WATER-USE LICENSE TECHNICAL REPORT FOR GARDEN COURT HATFIELD – HPF PROPERTIES (PTY) LTD.

October 2023

Report Number 1

BIOBLUE
ENVIRONMENTAL SUSTAINABILITY

Registration Nr: 2017/539350/07
E-mail: info@biobluenviro.com
829 Cronstedt Street, 21 Le Cottage, Moreleta Park, 0181

PEPARED FOR: **Department of Water and Sanitation**
Head Office, Pretoria
Francis Baard Street

ON BEHALF OF: **Mr. Michael Ernest Uphof**
HPF Properties (Pty) Ltd.
Nelson Mandela Square
Cnr 5th & Maude Street, 4th Floor
South Tower, Sandton, Johannesburg
2196

Document Control			
Author	Zander Liebenberg	BSc Hons. Environmental Science Pri.Sci.Nat - 117291	2024/01/23

EXECUTIVE SUMMARY

Garden Court Hatfield hotel is located on Erf 713 in Hatfield suburb. Their physical address is 1336 Pretorius Street, Pretoria, within the Gauteng Province.

The hotel comprises of 157 guest rooms, outdoor pool, fitness centre, restaurant, meeting room and open parking. The hotel offers accommodation for business and leisure purposes. The applicant proposes to utilise the water for their operations and activities within the hotel.

BioBlue Environmental Sustainability (Pty) Ltd., from here on referred to as BioBlue, was appointed by HPF Properties (Pty) Ltd., to assist with the Water-use Licence application in terms of the National Water Act, in order to supply water for the amenities at their hotel.

There are no existing lawful Water Rights on the property, thus the purpose of this document is to support HPF Properties (Pty) Ltd. with their Water-use Licence Application for Garden Court Hatfield. The proposed activities trigger the following water-uses in terms of the National Water Act 1998 (Act, No 36 of 1998):

- Section 21(a): Taking water from a groundwater resource via a borehole.

A formal Geo-Hydrological Assessment has been conducted for the proposed Groundwater abstraction and will be submitted with this application.

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Abbreviations	
a	Annum
DWA	Department of Water Affairs (old)
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EMP	Environmental Management Plan
EIS	Ecological Importance and Sensitivity
Ha	Hectares
m^3/a	Cubic metre per annum
m^3/d	Cubic metre per day
m^3/h	Cubic metre per hour
NWA	National Water Act, 1998 (Act 36 of 1998)
RQO's	Resource Quality Objectives
TDS	Total Dissolved Solids
WMA	Water Management Area
WULA	Water Use License Application

DECLARATION OF INDEPENDENCE

The independent Practitioner

I, **Zander Liebenberg** declare that I –

- act as the independent Environmental Practitioner for the Water-use License Technical Report
- this report covers the Water-use aspects only and no other scope of work was requested for this study and the information should be interpreted with caution
- do not have and will not have financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010;
- have no and will have any vested interest in the proposed activity proceeding;
- undertake to disclose, to the competent authority any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2010;
- BioBlue accepts no responsibility for the accuracy of any third-party data used in the production of this report.

Signature of Author – Zander Liebenberg Pri.Sci. Nat *(Reg.No. 117291)*

Date: 2024/01/23

1 INTRODUCTION

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2 PROJECT LOCATION

Garden Court Hatfield hotel is located on Erf 713 in Hatfield suburb. Their physical address is 1336 Pretorius Street, Pretoria, within the Gauteng Province. Site coordinates are 25°44'36.51"S, 28°14'45.28"E. The property is being utilised as a hotel which offers accommodation and other amenities for business and leisure purposes.

Garden Court Hatfield hotel is situated within an area that is characterised by office spaces, restaurants, shopping centres, embassies, government buildings, as well as the Gautrain station which is nearby. The site area falls within the City of Tshwane Metropolitan Municipality.

2.1 Owners of the Proposed Site

The property details can be found in Table 1 below.

Table 1: Property Details

Register Description	Landowner	Title Deed Number
Erf 713 in Hatfield	HPF Properties (Pty) Ltd.	T82940/2021

Figure 1: Locality Map – Garden Court Hatfield

2.2 Water Management Area and Quaternary Catchment

The study area is situated within the A23A Quaternary Catchment which is located within the Limpopo Water Management Area (WMA). Refer to table 2 below.

The upper and middle reaches of this catchment are densely settled and a significant portion of the urban as well as industrial demand is met by transfers from the Upper Vaal WMA. Based on the National Integrated Water Information System (NIWIS) (2023), the groundwater reserve within quaternary catchment A23A a surplus is available.

When the nine new Water Management Areas were announced on the 16th of September 2016 in the General Notice 1056, the boundaries of the new Limpopo Water Management Area where shifted. It is a large and complex WMA system which includes the following catchment areas: Marico, Limpopo, Luvuvhu and Crocodile West. The major rivers that are within the WMA include: Limpopo, Lephalala, Mokolo, Matlabas, Mogalakwena, Sand, Nzhelele, Luvuvhu and Mutale. The major rivers forming part of the A23 catchment is the Apies and Pienaars Rivers.

There are no surface water resources close to the site.

Table 2: Quaternary Catchment – Basic Information (WR2012)

Quaternary Catchment	Catchment Area		MAR	Cmap
	Gross (km^2)			
A23A	682.384		42.2	697.64

