GEOHYDROLOGICAL INVESTIGATION FOR THE PROPOSED DIAMOND KIMBERLITE AND DIAMOND GENERAL MINE IN BOSHOF WITHIN THE BOSHOF DISTRICT MUNICIPALITY, FREE STATE PROVINCE.

NOVEMBER 2022

GEO EQUILIBRIA

Balancing the Earth.

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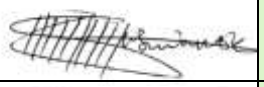
Compiled by	Mushiana, K.B.	Hydrogeologist		11 November 2022
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GLOSSARY

A confined aquifer - a formation in which the groundwater is isolated from the atmosphere at the point of discharge by impermeable geologic formations; confined groundwater is generally subject to pressure greater than atmospheric pressure.

ABA - Acid Base Accounting.

An unconfined, water table or phreatic aquifer - are different terms used for the same aquifer type which is bounded from below by an impermeable layer.

ANC - Acid Neutralising Capacity.

Aquifer – A body of rock, consolidated or unconsolidated, that is sufficiently permeable to conduct groundwater and to yield significant quantities of water to wells and springs.

ARD - Acid Rock Drainage.

Bedrock – A general term for the rock that underlies soil or other unconsolidated superficial material.

Cone of depression – A depression in the potentiometric surface of a body of groundwater that has the shape of an inverted cone and develops around a well/mine shaft/open pit mine from which water is being withdrawn.

Drawdown – The decline of the water table or potentiometric surface as a result of withdrawals from wells or excavations.

DWS - Department of Water and Sanitation (Used to be DWA and DWAF).

EC - Electrical Conductivity (mS/m).

Effective porosity - is the percentage of the bulk volume of a rock or soil that is occupied by interstices that are connected.

Fault – A fracture or fracture zone along which there has been displacement of the sides relative to one another parallel to the fracture.

Fe - Iron (mg/l).

Fracture – A crack, joint, fault or other break in rocks caused by mechanical failure.

Groundwater table - is the surface between the zone of saturation and the zone of aeration, the surface of an unconfined aquifer.

Heterogeneous -indicates non-uniformity in a structure.

Hydraulic conductivity (K) - Measure of the ease with which water will pass through the earth's material; defined as the rate of flow through a cross-section of one square metre under a unit hydraulic gradient at right angles to the direction of flow.

Hydraulic gradient - is the rate of change in the total head per unit distance of flow in a given direction.

Joint – A fracture in rock along which there has been no visible movement.

K - Hydraulic Conductivity.

LoM - Life of Mine.

mamsl - Metres above mean sea level.

mbgl - Metres below ground level.

NGDB - National Groundwater Database.

Observation borehole - is a borehole drilled in a selected location for the purpose of observing parameters such as water levels.

PCD – Pollution Control Dam.

Perched Water Table – The upper surface of a body of unconfined groundwater separated from the main body of groundwater by unsaturated material.

Permeability - the ease with which a fluid can pass through a porous medium and is defined as the volume of fluid discharged from a unit area of an aquifer under unit hydraulic gradient in unit time.

pH - is a measure of the acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity.

Recharge - is the addition of water to the zone of saturation; also, the amount of water added.

S – Storativity.

SO4 - Sulphate (mg/l).

Static water level - is the level of water in a borehole that is not being affected by withdrawal of groundwater.

Storativity - the volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head. It is a volume of water per volume of aquifer released as a result of a change in head.

TDS - Total Dissolved Solids (mg/l).

Total dissolved solids (TDS) - is a term that expresses the quantity of dissolved material in a sample of water.

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1. INTRODUCTION AND TERMS OF REFERENCE

By October 2022, Geo Equilibria (Pty) Ltd was appointed by Biomental Services (pty) Ltd on behalf of Invest In Property 126 (pty) Ltd to conduct a geohydrological investigation as part of an environmental application process to obtain the required authorization to mine diamond kimberlite and diamond general on the farm Viljoenshof 1655 in Boshof within Boshof District Municipality in the Free State province.

A geohydrological assessment is required to predict and quantify the potential impacts on water resources as well as to recommend reasonable mitigation measures. This assessment is fundamental to the discipline of environmental management and is a requirement of environmental impact assessments (EIA), water use license applications (WULA), Environmental Management Programmes (EMP) and other studies.

The assessment was conducted in line with the requirements of the National Water Act, 1998 (Act 36 of 1998) which provides for the protection, usage, development, conservation, management, and control of the country's water resources in an integrated manner. The Act provides the legal basis, upon which to develop tools and means to give effect to the protection of water resources.

The legal platform, on which the hydrogeological investigation is based, is summarized by the following main legislation and Guidelines (prescribed by the DWS, previously known as the Department of Water Affairs and Forestry (DWAF)).

2. PURPOSE AND OBJECTIVES

The primary purpose of this investigation is to provide information on the surface and groundwater environment on and near the site, and to do an impact assessment associated with the site activities. The objectives can be stated as the following:

- Identify water sources (rivers/streams, pans, dam or wetlands);
- Identify potential receptors;

- Determine surface and groundwater flow directions;
- Assess contamination risk from a hydrogeological perspective.
- Identify potential impacts of the proposed development on water features, and suggest suitable mitigation measures, if relevant, to remove these predicted impacts; and
- Provide a preliminary groundwater monitoring programme.

The main objectives of the hydrogeological study are to:

- Characterise the prevailing groundwater situation;
- Define the water bearing strata in the area;
- Determine current groundwater level distribution and flow directions;
- Determine baseline groundwater quality; and

Assess the impact of mining on the groundwater system including quantity and quality impacts on existing users, during both operational and closure phase.

3. SITE DESCTIPTION

3.1. LOCALITY

The proposed development site (here after referred as "the site") is situated 13 km east of Boshof town, within the Boshof district municipality, Free State Province. With relation to major cities, the site is located 27.9 km northeast of Kimberly and 120km west of Bloemfontein. The site covers an area approximately 3389 ha. The R64 road can be used to access the site. **Figure 1** shows the locality map and **Figure 2** the site satellite map. The central co-ordinates that can be used to locate the site are:

28° 35' 40" S, 25° 03' 43" E

3.2. SITE DESCRIPTION

The land coverage in the vicinity and within the proposed site is mixed between game farming, hunting and ecotourism.

3.2.1. TOPOGRAPHY

The highest on-site topographical elevation point was recorded was 1287 mamsl (metres above mean sea level) and the lowest point at 1246 mamsl, with an elevation loss of 41 m over a lateral distance of ~6359.49 m. The topography of the area is generally flat to rolling terrain. The slope of the site dips north.

3.2.2. DRAINAGE

The proposed site is in the Lower Vaal Management Area. The site is drained by means of run-off, with storm water collection towards the northwest and north of the site. No prominent surface drainage features are developed within the proposed site boundaries.

3.2.3. PROPOSED INFRASTRUCTURES

The surface infrastructure planned on the mine includes:

Access and security control

- Access and internal haul roads;
- Mine Area
- Soil berms
- Processing plant
- Stockpiles
- Open pits
- Ablution facilities (portable toilets)
- Clean and dirty water trenches, water management sumps and silt traps
- Tailings
- Slime dam

Infrastructure area

- Vehicle Park area
- Workshop and store
- Fuel storage
- Site camps and offices
- Ablution facilities (chemical toilets)
- JoJo tanks
- Waste disposal site
- Slump dam
- Tailings
- Water recycling facility
- Stockpile Yard
- Wash bay
- Generators
- Lighting

