Submitted to: Grace Simba Investments (Pty) Ltd
Attention: Ms Jade Greve
PO BOX 90757
Windhoek
Namibia

REPORT:

ML 133 – GROUNDWATER DEVELOPMENT REPORT

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ENVIRONMENTAL COMPLIANCE CONSULTANCY CONTACT DETAILS:

We welcome any enquiries regarding this document and its content. Please contact:

Environmental Compliance Consultancy
PO Box 91193, Klein Windhoek, Namibia
Tel: +264 81 669 7608
Email: info@eccenvironmental.com

Quality Assurance

Author:

Luke Towers
Environmental Compliance Consultancy

Checked By:

Jessica Bezuidenhout
Environmental Compliance Consultancy

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ABBREVIATIONS

Abbreviation	Description
%	percent
AD	available drawdown
BH	borehole
CDT	Constant-rate discharge test
ECC	Environmental Compliance Consultancy (Pty) Ltd
EMP	environmental management plan
ID	identification
l/s	litres per second
kW	kilowatt
MAFWLR	Ministry of Agriculture, Fisheries, Water and Land Reform
m^3/h	cubic metre per hour
m^2/d	metre square per day
m	metre
ML	mining licence
mm	millimetres
mamsl	metres above mean sea level
mbgl	metres below ground level
min	minute
PVC	Polyvinyl Chloride
RWL	rest water level
SDT	Step-drawdown test
WW	water wells

1 INTRODUCTION

Grace Simba Investments (Pty) Ltd (GSI), the client, appointed Environmental Compliance Consultancy (Pty) Ltd (ECC) to supervise test pumping of two (2) production boreholes drilled at Lithium Ridge, Mining Licence (ML) 133. Borehole drilling was undertaken by Oasis Drilling CC, while testing pumping was undertaken by sub-contractor PM Drilling (Pty) Ltd. Drilling activities were supervised by an Andrada geologist, and ECC supervised and assisted to carry out the test pumping programme.

Borehole drilling was completed in line with requirements and conditions of Licence no. 11913 issued on 30 April 2025 (see Appendix A). A notice of intent to drill was submitted to the Geohydrology Division of the Ministry of Agriculture, Fisheries, Water and Land Reform (MAFWLR) on 15 August 2025 (Appendix B). After drilling, two of the four licenced boreholes produced a sufficient blow yield to warrant casing and test pumping (WW207978 and WW207980). The remaining boreholes will be used for monitoring purposes.

This report provides a summary of drilling details, test pumping data, analysis undertaken to determine aquifer parameters, well performance and a sustainable yield determination. These data and information are used to support the application to the Department of Water Affairs for a Groundwater Abstraction Licence. The location of ML 133 and the test pumped boreholes are provided in Figure 1.

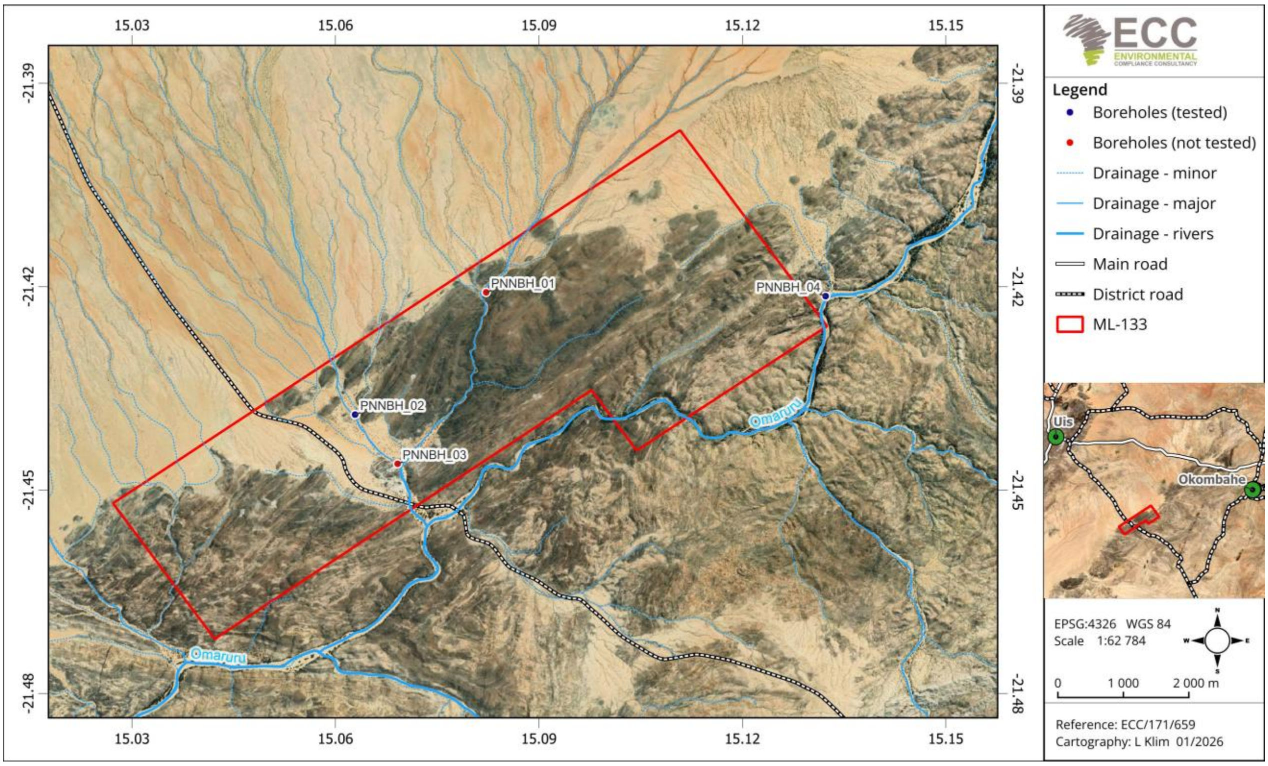

Figure 1 – Location of boreholes on ML133

2 GROUNDWATER DEVELOPMENT

2.1 OVERVIEW

The groundwater development programme included drilling of four (4) exploration production boreholes for groundwater abstraction. Rotary air percussion drilling technique was used to drill all boreholes. The driller's reports for all four (4) boreholes drilled are provided in Appendix C. Boreholes were generally drilled to a depth of ~100 metres (m). Groundwater potential was favourable at two (2) of the drilled boreholes and test pumping was undertaken to determine aquifer parameters and recommended yields. Testing comprised of a step discharge test (SDT) and a 48-hour constant-rate discharge test (CDT) followed by recovery monitoring (as per licence conditions). Calibration tests were undertaken to establish planned yields prior to commencement of test pumping. Groundwater quality samples were collected prior to the end of pumping for each of the two boreholes. Table 1 summarises drilling details for the four (4) boreholes, and Table 2 provides a summary of the test pumping details.

