

**SAMRASS 3**

ADDENDUM ON ROCKBURST AND FALL OF GROUND ACCIDENTS

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| ***SECTION A: DETAILS OF MINE*** |
| Mine code  |       |
| Name of mine |       |
|  Mine accident or dangerous occurrence number | YEAR | ACC /DO REF NO | Shaft |
| Y | Y | Y | Y | N | N | N | N | S | S |
|   |   |   |   |   |   |   |   |   |   |
| Activity |  |  |  | Date of accident or dangerous occurrence | Y | Y | Y | Y | M | M | D | D |
|   |   |   |   |   |   |   |   |
| Cause of accident |   |   |   |   |   |
| Depth below surface |   |   | m | Mining method |   |
| ***SECTION B: DETAILS OF ACCIDENT*** |
| *B.1. LOCATION* |
| Description of working place |   |   |   |   |
| Distance from face |   |   |   |   | m | Distance from panel bottom strike gully |   |   |   |   | m |
| Dimensions of stope | Strike span |   |   |   | m | Dip spa |   |   |   | m | Stog |   |   |   |   |   | m |
| Dimensions of other excavations | Height |   |   |   | m | Width |   |   |   | m | Length |   |  |   |   |   | m |
| Distance from reef |   |   | m |
| *B.2. SITE DESCRIPTION* |
| Quality of excavation: |
|       |
| *B.3. TEMPORARY SUPPORT* |
| *B.3.1. ACCORDING TO CODE OF PRACTICE* |
| Type of support |   |   |
| Size of support |   |   |   |  |   |   |   | m |
| Spacing of support |   |   |  |  |   |   |   | m |
| Rows of support |   |  |   |
| Distance from face |   |   |   |  |   |   |   | m |

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| *B.3.2. OBSERVED AFTER ACCIDENT* |
| Type of support |   |   |
| Size of support |   |   |   |  |   |   |   | m |
| Spacing of support |   |   |   |  |   |   |   | m |
| Rows of support |   |   |
| Distance from face |   |   |   |  |   |   |   | m |
| *B.4. PERMANENT SUPPORT* |
| *b.4.1.according to code of practice* |
| Type of support |   |   |
| Size of support |   |   |   |  |   |   |   | m |
| Spacing of support |   |   |   |  |   |   |   | m |
| Distance from face |   |   |   |  |   |   |   | m |
| *B.4.2.OBSERVED AFTER ACCIDENT* |
| Type of support |   |   |
| Size of support |   |   |   |  |   |   |   | m |
| Spacing of support |   |   |   |  |   |   |   | m |
| Distance from face |   |   |   |  |   |   |   | m |
| *B.5.REGIONAL SUPPORT* |
| *B.5.1.ACCORDING TO CODE OF PRACTICE* |
| Type of support |   |   |
| Size of support |   |   |   |  |   |   |   | m |
| Spacing of support |   |   |   |  |   |   |   | m |
| *B.5.2.OBSERVED AFTER ACCIDENT* |
| Type of support |   |   |
| Size of support |   |   |   |  |   |   |   | m |
| Spacing of support |   |   |   |  |   |   |   | m |
| Comments on support |
|       |
| Comments on effective use |
|       |
| *B.6.INSTRUMENTATION* |
| Instrument | Code | Warning signal |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |

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| *B.7.GEOLOGICAL DETAILS* |
| Reef being mined | Code |   |   |   | Description |       |
| Rock type |       | Code |  | U.C.S. strength |   |
| Immediate hanging wall | MPa |   |   |   |   |
| Immediate footwall | MPa |   |   |   |   |
| Reef/ ore | MPa |   |   |   |   |
| Relevant geological structure |   |   |
| Shortest distance from to disturbance |   |   |   | m |
| Comment on distance: |
|       |
| Measured or estimated field stress state |   |   |   |
| Induced fractures |   |
| *B.8.FALL OF GROUND* |
| Dimensions of fall |
| Height |   |   |   | m | Width |   |   |   | m | Length |   |  |   |   |   | m |
| Boundaries of fall |       |
| *B.9.ROCKBURST* |
| Total size of affected area |   |   |   | m² | Estimated maximum closure |   |   |   |
| *B.9.1.EXTENT OF DAMAGE* |
| Hanging wall damage |   |   |   |   | m² |
| Footwall damage |   |   |   |   | m² |
| Sidewall damage |   |   |   |   | m² |
| Roof support units damaged |   |   |
| Suspected bursting mechanism |   |
| Suspected mechanism based on |   |
| Distance between hypocentre and rockburst damage |   |   |   |   | m |
| *B.10.GENERAL MINE LAYOUT* |
| Mine layout | Code | Contribute |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
|       |   |   | YES |   | NO |   |
| ***SECTION C: SEISMIC EVENT DETAIL*** |
| Reference number |   |   |   |   |   |   |   |   |   |   |
| Hypocentre (m) |   | X |   | Y |   | Z |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Location error |   |   |   |   |   | m | Location magnitude |   |   |   |   |
| Time | H | H |  | M | M | Seismic moment (Nm) |   |   |   |   |   |   |
|   |   |  |   |   |  |  |  |  |  |  |
| Energy radiated: p-wave (J) |   |   |   |   |   | Energy radiated: s-wave (J) |   |   |   |   |   |   |
| Source radius (m) |   |   |   |   |   | Corner frequency (Hz) |   |   |   |   |   |   |
| Static stress drop (Mpa) |   |   |   |   | Dynamic stress drop (Mpa) |   |   |   |   |   |   |
| Peak acceleration (g) |   |   |   |   | Peak velocity |   |   |   |   |   |   |
| Displacement (cm) |   |   |   |   | Duration (sec) |   |   |   |   |   |   |
| *C.1. SEISMIC MOMENT RELEASED* |
| *C.1.SEISMIC MOMENT RELEASED* | 1 WEEK | 1 MONTH | AVERAGE |
| Per 1 m of face advance (Nm/m) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Per 1 t of rock output within 300 m radius |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

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| ***SECTION D: SEISMIC HISTORY*** |
| Within 300 m radius of scene of the accident | Magnitude |
| History detail | <0 | 0-1 | 1-2 | >2 | TOTAL |
| 1 DAY BEFORE ACCIDENT | 1. Number of seismic events
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Energy released: p-wave (J)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Energy released: s-wave (J)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Seismic moment released (Nm)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Static stress drop (Mpa)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Max energy index (E-obs/E-expec)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1 WEEK BEFORE ACCIDENT | 1. Number of seismic events
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Energy released: p-wave (J)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Energy released: s-wave (J)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Seismic moment released (Nm)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Static stress drop (Mpa)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Max energy index (E-obs/E-expec)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 6 MONTHS BEFORE ACCIDENT | 1. Number of seismic events
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Energy released: p-wave (J)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Energy released: s-wave (J)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Seismic moment released (Nm)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Static stress drop (Mpa)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |
| 1. Max energy index (E-obs/E-expec)
 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |       |

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| *D.1. BEFORE ACCIDENT* |
| 1 WEEK | 1 MONTH | AVERAGE FOR LAST 6 MONTHS |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ***E. COMPLETED BY*** |
| Name |    |
| Signature |  | Date |  |