Warkworth-Wells Water Treatment Plant
Annual Monitoring Report

Final - September 2025

Watercare

QUALITY INFORMATION

Document	Annual Monitoring Report
Date	30 September 2025
Name and position of originator	Krysia Buckley, Environmental Scientist
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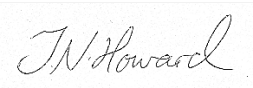
REVISION HISTORY

Rev	Revision Date	Name	Position	Signature
1	22/09/2025	Michiel Jonker	Environmental Care Manager	
2	DD/MM/YYYY	Martyn Lee	Operations Controller	
3	25/09/2025	Isaac Howard	Water Production Manager North	

APPROVED

Date	Name	Position	Signature
30/09/2025	Michiel Jonker	Environmental Care Manager	

CONSENT CHANGE AND MONITORING HISTORY

Change type	Description	Effective date	Reference / condition	Reporting / monitoring implications
Abstraction consent	To take groundwater from Sanderson Rd bore for public water supply in Warkworth	-	REG-64397	Daily abstraction monitoring (cond. 46); annual reporting (cond. 59)
Consent reissue	To transfer groundwater take permit from bore ID 22972 to 2 new bores on adjacent site To take surface water from Mahurangi River	June 2015	WAT60274987/ REG-64397 35555	Annual report 5 yearly WSDMP WAPT in 2025 and 2035 Surface water permit not in use
Stepped allocation limits	Phase increases in annual/daily volume limits	2013–2025, 2026–2035, 2036–2044	Condition 39	Report allocation vs use in AMR
Supply & demand management plan	1st WSDMP to report on network efficiency procedures and performance against efficiency measures	Submitted 2021	WAT60274987 Condition 6	Update every 5 years; report effectiveness in AMR (cond. 7)
Water Allocation Progress Report	Forecast water demand and report on abstraction volumes	Submitted 2025	WAT60274987 Conditions 60	Used for review of allocation (cond. 61)
Trigger exceedance process	Weekly monitoring + GTER if trigger breached; MER if mitigation needed	As triggered	Conditions 55–58	Submit GTER / MER to Council
Annual Monitoring Report	Annual report of abstraction, levels, quality, saline intrusion, network efficiency	Due 30 Sept each year	Condition 59	Submitted annually to Council; provided to MWCG
Mana whenua consultation	Provide AMR and engage MWCG; minutes where meetings held	Ongoing	Condition 16	Record in monitoring history

EXECUTIVE SUMMARY

The annual monitoring report for Warkworth-Wells Water treatment Plant (WTP) outlines the compliance against the groundwater abstraction consent REG-64397 and provides an update on the network efficiency targets for this supply area. The report fulfils the requirements of condition 59 of the consent.

Key findings include:

Abstraction: groundwater abstraction from the Sanderson Road production bores remained well within consented limits throughout the reporting period. The total annual volume was 629,493 m^3, and the maximum daily abstraction of 2,646 m^3 occurred on 10 January 2025—both below the respective limit.

Bore water level: water levels across most production and observation bores were stable, with seasonal fluctuations reflecting rainfall patterns. Observation bore OB3B recorded a temporary breach of its trigger level (6 mRL) for 38 days during a period of low rainfall in February–March 2025. Levels recovered following significant rainfall in April.

Bore water quality: monthly sampling resumed in October 2024, with weekly sampling initiated at OB3B following the trigger breach. Chloride, sulphate, and conductivity levels remained consistent across OB3A and OB3B, with no evidence of saline intrusion.

Network efficiency: all water efficiency targets were met. Non-revenue water (NRW) decreased from 31% to 23%, and real losses dropped from 29% to 21%. Leak detection and resolution efforts remained consistent, with 11 leaks identified and repaired.

Overall, the WTP and associated network operated efficiently and generally compliant with the consent conditions. The proposed revision to trigger levels is under review, and no formal changes have been adopted.

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1 INTRODUCTION

1.1 Background

The Warkworth-Wells Water Treatment Plant (WTP) annual report for the period 1 July 2024 to 30 June 2025 provides an overview of the plant's performance in accordance with the conditions outlined in resource consent REG-64397/WAT60274987 (the consent). This report outlines the key operational activities, groundwater take volumes, bore level monitoring, water quality data, and compliance status during the reporting period.

1.2 Consent requirements

The consent allows Watercare to abstract groundwater from two production bores located at 9 Sanderson Road (formally 86 Hudson Road) to supply water to the Warkworth region. Condition 59 outlines the annual reporting requirements for the consent and requires the following to be included:

a) *A description of the results of monitoring required in accordance with conditions 46, 52 and 56 of this consent (including confirmation of the Water Level Triggers in Schedule A following establishment of the seasonal variation under condition 52);*
b) *An evaluation of those results, including comparison with the results of all previous monitoring and an assessment of:*
    i. *Water use compared with the allocation;*
    ii. *The extent of groundwater drawdown, including, from 2036 onwards, in response to short term periods of higher than average pumping rates;*
    iii. *Groundwater drawdown effects and potential leakage from the Mahurangi River (including assessment of low flow river monitoring);*
    iv. *Saline intrusion (as set out in conditions 55 and 56), including an analysis of trends in the chloride concentration; and*
    v. *Predicted total volume and recharge rates of the aquifer.*
c) *A description of any incidences of failure to comply with the conditions of these consents, along with reasons for the failure to comply and a description of any resulting environmental effects;*
d) *Identification of any measures required to ensure that any adverse environmental effects identified by the monitoring or resulting from non-compliance with consent conditions are avoided, remedied or mitigated;*
e) *Network efficiency and water conservation reporting requirements set out in condition 6.*

1.3 Outline

The report is structured into the following key sections:

- Water take: Details the volume of water abstracted and ensures compliance with the consented limits
- Bore level monitoring: Presents data on water level fluctuations in both observation and production bores
- Water quality monitoring: Discusses the results of monthly water quality testing for chloride, sulphate, and conductivity

- Summary of Compliance: Reviews overall compliance with consent conditions and identifies any areas of non-compliance.
- Network efficiency and water conservation: Provides a summary of water efficiency targets and initiatives

2 GROUNDWATER TAKE

Condition 46 of the consent requires that the total combined volume of water being taken is monitored and daily values recorded. Condition 39 sets out the limits for abstraction, as detailed below. The raw daily abstraction data can be found in Appendix A with associated data tag IDs listed in Appendix D to allow traceability of source data.

Time Period	Maximum Annual Abstraction Volume (Combined total from Bore IDs 29094 and 29098)	Maximum Daily Abstraction Volume (Combined total from Bore IDs 29094 and 29098)
31 March 2013 – 31 December 2025	750,000 m^3/year	3,025 m^3/day
1 January 2026 – 31 December 2035	915,000 m^3/year	4,250 m^3/day
1 January 2036 – 30 June 2044	1,200,000 m^3/year	4,320 m^3/day

The combined groundwater annual abstraction from Sanderson Road Bore 1 (SR-PW2) and Sanderson Road Bore 2 (SR-PW3) was 629,492.72 m^3 which is below the consented limit of 750,000 m^3. The maximum daily abstraction was 2,646 m^3 on 10 Jan 2025, again well within the current limit of 3,025 m^3/day. The combined cumulative and daily abstraction volumes are presented in Figure 2-1 and Figure 2-2.

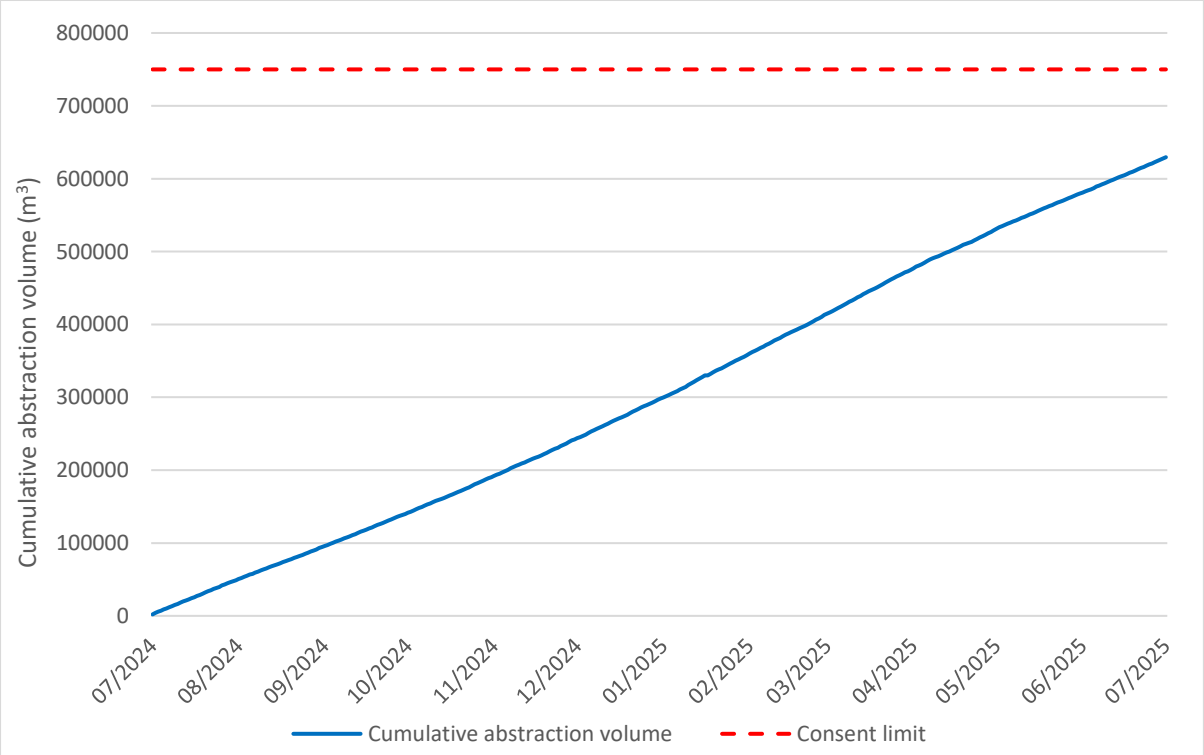

Figure 2-1 Combined annual cumulative groundwater abstraction from the Sanderson Road Bores over the 2024-25 reporting period.

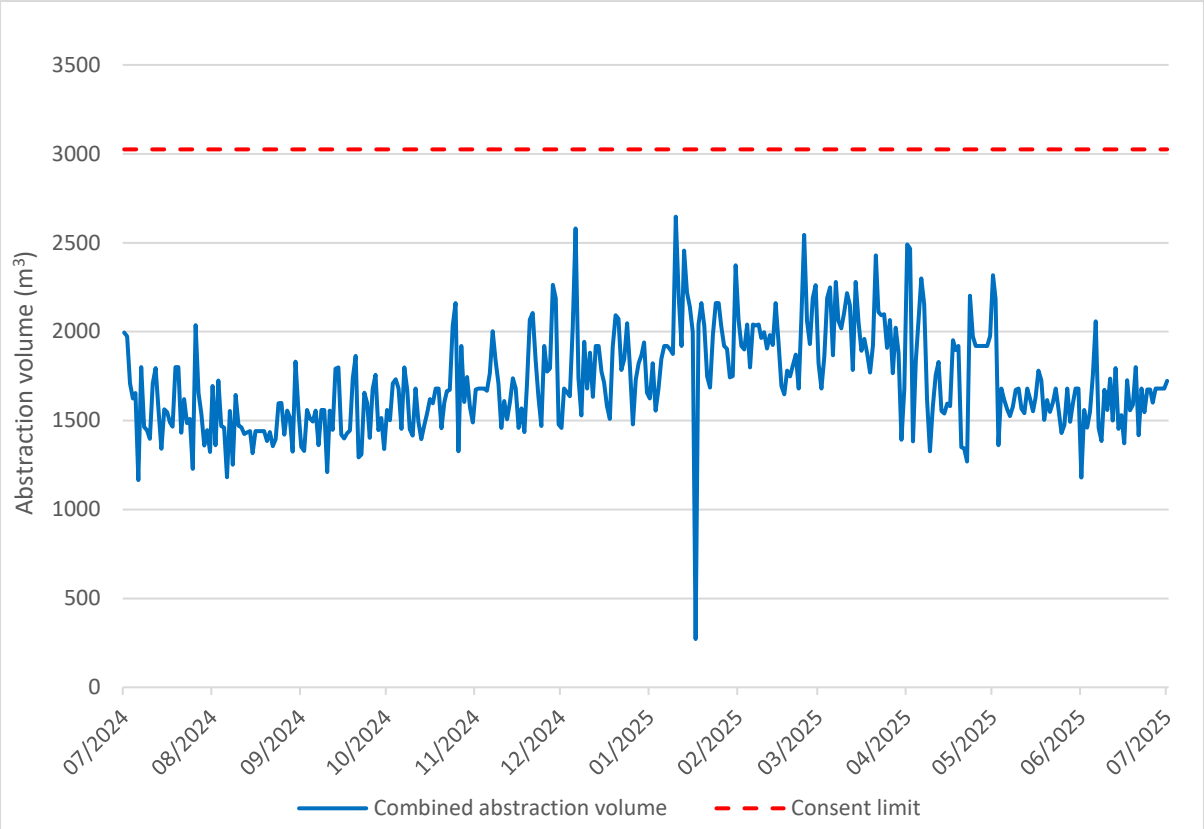

Figure 2-2 Combined daily groundwater abstraction from the Sanderson Road Bores over the 2024-25 reporting period.

3 BORE LEVEL MONITORING

3.1 Production bore monitoring

Condition 52 requires that the water levels in the Sanderson Road production bores (SR-PW2 and SR-PW3) be measured and recorded at daily intervals. Previous years have seen a seasonal trend in water levels, with a decrease during drier summer months. Figure 3-1 also demonstrate this with lower levels observed during lower monthly rainfall totals (December – March) and higher water levels during the wetter months (April – August).