Table 1 - Summary of borehole drilling details

BH ID	WW	X	Y	Z	Date drilled	BH depth (m)	Drilled diameter (mm)	Casing diameter (mm)	Steel casing interval (mbgl)	PVC screen interval (mbgl)
PNNBH_01	207977	508521	7631274	802	12/09/2025	121	0.165	0.16 (steel)	0-6	open hole
PNNBH_02	207978	506517	7629280	761	19/09/2025	100	0.165	0.16 (steel) 0.14 (PVC)	0-6	12-24; 36-78
PNNBH_03	207979	507166	7628477	734	23/09/2025	100	0.165	0.16 (steel)	0-5.5	open hole
PNNBH_04	207980	513708	7631209	768	29/09/2025	100	0.165	0.16 (steel) 0.14 (PVC)	0-16	12-94

Table 2 – Summary of test pumping details

BH ID	WW	X	Y	Z	Date tested	BH depth (m)	Drilled diameter (mm)	Pump installation depth (mbgl)	Rest water level (mbgl)	Step test yields (m^3/hr)	CDT yield (m^3/hr)	CDT duration (hours)	Sampled	95% Recovery (hrs)
PNNBH_02	207978	506517	7629280	761	06/12/2025	100	0.165	93	39.51	2.5; 3.3; 5.3; 8.8	6.5	48	Yes	16
PNNBH_04	207980	513708	7631209	768	03/12/2025	100	0.165	93	1.2	3.5; 6.6; 10.3; 16.3	10 (14; 15.6)	36 (8; 4) = 48	Yes	2

All boreholes drilled targeted the secondary (fractured) aquifer underlying the Quaternary and alluvial cover. The fractured aquifer comprises metasediments of the Kuiseb Formation, Swakop Group, Damara Super Group. The lithology is dominated by mica schists and minor calc silicate rocks. The region experienced considerable pegmatite intrusion likely resulting in the variable compartmentalisation of groundwater in the secondary aquifer, with flow to each borehole dependent on the nature, orientation and density of the fracture network(s) intersected.

Borehole PNNBH_02 penetrated a thin layer of unsaturated Quaternary cover before drilling directly into the fractured aquifer.

Borehole PNNBH_04 encountered saturated river alluvium of the Omaruru River at surface but was cased off to prevent collapse and direct abstraction from the alluvial aquifer. While steel casing was installed to a depth of 16 mbgl, no grouting or sealing off of the upper alluvial aquifer was undertaken, resulting in direct hydraulic connection between the underlying fractured aquifer and the upper alluvial (porous) aquifer. Based on the saturated nature of the river alluvium, it is anticipated that the borehole will respond to testing as a leaky, confined system with some flow contributed from the alluvial aquifer.

3 TEST PUMPING

3.1 General

A 90 mm diameter, 3.5/7 kW submersible pump set was installed to a depth of 95 metres below ground level (mbgl) in boreholes PNNBH_02 and PNNBH_04 (Figure 2). A level logger was installed above the pump inlet to record groundwater levels during pumping. The discharge line was positioned ~100 m away from the pumped borehole with all discharge directed away from the borehole. An in-line analogue flow meter was used to measure the flow and cumulative volume of water discharged. Groundwater level measurements were verified manually with a dip meter and discharge rates with a graduated container and stop-watch.

While other available boreholes were monitored to assess potential interactions; no drawdown responses were recorded, precluding the determination of a storage coefficient. The absence of observation data and the analysis of a single borehole test results in unreliable storage coefficient values – these are not considered representative and are therefore not reported on; typical literature based values were applied as end members during analysis to constrain responses in T due to changes in an uncertain S. The available drawdown (AD) during test-pumping analysis is the difference between the test-pump installation depth and the rest water level (RWL). All test pumping data is included in Appendix D.

Figure 2 – Test pumping setup at PNNBH_02 and PNNBH_04

3.1 PNNBH_02

Test-pumping was undertaken on borehole PNNBH_02 on 06 December 2025, consisting of a step-drawdown test and a constant-rate discharge test (CDT). Recovery monitoring was undertaken after both the SDT and the CDT. The pump was installed to a depth of 95 mbgl and the rest water level (RWL) was measured at 38.80 mbgl prior to the step-drawdown test, which allowed for an AD of 56.20 m.

3.1.1 STEP-DRAWDOWN TEST

The step-drawdown test consisted of four one-hour long steps, with abstraction rates of between 2.5 to 8.8 m^3/hr (see Table 3 and Figure 3). The step test was followed by 190 minutes of recovery.

Table 3 - Summary of the PNNBH_02 step test

Step No.	Duration (min)	Yield (m^3/hr)	Drawdown (m)
1	60	2.5	1.06
2	60	3.3	2.39
3	60	5.3	4.81
4	60	8.8	24.33
Recovery	190	-	-

