

72101



Details of Ventilation on Individual Mines.

EAST COLOMBARDIE COLLEFIELD.

Lake View and Star Ltd:

The ventilation of the group of shafts operated by this company has remained satisfactory. No major alteration to the air circuits has taken place.

The four shafts forming the western group of this company are Ivanhoe, Horseshoe No.2, Chaffers and Hannan's Star. These shafts, with the exception of Ivanhoe, are downcast all the year round. The Ivanhoe is strongly downcast during the summer, but upcasts in the winter months. The installation of a large fan at the bottom level of this shaft appears to be the only method of making it a positive downcast.

Major fans are installed at the 3670 level Chaffers which downcasts 83,000 cfm; the 2977 level Horseshoe No.2 which downcasts 82,800 cfm; the surface of the Ivanhoe South extended shaft which upcasts 176,600 cfm.

A door was erected adjacent to No.3 Sand pass on the No.10 level Horseshoe shaft. Doors have now been erected at all control points at this shaft. At some control points at Chaffers shaft a dust hazard is being experienced, but this should be rectified during 1958.

Development north on the 3100 level Chaffers has proceeded to the Ivanhoe No.10 lode. Chaffers 3100 level is connected to the Ivanhoe 3000 level No.10 lode by a series of winzes. This allows air to upcast from the Chaffers level into the Ivanhoe workings.

The eastern group comprises the Lake View shaft and the Associated shaft. These mines are satisfactorily ventilated by natural means. Air downcasts through both shafts, the Associated open cut, the Tetley lode stope (Associated) and the Golden Link shaft which is just south of the Lake View shaft. It is difficult to ascertain where this air upcasts, and apparently it passes through openings to the adjacent mines.

The ore control chute installed at the No.7 level ore passes of the Associated shaft, as mentioned in last years report, has satisfactorily eliminated the dust created at this level. The Associated shaft has been reopened to the No.19 level and some of the downcast air from the shaft passes along this level into the Lake View workings. As this level was not opened at the time of the survey, no measurement of the airflow has been taken.

The airflow survey commenced last year, has been completed on the eastern group. The survey of the western group has been postponed temporarily. At the latter end of the year a new head-frame and winder were installed on Ivanhoe shaft. Three compartments of this shaft, one for service and two for haulage, had been in use, but with the changeover the service compartment has become a ladderway and the servicing is now carried out in one of the previous haulage compartments. The shaft had been enclosed with doors to force the air down to the lower levels and these doors were equipped accordingly to facilitate the servicing. Alteration to the doors is now required and until this is completed it would be useless attempting a survey.

Secondary ventilation continues to maintain a satisfactory standard, and is supplied exclusively by compressed air driven fans and venturi blowers. Two small electric fans in use are permanent installations to assist airflow. At present 37-12" and 16" compressed air driven fans, and 61-6" venturi blowers are used underground.

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Great Boulder Gold Mines Ltd.:

Although some major changes have been made in the primary ventilation circuits, particularly in the lower levels of the Hamilton and Edwards shafts, the total overall flow (upcast and downcast) remain unaltered. This was measured at 90,000 cfm.

During the year the Hamilton shaft was deepened by sinking from the No.26 to the 31 level. Work consisted of firstly, sinking a pilot winze from level to level and then stripping to full size and timbering. Secondary ventilation was provided in both sinking and stripping operations. This ventilation was provided by using a No.2 limit load centrifugal fan and a 12" duct down the shaft.

When the shaft was completed to the No.31 level a No.7 Double width fan was installed in a chamber adjacent to the plat on that level. The purpose of this fan is to draw air from the Hamilton shaft and discharge it along the No.31 level to the Edwards shaft workings and improve conditions in that area.