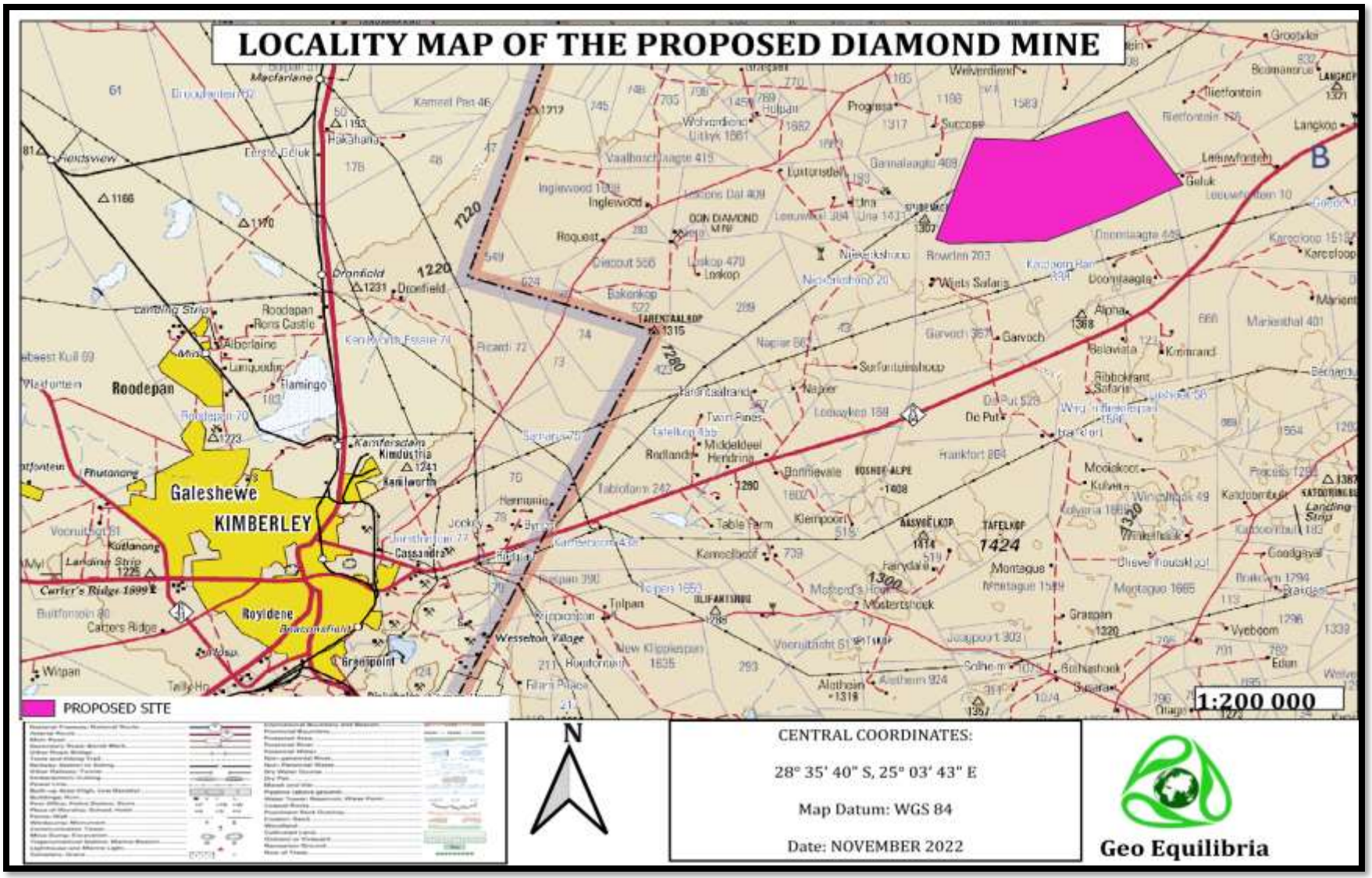

Figure 1: Locality Map.

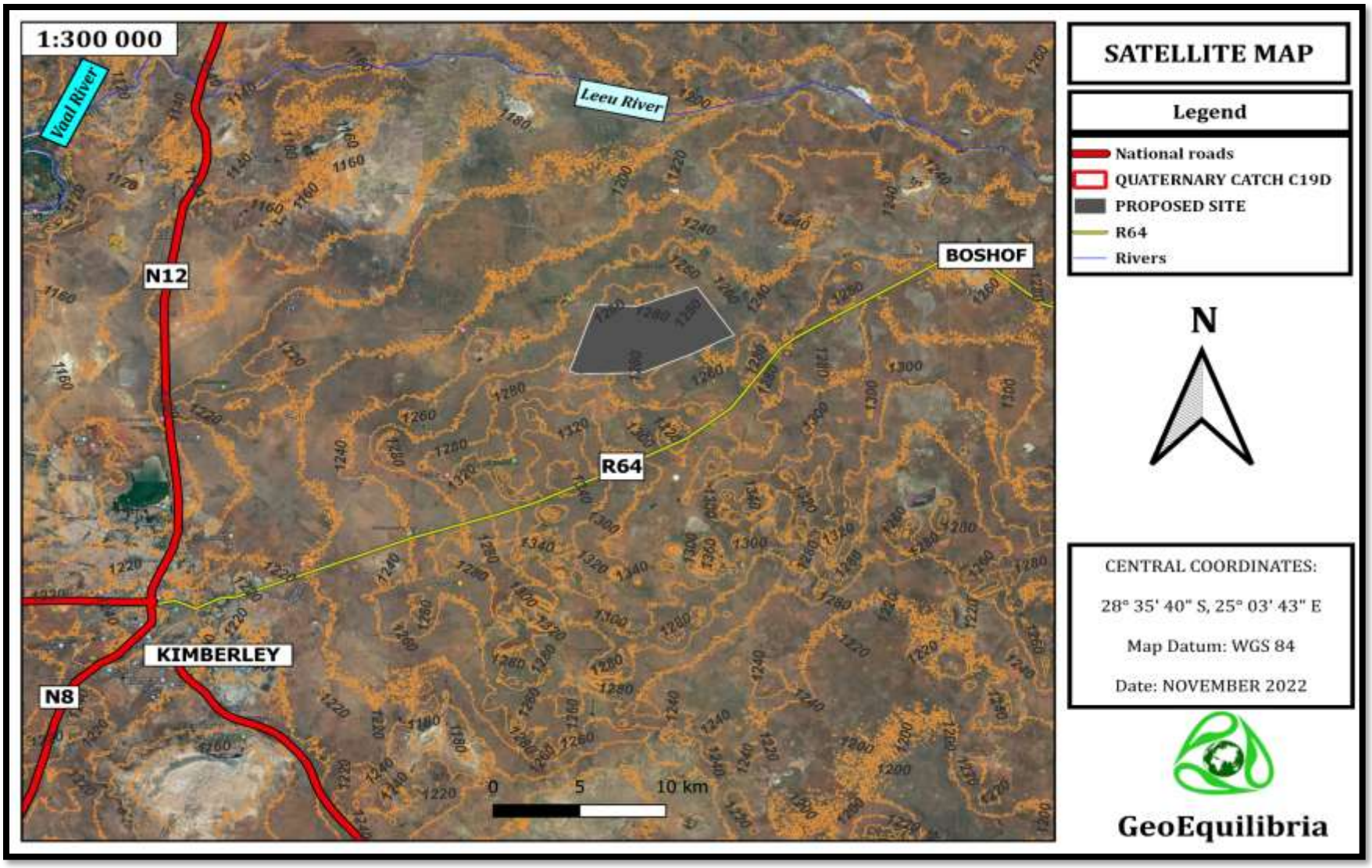

Figure 2: Satellite Map

4. METHODOLOGY

4.1. DESKTOP ASSESSMENT

The assessment was initiated with a desktop study to gather geological and hydrogeological data as well as information for evaluation and interpretation. The hydrogeological information was reviewed and assessed for relevance, to characterise the site, identify water features, and for hydrogeological characterisation.

A desktop study of the region was conducted using data obtained from the DWAF GRE2 project.

This report is not intended to be an exhaustive description of all the tasks performed, but rather a summary of the most important findings.

4 ENVIRONMENTAL SETTING

The geohydrology of the study area was described and assessed based on available data and information from previous studies, geohydrological modelling, and additional field work. The geohydrological setting and conceptual model of the study area is described according to the following criteria:

- Climate;
- Catchment analysis;
- Regional geohydrology;
- Regional Geology; and
- Groundwater flow direction.

5.1 CLIMATE

5.1.1 MEAN ANNUAL PRECIPITATION

Mean Annual Precipitation (MAP) is representative of the average rainfall that occurs over an area during any given year. This rainfall is obtained by taking the total rainfall received over time at a specific point including any extreme periods and/or events and averaging it.

The area of Boshof lies on 1280 m above sea level. The climate in Boshof is a local steppe climate. There is not much rainfall in Boshof all year long. The climate here is classified as BSh by the Köppen-Geiger system. The temperature here average is 18.6 °C. The annual rainfall is 500 mm.

July is the driest month, with 6 mm of rainfall and January experienced the greatest amount of precipitation with an average of 82 mm. The warmest month of the year is January, with an average temperature of 24.7 °C. The lowest average temperatures in the year occur in July, when it is around 10.5 °C. The difference in precipitation between the driest month and the wettest month is 76 mm. **Table 1**, and **Figure 4** shows the climate graph.

Table 1: Average Weather by Month.

Month	Avg. Temperature (°C)	Min. Temperature(° C)	Max. Temperature (°C)	Precipitation (mm)
January	24.7	18.1	31.2	82
February	23.6	17.7	30.2	75
March	22	16	28.4	68
April	17.8	11.5	24.3	46
May	14.2	7.77	21.2	19
June	10.6	3.9	18	12
July	10.5	3.3	18.3	6
August	13.5	5.6	21.6	11
September	17.1	9.4	25.8	16
October	21	12.9	28.8	38
November	22.7	14.9	30.2	56
December	24.3	13.2	31.3	68
Long-term Average	**18.6**	**10.5**	**24.7**	**500**

