

Documents in relation to risk faced by Murujuga Rock Art

These documents seek to evidence the acute risk posed to the landmark Murujuga Rock Art

Murujuga National Park, on the Burrup Peninsula, is home to one of the largest, densest and most diverse collections of rock art engravings in the world. Some of the art in Murujuga dates back over the past fifty thousand years. However, the rock art is under active threat by emissions relating to fossil fuel projects.

This series of documents outline concerns raised by successive rock art experts about failures to adequately address the impact of the fossil fuel developments on the rock art.

In January 2023, the federal government submitted an application for the Murujuga rock art to be added to UNESCO's World Heritage List.

Attachment 1: 2019 correspondence raising concerns about risk to rock art

Attachment 2: Concerns raised by the Murujuga Aboriginal Corporation in relation to LNG development

Attachment 3: 2022 correspondence raising risk to rock art to WA government

Attachment 4: 2023 correspondence to Murujuga Aboriginal Corporation board in relation to risk to rock art

Attachment 5: 2023 presentation to Murujuga Aboriginal Corporation board in relation to risk to rock art

Attachment 6: Images of the Rock Art

23 September 2019

Dr Ron Edwards
Chairman
Murujuga Rock Art Stakeholder Reference Group

Dear Ron

I am concerned the Western Australian Government is not truly committed to saving the world unique, priceless and irreplaceable petroglyphs on Murujuga.

Several actions by the Government and the Environmental Protection Authority (EPA) bring me to this conclusion.

1. EPA report 1648 into review of Ministerial Statement 870

The EPA report into the review of Ministerial Statement 870 relating to the impact of air emissions by Yara Pilbara Nitrates' Technical Ammonium Nitrate Production Facility (TANPF) on rock art was released on 18 September.

The major recommendation from the review was for the company to '*minimise air emissions from the Proposal as far as practicable to assist in minimising the risk of adverse impacts to the rock art on Murujuga*'. This recommendation is unenforceable and effectively dilutes the previous statement to '*adopt and implement best practice emissions control technology*'.

The report concludes '*definitive information on whether industrial air emissions, including those from the TANPF, are adversely affecting rock art is not available*'.

This statement is made without consideration of any of the previously published scientific papers. These peer reviewed papers show that industrial emissions from industry on Murujuga have increased the acidity of rock surfaces by over 1000-fold at some sites since pre-industrialisation and the outer layer of the rocks will be dissolved by these mineral acids. The outer rock layer, known as the patina, is crucial for survival of the rock art.

The research published in 2005 by Dr Ian MacLeod, former Director of the Western Australian Maritime Museum, and commissioned by the Western Australian government shows clearly that emissions from industry on Murujuga have increased the acidity of rock

surfaces. The following is a quote from MacLeod's paper: *'the most acidic rock (pH 3.58) ... was found down in a gully downwind a few hundred metres from the gas production facility'*. MacLeod also showed that there was a log (10-fold scale) increase in the dissolution of manganese and iron molecules from the rock surfaces for each unit fall in pH. This study provides clear evidence that acidity of rock surfaces has increased during the period of industrialisation and that the compounds in the outer patina are being dissolved. Other published papers support this conclusion.

Evidence suggests that this failure by EPA to consider previously published science was a deliberate act.

EPA consulted Yara Pilbara during their deliberations, but did not consult the concerned public or scientists investigating the effects of emissions on rock art. I asked on numerous occasions to meet with the Chairman of the EPA to discuss the review, but was refused a meeting.

The Chairman, Dr Hatton, in a letter to me stated that the EPA will not be seeking written submissions for the inquiry, but will be consulting with the Stakeholder Reference Group. Letter attached.

In my response to Dr Hatton, I said that I had requested the topic be placed on the Agenda for the next MRASRG meeting, but was advised this would not happen and discussion would be delayed until the meeting in 2019. Letter attached.

Because Dr Hatton had advised me that the MS870 review was expected to be completed by end of March 2019, I attached a list of relevant publications to my letter and emailed pdf copies of these papers to him, and you as chairman of MRASRG, and to Steph Turner as the committee Executive Officer.

The EPA Report stated it considered *'input from the Murujuga Rock Art Stakeholder Reference Group'*. This is a largely misleading statement, because at the 18 February 2019 MRASRG meeting, Dr Hatton gave a brief overview of the proposed direction for the review, but there was no discussion or consultation of its findings at the meeting. In response to a comment by Dr Hatton, that there is currently no information linking pollutants to the integrity of the rock art, I noted the importance of reviewing the MacLeod 2005 paper. No subsequent input from MRASRG was sought by EPA.

