

		GOLDER ASSOCIATES AFRICA SIM 140202 UG Barring Questionnaire	
Project No	13615364	Excavation	Stope Development Other
Date		Excavation Height (m)	
Champion Mine		Nationality	
Shaft		Place/ Town of Birth & Province	
Working Place		Ethnicity (Race & Language Group)	
Depth (m)		1st language/ 2nd language	
		Marital status	Single Married Divorced
Occupation		Number of dependants	
Sex (M/ F)		Years of mining experience	
Age category	18 -23 24-30 31-40 41-55 56-65 >65	Years working at this shaft/ mine	
1. Have you undergone any barring training here?			
2. Please tell me the rules of barring?			

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Competent	Not yet Competent		
<input style="width: 100%;" type="text"/>	<input style="width: 100%;" type="text"/>		
3. How long ago was the training completed?			
< 6 months	6 months to a year	1-3 years ago	>3 years ago
4. Was training only done on surface, or underground as well?			
5. How long was the training, both underground and surface?			
6. How was the training done?		<input style="width: 100%; height: 20px;" type="text"/>	
e-learning /computer based		<input style="width: 100%; height: 20px;" type="text"/>	
underground or in mock-ups		<input style="width: 100%; height: 20px;" type="text"/>	
classroom and facilitator based		<input style="width: 100%; height: 20px;" type="text"/>	
7. Which method did you think was the best/ learn the most from/ find useful?			
8. Have you had refresher training?			
9. When was the refresher completed?			
< 6 months	6 months to a year	1-3 years ago	>3 years ago
10. What language were you trained in? Did you have a choice?			
11. Do barring accidents occur frequently here?			
12. Do you think the rules of barring are followed?			
13. Do you feel safe when barring?			
14. If you cannot bar the area, what other options do you have?			
15. Is barring physically tiring?			

16. Have you ever not barred to standard? Why?			
17. Have you ever not followed the rules of barring? Why?			
18. Has the heat ever affected your ability to bar to standard?			(Ask if area is hot)
19. Do you have sufficient lighting to be able to observe dangerous conditions?			
19. Does your eyesight allow you to observe the HW properly? / Can you observe the HW properly?			
20. Do you normally wear glasses? Do you wear them underground?			
21. Is the PPE you are wearing able to protect you when barring?			
22. Are the pinchbars you use very heavy to carry around and use?			
23. If the pinchbar is blunt or old, do you still use it? Or do you exchange it?			
24. When was the last time you received a sharpened pinchbar from the workshop?			
Last week	Last month	2 months ago	Never
25. Is barring done only during EE or do you bar when you feel it is unsafe as well?			
26. Do you water down before barring?			
27. Do you stand on the up-dip side when barring?			
28. Do you use the correct pinchbar length to safely bar in your area?			

29. If you do not have the correct length of pinchbar, what do you do?

30. How many pinchbars are available in your working area/ panel?

31. Are the ends of your pinchbar sharp when you bar?

32. How do you tell when the rock is loose from the hanging?

33. What sound do you hear when you tap a loose rock?

34. How do you tell when the rock is solid?

35. What sound do you hear when you tap solid rock?

36. Do you use a gasket on your pinch bar during barring?

37. Are gaskets easily available to you?

38. Have you ever barred without a gasket? Why?

39. Is the gasket on your pinchbar effective at protecting you from hand injuries?

40. Do the people working in your area know when you are barring?

41. Are they located at a safe distance from you?

42. Do you have a spotter/buddy barrer at all times when barring?

43. Where do you stand when barring? Why?

44. What angle do you hold your pinchbar at?

45. Do you have an escape route identified prior to barring?

46. How often do you assess the HW when working?

47. Do you ensure a secure footing when barring? Why should you do this?

48. Do you rest in a safe, supported and barred place?

49. Do you stop and look back when barring?

50. Why can the rock conditions around you change whilst you are working?

51. How do you think barring can be made safer/improved?

52. Tricks of the trade

53. Soundbytes/Rhymes to remember rules etc.

Overall Competency:

COMPETENT

NOT YET COMPETENT



MINE HEALTH AND SAFETY COUNCIL UNDERGROUND BARRING RESEARCH PROJECT

Dear Sir/Madam

Golder Associates on behalf of the Mine Health and Safety Council (MHSC) of South Africa are undertaking a research study to investigate the reasons behind health and safety incidents related to underground barring activities and how we can improve barring practices at flagship mines in South Africa. As part of this study, Golder's social team is conducting focus group discussions and key informant interviews with underground workers to assess the risks they face when doing their jobs.