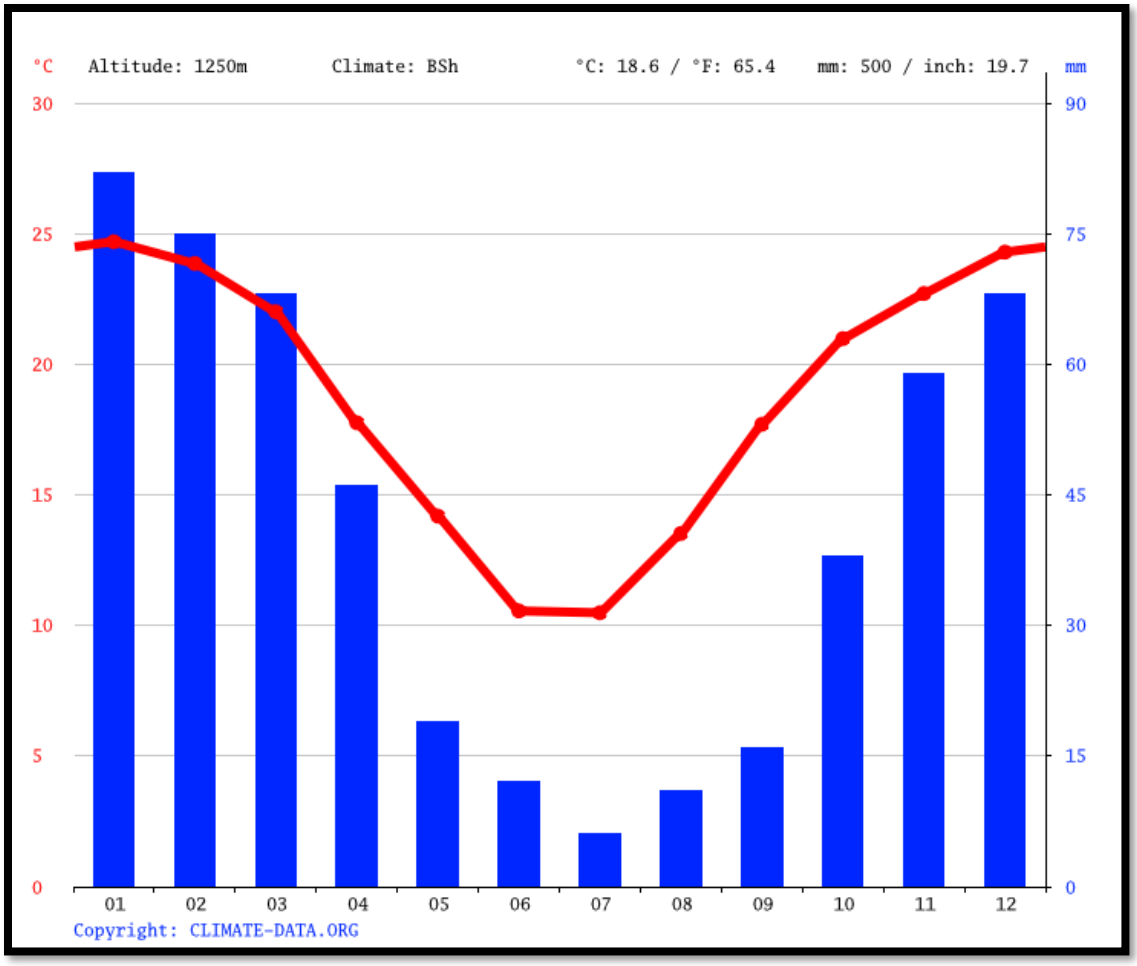

Figure 3: Climate Graph.

5.2 CATCHMENT ANALYSIS

The existing river systems in relation to the proposed site are categorized in 3 Tiers as follows:

- Tier 1- Water Management Area No: 05.
- Tier 2- Quaternary Catchment: C91D.
- Tier 3- Site Specific Catchment Areas.

The WMA and catchment areas are discussed in detail below.

5.2.1 WATER MANAGEMENT AREA NO: 05

The study area falls within water management area number 05– Vaal. WMA 05 includes the following major rivers Wilge, Liebenbergvlei, Mooi, Renoster, Vals, Sand, Vet, Harts, Molopo, and Vaal Rivers. Water management area 05 primarily drains in region C. **Figure 4** shows water management area No. 05.

Figure 4: Water Management Area Map.

5.2.2 QUATERNARY CATCHMENT

A catchment, in relation to a watercourse means the area from which any rainfall will drain into the watercourse or part of the water course through surface flow to a common point, or points (National Water Act, 1998, Act 36 of 1998). The study area is in Quaternary Catchment C91D (**Figure 5**) which covers an area of approximately 2693.91 km^2.

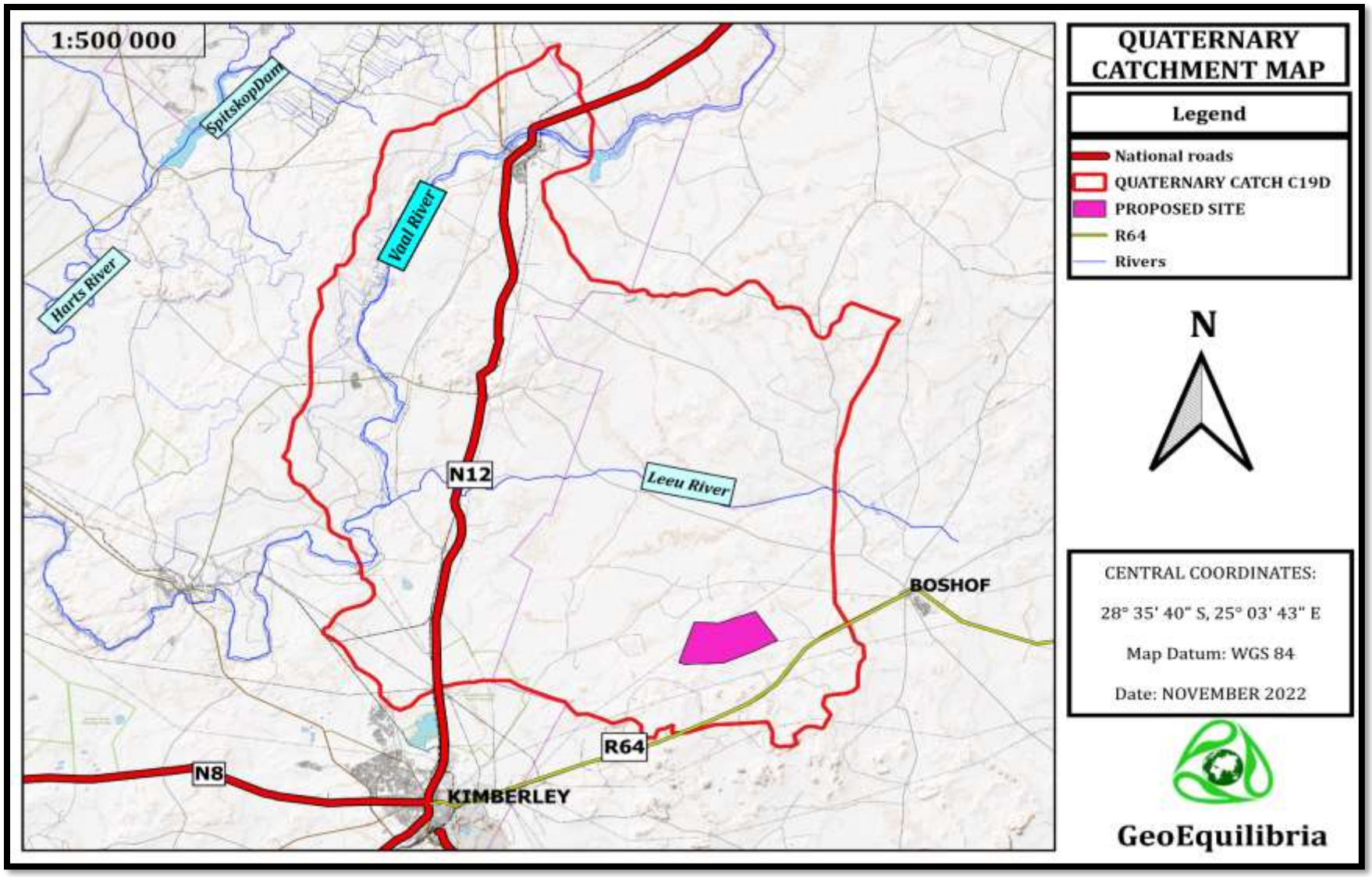

Figure 5: Quaternary Catchment C91D.

5.2.3 SIGNIFICANT SURFACE WATER RESOURCES

The Leeu River, a tributary of the Vaal River is the significant surface water feature in the vicinity of the site area.

The Vaal River has its course near Breyten in Mpumalanga 30 km north of Ermelo.it then flows westwards to its conjunction with the orange River southwest of Kimberley in the Northern cape.

5.3. REGIONAL GEOLOGY

The study area is predominantly characterized by lithologies of Kalahari Group, Tierberg Formation, Karoo Dolerite Suite, and Calcrete and hardpan.

The area is well known to be underlained by dolerite dyke, pebbly and calc-conglomerate, mudstones, gritstones, shale with interbedded siltstone, and sandstone in isolated areas. Thirty percent of the area has calcrete as part of the underlying geology. The area is mostly covered by Karoo and doleritic intrusions as well as younger Tertiary and Quaternary surficial deposits. Kimberlites protruded Ecca shales of Karoo sequence (Permian) and Jurassic dolerites.