Another conclusion from the EPA 1648 Report is most disturbing in the light of the published papers. The report states *'there is sufficient time for the monitoring and evaluation activities associated with the Murujuga Rock Art Program to be undertaken and for definitive information in regard to whether cumulative industrial air emissions within the Murujuga airshed are adversely affecting rock art to be obtained'*.

There is not scientific basis given for this statement. On the contrary, the evidence and interpretation from geochemists and scientists specialising in the impact of industrial emission on rock engravings suggest that the patina of rocks on Murujuga is already being dissolved. This is because the manganese and iron compounds comprising the rock patina will begin to dissolve once the pH falls below 6.5.

Currently, measurements have not been made on Murujuga that can prove, one way or the other, whether the rock surface has been partially dissolved. However, once the effect is visible, it will be too late to reverse the process and the rock art will be destroyed.

2. EPA review of best practice for TANPF

In November 2017, a group of people concerned about the potential impact of emissions from the TANPF on rock art held a meeting with the Minister for the Environment, Stephen Dawson and members of his staff, Department and EPA. Yara Pilbara had not been granted a licence to operate the plant at that time and the group were endeavouring to convince the Minister to apply stricter limits on emissions than allowed in MS870.

The group stated Yara International, the Norwegian parent company of Yara Pilbara, are the world experts in emissions reduction and claim their technology can reduce emissions of the two main industrial acid producing compounds, sulphur dioxide to 0 ppm, and nitrogen dioxide by 99%. The group argued these technologies developed for ships, should be applied to the stacks on the ammonium nitrate plant. Because MS870 stated that Yara should adopt and implement best practice emissions control technology, the Minister instructed EPA to undertake a review of best practice for the plant.

EPA provided a report which claimed Yara was proposing to use best practice as adopted by chemical and fertiliser plants in Europe. These European standards, of course, did not consider the impacts of emissions Murujuga rock art.

This review of best practice for the Yara plant again appears to be an illustration of the Government not taking the preservation of Murujuga rock art seriously.

In response to the review report, I asked the EPA why the shipping emissions reduction technology discussed at our meeting with the Minister had not even been considered in the report. After many attempts to gain an answer, EPA finally replied that it was not 'practical' to apply the technology devised for internal combustion engines in ships to the ammonium nitrate plant. I explained that scrubbers for nitrogen dioxide work independent of the source of the gas. I have repeatedly asked for the scientific justification as to why the nitrogen dioxide scrubbers developed ships cannot be applied to the nitric acid stack, but have never received an answer.

Failure to consider published scientific evidence and to review the application of advanced scrubber technology leaves one to wonder whether EPA believes that placating an international based company is more important to the Western Australian government than saving our unique Aboriginal heritage?

3. Government website on Murujuga rock art

The other evidence that suggests the Government is not concerned about the fate of the Murujuga rock art is the information presented on its website. This site contains all the CSIRO reports, which basically suggest emissions will not impact on the rock art, but none of the reports that provide evidence to the contrary.

The CSIRO reports relating to colour have never been published in a peer-review scientific journal. The conclusion from the colour change over time reports, which originally contained no statistical analysis, have been shown to be incorrect. The report, using the same CSIRO data, which showed that 70% of the spots measured had become significantly lighter from 2004 to 2014 is not obvious on the website.

The paper published by Ian MacLeod showing the fallacies in the CSIRO research and dissolution of Murujuga rock surfaces through acid emissions are not on the website.

4. Conclusion

I am greatly concerned for the future of the Murujuga petroglyphs. It appears to me the Government has adopted many strategies that give the appearance it is also concerned, such as establishing the Research Strategy, MRASRG and the World Heritage Listing application, but truly does not care. How could a government that cares about preservation of the petroglyphs do the actions outlined above, while encouraging more industrial development on Murujuga.

These petroglyphs will only be preserved if the Western Australian government compels industry on Murujuga to abolish their emission of acid forming compounds. The majority of Australians now believe our environment should be protected and the cost of this protection should be borne by the polluting industries.

It is time a senior Western Australian government bureaucrat took personal responsibility and 'ownership' of the Murujuga rock art to ensure that all government activities will preserve this heritage for another 40,000 years or more.