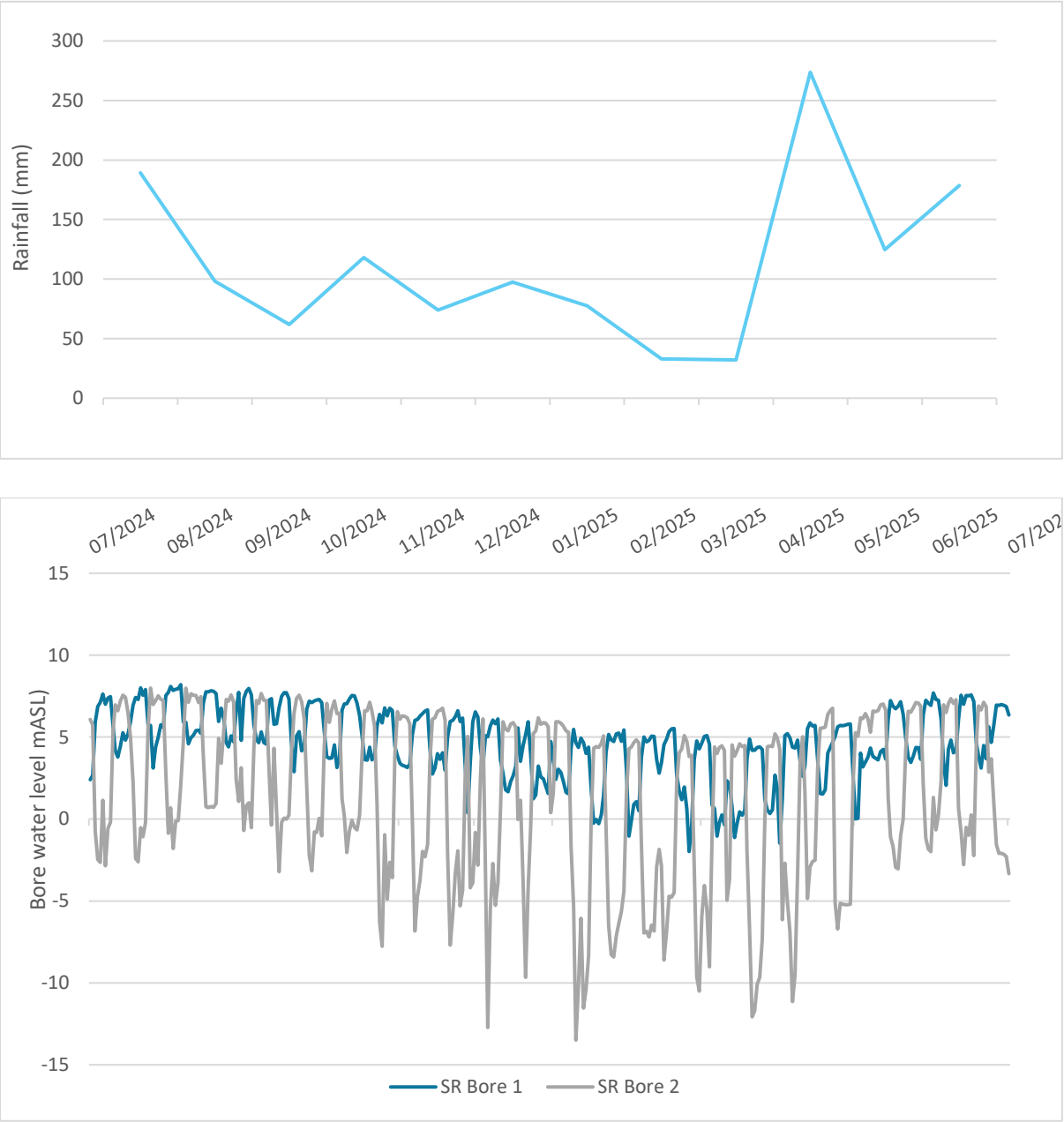

Figure 3-1 Water levels at the Sanderson Road bores and the total monthly rainfall, for the 2024-25 reporting period.

3.2 Observation bore monitoring

Condition 52 requires the water levels in the bores listed below in Schedule A of the consent, be measured and recorded electronically at daily intervals. Seasonal variation (SV) values have been set for the nine observation bores which were used to calculate the alert trigger levels, as displayed in Table 3-1 below.

Table 3-1 Trigger levels for the Schedule A observation bores

Bore ID	Drawdown Trigger (m) as per Schedule A	Drawdown Trigger (m)	Alert Trigger Level (mRL)	Alert Trigger Level (mRL)
OB1	SV + 20	21.27	Min WL – Drawdown trigger	-6.20
OB2	SV + 20	21.32	Min WL – Drawdown trigger	-5.80
OB3A	RL6	RL6	RL6	6
OB3B	RL6	RL6	RL6	6
OB4A	SV + 12	13.57	Min WL – Drawdown trigger	1.77
OB4B	SV + 12	13.34	Min WL – Drawdown trigger	2.22
OB5	SV + 6	7.67	Min WL – Drawdown trigger	29.04
OB6	SV + 13	14.22	Min WL – Drawdown trigger	1.39
OB7	SV + 1	3	Min WL – Drawdown trigger	1.39

Daily groundwater levels for the observations bores along with the relevant trigger levels are displayed in the following graphs (Figure 3-2-Figure 3-6). Eight of the nine observation bores recorded groundwater levels above the trigger level. The groundwater levels at 3B however (Figure 3-3), dipped below the trigger level of 6 m for a period of 38 days between 5 March and 11 April 2025. The lowest recorded level was 5.802 m on 29 March 2025. During this time, abstraction remained consistent with levels seen during summer, however the months of February and March received the lowest amount of rainfall, indicating a direct relationship between rainfall and aquifer groundwater levels. It appears that recharge of the aquifer significantly reduced during this time, causing levels to decline at OB3B. Levels then returned to normal following heavy rainfall in April.

In response to previously observed low groundwater levels, Tonkin & Taylor (T&T) were engaged to assess whether the existing trigger limits for the observation bores, particularly OB3B, remained appropriate under current abstraction and hydrogeological conditions. Their assessment confirmed that the original 6 mRL trigger level at OB3B, set conservatively to prevent saline intrusion, had been breached in March 2025. Using nine years of empirical data, T&T proposed a revised compliance limit of 3.9 mRL for OB3B, concluding that this lower threshold would still provide a sufficient buffer

against saline intrusion. The updated limit reflects a more accurate understanding of the aquifer response to pumping and allows Watercare to better utilise its consented abstraction volumes without compromising aquifer integrity. These proposed revisions are currently under consideration, and no formal changes to trigger limits have been implemented at this stage.

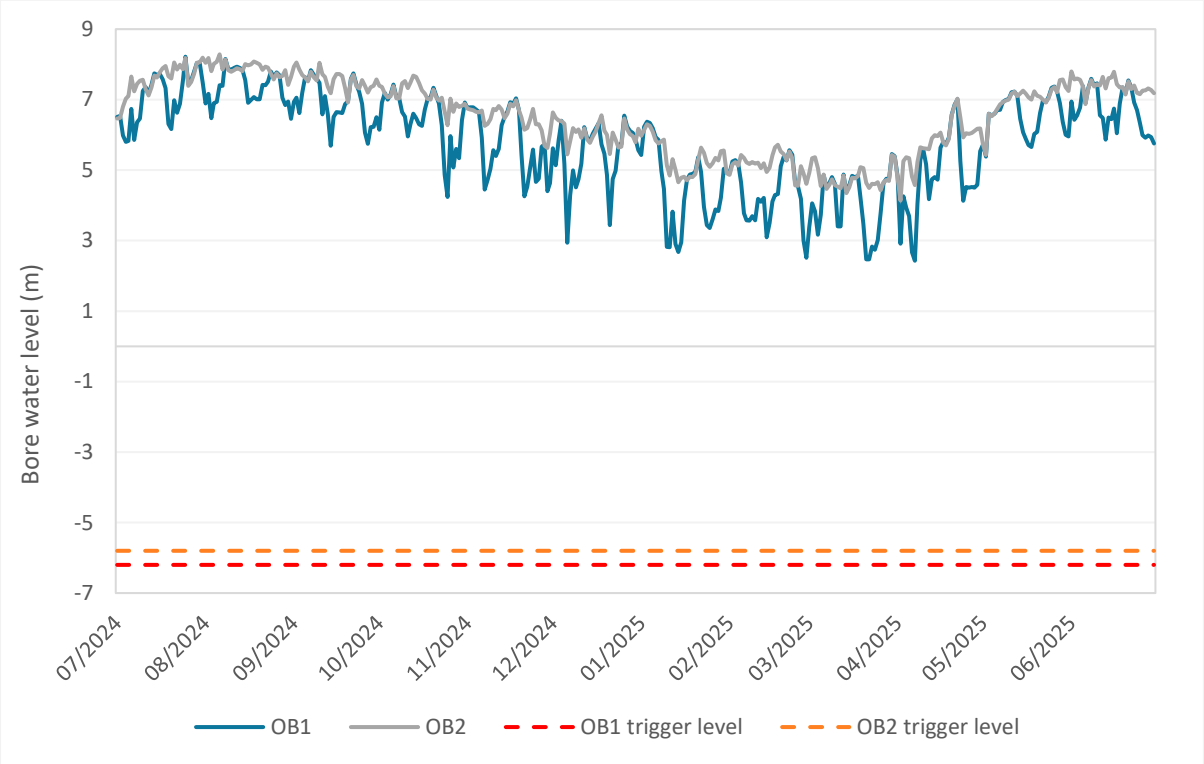

Figure 3-2 Groundwater and trigger levels for observation bores 1 and 2 for the 2024-25 reporting period.

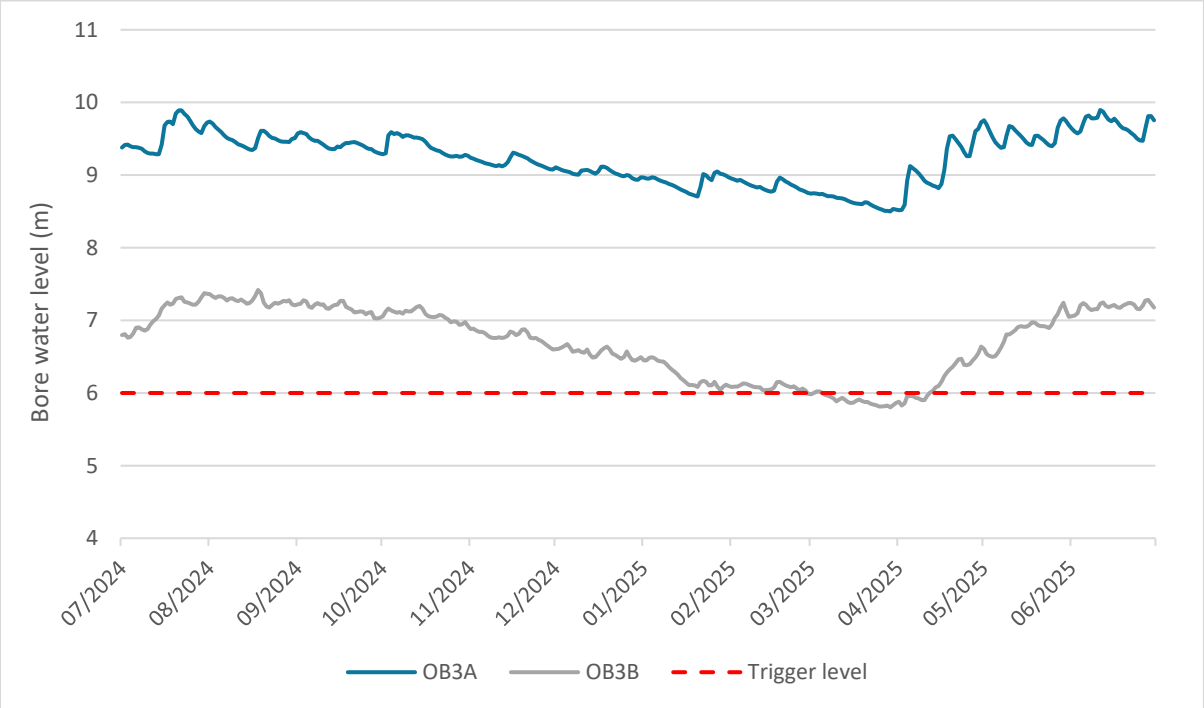

Figure 3-3 Groundwater and trigger levels for observation bores 3A and 3B for the 2024-25 reporting period.

