

May 2012

# Data

TG Bay Technologies

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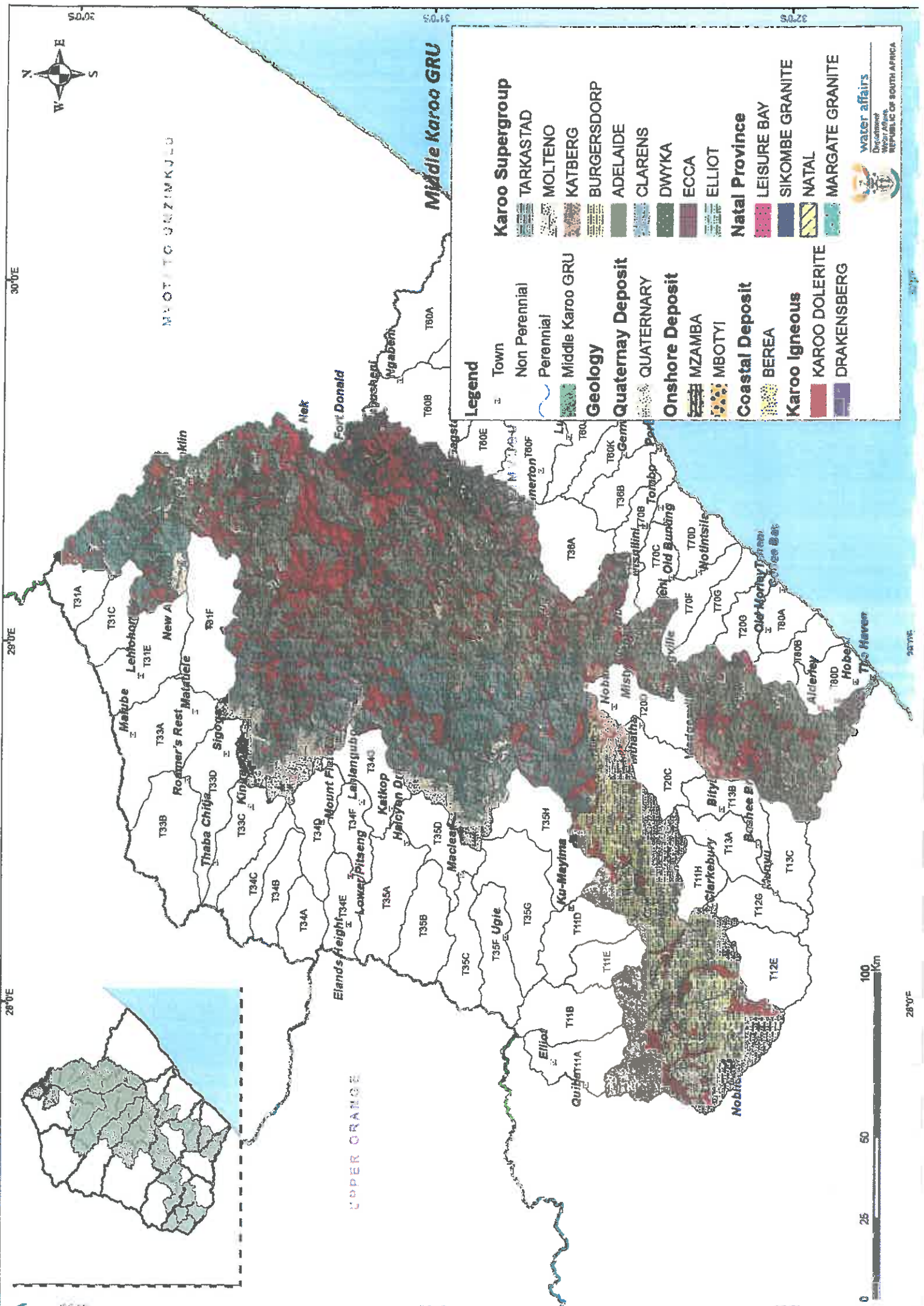
## Groundwater Reserve Determination Study: Mzimvubu to Keiskamma Water management Area (Eastern Region)

Completed for  
Chief Directorate: Resource Directed Measures



**Water Affairs**  
Department:  
Water Affairs  
REPUBLIC OF SOUTH AFRICA

Department of Water Affairs  
157 Schoeman Street, Pretoria, 0002



MNOTI TO UNZIMKULU

Middle Karoo GRU

**Legend**

- Town
  - Non Perennial
  - Perennial
  - Middle Karoo GRU
- Geology**
  - Quaternary Deposit
  - QUATERNARY
  - Onshore Deposit
  - MZAMBA
  - MBOTYI
  - Coastal Deposit
  - BEREA
  - Karoo Igneous
  - KAROO DOLERITE
  - DRAKENSBERG
- Karoo Supergroup**
  - TARKASTAD
  - MOLTENO
  - KATBERG
  - BURGERSDORP
  - ADELAIDE
  - CLARENS
  - DWYKA
  - ECCA
  - ELLIOT
- Natal Province**
  - LEISURE BAY
  - SIKOMBE GRANITE
  - NATAL
  - MARGATE GRANITE



30°E

29°E

28°E

33°S

32°S

33°S

32°S

30°E

29°E

28°E



UPPER ORANGE

Elands Heights

Mount Friesland

Fort Donald

Nek

Makhanda

Port Elizabeth

Grahamstown

Lower Pitseng

Katkop

Molteno

Merton

Grahamstown

Grahamstown

Grahamstown

Maclean

Molteno

Molteno

Molteno

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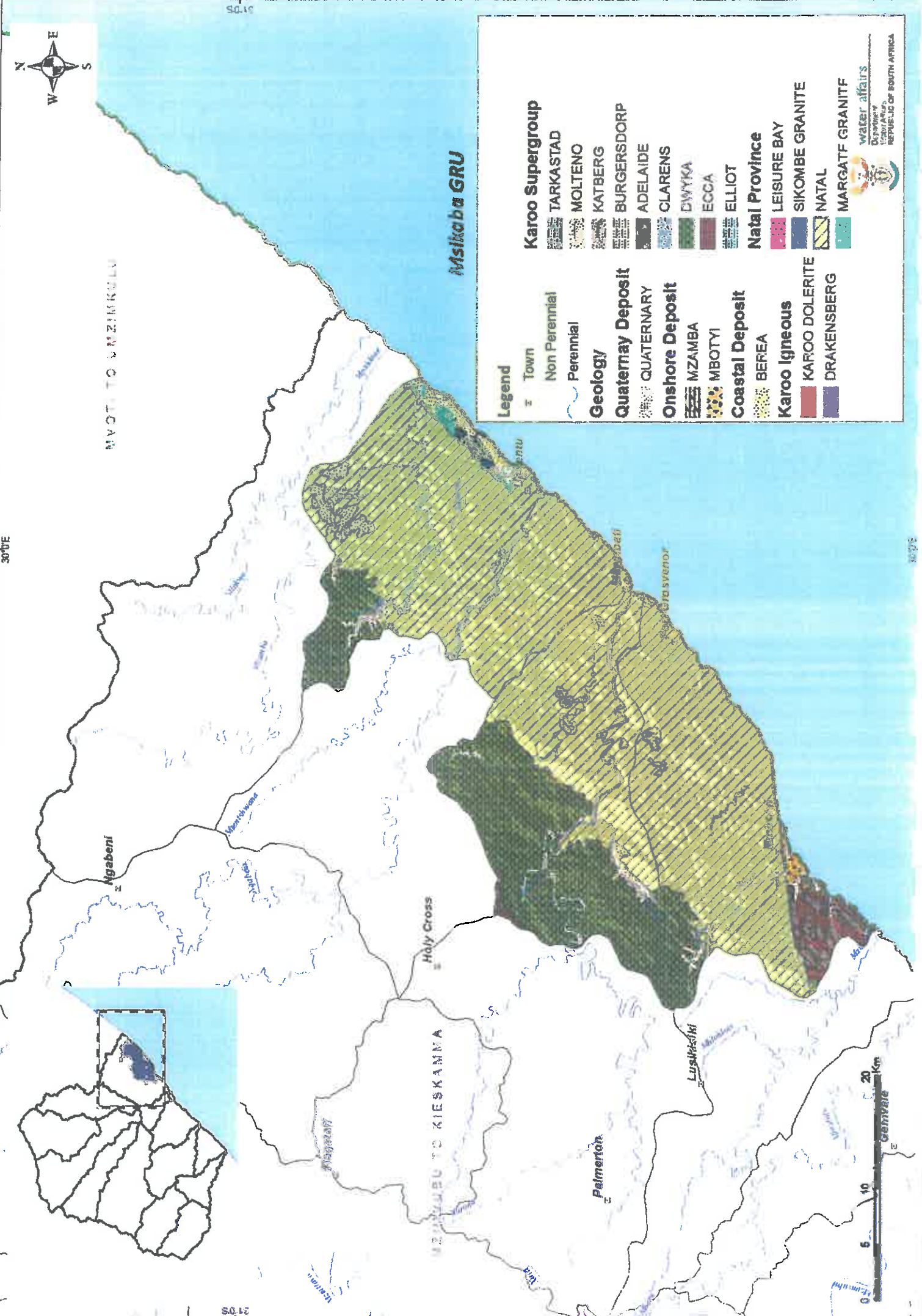
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30°0'E

30°0'E

31°0'S

### Mskikaba GRU

#### Legend

#### Karoo Supergroup

TARKASTAD

MOLTENO

KATBERG

BURGERSDORP

ADELAIDE

CLARENS

DWYKA

EGCA

ELLIOT

#### Natal Province

LEISURE BAY

SIKOMBE GRANITE

NATAL

MARGATF GRANITIF

#### Non Perennial

#### Perennial

#### Geology

#### Quaternary Deposit

QUATERNARY

#### Onshore Deposit

MZAMBA

MBOTYI

#### Coastal Deposit

BEREA

#### Karoo Igneous

KAROO DOLERITE

DRAKENSBERG



Department of Water Affairs and Forestry  
REPUBLIC OF SOUTH AFRICA

Ngabeni

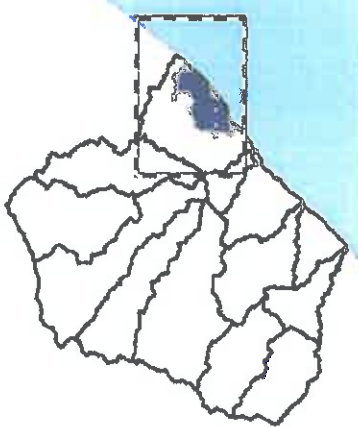
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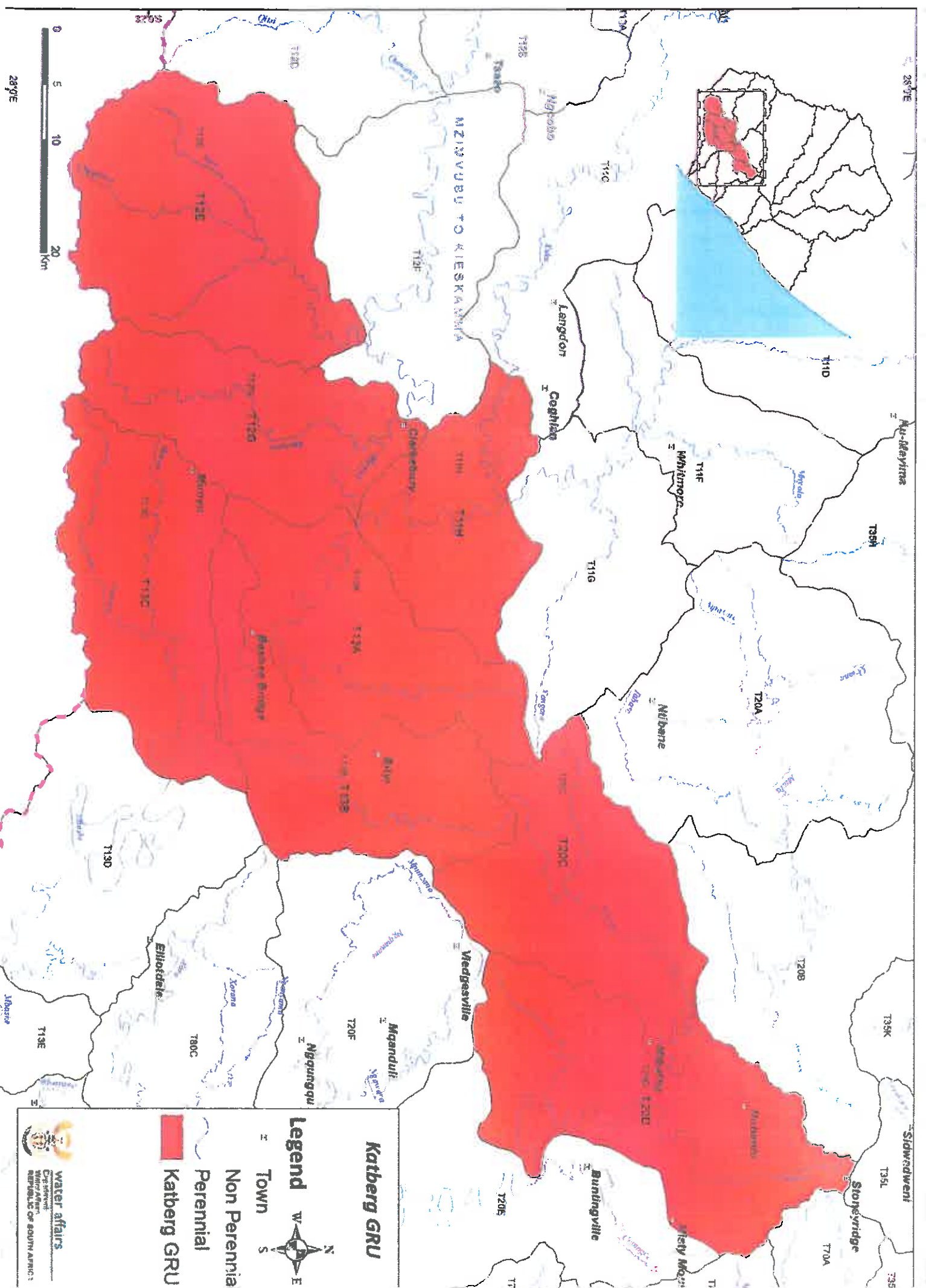
Holy Cross

MAMABU TO KIESKAMMA

Palmerston

Luskwini





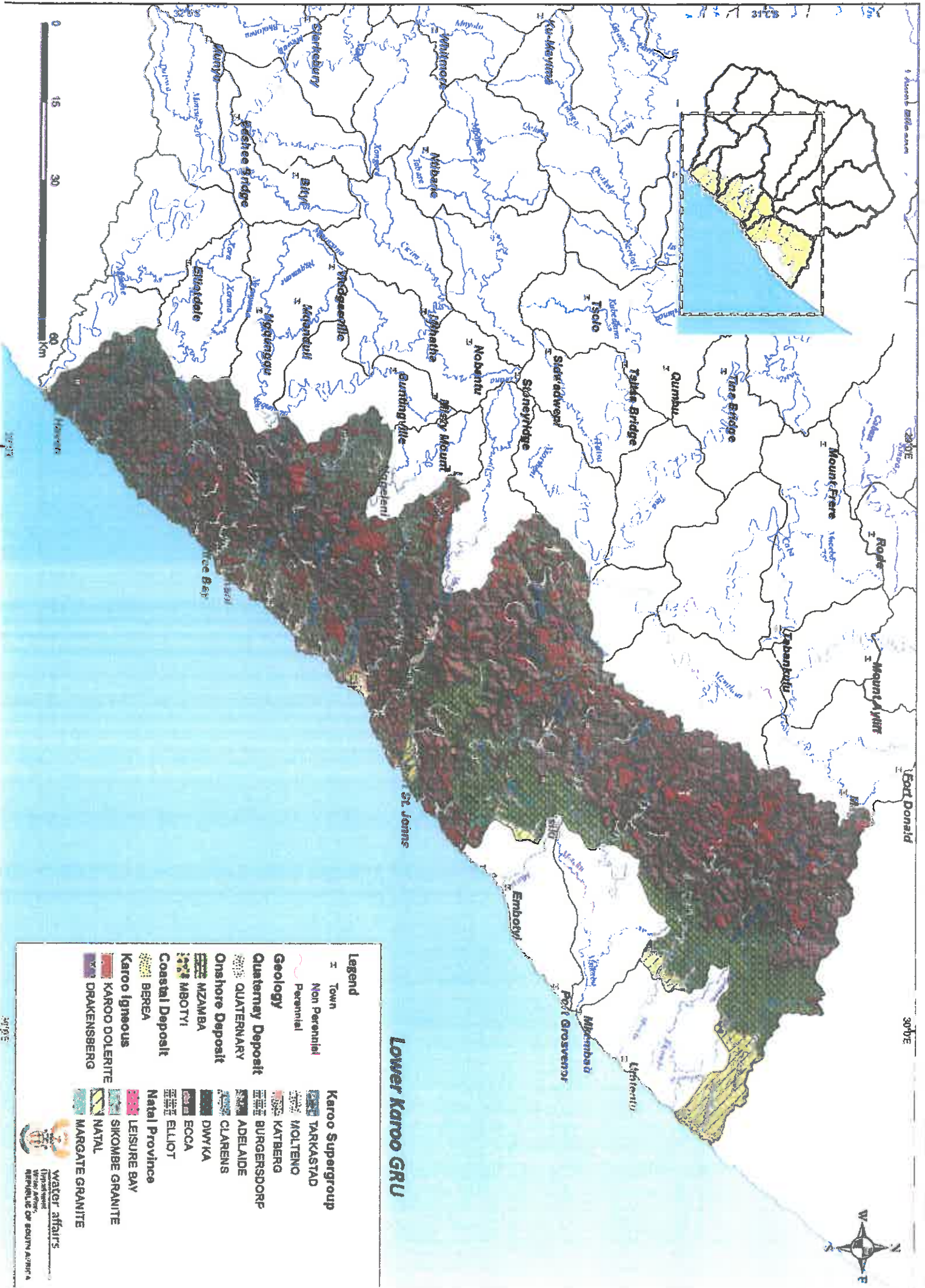
### Katberg GRU

#### Legend

-  Town
-  Perennial
-  Katberg GRU

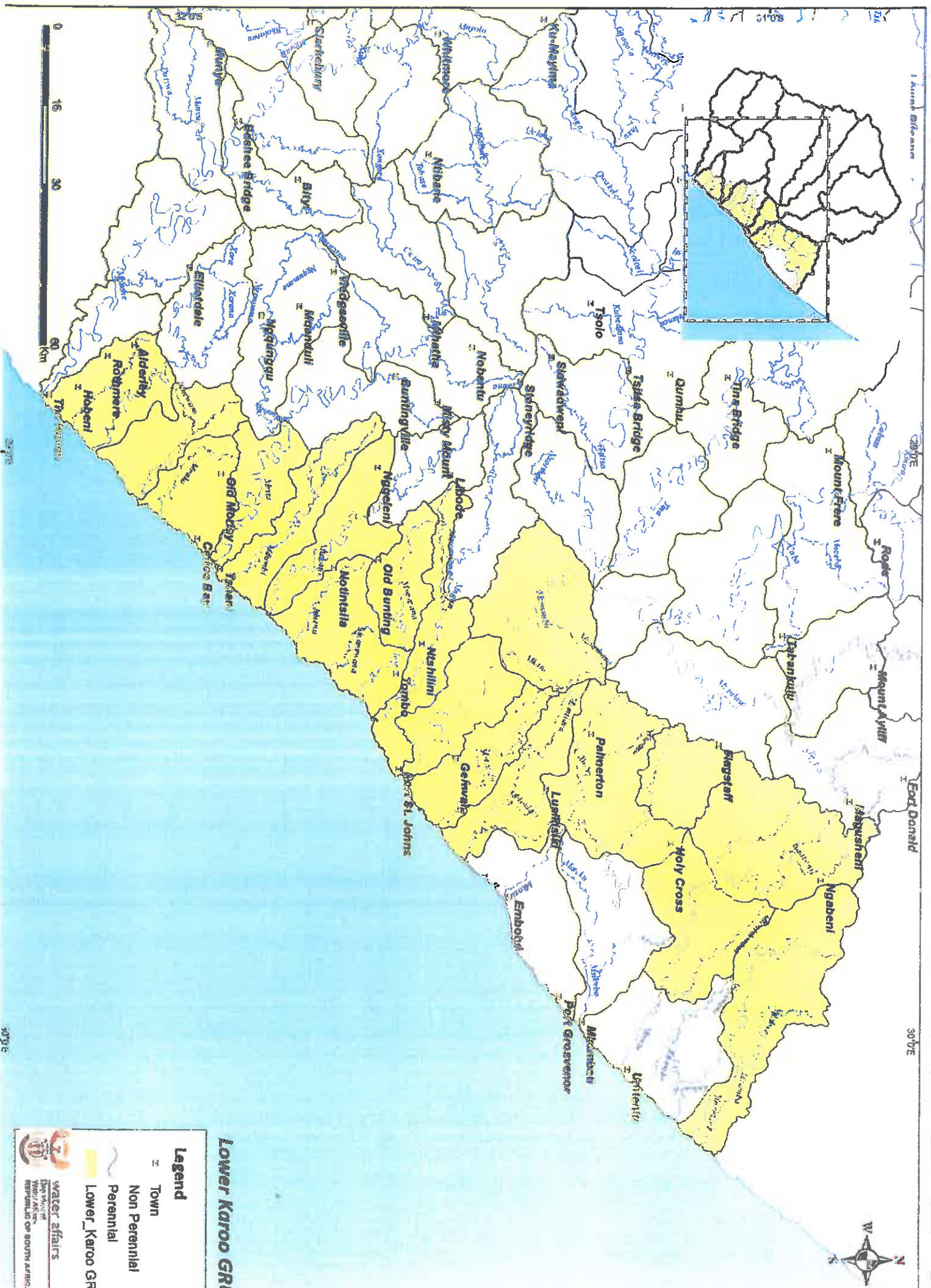



**Water Affairs**  
 Department of Water and  
 Environmental Affairs  
 Republic of South Africa



### Lower Karoo GRU


<b>Legend</b>	<b>Town</b>	<b>Karoo Supergroup</b>
<b>Non Perennial</b>	<b>Perennial</b>	<b>TARKASTAD</b>
<b>Geology</b>	<b>QUATERNARY DEPOSIT</b>	<b>MOLTENO</b>
<b>ONSHORE DEPOSIT</b>	<b>MZAMBA</b>	<b>KATBERG</b>
<b>COASTAL DEPOSIT</b>	<b>BEREA</b>	<b>BURGERSDORP</b>
<b>KAROO IGNEOUS</b>	<b>KAROO DOLERITE</b>	<b>ADELAIDE</b>
<b>DRAKENSBERG</b>	<b>MARGATE GRANITE</b>	<b>CLARENS</b>
		<b>DWYKA</b>
		<b>ECCA</b>
		<b>ELLIOT</b>
		<b>NATAL PROVINCE</b>
		<b>LEISURE BAY</b>
		<b>SIKOMBE GRANITE</b>
		<b>NATAL</b>
		<b>WATER AFFAIRS</b>
		<b>REPUBLIC OF SOUTH AFRICA</b>