Yours sincerely



PLUTO TRAIN 2: Summary of MAC's Feedback

Appeal of Works Approval

On 18 June 2021, MAC lodged an appeal of the conditions of Woodside's Works Approval W6332/2019/1 for the Pluto LNG Project (Train 2).

Grounds for appeal:

1. **The potential impact upon National Heritage values and Matters of National Environmental Significance have not been adequately considered.** Any damage to rock art caused by changes in air quality within the National Heritage Listed Area would be a Matter of National Environmental Significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999*. The potential for impacts upon National Heritage values and MNES were not considered during Part IV of the approvals process.
2. **The precautionary principle has not been adequately introduced with regards to the protection of rock art.** The degree of impacts from acid gas and other emissions associated with industrial expansion is not yet known. The conditions of this Works Approval do not adequately introduce the precautionary principle to mitigate currently un-assessed impacts on rock art.
3. **Lack of conditions that require monitoring and management of rock art.** MAC is concerned about the lack of conditions that require Woodside to monitor and manage potential damage to rock art caused by acid gas emissions and other changes in air quality.

MAC would like to see strong conditions in the Works Approval to require Woodside's future compliance with the MRAS (similar to the Perdaman and NWSE conditions). Ideally these conditions would also be included within Ministerial Statement 757 (MS757), but including them in the Works Approval provides some confidence, given that reviewing additional conditions of MS757 is a complex process (although note that the greenhouse gas conditions were reviewed: see below).

Submission on Section 46 Inquiry to Change Condition 12 of MS757: Greenhouse Gas

On 23 August 2021, MAC made a submission on the EPA's inquiry into Condition 12 of Ministerial Statement 757 (MS757) relating to Pluto LNG, to ensure it aligns with contemporary greenhouse gas conditions and the Greenhouse Gas Abatement Program (GGAP).

Summary of submission:

- **Lack of meaningful consultation with Traditional Owners/MAC to inform the original approval under MS757 or any subsequent reviews/amendment.** Although MAC was incorporated at the time that MS757 was published (2007), MAC was not engaged during the initial approval.
- We provided **similar feedback to that provided for the Works Approval**, noting lack of alignment with the MRAS and that current conditions are not adequate to protect values associated with rock art.
- **Concerns regarding greenhouse gas emissions and the need to consider local impacts of climate change on Murujuga**, including: the significant emissions load on Murujuga from multiple projects; fugitive emissions; the importance of methane's global warming potential; ocean acidification; health and wellbeing; sea level rise on rock art; and the increasing



severity of bushfires. We also provided feedback that **there should be greater opportunities for MAC's involvement in the solution for greenhouse gas abatement.**

Other Concerns Regarding Greenhouse Gas

On 9 May 2022, MAC provided NOPSEMA with feedback on Woodside's Scarborough Seabed Intervention and Trunkline Installation Environmental Plan (SITI EP), in particular the following feedback relevant to Pluto Train 2:

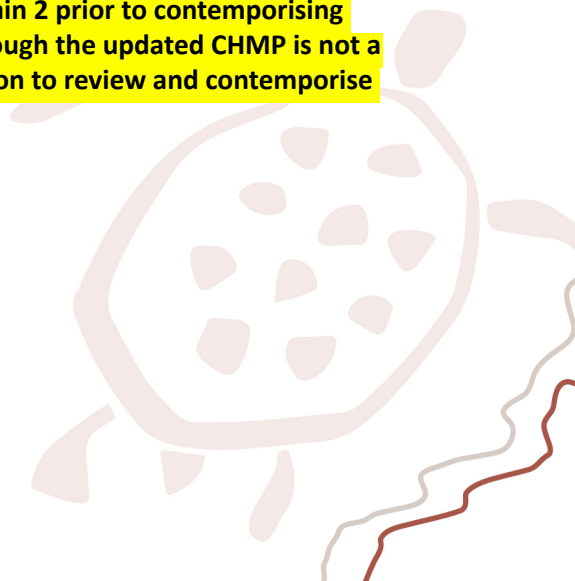
- It is disturbing that Woodside does not consider the connection of the Scarborough pipeline to the Pluto Gas Plant and the subsequent emission as a relevant 'indirect consequence' and concern to the Dampier Archipelago National Heritage Place, effectively considering the action of the pipeline creation in isolation of the connection of the pipeline to the processing plant and the subsequent downstream impacts.

