**GROSVENOR INQUIRY SUBMISSION. KEY ISSUE 5 Part 11.**

**VENTSIM MODELLING and VENTILATION OFFICER VENTSIM VALIDATION FINDINGS**

1. **The STRATEGY to MANAGE VENTILATION in LW 104 BLOCK and RETURN was SUPPORTED by FLAWED VENTSIM MODEL that was NOT FIT TO USE in MAJOR VENTILATION CHANGE PLANNING.**
2. **VENTSIM MODEL WAS at GREATER THAN 15% VARIANCE and NOT FIT TO USE in MAJOR VENTILATION CHANGE PLANNING**
3. **FLAWED VENTSOM MODELLING was DETAILED in the SECOND WORKINGS SOP and SUBMITTED through to the DNRME**
4. **DIFFERENTIAL PRESSURE READINGS WERE SPARSE INDICATING THAT LITTLE TO NO VENTSIM MODEL VALIDATION DONE BY GROSVENOR VENTILATION OFFICER in 2020.**
5. **PRESSURE and QUANTITY SURVEYS REQUIRED for VENTSIM MODEL VALIDATION**

**EVIDENCE**

1. **NO EVIDENCE PROVIDED TO GROSVENOR INQUIRY THAT THE VENTILATION OFFICER COMPLIED WITH REGULATION 365 “MEASUREMENTS AFTER CHANGE.**

***365 Measurements after changes***

***(1) This section applies if, because an underground mine’s ventilation system is changed, air flow rates in a place mentioned in section 362(2) may be affected substantially.***

***(2) The ventilation officer for the mine must ensure the air flow rate for the place is measured and recorded under section 362 immediately after the change.***

1. **LFI IN.00224943 STATES THE MODEL SHOWS 6m3/s DROP TO LW RETURN**

**If there were Ventilation Measurements that confirmed the Ventilation Model, it is logical that the LFI IN.00224943 and ANGLO GROSVENOR LFI IN.00226742 & IN.00228255 (8th June Withdrawal from Mine and Ignition of Gas LW104) would state so.**



1. **THE MEASUREMENTS AFTER CHANGES the GROSVENOR MINE VENTILATION OFFICER WAS REQUIRED TO ENSURE, WERE EITHER**
2. **NOT TAKEN**
3. **WERE TAKEN and SHOWED SUBSTANTIAL VARIANCE TO THE MODEL**
4. **THE VENTILATION MODEL ANALYSIS PERFORMED BY DALLAS MINING in MAY 2019 SHOWED a SIXTY-NINE (69%) CALIBRATION VARIANCE.**

**ANDREW SELF REPORT**

1. **ANDREW SELF WOULD NOT USE A MODEL WITH MORE THAN 15% VARIANCE FOR MAJOR VENTILATION CHANGE**
2. **ANDREW SELF REPORT IDENTIFIES**
3. **15% VARIANCE at TAILGATE MACHINE DOORS and MG 104 COFFIN SEAL and**
4. **16% VARIANCE at MG104 2c/t MACHINE DOORS**
5. **BEFORE GOING INBYE MG 104 2c/t MACHINE DOORS VENTSIM MODEL EXCEEDS ANDREW SELF CRITERIA FOR MODELLING MAJOR VENTILATION CHANGES**
6. **MODEL DOES NOT INCLUDE the TWO (2) FORCING FANS at #9 SHAFT PROVIDING a POSITIVE PRESSURE of approximately 500kPa and 50m3/s of VENTILATION.**
7. **MODEL SHOWS #9 SHAFT as OPEN TO ATMOSPHERE**
8. **VENTSIM MODEL at MAY 6th 2020 DID NOT TAKE INTO ACCOUNT**
9. **A learning from this investigation is that the differential pressure readings on file are sparse and there would be benefit in a more robust collation, validation and interpretation process.**
10. **VCDs in MG103 B-C Hdg c/t’s (inbye of 34c/t) Observed conditions differed to predictive ventsim modelling.**
11. **The shields at the shearer being double chocked,**
12. **The additional TG support (props and cogs which were erected in the TG between the PCB’s and the block side rib)**
13. **The TG floor heave reducing the TG roadway height to ~2.1m between the block side rib and PCB’s**
14. **The poly pipes layed across the TG carport to allow for ventilation in case we lost it**
15. **The gap between the TG carport and the underside of the canopy on #149 shield only being approximately 1.3m**
16. **Impact on ventilation system from goaf holes being turned on/off**

***ANGLO GROSVENOR in LFI IN.00226742 & IN.00228255 8th June Withdrawal from Mine and Ignition of Gas LW104***