



10 Questions every mining site should ask

THE MINE WATER MANAGEMENT CHECKLIST

For full details visit www.ausimm.com/courses



INTRODUCTION

Mine water management is no longer just an environmental concern, it is a strategic, operational, and financial imperative.

Whether you're an **engineer, site manager, or environmental professional**, asking the right questions early can prevent compliance failures, costly remediation, and reputational damage.

This checklist is designed to help you quickly assess the water related risks and opportunities on your site. It draws on the key principles of integrated mine water management from understanding sources and quality to pretreatment, treatment, and residual handling. Use it to start conversations, assess performance, and drive improvement.

This course helps you:

- ✔ Apply a complete water management framework
- ✔ Learn across 4 structured modules
- ✔ Work through real-world mining case studies
- ✔ Use practical tools you can apply on site
- ✔ Shift from reactive compliance to strategic water stewardship

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10 MUST-ASK MINING QUESTIONS

1. Do we have a complete understanding of our site water balance?

Why it matters: Water balance: sources (rain, groundwater, process water) vs demands (process, mining equipment and dust suppression, potable) is the foundation of effective management. An incomplete picture can lead to unplanned discharges, shortages, or hidden liabilities.

What to check: Do you track both volume and quality of inflows and outflows? Have you accounted for seasonal variability and extreme events?

2. Have we identified all stakeholders with an interest in our water management?

Why it matters: Water connects your site with surrounding communities, First Nations groups, downstream users, and regulators. Failure to engage early can result in mistrust, delays, or opposition.

What to check: Have you mapped all relevant stakeholders (regulators, neighbours, Indigenous groups)? Is there a clear process for consultation and ongoing communication?



3. Do we know what makes our water “mine affected”?

Why it matters: Mine affected water can contain a range of contaminants like metals, salts, suspended solids, and emerging compounds like PFAS. The type and concentration determine treatment options and discharge requirements.

What to check: Have you characterised the sources of contamination (e.g: pit water, tailings, runoff, workshop areas)? Do you understand the chemistry (pH, metals, salinity) and how it changes over time?

4. Have we identified all stakeholders with an interest in our water management?

Why it matters: Different uses (process, mining equipment and dust suppression, potable) and receiving environments have vastly different water quality requirements. Using the wrong parameters can lead to operational problems or noncompliance.

What to check: Do you have a clear hierarchy of water quality needs on site? Are you monitoring the right parameters (pH, turbidity, specific metals, salinity, etc.) for each intended use or discharge?



5. Is our sampling program delivering representative and reliable data?

Why it matters: Decisions are based on data. Poor sampling or analysis data will lead to poor decisions.

What to check: Sampling locations and procedures need to be representative. Online instrumentation needs to be fit for purpose, installed in the correct configuration and properly calibrated.

6. Do we have a realtime monitoring strategy where it matters most?

Why it matters: Manual sampling can miss short term events (spills, high flows, treatment upsets). Realtime instrumentation (e.g., pH, conductivity, turbidity) provides early warning and enables faster response.

What to check: Have you identified key control points where real time monitoring would add value? Is the equipment maintained and calibrated regularly?



7. Are we handling and storing water treatment chemicals safely and effectively?

Why it matters: Incorrect storage or dosing of chemicals (acids, coagulants, polymers) can lead to safety incidents, equipment damage, and treatment failure.

What to check: Do you follow relevant standards for chemical storage, containment, and handling? Are dosing systems properly configured and maintained? Do operators understand the risks of ambient temperature, freezing, or degradation?

8. Are we creating additional water treatment needs unnecessarily?

Why it matters: Sometimes the simplest and most cost-effective approach is to keep “clean” water separate from “dirty” water. This reduces the volume requiring treatment and minimises chemical use.

What to check: Are you diverting uncontaminated runoff away from mine affected areas? Could separate collection of different contaminated streams simplify downstream treatment?



9.

Do we understand the full treatment train, including residuals management?

Why it matters: Water treatment is not just about producing clean water. Sludge, brine, and spent media must be managed responsibly. Ignoring residuals can create new liabilities.

What to check: For each treatment step, have you identified the residuals (e.g., sludge volume, brine stream) and how they will be handled, stored, or disposed of? Is there a plan for decommissioning treatment infrastructure?

10.

Are we prepared for extreme events and changing climate conditions?

Why it matters: Floods, droughts, and changing rainfall patterns can overwhelm water management systems. A reactive approach often leads to emergency discharges or shortages.

What to check: Have you stress tested your water balance and storage capacity against historical extremes and future climate projections? Is there a documented plan for drought and flood scenarios?



ASSOCIATE CERTIFICATE COURSE

Water Management in Mining: Next Steps

If you answered “no” or “unsure” to any of these questions, you’re not alone. Many mining sites face the same challenges. The next step is to build the foundational knowledge needed to turn these gaps into strengths.

Water Management in Mining is a **5-week online course** designed to give you the **practical, integrated understanding** you need, from framing the problem to completing the treatment solution.

Learn how to:

- ✓ Assess site water balance and stakeholder expectations
- ✓ Characterise water quality and interpret monitoring data
- ✓ Select appropriate pretreatment and treatment technologies
- ✓ Manage residuals and build resilience for the future

Delivered 100% online, with **expert facilitators** and **real-world case studies**, this course is your pathway to becoming a more confident, risk-aware water leader.

Note: This checklist is based on the course content for the Associate Certificate in Water Management. For more detailed guidance, refer to the full course materials.

ENROL TODAY AND SECURE YOUR SITE’S WATER FUTURE