

PUB LIMS Operational Summary Report

PUB LIMS Operational Summary Report

=====

This report summarizes sampling program outputs, reporting limit distributions, and parameter classifications from the LIMS system. Charts referenced represent frequency distributions, distinct sampling coverage, and classification breakdowns.

Charts

1. Counts by Frequency per Matrix

[CHART: counts_by_freq_matrix.png]

- Distribution mains dominate quarterly and monthly schedules.

2. Distinct Sampling Points by Source

[CHART: distinct_sampling_points_by_source.png]

- Direct supply has the highest count (~310 points).

3. Parameters by Classification

[CHART: parameters_by_classification.png]

- Radiological Quality accounts for majority of tests (>900,000 codes).

4. RL Distribution

[CHART: rl_distribution.png]

- Most results clustered ≤ 1.0 mg/L with secondary peaks at 5, 9, 12 mg/L bins.

5. Sampling Workflow

[FLOW: samp_workflow.png]

Key Highlights

Category | Observation

Sampling Frequency | Distribution mains dominate quarterly and monthly schedules.

Sampling Points | Direct supply has the highest count (~310 points).

Parameter Classes | Radiological Quality accounts for majority of tests (>900,000 codes).

RL Distribution | Most results clustered ≤ 1.0 mg/L with secondary peaks at 5, 9, 12 mg/L bins.

Predefined Q&A; Knowledge Base (QA_BANK)

1. pH Trend (6 months)

- Stability observed across reservoirs (6.5–8.5 guideline).

- Notable rise in Marina due to algal bloom.

Follow-ups: Why was pH high in June–July? Show MacRitchie vs Bedok trend.

2. Chlorine Residuals (last quarter)

- Avg. 0.45 mg/L with controlled peak at 0.55 mg/L (maintenance).

- No microbiological impact observed.

Follow-ups: Why spike in June? Weekly breakdown? Alert if >0.6 mg/L.

3. Turbidity (Plant A)

- Improved from 0.30 NTU (Apr) → 0.18 NTU (Jul).

- Filter optimisation and headloss-based triggers effective.

Follow-ups: Why higher in Apr? Show daily data. Compare Plant A vs B.

4. Lead & Copper (yearly)

- Lead stable (0.002–0.004 mg/L), Copper stable (0.10–0.14 mg/L).

- QC via ICP-MS and ICP-OES.

Follow-ups: Why higher Cu in Aug? Monthly comparison? Alert for exceedances.

5. Coliforms (West region)

- One isolated hit in May (1 CFU/100 mL); flushed and resolved.

- No systemic issues.

Follow-ups: Why detected in May? Incident timeline? Regional comparison.

6. Root Cause – High pH (Marina)

- Driven by algal bloom, low inflow, high DO during midday.

- Actions: Aeration curtains, PAC dosing.

Follow-ups: Show pH vs DO overlay. List bloom days. Chlorophyll-a levels.

7. Ad-hoc Samples (Bedok, 3 months)

- Total: 45 bottles. Triggered by rainfall & maintenance.

- Parameters: Metals, Turbidity, Microbiology.

Follow-ups: Breakdown by parameter. Turbidity vs TSS after storm. Micro positives?

8. Turnaround Time (RW Inlet)

- Microbiology: 3–4 days. Physico-chemical: 2–3 days.

- Metals: 5–7 days. Organics: 5–10 days.

Follow-ups: Expedite with TAT-PRIORITY. Show pending QA. What causes delays?