



Mine Name	Mine ID	Operator	Activity Type	Activity Date
Vulcan Mine	MI04148	Vulcan Mine Management Pty Ltd	Inspection	02/11/2021

Mine Record Entry

This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed in 1 or more conspicuous positions at the mine in a way likely to come to the attention of workers at the mine.

Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.

Site Safety & Health Reps Consulted:

Today, Mines Inspector Paul Sullivan conducted an inspection of Vulcan Mine. Attending the opening meeting were Site Senior Executive (SSE) Mr Michael Cavanagh, HST Superintendent Mr Shane Walters, Electrical Engineering Manager (EEM) / Maintenance Superintendent Mr Ben Katchel and electrician Mr Joel Curtis. Prior to conducting an inspection of the fixed plant we had a general discussion of various topics. The salient points of this meeting were:

- Mr Katchel is currently the only person authorised to undertake complex isolations
- Mr Cavanagh provided an update on the mine's first response ability and the issues identified by Mines Inspector Mark Royes. They will have completed a Level 2 Exercise by the end of the year and we discussed various scenarios that they may use.
- He also provided an overview of the mining sequence, plant and equipment used, manning and expected expansion. They have fired four blasts so far. There are four CAT 789 C haul trucks and two excavators (Hitachi 1800 & 3600) on site however only two trucks and one excavator are in operation at any one time. There are plans to purchase their own loader (Komatsu WA 900) for the ROM
- By the end of Q2 in 2022 the public road will have been relocated.
- A mobile screening plant is in operation on the Run Of Mine (ROM). There are plans to also have a mobile crushing plant in operation soon.
- Mr Curtis and Mr Katchel described the ROM lighting project in detail including the engineering design.
- There will be a further additions to the administration buildings as well as the Emergency Response Team (ERT) Shed
- The configuration of the generators supplying power to the site has been changed. Mr Katchel identified that the light loading on the original generator system would cause problems and has been altered. This was discussed in greater detail during the mine inspection.
- IAuditor is the document management system. There are several maintenance templates that have now gone "live" on the system.
- The Sorterra Dryscan plant is currently being constructed and we spoke if its construction in general terms. There was a concern with the plants fire suppression system that Mr

Katchel was addressing. He is reviewing the commissioning documentation and process. A review of my previous MRE (13/05/2021) was undertaken with the main points being:

- Mr Katchel described the three stage approach to the commissioning of the Sorterra Dryscan plant
- The "Igloo" workshop has had a third party RPEQ assessment done on the entire building.
- An excel spreadsheet system is still being used for maintenance scheduling however there is still an expectation that they will proceed to a more dedicated system. I was informed that the maintenance planning is improving
- A weather cover "carport" has been installed over the main generators.
- I had requested information on the introduction to site process and supporting documentation for the welder CIG Weldskill250. This information had not been sent through to me and Mr Katchel stated that this would be done promptly. I later received this correspondence and am reviewing accordingly.
- Mr Katchel confirmed that the earth leakage protection (RCD) for the Water Treatment Plant variable voltage variable frequency (VVVF) drives were Type B "Hager" units. They were rated to operate across all expected voltages and frequencies.

The following Safety Bulletin and Industry Information was tabled:

- Re: Open Cut Examiners - New Competency Requirements (10 September 2021):- The Chief Inspector of Coal Mines has issued this correspondence highlighting the requirement for OCEs to have a Resource and Infrastructure Industry (RII) competency (RIIENV301E) and the required Certificate of Proficiency in Mine Gases & Testing. Mr Walters explained that the training dates and scope for this training has been budgeted and will occur well before the due date. I highlighted that the maintenance, calibration and testing requirements of hand held gas monitors should be undertaken against the requirements of Australian Standard "AS/NZS 2290.3:2018 *Electrical equipment for coal mines—Introduction, inspection and maintenance. Part 3: Gas detecting and monitoring equipment*" I stated that I would send Mr Katchel the extract that I have forwarded on to other EEMs. This will be a focus during the next electrical inspection.
- Safety Bulletin 197- "*High Potential incident under reporting*" – This was discussed in general terms.