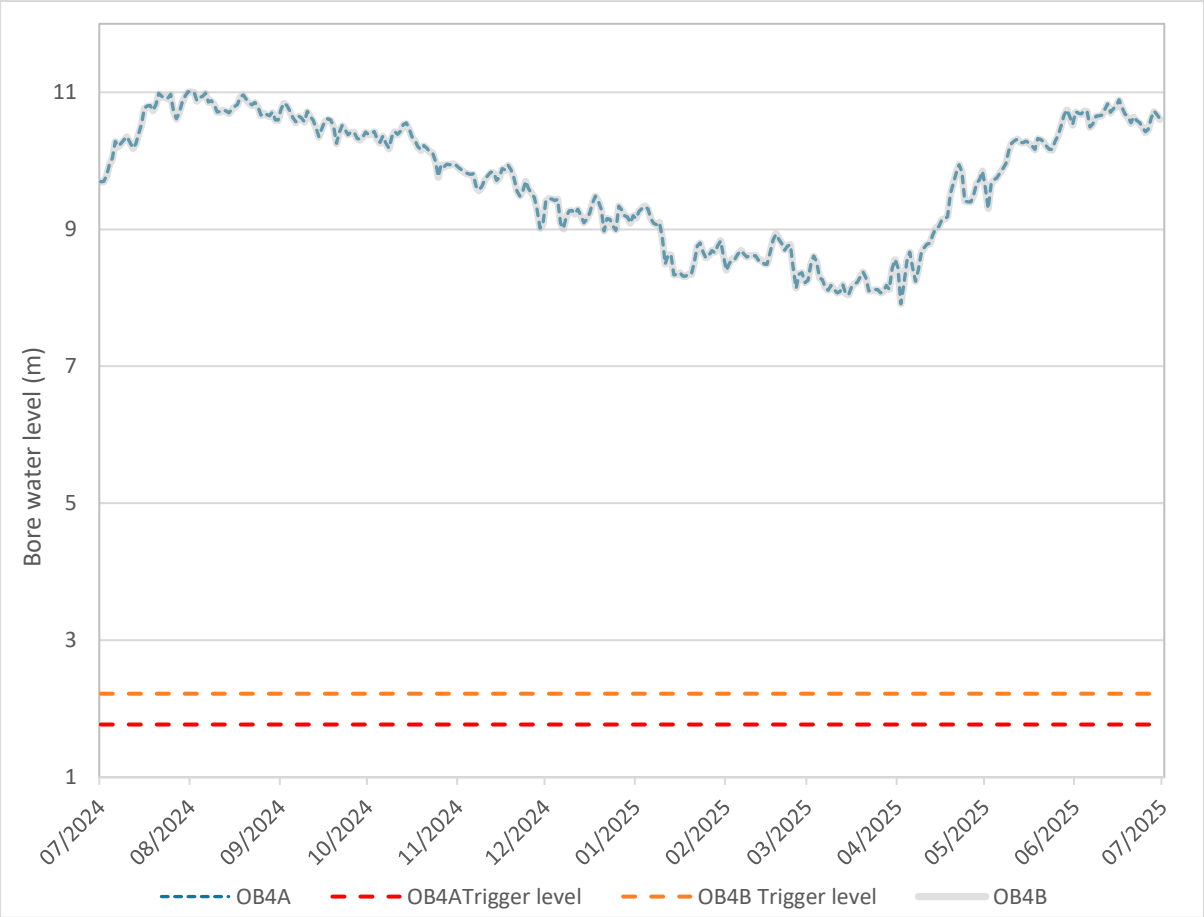

Figure 3-4 Groundwater and trigger levels for observation bores 4A and 4B for the 2024-25 reporting period

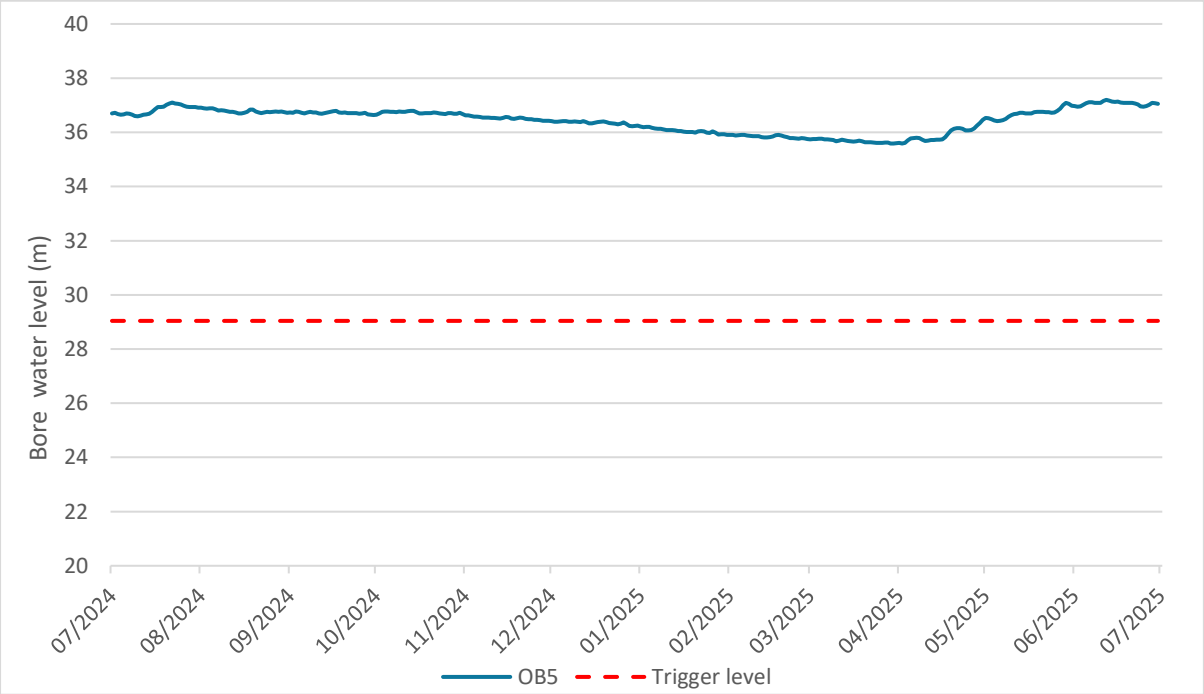

Figure 3-5 Groundwater and trigger levels for observation bore 5 for the 2024-25 reporting period.

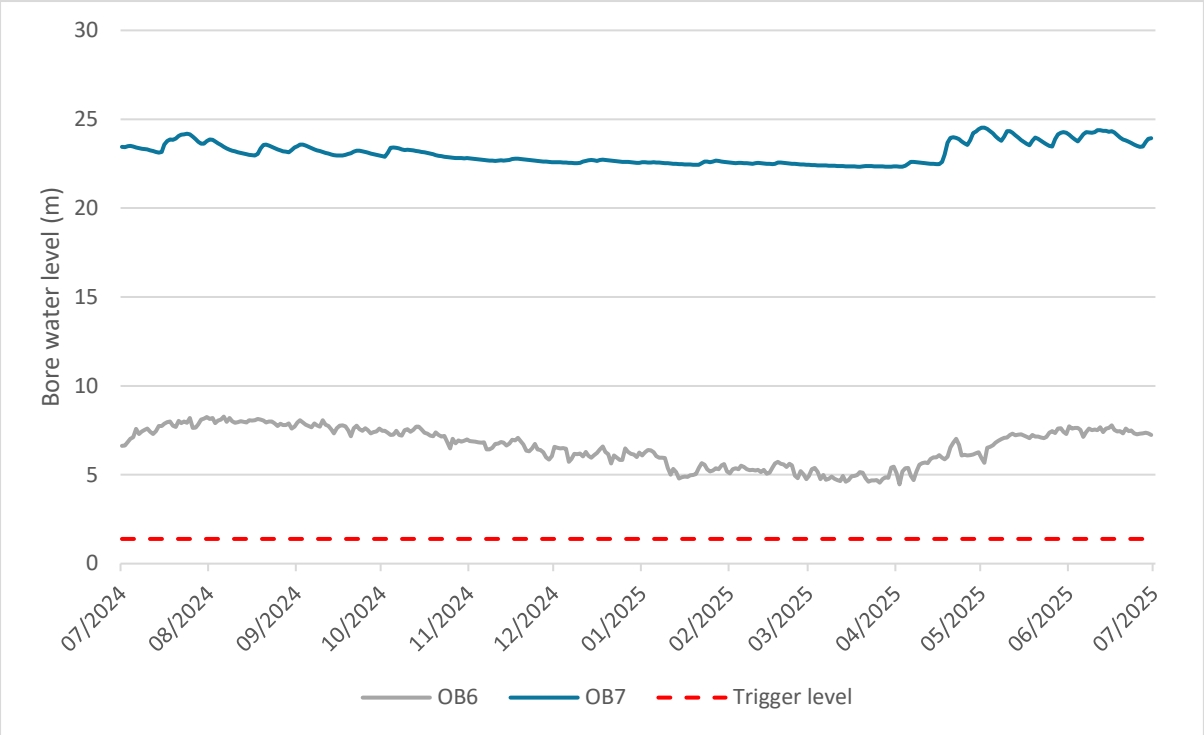

Figure 3-6 Groundwater and trigger levels for observation bores 6 and 7 for the 2024-25 reporting period

4 BORE WATER QUALITY MONITORING

Condition 56 of the consent requires that water samples be collected monthly from observation bore OB3, with analysis for chloride, sulphate, and conductivity. Bore water quality monitoring was not conducted since 2021 due to issues with the sampling method and replacement pumps not being suitable. However, monthly sampling finally resumed in October 2024 once a new micro-purging pump was installed, following testing and reliable results under the Warkworth-Snells wastewater pipeline project. As reported in Section 3.2, the groundwater level at OB3B breached the trigger level in March 2025, so as per condition 55, weekly sampling ensued until Auckland Council approved the return to a monthly sampling frequency in May 2025. The results of the bore quality monitoring from OB3A and OB3B are presented in Figure 4-1, and raw data can be found in Appendix C.

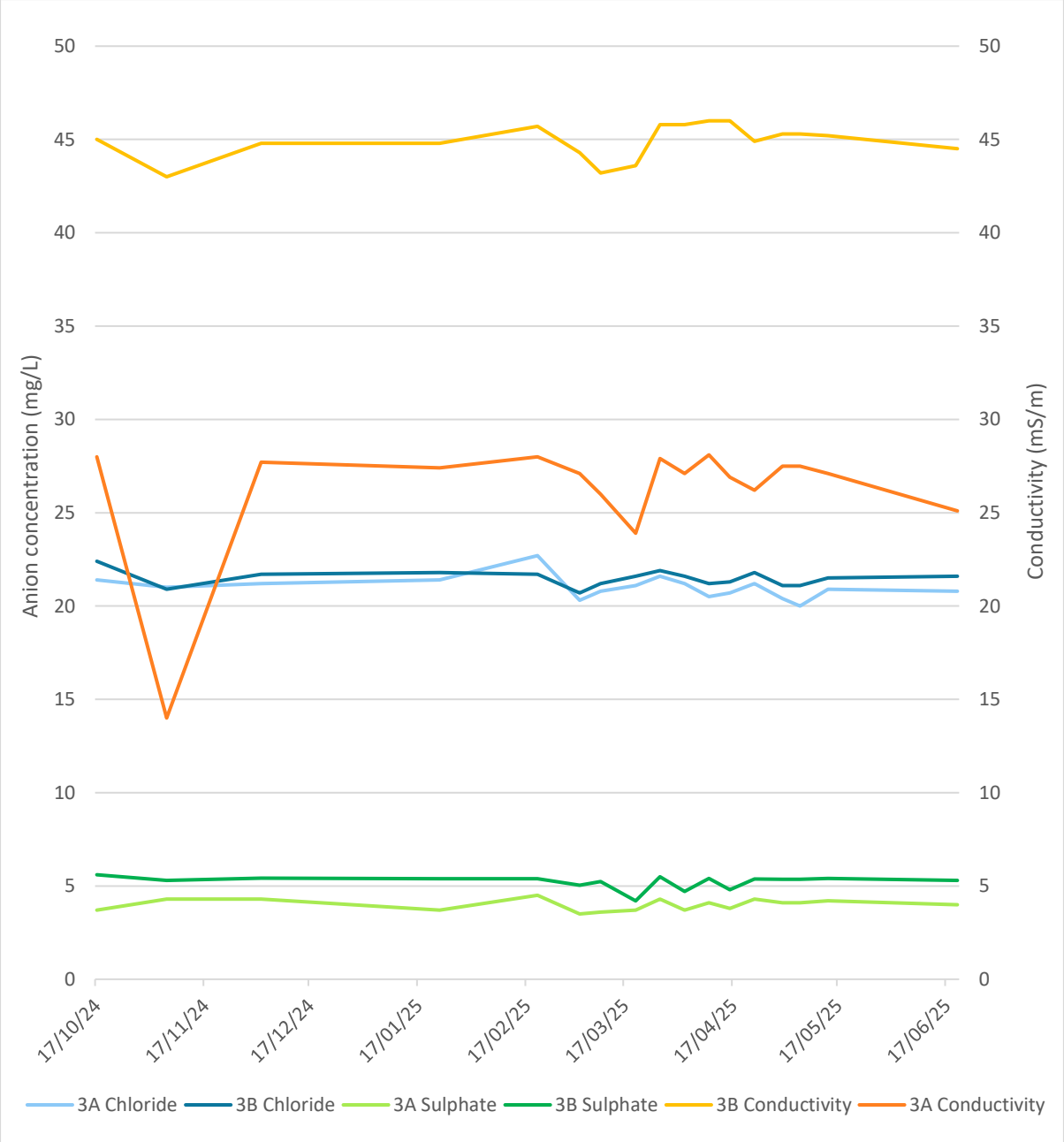

Figure 4-1 Bore quality results from OB3A and OB3B during the 2024-25 reporting period.

The water quality results are generally consistent with historic data, with conductivity at OB3A showing one uncharacteristically low result in November 2024. Additionally, water chemistry shows more variability over March and April, this can be attributed to the change in sampling frequency from monthly to weekly, to check for evidence of saline intrusion, in response to the water level breach at OB3B. As per condition 55, after weekly sampling was conducted, Tonkin & Taylor's Technical Assessment of Groundwater report (Appendix D) was submitted and accepted as the groundwater trigger exceedance report. Auckland Council responded and agreed that there was no sign of saline intrusion as the levels of chloride, sulphate and conductivity did not increase, but remained steady.

5 SUMMARY OF COMPLIANCE

Combined daily and annual abstraction volumes from the Sanderson Road production bores were below the consented limits. The water levels of the production and observation bores were routinely monitored, and measurements were steady across most of the bores during the 2024-25 reporting period.

However, observation bore 3B has historically measured water levels very close to the trigger level, and for the first time was breached during a period of low rainfall. This breach was not unexpected, and before it occurred an investigation was already underway; T & T were commissioned to reassess the compliance trigger level, with revised thresholds now proposed but not yet adopted

Despite exceeding the bore depth trigger level at OB3B, water quality monitoring, which resumed in October 2024, following installation of the new micro-purging pump (see Section 4 for more details) indicated that the water chemistry of the groundwater remains consistent, with no signs of saline intrusion.