The below feedback was provided to Woodside and the EPA regarding NWSE, but is relevant to all polluting projects on Murujuga:

- MAC requests that all proponents consult with MAC regarding the role MAC can play in carbon trading as part of the condition of any future approval.
- MAC requests that all proponents consult with MAC regarding research and activities to understand and enhance climate change adaptation and resilience on Murujuga Country as part of the condition of any future approval.

Lack of Consultation

MAC is concerned that Woodside is commencing works on Pluto Train 2 prior to contemporising the Pluto Train 2 Cultural Heritage Management Plan (CHMP). Although the updated CHMP is not a statutory requirement, Woodside had ensured MAC that consultation to review and contemporise the CHMP would take place prior to any works.



Just tried to give you a call to mention a couple more points before you meet with the Deputy Premier.

Regarding the Pluto CHMP and Woodside's lack of consultation, I just wanted to confirm the following:

- Given that works are now commencing, does Woodside have MAC observers on site? As you have reiterated many times, this is central to the cultural heritage management process and must happen regardless of the consultation on the CHMP not having occurred.
- Regarding my point in the document about a lack of consultation, it is worth noting that there was some consultation back in 2007 but there appears to have been no recent meaningful consultation to contemporise the CHMP (unless this has occurred without my involvement).

Cheers,

Murujuga Aboriginal Corporation (MAC)

313 King Bay Road, Dampier WA 6713

PO Box 1544, Karratha WA 6714

murujuga.org.au



"Naavintharri Gumawarni Naurranooa" (We all come together for country)



7 July 2023

Board of Directors

Murujuga Aboriginal Corporation

Dear Board of Directors,

RE: Murujuga Rock Art Strategy (MRAS) Concerns

My role

In addition, the MRAS SRG reports to the Minister for the Environment, and is therefore subject to public governance rules requiring participants to disclose certain information in relation to the conduct of its affairs.

Background

The MRAS sets out the strategy to guide the protection of the Murujuga rock art. Protection against the risks of harm due to anthropogenic air emissions (in particular) is to be achieved by maintaining air quality and minimising emissions using all reasonable and practical measures (p 11). Careful evaluation and assessment needs to be undertaken by means of an environmental quality management framework to monitor and manage air quality (pp 10, 24), and to apply the precautionary principle to avoid, where practicable, serious or irreversible damage (p 10) (see Appendix A).

The MRAS states there is no recognised scientific guidance or criteria on how to protect the rock art on Murujuga from airborne emissions caused by humans (p 27). Nonetheless, many peer-reviewed studies are showing massive increases in acidity levels in the outer surfaces (particularly near the Woodside plant), leading to weakening of the patina and placing the rock art under serious threat of destruction.

Protection of the rock art imposes a legal requirement on the EPA to have regard to the precautionary principle, which holds that where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation, and be guided by (a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment, and (b) an assessment of the risk-weighted consequences of various options (p 10).

The Department of Water, Energy and Resources (DWER) has primary responsibility for the day-to-day implementation of the MRAS, undertaken in partnership with the MAC, and in consultation with stakeholders, including the community and industry (p 5).

DWER engaged Calibre Ventures Pty Ltd (**Calibre**) to project manage the MRAS through to handover to MAC set for 2026 pursuant to a Project Management Plan (**PMP**). Certain milestones and deliverables for 2023 are due, which include continuing fieldwork and monitoring, ranger training and design of interim Environmental Quality Criteria (**EQC**). In addition, MAC and DWER intend to enter into Partnership and Financial Agreements (**P&F Agreements**).

Concerns

Since March 2023, I have identified a number of significant issues affecting the MRAS and the MRAMP. In summary, based on my experience and the review of the project documentation, I am concerned that the MRAS and the MRAMP are not geared in a positive direction to achieve the objectives of the MAC Strategic Business Plan or the MRAS, nor is the project being actioned with sufficient integrity, diligence or governance.

The concerns have been documented and expressed to all parties of the MRAS and the MRAMP. The lack of action and response is the reason for this summary report which I regard as high priority in consideration of preservation of the Murujuga rock art and reputational risk issues for MAC, both nationally and internationally.

