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Resources
Regulator

COMPLIANCE AUDIT REPORT

MOUNT PLEASANT OPERATION

MACH Energy Australia Pty Ltd



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Introduction

Background

The Mount Pleasant Operation is an open cut coal mine in the Upper Hunter Valley of NSW, about 50 kilometres northwest of Singleton. The mine comprises of five mining leases as detailed in Table 1. The leases are all held by MACH Energy Australia Pty Ltd.

Table 1 Details of mining leases for the Mount Pleasant Operations

LEASE	GRANT	EXPIRY
ML1645	17 December 2010	17 December 2031
ML1708	2 February 2015	2 February 2036
ML1709	2 February 2015	2 February 2036
ML1713	2 February 2015	2 February 2036
ML1750	3 March 2017	3 March 2038

The mine began construction in November 2016 and coal was first mined in July 2018. Mining is occurring in Pit A and Pit D in the south eastern corner of ML1645. Mining will initially progress north before developing to the west throughout its remaining life.

As part of the compliance audit program, an audit of the mining operations associated with the Mount Pleasant Operation was undertaken on 2 May 2019.

Audit objectives

The objectives of the audit were to:

- undertake a compliance audit of the Mount Pleasant Coal Mine, operated by MACH Energy Australia Pty Ltd, against the requirements of the *Mining Act 1992* and the conditions of the mining leases issued pursuant to that Act
- assess the operational performance of the Mount Pleasant mining operations and the ability of the titleholder and/or operator to implement management systems and controls to provide for sustainable management of the operations.

Audit scope

The scope of the audit included:

- the mining activities associated with the Mount Pleasant Coal Mine including:
 - mine development within ML1645, ML1708, ML1709, ML1713, ML1750
 - rehabilitation activities associated with mining and construction works
- a review of documents and records pertaining to the mining and exploration activities
- the assessment of compliance for the period commencing 1 May 2016 and ending 20 May 2019.

Audit criteria

The audit criteria against which compliance was assessed included:

- *Mining Act 1992*, specifically, Sections 5, 6, 163C to 163E and 378D
- *Mining Regulation 2016*, specifically clauses 59 to 68
- conditions attached to ML1645 (granted 17/12/2010), ML1708 (granted 2/2/2015), ML1709 (granted 2/2/2015), ML1713 (granted 2/2/2015) and ML1750 (granted 3/3/2017)
- commitments made in Mount Pleasant Mining Operations Plan (MOP) and Rehabilitation Management Plan Revision 01 (amendment A) dated 30 June 2018 (document ID MP001-0000-ENV-PLN-0010)
- *Exploration Reporting: A guide for reporting on exploration and prospecting in NSW* (version 2, March 2016)
- *ESG3: Mining Operations Plan (MOP) Guidelines*, September 2013
- *Guidelines and format for preparation of an annual environmental management report* (January 2006)
- *ESB28: Environmental incident reporting requirements* (October 2007)

Publishing and disclosure of information

This audit report will be published on the NSW Resources Regulator's website consistent with Section 365 of the *Mining Act 1992*.

This audit report may be publicly disclosed consistent with the *Government Information (Public Access) Act 2009*.

Audit methods

The audit process involved interviewing site personnel, reviewing documents and samples of records provided by the titleholder and/or operator and a site inspection to determine the level of compliance of the operations and assess the status of the operational performance. The audit process and methodology are described in more detail below.

Opening meeting

The opening meeting was held at the Mount Pleasant mine office on 2 May 2019.

The audit team was introduced and the scope of their responsibilities was conveyed to the auditees. The objectives and scope of the audit were outlined. The methods to be used by the team to conduct the audit were explained.

It was stated that the audit team would interview personnel, review documents, examine records and conduct a site inspection to assess specific compliance requirements.

Site interviews and inspections

Data collection and verification

Where possible, documents and data collected during the audit process were reviewed on site. Several documents were unable to be reviewed on site and were provided after the site visit.

All information obtained during the audit process was verified by the audit team where possible. For example, statements made by site personnel were verified by viewing documentation and/or site inspections where possible. Where suitable verification could not be provided, this was identified in the audit findings as not determined.