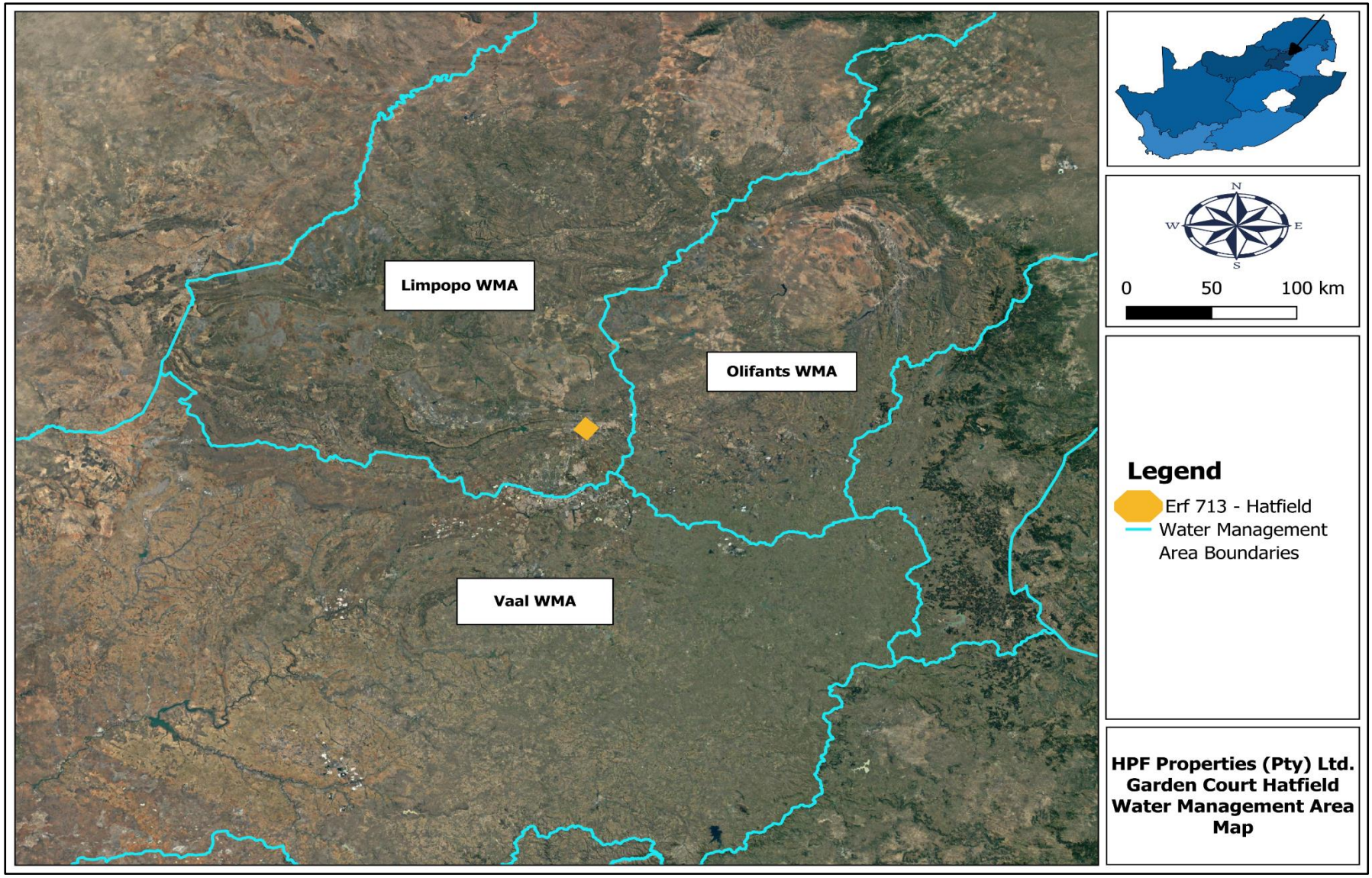


Figure 2: Water Management Area Map

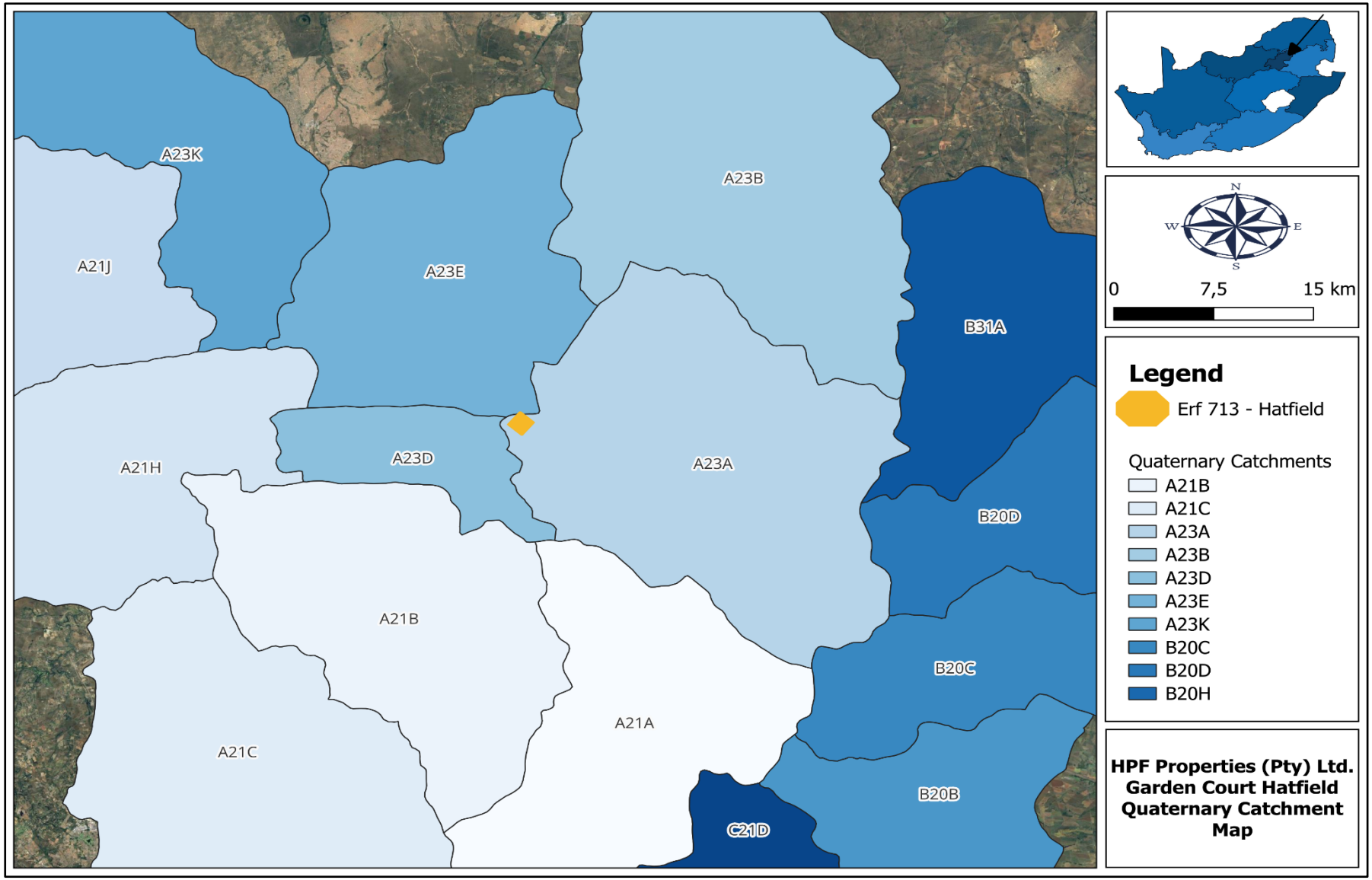


Figure 3: Quaternary Catchment Map

2.3 Municipality

The CDM website as well as municipality.co.za has been used for the research of this section. The Integrated Development Plan for City of Tshwane Metropolitan Municipality and the StatsSA website have also been used. It provides a summary of the situation in the study area and surrounding regions.

Hatfield, Pretoria falls within the City of Tshwane Metropolitan Municipality and is classified as a Category A municipality. Its land area comprises of 6,368 km^2, making it the largest Metropolitan Municipality in South Africa.

2.3.1 Economic Analysis

According to StatsSA, the City of Tshwane Metropolitan Municipality has a vibrant and diverse economy, which enables it to contribute at least 26,8% of the Gauteng Province's GDP and 9,4% of the GDP of the national economy.

Tshwane is the administrative capital of South Africa and is home to the Union Buildings with government-related business playing an important role in the local economy.

The municipality's main economic sectors are community services and government, followed by finance and manufacturing. Metal products, machinery and household products are the largest sub-sectors within manufacturing. The City has a well-established manufacturing sector, with the automotive industry representing the most significant component.

According to Census 2011 the total population is 2 921 488. Female-headed households stand at 35,8%, and the overall number of men and women in Tshwane are equivalent, however, men have more job opportunities than women. The unemployment rate is 24,2% while the youth unemployment rate stands at 32,6%. Approximately 64 095 individuals are listed as discouraged work seekers.

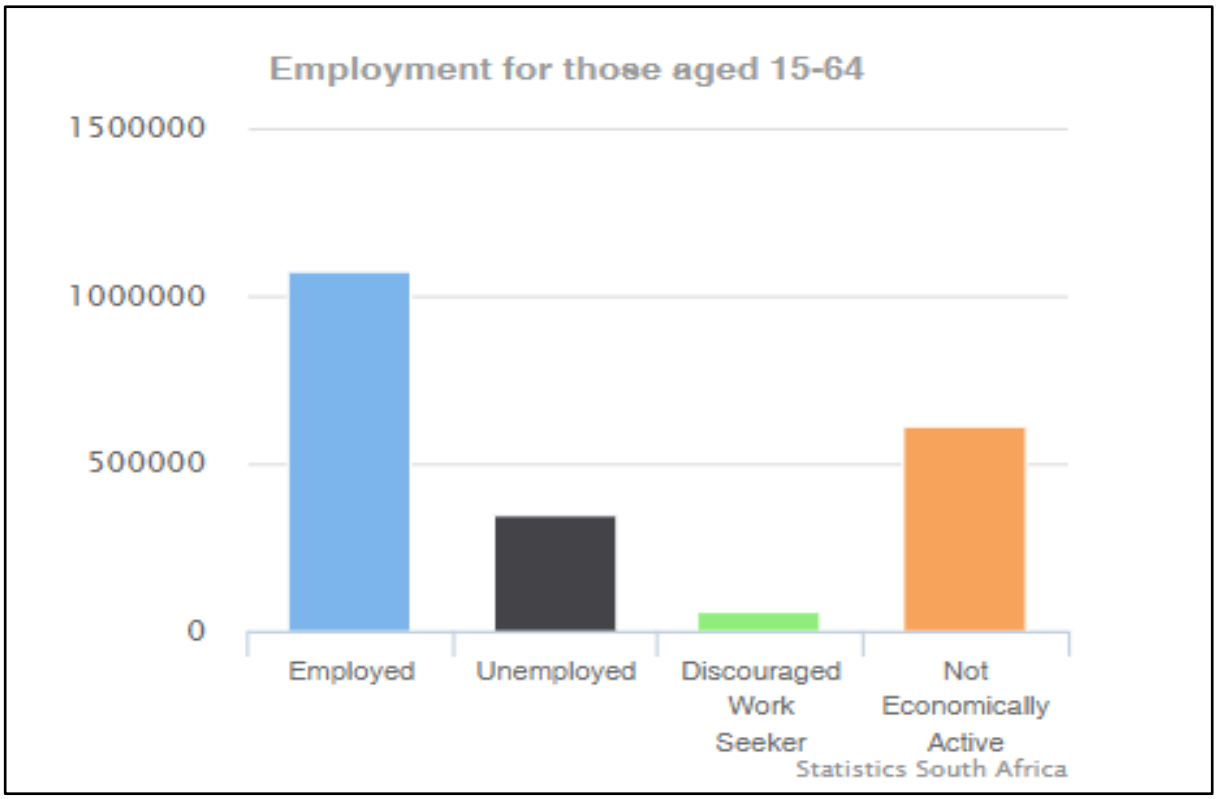


Figure 4: Employment Figures (StatsSA: Census 2011)

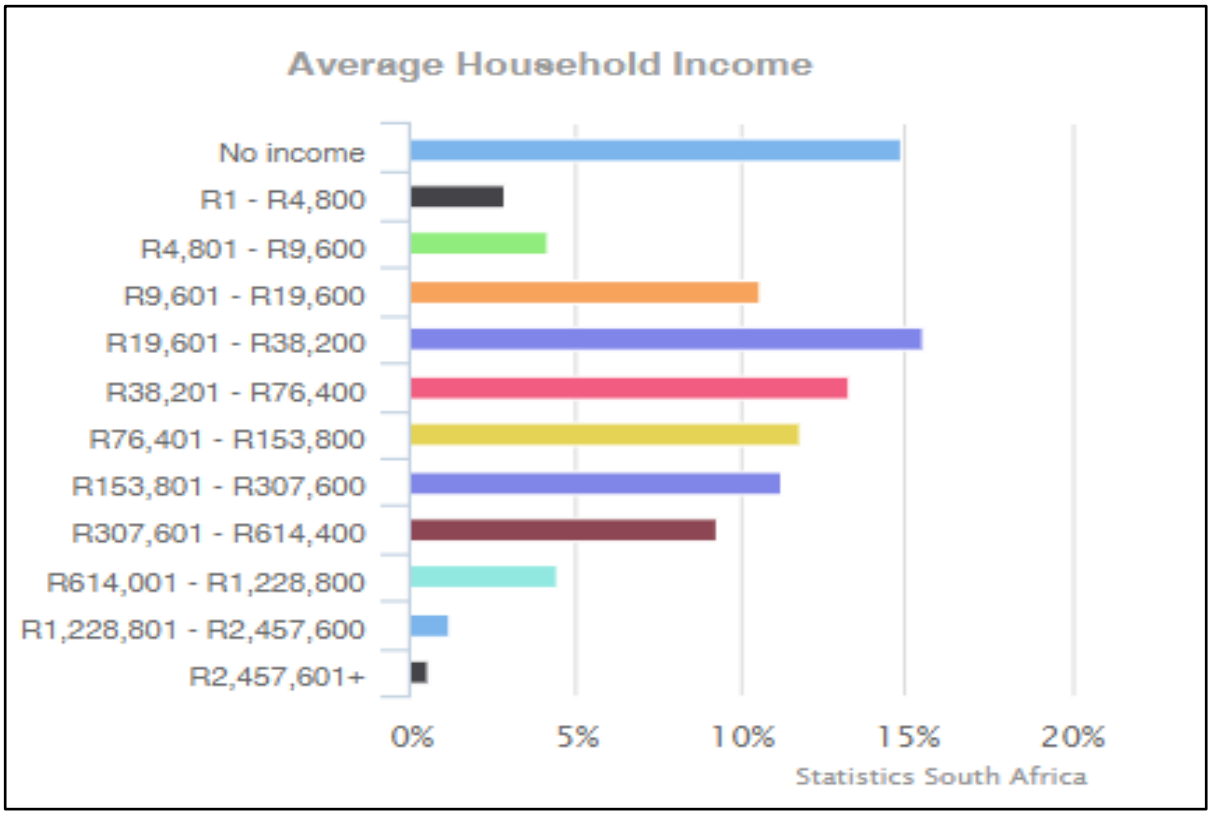


Figure 5: Average Household Income within the Municipality (StatsSA: Census 2011)

Figure 4 above indicates that 14,9% of the population within the municipality receives no income and this figure along with the unemployment rate is an indication of the need to create more job opportunities and establish job security within the Municipality.

2.3.2 Population and Age Group

Figure 5 below shows the different population groups of the City of Tshwane Metropolitan Municipality. The majority of the population is Black Africans representing 2,2 million people (75,4%) followed by the White population representing 600 000 people (20,1%). Other ethnic groups that make up the population are Coloured individuals (2%) and Indian/Asian individuals (1,8%). It is essential for all the residents in the area to be a part of the developmental Agenda of the Municipality no matter what ethnicity they belong to.

