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| Mine Name | Mine ID | Operator | Activity Type | Region | Activity Date |
| Moranbah North | M100750  | Anglo Coal (MoranbahNorth Management) PtyLtd | Inspection | Central | 17/01/2018 |

Vision: Our Industries Free of Safety and Health Incidents

# 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 on Safety Notice Boards.

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.

I, Mr Leslie Marlborough, Inspector of Mines conducted an inspection at Moranbah North Mine on Wednesday 122 September 2017. On my arrival on site I was met by Mr Neville Stanton, Underground Mine Manager, Moranbah North Mine.

Opening Meeting

The opening meeting was attended by Mr Craig Manz, SSE, Mr Stanton, Mr Casper

Badenhorst, SHE Manager, Mr Paul Stephan, Production Manager, Mr Wes Noble, Acting Technical Services Manager, Mr Peter Finnen, Acting Engineering Manager and Mrs Larnie Mackay, Personal Assistant to General Manager.

I explained that the reason for the visit was to conduct a routine inspection of Longwall 1 12 and a development panel. We began the meeting by discussing recent high potential incidents across the industry and the importance of learning from incidents at other mines as well as our own mine. I explained that we share the information regarding incidents at other mines so that the lessons fearnt could be used to help prevent the occurrence of similar incidents at other mines.

We discussed an incident at a Longwall mine whish had experienced 2 incidents of Methane exceeding 2.5% in the Longwail TG return that had not been reported. An investigation was underway at the mine as it appears that the TARP requirements were not foElowed on shift and the actions required to be taken were not followed. I stressed the importance of ensuring people with actions required under a TARP understand their responsibilities under the TARP.

 raised the concerns across the industry that mine inspectors have regarding effective contractor management and the effectiveness of front line supervisors. It is apparent from the incidents involving contractors across the industry that a heavy focus on how contractors are managed and supervised. It is important for mines to ensure they have robust systems in place to ensure contractors understand the mines SHMS and how it directly affects the work that they are conducting. Supervisors need to dearly understand their obligations and what is expected from them as a supervisor. I suggested that mines should place a high focus on auditing the effectiveness of the SHMS as it applies to supervisors and contractors.

22/01 /2018

Mr Manz gave a summary of the current status of the mine. I-Wi 12 is performing well and is currently approaching 19 CT in the MG. The mine has 3 development units, MG603 (mine personnel), currently mining 23-24 CT. TG 603, a contract unit (Mastermyne), currently mining 17-18 CT and MG604, another contract unit (Mastermyne), currently mining 3-4 CT. This unit has encountered a Dyke and has suffered a small cavity in advance of the miner which is being supported with a QDS bolter. I stated that I would like to inspect LWI 12 and MG604 development. The mine achieved 8.0 million tonnes for 2017, which was a record production year for the mine and the mine is performing as one of the highest producing mines in Australia.

Mr Manz stated that the mine's Q4 respirable dust results had only shown a single exceedance, which was in development. The mine's exceedances for the year were very low and demonstrate the effectiveness of the mine's processes for minimising respirable dust exposure for its coal mine workers. The mine is to be commended on the improvements they have made and the efforts put in by the people at all levels at the mine.

We had a discussion concerning the 2 Methane exceedances that the mine had reported on 13 and 14 January. The mine's investigations have indicated that the cause of the exceedances is due to the overlying strata. The sandstone that lies just above the coal seam (approx. 10m above the seam) has thickened jn the area where the Longwall is currently located. This has increased from approximately 4 m in thickness to over 10 m thick. It is believed that this sandstone is "bridging" and the goaf caving is not intersecting the goaf drainage holes, which are normally drilled to the top of the sandstone band. This is evidenced from the current face conditions which show heavy face slabbing, indicating there is a cantilever effect from the sandstone which is resulting in excessive load on the coal. In addition, the gas purity of the goaf drainage holes, normally around 60-70% Methane is current\*y, at the 3 holes immediately behind the LW is 80-95% Methane, which suggests the holes are not drawing from the goaf but from the overlying P seam. The hole spacing at the present time is 100m. The mine is in the process of drilling infill holes at 50m spacing in the area of the thick sandstone. These holes will be drilled through the sandstone to ensure the gas capture from the goaf area is achieved. The lesson learnt from this will be used in future goaf drainage hole design and spacing when planning the goaf drainage for Longwall operations.

I requested a copy of the completed investigation report for the Methane exceedances when it was completed.

Underground Inspection

Before going underground I went to the control room. I reviewed the Gas monitoring alarm register and the current gas alarms on the Citect system I also reviewed, on the Citect system, the LW Methane trends for the past 4 weeks. The gas monitoring alarm register was well completed and appropriately countersigned by Undermanagers and IJMM and Ventilation Officer. I selected several alarms that had been reported to ERZ Controllers. There did appear to be an issue where the gas alarm triggers on the gas monitors did not match up with the gas alarm triggers in the TARPs.

