



Independent Monitor

McArthur River Mine Annual Report Card



Independent monitoring and reporting on
data from 1 May 2023 to 30 April 2024

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For illustrative purposes only (not to scale)

Key

-  Mining Lease Area
-  Haul route

About the mine

The McArthur River Mine is a zinc and lead mine which has been operating since 1995.

The mine sits about 65 kilometres southwest of Borroloola in the NT.

In 2006, the mine changed from an underground mine to an open cut mine.

Zinc and lead are trucked from the mine to the Bing Bong Loading Facility located on the Gulf of Carpentaria, where it is transported to customers by ship.



About this Annual Report Card

Each year, the Northern Territory (NT) government hires a group of experts to check how well **McArthur River Mining** is caring for the environment around the Mine. The experts hired by the **Department of Industry, Tourism and Trade (DITT)** are called **Worley Consulting** (known as **Advisian** in previous years) and their role is to be the **Independent Monitor**.

This Annual Report Card is made by the Independent Monitor, and it is a shorter and simpler version of the full audit report (called the Annual Environmental Performance Audit Report 2024).

The Independent Monitor has provided these to the local community since 2020, after community members shared that it was difficult to find the important information in the full audit report.



The Independent Monitor

Worley Consulting



The Mine Operator

McArthur River Mining



The Department

NT Department of Industry, Tourism and Trade (DITT).*

**Name changed to Department of Lands, Planning and Environment (DLPE) in late 2024*

Main components of the audit:

The Local Community

A plan was prepared to guide local community engagement and communications.

The Department

A check on how well the Department applied the environmental rules to the Mine.



The Mine Operator

A check on how well the Mine Operator met the environmental rules.

River health

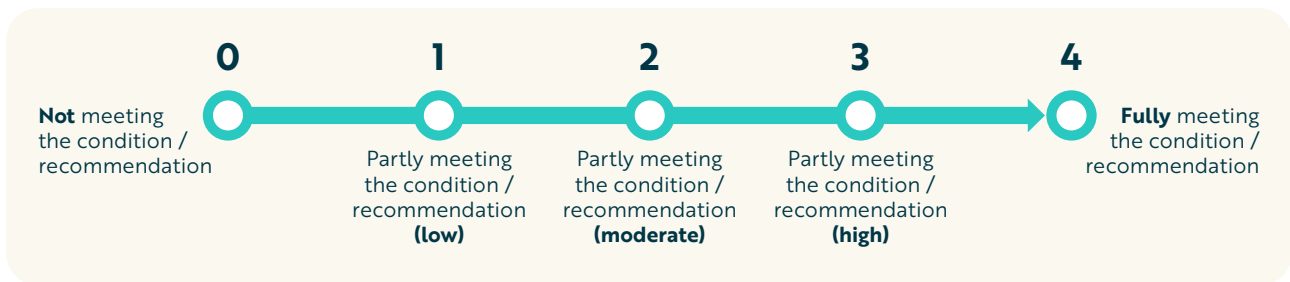
A check on the McArthur River's fish and habitat.

How are the findings measured?

To check how well the Mine Operator followed the rules (conditions) of the Mining Authorisation (approval) and the Waste Discharge Licence, the Independent Monitor used a scoring system with a scale of 0 to 4 to rate how well the rules were followed.

A score was given to reflect how well each rule was followed, and then the scores were added up and overall percentages (%) were worked out.

Scoring system



Qualitative checks

The Independent Monitor also checked some other things that might change how the environment is cared for, without giving them a score (qualitatively assessed):

- ▶ the **Mine Operator's** environmental commitments
- ▶ the **Department's** approach to applying the environmental rules to the mine
- ▶ overall health of the **McArthur River**.

The Independent Monitor did not score these other things, but they did consider how well they have been done.

2024 Audit period

The Independent Monitor completes an audit (check-up) of the Mine Operator and the Department every year. The last audit was done in 2023.

This audit covers the time between 1 May 2023 to 30 April 2024 and is what this Annual Report Card reports on.

TROPICAL CYCLONE MEGAN

Tropical Cyclone Megan brought heavy rain and major flooding to the Mine in March 2024. The McArthur River and local creeks broke their banks, and an emergency response was necessary with the highway, local roads, the airport, and mobile phones all cut off.