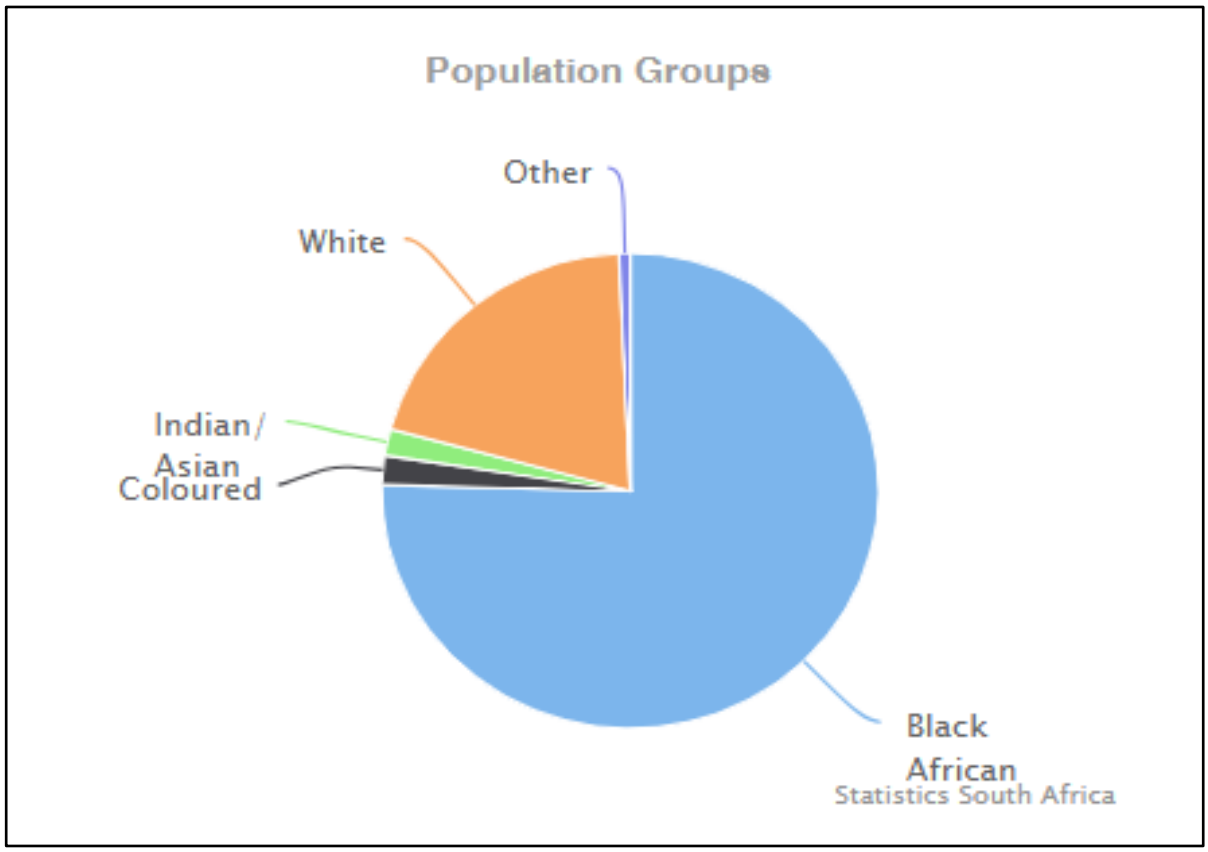


Figure 6: Population Groups within the Municipality (Census 2011)

Figure 6 below depicts the gender and age distribution in the Municipality as shown by statistics in 2011. The dominant age group in the district is the age group of 15-65 (71,8%) followed by the 0-14 age group (23,1%) and the 65+ age group (4,8%) being the smallest in the district.

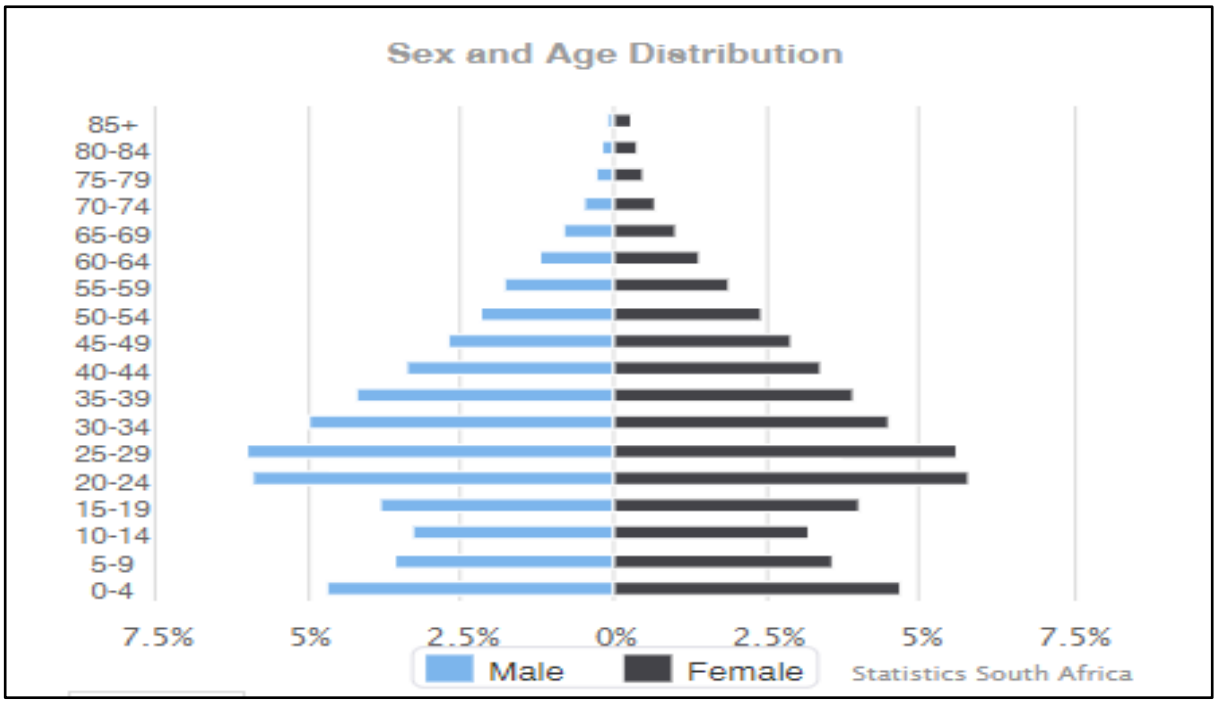


Figure 7: Gender and age groups in the Municipality in 2011

2.4 ENVIRONMENTAL INFORMATION

The climate here is considered warm and temperate. When compared with winter, the summers have much more rainfall. The mean yearly temperature recorded in Pretoria is 18.4 °C, as per the available data.

Precipitation is about 661 mm per year. Summer begins at the end of January and ends in December. The months of summer are: December, January, February, March.

In July, the precipitation level plummets to a mere 3 mm. This month holds the title for being exceptionally arid. In December, the precipitation reaches its peak, with an average of 118 mm.

The month of highest temperature is January during which the average temperature reaches up to 22.3 °C. At 12.0 °C on average, July is the coldest month of the year.

The precipitation variance between the months with the lowest and highest levels of rainfall is 115 mm. The variation in annual temperature is around 10.3 °C. The wettest month is December, while the driest is July.

As the site area falls within Pretoria for which rainfall data is available, Figure 7 will indicate the climate diagram for this area.

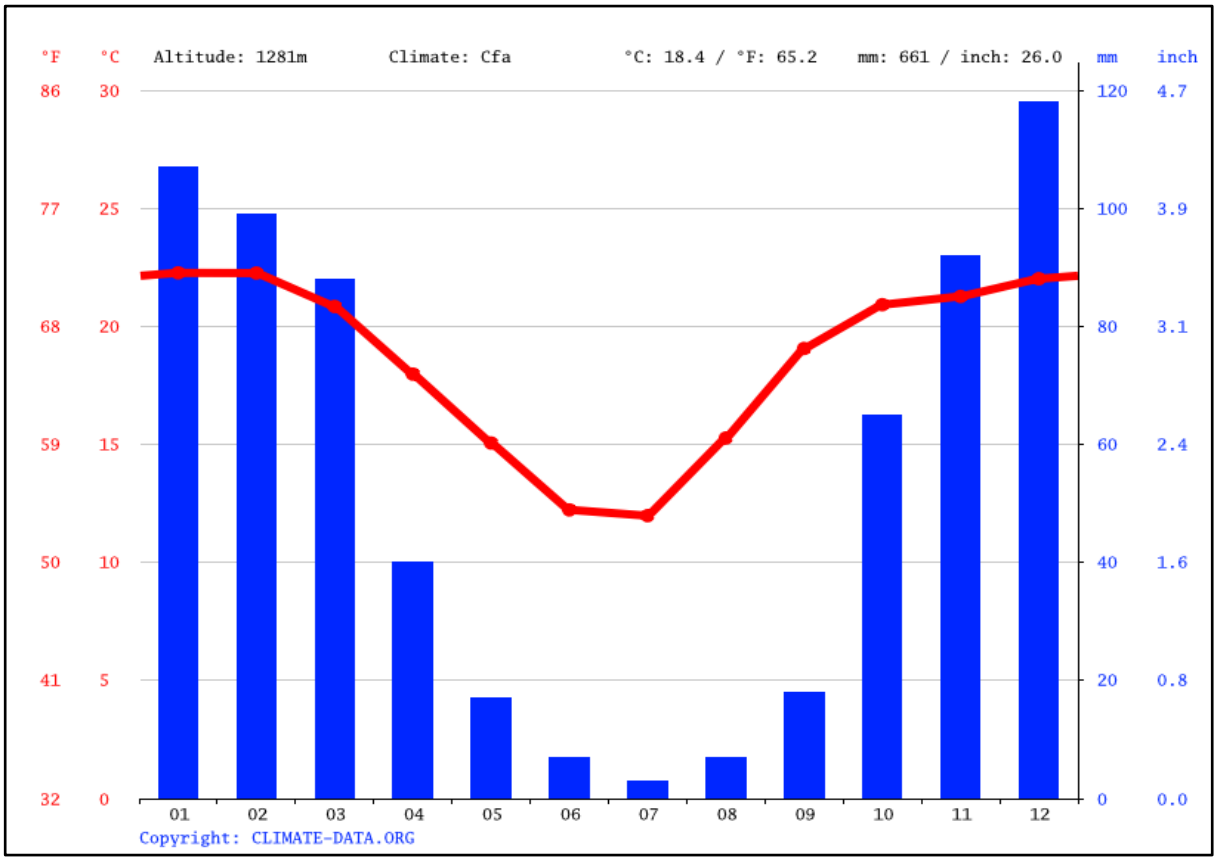


Figure 8: Climate diagram for Pretoria (Source: www.climate-data.org)

2.5 Area Classification (Sensitive and Protected Areas)

There are no sensitive or aquatic features close to the site as it is situated in the urban area of Hatfield.

3 PROJECT INFORMATION AND DESCRIPTION

3.1 Description of the Proposed Activity

The property is being utilised as a hotel which offers accommodation and other amenities for business and leisure purposes. The applicant proposes to utilise the water for irrigation of gardens and after RO treatment within the Hotel itself when there is limited Municipal supply.

3.2 Description of the Infrastructure for the Proposed Activity

Surface infrastructure includes (but is not limited to) the following:

- Borehole
- Pipelines
- Open parking area
- Swimming pool
- Accommodation rooms
- Restaurant

3.3 Description of Land Uses in the Area

Garden Court Hatfield hotel is situated within an area that is characterised by office spaces, restaurants, shopping centres, embassies, government buildings, as well as the Gautrain station which is nearby.

3.4 Environmental Authorisation

No application for Environmental Authorisation has been submitted as the project does not trigger any applicable activities in terms of the National Environmental Management Act (Act No 107 of 1998) at this moment in time.

4 WATER USE AND WASTE MANAGEMENT ANALYSES

The analyses or characterisations of all the water use and waste management aspects of the activity will be described in this section. Four key areas are focused on, namely: process water, storm water, groundwater, as well as waste. Information on the operational management and the monitoring programmes and control of the operation is also analysed. A best practice assessment was done for all facilities in order to evaluate the extent implementation of the current best practices. Information on education and training, internal and external communication, and environmental awareness to ensure the efficient execution of the plan will also be discussed.