The core concern is that the current approach is failing to adequately address the issues outlined in the MRAS for protection of the rock art. Presently, MAC is not in a position to verify the quality of raw sample data due to lack of access, questionable sampling practices and inadequate skills transfer to the rangers. The problem is compounded by the project management plan, delays in an interim EQMF and EQC, unclear contractor QA process, apparent conflicts of interest, unresponsiveness from SRG participants and lack of cooperation or disclosure from the contractor.

Due to these defects and disconnects, there is a loss of traction on the MRAS objectives to achieve world's best (or any reliable) standard of monitoring and management of the severity of the threat posed by anthropogenic airborne emissions. This in turn ought to trigger more serious consideration being given to the application of the precautionary principle by way of interim measures.

Key concerns

Key concerns may be generally grouped into the following categories and discussed in detail below:

- P&F Agreements
- MRAMP/ data accuracy/ quality/ integrity
- Access to data / responses to MAC requests
- Project Management and Governance

Critical areas of the PMP that do not reflect the stated objectives of the MRAS, creating obstacles to a meaningful partnership between MAC and DWER and threatening project integrity and heritage protection are:

- MAC is excluded, and not even to be informed, regarding SRG management, despite being the only permanent member of the SRG.
- MAC is not shown as accountable or responsible for MAC cultural induction requirement compliance.
- MAC is to be informed only, but not consulted or involved in quality audits.
- MAC is to be informed only of Heritage surveys of proposed fieldworks sites.
- MAC is to be informed only regarding incident reporting and investigation.

- Calibre is accountable and responsible for the conflict of interest register and the deed of confidentiality, not MAC or DWER who are to be informed only.
- Calibre and sub-contractor Curtin University are accountable for interim and final EQC and EQMF development and implementation, MAC and DWER are to be informed only.
- DWER accountable and responsible for the five yearly MRAMP review, MAC to be informed only.
- Calibre has responsibility and accountability for the final outcome of the MRAMP EQMF and EQC, MAC is not to be consulted.
- Section 4.2 of the PMP not shared with MAC.
- Project responsibility matrix shows a total of 67 key areas of responsibility are defined under the head contract. Calibre is categorised as either wholly or partly responsible or accountable for 55 of these, DWER 13, and MAC 4.
- The PMP assigns accountability, responsibility and management of the SRG with the contractor not DWER or MAC, in conflict with the MRAS and the scope and terms of reference of the SRG.

The following table sets out particular issues informing the concerns in the remaining areas and the current status.

| # | Issue | Detail | Status |
|---|---------------------------|---|--------------|
| 1 | Data quality and accuracy | Interim EQMF and EQC not delivered. | In progress |
| 2 | " | Protocols concerning management of bucket samples from the AQM not finalized. | In progress |
| | " | Curtin University (sub-contracted by Calibre) sent a contractor to Murujuga who demonstrated low capability and committed a major error in relation to the sample collection and sample processing protocol | Resolved |
| | " | Bucket sampling methodology and spectrometry, are experimental techniques according to Curtin Uni field scientist and therefore not world's best practice offering no proven scientific rigour or reproducibility required of the investigation, and not aligned to arriving at defensible scientific outcomes that can enable the design of a EQMF or EQC. | In progress |
| | " | Flaws in the labelling and processing of samples, requests to manage sample collections via forms and use labels. | Not resolved |
| | Skills transfer | little involvement of the MRAMP Rangers in the detailed work of sample collecting and this would hamper training and transition of the MRAMP monitoring to MAC. | |
| | Data access/transparency | MAC still has no access to raw sample data, despite multiple requests. | Not resolved |
| | " | Pollution events reported at MAC by the MRAMP rangers, data from the MAC AQM site for specific dates was formally requested. | Not resolved |
| | " /training | Further requests for MAC to have access to live monitoring data to aid learning and training were answered but not fulfilled. | Not resolved |
| | P&F Agreement | The above issue of MAC access to sampling data was raised by previous MAC representatives in relation to the pending partnership agreement and has not been addressed. | Not resolved |

