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| **Date:** |  | | **Is this JSA:** | | **New**  **Reviewed** | | | | | | **JSA Number:** | | |  |
| **Do personnel require a licence / ticket / permit / trade skill / other:** | | | | **Yes  No** | | | | **Specify:** |  | | | | | |
| **Exact Location:** e.g. **Crushing Plant** | | | | | | | | | | | | | | |
| **Task:** e.g. Removal and replacement of screens | | | | | | | | | | | | | | |
| **Reference Materials:** e.g. Equipment Manufacturers operation and maintenance manual | | | | | | | | | | | | | | |
| Once developed, the JSA must be signed below by each JSA team member involved in the development of the JSA. | | | | | | | | | | | | | | |
| **JSA Team Members** | | | | | | | | | | | | | | |
| **Name** | | | | **Position** | | | | | | **Signature** | | | | |
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| **This JSA is not valid until signed by the Site Supervisor or nominee.**  **Each section of the work sheet must be completed before it can be validated and before work can start.** | | | | | | | | | | | | | | |
| **Authorisation** | | | | | | | | | | | | | | |
| Site Supervisor / Nominee: | |  | | | | Signature: |  | | | | | Date: |  | |
| JSA Team Leader: | |  | | | | Signature: |  | | | | | Date: |  | |

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| **HAZARD / ENERGY** | **GUIDELINES FOR ASSESSING IF A HAZARD IS PRESENT** | **RECOMMENDED CONTROL MEASURE - THE BETTER CONTROL IS THE FIRST CONTROL MEASURE LISTED IN EACH SECTION BELOW.** |
| **NOISE**  **Acoustic Mechanical Vibrations Energy** | Would you have to shout to be heard less than a metre away from the person to whom you’re speaking?  YES  NO | * Switch off the source of the noise where possible. * Move work to a quieter area. * Erecting a sound-absorbing barrier between employee and source. * Work in rotating teams to reduce the employees’ exposure time. * Specify the particular type of hearing protection required (plugs, muffs or both). |
| **HEAT**  **Thermal Energy** | Is there a risk of burns / scalds, cold burns, heat exhaustion, sunburn?  YES  NO | * Install a barrier between heat source and employee. * Work in rotating teams to minimise long exposure to heat or cold. * Supply personal cooling devices. * Ensure adequate cool drinking water is available. * Wear additional clothing, gloves, boots. |
| **LIGHTING** | Is the lighting good enough to see where you are and what you are doing clearly?  YES  NO | * Install additional and / or improve the permanent lighting (low voltage in confined spaces). * Move the current lighting to achieve best effect (out of shadows). * Move the job being undertaken to well-lit area. * Install temporary lighting. |
| **AIRBORNE SUBSTANCES**  **Chemical Energy** | Are there any airborne contaminants released or generated when performing this task?  YES  NO  If so, what sort are they? (e.g. welding fumes, dusts, etc.) | * Reduce the dust or fume by wetting down. * Enclose the source of the dust. * Install permanent or temporary extraction ventilation to remove dust into drum for disposal. * Clean up all spills immediately, and vacuum if dry. * Provide and instruct in use and maintenance of respiratory protection. |
| **CHEMICALS**  **Chemical Energy** | Does the task involve the handling or the use of chemicals?  YES  NO  If yes, please list the types of chemicals (e.g. sodium chlorate, diesel, etc.) | * Source a less hazardous chemical. * Install a temporary or permanent barrier between employee and chemical. * Reduce the volume of chemical stored or used. * Minimise the time the employee is exposed to the chemical. * Specify the need for specific Permits and / or gas testing (e.g. confined spaces). * Refer to Safety Data Sheet (SDS), and always specify the use of the appropriate personal protective equipment (PPE). |
| **GASES**  **Chemical Energy** | Are there any gasses released or generated when performing this task?  YES  NO  If so, what sort are they? (e.g. smells, SO2, etc.) | * Dilute the gas by doing the job in open air or well-ventilated place. * Contain the gas by installing a permanent or temporary enclosure around the source. * Remove the gas by extraction ventilation or vacuum. * Instruct employees in the use and maintenance of appropriate personal protective equipment (PPE). |
| **PLANT, MACHINES AND EQUIPMENT**  **Kinetic or Potential Energy** | Are plant, conveyors and / or machine moving parts exposed which can be guarded?  YES  NO  Are additional emergency stop mechanisms required to prevent risk of injury?  YES  NO  Are there any potential electrical, mechanical or pneumatic hazards?  YES  NO | * Specify the correct machine or piece of equipment to do the job. * Identify all the protective guards, grating, mesh which must be in place. * Ensure the correct signs are in place (e.g. this machine starts automatically). * Specify the signs and / or barricades required (e.g. bunting, no entry, authorised personnel only, restricted access, etc.). * Specify the type Permit required. * Specify the isolation required; electrical, high voltage, mechanical and pneumatic (air) or other energy sources. |
| **Hand Tools**  **Biomechanical Energy** | Will the task require the use of hand tools?  YES  NO | * Specify the testing requirements for all electric hand tools and extension leads. * Specify any specific tools not to be used for the job. * Specify any personal protective equipment (PPE) related to using tools. |
| **HAZARDOUS MANUAL TASKS**  **Biomechanical Energy** | Will you perform any of the following actions repeatedly?  Bend down  YES  NO  Reach above your head  YES  NO  Reach forward  YES  NO  Twist (at waist line)  YES  NO  Maintain an awkward posture  YES  NO  Are actions repeated frequently?  YES  NO  Do you manually move loads over long distances?  YES  NO  Does the task involve pushing, pulling or carrying loads?  YES  NO | * Fix the item as part of a modular change-out rather than in situ. * Build or erect scaffolding to gain better access. * Specify need for scissor lift, cherry picker (or personnel cage) to gain better access. * Ensure that all employees are trained in correct lifting techniques. * Ensure that there are adequate numbers of employees to do the job. * Work in rotating teams to share the need to frequently lift or carry loads. * Limit the number of times the load has to be moved by changing the drop-off or original storage / destination point. * Use a mechanical lifting device where possible (e.g. crane, forklift, trolley). * Reduce the size or weight of the load to be carried or lifted (e.g. smaller bags, boxes, drums, containers). |

