



VERIFICATION FINDINGS REPORT
ALCOA AUSTRALIA – ALCOA AGREEMENT NO.6829
ANGLESEA COAL MINE, VIC 3230

August 2014

REVISION 3

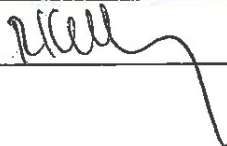
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DOCUMENT REVISION RECORD

Rev	Date	Description/Comments	Prepared by	Reviewed by
0	14/08/2014	Draft prepared for Inspector use and review	Wally Morrison	Michael Terry and Chris Walschots
1	15/10/2014	Draft prepared for peer review.	Wally Morrison	Tony Ferrazza
2	30/10/2014	Draft issued to site for review, comment and action plan development.	Wally Morrison	Chris Rolland (Alcoa Aust)
3	28/11/2014	Finalised Report	Wally Morrison	

VWA Internal Review (Completed after finalisation of report)

Reviewed By	Confirmed	Comment
Manager – Earth Resources	Rob Kelly	

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1. EXECUTIVE SUMMARY

The verification of the Anglesea Coal Mine (ACM) occurred on the 25th and 26th August 2014, and covered Safety Management System (SMS) elements and procedural controls relating to the identified Mining Hazards (MH) Ground Failure and Mine Fire (MF).

Six control measures (CM) and three SMS elements were reviewed, and where applicable, inspected during the verification. The verification sought to determine the level of implementation and functionality of each element, and a rating system of Yes/No/In Part was applied to each finding combined with a numeric value. Please refer to Attachment B for more detailed information.

This rating information will be used to compare results with future verifications at ACM and for comparison across Victorian mine sites.

Key findings of the verification highlighted areas for improvement in the following:

- Piezometer and Inclinometer monitoring activities and compliance with Ground Control Management Plan (GCMP) requirements.
- Detailing of hazards by employees whilst completing the Mine Inspection Checklist.
- Enhanced description of the key risk areas identified within the Water Management Plan (WMP) and development of key indicators used for monitoring risks in such areas.
- Centralisation of Contract Management documentation at the ACM to give project managers access to contractor information and assist in the effective management of contracts.
- Risk assess hazards with the potential to trigger the Emergency Management Plan (EMP), and where possible collaborate with the CFA to identify all relevant controls to prevent and/or mitigate risks associated with emergency management, especially mine fire.

Of the six selected control measures verified, all were found to be implemented. In addition, two were found to be functional and four In Part functional. The reasons for these findings are discussed further in section 4.1.

Of the three SMS elements verified, one was found to be implemented and two In Part implemented. All were found to be In Part functional. The reasons for these findings are discussed further in section 4.2.

Recommendations for improvement identified during the inspection are summarised within the Recommendations and Conclusions section of the report; and are discussed further within attachment A. These recommendations will be carried forward as part of oversight inspections for ACM.

No compliance action was taken by VWA during the onsite verification.

2. OBJECTIVES OF THE VERIFICATION

The objectives of the Verification process are to:

- Identify areas where strategic intervention is required.
- Ensure regulatory breaches or non-conformances detected during the inspection are appropriately dealt with.
- Assess whether or not a mine operator is providing a satisfactory level of Safety Management.
- Provide feedback and recommendations to the mine operator so that they can improve the level of safety management at the mine.

3. METHODOLOGY

3.1 Justification of Inspection Focus

The purpose of the inspection was to gather information, and where appropriate, inspect a sample of control measures and SMS elements used for the management of Ground Failure (GF) and Mine Fire associated hazards.

Prevention of GF related incidents have been identified by VWA as a priority to be verified across the Victorian mining sector. VWA have been notified by Victorian mines of fifteen separate incidents involving GF since May 2012.

Issued entry reports contain a summary of the activities conducted, issues identified and documents voluntarily provided by ACM. Refer to Attachment C and Attachment D for further detail.

3.2 Verification Team

Duration: 2 Days	Start: 25/08/2014	Finish: 26/08/2014	Control Measure Verified	SMS Element Verified
Agency	Name	Role		
VWA	Chris Walschots	Lead Inspector	CM 1, 2, 3 & 4	SMS 2
VWA	Michael Terry	Inspector	CM 5 & 6	SMS 1 & 3
VWA	Wally Morrison	Senior Mining Engineer	CM 5 & 6	

Table 1: Verification Team Details

4. INSPECTION FINDINGS

4.1 Control Measure Findings

Six control measures were verified with differing levels of implementation and functionality as shown in Table 2 below. None of the controls required immediate action through the provision of compliance action. Recommendations for achieving higher rating levels are provided within section 5.2.

As detailed within section 5.2, piezometer and inclinometer monitoring activities undertaken by ACM are not done in accordance with specifications set out within the GCMP. It has been recommended ACM review such requirements to ensure they are commensurate to risk and are contemporary to operational needs.

Evidence was found (mine inspection checklist – 22/07/14) operators are not accurately detailing hazards found when completing the mine inspection checklist. It is recommended ACM review this requirement with operators to ensure all possible information surrounding identified hazards is effectively maintained and managed.

Upon inspection of ACM's Water Management Plan (WMP) it was found the key risk areas identified throughout the mine were not clearly defined. Furthermore, inspection frequencies of these areas, combined with definitive indicators for measuring risk were not clear.

ACM's WMP specifies site inspections are to be undertaken at least biannually along with associated risk identification and risk assessment. It was found such inspections are completed and risks area identified, yet subsequent risk assessment is not undertaken. It has been recommended this process be undertaken during future site inspections.

Control Measure	Implemented	Functional	Level	Comments
CM 1: GCMP – Geotechnical Monitoring	Yes	In Part	4	All controls exist but certain monitoring practices are not maintained in accordance with the GCMP; consequently a review of these requirements is necessary.
CM 2: GCMP – Geotechnical Inspections	Yes	In Part	4	More detail is required by operators when completing mine inspection logs and ACM need to ensure identified hazards are recorded within the hazard management system.
CM 3: GCMP - Geotechnical Risk Register	Yes	Yes	5	
CM 4: GCMP - Auditing	Yes	Yes	5	
CM 5: WMP – Monitoring and Maintenance	Yes	In Part	3	Definition of key risk areas specified within the WMP require further definition and measures for monitoring the risk associated with these areas should be included.
CM 6: WMP – Risk Management	Yes	In Part	4	Biannual inspections are undertaken and risks identified. Evidence was not readily available to verify risk assessments are undertaken for such risks.

Table 2: Control Measure Findings Summary

4.2 Safety Management System Findings

ACM operate under the guidance of a SMS; from which three elements were assessed during the site inspection. The resulting levels of competency and a brief summary are shown in Table 3.

At the time of inspection it was found ACM's contract management system was centrally located off site at Alcoa's Point Henry operation. It was noted at the time of inspection, based on discussion with ACM management, ownership and management of this system was being transferred to the ACM and potentially could take several months to complete. Recommendation was been made for this action to be completed as current project managers located at the mine site don't have ready access to contract management documents and associated information.

ACM operate under the guidance of Alcoa's Victorian Operations & AARP-PTH EHS Management System (V5). Element 1.2 of this system requires hazard identification and risk assessment be undertaken in accordance with OHSAS 18001 and/or AS4801. At the time of inspection no evidence was available to suggest these standards are complied with through relevant auditing.

At the time of inspection no evidence was readily available to confirm ACM, through a risk based assessment process, have identified all hazards likely to trigger the Emergency Management Plan (EMP). Furthermore, incomplete evidence was available to indicate the associated controls have been identified, implemented and periodically reviewed to ensure their effectiveness.