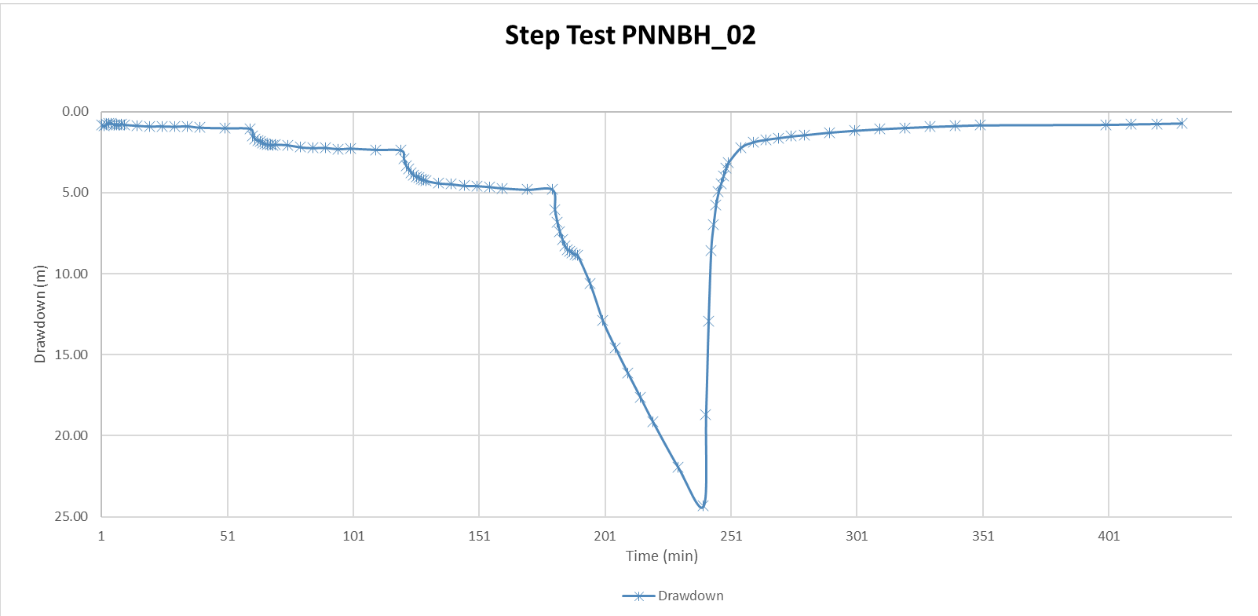

Figure 3 – Time *vs* drawdown of the step test, including recovery, at PNNBH_02

Step test results were used to determine the specific capacity of PNNBH_02, allowing turbulence and well losses to be evaluated, while also informing a suitable discharge rate for the CDT. The Specific Capacity (Sc) results provided in Table 4 show a decline in Sc with increasing discharge rate. This supports increased well losses and turbulence as the discharge rate increases. Using the Cooper-Jacob approximation of the Theis solution, a Transmissivity (T) value of 8 – 15 m^2/d was determined from the various steps. The T value was cross checked through the analysis of the recovery data using the Theis recovery method, resulting in a T of ~12 m^2/day. Results of step testing informed the onset of non-linear head losses at discharge rates >5 m^3/h (step 3), thus the CDT rate of 4.8 m^3/hr was selected and the adjustment made from the initial 6.5 m^3/hr.

Table 4 – Specific Capacity results for PNNBH_02

Step	Q (m^3/h)	End Time (min)	Drawdown (m)	Sc ($m^3/h/m$)
1	2.5	60	1.06	2.36
2	3.3	120	2.39	1.38
3	5.3	180	4.81	1.1
4	8.8	240	24.33	0.36

3.1.2 CONSTANT-RATE DISCHARGE TEST

A CDT was undertaken at PNNBH_02 for a total of 48 hours (2880 minutes). The initial rate was 6.5m^3/hr, this was adjust to 4.8 m^3/hr and later the yield dropped to 3.6 m^3/hr (see Table 5, Figure 4). After completion of the CD test, the water level was allowed to recover for 16 hours to within 100 % of the rest level.

Table 5 - Summary of the PNNBH_02 constant-rate discharge test

CD Test	Duration (min)	Yield (m^3/hr)	Drawdown (m)
Constant Discharge	0 - 300	6.5	12
	300 - 2010	4.8	46
	2010 - 2880	3.6	47
Recovery	1000	-	-

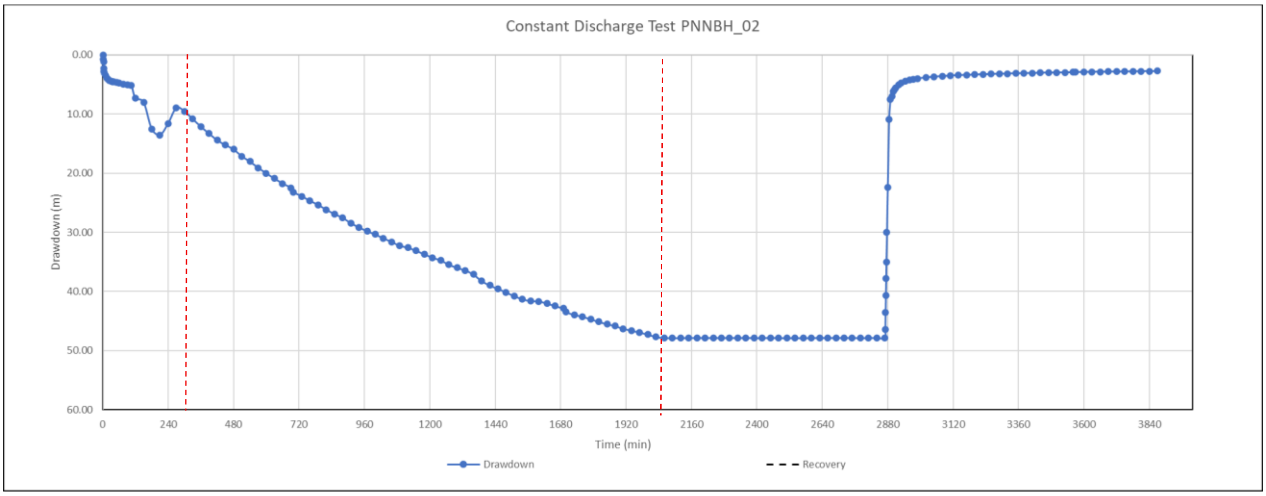

Figure 4 – Time vs drawdown results of the CDT, (including recovery at PNNBH_02.

3.1.3 ANALYSIS AND RECOMMENDATIONS

Prior to undertaking analysis, drawdown data were assessed for hydraulically valid periods of radial flow. Early time (<300 minutes) data was removed for analysis purposes as the initial rate was adjusted (Table 5). Data from 2010 minutes was removed due to a change in the pumping rate. Analysis was undertaken using a combination of AQTESOLV and FC to determine the flow characteristics at different time intervals, derive the Transmissivity (T) and establish an appropriate sustainable yield. Sustainable yield recommendations are determined using Sc results (aquifer vs well losses), drawdown derivatives and subjective information about flow boundaries for a projected period of two years assuming zero recharge.

Due to the long recovery record, the primary analytical solution used to calculate T was the Theis Recovery Method. This method removes much of the well loss component experienced in a pumped borehole and is useful in fractured systems where no observation boreholes are available. Applying this method resulted in a T value of ~10.5 m^2/d (Figure 5). This is comparable to the T value derived from the step test.

