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1. INTRODUCTION

Jagersfontein development requested EXP1 to conduct an underground visit to verify conditions of all the seals and all access points towards the pit on 154 Level and to 275 Level. The main purpose of the investigation was to identify tunnels that have already been blocked off. Assess the conditions of the plugs in the following terms:

- To confirm the accuracy of the underground plans.
- Material, (concrete, rock, grout, bricks, fine materials etc.)
- Size and length of plug (along the tunnel)
- Assess the structural capacity if possible (interface stability between plug and footwall, sidewalls and hanging wall.)
- Assess whether the plug has been pressure grouted (mass and/ or rock interface.)
- Are there pipes and valves through the plug? Is there water pressure at/ or behind the plug?
- Identify tunnels/ locations where plugs should be installed to prevent slime mitigation to the shaft.
- Has the rock around the tunnel/ shaft been recessed to accommodate the plug?
- Note ingress of water into all tunnels and shafts (position and seepage flow rate if possible?)

Exploration Team

I.	WH Fouche	Exploration Team Captain - Senior Mining Training Officer
II.	HJ vd Mescht	Exploration Team Vice C. - Mining Shift Overseer
III.	EF Campbell	Exploration Team Member - Environmental Officer
IV.	P v Wyngaard	Exploration Team Member - Shaft Forman
V.	FJ Pretorius	Exploration Team Member - Mining Shift Overseer
VI.	P Zeelie	Exploration Team Member - Mining Shift Overseer
VII.	J Brits	Exploration Team Member - Rock Engineering Officer

2. FINDINGS

MRS 1#(Main Shaft)

We started to erect our Sky Jack rigging system at the main shaft MRS1.

As we started to do shaft examination and decent into the MRS1 shaft we could see that several guides and buntings is badly damaged, we inspected and tested all shaft structure to evaluate general conditions. Due to the unsafe conditions of the first two guides we dislodged them into the shaft.

At the first intersection of the old lamp room walkway towards the shaft,we encountered old unstable material and water running into the shaft compartment which influenced the visibility in the shaft. The team Captain offloaded two of the Exploration crew members to stabilize the old and rusted structures and to re-route the water into a different compartment of the shaft to increase visibility towards 275 Level, no photos could be taken due to humidity in the shaft.

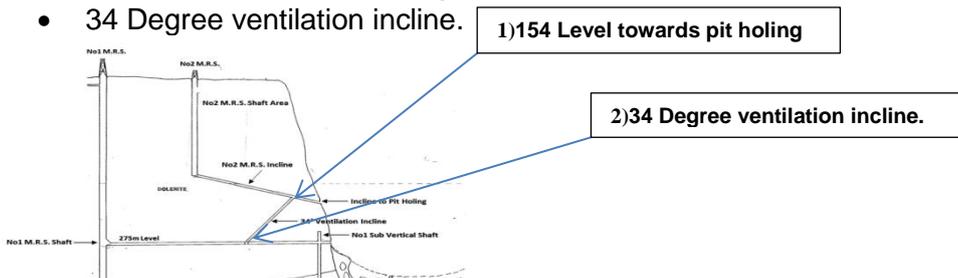
After the areas were declared safe, descending continued with the Sky Jack to approximately 60m down the main shaft. At this point, after visually assessing the risk, it was determined that due to uncontrolled falling of shaft structures that had caused additional damage to the shaft infrastructure, further descend would pose a life threatening risk to the crew. The team Captain and the crew agreed to stop the operation at MRS1# and withdrew to surface.

At the time the crew arrived on surface, the crew together with Jagersfontein management, re-planned and a decision was made to abandon MRS1# due to the risk and to move back to MRS2#.

MRS 2# (Sub Shaft)

As per the available underground plans supplied by the management of Jagersfontein, two access points from MRS 2# were identified as possible access to 275 Level

- 154 Level towards pit holing.
- 34 Degree ventilation incline.



After new site establishment at MRS 2#, shaft examination was conducted and the shaft was declared safe for further operation.

According to the re planning, we equipped the shaft with a 50mm, 20 bar pvc pipe and 25mm electrical cable.

MRS 2# (154 Level towards pit Holing)

At 154 Level towards pit holing, the natural water flow down the shaft washed mud and tailings which caused a restriction to the access. Hand lashing with shovels was used to create a 12m trench towards pit holing.

- Findings and signs of secondary blasting were observed which contributed to bad ground conditions, and resulted in the hanging walls and side walls collapsing and closing off of any possible access to the main pit.

- Moderate to good ground conditions were observed along the entire Level, up to approximately 8m from the fall of ground.
- Excessive scaling (large slabs) was observed on both of the sidewalls close to the holing position towards the old pit, these conditions were observed after digging a trench towards the pit
- Blasting barrels and secondary blasting accessories were discovered close to the holing position, which indicated that secondary blasting was possibly conducted in the past.