The lithologies present in the study area are illustrated in **Figure 6.**

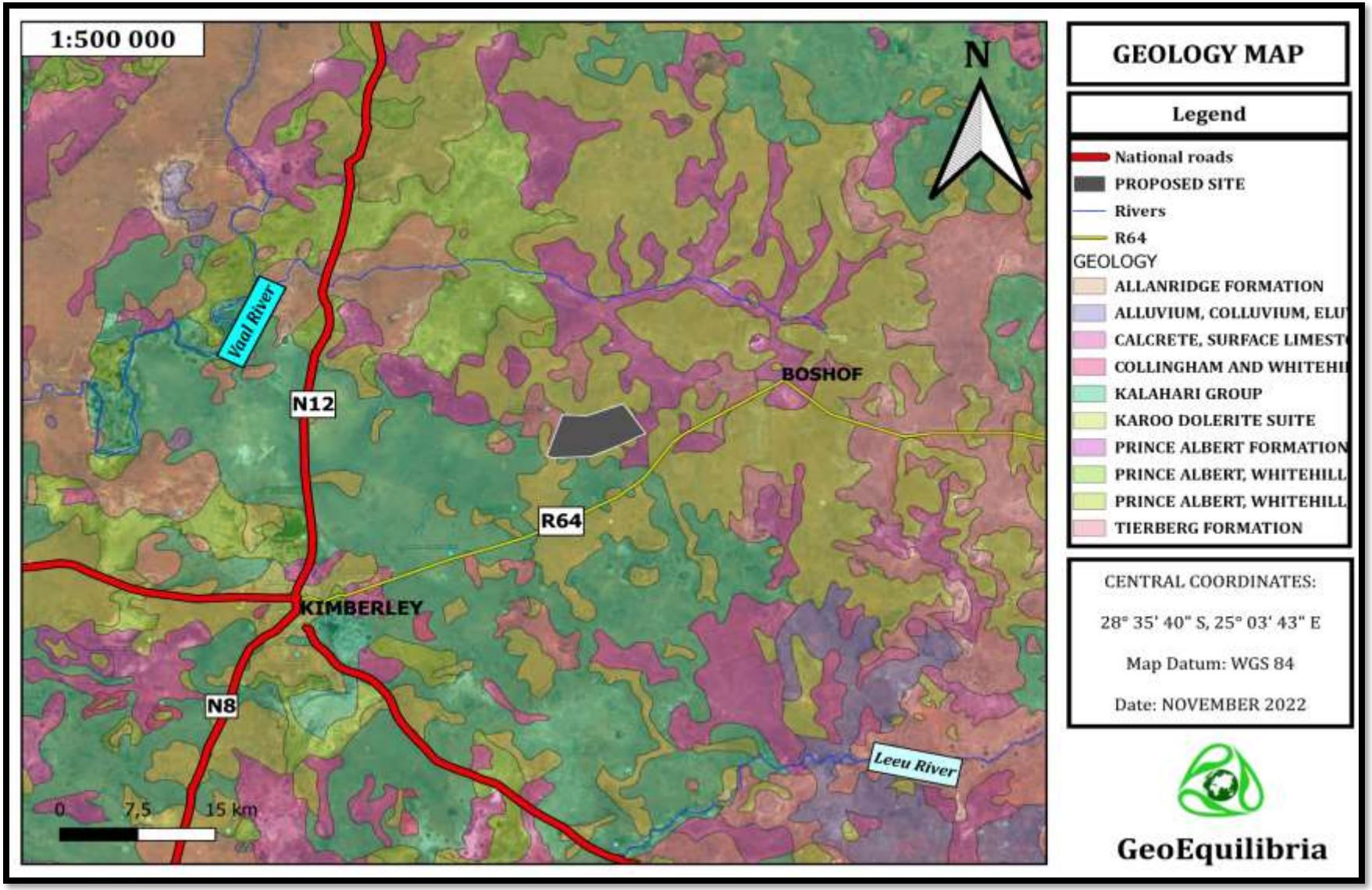

Figure 6: Geological Map.

The aquifers systems developed within the study area are:

- **Deeper Fractured Aquifers**: composed mainly of crystalline material (i.e. igneous and metamorphic rocks) characterised by an intact and relatively unweathered matrix with a complex arrangement of interconnected fracture systems.
- **Fractured karst aquifer**: these rocks that form a fractured karst aquifer in the area and have a high degree of heterogeneity and anisotropy. The aquifers are unconfined to semi-confined, being separated by dolerite dykes being a possible effect due to the dykes acting as aquitards or barriers to groundwater flow. The contact zones between the dolomite formations and dolerite dykes are usually fractured however, and along with any other faults and fractures result in distinct dolomite dissolution and the development of groundwater flow paths in the region (Mndaweni, S. et.al. 2019).

6. SITE ASSESSMENT AND HYDROCENSUS

A search of the National Groundwater Archive (NGA), which provides data on borehole positions, groundwater chemistry and yield, when available, was carried out. The information gathered during the preliminary site assessment was used to conceptualize the site and to guide subsequent phases of the assessment.

6.1. AQUIFER PROPERTIES

A desktop study of the region was conducted using data obtained from the DWAF GRE2 project, the maps are found on Appendix A.

Important parameters that can be obtained from borehole include Hydraulic Conductivity (K), Transmissivity (T), Storativity (S), Electrical Conductivity (EC),

These parameters are defined as follows (Krusemann and De Ridder, 1991):

- **Transmissivity** (T): Transmissivity is the product of the average hydraulic conductivity and the saturated thickness of the aquifer. Transmissivity observed from the boreholes around the site have an average value of 0.5-2.0 m/day**.**
- **Storativity** (S): The storativity of a saturated confined aquifer is the volume of water released from storage per unit surface area of the aquifer per unit decline in the component of hydraulic head normal to that surface. The storativity has a value of about 43 436.36 m^3/km^2.
- **Electrical Conductivity** (EC): The degree to which a specified material conducts electricity, calculated as the ratio of the current density in the material to the electric field which causes the flow of current. The Electrical conductivity observed from the boreholes around the site average at 70-300 mS/m.
- **Mean Recharge** is defined as the process by which water is added from outside to the zone of saturation of an aquifer, either directly into a formation, or indirectly by way of another formation. The boreholes had a mean recharge of 24.53 mm/a.
- **Exploitation potential** is the rate at which groundwater can be withdrawn from a catchment without causing any detrimental impacts (Parson 1998). The EP of the study area averages at 10289.68 $m^3/km^2/a$.

- **Mean water level** average surface level of a body of water or the average of all hourly water level over the period of record. At the study area the mean water level averages at 32.69 mbgl (meters below ground level).
- **Fractured Aquifer** solid rock layer where groundwater is found in fractures, joints, or cracks in the rock. The zone of fractured aquifer around the site averages at 313 m.

6.2. HYDROCENSUS AND BOREHOLE INFORMATION

Boreholes provide valuable information on the groundwater regime. The hydrocensus information is summarized in **Table 2** below, with the corresponding locations in **Figure 7**.

Table 2: Hydrocensus

BH ID	LONGITUDE	LATITUDE	BH DEPTH (M)	WATER LEVEL [MBGL]	DISCHARGE [L/S]	WATER USE	DISPLACEMENT(M)	DATE
2825CA00002	-28.56706	25.0829	27.98	6.09	0.04	Domestic	1969.49	13-10-2022
2825CA00003	-28.61705	25.01624	31.36	15.24	0.01	Agriculture	1304.68	13-10-2022
2825CA00007	-28.53372	25.01624	91.07	2.44	2.15	Agriculture	1734.35	13-10-2022
2825DB00033	-28.65039	24.98285	75.00	40.48	0.09	Domestic	4475.78	13-10-2022
2825CA00091	-28.61038	25.09651	48.10	13.10	1.27	Agriculture	25.03	13-10-2022
2825CA00109	-28.62347	25.0221	64.92	15.24	---	Agriculture	5857.91	13-10-2022
2825CA00113	-28.597729	24.97389	56.69	25.91	---	Agriculture	4261.02	13-10-2022

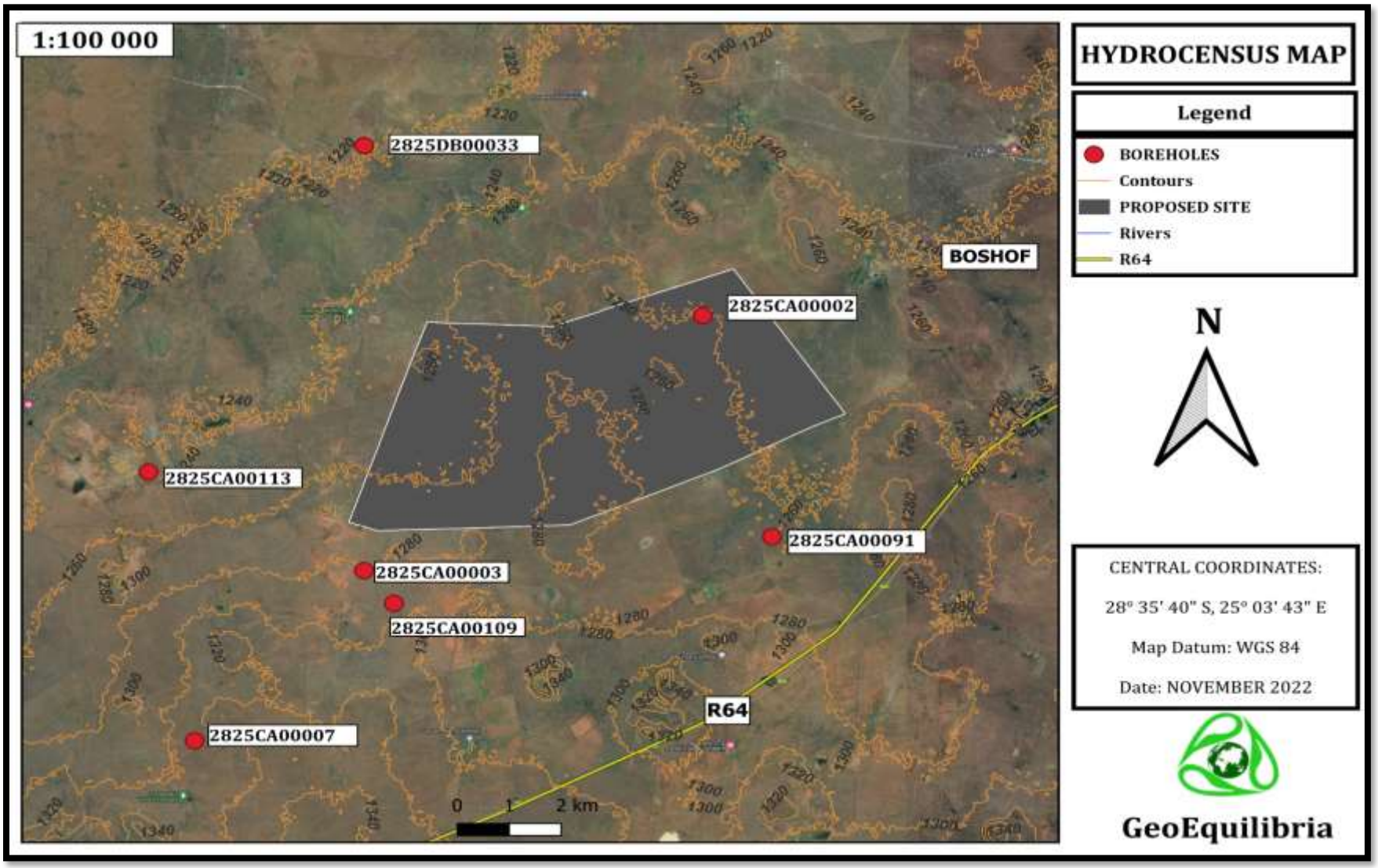

Figure 7: Hydrocensus Positions Map

7. CONTAMINATION RISK ASSESSMENT

The most widely accepted definition of groundwater contamination is defined as the introduction into water of any substance in undesirable concentration not normally present in water , which renders the water unfit for its intended use (UNESCO, 1992). The objective is to formulate a risk-based framework from geological and hydrogeological information obtained as part of this investigation. The approach followed in an estimation of the risk of groundwater contamination is discussed below.

