

Drinking Water Monitoring Report Hay 2025

Executive Summary

In 2025, Hay Shire Council performed routine drinking water sampling and testing to monitor the quality of drinking water in the Hay supply system.

Compliance has been assessed against the guideline values provided in the supplied 2025 Results Summary Report for E. coli, physical, chemical and operational water quality characteristics. The reporting period for the supplied data is 01-01-2025 to 31-12-2025 and includes a total sample count of 268.

The Hay supply achieved 100% compliance for E. coli, with no E. coli detected in 47 samples. Routine physical and aesthetic results also met the supplied guideline values. Most health-related chemical characteristics met the guideline values; however, the 2025 data recorded one mercury exception from seven mercury samples, with mercury meeting the guideline in 85.71% of results.

Operational monitoring shows that free chlorine and total chlorine were within the supplied guideline ranges for all samples. Fluoride met the 1.5 mg/L health-based guideline in routine chemistry results. These operational results should continue to be reviewed through normal water treatment process control.

All available results from the supplied 2025 data are summarised in the tables below.

Water Quality

Summary

Routine chemistry results were available for six sample rounds for most chemical and physical characteristics. Microbiological and process monitoring results were generally available from weekly distribution sampling. The summary below uses the supplied exception counts and guideline compliance percentages from the 2025 Results Summary Report.

Table 1. Hay Water Quality Compliance Overview

Sample Type	Result Count	Number of Characteristics	Exception Count	Meeting Guideline Values (%)
Physical and selected aesthetic chemistry	77	13	0	100.00
Health-related chemical characteristics	126	21	1	99.21
Microbiological - E. coli	47	1	0	100.00
Distribution process indicators	295	1	0	100.00

Note: The summary table separates E. coli from other process indicators. Total coliforms and operational fluoride results are included as process-control indicators, not as a replacement for E. coli compliance.

Routine Drinking Water Monitoring Characteristics

Chronic health-related chemical characteristics are inorganic chemicals that may be present in water and can pose a risk to health with prolonged exposure. Guideline values are generally set to be protective over a lifetime of exposure. A single result above a guideline value should be investigated, with compliance reviewed using long-term trends and follow-up sampling where required.

Table 2. Chronic health-related Chemical Water Quality Data for the Hay supply

Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
Antimony	0.0030 mg/L	0.0001	0.0001	6	0	100.00
Arsenic	0.0100 mg/L	0.0007	0.001	6	0	100.00
Barium	2.0000 mg/L	0.0215	0.0277	6	0	100.00
Bismuth	10.0000 mg/L	0.0500	0.05	5	0	100.00
Boron	4.0000 mg/L	0.0058	0.007	6	0	100.00
Cadmium	0.0020 mg/L	0.0001	0.00005	6	0	100.00
Chromium	0.0500 mg/L	0.0005	0.0005	6	0	100.00

Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
Fluoride	1.5000 mg/L	0.4950	1.08	6	0	100.00
Iodine	0.5000 mg/L	0.0117	0.02	6	0	100.00
Lead	0.0050 mg/L	0.0002	0.0004	6	0	100.00
Manganese	0.1000 mg/L	0.0069	0.0311	6	0	100.00
Mercury	0.0010 mg/L	0.0023	0.0152	7	1	85.71
Molybdenum	0.0500 mg/L	0.0002	0.00025	6	0	100.00
Nickel	0.0200 mg/L	0.0006	0.001	6	0	100.00
pH	6.5 - 8.5	7.4833	7.7	6	0	100.00
Selenium	0.0040 mg/L	0.0014	0.0035	6	0	100.00
Silver	0.1000 mg/L	0.0002	0.00025	6	0	100.00
Uranium	0.0200 mg/L	0.0002	0.00025	6	0	100.00

Acute health-related chemical characteristics are inorganic chemicals that can pose a health risk based on a small number of exposures. High concentrations of copper can cause vomiting. High concentrations of nitrite or nitrate can be risky for bottle-fed babies. The guideline values for these characteristics have been set to protect people from short-term exposure.

Table 2a. Acute health-related Chemical Water Quality Data for the Hay supply

Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
Copper	2.0000 mg/L	0.0035	0.008	6	0	100.00
Nitrate	50.0000 mg/L	0.5000	0.5	6	0	100.00
Nitrite	3.0000 mg/L	0.0500	0.05	6	0	100.00

Physical and aesthetic chemical characteristics change the way that water appears, tastes, smells, looks or feels. These characteristics do not generally have health guideline values but affect customer acceptance of the drinking water supply.