The recent control wiring failure on a lighting plant was raised and Mr Katchel described the investigation of the control circuit overheating. We discussed this in greater detail during the inspection. On Monday the 15th November I was sent the investigation report.

Accompanied by Mr Katchel and Mr Curtis an inspection of the site took place and the following noted:

We spoke about the introduction to site process and Mr Katchel stated that a mechanical tradesperson was now authorised / responsible to sign off on non-electrical equipment plant and machinery coming to site. Mr Katchel is still accountable for the process.

Lighting Plant SXLT886 - This was the equipment that had the control wiring failure. I remarked that there appeared to be no wiring diagram or schematic available. It was highlighted that a significant amount of fires or over-current heating incidents on this type of plant is normally associated with either less than adequate maintenance or poor circuit design. There have been issues where protection fuses and circuit breakers have been found to be excessively overrated for the cable size and components they are protecting.

I raised a point of concern that has been identified at other mines regarding plant that has both battery and starter isolators. It has been identified that some mines are using the "Starter" Isolator as a full current isolator when in the majority of instances it is only a control isolation for the starter solenoid. Mr Katchel was unsure if this situation could occur here and would review their plant and machinery isolation procedure to ensure that isolation devices fitted to electrical plant are full current and isolate all active power conductors.

Tyre Handling Truck IMT 7415 - I was introduced to contract Tyre Fitters Mr Kevin Formosa and Mr Lynton Murphy. I remarked that I had not seen a "Hiab" type tyre handler / truck arrangement before and they explained its functionality and how it is used. This particular

machine is able to handle up to 29 inch wheels. From the description of its use I later stated that I would take some counsel from the Mechanical Inspectors about how this equipment can handle tyres in compliance to Recognised Standard 13 "*Tyre, wheel and rim management*" regarding fall back arrestors.

ROM - Mr Curtis further described the plan and scope to install lighting in this area and some of the logistics that they had to manage.

The screening / sizing plant was in operation and viewed from a distance. We discussed the maintenance tasks that are undertaken on this equipment, specifically the function testing of the emergency stop system. These checks are done at a weekly frequency. There were no issues apparent with the guarding.

Sorterra Build Pad - Prior to a water truck arriving, there was a substantial amount of air borne dust being blown over the area where the plant was being assembled. I was informed that this was the prevailing wind direction on most days. I later raised at the debrief my concerns with managing this work environment as per Recognised Standard 20 "*Dust control in surface mines*". The mine should be conducting dust monitoring of CMWs working in this area. Later there was correspondence with Mr Walters on this expectation.

We met Sorterra Representatives Mr Troy Blagden and Mr Logan Roberts who described the current status of the Dryscan plant assembly and commissioning process. Mr Roberts has been authorised and appointed as an electrician.

There had been correspondence between a previous EEM (Mr Grantley Jack) and Mr Roberts regarding the emergency stop system taking a functional safety approach with inputs to a "smart" PLC. His direction was that these stops are "control" stops and to include separate hard wired stops as "emergency stops".

The CMS&H Regulations 2017 **section 25 "Standard for electrical control systems"**

part (a) "*each electrical control system at the mine operates safely under all operating conditions, including electricity supply instability or failure: and*

part (b) "*if the system suffers a fault or fails, all emergency stopping systems and safety alarms at the mine remain effective*"

Mr Katchel is to confirm that the emergency stop system is compliant to this legislation and to inform me accordingly.

Pit Lookout - We discussed the mining current and future sequences in general terms. I noted that the haul trucks utilised "chaser" green strip lighting which was quite visible. This was a one of the recommendations 2013 Ravensworth light vehicle fatality investigation findings.

Administration

A debrief of the inspection was undertaken with Mr Cavanagh, Mr Katchel and Mr Curtis with all points raised in this MRE noted.

Paul Sullivan
Inspector of Mines