Site inspections

A site inspection was undertaken of the following areas:

- Pit A – active open cut pit
- Pit D – active open cut pit
- Pit D topsoil stockpile – completed and reshaped
- Pit A waste dump – rehabilitation in progress

- Highwall dam topsoil stockpile – temporary rehabilitation completed
- Tailings dam – construction completed but not yet commissioned

Closing meeting

The closing meeting was held onsite at the Mount Pleasant mine office on 2 May 2019. The objectives of this meeting were to discuss any outstanding matters, present preliminary findings and outline the process for finalising the audit report.

Compliance assessment definitions

The reporting of results from the compliance audit was determined based on the definitions presented below in Table 2.

Table 2 Audit assessment categories

ASSESSMENT	CRITERIA
Compliance	Sufficient and appropriate evidence is available to demonstrate the particular requirement has been complied with.
Non-compliance	<p>Clear evidence has been collected to demonstrate the particular requirement has not been complied with. There are three subcategories of non-compliance reflecting the severity and level of risk associated with the non-compliance:</p> <p>NC1 – the absence of planning or implementation of a required operational element which has the potential to result in a significant risk</p> <p>NC2 – an isolated lapse or absence of control in the implementation of an operational element which is unlikely to result in a significant risk</p> <p>NC3 – an administrative or reporting non-compliance which does not have a direct environmental or safety significance</p> <p>Note: The identification of a non-compliance in this audit may or may not constitute a breach of the <i>Mining Act 1992</i>. Non-compliances identified in this audit report may be further investigated by the NSW Resources Regulator</p>
Observation of concern	Where an auditee may be compliant at the time of the audit but there are issues that exist that could result in the potential for future non-compliance if not addressed.

ASSESSMENT	CRITERIA
	Observation of concern was also used where an issue may not have particular compliance requirements, but which was not conducive to good management or best practice.
Suggestion for improvement	Where changes in processes or activities inspected or evaluated at the time of the audit could deliver improvement in relation to risk minimisation, sustainable outcomes and management practices.
Not determined	<p>The necessary evidence has not been collected to enable an assessment of compliance to be made within the scope of the audit.</p> <p>Reasons why the audit team could not collect the required information include:</p> <ul style="list-style-type: none"> ■ insufficient information on the file relating to the period covered by the audit or insufficient evidence collected to reach a conclusion ■ the wording on the criteria (approval condition) meant that no evidence could be gathered, or it was too difficult to gather the evidence. <p>A ‘not determined’ assessment was also made where the condition was outside of the scope of the audit.</p>
Not applicable	<p>The circumstances of the authorisation or titleholder changed and were no longer relevant, e.g. no longer mining, mining equipment and plant has been removed, etc.</p> <p>An invoking element in the criteria was not activated within the scope of the audit.</p>

Reporting

Following completion of the site audit, the audit checklists were completed and audit notes were reviewed to compile a list of outstanding matters to be noted in the audit report. This report was prepared to provide an overview of the operational performance of the site in relation to the exploration activities and identify any non-compliances or observations of concern noted by the auditors during the site inspections and interviews.

The draft audit findings were forwarded to MACH Energy for comment. Consideration was given to the representations made during the finalisation of the audit report as discussed in the audit findings.

Audit findings

Compliance management

Identifying compliance obligations

MACH Energy identified its compliance obligations and established a compliance register that was reviewed by the audit team. It was noted that although the register included obligations and commitments from the mining leases, environmental protection licence, development consent and the mining operations plan (MOP), it did not identify the obligations from the Mining Act or the Regulation that were not otherwise addressed by conditions attached to the mining leases.

The spreadsheet-based compliance register did not provide a mechanism for tracking compliance obligations, other than reporting. Where compliance obligations were ongoing, there was no process for monitoring these obligations to ensure compliance.

Further development of the compliance register would be beneficial in providing a more holistic approach to compliance management for the operations. This was raised as **suggestion for improvement no. 1**.

Inspections, monitoring and evaluation

Inspections were undertaken of the rehabilitation areas and the general environmental commitments included in the MOP. These inspections were observed to be recorded on inspection checklists and retained on file.

Where issues were identified during these inspections, there was no process to capture these issues, allocate corrective action tasks, track progress and close out those issues. Where issues were identified, they remain only on the inspection checklist, which means it would be easy for issues to be overlooked.