Evidence was available to support an EMP mock scenario involving mine fire was undertaken on the 20th August 2013. This was carried out in conjunction with the Anglesea Fire Brigade and both incidents were located within close proximity of the power station. No evidence was available to confirm a debrief was carried out post the exercise. Recommendation has been made to ensure future exercises include debriefs to capture exercise deficiencies and improve EMP effectiveness.

The Alcoa Anglesea Pre-Incident Plan (V29), developed by the local CFA, outlines the level of response required for different fire scenarios. This document was developed in January 2011. It is recommended this document be reviewed to reflect contemporary mine practices, the local mine environment and ensure all relevant controls are implemented or made readily available, to prevent and/or mitigate mine fire.

Recommendations for achieving higher rating levels for each SMS element are provided within section 5.2 – Recommendations.

SMS Element	Implemented	Functional	Level	Comments
SMS 1: Contractor Management	In Part	In Part	2	Alcoa's contract management system is not readily available to mine employees and is centrally managed off site.
SMS 2: Risk and Hazard Management	Yes	In Part	5	No evidence was available to support ACM's hazard identification and risk assessment processes are audited and comply with OHSAS 18001 and/or AS 4801.
SMS 3: Emergency Management Plan	In Part	In Part	2	A risk assessment covering potential hazards which may trigger the mine's emergency management plan has not been undertaken.

Table 3: SMS Element Findings Summary

5. RECOMMENDATIONS and CONCLUSIONS

5.1 Strategic or Regulatory Intervention

When viewed against each of the objectives of the Verification process in Section 2, the inspection team concluded:

Objective	Findings
Identify areas where strategic intervention is required (subject to oversight visits and possible compliance and enforcement actions).	<ul style="list-style-type: none"> Review GCMP inspection and monitoring requirements in line with verification recommendations. Review WMP risk area definitions and monitoring requirements in line with verification recommendations. Review ACM's contractor management system with regard to site ownership and availability of contract documentation to project managers. Review ACM's risk assessment activities with regard to hazards which will potentially trigger the EMP. Monitor ACM's collaborative progress with the local CFA in reviewing the <i>Alcoa Anglesea Pre-Incident Plan</i> and the implementation of controls to prevent

	and/or mitigate mine fire.
Ensure regulatory breaches or non-conformances detected during the inspection are appropriately dealt with.	No compliance action was taken during the onsite verification.
Assess whether or not a mine operator is providing a satisfactory level of Safety Management.	<p>The evidence from this Verification supports the conclusion that ACM is providing a satisfactory level of safety management to some but not all of the elements verified.</p> <p>An operator with a comprehensive safety management system should be able to provide clear documentary evidence, or similar, to show that aspects of Control Measures 1, 2 and 5 are well supported by the operator's SMS. Unfortunately this evidence was not entirely available during this Verification.</p> <p>SMS elements, Contractor Management and Emergency Plan, were found to be providing incomplete performance levels due to limited access to contract documentation at the ACM and no apparent risk assessment of the hazards associated with EMP scenarios.</p> <p>Satisfactory management of these SMS elements will be achieved through the recommendations provided within sections 4.2 and 5.2.</p>

5.2 Recommendations

A number of recommendations have been made based on the findings of this verification. These are listed in abbreviated form here. The reader should refer to the detailed findings in Attachment A for further detail and recommendation reasoning.

Provide feedback and recommendations to the mine operator so that they can improve the level of safety management at the facility.	<p>Control Measure 1: GCMP – Geotechnical Monitoring</p> <ol style="list-style-type: none"> 1. Review current piezometer locations to ensure their effectiveness in predicting ground water levels within active and non-active areas of the mine (i.e. where mine infrastructure and employees are likely to be affected). 2. Review the periodic recording and reporting requirements for piezometers within the GCMP to ensure it reflects current operational practices. 3. As per the GCMP, report rain gauge log data to the relevant mining consultant on a monthly basis, and/or review this requirement within the GCMP to ensure its continued effectiveness. 4. Review current inclinometer reading locations to ensure they provide effective results and review reporting requirements within the GCMP to ensure they reflect contemporary operational practices. <p>Control Measure 2: GCMP – Geotechnical Inspections</p> <ol style="list-style-type: none"> 5. Ensure mine inspection checklists are accurately completed by operators and the identified hazards reported through ACM's hazard management system. <p>Control Measure 5: WMP – Monitoring and Maintenance</p> <ol style="list-style-type: none"> 6. Include the detailed definitions of the key risk areas within the WMP. 7. Seek clarification from Mining One to determine the required inspection frequency of key risk areas defined within the WMP. 8. Include definitive measures for determining the status key risk areas defined within the WMP.
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	<p>Control Measure 6: WMP – Risk Management</p> <p>9. Conduct a risk assessment of the key risks identified during biannual site inspections (as per the Water Management Plan) and implement relevant controls into the outstanding geotechnical action list.</p> <p>SMS Element 1: Contractor Management</p> <p>10. Ensure that contractors are managed through a site based contract management system which is accessible to employees.</p> <p>11. Implement a process which ensures relevant details collected by Alcoa's procurement department are transferred to the responsible contract manager located at the Anglesea mine site.</p> <p>SMS Element 2: Risk and Hazard Management</p> <p>12. Consider auditing ACM's hazard identification and risk assessment processes to ensure they comply with OHS-AS18001 and/or AS 4801. This is a requirement of Alcoa's Victorian EHS management system.</p> <p>SMS Element 3: Emergency Plan</p> <p>13. Conduct a documented Risk Assessment / Hazard Identification process in relation to the events which would trigger the EMP. An updated version of this document is required.</p> <p>14. Ensure debriefs are conducted after each EMP training drill.</p> <p>15. The Alcoa Anglesea Pre-Incident Plan, developed by the local area CFA, outlines the level of response required for different fire scenarios. The most recent version of this document available is January 2011. It is recommended this be reviewed to reflect contemporary mine practices, the local mine environment and ensure all relevant controls are implemented or made readily available, to prevent and/or mitigate mine fire</p>
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5.3 Conclusions

The inspection identified areas where ACM were deemed deficient in the implementation and functionality of the control measures and SMS elements verified. Specific recommendations identified post the Verification are found in sections 4.1, 4.2 and 5.2, and are discussed further in Attachment A of this report.

Through record observation and discussion with employees, geotechnical monitoring and inspection requirements are to be reviewed to ensure GCMP standards are contemporary and reflective of operational needs.

ACM should review the importance of mine inspection checklists with employees and emphasise the need for providing detail when reporting hazards.

ACM's contractor management system is located offsite at Point Henry. Consequently project managers and other employees located at ACM don't have ready access to relevant information for the effective management of contractors.

No evidence is readily available to suggest ACM have undertaken a risk assessment process of the hazards which can trigger the EMP. It is recommended this be undertaken, and where possible collaboratively with the CFA, to identify all relevant controls to prevent and/or mitigate risks associated with emergency management, especially mine fire.

ACM's actions taken to address the specific recommendations made within this report will be carried forward for future progress evaluation during oversight visits by VWA.