Despite the intense rainfall and severe flooding, the Tailings Storage Facility, Main Pit and major dams did not overtop because the Mine Operator was able to transfer excess water between dams.

Emergency response actions were implemented by the Mine Operator to reduce the risk of environmental incidents associated with the flooding. The Mine Operator's response to the

flooding emergency safeguarded the river and avoided potential environmental harm with no overflows from the Tailings Storage Facility or any of the main dams.

Flooding damage caused seepage from the North Overburden Emplacement Facility at the northeastern flood levee. Some seepage was released from site with floodwaters, and the remainder captured and diverted to a treatment dam.

A seepage incident investigation report prepared by the Mine Operator was submitted to the NT Government and concluded there was low environmental risk to the McArthur River.

Tailings Storage Facility

The Tailings Storage Facility is where the Mine Operator stores leftover material (rock/water/mud) from the Mine processing (extracting lead and zinc).

Overburden Emplacement Facility

The Overburden Emplacement Facility is where waste rock is stored by the Mine Operator. There are three of these at the Mine: South, West, and North.

The North Overburden Emplacement Facility is mentioned in this report.

What did the community say about the 2023 audit?

The Independent Monitor visited the community in 2023 and 2024 to share the findings of the 2023 Audit.

In 2023 the Independent Monitor visited Borroloola and surrounding areas* over four days in October. We spoke to 27 people in:

- ▶ **Borroloola** Including town camps
- ▶ **Wandangula** Police Lagoon
- ▶ **Goolminyini** Devil Spring
- ▶ **Minyalini** Campbell Spring

In February 2024, the Independent Monitor returned and presented the 2023 audit findings to the Community Reference Group meeting in Borroloola.

**Robinson River community was inaccessible at the time due to poor road conditions.*

What was talked about?

Feedback from local community members during the 2023 engagement and consultation focused on three main topics:

- ▶ environmental monitoring
- ▶ land management and rehabilitation
- ▶ the health of the McArthur River.

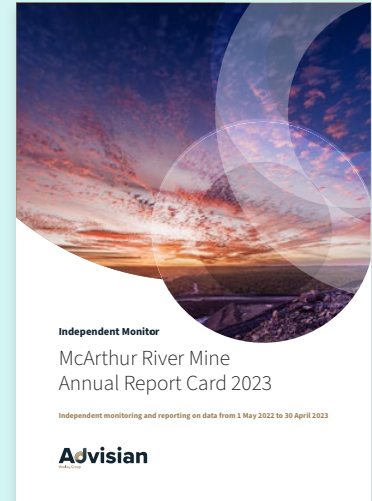
What did community members tell us?

Overall, community members are most interested in the health of the environment, the McArthur River, and the fish.

They are pleased with the Mine Operator's work on rehabilitating the environment.

They would like to see more Traditional Owners involved in the environmental monitoring, and a more transparent monitoring process.

Some community members are interested to see the results from the Tailings Dam Reports.



Over 100 copies of the Annual Report Card were given to people during our visit in October 2023, and copies were left in central community locations for others to access.



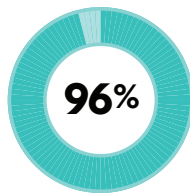
The Mine Operator Main findings

The environmental performance of the Mine Operator was worked out by checking how well they met the rules of the Mining Authorisation and Waste Discharge Licence, as well as other environmental commitments.

The Independent Monitor found that the Mine Operator fully met most of the conditions of the Mining Authorisation and the Waste Discharge Licence. The scores given for how well the Mine Operator followed the rules are shown below.

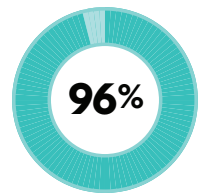
Mining Authorisation compliance

- ▶ The audit looked at 194 Mining Authorisation conditions.
- ▶ Overall, the Mine Operator scored 96% for the Mining Authorisation conditions. This is lower than the score of 98% in 2023.
- ▶ 172 conditions were fully met, and 22 were partly met, as the Mine Operator missed parts of those conditions.



Waste Discharge Licence compliance

- ▶ The audit looked at 126 Waste Discharge Licence conditions.
- ▶ Overall, the Mine Operator scored 96% for the Waste Discharge Licence conditions. This is lower than the score of 99% in 2023.
- ▶ 108 conditions were fully met, and 18 were partly met, as the Mine Operator missed parts of those conditions.