MACH Energy uses the Synergy software system to record and track actions arising from safety-related inspections, but this system is not used to record and track issues identified from environmental inspections. Further development of the Synergy system would be beneficial and this was raised as **suggestion for improvement no. 2**.

Interviews with MACH Energy personnel indicated there was no internal audit or compliance evaluation program for the Mount Pleasant operations. It was reported that development of such a process was in progress. When completed and implemented, this should provide an increased level of compliance management.

Subcontractor management

MACH Energy uses a range of subcontractors on site to undertake specific operations. It is important that there is management oversight of the operations of these subcontractors so that MACH Energy does not lose its ability to comply with its compliance obligations.

Thiess is the main mining contractor on site, with Sedgman Pty Ltd and Ditchfield Contracting Pty Ltd the main construction contractors. Using the Thiess contract as an example, a review of documents and records, and interviews with MACH Energy and Thiess staff, demonstrated that contractor management was generally well managed. In this regard, Thiess was involved in the audit process and was aware of the compliance obligations for which it was responsible. Evidence was sighted that good communication appeared to exist between MACH Energy and Thiess.

Mining operations plan

Condition 3 of the mining leases requires the titleholder to prepare and submit a MOP and operate in accordance with the approved MOP. MACH Energy submitted the Mount Pleasant Operation: Mining Operations Plan and Rehabilitation Management Plan dated 30 June 2018 which was approved by the Regulator on 10 October 2018. The approved MOP at the time of the audit expired on 30 June 2019. A revised MOP was submitted on 7 June 2019, which was approved on 28 June 2019 before the expiry of the previously approved MOP.

Generally, it was observed that operations on site were being undertaken in accordance with the description and plans provided in the MOP. Evidence was sighted that MACH Energy has established and implemented the environmental management system described in Section 3.1.1 of the MOP. For example:

- a ground disturbance permitting process
- inspection and testing processes.

These were reviewed in relation to the management of topsoil as an example of the implementation of the systems. The Thiess Blue View system for mapping and monitoring topsoil stripping and stockpiling was also reviewed. Together these systems were shown to provide good documentary evidence of the implementation of the topsoil stripping and management procedures.

It was noted that not all the MOP commitments were implemented at the time of the audit site inspection, particularly in relation to rehabilitation, as described in the following section.

Rehabilitation

Condition 2 of the mining lease conditions requires any disturbance resulting from the activities carried out under the lease, to be rehabilitated to the satisfaction of the Minister. Condition 3 of the leases requires a MOP to be prepared which, among other things, requires the titleholder to identify how the mine will be managed and rehabilitated to achieve the post-mining land use.

Risk assessment

To effectively manage the operations to achieve successful rehabilitation outcomes, the titleholder needs to understand the risks to successful rehabilitation. It was noted that a basic risk assessment was provided in the MOP and this risk assessment would be reviewed each time the MOP was amended. Some concerns with this basic risk assessment were identified by the auditor. For example, in Table 3.5 of the MOP, severe and/or prolonged drought leading to widespread failure of revegetation or rehabilitation was given a likelihood rating of ‘D, Unlikely’. Given that the Hunter Valley region has been in a severe drought for the past two years and MACH Energy staff advised that it has affected the rehabilitation and revegetation success, the risk ranking does not reflect the conditions. A likelihood of ‘Possible’ or ‘Likely’ would be more appropriate. This would have elevated the risk rating to ‘High’ and may have changed the controls identified.

The audit team also noted that there were several areas of significant erosion across the site and MACH staff indicated that soils were known to be dispersive. However, erosion was not included in the risk assessment in the MOP, other than for a major storm event (which was also ‘Unlikely’). A topsoil stockpile (Pit D topsoil stockpile) was observed to have been recently shaped but not vegetated (Figure 1). The stockpile had quite a long slope length but there were no erosion controls observed on the site. Given the potentially dispersive nature of the soils, the erosion risk was not adequately considered, and consequently, adequate controls were not identified and implemented. This has the potential to result in a loss or degradation of the topsoil in the stockpile.

Figure 1 Pit D topsoil stockpile showing no erosion controls on the slope



The observations made by the audit team on site do not give confidence that the titleholder has a good understanding of the risks to successful rehabilitation outcomes. This was raised as **observation of concern no. 1**.