6 NETWORK EFFICIENCY AND WATER CONSERVATION

6.1 Background

The Network Efficiency Plans and Water Conservation Management Plans are not developed for each treatment plant, but rather collated into a single plan called the Auckland Water Efficiency Plan 2021-2025. Below is a summary of relevant targets and strategic measures from the Auckland Water Efficiency Plan 2021-2025, followed by a review of the performance over the 2024-25 reporting period. The previous Water Supply Demand Management Plan was submitted in 2021 and so the next plan will be prepared by September 2026.

6.2 Water efficiency targets

Watercare's targets to 2025 are:

- 924 litres per connection per day gross supply
- 481 litres per day consumption per household
- 186 litres of non-revenue water per connection per day.

Non-revenue water includes leaks and theft.

Watercare has moved away from per-person metrics to per-connection metrics. The move to per connection metrics provides more accurate data and avoids the complications associated with defining populations.

Watercare's efficiency programme considers Watercare itself, Auckland Council, the largest single water customer, and residential efficiency. Coupled with this are our commercial water efficiency programme and a programme for reducing non-revenue water.

To meet these strategic targets, Watercare has four focus areas:

- Making every drop count by reducing loss
- Improving oversight from source to tap
- Optimising pressure in our network
- Residential, community and commercial water efficiency.

6.3 Performance against water efficiency targets

Monthly water supply, consumption and non-revenue water (NRW) data is available up to May 2025 and is presented in Table 6-1. The NRW accounts for all water that is produced but not billed, including under reading by water metres, operational water use such as flushing, illegal connection and leakages in the network. Real loss is only the leakage component of non-revenue water, and the target set for NRW as a proportion of supply is 20%. The NRW proportion of supply is down from 31% in 2023-24 to 23% this year, with real loss also decreased from 29% to 21%, which is very close to our Auckland target.

To track performance against the targets specified in Section 6.2, the monthly data has been averaged to determine the annual gross supply, household consumption and NRW, and compared to last year’s values as well as the annual targets (Table 6-2).

Table 6-1 Warkworth-Wells water supply, consumption and NRW monthly values for July 2024 - May 2025 (data in ML/d)

Date	Supply	Consumption (non-domestic)	Consumption (domestic)	NRW	Real Loss	Real Loss (% values)
Jul-24	1.45	0.36	0.78	0.31	0.29	0.20
Aug-24	1.36	0.36	0.78	0.22	0.20	0.15
Sept-24	1.44	0.35	0.79	0.30	0.28	0.19
Oct-24	1.55	0.40	0.82	0.34	0.31	0.20
Nov-24	1.67	0.44	0.84	0.39	0.36	0.22
Dec-24	1.73	0.48	0.88	0.37	0.34	0.20
Jan-25	1.91	0.52	0.91	0.49	0.46	0.24
Feb-25	1.89	0.56	0.89	0.44	0.41	0.22
Mar-25	1.90	0.58	0.86	0.46	0.43	0.23
Apr-25	1.76	0.45	0.79	0.52	0.48	0.28
May-25	1.53	0.40	0.77	0.37	0.34	0.22
Average	*1.65*	*0.45*	*0.83*	*0.38*	*0.35*	*0.21*

Table 6-2 Water efficiency targets compared to the Warkworth-Wells average data from July 2024 – May 2025 and also previous reporting period (data in litres per day, calculated from 2,459 connections)

Metric L/d	Warkworth	Per connection (2023-24 values)	Target
Gross Supply	1,653,636	(710) 672	924
Household consumption	828,182	(302) 337	481
NRW	382,727	(218) 156	186

The results show that all targets have been met which is an improvement from the 2023-24 reporting period. Also, there is an increase in in household consumption, whereas the supply and NRW have decreased since last year, indicating greater water use efficiency compared to the past reporting period. In addition, there have been 11 leaks identified and resolved by our reactive crews, during the past reporting period, which is the same number as the previous reporting period.

6.4 Water efficiency initiatives

Watercare has implemented a leakage management system that monitors the minimum night flow and alerts if there is an increase. This allows Watercare to monitor and if an increase is observed then a proactive leakage detection survey can be initiated.

Watercare supports efficient water use through Auckland-wide initiatives such as the below:

- Education campaigns – this includes ongoing public outreach on water-saving practices, particularly during summer, including gardening and household tips. A lot of this is shared via the seasonal Tapped-In newsletters
- Citizen's Assembly – this was conducted in winter 2022 to involve the public in decision making around Auckland's future water sources, focusing on direct recycled water, desalination, and water efficiency and education
- Encouraging rainwater harvesting, especially for gardens and non-potable uses
- School programmes – interactive, curriculum-aligned lessons for all levels of school students, including topics on water quality, drinking water, conservation and field-trips to dams and treatment plants
- Water fun for Tamariki campaign – provides hands-on activities and games for children to learn about water conservation
- App development – a new app is being produced to help residents monitor usage and receive efficiency tips

Appendix A. Abstraction Volumes

Combined daily abstraction volumes of the Sanderson Road production bores for the 2024-25 reporting period

Date	Abstraction volume (m^3/d)	Date	Abstraction volume (m^3/d)	Date	Abstraction volume (m^3/d)
1/07/24	1994.92	13/08/24	1433.96	25/09/24	1403.01
2/07/24	1974.25	14/08/24	1440.01	26/09/24	1676.81
3/07/24	1708.99	15/08/24	1316.80	27/09/24	1757.77
4/07/24	1624.91	16/08/24	1440.01	28/09/24	1445.53
5/07/24	1654.52	17/08/24	1439.99	29/09/24	1513.64
6/07/24	1164.67	18/08/24	1439.96	30/09/24	1339.45
7/07/24	1800.02	19/08/24	1439.97	1/10/24	1560.04
8/07/24	1464.25	20/08/24	1384.06	2/10/24	1501.92
9/07/24	1445.22	21/08/24	1434.69	3/10/24	1709.00
10/07/24	1397.78	22/08/24	1356.13	4/10/24	1732.84
11/07/24	1709.10	23/08/24	1395.99	5/10/24	1680.01
12/07/24	1795.22	24/08/24	1597.93	6/10/24	1453.84
13/07/24	1561.03	25/08/24	1599.91	7/10/24	1798.66
14/07/24	1342.40	26/08/24	1421.00	8/10/24	1673.35
15/07/24	1563.11	27/08/24	1555.56	9/10/24	1450.87
16/07/24	1546.18	28/08/24	1519.01	10/10/24	1416.23
17/07/24	1489.27	29/08/24	1325.87	11/10/24	1679.99
18/07/24	1465.96	30/08/24	1830.81	12/10/24	1492.49
19/07/24	1800.01	31/08/24	1559.99	13/10/24	1395.23
20/07/24	1800.02	1/09/24	1352.33	14/10/24	1470.71
21/07/24	1432.39	2/09/24	1328.43	15/10/24	1539.39
22/07/24	1620.29	3/09/24	1560.01	16/10/24	1619.99
23/07/24	1486.43	4/09/24	1512.00	17/10/24	1597.04
24/07/24	1509.64	5/09/24	1494.01	18/10/24	1680.01
25/07/24	1227.78	6/09/24	1555.36	19/10/24	1679.99
26/07/24	2036.76	7/09/24	1360.77	20/10/24	1457.63
27/07/24	1654.56	8/09/24	1559.97	21/10/24	1601.84
28/07/24	1535.71	9/09/24	1559.95	22/10/24	1665.93
29/07/24	1360.47	10/09/24	1210.42	23/10/24	1672.92
30/07/24	1445.72	11/09/24	1554.98	24/10/24	2031.68
31/07/24	1324.16	12/09/24	1447.72	25/10/24	2159.97
1/08/24	1693.81	13/09/24	1791.73	26/10/24	1327.66
2/08/24	1362.15	14/09/24	1799.54	27/10/24	1920.04
3/08/24	1725.47	15/09/24	1420.06	28/10/24	1603.98
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5/08/24	1460.07	17/09/24	1428.82	30/10/24	1575.79
6/08/24	1180.58	18/09/24	1443.76	31/10/24	1488.61
7/08/24	1554.74	19/09/24	1739.59	1/11/24	1674.92
8/08/24	1250.82	20/09/24	1863.84	2/11/24	1679.98
9/08/24	1644.22	21/09/24	1292.33	3/11/24	1680.01
10/08/24	1471.01	22/09/24	1309.73	4/11/24	1679.98
11/08/24	1462.19	23/09/24	1657.08	5/11/24	1666.78
12/08/24	1424.65	24/09/24	1597.48	6/11/24	1765.05

Date	Abstraction volume (m^3/d)	Date	Abstraction volume (m^3/d)	Date	Abstraction volume (m^3/d)
7/11/24	2002.46	23/12/24	1845.11	7/02/25	2034.53
8/11/24	1838.58	24/12/24	2047.99	8/02/25	2040.03
9/11/24	1708.95	25/12/24	1794.62	9/02/25	1965.09
10/11/24	1458.58	26/12/24	1478.97	10/02/25	1996.69
11/11/24	1610.05	27/12/24	1731.17	11/02/25	1905.92
12/11/24	1506.67	28/12/24	1821.55	12/02/25	1980.18
13/11/24	1604.73	29/12/24	1869.41	13/02/25	1924.15
14/11/24	1738.50	30/12/24	1938.53	14/02/25	2159.97
15/11/24	1680.00	31/12/24	1655.89	15/02/25	1939.26
16/11/24	1459.05	1/01/25	1624.34	16/02/25	1694.53
17/11/24	1569.14	2/01/25	1822.59	17/02/25	1648.02
18/11/24	1436.11	3/01/25	1555.35	18/02/25	1780.90
19/11/24	1700.26	4/01/25	1679.92	19/02/25	1748.37
20/11/24	2066.74	5/01/25	1847.03	20/02/25	1811.35
21/11/24	2105.17	6/01/25	1920.07	21/02/25	1869.98
22/11/24	1844.44	7/01/25	1920.02	22/02/25	1680.00
23/11/24	1631.16	8/01/25	1902.06	23/02/25	2057.19
24/11/24	1469.91	9/01/25	1873.95	24/02/25	2543.80
25/11/24	1920.04	10/01/25	2646.81	25/02/25	2059.27
26/11/24	1775.04	11/01/25	2201.45	26/02/25	1930.87
27/11/24	1793.21	12/01/25	1920.01	27/02/25	2189.77
28/11/24	2263.54	13/01/25	2456.84	28/02/25	2261.49
29/11/24	2187.89	14/01/25	2219.42	1/03/25	1822.98
30/11/24	1479.33	15/01/25	2139.60	2/03/25	1680.03
1/12/24	1459.13	16/01/25	1998.18	3/03/25	1858.27
2/12/24	1680.03	17/01/25	271.50	4/03/25	2189.77
3/12/24	1659.41	18/01/25	2039.29	5/03/25	2249.67
4/12/24	1636.76	19/01/25	2159.98	6/03/25	1867.78
5/12/24	2019.66	20/01/25	2034.58	7/03/25	2280.00
6/12/24	2580.68	21/01/25	1748.31	8/03/25	2061.43
7/12/24	1737.35	22/01/25	1684.77	9/03/25	2018.44
8/12/24	1528.81	23/01/25	1982.14	10/03/25	2106.42
9/12/24	1943.54	24/01/25	2159.96	11/03/25	2215.79
10/12/24	1679.50	25/01/25	2160.01	12/03/25	2147.79
11/12/24	1881.63	26/01/25	2031.09	13/03/25	1784.59
12/12/24	1632.65	27/01/25	1919.05	14/03/25	2279.99
13/12/24	1919.99	28/01/25	1902.59	15/03/25	2053.23
14/12/24	1920.00	29/01/25	1743.55	16/03/25	1892.58
15/12/24	1774.00	30/01/25	1750.39	17/03/25	1959.78
16/12/24	1714.06	31/01/25	2373.58	18/03/25	1876.32
17/12/24	1580.74	1/02/25	2068.40	19/03/25	1770.31
18/12/24	1509.77	2/02/25	1919.98	20/03/25	1923.93
19/12/24	1914.89	3/02/25	1899.85	21/03/25	2429.22
20/12/24	2092.81	4/02/25	2039.98	22/03/25	2109.55
21/12/24	2072.48	5/02/25	1798.96	23/03/25	2091.71
22/12/24	1785.07	6/02/25	2040.02	24/03/25	2097.59

Date	Abstraction volume (m^3/d)
25/03/25	1909.45
26/03/25	2065.25
27/03/25	1766.32
28/03/25	2021.37
29/03/25	1880.06
30/03/25	1392.46
31/03/25	1679.96
1/04/25	2489.26
2/04/25	2466.24
3/04/25	1383.35
4/04/25	1841.10
5/04/25	2054.20
6/04/25	2300.03
7/04/25	2156.06
8/04/25	1616.84
9/04/25	1327.06
10/04/25	1577.86
11/04/25	1756.43
12/04/25	1829.58
13/04/25	1554.21
14/04/25	1538.75
15/04/25	1595.95
16/04/25	1580.93
17/04/25	1952.00
18/04/25	1896.72
19/04/25	1920.02
20/04/25	1351.28
21/04/25	1342.99
22/04/25	1269.31
23/04/25	2201.59
24/04/25	1973.21
25/04/25	1920.03
26/04/25	1920.01
27/04/25	1920.04
28/04/25	1920.02
29/04/25	1919.97
30/04/25	1974.63
1/05/25	2318.04
2/05/25	2183.48
3/05/25	1361.16
4/05/25	1680.01
5/05/25	1616.37
6/05/25	1564.28
7/05/25	1525.68
8/05/25	1577.34
9/05/25	1673.46
10/05/25	1679.98
11/05/25	1566.24
12/05/25	1541.42
13/05/25	1680.03
14/05/25	1620.25
15/05/25	1551.98
16/05/25	1628.83
17/05/25	1781.20
18/05/25	1726.17
19/05/25	1503.55
20/05/25	1615.04
21/05/25	1548.22
22/05/25	1601.35
23/05/25	1680.00
24/05/25	1559.43
25/05/25	1429.00
26/05/25	1475.18
27/05/25	1679.99
28/05/25	1493.07
29/05/25	1600.68
30/05/25	1679.96
31/05/25	1679.99
1/06/25	1180.15
2/06/25	1559.95
3/06/25	1460.99
4/06/25	1548.15
5/06/25	1755.32
6/06/25	2058.82
7/06/25	1458.58
8/06/25	1384.91
9/06/25	1673.49
10/06/25	1559.23
11/06/25	1736.69
12/06/25	1499.42
13/06/25	1794.70
14/06/25	1453.10
15/06/25	1530.76
16/06/25	1372.23
17/06/25	1726.66
18/06/25	1557.32
19/06/25	1588.16
20/06/25	1800.03
21/06/25	1416.45
22/06/25	1680.00
23/06/25	1546.41
24/06/25	1675.27
25/06/25	1675.25
26/06/25	1600.81
27/06/25	1680.00
28/06/25	1680.03
29/06/25	1680.05
30/06/25	1679.99
1/07/25	1723.12