7.1. PARSONS RATING SYSTEM

The aquifer classification system used to classify the aquifers is the proposed National Aquifer Classification System of Parsons (1995). The "Parsons Rating System" is an aquifer classification system developed to implement a strategy for managing groundwater quality in South Africa. Classification, vulnerability, and susceptibility are rated for a specific aquifer to be studied.

This system has a certain amount of flexibility and can be linked to second classifications such as a vulnerability or usage classification. Parsons suggests that aquifer classification forms a very useful planning tool that can be used to guide the management of groundwater issues. He also suggests that some level of flexibility should be incorporated when using such a classification system.

7.1.1. AQUIFER CLASSIFICATION

An aquifer classification system provides a framework and objective basis for identifying and setting appropriate levels of groundwater resource protection. This would facilitate the adoption of a policy of differentiated groundwater protection. Other uses could include:

- Defining levels of investigation required for decision making;
- Setting of monitoring requirements; and
- Allocation of manpower resources for contamination control functions.

The South African Aquifer System Management Classification is presented by five major classes given in **Table 3**.

Table 3: Aquifer System Management Classification.

AQUIFER CLASSIFICATIONS	DEFINITIONS
Sole Source Aquifer	An aquifer which is used to supply 50% or more of domestic water for a given area, and for which there are no reasonable available alternative sources should the aquifer be impacted upon or depleted. Aquifer yields and natural water quality are immaterial.
Major Aquifer System	Highly permeable formations, usually with a known probable presence of significant fracturing. They may be highly productive and able to support large abstractions for public supply and other purposes. Water quality is generally very good (less than 150 mS/m).
Minor Aquifer System	*These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability. Although these aquifers seldom produce large quantities of water, they are important both for local supplies and supplying base flow to rivers.*
Non-Aquifer System	These are formations with negligible permeability that are generally regarded as not containing groundwater in exploitable quantities. Water quality may also be such that it renders the aquifer as unusable. However, groundwater flow through such rocks, although imperceptible, does take place, and needs to be considered when assessing the risk associated with persistent pollutants.
Special Aquifer System	An aquifer designated as such by the Minister of Water Affairs, after due process.

The study area is in a minor aquifer region, which do not have a high primary permeability, or other formations of variable permeability though they seldom produce large quantities of water and are important both for local supplies and supplying base flow to rivers. (DWS, 2013).

7.1.2. AQUIFER VULNERABILITY

Aquifer Vulnerability is the likelihood for contamination to reach a specified position in the groundwater system after introduction at some location above the uppermost aquifer. The vulnerability of the underground water sources is related to the distance that the contaminant must flow to reach the water table and the ease with which it can flow through the soil and rock layers above the water table. An assessment of the soil and rock types and the distance to the water table can be used to obtain a vulnerability class. **Table 4** defines the aquifer vulnerability classes.

Table 4: Vulnerability of Groundwater Aquifer.

VULNERABILITY CLASS	MEASUREMENTS	DEFINITION
High (usually gravely or fractured rock, and/or high-water table)	High risk and medium distance(2-5m) to water table	Vulnerable to many pollutants except those highly absorbed, filtered and/or readily transformed
Medium (usually fine sand, deep loam soils with semi-solid rock and average water table > 10m)	Low risk and medium to long distance to water table	Vulnerable to inorganic pollutants but with negligible risk of organic or microbiological contaminants
Low *(usually clay or loam soils with semisolid rock and deep-water table >20m)*	*Minimal and low risk and long to very long distance to water table*	*Only vulnerable to the most persistent pollutants in the very long term*

According to the aquifer vulnerability map of South Africa the project area is underlain by an aquifer system with a low vulnerability rating, which is only vulnerable to the most persistent pollutants in the very long term.

7.1.3. AQUIFER SUSCEPTIBILITY

The susceptibility matrix indicates the qualitative measure of the relative ease with which a groundwater body can be potentially contaminated by anthropogenic activities and includes both aquifer vulnerability and the relative importance of the aquifer in terms of its classification. According to the Aquifer susceptibility map of South Africa the project area is underlain by an aquifer system with a "low" susceptibility rating (DWS, 2013).

7.1.4. GROUNDWATER QUALITY MANAGEMENT

As part of the aquifer classification, a Groundwater Quality Management (GQM) Index can be used to define the level of groundwater protection required (**Table 6**). To achieve the Groundwater Quality Management Index a point scoring system as presented in **Table 5** was used.

Table 5: Ratings for the Aquifer Quality Management Classification System.

Aquifer System Management Classification	POINTS	Aquifer Vulnerability Classification	POINTS
Sole Source Aquifer System	6	High	3
Major Aquifer System	4	Medium	2
Minor Aquifer System	*2*	*Low*	*1*
Non-Aquifer System	0		
Special Aquifer System	0-6		

Table 6: Appropriate Level of Groundwater Protection Required.

GQM INDEX	LEVEL OF PROTECTION
<1	Limited Protection
1-3	*Low Level Protection*
3-6	Medium Level Protection
6-10	High Level Protection
>10	Strictly Non-degradation

The level of groundwater protection based on the Groundwater Quality Management (GQM) Classification:

GQM Index = Aquifer System Management x Aquifer Vulnerability
= 2 x 1
= 2

The ratings for the Aquifer System Management Classification and Aquifer Vulnerability Classification yield a Groundwater Quality Management Index of 2 for the study area, indicating that low level groundwater protection may be required. With the GQM index calculated for this area, a medium level of protection is needed to adhere to the Department of Water Affair's (DWA) water quality objectives.

7.2. PATHWAY AND RECEPTOR EVALUATION

To evaluate the risk of groundwater contamination, potential sources of contamination should be identified, as well as potential pathways and receptors. The pollution linkage concept relies on the identification of a potential pollutant (i.e., source) on-site which is likely to have the potential to cause harm on a receptor by means of a pathway by which the receptor may be exposed to the contaminant.

7.2.1. COMMON PATHWAYS

Water forms part of the mechanism driving the pollution away from the source. The media in which the material is carried from one point to another and usually in this case influenced by water recharge into the subsurface. Particle pores, fissures and fractures serve as pathway to allow contamination to mobilise within the aquifer. The following common pathways have been identified:

- Percolation of contaminants through soil media; and
- Direct contact with groundwater. Groundwater will be the transport medium for downstream migration of contaminants (migration rate will depend on the natural groundwater flow rate).

7.2.2. POTENTIAL RECEPTORS

Receptors can be classified as points of discharge such as boreholes used for water drinking, rivers, or streams where animal (including humans) and plants come into contact or consume contaminated water. The following potential receptors have been identified:

- Groundwater i.e., host aquifer;
- Streams around the site, Leeu River approximately 13.23 km north of site.

9. CONCLUSIONS

Geo Equilibria (Pty) Ltd was appointed by Biomental Services (pty) Ltd on behalf of Invest In Property 126 (pty) Ltd to conduct a geohydrological investigation as part of an environmental application process to obtain the required authorization to mine diamond kimberlite and diamond general on the farm Viljoenshof 1655 in Boshof within Boshof District Municipality in the Free State province.

The primary purpose of this investigation was to provide information on the surface and groundwater environment on and near the site, and to do a risk assessment associated with the proposed development.

There is little rainfall in Boshof all year long. The temperature here average is 18.6 °C. The annual rainfall is 500 mm. The study area is predominantly characterized by lithologies of Kalahari Group and the area is well known to be underlained by dolerite dyke, pebbly and calc-conglomerate, mudstones, gritstones, shale with interbedded siltstone, and sandstone in isolated areas.

The study area falls within water management area number 5 Vaal, in Quaternary Catchment C91D, the main water resource is the Vaal River. The ground water level around the site is expected to be in the region of 18.09 mbgl. The groundwater flow direction at the site is dominantly north and northwest based on site assessment.

No identified impact disqualified the implication of the project, and the impacts can be countered by adequate mitigation and training of personnel.

Reasonable measures as recommended in this report should be implemented to prevent and/or minimise the potential impacts on water resources. The identified potential impacts' significance was rated negligible to low with mitigation.