A risk assessment was conducted in order to identify; rate and rank the aspects, impacts and the risks that are associated with the activity. The risks that may have an effect on the environment and human health were also addressed during this process. The risk assessment process identified and prioritised all issues identified as posing potential significant risks to the receiving environment and to the activity.

Based upon all the above-mentioned analyses, a statement regarding all the matters requiring attention was made. In addition, the level of confidence which can be placed upon the available information was assessed.

4.1 WATER AND WASTE MANAGEMENT

4.1.1 Process Water

The primary source of water within the facilities, is received from the Municipal Bulk Line and the proposed borehole water will be used for the irrigation of gardens and after RO treatment within the hotel itself to ensure that their guests always have available water supply as in recent times the municipal supply has been under some strain.

A formal Geo-Hydrological Assessment has been conducted for the abstraction of process water from borehole and is submitted with this application.

4.1.2 Conceptual Water Balance

A conceptual water balance for the farming operations have been compiled based on the required volumes that have been calculated, which have been applied for as part of the application. The conceptual water balance for the operation is provided in the figure below

(Figure 9). It is important to note that this is a theoretical water balance that should be regularly updated with the availability of more information.

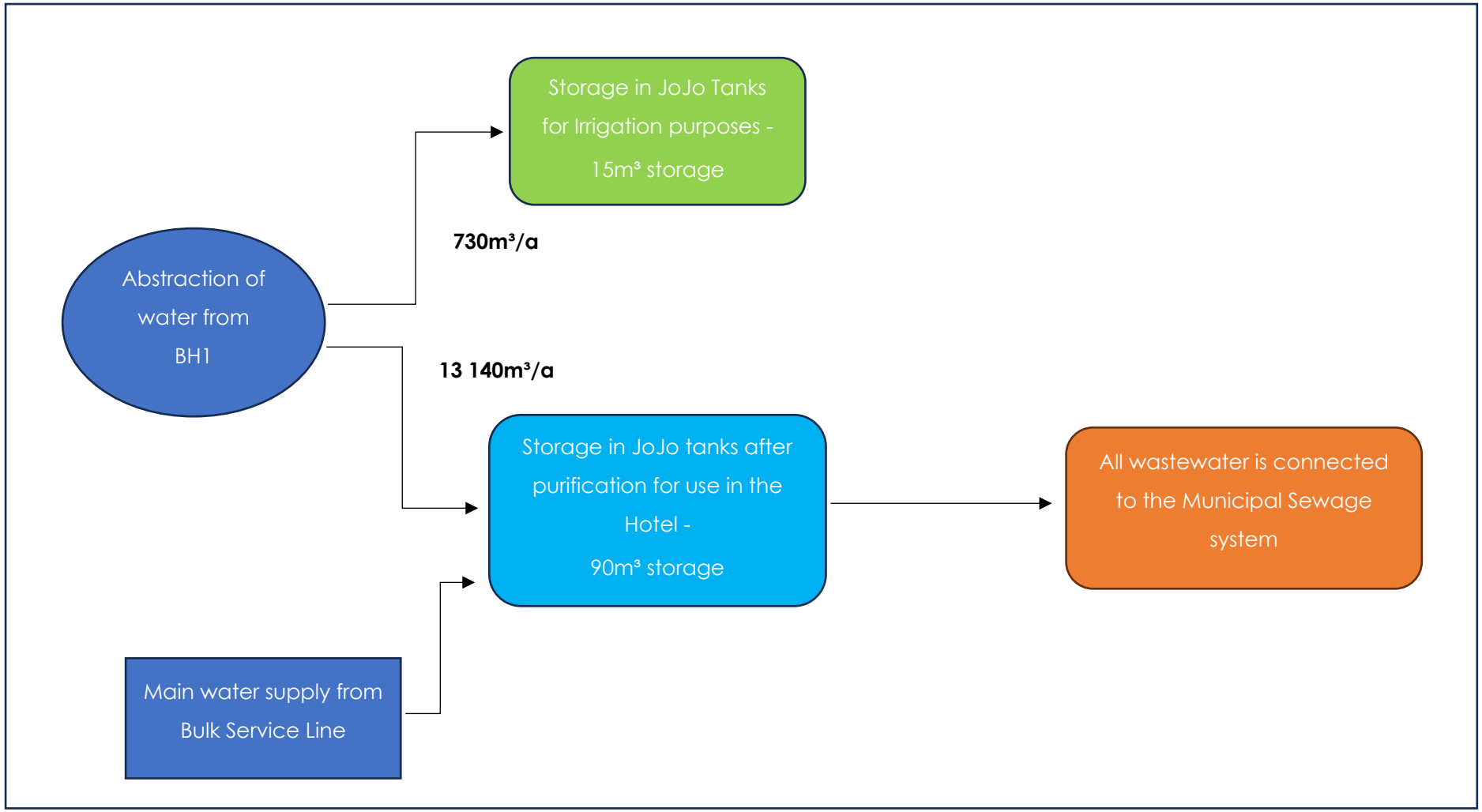


Figure 9: Conceptual Water Balance for the Garden Court Hotel

4.1.3 Groundwater

A formal Geo-hydrological study has been done and reports compiled to support the application for abstraction of water via groundwater resources. This is discussed at a later stage within this report.

4.1.4 Solid Waste

Solid waste produced during the operational phase of the activities will include inert waste and food waste. Inert waste includes paper, glass and plastic. The waste produced during the activities will be collected in various waste bins and regularly emptied into a central waste collection area. This waste is collected by the municipality as part of the municipal services in the area.

4.2 Operational Management

4.2.1 Organisation Structure

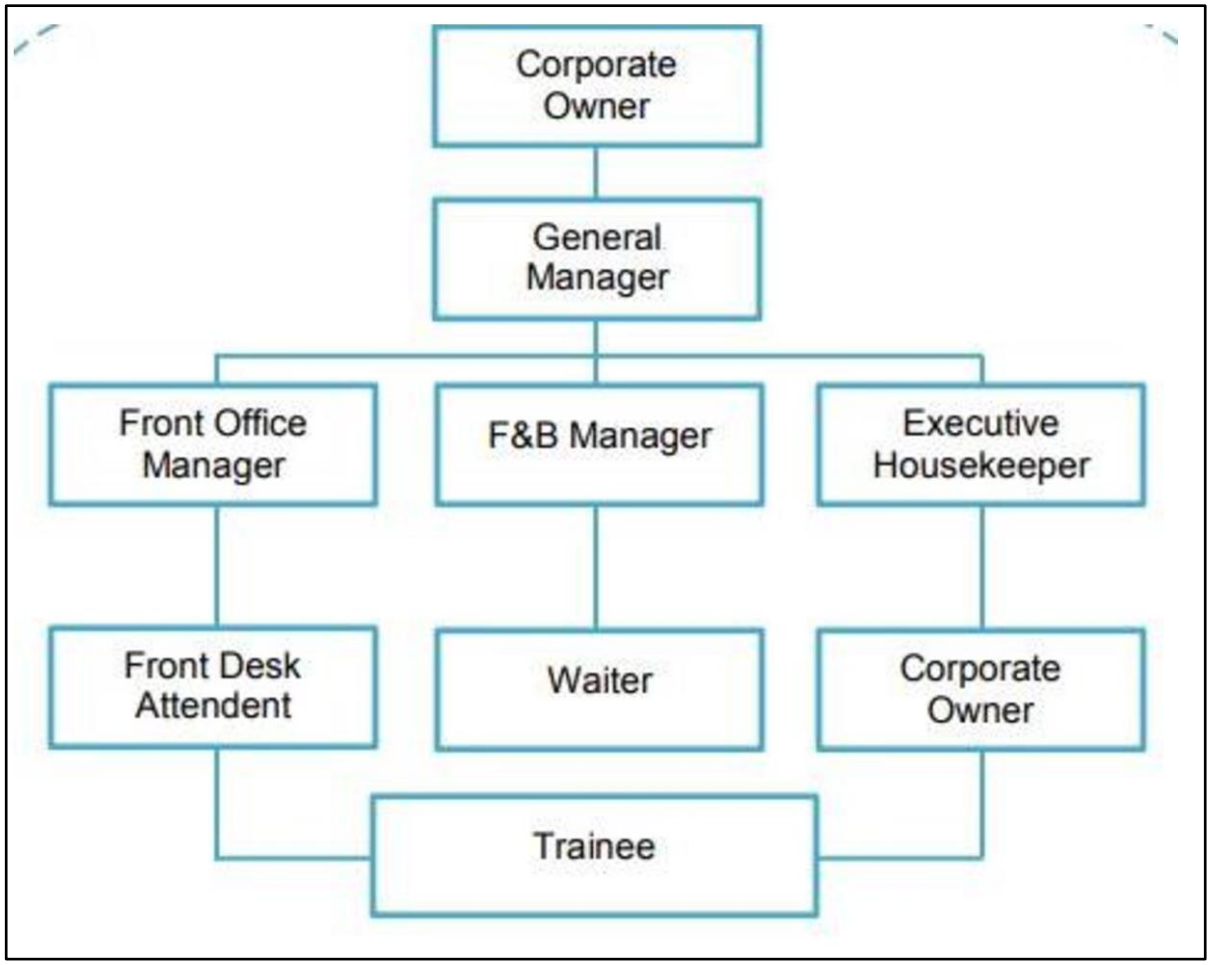


Figure 10: Organisational Structure for Garden Court Hotel

4.2.2 Assets and Capabilities

Garden Court Hatfield hotel is part of the Southern Sun Group which has a heritage of over 50 years and is Southern Africa's leading hospitality group.

The hotel comprises of 157 guest rooms, outdoor pool, fitness centre, restaurant, meeting room and open parking. The hotel offers accommodation for business and leisure purposes.

This hotel operation has a competitive advantage through the wealth of experience of their management team, the availability of resources and the sustainable manner in which it is utilised and very importantly, the experience and hardworking nature that every employee brings to the operation with a wide variety of skills and capabilities.

4.2.3 Education and Training

Garden Court Hatfield hotel identifies itself closely with, and commits itself to contributing to continuous education and training to its numerous employees as well as partaking in community uplifting activities, through:

- Contributing to continuous skills development of their employees.
- Proper trainee training conducted by an appointed head.
- Partaking in the Arcadia Schools feeding programme.
- Linen donations to Jacaranda children's home and Cancer Nicus Lodge.
- Soap recycling to Basisa Foundation and Nicus Lodge.

Through continual education and training, employees will become more aware of their own environment and more importantly their human impact on the local area. This water-use application is important for this hotel operation as it secures the continuing and success of their operation and thus directly secures the livelihood of their employees as well as that of their families.

4.2.4 Communication Process (Internal and External)

Garden Court Hatfield hotel has an open-communication policy. As work at the hotel consists of multiple divisions, a direct communication line exists between all spheres of the company. Employees in need of lodging a compliant are free to contact their management division head in this regard. It the management head is not able to resolve the problem, it is taken up to the General Manager of the hotel.

The development of strong company values with regards to respect, trust, quality and ethics play a big role in the day-to-day activities.

A formal complaints register will be developed to appropriately note and address issues of concern.

External communication from the community, adjacent companies and other interested and affected parties are handled in a formal and responsible manner via the management office. The company details are public knowledge and all individuals are welcome to lodge any complaints that they might have.

4.3 Monitoring and Control

4.3.1 Water Monitoring

4.3.1.1 Groundwater Monitoring

It is recommended that the groundwater levels of the production borehole be monitored using automated monitoring equipment (e.g. data-loggers) to allow for the frequent monitoring of groundwater levels.

