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## 2021 Investor briefing: Rio Tinto's QMM mine, Madagascar

**Issues: Communities; safe drinking water; contamination of environment; human rights violations; transparency**

### *Summary*

Rio Tinto's Madagascar mine produces ilmenite, a major source of titanium dioxide that is used for whitening products such as paint, toothpaste, and cleaning products. The mine is operated by Rio Tinto's local subsidiary QIT Minerals Madagascar (QMM). Between 2013-2014 QMM breached the authorised limits of an environmental buffer zone, designed to protect a local estuary system from harmful activity, including mining. The mine extended well over the already reduced statutory buffer limit (from 80m to just 50m) around its Mandena site, it encroached onto the bed of Lake Besaroy in the adjacent estuary system, raising concerns that the mine was leaching radionuclides, e.g., uranium, into the local water system. Independent studies have confirmed QMM's breach and the contamination of the waters where local people fish and gather drinking water.

### *Background*

The QMM ilmenite mine, which also produces zircon and monazite, is situated in the southeast of the island in the Anosy region. This is one of the poorest regions of the country, with 91% of people living in poverty and where 80% of the rural population are wholly dependent on natural resources for their survival. The majority of the 15,000 people living next to the QMM mine site draw on adjacent lakes and waterways for drinking and domestic water.

### *The QMM breach and water contamination*

In response to concerns raised locally, [Andrew Lees Trust \(ALT UK\)](#) commissioned technical experts to study the buffer breach, review radioactivity around the Rio Tinto QMM mine, and investigate water quality. ALT UK's independent studies in 2018 and 2019 confirmed QMM's illegal breach of the buffer zone and identified elevated levels of uranium and lead in waters around the mine, 50 times and almost 40 times higher, respectively, than WHO guidelines for safe drinking water in some places. The breach and water contamination issues were raised at the 2019 and 2020 Rio Tinto AGMs, and were reported and disseminated widely in the Trust's [water briefing](#).

Rio Tinto [admitted the breach](#) of the buffer zone in 2019 but assured its shareholders that the impacts of the breach were "negligible". They also claimed that elevated uranium levels are "naturally occurring". However, the company failed to provide evidence to substantiate their claim; by their own admission, QMM's monitoring of radioactivity around the mine had focused on workers' exposure. Radioactivity expert Dr Swanson deemed RioTinto/QMM's monitoring of the mine in the wider environment to be "unacceptable" ([Swanson 2019a](#)).

### *QMM mineral sands mining concentrates uranium*

In the absence of evidence from Rio Tinto, the Trust undertook further studies and, using QMM water data, [Swanson \(2019b\)](#) confirmed that the mining process itself and the churning of sands concentrated uranium levels in the mining pond. QMM waste waters are then discharged into the surrounding lakes and rivers through a series of settling ponds, with no evidence that this process removes the contaminants. The study by hydrogeology expert Dr Steven Emerman in 2019 detected [elevated levels of uranium and lead in waters downstream of the mine](#), well in excess of WHO safe drinking water guidelines, with a negative impact on regional water quality.

In 2020 Rio Tinto/QMM admitted that QMM's "process water may have higher concentrations of minerals and metals than deemed safe by drinking water standards"<sup>1</sup> and was unable to provide evidence that levels of uranium and heavy metals in waters leaving the QMM site into adjacent wetlands and streams are "under permitted limits". It then contracted an external provider, JBS&G, to conduct a new radioactivity study.

### *New research*

The first water study results from the JBS&G research were shared in July 2020. They were reviewed by Dr Emerman who highlighted that although QMM claimed "all results...were within the relevant WHO guidelines for drinking water quality", Rio Tinto/QMM did not acknowledge the existence of any pre-existing water data in its objectives for the JBS&G study. In this regard, Rio Tinto failed to adhere to standard procedure. Analysis of the JBS&G water results by Dr Emerman shows that the integration of the new water quality results from JBS&G (2020) with the results from previous studies ([Swanson, 2019a](#); [Emerman, 2019](#)) strengthens the conclusion of Dr Emerman's 2019 findings: that the QMM mine has a detrimental impact on water quality with elevated uranium and lead well in excess of WHO guidelines ([Emerman 2020](#)).

<sup>1</sup> Rio Tinto response to questions raised jointly in a letter from Publish What You Pay (UK and MG), Friends of the Earth and Andrew Lees Trust, 21<sup>st</sup> February 2020.

### *QMM Wastewater report 2021*

A new Rio Tinto [wastewater report](#) documents elevated levels of uranium, between 1.6-1.8 mg/L, in QMM mine discharge waters. This is consistent with previous data reported by QMM that form the basis for [studies](#) undertaken by ALT UK and mentioned above. These data confirm that QMM is contaminating local waterways with concentrations of uranium more than 50 times the WHO guidelines that provide a limit of 0.03 mg/L of uranium content for drinking water to be safe. The QMM wastewater report states “*No discharge limit is prescribed for uranium,*” i.e., by the Malagasy Government. However, Rio Tinto asserts that when national standards are less strict than international ones, they will apply international standards. Lead concentrations in QMM discharge water are also above WHO guidelines. Additionally, the new data expose levels of cadmium and aluminium in QMM mine discharge waters that exceed even the less strict Malagasy guidelines. No mitigating measures are advanced by QMM other than to move the monitoring position for discharge waters. As a member of the ICMM, Rio Tinto is supposed to implement the Global Industry Standard on Tailings Management by August 2023.

