

ALGA & WasteMINZ QAQC Practice Note Launch

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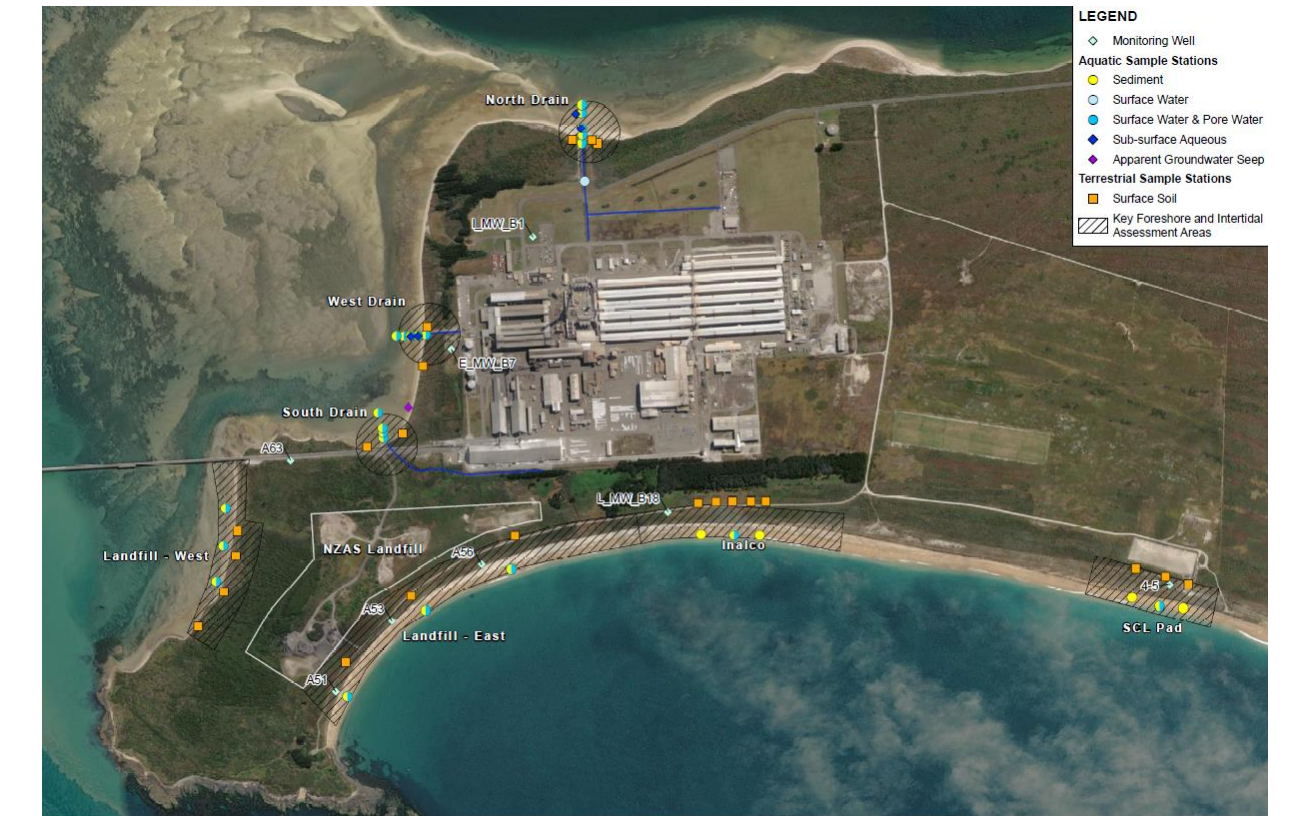


Presentation Aims

- Present background and context to the ALGA/WasteMINZ QA/QC Practice Note.
- Has been a huge collective effort by a large number of “industry” practitioners.
 - Big thank you to all those who have contributed and will contribute (***as there is still work to do***).



Share My Own Experiences



Core Intent: Lift Consistency and Defensibility of Data

At its simplest, the Practice Note is about:

Ensuring environmental data (soil, surface water, sediment, groundwater, vapour/landfill gas) is demonstrably fit for purpose.

Across NZ, there's a recognised issue:

- Variable QA/QC implementation between practitioners.
- Over-reliance on lab QA vs. field QA.
- Inconsistent interpretation of duplicates, blanks, spikes, etc.

Practice Note is addressing this by setting clear, practitioner-level expectations for:

- What QA/QC is required?
- When it's required.
- How it should be interpreted in reports.



Moving from “Guidance Exists” to “Minimum Standard”

ALGA NZ workshop (2022)

Key outcome:

- Strong industry support for QA/QC guidance.

Key issue:

- CLMG#5 does not provide sufficient QA/QC detail.