As a result of the above work the Hamilton shaft has a downcast air flow from the surface to the No.31 level. Some of this air is drawn off at the No.19 level under the influence of a No.7 Double width limit load fan and flows to the No.2 winze which is down cast to the No.31 level. From the No.31 level this air upcasts through the Hamilton shaft workings to the No.16 level and then to the surface through the Eastern lode system. The remainder of the downcast air in the Hamilton shaft flows along the No.31 level under the influence of the new fan and splits to the workings in the Edwards shaft area between the No.28 and 32 levels. This air returns to the Edwards shaft at the No.28 level and is upcast to the surface.

The Lane shaft is downcast under the influence of a No.7 D.W. limit load fan on the No.14 level. The output from this fan is split, some of the air flowing to the Eastern side workings and upcasting to the surface, the rest flowing down through the Edwards shaft workings and joining the downcast air from the Main shaft at the intake to the No.7 D.W. centrifugal fan on No.26 level. This fan discharges the air through the Eastern lode system workings to the surface.

This company has recently commenced using the stage rising method of making openings from level to level. Firstly, a hole is drilled from level to level and reamed out to a diameter of four inches. This hole is used for the passage of hoist rope and knocker line to the stage. These rises are ventilated by a compressed air jet which induces air into the top of and down the hole to the man working in the rise. This system of ventilation provided a satisfactory flow of air through the rise.

To develop the mine at a greater depth the company proposes to commence sinking a new internal shaft from the No.29 level in the coming year. This proposal to develop the mine to a greater depth sounds quite logical from the mining viewpoint but will increase the problems of the already overtaxed ventilation system of this mine. The first move should be being about a better ventilation of the present workings by providing larger openings to the surface than are in use at present. Then develop at depth.

On the surface, a new dust collecting plant has been installed to remove dust from the primary and secondary crushers. This plant which commenced operation in November, has reduced the concentration of airborne dust in the vicinity of the crushers considerably. The dust collector has a rated capacity of 6000 cfm. against 8" W.G. A second - 5000 cfm. capacity dust collector is to be installed in the tertiary crushing section in the near future and it is hoped that it will be as efficient as that now operating in the primary and secondary sections.

Gold Mines of Kalgoorlie (Aust.) Ltd.

Overall conditions of the workings off the various shafts of this mine remain generally unchanged. Ventilation generally was of a satisfactory standard. Where exhaust systems are used to remove dust from ore bin grizzlies wet coke filters are now used to collect the dust. The flannel bag type previously used required regular attention to be kept in efficient working order.

Major air flows off the various shafts were reported as follows:-

Western Group.

Perseverance: The main shaft has an upcast air flow from the No.11 level of 19000 cfm. The air flows down the shaft below the No.11 level and upcasts through the No.6 shaft from the No.14 level to the surface. (10,000 cfm) The above airflows are changeable and subject to surface weather conditions. A connection has been made to the South Kalgurli workings on the 2050' level to improve airflows. A No.5 limit load fan on the 2050 level exhausts air from the Enterprise workings to the surface through old workings in the Lake View lode.

Enterprise: The air flow in the shaft is downcast under the influence of a No.6½ limit load fan on the No.26 level. The flow induced by this fan varies from 20,000 cfm. in the summer to 30,000 cfm. in winter. A No.6½ Double width limit load fan is to be installed in place of the single width fan on the No.26 level early in the coming year. It is hoped that this fan will increase the air flows through the mine by about 50%. This should improve conditions, particularly in the lower levels fill stopes where humidity from hydraulic filling presents a problem.

South Kalgurli: The main shaft is reported as being upcast from the No.16 level with an air flow of 12,000 cfm. Below the No.16 level the shaft is downcast. Morty's shaft is now upcasting 9000 cfm. Downcast flow is through old workings, and from the north Kalgurli workings.

Hainault: This shaft is upcasting to the surface at a rate of 10,000 cfm. (Natural flow) Downcast through the stopes.

Eastern Group.

Groves South: This shaft is downcast to the No.15 level from where the air upcasts through the workings to the No.5 level where it is drawn up the Blue Gap shaft under the influence of the fan on the No.5 level.

New North Boulder: The workings off this shaft continue to be ventilated satisfactorily by natural means.