6. ATTACHMENT A - Detailed Inspection Findings

6.1 Control Measure 1: GCMP – Geotechnical Monitoring

MIMH Control	Key areas of interest / Inspection Guidance														
<p>CMI 1: GCMP – Geotechnical Monitoring</p>	<p>Reference Material: V1 – Alcoa - Anglesea Mine - Ground Control Management Plan - Revision 4, August 2014</p> <p>Purpose of Control: To routinely monitor active and non-active mining areas to ensure personnel are not exposed to geotechnical hazards and unsafe levels of risk.</p> <p>Performance Standard: In accordance with V1, ACM's monitoring requirements are as follows:</p> <div data-bbox="316 813 1474 1451" style="border: 1px solid black; padding: 5px;"> <p>Table 4.1 Monitoring Frequency</p> <table border="1" data-bbox="488 864 1302 1256"> <thead> <tr> <th>Slope Monitoring Instrument</th> <th>Monitoring Frequency</th> </tr> </thead> <tbody> <tr> <td>Survey Prisms</td> <td>Fortnightly *</td> </tr> <tr> <td>GPS Pins</td> <td>Every two months ^o</td> </tr> <tr> <td>Inclinometers</td> <td>Quarterly or six monthly</td> </tr> <tr> <td>Piezometers</td> <td>Monthly</td> </tr> <tr> <td>Rain Gauge</td> <td>Daily</td> </tr> <tr> <td>Visual Inspections</td> <td>Daily #</td> </tr> </tbody> </table> <p>* On occasion over the years frequencies have been at weekly and 3-times / week. ^o Have also been at quarterly frequencies. # This represents the daily Alcoa (mine operations) workplace inspection process. Other frequencies also take place for more detailed geotechnical inspections, including the formal three-monthly geotechnical inspections and reporting.</p> </div> <p>Performance Information:</p> <p>Implemented:</p> <ol style="list-style-type: none"> 1. Verify survey prisms are monitored in accordance with the above frequency requirements. 2. Verify GPS monitoring pins are monitored in accordance with the above frequency requirements. 3. Verify piezometers are monitored in accordance with the above frequency requirements. 4. Verify rain gauges are monitored in accordance with the above frequency requirements. 5. Verify inclinometers are monitored in accordance with the above frequency requirements. <p>Functional</p>	Slope Monitoring Instrument	Monitoring Frequency	Survey Prisms	Fortnightly *	GPS Pins	Every two months ^o	Inclinometers	Quarterly or six monthly	Piezometers	Monthly	Rain Gauge	Daily	Visual Inspections	Daily #
Slope Monitoring Instrument	Monitoring Frequency														
Survey Prisms	Fortnightly *														
GPS Pins	Every two months ^o														
Inclinometers	Quarterly or six monthly														
Piezometers	Monthly														
Rain Gauge	Daily														
Visual Inspections	Daily #														

1. Verify survey prism data is processed, reviewed and analyzed to detect any irregular ground movement; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.4.
2. Verify GPS monitoring pin data is processed, reviewed and analyzed to detect any irregular ground movement; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.5.
3. Verify piezometer data is processed, reviewed and analyzed; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.6.
4. Verify rain gauge data is processed, reviewed and analyzed; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.7.
5. Verify inclinometer data is processed, reviewed and analyzed to detect any irregular ground movement; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.8.
6. Verify ACM's Trigger Action Response Plan (TARP) referenced within section 4.1 of the GCMP, is implemented and includes systematic triggers to ensure monitoring frequencies are complied with (i.e. frequencies stated within the above table).

Inspector Comments (Initial observations and enquiries)

Findings (Fact & Opinion)

Implemented:

1. **Verify survey prisms are monitored in accordance with the above frequency requirements.**
Yes. Location of prisms noted on site. Fortnightly monitoring is undertaken as per Ground Control Plan (V1). Observed in Employers records for last 6 months (V9).
2. **Verify GPS monitoring pins are monitored in accordance with the above frequency requirements.**
Yes. Enquiries held with both Mining Manager and the Mining Engineer. Data is being provided by Contract Surveyors and provided to Mine Management every 2 months (V12). Data further reviewed by Mining One (V14).
3. **Verify piezometers are monitored in accordance with the above frequency requirements.**
In Part. Last readings taken in August 2014. None prior to this date. Last undertaken on a monthly basis in Jan 2011.

Management reported that water table levels have been static for some years and that current piezometer readings are showing no anomalies based on current rainfall patterns. If rainfall patterns were shown to significantly increase within the Anglesea mine catchment then periodic piezometer readings are to recommence using the current piezometer locations (V12, V13 and V1).
4. **Verify rain gauges are monitored in accordance with the above frequency requirements.**
Yes. Rainfall events are being monitored and recorded daily as required by GCMP. Reviewed Piezo no 3 Hole 762 (V1, V15 and V13).
5. **Verify inclinometers are monitored in accordance with the above frequency requirements.**
Yes. Reviewed data on AN002D Inclinometer Log. Last Monitoring period 8-1-14 to 15-8-14. Last logs for both six monthly and 3 monthly V7. Anglesea Coal Mine – Site Geotechnical Log, Anglesea Coal

Mine, 24th Aug.

Functional:

1. **Verify survey prism data is processed, reviewed and analyzed to detect any irregular ground movement; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.4.**

Yes. Enquiries held with both Mining Manager and the Mining Engineer. Data is being analyzed by Management. Verified 2 examples for both South Wall and Haul Road coal block wedge (V9, V10 and V11).

2. **Verify GPS monitoring pin data is processed, reviewed and analyzed to detect any irregular ground movement; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.5.**

Yes. Data further reviewed by Mining One (Mining Consultants) (V1). Reporting and response Emails confirm the same (V14).

3. **Verify piezometer data is processed, reviewed and analyzed; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.6.**

No, based only on historical data pre 2011. No further review has been undertaken by Mine management since this date based on water levels continually lowering despite frequent rainfall events (V13).

4. **Verify inclinometer data is processed, reviewed and analyzed to detect any irregular ground movement; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.8.**

No. Daily information is collected and logged by Mine Management but not reported at all to Mining Consultants as required on a monthly basis. (V1) (V13).

5. **Verify inclinometer data is processed, reviewed and analyzed to detect any irregular ground movement; and confirm such findings are reported periodically back to Mine Management. This is a requirement of the GCMP, section 4.2.8.**

In Part. Data is analyzed by Mining Engineer and Mining Consultant. Recent reports indicate inclinometer locations have not assisted in noting any ground movement and they are being used by the Mine to assist in ground movement risk analysis.

6. **Verify ACM's Trigger Action Response Plan (TARP) referenced within section 4.1 of the GCMP, is implemented and includes systematic triggers to ensure monitoring frequencies are complied with (i.e. frequencies stated within the above table).**

Yes. Management relies on the TARP system but it has not triggered any actions (i.e. No new log produced) as ground conditions have been uneventful for last 12 months (V16 and V34).

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Recommendations

Recommendations:

1. Review current piezometer locations to ensure their effectiveness in predicting ground water levels within active and non-active areas of the mine (i.e. where mine infrastructure and employees are likely to be affected).

2. Review the periodic recording and reporting requirements for piezometers within the GCMP to ensure it reflects current operational practices.
3. As per the GCMP, report rain gauge log data to the relevant mining consultant on a monthly basis, and/or review this requirement within the GCMP to ensure its continued effectiveness.
4. Review current inclinometer reading locations to ensure they provide effective results and review reporting requirements within the GCMP to ensure they reflect contemporary operational practices.