REFERENCES

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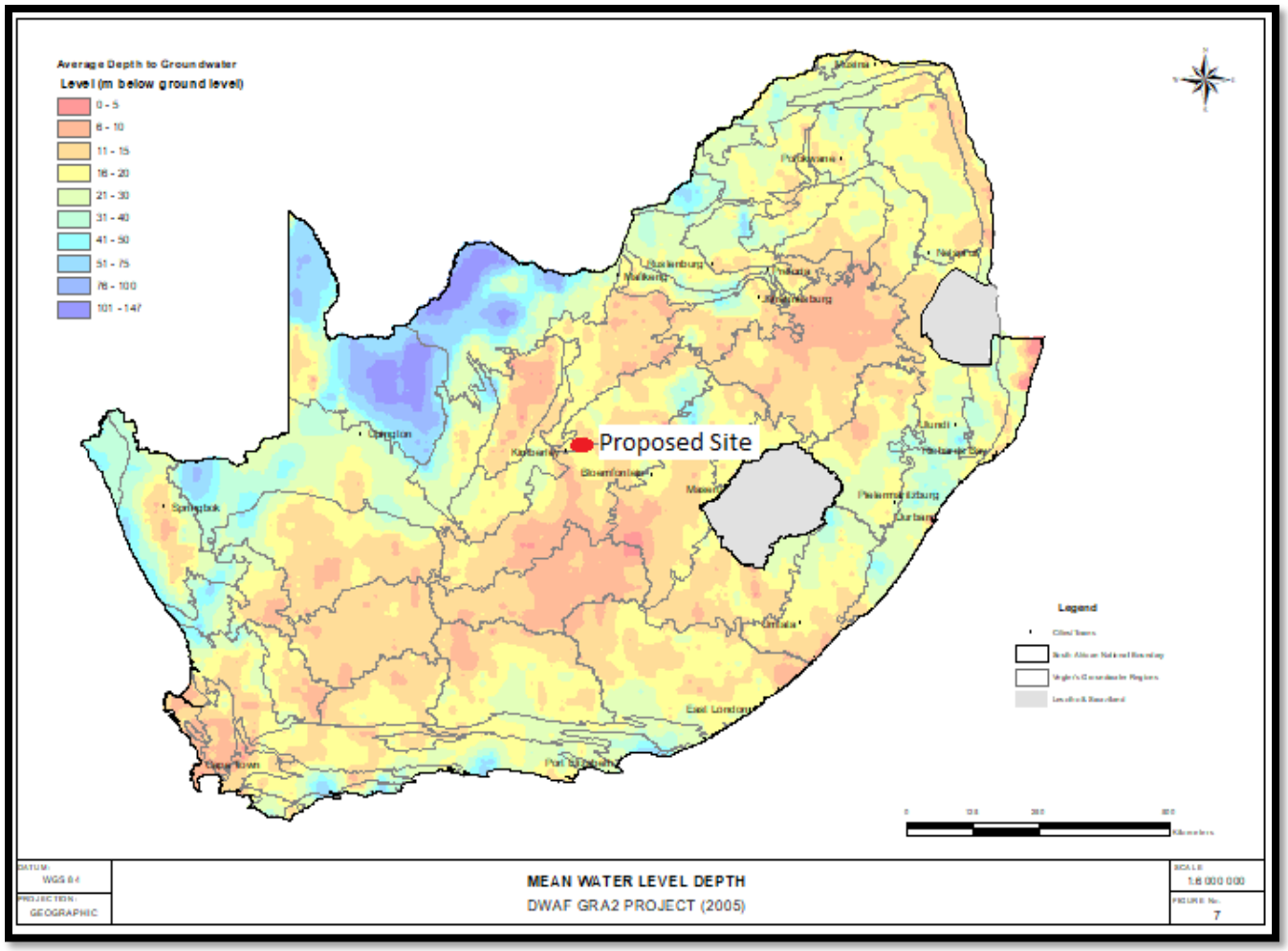
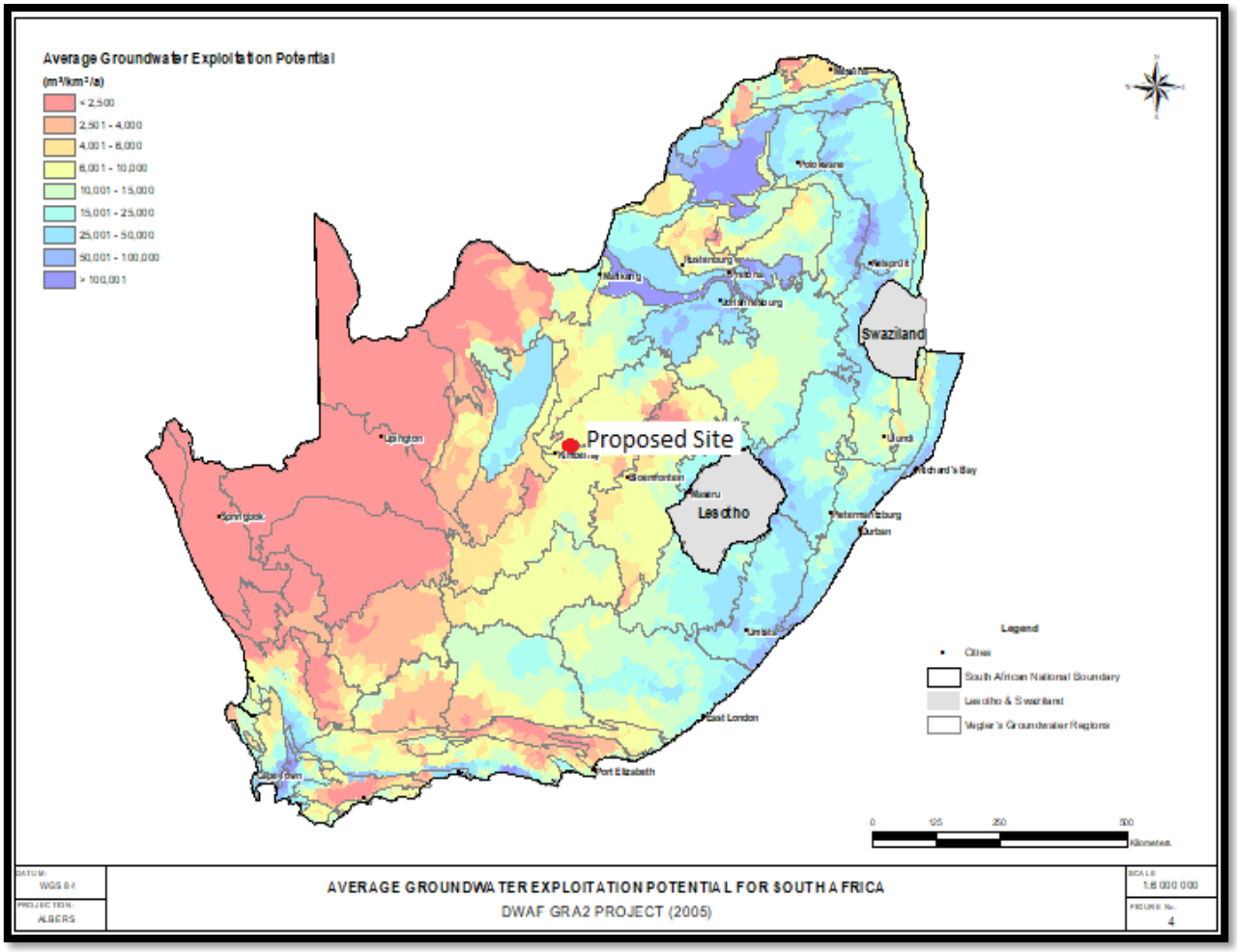
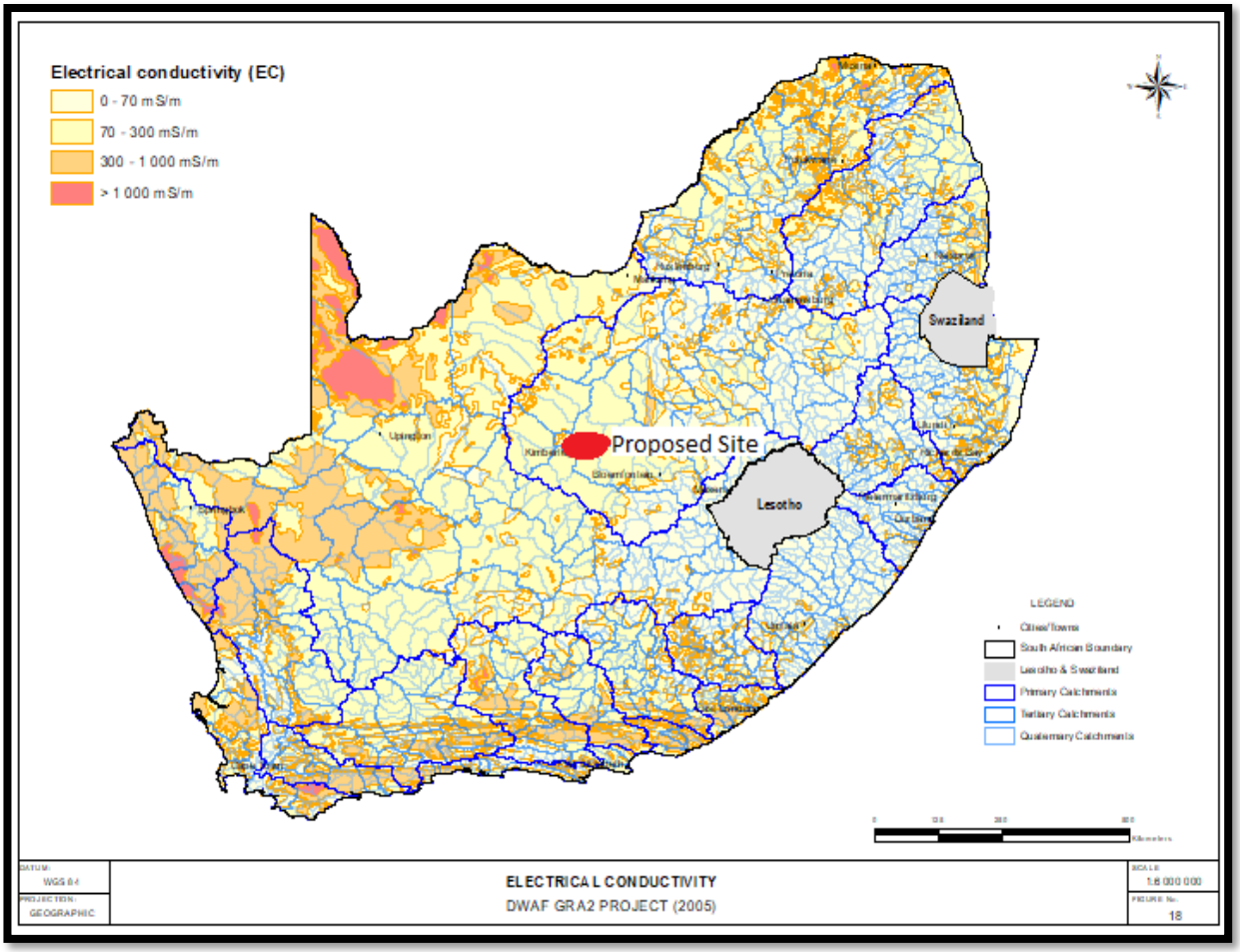
APPENDIX A: AQUIFER PROPERTIES