I then reviewed statutory inspection reports, in particular, the reports that were written for the shifts where the CRO had reported the ERZ Controllers the gas alarms. The ERZ Controllers were not recording on their stat reports the gas alarms that were reported to them or the findings of their investigation of the gas alarms.

I reviewed the ERZ Controller stat reports for LWI 12 and MG604. The reports appeared to be satisfactory in the manner in which they were completed.

The TARP Board in the muster area showed 7 TARPS currently in effect. They were;Whole of Mine Code Orange Safety TARP (based on mine rs safety performance); TG603 Code yellow strata TARP;

LWI 12 face code yellow strata TARP due to face slabbing;

MG604 Code Red strata TARP due to cavity at Dyke in A Hdg 3-4 CT; MG603 Code yellow strata TARP;

TG601 Code yellow Outburst TARP (methane content >6 m 3/t>7 m 3/t); MGI 12 Code Yellow TARP for Legionella.

I then proceeded underground accompanied by Mr Manz Mr Stanton, Mr Stephan, Mr Scott

Cooper, Longwall Superintendent and Mr Kieran Duffy, Shift Undermanager. We travelled to LWI 12 MG. The road conditions in the outbye area and the travel road into LWI 12 were good and the stonedust standards were also good throughout.

LW112

On arrival at LWI 12 we were met by Mr Shane Thwaitesoohnson, the ERZ Controller. Before accessing the LW face, Mr Cooper assembled us and we completed a group SLAM. The hazards identified were the no go zones, moving shields and other LW equipment, notifying MG operator prior to entering area beside the BSL and the requirement to wear respiratory protection at ali times when on the Longwall face.

Standards at the MG end atong the BSL were good. Mr Thwaites-Johnson explained that they had collected a pile of rubbish which he had positioned against the outbye corner of the rib at the CT ready to be loaded out into an LHD. This pile of rubbish had been taped off with hazard tape. At my request he attached an information tag to the hazard tape explaining the reason why the hazard tape was in place.

The face was in production and on arrival at the MG the MG operator explained to me the shearer was just leaving the TG end cutting towards the Maingate. The operator showed me the Citect screens on the MG control unit. The outbye TG gas monitors were showing 1.36% methane. Shearer and TG AFC were both reading 0.5% Methane.

The mine has installed a steel step for persons to gain access to the rear walkway when leaving the MG area to travel through the face. This is a significant improvement and I congratulated Mr Manz on this as it significantly reduces exposure of coal mine workers when travelling through this area.

Face standards were very good throughout the face. The alignment was very good and the shields were all very clean and free of any signs of dust. I discussed this with Mr Manz and Mr Stanton and they explained that the mine had just completed a week where they produced in excess of 250F000 tonnes. The mine is to be commended for the work they have done in dust control on the Longwall.

On the face, the slabbing in front of the shearer was very apparent, but was being well managed by the operators who were using the flippers on the shields to control the targe lumps. The horizon control on the face was good, as was the face alignment I checked several fire extinguishers and severat sets of lifting equipment and all were in order and correctly tagged. I had a discussion with several of the LW operators and they demonstrated a good understanding of the controls in place for management of dust.

MG604 development.

The ERZ Controller was Mr John Bromley. We were also met by Mr Matt Crampton, Acting

Development Superintendent. The travel road into the panel from the outbye end was quite rough. Mr Crampton explained that the start of the panel was also the shuttle car wheeling road. As we went inbye from the crib room the travel road was also rough, Mr Bromley stated that work on the roads was "ongoing". The housekeeping in the crib room was poor. Support plans were up to date and clearly visible as were other documents/plans such as Permit to Mine etc. read the ERZ Controllers statutory and production reports from the last few shifts. I noted that there was a lot more detail entered into the Production Reports than there was in the Statutory Reports.

There were several areas of damaged rib support noted as we travelled into the B Heading road. I discussed these with the ERZ Controller, Mr Crampton and Mr Stanton. Also in evidence were a number of rib bolts that were showing greater than 120mm of "tail" on the bolts. Most of the identified bolts were in the bottom row and most had not had an additional bolt installed beside them. I also noted that there were several places where the plastic rib mesh was bunched up or part of a roll was left hanging on the rib or pinned with rib bolts. The stonedust standards in the A and B headings were poor. There were several areas where there was little or no evidence of stonedust on the roof but the sides had been dusted showing that an attempt had been made to stonedust the roadway. The mine should review its Stonedust SOP to determine whether the minimum amount of stonedust has been applied to the newly mined areas. It is my understanding that the required amount of stonedust to be applied per metre advance is stated in the SOP. The ERZ Controllers for development and Longwall panels should be recording on their Statutory Report the amount of stonedust applied each shift.