Rehabilitation progress

Section 2.6.4 of the approved MOP identified that rehabilitation would begin during the MOP term. This was to involve the start of dump profiling and topsoil placement on areas on the eastern side of the overburden emplacement as shown on Plan 3 of the MOP.

An area of about four hectares of rehabilitation on the eastern side of the overburden emplacement was inspected during the audit. Evidence of extensive erosion and weeds was observed throughout this rehabilitation area (Figure 2 and Figure 3). A further area was shaped and partially topsoiled, but it was observed that this area was not consistent with the extent detailed in the MOP Plan 3. This was raised as **observation of concern no. 2**.

Temporary rehabilitation was undertaken on construction batters around the Mount Pleasant site as outlined in the MOP. It was observed that significant erosion and weed infestation occurred on some of these areas, and revegetation failures occurred on other areas that were not addressed (Figure 4). This was raised as **observation of concern no. 3**.

Figure 2 Rehabilitation of the eastern side of the overburden emplacement showing weed infestation



Figure 3 Significant erosion in the overburden emplacement rehabilitation area



Figure 4 Revegetation failure and erosion on construction batters at the tailings dam



Rehabilitation monitoring

Performance indicators and completion criteria were discussed in Section 6 of the approved MOP. It was proposed that field investigations would be undertaken in the second half of 2018 to identify appropriate control/reference sites for each secondary rehabilitation domain. It was also proposed to collect monitoring data from these sites, from which completion criteria would be developed. A monitoring program and TARP, based on the SMART completion criteria, were proposed to be developed in quarter four of 2018. Interviews with MACH Energy personnel on site found that rehabilitation analogue monitoring sites were not selected and the monitoring programs and TARP described in the approved MOP were not developed and implemented.

Section 8.1 of the MOP describes a rehabilitation monitoring program based on the following methodologies:

- ecosystem functional analysis
- rapid visual assessment of revegetated areas.

While rehabilitation inspections were done, they were not done in accordance with the procedures described in the MOP. It is understood that a detailed rehabilitation strategy required by the project development consent was prepared and was awaiting approval from the Department of Planning,

Industry and Environment. Approval of the rehabilitation strategy may change the requirements for rehabilitation monitoring and this was given by MACH Energy as the reason the rehabilitation monitoring program was not implemented in accordance with the MOP.

Issues with the failure to implement the MOP actions for rehabilitation monitoring and the development of performance indicators and completion criteria were raised as **non-compliance no. 1** and were ranked NC2. Failure to undertake mining operations in accordance with the approved MOP is a breach of condition 3 of the titles and an offence under S378D of the *Mining Act 1992*.

Reporting

MACH Energy uses the mining titles agent Hetheringtons to monitor when reporting, lease renewals, rents, levies, and royalties are due. Hetheringtons provide MACH Energy with a monthly update on what is due over the next month, two months and three months. Using this system, reports were generally submitted on time with no non-compliances for late reporting in the past two years.

Annual rehabilitation reporting

Condition 3(f) of the mining lease requires the titleholder to prepare and submit an annual rehabilitation report that provides a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP. Two annual rehabilitation reports were prepared and submitted during the audit scope period:

- Mount Pleasant Operation 2017 Annual Review (Annual Rehabilitation Report) was received on 29 March 2018 and accepted as satisfactory by letter from the Regulator dated 25 July 2018
- Mount Pleasant Operation 2018 Annual Review (Annual Rehabilitation Report) was received on 29 March 2019 and is under assessment by the Regulator.

Section 7 of both reports discusses rehabilitation. Being a recently constructed mine, very little rehabilitation was undertaken at the time of the 2017 report, so little discussion was included. The 2018 report provided a more comprehensive review of the rehabilitation status, including an assessment against the MOP requirements.

Compliance reporting

Before February 2018, condition 4 of the mining leases required the submission of an annual compliance report. A separate compliance report was not provided by MACH Energy, but compliance reporting was included in the 2017 AEMR, including the identification of a non-compliance with condition 5 of ML1645 in relation to an environmental incident (see below).