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| **SAFE WORKING AT HEIGHTS**  **Kinetic or Potential Energy** | Could an injury occur as a result of a person falling?  YES  NO  Is a person required to work where there is a risk of falling from one level to another?  YES  NO  Is a Fall Injury Protection System the principle means of protection?  YES  NO  Does a person need to exit from an elevated work platform (EWP) in the raised position?  YES  NO  Creating an open hole with edge protection, floor or walkway?  YES  NO  Scaffolding is to be erected or dismantled?  YES  NO  Is work to occur on or near the edge of a fragile surface?  YES  NO  Could an injury occur as a result of an object falling?  YES  NO | * Use the safe work at height permit. * Have a safe working area by means of work platforms or scaffolds complete with floors, guardrails, kickboards, and a safe method of access and egress. * Use fall injury prevention systems to prevent falls and falling objects. * Wear protective helmets with chinstraps. * Use tool lanyards or tool belts. * Fit close fitting floor boards and kick-rails and netting. * Practice good housekeeping, signage, and drop-zone barricading to prevent injuries from falling objects. |
| **CONCURRENT OPERATIONS** | Are other jobs / tasks in progress which could pose an interaction risk to employees carrying out this task?  YES  NO  Are there other jobs / tasks in progress which could be put at risk by carrying out this task?  YES  NO  Is there a risk from accidental falling objects, spillage or other interactions, accidental or otherwise, between this task and any other concurrent tasks being carried out?  YES  NO | * Re-schedule work. * Provide controls, such as area / vessel isolations, or drop-zone barricading and signage, to prevent injuries from falling objects, spillage or other interactions. |
| **CRANE / LIFTING OPERATIONS** | Does the task / job require personnel, materials or equipment to be lifted such that a suspended load risk is created?  YES  NO | * Specify and provide the necessary isolations, signs and barricades as required. |