Iron Duke: This shaft is now only used as a ventilation opening and downcasts to the Parings and Brown Hill workings - now worked from the Parings mine.

Parings: The north shaft continues to upcast but the south shaft varies with seasonal conditions. Airflows in from the Iron Duke mine as mentioned above. A through connection has been established between the No.10 and 11 levels (South shaft) to improve conditions on the No.11 level. The grizzly on this level is equipped with an exhaust system to reduce dust at the grizzly. The dust is collected in a wet coke filter. The 32½" axial flow fan previously installed on No.7 shaft, New North Boulder is now installed on the No.8 level Parings North and exhausts 12,000 cfm. to the Iron Duke - Groves hanging wall workings.

* subject to seasonal fluctuation. Doors are fitted on all levels down to the No.7 level, and the air leaves the shaft at the various levels below. Some air passes up through the workings and upcasts through the Union Jack shaft, whilst the remainder flows along No.13 level to the equivalent No.17 level of the Kelgurli shaft. The air downcasts through the Kelgurli shaft to the lower workings and passes into adjacent mines. Kelgurli shaft is upcast from No.17 level to the surface. Sinking of the Kelgurli shaft was completed and a connection on No.22 level to proposed No.18 level Main shaft has advanced considerably. Ventilation of this work has been by using two 15" electric axial flow fans in series with 16" ducting drawing air from above No.20 level.

Pomeroy shaft in the Oroya North Block lease is still downcasting with varying intensity due to seasonal changes. Upper level workings off the Kelgurli shaft are ventilated by this air.

The dust extraction system fitted at the No.9 level main ore pass continues to exhaust to the surface via the old main shaft.

Croesus Mine: Operations have now assumed fairly large proportions. At present the workings are naturally ventilated. A survey of the mine has been commenced and will be completed early in 1958. From information gathered so far it appears that there is no airflow in the Croesus shaft between the surface and No.6 level, apart from that created by cage movement. All air from the surface is downcast through the Eclipse shaft, south of the Croesus, to No.6 level and then out to the Croesus shaft. Some of this air upcasts through the workings whilst the remainder is downcast by the shaft to the lower levels. This air then upcasts through the workings and returns to the surface via Eagle shaft.

Hydraulic filling of stopes has commenced at both the Croesus and main shafts. Because of the relatively poor airflows in these mines, coupled with proposed working at greater depths, the humidity is expected to rise appreciably once the filling of stopes becomes a major operation.

Secondary ventilation is supplied by electric and compressed air driven fans, and venturi blowers. The appliances used for the various jobs are incapable of forcing the air over the long distances required, resulting in a very low efficiency.

Huoma Gold Mine N.L.

Operations at present consist only of removing broken ore from the stopes. The main shaft is downcast to the No.6 level. A fall on the No.7 level has blocked the airflow, and normally the air downcasts through main shaft to this level thence upcasts through the workings. The primary circuit is by natural means.

At present 1300 cumins are passing into No.6 level and 1500 cumins into No.5 level, 1700 cumins flow into the shaft at the No.2 level and 1500 cumins are drawn from the surface. Various other openings at the surface have little effect upon the airflows.

Owing to the shallow depth of this mine, little trouble should be experienced with the normal ventilation problems.

COOLGARDIE GOLDFIELD.

New Coolgardie Gold Mines: (Owned and operated by Gold Mines of Kalgoorlie (Aust.) Ltd.)

Barbara Mine: No development has taken place on this mine during the past year and operations have been confined to stoping. There has been no major alteration to the ventilation of this mine.

Bayley's Mine: The main shaft (Prices) is reported as downcast to No. 5, 10 and 11 levels and return air from the Western side workings upcasts through the Reward shaft to the surface (natural flow). From the Eastern side workings the air is returned through the No. 10 level and through old stopes to the No. 6 level, from where it is drawn to the surface up the Consols shaft under the influence of a No. 6 Centrifugal fan situated on the surface. The flow up the consols shaft was measured at 24,000 cfm.

