



Presentation Title: Transforming Mining Practices in South Africa:
The In-stope Drill Guide

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FOGAP Six Pillars

The GOAL

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Zero harm strategic framework



Values and engaged leadership

Employee engagement is a direct outcome of the company culture, quality of leadership and the ability to foster an inclusive environment

- Value-based behaviour and decision making
- The right decisions all the time
- The sustainable solution to risk reduction

ENABLING ENVIRONMENT

Operationalising our intent

Sustaining a safe working environment with the required operating practices, equipment, tools and material

- Real risk reduction
- Engineering out risk
- Designing & implementing controls, standards and protocols

EMPOWERED PEOPLE

Humanising our intent

Appropriately-trained and resourced people to execute our safety and health strategy

- Risk management: Fundamental basis of any safety system
- Competent, trained people to apply controls. Know when to stop and stop without hesitation

WORLD CLASS SYSTEMS

Systemising our intent

Subscribing to best practice, principles, integrated systems and digital technologies to embed and support our safety and health strategy

- Global best practice to embed risk management
- Implement, measure and monitor
- Proactive risk management



Developed collectively with stakeholders to improve safety and health for the workforce



- Miners in an underground environment face significant risks, one of the most serious being falls of ground.
- Falls of ground pose a grave threat to the safety of miners and can result in injuries, fatalities, and significant damage to infrastructure.

Falls of Ground elimination strategy

To mitigate the risk of falls of ground in a Mine, we may employ various strategies

In-stope drill guide.

Bolt installation.

Blasting.

Backfilling.

The in-stope drill guide serves as a valuable tool in the Falls of Ground elimination strategy in a Mine, helping miners work more safely and efficiently in challenging underground conditions.

FOGAP Six Pillars

1

Adoption of Leading Practices

- Monitoring effectiveness of current drilling practice using technology

2

Research and Development (R&D)

- Implementing improved drilling accuracy by using jigs/rigs in conventional stope panels

3

Skills Development

4

Policy Issues

5

Behaviour, Culture Operational Discipline

- Implement ways to reduce the mining cycle time, for example, faster drills Implementation and Monitoring

6

Implementation and Monitoring



Drill Guide underground at Burnstone

What was the Goal?



In conventional stoping drilling accuracy is crucial for both safety and productivity.

Drill guides/Jigs ensure that drill holes are consistently placed at the correct angles and positions, reducing deviations from the planned drilling pattern.

Drill guides/Jigs are typically equipped with adjustable components to accommodate different drilling angles and positions.

Drill guides/Jigs may include supports, clamps, and stabilizing features to secure drilling equipment in place

What was the Goal... what, how and why?

Drill holes
that are:

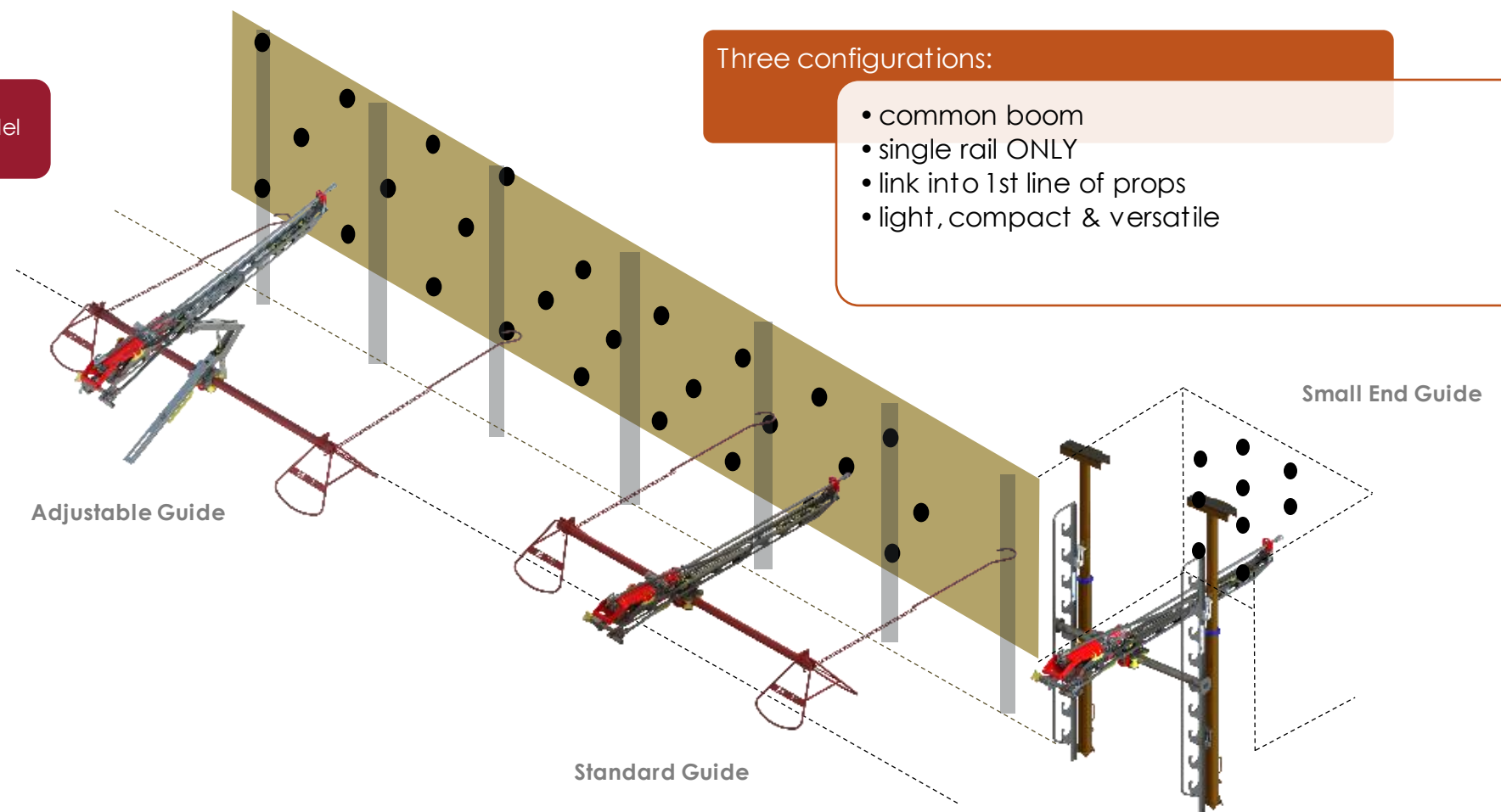
Accurate

Straight

Parallel

Three configurations:

- common boom
- single rail ONLY
- link into 1st line of props
- light, compact & versatile



What was the Goal... what, how and why?

Key
Performance
Indicators
(KPI's):