### *Community perceptions*

In November 2020, Publish What You Pay Madagascar (PWYP MG) studied local communities’ perceptions and concerns about water. [The results](#) demonstrated that over half the population interviewed, who use surface water around Mandena for drinking and domestic use, deemed it of poor quality and degraded over the past ten years (i.e., since the mine began operating), being suspicious in colour, bad tasting and/or foul smelling. These perceptions were confirmed during focus groups where villagers noted “*strong pollution*” since the installation of the QMM weir and mining operation. Villagers see that the change in the water quality has had a detrimental effect on their health, their livelihoods – principally fishing – and consequently on their income.

Local leaders also perceive the water to have bad effects on the health of the population, and a significant number attribute the degradation of the water quality to proximity to the QMM mine operations. More than half of the respondents in the study reported health problems in relation to local water consumption, and almost all who draw their water from surface water reported health issues related to water, with over half perceiving the mine to be responsible for the poor quality of water. Almost all those villagers who use surface water sources want support for and restitution of access to good quality water and a number want compensation, and remediation of polluted water.

PWYP Madagascar presented the findings from this research to Malagasy authorities, mining companies and civil society organizations on December 4<sup>th</sup>, 2020, but QMM did not attend the meeting, arguing it was of short notice and that it was impossible at the time for them to gather their experts to comment on the report. Instead, the company conducted a media campaign claiming that QMM is a responsible and trustworthy company.

### *Governance and accountability*

Contamination of their water source is a principal concern of the communities. More than half of those surveyed have already taken their concerns to the local authorities, and/or to QMM. However, the researchers observe from the discussions with villagers that locals fear repression and/or imprisonment for making complaints. It has been noted through local and national feedback that the Malagasy regulator, the National Office for the Environment (ONE), which is tasked with monitoring the QMM mine, has been [brought into question](#) for appearing compromised in its relations with QMM and failing to represent citizens’ concerns. Indeed, at public meetings, ONE has openly reprimanded citizens and civil society leaders when they have criticised QMM.

### *Action needed*

***Demands for communities*** in Southern Madagascar, based on research/consultations and engagement with communities, civil society and stakeholders over the last 4 years: -

- 1) Restore the quality of local natural water supplies (includes managing QMM mine waste waters)
- 2) Provide safe drinking water to affected communities
- 3) Share water data transparently (including wastewater data) and make this publicly available
- 4) Communicate the findings of the Swanson 2019 radioactivity report as previously agreed
- 5) Improve community consultation processes and increase accountability and transparency to protect local governance around natural resources, e.g., water and land, and natural resource management

### ***Ongoing Risks to the Community from QMM mining in Anosy***

1. Health impacts from [exposure to high levels of uranium and lead](#) in drinking water from contaminated mine waste waters including: affected kidneys and bones; damage to the nervous system, learning disabilities, shorter stature, impaired hearing, and impaired formation and function of blood cells; increased blood pressure, decreased kidney function and reproductive problems.
2. Food insecurity: estuary system around the Mandena site already suffering from depleted fish stocks due to the QMM weir. Communities impacted by QMM’s Biodiversity Offsetting face [serious food shortages](#).
3. Risk of increased conflict due to [poor governance and lack of transparency](#) around QMM operation.

## Organisations/Contacts:

**Andrew Lees Trust (ALT UK)** is a British based charity working to serve the people of Madagascar since 1995. It has a long-standing relationship with communities in the south of the island where it delivered social and environmental education programmes for over ten years. In 2009 it realised its sustainability strategy with a full hand over to its Malagasy team. It has since provided technical advice and fundraising assistance to the Malagasy NGO in a commitment to local ownership of development, and supports local actors for change, civil society and communities, amplifying their voice and advocating for their rights.

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**Publish What You Pay Madagascar (PWYP MG)** is a coalition of civil society organizations in the extractive industry sector. This organisation works to ensure that natural resource extraction benefits to the Malagasy people and to drive development. It also works for more effective civil society engagement in the Extractives Industry Transparency Initiative (EITI) process in the country and an open and accountable extractive industry. It promotes community participation in decision-making and works to influence the Government on mining and petroleum laws. The PWYP MG Coalition is currently led by Transparency International Initiative Madagascar (TI-MG). **Contact:** Dr Ketakandriana Rafitoson, Director: [krafitoson@transparency.mg](mailto:krafitoson@transparency.mg) Mob: 00 261 34 08 46316.

**Publish What You Pay UK (PWYP UK)** is a coalition of UK civil society organizations working on extractive sector transparency, accountability and sustainability. Through research and advocacy, we address corruption, mismanagement, and social and environmental harms arising from the activities of UK-incorporated and London Stock Exchange-listed oil, gas and mining companies worldwide and from extractive activity in the UK including the UK North Sea. We engage with the UK and other governments, with companies and with other actors to raise awareness of harms and promote better extractive sector governance, policy and practice. **Contact:** Miles Litvinoff, Director: [mlitvinoff@pwypuk.org](mailto:mlitvinoff@pwypuk.org). Mob: +44 (0)7984 720103.  
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