This picture is of 154 Level over run at the 34 degree incline towards the pit. Hand lashing must be conducted at this position to be able to get to the access point.





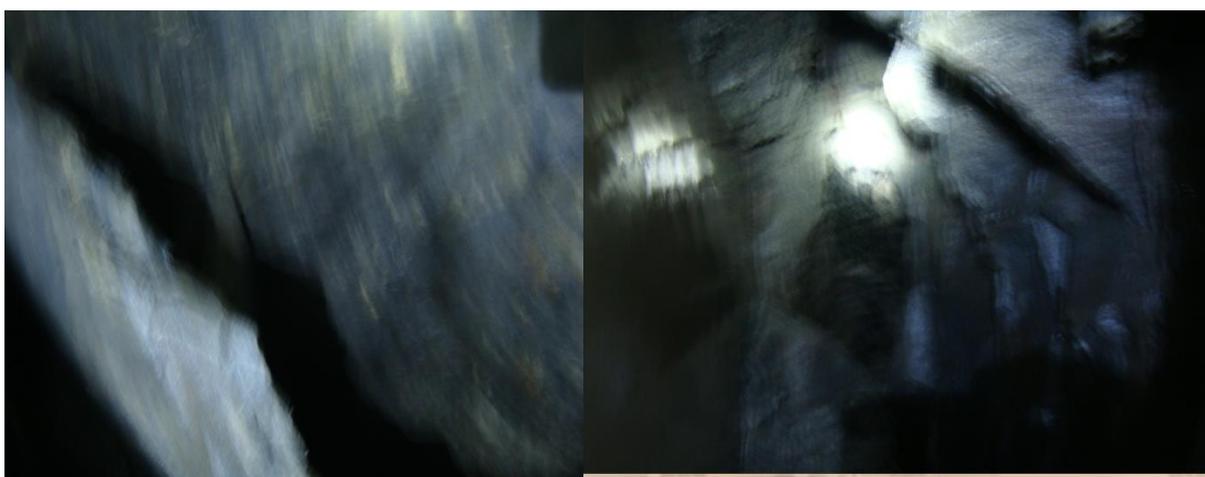
Water was intersected and a spindle pump was used to remove the water . We managed to dig a trench for access as indicated above.



The trench provided access up to the fall of ground intersection, bad hanging wall and side wall conditions clearly visible and a total collapse of surrounding development ends.



Water pipes and electric cables that we installed underground.



Bad ground conditions on the 154 level where they blasted to ensure it caved in towards the pit.

MRS 2# (34 Degree ventilation Incline)

The 50mm class 20 pvc water column and Electrical cable was then suspended approximately 100m down the 34 degree ventilation incline, to focus on the last possible access point towards 275 Level.

All the mud was loaded into salt bags, issued by Jagersfontein mine, to create a wall and prevent mud from flowing back into the excavation, after a two day attempt of opening the plug we again encountered falls of ground possibly created by blasting induced practices, blasting accessories and clearly visible barrels were observed during the operation.

Mud and tailings created a plug 134m down the 34 degree ventilation incline, this together with possible induced blasting practices created the plug. The available plans do not correspond with the underground measurements; the plans indicated that the access point of 275 level was supposed to be intersected at 101,9m.