Independent Certifying Engineer (ICE) review

The role of the Independent Certifying Engineer (ICE) is to oversee construction activities and to certify that the Mine is constructed the way it was planned.

The ICE has continued to improve their performance during this audit period. The ICE is better organised, has implemented clearer work processes and has provided more on-site supervision staff resources.

The ICE consistently prepares North Overburden Emplacement Facility daily, weekly and monthly construction reports with evidence of the details of construction. Certified 'as constructed' construction reports for the North Overburden Emplacement Facility (2023) and Tailings Storage Facility Cell 1 (Stage 5) and Cell 2 (Stage 6) were provided.

The Operator could further assist the ICE by:

- ▶ providing Inspection and Test Plans for construction in all North Overburden Emplacement Facility work areas, and
- ▶ updating the annual list of structures planned for construction.

Voluntary environmental commitments

The Mine Operator has voluntarily committed to doing a list of things to improve the way the environment is looked after. These voluntary environmental commitments are written down in different documents - Mine Management Plans (MMPs) and the Environmental Monitoring Reports (EMR).

The Independent Monitor does not score how well the Mine Operator has followed each commitment. The Independent Monitor reviews how well the Mine Operator has followed the list and offers suggestions on ways to improve.

Most of the Mine Operator's commitments are met, with only 6 out of 155 ongoing commitments not fully addressed. All the suggestions for improvement are the same that were made across the last three Audit Reports. It is important to remember that these commitments are not rules enforced by the Department but were voluntarily committed to by the Mine Operator.

The Mine Operator

A deeper look at the findings

To better understand the Mine Operator’s environmental performance, the compliance scores for conditions of the Mine’s approvals were matched against the mining areas (Operator domains) and the parts of the environment (Environmental aspects) that they relate to.

Mining activity areas (Operator domains)

As part of the audit, the Mine was divided into ‘domains’ which represent the Mine’s key activity areas, plus an extra area called Governance/General which is about the Mine Operator’s overall environmental management. The compliance scores for these areas are shown in the graph below.

The two areas of the Mine’s activity that are seen to have the highest potential environmental risk, if not managed properly, are the:

Tailings Storage Facility, where leftover material from the mine processing is stored.

The Tailings Storage Facility scored **98%** compliance

Overburden Emplacement Facilities, where waste rock is stored

The Overburden Emplacement Facilities scored **98%** compliance

The Department has put a high number of rules (Mining Authorisation conditions) on these domains because these activities are seen to have the highest chance of harming the environment if not managed properly.

The scores for both domains have improved on last year’s scores (Tailings Storage Facility increased from 94% to 98%; the Overburden

Emplacement Facilities increased from 97% to 98%).

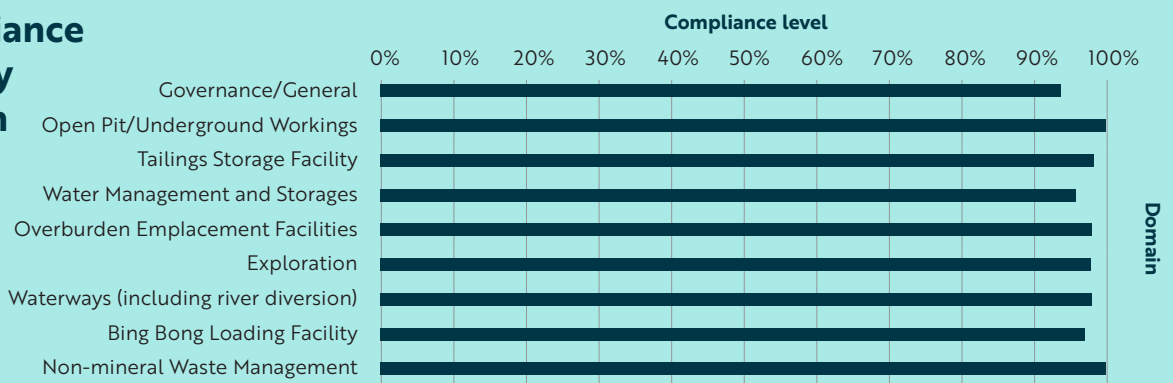
While these scores show improvement in compliance since last year, some outstanding items have prevented full compliance from being achieved in this audit period.