Comments from the Operator on the Findings and Required Actions

6.2 Control Measure 2: GCMP – Geotechnical Inspections

MMH Control	Key areas of interest / Inspection Guidance														
<p>CM 2: GCMP – Geotechnical Inspections</p>	<p>Reference Material:</p> <p>V1 – Alcoa - Anglesea Mine - Ground Control Management Plan - Revision 4, August 2014;</p> <p>V2 - ANG Mine Shift Checklist, ACM, 23rd June 2014.</p> <p>Purpose of Control:</p> <p>To inspect active and non-active mining areas to ensure personnel are not exposed to geotechnical hazards and unsafe levels of risk.</p> <p>Performance Standard:</p> <p>In accordance with V1, ACM's monitoring requirements are as follows:</p> <div data-bbox="336 786 1442 1391" style="border: 1px solid black; padding: 5px;"> <p>Table 4.1 Monitoring Frequency</p> <table border="1" data-bbox="502 831 1275 1205"> <thead> <tr> <th>Slope Monitoring Instrument</th> <th>Monitoring Frequency</th> </tr> </thead> <tbody> <tr> <td>Survey Prisms</td> <td>Fortnightly *</td> </tr> <tr> <td>GPS Pins</td> <td>Every two months ^o</td> </tr> <tr> <td>Inclinometers</td> <td>Quarterly or six monthly</td> </tr> <tr> <td>Piezometers</td> <td>Monthly</td> </tr> <tr> <td>Rain Gauge</td> <td>Daily</td> </tr> <tr> <td>Visual Inspections</td> <td>Daily #</td> </tr> </tbody> </table> <p>* On occasion over the years frequencies have been at weekly and 3-times / week.</p> <p>^o Have also been at quarterly frequencies.</p> <p># This represents the daily Alcoa (mine operations) workplace inspection process. Other frequencies also take place for more detailed geotechnical inspections, including the formal three-monthly geotechnical inspections and reporting.</p> </div> <p>Performance Information:</p> <p>Implemented:</p> <ol style="list-style-type: none"> As per the above table from ACM's GCMP, confirm visual inspection frequency requirements are being met (i.e. daily)? Verify operators are utilising the ANG Mine Shift Checklist (refer to V2) during such inspections. Verify Mine Supervisors are visually inspecting berms and batters at least fortnightly, and earlier if significant rainfall has been experienced. In accordance with section 4.2.9 of the GCMP, such inspections are to be documented within a 'Mine Inspection Log'. Verify ACM's Trigger Action Response Plan (TARP) includes systematic triggers to ensure geotechnical irregularities or concerns detected during inspections are actioned accordingly. <p>Functional:</p> <ol style="list-style-type: none"> Verify Mine Supervisors are visually inspecting berms and batters at least fortnightly, and earlier if significant rainfall has been experienced. In accordance with section 	Slope Monitoring Instrument	Monitoring Frequency	Survey Prisms	Fortnightly *	GPS Pins	Every two months ^o	Inclinometers	Quarterly or six monthly	Piezometers	Monthly	Rain Gauge	Daily	Visual Inspections	Daily #
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	<p>4.2.9 of the GCMP, such inspections are to be documented within a 'Mine Inspection Log'.</p> <p>2. Evidence any irregularities or geotechnical hazards detected during the above visual inspections (i.e. questions 1 and 2) are reported to the Mine Manager.</p> <p>3. Verify the Mine Manager and Mining Engineer are conducting fortnightly berm and batter inspections; and that such inspections are documented. This is a requirement of section 4.2.9 of the GCMP.</p>
Inspector Comments (Initial observations and enquiries)	
Findings (Fact & Opinion)	
<p>Implemented and Functional:</p> <p>1. As per the above table from ACM's GCMP, confirm visual inspection frequency requirements are being met (i.e. daily)? Verify operators are utilising the ANG Mine Shift Checklist (refer to V2) during such inspections.</p> <p>Yes. Noted that daily inspections are occurring by the Mining Manager, Mining Engineer and shift Operators and are being recorded on Mine Inspection Log Sheets (V1, V17 and V20).</p> <p>Per Mining Engineer - Random review dated 27/6/14, 4/8/14 and 18/8/14.</p> <p>Per 4 shift operators - Random review dated 15/8/14 on coal and 15/8/14, 14/7/14, 22/7/14 and 18/7/14 on overburden. Forms not being completed with comments on highlighted risks on the 22/7/14.</p> <p>2. Verify that ACM's geotechnical consultant visually inspects and assesses ground conditions on a six monthly basis. This is a requirement of section 4.2.9 of the GCMP.</p> <p>Yes. Geotechnical Consultant is currently inspecting and assessing ground conditions. Last report dated April 2014 by Mining One (V6, V8 and V9). ANG Mine Shift Checklist, Anglesea Coal Mine, 18th Aug 2014 (V19). ANG Mine Shift Checklist, Anglesea Coal Mine, 4th Aug 2014 (V20).</p> <p>3. Verify ACM's Trigger Action Response Plan (TARP) includes systematic triggers to ensure geotechnical irregularities or concerns detected during inspections are actioned accordingly.</p> <p>Yes. Management are relying on the TARP system. No geotechnical irregularities were reported or recorded and therefore has not triggered any actions. Ground conditions have been reported as uneventful for last 12 months (V16 and V34).</p> <p>Functional:</p> <p>1. Verify Mine Supervisors are visually inspecting berms and batters at least fortnightly, and earlier if significant rainfall has been experienced. In accordance with section 4.2.9 of the GCMP, such inspections are to be documented within a 'Mine Inspection Log'.</p> <p>In Part. Both the Mining Manager and the Mining Engineer are reviewing fortnightly mine inspection log sheets (V1). Rainfall events are not mentioned by those supervisors completing the form.</p> <p>2. Evidence any irregularities or geotechnical hazards detected during the above visual inspections (i.e. questions 1 and 2) are reported to the Mine Manager.</p> <p>Yes. Advised by Management any irregularities arising from mine inspection log sheet are verbally reported and acted upon. No issues allegedly reported in last 3 months. The current mine log inspection sheet has sufficient area for recording and prompting actions with follow up or responses (V17).</p> <p>3. Verify the Mine Manager and Mining Engineer are conducting fortnightly berm and batter</p>	

inspections; and that such inspections are documented. This is a requirement of section 4.2.9 of the GCMP.

Yes. Both the Mining Manager and the Mining Engineer are reviewing and recording fortnightly mine inspection log sheets (V1 and V16) and this includes berm and batter observations (V7 and V17).

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Recommendations

Recommendations:

1. Ensure mine inspection checklists are accurately completed by operators and the identified hazards reported through ACM's hazard management system.

Comments from the Operator on the Findings and Required Actions

6.3 Control Measure 3: GCMP – Geotechnical Risk Register

MMH Control	Key areas of interest / Inspection Guidance
CM 3: GCMP - Geotechnical Risk Register	<p>Reference Material:</p> <p>V1 – Alcoa - Anglesea Mine - Ground Control Management Plan - Revision 4, August 2014;</p> <p>V3 - Anglesea Coal Mine – Site Geotechnical Log, ACM, Not Dated.</p> <p>Purpose of Control:</p> <p>To provide effective identification of geotechnical hazards and their subsequent management to minimise the potential for such hazards to pose a risk to employees so far as reasonably practicable.</p> <p>Performance Information:</p> <p>Implemented:</p> <ol style="list-style-type: none"> As required by section 5.3 GCMP, verify that ACM's geotechnical log (or geotechnical risk register V3) is contemporary and contains all geotechnical hazards identified across site. <p>Functional:</p> <ol style="list-style-type: none"> Verify controls included within ACM's geotechnical log (i.e. required actions and outstanding actions in V3) are progress monitored to ensure implementation and continued effectiveness.
Inspector Comments (Initial observations and enquiries)	
Findings (Fact & Opinion)	
<p>Implemented:</p> <ol style="list-style-type: none"> As required by section 5.3 GCMP, verify that ACM's geotechnical log (or geotechnical risk register V3) is contemporary and contains all geotechnical hazards identified across site. <p>Yes. The most recent mine review dated 4/8/14 and currently records all known geotechnical risks (see V33, V34 and V16).</p> <p>Functional:</p> <ol style="list-style-type: none"> Verify controls included within ACM's geotechnical log (i.e. required actions and outstanding actions in V3) are progress monitored to ensure implementation and continued effectiveness. <p>Yes. Review of four mine areas indicates the following:</p> <ul style="list-style-type: none"> South Wall (Erosion of Benches) - Awaiting drier weather conditions to rebuild and re-drain. Coal Mine area west - Weather monitoring occurring action being undertaken. West Wall (Erosion) - Backfilling and Berms along boundary awaiting drier weather. Mine Sump water levels - No required actions as advised from geotechnical consultant on the 4/8/14. <p>Review of the above indicates all of the above are actioned and monitored as per set timelines (see</p>	