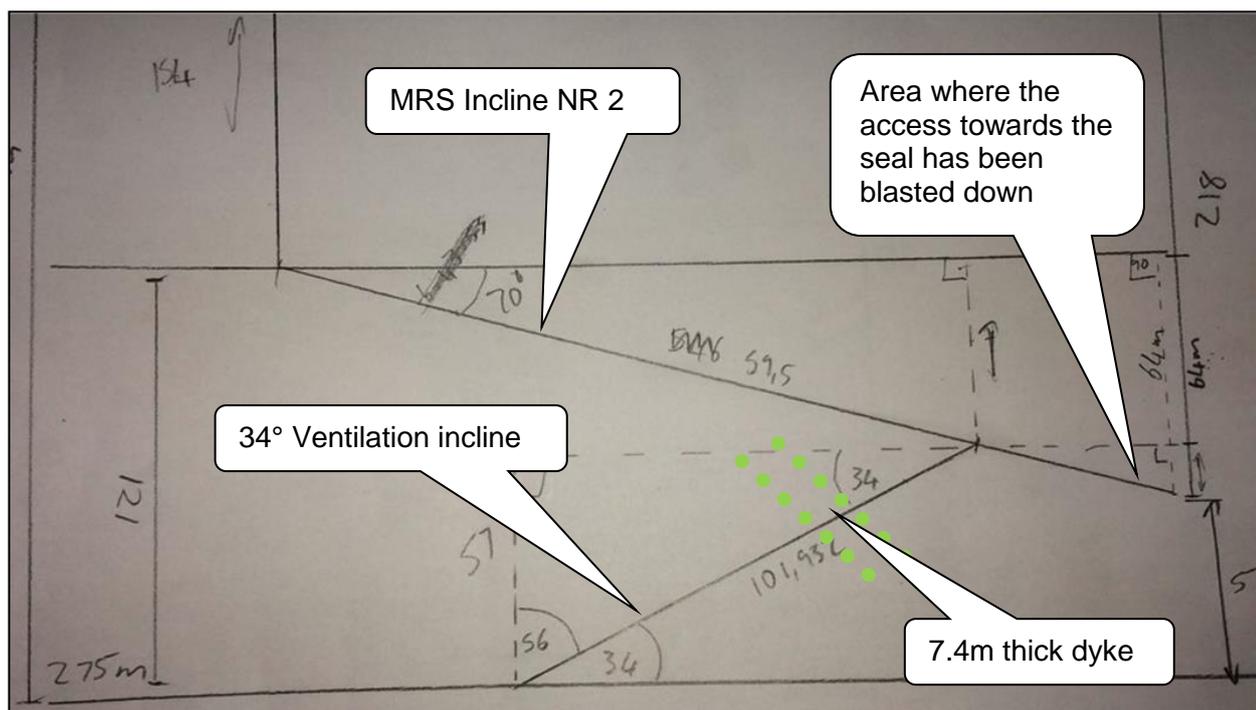
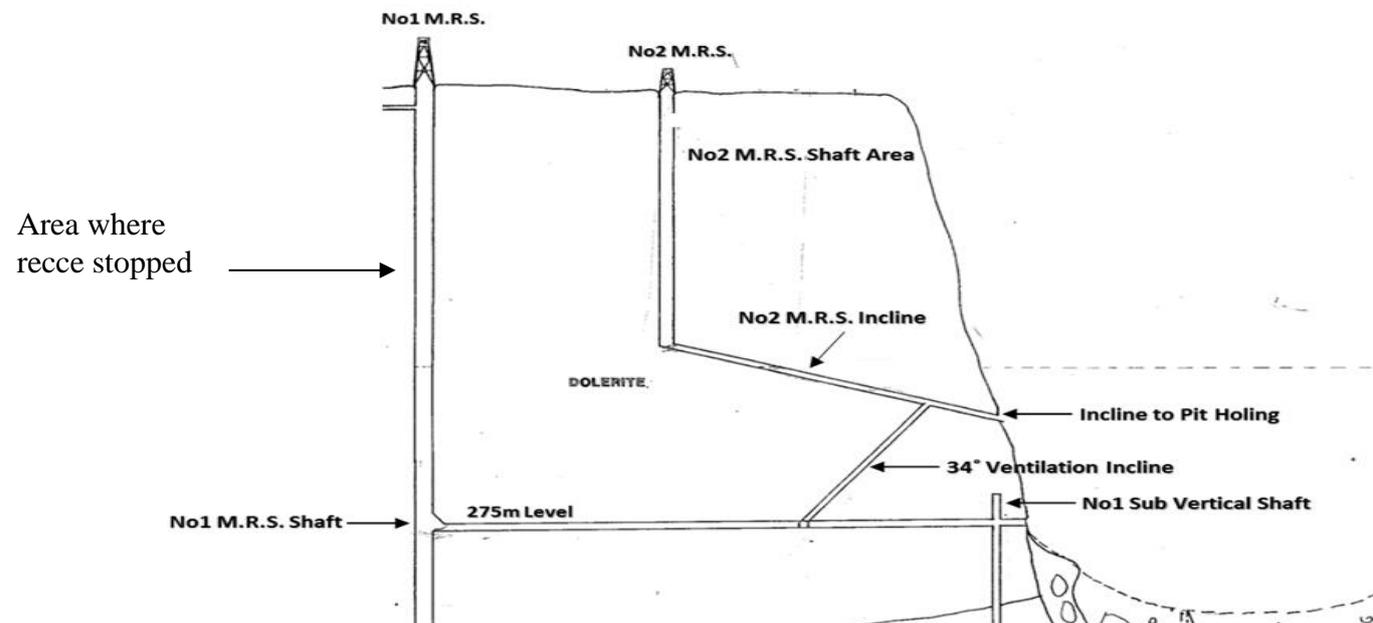


Figure 1: Section view for the first two (2) levels from the sub-shaft.

• **34° Ventilation incline**

- Moderate to good ground conditions were observed in the 34° Ventilation incline.
- A large fall of ground was observed 32m from the top going down towards 275 level. The fall of ground has occurred on the 7.4m thick dyke (igneous intrusion with sympathetic jointing) and a large wedge has dislodged from the hanging wall.
- The rest of the ground conditions along the 34° Ventilation incline appear to be in good condition.
- Access towards 275 level was not accessible as the area was blasted down (large amount of blasting

wire was discovered in close proximity of the holing point into 275 level and large blasting sockets was visible in the hanging wall and sidewalls.)