Most part compliances were about reporting and sharing information with the Department when required.

The key reasons for the part compliances were:

- ▶ Quarterly reports for the Tailings Storage Facility were submitted late to the Department.
- ▶ Records were not up to date for sumps and dams that may contain mine-affected water.

Compliance level by domain



The Mine Operator

A deeper look at the findings

Environmental aspects

Environmental aspects are the parts of the environment that may be impacted by the Mine operations.

The audit checked how well the Mine Operator met the rules of the Mining Authorisation that link to each of the environmental aspects.

Overall, compliance levels varied, with the scores ranging from 94% to 100%. This year four environmental aspects scored 100%, which is the equal highest number in any of the past five years.



Aquatic fauna

The Mine Operator met all the rules for aquatic fauna.

100%



Community

To return to full compliance in Community aspects, the Mine Operator needs to ensure they share necessary documents with the Department for upload to their website.

99%



Groundwater

To improve this score, the Mine Operator needs to submit the Tailings Storage Facility quarterly reports on time.

97%



Monitoring and reporting

To improve this score, the Mine Operator needs to submit annual environmental monitoring data on time.

94%



Air quality

The Mine Operator met all the rules for air quality.

100%



Marine waters

The Mine Operator met all the rules for marine waters.

100%



Vegetation and rehabilitation

The Mine Operator met all the rules for vegetation and rehabilitation.

100%



Waste management

To improve this score, the Mine Operator must submit documentation on time to the Department and the Independent Certifying Engineer.

98%



Surface water

To improve this score, the Mine Operator needs to complete all regular inspections that are required, progress outstanding actions in safety reports and record them when completed, properly record water sampling approach, and take care to complete documents correctly.

96%

The Mine Operator

Key successes and opportunities for improvement

Key successes

The key areas identified by the audit where the Mine Operator did well to improve environmental performance, include:



Managed water releases

The Mine Operator took action ahead of the wet season and during Tropical Cyclone Megan to manage a record volume of water during this audit period. The Mine Operator managed water and water releases ahead of and during the flood event to reduce risk to the environment.



Acoustic monitoring of the Freshwater Sawfish

Monitoring of tagged Freshwater Sawfish has demonstrated that migratory fish can use the McArthur River diversion channel to travel both upstream and downstream of the Mine.



Community Reference Group (CRG) commencement

Quarterly meetings between the local community and the Mine Operator began in July 2023. Discussions have included the Operator's local employment and training program, impacts of the March 2024 flooding, and how the Mine Operator can engage with the community better.



Purple Crowned Fairy Wren habitat improvements

Cane grass 'clusters' have been planted on the banks of the upper McArthur River diversion channel to replace Purple Crowned Fairy Wren nesting habitats that were lost to natural bushfires in late 2022.

Key opportunities for improvement

While the audit found the Mine Operator **fully met most of the rules**, there are things they can do to improve their environmental performance.

Improving compliance with Mining Authorisation conditions

- ▶ Submit all environmental monitoring data annually.
- ▶ Prepare and submit quarterly Tailings Storage Facility reports on time.
- ▶ Work with the Department for their approval to sample water at different locations and update the Water Management Plan to show the changes.
- ▶ Make sure that the record of where mine-affected water is stored is correct and up to date.
- ▶ Improve management of mine-affected water storage records, conduct regular checks, and complete maintenance tasks that are identified.

Improving compliance with Waste Discharge Licence

- ▶ Submit updated Emergency Response Plan to the Administering Agency.
- ▶ Implement any changes that come from 'lessons learned' during the weather event associated with Tropical Cyclone Megan.
- ▶ Close the waste management area near the Water Management Dam and progress the planning and building of a new waste management area.
- ▶ When checks show that monitoring equipment is not working properly, get it fixed and keep spares to use.
- ▶ Explore the opportunity to improve automated data monitoring during water discharge events.

It is important to note these are suggestions to increase the Mine Operator's compliance scores and are not new rules that the Operator needs to follow.

The Department

Main findings

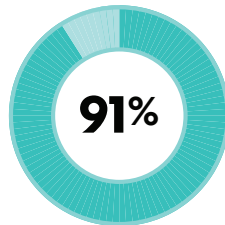
The environmental performance of the Department was assessed by checking how well the Department had:

- ▶ followed up relevant conditions of the Mining Authorisation 82 conditions
- ▶ included NT EPA recommendations as Mining Authorisation conditions 116 recommendations
- ▶ followed their own procedures for regulating the Mine Operator.