| | | | |
|--|-----------------------------------|---|---------------------------------|
| | " | There has been consistent pressure from DWER to finalise the P&F Agreement. However, this cannot be done until the emerging issues and the lack of proper disclosure of information requested from DWER and Calibre are resolved. | Not resolved |
| | | The terms of the contract between DWER and Calibre have not been disclosed, yet are likely highly relevant to the terms of the proposed P&F Agreements. | Not resolved |
| | Governance/ participation | At the May 24, MRAS SRG meeting, Avoidance and Minimisation, the application of the precautionary principle was raised and there was no interest or response. | Not resolved Now in progress |
| | " | From the DWER request for feedback from SRG members and observers, (requested by MAC), only 1 SRG member provided feedback. A request by MAC to repeat the request and seek proper SRG participation via the feedback was agreed by DWER but not carried out. | Not resolved |
| | " | Aside from two SRG members, communications to SRG members regarding the project and introducing myself have not been responded. | Not resolved |
| | Project management | I invited a MAC Jawun employee to a monthly meeting and resolved some report format issues. | Resolved |
| | " | It was highlighted that the charge-out rate of Curtin undergraduates was extraordinary in relation to such projects. Calibre committed to a response and none was forthcoming. | Not resolved |
| | "/QA | the Quality Assurance protocols of Calibre as stated in s 14.3 of the PMP appear not to be final or defined, and suggest that Calibre does not currently hold any relevant ISO or NATA certifications. | Not resolved |
| | Governance/ conflicts of interest | A Governance Officer from the Department of Premier and Cabinet (March SRG Quarterly meeting) suggested full disclosure of all conflicts of interest. My observation of the management of the SRG is that this advice was ignored. | Not resolved |
| | Governance/ participation | Calibre & DWER refuse to relevant project information on confidentiality grounds, including for example executive summary of MRAMP showing budget allocations. | Not resolved |

The above review is based on limited access to project areas, and addresses aspects of fieldwork, PMP, training and governance to which I have had access. I note that access to project management information, raw sampling data, data processing/ analysis/ working calculations has been limited or unavailable.

Feedback

Having met with the previous MRAS coordinator it was stated that the issue whereby Avoidance and Minimisation and precautionary protection according to the MRAS was systematically avoided and was a serious issue in 2021-2022.

I have had meetings with DWER and third-party consultants, seeking to find solutions to the issues which remain unresolved. I have had positive feedback from DWER seeking to remediate the issues (see Appendix B) and from two stakeholders who are willing to support and fund the objectives of the MRAS to protect the Murujuga Rock Art heritage.

Industry (Rio Tinto and Woodside) have indicated positive support to avoidance and minimization and to seriously consider options consistent with the precautionary principle and the P&F Agreements.

While the feedback from DWER and industry is encouraging, the lack of due diligence and withholding of information from MAC and lack of cooperation from the contractor raises issues of potential contract failure, undermining the purpose of the MRAS and the MRAMP and the risks to all stakeholders in relation to the documented mismanagement.

Recommendations

Key requirements to address the issues identified are the provision of resources to empower MAC to improve the project direction via the provision of professional services including in the short term:

1. Engage independent scientific expertise to (CarbonTP and its associates) to provide strategic advice and technical guidance on improving the effectiveness of MAC's position on the SRG:
 - Provide a gap analysis on the technical activities currently being undertaken by DWER / Curtin Uni / Calibre and those activities necessary for an outcome-based approach to protecting the Murujuga rock art, with recommendations to address any identified gaps.
 - Provide expert guidance on Stakeholder Management and advising MAC as to its rights on the SRG (Associate Adele Carles – former lawyer / State MP and expert on Stakeholder common law in WA)
 - Provide subject matter expertise on technical aspects of the emissions monitoring program (Associate Lee Bell – international expert in Industrial Emissions and Persistent Organic Pollutants)
 - Oversee the design and implementation of an Avoidance and Minimisation strategy.
 - Services can be provided via CarbonTP and by direct MAC engagement of Associates as required.
2. Engage external legal services (Clemens Haskin Legal) to assist and advise in relation to the risks currently posed to the MRAS and MAC, negotiations, preparing/ reviewing documents and agreements as required, including review and advise in relation to the pending MAC partnership and financial agreement.
3. MRAS expanded funding to enable in-house management and oversight of the MRAS, additional staff and Scientific consultants, vehicle.
4. Changes to the current MRAS Coordinator role in view of the issues highlighted.
5. Provision of a safe work place to enable the MRAS strategy to be designed and implemented with government and industry.
6. MAC company secretary assistance with stakeholder meetings and management of governance and legal issues.
7. Ministerial level intervention to bring section 4 of the strategy in line with the scope of the MRAS.

I await guidance and resolutions from the MAC Board and Circle of elders in relation to the continuation of my work and my current approaches to government, industry and consultants referred to restore integrity to the Murujuga Rock Art Strategy and its objectives.