**Lower Karoo GRU**

**Legend**

- ≡ Town
- ≡ Non Perennial
- ≡ Perennial
- Lower Karoo GRU


  
 Water Affairs
   
 Department of Water and
   
 Environmental Affairs
   
 REPUBLIC OF SOUTH AFRICA

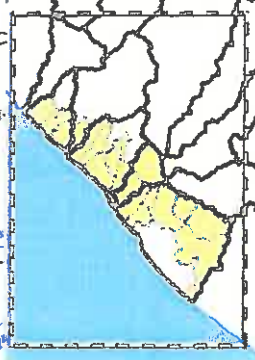


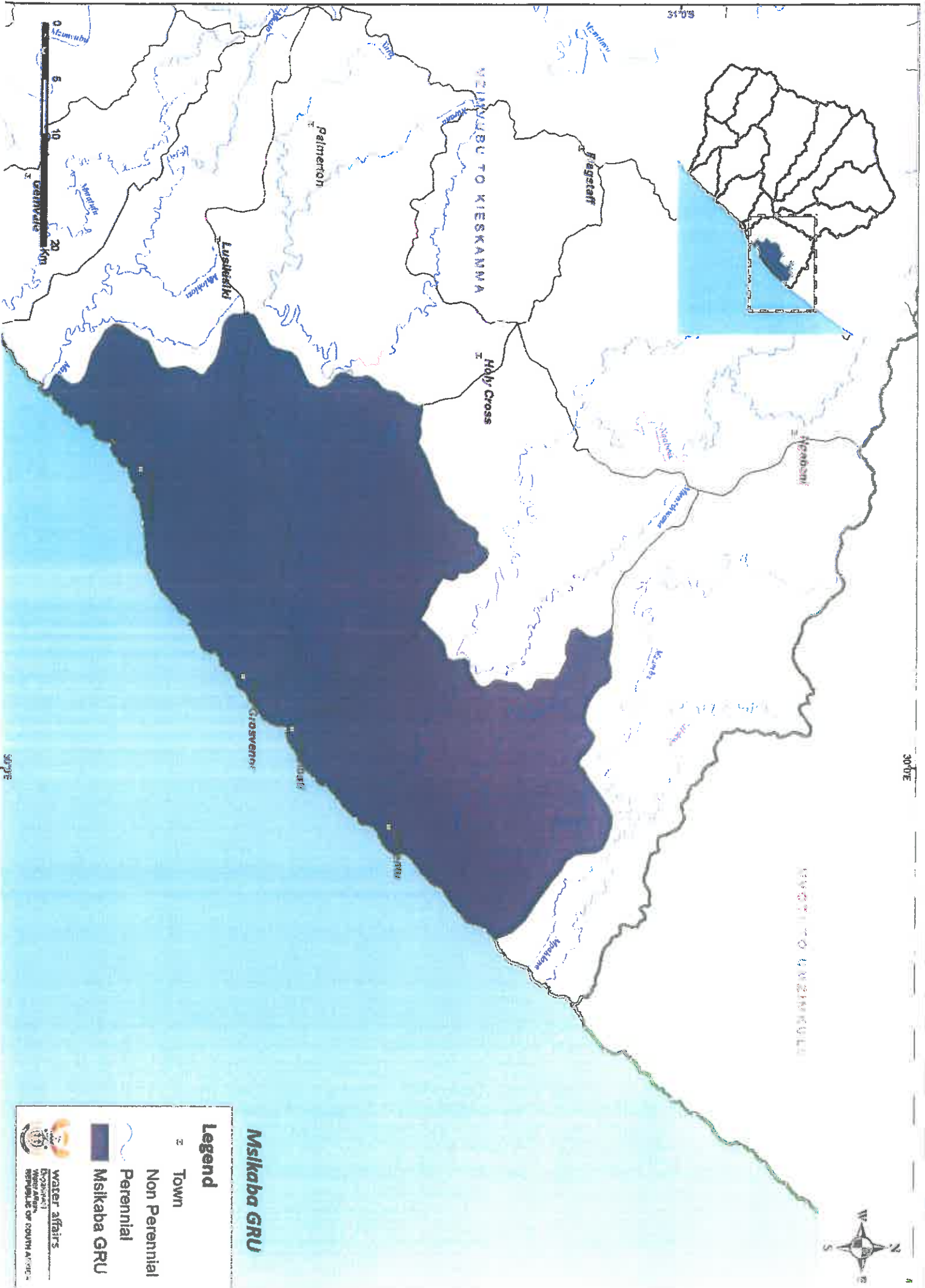
30°E

30°E

0 15 30 60 Km

1: African Birdlife





**Mskaba GRU**

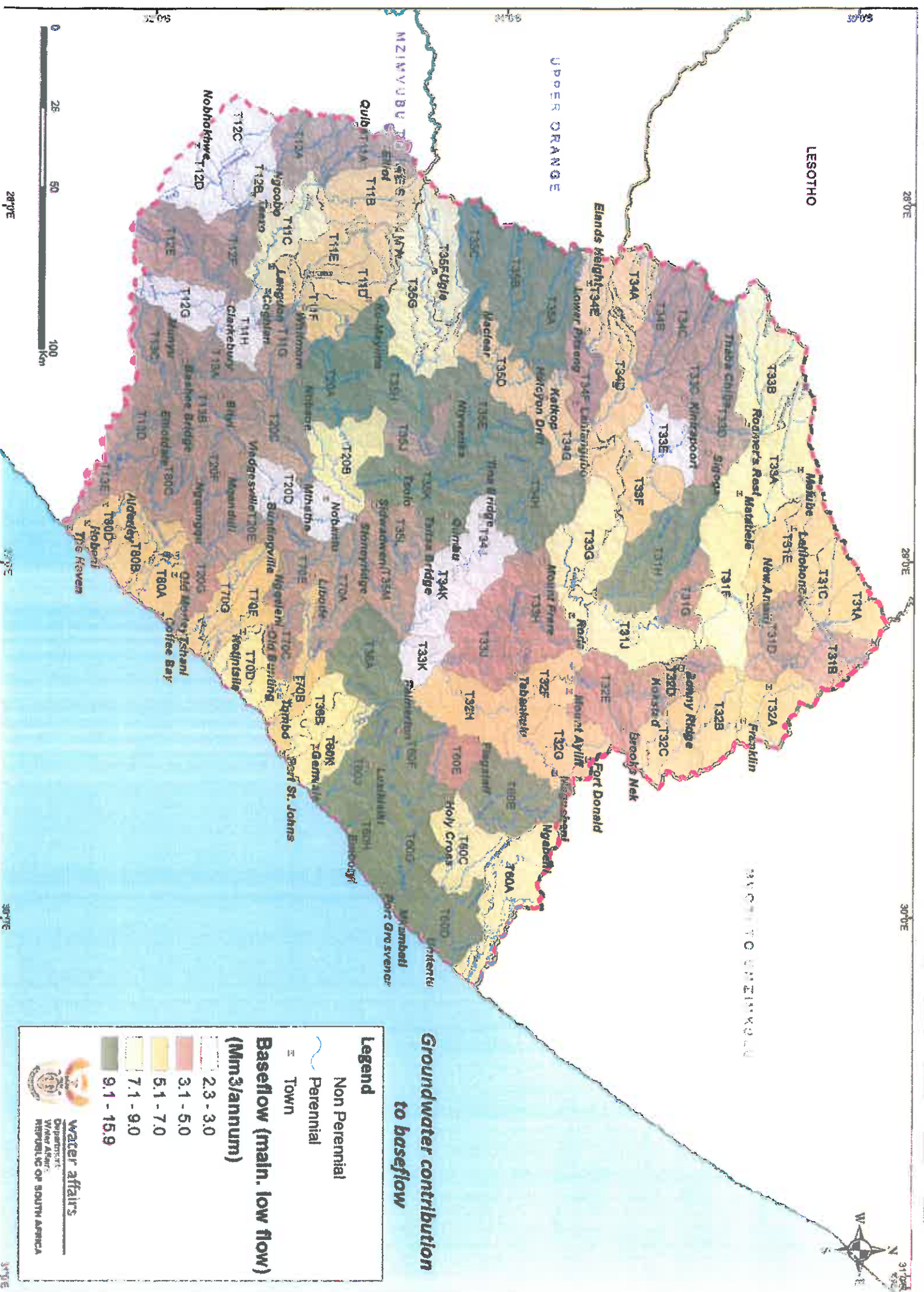
**Legend**

- Town
- Non Perennial
- Perennial
- Mskaba GRU



30°05' S  
30°02' E

0 5 10 20  
Kilometers



**Groundwater contribution to baseflow**

**Legend**

Non Perennial

Perennial

Town

**Baseflow (main. low flow)  
(Mm³/annum)**

- 2.3 - 3.0
- 3.1 - 5.0
- 5.1 - 7.0
- 7.1 - 9.0
- 9.1 - 15.9



**Water affairs**  
Department of  
Water Affairs  
REPUBLIC OF SOUTH AFRICA



28°E

29°E

30°E

31°E

28°E

29°E

30°E

31°E

LESOTHO

MOZAMBIQUE

UPPER ORANGE

Elandsheilig 134E

Lower Priesburg 134F

Port Donald

Ngabeni

Magersburg

Mount Ayliff

Brooks Nek

Keelburg

Keelburg

Keelburg

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Keelburg

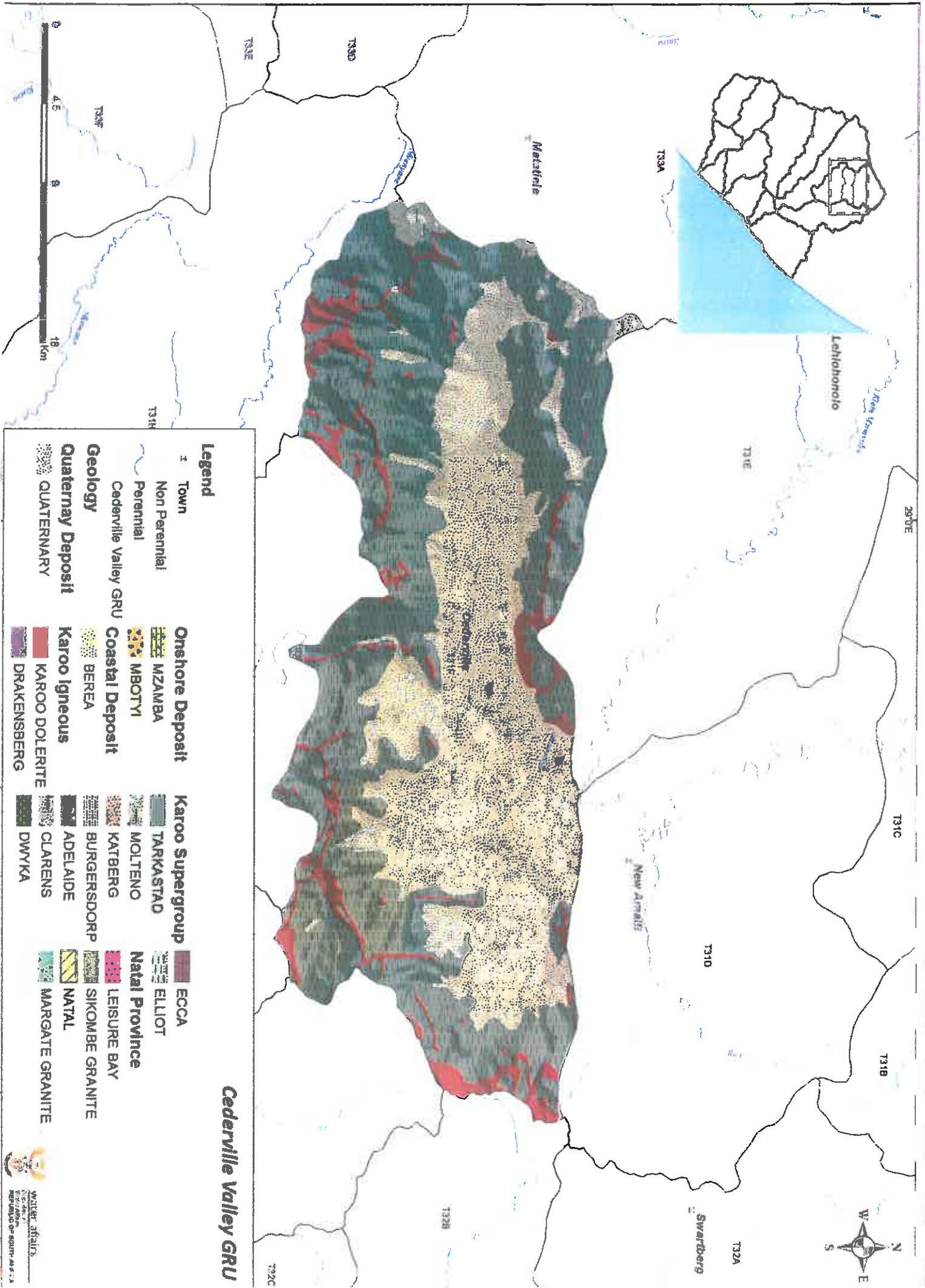
Keelburg

Keelburg

Keelburg

Keelburg

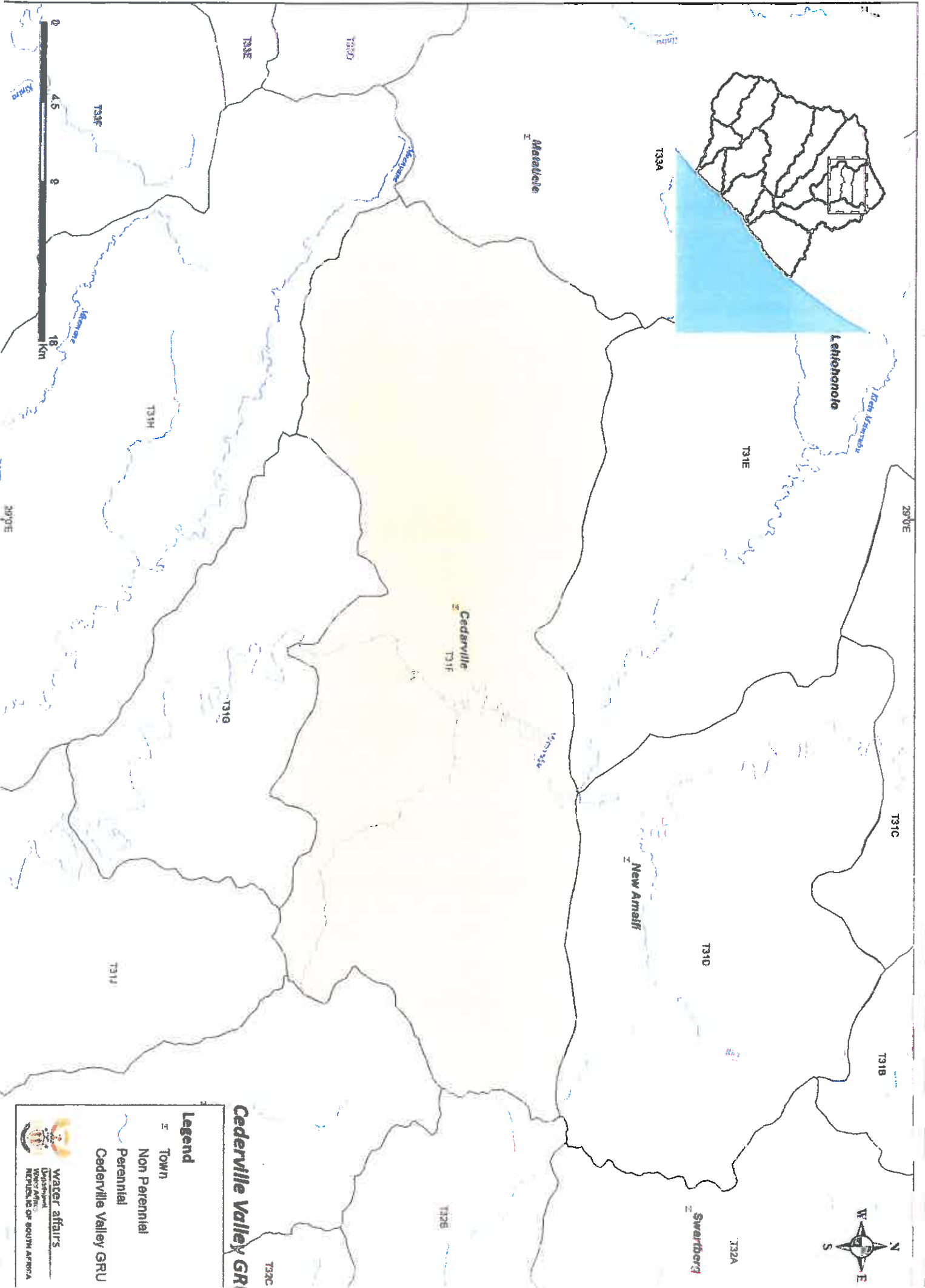
Keelburg



**Cederville Valley GRU**

**Legend**

- Town**
  - Non Perennial
  - Perennial
- Geology**
- Quaternary Deposit**
  - QUATERNARY
- Onshore Deposit**
  - MZAMBA
  - MBOTYI
- Coastal Deposit**
  - BEREA
- Karoo Igneous**
  - KAROO DOLERITE
  - DRAKENSBERG
- Karoo Supergroup**
  - TARKASTAD
  - MOLTENO
  - KATBERG
  - BURGERSDORP
  - ADELAIDE
  - CLARENS
  - DWYKA
- Natal Province**
  - ECCA
  - ELLIOT
  - LEISURE BAY
  - SIKOMBE GRANITE
  - NATAL
  - MARGATE GRANITE

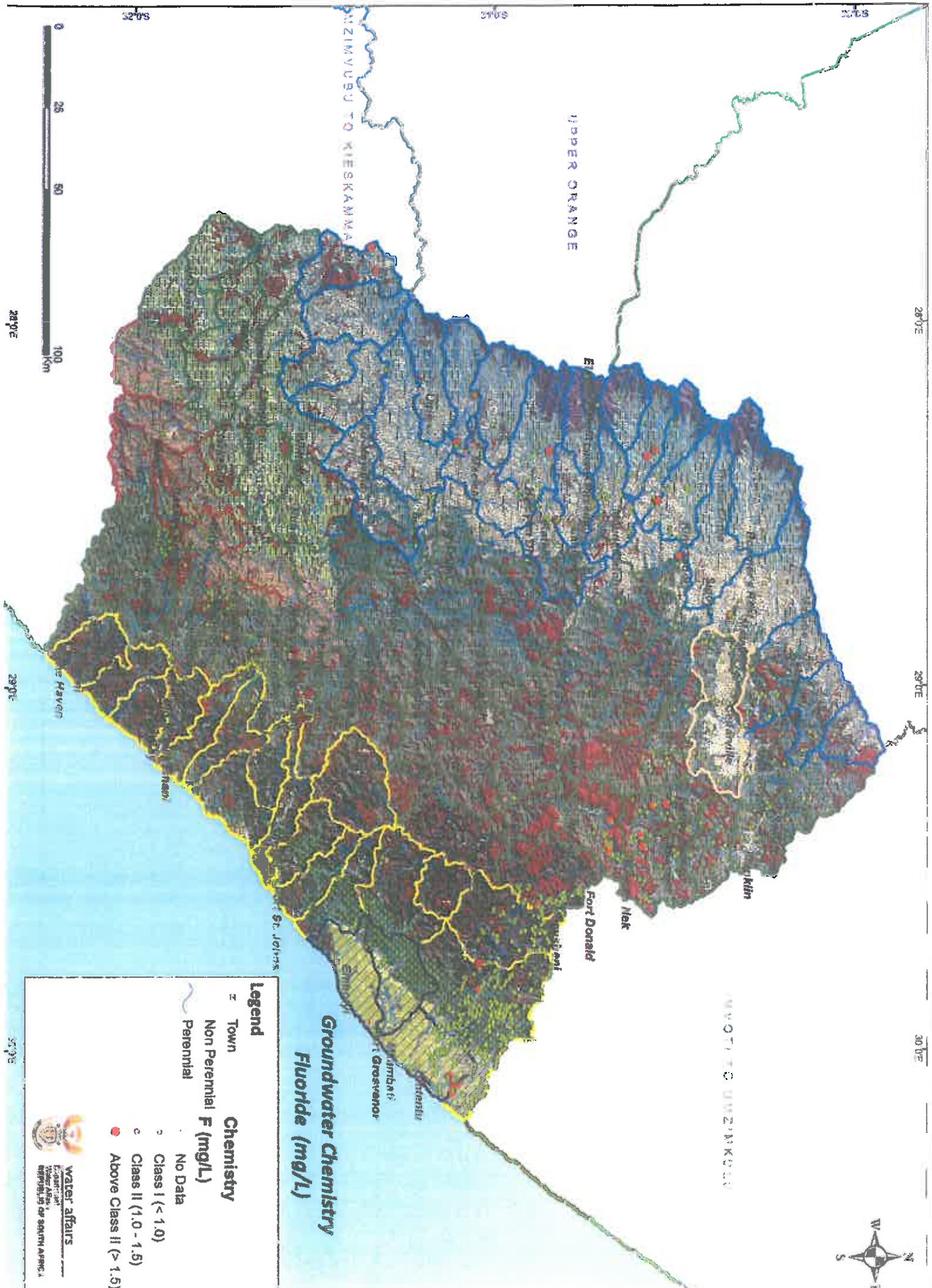


**Cederville Valley GRU**

**Legend**

- TOWN
- Non Perennial
- Perennial
- Cederville Valley GRU

**Water affairs**  
 Department of Water Affairs  
 REPUBLIC OF BOTSWANA



28°0'E

29°0'E

30°0'E

28°0'S

29°0'S

30°0'S



28°0'E

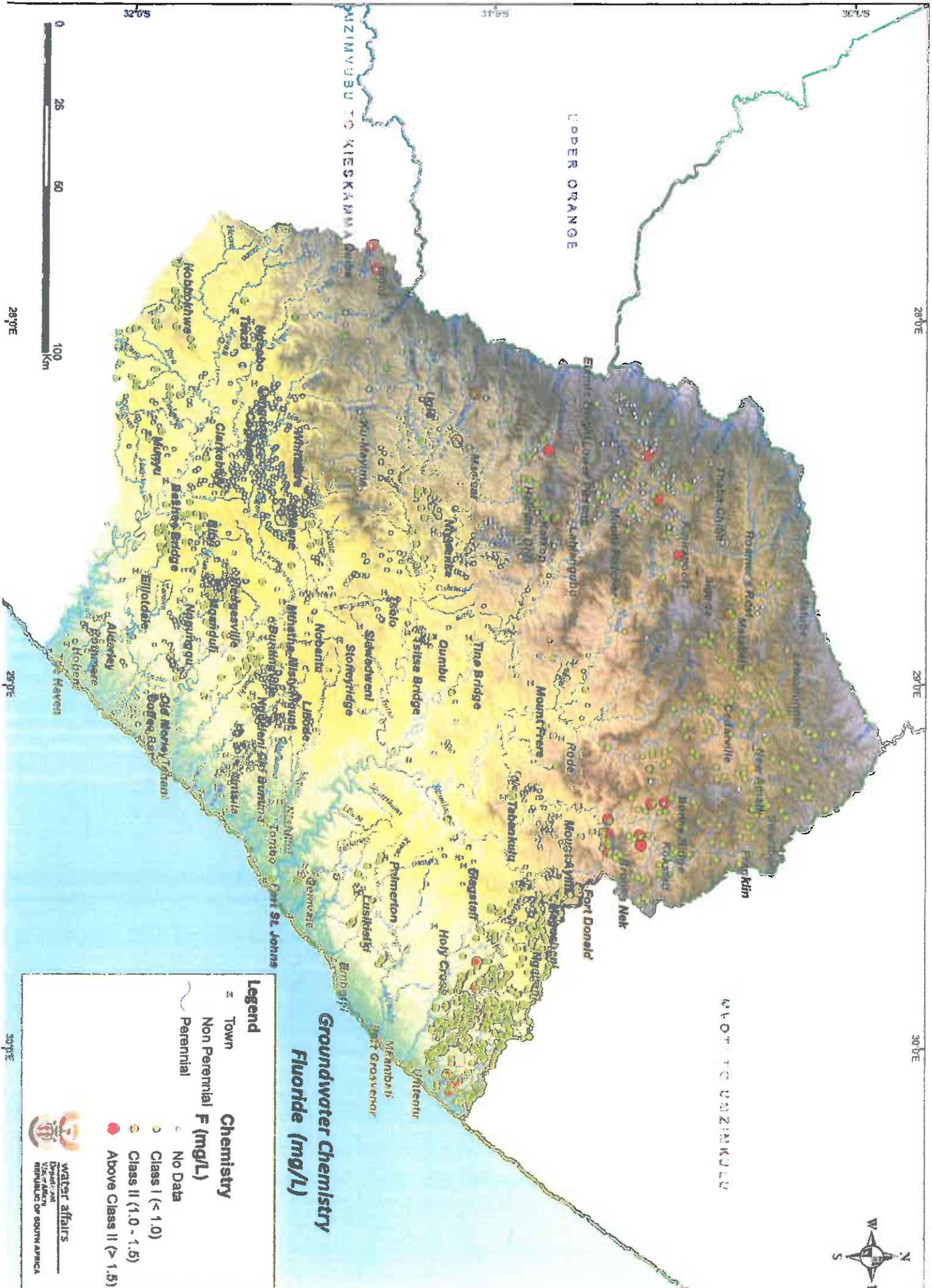
29°0'E

30°0'E

### Groundwater Chemistry Fluoride (mg/L)

Legend	
	Town
	Non Perennial
	Perennial
Chemistry	
	No Data
	Class I (< 1.0)
	Class II (1.0 - 1.5)
	Above Class II (> 1.5)

**Water Affairs**  
 DEPARTMENT OF WATER AND SANITATION  
 REPUBLIC OF SOUTH AFRICA



28°0'E

29°0'E

30°0'E



UPPER ORANGE

WATERS TO WAZINKULU

MAZIMVUBU TO KIESKAMMA DREE

**Groundwater Chemistry  
Fluoride (mg/L)**

**Legend**

- ◻ Town
- Non Perennial
- ~ Perennial
- No Data
- Class I (< 1.0)
- Class II (1.0 - 1.5)
- Above Class II (> 1.5)

**Chemistry**

**F (mg/L)**

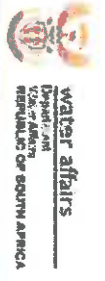
- No Data
- Class I (< 1.0)
- Class II (1.0 - 1.5)
- Above Class II (> 1.5)



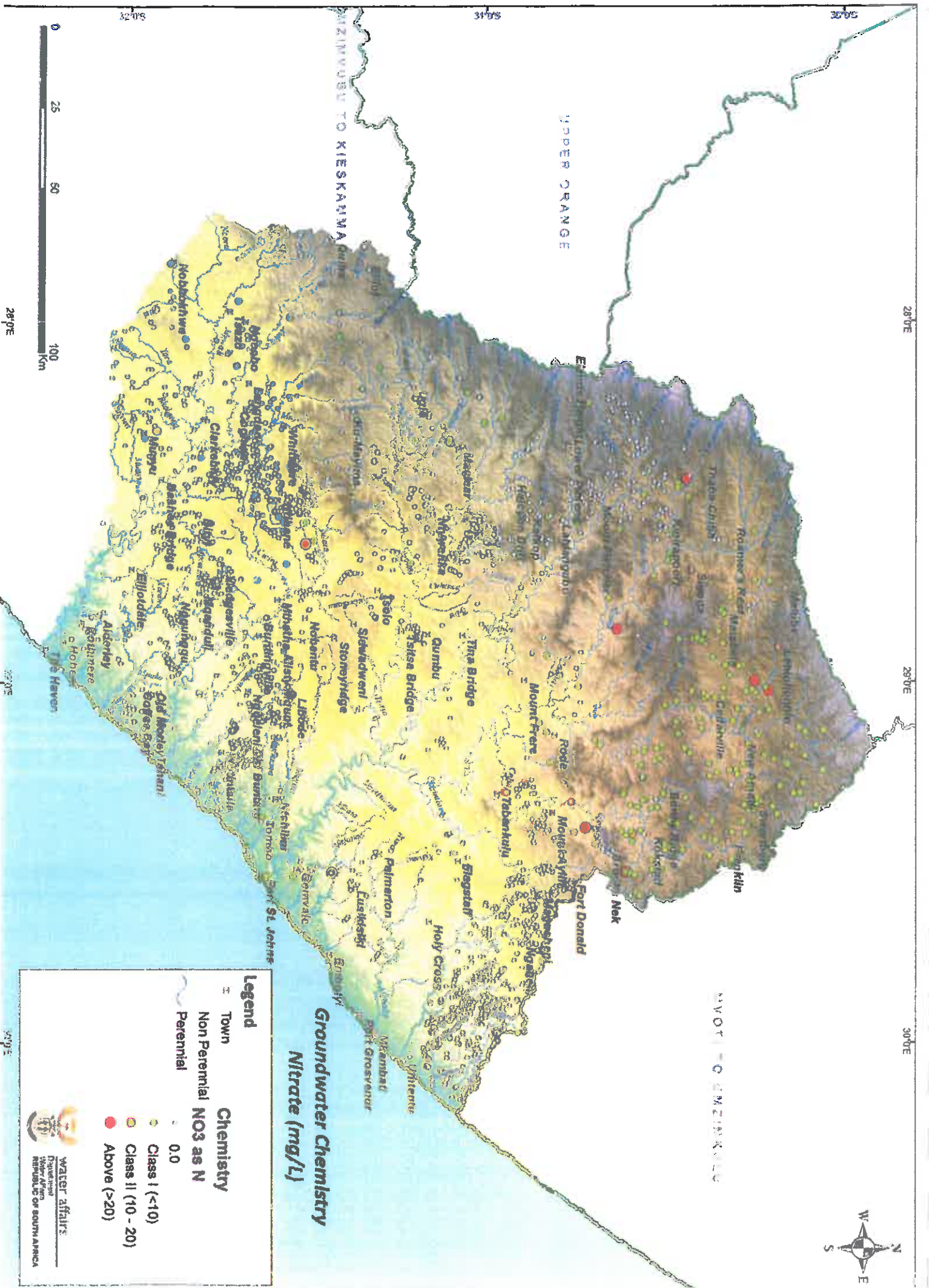
28°0'E

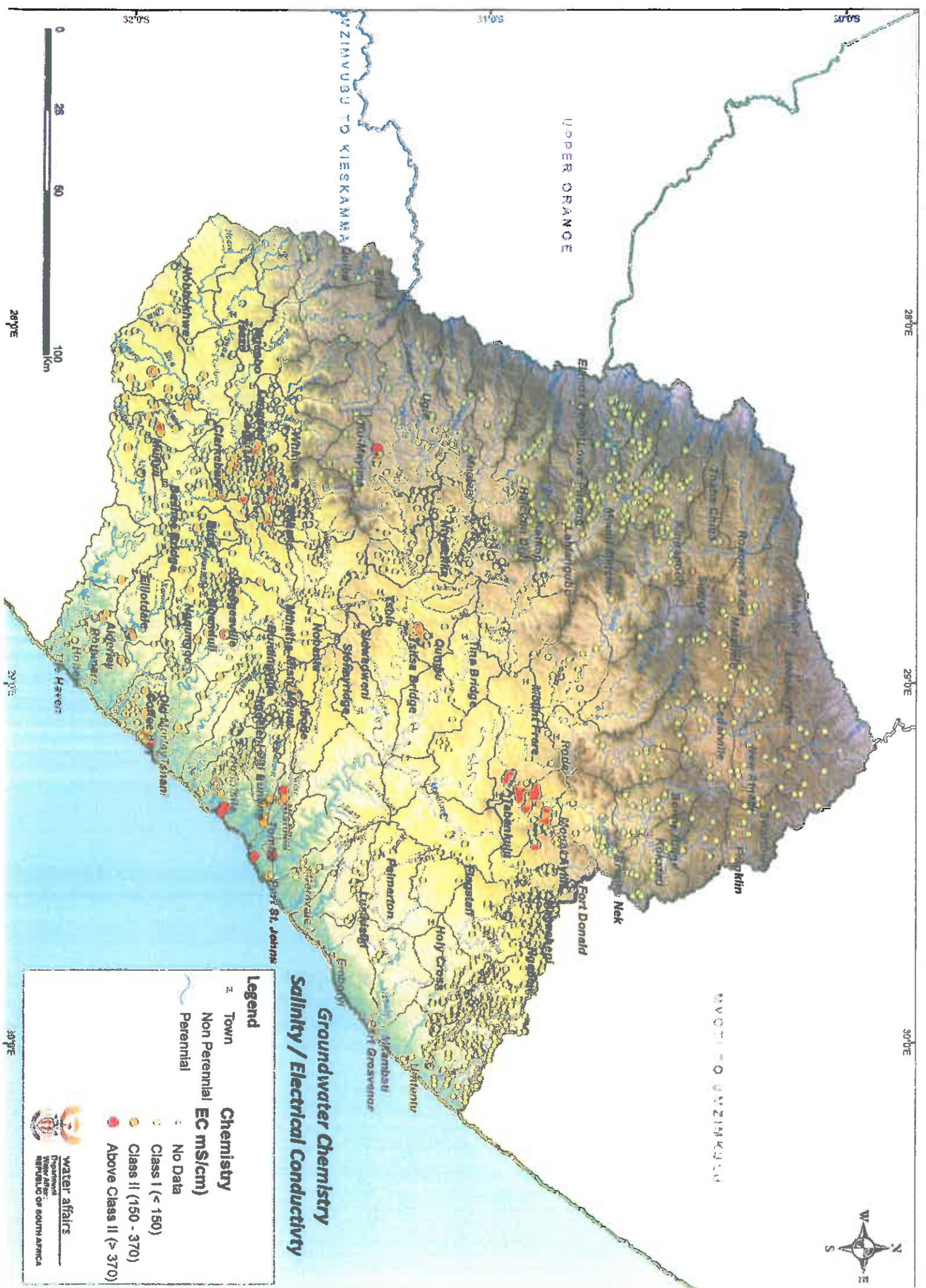
29°0'E

30°0'E



Water Affairs  
Department of Water Affairs and Forestry  
REPUBLIC OF SOUTH AFRICA





**Groundwater Chemistry  
Salinity / Electrical Conductivity**

**Legend**

- Town
- Non Perennial
- Perennial

**Chemistry EC mS/cm**

- No Data
- Class I (< 150)
- Class II (150 - 370)
- Above Class II (> 370)



28°05' S

29°05' S

29°55' S

30°05' S

0 25 50 100 Km

28°05' E

29°05' E

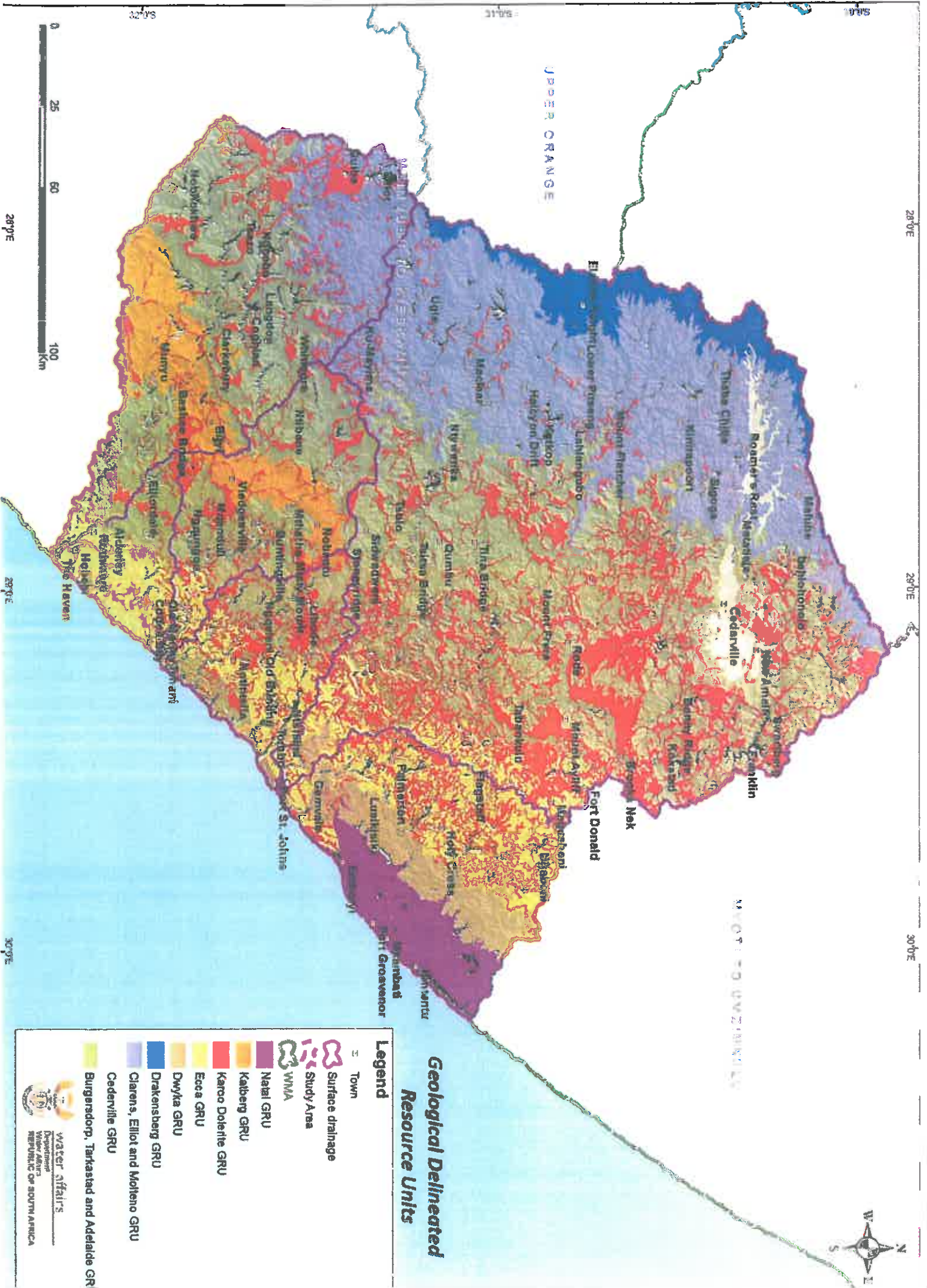
29°55' E

30°05' E









## Geological Delineated Resource Units

**Legend**

- Town
- Surface drainage
- Study Area
- WMA
- Natal GRU
- Kalberg GRU
- Karoo Dolerite GRU
- Ecca GRU
- Dwyla GRU
- Drakensberg GRU
- Clarens, Elliot and Molteno GRU
- Cederville GRU
- Burgersdorp, Tarkastad and Adelaide GRU

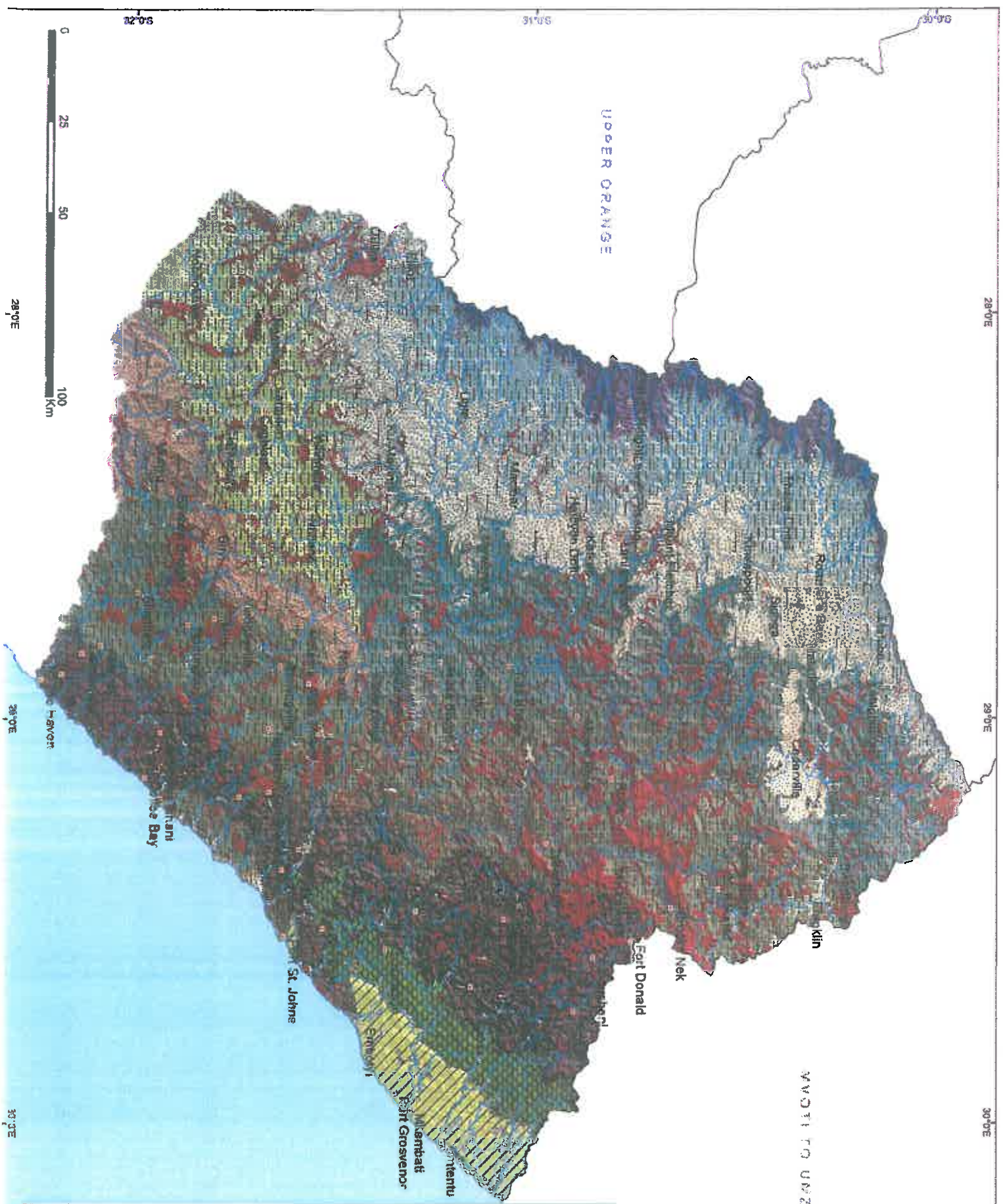
**WATER AFFAIRS**  
 Department of Water Affairs  
 REPUBLIC OF SOUTH AFRICA

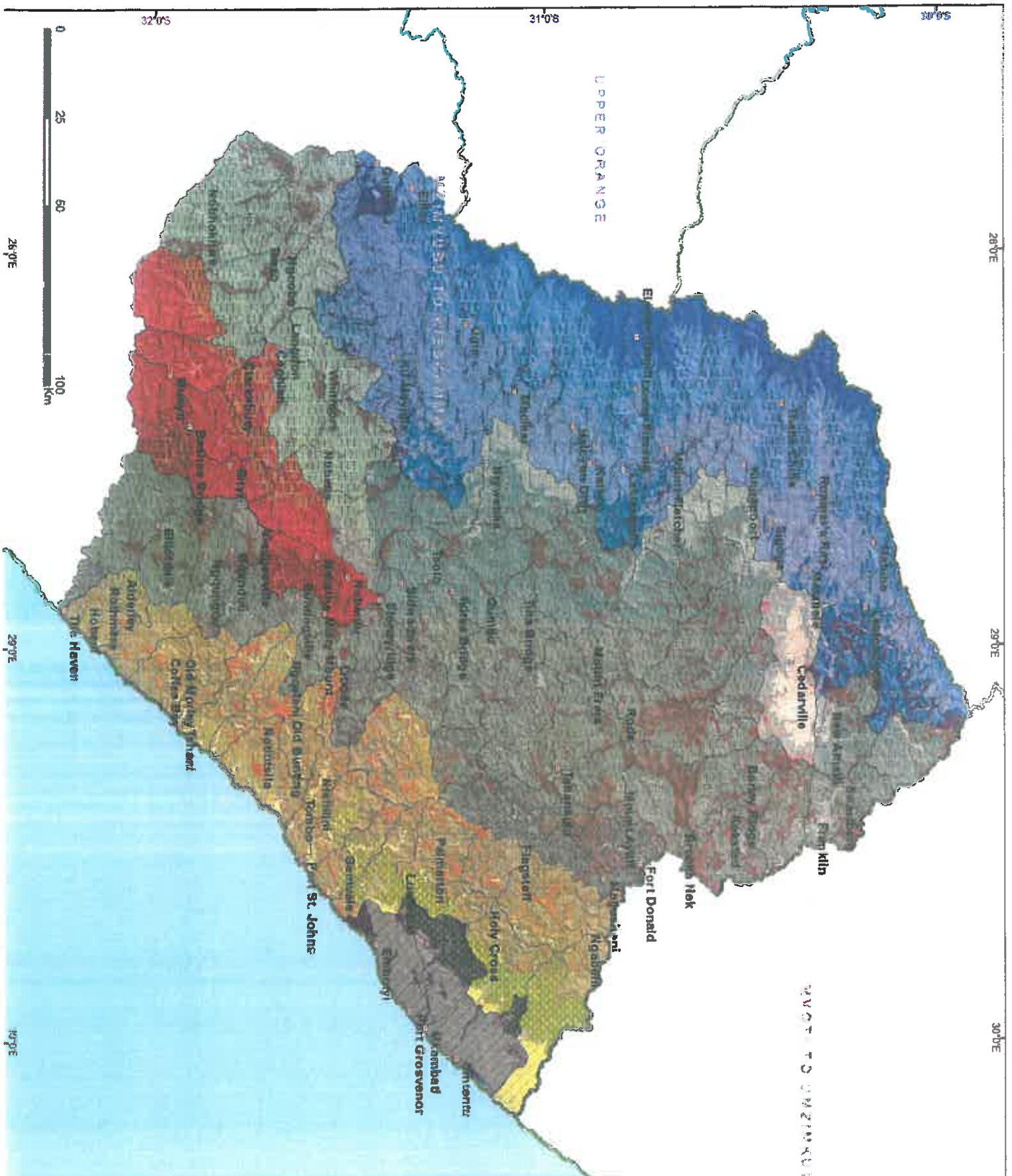


### Regional Geology

#### Legend

























- Non Perennial
- Perennial
- Town
- Geology**
- Quaternary Deposit**
- QUATERNARY
- Onshore Deposit**
- MZAMBA
- MBOTYI
- Coastal Deposit**
- BEREA
- Karoo igneous**
- KAROO DOLERITE
- DRAKENSBERG
- Karoo Supergroup**
- TARKASTAD
- MOLTENO
- KATBERG
- BURGERSDORP
- ADELAIDE
- CLARENS
- DWYKA
- ECCA
- ELLIOT
- Natal Province**
- LEISURE BAY
- SIKOMBE GRANITE
- NATAL
- MARGATE GRANITE