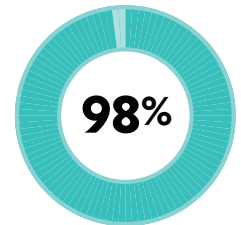
Mining Authorisation compliance

- ▶ The audit looked at 82 Mining Authorisation conditions.
- ▶ Overall, the Department scored 91% for the Mining Authorisation conditions. This is lower than the score of 97% in 2023.
- ▶ 55 conditions were fully met, and 27 were partly met as the Department missed parts of those conditions.



NT EPA recommendations

- ▶ The audit looked at 116 NT EPA recommendations.
- ▶ Overall, the Department scored 98% for the NT EPA recommendations. The Department maintained the same score they received in the previous audit.
- ▶ 107 conditions were fully met, and 9 were partly met as the Department missed parts of those conditions.



Regulatory procedures and approach review

The review looked at how well the Department managed:

- ▶ assessment of reports
- ▶ checking the Mine Operator's environmental monitoring data
- ▶ responding to environmental incidents
- ▶ establishment of the Independent Expert Panels.

The review found the Department was highly responsive to potential environmental issues with a site inspection immediately after the cyclone. The Department has not completed as many reviews of environmental plans and reports as in previous years.

Key achievements for the Department during the audit period include:

- ▶ The Minister's appointment of a Chairperson for the Independent Expert Panels for the North Overburden Emplacement Facility and the Tailings Storage Facility.
- ▶ Approval of the Mine Closure Independent Expert Panel's terms of reference.
- ▶ Strengthening the Authorisation conditions around providing 'as constructed' reports.

The Department

Main findings

To better understand how well the Department applied the rules of the Mining Authorisation, the rules were divided into seven sections. These sections and their compliance scores are shown in the table below:

Section	Compliance score
General	89%
Water Management	75%
Tailings Storage Facility	93%
Environmental and Independent Monitoring	98%
Overburden Management Project	84%
Adaptive Management	100%
Mine Closure	100%

The Department achieved an overall compliance score of 91%, which is lower than the 2023 score (97%). Both the Mine Closure and Adaptive Management sections maintained a 100% compliance score this year. These both have only one condition being scored.

The Tailings Storage Facility is an area of high potential environmental risk, if not managed properly. A 93% compliance score was achieved again this year. This score was due to:

- ▶ The Tailings Storage Facility Quarterly Reports not being reviewed and assessed in a reasonable time.
- ▶ The Department did not follow up with the Mine Operator to check on a missed report (the Annual Dam Safety Assessment) and Tailings Storage Facility construction reports.
- ▶ The Department did not follow up on missed quarterly Tailings Storage Facility reports.

The General section scored 89%, as the Department did not follow up on deliverables that were not received from the Mine Operator, such as the annual environmental monitoring data. The Department added a requirement to the Authorisation for the Mine Operator to list the 'as constructed' reports that will be submitted each year. There remains room for improvement in how the Department tracks construction completion reports due from the Mine Operator.

The Overburden Management Project scored 84% which is 11% lower than the 2023 score. The Department missed parts of 14 compliance matters, which are mostly related to a lack of evidence to show if the Department was following up on things with the Mine Operator, and the delay to the start of the Community Reference Group and Independent Expert Panels.



The Department

Key successes

The audit identified areas where the Department did well to improve environmental performance. These areas include:



Established the Community Reference Group (CRG). The first CRG meeting was held at the Mine on 27 July 2023. The quarterly CRG meetings provide an opportunity to the local community to directly communicate with the Mine.



The Department conducted a site inspection in the week after the cyclone flooding to assess any potential environmental impacts at the Mine site and facilities. This action demonstrates the Department's initiative and responsiveness to examine potential environmental incidents.



The Mine Closure Independent Expert Panel terms of reference were approved by the Minister and this Panel will provide advice on planning for closure of the Mine.



A Chairperson was appointed to the Independent Expert Panels for the North Overburden Emplacement Facility and the Tailings Storage Facility. These Panels will provide technical advice on Mine management to protect the McArthur River from any Mine related impacts.



A new Authorisation condition establishes an annual process for "as constructed" documentation to be provided by the Mine Operator to certify construction works meet the design and specifications.