V6, V7 and V8).
Status (Yes/In Part/No - include explanation)
Implemented: Yes Functional: Yes
Recommendations
Recommendations: 1. Nil.
Comments from the Operator on the Findings and Required Actions

6.4 Control Measure 4: GCMP - Auditing

MMH Control	Key areas of interest / Inspection Guidance
<p>CM 4: GCMP - Auditing</p>	<p>Reference Material: V1 – Alcoa - Anglesea Mine - Ground Control Management Plan - Revision 4, August 2014; V3 - Anglesea Coal Mine – Site Geotechnical Log, ACM, Not Dated.</p> <p>Purpose of Control: To ensure the continual integrity of geotechnical process and practices, and minimise the potential for geotechnical hazards and risk posed to employees.</p> <p>Performance Standard: In accordance with V1, ACM's external auditing requirements are summarised as follows:</p> <div style="border: 1px solid black; padding: 5px;"> <p>8 AUDITING</p> <p>Periodic audits of geotechnical hazards and hazard control processes are carried out at regular intervals by an external specialist. Items that must be addressed in each audit are:</p> <ul style="list-style-type: none"> • Overall site geotechnical conditions and geotechnical hazard management; • Review of geotechnical ground control management; • Data review and monitoring review; • Stability and soundness of geotechnical geometry; • Implementation of the GCMP; • Compliance with this GCMP; • The effectiveness and validity of this GCMP; and • Responsibilities and accountabilities are being met. </div> <p>Performance Information:</p> <p>Implemented:</p> <ol style="list-style-type: none"> 1. Evidence ACM engages external specialists to carry out audits in accordance with the above criteria. If the opportunity has not yet arisen for an audit (i.e. twelve months has not yet lapsed) is there evidence to indicate an audit has been scheduled? <p>Functional:</p> <ol style="list-style-type: none"> 1. Evidence external geotechnical audits have been carried out on a three monthly basis by ACM's geotechnical consultant. Evidence will include site visits undertaken by the consultant which will be supported by comprehensive reports.
<p>Inspector Comments (Initial observations and enquiries)</p>	
<p>Enquiries with site management and review of onsite documentation.</p>	
<p>Findings (Fact & Opinion)</p>	
<p>Implemented:</p>	

1. Evidence ACM engages external specialists to carry out audits in accordance with the above criteria. If the opportunity has not yet arisen for an audit (i.e. twelve months has not yet lapsed) is there evidence to indicate an audit has been scheduled?

Yes. Review of Table 8 within the GCMP (V1) indicates management has been providing data quarterly to the Geotechnical consultants. Management advised that a report has been undertaken by its external consultant in July 2014 but that report has not been made available to the Mine at the time of inspection (V6, V7 and V8).

Functional:

1. Evidence external geotechnical audits have been carried out on a three monthly basis by ACM's geotechnical consultant. Evidence will include site visits undertaken by the consultant which will be supported by comprehensive reports.

Yes. Upon reviewing external reports which are provided by Mining One it was evident ACM's geotechnical inspection and review processes are audited as per section 8 of the GCMP.

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: Yes

Recommendations

Recommendations:

1. Nil.

Comments from the Operator on the Findings and Required Actions

6.5 Control Measure 5: Water Management Plan – Monitoring and Maintenance

MMH Control	Key areas of Interest / Inspection Guidance
CM 5: WMP – Monitoring and Maintenance	<p>Reference Material: V4 – Anglesea Mine Water Management Plan, ACM, 4th September, 2014;</p> <p>Purpose of Control: To monitor and assess water volumes and flow which may negatively impact ground stability within and adjacent to mining areas.</p> <p>Performance Information:</p> <p>Implemented:</p> <ol style="list-style-type: none"> 1. Verify quarterly inspections of the key risk areas referred to within section 7.1 of the Water Management Plan (WMP) are undertaken by a geotechnical expert. <p>Functional:</p> <ol style="list-style-type: none"> 1. Verify weekly inspections of the key risk areas referred to within section 7.1 of the Water Management Plan (WMP) are undertaken weekly or more often where required. 2. Furthermore verify the report generated by a geotechnical expert identifies any gaps with implemented controls and provides direction for remedial action.
Inspector Comments (Initial observations and enquiries)	
<p>The Anglesea Mine Water Management Plan states that Key Risk Areas are to be monitored yet the specific key risk areas are not identified in the document.</p>	
Findings (Fact & Opinion)	
<p>Implemented and Functional:</p> <ol style="list-style-type: none"> 1. Verify quarterly inspections of the key risk areas referred to within section 7.1 of the Water Management Plan (WMP) are undertaken by a geotechnical expert <p>Yes. Site inspections are carried out by Mining One on a quarterly basis, the last inspection was conducted on August 7 2014 but at the time of this verification the report had not yet been received.</p> <p>The most recent report was based on a visit in April 2014. (v8)</p> <p>The visit was conducted by Mr Ian Hulls, Geotechnical Services Manager, Mining One and reviewed by Mr David Lucas, Principal Geotechnical Engineer, Mining One.</p> <p>Functional:</p> <ol style="list-style-type: none"> 1. Verify weekly inspections of the key risk areas referred to within section 7.1 of the Water Management Plan (WMP) are undertaken weekly or more often where required. <p>In Part. The Anglesea Mine Water Management Plan (section 7.1) states that inspections will be conducted weekly. This requirement is not being met as inspections are being undertaken on a fortnightly basis. See documents (v19, v20).</p> <p>The key risk areas have been determined by a combination of local knowledge and quarterly geotech inspections, these key areas are identified on a map (Geotechnical Hazard Plan); this map forms a component of the ANG Mine Shift Checklist. If the Anglesea Mine Water Management Plan is to continue being used as the site standard then a section outlining what the key risk areas are needs to</p>	

be included. This should include any conditions which would trigger a response to be outlined e.g. level is above 1m the area needs to be pumped out.

Some of the comments relating to the current status of a key risk area state that the level is OK. What does OK mean?

2. Furthermore verify the report generated by a geotechnical expert identifies any gaps with implemented controls and provides direction for remedial action.

Yes. The visit in April 2014 which was conducted by Mr Ian Hulls, Geotechnical Services Manager, Mining One includes an outstanding Geotechnical action list. (this list includes any water management risks)

This list has the action required and the person responsible for the action and a completion date.

The areas identified have been added to the ANG Mine Shift Checklist which is inspected fortnightly.

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Recommendations

Recommendations:

1. Include the detailed definitions of the key risk areas within the WMP.
2. Seek clarification from Mining One to determine the required inspection frequency of key risk areas defined within the WMP.
3. Include definitive measures for determining the status key risk areas defined within the WMP.

Comments from the Operator on the Findings and Required Actions

6.6 Control Measure 6: Water Management Plan - Risk Management

MMH Control	Key areas of interest / Inspection Guidance
CM 6: WMP – Risk Management	<p>Reference Material: V4 – Anglesea Mine Water Management Plan, ACM, 4th September, 2014;</p> <p>Purpose of Control: To identify any hazards associated with water management undertake risk assessment accordingly.</p> <p>Performance Information: Functional: 1. Verify a register has been implemented and maintained to capture any of the hazards identified above.</p> <p>Implemented: 1. Verify a site inspection is undertaken biannually to ensure the following:</p> <ul style="list-style-type: none"> • Site compliance with the WMP in terms of water movement, monitoring and maintenance; • Identification of water related hazards; • Risk assessment of the identified hazards and implementing controls; and • Progress monitoring of previously identified hazards and the effectiveness of associated controls.
Inspector Comments (Initial observations and enquiries)	
Findings (Fact & Opinion)	
<p>Implemented:</p> <p>1. Verify a register has been implemented and maintained to capture any of the hazards identified above.</p> <p>Yes. The most recent inspection which was conducted in April 2014 by Mr Ian Hulls, Geotechnical Services Manager, Mining One includes an outstanding Geotechnical action list (this list includes any water management risks).</p> <p>This list has the action required and the person responsible for the action and a completion date. The areas identified have been added to the ANG Mine Shift Checklist which is inspected fortnightly.</p> <p>Functional:</p> <p>1. Verify a site inspection is undertaken biannually to ensure the following:</p> <ul style="list-style-type: none"> • Site compliance with the WMP in terms of water movement, monitoring and maintenance; • Identification of water related hazards; • Risk assessment of the identified hazards and implementing controls; and • Progress monitoring of previously identified hazards and the effectiveness of associated 	

controls.

