

CONFIDENTIAL**Queensland Government**

Mackay Office
P.O. Box 1801, Mackay, QLD 4740
Phone: 07 4999 8512, Fax: 07 49998519

| Mine Name | Mine ID | Operator | Activity Type | Activity Date |
|---------------------|---------|---|---------------|---------------|
| Grosvenor Coal Mine | MI02976 | Anglo Coal (Grosvenor Management) Pty Ltd | Inspection | 02/07/2019 |

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.

Today the 2nd July 2019 Department of Natural Resources Mines and Energy Inspector Keith Brennan travelled to Grosvenor Underground operations, the focus of my inspection was 103 Longwall gas exceedances and familiarisation of the introduction of iPads for recording Statutory Inspections.

I arrived on site at 6:45am in time for the Bull Gang roster return to work. A brief meeting was held with UMM Wouter Niehaus prior to attending the Bull Gang pre-start meeting. Undermanager Adam Kruse provided a review of activities and High Potential Incidents occurring during the previous tour.

High Potential Incidents included Longwall 103 gas exceedance and Shuttle Car HUK04 (12 Volt Lighting Cable) damaged by rubbing against suspension components. SSE Robert Knowles addressed the workforce providing an overview of projects, congratulated development on the continued high standards of production including belt extensions.

Gas Data - Control Room:-

I was accompanied by UMM Wouter Niehaus and the CRO I reviewed data from CITEC following numerous CH₄ exceedances. I established the following information:-

- Ventilation current travels via Longwalls 101, 102, 103 as bleeder ventilation (25m³/s) through 104 Bleeder/Installation before reporting to the last open cut-through where it mixes at 17ct with intaking ventilation reporting to the face - quantity - 62m³/sec. Maingate Gasguard x 2 were recording 0.5% CH₄ in the general body intake.
- The shearer was currently at 22# (149 shields - 300 metre face) Tailgate Drive monitors both recording CH₄ at 1.3%.
- Inbye Tailgate Sensor 1.85% CH₄ - Outbye Tailgate Sensor 1.76% CH₄

Controls Introduced to reduce Exceedances:-

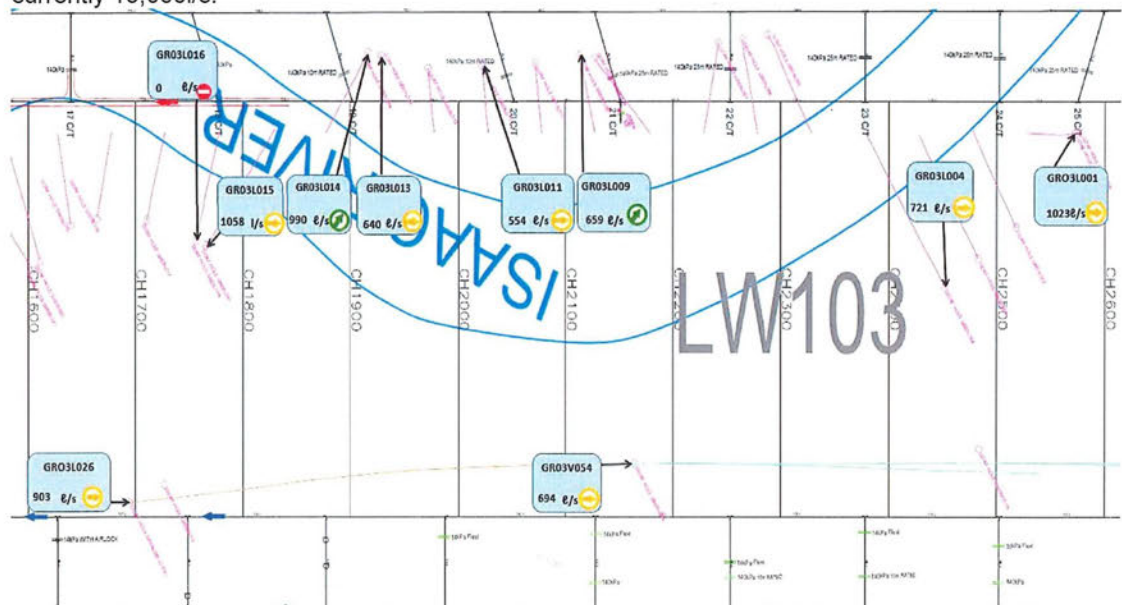
Bi-Di cutting sequence - Shearer cuts to towards tailgate a value calculated using the difference between the inbye and outbye readings - the value displayed by the tailgate 1.8%CH₄ real time monitor.

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The accompanying screen shot indicates 1.80% CH₄ was present at the inbye tailgate sensor the shearer would cut to 115# - 1.87% CH₄ was detected/displayed the shearer would cease cutting and park at 115# until gas levels fall below 1.80% CH₄, this value changes each shear depending on previous gas variations between inbye and out tailgate sensors.



Lateral gas drainage hole GRO3L016 located at 1760 chainage is due to come on line. The hole has been drilled laterally due to the location of the Isaac River. Gas drainage capacity currently 10,000l/s.