Desire:

- Move from compliance → best practice.



New Zealand Land and Groundwater Conference 2022
13-14 September 2022
Te Pae Christchurch Convention Centre

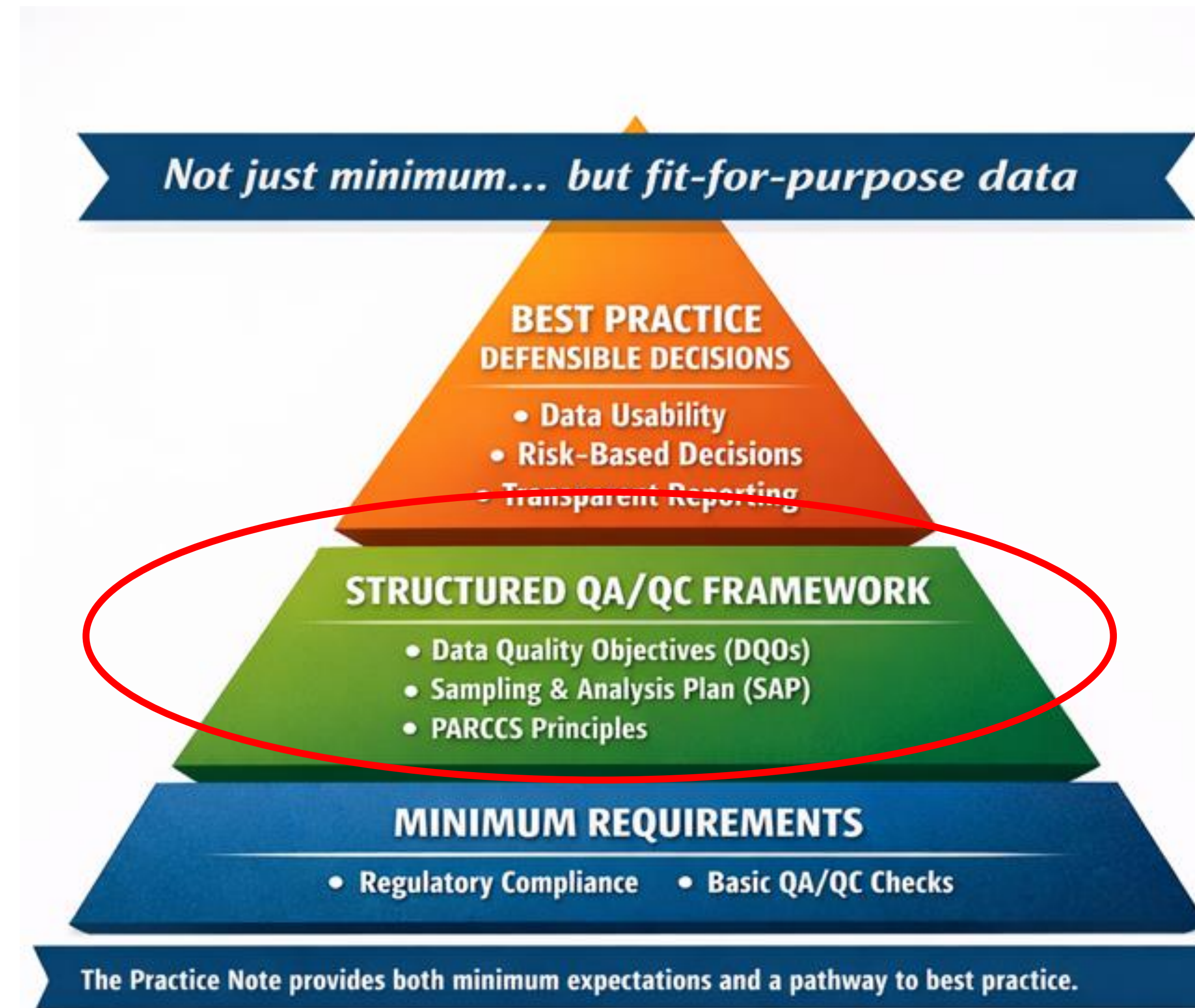
There is already guidance (CLMG#5, various EPA docs, lab protocols), but:

- It is fragmented.
- Often high level.
- Leaves too much to individual judgement.



Objectives of Practice Note

- Provide a practical QA/QC toolkit.
- Define:
 - Minimum defensible standards.
 - Best Practice Approaches.
- Cover:
 - Soil, sediment, surface water, groundwater and vapour/landfill gas.
 - Lab QA/QC interpretation.



→ Minimum standards + scalable to meet Project Risks



First Principles Approach – Development of the Guidelines

QA/QC Guidelines

Built from:

- MfE Historical Guidance (Timber Treatment + Gasworks).
- AS 4482.1 (the basis of CLMG#5).
- NZ Oil Industry Guidelines.