In Part. Inspections are completed more frequently than the Anglesea Mine Water Management Plan (Section 7.3) states.

Site inspections are conducted quarterly.

Hazards are identified; however evidence of a risk assessment on any of the findings was not available at the time of this verification.

Information gathered is included in reports and an action plan has been developed.

Status (Yes/In Part/No - include explanation)

Implemented: Yes

Functional: In Part

Recommendations

Recommendations:

1. Conduct a risk assessment of the key risks identified during biannual site inspections (as per the WMP) and implement the relevant controls into the outstanding geotechnical action list.

Comments from the Operator on the Findings and Required Actions

6.7 SMS Element 1: Contractor Management

MMH Control	Key areas of interest / Inspection Guidance
SMS 1: Contractor Management	<p>Reference Material: V5 - VIC MANAGEMENT SYSTEM OVERVIEW, Alcoa Business Systems, 27 Sep 2012;</p> <p>Purpose: To manage contractor activities on site to ensure contractors activities are conducted in a safe manner.</p> <p>Performance: Implemented:</p> <ol style="list-style-type: none"> 1. A Contractor Management System is available for use and includes procedures for: <ul style="list-style-type: none"> • Contractor selection and approval including ACM specific OH&S requirements; • Contractor agreements; • Contractor inductions; • Contract performance monitoring; and • The maintenance of Contractor documentation/records. <p>Functional:</p> <ol style="list-style-type: none"> 1. Contractor selection and approval records are maintained current. 2. Induction records are maintained current. 3. Absence of indication of problems such as un-inducted or un-approved contractors on site.
Inspector Comments (Initial observations and enquiries)	
<p>The current contractor management process is administered from Point Henry, this will change as operations move to Anglesea.</p> <p>For the purpose of a random sample of contractor management, <i>Snakes and Ladders</i> (contract environmental management) were used as an example.</p>	
Findings (Fact & Opinion)	
<p>Implemented:</p> <ol style="list-style-type: none"> 1. A Contractor Management System is available for use and includes procedures for: <ul style="list-style-type: none"> - Contractor selection and approval including ACM specific OH&S requirements; - Contractor agreements; - Contractor inductions; - Contract performance monitoring; and - The maintenance of Contractor documentation/records. 	

No. A contractor services management system is in use at Alcoa Anglesea (V35 Web page print out).
The system is mainly used as a pre-qualification tool which is administered by the procurement department.

At the time of this verification evidence of the use of a contractor management system for the ongoing management of the contractor used as a sample could not be provided.

Functional:

1. Contractor selection and approval records are maintained current.

In Part. Contractors are approved by the procurement department before they are permitted to work on site. Records of this process could not be provided. The contractor is not in the system until the criteria of this process are met.

Safe Work Method Statements were produced by the contractor upon request, however the Alcoa Responsible Person (ARP) did not have a copy of the documents, the ARP completed a Work Planning Form with the contractor prior to work being undertaken.

2. Induction records are maintained current.

Yes. Each member of the sample contractor has a current induction which has been undertaken by the Alcoa Responsible Person.

3. Absence of indication of problems such as un-inducted or un-approved contractors on site.

Yes. Since the introduction of the Contractor Services Management System this has not been identified as a problem.

Status (Yes/In Part/No - include explanation)

Implemented: In Part

Functional: In Part

Recommendations

Recommendations:

1. Ensure that contractors are managed through a locally based system which is made accessible to employees located at the Anglesea mine site.
2. Implement a process which ensures relevant details collected by Alcoa's procurement department are transferred to the responsible contract manager located at the Anglesea mine site.

Comments from the Operator on the Findings and Required Actions

6.8 SMS Element 2: Risk and Hazard Management

SMS Element	Key areas of interest / Inspection Guidance
SMS 2: Risk and Hazard Management	<p>Reference Material: V5 - VIC MANAGEMENT SYSTEM OVERVIEW, Alcoa Business Systems, 27 Sep 2012;</p> <p>Purpose: As per OHS Regulations 5.3.7, 5.3.8, 5.3.9, 5.3.21, 5.3.22 and 5.3.23.</p> <p>Performance Information:</p> <p>Implemented:</p> <ol style="list-style-type: none"> 1. The operator (ACM) so far as reasonably practicable has identified all mining hazards; and assessed the associated risks to health and safety? 2. Evidence the hierarchy of controls, as per OHS regulation 5.3.8, has been used to control the above risk so far as reasonably practicable? 3. Evidence the operator (ACM) has reviewed and, if necessary, revised the identification of mining hazards, the assessment of risks to health or safety associated with mining hazards, and the risk control measures identified? 4. Evidence the review referred to in question 3, has been conducted relative to the following: <ul style="list-style-type: none"> - before any mine modification has been made; or - after any incident involving a mining hazard; or - after receiving a request from the health and safety representative; or - in any event at least once every 3 years. <p>Functional:</p> <ol style="list-style-type: none"> 1. Evidence the ACM process for undertaking risk assessments is being followed and completed. Gained additional evidence to that assessed within Control Measure 6 questioning (i.e. Water Management). 2. Evidence ACM undertakes hazard identification and risk assessment in accordance with OHSAS 18001 and/or AS 4801. This is a requirement of ACM's Alcoa EHS Management System Objectives (V5). 3. Evidence all employees, including contractors and visitors, are informed through the ACM induction process of site hazards/risks and their subsequent management.
Inspector Comments (Initial observations and enquiries)	
Enquiries held with Mine Management and review of documentation.	
Findings (Fact & Opinion)	
<p>Implemented:</p> <ol style="list-style-type: none"> 1. The operator (ACM) so far as reasonably practicable has identified all mining hazards; and assessed the associated risks to health and safety? 	

Yes. Mine management has updated its Electronic mining risk register (Semi-Quantitative risk assessment document process developed by Quest - Revision A dated May 2003). The Mine Operators Electronic Version review indicates that the last review provided additional comments in August 2014.

2. Evidence the hierarchy of controls, as per OHS regulation 5.3.8, has been used to control the above risk so far as reasonably practicable?

In Part. Whilst the number of risk controls are indicating best practice approach they are not ranked as within the required Hierarchy of Control (V34) as per Alcoa VIC System Procedure-Aspects, Risks and Impacts.

3. Evidence the operator (ACM) has reviewed and, if necessary, revised the identification of mining hazards, the assessment of risks to health or safety associated with mining hazards, and the risk control measures identified?

Yes. Mine management has updated its mining risk register (Semi-Quantitative risk assessment document process developed by Quest -Revision A dated May 2003). The Mine Operators Electronic Version review indicates that the last review provides additional comments in August 2014.

4. Evidence the review referred to in question 3, has been conducted relative to the following:

- before any mine modification has been made; or
- after any incident involving a mining hazard; or
- after receiving a request from the health and safety representative; or
- in any event at least once every 3 years.

