

## Supplementary material

Table S1. Questionnaire.

|                                                                                            |   |
|--------------------------------------------------------------------------------------------|---|
| <b>Instructions: For each question with numbered answers, use an X or tick in the box.</b> |   |
| <b>Thank you for your participation</b>                                                    |   |
| <b>SECTION A: BIOGRAPHICAL DETAILS</b>                                                     |   |
| 1. What is your gender?                                                                    |   |
| Male                                                                                       | 1 |
| Female                                                                                     | 2 |
| 2. How old are you?                                                                        |   |
| <input type="checkbox"/> ..... years old                                                   |   |
| <b>SECTION B: OCCUPATIONAL DETAILS</b>                                                     |   |
| 3. What is your job title/profession?                                                      |   |
| Machine operator                                                                           | 1 |
| Residential engineer                                                                       | 2 |
| Driver                                                                                     | 3 |
| General worker                                                                             | 4 |
| Other, please specify:<br>.....                                                            | 5 |
| 4. Which work task/site are you operating from? (Choose one answer)                        |   |
| Crushing                                                                                   | 1 |
| Grinding                                                                                   | 2 |
| Blasting                                                                                   | 3 |
| Loading and offloading                                                                     | 4 |
| Screening                                                                                  | 5 |
| Transporting                                                                               | 6 |
| Final storage                                                                              | 7 |
| Other, please specify:<br>.....                                                            | 8 |
| 5. How long have you been working on this site?                                            |   |
| <input type="checkbox"/> ..... Years                                                       |   |
| <input type="checkbox"/> ..... Months                                                      |   |
| <input type="checkbox"/> ..... Days                                                        |   |
| 6. Approximately how many hours are you exposed per day?                                   |   |
| Less than 8 hours                                                                          | 1 |
| 8 hours                                                                                    | 2 |
| More than 8 hours                                                                          | 3 |
| 7. Are you provided with protective clothing (PPE)?                                        |   |
| No                                                                                         | 0 |
| Yes                                                                                        | 1 |

8. Which type of PPE?

|      |                                 | No | Yes |
|------|---------------------------------|----|-----|
| 8.1. | Not applicable                  | 0  | 1   |
| 8.2. | Face shield                     | 0  | 1   |
| 8.3. | Respirator                      | 0  | 1   |
| 8.4. | Dust Mask                       | 0  | 1   |
| 8.5. | Other, please specify:<br>----- | 0  | 1   |

9. Do you wear or use your PPE?

|                        |   |
|------------------------|---|
| Never use              | 1 |
| Occasionally/sometimes | 2 |
| Almost every time      | 3 |
| At all times           | 4 |

10. In your work task, how often do you change your PPE?

|                                 |   |
|---------------------------------|---|
| Not applicable                  | 1 |
| Never change                    | 2 |
| Daily                           | 3 |
| Weekly                          | 4 |
| Monthly                         | 5 |
| Quarterly                       | 6 |
| Annually                        | 7 |
| Other, please specify:<br>----- | 8 |

**Table S2.** Risk rating determination band table (SIMRAC 2001).

| Risk factor                                                                                   |                                                                                                                                  | Value                      |                           |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|
| <b>PROBABILITY OF TWA EXPOSURE&gt; OEL</b><br><br>What is the level of exposure?              | Exposure > OEL-c or exceeding the TWA-OEL more than threefold or mixture of exposure with an index of >3.                        | <b>10</b>                  |                           |
|                                                                                               | Exposure of more than or equal to OEL-TWA of or equal to OEL-TWA or mixture of exposure with an index between 1 and 3.           | <b>6</b>                   |                           |
|                                                                                               | Exposure of more than or equal to 50% of the OEL and < OEL or mixture of exposure with an index between 0.5 and 1.               | <b>3</b>                   |                           |
|                                                                                               | Exposure of more than or equal to 25% of the OEL and < 50% of the OEL or mixture of exposure with an index between 0.25 and 0.5. | <b>1</b>                   |                           |
|                                                                                               | Exposure of more than or equal to 10% of the OEL and < 25% of the OEL or mixture of exposure with an index between 0.1 and 0.25. | <b>0.5</b>                 |                           |
|                                                                                               |                                                                                                                                  |                            |                           |
| <b>EXPOSURE PERIOD</b><br><br>How many times people are exposed to the event and for how long | Continuous exposure for 8-hour shift or more.                                                                                    | <b>10</b>                  |                           |
|                                                                                               | Continuous exposure for up to 6-hour shift - frequent, daily.                                                                    | <b>6</b>                   |                           |
|                                                                                               | Continuous exposure for up to 2-hour shift - often weekly.                                                                       | <b>3</b>                   |                           |
|                                                                                               | Short exposure periods, a few times per month.                                                                                   | <b>2</b>                   |                           |
|                                                                                               | Unusual, at least once yearly.                                                                                                   | <b>1</b>                   |                           |
|                                                                                               | Rare.                                                                                                                            | <b>0.5</b>                 |                           |
|                                                                                               |                                                                                                                                  |                            |                           |
| <b>CONSEQUENCES OF EXPOSURE</b><br><br>Severity of harm or damage that could occur            | One or more mortality from an occupational disease.                                                                              | <b>100</b>                 |                           |
|                                                                                               | Life threatening/disability injury or illness. Multiple occupational diseases cases. Miscarriage (very serious).                 | <b>50</b>                  |                           |
|                                                                                               | Irreversible health effects of concern or serious illness. Compensable occupational disease. Possible miscarriage (serious).     | <b>15</b>                  |                           |
|                                                                                               | Reversible confirmed health effects. Occupational disease.                                                                       | <b>7</b>                   |                           |
|                                                                                               | Minor ill health.                                                                                                                | <b>1</b>                   |                           |
| <b>Calculated risk</b>                                                                        | <b>Band</b>                                                                                                                      | <b>Risk classification</b> | <b>Action</b>             |
| 400 and above                                                                                 | AA                                                                                                                               | Very high risk             | Consider discontinuation  |
| 200 to 399                                                                                    | A                                                                                                                                | High risk                  | Immediate action required |
| 70 to 199                                                                                     | B                                                                                                                                | Moderate risk              | Correction required       |
| 20 to 69                                                                                      | C                                                                                                                                | Low risk                   | Attention necessary       |
| <20                                                                                           | D                                                                                                                                | Tolerable risk             | Monitor                   |

Red code: Very high risk level; Mustard code: High risk level; Yellow code: Moderate risk level; Green code: Low risk level; Lime code: tolerable risk level.