The focus groups discussions and key informant interviews are qualitative research tools which aids in understanding the experience and opinions of underground workers. The information collected through these discussions and interviews will be analysed using thematic analysis based on the themes indicated by the MHSC. Results from the social research will be included in the overall project report.

All qualitative research techniques have been compiled and administered in accordance with recognised ethical practices when undertaking social research with human participants in a non-medical context. This entails that the project is explained to participants in their own language and their written consent will need to be obtained in order to participate in the focus groups and interviews. These discussions and interviews will be recorded for the purposes of the researcher to accurately capture responses and consent from participants to be recorded will also be obtained. Participant's identities are kept confidential and only the responses are analyses and presented as results in the overall report.

Golder's social team will require available participants for focus groups with the following criteria:

Competent A and B underground workers including team leaders;

Must have had prior experience conducting barring activities;

Should have worked at the mine for some time in order to have knowledge of mine specific procedures

The Key Informant Interviews will be administered to miners, relevant supervisors, managers and head of departments. This depends on their willingness to participate in this research. Once again their consent would be needed before we can conduct interviews with the selected people.

The overall objective for this research is to identify the aspects which influence the health and safety incidents related to underground barring activities and how we can improve barring practices. Your cooperation and willingness to assist us would be much appreciated. Should you have any further queries, please contact us on the details below:

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Best regards,



Focus Group Discussion Questions:

General

Introduction to the study and the objectives for these focus groups:

Golder Associates on behalf of the Mine Health and Safety Council (MHSC) are undertaking a research study to investigate the reasons behind health and safety incidents related to underground barring activities and how we can improve barring practices at flagship mines in South Africa. As part of this study, Golder is conducting focus group discussions with underground workers to assess the risks you face when doing your jobs.

The focus groups are expected to last an hour and a half so please remain patient and continue to participate for this time. Your experiences and opinions will help us to conduct our study and provide a good quality report to the MHSC. Also please remember to respect each other and allow people to speak without interruptions. Everyone will get a chance to speak so please be patient and wait for your turn.

Establishing people's names, ages, job titles and previous experience and introduction of the researcher to the group. Time should be spent explaining the consent form and getting people to translate and sign it.

We are passing around an attendance register just for our own use so we can come back to the right people if we need to ask follow up questions. Also we would like you to sign a consent form which means you have agreed to participate in this focus group and answer the questions we have. Your names and personal details will not be included in our report. Your responses will also not be distributed to the managers. They are for us to analyse and we will present our results to the mine and the MHSC. We also request that the other members of the group respect each other's privacy and do not disclose information about each other outside of this group.

1. Skills

- 1.1 What skills are required for Competent A underground workers? *(You may need to prompt the group here)* What do Competent A workers do which others don't?
- 1.2 What is your highest level of education?
- 1.3 What level of ABET have you completed? *(explain what ABET is and when it is applicable)*
- 1.4 Do you know what barring is? Why do you need to do it?
- 1.5 Have you done barring at this mine or on another mine before working here? What other mine have you done barring at?
- 1.6 Who's responsibility is it to know the barring procedures? What are these barring steps? *(get a brief indication of what they think the steps are)*
- 1.7 If you don't bar, why don't you and what do you do when barring is being done?

2. Training

- 2.1 Have you undergone training to be able to bar underground? (surface and underground?)
- 2.2 What do you think of this training?
- 2.3 Do you think this training is sufficient?
- 2.4 Do you feel confident to bar underground after this training?
- 2.5 Can you identify the area that you need to bar after your training?
- 2.6 Is the correct barring technique done by all underground workers? Please explain.