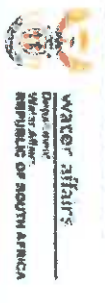


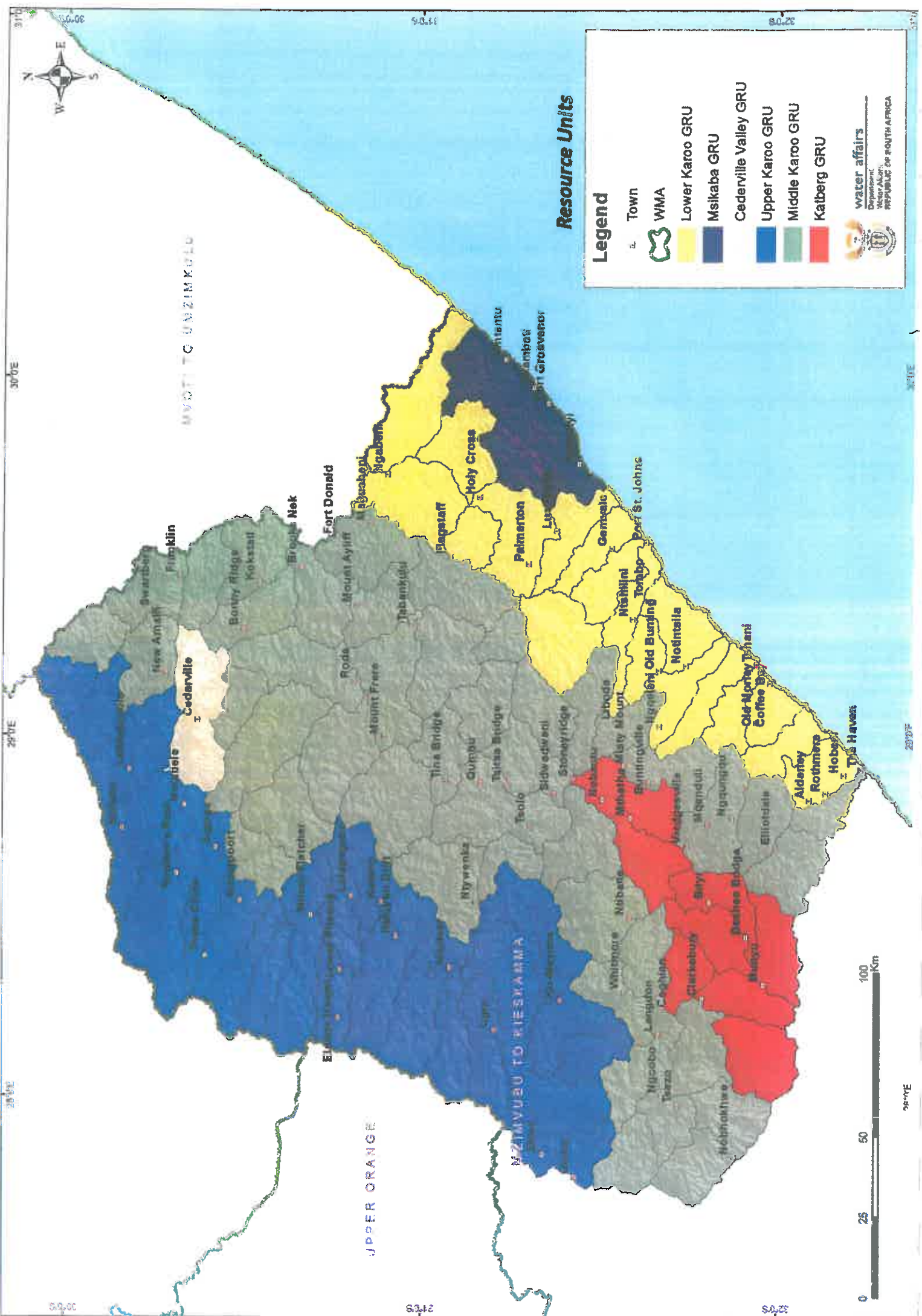


### Resource Units

#### Legend

-  Town
-  WMA
-  Lower Karoo GRU
-  Maksha GRU
-  Cederville Valley GRU
-  Upper Karoo GRU
-  Middle Karoo GRU
-  Karoo GRU
- Geology**
-  Quaternary Deposit
-  Onshore Deposit
-  MZAMBA
-  MBOTYI
- Coastal Deposit**
-  BEREA
- Karoo Igneous**
-  KAROO DOLERITE
-  DRAKENSBERG
- Karoo Supergroup**
-  TARKASTAD
-  MOLTENO
-  KATBERG
-  BURGERSDORP
-  ADELAIDE
-  CLARENS
-  DMYNA
-  ECCA
-  ELLIOT
- Natal Province**
-  LESURE BAY
-  SIKOMBE GRANITE
-  MATAL
-  MARGATE GRANITE





### Resource Units

**Legend**

- Town
- WMA
- Lower Karoo GRU
- Mskaba GRU
- Cederville Valley GRU
- Upper Karoo GRU
- Middle Karoo GRU
- Katberg GRU
- Water affairs Department Western Cape REPUBLIC OF SOUTH AFRICA

30°50' 30°55' 31°00'

28°00' 28°05' 28°10'



UPPER ORANGE

MZIMVU TO KIESKAMA

MUOTI TO UNZINKOLO



28°05'E

28°07'E

28°09'E

31°00'

30°50'

28°00'

30°05'

31°00'

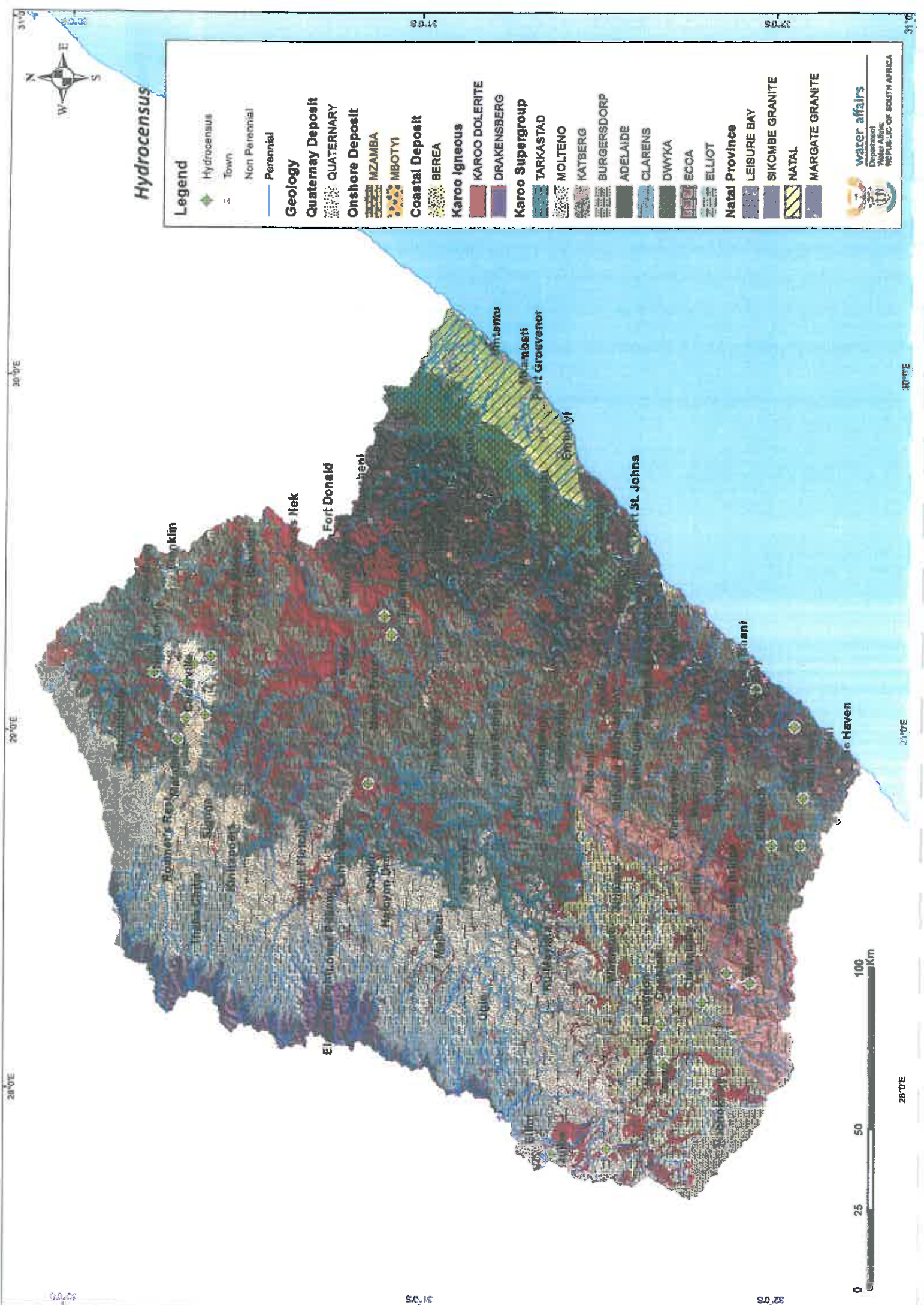
21°38'

32°05'

30°40'

30°20'

31°00'



# Hydrocensus

## Legend

- ◆ Hydrocensus
  - Town
  - Non Perennial
  - Perennial
- ### Geology
- Quaternary Deposit**
  - QUATERNARY**
  - Onshore Deposit**
  - MZAMBA**
  - MBOTYI**
  - Coastal Deposit**
  - BEREA**
  - Karoo igneous**
  - KAROO DOLERITE**
  - DRAKENSBERG**
  - Karoo Supergroup**
  - TARKASTAD**
  - MOLTENO**
  - KATBERG**
  - BURGERSDORP**
  - ADELAIDE**
  - CLARENS**
  - DWYKA**
  - ECCA**
  - ELLIOT**
  - Natal Province**
  - LEISURE BAY**
  - SIKOMBE GRANITE**
  - NATAL**
  - MARGATE GRANITE**

**water affairs**  
 Department of Water Affairs  
 REPUBLIC OF SOUTH AFRICA

30°0'E

30°0'E

28°0'E

31°0'S

31°0'S

32°0'S

32°0'S

30°0'E

30°0'E

28°0'E



Franklin

Wesleyville

Fort Donald

St. Johns

St. Johns

St. Johns

St. Johns

Wesleyville

Wesleyville

Wesleyville

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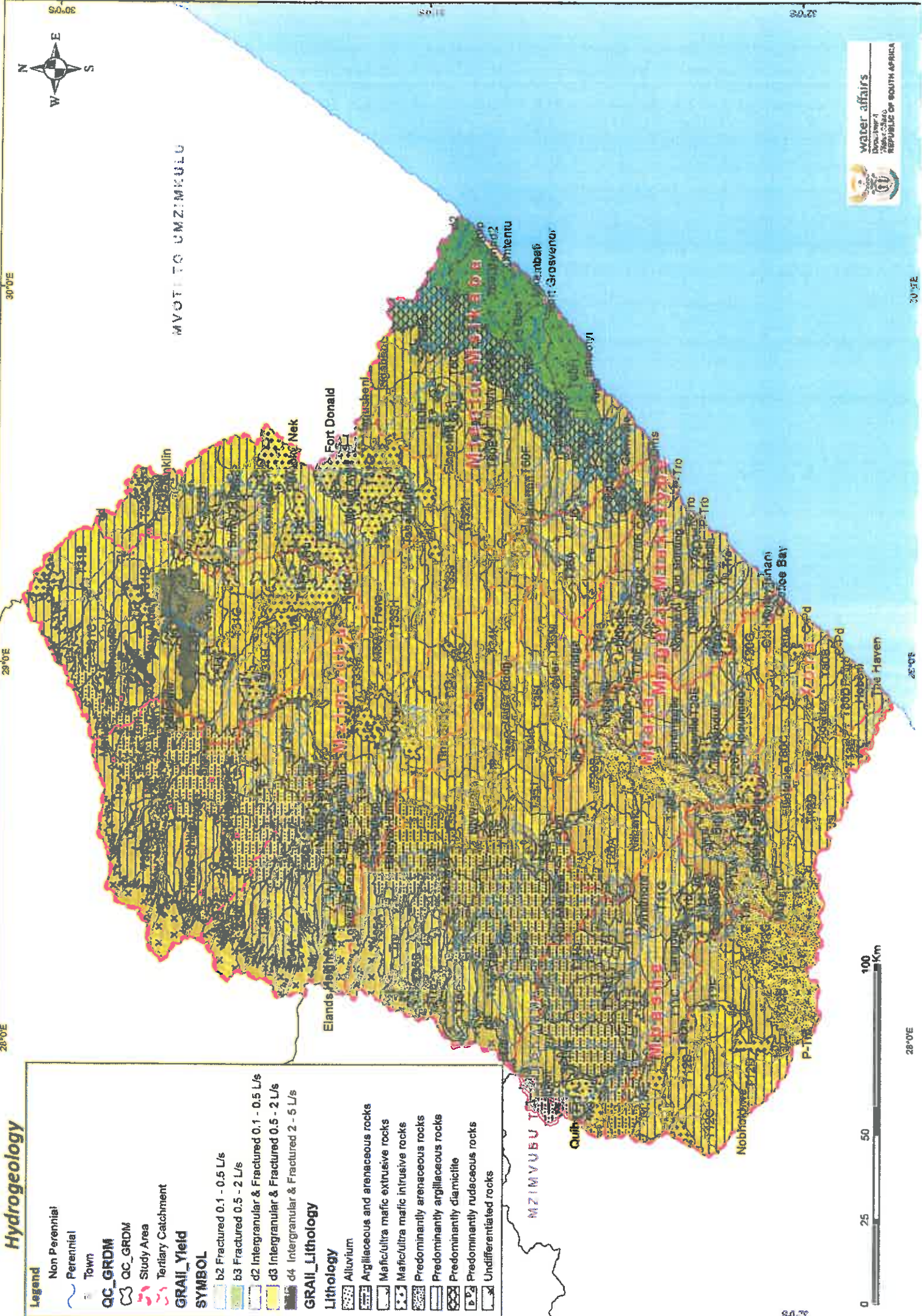
Wesleyville

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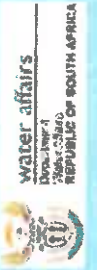
Wesleyville

Wesleyville



# Hydrogeology

- Legend**
- Non Perennial
  - Perennial
  - Town
  - QC\_GDRM
  - QC\_GDRM
  - Study Area
  - Tertiary Catchment
  - GRAII\_Yield
- SYMBOL**
- b2 Fractured 0.1 - 0.5 L/s
  - b3 Fractured 0.5 - 2 L/s
  - d2 Interganular & Fractured 0.1 - 0.5 L/s
  - d3 Interganular & Fractured 0.5 - 2 L/s
  - d4 Interganular & Fractured 2 - 5 L/s
- GRAII\_Lithology**
- Lithology**
- Alluvium
  - Argillaceous and arenaceous rocks
  - Mafic/ultra mafic intrusive rocks
  - Mafic/ultra mafic intrusive rocks
  - Predominantly arenaceous rocks
  - Predominantly argillaceous rocks
  - Predominantly diamictite
  - Predominantly rudsaceous rocks
  - Undifferentiated rocks



water affairs  
 Department of Water Affairs and Forestry  
 REPUBLIC OF SOUTH AFRICA

30°00'E 30°00'E 30°00'E

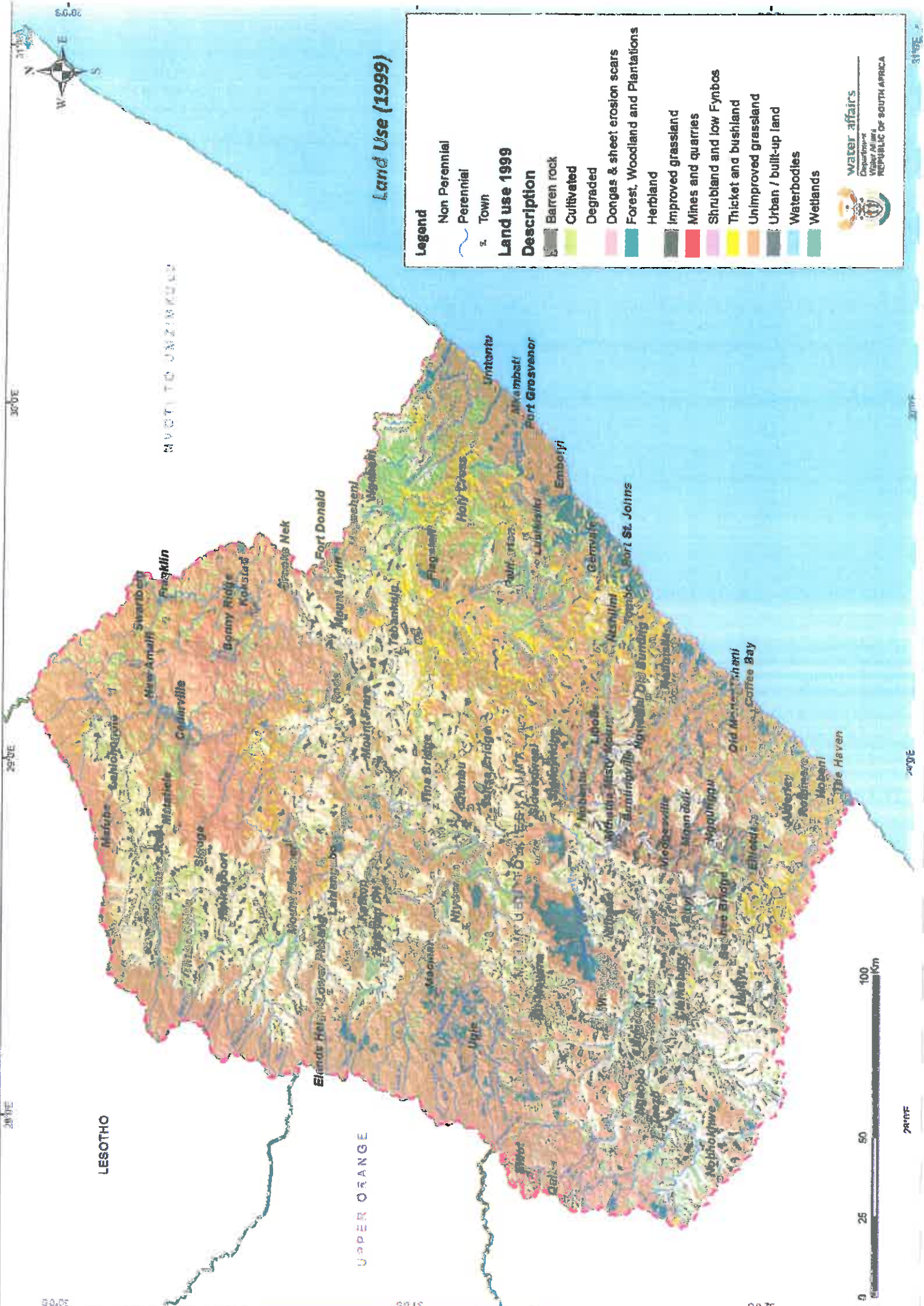
30°00'E 30°00'E 30°00'E

30°00'E 30°00'E 30°00'E

30°00'E 30°00'E 30°00'E

30°00'E 30°00'E 30°00'E

30°00'E 30°00'E 30°00'E



# Land Use (1999)

**Legend**

- Non Perennial
- Perennial
- Town

**Land use 1999 Description**

- Barren rock
- Cultivated
- Degraded
- Dongas & sheet erosion scars
- Forest, Woodland and Plantations
- Herbland
- Improved grassland
- Mines and quarries
- Shrubland and low Fynbos
- Thicket and bushland
- Unimproved grassland
- Urban / built-up land
- Waterbodies
- Wetlands



Water affairs  
 Department  
 Water Affairs  
 REPUBLIC OF SOUTH AFRICA

30°05' 30°05' 30°05'

29°05' 29°05' 29°05'

29°05' 29°05' 29°05'

30°05' 30°05' 30°05'

LESOTHO

UPPER ORANGE



29°05'

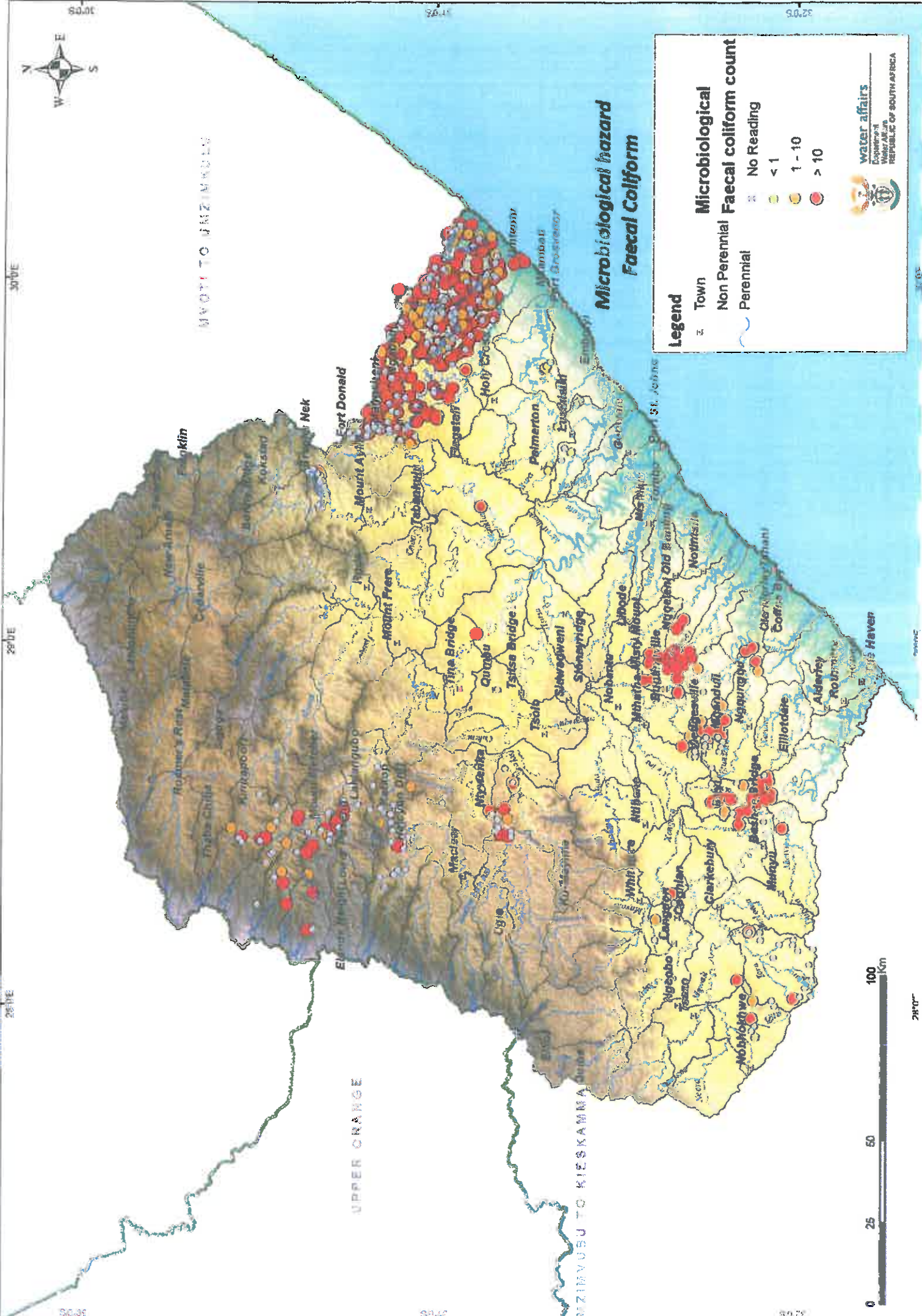
30°05'

31°05'

32°05'







UPPER ORANGE

**Microbiological Hazard Faecal Coliform**

**Legend**

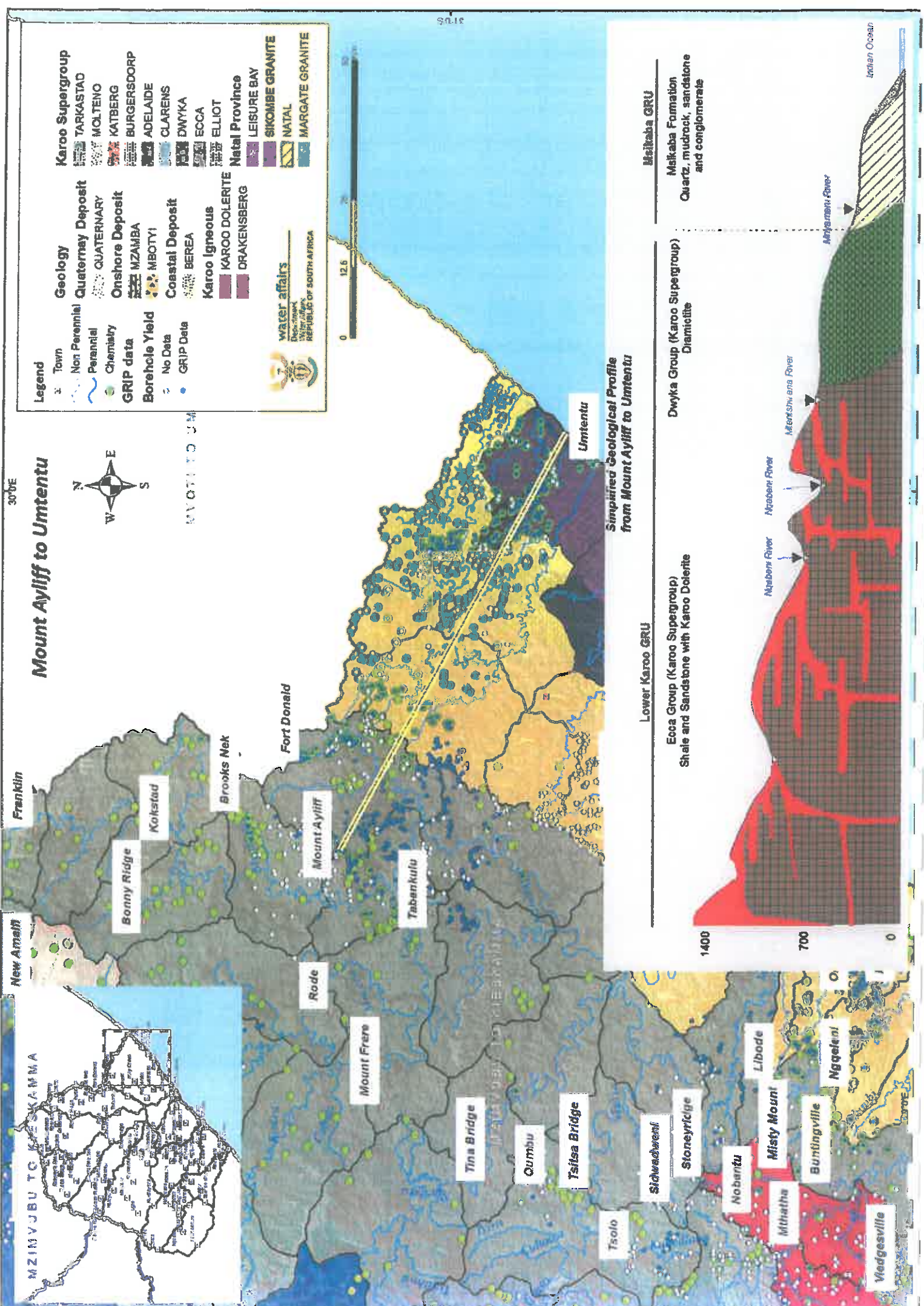
- Town
- Non Perennial
- Perennial
- No Reading
- < 1
- 1 - 10
- > 10

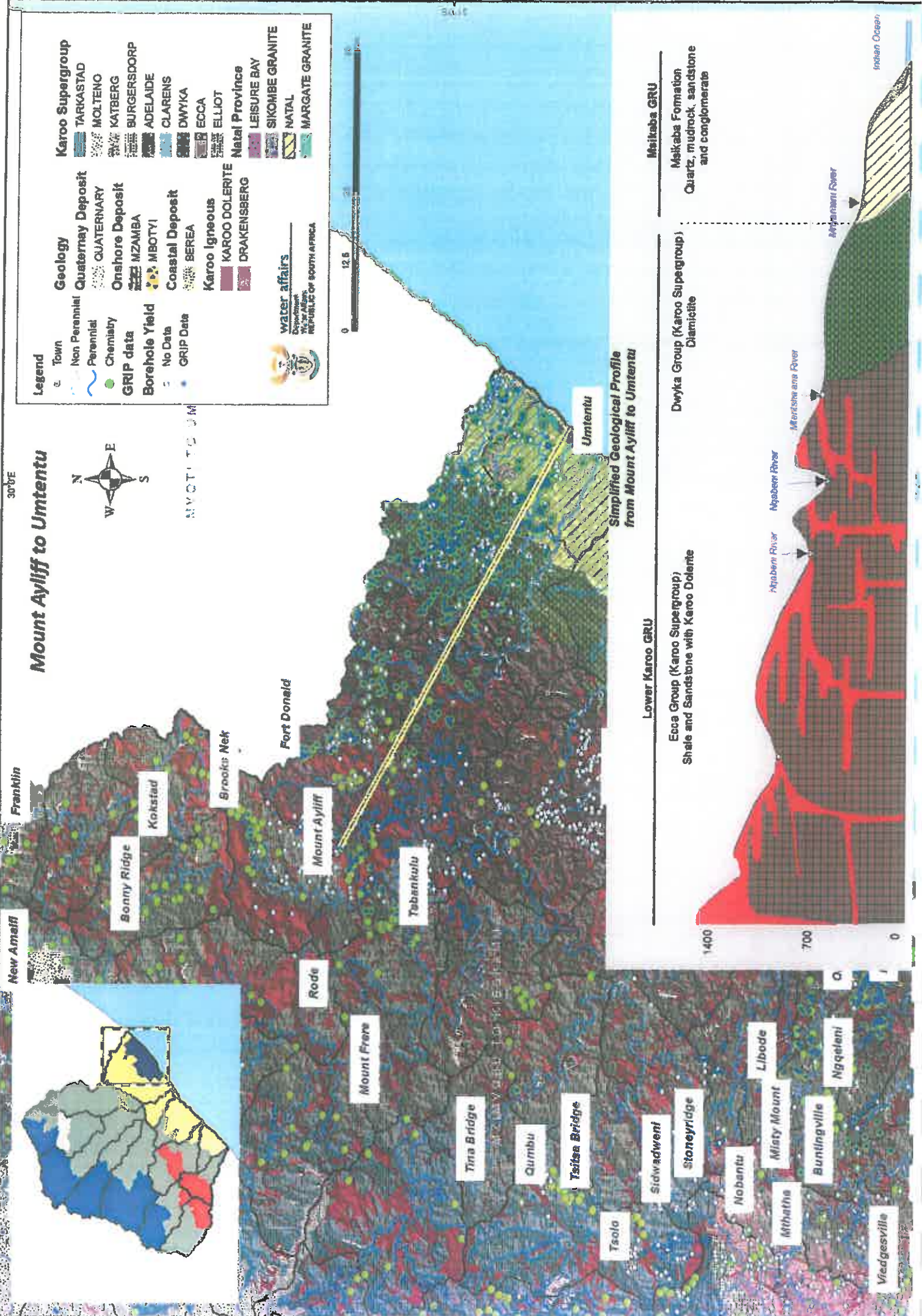
**water affairs**  
 Department of Water Affairs  
 REPUBLIC OF SOUTH AFRICA

UPPER ORANGE



28°00'





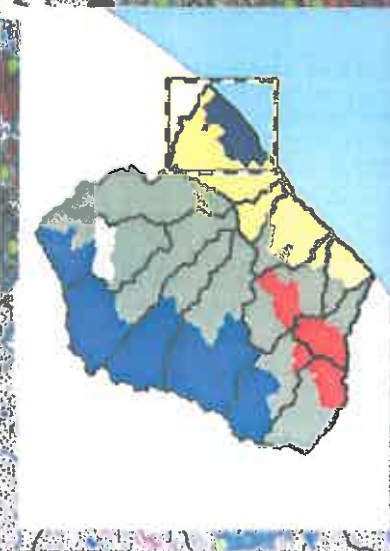
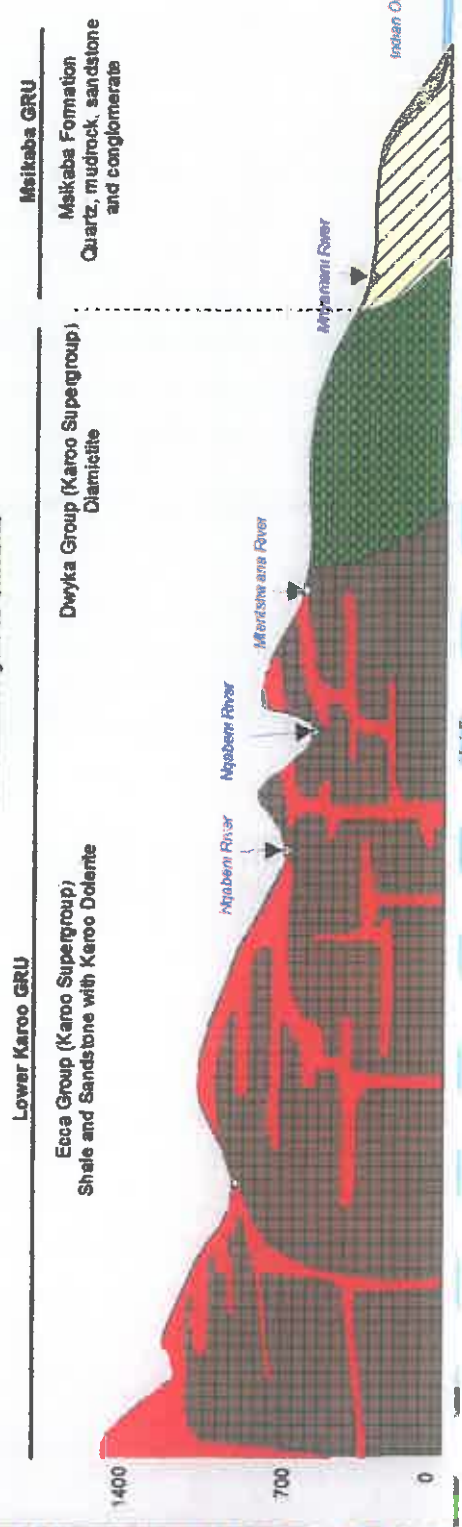
# Mount Ayliff to Umtentu

**Legend**

- Town**
  - Non Perennial
  - Perennial
  - Chemistry
- GRIP data**
  - Borehole Yield
  - No Data
  - GRIP Data
- Geology**
  - Quaternary Deposit
  - Onshore Deposit
  - Coastal Deposit
  - Karoo Igneous
- Karoo Supergroup**
  - TARKASTAD
  - MOLTENO
  - KATBERG
  - BURGERSDORP
  - ADELAIDE
  - CLARENS
  - DWYKA
  - ECCA
  - ELLIOT
- Natal Province**
  - LEISURE BAY
  - SIKOMBE GRANITE
  - NATAL
  - MARGATE GRANITE

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 Department  
 Water Affairs  
 REPUBLIC OF SOUTH AFRICA