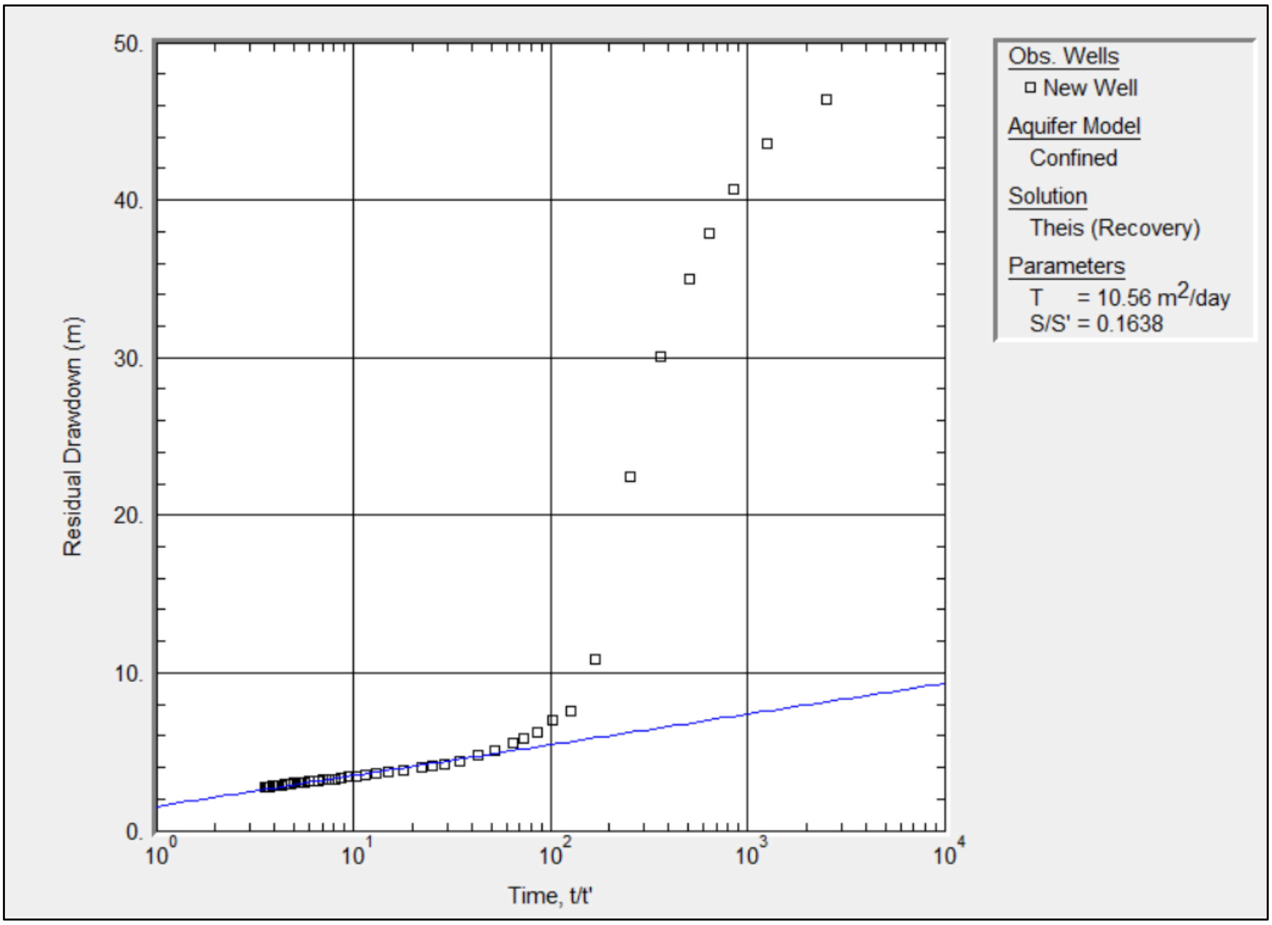

Figure 5 – AQTESOLV curve matching for parameter estimation

Assessing the Sc, T value, and responses to pumping, the recommended yield for PNNBH_02 is **3.5 m^3/hr pumping 20 hours per day**. This amounts to a daily yield of 70 m^3/day and ~25 550 m^3/annum. The borehole should be allowed to recover for at least 4 hours per day.

Recommended yields can be revised (upward or downward) following three (3) months of pumping and associated monitoring. Storage infrastructure is required to ensure pumping times are not exceeded; the borehole should not respond directly to demand, but pump to a holding tank.

It is recommended that a level logger be installed in the borehole to monitoring groundwater level initially on an hourly basis with monthly manual verification (revise frequency after 3 months). The wellhead needs to allow for a dip tube to house the logger and allow manual measurement with a dip meter. All abstraction volumes and rates need to be monitored by a flow meter and recorded weekly. The flow meter needs to be installed upright and level with sufficient distance to reduce turbulence through the gauge and approach laminar flow. Pump times (start/stop) should be recorded to supplement and correlate abstraction and water level data. The pump can be installed at a depth of 80 mbgl, to keep cool water flowing near the motor. The water level alert threshold and cut back can be set at 70 mbgl, and the cut off at 75 mbgl.

3.2 Borehole PNNBH_04

Test-pumping was undertaken on borehole PNNBH_04 on 03 December 2025, consisting of a step-drawdown test and a constant-rate discharge test (CDT). Recovery monitoring was undertaken after both the SDT and the CDT. The pump was installed to a depth of 93 mbgl and the rest water level (RWL) was measured at 1.2 mbgl prior to the step-drawdown test, which allowed for an AD of 91.80 m.

3.2.1 STEP-DRAWDOWN TEST

The step-drawdown test consisted of four one-hour long steps, with abstraction rates of between 3.5 to 16.3 m^3/hr (see Table 6 and Figure 6). The step test was followed by 360 minutes of recovery.

Table 6 - Summary of the PNNBH_04 step test

Step No.	Duration (min)	Yield (m^3/hr)	Drawdown (m)
1	60	3.5	0.42
2	60	6.6	0.80
3	60	10.3	2.18
4	60	16.3	2.42
Recovery	360	-	-