Safely

Quick

Least cost

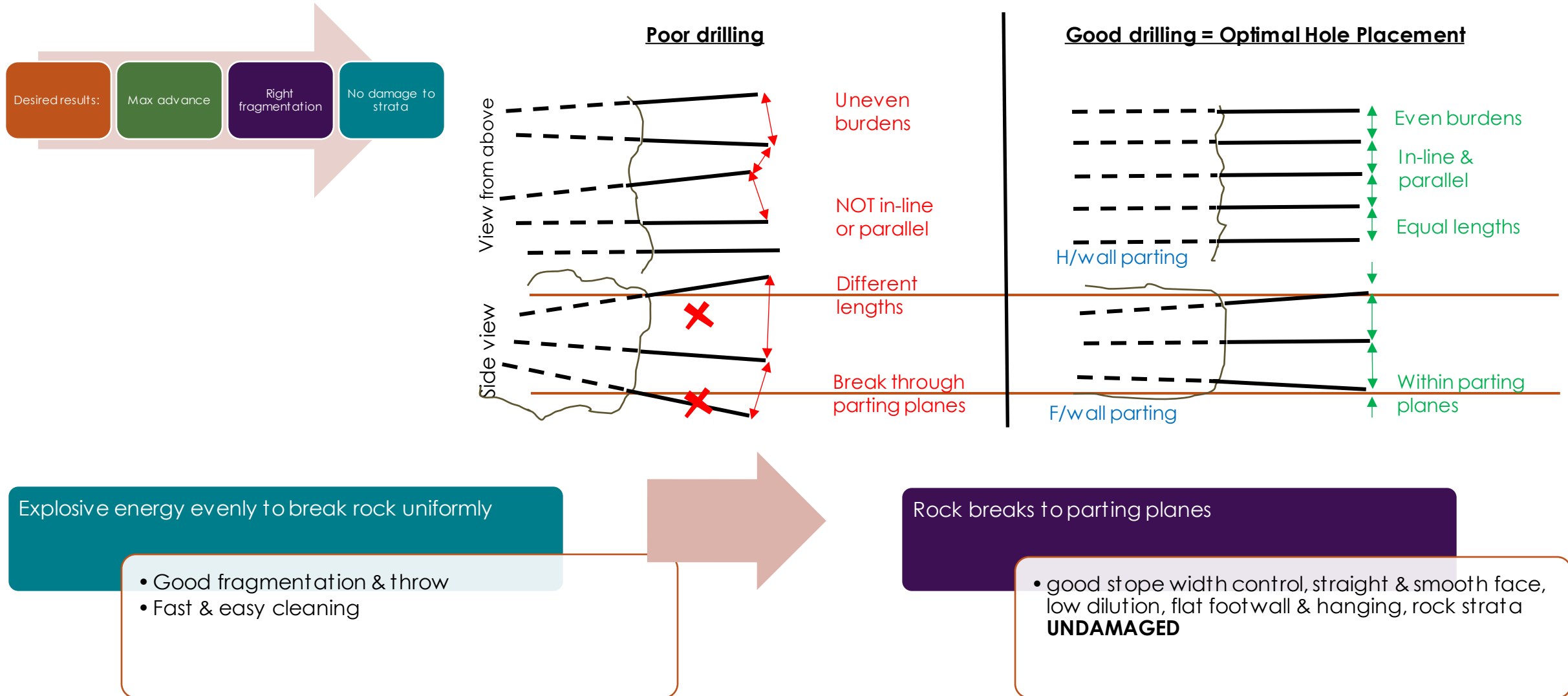


Features:

- In-line thrust à 20% faster & 20% less water
- Guide datum à GOOD Drilling à many benefits
- Fast & easy à Great operator acceptance
- Tethered to face props
- Light-weight rail on skids
- Boom "pegs & slides" à easy re-positioning

Eliminating FOG Fatalities by implement ways to reduce the mining cycle time

What was the Goal... what, how and why?



What is the Industry's "Ultimate goal"?



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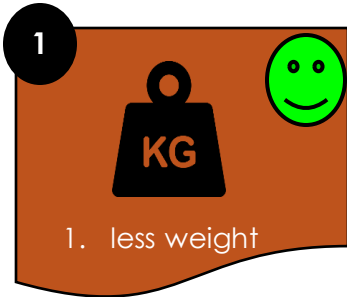
Drill Guide underground at Burnstone

What is the Industry's "Ultimate goal"?

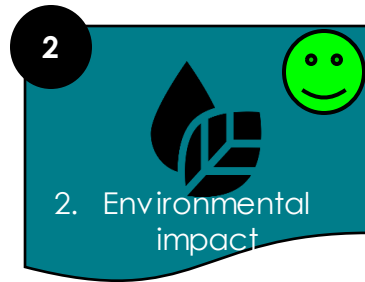


Drill Guide underground at Burnstone

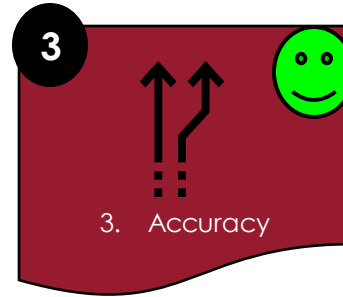
What is it the Industry's "Ultimate goal"?



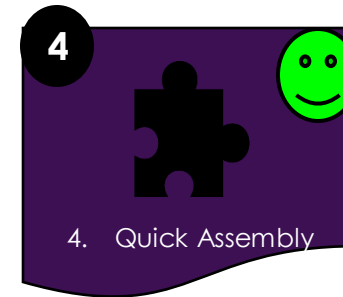
easy to use



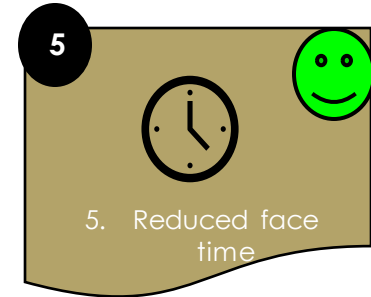
not air



precision



fast ..



safe !

It is a user-friendly interface, in specifically addressing inclusivity and diversity in the mining workforce, especially of **women in mining**.

Precision drilling helps **minimize overbreak** (unintended fracturing of surrounding rock), reducing the environmental impact and potential harm to adjacent areas.

Precision drilling is essential for effective blasting, fragmentation control, and **overall mining efficiency**.

In-line thrust 20% **faster** & 20% less water.

Accurate drilling contributes to better ore recovery rates, maximizing the **economic benefits** of mining operations.

Challenges

Geological Variability

Mobility

Water control

Operator Training and Skill Levels

Cultural Acceptance and Workforce Buy-In (change in mindset)



QUESTIONS?