In February 2018, the (then) department Division of Resources and Geoscience amended the mining lease conditions on all the MACH Energy Mount Pleasant titles by way of an endorsement schedule dated 19 February 2018. This amendment changed the requirements for compliance reporting under condition 4 of the leases such that an annual compliance report was no longer required. The titleholder must now notify the Regulator when it becomes aware of any breaches of the conditions of this mining lease or breaches of the Mining Act or Regulations. A search of the Regulator's ACES database, undertaken on 15 May 2019, showed no non-compliance notifications under the Mining Act or Regulations were made during the audit scope period (and particularly since 19 February 2018).

Environmental incident reporting

Before February 2018, the titleholder was required to report to the Regulator within 24 hours of any environmental incident occurring. In February 2018, the Regulator amended the mining lease conditions on all the MACH Energy Mount Pleasant titles by way of an endorsement schedule, dated 19 February 2018. This amendment changed the requirements for environmental incident reporting under condition 5 of the leases. Under the amended condition, since February 2018, the titleholder must provide environmental incident notifications and reports to the Regulator no later than seven days after those notifications are provided to the relevant authorities under the *Protection of the Environment (Operations) Act 1997*.

An environmental incident involving a clean water discharge occurred in October 2017. The discharge event was immediately reported to the Environment Protection Authority (EPA) and an incident report was submitted within seven days. While this would meet the requirements of the existing version of condition 5 of the leases, it was non-compliant against the previous version of condition 5, which was in operation when the incident occurred (because the incident was not reported to the Regulator within 24 hours). This was raised as **non-compliance no. 2** and was ranked NC3. Failure to report the environmental incident is a breach of Condition 5 of the titles and an offence pursuant to S378D of the *Mining Act 1992*.

The non-compliance was self-reported by MACH Energy in the 2017 Annual Rehabilitation Report. The incident was followed up and a warning letter was issued. No further action was taken by the Regulator.

Exploration reporting

Section 163C of the Mining Act and Clause 59 of the Mining Regulation require the submission of an annual report that provides the particulars of all surveys and other operations or activities that have been carried out in the preceding 12 months. Annual exploration reports for the December 2016 to December 2017 period and the December 2017 to December 2018 period were submitted by MACH Energy and were reviewed as part of the audit. Both reports were submitted within the required timeframes and were generally prepared in accordance with the guidelines.

It was reported that 83 exploration boreholes were drilled in the 2016/2017 reporting period, with a further 74 drilled in the 2017/2018 reporting period. Relevant data and documentation was provided for both drilling programs. An inspection of exploration drill holes was not proposed or completed as part of the audit because the holes drilled were in the area now mined as part of the Pit A and Pit D developments.

Record keeping

Sections 163D and 163E of the Mining Act relate to the creation and maintenance of records required under the Act, the Regulations, or a condition of title. Records must be kept in a legible form for production to any inspector and must be maintained for a period of four years after the expiry or cancellation of the title.

MACH Energy and the mine operator, Thiess, have developed and implemented some good systems for record keeping. Generally, records were noted to be readily available for the audit team to review. Records to demonstrate compliance with mining lease conditions and the approved MOP included:

- letters dated 24 March 2017 to Muswellbrook Council and Bengalla Mine to advise of the grant of ML1750 (required by condition 1 of ML1750)
- records of weed spraying for prickly pear, prickly acacia and boxthorn as evidence of commitments in Section 3.2.9 of the approved MOP.

Titleholder response to draft audit findings

MACH Energy was provided with a copy of the draft audit report and invited to submit a response to the draft audit findings. A copy of the response is provided in Appendix 1.

MACH Energy provided a detailed response that provided context for the non-compliances and observations of concern. The response also included an action plan with due dates for actions to address the issues raised during the audit. Generally, the actions were considered appropriate. Implementation of the actions will be reviewed during future inspections by the Regulator.

Audit conclusions

From the evidence reviewed during the audit and observations made on site during the audit site inspections, it was concluded that MACH Energy achieved a moderate level of compliance with the requirements of the mining leases and MOP in relation to mining operations undertaken at Mount Pleasant.

One non-compliance ranked NC2, one non-compliance ranked NC3, three observations of concern and two suggestions for improvement were noted by the auditor as summarised in Table 3, Table 4 and Table 5.