BURDAS GOLDFIELD.

Central Norseman Gold Corporation N.L.

Regent Mine: This shaft is downcast to the No. 38 level. A connection made at the Crown shaft on the No. 14 level has, in effect short circuited some of the flow down the Regent shaft. The total flow drawn by the No. 8 C.L. Double width fan situated on the No. 22 level was measured at 61,000 cfm. against 21" W.G. Of this total flow 41,000 cfm. is drawn down the Regent shaft and up through workings to the No. 22 level and 20,000 cfm. is drawn down the Crown shaft to the No. 14 level and through connections made to the No. 15 and No. 16 levels and then down to the No. 2 level.

A connection has been made by a winze between the No. 29 and No. 34 level at section 104^N. This connection has resulted in an upcast airflow of 10,000 cfm. through this winze. A considerable improvement in conditions generally in the northern end of the lower levels of the mine has resulted.

To separate the Crown and Regent shaft airflows into two different systems a new fan capable of 50,000 cfm. delivery is to be installed on the No. 16 level South drive. This will draw from the Crown shaft workings and leave the full capacity of the fan on the No. 22 level to be used to ventilate the Regent shaft workings.

Royal Mine: The No. 6½ C.L. Double width fan on the No. 7 level had a measured output of 43,000 cfm. against 1.9" W.G. This flow is downcast through the North Royal shaft to the No. 10 level and upcast to the No. 7 level through the workings which are mostly south of the North Royal shaft.

The No. 10 level North drive is ventilated by three 16" axial flow electric fans in series with 21½" duct as an exhaust and a 16" axial flow electric fan drawing from the air flow created by the above exhaust system and discharging at the face through a 15" duct.

Dust control at shaft bin grizzlies: A simple but effective water spray has been devised to control dust when tipping ore from trucks at grizzlies. The sprays consist of a length of ½" C.I. pipe closed off at one end with cuts made with a hook saw every two feet. This pipe is made the full length of the grizzly and placed above it with the holes facing downwards. The open end of the pipe is connected to the water main through a quick action valve. The resulting spray is finely atomized and is spread evenly over the length of the ore bin opening. This type of spray is being installed in all shaft bin grizzlies.

Norseman Gold Mines N.L.

Owing to a fall in the demand for pyrite concentrates production has been reduced during the year. The only notable change in the airflow circuit was brought about by a winze-rise connection between the No. 6 and No. 7 levels at section 42. As a result an airflow of 4000 cfm. flows through this opening.

The airflow down the main shaft is now reported as 59,000 cfm. 4,000 cfm. of this leaves the shaft at No. 7 level and upcasts thru

surface by a No. 6 M. fan. The remainder moves south under the influence of a No. 6 CL fan located at the section 22 air shaft. The only development other than the winze-rise connection mentioned above was on the No. 7 level south drive. This drive is ventilated by a No. 2 CL fan at the shaft end boosted by an air fan further along the line of ducting to the face.

A 5 H.P. electric fan on the No. 7 level is used to ventilate the underground crusher station at the No. 3 level, and the skip loading station below.

YILGAM GOLDFIELD.

Sunshine Reward Amalgamated G.M.

There were no mining operations at this mine during the year.

Great Western Consolidated M.L.

Copperhead mine - Bullfinch: The upcast airshaft to the surface was enlarged by stripping and timbered. (This opening was made last year and was reported in the Annual Report for that year. The airflow through the mine increased as the resistance to the flow diminished. The 32" electric fan on No. 12 plat was removed and after being overhauled was installed on No. 18 level. (Whilst at the No. 12 level this fan passed 15,000 cfm.) In December, and after two rises between Nos. 18 and 16 levels were connected this 32" electric fan came into operation. The air downcast through the main shaft totals between 50,000 and 55,000 cfm. made up of 28,000 cfm. through the 48" electric fan on No. 13 level, 10,000 cfm. through the 30" electric fan on No. 14 level and about 10 - 15,000 cfm. through the 32" electric fan now installed at No. 18 level. Fourteen rises were made in the year. Some were between main levels and sublevels, and other between main levels but they all had the effect of providing air ways into working places, and more direct passages to the upcast shafts.