Aligns with:

- NEMS (NZ-based).
- NEPM Schedule B1 (Australia-based).
- ISO-18400.
- US EPA QA Framework.
- Best Practice Sampling Guidelines.

Anchored in International Defensibility + a NZ Context.



Standardising Field QA/QC (a known weak point)

Moving from “guidance exists” to “minimum standard”, focus on field QA/QC consistency.

Expect the note to prescribe:

Frequency and use of:

- Field duplicates.
- Trip blanks.
- Rinsate blanks.

Handling of:

- Decontamination.
- Sample preservation.
- Holding times.

👉 This directly targets one of the most inconsistent areas in practice.



Aligning Laboratory Data with “Data Usability”

Another major shift is moving beyond “the lab says it’s OK” to the following:

Is the dataset usable for decision-making?

This means:

- Introducing Data Quality Objective (DQO) thinking.
- Linking QA/QC to:
 - Investigation stage (PSI vs DSI vs delineation vs validation).
 - Contaminant type (e.g. VOCs vs metals vs PFAS).
 - Risk decision (screening vs litigation vs remediation closure).

☞ This is very consistent with US EPA-style frameworks, but not embedded in NZ practice historically.



What it Will Look Like in Application

Procurement / Contracts

- Clients/Regulators can reference the “QA/QC Practice Note”.

Reports

- Standard QA/QC sections referencing the note.

Regulators

- Using it as a review benchmark.

Disputes / Expert Evidence

- Used to challenge or defend:
 - Adequacy of investigations.
 - Reliability of datasets.

Moving QA/QC from a loosely applied technical add-on → to a formalised, auditable, decision-critical component of contaminated land practice.



Providing Interpretation Rules (this is the big one)

Most guidance stops at “collect QA/QC samples”—Practice Note is going further:

Expect practical interpretation guidance such as:

- What constitutes **acceptable duplicate precision**.
- When **RPD failure invalidates data**.
- How to treat:
 - Contaminated blanks.
 - Matrix interference.
 - Lab flags and qualifiers

☞ This is critical because:

- Regulators often see inconsistent interpretations.
- Consultants apply different thresholds to identical data.



When RPDs in Soil Are Needed and When Less Critical

- High spatial heterogeneity is expected. ✓
- Concentrations near acceptance limits / criteria (could be risk criteria or landfill criteria). ✓
- Data use for risk assessment or site closure (need to right answer). ✓
- Very homogeneous soils/stockpile. ?
- Early stage DSI or screening investigation. ?
- When other QA/QC lines of evidence dominate – high density sampling. ?

	Mining			Residential		
	Mean	95%ile	N	Mean	95%ile	N
Arsenic	18.74	77.24	73	18.58	59.61	85
Copper	13.47	37.37	44	18.74	64.94	85
Lead	24.07	80.59	50	23.77	75.66	85
Mercury	31.4	113.6	67			
Zinc	16.69	51.23	44	19.81	65.95	85

RPD percentages.



PRACSS Framework

Precision

Accuracy

Representativeness

Comparability

Completeness

Sensitivity

QA/QC must allow you to answer **ALL** of these



Evaluating QA/QC Data

QA/QC = evidence for PARCCS

Examples

- Precision → duplicates.
- Accuracy → spikes and CRM (from lab QA/QC report).
- Representativeness → sampling design and SOPs (based on appropriate guidance documents).
- Compatibility → within historical range and appropriate analytical methods.
- Completeness → were all the samples collected and appropriate sample documentation.
- Sensitivity → detection limits less than guidelines.

Not all QA/QC requires QA samples



Strengthening Reporting Expectations

The practice note will present:

- Explicit QA/QC summary tables
- Clear statements on:
 - Data limitations.
 - Usability.
 - Uncertainty.

Rather than:

- QA/QC buried in appendices with no interpretation.

☞ This aligns strongly with:

- Expert witness expectations.
- Regulator review requirements.



Supporting the Role of Certified Practitioners

There's a strategic angle that aligns with certification:

- Creates a technical framework that certified practitioners are expected to apply.
- Reinforces:
 - Professional judgement backed by evidence.
 - Not just process compliance.

↳ In effect:

QA/QC becomes one of the key arenas where “competent practitioner” status is demonstrated.



Reducing Regulatory Friction and Rework

From a practical perspective, the Practice Note is trying to reduce:

- Regulator pushback on data quality.
- Requests for additional sampling.
- Delays in consenting or closure.

Because:

- Submissions will be based on a recognised, consistent QA/QC framework.

☞ This has a direct value-for-money benefit:

- Less rework.
- Faster decisions.
- More defensible outcomes.



What Good QA/QC Looks Like