Table 2b. Physical and Selected Aesthetic Chemical Water Quality Data for the Hay supply

Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
Aluminium	0.2000 mg/L	0.0383	0.05	6	0	100.00
Calcium	10000.0000 mg/L	10.3500	13.6	6	0	100.00
Chloride	250.0000 mg/L	16.6667	27	6	0	100.00
Iron	0.3000 mg/L	0.0092	0.01	6	0	100.00
Magnesium	10000.0000 mg/L	5.6783	8.15	6	0	100.00
Silicon	100.0000 mg/L	0.2860	0.89	5	0	100.00
Sodium	180.0000 mg/L	27.1667	43	6	0	100.00
Sulfate	250.0000 mg/L	23.6667	26	6	0	100.00
Total Dissolved Solids (TDS)	10000.0000 mg/L	121.6667	148	6	0	100.00
Total Hardness as CaCO ₃	200.0000 mg/L	49.3500	68	6	0	100.00
True Colour	15.0000 Hazen Units (HU)	1.0833	3	6	0	100.00
Turbidity	5.0000 NTU	0.2917	0.6	6	0	100.00
Zinc	3.0000 mg/L	0.0100	0.01	6	0	100.00

Escherichia coli, a bacteria found in the gut of many backboned animals, is an indicator that there has been recent faecal contamination in a drinking water supply. Chlorine is used widely to kill disease-causing organisms in drinking water. A reasonable residual concentration in the supply provides ongoing protection to customer taps and gives an indication that treatment and distribution system integrity are being maintained.

Table 3. Microbiological and Distribution Water Quality Data for the Hay supply

Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
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Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
E. coli	0.0000 mpn/100 mL	0.0000	0	47	0	100.00
Free Chlorine	0.2 - 5 mg/L	0.9532	1.55	50	0	100.00
pH	6.5 - 8.5	7.4906	8.1	50	0	100.00
Temperature	30.0000 C	19.9021	26	48	0	100.00
Total Chlorine	5.0000 mg/L	1.1128	1.84	50	0	100.00
Turbidity	5.0000 NTU	0.4814	1.46	50	0	100.00

Operational Monitoring

Operational monitoring assists Council with the day-to-day control of the treatment process. The routine chemistry fluoride results met the 1.5 mg/L health-based guideline. Operational water utility fluoride results were generally close to target.

Table 4. Operational Fluoride Monitoring for the Hay supply

Analysis Type	Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
Chemistry	Fluoride (WU result)	1.5000 mg/L	0.5750	1.15	2	0	100.00

Other Monitoring

Per- and Poly-fluorinated alkyl substances (PFAS) testing

PFAS are a class of chemicals that have been developed for fire-fighting, stain and water resistance and other uses. They can pose a risk to health with prolonged exposure. The 2025 data reports PFAS characteristics individually. All PFAS results provided in the supplied 2025 data met the listed guideline values.

Table 5. Results for PFAS monitoring for the Hay supply

Characteristic	Guideline Value	Mean	Maximum	Sample Count	Exceptions	Meeting Guideline Value (%)
PFBS	1.0000 µg/L	0.0004	0.0005	2	0	100.00
PFHxS	0.0300 µg/L	0.0010	0.001	2	0	100.00
PFOA	0.2000 µg/L	0.0005	0.0005	2	0	100.00
PFOS	0.0080 µg/L	0.0009	0.001	2	0	100.00

Pesticide testing

The supplied 2025 Results Summary Report did not include pesticide testing results. Pesticide results should be added to this report if a separate 2025 pesticide dataset becomes available.

Key Findings and Recommended Actions

- E. coli compliance was 100%, with no E. coli detected in 47 samples.
- Physical and selected aesthetic chemistry results met the supplied guideline values.
- One mercury exception was recorded from seven mercury samples. The result should be reviewed against sampling records, laboratory quality assurance information and any follow-up sampling results.
- Routine fluoride chemistry met the health-based guideline of 1.5 mg/L. Operational fluoride results should continue to be managed through normal treatment process control due to the recorded target-range exceptions.
- Free chlorine, total chlorine, pH, temperature and turbidity results were within the supplied guideline values for distribution monitoring.

Source Data

This report was prepared using the supplied 2025 Results Summary Report for the collected date range 01-01-2025 to 31-12-2025, and the supplied 2024 Hay Drinking Water Monitoring Report was used as the reporting format reference.