Appendix B. Bore Groundwater Levels

Mean daily water levels at the Sanderson Road production bores in mASL, for the 2024-25 reporting period

Date	SR Bore 1	SR Bore 2
1/07/24	2.397	6.066
2/07/24	2.659	5.739
3/07/24	5.905	-0.737
4/07/24	6.868	-2.474
5/07/24	7.127	-2.646
6/07/24	7.620	1.136
7/07/24	7.012	-2.852
8/07/24	7.388	-0.578
9/07/24	7.468	-0.197
10/07/24	5.688	5.350
11/07/24	4.174	6.971
12/07/24	3.787	6.605
13/07/24	4.438	7.199
14/07/24	5.271	7.561
15/07/24	4.808	7.439
16/07/24	5.177	6.503
17/07/24	5.934	4.953
18/07/24	6.950	2.247
19/07/24	7.409	-2.401
20/07/24	7.298	-2.612
21/07/24	7.998	-0.520
22/07/24	7.557	-1.086
23/07/24	7.902	-0.231
24/07/24	5.751	5.488
25/07/24	5.714	7.991
26/07/24	3.112	6.979
27/07/24	4.403	7.234
28/07/24	4.989	7.519
29/07/24	5.738	7.314
30/07/24	5.605	7.231

Date	SR Bore 1	SR Bore 2
31/07/24	7.533	2.814
1/08/24	7.730	-0.873
2/08/24	8.082	0.672
3/08/24	7.841	-1.795
4/08/24	7.915	-0.133
5/08/24	7.944	-0.103
6/08/24	8.200	2.116
7/08/24	5.912	4.731
8/08/24	5.908	7.989
9/08/24	4.595	7.122
10/08/24	4.951	7.634
11/08/24	5.133	7.555
12/08/24	5.404	7.546
13/08/24	5.422	7.101
14/08/24	5.235	7.461
15/08/24	7.087	3.784
16/08/24	7.758	0.752
17/08/24	7.766	0.700
18/08/24	7.826	0.757
19/08/24	7.800	0.705
20/08/24	7.654	0.960
21/08/24	5.947	4.917
22/08/24	6.770	3.410
23/08/24	6.146	5.318
24/08/24	4.663	7.299
25/08/24	4.397	7.188
26/08/24	5.076	7.569
27/08/24	4.717	7.141
28/08/24	6.578	2.434
29/08/24	7.722	1.072

Date	SR Bore 1	SR Bore 2
30/08/24	4.804	3.125
31/08/24	7.351	-0.698
1/09/24	7.796	0.820
2/09/24	7.977	0.990
3/09/24	7.570	-0.525
4/09/24	5.721	4.437
5/09/24	4.826	7.228
6/09/24	4.666	7.054
7/09/24	5.321	7.657
8/09/24	4.651	7.246
9/09/24	4.569	7.229
10/09/24	7.240	3.199
11/09/24	7.345	-0.380
12/09/24	5.779	4.316
13/09/24	5.806	0.504
14/09/24	6.792	-3.224
15/09/24	7.484	-0.198
16/09/24	7.709	0.062
17/09/24	7.706	-0.007
18/09/24	7.339	0.231
19/09/24	4.585	4.146
20/09/24	2.893	6.455
21/09/24	5.072	7.364
22/09/24	5.333	7.559
23/09/24	4.159	7.156
24/09/24	4.475	6.114
25/09/24	6.717	1.953
26/09/24	7.190	-2.231
27/09/24	7.111	-3.161
28/09/24	7.207	-0.779
29/09/24	7.266	-0.828
30/09/24	7.293	0.047

Date	SR Bore 1	SR Bore 2
1/10/24	7.104	-1.029
2/10/24	5.366	4.413
3/10/24	3.796	7.052
4/10/24	3.702	5.907
5/10/24	3.737	6.710
6/10/24	4.528	7.214
7/10/24	3.148	6.434
8/10/24	3.769	6.451
9/10/24	6.642	1.234
10/10/24	7.019	0.202
11/10/24	7.040	-2.047
12/10/24	7.322	-0.726
13/10/24	7.539	-0.081
14/10/24	7.522	-0.512
15/10/24	7.076	-0.670
16/10/24	6.335	0.229
17/10/24	5.050	3.948
18/10/24	3.634	6.601
19/10/24	3.594	6.610
20/10/24	4.392	7.122
21/10/24	3.612	6.573
22/10/24	3.816	5.682
23/10/24	5.684	0.822
24/10/24	6.375	-6.286
25/10/24	5.861	-7.768
26/10/24	6.788	-0.950
27/10/24	6.300	-4.894
28/10/24	6.769	-2.643
29/10/24	6.622	-3.580
30/10/24	4.432	3.877
31/10/24	3.869	6.551
1/11/24	3.395	6.087

Date	SR Bore 1	SR Bore 2
2/11/24	3.273	6.295
3/11/24	3.224	6.258
4/11/24	3.141	6.171
5/11/24	3.336	5.803
6/11/24	5.145	-0.063
7/11/24	6.017	-6.841
8/11/24	6.081	-4.740
9/11/24	6.283	-3.745
10/11/24	6.428	-1.974
11/11/24	6.583	-2.299
12/11/24	6.663	-1.555
13/11/24	4.329	3.475
14/11/24	2.751	6.088
15/11/24	3.117	6.176
16/11/24	3.991	6.580
17/11/24	3.650	6.637
18/11/24	4.044	6.768
19/11/24	2.979	6.042
20/11/24	5.021	-2.240
21/11/24	5.956	-7.700
22/11/24	6.026	-5.853
23/11/24	6.251	-3.336
24/11/24	6.608	-1.939
25/11/24	5.951	-5.293
26/11/24	6.151	-4.364
27/11/24	3.306	2.537
28/11/24	0.383	5.038
29/11/24	3.445	-4.196
30/11/24	5.929	-3.884
1/12/24	6.532	-0.829
2/12/24	6.232	-2.812
3/12/24	4.291	2.449

Date	SR Bore 1	SR Bore 2
4/12/24	3.293	6.100
5/12/24	5.066	-3.363
6/12/24	5.020	-12.725
7/12/24	5.674	-5.553
8/12/24	6.041	-2.715
9/12/24	5.807	-5.272
10/12/24	6.101	-3.898
11/12/24	3.614	0.581
12/12/24	2.798	5.938
13/12/24	1.785	5.484
14/12/24	1.655	5.386
15/12/24	2.285	5.789
16/12/24	2.646	5.877
17/12/24	3.209	5.601
18/12/24	5.548	-0.033
19/12/24	3.528	1.151
20/12/24	4.472	-3.747
21/12/24	5.140	-9.666
22/12/24	5.929	-4.215
23/12/24	3.922	-0.476
24/12/24	1.224	5.207
25/12/24	1.467	5.388
26/12/24	3.231	6.185
27/12/24	2.564	5.780
28/12/24	2.449	5.887
29/12/24	2.018	5.842
30/12/24	1.561	5.642
31/12/24	4.725	0.385
1/01/25	3.641	1.550
2/01/25	2.423	5.940
3/01/25	3.045	5.941
4/01/25	2.839	5.855

Date	SR Bore 1	SR Bore 2
5/01/25	2.275	5.664
6/01/25	1.623	5.378
7/01/25	1.540	5.290
8/01/25	4.319	-1.676
9/01/25	5.478	-5.357
10/01/25	4.663	-13.495
11/01/25	4.368	-10.250
12/01/25	4.939	-6.059
13/01/25	4.665	-11.533
14/01/25	4.000	-10.403
15/01/25	4.388	-8.363
16/01/25	1.884	-0.158
17/01/25	-0.245	4.323
18/01/25	-0.034	4.423
19/01/25	-0.286	4.371
20/01/25	0.245	4.629
21/01/25	1.413	5.073
22/01/25	4.098	-0.629
23/01/25	5.152	-6.487
24/01/25	4.833	-8.290
25/01/25	4.729	-8.427
26/01/25	5.194	-7.148
27/01/25	5.245	-6.363
28/01/25	4.750	-5.666
29/01/25	5.442	-4.432
30/01/25	3.006	1.503
31/01/25	-1.051	4.283
1/02/25	-0.168	4.387
2/02/25	0.886	4.665
3/02/25	1.064	4.831
4/02/25	0.510	4.639
5/02/25	3.738	-1.502

Date	SR Bore 1	SR Bore 2
6/02/25	5.005	-6.963
7/02/25	4.709	-6.856
8/02/25	4.803	-7.192
9/02/25	5.054	-6.481
10/02/25	5.036	-6.826
11/02/25	3.632	-2.905
12/02/25	2.795	-1.854
13/02/25	3.443	-2.873
14/02/25	4.547	-8.613
15/02/25	4.870	-6.919
16/02/25	5.326	-4.715
17/02/25	5.501	-4.773
18/02/25	5.520	-4.492
19/02/25	2.677	2.234
20/02/25	1.706	4.033
21/02/25	1.184	4.281
22/02/25	1.956	5.083
23/02/25	0.587	4.745
24/02/25	-1.985	3.815
25/02/25	-0.401	3.877
26/02/25	3.616	-2.842
27/02/25	4.761	-9.628
28/02/25	4.280	-10.507
1/03/25	4.641	-5.939
2/03/25	5.041	-4.057
3/03/25	5.091	-5.548
4/03/25	4.582	-9.027
5/03/25	0.852	-1.239
6/03/25	0.628	4.399
7/03/25	-1.044	4.001
8/03/25	-0.235	4.372
9/03/25	0.240	4.463

Date	SR Bore 1	SR Bore 2
10/03/25	-0.363	4.177
11/03/25	2.329	-4.951
12/03/25	2.096	-3.697
13/03/25	0.749	4.525
14/03/25	-1.125	3.841
15/03/25	-0.257	4.176
16/03/25	0.438	4.590
17/03/25	0.239	4.414
18/03/25	0.520	4.494
19/03/25	3.665	-1.999
20/03/25	4.880	-6.707
21/03/25	4.200	-12.077
22/03/25	4.200	-11.717
23/03/25	4.367	-10.098
24/03/25	4.400	-9.669
25/03/25	4.240	-7.341
26/03/25	1.194	-0.099
27/03/25	0.555	4.423
28/03/25	0.341	4.448
29/03/25	0.550	4.418
30/03/25	2.674	5.194
31/03/25	1.899	4.959
1/04/25	-1.481	4.256
2/04/25	1.221	-6.138
3/04/25	5.098	-2.701
4/04/25	5.208	-5.042
5/04/25	4.961	-6.865
6/04/25	4.384	-11.138
7/04/25	4.324	-9.512
8/04/25	4.814	-3.411
9/04/25	3.528	3.554
10/04/25	2.609	5.025

Date	SR Bore 1	SR Bore 2
11/04/25	3.237	1.647
12/04/25	5.510	-4.849
13/04/25	5.863	-2.916
14/04/25	5.678	-2.604
15/04/25	5.713	-2.505
16/04/25	3.638	3.046
17/04/25	1.564	5.531
18/04/25	1.530	5.551
19/04/25	1.775	5.608
20/04/25	4.014	6.384
21/04/25	4.366	6.632
22/04/25	4.682	6.757
23/04/25	5.038	-5.103
24/04/25	5.627	-6.719
25/04/25	5.717	-5.153
26/04/25	5.702	-5.205
27/04/25	5.722	-5.226
28/04/25	5.777	-5.224
29/04/25	5.798	-5.197
30/04/25	2.835	1.991
1/05/25	0.003	5.262
2/05/25	0.047	5.050
3/05/25	4.025	6.175
4/05/25	3.174	6.120
5/05/25	3.477	6.438
6/05/25	3.762	6.127
7/05/25	4.332	5.296
8/05/25	3.814	6.583
9/05/25	3.715	6.554
10/05/25	3.600	6.601
11/05/25	4.101	6.972
12/05/25	4.239	7.019

Date	SR Bore 1	SR Bore 2
13/05/25	3.655	6.643
14/05/25	6.088	1.254
15/05/25	7.232	-1.079
16/05/25	6.885	-1.659
17/05/25	6.732	-2.945
18/05/25	6.890	-3.042
19/05/25	7.158	-1.003
20/05/25	6.391	0.006
21/05/25	4.931	4.224
22/05/25	3.768	6.572
23/05/25	3.455	6.522
24/05/25	3.855	6.800
25/05/25	4.367	7.111
26/05/25	4.351	7.072
27/05/25	3.644	6.887
28/05/25	6.346	2.129
29/05/25	7.251	-1.166
30/05/25	7.067	-1.846
31/05/25	6.933	-1.991
1/06/25	7.684	1.323
2/06/25	7.299	-0.671
3/06/25	7.246	0.261
4/06/25	6.122	2.257
5/06/25	3.445	6.966
6/06/25	2.058	6.512
7/06/25	4.251	7.031
8/06/25	4.807	7.341
9/06/25	4.037	7.058
10/06/25	4.169	7.271
11/06/25	6.091	0.640
12/06/25	7.554	-0.779
13/06/25	7.002	-2.789