Furthermore, it is recommended that groundwater quality monitoring also be conducted on borehole, BH1. The groundwater sample must then be submitted to a SANAS accredited laboratory where analyses are carried out in accordance with the methods prescribed by the South African Bureau of Standards. The samples should be analysed for the SANS 241-1: 2015 drinking water quality parameters.

The sampling tests should be conducted bi-annually.

4.4 Hydrogeological Assessment

Geostratum Water Management Consultants (Pty) Ltd (Geostratum) was appointed by BioBlue Environmental Sustainability (Pty) Ltd. to carry out a hydrogeological investigation as part of a Water Use Authorisation (WUA) for the Garden Court Hotel located in Hatfield, Gauteng Province.

Methodology

- Desktop Study
- Hydrocensus
- Aquifer Hydraulic Testing
- Groundwater Sampling
- Groundwater Reserve Determination

Please refer to Hydrological Report for a full description of the methodology.

Topography and Drainage

Regional topography slopes in a north easterly direction towards the non-perennial Moreleta River, flowing in a northerly direction approximately 260m east of the site. The topography of the project area is relatively flat with a general gradient of less than 5% east. Surface elevation across the project area range between ~1 346 and ~1 352 metres above mean sea level (mamsl).

Geology

The 1:250 000 Geological Series Map – 2528 Pretoria (Council for Geoscience, 1978) the area is underlain by volcanic rocks of the Hekpoort Formation forming part of the Pretoria Group (Transvaal Supergroup).

Hydrogeology

According to the 1:500 000 Hydrogeological map series 2526 Johannesburg (Barnard and Baran, 1999) the site is underlain by an intergranular and fractured type of aquifer with mean borehole yields ranging between 0.1 and 0.5L/s. Groundwater occurrence is associated with joints and fractures in contact zones related to the heating and cooling of country rock, caused by the intrusion of dykes and sills.

Refer to Hydrogeological Report for groundwater vulnerability and aquifer classification.

Hydrological Field Programme Results

National Groundwater Archive

The National Groundwater Archive (NGA) database was used to determine the presence of any boreholes within proximity of the site. Data for four (4) boreholes were available within a 1km radius, however none of these boreholes could be located during the hydrocensus conducted during November 2023. No groundwater level data was available from the database, however lithology was included, where available.

Table 3: NGA Borehole Summary

ID	Coordinates (WGS, 84)		Borehole Depth	Lithology	
	Latitude	Longitude	[m]	[m]	
2528CA00472	-25.74951	28.24111	53.34	0 - 1.52 1.52 - 32.3 32.3 - 53.34	Soil Clay Dolerite
1669	-25.74728	28.24361	30.48	0 - 1.06 1.06 - 4.57 4.57 - 8.22 8.22 - 12.19 12.19 - 14.17 14.17 - 32.3	Soil Diabase Diabase Diabase Shale Diabase
2528CA00282	-25.74005	28.2436	65.53	0 - 1.52 1.52 - 28.95 28.95 - 65.53	Soil Quartzite Shale
2528CA00005	-25.73616	28.23721	100	ND	

[ND] No Data

Hydrocensus

Eight (8) hydrocensus boreholes were identified (UBH1 – UBH8). All boreholes were located on the University of Pretoria's campus grounds. No hydrogeological information (water levels,

pump details etc.) were allowed to be taken by site personnel. All boreholes were used for irrigation purposes. The locations of the identified boreholes are presented in the table below.

Table 4: Hydrocensus Borehole Details

ID	Co-ordinates (WGS, 84)		Address	Use
	Latitude	Longitude	[-]	[-]
UBH1	-25.749488	28.247348	University of Pretoria (Farm Koedoespoort 456 JR)	Irrigation
UBH2	-25.75192	28.252814		Irrigation
UBH3	-25.753904	28.252743		Irrigation
UBH4	-25.748901	28.256639		Irrigation
UBH5	-25.750922	28.261301		Irrigation
UBH6	-25.750037	28.250778		Irrigation
UBH7	-25.749984	28.251276		Irrigation
ID	Co-ordinates (WGS, 84)		Address	Use
	Latitude	Longitude	[-]	[-]
UBH8	-25.755948	28.249257		Irrigation

Groundwater Investigation

One (1) borehole (BH1) was identified in the study area and is proposed to be used for domestic and garden irrigation purposes at the hotel. The usage and abstraction rate are summarised in the table below. The depth to groundwater was 6.89mbgl. The spatial distribution of the identified borehole is presented in below figure.

Table 5: On-site Borehole Summary

Borehole ID	Coordinates (WGS, 84)			Address	Borehole Depth	Pump Specifications	Borehole Use and Abstraction		Hydrogeological Information
	Latitude	Longitude	Elevation				Primary Use	Abstraction Rate	Static Water Level
			[mamsl]	[-]	[m]	[-]	[-]	[L/hr]	[mbgl]
BH1*	-25.743621°	28.245607°	1350	1336 Pretorius Street	Unknown	Submersible	Domestic Garden irrigation	9 000	6.89

*Groundwater sample collected

[mamsl] meters above mean sea level

[m] meter

[L/hr] litre per hour

[mbgl] meter below ground level

Aquifer Test Results

The aquifer test details of the BH1 are summarized below:

Table 6: On-site Borehole Summary

BH ID	SWL	Depth	Pump Yield	Available Drawdown (to borehole depth)*	Total Drawdown	Recovery
	[mbgl]	[mbgl]	[l/s]	[m]	[m]	[%]
BH1	6.89	±45	2.5	38.11	8.28	100% after 7min

[mbgl] meter below ground level
[l/s] Litre per second
*Water strike unknown

The results of the aquifer testing are presented below:

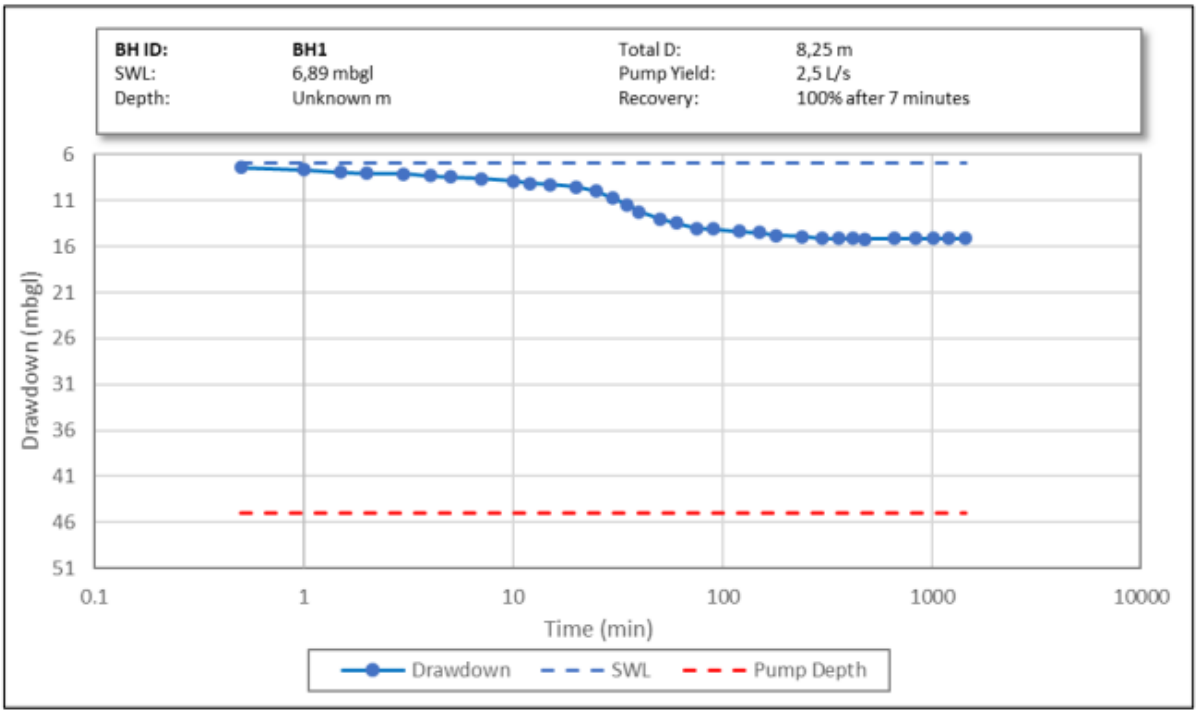


Figure 11: Drawdown vs. Time BH1

Recommended abstraction based on the aquifer testing

Based on the aquifer testing results, a total volume of 108m3/day (39 420m3/annum) is available from the tested borehole.

Table 7: Recommended Pump Rate and Pump Schedule

BH ID	Yield	Pump duration	Recovery	Recommended Abstraction Volume		
	[L/s]	[Hours]	[Hours]	[L/hr]	[m³/day]	[m³/annum]
BH1	2.5	12	12	9 000	108	39420

[L/s] Liter per second

[L/hr] Liter per hour

[m³/day] cubic meters per day

[m³/a] cubic meters per annum

Groundwater Quality

A groundwater sample was collected from BH1. The sample was submitted to an accredited laboratory for chemical analyses and the results are available within the Geohydrological Report. The groundwater was used for domestic use, and was therefore compared to the following standards:

- DWAF (1996). South African Water Quality Guidelines (second edition). Volume 1: Domestic Use; and
- SANS 241-1:2015 drinking water quality standards (SABS, 2015)

Neutral pH and low Electrical Conductivity (EC) and Total Dissolved Solids (TDS) were detected. Aluminium and iron detected exceeded the DWAF guidelines, however was compliant with the SANS standards. Noticeable adverse aesthetic effects (colour) occur when aluminium is present in association with iron or manganese.

Risk of infectious disease transmission is expected due to the presence of Total Coliforms and Total Plate Count. The water is not suitable for consumption without treatment. Measures (purification) for coliforms detected are recommended.

Groundwater Balance

A groundwater balance was calculated for the sub-catchment to determine the available groundwater for abstraction. The details regarding the water balance are listed below:

Table 8: Water Balance Calculation

Sub-catchment	Reserve Determination
Size	27.81 km² (27 810 000 m²)
Groundwater Recharge	42.2 mm/a = 3 215.29 m³/day
Basic Human Need	Population: 1416 people Basic Human Needs: 984.62 m²/day
Groundwater contribution to baseflow	10.35 mm/a = 788.58 m³/day
Existing groundwater use (NIWIS, 2023)	4 780 194 m³/a or 0.03 m³/km²/day = 0.78m³/day within sub-catchment
Water demand	BH1: 108 m³/day
Total use	1 881.99 m³/day
Surplus amount	1 333.31 m³/day
Scale of abstraction	59 % of recharge (Class A - Small scale abstraction <60% of recharge)

From the preliminary water balance calculation, small scale abstraction (Category A) is proposed.

Groundwater Quantity

The recent status of a groundwater resource unit can be assessed in terms of sustainable use, observed ecological impacts or water stress. Since no information about ecological impacts of groundwater abstraction is available, the concept of water stress was applied for the classification process.

Based on the current and proposed abstraction, the aquifer is classified as moderately stressed. From the water balance calculation, it is evident that groundwater can be used as a viable water source of water supply to the project site.

