



Mine Name	Mine ID	Operator	Activity Type	Activity Date
Jupiter Bulk Sample Pit	MI04148	Vulcan Mine Management Pty Ltd	Inspection	13/05/2021

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 Jupiter Bulk Sample Pit (Vulcan Mine). Attending the opening meeting were Electrical Engineering Manager (EEM) Mr Robert Plumpton, Site Senior Executive (SSE) Mr James Richardson, Site Systems Superintendent Ms Nicole Davey, Maintenance Manager Mr Ben Kachel and electrician Mr Joel Curtis. Prior to undertaking an inspection of the mine we discussed several topics with the salient points being:

- The Sorterra Dryscan crushing and screening system will be assembled and commissioning will commence in June. Once this commissioning is completed Mr Plumpton explained that he intends to no longer be EEM at the mine and that Mr Kachel will be appointed to the position.
- Mr Kachel provided a description of the commissioning process for the Dryscan system and that the OEM's documentation was being reviewed.
- Mr Richardson spoke of the current plant in use onsite as well as future expansion and manning. 40% of the mine is "free dig". The first shot will be at the end of May using a contractor (Blackrock D&B) and they have been in communication with Senior Inspector of Explosives Shane Cooper
- The "Igloo" Workshop has had the slab and roof structure individually assessed by the suppliers. A third party Registered Professional Engineer Queensland (RPEQ) will assess the workshop as an entirety. I commented that as the "Igloo" design is normally associated with a finite life the requirement to manage this should be in the mines scheduled maintenance system (SMS). "Igloo" Structures should not be regarded as a place of safety during severe weather events.
- An excel spreadsheet system is used as the current SMS. As the mine plant and infrastructure expands this will be changed over for a more dedicated system.
- Contractor company CQ Compliance are still managing the introduction to site process for plant and equipment
- There are approximately 25 operators on 7 / 7 roster and 15 staff on 5 / 2. The mine is operating on dayshift only however there is the potential for crushing and screening crews to also work nightshift.
- There is currently no one authorised to conduct hot works. This area is still being set up.

- An arc flash / incident energy level study has been undertaken for the current and proposed installations. The site is powered by diesel generators.
- The Water Treatment Plant has recently been commissioned.

The following safety alerts and bulletins were tabled:

- RSHQ Petroleum and Gas Safety Alert 97 – Coolon Lighting Emergency Battery Packs - There have been a number emergency battery backup units that have failed in service due to an internal “build-up” of hydrogen. Mr Plumpton stated that these are not onsite
- Electrical Safety Recall "Automatic Submersible Vortex Pump (Wilo STV 180F-EM-A)" - Mr Plumpton is aware of this recall and it is not an issue at the mine.
- RSHQ Mine Safety Bulletin no 183 "*Use of compressed air for cleaning*" - The safety bulletin highlights the requirements to identify if compressed air is required for a task that would cause dust to be in suspension, to ensure that task is on a register and conduct personal exposure monitoring.

Ms Davey explained how RSHQ safety alerts, bulletins and newsflashes are incorporated into the return to work pre-start system for crews. There is a corrective action recommendation system for these alerts and from her description it is fairly generic to how other mines manage them.

The following incident was tabled:

Incident 11/12/2020 – Drill bit contacted live incomer in shed – I was informed that the mine have an SOP for managing concealed services however it was not followed by the electrician. Mr Plumpton stated there may have been external work pressure on the electrician to complete the task. It was acknowledged that the mine has improved this aspect of its management. I remarked that any incidents where work pressure is a contributing factor is a significant concern to the Inspectorate.

My previous MRE (20/10/2020) was reviewed with the main points being:

- The permanent parallel supply generators have been installed, commissioned and are operational. Mr Plumpton described in general terms their load sharing and duty roster cycles. Due to the configuration of these generators the MEN connection point is in the main switchboard. This is clearly identified.
- The OEM are providing electrical support for the Dryscan crushing and conveying system.
- Ms Davey highlighted that she was drafting out a procedure and authorisation for a Laser Safety Officer. Mr Kachel stated that this may be a role he undertakes.