Continued environmental performance and high levels of regulatory compliance by the Mine Operator have been supported by the practical actions of the Department.

Key opportunities for improvement

The audit identified key things that the Department could do to help improve its regulatory activities related to the Mine Operator's environmental performance. Opportunities for improvement include:

- ▶ Following up with the Operator on documents not received (e.g. environmental monitoring data, Tailings Storage Facility quarterly reports, Annual Dam Safety Assessment, and Tailings Storage Facility 'as constructed' construction reports).

- ▶ Review and / or approve documents more quickly (e.g., management plans, Tailings Storage Facility quarterly reports and Eastern Perimeter Runoff Dam Construction Report).
- ▶ Establish the North Overburden Emplacement Facility and Tailings Storage Facility Independent Expert Panels.

It is important to note these are suggestions to increase the Department's compliance scores and are not new rules that the Department needs to follow.

River Health

The Mine Operator uses lots of ways to protect the health of the McArthur River so that people can keep using the river. The Mine Operator has programs in place to check and manage potential impacts on river health.

The Independent Monitor assessed the condition of the McArthur River system using river habitat and fish monitoring information provided by the Mine Operator. Overall, it was found the McArthur River system was in good health.

Monitoring results for the reporting period found some elevated levels of metals in Barney Creek and Surprise Creek sediment near to the Mine's processing facilities.

These sediment sample results were similar to the 2021-2022 and 2022-2023 audit periods and are confined to areas not accessible to the public.

There were some exceedances of target metal levels in fish samples in Barney Creek near to the Mine's processing facilities, which is likely related to the elevated levels of metals in sediment.

These fish sample results were similar to earlier audit periods, and are confined to areas not accessible to the public.

The Mine Operator removed sediment from Barney Creek in late 2023 to protect the downstream environment.

The community has no access to these creek areas at the mine site. These creeks do not flow in the dry season and there is negligible risk to the community.

Data collected for the 2023-2024 monitoring program found that fish caught throughout the McArthur River catchment, including barramundi and sooty grunter, are safe to eat.

Checking the metal levels in both sediment and fish will continue to take place, as part of the checking and management the Mine Operator is already doing to protect the river and the community.

The monitoring data collected suggests that works done to make the McArthur River diversion channel more like natural river channels by planting river plants and placing woody debris (tree branches etc.) in the river, has improved the river habitat for the animals that live in the river.

Three young sawfish were recorded in or upstream of the diversion, demonstrating sawfish movement up and down the McArthur River is not restricted.

The McArthur River system is in good health, fish are safe to eat, and sawfish are able to migrate.

Comparison of results

River Health

There was no decline in the river system health from 2023. The river monitoring showed:

- ▶ The same numbers and types of freshwater animals living in the McArthur River system.

- ▶ That the McArthur River system is in good condition.
- ▶ An extremely low risk to human health from eating the monitored fish species caught in the McArthur River catchment upstream or downstream of the mine.

- ▶ That effort made to reinstate habitat conditions like that of natural river channels has improved and is likely to continue to improve the animal habitat along the McArthur River diversion channel.

Mine Operator and Department score comparison

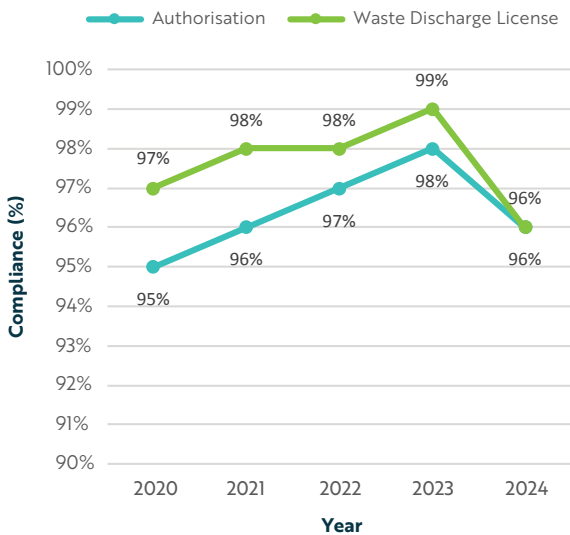
Audits from 2020 through to 2024

The Mine Operator’s overall compliance with the Mining Authorisation conditions and Waste Discharge Licence has **decreased** for the first time since compliance scoring began in 2020.