Yours sincerely,

Appendix A – Murujuga Rock Art Strategy (selected excerpts)

Section 2.3 of the MRAS:

The Environment Protection Act 1986 is the principle [sic] legislation in Western Australia that provides for “the prevention, control and abatement of pollution and environmental harm” and for “the conservation, preservation, protection, enhancement and management of the environment”.

The object of the EP Act is to protect the environment of the state, having regard to a number of principles, including:

The precautionary principle, which holds that where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, decisions are to be guided by: (a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and (b) an assessment of the risk-weighted consequences of various options.

The EPA is required to have regard for the principles as a condition of the valid exercise of its powers to assess and report on proposals under Part IV of the EP Act.¹⁵

With respect to air quality, the EPA’s environmental objective is “to maintain air quality and minimise emissions so that environmental values are protected”.¹⁶ Considerations for impact assessment include:

- application of the mitigation hierarchy to avoid and minimise emissions, where possible;*
- application of technology appropriate to the potential environmental impacts and risks;*
- whether proposed mitigation is technically and practically feasible; and*
- the significance of the likely changes to air quality as well as the environmental values affected by those changes in the context of existing and predicted cumulative impacts. The EPA encourages the application of all reasonable and practical measures to minimise harmful emissions to air, which can include facility design, technology choice, operation and closure.¹⁷ ‘Reasonable and practical’ measures include those that are reasonably practicable, having regard to, among other things, local conditions and circumstances (including costs) and the current state of technical knowledge.*

Section 4.2 of the MRAS:

An Environmental Quality Management Framework (management framework) will be implemented to provide a transparent, risk-based and adaptive framework for monitoring and managing environmental quality to protect the rock art on Murujuga from anthropogenic emissions (emissions caused by humans).

It is important to note that criteria define the scientifically based limits of ‘acceptable’ change to environmental quality. They do not represent pollution levels that trigger enforcement action if exceeded; nor do they infer it is acceptable to ‘load up’ the environment to these levels.

From:
Sent: Tuesday, June 27, 2023 4:38 PM
To:
Cc:
Subject: Recent discussions on MAC

Hi thanks for our discussion yesterday and last week. I have some takeaway actions that we are progressing.

We agreed to look at ways to provide increased opportunities for MAC involvement in the monitoring program. I'll get our team to set up a meeting with you to discuss how we can implement changes to deliver this.

We'll also arrange a meeting to get the agreement sorted before the next payment is due in September.

Regarding regulating to the precautionary principle to protect the rock art, I will arrange a meeting with our regulatory staff where we can discuss our regulatory tools, what is currently being done and what can be done in future.

We look forward to receiving and discussing MACs proposal for additional funding through the budget process. I expect this will cover MACs capacity for engaging technical advice in future. In the short term, for your immediate funding request I am asking our finance team what information we need to support this request. I will come back to you once I have this information.

In respect to your query regarding the peer review process please see attached email to the SRG (12 December 2022) that includes the request for input on the list of peer reviewers. The list is updated regularly and we welcome MAC input. Additional information will be sent to you on the selection panel process on receipt of the quotes.

I have also started a log of actions to keep track of actions and completion. We can add to these as we go and have a running list.

Thanks for your support, we look forward to catching up again soon.

Best wishes

Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace, Joondalup

We are proud to be part of

a place of
opportunity



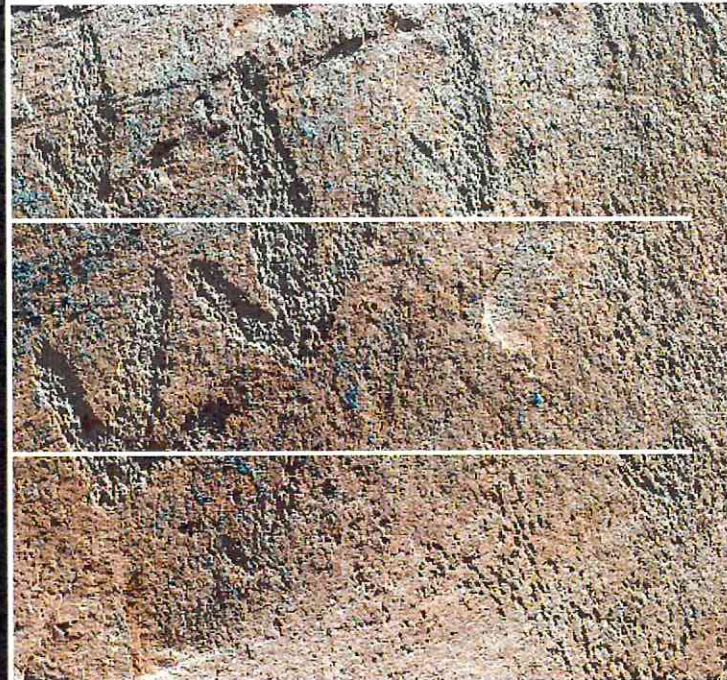
Department
of Water and
Environmental
Regulation
Graduate Program

