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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 headYES [ ]  NO [ ] Reach forwardYES [ ]  NO [ ] Twist (at waist line)YES [ ]  NO [ ] Maintain an awkward postureYES [ ]  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 JSAList 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** |
|  |  | **1Minor** | **2Moderate** | **3Serious** | **4Major** | **5Catastrophic** |
| **Likelihood** | **AAlmost Certain** | 10 | 16 | 20 | 23 | 25 |
| **BLikely** | 7 | 12 | 17 | 21 | 24 |
| **CPossible** | 4 | 8 | 13 | 19 | 22 |
| **DUnlikely** | 2 | 5 | 9 | 14 | 18 |
| **ERare** | 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 |