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| **Step** | **Job Tasks**  *List the key job steps required to perform the task. In the sequence that they are to be carried out.* | **Hazards**  *List the identified hazards with each step.* | **Existing Controls**  *List the controls already in place.*  *e.g. Safe Operating Procedure, Trained Competent Operator, etc.* | **Assess Risk**  Initial rank | **Additional Controls**  *List identified additional control measures that are to be implemented.* | **Assess Risk**  Residual rank |
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| **All Personnel working under this JSA must sign off below to acknowledge they have read, understood and accepted the conditions stipulated.** | | | | |
| **Name** | **Signature** | **Position** | **Date** | **Time** |
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| **CHANGES TO THE JSA List new or changed Job Steps and**  **Identify the Hazards and Risks.** | The nominated person responsible for the job **must** consult with, communicate to and instruct all concerned with the work. All persons working on the job **must** be aware of the changed / new job steps, hazards and risk controls. |

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| **Step** | **Job Tasks**  *List the key job steps required to perform the task. In the sequence that they are to be carried out.* | **Hazards**  *List the identified hazards with each step.* | **Existing Controls**  *List the controls already in place.*  *e.g. Safe Operating Procedure, Trained Competent Operator, etc.* | **Assess Risk**  Initial rank | **Additional Controls**  *List identified additional control measures that are to be implemented.* | **Assess Risk**  Residual rank |
| 1 |  |  |  |  |  |  |
| I UNDERSTAND THE ABOVE CHANGES, INCLUDING THE HAZARDS, RISKS AND THE CONTROL MEASURES. TO BE SIGNED ALONG HERE BY ALL PERSONS WORKING ON THIS JOB. | | | | | | |
| 2. |  |  |  |  |  |  |
| I UNDERSTAND THE ABOVE CHANGES, INCLUDING THE HAZARDS, RISKS AND THE CONTROL MEASURES. TO BE SIGNED ALONG HERE BY ALL PERSONS WORKING ON THIS JOB. | | | | | | |