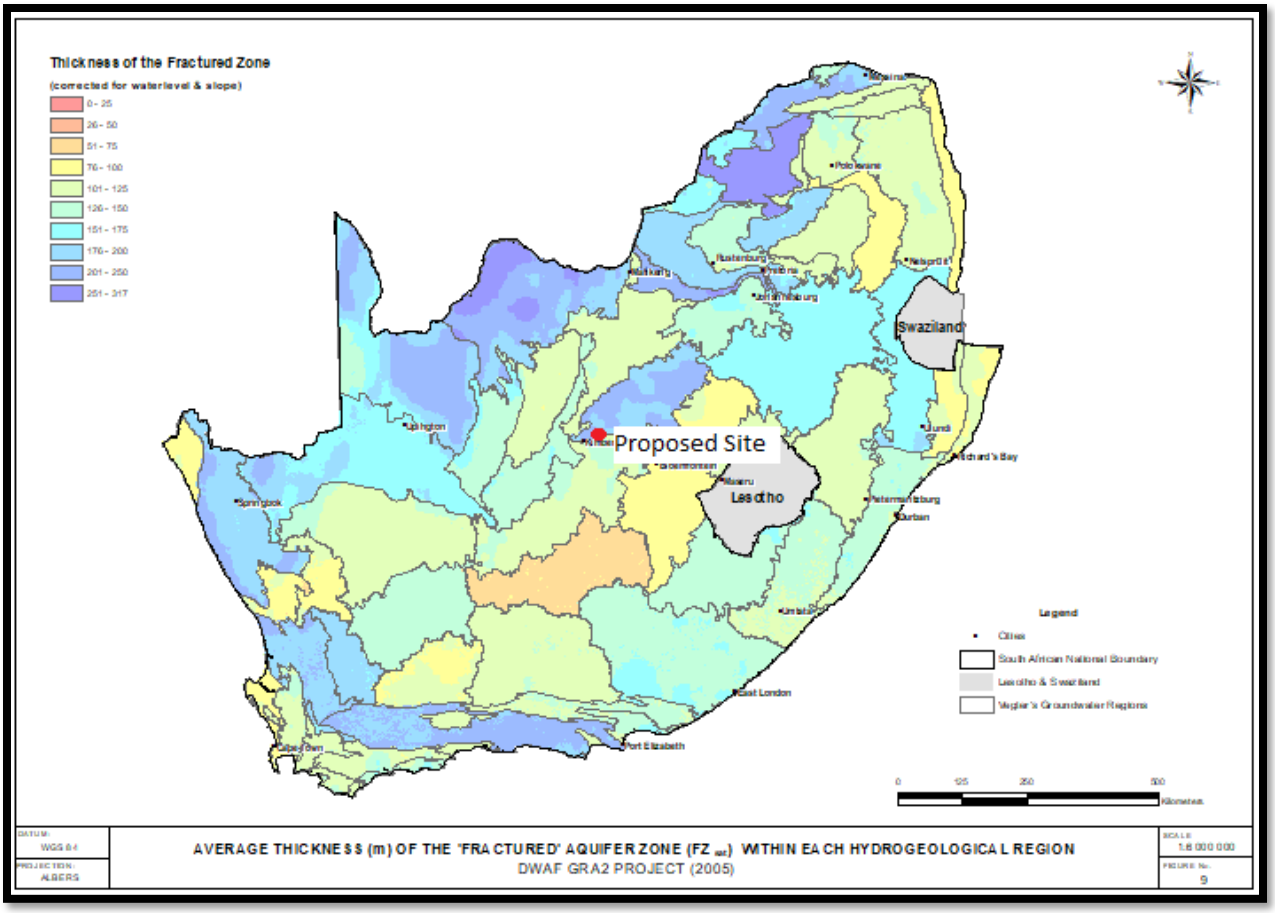
Mean Water Level Depth



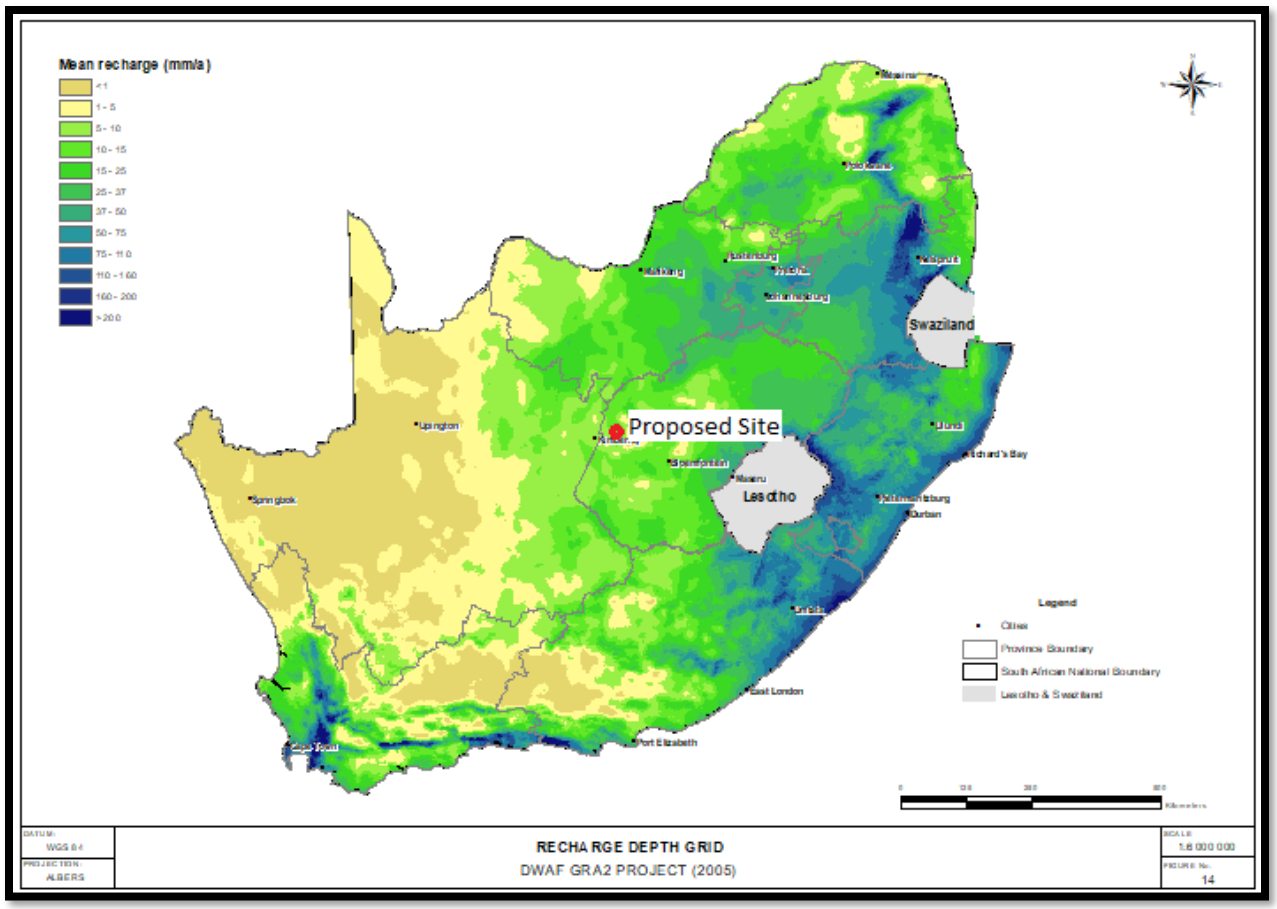
Average Groundwater Exploration Potential