Risk Assessment

Key Characteristics of the Risk Assessment

The key aquifer characteristics that were taken into account in the risk assessment included the following:

- No buffer zone exists between contamination sources and groundwater table, as a groundwater level of 6.89mbgl was measured in BH1;
- During the hydrocensus eight (8) boreholes were identified, all used for irrigational purposes. Water supply in the area is mainly supplied by the municipality;
- Based on the groundwater reserve calculations it was determined that the proposed groundwater abstraction within the delineated sub-catchment is low and the aquifer is moderately stressed;
- The presumed groundwater flow mimic topography and flow in a general north easterly direction;
- Groundwater quality is considered moderate, however due to the presence of Aluminium and iron noticeable adverse aesthetic effects (colour) can be expected. Measures (purification) for coliforms detected are recommended due to a risk of infectious disease transmission.

The potential groundwater impacts from the site, direct and indirect, is summarised in the table below. In summary these potential impacts contribute to overall groundwater impacts and include:

- Aquifer destruction / over abstractions of groundwater.

Table 9: Summary of Potential Groundwater Impacts

Major Aspect	Key Environmental Issues/ Potential Issues
Aquifer destruction /over abstractions of groundwater	The sustainable use of the groundwater is important to avoid water being pumped from the aquifer faster than it is being replenished. Over abstraction of the aquifer could result is decreasing water tables, empty wells, higher pumping costs and ultimately the destruction of the groundwater resource. It is therefore crucial to adhere to the sustainable safe yield and abstraction programs to ensure the aquifer is not overstressed.

Based on the overall impact assessment conducted in this report, the majority of consequences can be avoided through proper management of water recourses.

Recommendations

The following recommendations are made:

- Measures (purification) for coliforms detected are recommended.
- Groundwater level monitoring should be conducted as well as groundwater chemical analyses and data should be interpreted by a hydrogeologist.
- Daily groundwater abstraction volumes should be recorded.
- Mitigation measures, as per Table 8-3 within the Hydrogeological Report, should be implemented.

Impact Statement

The potential impact of abstraction emphasizes the need to implement on-site practices to prevent detrimental impact on the groundwater resource.

If proper management measures, together with site- operational monitoring (refer to recommendations above), are applied, the potential impact on groundwater resources will have a low impact.

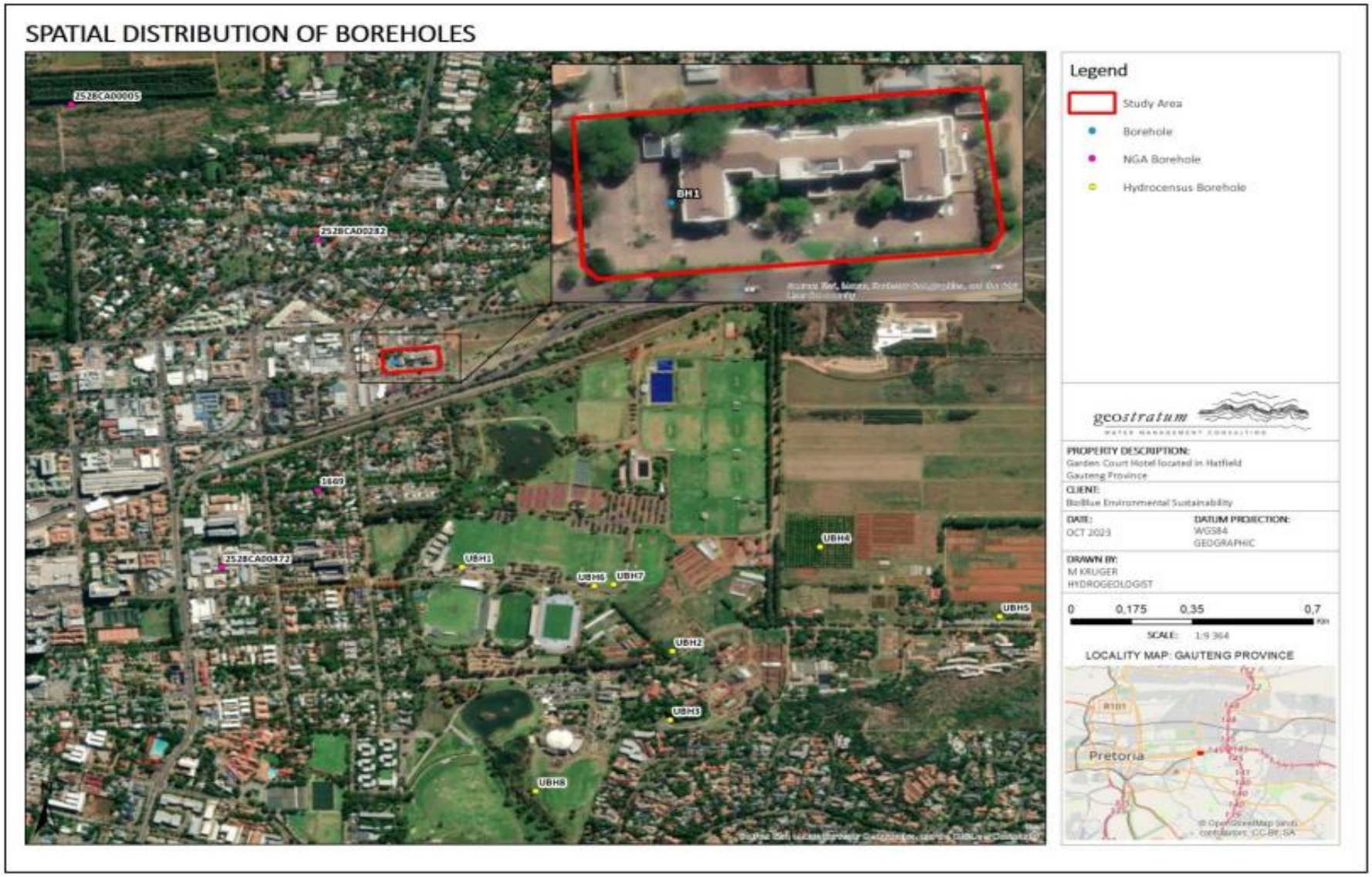


Figure 12: Spatial distribution of boreholes

5 WATER USAGE

5.1 New Proposed Water-Uses to be Licensed

Water uses applied for are as follows:

- Section 21(a): Taking water from a Groundwater resource via a borehole.

5.1.1 Section 21(a):

As per the DWS (formerly DWA) guideline "Registration Guide: Raw water related water uses" July 2013, Section 21(a) water uses consist of the following:

- This water use is for any instance of taking water from a water resource.
- The water resource may occur on a person's property or be accessed by means of a servitude across another person's property.
- Common examples include pumping from a river or a borehole, taking water from a canal or dam outlet, or pumping water directly out of a dam.
- Water taken from a municipal supply network is NOT a water use.
- Water taken from a Water Services Provider such as a Water Board is NOT a water use.

The estimated water requirements and volume which the applicant is applying for:

- 13 870m^3/annum abstraction for hotel operation purposes from a groundwater resource via a borehole located on the premises.

This constitutes a Water Use Licence in terms of Section 21(a) of the National Water Act, 1998 (Act No. 36 of 1998) as it exceeds the allowable volume under the General Authorisation (Government Gazette Notice 538 of 2 September 2016) for the catchment.

Table 10: Summary of Water-uses

Section	Purpose	Properties	Capacity/Length/ Amount	Coordinates
21(a)	BH1	Erf 713 in Hatfield	13 870m³/annum	25°44'36.97"S 28°14'44.33"E

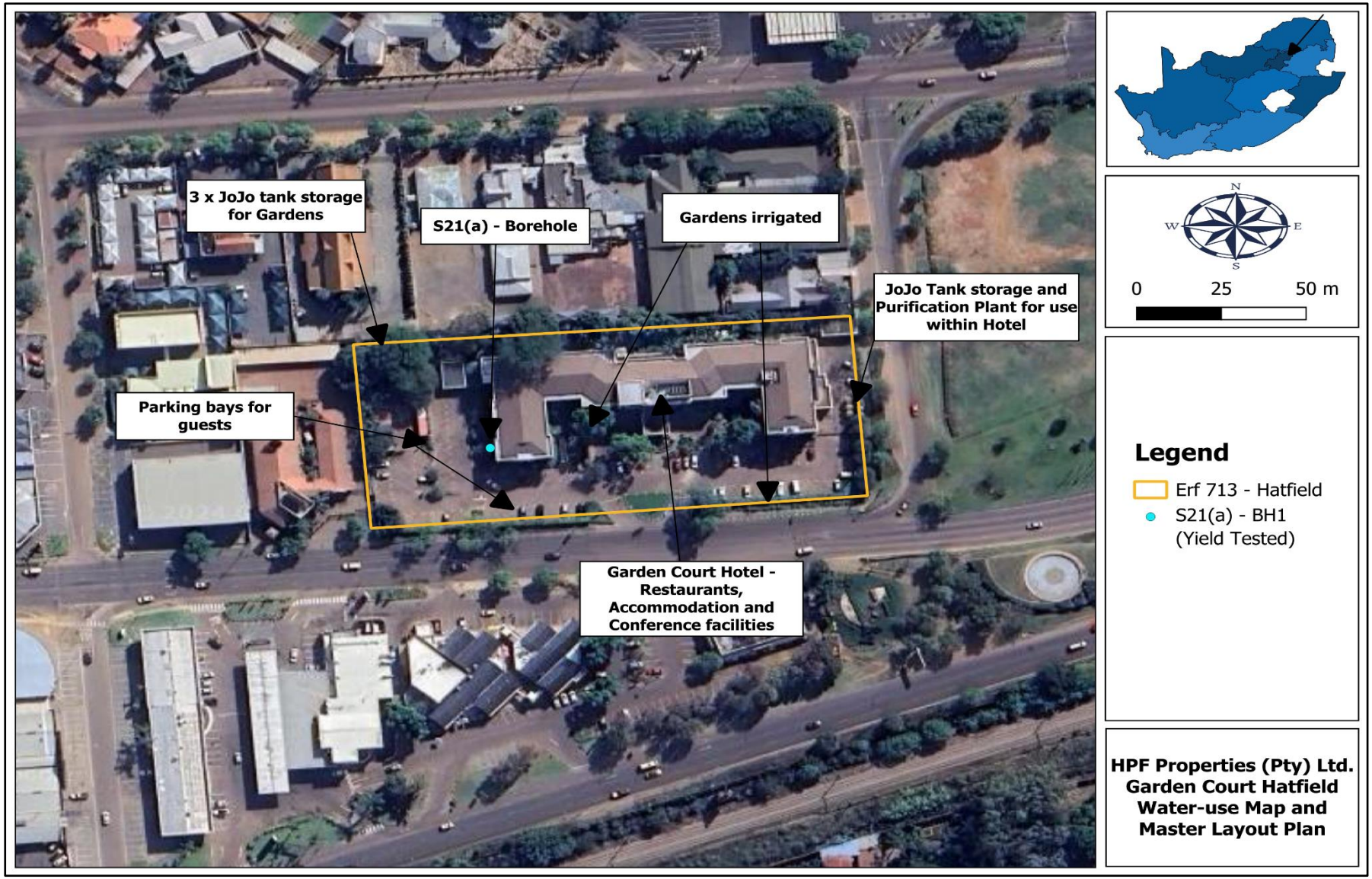


Figure 13: Water-Use Map and Master Layout Plan

6 RISK ASSESSMENT / BEST PRACTICE ASSESSMENT

6.1 METHODOLOGY

Development in any form has an immediate effect on the environment and therefore it is extremely important to provide information on the consequences the activity will have in relation to the environment. It is also important that the decision-makers are informed of these risks. The assessment of aspects which might potentially impact on the environment must adhere to the minimum requirements as recorded in the EIA Regulations, 2014 and the National Water Act and should take applicable official guidelines into account.