The sinking of an internal shaft below No. 10 level was commenced and this work was ventilated by an exhaust system consisting of a 16" electric fan with 22" diam. duct and a 16" compressed air driven fan installed in the shaft and ventilating the face through 15" diam. duct.

As the winzer for this shaft is to be installed on No. 14 level the shaft has been continued above No. 18 level to this horizon. The work was done by rising with a stage on a borehole. The opening thus made was stripped generally in a through airway. However a 16" compressed air fan was installed for use when the opening at the bottom was blocked.

Fraser's mine - Southern Cross: No alteration to the major airflow was necessary, and the system whereby the main shaft was downcast and a 24" electric fan exhausted the return air along No. 4 level to the upcast shaft, was maintained. The mine ventilation has been satisfactory under this system. A winze between Nos. 5 and 6 levels and several rises into stopes and sublevels were made.

Nevevia mine - Marvel Loch: This mine is still naturally ventilated. The air downcasts to the 250ft. level (No. 2 level) by the No. 1 shaft and is upcast through No. 2 shaft. An exhaust system has been established whereby the return air from No. 3 level development is exhausted to the surface. The three development ends in progress are ventilated by 16" compressed air fans.

The making of a rise between No. 1 and No. 2 level is proposed and when this is completed an improvement to the ventilation of No. 3 level should result.

Corinthian mine - Corinthia: Stopping is the only mining being undertaken at this mine, and several rises have been broken through from the stope to the 100' level. This provides a through airway from the 200' level via the stope to the 100ft. level and thence to the surface by an old open cut. About 2,000 cfm. is the air flow.

NORTH COOLCARRIE GOLDFIELD.

Moonlight Wiluna Gold Mines Ltd.

Timoni mine - Mt. Ida: Ventilation of this mine continues as for the past year. The main shaft downcasts to the nos. 7 and 8 levels. Air is prevented from entering the levels above No. 7 level by doors placed at each plat. From the bottom levels the air upcasts through the workings to the No. 2 level. The air is then exhausted to the surface through a No. 12 S.W.L.L. fan installed on the surface at the south shaft. Measurements show 55,000 cfm. to be passing through this fan.

Secondary ventilation is seldom necessary in this mine because practically the only mining carried on is stopping. Whenever secondary ventilation is required, it is supplied mainly by electric fans although occasionally venturi blowers are used over short leads.

MT. MARGARET GOLDFIELD.

Sons of Gwalia Ltd.

The ventilation of this mine has continued as for the previous year. Measurements supplied by the mine show 71,400 cfm. downcasting through No. 17 level axial flow fan, and 86,000 cfm. upcasting through No. 30 level centrifugal fan. These figures compare favourably with measurements taken by us during the year.

Air is drawn from the surface to the No. 17 level fan, then through the various workings to the No. 30 level. The air is then split, some passing through the workings to No. 32 level then upcasting via the internal shaft back to No. 30 level where it joins the remainder and is exhausted up the main shaft. Some goes direct to the surface and the remainder is bled off at the various levels above No. 22 and passed through the workings before reaching the surface.

High dry bulb temps. with low humidity are recorded in the workings of the downcast airway, but lower dry bulb temperatures with high humidity are recorded in the upcast airways. Wet bulb readings remain fairly constant throughout the mine. At present the ratio of working places in the downcast and upcast airways is 3 : 1. More workings are being started in the upcast airways. This will cause this ratio to decrease. A change in the major airflow pattern of this mine, therefore, appears desirable. By careful planning the airway could be altered so that more workings of the upper levels could receive benefit from the downcast air.

No work solely for ventilation has taken place during the year. Any work affecting the airflows being solely for extracting the ore as quickly and cheaply as possible. All the horses have now been removed from underground and replaced by electric locomotives.