I was provided a copy of the SOP for Hot Work (VUL-SOP-096c(ii)-Hot Work and Hot Work Permit (VUL-FRM-19-05-Hot Work Permit). I later (offsite) did a first pass review of the documents and have a concern regarding the following:

1. The SOP does not mention the term Hazard Reduction Device and the requirements to confirm it is fit for purpose (trigger) or that it is operational prior to use (Voltage Reduction Device)
2. That the SOP allows hot work (welding) in wet situations 4.11 and hot work (welding or cutting) containers which have held combustibles 4.12
3. The SOP prompts for the JHA 4.2 do not include consideration for electric shock
4. The Mandatory Controls checklist (section 4) in the Hot Work Permit does not specifically identify that the hazard reduction device is fit for purpose / operational.
5. The Mandatory Controls checklist (section 4) in the Hot Work Permit does not indicate that the work area has been assessed for the welding classification class (A, B or C) and that the required controls are in place.

There will be ongoing correspondence on the above points with Mr Richardson.

Accompanied by Mr Plumpton, Mr Kachel, Mr Curtis and Mr Richardson an inspection of the site was undertaken and the following points noted:

Parallel Generator Supply

Circuit breakers and isolators are clearly identified and able to be locked. The injection test sockets could not be used by 240 volt portable electric equipment (round earth). I was informed that there will be a weather cover “carport” installed over the equipment. There was

a general discussion on the results of the factory acceptance testing (FAT) and commissioning results. I have requested that the maintenance schedules for generator GEA002 be sent through to me as confirmation that it is in the SMS and that examinations and tests are being undertaken.

Water Treatment Plant (WPT)

Mr Curtis informed me that the permanent identification labels for the switchboard were being made. The 3 phase outlets have 30mA protection and the circuit breakers have lockout arms fitted. The temporary labelling is adequate. The water treatment pump motors are each connected to a variable speed drive (VSD) unit. Mr Plumpton and Mr Kachel were unaware whether the VSD is used to just start the pumps and get it up to 50 hertz or if the functionality had it operating below 50 Hz continuously. The earth leakage RCD protecting the circuit is only suitable for 50 Hz systems. We then discussed several types of earth leakage protection RCDs that operate across a wide band of frequencies. Mr Plumpton and Mr Kachel stated they would investigate and ensure that the correct circuit protection was installed. It will be a focus during my next inspection.

Igloo Workshop

Mr Richardson confirmed that the workshop slab was over engineered as it has had rails embedded to take dozers. The switchboards also require permanent labelling however the temporary labelling is adequate. The 3 phase outlets have 30mA protection and the circuit breakers have lockout arms fitted.

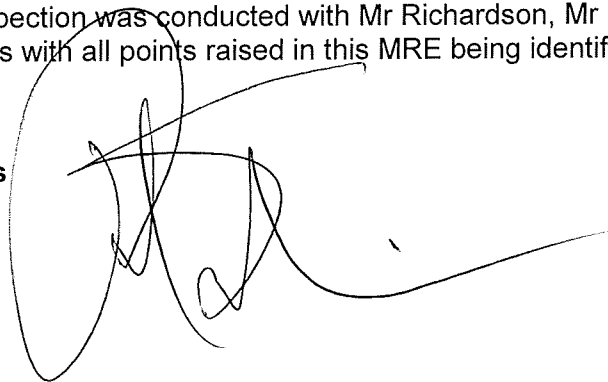
Workshop / Warehouse

Mr Curtis explained that during the commissioning of this switchboard an RCD had failed and was replaced. I was later provided a copy of the "Energisation or Verification of an Electrical Installation" document. The example I was given was for a Lighting Tower Switchboard. It appears to be a well constructed document listing the required testing and examinations. I selected the welder CigWeldskill250 for the introduction to site process and Mr Kachel stated he would send through the documentation indicating that it went through the mine's required process.

Administration

A debrief of the inspection was conducted with Mr Richardson, Mr Plumpton, Mr Kachel, Ms Davey and Mr Curtis with all points raised in this MRE being identified.

Paul Sullivan
Inspector of Mines

A large, stylized handwritten signature in black ink, likely belonging to Paul Sullivan, the Inspector of Mines. The signature is written over the 'Administration' section and extends across the right side of the page.