CONFIDENTIAL**Opening Meeting:-**

The opening meeting was briefly attended by Anglo Executive Head of Underground Operations Glen Britton, SSE Rob Knowles and UMM Wouter Niehaus. General discussion took place about industry safety, Glen Britton advised substantial funding has been budgeted for gas drainage, trialing of infra red CH₄ gas detectors and the introduction of iPads for statutory officials before leaving the meeting.

The meeting continued with a review of recent gas exceedances and recent high potential incidents. We reviewed questions and responses between SSE Trent Griffiths and Inspector of Mines Paul Brown, responses covered trigger points and possible reduction of shearer speed, barometric lows/highs and diurnal effects and goaf drainage.

Current Safety Newsflashes and Mines Safety Bulletin Correspondence 182 Engineering and maintenance of mobile plant braking system and the introduction of a mobile screening service as part of ongoing efforts to tackle mine dust lung disease in Queensland.

UMM Wouter Niehaus provided the screen shot items on page 2 explaining how the values are calculated following each shear. We also discussed the drilling of *lateral* gas drainage holes due to the location of the Isaac River. I was also advised a blind bore shaft planned to intersect the seam at 103/104 bleeder roadways by end of year has commenced operating.

Underground Inspection:-

In the company of UMM Wouter Niehaus and Undermanager Adam Kruse we travelled to Longwall 103. At 15ct cribb room I took the opportunity to review the ERZ Controllers statutory report. The report identified a cavity on the face between 143 - 149#, a butchers flap installed at 6# and the shearer stop values 115#. I invited coal mine workers present in the cribb room to raise industry safety matters. The planned mobile screening service was discussed.

We walked inbye via the belt roadway, the roadway was free of spillage. A mobile bolting platform was located at 15.5 cut-through. The platform had a number of safety features, roll back stops including a winch rope, a rip switch located 100 metres inbye is designed to stop the conveyor preventing oversize lumps from making contact with the platform. The platform is propelled by an air motor. A mobile hard barrier has been developed to protect coal mine workers walking between the transfer point and the outbye structure.

I was provided an excellent overview of the CITEC screen located at the BSL by a coal mine worker who was able to access all CITEC information. We discussed the effects of barometric pressures, the effects of 0.5% CH₄ in the intaking general body atmosphere. The shearer was stood at 115# tailgate CH₄ 1.97% the set value CH₄ for shearer to cut to the tailgate 1.5% CH₄.

The last open cut-through was adjacent the faceline, the brattice wing bag was in place, the cut-through was well supported using cans and link-lock cogs at the seal site. Both GASGUARD CH₄ monitors at the maingate #1 displayed 0.5% CH₄. Both Altair 5 gas detectors carried by the UMM and Undermanager displayed 0.35% CH₄. We inspected the faceline, I observed a number of butchers flaps positioned to reduce CH₄ levels in the rear walkways and venturi air coolers. The tailgate roadway was well supported, a temporary flushing shield was in place attached to 149#. While inspecting the tailgate area Undermanager Adam Kruse received information an accident causing injury had occurred in Mains Development.

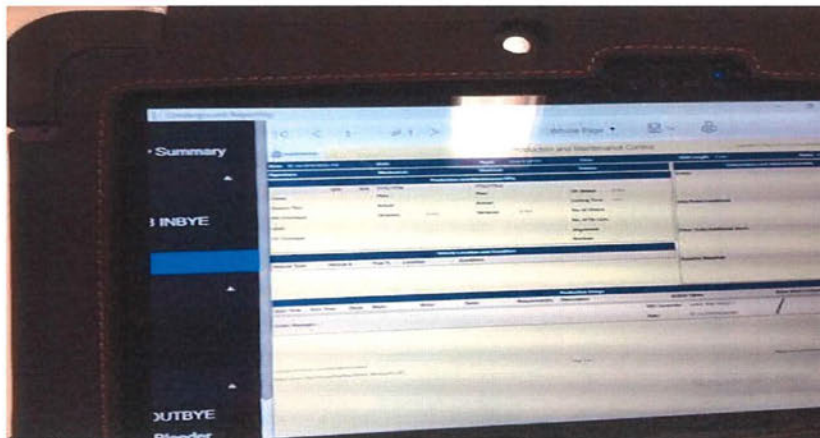
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We travelled to the mains development panel, the Joy 12/12 had been cutting 106 A-B heading 33 - 34ct, the coal mine worker who had been installing 8 metre Mega bolts, the worker had been taken to the surface paramedics prior to our arrival. The coal mine worker told the section Deputy Chris Eyre who informed us of the following - the coal mine worker had placed his left foot on top of the dolly while flushing the dolly, the three x two metre x 32mm drill steels being held by the bolter gripper jaws dropped impacting the workers left foot.