Secondary ventilation is seldom necessary because of the small amount of development taking place. When required, however, it is supplied by compressed air driven fans or venturi blowers, which prove quite satisfactory over the short leads encountered at this mine.

MURCHISON GOLDFIELD.

Hill 50 Gold Mine Hill.

During the past portion of the year the airflow through the

discovered during an air survey in March. This was remedied by re-pairing stoppings. Two more connections were made between the Nos. 6 and 5 levels so that there are now three openings between these levels. (One connection was reported in the Annual report for 1956) These openings apparently had the effect of causing the air to downcast to No. 6 level with the majority of air going off at Nos. 2 and 6 levels and leaving a negligible amount of air to flow along No. 5 level. This was corrected late in the year by installing a door on No. 4 level and now more air circulates beneficially through the workings above No. 5 level. Mining operations above No. 4 level is limited. A Strococo 60" diameter two stage Keroto mine fan is to be installed on the ventilation shaft and this is expected to further improve the ventilation on the mine.

WEST PILBARA GOLDFIELD.

Australian Blue Asbestos Ltd.

This company was visited twice during the year, once as a routine inspection in August, and again in October for a Board of Reference. (This Board of Reference was covered in the earlier part of this report).

Wittenoom mine: The intake airflow was measured in August at 32,650 cfm. whilst the 60" axial flow exhaust fan exhausted 50,625 cfm. The discrepancy can only be accounted for by ineffective sealing of old adit openings and a poor stopping at the fan. Only limited mining was proceeding in the mine and the 32,650 cfm. was quite adequate. Mining operations at this mine were stopped on October 4th.

Colonial mine: 68,500 cfm. was being exhausted by the 60" axial flow fan installed in the northern cliff opening whilst the intake totalled 60,700 cfm. This intake was made up of 23,750 cfm. through the main adit, 27,000 cfm. through No. 3 level, 4,950 cfm. (fluctuates) through No. 2 level and a fluctuating amount (may even reverse) through No. 1 level. These figures indicate a large volume of air passing through the mine, but the path taken by the air is variable. There is no positive airflow through the intake openings and no constant path adopted by the air. This can be attributed to the air currents in the gorges and along the walls of the gorge.

No. 4 level is being developed and a connection through to the cliff face is anticipated in the new year. A stone drive from No. 3 level connected to a chute and manway put up from No. 4 level and there is a through airway by the Main adit. When No. 4 level connects to the cliff face ventilation doors will be installed in No. 1 level to increase the amount of air flowing along Nos. 3 and 4 levels. The majority of the stopes will then be close to these levels.

Dust at the discharge from the Ore conveyor belt was causing a hazard and to eliminate it, a box was placed around the discharge pulley and an exhaust fan discharging to atmosphere outside the mine was installed.

Construction of a new treatment plant at the Colonial mine has commenced. The high elevation of the entrance to the mine on the Gorge face and the fall into the valley of the gorge should assist in the plant layout. It is to be hoped that provision for dust collection, at least similar to and possibly improved on that now at the Wittenoom plant, has been made.

PHILLIPS RIVER GOLDFIELD.

Ravensthorpe Copper Mines N.L.

Mining increased during the year at the copper mine operated

This amount is used to ventilate the development ends on No.3 level and upcasts through old stopes north of the shaft. 2,150 cfm. flows south of the shaft on No.2 level and through a working stope to the No.1 level. The air then flows to the north of the shaft and returns to the surface by small openings. The development ends are ventilated by 12" compressed air driven fans. Generally 12" duct and sometimes 6" duct is used to carry the air to the working face. Probably more fans will be required as future development is increased.

NORTHAMPTON MINERAL FIELD.

Protheroe Lead Mine

This mine was visited in April and ventilation was satisfactory. The main mining was 1. stopping above the 200ft. level about 400ft. north of the shaft. This work was off a winze from the surface and the airflow was good. 2. driving north and south on the 550ft. level off No.6 S. Winze. This development was ventilated by a 12" fan installed on the 415' level and ducting down the winze.