## Simplified Geological Profile from Mount Ayliff to Umtentu





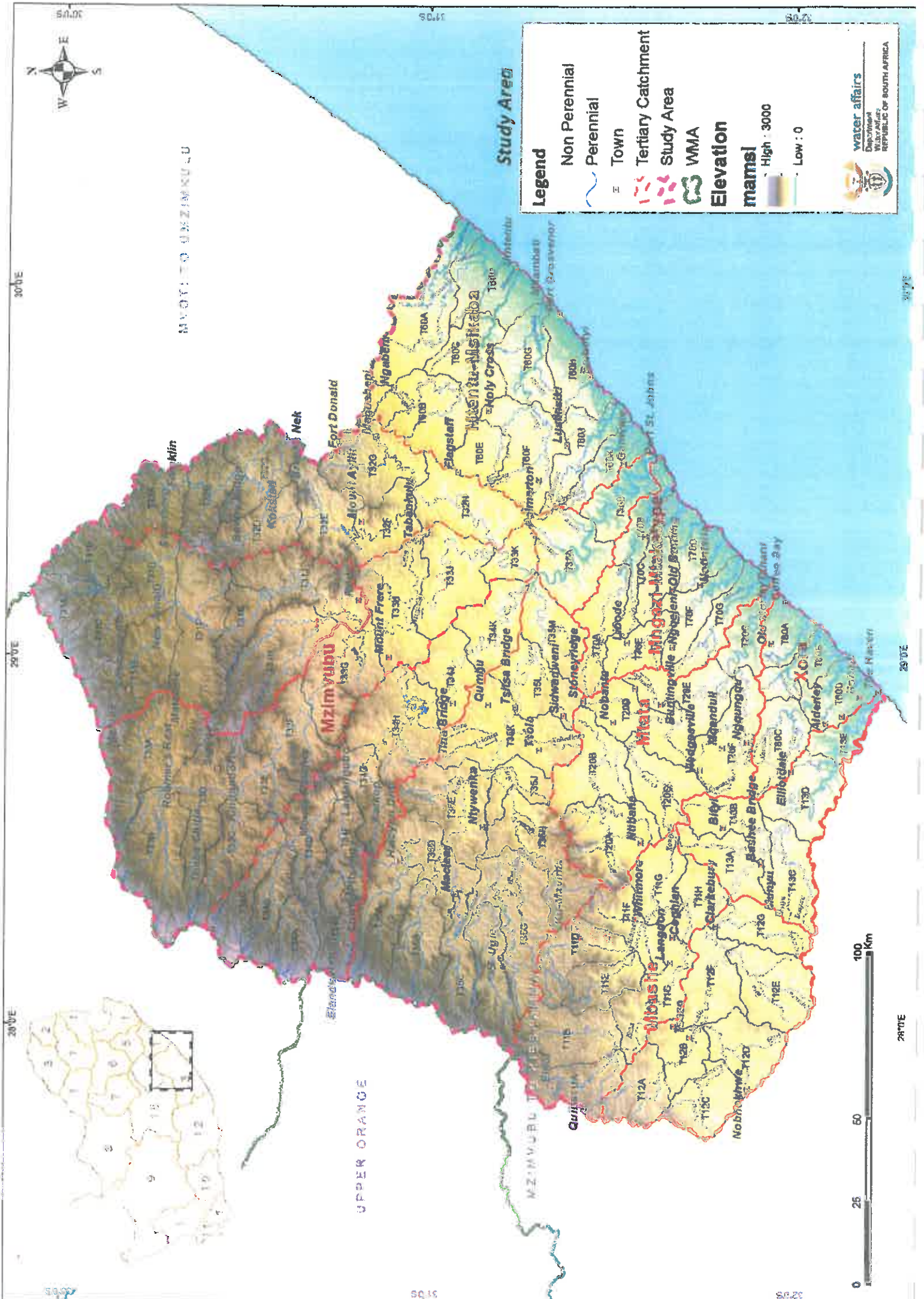
MAVOYO TO UMSIZINKU LU

Study Area

**Legend**

- Non Perennial
- Perennial
- Town
- Tertiary Catchment
- Study Area
- WMA
- Elevation
- mamsl
- High : 3000
- Low : 0

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Iklin

Nek

Fort Donald

Mzimvubu

UPPER ORANGE

Quthi

Moushie

Mbatla

Mhaga

Uthmaniyah

Uthmaniyah

Uthmaniyah

Uthmaniyah

Uthmaniyah

Uthmaniyah

Uthmaniyah



29°00' E

29°00' E

29°00' E

29°00' E

30°00' E

30°00' E

30°00' E

30°00' E

32°00' S

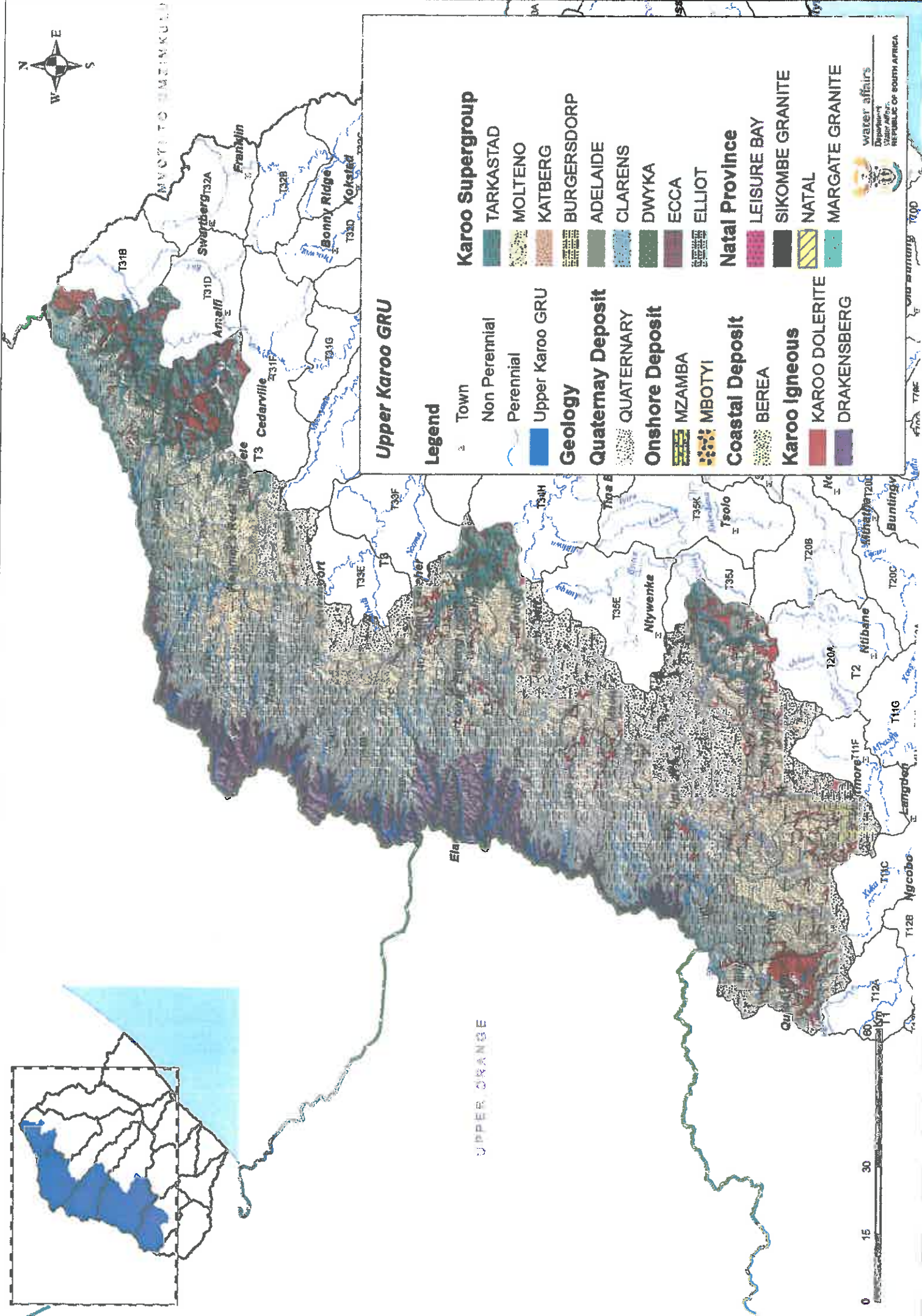
32°00' S

32°00' S

32°00' S

32°00' S

32°00' S



**Upper Karoo GRU**

**Legend**

- Town
- Non Perennial
- Perennial
- Upper Karoo GRU
- Geology**
- Quaternary Deposit**
- QUATERNARY
- Onshore Deposit**
- MZAMBA
- MBOTYI
- Coastal Deposit**
- BEREA
- Karoo Igneous**
- KAROO DOLERITE
- DRAKENSBERG

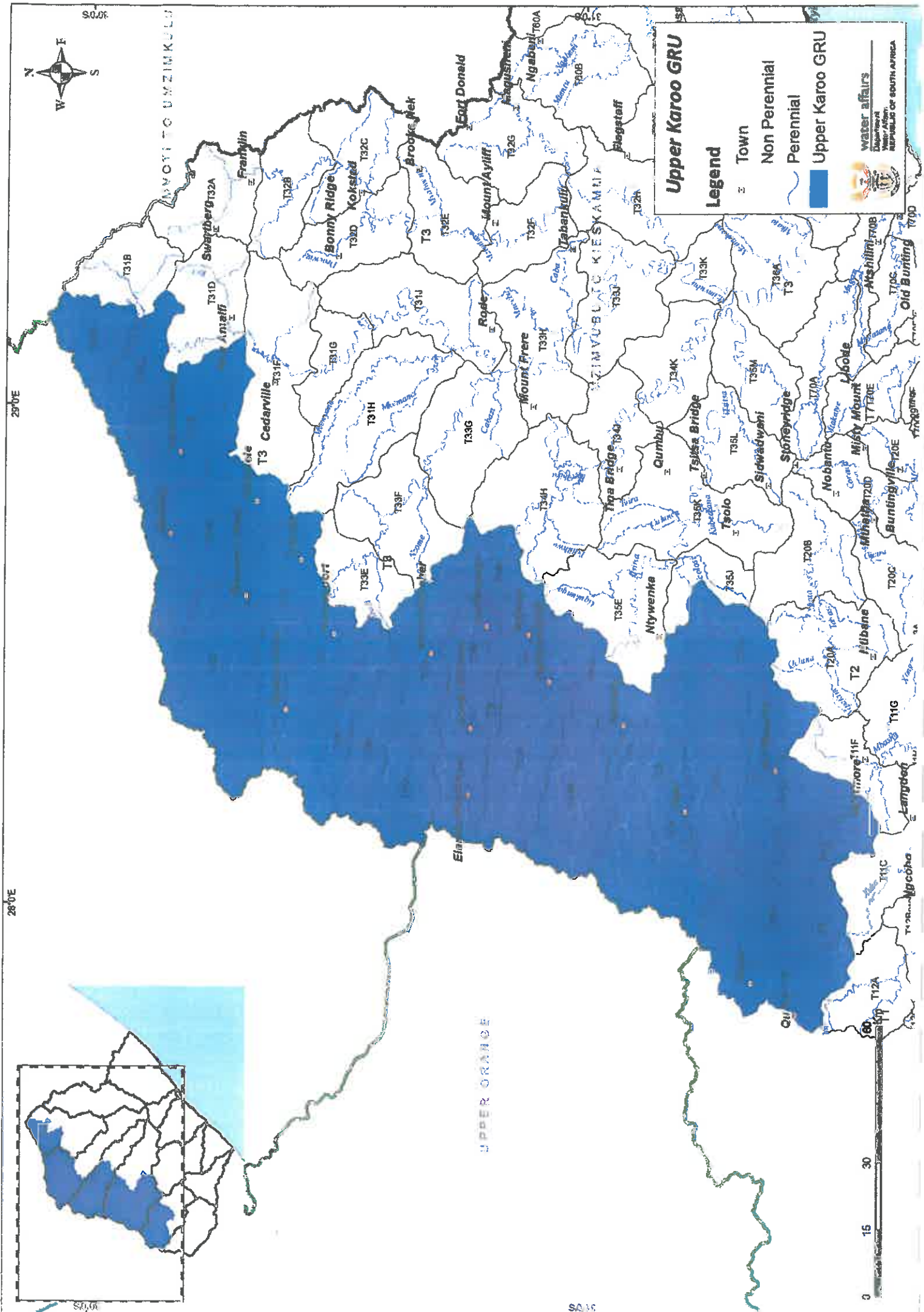
- Karoo Supergroup**
- TARKASTAD
- MOLTENO
- KATBERG
- BURGERSDORP
- ADELAIDE
- CLARENS
- DWYKA
- ECCA
- ELLIOT
- Natal Province**
- LEISURE BAY
- SIKOMBE GRANITE
- NATAL
- MARGATE GRANITE



UPPER ORANGE

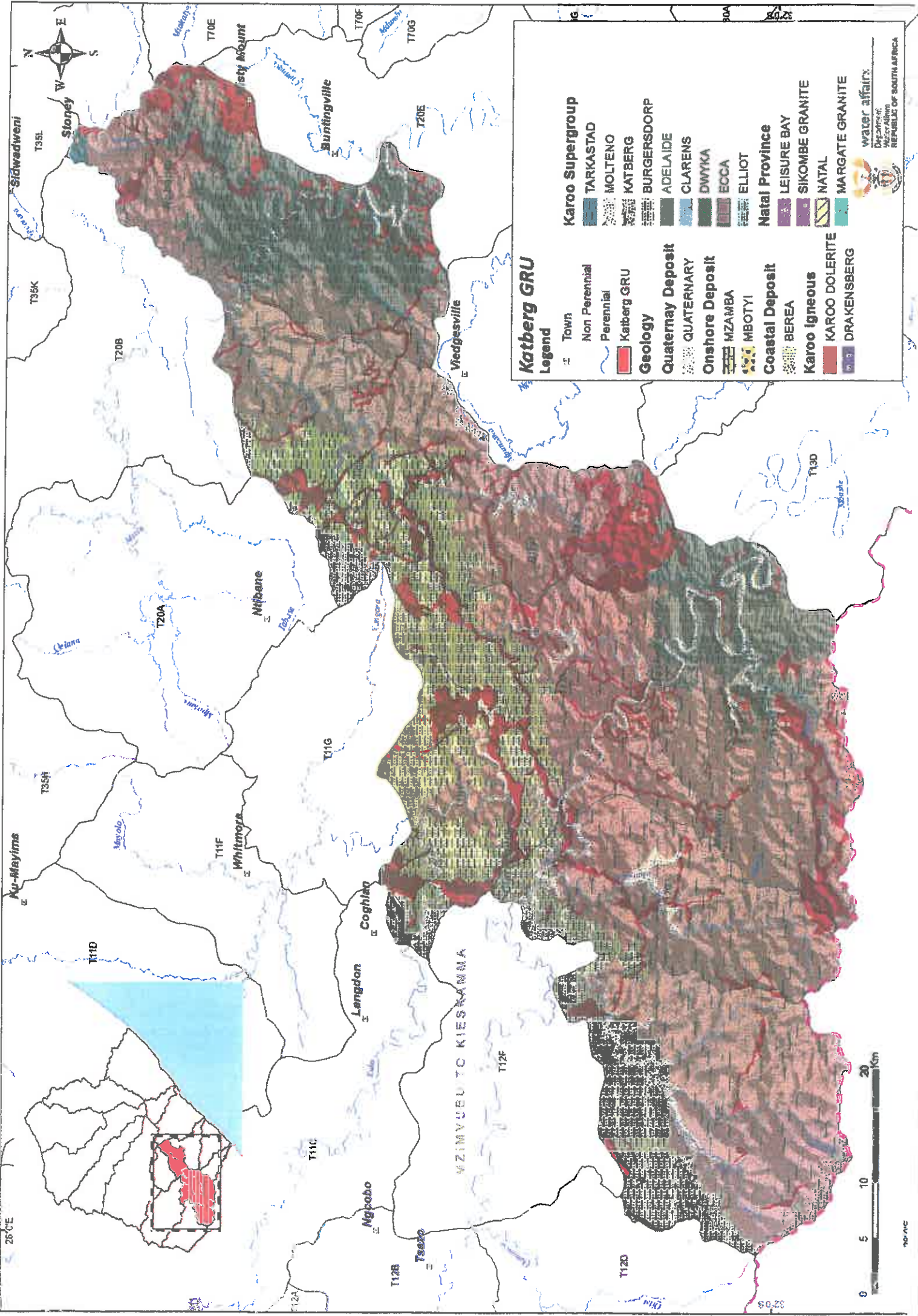
INVOU TO HEMINKULU

1:50,000









### Katberg GRU

#### Legend

- Town
  - Non Perennial
  - Perennial
  - Katberg GRU
- #### Geology
- Quaternary Deposit
  - QUATERNARY
  - Onshore Deposit
  - MZAMBA
  - MBOTYI
  - Coastal Deposit
  - BERA
  - Karoo Igneous
  - KAROO DOLERITE
  - DRAKENSBERG
- #### Karoo Supergroup
- TARKASTAD
  - MOLTENO
  - KATBERG
  - BURGERSDORP
  - ADELAIDE
  - CLARENS
  - DWYKA
  - ECCA
  - ELLIOT
- #### Natal Province
- LEISURE BAY
  - SIKOMBE GRANITE
  - NATAL
  - MARGATE GRANITE



100/1/C



Department of  
Water Affairs  
Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA

Monitoring	Monitor_1	Latitude	Longitude	Source
98833.000000	WANSBEK	-30.011667	29.186111	DWA
171433.000000	MINNEHANNA	-31.021111	28.209722	DWA
171411.000000	INGLEWOOD	-31.201667	28.330000	DWA
1000014850.000000	3029AA00076 MIDDELVALLEY PTN. FERDALE POLICE STATION - KZN060204	-30.053056	29.136389	DWA
0.000000	T30507	-30.550367	28.419150	Elundini GW refirb
0.000000	T30572	-30.696400	28.483800	Elundini GW refirb
171426.000000	WINTER MATTEN	-31.076667	28.156389	DWA
0.000000	T30567B	-30.885833	28.357500	Elundini GW refirb
171440.000000	WELGELEGEN (DUP NAME 27359)	-31.413889	28.041389	DWA
171429.000000	BEN VOLICH	-31.201667	28.211944	DWA
171432.000000	BRAND	-31.007778	28.280000	DWA
0.000000	T30576	-30.727620	28.501240	Elundini GW refirb
0.000000	EC/001/UK	-30.886570	28.548660	Elundini GW refirb
171421.000000	RONDAVEL HOEK PART OF ELLIOT SMALL	-31.373333	28.247778	DWA
0.000000	T30552 B	-30.547217	28.487750	Elundini GW refirb
1000014830.000000	3029AC00189 CHILFROME - KZN060169	-30.255556	29.022222	DWA
0.000000	EC-031-UK	-30.732800	28.488320	Elundini GW refirb
0.000000	EC/020/UK	-30.464950	28.446800	Elundini GW refirb
89987.000000	ZQMELT1 3127BD00017 ELLIOT ERF 1	-31.329444	27.855833	DWA
0.000000	306-0003	-30.857840	28.533580	Elundini GW refirb
0.000000	EC/007/UK	-30.901667	28.537222	Elundini GW refirb
1000015010.000000	3029AA00078 EASTFIELD - KZN060249	-30.235056	29.085083	DWA
0.000000	EC/017/UK	-30.532133	28.458817	Elundini GW refirb
174518.000000	GLEN LYNDEN	-30.744167	28.143889	DWA
0.000000	T30555	-30.518850	28.455733	Elundini GW refirb
0.000000	T30563	-30.435417	28.485883	Elundini GW refirb
0.000000	T30548	-30.786389	28.550019	Elundini GW refirb
0.000000	EC-025-UK	-30.878020	28.522800	Elundini GW refirb
1000014620.000000	3028BD00139 MATATIELE BOROUGH PTN. PIGGERY - KZN060048	-30.342528	28.804083	DWA
1000014840.000000	3029AC00175 BEGINSEL - KZN060188	-30.295556	29.075083	DWA
1000015090.000000	3029BD00040 MADWALA PTN. MATATIELE - KZN060280	-30.334056	28.810028	DWA
0.000000	T30535	-30.885833	28.357500	Elundini GW refirb

1000014840.000000	3029AA00073	FARNHAM PTN. CREMORA - KZN060185	-30.245556	29.030000	DWA
1000015010.000000	3029AA00079	VIELSALM PTN. VERYAN - KZN060250	-30.122389	29.128389	DWA
0.000000	T30508		-30.898889	28.369444	Elundini GW refirb
0.000000	EC/012/UK		-30.703500	28.467283	Elundini GW refirb
171435.000000	DUIRA		-31.413056	27.973611	DWA
0.000000	EC-021-UK		-30.533950	28.390917	Elundini GW refirb
0.000000	EC-032-UK		-30.703380	28.528060	Elundini GW refirb
1000013980.000000	3128AB00013	WEATHERLY STATION - EC/T35/069	-31.106900	28.333870	DWA
1000013980.000000	3128AB00013	WEATHERLY STATION - EC/T35/069	-31.106900	28.333870	DWA
0.000000	T30547		-31.106900	28.333870	DWA
0.000000	EC/019/UK		-30.747160	28.560420	Elundini GW refirb
171404.000000	CLOETA		-30.457217	28.456733	Elundini GW refirb
0.000000	EC/013/UK		-31.342778	27.791389	DWA
1000014830.000000	3029AA00072	ALTONA - KZN060180	-30.647833	28.474617	Elundini GW refirb
1000014720.000000	3029AA00071	SETTLEMENT PTN. SYDENHAM - KZN060162	-30.103833	29.140000	DWA
0.000000	T30570		-30.217222	29.016389	DWA
0.000000	T30529		-30.705117	28.451783	Elundini GW refirb
0.000000	EC/018/UK		-30.858889	28.320556	Elundini GW refirb
1000014830.000000	3028BD00135	LANGEPUNT PTN. ANNIESVALLEY - KZN060183	-30.463917	28.459967	Elundini GW refirb
90085.000000	ZQMMAC1	3128AB00011 MACLEAR MEENT	-30.281944	28.955000	DWA
1000013980.000000	3128AA00009	FOREST RESERVE - EC/T35/072	-31.069444	28.343889	DWA
1000013980.000000	3128AA00009	FOREST RESERVE - EC/T35/072	-31.054930	28.198630	DWA
1000014690.000000	3028BB00032	DRIE FONTEIN PTN. FELSTEAD - KZN060160	-31.054930	28.198630	DWA
0.000000	EC-030-UK		-30.248611	28.998333	DWA
0.000000	EC/011/UK		-30.828590	28.603370	Elundini GW refirb
0.000000	EC/006/UK		-30.744580	28.516610	Elundini GW refirb
171437.000000	THE HOME PART OF ELLIOT SMALL GRAN		-30.847778	28.352222	Elundini GW refirb
174546.000000	PLAAS (DUP NAME 29318)		-31.347778	28.184722	DWA
1000014610.000000	3028BD00144	MATATIELE BOROUGH PTN. CARAVAN PARK - KZN060014	-30.827500	28.541667	DWA
174520.000000	MONDAMIN		-30.340556	28.799583	DWA
173897.000000	BRAESIDE		-31.007500	28.279444	DWA
98832.000000	ARGYLE		-30.210000	29.025000	DWA
0.000000	T30526C		-30.142778	29.179167	DWA
			-30.555733	28.348500	Elundini GW refirb

1000014830.000000 3028BD00134 LANGE PUNT - KZN060164  
 171422.000000 ORIBE DALE  
 1000013980.000000 3128AB00014 WEATHERLEY STATION - EC/T35/075  
 1000013980.000000 3128AB00014 WEATHERLEY STATION - EC/T35/075  
 173898.000000 DRIEHOEK (DUP NAME 28889)  
 0.000000 EC/002/UK  
 0.000000 T30573  
 161333.000000 SHEPHERDS HOPE  
 174525.000000 ESILINDINI(ZINGCUKA)  
 173895.000000 OATLANDS (DUP NAME 28888)  
 0.000000 306-0012  
 0.000000 EC/007/WC  
 0.000000 EC-028-UK  
 0.000000 EC/003/UK  
 174539.000000 DENGWANE  
 1000013980.000000 3128AB00015 WEATHERLEY STATION - EC/T35/070  
 1000013980.000000 3128AB00015 WEATHERLEY STATION - EC/T35/070  
 174531.000000 SIMPSON  
 0.000000 EC/016/UK  
 174521.000000 AYLESTONE 2  
 0.000000 EC-024-UK  
 98829.000000 KHWAMPA  
 174517.000000 MILLBURN  
 0.000000 EC/014/UK  
 174541.000000 GEORGE HERBERT  
 0.000000 EC/015/UK  
 174516.000000 MATOLWENI  
 150527.000000 UITZIGT (DUP NAME 10969)  
 1000013990.000000 3128AB00016 WEATHERLEY STATION - EC/T35/076  
 1000013990.000000 3128AB00016 WEATHERLEY STATION - EC/T35/076  
 174524.000000 MANGOLONG 26  
 98865.000000 SAAMLLOOP  
 174542.000000 LA GRANGE

-30.292500 28.956667 DWA  
 -31.364444 28.271944 DWA  
 -31.054930 28.198630 DWA  
 -31.054930 28.198630 DWA  
 -30.208056 29.078056 DWA  
 -30.709380 28.531590 Elundini GW refirb  
 -30.686150 28.475733 Elundini GW refirb  
 -30.741667 28.233333 DWA  
 -30.626667 28.575556 DWA  
 -30.271667 29.028056 DWA  
 -30.574900 28.366550 Elundini GW refirb  
 -30.901667 28.537222 Elundini GW refirb  
 -30.879660 28.447060 Elundini GW refirb  
 -30.748000 28.535500 Elundini GW refirb  
 -30.557500 28.479444 DWA  
 -31.101590 28.337930 DWA  
 -31.101590 28.337930 DWA  
 -30.316667 28.764722 DWA  
 -30.560417 28.500867 Elundini GW refirb  
 -30.713056 28.225556 DWA  
 -30.876720 28.523240 Elundini GW refirb  
 -30.290000 28.777500 DWA  
 -30.958333 28.268333 DWA  
 -30.617950 28.507167 Elundini GW refirb  
 -30.248333 28.716111 DWA  
 -30.622100 28.517783 Elundini GW refirb  
 -30.485833 28.588889 DWA  
 -31.300000 28.126667 DWA  
 -31.105870 28.327020 DWA  
 -31.105870 28.327020 DWA  
 -30.513889 28.564722 DWA  
 -30.308611 29.111111 DWA  
 -30.207222 28.720556 DWA

174543.000000 DIAHO  
174545.000000 CHEVY CHASE

-30.249722 28.582222 DWA  
-30.828611 28.541667 DWA

Type	Drainage_R	Sample_Dat	Ca	Cl	TDS	EC	F	K	Mg	NH4_N	NO3_NO2_N	NH	PO4_P	SO4
Borehole	T31A	12-15-1994	7.60	1.50	66.00	7.50	0.16	0.15	3.60	0.02	0.05	0.00	0.012000	1.60
Borehole	T35B	1993/08/03	2.80	1.50	176.00	21.70	0.24	0.30	0.00	0.00	0.00	0.00	0.007000	4.20
Borehole	T35G	1993/08/04	13.50	4.70	214.00	28.10	0.29	0.30	2.50	0.00	0.00	0.00	0.008000	4.40
Borehole	T31A	06-28-2006	2.52	2.00	155.65	20.10	0.31	0.31	0.00	0.00	0.00	0.00	0.014000	3.00
Borehole			7.80	21.00		28.00	0.25	0.27	4.00	0.00	0.00	0.00		4.00
Borehole			5.30	3.00		31.00	0.29	0.38	1.60	0.00	0.00	0.00		3.00
Borehole	T35C	1993/08/03	8.00	2.80	101.00	11.30	0.29	0.34	4.00	0.00	0.00	0.00	0.033000	4.00
Borehole			15.00	13.00		52.00	0.45	0.30	4.00	0.00	0.00	0.00		3.00
Borehole	T11E	1993/08/05	23.30	3.70	212.00	25.00	0.78	0.41	3.80	0.00	0.00	0.00	0.008000	4.00
Borehole	T35F	1993/08/05	3.10	6.20	43.00	6.30	0.05	0.40	2.90	0.00	0.00	0.00	0.011000	4.00
Borehole	T35B	1993/08/03	29.00	9.50	253.00	34.80	0.15	0.00	6.20	0.00	0.00	0.00	0.009000	4.00
Borehole			5.10	3.00		26.00	0.11	0.40	1.20	0.00	0.00	0.00		4.00
Borehole			10.50	6.30		23.00	0.44	0.50	2.10	0.00	0.00	0.00		4.00
Borehole	T11D	1993/08/05	15.90	4.70	236.00	23.30	0.12	0.50	6.30	0.00	0.00	0.00	0.013000	4.00
Borehole			4.10	3.00		50.10	6.10	0.50	0.30	0.00	0.00	0.00		4.00
Borehole	T31E	06-27-2006	17.00	2.00	225.10	28.10	0.28	0.51	5.20	0.00	0.00	0.00	0.016000	4.00
Borehole			10.00	4.90		16.00	0.30	0.30	0.30	0.00	0.00	0.00		4.00
Borehole			12.00	7.60		22.00	0.40	0.51	5.80	0.00	0.00	0.00		4.00
Borehole	T11A	09-27-2007	9.21	47.98	381.02	33.10	2.60	0.58	1.80	0.00	0.00	0.00	0.012000	4.00
Borehole			3.70	3.00		53.00	0.58	0.60	0.00	0.00	0.00	0.00		4.00
Borehole			0.70	3.80		25.00	0.42	0.62	0.00	0.00	0.00	0.00		4.00
Borehole	T31E	06-28-2006	31.46	6.03	252.06	34.50	0.15	0.63	31.16	0.00	0.00	0.00	0.018000	4.00
Borehole			8.10	3.00		11.00	0.11	0.66	4.00	0.00	0.00	0.00		4.00
Borehole	T34E	1995/02/25	12.90	1.50	93.00	10.30	0.16	0.66	3.40	0.00	0.00	0.00	0.014000	4.00
Borehole			11.00	18.00		26.00	1.00	0.60	4.20	0.00	0.00	0.00		4.00
Borehole			27.00	11.00		42.00	0.23	0.67	4.20	0.00	0.00	0.00		4.00
Borehole			18.00	7.00		22.00	0.17	0.60	0.90	0.00	0.00	0.00		4.00
Borehole			7.10	3.00		7.90	0.04	0.70	2.10	0.00	0.00	0.00		4.00
Borehole	T33A	06-29-2006	4.46	6.66	334.22	40.40	1.91	0.73	1.26	0.00	0.00	0.00	0.020000	4.00
Borehole	T31E	06-28-2006	28.00	7.80	230.39	31.00	0.40	0.73	3.20	0.00	0.00	0.00	0.017000	4.00
Borehole	T33A	06-29-2006	5.11	6.12	228.90	37.90	0.33	0.74	0.50	0.00	0.00	0.00	0.017000	4.00
Borehole			3.30	14.00		27.00	0.01	0.74	0.10	0.00	0.00	0.00	0.020000	4.00

Borehole T31E	06-27-2006	22.21	2.09	232.30	31.40	0.18	0.21	2.17	0.02	1.47	1.27	0.006000	6.52
Borehole T31C	06-28-2006	2.42	4.48	80.61	11.29	0.05	0.25	2.28	0.02	0.22	1.02	0.006000	2.28
Borehole		28.00	3.00		25.02	0.22	0.22	1.07	0.29		28.00		13.00
Borehole		19.00	3.00		31.00	0.30	0.77	6.20	0.14		31.00		2.00
Borehole T11B	1993/08/07	22.10	3.20	199.00	25.20	0.20	0.21	6.06	0.22	9.07	12.90	0.003000	3.00
Borehole		40.00	5.60		35.00	0.13	0.84	2.50	0.01	6.52	14.00		4.00
Borehole		52.00	11.00		38.00	0.15	0.85	13.00	0.04		19.00		1.10
Borehole T35C	2006/03/22	10.40	4.23	135.00	17.50	0.11	0.87	3.27	0.22	0.04	20.30	0.023000	15.45
Borehole T35C	03-22-2006	10.40	4.73	135.00	15.50	0.11	0.87	2.27	0.02	0.04	12.30	0.023000	14.82
Borehole		25.00	6.50		26.00	0.14	0.82	2.50	0.21	0.22	12.00		5.80
Borehole		15.00	8.20		21.00	0.24	0.50	4.10	0.01	1.40	12.00		3.00
Borehole T11A	1993/08/07	11.90	10.90	248.00	34.00	1.97	0.29	4.10	0.02	1.12	1.12	0.003000	5.10
Borehole		4.70	15.00		42.00	1.00	0.21	0.23	0.22		1.00		16.00
Borehole T31C	06-28-2006	21.25	4.07	142.43	22.30	0.05	0.21	5.22	0.05	1.60	0.26	0.081000	2.82
Borehole T31E	06-28-2006	40.51	5.85	292.44	32.30	0.15	0.26	14.02	0.02	1.64	1.10	0.021000	4.22
Borehole		24.00	3.00		28.00	0.25	0.26	2.00	0.01		1.00		2.00
Borehole		17.00	17.00		30.00	0.22	0.22	12.00	0.22		1.00		1.00
Borehole T31E	06-27-2006	35.60	14.50	356.29	41.20	0.20	1.01	12.22	0.02	1.02	1.00	0.033000	10.12
Borehole T35D	05-08-2008	29.14	13.66	221.12	29.20	0.12	1.02	2.24	0.12	1.02	1.00	0.027000	2.28
Borehole T35C	2006/03/22	15.23	5.00	296.18	33.20	0.26	1.02	1.22	0.05	0.04	0.20	0.030000	2.02
Borehole T35C	03-22-2006	15.23	5.00	280.13	32.20	0.26	1.02	1.22	0.05	0.04	0.20	0.030000	2.02
Borehole T31E	06-27-2006	112.93	134.36	764.36	107.50	0.14	1.07	59.24	0.02	58.44	1.00	0.012000	22.24
Borehole		18.00	4.00		20.00	0.05	1.10	2.20	0.02		1.00		1.00
Borehole		16.40	3.00		23.00	0.22	1.10	5.20	0.02		1.00		1.00
Borehole		19.00	2.00		32.00	6.60	1.10	2.10	0.01		1.00		1.00
Borehole T11D	1993/08/05	32.50	4.20	264.20	34.20	0.62	1.11	6.60	0.02	1.10	1.00	0.005000	1.00
Borehole T34F	1995/03/21	2.70	4.60	259.00	28.20	1.51	1.15	0.50	0.02	1.10	1.00	0.014000	1.00
Borehole T33A	06-29-2006	12.70	9.33	136.93	30.20	0.11	1.12	10.20	0.02	1.10	1.00	0.006000	1.00
Borehole T35B	1995/02/25	1.20	1.50	36.00	2.60	0.14	1.17	0.50	0.02	1.10	1.00	0.015000	1.00
Borehole T31E	12-13-1994	54.00	47.70	408.00	58.20	0.22	1.20	29.00	0.02	21.22	1.00	0.016000	1.00
Borehole T31C	12-14-1994	36.20	10.40	259.00	14.20	0.19	1.20	10.10	0.02	1.10	1.00	0.005000	1.00
Borehole		4.50	3.00		23.00	6.10	1.20	0.15	0.02	1.10	1.00	0.005000	1.00