Table 3 Summary of non-compliances

NON-COMPLIANCE NO.	DESCRIPTION OF ISSUE	RECOMMENDATION
1 NC2	<p>Interview with MACH Energy personnel found that rehabilitation analogue monitoring sites was not selected and the monitoring programs and TARP descriptions in the approved MOP have not been developed and implemented.</p> <p>Section 8.1 of the MOP describes a rehabilitation monitoring program. While rehabilitation inspections were done, they were not done in accordance with the procedures described in the MOP.</p> <p>Failure to undertake mining operations in accordance with the approved MOP is a breach of condition 3 of the titles and an offence under S378D of the Act.</p>	Implement the MOP actions for rehabilitation monitoring and the development of performance indicators and completion criteria.
2 NC3	<p>An environmental incident involving a clean water discharge occurred in October 2017. The discharge event was immediately reported to the EPA and an incident report was submitted to the Regulator within seven days. While this would meet the requirements of the version of condition 5 of the leases, it was non-compliant against the previous version of condition 5, which was in operation at the time the incident occurred. The incident was not reported to the Regulator within 24 hours. The incident was followed up and a warning letter was issued. No further action was taken by the Regulator.</p> <p>Failure to report the environmental incident is a breach of condition 5 of the titles and an offence under S378D of the Act.</p>	Ensure that environmental incidents are reported to the Regulator as required by condition 5.

Table 4 Summary of observations of concern

OBSERVATION OF CONCERN NO.	DESCRIPTION OF ISSUE	RECOMMENDATION
1	<p>It was noted that a basic risk assessment was provided in the MOP and this risk assessment was reviewed each time the MOP was amended. Some concerns with this basic risk assessment were identified by the auditor. The observations made by the audit team on site did not give confidence that the titleholder has a good understanding of the risks to successful rehabilitation outcomes.</p>	Review the risk assessment in the MOP to ensure it addresses the key risks to successful rehabilitation outcomes.
2	<p>An area of about four hectares of rehabilitation on the eastern side of the overburden emplacement was inspected during the audit. Evidence of extensive erosion and weeds was observed throughout this rehabilitation area (Figure 2 and Figure 3). A further area was shaped and partially laid with topsoil, but it was observed that this area was not consistent with the extent detailed in the MOP Plan 3.</p>	Undertake remedial actions on the rehabilitation areas of the overburden emplacement.
3	<p>Temporary rehabilitation has been undertaken on construction batters around the Mount Pleasant site as outlined in the MOP. It was observed that significant erosion and weed infestation has occurred on some of these areas, and revegetation failures had occurred on other areas that had not been addressed (Figure 4).</p>	Undertake remedial actions on areas of erosion and weed infestation where temporary rehabilitation occurred on construction batters.

Table 5 Summary of suggestions for improvement

SUGGESTIONS FOR IMPROVEMENT	DESCRIPTION OF ISSUE
1	MACH Energy has identified its compliance obligations and has established a compliance register that was reviewed by the audit team during the audit. It was noted that while the register has included obligations and commitments from the mining leases, environmental protection licence, development consent and the MOP, it did not identify the obligations from the Mining Act or the Regulation that were not otherwise addressed by conditions attached to the mining leases. Further development of the compliance register would be beneficial in providing a more holistic approach to compliance management for the operations.
2	MACH Energy uses the Synergy software system to record and track actions arising from safety related inspections, but this system is not used to record and track issues identified from environmental inspections. Further development of the Synergy system to record environmental outcomes would be beneficial.

Appendix 1

Titleholder response to draft audit findings

From: [Jenn Warner](#)
To: andrew.reid@machenergyaustralia.com.au; chloe.annandale@machenergyaustralia.com.au
Cc: [Jenny Ehmsen](#); [Peter Ainsworth](#)
Subject: MACH Energy - Mount Pleasant Coal Mine Audit
Date: Wednesday, 24 April 2019 6:35:00 PM
Attachments: [Audit Plan Mount Pleasant - MACH Energy.pdf](#)
[image003.jpg](#)
[image004.png](#)

Hi Andrew,

Following our discussion yesterday afternoon I am emailing you today to advise that the Resources Regulator is planning a compliance audit of the Mount Pleasant Coal Mine.

The audit will take place on the 2 May 2019. It is envisaged that the audit will require 1 day on site including site inspection where appropriate. Lead auditor will be Jenny Ehmsen with myself in attendance (Inspector Environment Northern Region).