A 30" Aerex fan is installed over a shaft about 300ft. south of the main shaft. This shaft is used as a send pass and only a small proportion of the capacity of the fan is used to exhaust air from the underground workings. The remainder of the air is being short circuited to the fan. This shaft was to be covered.

The ore is limited at the mine and it is believed operations are to be restricted.

SOUTH WEST MINING DISTRICT.

The hard rock quarries and the dry crushing plants attached thereto were inspected during the year under review, and again in January 1958 to ascertain what action, if any, had been taken to carry out the recommendations made on my initial visit.

Ventilation does not enter into the quarrying operations as they are all open air occupations. The suppression of dust created in the plants however does need attention and little has been attempted by the company, with one exception.

Australian Blue Metals Ltd:

This company is the exception. Their 84" x 60" primary jaw crusher is installed in a sealed room and pressurised by air cleaned by drawing through oil filters. Dust counts in this room have averaged 80 p.p.c.c.

The secondary crushing section of this plant is equipped with a dust collection unit which has done much to minimise the dusty conditions. At my first visit in March, this year, it was practically impossible to see or work in the section, but shortly after the installation of the collector an improvement was noticeable. Counts averaging 220 p.p.c.c. were obtained.

The tertiary section is to be altered and foundations etc. have been prepared for four Symons 4' diameter crushers. These are to be equipped with a dust collector. New vibrating screens used for sizing the material are to be installed and of these, one set will be devoted to the removal of dust. (As well as the removal of dust for its harmful properties to health, its removal is now necessary because of the demand for 'dust free metal' by the purchaser)

Blue Rock Quarries Ltd:

There is no dust collection at this company's crushing plant and counts of samples of air taken are high, particularly in the

to secure a 'dust free metal' a fan with ducting has been installed to exhaust when the metal is run from the bins into trucks. A gate in the duct is opened when the door of a chute is opened and exhausts from that particular chute removing some of the dust.

Harrington Quarries Ltd:

This quarry came into operation about October 1957 and it is this company's claim to be able to provide 'dust free metal' that has caused the other companies to endeavour to provide this same feature. The crushing plant is not equipped with dust collection units and in most sections the count from dust samples is high. The company has been recommended to consider the installation of dust collectors. The 'dust free metal' is obtained by double screening the material. It is first screened for sizing and placed in storage bins. When the material is loaded into trucks it is again screened, the required size of material being drawn from the storage bin and transported by conveyor belt for final screening.

Mountain Quarries Ltd:

Counts of dust samples taken in this company's crushing plant have been very high. Although the installation of a dust collector was recommended nothing has been attempted. In the screens section there is a large accumulation of fine powder on the floor and other parts of the building and with wind this is blown into the air further increasing the dusty conditions. The company has been requested to comply with Section 150 of the Mines Regulation Act.

At Bunbury and Capel two companies are operating for the extraction of ilmenite. Samples of the air have been taken in their treatment plants and counts of the samples made. It is only after the material has been dried that there is any dust created.

At Cable (1956) Ltd. all counts taken have been satisfactory.

At Western Titanium Ltd. counts generally have been satisfactory. One high count of 500 p.p.c.c. was obtained from a sample taken whilst on the magnetic separator floor. The wearing of respirators whilst working on dusty operations was recommended.

YEARLY TABULATION OF DUST COUNTS - 1957.

Particles per Cubic Centimetre.

Development	Stopping			Level			Surface			No. of places showing 1000+		
	Average Count	No. of Samples	Average Count	No. of Samples	Average Count	No. of Samples	Average Count	No. of Samples	Average Count	Dev.	Stope	Level
	174	951	169	129	194	195	197	9	7	2	8	(3)
	(152)	(877)	(191)	(84)	(215)	(123)	(137)	(1)	(7)	(3)	(3)	(3)

Included in the above figures and average count are the dust counts of 1000+.