The impact criteria applied will be discussed in the following sections.

6.2 Criteria of Impact Assessment

An impact significance rating and evaluation form part of the Impact Assessment.

The main period of positive impact occurrence is during the long-term operational phase of the project when it is felt that the broader community will benefit from the project.

There are a number of methodologies and approaches of assessing the potential impacts of development on the environment.

When a method for environmental impact analysis is selected certain general principles must be kept in mind. In general terms an environmental assessment evaluation comprises four main tasks which include:

1. Data collection
2. Data analysis and interpretation
3. Identifying significant environmental impacts; and
4. Communication the results.

Impact methodologies provide an organised approach for the prediction and assessment of potential impacts. Any methodology will have opportunities and limitations, as well as resource and skill demand. There are no methods that are appropriate for all circumstances in South Africa. The selected methodologies proposed by this document are appropriate for most South African situations, taking the above aspects into account.

Criteria to which assessments should comply with include the following:

- Be comprehensive: the environment consists of complex systems of biotic and abiotic elements, which are linked by multifaceted relationships. The methodology has to consider the effects on these factors.
- Be flexible: projects differ from size and scale and thus result in different impacts, by having a flexible methodology it can be used for different projects.
- Detect true impact: long-term and short-term changes need to be measured. The actual impact that institutes environmental change, as opposed to natural existing conditional changes.
- Be objective: The methodology must be objective and unbiased, without interference from external decision-making.
- Ensure the input of the required expertise: comprehensive and specialized judgment must be assured.
- Utilize the state of the art: use the best available analytical techniques.
- Use clearly defined criteria: Evaluation criteria used to assess the magnitude of environmental impacts should not be randomly allocated. The methodology should provide explicitly defined criteria and explicitly stated procedures regarding the use of these criteria, including the documented rational.
- Assess actual degree of impacts: methods must be provided for an assessment based on specific levels of impact for each environmental concern.
- Provide an overall assessment of the total impact: A combination of multiple separate impacts is necessary to provide an evaluation of the overall total impact on the environment.
- Identify critical impacts: The methodology must identify and emphasize impacts that can have a possible hazardous effect.

Table 11: Calculation of Severity Rating base on the Identified Impacts (Refer to Geohydrological Report)

Environmental parameter	Issue / impact / environmental effect/ nature	Environmental significance			Recommended mitigation measures	Environmental significance		
		Before mitigation				After mitigation		
		Total	Status (+ or -)	S		Total	Status (+ or -)	S
Aquifer destruction /over abstractions of groundwater	Over abstraction of the aquifer could result is decreasing water tables, empty wells, higher pumping costs and ultimately the destruction of the groundwater resource. The groundwater reserve indicates that a total volume of 108m^3/day is feasible for abstraction from the borehole.	22	-	Low	It is expected that without mitigation a low negative impact can be expected. Mitigation will include: • Groundwater level monitoring • Increase water-use efficiencies. • Licence all production boreholes	18	-	Low

7 PUBLIC CONSULTATION

7.1 ADVERTISING THE PROPOSED PROJECT IN ACCORDANCE TO THE PRESCRIBED REGULATIONS

R East SPORT
OCTOBER 13, 2023 www.rekord.co.za 012-842-0300
REKORD

Gold Cup is kersie op koek vir Naka Bulle

Koos Venter

Die Naka Bulle van Pretoria se Moot is die Gold Cup-kampioen en gevolglik gregtig op die titel as Suid-Afrika se beste "oop" rugbyklub.

Met "oop" word bedoel klubs wat nie aan 'n tersiêre onderwys-instansie verbind word nie.

Laat die jaloerses, waringe ligtes en suurknolle vanoor die landheen maar mor en perspekies probeer vestig met skinderstories. Soos oom Boy Louw sou sê – "look at the scoreboard…"

Jare se beplanning, belegging, uitbouing en doodgewoon harde werk het in 2023 uiteindelik vrugte gedra en Marinus van der Watt se manne – wat skitterend bestuur word deur Ian Herbst, Thinus Joubert en ander – kon 'n droomseisoen Saterdag afsluit met hul oorwinning van 56-29 in die nasionale African Rainbow Community Gold Cup-klubtoernooi.

Daarmee voeg Naka Bulle dié nasionale titel by hul titel as 2023-kampioen van die Blou Bulle se gesogte Carltonbeker.

Dit was gladnie 'n maklike pad vir Ruan Gruendling en sy makkers om hierdie nuutste prestasie in vyf ononderbroke weke te behaal nie. Hulle moes met twee klubs uit die WP, Union Milnerton (tuis) en Valshuni (weg); die omgeskopte kampioenspan van die Valke, Speings Rugbyklub (weg), en die onvoorspelbare Crusaders van SWD (tuis) afreken om vir die eindstryd te kwalifiseer.

Saterdag moes hulle op hul tuisveld 'n reuse tweedehelfte-aanslag van die baie sterk, semi-professionele, College Rovers uit Durban oorleef om die kroon te dra.

Dit was goud duidelik dat die manne van die Moot se voorspelers die oorhand het in die wedstryd. Hulle het vemil in die eerste helfte die Natalliens gekmuffel in die vaste skrums en ook groot breuse geslaan met hul dryfbewegings.

Hierdie oorheersing voorlangs het aan Hansie Graaff op losskakiel die nodige ruimte gegee om sy agterlyn behoorlik in te span. Frans Botha se drie na slegs twee minute se spel het juis gekom nadat Graaff sy bedieneliike spoed gebruik het om die lyn te breek, waarna Botha 'n skop van heelagter Danny Mokhoabane kon opvolg om te druk.

Nóg 'n dominante skrum het die tweede drie, dié keer deur senter Martin Austen, moontlik gemaak – met Graaff se goeie hande wat weer 'n rol gespeel het.

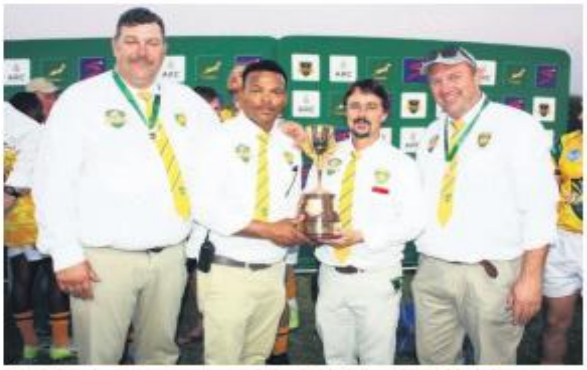
Daarna het die voorspeler-krag en dryfspel van die tuisspan gesorg vir 'n drie deur slot Stephan Vermeulen en 'n strafdrie, terwyl Xavier Human se drie kort voor rustyd óók deur oorheersing voorlangs moontlik gemaak is.

Met die rustydtelling op 35-10, het baie ondersteuners van die tuisspan al by die kroegtoonbank begin saamdrom om met die feesvieringe te begin. Hulle is egter gou na hul sitplekke teruggedwing, toe dit duidelik word dat die Durbanneste se verandering in strategie vir hulle begin vrugte afwerp.

Soos die Crusaders van George verlede week het College Rovers besef dat hulle die bal eerstens weg moet hou van Naka Bulle se voorspelers, terwyl hulle die tempo van die spel moet opjaag en met hul agterlyn moet aanval. Dié strategie het vir 20 minute goed gewerk en ná twee vinnige drieë het College Rovers duidelik nuwe moed geskep.

Goeie leierskap, ervaring en koelkoppe op die veld het egter wéér gesorg dat Naka Bulle die fokus herwin en drieë deur Austen en Ian Oosthuizen het die telling buite bereik van die besoekers geplaas.

Ruben Beytel, wat intussen op die veld verskyn het, het vir die 50-tal gesoeg met een van sy tipiese opportunistiese pogings, wat soos gewoonlik onder die pale geëindig het.



Naka Bulle se bestuurspan spog met die beker. Hier is Anthony (Kuduz) Oberholzer (hulpafrigter), Marinus van der Watt (hoofafrigter), Momé Human (hulpafrigter) en Bennie Sutherland (spanbestuurder). Foto: Frans Lombard

NOTICE OF APPLICATION FOR WATER-USE LICENCE

HPF PROPERTIES (PTY) LTD. - WATER-USE LICENCE APPLICATION IN TERMS OF THE NATIONAL WATER ACT, ACT 36 OF 1998, IN TERMS OF SECTION 21(a) FOR GARDEN COURT HATFIELD HOTEL IN PRETORIA

Notice is hereby given in terms of Section 40 of the National Water Act, 1998 (Act 36 of 1998) that HPF Properties (Pty) Ltd. proposes to lodge an application for Water-uses as listed in Section 21 of the National Water Act.

Project Background and Locality: HPF Properties, the applicant, proposes to apply for a water-use licence for Garden Court Hatfield hotel to abstract water from a borehole for commercial use within the property. The proposed Water-use License Application is for Section 21(a).

Garden Court Hatfield hotel is located in 1306 Pretorius Street, Hatfield, Pretoria within the Gauteng Province.

- **Co-ordinates:** 25°44'37.02"S 28°14'46.32"E
- **Date of Notice:** 12 October 2023

Queries regarding this matter must be referred to: BioBlue Environmental Sustainability (Pty) Ltd., 829 Cronstad Street, Moreleta Park, Pretoria
Tel: 082 562 1404. **E-mail: zander@bioblueenviro.com** / **info@bioblueenviro.com**
Contact person: Zander Liebenberg

Parties wishing to formally object to and / or comment on the proposed Water-use License application are requested to forward their objections and comments (with reasons) to BioBlue Environmental Sustainability (Pty) Ltd. no later than thirty days (30) after the publication of this advertisement. The Water-use License technical documents will be made available on the BioBlue website **www.bioblueenviro.com** and via direct email link upon request for a comment period of sixty (60) days.

NOTICE OF APPLICATION FOR WATER-USE LICENCE

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Garden Court Hatfield hotel is located in 1336 Pretorius Street, Hatfield, Pretoria within the Gauteng Province.

- **Coordinates: 25°44'37.02"S 28°14'45.32"E**
- **Date of Notice:** 12 October 2023

Queries regarding this matter must be referred to: BioBlue Environmental Sustainability (Pty) Ltd., 829 Cronstedt Street, Moreleta Park, Pretoria
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7.2 Report on Comments and Response

No comments received with regards to this application.

8 SECTION 27 MOTIVATION

A Section 27 Motivation Report needs to form part of the water-use licence application submitted to the Department of Water and Sanitation. All criteria as specified in the National Water Act, 1998 (Act No. 36 of 1998) had been considered as contemplated in the Table below.