Date	SR Bore 1	SR Bore 2
14/06/25	7.544	-0.518
15/06/25	7.520	-0.988
16/06/25	7.573	0.250
17/06/25	7.168	-2.238
18/06/25	4.636	4.584
19/06/25	3.837	6.904
20/06/25	3.112	6.658
21/06/25	4.479	7.132
22/06/25	3.670	6.848
23/06/25	5.627	2.860
24/06/25	4.684	3.681
25/06/25	5.741	0.945
26/06/25	6.944	-1.568
27/06/25	6.943	-2.091
28/06/25	6.980	-2.094
29/06/25	6.936	-2.165
30/06/25	6.863	-2.279
1/07/25	6.355	-3.342

Mean daily water levels at the observation bores in mASL, for the 2024-25 reporting period

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
1/07/24	9.38	6.80	9.70	9.69	36.70	6.63	6.51	6.46	23.44
2/07/24	9.42	6.81	9.70	9.69	36.72	6.64	6.54	6.48	23.43
3/07/24	9.42	6.76	9.79	9.78	36.67	6.84	5.99	6.80	23.48
4/07/24	9.40	6.77	9.95	9.95	36.65	7.02	5.80	7.02	23.50
5/07/24	9.38	6.82	10.04	10.03	36.66	7.11	5.83	7.11	23.46
6/07/24	9.38	6.90	10.29	10.28	36.70	7.57	6.74	7.66	23.41
7/07/24	9.38	6.90	10.21	10.20	36.68	7.29	5.86	7.23	23.37
8/07/24	9.36	6.88	10.25	10.25	36.65	7.44	6.36	7.45	23.34
9/07/24	9.33	6.86	10.31	10.30	36.60	7.52	6.47	7.53	23.33
10/07/24	9.31	6.88	10.35	10.35	36.59	7.59	7.25	7.57	23.30
11/07/24	9.30	6.94	10.27	10.26	36.61	7.43	7.36	7.29	23.25
12/07/24	9.30	6.99	10.19	10.18	36.65	7.29	7.18	7.12	23.21
13/07/24	9.29	7.02	10.25	10.24	36.67	7.46	7.42	7.35	23.17
14/07/24	9.29	7.07	10.40	10.39	36.69	7.74	7.75	7.68	23.12
15/07/24	9.42	7.16	10.54	10.53	36.75	7.74	7.70	7.63	23.15
16/07/24	9.68	7.21	10.77	10.76	36.85	7.86	7.72	7.77	23.57
17/07/24	9.73	7.25	10.80	10.79	36.93	7.97	7.58	7.90	23.77
18/07/24	9.74	7.21	10.81	10.80	36.93	8.00	7.33	7.95	23.86
19/07/24	9.70	7.23	10.74	10.73	36.94	7.77	6.31	7.67	23.85
20/07/24	9.85	7.30	10.82	10.81	37.02	7.69	6.17	7.60	23.92
21/07/24	9.89	7.31	10.98	10.98	37.07	8.03	6.99	8.05	24.06
22/07/24	9.89	7.32	10.94	10.93	37.10	7.91	6.63	7.86	24.14
23/07/24	9.84	7.26	10.95	10.94	37.06	8.00	6.88	7.99	24.15
24/07/24	9.81	7.25	10.91	10.91	37.05	7.93	7.52	7.86	24.18
25/07/24	9.75	7.23	10.97	10.97	37.03	8.19	8.22	8.18	24.15
26/07/24	9.69	7.22	10.72	10.72	36.98	7.64	7.48	7.39	24.03
27/07/24	9.64	7.22	10.61	10.61	36.95	7.64	7.55	7.50	23.88
28/07/24	9.60	7.25	10.71	10.70	36.93	7.83	7.79	7.73	23.74
29/07/24	9.58	7.32	10.85	10.85	36.93	8.11	8.04	8.04	23.62
30/07/24	9.68	7.38	10.94	10.94	36.94	8.15	8.02	8.06	23.62
31/07/24	9.73	7.37	11.01	11.00	36.91	8.24	7.49	8.19	23.77

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
1/08/24	9.74	7.36	11.01	11.00	36.91	8.13	6.89	8.05	23.86
2/08/24	9.71	7.33	11.00	11.00	36.89	8.20	7.16	8.18	23.84
3/08/24	9.66	7.31	10.88	10.87	36.88	7.91	6.47	7.81	23.75
4/08/24	9.63	7.33	10.92	10.92	36.89	8.06	6.91	8.02	23.65
5/08/24	9.59	7.33	10.94	10.94	36.88	8.11	6.94	8.07	23.55
6/08/24	9.55	7.31	10.99	10.98	36.85	8.27	7.41	8.29	23.45
7/08/24	9.51	7.27	10.86	10.85	36.81	7.97	7.39	7.85	23.36
8/08/24	9.49	7.30	10.88	10.87	36.81	8.19	8.16	8.13	23.29
9/08/24	9.48	7.30	10.83	10.82	36.80	8.01	7.87	7.84	23.24
10/08/24	9.45	7.28	10.72	10.71	36.78	7.93	7.85	7.79	23.19
11/08/24	9.43	7.26	10.72	10.71	36.75	7.96	7.90	7.83	23.15
12/08/24	9.41	7.29	10.74	10.74	36.76	8.01	7.94	7.89	23.10
13/08/24	9.39	7.26	10.73	10.72	36.74	7.98	7.90	7.86	23.07
14/08/24	9.37	7.23	10.70	10.69	36.70	7.94	7.86	7.81	23.03
15/08/24	9.35	7.24	10.75	10.74	36.70	8.08	7.55	8.01	23.01
16/08/24	9.34	7.27	10.79	10.79	36.72	8.05	6.91	7.97	22.98
17/08/24	9.37	7.34	10.83	10.82	36.76	8.07	6.99	8.00	22.96
18/08/24	9.51	7.42	10.94	10.93	36.84	8.15	7.07	8.08	23.05
19/08/24	9.61	7.37	10.96	10.95	36.84	8.11	7.01	8.05	23.35
20/08/24	9.61	7.24	10.90	10.89	36.77	8.04	7.01	8.00	23.55
21/08/24	9.58	7.19	10.84	10.84	36.73	7.94	7.42	7.85	23.58
22/08/24	9.54	7.18	10.81	10.81	36.71	8.00	7.41	7.94	23.52
23/08/24	9.51	7.21	10.85	10.85	36.73	8.00	7.51	7.91	23.44
24/08/24	9.50	7.24	10.79	10.78	36.76	7.89	7.80	7.73	23.37
25/08/24	9.48	7.23	10.67	10.66	36.75	7.74	7.64	7.57	23.31
26/08/24	9.46	7.25	10.70	10.69	36.76	7.87	7.78	7.75	23.25
27/08/24	9.46	7.27	10.67	10.67	36.77	7.79	7.69	7.64	23.20
28/08/24	9.46	7.26	10.66	10.65	36.76	7.79	7.05	7.68	23.17
29/08/24	9.46	7.28	10.71	10.70	36.77	7.89	6.85	7.84	23.14
30/08/24	9.50	7.22	10.60	10.59	36.74	7.60	6.95	7.42	23.26
31/08/24	9.51	7.21	10.60	10.59	36.72	7.71	6.45	7.64	23.40
1/09/24	9.57	7.22	10.75	10.75	36.73	7.95	6.94	7.94	23.49

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
2/09/24	9.59	7.23	10.84	10.84	36.73	8.07	7.05	8.06	23.58
3/09/24	9.58	7.28	10.81	10.80	36.76	7.94	6.62	7.86	23.57
4/09/24	9.56	7.26	10.72	10.71	36.76	7.81	7.19	7.70	23.51
5/09/24	9.52	7.19	10.63	10.62	36.72	7.75	7.63	7.62	23.44
6/09/24	9.49	7.17	10.57	10.56	36.70	7.66	7.53	7.52	23.37
7/09/24	9.47	7.21	10.65	10.65	36.73	7.88	7.83	7.79	23.31
8/09/24	9.47	7.24	10.62	10.62	36.76	7.79	7.71	7.64	23.25
9/09/24	9.45	7.22	10.57	10.56	36.74	7.71	7.60	7.55	23.21
10/09/24	9.42	7.22	10.72	10.71	36.73	8.07	7.48	8.04	23.16
11/09/24	9.39	7.17	10.65	10.64	36.69	7.82	6.58	7.72	23.11
12/09/24	9.37	7.16	10.59	10.58	36.68	7.74	7.10	7.64	23.06
13/09/24	9.36	7.19	10.48	10.48	36.71	7.54	6.59	7.36	23.02
14/09/24	9.36	7.21	10.35	10.35	36.74	7.33	5.69	7.18	22.99
15/09/24	9.39	7.22	10.48	10.47	36.75	7.62	6.51	7.59	22.97
16/09/24	9.39	7.27	10.58	10.57	36.78	7.76	6.65	7.73	22.96
17/09/24	9.42	7.27	10.62	10.61	36.79	7.78	6.64	7.73	22.96
18/09/24	9.44	7.19	10.59	10.59	36.73	7.73	6.62	7.67	22.99
19/09/24	9.44	7.17	10.50	10.50	36.72	7.50	6.87	7.33	23.04
20/09/24	9.45	7.15	10.26	10.25	36.73	7.16	6.95	6.92	23.08
21/09/24	9.46	7.11	10.42	10.41	36.71	7.62	7.59	7.57	23.17
22/09/24	9.44	7.11	10.52	10.51	36.71	7.77	7.75	7.70	23.23
23/09/24	9.43	7.12	10.45	10.45	36.71	7.56	7.44	7.39	23.23
24/09/24	9.41	7.12	10.38	10.38	36.72	7.48	7.22	7.31	23.20
25/09/24	9.38	7.08	10.42	10.41	36.69	7.62	6.88	7.55	23.16
26/09/24	9.36	7.11	10.42	10.41	36.69	7.50	6.06	7.39	23.12
27/09/24	9.36	7.11	10.33	10.32	36.72	7.33	5.75	7.20	23.08
28/09/24	9.33	7.03	10.31	10.30	36.66	7.41	6.22	7.36	23.03
29/09/24	9.31	7.03	10.34	10.34	36.65	7.44	6.23	7.39	22.99
30/09/24	9.30	7.04	10.42	10.41	36.64	7.60	6.50	7.57	22.95
1/10/24	9.29	7.06	10.39	10.38	36.65	7.47	6.15	7.39	22.92
2/10/24	9.30	7.12	10.39	10.39	36.69	7.47	6.92	7.36	22.90
3/10/24	9.55	7.16	10.43	10.42	36.75	7.36	7.19	7.17	23.10

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
4/10/24	9.59	7.13	10.32	10.31	36.77	7.24	7.00	7.06	23.39
5/10/24	9.57	7.12	10.27	10.26	36.77	7.25	7.15	7.10	23.41
6/10/24	9.58	7.10	10.36	10.36	36.76	7.48	7.43	7.38	23.39
7/10/24	9.56	7.11	10.26	10.25	36.76	7.24	7.08	7.04	23.35
8/10/24	9.53	7.09	10.18	10.18	36.75	7.20	7.04	7.03	23.30
9/10/24	9.55	7.13	10.35	10.34	36.77	7.52	6.65	7.46	23.26
10/10/24	9.55	7.12	10.43	10.42	36.76	7.57	6.52	7.53	23.28
11/10/24	9.54	7.12	10.39	10.38	36.75	7.42	5.96	7.32	23.27
12/10/24	9.52	7.15	10.44	10.43	36.78	7.53	6.30	7.49	23.25
13/10/24	9.51	7.18	10.53	10.52	36.79	7.71	6.61	7.68	23.21
14/10/24	9.51	7.20	10.55	10.54	36.79	7.70	6.48	7.65	23.19
15/10/24	9.50	7.16	10.47	10.46	36.75	7.55	6.30	7.47	23.17
16/10/24	9.46	7.09	10.35	10.34	36.70	7.37	6.26	7.26	23.15
17/10/24	9.41	7.06	10.30	10.29	36.69	7.30	6.72	7.18	23.11
18/10/24	9.38	7.05	10.21	10.20	36.71	7.19	7.03	7.02	23.07
19/10/24	9.36	7.04	10.16	10.15	36.71	7.17	7.06	7.00	23.03
20/10/24	9.34	7.05	10.22	10.22	36.71	7.39	7.33	7.28	22.99
21/10/24	9.33	7.07	10.19	10.18	36.73	7.24	7.10	7.05	22.95
22/10/24	9.31	7.07	10.13	10.13	36.72	7.15	6.89	6.97	22.92
23/10/24	9.28	7.04	10.12	10.11	36.70	7.18	6.28	7.05	22.89
24/10/24	9.27	7.01	10.00	9.99	36.68	6.85	4.86	6.66	22.87
25/10/24	9.25	6.98	9.77	9.76	36.68	6.48	4.24	6.27	22.85
26/10/24	9.26	6.99	9.95	9.94	36.71	7.01	5.97	7.03	22.83
27/10/24	9.26	6.98	9.91	9.91	36.71	6.78	5.07	6.66	22.83
28/10/24	9.25	6.94	9.95	9.94	36.69	6.93	5.60	6.89	22.82
29/10/24	9.26	6.95	9.94	9.93	36.69	6.87	5.34	6.79	22.81
30/10/24	9.28	6.98	9.96	9.96	36.73	6.92	6.42	6.83	22.80
31/10/24	9.27	6.92	9.94	9.93	36.68	6.98	6.92	6.89	22.81
1/11/24	9.24	6.88	9.90	9.90	36.63	6.90	6.76	6.75	22.80
2/11/24	9.22	6.89	9.87	9.86	36.62	6.88	6.78	6.72	22.78
3/11/24	9.21	6.86	9.84	9.83	36.61	6.86	6.78	6.70	22.76
4/11/24	9.19	6.84	9.82	9.81	36.58	6.82	6.72	6.66	22.74