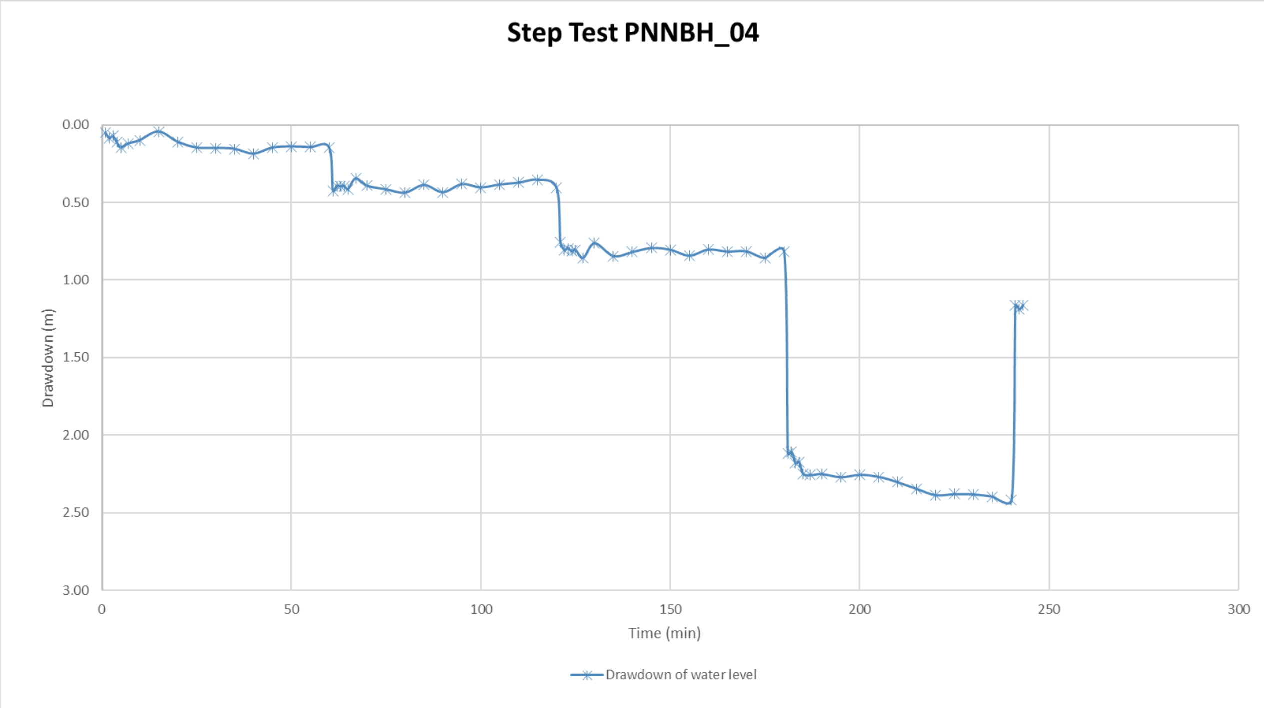

Figure 6 – Time *vs* drawdown of the step test, including recovery, at PNNBH_04

Step test results were used to determine the specific capacity of PNNBH_04, allowing turbulence, well losses and leakance to be evaluated, while also informing a suitable discharge rate for the CDT. The Specific Capacity (Sc) results provided in Table 7 show a decline in Sc with increasing discharge rate. This supports increased well losses and turbulence as the discharge rate increases. Using the Cooper-Jacob approximation of the Theis solution, a Transmissivity (T) value of 25 – 45 m^2/d was determined from the various steps. This is likely an overestimate due to leakage from the alluvium. The T value was cross checked through the application of the Hantush-Jacob solution for leaky, confined aquifers, resulting in an apparent T of ~25 m^2/day. This indicates a significant leakage contribution from the alluvium and triggers a precautionary approach to avoid stressing the alluvial system. Results of step testing informed the onset of non-linear head losses (inefficiency) at discharge rates >10 m^3/h (step 3), thus the CDT rate of 10 m^3/hr was selected.

Table 7 – Specific Capacity results for PNNBH_04

Step	Q (m^3/h)	End Time (min)	Drawdown (m)	Sc (m^3/h/m)
1	3.5	60	0.15	23.04
2	6.6	120	0.38	17.18
3	10.3	180	0.82	12.53
4	16.3	240	2.392	6.81

3.2.2 CONSTANT-RATE DISCHARGE TEST

A CDT was undertaken at PNNBH_04 for a total of 48 hours (2880 minutes). The initial rate was 10 m^3/hr, this was adjusted to 14 m^3/hr and later to 15.6 m^3/hr (see Table 5, Figure 4). After completion of the CD test, the water level was allowed to recover for 2 hours to within 100 % of the rest level.

Table 8 - Summary of the PNNBH_04 constant-rate discharge test

CD Test	Duration (min)	Yield (m^3/hr)	Drawdown (m)
Constant Discharge	0 - 2160	10	2.22
	2160 - 2640	14	3.02
	2640 - 2880	15.3	3.42
Recovery	120	-	-

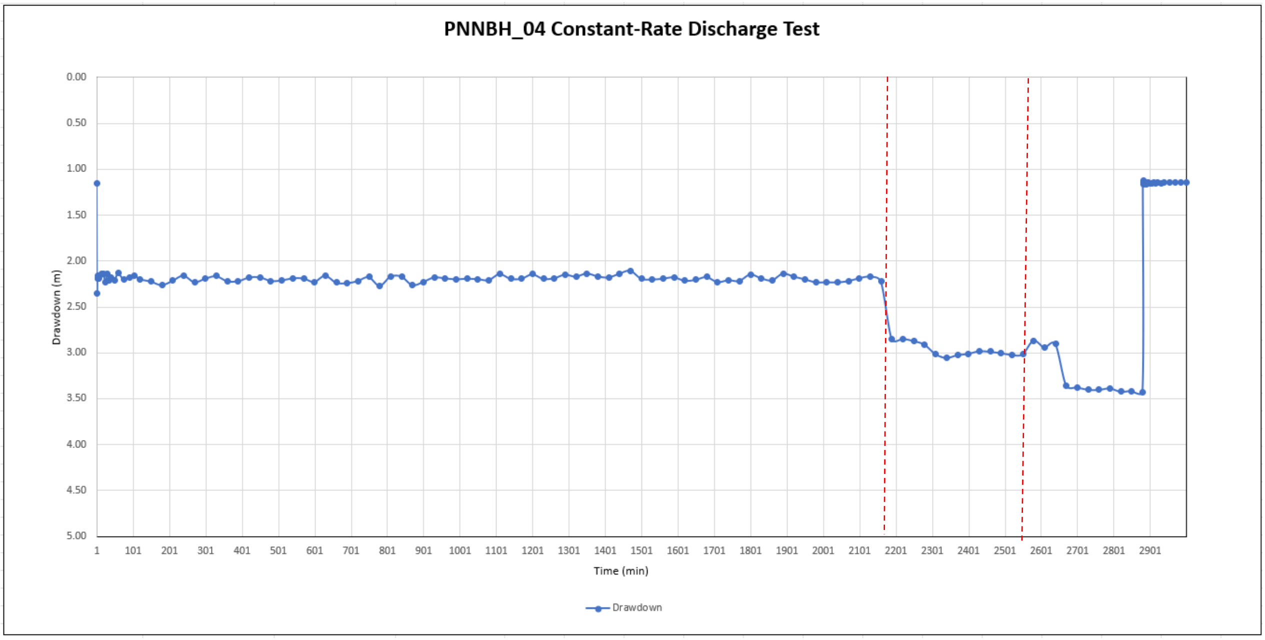

Figure 7 – Time vs drawdown results of the CDT, including recovery at PNNBH_04.