34 Degree mud loading taking place.



Continuous mud and water flowing down 34 degree incline.



Large rocks was intersected and signs of blasting accesories observed.



Bad ground conditions



Photo indicating mudbag wall at the bottom 34 degree incine.



Photo indicating mudbag wall at the bottom 34 degree incine.



Stacking of mud bags against the side of the incline.



Incompetent ground conditions along incline.



Corroded Steel construction in the incline.



Area barred and made safe.

**Drone Footages
Open pit**

We took several photos with a drone and also made a video. It is clear that there is no opening or plug visible in the pit. The side walls caved in thru the years and that made it impossible for us to see the plugs or the condition of the plugs.



**Jagersfontein Developments
Underground Recce No1 and 2 M.R.S.
Shaft
Final Report**

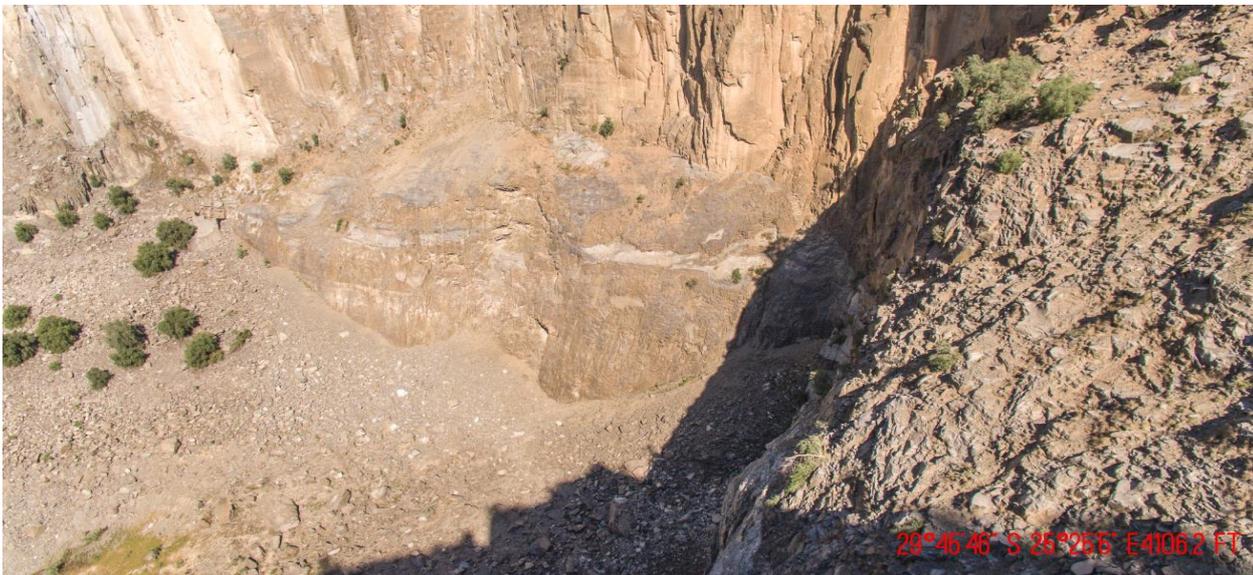




Clear indication of the pit mining itself, caving in.



Collapsing of High walls.



Excessive stof in the pit.





3. CONCLUSIONS

- We can confirm that the underground plans are not accurate or to scale.
- We could not determine the size and the length of any of the plugs.
- We could not assess the structural capacity or the stability between the plug and the footwall, side walls and hanging wall.
- We could not determine if the plug was pressure grouted as we could not get close to the plug.
- There are no pipes and valves through the plug. There is water seeping underneath the stuff but we can't see that there is any pressure on the plug.
- Unsafe Shaft conditions at MRS 1# pose a life threatening risk due to all the loose material on the buntings.
- Access towards the 154 Level seal on the MRS 2# was not accessible as the ground conditions were unsafe due to signs of possible blasting induced activities to ensure that it caved in and that there will not be any entrance to the shaft from the pit side.
- Access towards 275 level was blocked due to possible induced secondary blasting activities and mud and water running down the 34 degree incline.
- It is clear that all means necessary were taken to ensure that no person will enter through the plugs that were built in the shaft.
- All underground access points were tested and no vent flow or flammable gasses were present.
- Drone footage and video clearly indicate no visible cement plug or holing on the open pit high wall.
- Open pit measured at 165m in depth.
- Corrosion and collapsing of side walls causing natural filling of the pit.

Report conducted by WH Fouche

Exploration Team Captain

Date: _____