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
5/11/24	9.18	6.84	9.80	9.80	36.58	6.80	6.65	6.64	22.73
6/11/24	9.17	6.82	9.81	9.80	36.57	6.82	5.92	6.69	22.71
7/11/24	9.15	6.79	9.63	9.62	36.55	6.44	4.45	6.25	22.69
8/11/24	9.14	6.77	9.57	9.56	36.54	6.42	4.72	6.31	22.68
9/11/24	9.13	6.76	9.62	9.61	36.54	6.52	5.04	6.45	22.66
10/11/24	9.12	6.76	9.73	9.72	36.54	6.74	5.57	6.74	22.65
11/11/24	9.14	6.77	9.79	9.78	36.54	6.74	5.40	6.70	22.67
12/11/24	9.12	6.76	9.83	9.82	36.52	6.84	5.60	6.82	22.69
13/11/24	9.14	6.77	9.84	9.83	36.51	6.81	6.28	6.72	22.68
14/11/24	9.18	6.79	9.71	9.70	36.53	6.65	6.51	6.47	22.69
15/11/24	9.24	6.84	9.76	9.75	36.57	6.76	6.67	6.61	22.71
16/11/24	9.31	6.83	9.89	9.88	36.56	6.97	6.93	6.88	22.76
17/11/24	9.30	6.80	9.87	9.86	36.51	6.93	6.89	6.81	22.78
18/11/24	9.28	6.82	9.94	9.93	36.50	7.08	7.03	6.99	22.78
19/11/24	9.26	6.87	9.87	9.88	36.53	6.89	6.71	6.70	22.77
20/11/24	9.25	6.88	9.76	9.76	36.54	6.70	5.44	6.49	22.75
21/11/24	9.23	6.83	9.56	9.56	36.53	6.35	4.26	6.14	22.72
22/11/24	9.20	6.76	9.48	9.49	36.50	6.31	4.53	6.19	22.70
23/11/24	9.18	6.75	9.56	9.55	36.49	6.48	5.07	6.43	22.69
24/11/24	9.16	6.76	9.70	9.70	36.48	6.74	5.58	6.74	22.67
25/11/24	9.14	6.73	9.59	9.59	36.46	6.42	4.66	6.31	22.65
26/11/24	9.13	6.71	9.53	9.53	36.46	6.39	4.76	6.30	22.64
27/11/24	9.11	6.68	9.47	9.47	36.44	6.27	5.66	6.13	22.63
28/11/24	9.09	6.65	9.28	9.28	36.43	5.98	5.73	5.69	22.61
29/11/24	9.08	6.63	9.02	9.02	36.43	5.85	4.40	5.63	22.60
30/11/24	9.07	6.60	9.08	9.07	36.42	6.06	4.63	6.03	22.59
1/12/24	9.11	6.60	9.41	9.41	36.41	6.58	5.62	6.64	22.59
2/12/24	9.09	6.61	9.45	9.45	36.39	6.51	5.14	6.49	22.59
3/12/24	9.07	6.62	9.44	9.44	36.39	6.48	5.85	6.41	22.58
4/12/24	9.06	6.65	9.42	9.42	36.40	6.51	6.40	6.40	22.57
5/12/24	9.05	6.67	9.44	9.44	36.42	6.47	5.17	6.32	22.56
6/12/24	9.04	6.63	9.09	9.09	36.41	5.73	2.94	5.45	22.55

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
7/12/24	9.02	6.57	9.01	9.01	36.39	5.88	4.29	5.82	22.54
8/12/24	9.01	6.58	9.19	9.18	36.39	6.18	4.99	6.19	22.53
9/12/24	9.01	6.59	9.27	9.26	36.40	6.16	4.52	6.08	22.53
10/12/24	9.06	6.57	9.27	9.27	36.39	6.19	4.74	6.16	22.55
11/12/24	9.07	6.56	9.23	9.22	36.38	6.04	5.19	5.92	22.62
12/12/24	9.07	6.60	9.29	9.29	36.41	6.28	6.22	6.19	22.65
13/12/24	9.06	6.53	9.19	9.19	36.38	6.06	5.91	5.87	22.69
14/12/24	9.04	6.49	9.10	9.10	36.34	5.96	5.84	5.78	22.71
15/12/24	9.02	6.49	9.15	9.15	36.33	6.10	6.04	5.96	22.69
16/12/24	9.05	6.54	9.24	9.24	36.36	6.23	6.18	6.10	22.66
17/12/24	9.12	6.59	9.38	9.39	36.38	6.43	6.33	6.33	22.70
18/12/24	9.11	6.62	9.48	9.48	36.39	6.59	5.73	6.55	22.72
19/12/24	9.10	6.64	9.41	9.41	36.40	6.28	5.47	6.12	22.70
20/12/24	9.07	6.60	9.30	9.30	36.38	6.17	4.87	6.00	22.68
21/12/24	9.05	6.54	8.97	8.98	36.34	5.64	3.44	5.46	22.67
22/12/24	9.02	6.52	9.16	9.16	36.33	6.08	4.75	6.06	22.65
23/12/24	9.01	6.50	9.15	9.15	36.32	5.96	4.98	5.87	22.63
24/12/24	8.99	6.47	9.04	9.05	36.30	5.83	5.72	5.64	22.62
25/12/24	8.98	6.49	8.98	8.99	36.32	5.84	5.73	5.67	22.61
26/12/24	9.00	6.57	9.34	9.34	36.37	6.48	6.55	6.46	22.60
27/12/24	8.99	6.51	9.28	9.28	36.31	6.29	6.23	6.16	22.59
28/12/24	8.96	6.45	9.20	9.20	36.24	6.18	6.11	6.02	22.58
29/12/24	8.94	6.45	9.18	9.18	36.22	6.14	6.06	5.97	22.56
30/12/24	8.94	6.47	9.09	9.09	36.23	6.00	5.89	5.80	22.55
31/12/24	8.97	6.49	9.20	9.20	36.25	6.25	5.56	6.18	22.55
1/01/25	8.97	6.45	9.16	9.16	36.22	6.08	5.43	5.98	22.58
2/01/25	8.95	6.45	9.26	9.26	36.19	6.26	6.23	6.14	22.58
3/01/25	8.95	6.48	9.30	9.31	36.20	6.39	6.37	6.30	22.57
4/01/25	8.97	6.49	9.33	9.34	36.20	6.38	6.34	6.26	22.56
5/01/25	8.96	6.48	9.30	9.30	36.17	6.26	6.20	6.09	22.58
6/01/25	8.94	6.45	9.16	9.16	36.14	6.05	5.94	5.85	22.57
7/01/25	8.92	6.44	9.09	9.09	36.13	5.96	5.86	5.76	22.56

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
8/01/25	8.91	6.43	9.07	9.07	36.13	5.96	4.98	5.82	22.54
9/01/25	8.89	6.40	9.10	9.10	36.11	5.94	4.47	5.86	22.53
10/01/25	8.88	6.36	8.88	8.87	36.08	5.38	2.83	5.14	22.52
11/01/25	8.86	6.32	8.49	8.49	36.09	5.01	2.82	4.85	22.51
12/01/25	8.85	6.29	8.63	8.62	36.09	5.33	3.82	5.31	22.50
13/01/25	8.82	6.26	8.63	8.62	36.07	5.15	2.90	5.01	22.49
14/01/25	8.80	6.21	8.34	8.33	36.05	4.79	2.68	4.66	22.48
15/01/25	8.79	6.18	8.34	8.34	36.04	4.85	2.95	4.78	22.47
16/01/25	8.77	6.14	8.37	8.36	36.03	4.90	4.14	4.81	22.47
17/01/25	8.75	6.11	8.32	8.31	36.01	4.88	4.73	4.71	22.46
18/01/25	8.73	6.11	8.31	8.31	36.01	4.96	4.88	4.81	22.45
19/01/25	8.72	6.10	8.35	8.34	36.01	4.99	4.89	4.80	22.44
20/01/25	8.71	6.08	8.35	8.34	35.99	5.04	4.94	4.88	22.43
21/01/25	8.83	6.15	8.52	8.52	36.03	5.39	5.36	5.30	22.43
22/01/25	9.01	6.17	8.76	8.75	36.05	5.66	4.95	5.64	22.53
23/01/25	9.00	6.15	8.80	8.80	36.04	5.56	3.96	5.50	22.61
24/01/25	8.96	6.10	8.67	8.67	35.99	5.30	3.44	5.20	22.61
25/01/25	8.93	6.10	8.58	8.58	35.98	5.18	3.36	5.09	22.59
26/01/25	9.03	6.15	8.62	8.62	36.03	5.25	3.60	5.19	22.62
27/01/25	9.05	6.09	8.69	8.70	35.98	5.37	3.88	5.35	22.67
28/01/25	9.02	6.04	8.66	8.66	35.92	5.31	3.84	5.28	22.65
29/01/25	9.01	6.09	8.76	8.77	35.93	5.53	4.22	5.54	22.63
30/01/25	8.99	6.11	8.83	8.84	35.93	5.60	5.04	5.56	22.60
31/01/25	8.97	6.10	8.61	8.62	35.91	5.18	4.98	4.91	22.58
1/02/25	8.95	6.08	8.40	8.40	35.90	5.08	4.91	4.87	22.56
2/02/25	8.94	6.09	8.50	8.50	35.90	5.30	5.25	5.16	22.55
3/02/25	8.92	6.09	8.56	8.57	35.89	5.37	5.28	5.23	22.53
4/02/25	8.94	6.11	8.57	8.57	35.89	5.32	5.20	5.13	22.55
5/02/25	8.91	6.13	8.64	8.64	35.91	5.51	4.65	5.43	22.55
6/02/25	8.89	6.13	8.69	8.69	35.90	5.43	3.78	5.35	22.54
7/02/25	8.87	6.11	8.64	8.64	35.89	5.31	3.57	5.22	22.52
8/02/25	8.86	6.10	8.60	8.60	35.87	5.25	3.57	5.18	22.51

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
9/02/25	8.84	6.08	8.61	8.61	35.86	5.28	3.70	5.23	22.50
10/02/25	8.83	6.08	8.61	8.61	35.86	5.25	3.58	5.19	22.52
11/02/25	8.84	6.08	8.61	8.62	35.86	5.28	4.19	5.21	22.55
12/02/25	8.81	6.04	8.55	8.56	35.82	5.16	4.11	5.06	22.53
13/02/25	8.79	6.04	8.55	8.56	35.81	5.27	4.21	5.20	22.52
14/02/25	8.78	6.04	8.49	8.50	35.82	5.06	3.10	4.95	22.50
15/02/25	8.77	6.05	8.49	8.49	35.82	5.12	3.49	5.07	22.49
16/02/25	8.78	6.08	8.65	8.65	35.84	5.41	4.11	5.42	22.47
17/02/25	8.91	6.15	8.84	8.84	35.90	5.64	4.29	5.64	22.50
18/02/25	8.96	6.15	8.93	8.94	35.91	5.73	4.33	5.72	22.56
19/02/25	8.94	6.13	8.85	8.87	35.88	5.61	5.11	5.53	22.57
20/02/25	8.91	6.10	8.79	8.80	35.85	5.58	5.37	5.46	22.55
21/02/25	8.89	6.09	8.69	8.70	35.83	5.44	5.27	5.28	22.54
22/02/25	8.87	6.08	8.76	8.76	35.79	5.63	5.57	5.53	22.52
23/02/25	8.85	6.09	8.77	8.78	35.79	5.53	5.43	5.34	22.50
24/02/25	8.83	6.06	8.43	8.43	35.77	4.94	4.64	4.57	22.49
25/02/25	8.80	6.04	8.14	8.14	35.77	4.81	4.53	4.55	22.47
26/02/25	8.79	6.06	8.35	8.35	35.79	5.20	4.19	5.11	22.46
27/02/25	8.77	6.04	8.37	8.37	35.77	5.03	3.00	4.91	22.45
28/02/25	8.75	5.99	8.22	8.22	35.75	4.75	2.52	4.61	22.44
1/03/25	8.74	5.98	8.25	8.25	35.74	4.94	3.39	4.92	22.43
2/03/25	8.75	6.00	8.49	8.49	35.75	5.30	4.06	5.34	22.43
3/03/25	8.74	6.02	8.61	8.61	35.76	5.38	3.84	5.37	22.42
4/03/25	8.74	6.02	8.53	8.53	35.76	5.16	3.17	5.06	22.41
5/03/25	8.74	6.00	8.29	8.29	35.76	4.76	3.74	4.54	22.41
6/03/25	8.73	5.97	8.27	8.27	35.75	4.99	4.86	4.87	22.40
7/03/25	8.71	5.96	8.15	8.15	35.74	4.71	4.51	4.47	22.40
8/03/25	8.71	5.95	8.11	8.11	35.73	4.77	4.64	4.58	22.39
9/03/25	8.70	5.93	8.18	8.18	35.72	4.89	4.81	4.74	22.38
10/03/25	8.69	5.88	8.13	8.13	35.67	4.77	4.61	4.57	22.38
11/03/25	8.68	5.91	8.07	8.07	35.69	4.71	3.41	4.53	22.37
12/03/25	8.68	5.93	8.09	8.09	35.73	4.64	3.41	4.49	22.37