Borehole T31E	06-27-2006	30.37	6.21	269.55	37.46	0.62	1.20	10.08	0.10	0.00	16.57	0.015000	4.00
Borehole T35H	1993/08/04	19.20	6.60	211.00	27.80	0.15	1.22	7.20	0.02	0.00	0.00	0.009000	0.00
Borehole T35C	2006/03/23	11.05	2.00	283.15	34.40	1.72	1.22	2.99	0.08	0.00	0.00	0.024000	3.46
Borehole T35C	03-23-2006	11.05	2.00	283.15	34.40	1.72	1.22	2.66	0.08	0.00	0.00	0.024000	0.44
Borehole T31E	12-13-1994	34.90	5.70	306.00	34.00	0.61	1.23	19.00	0.02	0.00	0.00	0.011000	0.00
Borehole		24.80	23.32		34.00	0.22	1.70	3.20	0.12		0.00		0.00
Borehole		34.00	12.00		45.00	0.91	1.80	10.00	0.12		0.00		0.00
Borehole T34E	1981/08/27	23.60	2.10	165.00	20.80	0.16	1.12	5.10	0.02		0.00	0.006000	0.00
Borehole T34D	1995/03/14	7.10	1.50	80.00	8.20	0.47	1.17	2.80	0.02		0.00	0.422000	0.00
Borehole T31E	12-11-1994	38.30	7.90	325.00	40.30	0.46	1.57	13.90	0.02		0.00	0.012000	0.00
Borehole		5.50	15.00		30.00	2.60	1.40	0.73	0.03		0.00		0.00
Borehole		32.00	11.00		45.00	0.73	1.40	14.00	0.00		0.00		0.00
Borehole		19.00	4.20		18.00	0.05	1.60	4.00	0.00		0.00		0.00
Borehole		11.70	10.10		39.00	0.23	1.60	10.30	0.11		0.00		0.00
Borehole T34C	1995/03/14	15.50	7.50	124.00	17.40	0.13	1.03	6.40	0.02		0.00	0.011000	0.00
Borehole T35C	2006/03/23	13.02	5.92	174.13	28.50	0.94	1.67	3.03	0.05		0.00	0.035000	0.00
Borehole T35C	03-23-2006	13.02	5.92	174.13	28.50	0.94	1.67	1.94	0.02		0.00	0.035000	0.00
Borehole T33A	1995/03/14	3.90	1.30	73.00	3.90	0.10	1.60	2.00	0.12		0.00	0.003000	0.00
Borehole		6.40	3.00		29.00	0.46	1.70	1.50	0.04		0.00		0.00
Borehole T34E	1995/02/24	13.70	1.50	105.00	12.20	0.14	1.77	4.10	0.02		0.00	0.018000	0.00
Borehole		4.00	3.00		15.00	0.05	1.80	1.60	0.02		0.00		0.00
Borehole T33A	1994/12/13	23.80	3.40	253.00	30.70	0.59	1.80	7.20	0.02		0.00	0.018000	0.00
Borehole T35B	1995/02/25	41.00	23.70	253.00	40.00	0.21	1.82	8.00	0.02		0.00	0.012000	0.00
Borehole		62.00	7.40		55.00	0.15	2.10	12.00	0.03		0.00		0.00
Borehole T33A	1995/03/13	7.10	1.50	105.00	11.90	0.22	2.40	3.60	0.02		0.00	0.006000	0.00
Borehole		21.00	3.00		20.00	0.04	2.40	6.70	0.04		0.00		0.00
Borehole T33C	1995/03/16	3.40	4.10	30.00	6.20	0.23	2.53	1.70	0.02		0.00	0.008000	0.00
Borehole T11D	1976/08/25	34.00	32.40	280.00	55.60	0.64	2.60	30.10	0.11		0.00	0.007000	0.00
Borehole T35C	2006/03/23	4.82	5.10	234.77	36.10	2.08	2.67	1.80	0.02		0.00	0.022000	0.00
Borehole T35C	03-23-2006	4.82	5.10	234.77	36.10	2.08	2.67	1.66	0.02		0.00	0.022000	0.00
Borehole T33C	1995/03/16	44.60	9.30	354.50	49.00	0.25	2.68	13.00	0.02		0.00	0.016000	0.00
Borehole T31E	12-07-1994	33.10	5.00	295.30	32.50	0.33	2.92	15.00	0.12		0.00	0.009000	0.00
Borehole T33A	1995/03/13	7.10	10.30	91.00	12.00	0.33	2.80	2.70	0.02		0.00	0.008000	0.00

Borehole	Date	9.50	23.00	129.00	51.70	0.12	3.25	6.30	0.10	2.95	1.51	0.047000	100.00
T33B	1995/03/13												
T34G	1995/03/21	6.20	12.00	72.00	11.80	0.13	5.27	2.90	0.00			0.003000	100.00

SI	TAL	pH	HCO3
7.070000	37.300000	7.840000	45.506000
6.440000	98.200000	7.720000	119.804000
6.780000	118.900000	7.710000	145.058000
6.609000	89.514000	8.397000	109.207080
	102.000000	8.330000	124.440000
	158.000000	9.390000	192.760000
10.940000	61.900000	8.160000	75.518000
	180.000000	7.600000	219.600000
8.150000	118.600000	7.350000	144.692000
6.520000	15.300000	7.380000	18.666000
12.350000	134.300000	7.030000	163.846000
	190.000000	8.030000	231.800000
	94.000000	8.520000	114.680000
7.860000	132.700000	8.210000	161.894000
	256.000000	9.030000	312.320000
10.305000	132.107000	8.330000	161.170540
	71.000000	8.150000	86.620000
	108.000000	7.570000	131.760000
5.643000	159.484000	8.353000	194.570480
	291.400000	9.970000	355.508000
	109.000000	9.930000	132.980000
12.481000	146.591000	8.003000	178.841020
	32.000000	7.170000	39.040000
9.940000	55.800000	8.060000	68.076000
	120.000000	7.730000	146.400000
	183.000000	7.420000	223.260000
	95.000000	7.670000	115.900000
	30.000000	6.930000	36.600000
10.232000	186.025000	8.239000	226.950500
12.401000	117.931000	8.162000	143.875820
6.027000	159.018000	8.256000	194.001960
	112.000000	7.450000	136.640000

11.994000	138.454000	8.072000	168.913880
7.085000	41.855000	6.955000	51.063100
	139.000000	8.050000	169.580000
	149.000000	6.960000	181.780000
9.660000	112.800000	7.610000	137.616000
	157.000000	7.730000	191.540000
	162.000000	8.170000	197.640000
13.503000	73.378000	7.598000	89.521160
13.503000	73.378000	7.598000	89.521160
	146.000000	7.610000	178.120000
	86.000000	7.870000	104.920000
8.050000	126.800000	7.370000	154.696000
	190.000000	8.650000	231.800000
9.920000	73.639000	8.267000	89.839580
11.663000	165.157000	8.214000	201.491540
	144.000000	7.950000	175.680000
	135.000000	7.170000	164.700000
	99.000000	7.170000	120.780000
13.205000	155.703000	8.395000	189.957660
11.948000	115.171000	7.636000	140.508620
5.616000	156.826000	8.033000	191.327720
5.616000	156.826000	8.033000	191.327720
16.664000	199.943000	8.150000	243.930460
	101.000000	7.890000	123.220000
	106.900000	7.130000	130.418000
	143.000000	8.560000	174.460000
9.820000	145.900000	7.730000	177.998000
11.840000	146.000000	8.050000	178.120000
19.210000	91.606000	7.354000	111.759320
5.940000	18.400000	7.440000	22.448000
18.650000	134.600000	7.910000	164.212000
11.780000	153.600000	8.140000	187.392000
	184.000000	9.350000	224.480000

11.455000	157.587000	8.489000	192.256140
9.170000	118.000000	8.140000	143.960000
13.898000	161.306000	7.827000	196.793320
13.898000	161.306000	7.827000	196.793320
12.910000	186.700000	8.510000	227.774000
	157.700000	6.870000	192.394000
	211.000000	7.680000	257.420000
10.130000	92.300000	7.200000	112.606000
17.400000	44.700000	7.980000	54.534000
13.220000	177.500000	8.760000	216.550000
	125.000000	8.750000	152.500000
	223.000000	7.720000	272.060000
	83.000000	7.310000	101.260000
	192.200000	7.300000	234.484000
12.950000	52.600000	7.700000	64.172000
8.199000	98.467000	7.691000	120.129740
8.199000	98.467000	7.691000	120.129740
9.300000	45.200000	6.920000	55.144000
	127.000000	8.940000	154.940000
12.870000	61.000000	8.150000	74.420000
	73.000000	8.300000	89.060000
10.660000	158.100000	7.650000	192.882000
12.520000	138.500000	8.340000	168.970000
	291.000000	7.650000	355.020000
8.010000	60.100000	7.310000	73.322000
	85.000000	7.490000	103.700000
11.820000	15.300000	7.460000	18.666000
14.150000	139.800000	8.320000	170.556000
6.828000	160.972000	8.481000	196.385840
6.828000	160.972000	8.481000	196.385840
11.650000	219.300000	8.470000	267.546000
18.070000	172.600000	8.400000	210.572000
8.760000	35.500000	7.620000	43.310000

4.280000	40.100000	7.890000	48.922000
4.650000	16.400000	7.890000	20.008000

Monitoring	Monitori_1	Latitude	Longitude	Source
184406.000000	ZQMCRO1 3029AD00102 THE CROWN	-30.374722	29.262500	DWA
98854.000000	STRYDFONTEIN (DUP NAME 5608)	-30.445833	29.185556	DWA
98827.000000	FALLEDEN	-30.334722	29.018889	DWA
1000015180.000000	3029AC00191 RATHFARNHAM PTN. SUMMERHILL - KZN060626	-30.429528	29.199611	DWA
1000015190.000000	3029AC00184 MIRAGE PTN. HALF ACRE - KZN060633	-30.338306	29.135389	DWA
173909.000000	SUMMER HILL	-30.430556	29.196389	DWA
161340.000000	JAKKALSFONTEIN (DUP NAME 20469)	-30.425000	29.074444	DWA
1000014630.000000	3028BD00137 ZWAR FONTEIN PTN. THE MEADS - KZN060071	-30.330361	28.954194	DWA
173896.000000	THE MEADS	-30.311944	28.947222	DWA
1000014630.000000	3028BD00140 COMPENSATION PTN. ROSSBURG - KZN060050	-30.350194	28.859861	DWA
1000014840.000000	3029AC00176 RIET FONTEIN PTN. KENARSLEY - KZN060193	-30.336944	29.044722	DWA
1000014650.000000	3028BD00138 HIGHFLATS PTN. MEADOWBROOK - KZN060087	-30.318222	28.981444	DWA
1000012840.000000	ZQMCRO2 3029AD00103 THE CROWN	-30.375920	29.260750	DWA
1000015170.000000	3029AC00182 PRAMKOP - KZN060603	-30.398361	29.130167	DWA
1000015140.000000	3029AC00179 ANNEX TREURFONTEIN PTN. ANNEXE - KZN060452	-30.318044	29.246583	DWA
98870.000000	HARMONY (DUP NAME 5611)	-30.397222	28.885556	DWA
98828.000000	CEDERVILLE	-30.390833	29.032222	DWA
1000014680.000000	3029AC00178 CEDARVILLE - KZN060142	-30.380583	29.040250	DWA
98826.000000	BONACCORD	-30.336667	28.893611	DWA
1000014630.000000	3028BD00136 BON ACCORD - KZN060059	-30.335278	28.893194	DWA
1000015190.000000	3029AD00111 VAALBANK PTN. HIGHBANK SCHOOL - KZN060639	-30.352972	29.253861	DWA
1000015100.000000	3028BD00141 HARMONY PTN. TRUANT - KZN060297	-30.390667	28.864861	DWA
1000015150.000000	3029AC00190 ZANDPLAATS - KZN060502	-30.376667	29.228333	DWA
1000014680.000000	3029AC00177 CEDARVILLE - KZN060141	-30.388056	29.047250	DWA
98869.000000	ALLINGTHON	-30.410278	28.878611	DWA
98825.000000	UITVLUGT (DUP NAME 5603)	-30.359444	29.044722	DWA
1000015100.000000	3028BD00142 ZWART MODDER FONTEIN PTN. ZWARTMODDERFONTEIN - KZN060287	-30.422028	28.880583	DWA

Type	Drainage_R	Sample_Dat	On	Cl	TDS	EC	F	K	Mg	NH4_N	NO2_N	NO3_N	Mg	PO4_P	SGR
Borehole	T31F	05-08-2008	11.57	2.00	1114.44	14.79	0.05	0.52	45.11	0.02	0.06	0.06	5.95	0.022000	5.27
Borehole	T31F	12-04-1994	15.79	6.70	1460.00	16.10	0.15	1.30	3.00	0.02	0.02	0.02	13.20	0.006000	2.00
Borehole	T31F	12-12-1994	20.00	4.50	208.00	25.10	0.55	1.40	5.50	0.02	0.02	0.02	4.00	0.010000	4.00
Borehole	T31F	07-07-2006	5.40	6.97	215.82	30.60	1.02	0.42	0.50	0.02	0.02	0.02	34.50	0.049000	6.90
Borehole	T31F	06-26-2006	11.55	6.48	212.54	27.20	0.28	0.72	1.94	0.02	0.02	0.02	48.00	0.017000	6.23
Borehole	T31F	12-07-1994	15.20	8.60	208.00	17.00	0.92	0.60	1.60	0.02	0.02	0.02	47.50	0.011000	6.00
Borehole	T31F	08-26-1981	39.80	21.70	212.00	10.00	0.16	1.30	3.40	0.02	0.02	0.02	30.50	0.006000	4.90
Borehole	T31F	06-27-2006	18.60	2.00	244.05	30.50	0.78	0.60	2.60	0.02	0.02	0.02	49.00	0.042000	2.00
Borehole	T31F	12-12-1994	20.90	2.30	263.00	30.90	0.50	1.12	2.70	0.02	0.02	0.02	45.00	0.010000	4.20
Borehole	T31F	06-27-2006	35.04	39.52	357.61	51.20	0.27	2.26	14.45	0.02	0.02	0.02	37.00	0.113000	20.10
Borehole	T31F	06-27-2006	39.01	36.48	322.32	49.20	0.10	0.87	12.25	0.02	0.02	0.02	34.00	0.037000	10.00
Borehole	T31F	06-27-2006	28.22	13.72	307.26	41.50	0.71	1.32	9.65	0.02	0.02	0.02	34.00	0.020000	10.00
Borehole	T31F	09-28-2007	32.14	8.66	308.57	38.40	0.05	0.70	12.04	0.02	0.02	0.02	22.00	0.115000	2.00
Borehole	T31F	06-27-2006	32.34	23.89	358.07	46.50	0.99	3.40	11.47	0.02	0.02	0.02	50.00	0.021000	2.50
Borehole	T31F	06-28-2006	42.29	16.58	340.92	45.80	0.10	1.05	10.06	0.02	0.02	0.02	42.00	0.048000	4.60
Borehole	T31F	12-11-1994	33.60	11.20	276.00	38.50	0.39	2.87	11.50	0.02	0.02	0.02	24.00	0.003000	0.00
Borehole	T31F	12-12-1994	39.20	3.90	321.00	36.20	0.42	0.45	16.20	0.02	0.02	0.02	42.00	0.025000	2.00
Borehole	T31F	06-29-2006	42.47	7.32	352.95	44.30	0.60	4.17	16.13	0.02	0.02	0.02	22.22	0.045000	2.00
Borehole	T31F	12-12-1994	38.30	5.70	360.00	45.00	0.40	1.88	12.10	0.02	0.02	0.02	40.50	0.010000	4.00
Borehole	T31F	06-27-2006	41.50	12.99	407.29	52.60	0.32	1.08	14.86	0.02	0.02	0.02	41.00	0.032000	4.00
Borehole	T31F	06-28-2006	43.73	24.15	404.32	53.20	0.24	1.88	21.19	0.02	0.02	0.02	36.50	0.006000	10.00
Borehole	T31F	06-27-2006	42.09	4.85	391.13	48.00	0.25	0.21	35.25	0.02	0.02	0.02	11.22	0.085000	4.00
Borehole	T31F	07-06-2006	84.61	47.32	553.08	66.40	0.30	0.20	25.32	0.02	0.02	0.02	4.00	0.015000	5.00
Borehole	T31F	06-29-2006	45.26	8.87	507.95	62.70	0.70	0.78	24.77	0.02	0.02	0.02	1.00	0.023000	3.00
Borehole	T31F	12-10-1994	60.70	3.70	401.00	62.80	0.26	2.16	21.20	0.02	0.02	0.02	42.00	0.020000	4.00
Borehole	T31F	12-11-1994	38.30	12.40	463.00	75.50	0.22	1.21	20.00	0.02	0.02	0.02	1.00	0.068000	1.00
Borehole	T31F	06-27-2006	82.77	34.98	504.37	89.10	0.41	0.72	37.47	0.02	0.02	0.02	24.00	0.032000	2.00

Si	TAL	pH	HCO3
12.809000	65.190000	7.888000	79.531800
10.100000	85.400000	7.650000	104.188000
11.160000	114.900000	7.990000	140.178000
6.538000	115.895000	7.982000	141.3919
7.955000	120.410000	8.406000	146.9002
8.090000	133.300000	8.590000	162.626000
10.390000	134.300000	7.570000	163.846000
11.138000	141.549000	8.238000	172.689780
8.090000	157.600000	7.800000	192.272000
12.110000	163.740000	8.339000	199.762800
11.092000	164.824000	8.186000	201.08528
10.796000	166.054000	8.096000	202.58588
11.615000	182.604000	8.104000	222.776880
11.293000	186.119000	8.186000	227.06518
17.858000	189.404000	8.439000	231.07288
7.950000	189.800000	8.600000	231.556000
14.330000	197.200000	8.040000	240.584000
16.965000	211.364000	8.236000	257.86408
10.230000	219.500000	8.240000	267.790000
10.494000	225.914000	8.152000	275.615080
8.529000	229.950000	8.164000	280.539
11.464000	237.084000	8.019000	289.24248
12.191000	241.955000	8.152000	295.1851
9.473000	338.656000	8.431000	413.16032
15.240000	376.800000	8.320000	459.696000
11.970000	391.000000	8.490000	477.020000
14.480000	464.000000	8.505000	566.08

Monitoring	Monitor_1	Latitude	Longitude	Source	Type	Drainage_R	Sample_Dat
0.000000	EC-T12-518	-31.874620	28.202850	Nkobongo	Borehole		
171399.000000	BASHEE HILL-A	-31.801389	28.375556	DWA	Borehole	T11H	1993/09/14
0.000000	T32124	-31.715833	28.690278	Africon Mganduli Hydrocensus	Borehole		
171485.000000	SWARTFONTEIN (DUP NAME 27382)	-31.561667	28.670833	DWA	Borehole	T20C	1993/09/05
171395.000000	KUMJELO	-31.960000	28.321111	DWA	Borehole	T13C	1993/09/18
0.000000	EC-T12-520	-31.903940	28.200610	Nkobongo	Borehole		
89819.000000	ZQMYYFM1 3128DA00066 YERSEY - T304392	-31.643889	28.714722	DWA	Borehole	T20C	05-21-1997
171486.000000	KRWELEDA	-31.926111	28.301111	DWA	Borehole	T12G	1993/09/11

Ca	Mg	TDS	EC	F	K	Mg	NH4_N	NO3_NO2_N	Na	PO4_P	SO4	SI	TAL	pH
56.00	172.00			95.00	0.49	1.10	3.18		331.00		29.00		98.000000	7.800000
37.50	15.50	401.00		58.50	0.20	0.54	0.00	5.50	57.00	0.012000	3.50	18.470000	148.200000	8.080000
44.50	100.00			58.00	0.30	2.10	0.10		41.50	0.100000	49.50			7.800000
32.50	142.60	554.00		95.50	0.45	5.42	0.05	4.10	112.10	0.009000	41.20	7.480000	239.500000	7.610000
47.00	153.90	761.00		105.30	0.49	1.45	0.04	7.77	138.10	0.020000	12.80	17.800000	283.100000	8.080000
43.00	191.00			142.00	0.83	2.50	0.44		153.00		42.30		336.000000	7.400000
101.50	240.50	1052.00		156.00	0.26	1.41	0.02	0.51	152.50	0.008000	27.20	17.090000	387.500000	7.890000
64.00	215.10	1085.00		155.00	0.39	6.09	0.07	15.20	100.20	0.008000	40.00	27.120000	396.900000	7.700000

HCO3

119,560,000

180,804

232

292,19

345,382

409,920,000

472,75

484,218

Description (GRUA)	Area (km <sup>2</sup> )	Recharge (Mm <sup>3</sup> /a)	GW to baseflow (Mm <sup>3</sup> /a)	BHN (Mm <sup>3</sup> /a)	Reserve (Mm <sup>3</sup> /a)	Reserve as a % of Recharge	Gw use (Mm <sup>3</sup> /a)	Stress Index (SI)	Allocable GW (Mm <sup>3</sup> /a)	Final Present Category
Upper Karoo	9400	493.39	172.38	3.77	176.15	35.7	2.28	0.57	142.27	I
Cedarville Flats	605	28.04	11.89	0.022	11.91	42.5	0.33	1.2	5.98	I
Middle Karoo	15914	927.2	250.58	14.49	265.07	28.6	7.87	0.87	329.74	I
Katberg	2503	110.25	10.93	3.93	14.86	13.5	1.5	1.4	55.3	I
Lower Karoo	5380	651.02	162.42	8.74	171.16	26.3	3.3	0.5	248.7	I
Msikaba	1093	191.1	62.83	0.75	63.58	33.3	0.33	0.18	60.3	I

Management  
Option

III
I
II
I
III
I

Monitoring	Monitori_1	Latitude	Longitude	Source	Type	Drainage_R
171891.000000	AMADIBA (DUP NAME 27672)	-31.083889	30.152222	DWA	Borehole	T60A
174509.000000	IMIZIZI(LUGWUINI)	-30.972500	29.995278	DWA	Borehole	T60A
184408.000000	ZQMLAN1 3129BA00002 SIPAOENI MDIKISWENI (LANGA)	-31.059444	29.513889	DWA	Borehole	T60B
171893.000000	PORT ST JOHNS (DUP NAME 27673)	-31.612778	29.537778	DWA	Borehole	T36B
174549.000000	IMIZIZI	-30.913889	29.972500	DWA	Borehole	T60A
174534.000000	EKSIKUMBENI	-30.843056	29.774167	DWA	Borehole	T60A
171895.000000	LOWER NTAUFUFU	-31.542778	29.539722	DWA	Borehole	T60K
171896.000000	MZINTLAVA	-31.434444	29.528889	DWA	Borehole	T60J
171489.000000	TOMBO	-31.631111	29.375000	DWA	Borehole	T70D
174526.000000	ISINUKA	-31.609167	29.481667	DWA	Borehole	T36B

Sample_Dat	Ca	Cl	TDS	EC	F	K	Mg	NH4_N	NO3_NO2_N	NO	PO4_P	Si	TAL
1993/11/18	2.50	23.20	65.00	15.50	0.1	0.45	3.2	0.02	2.565	15.2	0.003	2.8	2
1995/03/17	5.80	39.00	159.00	27.30	0.18	2.87	7.9	0.02	4.256	27.7	0.021	10.82	41.1
05-09-2007	6.20	42.30	104.02	16.40	0.12	0.823	5.717	0.035	1.172	17.546	0.054	17.375	43.569
1993/11/22	14.30	63.70	200.00	36.20	0.18	4.88	10.1	0.02	0.072	16.7	0.055	15.37	49.7
1995/03/10	2.60	9.30	106.00	15.20	0.28	2.97	2.4	0.02	0.02	15.2	0.003	10.34	59
1995/03/10	15.80	11.90	148.00	20.30	0.21	0.39	7.6	0.02	1.854	14.5	0.077	21.67	72.2
1993/11/22	5.10	31.20	269.00	27.60	0.53	0.48	5.5	0.02	0.142	16.8	0.112	15.5	78.7
1993/11/22	15.30	33.70	219.00	31.30	0.49	1.07	8.3	0.02	0.003	14.8	0.034	18.33	90.6
1993/09/07	87.50	797.80	2005.00	343.00	0.56	3.2	103.7	0.119	45.376	45.25	0.018	18.77	378.1
1995/02/27	16.20	9901.60	36217.00	4060.00	0.64	380.02	100	3.505	0.137	1164.15	0.013	5.78	5693

pH	HCO3
7.17	2.44
7.77	50.142
7.72	53.15418
8.01	60.634
7.21	71.98
7.64	88.084
8.29	96.014
8.37	110.532
7.95	461.282
8.2	6945.46

Monitoring	Monitori_1	Latitude	Longitude
180433.000000	TABASE 4 (DUP NAME 31234)	-31.510833	28.455833
174537.000000	BROOKSNEK	-30.696667	29.452222
98850.000000	ROODEBERG (DUP NAME 5605)	-30.368056	29.387778
1000015120.000000	3029CB00137 STRATHNEVA PTN. STRATNEVA - KZN060348	-30.561806	29.329861
1000015120.000000	3029CB00135 JAKKALS FONTEIN PTN. MIPATOANE - KZN060340	-30.561000	29.264972
98867.000000	MIDATOGNE	-30.561111	29.266667
173894.000000	ABBOTSFORD	-30.496944	28.837778
173908.000000	NACHT WACHT (DUP NAME 28895)	-30.593611	29.415556
0.000000	T105224	-31.842960	28.069430
171496.000000	ENGXOGI	-31.643333	28.193889
1000015140.000000	3029CB00143 STRYD KOP PTN. YONAROO FARM - KZN060393	-30.523889	29.324000
0.000000	207-0057	-31.022290	28.555210
180434.000000	UPPER TABASE 5 (DUP NAME 31235)	-31.570278	28.580556
180431.000000	TABASE 4 (DUP NAME 31232)	-31.525000	28.478333
1000015170.000000	3029AD00116 WINDHOEK PTN. HIGHLAND - KZN060579	-30.465611	29.395639
1000015110.000000	3029AC00185 STRYDFONTEIN - KZN060329	-30.467972	29.11389
1000015200.000000	3029AA00083 BANCHORY PTN. FEARNELY - KZN060652	-30.155361	29.231167
1000015180.000000	3029DA00032 WAERVAL - KZN060628	-30.570083	29.594694
171398.000000	SIKOBENI	-31.697222	27.942222
1000015070.000000	3029AD00106 FAIRFIELDS - KZN060254	-30.280694	29.389722
1000014850.000000	3029AB00069 DONKER - POORT PTN. THE SIDE - KZN060209	-30.196861	29.348056
180425.000000	TABASE 4 (DUP NAME 31228)	-31.525833	28.529167
1000014970.000000	3029AA00077 RIVERSDALE - KZN060228	-30.054972	29.246944
1000015160.000000	3029AC00181 CONFLUENCE PTN. ELTON GRANGE - KZN060529	-30.281389	29.134167
0.000000	EC/005/UK	-31.121278	28.655444
1000015130.000000	3029CB00140 NOLANGENI - KZN060380	-30.619083	29.417111
1000015180.000000	3029DA00031 FARMERSFIELD - KZN060627	-30.578778	29.586278
98845.000000	CRYSTAL SPRINGS	-30.486389	29.388611
1000015110.000000	3029CA00039 POORT KRAAL PTN. DEE MOUNT - KZN060320	-30.585472	29.195500
1000014610.000000	3028BD00145 LANGE PUNT PTN. LANGKUIL - KZN060018	-30.461333	28.880222
1000015090.000000	3029AC00192 SPRINGFONTEIN - KZN060281	-30.266667	29.175000
1000015170.000000	3029AD00118 MOOI MEISJES FONTEIN PTN. MOOIMEISJESFONTEIN - KZN060584	-30.491083	29.461361

1000015140.000000	3029DAD00029	DAGSTER PTN. ROCKEY CASTLE AMANZIYAMA FARM - KZN060395	-30.596361	29.532972
0.000000	EC/004/JK		-31.160780	28.525050
1000015160.000000	3029AD00115	RIVERSIDE PTN. TULLBARDINE - KZN060577	-30.485111	29.484028
1000000720.000000	3127DB00028	BUFFALLO THORNS - GXOJENI SPRING NO2	-31.554389	27.988167
1000015110.000000	3029AC00186	LILLY FONTEIN PTN. THIEPVAAL - KZN060330	-30.463056	29.144361
1000014960.000000	3029AB00070	RIETKUL - KZN060220	-30.249111	29.355528
1000015140.000000	3029AD00112	SPRINGVILLE - KZN060432	-30.442889	29.322556
1000015150.000000	3029AC00180	VOGEL VLEI PTN. FRIEDALE - KZN060628	-30.298911	29.243506
1000015130.000000	3029CB00138	NOOTTGEDACHT PTN. HILLENDALE FARM - KZN060354	-30.615833	29.313000
0.000000	207-0074		-31.029694	28.572528
98846.000000	DROMORE		-30.425556	29.378056
180427.000000	TABASE 4 (DUP NAME 31229)		-31.606111	28.493333
1000015090.000000	3029AA00081	REUBEN PTN. MARIA TELGTE MISSION - KZN060279	-30.220639	29.205944
1000014620.000000	3029AC00188	CEDARBERG - KZN060036	-30.425444	29.026750
180428.000000	UPPER NCISE		-31.515000	28.556944
180435.000000	TABASE 4 (DUP NAME 31236)		-31.523889	28.497500
0.000000	208-0001		-31.126111	28.622778
1000015080.000000	3029AD00107	BLOEMFONTEIN PTN. MARYLAND - KZN060276	-30.264361	29.294944
1000014620.000000	3028BD00143	VLEI - DRAAI PTN. VAN ROOI - KZN060027	-30.459583	28.956972
98851.000000	GLEN ROY (DUP NAME 5606)		-30.389167	29.431667
1000015130.000000	3029CB00139	SPIONS KOP PTN. SPIONSKOP - KZN060378	-30.595306	29.343528
180423.000000	UPPER TABASE 4		-31.591667	28.583333
1000015100.000000	3029CA00037	LUCKNOW - KZN060314	-30.513778	29.213000
98857.000000	THE WORLDS		-30.582778	29.537222
1000015140.000000	3029CB00144	DONKERHOEK PTN. SHELTERED VALE - KZN060415	-30.505806	29.308278
1000015100.000000	3029CA00038	BOUNEPARTES FONTEIN PTN. BONEPARTE - KZN060315	-30.528556	29.220361
1000014840.000000	3029AA00074	BANCHORY - KZN060199	-30.162389	29.227222
1000014980.000000	3029AB00073	FETTERCAIRN - KZN060236	-30.072222	29.343833
1000015120.000000	3029CA00043	PALMIET FONTEIN - KZN060353	-30.565639	29.233222
180437.000000	TABASE		-31.556944	28.511944
1000015160.000000	3029DAD00030	KRUIS- SPRUIT - KZN060543	-30.508222	29.522972
1000015070.000000	3029AB00075	WOODS VILLE PTN. WOODSVILLE - KZN060257	-30.240361	29.322583
1000014960.000000	3029AB00071	STAFFORD PTN. STAFFORD PRIMARY SCHOOL - KZN060224	-30.136972	29.311500

1000015110.000000	3029CA00041	KROM DRAAI - KZN060337	-30.557194	29.186194
1000015160.000000	3029AD00114	TWEE FONTEIN PTN. NEWLANDS - KZN060573	-30.374361	29.482889
1000015150.000000	3029AD00113	BLOEM- FONTEIN PTN. INGLEBROOK - KZN060504	-30.358333	29.440000
1000015080.000000	3029AA00080	MARAIS KOP PTN. MARAISKOP - KZN060278	-30.193528	29.216389
1000014850.000000	3029AA00075	MINWATERS HOEK PTN. GLEN EDWARD SCHOOL - KZN060200	-30.106361	29.206944
171493.000000		EHUKWINI	-31.846667	28.047222
180440.000000		UPPER NCISE 3 (DUP NAME 31240)	-31.507778	28.614722
1000015010.000000	3029AB00074	RIETKUIL PTN. SWARTBERG POLICE STATION - KZN06252	-30.242750	29.339361
180439.000000		UPPER NCISE 3 (DUP NAME 31239)	-31.485000	28.605833
1000015150.000000	3029AD00109	BADFONTEIN - KZN060514	-30.259722	29.265000
1000015170.000000	3029AD00119	RIET FONTEIN PTN. HILLBROW - KZN060605	-30.311194	29.417750
0.000000		EC-T11-055	-31.660230	28.306310
1000015120.000000	3029CA00042	KROM DRAAI - KZN060338	-30.558417	29.194583
180432.000000		UPPER TABASE 5 (DUP NAME 31233)	-31.583889	28.539722
180438.000000		UPPER TABASE 5 (DUP NAME 31238)	-31.584722	28.581389
173899.000000		SONDERWATER (DUP NAME 28890)	-30.237778	29.150000
98852.000000		BAKPOORT	-30.277222	29.343889
1000015130.000000	3029CB00141	SLANG FONTEIN PTN. NACHT WACHT - KZN060382	-30.567444	29.413083
0.000000		EC/013/KD	-31.769167	28.652833
1000015120.000000	3029CB00136	WONDER HEUWEL PTN. HERITAGE - KZN060342	-30.553028	29.327194
1000014970.000000	3029AD00104	HARTEBEESTE FONTEIN - KZN060234	-30.288417	29.391111
171495.000000		LUHEWINI	-31.701389	28.122222
180430.000000		UPPER TABASE 5 (DUP NAME 31231)	-31.569722	28.555556
1000015010.000000	3029AD00105	RIETKUIL - KZN060253	-30.265167	29.357944
180426.000000		UPPER NLISE	-31.505278	28.555556
174505.000000		MAKAULA'S FARM	-30.834722	28.926944
1000015180.000000	3029AC00183	MELKFONTTEIN - KZN060630	-30.499639	29.065694
174544.000000		UMZIMVUBU (DUP NAME 29317)	-30.834444	29.140000
98866.000000		THIEPVAAL	-30.462500	29.144722
1000015200.000000	3029AD00120	VOGELVLEI PTN. LOUISDENE - KZN060655	-30.274083	29.421833
174533.000000		DUNDEE (DUP NAME 29314)	-30.756111	29.417500
98858.000000		WATERFAL	-30.575278	29.348889
98849.000000		WAGENAARSKRAAL	-30.311389	29.493889