Table 12: Section 27 Motivation Criteria

Section	Aspect
5 - 7	The National Water Resource Strategy
27 (1)(e)	The Catchment Management Strategy applicable to the relevant water resource
27 (1)(j)(i)	The quality and quantity of water in the water resource which may be required for the reserve
27 (1)(j)(ii)	The quantity and quality of water in the water resource which may be required for meeting international obligations
27 (1)(g)	The class and the resource quality objectives of the water resource
27 (1)(i)	The strategic importance of the water use to be authorised
27 (1)(a)	Existing Lawful Water Uses (ELU)
27 (1)(f)	The likely effect of the water use to be authorised on the water resource and on other water users
41(3)	Compliance with the requirements contained in regulations made under section 26 of the Environment Conservation Act, 1989 (Act no. 73 of 1989)
41(4)	Comments/objections from stakeholders and interested and affected parties
27 (1)(b)	The need to redress the results of past racial and gender discrimination
27 (1)(c)	Efficient and beneficial use of water in the public interest
27 (1)(d)(i)	The socio-economic impact of the water use or uses if authorised
27 (1)(d)(ii)	The socio-economic impacts of the failure to authorise the water use or uses
27 (1)(h)	The investments already made and to be made by the water user in respect of the water use in question
27 (1)(k)	The probable duration of the undertaking for which a water use is to be authorised

8.1 SECTION 27(1)(A): EXISTING LAWFUL WATER-USES

An Existing Lawful Water Use as defined by Section 32 of the National Water Act, 1998 (Act No. 36 of 1998) is a water use that has taken place at any time during a period of two years immediately before the date of commencement of the Act and was authorised by a law before the date of commencement. There are no Existing Lawful Uses on this premises.

8.2 Section 27(1)(b): The Need to redress the Results of Past Racial and Gender Discrimination

Southern Sun is committed to transformation and holds a certified Level 1 B-BBEE contributor status with 59.9% black ownership and 37.2% black women ownership. Being a Level 1 contributor to B-BBEE in South Africa evidences the spirit in which they actively contribute to broad-based black economic empowerment through practices that facilitate meaningful positive change – from maintaining the diversity of their workforce to supporting emerging enterprises through their entrepreneurs' programme and investing in the upliftment of the communities.

Southern Sun holds more than 50% shares in HPF Properties and thus their vision is aligned.

The hotel also creates numerous permanent job opportunities throughout the life of their operation. There are different opportunities within the hotel as they comprise of many different amenities as well as indirect opportunities such as transport services for guests to and from the hotel.

If this application is granted, Garden Court Hatfield hotel will be able to give their employees job security as the hotel will be able to continue operating effectively as well as uphold the values of Southern Sun who is committed to transformation.

The whole of South Africa has a high-unemployment rate that has been aggravated by the Covid pandemic and we need businesses to assist in creating additional opportunities and secure employment where possible.

The hotel also actively partakes in the Arcadia Schools Feeding Programme, and they contribute towards two Corporate Social Investment initiatives, described as

1. Linen donations to Jacaranda children's home and Cancer Nicus Lodge; and
2. Soap recycling to Basisa Foundation and Cancer Nicus Lodge.

8.3 Section 27 (1)(c): Efficient and Beneficial Use of Water in the Public Interest

The water-uses are comprised of Section 21(a) and water will be utilised for watering of gardens and commercial use within the hotel itself. The Water-use License will ensure that Garden Court hotel has sufficient water supply to run a sustainable business and ensure their guests and other clients use of all amenities even if there is strain on the Municipal supply.

Garden Court Hatfield hotel employs various different individuals from different sectors such as managers, kitchen staff, room attendants, cleaners, maintenance staff, security, etc. that enables various households to earn a decent living and alleviate some of the unemployment statistics within the region. The hotel is a commercial operation and thus contributes to the local GDP and income to external companies such as, logistic companies, home & furniture companies, fresh produce companies, transport service companies, etc.

8.4 Section 27(1)(d): The Socio-Economic Impact

8.4.1 The Socio-Economic Impact of the Water-Use or Uses if Authorised

The main positive impacts associated with the hotel:

- Provision of long-term employment during the operational phase.
- Money paid out locally in the form of the company payroll.
- Money paid to Government in the form of local, regional and national taxes.
- The outsourcing of service provision to local and regional service providers.

The main aim of the Water-use License application is to ensure supply to the Hotel and avoid the need to temporarily suspend operations due to supply constraints.

8.4.2 The Socio-Economic Impact of the Failure to Authorise the Water-Uses

If the Department of Water and Sanitation decides not to authorise the proposed applied for water-uses, then the no-go alternative will apply.

With the implementation of the 'no-go alternative' the hotel operation stays as it is. No impacts on the environment other than from existing practices will take place.

8.5 Section 27(1)(e): Any Catchment Management Strategy Applicable to the Relevant Water Resource

According to DWAF (2004a) (also as specified in the National Water Act, Act No. 36 of 1998) the delegation of water resource management from central government to catchment level will be achieved by establishing Catchment Management Agencies (CMAs) at WMA level. Each CMA has the responsibility to develop a Catchment Management Strategy (CMS) for the protection, use, development, conservation, management and control of water resources within its WMA.

8.6 Section 27(1)(f): The Likely Effect of the Water-Uses to be Authorised on the Water Resource and on the Water-Users

The applicant will be able to successfully continue with their commercial operations within the hotel and secure the jobs of their permanent employees as well as create other possible job opportunities.

With that said, they will also be continuously contributing to the income of external companies such as logistic companies, home & furniture companies, fresh produce companies, transport service companies, etc.

The risk to adjacent water-users and the groundwater catchment has been deemed low by the study conducted by the Geohydrologists.

8.7 Section 27(1)(g): The Class and Resource Quality Objectives of the Water-Uses

8.7.1 Groundwater Resources

Sub-Catchment Delineation:

In order to delineate a sub-catchment for the site within the quaternary catchment ArcGIS is used (which provides a method to describe the physical characteristics of a surface). Using a digital elevation model as input, it is possible to delineate a drainage system and then quantify the characteristics of that system. The tools in the extension let you determine, for any location in a grid, the upslope area contributing to that point and the down slope path water would follow. The delineated sub-catchment size is 27.8km2.

Sub-catchment	Reserve Determination
Size	27.81 km² (27 810 000 m²)
Groundwater Recharge	42.2 mm/a = 3 215.29 m³/day
Basic Human Need	Population: 1416 people Basic Human Needs: 984.62 m²/day
Groundwater contribution to baseflow	10.35 mm/a = 788.58 m³/day
Existing groundwater use (NIWIS, 2023)	4 780 194 m³/a or 0.03 m³/km²/day = 0.78m³/day within sub-catchment
Water demand	BH1: 108 m³/day
Total use	1 881.99 m³/day
Surplus amount	1 333.31 m³/day
Scale of abstraction	59 % of recharge (Class A - Small scale abstraction <60% of recharge)

8.8 Section 27(1)(h): Investments Already Made and to be Made by the Water User

The Applicant has already made numerous investments into their operations and will continue to do so throughout its operation. Specialists have also been contracted to do borehole yield assessments and compile the necessary reports. The application will continue to make investments into the operations to enable the operations to remain sustainable and to keep on creating job opportunities for the employees.

Southern Sun also prides themselves in investing into community development, entrepreneur development and environmental education.

8.9 Section 27(1)(i): The Strategic Importance of the Water-Use that has been Authorised

The water resources in South Africa have been impacted by various activities and new water users should always aim to improve the water quality and management of their resources within their area.

As previously stated, this operation creates direct and indirect job opportunities during a time that unemployment is at an all-time high. The hospitality sector in South Africa is one of the most diverse sectors and needs to be developed to ensure that job opportunities are created and that the South African market is expanded. The issuance of the Water-use License will ensure that the company can ensure supply and services to their clients.

8.10 Section 27(1)(j): The Quality and Quantity of Water in the Water Resource which may be Required for the Reserve and for Meeting International Obligations

The water should be tested bi-annually against drinking water standards.

8.11 Section 27(1)(k): The Probable Duration for any undertaking that a Water-Use has been Authorised

The life of the hotel will be determined by the South African economy and the influx of tourists, the use of the conference facilities and other amenities by local clients and individuals. Thus, the requirement is for the License to be authorised for the maximum of 20-years.

9 ENVIRONMENTAL AWARENESS AND CONSERVATION

9.1 ENVIRONMENTAL AWARENESS PLAN

INDUCTION

To initiate the Environmental Awareness Plan, employees need to complete an induction session. This session needs to be done again after returning from leave. Environmental issues and aspects related to the operation will be addressed in these sessions.

All environmental impacts and aspects and their mitigating measures will be discussed, explained and communicated to employees.

Basic contents of the induction phase:

- Welcome and registration.
- General issues and concerns from both employees as well as management
- Environmental and Quality Checklists

General environmental awareness will be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout the duration of the hotel's operation. This will ensure that environmental accidents are minimized, and environmental compliance maximized.

EMPLOYEE COMMUNICATION PROCESS

Environmental meetings can be held with management, and selected group of employee representatives if some problems arise or if employees have ideas that they want to discuss with management. This will then take the form of an open discussion between the relevant personnel and management. After these discussions have been held, a larger group meeting can be arranged if required.

These meetings and open discussions will aid environmental awareness being generated at all levels, as well as assist the relevant department in defining all, and identifying new environmental issues, concerns and pollution sources.

Management shall establish and maintain procedures for the internal communication between the various levels and functions of the organisation, while documenting and responding to relevant communication from external interested and affected parties.

ENVIRONMENTAL EDUCATION AND TRAINING

In-house training sessions will be held with relevant employees, divided into groups that work together on a daily basis. These sessions will allow employees to participate in determining what the environmental issues and concerns are with regards to their specific occupation. Education with regards to environmental incident handling and reporting will be detailed at these sessions.

The company accepts that environmental awareness training is crucial for all employees to understand how they can play a role in achieving the objectives specified in the

ENVIRONMENTAL ISSUES

What is an Environmental Impact?

An environmental impact is the result, either good or bad, of a ma's actions on the natural environment. This results in one or many changes in the environment and may also affect the availability of resources and the environment's capacity to function.

PROCEDURE FOR MAINTENANCE AND INFRASTRUCTURE MANAGEMENT

- Only service machinery and vehicles in designated areas.
- Regularly check all vehicles and machinery for fuel and oil leaks
- Inform the hotel manager of any damage or leaking vehicles and machinery so that repairs can be scheduled.
- Store machinery, vehicles and materials only in demarcated areas
- Only refuel by means of a pump and on the bund created for that purpose
- Immediately clean any accidental fuel and oil spills – do not hose spills into natural areas.

WATER USE

Water scarcity can have a tremendous effect on ecosystems and biodiversity. Sensitive species might not be able to handle the effect of the reduction in water availability, thus it is important to manage the use of freshwater.

- Control the quantity of water withdrawn from the system
- Control the discharge of waste products
- Implement new technologies and strategies to reduce water use or waste load.
- Specify the standards for water usage.
- Employ precision irrigation with water delivery systems

INCIDENT REPORTING PROCEDURE

Environmental Incident Reporting is a vital part of communication. Employees are required to report any and all environmentally related problems, incidents and pollution, so that the appropriate mitigating action can be implemented timeously.

Reporting procedure / Hierarchy:

Employee - Supervisor - Management - Board

Actions:

- How did the incident happen?
- The reasons the incident happened.
- How rehabilitation or clean up needs to take place
- The nature of the impact that occurred
- The type of work, process or equipment involved
- Recommendations to avoid future incidents

A copy of this report must be kept on file and one forwarded to the Environmental consultant in order to accurately capture the incident into the reporting database.

10 REFERENCES

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https://www.southernsun.com/investors/empowerment

https://en.climate data.org/location

StatsSa: Census 2011