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
13/03/25	8.67	5.91	8.19	8.19	35.71	4.94	4.87	4.85	22.36
14/03/25	8.65	5.87	8.06	8.06	35.68	4.60	4.37	4.35	22.36
15/03/25	8.63	5.86	8.04	8.04	35.67	4.70	4.58	4.52	22.35
16/03/25	8.62	5.87	8.16	8.16	35.66	4.91	4.84	4.78	22.35
17/03/25	8.61	5.89	8.20	8.20	35.67	4.93	4.79	4.77	22.34
18/03/25	8.60	5.91	8.23	8.23	35.69	4.98	4.85	4.83	22.34
19/03/25	8.60	5.89	8.30	8.30	35.67	5.15	4.22	5.09	22.33
20/03/25	8.63	5.88	8.38	8.38	35.64	5.11	3.48	5.06	22.35
21/03/25	8.62	5.88	8.29	8.29	35.63	4.81	2.47	4.64	22.37
22/03/25	8.60	5.85	8.10	8.10	35.63	4.61	2.47	4.49	22.36
23/03/25	8.57	5.84	8.11	8.10	35.63	4.68	2.83	4.61	22.36
24/03/25	8.56	5.83	8.12	8.12	35.61	4.67	2.75	4.61	22.36
25/03/25	8.54	5.82	8.12	8.11	35.61	4.69	3.01	4.66	22.35
26/03/25	8.52	5.81	8.07	8.07	35.61	4.56	3.79	4.43	22.35
27/03/25	8.51	5.82	8.09	8.09	35.62	4.76	4.64	4.66	22.34
28/03/25	8.51	5.83	8.18	8.18	35.62	4.86	4.75	4.72	22.34
29/03/25	8.50	5.80	8.12	8.12	35.59	4.83	4.73	4.69	22.33
30/03/25	8.53	5.83	8.43	8.43	35.59	5.41	5.45	5.43	22.34
31/03/25	8.53	5.86	8.56	8.56	35.60	5.46	5.40	5.38	22.35
1/04/25	8.52	5.88	8.44	8.44	35.61	5.08	4.83	4.77	22.34
2/04/25	8.52	5.83	7.91	7.91	35.59	4.46	2.91	4.14	22.34
3/04/25	8.59	5.86	8.21	8.21	35.61	5.19	4.26	5.26	22.33
4/04/25	8.93	5.96	8.54	8.53	35.70	5.37	3.93	5.37	22.38
5/04/25	9.12	5.96	8.66	8.67	35.78	5.38	3.69	5.34	22.50
6/04/25	9.10	5.96	8.44	8.45	35.79	4.96	2.67	4.81	22.60
7/04/25	9.06	5.93	8.24	8.24	35.80	4.70	2.43	4.57	22.61
8/04/25	9.02	5.93	8.42	8.42	35.78	5.18	4.05	5.23	22.58
9/04/25	8.97	5.90	8.66	8.66	35.73	5.57	5.29	5.64	22.57
10/04/25	8.92	5.90	8.73	8.73	35.69	5.65	5.59	5.62	22.55
11/04/25	8.89	5.96	8.78	8.78	35.69	5.69	5.16	5.61	22.53
12/04/25	8.88	6.00	8.80	8.79	35.71	5.65	4.18	5.59	22.51
13/04/25	8.86	6.03	8.92	8.92	35.72	5.89	4.74	5.90	22.50

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
14/04/25	8.84	6.08	9.02	9.02	35.73	5.98	4.80	5.99	22.49
15/04/25	8.82	6.10	9.04	9.04	35.73	5.98	4.73	5.97	22.47
16/04/25	8.88	6.15	9.14	9.14	35.74	6.10	5.64	6.07	22.47
17/04/25	9.07	6.23	9.15	9.15	35.82	5.95	5.80	5.77	22.60
18/04/25	9.36	6.28	9.19	9.18	35.96	5.87	5.74	5.70	23.01
19/04/25	9.53	6.32	9.52	9.51	36.07	6.01	5.92	5.88	23.68
20/04/25	9.54	6.36	9.67	9.67	36.13	6.53	6.57	6.56	23.95
21/04/25	9.49	6.41	9.82	9.82	36.15	6.81	6.85	6.83	23.99
22/04/25	9.44	6.46	9.94	9.94	36.15	7.03	7.01	7.03	23.96
23/04/25	9.39	6.47	9.84	9.84	36.14	6.67	5.26	6.49	23.87
24/04/25	9.32	6.39	9.41	9.41	36.08	6.08	4.13	5.93	23.76
25/04/25	9.26	6.38	9.40	9.40	36.07	6.12	4.52	6.05	23.64
26/04/25	9.26	6.40	9.40	9.40	36.08	6.09	4.51	6.03	23.55
27/04/25	9.43	6.44	9.51	9.51	36.14	6.11	4.52	6.06	23.83
28/04/25	9.61	6.49	9.68	9.67	36.25	6.15	4.50	6.11	24.22
29/04/25	9.64	6.55	9.72	9.72	36.35	6.20	4.59	6.18	24.31
30/04/25	9.73	6.64	9.85	9.85	36.47	6.26	5.54	6.18	24.44
1/05/25	9.75	6.61	9.61	9.61	36.53	5.95	5.73	5.72	24.53
2/05/25	9.70	6.54	9.30	9.31	36.52	5.67	5.39	5.43	24.52
3/05/25	9.61	6.51	9.65	9.65	36.49	6.52	6.60	6.60	24.46
4/05/25	9.53	6.50	9.72	9.72	36.44	6.57	6.56	6.53	24.34
5/05/25	9.45	6.51	9.75	9.75	36.41	6.67	6.61	6.61	24.20
6/05/25	9.41	6.56	9.83	9.83	36.42	6.80	6.71	6.75	24.04
7/05/25	9.38	6.62	9.89	9.89	36.45	6.92	6.71	6.87	23.90
8/05/25	9.38	6.71	9.96	9.96	36.49	7.01	6.94	6.93	23.78
9/05/25	9.54	6.80	10.14	10.14	36.57	7.07	7.00	6.97	24.03
10/05/25	9.68	6.81	10.26	10.26	36.64	7.09	7.02	7.00	24.34
11/05/25	9.66	6.83	10.29	10.29	36.67	7.24	7.21	7.17	24.33
12/05/25	9.62	6.86	10.32	10.32	36.69	7.31	7.23	7.23	24.23
13/05/25	9.58	6.91	10.27	10.27	36.72	7.22	7.11	7.10	24.10
14/05/25	9.54	6.92	10.26	10.26	36.72	7.25	6.45	7.17	23.96
15/05/25	9.49	6.91	10.29	10.28	36.70	7.28	6.08	7.26	23.83

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
16/05/25	9.45	6.91	10.26	10.26	36.69	7.21	5.87	7.16	23.71
17/05/25	9.42	6.93	10.22	10.21	36.70	7.13	5.71	7.06	23.61
18/05/25	9.42	6.97	10.17	10.16	36.74	7.06	5.66	7.00	23.53
19/05/25	9.54	6.97	10.32	10.32	36.76	7.24	6.03	7.23	23.78
20/05/25	9.54	6.93	10.31	10.31	36.76	7.15	6.08	7.11	23.96
21/05/25	9.51	6.92	10.28	10.28	36.75	7.15	6.62	7.09	23.90
22/05/25	9.48	6.92	10.22	10.21	36.75	7.10	6.97	7.00	23.80
23/05/25	9.45	6.91	10.17	10.16	36.74	7.06	6.93	6.92	23.69
24/05/25	9.41	6.90	10.16	10.16	36.72	7.14	7.08	7.04	23.59
25/05/25	9.40	6.94	10.28	10.28	36.74	7.36	7.34	7.30	23.50
26/05/25	9.44	7.03	10.37	10.36	36.80	7.45	7.37	7.35	23.47
27/05/25	9.65	7.08	10.50	10.49	36.88	7.35	7.23	7.21	23.87
28/05/25	9.75	7.18	10.67	10.66	37.00	7.60	6.90	7.56	24.15
29/05/25	9.78	7.24	10.75	10.74	37.09	7.62	6.37	7.57	24.24
30/05/25	9.75	7.14	10.64	10.64	37.06	7.43	6.00	7.35	24.28
31/05/25	9.69	7.05	10.53	10.52	36.98	7.30	5.96	7.24	24.24
1/06/25	9.64	7.06	10.72	10.71	36.97	7.73	6.95	7.80	24.13
2/06/25	9.60	7.07	10.70	10.69	36.95	7.61	6.43	7.57	23.99
3/06/25	9.57	7.10	10.68	10.68	36.96	7.63	6.56	7.60	23.85
4/06/25	9.60	7.21	10.73	10.73	37.02	7.64	6.78	7.57	23.75
5/06/25	9.72	7.24	10.72	10.72	37.07	7.53	7.38	7.37	23.93
6/06/25	9.80	7.22	10.49	10.49	37.11	7.14	6.91	6.88	24.15
7/06/25	9.82	7.17	10.54	10.54	37.12	7.40	7.33	7.31	24.28
8/06/25	9.78	7.14	10.65	10.65	37.09	7.60	7.59	7.56	24.26
9/06/25	9.78	7.15	10.66	10.65	37.09	7.51	7.40	7.38	24.25
10/06/25	9.79	7.16	10.67	10.66	37.09	7.54	7.47	7.44	24.27
11/06/25	9.90	7.23	10.74	10.74	37.16	7.51	6.55	7.40	24.39
12/06/25	9.87	7.25	10.83	10.83	37.20	7.67	6.48	7.65	24.39
13/06/25	9.82	7.20	10.71	10.70	37.17	7.41	5.87	7.32	24.35
14/06/25	9.76	7.18	10.76	10.75	37.14	7.61	6.49	7.61	24.34
15/06/25	9.74	7.20	10.80	10.79	37.12	7.64	6.45	7.62	24.29
16/06/25	9.78	7.21	10.89	10.89	37.13	7.78	6.75	7.79	24.33

Date	OB3a	OB3b	OB4a	OB4b	OB5	OB6	OB1	OB2	OB7
17/06/25	9.73	7.18	10.78	10.77	37.11	7.52	6.04	7.44	24.25
18/06/25	9.68	7.17	10.69	10.68	37.09	7.44	6.89	7.34	24.12
19/06/25	9.64	7.20	10.64	10.63	37.09	7.46	7.35	7.35	23.97
20/06/25	9.63	7.22	10.55	10.55	37.09	7.32	7.18	7.14	23.86
21/06/25	9.61	7.24	10.64	10.63	37.09	7.59	7.55	7.52	23.81
22/06/25	9.58	7.24	10.59	10.58	37.06	7.45	7.35	7.30	23.74
23/06/25	9.55	7.21	10.56	10.55	37.02	7.50	6.92	7.40	23.66
24/06/25	9.50	7.16	10.49	10.49	36.96	7.33	6.70	7.20	23.58
25/06/25	9.48	7.15	10.42	10.42	36.94	7.27	6.34	7.15	23.51
26/06/25	9.47	7.20	10.46	10.45	36.96	7.32	6.00	7.25	23.45
27/06/25	9.64	7.27	10.62	10.61	37.02	7.34	5.92	7.27	23.47
28/06/25	9.81	7.28	10.73	10.72	37.09	7.37	5.99	7.32	23.71
29/06/25	9.81	7.23	10.68	10.67	37.08	7.33	5.94	7.28	23.91
30/06/25	9.76	7.18	10.61	10.61	37.06	7.24	5.76	7.19	23.94

Appendix C. Bore Quality Monitoring

Water quality results taken from Observation bores 3A and 3B during the 2024-25 reporting period

Date	3A Chloride (mg/L)	3A Conductivity (mS/m)	3A Sulphate (mg/L)
17/10/24	21.40	28.00	3.70
6/11/24	21.00	14.00	4.30
3/12/24	21.20	27.70	4.30
23/01/25	21.40	27.40	3.70
20/02/25	22.70	28.00	4.50
4/03/25	20.30	27.10	3.50
10/03/25	20.80	26.00	3.60
20/03/25	21.10	23.90	3.70
27/03/25	21.60	27.90	4.30
3/04/25	21.20	27.10	3.70
10/04/25	20.50	28.10	4.10
16/04/25	20.70	26.90	3.80
23/04/25	21.20	26.20	4.30
1/05/25	20.40	27.50	4.10
6/05/25	20.00	27.50	4.10
14/05/25	20.90	27.10	4.20
20/06/25	20.80	25.10	4.00

Date	3B Chloride (mg/L)	3B Conductivity (mS/m)	3B Sulphate (mg/L)
17/10/24	22.40	45.00	5.60
6/11/24	20.90	43.00	5.29
3/12/24	21.70	44.80	5.42
23/01/25	21.80	44.80	5.38
20/02/25	21.70	45.70	5.38
4/03/25	20.70	44.30	5.04
10/03/25	21.20	43.20	5.24
20/03/25	21.60	43.60	4.20
27/03/25	21.90	45.80	5.49
3/04/25	21.60	45.80	4.70
10/04/25	21.20	46.00	5.40
16/04/25	21.30	46.00	4.80
23/04/25	21.80	44.90	5.37
1/05/25	21.10	45.30	5.36
6/05/25	21.10	45.30	5.35
14/05/25	21.50	45.20	5.40
20/06/25	21.60	44.50	5.29

Appendix D. Copy of Tonkin & Taylor's technical assessment of groundwater report

Appendix E. Data Sources

Download location of environmental monitoring data used in this report

Category	Parameter	Source platform	Tag/ID
Abstraction volumes	Sanderson Rd bores 1 & 2 abstraction volumes	ID/ Pi DataLink	SWSA1_20_FIT_111/AI1/OUT.CV SWSA2_20_FIT_111/AI1/OUT.CV
Bore water levels	Sanderson Rd production bore water levels	Pi DataLink	SWSA1_20_LIT_011/AI1/OUT.CV SWSA2_20_LIT_011/AI1/OUT.CV
Bore water levels	Observation bore water levels	Hydrotel	SLFAL_20_WL_01 SLFAL_20_WL_02 SLHUD_20_WL_01 SLHUD_20_WL_02 SLHUD_20_WL_03 SLSHO_20_WL_01 SLSHO_20_WL_02 SLVIV_20_WL_01 SLWOO_20_WL_01
Bore water quality	Chloride, sulphate, conductivity	Labware/ BI Water Lab	WARK_OB3A WARK_OB3AB
Monthly water use	Water supply, consumption, NRW, connections	Te Puna Wai	Warkworth DMA
Rainfall	Total daily rainfall	MOATA	ACC - Rain -Mahurangi @ Satellite Dish # 644616