98830.000000	UBALA	-30.184167	29.369444
1000015110.000000	3029CA00040 RIETPOORT PTN. MOOIPLAATS - KZN060335	-30.507000	29.174833
1000015100.000000	3029CA00036 BOUNEPARTES FONTEIN PTN. CHATWALL - KZN060313	-30.522722	29.186444
173906.000000	WINSTON	-30.519722	29.349444
174523.000000	NCOME 20	-30.656667	28.766944
98856.000000	DAGSTER	-30.608889	29.528889
98853.000000	OATLANDS (DUP NAME 5607)	-30.537778	29.351389
98847.000000	TEKWANE	-30.501389	29.453056
173907.000000	NACHT WACHT (DUP NAME 28894)	-30.590278	29.420556
98855.000000	SHELTED VALE	-30.504722	29.311667
174506.000000	MKEMANE	-30.745000	29.014167
173910.000000	PALMIET	-30.565278	29.232778
174538.000000	UMZIMVUBU (DUP NAME 29315)	-30.854167	29.115556
1000014840.000000	3029AB00068 IHLANE PTN. HLANI - KZN060196	-30.175278	29.290861
98859.000000	WAAIFONTEIN (DUP NAME 5609)	-30.606667	29.425556
98848.000000	NEWLANDS (DUP NAME 5604)	-30.374722	29.482778
174535.000000	MFUNDISWENI	-30.928056	29.547222
98864.000000	NEW AMARFI	-30.680556	29.174722
174527.000000	TABANKULU COMMONAGE (DUP NAME 29313)	-30.952222	29.306944
174514.000000	TABANKULU COMMONAGE (DUP NAME 29312)	-30.944444	29.308056
174547.000000	BUBESI	-30.530278	28.704444
180429.000000	TABASE 4 (DUP NAME 31230)	-31.596944	28.494444
184353.000000	ZQMNQBI 3127DD00023 NOBOKWE	-31.888610	27.839170
98860.000000	ARUM VALLEY	-30.535000	29.521944
174507.000000	ZONDWENI	-30.797500	28.981111
171497.000000	NKONDLO	-31.660833	28.236667
174513.000000	PLAAS (DUP NAME 29311)	-30.491667	28.662500
1000015130.000000	3029CB00142 USERWOOD WEST PTN. FERNHILL - KZN060392	-30.590306	29.444111
0.000000	EC-T32-316	-30.677351	29.441773
0.000000	EC-029-UK	-30.934890	28.599770
98831.000000	HLANI	-30.175278	29.291389
174510.000000	NTSIZWA	-30.824167	29.224444
1000015170.000000	3029AD00117 FARM 202 PTN. BRANDFONTEIN - KZN060581	-30.449889	29.466611

1000015150.000000	3029ADD00108	BULT FONTEIN - KZN060464	-30.296389	29.258889
173900.000000	STAFFORD (DUP NAME 28891)		-30.120833	29.310556
173901.000000	WANSTEAD		-30.280556	29.228611
174532.000000	NDZONGISENI		-30.763889	29.334444
161342.000000	KOMMETJESFONTEIN		-30.537500	29.495556
1000014970.000000	3029ADD000121	BAKPOORT - KZN060233	-30.276000	29.344194
174515.000000	LUNDINI		-30.893611	29.280556
174540.000000	DUNDEE (DUP NAME 29316)		-30.723889	29.405278
90042.000000	ZQMKID1	KINIRAPOORT	-30.487222	28.642500
166158.000000	RIET FOUNTAIN (DUP NAME 24284)		-30.696389	29.163056
180436.000000	UPPER TABASE 5 (DUP NAME 31237)		-31.586944	28.525000
174512.000000	LUDIDI		-30.634722	28.852778
150321.000000	WODEHOUSE (DUP NAME 10776)		-31.215000	28.670000
173904.000000	BRANDFONTEIN (DUP NAME 28893)		-30.453056	29.467222
173905.000000	VOGEL VLEI		-30.267222	29.421111
1000014620.000000	3029ACC00187	SPRINGFONTEIN - KZN060025	-30.468083	29.054417
1000014970.000000	3029AB00072	ALMA PTN. INKERMAN - KZN060225	-30.110500	29.283500
1000015160.000000	3029ADD00110	BADFONTEIN - KZN060518	-30.265000	29.276111
171492.000000	LOWER MAKWABABA		-31.855556	27.920556
180424.000000	UPPER TABASE 5 (DUP NAME 31227)		-31.567222	28.553333

Source	Type	Drainage_R	Sample_Dat	Ca	Cl	TDS	FC	pH	g	MP	SP4_V	NO3	NO2
DWA	Spring/Eye	T20A	1999/07/25	3.50	2.80	38.00	4.90	0.11	0.15	1.50	0.00	0.00	0.15
DWA	Borehole	T32E	1995/03/10	11.30	0.50	142.00	13.20	0.41	0.02	2.0	0.00	0.00	0.15
DWA	Borehole	T32B	12-02-1994	16.50	2.30	144.00	16.80	0.15	0.05	0.00	0.00	0.00	0.00
DWA	Borehole	T32D	06-29-2006	4.24	0.60	228.96	70.00	3.68	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31J	06-27-2006	21.37	0.52	215.28	38.00	0.47	0.15	0.00	0.00	0.00	0.00
DWA	Borehole	T31J	12-09-1994	23.70	0.10	263.00	27.30	0.35	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31H	12-11-1994	22.40	6.59	285.10	25.00	0.38	0.15	0.00	0.00	0.00	0.00
DWA	Borehole	T32D	12-05-1994	21.10	21.10	257.10	45.00	1.73	0.15	0.00	0.00	0.00	0.00
Nkobongo	Borehole			12.00	19.00		25.00	0.11	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T11F	1993/09/04	3.30	71.10	173.00	51.10	2.87	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T32D	07-27-2006	12.22	7.27	240.22	11.20	2.04	0.00	0.00	0.00	0.00	0.00
Elundini GW refirb	Borehole			6.10	3.90		22.00	0.00	0.00	0.00	0.00	0.00	0.00
DWA	Spring/Eye	T20A	1999/07/23	12.30	14.20	150.00	37.10	0.13	0.12	0.00	0.00	0.00	0.00
DWA	Spring/Eye	T20A	1999/07/23	6.70	6.20	81.00	10.60	0.11	0.15	0.00	0.00	0.00	0.00
DWA	Borehole	T32C	07-05-2006	3.30	4.66	16.97	4.96	0.21	0.42	0.00	0.00	0.00	0.00
DWA	Borehole	T31G	06-29-2006	26.51	7.57	310.97	33.60	0.15	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31D	07-06-2006	15.24	2.00	136.66	19.90	0.21	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T32C	06-29-2006	24.14	10.99	189.58	26.40	0.13	0.12	0.00	0.00	0.00	0.00
DWA	Borehole	T12B	1993/09/12	16.40	6.10	158.00	31.70	0.13	0.15	0.00	0.00	0.00	0.00
DWA	Borehole	T32A	06-28-2006	23.69	13.12	239.21	40.00	0.00	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T32A	06-29-2006	20.12	4.58	101.74	26.10	0.13	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T20A	1999/07/26	17.90	9.90	231.00	28.00	0.16	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31B	06-29-2006	3.25	6.91	31.19	4.92	0.10	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31D	06-28-2006	24.91	18.45	270.75	30.00	0.08	0.00	0.00	0.00	0.00	0.00
Elundini GW refirb	Borehole			16.00	13.00		40.00	0.00	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T32D	06-29-2006	19.24	10.30	192.40	29.00	0.13	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T32C	06-28-2006	41.49	11.65	432.38	54.00	0.13	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T32C	12-02-1994	8.70	1.50	35.00	0.10	0.13	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31J	06-29-2006	26.76	15.57	224.86	34.00	0.15	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31H	06-27-2006	35.27	14.14	301.20	50.00	0.00	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T31D	06-29-2006	22.25	7.09	123.52	25.00	0.12	0.00	0.00	0.00	0.00	0.00
DWA	Borehole	T32C	07-05-2006	6.80	4.82	71.69	0.70	0.15	0.00	0.00	0.00	0.00	0.00

DWA	Elundini GW refirb	Borehole	T32C	06-29-2006	78.41	21.50	102.97	73.07	0.15	0.07	0.08	0.07	1.00
DWA	Borehole	T32B	07-05-2006	77.84	6.50	235.74	31.67	0.19	0.07	0.08	0.07	1.00	
DWA	Spring/Eye	T11C	2002/08/07	26.16	5.00	214.96	29.29	0.16	0.07	0.08	0.07	1.00	
DWA	Borehole	T31G	06-29-2006	29.19	5.05	240.09	30.09	0.10	0.07	0.08	0.07	1.00	
DWA	Borehole	T32A	06-27-2006	5.14	21.57	328.96	40.40	0.07	0.07	0.08	0.07	1.00	
DWA	Borehole	T32D	07-06-2006	31.70	4.10	254.99	33.92	0.11	0.07	0.08	0.07	1.00	
DWA	Borehole	T31D	06-28-2006	33.54	8.61	341.05	42.30	0.11	0.07	0.08	0.07	1.00	
DWA	Borehole	T32D	06-06-2006	15.15	0.05	159.39	22.49	0.07	0.07	0.08	0.07	1.00	
Elundini GW refirb	Borehole	T32C	12-02-1994	18.90	3.00		22.00	0.04	0.07	0.08	0.07	1.00	
DWA	Borehole	T20A	1999/07/24	39.80	46.30	371.00	52.30	0.12	0.07	0.08	0.07	1.00	
DWA	Borehole	T31D	06-26-2006	36.06	14.23	286.69	36.90	0.17	0.07	0.08	0.07	1.00	
DWA	Borehole	T31G	06-27-2006	35.80	42.81	280.09	41.09	0.15	0.07	0.08	0.07	1.00	
DWA	Spring/Eye	T20A	1999/07/25	32.50	24.30	303.42	52.40	0.14	0.07	0.08	0.07	1.00	
Elundini GW refirb	Spring/Eye	T20A	1999/07/25	6.45	8.40	130.00	16.60	0.11	0.07	0.08	0.07	1.00	
DWA	Borehole	T31D	06-28-2006	15.60	5.67	130.26	21.00	0.14	0.07	0.08	0.07	1.00	
DWA	Borehole	T31G	06-27-2006	32.16	12.94	212.56	32.77	0.23	0.07	0.08	0.07	1.00	
DWA	Borehole	T32B	12-02-1994	19.09	1.10	108.49	11.09	0.16	0.07	0.08	0.07	1.00	
DWA	Borehole	T32D	06-29-2006	36.57	14.09	350.95	34.20	0.14	0.07	0.08	0.07	1.00	
DWA	Borehole	T20A	1999/07/26	36.80	47.06	349.30	51.60	0.16	0.07	0.08	0.07	1.00	
DWA	Borehole	T31J	06-29-2006	30.76	14.29	107.34	40.60	0.17	0.07	0.08	0.07	1.00	
DWA	Borehole	T32C	12-04-1994	29.90	4.40	220.00	26.00	0.11	0.07	0.08	0.07	1.00	
DWA	Borehole	T32D	06-27-2006	23.18	11.57	266.66	40.20	0.11	0.07	0.08	0.07	1.00	
DWA	Borehole	T31J	06-29-2006	11.91	4.22	132.26	17.20	0.17	0.07	0.08	0.07	1.00	
DWA	Borehole	T31D	06-28-2006	22.50	14.23	177.46	22.70	0.07	0.07	0.08	0.07	1.00	
DWA	Borehole	T31B	06-29-2006	44.06	19.05	306.25	31.20	0.10	0.07	0.08	0.07	1.00	
DWA	Borehole	T31J	06-29-2006	41.47	11.30	343.50	35.50	0.11	0.07	0.08	0.07	1.00	
DWA	Spring/Eye	T20A	1999/07/24	15.40	20.90	202.00	21.50	0.11	0.07	0.08	0.07	1.00	
DWA	Borehole	T32C	06-29-2006	47.14	21.24	323.13	45.40	0.11	0.07	0.08	0.07	1.00	
DWA	Borehole	T31D	06-28-2006	27.95	6.00	227.06	27.90	0.14	0.07	0.08	0.07	1.00	
DWA	Borehole	T31B	06-29-2006	26.49	4.90	211.57	21.10	0.11	0.07	0.08	0.07	1.00	





DWA	Borehole	T31D	06-28-2006	27.58	12.34	249.96	55.00	0.33	2.22	10'638	11.08	0.11
DWA	Borehole	T31B	12-15-1994	29.03	15.30	293.83	58.00	0.10	1.57	10'7	1.02	1.03
DWA	Borehole	T31D	12-07-1994	26.05	19.00	359.00	46.00	1.00	2.02	11'2	10.01	10.20
DWA	Borehole	T32E	1995/03/11	16.00	7.50	182.00	22.00	0.15	1.80	9'8	0.87	1.96
DWA	Borehole	T32C	08-11-1981	32.10	26.80	270.00	35.80	0.37	1.03	8'1	0.00	10.25
DWA	Borehole	T32A	06-28-2006	21.97	11.84	200.31	29.40	0.15	1.65	10'00	10.02	1.75
DWA	Borehole	T33H	1995/03/25	44.20	21.20	295.00	39.00	0.37	1.68	10'7	10.02	1.75
DWA	Borehole	T32E	1995/03/11	44.50	32.50	314.00	71.00	0.44	1.26	10'6	10.02	1.75
DWA	Borehole	T33E	11-28-1995	32.00	70.00	267.00	42.00	2.60	1.26	10'7	10.02	1.75
DWA	Borehole	T31J	02-06-1987	105.00	160.00	190.00	112.20	0.66	1.03	10'8	10.02	1.75
DWA	Spring/Eye	T20A	1999/07/24	11.40	36.20	471.00	38.80	0.10	1.06	10'6	10.02	1.75
DWA	Borehole	T33F	1995/03/20	47.20	47.10	261.00	36.00	0.1	1.1	10'7	10.02	1.75
DWA	Borehole	T35I	1976/07/29	21.00	61.50	323.00	41.80	0.60	1.07	10'7	10.02	1.75
DWA	Borehole	T32B	12-02-1994	10.00	6.50	248.00	19.00	0.14	1.12	10'8	10.02	1.75
DWA	Borehole	T32A	12-03-1994	44.50	21.50	286.00	36.00	0.05	1.04	10'8	10.02	1.75
DWA	Borehole	T31G	06-29-2006	46.00	5.22	357.97	35.40	0.48	1.14	10'8	10.02	1.75
DWA	Borehole	T31B	06-28-2006	38.75	39.24	405.77	56.30	0.10	1.08	10'8	10.02	1.75
DWA	Borehole	T31D	06-28-2006	39.02	9.40	419.05	42.30	0.16	1.09	10'8	10.02	1.75
DWA	Borehole	T12D	1993/09/17	54.50	191.40	872.00	111.30	0.72	1.01	10'9	10.02	1.75
DWA	Borehole	T20A	1999/07/23	64.40	147.30	562.00	81.80	0.30	1.05	10'9	10.02	1.75

No	PO4_P	SO4	SI	TAL	pH	HCO3
5.30	0.008000	2.00	5.570000	19.400000	7.430000	23.668000
7.5	0.013	2	20.53	64.9	7.65	79.178
5.40	0.019000	5.60	18.150000	84.900000	8.210000	103.578000
56.971	0.018	8.545	8.897	118.809	8.574	144.94698
30.832	0.013	4.627	9.535	122.104	8.259	148.96688
45.30	0.009000	5.80	8.960000	133.500000	8.210000	162.870000
35.9	0.008	5.6	7.04	164.8	8.03	201.056
67.2	0.007	28.7	10.11	169.2	8.23	206.424
50.00		4.75		95.000000	8.000000	115.900000
42.6	0.013	2	5.03	181.8	8.25	221.796
50.219	0.066	8.399	9.768	128.33	8.057	156.5626
42.00		2.00		118.000000	8.620000	143.960000
12.70	0.036000	2.00	17.620000	81.200000	8.800000	99.064000
7.50	0.015000	2.00	9.440000	41.100000	7.910000	50.142000
2.384	0.031	2	8.337	15.656	7.52	19.10032
7.615	0.234	4.463	25.192	127.985	8.317	156.1417
4.05	0.037000	2.00	17.559000	84.281000	7.822000	102.822820
9.25	0.012000	2.00	3.519000	108.421000	8.131000	132.273620
10	0.023	8.8	24.77	78.2	7.62	95.404
38.20	0.006000	9.78	10.428	167.835	8.026	204.7587
12.25	0.227000	2.00	15.282	107.597	8.347	131.26834
12.20	0.018000	2.00	31.3	123.3	7.24	150.426
2.05	0.032000	2.00	4.062	8.142	7.612	9.93324
31.332	0.006	8.937	9.217	149.957	8.359	182.94754
48.40		2.00		165.000000	7.990000	201.300000
10.583	0.025	2	21.65	106.932	8.255	130.45704
32.05	0.006000	2.00	14.386000	262.781000	8.625000	320.592820
4.60	0.015000	8.70	12.090000	38.000000	7.880000	46.360000
10.51	0.015	2	20.351	102.09	8.244	124.5498
28.06	0.057000	9.72	7.664	169.594	8.421	206.90468
17.574	0.012	5.899	13.424	109.803	8.234	133.95966
52.26	0.02	2	7.971	38.759	7.559	47.28598

11.307	0.023	14.352	10.176	92.103	7.882	112.36566
29.00		4.50		132.00000	7.40000	161.04000
13.522	0.042	2	21.508	139.275	8.283	169.9155
7.22	0.023000	5.98	21.28800	127.13400	8.12900	155.103480
17.951	0.026	2	16.081	140.87	8.084	171.8614
85.12	0.051000	20.55	5.22	157.606	8.174	192.27932
0.518	0.109	2	17.375	147.518	8.341	179.97196
32.649	0.015	8.611	8.519	199.746	8.275	243.69012
13.217	0.041	6.85	9.45	87.737	8.181	107.03914
14.90		3.35		98.80000	7.52000	120.53600
4.10	0.016000	2.05	9.09000	29.30000	7.59000	35.74600
31.44	0.008000	4.36	19.89000	172.60000	7.73000	210.57200
20.181	0.032	5.491	10.097	156.122	8.439	190.46884
4.70	0.017000	6.11	24.455	163.06	8.42	198.9332
65.46	0.010000	2.00	13.31000	197.40000	7.96000	240.82800
16.09	0.013000	2.00	10.09000	42.50000	6.92000	51.85000
106.00		18.00		360.00000	7.18000	439.20000
7.421	0.006	5.255	21.016	75.067	7.775	91.58174
12.32	0.045000	2.00	9.151	91.048	7.913	111.07856
10.46	0.011000	2.00	16.72000	99.70000	7.43000	121.63400
10.903	0.03	6.144	15.975	187.159	8.494	228.33398
32.3	0.01	4.3	18.94	128.8	7.7	157.136
50.507	0.371	8.49	9.192	143.412	8.196	174.96264
16.50	0.012000	3.70	11.56000	128.50000	8.05000	156.77000
20.822	0.029	2	10.412	144.517	8.507	176.31074
7.717	0.033	2	22.783	67.932	7.717	82.87704
8.00	0.012000	4.73	10.193	91.075	7.719	111.1115
45.24	0.043000	15.94	7.186	212.068	8.431	258.72296
19.037	0.027	5.059	13.377	198.829	8.289	242.57138
14.30	0.017000	2.00	20.02000	73.10000	7.37000	89.18200
14.659	0.017	13.452	19.486	163.907	8.075	199.96654
10.74	0.015000	2.00	9.039	135.595	8.455	165.4259
12.38	0.014000	2.00	7.457	133.255	8.393	162.5711

18.276	0.006	20.346	9.752	166.936	8.395	203.66192
18.276	0.013	4.406	12.573	147.523	8.283	179.97806
19.054	0.014	2	13.552	109.455	8.012	133.5351
13.632	0.022	2	13.451	145.807	8.359	177.88454
13.632	0.006000	13.53	2.428	110.785	8	135.1577
24.9	0.049	2	21.25	108.8	7.69	132.736
19.110	0.014000	2.50	21.580000	107.100000	7.200000	130.662000
24.97	0.042000	7.50	8.865	148.957	8.082	181.72754
37.10	0.022000	7.10	8.21	124.6	8.47	152.012
16.806	0.014	14.231	15.486	228.306	8.314	278.53332
28.146	0.021	12.726	12.982	115.272	8.217	140.63184
56.00		12.00			8.040000	316.680000
14.289	0.05	17.101	16.724	125.73	8.055	153.3906
31.8	0.015000	5.8	5.97	135.2	8.71	164.944
42.70	0.011000	9.50	16.85	145.8	7.89	177.876
11	0.012	8.5	15.87	136.4	7.99	166.408
8.30	0.012000	2.00	21.040000	105.500000	8.020000	128.710000
21.168	0.017	12.995	19.945	245.769	8.33	299.83818
35.00		14.20		214.000000	7.410000	261.080000
27.673	0.012	9.195	11.64	178.414	8.334	217.66508
26.56	0.022000	2.00	15.091	267.869	7.91	326.80018
19.16	0.011	4.1	10.09	225.1	7.99	274.622
53.10	0.011000	9.50	7.630000	171.200000	9.410000	208.864000
16.40	0.017000	20.50	18.158	237.31	8.034	289.5182
26.20	0.011000	2.00	8.510000	21.700000	6.270000	26.474000
7.1	0.025	0.2	15.61	41.2	7.89	50.264
12.12	0.018000	2.00	30.036000	95.039000	8.200000	115.947580
11.4	0.011	2	19.71	116.7	6.56	142.374
14.10	0.008000	5.40	15.480000	148.100000	8.210000	180.682000
15.13	0.016000	9.51	13.810000	137.517000	8.023000	167.770740
21.5	0.007	2	15.79	126.8	8.02	154.696
25.99	0.013000	25.20	11.910000	215.900000	8.310000	263.398000
10.60	0.017000	2.00	11.010000	92.500000	7.970000	112.850000

9.62	0.010000	2.00	10.980000	131.400000	8.320000	160.308000
14.61	0.028	6.634	16.027	148.274	8.164	180.89428
15.418	0.036	10.253	12.51	160.162	8.183	195.39764
4.3	0.011	4.7	11.97	47.8	7.64	58.316
19.8	0.02	2	10.07	113.6	8.29	138.592
13.60	0.007000	25.50	25.580000	158.300000	8.070000	193.126000
18.307	0.011000	2.00	15.570000	220.400000	8.600000	268.888000
13.60	0.019000	2.00	8.910000	135.100000	8.580000	164.822000
22.2	0.008	21.2	17.96	137.8	8.39	168.116
22.10	0.005000	6.30	10.380000	161.600000	8.260000	197.152000
51.3	0.009	22.7	9.77	214.5	8.26	261.69
21.1	0.005	4.9	12.9	203.4	8.23	248.148
20.3	0.009	5.3	17	212.6	8.06	259.372
28.63	0.018000	2.00	8.025	144.137	7.939	175.84714
39.10	0.016000	6.90	11.420000	220.800000	8.340000	269.376000
22.20	0.007000	2.00	11.040000	146.100000	8.020000	178.242000
22.5	0.015	2	19.31	133.1	7.99	162.382
27.40	0.009000	7.90	7.980000	140.500000	8.340000	171.410000
23.4	0.009	4.9	14.09	141.5	8.25	172.63
30.6	0.016	8.1	12.88	161.1	7.92	196.542
44.5	0.003	3.6	12.72	260.7	8.52	318.054
15.10	0.011000	2.00	9.390000	21.300000	6.280000	25.986000
22.50	0.006000	4.81	11.254000	205.368000	7.469000	250.548960
22.40	0.008000	7.70	12.900000	167.400000	8.120000	204.228000
25.1	0.018	2	12.34	145.8	8.43	177.876
25.4	0.011	5	13.02	226	7.88	275.72
29.8	0.007	29.4	6.64	281.4	8.23	343.308
31.057	0.018	12.255	11.052	188.026	8.491	229.39172
12.09		1.52			7.400000	73.000000
14.00		12.00		67.000000	7.490000	81.740000
10.20	0.008000	4.60	6.780000	141.700000	8.100000	172.874000
3.6	0.025	2	13.13	43.1	7.76	52.582
9.026	0.015	2	17.038	76.951	7.717	93.88022

17.234	0.042	9.54	5.933	129.237	8.293	157.66914
23.9	0.005	6.1	7.7	154.4	8.2	188.368
32.4	0.009	24.5	8.48	192.4	8.2	234.728
13.9	0.049	12.5	24.95	89.5	7.74	109.19
34.3	0.009	14.5	11.59	124.4	7.37	151.768
7.51	0.043000	6.23	22.455	105.181	8.08	128.32082
37	0.012	5.2	16.13	206.1	8.36	251.442
22.2	0.012	22.5	26.26	165.4	8.13	201.788
87.20	0.007000	13.50	16.290000	64.400000	9.100000	78.568000
45.2	0.005	82.4	14.63	258.1	7.73	314.882
26.70	0.028000	2.00	12.040000	33.400000	6.690000	40.748000
18.7	0.01	9.6	18.97	110	7.96	134.2
58.6	0.007	62.6	9.28	96.9	8.3	118.218
40.4	0.005	5.4	16.25	73.5	8.01	89.67
14	0.009	10.1	17.04	123	8.11	150.06
21.21	0.017000	7.59	11.441	203.54	8.258	248.3188
21.23	0.013000	8.52	9.182	203.912	8.022	248.77264
12.824	0.015	9.593	10.982	180.114	8.153	219.73908
166.7	0.011	24.5	4.95	285.3	8.21	348.066
66.2	0.01	5.9	14.86	169.8	7.97	207.156

Monitoring	Monitor_1	Latitude	Longitude	Source	Type	Drainage_R	Sample_Dat	Q	TDS
0.000000	EC-T60-051	-31.309080	29.759600	Lusikisiki	Borehole		21/09	22.000	
0.000000	EC-T60-052	-31.303130	29.752830	Lusikisiki	Borehole		21/09	47.000	
0.000000	EC-T60-053	-31.348550	29.708910	Lusikisiki	Borehole		21/09	39.000	
0.000000	EC-T60-078	-31.317580	29.770800	Lusikisiki	Borehole		26/09	16.000	
0.000000	EC-T60-080	-31.331750	29.953830	Lusikisiki	Borehole		11/09	91.000	
0.000000	EC-T60-470	-31.127660	30.073610	Mbizana Hydrocensus	Borehole		01/09	44.000	
0.000000	EC-T60-471	-31.131430	30.075150	Mbizana Hydrocensus	Borehole		03/09	23.000	
0.000000	EC-T60-472	-31.129160	30.080340	Mbizana Hydrocensus	Borehole		01/09	29.000	
0.000000	EC-T60-473	-31.117730	30.082400	Mbizana Hydrocensus	Borehole		05/09	30.000	
0.000000	EC-T60-474	-31.111780	30.083020	Mbizana Hydrocensus	Borehole		05/09	30.000	
0.000000	EC-T60-476	-31.118340	30.112770	Mbizana Hydrocensus	Borehole		01/09	26.000	
0.000000	EC-T60-477	-31.117860	30.108270	Mbizana Hydrocensus	Borehole		01/09	25.000	
0.000000	EC-T60-478	-31.113820	30.100630	Mbizana Hydrocensus	Borehole		01/09	22.000	
0.000000	EC-T60-479	-31.106890	30.086000	Mbizana Hydrocensus	Borehole		01/09	22.000	
0.000000	EC-T60-480	-31.100290	30.089390	Mbizana Hydrocensus	Borehole		01/09	24.000	
0.000000	EC-T60-481	-31.104220	30.078780	Mbizana Hydrocensus	Borehole		01/09	22.000	
0.000000	EC-T60-483	-31.067350	30.065360	Mbizana Hydrocensus	Borehole		01/09	41.000	
0.000000	EC-T60-525	-31.062650	29.912250	Mbizana Hydrocensus	Borehole		01/09	22.000	
0.000000	EC-T60-526	-31.055620	29.902780	Mbizana Hydrocensus	Borehole		01/09	19.000	
0.000000	EC-T60-628	-31.055990	30.040720	Mbizana Hydrocensus	Borehole		01/09	41.000	
0.000000	EC-T60-629	-31.080310	30.001310	Mbizana Hydrocensus	Borehole		01/09	51.000	
0.000000	EC-T60-630	-31.079110	30.002730	Mbizana Hydrocensus	Borehole		01/09	31.000	
0.000000	EC-T60-631	-31.077900	30.003470	Mbizana Hydrocensus	Borehole		01/09	31.000	
0.000000	EC-T60-632	-31.082860	29.999770	Mbizana Hydrocensus	Borehole		01/09	27.000	
0.000000	EC-T60-633	-31.084790	29.992240	Mbizana Hydrocensus	Borehole		01/09	25.000	
0.000000	EC-T60-634	-31.082990	29.987720	Mbizana Hydrocensus	Borehole		01/09	28.000	
0.000000	EC-T60-635	-31.068010	29.975870	Mbizana Hydrocensus	Borehole		01/09	22.000	
0.000000	EC-T60-636	-31.069400	29.972610	Mbizana Hydrocensus	Borehole		01/09	27.000	
0.000000	EC-T60-637	-31.105780	29.987570	Mbizana Hydrocensus	Borehole		01/09	22.000	
0.000000	EC-T60-638	-31.105710	29.987580	Mbizana Hydrocensus	Borehole		01/09	24.000	
0.000000	EC-T60-642	-31.063290	29.906340	Mbizana Hydrocensus	Borehole		01/09	18.000	
0.000000	EC-T60-643	-31.063390	29.899310	Mbizana Hydrocensus	Borehole		01/09	22.000	

0.000000	EC-T60-644	-31.081160	29.930990	Mbizana Hydrocensus	Borehole	1.70	66.00
0.000000	EC-T60-645	-31.075700	29.923480	Mbizana Hydrocensus	Borehole	1.00	14.00
0.000000	EC-T60-648	-31.104360	29.986800	Mbizana Hydrocensus	Borehole	2.16	20.00
0.000000	EC-T60-649	-31.104390	29.987150	Mbizana Hydrocensus	Borehole	3.24	25.00
0.000000	EC-T60-650	-31.105150	29.988250	Mbizana Hydrocensus	Borehole	1.60	14.00
0.000000	EC-T60-652	-31.169990	30.061860	Mbizana Hydrocensus	Borehole	2.00	20.00
0.000000	EC-T60-653	-31.169240	30.062690	Mbizana Hydrocensus	Borehole	2.00	20.00
0.000000	EC-T60-654	-31.164650	30.065680	Mbizana Hydrocensus	Borehole	2.00	20.00
0.000000	EC-T60-655	-31.152990	30.096100	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-656	-31.152930	30.115860	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-657	-31.153450	30.103410	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-660	-31.244310	30.045140	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-662	-31.239900	30.044220	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-663	-31.216240	30.037860	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-665	-31.233200	30.051830	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-666	-31.112990	30.028800	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-667	-31.113850	30.041000	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-671	-31.099240	29.933730	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-672	-31.135880	30.006950	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-673	-31.136560	30.006390	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-674	-31.142520	30.006820	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-675	-31.138880	30.003030	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-677	-31.140740	30.010980	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-678	-31.144990	30.009760	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-679	-31.147000	30.007750	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-680	-31.148070	30.010060	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-681	-31.151790	30.010310	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-682	-31.151900	30.008600	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-683	-31.157110	30.012900	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-684	-31.159860	30.009090	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-685	-31.163840	30.005150	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-686	-31.161500	30.000970	Mbizana Hydrocensus	Borehole	1.00	10.00
0.000000	EC-T60-687	-31.157950	30.005160	Mbizana Hydrocensus	Borehole	1.00	10.00

0.000000	EC-T60-688	-31.151870	30.005210	Mbizana Hydrocensus	Borehole	1.661	32.000
0.000000	EC-T60-690	-31.150270	30.001900	Mbizana Hydrocensus	Borehole	0.550	32.000
0.000000	EC-T60-691	-31.149520	29.998380	Mbizana Hydrocensus	Borehole	2.290	32.000
0.000000	EC-T60-692	-31.146730	30.002690	Mbizana Hydrocensus	Borehole	1.000	31.000
0.000000	EC-T60-693	-31.081880	29.956330	Mbizana Hydrocensus	Borehole	8.390	29.000
0.000000	EC-T60-694	-31.082370	29.951730	Mbizana Hydrocensus	Borehole	1.900	31.000
0.000000	EC-T60-695	-31.077080	29.948600	Mbizana Hydrocensus	Borehole	2.300	29.000
0.000000	EC-T60-698	-31.081627	29.956390	Mbizana Hydrocensus	Borehole	1.240	32.000
0.000000	EC-T60-699	-31.090650	29.965190	Mbizana Hydrocensus	Borehole	2.500	29.000
0.000000	EC-T60-700	-31.138760	29.991560	Mbizana Hydrocensus	Borehole	0.000	32.000
0.000000	EC-T60-701	-31.132510	29.994940	Mbizana Hydrocensus	Borehole	0.500	32.000
0.000000	EC-T60-702	-31.132900	29.998310	Mbizana Hydrocensus	Borehole	1.300	32.000
0.000000	EC-T60-703	-31.131860	30.003890	Mbizana Hydrocensus	Borehole	1.500	32.000
0.000000	EC-T60-704	-31.132800	29.988320	Mbizana Hydrocensus	Borehole	1.300	32.000
0.000000	EC-T60-705	-31.124360	29.983480	Mbizana Hydrocensus	Borehole	4.800	32.000
0.000000	EC-T60-706	-31.119200	29.984410	Mbizana Hydrocensus	Borehole	0.000	32.000
0.000000	EC-T60-707	-31.118220	29.984750	Mbizana Hydrocensus	Borehole	2.000	31.000
0.000000	EC-T60-708	-31.117350	29.975260	Mbizana Hydrocensus	Borehole	1.000	32.000
0.000000	EC-T60-709	-31.111360	29.972320	Mbizana Hydrocensus	Borehole	2.600	32.000
0.000000	EC-T60-710	-31.112600	29.980570	Mbizana Hydrocensus	Borehole	0.000	32.000
0.000000	EC-T60-711	-31.106000	29.974900	Mbizana Hydrocensus	Borehole	4.800	32.000
0.000000	EC-T60-712	-31.106640	29.976330	Mbizana Hydrocensus	Borehole	2.000	32.000
0.000000	EC-T60-713	-31.104900	29.967270	Mbizana Hydrocensus	Borehole	3.000	32.000
0.000000	EC-T60-716	-31.108070	29.981700	Mbizana Hydrocensus	Borehole	12.000	43.000
0.000000	EC-T60-717	-31.106390	29.976620	Mbizana Hydrocensus	Borehole	2.800	32.000
0.000000	EC-T60-718	-31.162620	30.046620	Mbizana Hydrocensus	Borehole	4.800	32.000
0.000000	EC-T60-719	-31.164650	30.043840	Mbizana Hydrocensus	Borehole	1.000	32.000
0.000000	EC-T60-720	-31.167470	30.039560	Mbizana Hydrocensus	Borehole	1.000	32.000
0.000000	EC-T60-721	-31.174390	30.038490	Mbizana Hydrocensus	Borehole	0.000	32.000
0.000000	EC-T60-722	-31.173280	30.031720	Mbizana Hydrocensus	Borehole	4.000	32.000
0.000000	EC-T60-723	-31.176710	30.025970	Mbizana Hydrocensus	Borehole	0.000	32.000
0.000000	EC-T60-724	-31.173840	30.018100	Mbizana Hydrocensus	Borehole	0.000	32.000
0.000000	EC-T60-725	-31.180120	30.013360	Mbizana Hydrocensus	Borehole	4.800	32.000