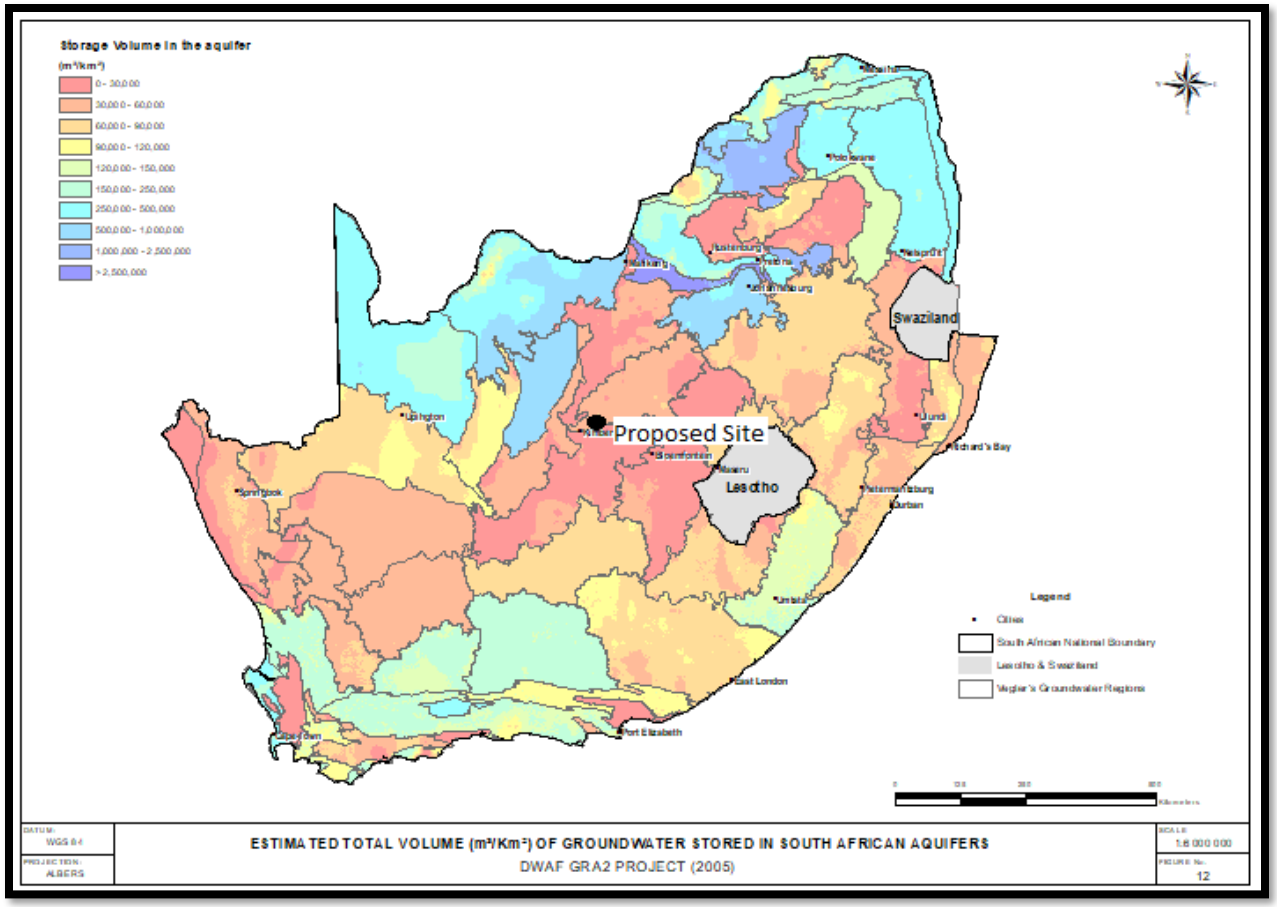
Electrical Conductivity



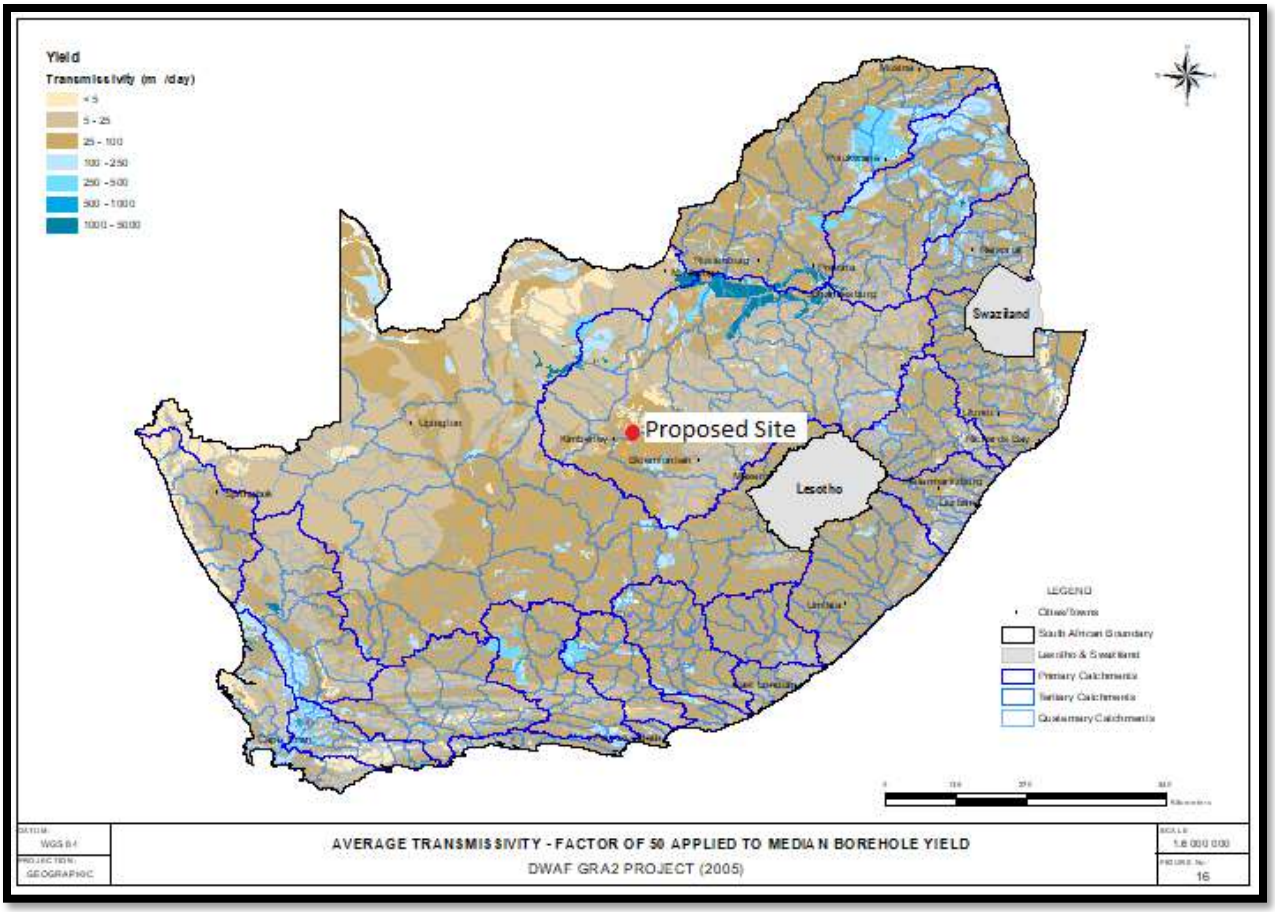
Average Thickness of The Fractured Aquifer Zone



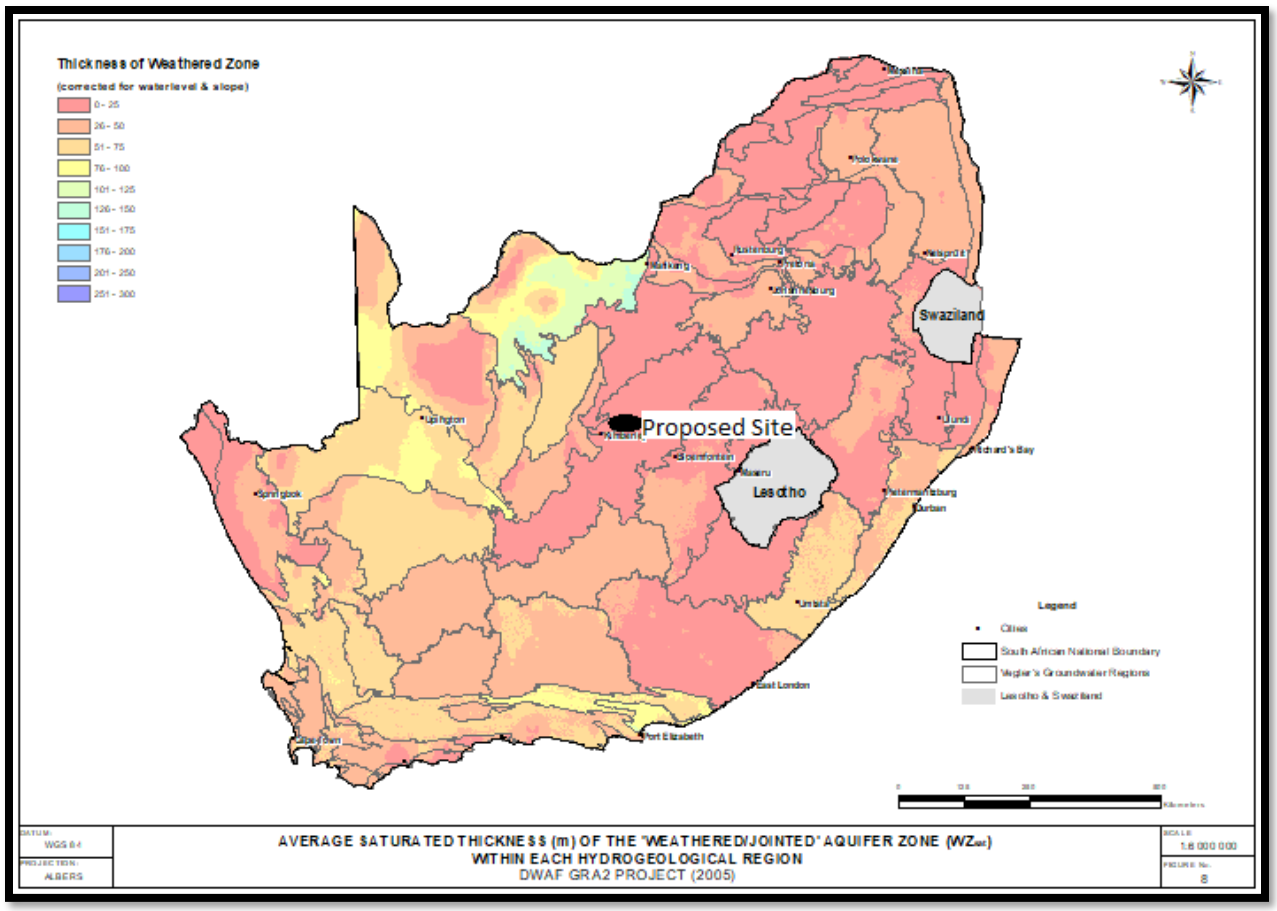
Recharge Depth



Storativity



Transmissivity



Thickness of the Weathered/Jointed Aquifer Zone