Figures in brackets are those of the Yearly tabulation for 1956.

encountered during an air survey in March. This was remedied by re-wiring stoppings. Two more connections were made between the Nos. 6 and 5 levels so that there are now three openings between these levels. (One connection was reported in the Annual report for 1956). These openings apparently had the effect of causing the air to downcast to No. 6 level with the majority of air going off at Nos. 4 and 6 levels and leaving a negligible amount of air to flow along No. 5 level. This was corrected late in the year by installing a door on No. 4 level and now more air circulates beneficially through the workings above No. 5 level. Mining operations above No. 4 level is limited. A Sirocco 60" diameter two stage Aeroto Mine Fan is to be installed on the ventilation shaft and this is expected to further improve the ventilation on the mine.

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Wittenoom mine: The intake airflow was measured in August at 32,650 cfm. whilst the 60" axial flow exhaust fan exhausted 50,625 cfm. The discrepancy can only be accounted for by ineffective sealing of old edit openings and a poor stopping at the fan. Only limited mining was proceeding in the mine and the 32,650 cfm. was quite adequate. Mining operations at this mine were stopped on October 4th.

Colonial mine: 66,500 cfm. was being exhausted by the 60" axial flow fan installed in the northern cliff opening whilst the intake totalled 60,700 cfm. This intake was made up of 28,750 cfm. through the main edit, 27,000 cfm. through No. 3 level, 4,950 cfm. (fluctuates) through No. 2 level and a fluctuating amount (may even reverse) through No. 1 level. These figures indicate a large volume of air passing through the mine, but the path taken by the air is variable. There is no positive airflow through the intake openings and no constant path adopted by the air. This can be attributed to the air currents in the gorges and along the walls of the gorge.

No. 4 level is being developed and a connection through to the cliff face is anticipated in the new year. A rope drive from No. 3 level connected to a chute and manway cut up from No. 4 level and there is a through airway by the main edit. When No. 4 level connects to the cliff face ventilation doors will be installed in No. 1 level to increase the amount of air flowing along Nos. 3 and 4 levels. The majority of the stopes will then be close to these levels.

Dust at the discharge from the Ore conveyor belt was causing a hazard and to eliminate it, a box was placed around the discharge pulley and an exhaust fan discharging to atmosphere outside the mine was installed.

Construction of a dust treatment plant at the Colonial mine was commenced. The high elevation of the entrance to the mine on the gorge face and the fall into the valley of the gorge should assist in the plant layout. It is to be hoped that provision for dust collection, at least similar to and normally improved on what now at the Wittenoom plant, will soon appear.

PILBARA MINE CO. LTD.

WITTENOOM GOLD MINE

DATE	NAME	PLACE	COUNT	TEMPERATURE		REMARKS
				AIR	WET	
	AUSTRALIAN BLUE ASBESTOS LTD. SHEPPHORN					
2. 10. 57	Treatment Plant	Mos. 1 and 2 Moss Chain Feeder	180			
		from Ore bin.				
		Mos. 2 ^A Conveyor belt	70			At picker's position
		Feed to Blake Jaw Crusher	30			Operators platform.
		Jacquard crusher	170	50		Operators platform.
		Vicinity Trepler crusher	180	70		
		Discharge from Symons to belt	240			
		conveyor				
		Vicinity of Oubre Mill	550			
		Operating platform for Rolls and screens etc.	640			
		Operator's platform vicinity of	280			
		Habit breaker, screens and				
		fibre collection.				
		Vicinity Nos. 3 and 4 Trommels	330	50		
		Bagging section (South side)	320			
		Bagging section (North side)	500			
		Centre of fibre storage room	150	70		
		Outside plant. Vicinity of plant	50	10		
		fibre bagging (North side)	460			Two men working.
		In front of Nos. 3 and 6 screens				
		inside No. 1 Dust room.	1000+			
3. 10. 57						

C 1904

No. Figures in red are results of dust samples taken 17.6.57

J. M. Fairclough

DISTRICT INSPECTOR OF MINES.