3.2.3 ANALYSIS AND RECOMMENDATIONS

Prior to undertaking analysis, drawdown data were smoothed using a 5-point rolling mean and assessed for hydraulically valid periods of radial flow. The constant rate test exhibited rapid drawdown stabilisation (~2.15–2.25 m) within the first 30–60 minutes of pumping, followed by near-steady-state behaviour over the remainder of the test portion at 10 m^3/h. This behaviour is diagnostic of a leaky aquifer, where vertical recharge from the overlying alluvium compensates for abstraction from the fractured aquifer. Analysis using the Cooper–Jacob method for the various portions of pumping at different rates resulted in a T value ranging between ~9 – 12 m^2/day representing the aquifer T without leakage contribution (Figure 8). Applying the leaky aquifer method (Hantush–Jacob) indicated an apparent transmissivity of 18–25 m^2/day, reflecting significant additional recharge from the alluvium. The recovery data is sparse due to rapid recovery, however assessing T with the Theis Recovery Method results in a T of 30 m^2/d. This is likely an overestimate as it combines the leakage contribution, as confirmed by the Hantush-Jacob method. Due to the alluvial contribution identified, a T value of 10 m^2/day is adopted for the yield estimations. This aligns with results of this and the previous borehole's test.

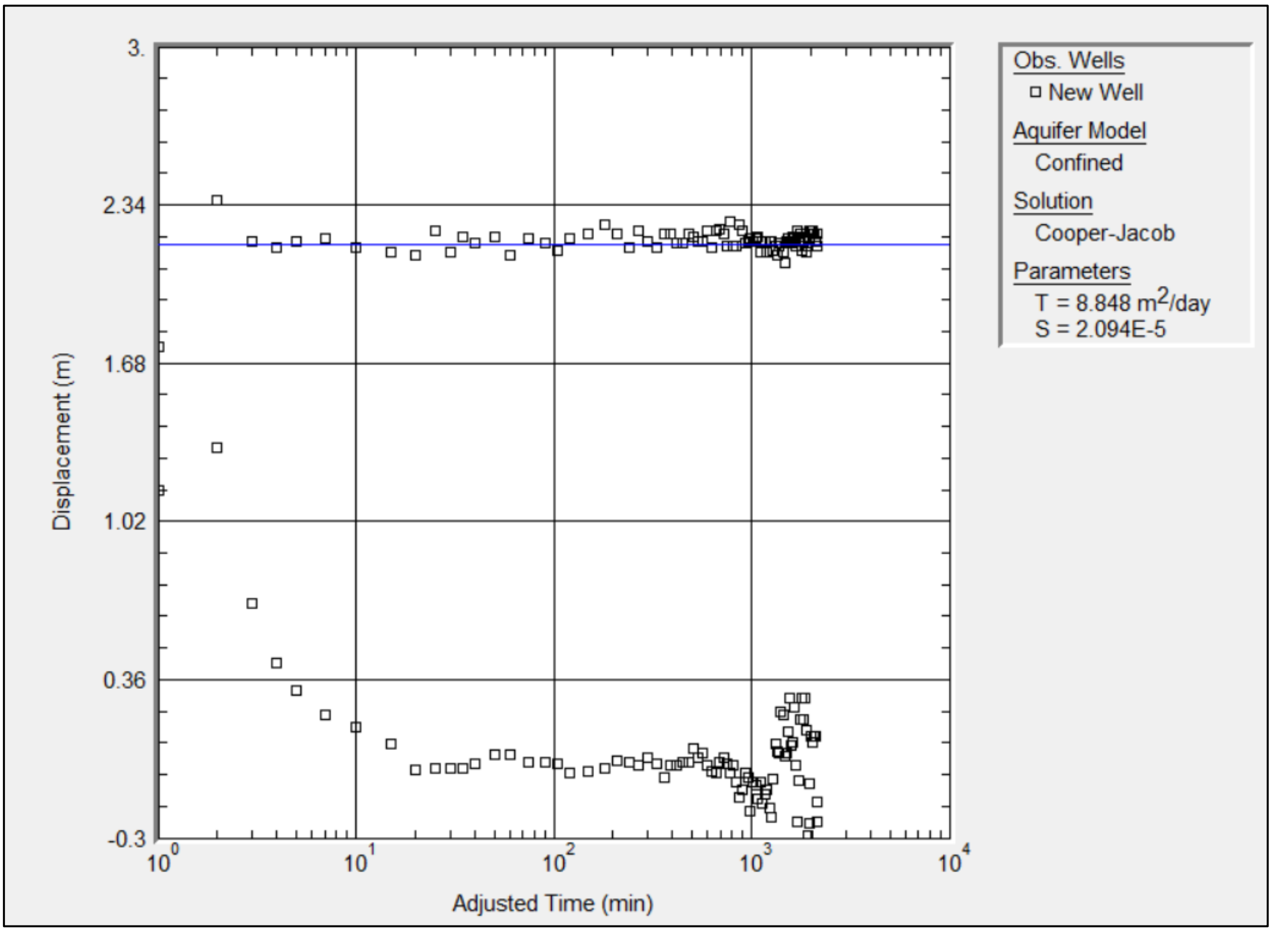

Figure 8 – AQTESOLV curve matching for parameter estimation

Assessing the Sc, T value, and responses to pumping, the recommended yield for PNNBH_04 is **10 m^3/hr pumping 20 hours per day**. This amounts to a daily yield of 200 m^3/day and ~73 000 m^3/annum. The borehole should be allowed to recover for at least 4 hours per day. In times of increased demand, the rate can be increased to 12 m^3/h for 12 hours a day. Results indicate increased rates result in increased inefficiency, despite the availability of drawdown. Yield higher than 12 m^3/h not only increase well losses but also risk dewatering fracture and increasing dependence of supply from the alluvial system.

Recommended yields can be revised (upward or downward) following three (3) months of pumping and associated monitoring. Storage infrastructure is required to ensure pumping times are not exceeded; the borehole should not respond directly to demand, but pump to a holding tank.

It is recommended that a level logger be installed in the borehole to monitoring groundwater level initially on an hourly basis with monthly manual verification (revise frequency after 3 months). The wellhead needs to allow for a dip tube to house the logger and allow manual measurement with a dip meter. All abstraction volumes and rates need to be monitored by a flow meter and recorded weekly. The flow meter needs to be installed upright and level with sufficient distance to reduce turbulence through the gauge and approach laminar flow. Pump times (start/stop) should be recorded to supplement and correlate abstraction and water level data. The pump can be installed at a depth of 80 mbgl, to keep cool water flowing near the motor. The water level alert threshold and cut back can be set at 70 mbgl, and the cut off at 75 mbgl.