0.000000	EC-T60-726	-31.167240	30.018550	Mbizana Hydrocensus	Borehole	1.237	24.000
0.000000	EC-T60-727	-31.157140	29.971530	Mbizana Hydrocensus	Borehole	1.236	24.000
0.000000	EC-T60-728	-31.157270	29.967560	Mbizana Hydrocensus	Borehole	1.235	24.000
0.000000	EC-T60-729	-31.151500	29.958670	Mbizana Hydrocensus	Borehole	1.234	24.000
0.000000	EC-T60-730	-31.148790	29.965560	Mbizana Hydrocensus	Borehole	1.233	24.000
0.000000	EC-T60-731	-31.147360	29.960290	Mbizana Hydrocensus	Borehole	1.232	24.000
0.000000	EC-T60-732	-31.146570	29.963320	Mbizana Hydrocensus	Borehole	1.231	24.000
0.000000	EC-T60-733	-31.145000	29.957780	Mbizana Hydrocensus	Borehole	1.230	24.000
0.000000	EC-T60-734	-31.151950	29.955190	Mbizana Hydrocensus	Borehole	1.229	24.000
0.000000	EC-T60-735	-31.151970	29.955940	Mbizana Hydrocensus	Borehole	1.228	24.000
0.000000	EC-T60-736	-31.168120	29.949310	Mbizana Hydrocensus	Borehole	1.227	24.000
0.000000	EC-T60-737	-31.155830	29.937070	Mbizana Hydrocensus	Borehole	1.226	24.000
0.000000	EC-T60-738	-31.154800	29.936420	Mbizana Hydrocensus	Borehole	1.225	24.000
0.000000	EC-T60-739	-31.153800	29.933800	Mbizana Hydrocensus	Borehole	1.224	24.000
0.000000	EC-T60-740	-31.152150	29.933560	Mbizana Hydrocensus	Borehole	1.223	24.000
0.000000	EC-T60-753	-31.139700	29.931830	Mbizana Hydrocensus	Borehole	1.222	24.000
0.000000	EC-T60-757	-31.147330	29.932150	Mbizana Hydrocensus	Borehole	1.221	24.000
0.000000	EC-T60-758	-31.131390	29.937860	Mbizana Hydrocensus	Borehole	1.220	24.000
0.000000	EC-T60-759	-31.132860	29.943280	Mbizana Hydrocensus	Borehole	1.219	24.000
0.000000	EC-T60-760	-31.127990	29.942950	Mbizana Hydrocensus	Borehole	1.218	24.000
0.000000	EC-T60-761	-31.130880	29.932500	Mbizana Hydrocensus	Borehole	1.217	24.000
0.000000	EC-T60-762	-31.121200	29.940340	Mbizana Hydrocensus	Borehole	1.216	24.000
0.000000	EC-T60-763	-31.165900	29.941100	Mbizana Hydrocensus	Borehole	1.215	24.000
0.000000	EC-T60-764	-31.117410	29.940040	Mbizana Hydrocensus	Borehole	1.214	24.000
0.000000	EC-T60-765	-31.129800	29.933260	Mbizana Hydrocensus	Borehole	1.213	24.000
0.000000	EC-T60-766	-31.116610	29.935890	Mbizana Hydrocensus	Borehole	1.212	24.000
0.000000	EC-T60-767	-31.112590	29.939220	Mbizana Hydrocensus	Borehole	1.211	24.000
0.000000	EC-T60-768	-31.112110	29.938210	Mbizana Hydrocensus	Borehole	1.210	24.000
0.000000	EC-T60-769	-31.114340	29.933780	Mbizana Hydrocensus	Borehole	1.209	24.000
0.000000	EC-T60-770	-31.114660	29.934390	Mbizana Hydrocensus	Borehole	1.208	24.000
0.000000	EC-T60-787	-31.095880	29.922980	Mbizana Hydrocensus	Borehole	1.207	24.000
0.000000	EC-T60-788	-31.095290	29.920950	Mbizana Hydrocensus	Borehole	1.206	24.000
0.000000	EC-T60-795	-31.089490	29.902240	Mbizana Hydrocensus	Borehole	1.205	24.000

0.000000	EC-T60-799	-31.059250	29.896140	Mbizana Hydrocensus	Borehole			
0.000000	EC-T60-800	-31.063250	29.896560	Mbizana Hydrocensus	Borehole			
0.000000	EC-T60-801	-31.064040	29.896440	Mbizana Hydrocensus	Borehole			
0.000000	EC-T60-802	-31.072420	29.894720	Mbizana Hydrocensus	Borehole			
0.000000	EC-T60-803	-31.069180	29.899570	Mbizana Hydrocensus	Borehole			
0.000000	EC-T60-804	-31.071800	29.902200	Mbizana Hydrocensus	Borehole			
0.000000	EC-T60-805	-31.073050	29.899770	Mbizana Hydrocensus	Borehole			
171897.000000	TRACOR LUSIKISIKI	-31.358889	29.714444	DWA	Borehole			
0.000000	171897	-31.358889	29.714444	WMS single reading	Borehole		1993/11/22	
0.000000		-31.153330	29.973880	NGDB	Borehole			

EC	F	K	Mg	NH4_N	NO3_NO2_N	Na	PO4_P	SO4	SI	TAL	pH	HCO3
13.00	0.95	0.86	1.69	0.04		15.00		8.40			5.770000	
49.00	0.30	1.90	13.00	0.02		28.00		4.30			7.100000	
41.00	0.62	1.80	11.00	0.04		39.00		12.00			7.220000	
17.00	0.08	1.80	2.00	0.03		19.00		6.05			6.130000	
32.00	0.04	0.50	5.60	0.03		41.00		4.30			5.590000	
12.00	50.00	1.00	1.40	0.48		20.00		6.02			6.500000	
24.00	0.09	4.60	7.10	0.34		36.00		9.05			6.500000	
13.00	0.16	1.10	2.80	0.34		21.00		7.98			6.500000	
11.00	50.00	1.00	2.80	0.93		19.00		8.40			6.400000	
11.00	0.05	1.00	2.10	0.19		26.00		6.57			6.000000	
11.00	0.08	1.00	2.50	0.53		17.00		10.10			6.800000	
11.00	0.15	1.00	1.60	0.43		18.00		10.30			6.400000	
9.00	50.00	1.60	1.50	0.35		15.00		10.40			6.200000	
13.00	0.09	1.00	3.00	0.33		16.00		8.31			6.100000	
9.00	50.00	1.90	1.40	0.41		16.00		7.03			5.800000	
3.00	0.03	1.00	0.20	0.29		15.00		8.14			6.000000	
9.00	0.05	1.00	1.60	0.08		16.00		9.99			5.800000	
7.00	0.29	1.00	1.20	0.19		12.00		4.46			7.300000	
7.00	0.36	1.00	2.10	0.17		12.00		3.40			7.300000	
7.00	0.18	1.00	1.20	0.40		11.00		5.96			7.000000	
27.00	0.16	1.50	7.80	0.19		33.00		9.07			6.400000	
13.00	0.13	1.00	5.50	0.26		27.00		6.97			6.600000	
9.00	0.19	1.00	2.30	0.19		15.00		14.40			6.600000	
25.00	0.27	1.20	4.60	0.23		20.00		17.10			6.900000	
16.00	0.16	1.10	4.40	2.65		20.00		17.80			6.600000	
21.00	0.15	1.00	5.70	0.23		27.00		9.54			6.400000	
23.00	0.42	1.50	4.80	0.24		40.00		22.50			6.900000	
19.00	0.42	1.00	4.20	0.16		32.00		14.30			6.500000	
24.00	0.27	2.40	6.80	0.22		24.00		4.40			7.600000	
7.00	0.17	1.00	1.00	0.14		13.00		3.85			7.100000	
9.00	0.13	1.10	2.30	0.25		15.00		4.54			7.000000	

13.00	0.43	1.50	11.00	0.26	40.00	3.32	6.700000
9.00	0.22	1.00	2.30	0.11	18.00	3.83	7.000000
16.00	0.22	1.10	4.00	0.35	25.00	3.60	6.800000
13.00	0.25	2.50	4.30	0.33	24.00	7.64	6.800000
15.00	0.13	1.80	2.80	0.36	23.00	3.81	6.400000
17.00	0.25	1.00	2.40	0.12	18.00	7.43	6.500000
8.00	0.16	1.00	1.40	0.24	12.00	7.12	6.700000
12.00	0.26	1.00	2.30	0.19	19.00	4.83	6.600000
18.00	0.17	1.00	3.30	0.26	23.00	11.10	6.200000
12.00	0.16	1.00	2.60	0.36	20.00	8.80	6.300000
27.00	0.18	1.00	5.50	0.28	40.00	8.02	6.300000
14.00	0.15	1.20	2.90	0.13	22.00	5.04	6.600000
11.00	0.20	1.00	1.70	0.34	20.00	8.04	6.400000
20.00	0.22	1.00	4.80	0.23	44.00	17.10	6.300000
6.00	0.28	1.00	1.40	0.29	19.00	15.20	6.100000
13.00	0.05	1.00	2.20	0.25	20.00	6.97	6.200000
26.00	0.25	1.30	5.00	0.16	40.00	10.60	7.500000
9.00	0.09	1.00	2.20	0.08	12.00	7.35	7.500000
13.00	0.18	1.00	4.40	0.12	10.00	4.11	7.400000
10.00	0.07	1.00	2.10	0.08	12.00	32.40	7.300000
9.00	0.12	1.00	2.30	0.10	11.00	8.00	7.300000
11.00	0.16	1.30	2.30	0.13	15.00	8.54	7.200000
12.00	0.16	1.00	2.10	0.13	16.00	4.39	7.100000
13.00	0.15	1.10	3.10	0.03	17.00	6.36	7.000000
11.00	0.12	1.00	2.40	0.13	12.00	7.84	7.000000
26.00	0.08	1.90	7.60	0.15	26.00	4.44	6.700000
15.00	0.20	3.10	3.30	0.08	15.00	6.30	6.800000
10.00	0.14	1.00	1.20	0.08	15.00	1.55	6.800000
11.00	0.05	1.10	2.00	0.12	16.00	4.47	7.000000
12.00	0.07	1.00	2.00	0.02	19.00	4.96	7.000000
13.00	0.12	1.00	2.00	0.11	15.00	6.56	6.700000
12.00	0.14	1.00	3.00	0.10	15.00	4.76	6.700000

18.00	0.12	1.70	2.50	0.08	18.00	2.94	6.800000
19.00	0.13	1.80	4.30	0.13	26.00	4.42	6.400000
22.00	0.19	1.40	3.00	0.08	19.00	7.26	6.500000
17.00	0.16	2.00	6.30	0.10	29.00	5.62	6.300000
16.00	0.21	2.20	4.40	0.11	21.00	12.70	6.400000
14.00	0.28	1.16	4.40	0.08	22.00	5.97	6.600000
13.00	0.28	1.50	3.60	0.18	18.00	12.00	6.600000
14.00	0.16	1.66	4.30	0.14	24.00	4.15	6.800000
16.00	0.15	1.20	3.50	0.08	30.00	6.13	6.800000
13.00	0.16	1.00	0.80	0.21	14.00	7.12	9.300000
2.00	0.13	1.00	1.50	0.16	14.00	14.30	7.500000
12.00	0.34	1.50	1.50	0.15	19.00	20.40	7.500000
10.00	0.10	1.00	1.70	0.43	13.00	2.22	7.500000
20.00	0.09	5.20	4.90	0.38	25.00	9.96	7.500000
20.00	0.19	11	0.2	0.38	30	10.2	7
7.00	0.17	0.999	1.8	0.6	13	7.83	7
17.00	0.15	4.2	4.5	0.67	23	0.69	6.8
11.00	0.06	0.999	1.7	0.08	10	10.4	7.2
21.00	0.049999	4.6	5	0.57	26	10.7	6.8
3.00	0.22	0.999	1.7	0.0799	11	14.1	6.7
39.00	0.26	1.6	8.8	0.42	49	18.7	6.4
24.00	0.21	1	3.9	0.08	30	11.6	6.4
23.00	0.27	1.1	5	1.08	34	11.5	7.8
20.00	0.14	1	4.4	0.21	29	6.78	6.7
21.00	0.14	1	4.4	0.41	28	10.9	6.5
20.00	0.049999	0.999	2.1	0.21	46	8.24	6
15.00	0.18	0.999	2.6	0.37	13	7.15	6.3
10.00	0.23	0.999	2.5	0.08	15	2.84	6.3
10.00	0.2	0.999	1.8	0.08	15	6.56	6.2
10.00	0.21	0.999	2	0.08	14	6.26	6.2
10.00	0.28	0.999	1.6	0.51	15	6.38	6.2
10.00	0.69	0.999	1.6	0.0799	14	4.10	6.2
12.00	0.1	0.999	2.5	0.0799	18	5.87	6.1

10.00	0.08	0.099	2.2	0.0499	17	5.01	5.9
16.00	0.17	2.8	1.7	0.19	18	6.24	6.1
13.00	0.14	1.5	1.8	0.19	15	6.37	6
14.00	0.14	2.8	2.3	0.23	16	6.66	5.9
13.00	0.13	1	2.2	0.0799	19	7.01	5.9
9.00	0.13	1.3	2.4	0.19	12	9.19	5.9
12.00	0.23	1.4	3.6	0.2	19	9.53	5.8
12.00	0.17	1.4	3.2	0.23	17	9	5.8
26.00	0.28	5.7	4.6	0.37	41	17.7	5.9
11.00	0.15	1.3	2	0.32	15	8.15	6
12.00	0.17	2.3	2.9	0.32	16	8.09	5.9
20.00	0.1	0.999	4.4	0.13	22	6.48	7.6
15.00	0.1	0.999	3	0.1	22	5.56	7.5
15.00	0.08	1.9	3.2	0.09	17	8.52	7.5
14.00	0.09	1.6	3.5	0.0799	17	6.68	7.2
15.00	0.11	1.9	5.4	0.14	13	6.57	6.2
16.00	0.29	7	3.1	0.42	24	29.8	6.2
12.00	0.1	1.8	3.2	0.12	18	12.5	7.4
10.00	0.29	2.2	2.7	0.17	14	32	7.2
8.00	0.15	1.6	2	0.14	13	14.9	7.2
44.00	0.25	1.7	0.1	0.54	48	9.95	6.8
43.00	0.2	4.8	1.1	0.22	50	13.5	6.9
19.00	0.2	4	6	0.12	23	15.2	7.1
36.00	0.28	2.8	7.8	0.25	40	25.5	7
20.00	0.24	1.2	5.7	0.17	31	10.6	7.1
39.00	0.18	4.2	1.2	0.27	45	14.1	6.8
24.00	0.27	1.8	5.4	0.36	38	15.7	6.9
15.00	0.1	1.1	3.4	0.08	20	7.05	7
30.00	0.25	2	6.3	1.16	29	14.3	6.7
49.00	0.53	5.9	15	1.17	60	28.4	6.7
16.00	0.21	1.7	4.3	0.3	23	12.2	7.6
15.00	0.22	1.9	4	0.27	21	9.98	7.6
30.00	0.13	1.6	3.2	0.19	18	5.34	8.4



Description (GRUA)	Area (km <sup>2</sup> )	Recharge (Mm <sup>3</sup> /a)	GW to baseflow (Mm <sup>3</sup> /a)	BHN (Mm <sup>3</sup> /a)	Reserve (Mm <sup>3</sup> /a)	Reserve as a % of Recharge	Gw use (Mm <sup>3</sup> /a)	Stress Index (SI)	Allocable GW (Mm <sup>3</sup> /a)	Final Present Category	Managem ent Option
Upper Karoo	9400	493.39	172.38	3.77	176.15	35.7	2.28	0.57	142.27	I	III
Cedarville Flats	605	28.04	11.89	0.022	11.91	42.5	0.33	1.2	5.98	I	I
Middle Karoo	15914	927.2	250.58	14.49	265.07	28.6	7.87	0.87	329.74	I	II
Katberg	2503	110.25	10.93	3.93	14.86	13.5	1.5	1.4	55.3	I	I
Lower Karoo	5380	651.02	162.42	8.74	171.16	26.3	3.3	0.5	248.7	I	III
Msikaba	1093	191.1	62.83	0.75	63.58	33.3	0.33	0.18	60.3	I	I

May 2012

# Data

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Groundwater Reserve Determination Study:

Mzimvubu to Keiskamma Water management An

(Eastern Region)

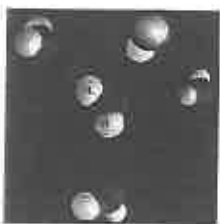
Completed for

Chief Directorate: Resource Directed Measures



Water affairs  
Department  
Water Affairs  
REPUBLIC OF SOUTH AFRICA

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157 Schoeman Street, Pretoria, 0002



GUA	QUATDRGN_L	QUATDRGN_I	QUARTERN	CATID	CMAP	MAR	CURVE	HYDROZ	TERTIARY	SECONDARY
U.Karoo	1285	1284	T11A	83	745.01	103.6	6	H	T11	T1
	1274	1280	T11B	78	746.52	110.6	6	H	T11	T1
	1289	1289	T11D	86	848.71	170.7	5	H	T11	T1
	1304	1307	T11E	96	938.56	222.3	5	H	T11	T1
	1041	1044	T31A	7	907.43	170.1	6	G	T31	T3
	1057	1055	T31C	9	830.38	128.3	6	G	T31	T3
	1063	1063	T31E	11	755.63	94.0	6	G	T31	T3
	1069	1070	T33A	12	757.25	100.7	6	G	T33	T3
	1078	1076	T33B	351	800.52	113.5	6	G	T33	T3
	1119	1118	T33C	353	767.68	98.5	6	G	T33	T3
	1101	1104	T33D	352	736.47	91.5	6	G	T33	T3
	1160	1160	T34A	36	904.80	208.5	5	C	T34	T3
	1151	1147	T34B	32	859.82	184.1	5	C	T34	T3
	1126	1127	T34C	25	807.29	156.4	5	C	T34	T3
	1166	1168	T34D	37	850.31	188.0	5	C	T34	T3
	1188	1185	T34E	45	900.80	206.2	5	C	T34	T3
	1193	1191	T34F	48	874.80	201.5	5	C	T34	T3
	1187	1188	T34G	44	894.49	191.9	5	C	T34	T3
	1205	1202	T35A	53	911.98	230.5	5	C	T35	T3
	1219	1219	T35B	56	914.56	233.1	5	C	T35	T3
	1241	1240	T35C	62	916.01	288.6	5	C	T35	T3
	1220	1223	T35D	57	818.10	186.6	5	C	T35	T3
	1250	1251	T35F	67	859.53	199.7	5	C	T35	T3
	1251	1253	T35G	68	759.17	148.9	5	C	T35	T3
	1258	1257	T35H	69	845.07	201.2	5	C	T35	T3
Cedarville	1100	1105	T31F	18	713.46	75.0	6	G	T31	T3
	1330	1333	T11C	113	856.25	172.4	5	H	T11	T1
	1315	1318	T11F	104	897.22	207.1	5	H	T11	T1
	1344	1345	T11G	120	746.71	125.7	5	H	T11	T1
	1328	1328	T12A	112	845.12	147.4	6	H	T12	T1
	1353	1355	T12B	125	739.67	105.4	6	H	T12	T1
	1361	1362	T12C	131	741.66	100.3	6	H	T12	T1
	1387	1391	T12D	148	724.14	98.5	6	H	T12	T1
	1371	1373	T12F	138	745.72	117.6	5	H	T12	T1

M.Karoo

1421	1423	T13D	168	889.12	127.3	7	M	T13	T1
1444	1455	T13E	184	941.61	166.0	7	M	T13	T1
1305	1311	T20A	97	939.98	268.0	5	C	T20	T2
1301	1299	T20B	93	843.82	219.9	5	C	T20	T2
1339	1343	T20E	117	829.09	98.5	7	M	T20	T2
1379	1388	T20F	143	763.78	74.5	7	M	T20	T2
1050	1049	T31B	8	832.64	129.9	6	G	T31	T3
1079	1077	T31D	15	735.90	85.8	6	G	T31	T3
1128	1136	T31G	26	800.57	119.2	6	G	T31	T3
1123	1130	T31H	24	808.03	122.7	6	G	T31	T3
1142	1145	T31J	30	806.92	97.5	7	G	T31	T3
1071	1074	T32A	13	804.34	90.3	7	G	T32	T3
1114	1115	T32B	21	814.17	103.1	7	G	T32	T3
1133	1140	T32C	27	781.02	97.4	7	G	T32	T3
1121	1129	T32D	23	788.69	92.2	7	G	T32	T3
1170	1175	T32E	39	844.07	119.9	7	G	T32	T3
1202	1207	T32F	51	923.90	160.9	7	G	T32	T3
1189	1195	T32G	46	861.83	128.6	7	G	T32	T3
1233	1238	T32H	59	891.73	143.7	7	G	T32	T3
1140	1143	T33E	29	748.42	91.4	6	G	T33	T3
1150	1150	T33F	31	828.94	127.5	6	G	T33	T3
1181	1182	T33G	41	835.47	139.5	6	G	T33	T3
1206	1212	T33H	54	780.30	88.5	7	G	T33	T3
1234	1237	T33J	60	730.05	76.5	7	G	T33	T3
1260	1265	T33K	70	856.30	131.9	7	G	T33	T3
1201	1203	T34H	50	863.11	185.4	5	C	T34	T3
1235	1236	T34J	61	770.80	88.9	7	G	T34	T3
1248	1249	T34K	65	714.98	74.2	7	G	T34	T3
1228	1228	T35E	58	918.35	244.8	5	C	T35	T3
1263	1264	T35J	72	923.93	258.0	5	C	T35	T3
1243	1244	T35K	63	783.00	177.8	5	C	T35	T3
1265	1273	T35L	73	763.54	84.7	7	G	T35	T3
1283	1287	T35M	82	860.74	137.6	7	G	T35	T3
1309	1316	T70A	99	860.82	114.3	7	M	T70	T7
1326	1335	T70E	111	827.85	100.5	7	M	T70	T7
1417	1418	T80C	164	793.90	99.7	7	M	T80	T8

Katberg

1317	1323	T20D	105	763.78	74.5	7	M	T20	T2
1340	1344	T20C	118	685.46	137.2	5	C	T20	T2
1366	1372	T11H	133	721.08	113.2	5	H	T11	T1
1367	1374	T13A	134	747.22	145.2	5	H	T13	T1
1373	1379	T13B	139	703.99	124.3	5	H	T13	T1
1391	1396	T12G	150	683.03	96.3	5	H	T12	T1
1405	1410	T12E	156	724.86	108.1	5	H	T12	T1
1423	1425	T13C	170	725.23	134.3	5	H	T13	T1

L. Karoo

1211	1216	T60B	323	896.09	145.6	7	F	T60	T6
1238	1243	T60C	324	952.44	176.5	7	F	T60	T6
1247	1250	T60E	325	884.93	144.9	7	F	T60	T6
1285	1268	T60F	326	939.83	173.7	7	F	T60	T6
1286	1293	T36A	84	929.81	148.0	7	M	T36	T3
1291	1298	T60J	87	1100.92	266.4	7	F	T60	T6
1303	1314	T60K	95	1075.01	249.6	7	F	T60	T6
1314	1325	T36B	103	1029.17	218.0	7	M	T36	T3
1331	1341	T70B	114	973.69	182.8	7	M	T70	T7
1348	1353	T70C	121	930.94	146.5	7	M	T70	T7
1354	1363	T70D	126	1002.14	199.3	7	M	T70	T7
1359	1367	T70F	130	928.31	145.1	7	M	T70	T7
1363	1370	T70G	132	942.05	152.0	7	M	T70	T7
1397	1409	T20G	153	958.38	159.3	7	M	T20	T2
1419	1422	T80B	166	927.02	161.7	7	M	T80	T8
1422	1426	T80A	169	1002.32	202.8	7	M	T80	T8
1437	1449	T80D	179	965.03	181.8	7	M	T80	T8

Msikaba

1214	1221	T60A	55	872.57	134.0	7	F	T60	T6
1246	1252	T60D	64	1071.51	252.1	7	F	T60	T6
1262	1278	T60G	71	1116.37	282.2	7	F	T60	T6
1292	1304	T60H	88	1277.17	389.9	7	F	T60	T6

PRIMARY	FREQ	WMA	NAME	ZONE	AREA_kmq2	DSL_m	LEVEL_mbgf	S_YIELD	Q_1_s	USE_1_s
T	1413	T	T11A	T1A	329.70	5.000000	16.800000	0.003793	131.000000	0.200000
T	1414	T	T11B	T1A	414.70	5.000000	15.800000	0.003795	180.000000	0.300000
T	1416	T	T11D	T1B	342.60	5.000000	13.800000	0.003402	177.000000	2.400000
T	1417	T	T11E	T1B	232.80	5.000000	15.000000	0.003311	161.000000	1.800000
T	1440	T	T31A	T3A	221.30	5.000000	33.700000	0.002419	165.000000	0.100000
T	1442	T	T31C	T3A	290.60	5.000000	30.500000	0.002630	186.000000	7.400000
T	1444	T	T31E	T3A	508.70	5.000000	25.700000	0.002540	0.000000	2.900000
T	1457	T	T33A	T3E	671.90	5.000000	23.800000	0.003463	395.000000	8.400000
T	1458	T	T33B	T3E	601.90	5.000000	25.800000	0.003675	343.000000	4.900000
T	1459	T	T33C	T3E	366.90	5.000000	21.700000	0.003782	192.000000	3.800000
T	1460	T	T33D	T3E	461.00	5.000000	24.500000	0.003794	222.000000	8.100000
T	1467	T	T34A	T3H	241.50	5.000000	21.000000	0.003802	176.000000	3.300000
T	1468	T	T34B	T3H	246.10	5.000000	21.800000	0.003787	160.000000	2.800000
T	1469	T	T34C	T3H	281.90	5.000000	19.200000	0.003774	164.000000	2.500000
T	1470	T	T34D	T3H	341.40	5.000000	19.900000	0.003596	216.000000	5.900000
T	1471	T	T34E	T3H	268.20	5.000000	19.700000	0.003802	174.000000	0.000000
T	1472	T	T34F	T3H	237.70	5.000000	18.900000	0.003698	160.000000	0.700000
T	1473	T	T34G	T3J	358.00	5.000000	18.800000	0.002877	210.000000	1.600000
T	1477	T	T35A	T3K	475.10	5.000000	17.800000	0.003802	311.000000	3.000000
T	1478	T	T35B	T3K	395.70	5.000000	14.700000	0.003802	286.000000	0.000000
T	1479	T	T35C	T3K	306.10	5.000000	11.500000	0.003802	215.000000	0.000000
T	1480	T	T35D	T3K	347.80	5.000000	15.500000	0.003802	176.000000	1.900000
T	1482	T	T35F	T3L	358.70	5.000000	11.900000	0.003802	199.000000	0.000000
T	1483	T	T35G	T3L	574.50	5.000000	13.200000	0.003757	240.000000	1.600000
T	1484	T	T35H	T3L	519.30	5.000000	14.800000	0.002956	329.000000	8.600000
T	1445	T	T31F	T3B	604.70	5.000000	22.400000	0.002243	303.000000	10.500000
T	1415	T	T11C	T1A	385.50	5.000000	16.000000	0.002541	230.000000	6.800000
T	1418	T	T11F	T1B	275.20	5.000000	13.800000	0.002653	187.000000	4.300000
T	1419	T	T11G	T1B	290.80	5.000000	15.800000	0.002243	144.000000	4.800000
T	1421	T	T12A	T1C	278.80	5.000000	14.000000	0.002881	149.000000	1.800000
T	1422	T	T12B	T1C	229.80	5.000000	16.700000	0.002243	84.000000	4.200000
T	1423	T	T12C	T1C	283.60	5.000000	14.500000	0.002257	99.000000	6.600000
T	1424	T	T12D	T1C	320.30	5.000000	16.300000	0.002246	110.000000	5.700000
T	1426	T	T12F	T1D	346.10	5.000000	15.700000	0.002243	149.000000	6.000000

T	1431	T	T13D	T1E	357.30	5.000000	10.500000	0.002257	293.000000	5.800000
T	1432	T	T13E	T1E	167.50	5.000000	10.300000	0.002315	183.000000	2.700000
T	1433	T	T20A	T2A	480.80	5.000000	16.800000	0.002321	294.000000	3.000000
T	1434	T	T20B	T2A	405.20	5.000000	17.200000	0.002243	205.000000	5.400000
T	1437	T	T20E	T2B	349.40	5.000000	15.200000	0.002243	246.000000	11.400000
T	1438	T	T20F	T2B	443.00	5.000000	12.700000	0.002243	258.000000	10.400000
T	1441	T	T31B	T3A	284.00	5.000000	34.100000	0.002243	173.000000	0.400000
T	1443	T	T31D	T3A	352.50	5.000000	30.400000	0.002243	197.000000	0.600000
T	1446	T	T31G	T3B	208.40	5.000000	20.300000	0.002243	114.000000	0.100000
T	1447	T	T31H	T3B	616.20	5.000000	21.500000	0.002279	355.000000	13.200000
T	1448	T	T31J	T3B	506.40	5.000000	19.600000	0.002243	297.000000	6.600000
T	1449	T	T32A	T3C	347.10	5.000000	20.900000	0.002243	227.000000	0.300000
T	1450	T	T32B	T3C	306.50	5.000000	20.200000	0.002243	205.000000	0.600000
T	1451	T	T32C	T3C	372.90	5.000000	17.700000	0.002243	247.000000	0.400000
T	1452	T	T32D	T3C	350.20	5.000000	20.000000	0.002243	212.000000	0.500000
T	1453	T	T32E	T3D	382.00	5.000000	17.300000	0.002243	283.000000	7.300000
T	1454	T	T32F	T3D	296.70	5.000000	15.800000	0.002243	256.000000	6.800000
T	1455	T	T32G	T3D	437.70	5.000000	15.500000	0.002243	428.000000	9.500000
T	1456	T	T32H	T3D	452.20	5.000000	14.500000	0.002243	418.000000	8.300000
T	1461	T	T33E	T3F	267.10	5.000000	22.300000	0.003011	126.000000	4.400000
T	1462	T	T33F	T3F	437.00	5.000000	21.700000	0.002446	263.000000	7.300000
T	1463	T	T33G	T3F	502.50	5.000000	21.100000	0.002243	274.000000	11.900000
T	1464	T	T33H	T3G	516.00	5.000000	19.000000	0.002243	224.000000	13.800000
T	1465	T	T33J	T3G	456.40	5.000000	17.600000	0.002243	209.000000	8.000000
T	1466	T	T33K	T3G	169.10	5.000000	16.200000	0.002243	123.000000	3.700000
T	1474	T	T34H	T3J	590.10	5.000000	20.900000	0.002243	295.000000	9.600000
T	1475	T	T34J	T3J	296.30	5.000000	19.500000	0.002243	113.000000	6.100000
T	1476	T	T34K	T3J	332.90	5.000000	17.900000	0.002243	152.000000	4.200000
T	1481	T	T35E	T3K	491.80	5.000000	16.400000	0.002528	328.000000	7.200000
T	1485	T	T35J	T3L	188.40	5.000000	17.100000	0.002284	115.000000	3.300000
T	1486	T	T35K	T3M	624.80	5.000000	17.500000	0.002243	256.000000	12.000000
T	1487	T	T35L	T3M	340.10	5.000000	15.900000	0.002243	170.000000	5.700000
T	1488	T	T35M	T3M	304.50	5.000000	15.000000	0.002243	225.000000	3.500000
T	1529	T	T70A	T7A	314.00	5.000000	14.300000	0.002243	228.000000	5.900000
T	1533	T	T70E	T7A	228.10	5.000000	14.000000	0.002243	148.000000	2.900000
T	1538	T	T80C	T8A	314.40	5.000000	11.200000	0.002243	220.000000	6.300000

T	1436	T	T20D	T2B	387.60	5.000000	16.200000	0.002243	202.000000	7.900000
T	1435	T	T20C	T2A	319.70	5.000000	17.100000	0.002243	111.000000	6.900000
T	1420	T	T11H	T1B	216.20	5.000000	15.100000	0.002243	104.000000	3.700000
T	1428	T	T13A	T1E	287.50	5.000000	16.000000	0.002243	134.000000	5.000000
T	1429	T	T13B	T1E	285.30	5.000000	14.900000	0.002243	128.000000	5.100000
T	1427	T	T12G	T1D	276.30	5.000000	14.500000	0.002247	104.000000	7.100000
T	1425	T	T12E	T1D	412.10	5.000000	14.900000	0.002248	169.000000	8.000000
T	1430	T	T13C	T1E	318.30	5.000000	12.700000	0.002243	148.000000	3.300000
T	1520	T	T60B	T6A	527.00	5.000000	15.800000	0.002243	536.000000	10.100000
T	1521	T	T60C	T6A	362.60	5.000000	17.400000	0.001540	418.000000	5.100000
T	1523	T	T60E	T6B	197.90	5.000000	13.000000	0.002243	179.000000	2.900000
T	1524	T	T60F	T6B	463.20	5.000000	11.700000	0.001932	473.000000	9.400000
T	1489	T	T36A	T3N	462.00	5.000000	15.300000	0.002243	405.000000	5.900000
T	1527	T	T60J	T6B	293.40	5.000000	11.200000	0.001620	404.000000	7.300000
T	1528	T	T60K	T6B	242.00	5.000000	11.300000	0.001789	353.000000	5.400000
T	1490	T	T36B	T3N	264.40	5.000000	12.600000	0.001838	373.000000	3.700000
T	1530	T	T70B	T7A	276.40	5.000000	13.000000	0.002243	346.000000	4.900000
T	1531	T	T70C	T7A	197.60	5.000000	13.000000	0.002243	210.000000	3.000000
T	1532	T	T70D	T7A	332.30	5.000000	11.200000	0.002243	495.000000	8.200000
T	1534	T	T70F	T7A	264.60	5.000000	11.800000	0.002243	286.000000	6.000000
T	1535	T	T70G	T7A	268.30	5.000000	10.900000	0.002243	296.000000	8.200000
T	1439	T	T20G	T2B	212.90	5.000000	10.700000	0.002243	260.000000	4.100000
T	1537	T	T80B	T8A	233.50	5.000000	10.700000	0.002243	259.000000	5.500000
T	1536	T	T80A	T8A	212.80	5.000000	10.000000	0.002243	292.000000	5.900000
T	1539	T	T80D	T8A	280.20	5.000000	10.700000	0.002243	333.000000	7.800000
T	1519	T	T60A	T6A	545.50	5.000000	22.800000	0.001463	523.000000	5.800000
T	1522	T	T60D	T6A	413.90	5.000000	22.300000	0.001126	559.000000	3.600000
T	1525	T	T60G	T6B	359.40	5.000000	14.600000	0.001126	517.000000	4.900000
T	1526	T	T60H	T6B	321.60	5.000000	12.400000	0.001265	684.000000	1.900000