## Consequence Rating Criteria

| **Rating** | **Safety** | **Health** | **Environment** | **Equipment and Assets** | **Business Continuity** | **Community and Reputation** | **Liability** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1**  **Minor** | Single minor injury to one person. First aid or no treatment required. No lost time. | Reversible health effects of minor concern requiring first aid treatment at most. | Issues of non-continuous nature with promptly reversible impact or consequence (e.g. within shift). Low-level incident, site contained. | Below $5,000 (or 0.1% of operational budget based at 50,000,000). | Loss of operations for > ½ day. Reduction in capacity, < 10% for up to one month. | Unsubstantiated, low profile or no media attention.  One-off complaint which is resolved via existing procedures. | Below $50,000 (or 0.1% of operational budget based at 50,000,000). |
| **2**  **Moderate** | Medically treated injury. Reversible injury. Requires treatment but does not lead to restricted duties. | Reversible health effects of concern that result in medical treatment but not restricted duties. | Issues of a non-continuous nature and minor impact and consequence. Low-level incident, site contained. Short term reversible (e.g. within days). | Between $5,000- $50,000 (or 0.1%- 0.5% of operational budget). | Loss of operations for > ½ day. Reduction in capacity, < per 20% for up to one month. Minor disruption to supply of services or technical support. | Substantiated, low impact, low media profile. Unresolved, low level community dissatisfaction. Repeated community complaints. | Between $50,000-$250,000 (or 0.1%- 0.5% of operational budget). Financial or accounting issue with ability to resolve with existing resources. |
| **3**  **Serious** | Reversible injury or moderate irreversible impairment. Less than 10 days lost time. | Severe but reversible health effects. Results in a lost time illness of less than 10 days. | Issues of a continuous nature - limited impact and consequence. Incident resulting in some site contamination.  Medium term recovery impact. | Between $50,000-$500,000 (or 0.5%- 3.5% of operational budget). Threat to property by known extreme organisations. | Loss of operations for one day to one week. Reduction in capacity, < 30% for up to one month. Increased government interest. | Substantiated, public embarrassment, moderate media profile (front page, one day). Repeated community complaint. Community demonstration. Impact on share price. | Between $250,000-$1,750,000 (or 0.5%-3.5% of operational budget). Financial or accounting issue requiring Chief Financial Officer (CFO) resolution. |
| **4**  **Major** | Severe irreversible damage to one or more persons. Lost Time Injury greater than 10 days. | Severe and irreversible health effects or disabling illness. | Compliance issue with large fine, media attention. Serious harm not immediately recovered. Significant site contamination or off-site impact. Long term recovery. | Between $500,000-$1,000,000 (or 3.5-10% of operational budget). Confirmed threats, without actions. | Loss of operations for one week to one month. Reduction in capacity,  < 50% for up to one month. Regulatory enquiry. | Substantiated, public embarrassment, high impact, major media attention. Local or state media interest. Severe community dissent. Criticism from a non-government organisation (NGO) and / or government. | Between $1,750,000-$5,000,000 (or 3.5-10% of operational budget). |
| **5**  **Catastrophic** | Single fatality. Permanent disabling injuries. | Life threatening or permanently disabling illness. | Issues of a continuous nature with major long-term impact and potentially serious consequences. | Above $1,000,000 (or more than 10% of operational budget). Escalating threats or actions. | Loss of operations for > 1-3 months. Loss of permit to operate. Total loss of production for more than one month. | Substantiated, public embarrassment, multiple impacts, long lasting widespread media coverage. Severe, prolonged community dissent. | Above $5,000,000 (or more than 10% of operational budget). |

## Risk Matrix

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|  |  | **Consequence** | | | | |
|  |  | **1 Minor** | **2 Moderate** | **3 Serious** | **4 Major** | **5 Catastrophic** |
| **Likelihood** | **A Almost Certain** | 10 | 16 | 20 | 23 | 25 |
| **B Likely** | 7 | 12 | 17 | 21 | 24 |
| **C Possible** | 4 | 8 | 13 | 19 | 22 |
| **D Unlikely** | 2 | 5 | 9 | 14 | 18 |
| **E Rare** | 1 | 3 | 6 | 11 | 15 |

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| **Risk result** | **Rating** | **Definition** | **Level of involvement** |
| **Note when a potential consequence is classified as catastrophic, immediate and on-going intervention is required from the CEO to ensure control measures are adequate.** | | | |
| **19 - 25** | Critical | Imperative to eliminate or reduce risk to a lower level by the introduction of controls. Formal risk assessment required. | CEO needs to review. |
| **18 - 11** | High | Corrective action required.  Normally permits required to perform work. Safe Work Procedure or Job Hazard Analysis mandatory. | Quarry Manager review required. |
| **10 - 6** | Moderate | Corrective action required. Safe Work Procedure or Job Hazard Analysis required. | Supervisor review required. |
| **5 - 1** | Low | Corrective action where practical.  Take 5 risk assessment required. | Manage by routine procedures at operational level. |

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| **Rating** | **Descriptor** | **Description** | **Suggested Frequency** |
| **A** | Almost certain | The event is expected to occur | Recurring event during the lifetime of a project / operation e.g. more than once per month |
| **B** | Likely | The event will probably occur | Event that may occur frequently during the lifetime of a project / operation e.g. at least once per year |
| **C** | Possible | The event should occur | Event that may occur during the lifetime of a project / operation e.g. once in 3 years |
| **D** | Unlikely | The event could occur | Event that is unlikely to occur during the lifetime of a project / operation e.g. once in 10 years |
| **E** | Rare | The event may occur only in exceptional circumstances | Event that is very unlikely to occur during the lifetime of a project / operation e.g. once in 15 years |