APPENDIX A

Questionnaires used in the Barring Study

- a) Are training materials available in non- English languages? If so, in what other languages?
- 2.7 What Safety Training Materials and Methods does your mine use? (written materials, videos, self-guided, hands on, group exercises, practical demonstrations, narrative, e-learning, mock-ups, class room situation)
- 2.8 What training materials are the most helpful for you to learn with? (rank from most to least – top three) and what training material is least helpful for you to learn with? (rank three)
- 2.9 How many people inspect a hanging wall after blasting? Is this sufficient to create a safe working environment?
- 2.10 If you are unsure on whether you should bar or not, what process is followed?
- 2.11 How do you stand when barring down ('making safe')? (*should be holding the pinch bar at 45 degree angle at your side with firm footing, body angle to the side*)

3. Equipment

- 3.1 Is your equipment adequate for the job? Is your pinch bar sharp, clean and readily available in your work area? If no please explain why.
- 3.2 How often is your equipment serviced, exchanged or repaired? (*transportation of pinch bars*)
- 3.3 Does the weight or the length of your equipment (pinch bars) bother you? And Why?
- 3.4 Do people use gaskets on their pinch bars? Are these optional? What type of gasket is used? (leather or steel)
- 3.5 Are pinch bars readily available in your working area?
- 3.6 In your opinion, is there other equipment you would need for barring to make it easier or safer?

4. Barring Environment (Size of Excavations)

- 4.1 Do workers enter a blasted area before the area has been declared safe? (How long do you wait after blasting has taken place to re-enter the area under concern?)
- 4.2 How do you assess any unsafe hanging wall conditions? Do you do a risk assessment? (ALLeRT, TARP. Hazard Identification)
- 4.3 How do you bar in 2m or higher excavations/development?
- 4.4 And lower than 2m excavations/stopes? (*indication/demonstration of position on their knees or squatting*)
- 4.5 Do you continue to bar after the post entry examination or when conditions change during your shift? If you notice a dangerous condition while working, what do you do?
- 4.6 Do you report any barring incidents or accidents? If so, to whom? (formal or informal)
- 4.7 What is the procedure for reporting incidents?
- 4.8 Are persons associated with an incident/accident interviewed?
- 4.9 Have you witnessed any barring which was done incorrectly? Perhaps an incident where you felt something was done wrong. If so, what?
- 4.10 How is misconduct reported? Do you feel comfortable with this process?



APPENDIX A

Questionnaires used in the Barring Study

4.11 Do workers rush the inspection of the hanging wall? Why do you think this happens?

4.12 Is the available light suitable for you to do your work? If not please explain. (eyesight)

5. Leadership

5.1 Do you feel that you get sufficient supervision? How often do you see your miner per shift?

5.2 Is mentoring/guidance/on the job coaching provided by your miner?

5.3 Do you know the Mine Health and Safety Act?

5.4 What are Section 22 and 23 of the Act?

5.5 Do you think your miner or supervisor works according to the Mine Safety Act?

5.6 Do you feel comfortable approaching or speaking to your miner/shift boss/supervisor? Please provide some examples.

5.7 How do the people in your team work together? Do you argue with each other? Why?

5.8 Do you think your team leader/Competent A/miner is a good leader? Does he look out for you?

5.9 Is there a good level of communication and sharing of information between who you directly report to and yourself? If not, why?

6. Communication

6.1 What are the communication systems which are used underground? (Written – yellow card and safe declaration book, shift supervisor logbook, verbal, visual – notice boards)

6.2 Are your standards and reports on the notice boards updated regularly?

6.3 Do you think that these systems are working for you?

6.4 If there is a change in rules underground, are these changes communicated to everyone? How is this done?

7. People within the Environment

7.1 When barring, what do workers suffer from which affects their performance at work? (*personal fatigue, other physical injuries or personal issues?*) What do most workers suffer from?

7.2 Why do you think people are tired? Do people sleep during their shifts?

7.3 Do you think people's thoughts and what's going on in their lives or at home affect them at work?

7.4 Does eyesight or hearing affect your ability to bar? (Get a response on each)

7.5 How many hours do you work in a day and in a week? How are your shifts structured?

7.6 How many rest breaks are you allowed during a shift? (Do the miners and team members get upset if you are resting?)

7.7 Does your leave get approved by the managers?

7.8 How often do you work over time? (Reasons for overtime?)

7.9 Does fatigue affect your ability to bar?



APPENDIX A

Questionnaires used in the Barring Study

- 7.10 What is the drug and alcohol testing protocol for going underground on the mine? (determine if people go underground under the influence of alcohol). Do you think this is a problem with mine workers? Have you seen anyone under the influence while underground?
- 7.11 Do heat levels affect your ability to bar effectively? If so, in what ways?
- 7.12 How often are people hurt when barring? Why do you think this happens?
- 7.13 What ways can we make barring safer for everyone?
- 7.14 Does a miner's work experience help them bar better?
- 7.15 Has anyone experienced a barring incident where someone was hurt or injured underground? If so, please elaborate.
- 7.16 Does anyone know someone that has died from underground barring activities? If so, can you give a brief account of the incident?
- 7.17 Can you rate your job satisfaction from 1-5 (1 being unsatisfied and 5 being very satisfied)

Human behaviour and Culture

Instructions: Assess the knowledge of the mine specific barring standards or golden rules of barring. Get two people to demonstrate and discuss discrepancies.