I had a discussion with the ERZ Controller, Mr Bromley and he stated that he would be reporting them on his stat report. I explained that he had a obligations under the CMSHR s308(1) regarding the actions he must take should he find anything that was unsafe during an inspection. I also explained that he should not only report them on his stat report, but that he should also record the actions he has taken to rectify the unsafe condition and any other action he has taken to ensure other CMW's are not exposed to an unacceptable level of risk.

On arrival at the DCB we applied our Personal Danger Locks and Tags in accordance with the mine's procedures as we needed to pass in front of the parked continuous miner to view the area where the roof cavity was being supported. On arrival at the face there was a group of coal mine workers preparing to continue to support the cavity area with a QDS Bolter. The cavity appeared to be we'l supported. The cavity was the full width of the roadway, about 2.0m high at the highest point and about 3.0 m in length. In this heading there were also several rib bolts with tails in excess of 120 mm and no replacement bolts installed. I asked the operator of the QDS bolting rig what was the maximum length of bolt tail allowed. He did not know. I asked him what the support rules said about bolt tails and he did not know that either. I suggested the ERZ Controller that he spend some time and refresh his crew on the requirements of the support rules that were in place for the panel Further discussion with the crew revealed they had done a SLAM and had been taken through a JRA for bolting the cavity. Back at the crib room I examined the JRA. It only had one job step, namely Bolting the Cavity. However there were many hazards listed and controls beside each hazard identified. It was signed off by the previous crew who had started the task, but there was not a sign off page for the oncoming crew to state they had read the JRA and there was nowhere for the oncoming crews to add additional hazards and controls. I recommend that the mine consider this for URA's where the task extends beyond a single shift.

Close Out Meeting

The close out meeting was attended by Mr Manz, Mr Stanton, Mr Stephan and Mrs Mackay. We discussed the findings of the inspection.

We discussed the Control Room Gas Atarm Log. I explained that it did not appear that the alarm set points on the gas monitors were aligned to the TARP values. i recommend that the

mine review this.

The issue of ERZ Controllers not recording on their stat reports a gas alarm that has been reported to them by the Control Room Officer, This seems to be a common occurrence at several mines and needs to be addressed. The ERZ Controllers need to record the alarm of which they were informed by the control Room Officer and the findings of their investigation into the cause of the alarm and any actions taken to rectify the cause of the gas alarm, if any. I suggested to Mr Stanton that he communicate this to all of his ERZ Controllers.

We discussed the Longwall and I commended the mine for the work they have done in the control of respirable dust in the Longwall and around the mine. The sample results show that and the visual inspection of the Longwal[ shows that there is a high focus on removing sources of dust as well as keeping the operators out of any areas where dust is prevalent, The high standards throughout the Longwall District show that these may be maintained as well as maintaining high production levels. It is obviously a team effort by everyone involved.

The mine is taking a proactive approach to management of TG Gas levels. The recent high levels of gas are uncharacteristic for the LWI 12 block since the mine placed a high focus on gas management in 2017. The recent high gas levels have been thoroughly investigated and this has been done with urgency with the mine already taking action to rectify the issues identified. The information from the investigation will be used when designing the gas drainage strategy for the next Longwall block.

The Outbye standards at the mine were also very good. Most of the main travel roads have been Fibrecreted to a high standard The roads and the stonedust standards throughout the outbye areas were very good.

MG604 development standards were poor. I understand this is a new panel and is just commencing. The panel has hit some difficult geological conditions. However, the poor standards that I observed were man made and relatively easily rectified. It is important that, when a new panel commences, the standards should be set at the level that is expected throughout the life of the panel. I recommended that the mine needs to review the standards in MG604 and audit compliance to their Development Panel Standards and establish an action plan to address the panel standards in the MG604 development.

I suggested that the mine should review the risk assessment that was conducted for using the panel travel road and primary Escapeway as a shuttle car wheeling road. I understand that this situation can occur when establishing a new panel until conveyors are installed. I also suggested that this should be a risk assessment and not a JRA and that, if it is a situation that occurs regularly at the mine a standard, or procedure is developed to ensure it is conducted to an acceptable level of risk.

 thanked Mr Manz and his team for their hospitality and their time.

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| Number | Recommendation | Due Date |
|  | MG604 Development Panel Standards | NIA |

I recommend that the mine reviews the standards in MG604 and audit compliance to their Development Panel Standards. This can then be used to establish an action plan to address the panel standards in the MG604 development.

Please respond to this recommendation to Inspector Marlborough via e mail by Monday 29 Jan

2018.

Envy

Please provide a written status report on each SCP together with the actions taken to address each item by their due dates

Please provide a written status report on each Directive together with the actions taken to address each item by their due dates

Please provide a written status report on each Directive and SCP together with the n to address each item by their due dates

Les Marlborough

Inspector of Mines

Central Region

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