Disclaimer: This e-mail is confidential to the addressee and is the view of the writer, not necessarily that of the Department of Water and Environmental Regulation, which accepts no responsibility for the contents. If you are not the addressee, please notify the Department by return e-mail and delete the message from your system; you must not disclose or use the information contained in this email in any way. No warranty is made that this material is free from computer viruses.

Murujuga Rock Art Strategy & Monitoring Program

Project Overview for MAC Board

Date 25 JULY 2023



Key Summary



- » Comprehensive review of the MRAS & MRAMP now complete
- » Project deficiencies place Rock Art and MAC at risk
- » Considerable work undertaken to address key issues
- » Goodwill expressed by DWER to expand funding of MRAS
- » Goodwill expressed by Industry proponents to address issues.
- » The opportunity now open for MAC to be empowered via the DWER-MAC Partnership and Financial Agreements
- » Avoidance & Minimisation a revised focus (Precautionary Principle)
- » Ministerial advice required to address MRAS upgrade and review of the MRAS Stakeholder Reference Group (SRG).

Rock Art Strategy is at a critical crossroad.



- The MRAS is a conflicted document..let me explain
- The MRAMP Project Plan disempowers and places MAC and Heritage at Risk
- Numerous defects in the work of the MRAMP are documented
- Critical milestones have not been met – interim EQC and EQMF
- Avoidance & Minimisation as recommended in the MRAS is neglected
- The partnership between MAC and DWER is theoretical only.

Some positive outcomes via Industry & Government Engagement



- DWER is ready to address the project shortfalls and the precautionary principle (EPA)
- Industry likewise is ready to engage with MAC and DWER positively
- The MRAMP can be put back on track via the recommendations
- Medium and longer term funding is not a key concern
- A finalised agreement between MAC and DWER is now feasible following extensive consultation and agreement by DWER in writing to expand funding and MAC capacity to engage as a partner with government and industry
- Agreement on the Precautionary Principle is a key milestone reached.

Some more positive outcomes....



- The Curtin Scientific team will produce valuable science in the long term
- The Burrup AQM network will be an enduring asset and key part of the MRAS
- DWER has funded for MAC an independent scientist and engineer to review and recommend on the MRAMP
- MAC is now a key player in the peer review process of the science to date
- Positive recommendations have been adopted by the MRAMP to accelerate training and expand the scope of MRAMP Ranger training.

Making it happen – key priorities



- Agreement on the engagement of the consultants expert in the field and extensively briefed on the issues
- Finalisation of the MAC-DWER agreement in alignment with the findings, the MRAS, the MRAMP and the MAC Strategic Business Plan (Adele Carles - CHL)
- DWER meeting (August) to expand and share the discoveries and the path forward
- Review of the Stakeholder Reference Group via consultant and MAC review prior to advice to the Chair of the SRG and Minister per the protocols and scope of the MRAS
- Engagement of CarbonTP to initiate process of industry engagement.

Request of the Board



- To endorse the extensive work undertaken to analyse and report on the project and commit to support the outcomes to be achieved
- To approve \$35,000 in interim funding to enable initiation of works on the key recommendations (focus on key agreement finalisation integrating all relevant industry and MAC agreements in alignment with the MAC Strategic Business Plan, MRAS and MRAMP)
- A full scope and detailed costing projection funded by DWER and industry can be provided at the next MAC Board meeting
- To note the risks and benefits expressed in this summary and the report attached and to continue the support of the MRAS Coordinator role to address the risks strategically.

Thank you for listening and please ask any questions or call me regarding any further ideas or concerns arising from this report.



Tabled Document

Available from the secretariat on request