Yes. The current management review indicates that compliance is occurring for any event as to trigger a mining hazard risk review. However it's not indicating the same in the Semi-Quantitative risk assessment document process developed by Quest -Revision A dated May 2003 (i.e. Undated amendments not tracked).

Functional:

1. Evidence the ACM process for undertaking risk assessments is being followed and completed

Yes. The Operator of the mine is using the Semi-Quantitative risk assessment document process as outlined by Quest -Revision A dated May 2003.

2. Evidence ACM undertakes hazard identification and risk assessment in accordance with OHSAS 18001 and/or AS 4801. This is a requirement of ACM's Alcoa EHS Management System Objectives (V5).

In Part. The Vic Management System- Alcoa VIC System Procedure-Aspects, Risks and Impacts (V34) indicates that it references processes and outcomes to either OHS-AS18001 and/or AS 4801.

Management was unable to provide any evidence at the time of the verification that this is actually occurs with its onsite hazard identification and risk assessment processes.

3. Evidence all employees, including contractors and visitors, are informed through the ACM induction process of site hazards/risks and their subsequent management.

Yes. The Operator of the Mine requires all visitors to be escorted whilst on site. Any hazards and risks and controls are verbally discussed. The completion of the "Sign In" book at the front desk is also undertaken by visitors and contractors.

Refer further to SMS 1 for Contractor Management. Contractor Environmental, Health & Safety Management Plan, Alcoa Eastern Australia, 5th Nov 2013 (V18).

Status (Yes/In Part/No - include explanation)

Implemented: Yes Functional: In Part
Recommendations
Recommendations: 1. Consider auditing ACM's hazard identification and risk assessment processes to ensure they comply with OHS-AS18001 and/or AS 4801. This is a requirement of Alcoa's Victorian EHS management system.
Comments from the Operator on the Findings and Required Actions

6.9 SMS Element 3: Emergency Management Plan

SMS Element	Key areas of interest / Inspection Guidance
<p>SMS 3: Emergency Management Plan</p>	<p>Reference Material: V5 - VIC MANAGEMENT SYSTEM OVERVIEW, Alcoa Business Systems, 27 Sep 2012;</p> <p>Purpose: Provide site management with detailed information on how to respond to various emergency situations that could occur due to unwanted incidents during normal operations. That is:</p> <ul style="list-style-type: none"> • What type of incident could occur; • What specific emergency response is required; and • Any special response requirements <p>Performance: Implemented:</p> <ol style="list-style-type: none"> 1. A current version of the Emergency Management Plan and any other relevant plans or documentation, are kept on site and made available for the use of emergency services. 2. Evidence responsible people referred to in EMP are aware of and understand their responsibilities. Responsible people, irrespective of their positions or roles, can be interviewed to verify this requirement. 3. The EMP has been forwarded to or communicated with local emergency services. 4. A risk assessment has been carried out to identify the hazards likely to initiate the EMP, and the associated controls have been implemented. <p>Functional:</p> <ol style="list-style-type: none"> 1. Evidence that an emergency drill is scheduled and performed. That is; <ul style="list-style-type: none"> • A simulated exercise is held on a periodic basis to test the plans continued effectiveness. • All necessary steps are taken to arrange for Emergency Service Organisations to participate in the simulated exercise. 2. Evidence that an investigation is carried out following an emergency and the response plan is revised and amended as necessary. 3. Evidence a copy of the EMP is available to all staff and stakeholders to view. 4. Evidence the controls identified and implemented during the above risk assessment are reviewed and maintained to ensure their effectiveness (e.g. ACMs Fire Service Dam is fully charged and the identified means for distributing water across site is fully operational).
<p>Inspector Comments (Initial observations and enquiries)</p>	
<p> </p>	

Findings (Fact & Opinion)

Implemented:

- 1. A current version of the Emergency Management Plan and any other relevant plans or documentation, are kept on site and made available for the use of emergency services.**

Yes. The Current Emergency Management Plan (V21) is in draft form.

A list of hard copies is in the document (Page 52) and an electronic copy is stored on Paradigm 3 which all staff have access to.

- 2. Evidence responsible people referred to in EMP are aware of and understand their responsibilities. Responsible people, irrespective of their positions or roles, can be interviewed to verify this requirement.**

Yes. Each area has a designated warden.

The Emergency Response Team (ERT) is available to respond to an incident 24 hours a day.

The list of skills which the Emergency Response Team is trained in is provided in section 4.1 of the EMP.

(V30) is a training proposal from the training provider which outlines the training process and relevant competencies which will be achieved for all members of the ERT.

- 3. The EMP has been forwarded to or communicated with local emergency services.**

Yes. The current draft EMP has been reviewed in consultation with local emergency services.

The Alcoa Anglesea Pre Incident Plan (V29), developed by the local area CFA, outlines the level of response required for different fire scenarios, the most recent version of this document available is January 2011.

- 4. A risk assessment has been carried out to identify the hazards likely to initiate the EMP, and the associated controls have been implemented.**

No. The EMP has been developed in consultation with relevant emergency services and past history of the site.

A documented risk assessment / Hazard Identification process has not been undertaken.

Functional:

- 1. Evidence that an emergency drill is scheduled and performed. That is;**

- **A simulated exercise is held on a periodic basis to test the plans continued effectiveness.**
- **All necessary steps are taken to arrange for Emergency Service Organisations to participate in the simulated exercise.**

In Part. A mock scenario was conducted on this site on the 20th August with the Anglesea Fire Brigade, however there was no debrief after the event to capture any improvements which could be made should the event occur.

- 2. Evidence that an investigation is carried out following an emergency and the response plan is revised and amended as necessary.**

In Part. This evidence could not be provided at the time of this verification as there had not been any events which had triggered the EMP.

- 3. Evidence a copy of the EMP is available to all staff and stakeholders to view.**

Yes. A list of hard copies is in the document (Page 52) and an electronic copy is stored on Paradigm

3 which all staff have access to.

4. Evidence the controls identified and implemented during the above risk assessment are reviewed and maintained to ensure their effectiveness (e.g. ACiis Fire Service Dam is fully charged and the identified means for distributing water across site is fully operational).

No. A risk assessment has not yet been conducted.

Status (Yes/In Part/No - include explanation)

Implemented: In Part

Functional: In Part

Recommendations

Recommendations:

1. Conduct a documented Risk Assessment / Hazard Identification process in relation to the events which would trigger the EMP. An updated version of this document is required.
2. Ensure debriefs are conducted after each EMP training drill.
3. The Alcoa Anglesea Pre-Incident Plan, developed by the local area CFA, outlines the level of response required for different fire scenarios. The most recent version of this document available is January 2011. It is recommended this be reviewed to reflect contemporary mine practices and the local mine environment.

Comments from the Operator on the Findings and Required Actions

7. ATTACHMENT B – Verification Findings Tool – Information

Control Measures Findings

Implemen- ted	Function- al	Level	Description
No	No	0	Control does not exist (at all) as described by the Mine or exists but is totally ineffective
In Part		1	Key components required for the control to prevent the MMH are missing
Yes		2.	Control exists as required but is: <ul style="list-style-type: none"> • not working; • not being used.
	In Part	3.	Control exists as required and is: <ul style="list-style-type: none"> • not totally effective - achieving some performance standards at controlling the MMH; • doing the job but is not being tested; • not properly performance monitored, and/or • lacking description and/or being informally used.
	4	Control exists, is effective and is performance monitored but does not meet some of its performance standards.	
	Yes	5	Control fully implemented and fully functional.