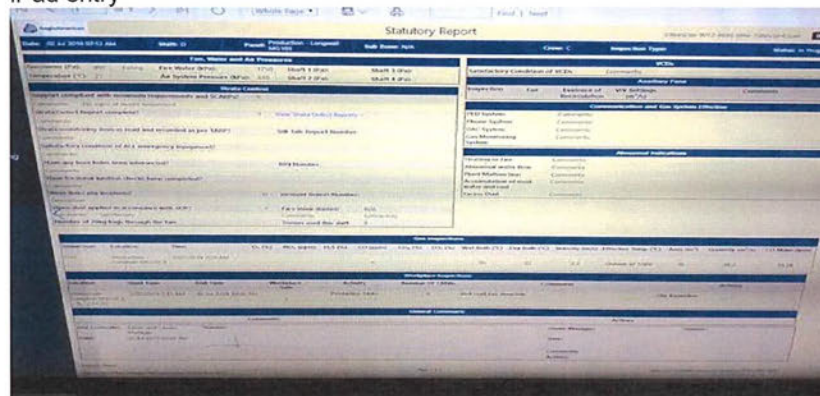
We boarded the miner in an attempt to understand what had occurred. UMM Wouter Niehaus oversaw the immediate investigation directing Mechanical Engineering Superintendent Aaron Springis to take gripper jaw load lock pressures. We were informed following testing the grippers jaw load locks were leaking. UMM Wouter Niehaus, Undermanager Adam Kruse and Superintendent Aaron Springis gave immediate direction for other continuous miners to have gripper jaws inspected and pressure tested. We returned to the surface.

iPads implementation Statutory Officials:-

Anglo Underground Operations are currently introducing iPads for use by statutory officials - ERZ Controllers Reporting. I was provided the opportunity to attend a training session. Three ERZ Controllers were being introduced to the technology, the process of data entry was explained including the display of statutory reports on monitors accessible to all coal mine workers in the muster area, ERZ controllers sign the reports electronically.



iPad entry



Statutory Report

CONFIDENTIAL**Close Out Meeting:-**

A close out meeting was held with SSE Rob Knowles and UMM Wouter Niehaus. We discussed CH₄ management including placing the intaking bleeder roadways on return in an attempt to reduce CH₄ levels entering the longwall face.

We were informed the injured coal mine worker had been transported to Mackay Base Hospital. The coal mine worker was later admitted as an in-patient for surgery later Tuesday evening. The incident was reported by UMM Wouter Niehaus as High Potential Incident involving a Serious Accident CMSHA 16 (b).

High Potential Incident:-

While we were in Mains 106 I was informed by Undermanager Adam Kruse that Longwall 103 recorded an exceedance of 2.7% CH₄ on the inbye sensor the outbye sensor recorded 2.5% CH₄.

As a result of the exceedance I was informed by UMM Wouter Niehaus the longwall will be stood for 36 hours. During the stand down an Incident Management Team (IMT) will be formed to review CH₄ management strategies. The IMT will explore placing the bleeder roads on return ventilation, slowing shearer speed and Uni-Di cutting.

On the 4th July 2019 I received minutes from the IMT the objective of the IMT was to:-


Develop and implement strategies to assist in reducing the methane emissions in the TG roadway and the LW face to adequate levels to allow consistent longwall production in line with forecast.

- Gas and Shearer positioning trends were reviewed
- Gas Drainage Report Update - All holes running at 100%
- Barometric effects goaf tailgate emissions
- Plans to drill Mid panel Goaf hole GR03V055 at 1522 metre chainage (97 metres from MG rib-line)
- Installing Infra-Red CH₄ sensors at 3-4ct adjacent to currently installed sensors (comparison purposes only) • Continue investigations with baffle setup to drop moisture and dust prior to reaching sensor.
- Short Term Ventilation Strategy:- Model, plan and execute the perimeter road ventilation reversal to lower CH₄ levels entering the MG • Predicted low pressure weather system to significantly lower barometric pressure over the next 2 days • Maintain face ventilation quantity (review post vent change to minimise changing too many variables)
- Short Term Goaf Drainage Strategy • GR03V055 – Targeted Ch1530 90m from MG (additional infill hole) • GR03V053 – Expected to come online at Ch1690 (P seam MG) • GR03V056 – to be scoped and designed for ~Ch1100 • Review gas compliance cores for GM and P Seams for remainder of LW103
- Long Term Goaf Drainage Strategy • Install 6th LRP at Gas Plant • Purchase and install blowers • All SIS gas currently plumbed to Arrow • UIS currently 8% of gas plant capacity. Purity of UIS will result in disconnections from Arrow if below 94% CH₄. (UIS to Arrow not ideal) • Venting restricted emergency situations only • Identify potential goaf gas sources and areas for LW104. • Complete review of SGE model against actuals • Increase SGE resolution to identify areas with predicted higher goaf gas.
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• Increase SGE resolution to identify areas with predicted higher goaf gas.

I thanked SSE Rob Knowles and UMM for their assistance during my inspection including providing detailed actions of the IMT meeting held on 4th July 2019.



Keith Brennan
Inspector of Mines