A copy of the audit plan is attached for your information.

Please do not hesitate to call me should you require further information.

Kind regards

Jenn

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MACH Energy Australia - Responses to the two non-compliances identified in the May 2019 NSW Resource Regulator Audit

Audit Findings	MACH Energy Responses	Due Dates
<p>1 - NC2 – Selection of rehabilitation analogue monitoring sites. Development and implementation of rehabilitation monitoring programs</p> <p>Interview with MACH Energy personnel on site found that rehabilitation analogue monitoring sites have not yet been selected and the monitoring programs and TARPs described in the approved MOP are yet to be developed and implemented.</p> <p>Section 8.1 of the MOP describes a rehabilitation monitoring program. Whilst rehabilitation inspections are done, they are not done in accordance with the procedures described in the MOP.</p> <p>Failure to undertake mining operations in accordance with the approved MOP is a breach of Condition 3 of the titles and as such could be considered an offence under S378D of the Act.</p> <p>Pit D topsoil stockpile – completed and reshaped</p>	<p>Rehabilitation activities at Mt Pleasant Operation are at an early stage. At the time of the audit, approximately 4ha of rehabilitation was shaped, topsoiled and seeded. Pit A waste dump rehabilitation is in progress, the highwall dam topsoil stockpile temporary rehabilitation is complete and the fines emplacement area construction is complete but not yet commissioned.</p> <p>Areas on-site that were available for rehabilitation to final landform, and therefore auditable, were limited, and mostly unavailable for monitoring. At that time, it was anticipated that analogue sites would be selected at or around the same time as the rehabilitation monitoring sites.</p> <p>Some additional rehabilitation monitoring sites will become available towards the end of 2019 and MACH Energy Australia has commissioned an experienced rehabilitation and ecological restoration provider to commence analogue site data collection and implement a sampling design based on statistical analysis and stratification methodologies (slope/aspect/final land use etc), tailored to specific completion criteria for each of the domains but may also include interim criteria designed to track progress of rehabilitation performance over time.</p>	<p>Detailed design of draft monitoring program with reference to mine-supplied GIS data and progressive rehabilitation plan has commenced (June 2019 - Stage 1).</p> <p>Stage 2 involves the development of draft digital data collection forms and standardised processing templates ("Rehabilitation Report Card" or similar), for approval by Mach Energy. Reference (analogue) monitoring locations will be identified in July 2019.</p> <p>Stage 3 involves an adjustment of the monitoring program (adaptive management), as necessary to address any identified short-comings or opportunities for improvement, prior to the end of year 1 of the monitoring schedule, in 2020.</p>

<p>2 - NC3 - Reporting of environmental incident involving clean water discharge</p> <p>An environmental incident involving a clean water discharge occurred in October 2017. The discharge event was immediately reported to the EPA and an incident report was submitted to DPE and the Regulator within 7 days. Whilst this would meet the requirements of the current version of condition 5 of the leases, it was non-compliant against the previous version of condition 5 which was in operation at the time the incident occurred because the incident was not reported to the Regulator within 24 hours.</p> <p>Failure to report the environmental incident is a breach of Condition 5 of the titles and as such could be considered an offence under S378D of the Act.</p>	<p>Following a water discharge incident on 31 October 2017, the EPA were notified immediately. MACH was justifiably focused on attending to the incident in a manner to ensure there was no injury caused and to minimise and potential damage to the environment. Further, notification was provided to the New South Wales Environmental Protection Authority immediately following the incident and an Environmental Incident Report was provided to the Department of Planning and Environment on 8 November 2018. However, the immediate notification of the Department of Planning and Environment as required by DA 92/97 was delayed.</p> <p>The significance of the breach was evaluated by the Department of Planning and Environment in accordance with their Compliance Policy and it was deemed appropriate for MACH to receive a Warning Letter [Ref: DA 92/97 (as modified) – dated 8 December 2017]. It is understood that a Warning Letter is the lowest form of regulatory response that can be received from the Department of Planning and Environment in relation to any non-compliance. Furthermore, appropriate measures have been put in place to ensure that non-compliances of this nature do not reoccur, including the familiarisation of the requirements under the ML 1645 conditions, DA 92/97, the Mount Pleasant Operations Mining Operations Plan and all relevant legislation.</p>	<p>No further action</p>
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	MACH has also engaged a tenement manager, Hetherington Exploration & Mining Title Services Pty Ltd, to assist with all its tenement related obligations.	
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MACH Energy Australia - Responses to the areas of concern identified in the May 2019 NSW Resource Regulator Audit