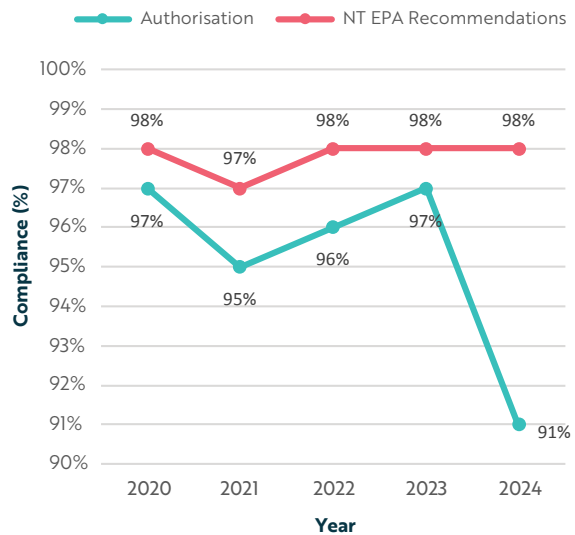
The Department’s overall compliance with the Mining Authorisation conditions has **decreased** to its lowest score in the last five years.

The Department has maintained a high level of overall compliance with the NT EPA recommendations.

The Mine Operator



The Department



What does this mean?

Overall compliance scores remain high and there has been **no significant change in environmental risks** or impacts since last year. The graphs comparing the compliance scores show improvement trends in the years 2020 to 2023, but score reductions in 2024. The Independent Monitor’s assessment indicates that the lower scores this year are related to instances of incomplete compliance reporting.

Conclusion

Health of the McArthur River

The Independent Monitor found that overall, the McArthur River system was in good health and the fish were safe to eat.

Mine Operator: McArthur River Mining

The Mine Operator has continued to avoid or minimise potential environmental risks by proactively managing and monitoring environmental issues across a wide range of site activities while keeping a focus on maintaining environmental performance.

Compared to recent years the Mine Operator scored a lower level of overall compliance with the Mining Authorisation conditions and the Waste Discharge Licence conditions.

The Mine Operator's compliance score (96% or above) across all areas

of the Mine's main facilities showed that they met the rules.

The review did not identify any environmental issues requiring urgent investigation.

The Mine Operator acted ahead of the wet season and during Tropical Cyclone Megan to manage a record volume of water. The Mine Operator managed dams and water releases during the flood event to reduce risk to the environment.

The quarterly Community Reference Group meetings facilitated by the

Mine Operator are an opportunity for the local community to directly engage on Mine issues.

The Mine Operator should submit all environmental monitoring data annually and the quarterly Tailings Storage Facility reports on time.

The Independent Certifying Engineer, appointed by the Mine Operator, has improved performance with better organisation and clearer processes.

The Department: The NT Department of Industry, Tourism and Trade

The Department has maintained a high level of overall compliance with the NT EPA recommendations.

The overall compliance score against the Authorisation conditions reduced to its lowest score in the past five years.

The Department was highly responsive to potential environmental issues, demonstrated by conducting a site inspection immediately after Tropical Cyclone Megan.

The Department had a strong focus on key potential environmental risks, and a practical approach to compliance and monitoring.

It was found that the Department should follow up on monitoring data and regular reports not received, as well as review or approve documents more quickly.

The Community Reference Group's first meeting was held in July 2023, following the Department's establishment of the group.

The Minister appointed a Chairperson for the Independent Expert Panels for the North Overburden Emplacement Facility and the Tailings Storage Facility.

Next audit

The next environmental performance audit review will start in early 2025 and will look at the period between 1 May 2024 and 30 April 2025.

The Independent Monitor will continue to talk to the local community about the findings of the 2024 audit and future reports.



Acknowledgement of Country

Worley Consulting respectfully acknowledges the Traditional Owners of the Borroloola and Gulf region, and their continuing culture and connection to the lands and waters. We pay our respect to their Elders, past and present.

More information

If you would like more information about the Independent Monitor or to access the full Annual Environmental Performance Audit Report please visit the Northern Territory Government Independent Monitor website at: www.industry.nt.gov.au/MRM-Independent-Monitor.

Acknowledgements: This document was produced by Worley Consulting..

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