3.2.4 SUMMARY

Based on the recommended yield derived for each borehole (Table 10), the combined volume available for abstraction is 13.5 m^3/h for 20 hours pumping per day. This equates to an annual volume of 98550 m^3/annum. Due to the additional peak potential of PNNBH_04, a total volume of **100 000 m^3/annum** can be applied for to the MAFWLR.

4 GROUNDWATER QUALITY

Samples were collected prior to the end of the constant rate tests and were submitted to a South African National Accreditation Standards (SANAS) accredited lab in South Africa for analysis of microchemical constituents as well as trace metals. Water is intended for exploration activities, mining and dust suppression and is not used for potable purposes nor linked to any water body harbouring biodiversity. Results are compared to the Acceptable standard in Namibia Water Resource Management Act Regulation's potable water quality limits as these provide a useful benchmark against which changes can be tracked. Table 9 provides the results of the hydrochemical analysis with all lab results included in Appendix E.

Table 9 – Groundwater quality results

Parameter	Unit	Acceptable	PNNBH_02	PNNBH_04
pH	pH	6-9	7.48	7.87
EC	mS/m	300	396	108
TDS - cal	mg/l	2000	2508	705
Alk	mg $CaCO_3$/l		378	263
Cl	mg/l	300	947	170
SO_4	mg/l	300	327	55.1
NO_3	mg/l	11	6.39	5.23
TON	mg/l		6.4	5.24
NO_2	mg/l	0.15	<0.065	<0.065
NH_4	mg/l	0.5	0.05	0.016
PO_4	mg/l		0.017	0.064
F	mg/l	1.5	1.42	0.549
Ca	mg/l	150	204	115
Mg	mg/l	70	54.4	17.6
Na	mg/l	300	632	118
K	mg/l	100	21.7	9.22
Cr^{6+}	mg/l	0.1	<0.002	<0.002
Turbidity	NTU	2	0.336	0.145
Hardness	mg $CaCO_3$/l		733	360
Cl_2	mg/l	1.5	<0.02	0.03
CN - free	mg/l	0.05	<0.008	<0.008
TOC	mg/l	10	6.19	0.982
BiCarb HCO_3	HCO3		460	318
Parameter	**Unit**	**Acceptable**	**PNNBH_02**	**PNNBH_04**
ICP-MS Scan Dissolved				
Li	mg/l		1.6	0.1252
Be	mg/l	0.005	0.001	<0.0001
B	mg/l	0.5	2.4	0.2286
Al	mg/l	0.1	<0.0001	<0.0001
Ti	mg/l	0.3	<0.0001	<0.0001

Parameter	Unit	Acceptable	PNNBH_02	PNNBH_04
V	mg/l	0.5	0.1018	0.0322
Cr	mg/l	0.1	<0.0001	<0.0001
Mn	mg/l	0.1	0.0802	0.0383
Fe	mg/l	0.3	<0.0001	<0.0001
Co	mg/l	0.5	0.0001	<0.0001
Ni	mg/l	0.15	<0.0001	<0.0001
Cu	mg/l	2	0.001	0.0101
Zn	mg/l	5	0.1683	0.0227
As	mg/l	0.05	0.0785	0.0115
Se	mg/l	0.05	<0.0001	<0.0001
Rb	mg/l		0.0053	0.0039
Sr	mg/l		6.7	1.9
Mo	mg/l		0.0119	0.0018
Cd	mg/l	0.01	<0.0001	<0.0001
Sn	mg/l	0.2	<0.0001	<0.0001
Sb	mg/l	0.05	0.0207	0.0205
Cs	mg/l	2	0.0077	0.0001
Ce	mg/l	2	<0.0001	<0.0001
Hg	mg/l	0.002	0.0001	<0.0001
Pb	mg/l	0.05	<0.0001	<0.0001
Bi	mg/l	0.5	<0.0001	<0.0001
Th	mg/l	0.01	<0.0001	<0.0001
U	mg/l	0.015	0.3389	0.0486

*Red cells exceed potable limit

Groundwater is of very good quality in both boreholes considering the arid region and poor water quality known to occur in the schists. The Piper diagram in Figure 9 demonstrates the two different water types encountered in PNNBH_02 (Na-Cl) versus PNNBH_04 (Ca-HCO_3), with PNNBH_04 having improved water quality compared to PNNBH_02, likely due to the influence of the overlying alluvial material bringing more frequent fresh recharge to the system. This is further supported by the difference in major ion chemistry as shown in the Stiff diagrams (Figure 10). PNNBH_02 shows a groundwater pathway with increased residence times, and minor effects of evaporation and concentration accumulation as compared to PNNBH_04.