Audit Findings	MACH Energy Responses	Due Dates
<p>1 - Risk Assessment</p> <p>It was noted that a basic risk assessment is provided in the MOP and this risk assessment is reviewed each time the MOP is amended. Some concerns with this basic risk assessment were identified by the auditor. The observations made by the audit team on site do not give confidence that the titleholder has a good understanding of the risks to successful rehabilitation outcomes.</p>	<p>An updated risk assessment was undertaken in March 2019, and is incorporated within the MOP 2019-2020. This includes risks on drought and other natural events on rehabilitation.</p> <p>Rehabilitation success is a moderate risk based on several factors. Severe and/or prolonged drought in a mild to warm temperate zone such as the Hunter Valley is considered unlikely, despite the current drought conditions. The long-term rainfall record (1900-2013) shows that the upper Hunter has experienced considerable variation in rainfall with periods of both wetter and drier conditions. The millennium drought (first decade of this century) saw a long period of below average rainfall. This dry period ended with two of the wettest years on record for Australia (2010-2011), with 2010 being the third wettest year on record for NSW.</p> <p>MACH acknowledges long-term climate change, and widespread failure of rehabilitation, like climate prediction, needs to be assessed over the life-of-mine. Drier conditions are expected to continue, however most models agreed that autumn rainfall would increase. The audit report relates to a number of brief observations during the May 2019 inspection, and is merely a snapshot of</p>	<p>MACH will continue to review key risks associated with site rehabilitation, biodiversity and land management annually.</p> <p>Successful rehabilitation is likely through continual adjustment of the rehabilitation monitoring program (adaptive management), to address any identified short-comings or opportunities for improvement, over the life of mine – Refer to Stage 3 outcomes in NC2 above.</p>

	mine rehabilitation success over the full life-of-mine cycle.	
2 - Erosion and Weed Management An area of approximately four hectares of rehabilitation on the eastern side of the overburden emplacement was inspected during the audit. Evidence of extensive erosion and weeds was observed throughout this rehabilitation area (Figure 2 and Figure 3). A further area has been shaped and partially topsoiled but it was observed that this area was not consistent with the extent detailed in the MOP Plan	<p>MACH Energy Australia has commissioned an experienced Land Management and Rural Services provider to undertake weed mapping and spraying activities on a regular basis. Weed management on the mining leases has been undertaken throughout the life of the mine.</p> <p>As part of the MOD3 works, the overburden emplacement toe extended further east to enable macro and micro relief of the final landform. On approval of MOD3, extensive works were undertaken on the design of the macro and micro relief of these areas, which was completed in the first half of 2019. These areas are now currently being shaped to design, with topsoiling and rehabilitation to follow as soon as practicable after.</p>	<p>An erosion and sediment control audit was undertaken in Q1 2019. The outcomes of this audit include remediation of areas of erosion throughout the mine. Scoping works were conducted in Q2, with works to commence in Q3 2019.</p> <p>Weed mapping is due to be undertaken in July 2019, with the next weed eradication program to follow shortly afterwards.</p>
3- Erosion and Weed Management Temporary rehabilitation has been undertaken on construction batters around the Mount Pleasant site as outlined in the MOP. It was observed that significant erosion and weed infestation has occurred on some of these areas, and revegetation failures had occurred on other areas which had not been addressed	<p>MACH Energy Australia has commissioned an experienced Land Management and Rural Services provider to undertake weed mapping and spraying activities on a regular basis. Weed mapping is due to be undertaken in July 2019, with the next weed eradication program to follow shortly afterwards. Weed management on the mining leases has been undertaken throughout the life of the mine.</p> <p>Rehabilitation within the construction areas of the mine is completed as works are finalised. In</p>	As above.

	any areas where rehabilitation does not meet expectations (e.g. due to extended dry periods), the area is re-rehabilitated via infill planting, reseeding, or similar. Multiple areas within the construction areas have had multiple rounds of rehabilitation, with further rounds planned for Spring 2019.	
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