Allow a 15 min discussion and use a pinch bar as a prop.

Key aspects to look for:

1. Barring where there should have been alternative action.
2. Inconsistencies in barring procedure
3. Knowledge of correct procedure
4. Cultural and personality clashes within the group

Other

Other issues that respondents may have

Notes, general observation



KEY INFORMANT INTERVIEW QUESTIONS:

General

Introduce the study and the objectives for these interviews:

Golder Associates on behalf of the Mine Health and Safety Council (MHSC) are undertaking a research study to investigate the reasons behind health and safety incidents related to underground barring activities and how we can improve barring practices at flagship mines in South Africa. As part of this study, Golder is conducting focus groups and individual interviews with selected people and groups on the mine who can provide us with information which will assist in our study.

Indicate the person's job title/position at the mine.

1. Skills

- 1.1 What is your highest level of education?
- 1.2 How long have you done barring? (Years of experience?)
- 1.3 Do you think the underground workers have the adequate skills to be able to bar safely?

2. Training

- 2.1 Have you undergone barring training at this mine?
- 2.2 Do you think this training is sufficient?
- 2.3 Do you feel that this training equips underground labourers and miners to bar safely and to understand the reasons for barring and the process?
- 2.4 Is the correct barring technique being implemented by all underground workers? If not, why do you think it isn't?
- 2.5 What Safety Training Materials and Methods does your mine use? (written materials, videos, self-guided, hands on, group exercises, practical demonstrations, narrative, e-learning, mock-ups, class room situation) In your opinion, which training materials are the most and least helpful to train workers to bar?

3. Equipment

- 3.1 How often is the barring equipment serviced, exchanged or repaired? (transportation of pinch bars)
- 3.2 Are pinch bars readily available in the working area?
- 3.3 In your opinion, is there any other equipment you would need for barring to make the practice easier or safer?

4. Barring Environment

- 4.1 Do you think the underground environment affects workers ability to bar safely? Please explain.
- 4.2 What can be done to better prepare workers for these conditions?

5. Leadership

- 5.1 Do you feel that you get sufficient feedback from your crews? How often do you visit your panels/areas per shift?
- 5.2 What is the procedure for reporting incidents? Please explain.



APPENDIX A

Questionnaires used in the Barring Study

- 5.3 Are persons associated with an incident/accident interviewed?
- 5.4 How is misconduct reported? Do you feel comfortable with this process?
- 5.5 Do you feel comfortable approaching or speaking to your direct manager?
- 5.6 How do the people in your team work together? If there are arguments, what do you think the reasons are for this? Are cultural differences impacting on the team's ability to work together?

6. Communication

- 6.1 What are the communication systems which are used underground? (Written – yellow card and safe declaration book, shift supervisor logbook), verbal, visual – notice boards)
- 6.2 Do you think that these systems are working?
- 6.3 Are there any mechanisms to check if workers have understood the change of rules or new information provided by managers?

7. People within the Environment

- 7.1 What do you think are the main reasons why people are injured during barring activities?
- 7.2 How often are people hurt when barring? Are there any recent incidents you could share with us?
- 7.3 Do you think substance abuse is a problem with mine workers? If so, what measures are in place to detect this? Do you think these measures are effective?
- 7.4 Can you rate your job satisfaction from 1-5 (1 being unsatisfied and 5 being very satisfied)

8. Human behaviour and Culture

- 8.1 Do you feel that there is a behavioural aspect which affects workers' ability to undertake safe barring procedures? If so, please tell us a bit more about this behaviour?
- 8.2 What are the attitudes of workers around implementing barring safety procedures?
- 8.3 What can you suggest to improve safety practices around barring activities?

9. Other

- 9.1 Nutrition programme/ feeding scheme.

Other issues/comments that you may have