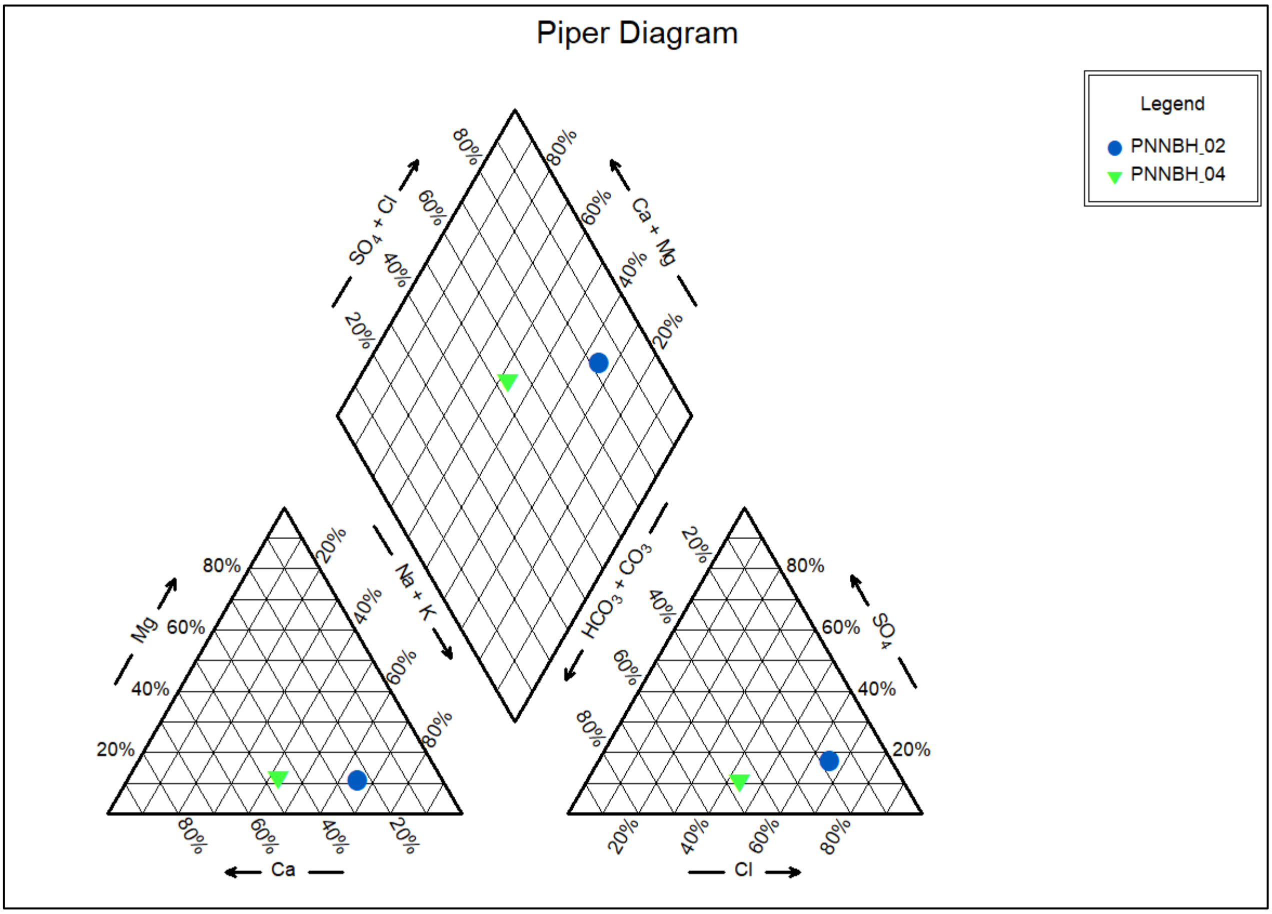

Figure 9 – Piper diagram of PNNBH_02 and PNNBH_04 groundwater samples

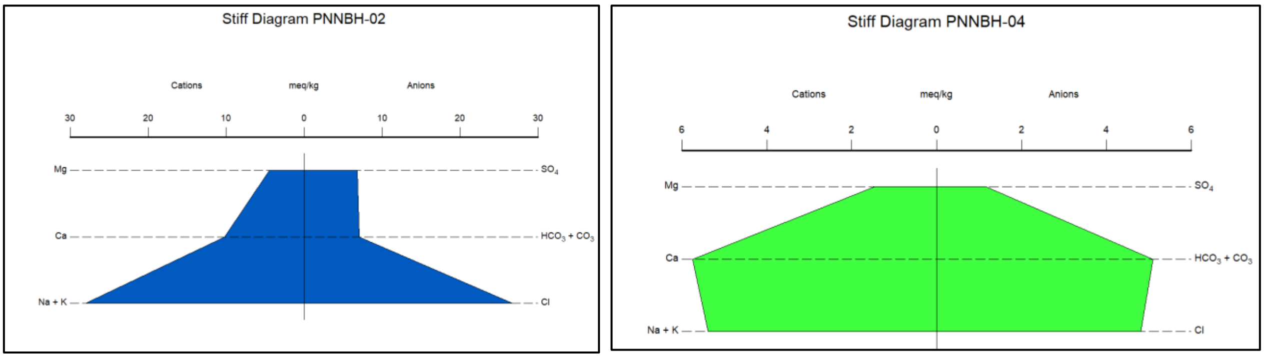

Figure 10 – Stiff diagrams showing the difference in major ion composition

ICP-MS analysis of trace metals was undertaken; this indicates the total concentration of a metal present after elements in suspension have been dissolved by microwave digestion. B, As and U were the only exceedances in PNNBH_02 and only U was exceeded in PNNBH_04. Sr was elevated in both samples. This further confirms the good quality of groundwater in the region.

5 CONCLUSION AND RECOMMENDATIONS

Four (4) boreholes were drilled at ML133 to secure groundwater supply for exploration and future mining activities. Two (2) of the drilled boreholes showed sufficient groundwater potential to undertake test pumping. All testing activities were carried out in line with technical licence conditions of licence no. 11913. An environmental clearance certificate (no. 2300764) is in place for the operations on the ML.

Table 10 summarises the test parameters and the results obtained from test pumping. Water level responses to pumping, and hydrochemical results, support that PNNBH_04 receives leakage (recharge) from the overlying Omaruru alluvial aquifer. This alluvial aquifer is more readily susceptible to impacts of abstraction from PNNBH_04 and requires monitoring due to its potential for recharging the underlying fractured aquifer, but also for sustaining flow in the alluvium for other users (if any) and groundwater dependent eco systems. Both boreholes have good water quality, with PNNBH_04 having improved quality compared to PNNBH_02. PNNBH_04 is the preferred primary production borehole with PNNBH_02 as stand by. Both boreholes should be equipped.

Table 10 – Summary of results

BH ID	WW	X	Y	Z	Pump installation depth (mbgl)	T (m^2/d)	Recommended Yield (m^3/hr)	Daily hours (hrs)	Daily Yield (m^3/hr)	Annual Yield ($m^3/annum$)
PNNBH_02	207978	506517	7629280	761	80	10.5	3.5	20	70	25550
PNNBH_04	207980	513708	7631209	768	80	10	10	20	200	73000

The following recommendations are provided:

- Demand is estimated as ranging from 50 000 m^3/a in early stages to >90 000 m^3/a as operations progress. Based on results obtained, an application for a Groundwater Abstraction Licence for 100 000 $m^3/annum$ can be made to the regulator.
- Each borehole should be equipped with a level logger to record hourly water levels for the first 3 months, with monthly manual verification. Thereafter the frequency of measurement can be adjusted to every 6 hours;
- The two (2) boreholes not tested or planned for abstraction should be included in the monitoring network.
- The wellhead needs to allow for a dip tube to house the logger and allow manual measurement with a dip meter;
- All abstraction volumes and rates need to be monitored by a flow meter and recorded weekly with monthly consolidation and annual reporting.
- The flow meter needs to be installed upright and level with sufficient distance to reduce turbulence through the gauge and promote laminar flow.

- Pump times (start/stop) should be recorded to supplement and correlate abstraction and water level data.
- Quarterly groundwater quality sampling is recommended.
- Two (2) shallow monitoring boreholes should be installed in the river alluvium (~15 – 20 m deep) to monitor potential stress on the alluvial system due to abstraction from PNNBH_04.

APPENDIX A – BOREHOLE LICENCE

APPENDIX B – NOTICE TO DRILL

APPENDIX C – DRILLER REPORTS

APPENDIX D – TEST PUMPING DATA

APPENDIX E - HYDROCHEMISTRY