Safety Management System Findings

Implemented	Functional	Level	Description
No	No	0	<p>The operator of the mine has not established and implemented a Safety Management System that supports implemented control measures:</p> <ul style="list-style-type: none"> ◦ The SMS element does not exist at all, and the Corporate SMS is not directly relevant to the Mine e.g. regulation 5.3.21(3)(b) , and/or ◦ Safety Assessment is not part of the SMS as required by regulation 5.3.21(3)(b) <p>Performance standards for measuring the effectiveness of the Safety Management System have not been developed</p>
In Part	No	1	<p>The Safety Management System does not provide a comprehensive and integrated management system for all aspects of control measures adopted under Part 3 because the SMS element exists but:</p> <ul style="list-style-type: none"> ◦ Key components of the SMS element required to manage the control measure are missing such as lack of maintenance, inspection or training systems, or ◦ Key components are present but are not being used to manage control measures, i.e. a process that sits outside the formal SMS system is being used to manage the control measure, or ◦ Those aspects of the SMS element which have been implemented have been demonstrated to not be functional. ◦ Performance standards for measuring the effectiveness of the Safety Management System may have been developed, but they have not been undertaken to a satisfactory level. <p>Auditing activities have not been developed or have been ineffective in identifying issues with implementation.</p>
In Part	In Part	2	<p>The Safety Management System does not provide a comprehensive and integrated management system for all aspects of control measures adopted because the SMS element exists but:</p> <ul style="list-style-type: none"> ◦ Some key components of the SMS element have not been implemented, and ◦ Those aspects of the SMS element which have been implemented have been demonstrated to functional. ◦ Performance standards for measuring the effectiveness of the Safety Management System have been developed covering those aspects of the SMS element that have been implemented and monitoring has been undertaken. <p>Auditing activities have been developed, effectiveness in identifying issues with implementation/functionality range from ineffective to fully effective.</p>

Yes	No	3	<p>The Safety Management System does not provide a comprehensive and integrated management system for all aspects of control measures adopted because:</p> <ul style="list-style-type: none"> • The SMS element and key components are all present but are not being used to manage the control measure, i.e. use of other systems not included within the Mine SMS. <p>Auditing activities have been developed, effectiveness in identifying issues with implementation/functionality range from ineffective to fully effective.</p>
Yes	In Part	4	<p>The Safety Management System does not provide a comprehensive and integrated management system for all aspects of control measures adopted because:</p> <ul style="list-style-type: none"> • Performance standards for measuring the effectiveness of the Safety Management System have not been developed. • The SMS elements and key components are present, are being used and performance standards have been developed but the performance is not being monitored in accordance to the criteria detailed within the Mine SMS. <p>Auditing activities have been developed, effectiveness in identifying issues with implementation/functionality range from ineffective to fully effective.</p>
Yes	In Part	5	<p>The Safety Management System does provide a comprehensive and integrated management system for all aspects of control measures adopted, however:</p> <ul style="list-style-type: none"> • Performance monitoring activities indicate that the SMS is not meeting its required performance standard, and • Corrective action has not been developed or implemented <p>Auditing activities have been developed but are deemed to be only partially effective in identifying issues with implementation/ functionality.</p>
Yes	Yes	6	<p>The Safety Management System does provide a comprehensive and integrated management system for all aspects of control measures adopted because SMS elements are implemented and are demonstrated to be effective by:</p> <ul style="list-style-type: none"> • Performance monitoring activities that indicate the SMS is meeting its required performance standard, or • Performance monitoring activities indicate that the SMS is meeting its required performance standard, or where monitoring indicates deficiency in performance, that corrective action(s) have been developed, and monitored for implementation and effectiveness. <p>Auditing activities have been developed and have been effective in identifying any issues related to implementation/functionality.</p>

8. ATTACHMENT C – ADDITIONAL INFORMATION

C1 Entry Reports

Entry Reports were provided to site at the end of each day of the Verification (details below).

25/08/14	V00048403747L	CW
26/08/14	V00048403748L	CW

9. ATTACHMENT D – SITE DOCUMENTS RECEIVED BY WSV

- V1.** Alcoa - Anglesea Mine - Ground Control Management Plan - Revision 4, Anglesea Coal Mine, August 2014;
- V2.** ANG Mine Shift Checklist, Anglesea Coal Mine, 23rd June 2014;
- V3.** Anglesea Coal Mine – Site Geotechnical Log, Anglesea Coal Mine, Not Dated;
- V4.** Anglesea Mine Water Management Plan, Anglesea Coal Mine, 4th September, 2014;
- V5.** VIC MANAGEMENT SYSTEM OVERVIEW, Alcoa Business Systems, 27 Sep 2012;
- V6.** Anglesea Coal Mine – Geotechnical Site Visit, Mining One, June 2013;
- V7.** Anglesea Coal Mine – Site Geotechnical Log, Anglesea Coal Mine, 24th Aug 2014;
- V8.** Anglesea Coal Mine – Geotechnical Site Visit, Mining One, April 2013;
- V9.** Numerous Emails referencing wall prism monitoring, Anglesea Coal Mine , August 2013;
- V10.** Anglesea Coal Mine Wall Prism monitoring data, Anglesea Coal Mine , August 2013;
- V11.** Numerous Emails referencing wall prism monitoring results and analysis, Anglesea Coal Mine , August 2013;
- V12.** Anglesea Coal Mine pin monitoring data, Anglesea Coal Mine , August 2013;
- V13.** Anglesea Coal Mine piezometer monitoring data, Anglesea Coal Mine , July 2014;
- V14.** Numerous Emails referencing wall GPS monitoring results and analysis, Anglesea Coal Mine , August 2013;
- V15.** South Wall – Layout & Monitoring, Mining One, 10th Oct 2013;
- V16.** Geotechnical Inspection and Monitoring Schedule, Anglesea Coal Mine., Not Dated;
- V17.** Anglesea Coal Mine – Site Geotechnical Log, Anglesea Coal Mine, 24th Aug 2014;
- V18.** Contractor Environmental, Health & Safety Management Plan, Alcoa Eastern Australia, 5th Nov 2013;
- V19.** ANG Mine Shift Checklist, Anglesea Coal Mine, 18th Aug 2014;
- V20.** ANG Mine Shift Checklist, Anglesea Coal Mine, 4th Aug 2014;
- V21.** Anglesea Power Station – Anglesea Emergency Plan, Anglesea Coal Mine, 11th Apr 2014;
- V22.** Fire Planning Meeting minutes – Alcoa Anglesea, CFA and Surf Coast Shire, Anglesea Coal Mine, 13th May 2014;
- V23.** SWI – Management of Hot Coal and Coal Fires, Anglesea Coal Mine, 27th Dec 2014;
- V24.** Work Planning Form, Anglesea Coal Mine, 30th Dec 2014;

- V25.** XXHR AWAU – Contigent Workers Training Data Extract Training History, Anglesea Coal Mine, 25th Aug 2014;
- V26.** Email referencing EMP scenarios at the Anglesea Coal Mine, Alcoa Australia, 26th August 2014;
- V27.** Details of proposed meeting to determine EMP scenarios at the Anglesea Coal Mine, Anglesea Coal Mine, Not Dated;
- V28.** CFA EMP Exercise Plan for Anglesea Coal Mine, CFA, 2nd Aug 2011;
- V29.** Alcoa Anglesea PIP, CFA, Jan 2011;
- V30.** Emergency Response Team Training Proposal, PARCOR, Sep 2013;
- V31.** Email referencing EMP reviews at the Anglesea Coal Mine, Alcoa Australia, 25th August 2014;
- V32.** Anglesea Fire Brigade – Exercise Alcoa 2011, Alcoa Australia, 20th August 2013;
- V33.** Hazard and Risk Management Policy – Victorian Operations, Alcoa Australia, 23rd Dec 2013;
- V34.** Vic System Procedure – Aspects, Risks and Impacts, Alcoa Australia, 25th Jul 2013;
- V35.** Contractor Services Management System, Alcoa World Alumina – Australia Operations, 26/08/2014