35132.90

RE_LIM_mm	RE_DEF_	RE_GRA_	MAP_mm	MAR_mm	MAE_mm	BF_DEFAULT3F_HUGHES_	BF_PITMAN_	BF_SCHULTZ
62.000000	5.100000	5.100000	745.00	103.600000	1500.000000	0.000000	0.790000	0.000000
62.000000	5.400000	5.400000	746.50	110.600000	1450.000000	0.090000	1.530000	0.090000
71.000000	5.900000	5.900000	848.70	170.700000	1400.000000	0.000000	0.710000	0.000000
78.000000	7.100000	7.100000	938.60	222.300000	1400.000000	0.770000	9.010000	0.770000
76.000000	7.000000	7.000000	907.40	170.100000	1350.000000	0.000000	0.180000	0.000000
69.000000	6.500000	6.500000	830.40	128.300000	1350.000000	0.000000	0.560000	0.000000
63.000000	6.500000	6.500000	755.60	94.000000	1350.000000	0.720000	2.520000	0.720000
67.000000	6.000000	6.000000	800.50	100.700000	1350.000000	0.690000	3.040000	0.690000
64.000000	5.700000	5.700000	767.70	113.500000	1400.000000	0.120000	3.470000	0.120000
61.000000	5.400000	5.400000	736.50	98.500000	1400.000000	0.490000	9.040000	0.490000
75.000000	7.100000	7.100000	904.80	208.500000	1400.000000	0.030000	0.580000	0.030000
72.000000	6.700000	6.700000	859.80	184.100000	1400.000000	0.000000	0.140000	0.000000
67.000000	6.300000	6.300000	807.30	156.400000	1400.000000	0.000000	2.080000	0.000000
71.000000	6.600000	6.600000	850.30	188.000000	1350.000000	0.120000	1.600000	0.120000
75.000000	6.300000	6.300000	900.80	206.200000	1400.000000	0.000000	0.240000	0.000000
73.000000	6.800000	6.800000	874.80	201.500000	1350.000000	5.010000	13.370000	5.010000
75.000000	6.400000	6.400000	894.50	191.900000	1350.000000	0.810000	4.670000	0.810000
76.000000	6.600000	6.600000	912.00	230.500000	1400.000000	0.090000	1.560000	0.090000
76.000000	7.200000	7.200000	914.60	233.100000	1400.000000	0.000000	0.000000	0.000000
76.000000	7.100000	7.100000	916.00	288.600000	1400.000000	0.180000	4.760000	0.180000
68.000000	5.700000	5.700000	818.10	186.600000	1350.000000	0.150000	1.860000	0.150000
72.000000	6.300000	6.300000	859.50	199.700000	1400.000000	5.430000	10.840000	5.430000
63.000000	5.300000	5.300000	759.20	148.900000	1400.000000	0.000000	0.000000	0.000000
70.000000	7.100000	7.100000	845.10	201.200000	1350.000000	0.030000	0.950000	0.030000
59.000000	6.500000	6.500000	713.50	75.000000	1350.000000	0.390000	2.910000	0.390000
71.000000	6.600000	6.600000	856.30	172.400000	1400.000000	5.850000	20.190000	5.850000
75.000000	7.400000	7.400000	897.20	207.100000	1350.000000	0.540000	3.820000	0.540000
62.000000	6.400000	6.400000	746.70	125.700000	1350.000000	0.000000	0.000000	0.000000
70.000000	6.200000	6.200000	845.10	147.400000	1500.000000	1.530000	5.700000	1.530000
62.000000	4.800000	4.800000	739.70	105.400000	1450.000000	3.590000	11.240000	3.590000
62.000000	4.700000	4.700000	741.70	100.300000	1500.000000	0.030000	0.480000	0.030000
60.000000	4.700000	4.700000	724.10	98.500000	1450.000000	0.270000	2.240000	0.270000
62.000000	5.800000	5.800000	745.70	117.600000	1400.000000	0.000000	0.070000	0.000000

74.000000	9.100000	9.100000	889.10	127.300000	1250.000000	0.600000	5.570000	0.600000	2.120000
78.000000	11.300000	11.300000	941.60	166.000000	1200.000000	0.000000	0.060000	0.000000	0.000000
78.000000	6.900000	6.900000	940.00	268.000000	1300.000000	0.000000	0.300000	0.000000	0.000000
70.000000	6.200000	6.200000	843.80	219.900000	1250.000000	0.000000	0.380000	0.000000	0.000000
69.000000	8.600000	8.600000	829.10	98.500000	1200.000000	0.090000	1.240000	0.090000	0.000000
64.000000	7.800000	7.800000	763.80	74.500000	1200.000000	9.730000	28.610000	9.730000	0.000000
69.000000	6.200000	6.200000	832.60	129.900000	1350.000000	6.920000	19.980000	6.920000	15.520000
61.000000	6.400000	6.400000	735.90	85.800000	1350.000000	0.000000	0.080000	0.000000	11.840000
67.000000	6.600000	6.600000	800.60	119.200000	1300.000000	0.030000	1.700000	0.030000	0.000000
67.000000	6.800000	6.800000	808.00	122.700000	1300.000000	0.000000	0.190000	0.000000	0.000000
67.000000	6.900000	6.900000	806.90	97.500000	1300.000000	0.000000	0.000000	0.000000	0.000000
67.000000	7.300000	7.300000	804.30	90.300000	1300.000000	0.450000	1.760000	0.450000	0.860000
68.000000	7.400000	7.400000	814.20	103.100000	1250.000000	0.000000	0.000000	0.000000	0.000000
65.000000	7.600000	7.600000	781.00	97.400000	1200.000000	0.630000	2.770000	0.630000	1.230000
66.000000	6.900000	6.900000	788.70	92.200000	1250.000000	0.000000	0.160000	0.000000	0.000000
70.000000	8.500000	8.500000	844.10	119.900000	1200.000000	0.000000	0.960000	0.000000	0.000000
77.000000	9.200000	9.200000	923.90	160.900000	1200.000000	5.740000	14.260000	5.740000	8.760000
72.000000	11.200000	11.200000	861.80	128.600000	1200.000000	1.080000	19.390000	1.080000	8.640000
74.000000	10.100000	10.100000	891.70	143.700000	1200.000000	0.000000	0.000000	0.000000	0.000000
62.000000	5.700000	5.700000	748.40	91.400000	1350.000000	7.770000	22.590000	7.770000	13.340000
69.000000	6.600000	6.600000	828.90	127.500000	1350.000000	0.000000	0.000000	0.000000	0.000000
70.000000	6.000000	6.000000	835.50	139.500000	1300.000000	0.630000	4.410000	0.630000	1.700000
65.000000	6.000000	6.000000	780.30	88.500000	1250.000000	1.380000	6.990000	1.380000	2.650000
61.000000	6.600000	6.600000	730.00	76.500000	1200.000000	0.000000	0.000000	0.000000	0.000000
71.000000	8.600000	8.600000	856.30	131.900000	1200.000000	0.120000	2.260000	0.120000	0.000000
72.000000	5.600000	5.600000	863.10	185.400000	1300.000000	0.000000	0.000000	0.000000	0.000000
64.000000	4.700000	4.700000	770.80	88.900000	1250.000000	2.700000	10.600000	2.700000	4.200000
60.000000	6.200000	6.200000	715.00	74.200000	1200.000000	0.000000	0.020000	0.000000	0.000000
77.000000	6.800000	6.800000	918.30	244.800000	1350.000000	0.870000	2.970000	0.870000	1.080000
77.000000	6.300000	6.300000	923.90	258.000000	1300.000000	0.000000	0.270000	0.000000	0.000000
65.000000	5.400000	5.400000	783.00	177.800000	1300.000000	0.000000	0.000000	0.000000	0.000000
64.000000	6.900000	6.900000	763.50	84.700000	1250.000000	0.720000	2.610000	0.720000	0.890000
72.000000	8.800000	8.800000	860.70	137.600000	1200.000000	0.000000	0.100000	0.000000	0.000000
72.000000	9.100000	9.100000	860.80	114.300000	1200.000000	0.000000	0.000000	0.000000	0.000000
69.000000	8.500000	8.500000	827.80	100.500000	1200.000000	7.950000	13.510000	7.950000	9.850000
66.000000	8.600000	8.600000	793.90	99.700000	1200.000000	0.000000	0.000000	0.000000	0.000000

64.000000	6.900000	6.900000	763.80	74.500000	1200.000000	0.000000	0.150000	0.000000	0.000000
57.000000	5.400000	5.400000	685.50	137.200000	1250.000000	0.030000	0.740000	0.030000	0.000000
60.000000	6.500000	6.500000	721.10	113.200000	1350.000000	4.260000	16.590000	4.260000	6.320000
62.000000	6.100000	6.100000	747.20	145.200000	1300.000000	0.000000	0.170000	0.000000	0.000000
59.000000	6.300000	6.300000	704.00	124.300000	1300.000000	0.120000	1.770000	0.120000	0.000000
57.000000	5.700000	5.700000	683.00	96.300000	1350.000000	1.980000	9.630000	1.980000	3.920000
60.000000	5.700000	5.700000	724.90	108.100000	1400.000000	3.770000	8.490000	3.770000	4.830000
60.000000	6.300000	6.300000	725.20	134.300000	1300.000000	0.030000	1.570000	0.030000	0.000000
75.000000	12.000000	12.000000	896.10	145.600000	1150.000000	3.840000	10.310000	3.840000	6.240000
79.000000	12.700000	12.700000	952.40	176.500000	1150.000000	0.030000	0.440000	0.030000	0.000000
74.000000	11.600000	11.600000	884.90	144.900000	1150.000000	0.000000	0.920000	0.000000	0.000000
78.000000	12.700000	12.700000	939.80	173.700000	1150.000000	0.820000	14.440000	0.820000	6.550000
77.000000	10.400000	10.400000	929.80	148.000000	1200.000000	0.000000	0.050000	0.000000	0.000000
92.000000	14.900000	14.900000	1100.90	266.400000	1150.000000	4.730000	13.470000	4.730000	8.360000
90.000000	16.000000	16.000000	1075.00	249.600000	1150.000000	0.480000	5.710000	0.480000	2.830000
86.000000	14.800000	14.800000	1029.20	218.000000	1150.000000	0.030000	0.580000	0.030000	0.000000
81.000000	13.500000	13.500000	973.70	182.800000	1150.000000	10.550000	26.320000	10.550000	18.770000
78.000000	12.000000	12.000000	930.90	146.500000	1200.000000	0.000000	0.000000	0.000000	0.000000
84.000000	15.400000	15.400000	1002.10	199.300000	1150.000000	0.810000	3.370000	0.810000	1.320000
77.000000	12.000000	12.000000	928.30	145.100000	1200.000000	0.570000	1.990000	0.570000	0.700000
79.000000	12.600000	12.600000	942.00	152.000000	1200.000000	0.480000	5.770000	0.480000	2.600000
80.000000	12.800000	12.800000	958.40	159.300000	1200.000000	0.000000	0.490000	0.000000	0.000000
77.000000	11.700000	11.700000	927.00	161.700000	1200.000000	0.000000	0.060000	0.000000	0.000000
84.000000	13.400000	13.400000	1002.30	202.800000	1200.000000	0.870000	3.300000	0.870000	1.320000
80.000000	12.100000	12.100000	965.00	181.800000	1200.000000	0.030000	0.750000	0.030000	0.000000
73.000000	11.700000	11.700000	872.60	134.000000	1150.000000	1.680000	4.940000	1.680000	2.700000
89.000000	13.200000	13.200000	1071.50	252.100000	1150.000000	0.000000	0.000000	0.000000	0.000000
93.000000	15.100000	15.100000	1116.40	282.200000	1150.000000	0.000000	0.000000	0.000000	0.000000
106.000000	17.500000	17.500000	1277.20	389.900000	1150.000000	0.000000	0.100000	0.000000	0.000000

84252.50  
851.04  
17.02  
597.26

BF_VTONDER	NOFLOW	ET_EXT_m	ET_RIP	RD_POP	RD_BHN_LPD	RD_PSC	CAL_BHN
0.000000	0.000000	4.000000	5.300000	6327.000000	25	B	57733.875000
0.300000	0.000000	4.000000	2.900000	0.000000	25	B	0.000000
0.000000	0.000000	4.000000	4.400000	6441.000000	25	B	58774.125000
3.220000	0.000000	4.000000	3.200000	6645.000000	25	B	60635.625000
0.000000	0.000000	4.000000	2.300000	493.000000	25	A	4498.625000
0.000000	0.000000	4.000000	5.000000	13110.000000	25	A	119628.750000
1.080000	0.000000	4.000000	4.200000	12815.000000	25	A	116936.875000
1.280000	0.000000	4.000000	3.800000	56453.000000	25	B	515133.625000
0.640000	0.000000	4.000000	4.200000	30627.000000	25	B	279471.375000
3.040000	0.000000	4.000000	2.900000	17759.000000	25	B	162050.875000
0.000000	0.000000	4.000000	3.600000	33472.000000	25	E	305432.000000
0.000000	0.000000	4.000000	5.900000	8720.000000	25	B	79570.000000
0.000000	0.000000	4.000000	5.900000	6940.000000	25	B	63327.500000
0.330000	0.000000	4.000000	4.900000	9860.000000	25	B	89972.500000
0.000000	0.000000	4.000000	5.000000	21115.000000	25	B	192674.375000
0.000000	0.000000	4.000000	4.200000	0.000000	25	B	0.000000
7.470000	0.000000	4.000000	3.800000	5627.000000	25	B	51346.375000
1.760000	0.000000	4.000000	4.900000	14867.000000	25	B	135661.375000
0.310000	0.000000	4.000000	4.500000	10162.000000	25	B	92728.250000
0.000000	0.000000	4.000000	4.100000	0.000000	25	B	0.000000
0.880000	0.000000	4.000000	5.900000	2934.000000	25	B	26772.750000
0.390000	0.000000	4.000000	4.300000	8329.000000	25	B	76002.125000
7.300000	0.000000	4.000000	6.200000	1271.000000	25	B	11597.875000
0.000000	0.000000	4.000000	6.200000	6074.000000	25	B	55425.250000
0.170000	0.000000	4.000000	4.000000	27442.000000	25	B	250408.250000
1.030000	0.000000	4.000000	2.600000	2188.000000	25	A	19965.500000
9.900000	0.000000	4.000000	3.800000	24019.000000	25	B	219173.375000
1.400000	0.000000	4.000000	4.300000	16508.000000	25	C	150635.500000
0.000000	0.000000	4.000000	4.100000	25944.000000	25	C	236739.000000
2.460000	0.000000	4.000000	4.500000	7895.000000	25	C	72041.875000
5.720000	0.000000	4.000000	2.500000	19146.000000	25	C	174707.250000
0.000000	0.000000	4.000000	3.500000	17372.000000	25	C	158519.500000
0.850000	0.000000	4.000000	4.000000	18747.000000	25	C	171066.375000
0.000000	0.000000	4.000000	3.600000	24010.000000	25	C	219091.250000

0.000503

1.930000	0.000000	4.000000	5.700000	27770.000000	25	C	253401.250000
0.000000	0.000000	4.000000	5.300000	8821.000000	25	C	80491.625000
0.000000	0.000000	4.000000	5.900000	21266.000000	25	B	194052.250000
0.250000	0.000000	4.000000	3.700000	35555.000000	25	B	324439.375000
14.810000	0.000000	4.000000	4.900000	40699.000000	25	D	371378.375000
10.730000	0.000000	4.000000	6.100000	58099.000000	25	B	530153.375000
0.000000	0.000000	4.000000	3.200000	2903.000000	25	A	26489.875000
0.000000	0.000000	4.000000	3.900000	3587.000000	25	A	32731.375000
0.000000	0.000000	4.000000	4.400000	262.000000	25	A	2390.750000
0.000000	0.000000	4.000000	5.600000	29073.000000	25	A	265291.125000
0.000000	0.000000	4.000000	4.000000	21943.000000	25	A	200229.875000
0.800000	0.000000	4.000000	2.900000	2246.000000	25	A	20494.750000
0.000000	0.000000	4.000000	4.400000	4658.000000	25	A	42504.250000
1.190000	0.000000	4.000000	4.600000	39324.000000	25	A	358831.500000
0.000000	0.000000	4.000000	3.800000	3405.000000	25	A	31070.625000
0.000000	0.000000	4.000000	3.100000	32609.000000	25	B	297557.125000
8.170000	0.000000	4.000000	3.200000	23029.000000	25	B	210139.625000
6.650000	0.000000	4.000000	4.300000	42683.000000	25	B	389482.375000
0.000000	0.000000	4.000000	2.600000	36169.000000	25	B	330042.125000
12.090000	0.000000	4.000000	3.500000	14955.000000	25	B	136464.375000
0.000000	0.000000	4.000000	4.000000	21162.000000	25	B	193103.250000
1.610000	0.000000	4.000000	3.200000	29938.000000	25	B	273184.250000
2.740000	0.000000	4.000000	4.300000	58784.000000	25	B	536404.000000
0.000000	0.000000	4.000000	3.800000	38276.000000	25	B	349268.500000
0.440000	0.000000	4.000000	2.800000	13409.000000	25	B	122357.125000
0.000000	0.000000	4.000000	5.000000	46605.000000	25	B	425270.625000
4.520000	0.000000	4.000000	3.200000	23028.000000	25	B	210130.500000
0.000000	0.000000	4.000000	4.400000	20920.000000	25	B	190895.000000
1.290000	0.000000	4.000000	3.800000	25094.000000	25	B	228982.750000
0.000000	0.000000	4.000000	3.800000	15134.000000	25	B	138097.750000
0.000000	0.000000	4.000000	4.000000	53682.000000	25	B	489848.250000
1.090000	0.000000	4.000000	4.900000	21721.000000	25	B	198204.125000
0.000000	0.000000	4.000000	4.300000	20465.000000	25	B	186743.125000
0.000000	0.000000	4.000000	5.500000	34224.000000	25	B	312294.000000
9.510000	0.000000	4.000000	5.900000	26758.000000	25	B	244166.750000
0.000000	0.000000	4.000000	7.600000	33245.000000	25	B	303360.625000

0.000000	0.000000	4.000000	4.700000	#####	25	C	980599.875000
0.000000	0.000000	4.000000	5.100000	52228.000000	25	C	476580.500000
7.000000	0.000000	4.000000	4.200000	16418.000000	25	C	149814.250000
0.000000	0.000000	4.000000	4.700000	22137.000000	25	C	202000.125000
0.360000	0.000000	4.000000	4.400000	28211.000000	25	C	257425.375000
3.900000	0.000000	4.000000	4.400000	18722.000000	25	C	170838.250000
4.910000	0.000000	4.000000	4.000000	23985.000000	25	C	218863.125000
0.000000	0.000000	4.000000	6.100000	16687.000000	25	C	152268.875000
5.720000	0.000000	4.000000	4.600000	60561.000000	25	A	552619.125000
0.090000	0.000000	4.000000	4.600000	31980.000000	25	A	291817.500000
0.000000	0.000000	4.000000	2.800000	31648.000000	25	A	288788.000000
5.000000	0.000000	4.000000	4.700000	54096.000000	25	B	493626.000000
0.000000	0.000000	4.000000	4.300000	29898.000000	25	B	272819.250000
7.390000	0.000000	4.000000	6.700000	47685.000000	25	B	435125.625000
2.140000	0.000000	4.000000	6.200000	31525.000000	25	B	287665.625000
0.000000	0.000000	4.000000	3.500000	21375.000000	25	B	195046.875000
15.920000	0.000000	4.000000	5.600000	32785.000000	25	B	299163.125000
0.000000	0.000000	4.000000	4.500000	20485.000000	25	B	186925.625000
1.410000	0.000000	4.000000	4.800000	34208.000000	25	B	312148.000000
0.850000	0.000000	4.000000	4.000000	29932.000000	25	B	273129.500000
2.070000	0.000000	4.000000	6.600000	26796.000000	25	B	244513.500000
0.000000	0.000000	4.000000	6.000000	17630.000000	25	B	160873.750000
0.000000	0.000000	4.000000	4.600000	22964.000000	25	B	209546.500000
1.430000	0.000000	4.000000	3.300000	31768.000000	25	B	289883.000000
0.000000	0.000000	4.000000	5.700000	28509.000000	25	B	260144.625000
2.570000	0.000000	4.000000	6.000000	65375.000000	25	A	596546.875000
0.000000	0.000000	4.000000	4.600000	15284.000000	25	A	139466.500000
0.000000	0.000000	4.000000	6.400000	30785.000000	25	B	280913.125000
0.000000	0.000000	4.000000	1.400000	12084.000000	25	B	110266.500000

E Q R F

CAL_BHN_Mm	NIS_BHN_Mm	USE_Mm	Recharge	Stress	Reserve_Pitman	Reserve_Schultz	Reserve_VTonder
0.057734	0.080108	0.006307	12.526951	0.000503	0.004609	0.004609	0.004609
0.000000	0.011014	0.009461	16.716972	0.000566	0.005384	0.000000	0.017946
0.058774	0.084498	0.075686	17.155113	0.004412	0.003426	0.003426	0.003426
0.060636	0.087700	0.056765	15.513932	0.003659	0.053541	0.260452	0.211464
0.004499	0.003641	0.003154	14.056533	0.000224	0.000320	0.000320	0.000320
0.119629	0.219347	0.233366	15.685426	0.014878	0.007627	0.007627	0.007627
0.116937	0.042751	0.091454	24.984292	0.003660	0.033499	0.041103	0.047908
0.515134	0.603783	0.264902	33.073942	0.008009	0.036438	0.054276	0.054276
0.279471	0.528775	0.154526	28.909257	0.005345	0.013818	0.009667	0.031805
0.162051	0.394985	0.119837	16.055140	0.007464	0.040613	0.249269	0.199441
0.305432	0.251814	0.255442	18.334431	0.013932	0.016659	0.016659	0.016659
0.079570	0.203132	0.104069	15.514153	0.006708	0.007063	0.005129	0.005129
0.063327	0.104299	0.088301	14.176984	0.006228	0.004467	0.004467	0.004467
0.089972	0.100448	0.078840	14.337406	0.005499	0.006275	0.004467	0.006275
0.192674	0.133143	0.186062	19.159300	0.009711	0.016320	0.010056	0.027280
0.000000	0.237560	0.000000	15.220457	0.000000	0.000000	0.000000	0.000000
0.051346	0.000885	0.022075	14.139917	0.001561	0.357947	0.584964	0.531923
0.135661	0.078256	0.050458	20.494784	0.002462	0.046142	0.091519	0.092495
0.092728	0.297794	0.094608	28.597219	0.003308	0.006390	0.003243	0.014083
0.000000	0.113004	0.000000	26.057320	0.000000	0.000000	0.000000	0.000000
0.026773	0.000000	0.000000	19.907520	0.000000	0.010387	0.001345	0.045549
0.076002	0.035250	0.059918	16.218505	0.003694	0.013935	0.004686	0.028733
0.011598	0.313754	0.000000	19.423067	0.000000	0.280162	0.428954	0.376439
0.055425	0.012739	0.050458	23.116501	0.002183	0.002398	0.002398	0.002398
0.250408	0.069268	0.271210	31.159091	0.008704	0.008999	0.008036	0.013492
0.019966	0.173886	0.331128	28.044474	0.011807	0.014618	0.038509	0.037439
0.219173	0.354050	0.214445	21.786841	0.009843	0.278571	0.506690	0.464463
0.150636	0.217631	0.135605	18.271299	0.007422	0.037799	0.089246	0.084867
0.236739	0.319402	0.151373	13.896983	0.010892	0.017035	0.017035	0.017035
0.072042	0.103770	0.056765	14.608061	0.003886	0.109668	0.157587	0.173332
0.174707	0.238336	0.132451	8.159187	0.016233	0.461407	0.775164	0.722463
0.158520	0.186615	0.208138	9.886268	0.021053	0.019069	0.016034	0.016034
0.171066	0.219018	0.179755	10.900674	0.016490	0.040462	0.108348	0.093670
0.219091	0.309620	0.189216	14.969033	0.012640	0.014636	0.014636	0.014636

0.253401	0.379983	0.182909	28.908464	0.006327	0.029521	0.082101	0.075528
0.080492	0.221099	0.085147	17.822134	0.004778	0.004516	0.004516	0.004516
0.194052	0.308352	0.094608	31.184688	0.003034	0.006223	0.006223	0.006223
0.324439	0.493918	0.170294	21.198281	0.008033	0.015305	0.015305	0.015305
0.371378	0.629579	0.359510	24.913128	0.014431	0.018519	0.014907	0.024942
0.530153	0.753707	0.327974	26.392345	0.012427	0.388755	0.608137	0.581235
0.026490	0.018989	0.012614	14.660421	0.000860	0.473826	0.809424	0.733709
0.032731	0.042751	0.018922	16.601904	0.001140	0.001972	0.001972	0.001972
0.002391	0.022457	0.003154	11.011773	0.000286	0.002941	0.000217	0.000217
0.265291	0.003367	0.416275	33.856493	0.012295	0.007836	0.007836	0.007836
0.200230	0.406856	0.208138	28.194377	0.007382	0.007102	0.007102	0.007102
0.020495	0.224530	0.009461	20.379595	0.000464	0.023087	0.043205	0.040261
0.042504	0.023597	0.018922	18.466870	0.001025	0.002302	0.002302	0.002302
0.358832	0.028269	0.012614	22.133852	0.000570	0.044675	0.071783	0.069976
0.031071	0.230488	0.015768	19.057989	0.000827	0.001630	0.001630	0.001630
0.297557	0.233828	0.230213	27.407927	0.008399	0.010857	0.010857	0.010857
0.210140	0.389765	0.214445	25.219144	0.008503	0.235937	0.355688	0.332293
0.389482	0.360009	0.299592	42.247504	0.007091	0.034783	0.213728	0.166625
0.330042	0.537973	0.261749	40.725901	0.006427	0.008104	0.008104	0.008104
0.136464	0.367829	0.138758	11.394165	0.012178	0.693905	1.182751	1.073046
0.193103	0.188377	0.230213	23.907134	0.009629	0.008077	0.008077	0.008077
0.273184	0.266167	0.375278	25.190325	0.014898	0.035854	0.078331	0.074758
0.536404	0.401144	0.435197	24.158088	0.018015	0.079328	0.131898	0.135623
0.349268	0.728403	0.252288	21.989352	0.011473	0.015884	0.015884	0.015884
0.122357	0.589329	0.116683	12.452828	0.009370	0.019462	0.009826	0.045159
0.425271	0.185055	0.302746	28.521657	0.010615	0.014910	0.014910	0.014910
0.210131	0.541350	0.192370	10.734238	0.017921	0.271107	0.410847	0.440658
0.190895	0.368376	0.132451	14.757457	0.008975	0.012935	0.012935	0.012935
0.228983	0.153848	0.227059	30.710156	0.007394	0.035786	0.042624	0.049462
0.138098	0.342187	0.104069	10.965954	0.009490	0.012593	0.012593	0.012593
0.489848	0.223745	0.378432	26.417794	0.014325	0.018542	0.018542	0.078542
0.198204	0.634014	0.179755	17.916978	0.010033	0.051248	0.060736	0.071899
0.186743	0.286279	0.110376	23.063317	0.004786	0.008097	0.008097	0.008097
0.312294	0.399931	0.186062	24.596499	0.007565	0.012697	0.012697	0.012697
0.244167	0.462738	0.091454	16.049800	0.005698	0.510546	0.628928	0.607744
0.303361	0.331402	0.198677	21.465786	0.009256	0.014132	0.014132	0.014132

0.980600	1.379399	0.249134	20.427373	0.012196	0.048004	0.048004	0.048004
0.476581	0.833678	0.217598	11.834335	0.018387	0.042806	0.040271	0.040271
0.149814	0.206499	0.116683	10.133618	0.011514	0.435167	0.638451	0.705554
0.202000	0.312093	0.157680	13.104020	0.012033	0.015415	0.015415	0.015415
0.257425	0.409457	0.160834	12.653626	0.012710	0.029827	0.020344	0.048794
0.170838	0.236666	0.223906	10.756635	0.020816	0.199955	0.380308	0.378449
0.218863	0.289062	0.252288	17.027684	0.014816	0.234258	0.296509	0.301207
0.152269	0.258858	0.104069	14.542363	0.007156	0.012534	0.010471	0.010471
0.552619	0.886129	0.318514	56.669364	0.005621	0.077513	0.119864	0.110688
0.291818	0.814251	0.160834	43.858210	0.003667	0.007338	0.006654	0.008706
0.288788	0.209966	0.091454	20.314118	0.004502	0.014216	0.014216	0.014216
0.493626	0.458568	0.296438	55.285051	0.005362	0.023761	0.127406	0.099369
0.272819	0.295677	0.186062	44.675030	0.004165	0.006107	0.006107	0.006107
0.435126	0.158100	0.230213	48.127605	0.004783	0.107321	0.182746	0.162591
0.287666	0.614450	0.170294	41.624000	0.004091	0.018443	0.074901	0.058324
0.195047	0.487211	0.116683	40.273831	0.002897	0.005588	0.004843	0.004843
0.299163	0.463869	0.154526	36.332642	0.004253	0.298607	0.524849	0.446407
0.186926	0.526357	0.094608	22.073501	0.004286	0.008468	0.008468	0.008468
0.312148	0.342753	0.258595	51.281666	0.005043	0.021882	0.031827	0.033582
0.273130	0.348511	0.189216	29.475382	0.006419	0.028605	0.033015	0.038104
0.244513	0.420644	0.258595	31.845064	0.008120	0.022751	0.089324	0.072680
0.160874	0.361259	0.129298	26.117550	0.004951	0.006160	0.006160	0.006160
0.209547	0.357207	0.173448	25.325176	0.006849	0.008274	0.008274	0.008274
0.289883	0.450583	0.186062	28.580785	0.006510	0.040583	0.056327	0.060176
0.260145	0.502450	0.245981	32.717553	0.007518	0.008868	0.007951	0.007951
0.596547	0.355483	0.182909	55.692386	0.003284	0.040877	0.059192	0.056858
0.139466	0.525126	0.113530	58.541188	0.001939	0.002382	0.002382	0.002382
0.280913	0.934391	0.154526	60.586358	0.002551	0.004637	0.004637	0.004637
0.110267	0.386088	0.059918	71.880816	0.000834	0.001534	0.001534	0.001534

2437.488281

SPATSIM_BF	Reserve_MLF	Reserve % recharge	Recharge-Murry	Vegler
2.854	0.234224	23.42%		21.4305
3.859	0.231502	23.15%		26.9555
5.005	0.296675	29.67%		22.269
4.422	0.290687	29.07%		15.132
9.677	0.688693	68.87%		14.3845
6.261	0.413144	41.31%		18.889
8.248	0.331839	33.18%		33.0655
6.111	0.203023	20.30%		43.6735
6.069	0.228224	22.82%		39.1235
3.238	0.226282	22.63%		23.8485
3.839	0.223122	22.31%		29.965
5.691	0.379920	37.99%		15.6975
5.173	0.372244	37.22%		15.9965
5.111	0.363486	36.35%		18.3235
7.401	0.393237	39.32%		22.191
6.244	0.425845	42.58%		17.433
5.487	0.388113	38.81%		15.4505
7.812	0.384988	38.50%		23.27
11.962	0.428706	42.87%		30.8815
10.044	0.389795	38.98%		25.7205
9.557	0.480070	48.01%		19.8965
7.242	0.448700	44.87%		22.607
8.430	0.450174	45.02%		23.3155
10.308	0.446466	44.65%		37.3425
12.341	0.398287	39.83%		33.7545
11.887	0.294816	29.48%		27.2115
5.686	0.277234	27.72%		0
4.94	0.282280	28.23%		17.3475
1.259	0.113579	11.36%		12.384
3.304	0.233280	23.33%		13.086
0.786	0.125544	12.55%		12.546
0.903	0.110215	11.02%		10.341
1.011	0.112839	11.28%		12.762
1.265	0.105192	10.52%		14.4135
				15.5745

4.171	0.157427	15.74%	16.0785
2.580	0.157170	15.72%	7.5375
15.033	0.491951	49.20%	21.636
10.747	0.530275	53.03%	18.234
1.603	0.089615	8.96%	15.723
3.398	0.157307	15.73%	19.935
6.176	0.422566	42.26%	12.78
5.275	0.320310	32.03%	15.8625
6.349	0.578604	57.86%	9.378
12.336	0.364461	36.45%	27.729
13.677	0.499527	49.95%	22.788
9.071	0.456119	45.61%	15.6195
9.108	0.494485	49.45%	13.7925
10.693	0.484383	48.44%	16.7805
6.020	0.327972	32.80%	15.759
4.472	0.171696	17.17%	17.19
4.651	0.199879	19.99%	13.3515
5.540	0.139653	13.97%	19.6965
6.317	0.168320	16.83%	20.349
2.181	0.223696	22.37%	12.0195
4.884	0.212170	21.22%	19.665
6.201	0.256732	25.67%	22.6125
4.434	0.200146	20.01%	23.22
3.482	0.191475	19.15%	20.538
2.159	0.220699	22.07%	7.6095
12.590	0.447907	44.79%	26.5545
2.606	0.293207	29.32%	13.3335
2.540	0.197078	19.71%	14.9805
13.112	0.431969	43.20%	22.131
12.438	1.165442	116.54%	8.478
2.872	0.117184	11.72%	28.116
2.872	0.195681	19.57%	15.3045
4.138	0.191832	19.18%	13.7025
6.061	0.262677	26.27%	14.13
3.873	0.270143	27.01%	10.2645
5.042	0.250324	25.03%	14.148

1.379	0.115512	11.6%	17.442
2.705	0.268843	26.9%	14.3865
0.842000	0.097874	9.8%	9.729
1.323000	0.116377	11.6%	12.9375
1.105000	0.107671	10.8%	12.8385
0.841000	0.094066	9.4%	12.4335
1.388000	0.094368	9.4%	18.5445
1.342000	0.102753	10.3%	14.3235
15.543	0.289912	29%	34.255
12.725	0.308705	31%	23.569
5.384	0.275373	28%	12.8635
14.896	0.277735	28%	30.108
11.735	0.269293	27%	30.03
14.804	0.310884	31%	19.071
11.440	0.289603	29%	15.73
10.008	0.260596	26%	17.186
8.609	0.249717	25%	17.966
4.874	0.244653	24%	12.844
11.273	0.226509	23%	21.5995
6.468	0.231261	23%	17.199
6.848	0.228250	23%	17.4395
1.540	0.072796	7%	13.8385
6.110	0.255367	26%	15.1775
6.993	0.260440	26%	13.832
8.241	0.267240	27%	18.213
14.936	0.274570	27.46%	51.8225
20.287	0.355513	35.55%	39.3205
18.451	0.319963	32.00%	34.143
24.092	0.340537	34.05%	30.552

Description (GRUA)	Area (km <sup>2</sup> )	Recharge (Mm <sup>3</sup> /a)	GW to baseflow (Mm <sup>3</sup> /a)	BHN (Mm <sup>3</sup> /a)	Reserve (Mm <sup>3</sup> /a)	Reserve as a % of Recharge	Gw use (Mm <sup>3</sup> /a)	Stress Index (SI)	Allocable GW (Mm <sup>3</sup> /a)	Final Present Category	Management Option
Upper Karoo	9400	493.39	172.38	3.77	176.15	35.7	2.28	0.57	142.27	I	III
Cedarville Flats	605	28.04	11.89	0.022	11.91	42.5	0.33	1.2	5.98	I	I
Middle Karoo	15914	927.2	250.58	14.49	265.07	28.6	7.87	0.87	329.74	I	II
Katberg	2503	110.25	10.93	3.93	14.86	13.5	1.5	1.4	55.3	I	I
Lower Karoo	5380	651.02	162.42	8.74	171.16	26.3	3.3	0.5	248.7	I	III
Msikaba	1093	191.1	62.83	0.75	63.58	33.3	0.33	0.18	60.3	I	I