



## Plant Hazard Analysis & Risk Assessment

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Model: Omme 2350R

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### Person conducting assessment:

This Hazard Identification and Risk Assessment document is Model specific. It is based on the knowledge that all new machines of this model were/are produced to the same specification and design. It assumes all examples of this exact model currently in service to be as per the original specification, and to have been and continue to be operated and maintained in accordance with the Manufacturers requirements, and with all applicable statutory and regulatory requirements of an original example of the Model for which it was prepared. This Assessment must be reviewed by all stakeholders as required:

- Having regard to the manufacturers approved options
- Having regard to the general arrangement of miscellaneous equipment or facilities that may be provided on the plant according to the end users requirements or specification
- According to the particular circumstances under which the plant is used and maintained
- As new Hazards are identified and/or as risks are reassessed
- As existing risk control measures are revised or new risk control measures are introduced and implemented
- As and when work procedures are altered or revised
- Having regard to any unauthorised alterations or modifications made to the design or operation of the equipment

Monitor has made every attempt to identify all reasonably foreseeable operating circumstances in preparing this Assessment, however no guarantee as to the completeness of this Assessment is provided or implied.

It is the responsibility of Owners, Employers and Operators to identify all hazards associated with the use of this equipment specifically applicable to the task to be carried out and to where the equipment is to be used or located. They must assess the risk potential for each of the identified hazards and ensure that all reasonably practicable steps are taken to ensure those risks are effectively controlled.

- All operators must be trained and competent in the safe use of this particular piece of equipment, and hold appropriate qualifications as required by applicable regulatory requirements
- Operators of the equipment to which this Plant Risk Assessment refers must read and understand the Instructions for Use and Warnings contained within the Operators Manual prior to use
- All Daily Pre-Start Checks, Routine and Periodic Inspections, Maintenance and Repairs to this equipment must be carried out in accordance with the requirements of AS2550.10-2006.

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| ID  | Description of Hazard Potential  |   | Activity  | Risk control measures already implemented   | Risk                     | Supplementary risk control measures  | Risk score           |
|-----|--|---|---|---|--------------------------|--|----------------------|
|     | Origin   | Consequence                                 |   |   |                          |  |                      |
| 1   | Operator Competency  |   |   |   |                          |  |                      |
| 1.1 | <p>Untrained operator, not following proper operating procedures.</p> <p>Distracted operator.</p> <p>Following a poor system of work.</p> <p>Operator working alone.</p> | <p>Crushing</p> <p>Impact</p> <p>Trauma</p> | <p>Set up</p> <p>Operation</p> <p>Maintenance</p> | <p>Operation instructions explained in operator's manual</p>                                  | <p>C4</p> <p>Extreme</p> | <p>Train operators on safe use of the plant.</p> <p>Operator training should include at least the following:</p> <ul style="list-style-type: none"> <li>• pre-operation inspections</li> <li>• safe operation of plant</li> <li>• regular maintenance tasks</li> <li>• understanding of plant operation</li> <li>• capabilities and limitations</li> <li>• emergency procedures</li> </ul> <p>Do not operate the plant unless proper training has been received.</p> <p>Ensure operator's manual is kept with the plant for reference.</p> <p>Do not operate the plant when distracted, ill, excessively fatigued, or under the influence of drugs or alcohol.</p> <p>Implement appropriate system of work based on manufacturer's recommendations (e.g. operating instructions shown in operator's manual).</p> | <p>B1</p> <p>Low</p> |
| 1.2 | <p>Misuse</p> <p>Unauthorised use of plant</p>   | <p>Crushing</p> <p>Impact</p> <p>Trauma</p> | <p>Operation</p>                                  | <p>Operator's manual warns about not using the plant for other than its intended purpose.</p> | <p>C4</p> <p>Extreme</p> | <p>Do not use the MEWP for any other purpose than its intended use as explained in the operator's manual.</p> <p>Do not operate the plant unless proper training has been received.</p>  | <p>B1</p> <p>Low</p> |

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|     | Origin   | Consequence             |                      |  |               |  |            |
|     |  |                         |                      |  |               | Keys are not to remain in an unattended machine.   |            |
| 2   | Plant Limitations  |                         |                      |  |               |  |            |
| 2.1 | Plant overload causing <ul style="list-style-type: none"> <li>- overturning</li> <li>- structural failure</li> </ul>             | Overturning<br>Crushing | Driving<br>Operation | Maximum Rated Capacity (MRC) displayed on basket.<br>Plant limitation displayed on work platform and in Operator's Manual.<br>Plant fitted with load control system. | C4<br>Extreme | Learn and understand plant limitations.<br>Consider weight of all workers, tools and equipment to be loaded into basket.<br>Do not exceed work platform capacity.<br>Regularly inspect the MEWP as per maintenance schedule to ensure integrity of structural members. | A2<br>Low  |
| 2.2 | Excessive incline causing plant to overturn  | Overturning             | Driving<br>Operation | Plant limitations given in Operator's Manual.  | C3<br>High    | Do not drive the plant over ground slopes which exceeds its limitations.<br>Conduct site risk assessment to determine suitability of job site before starting any work.  | B2<br>Low  |
| 2.3 | Excessive wind force causing overturning.  | Overturning             | Operation            | Follow maximum wind speed rating.  | C3<br>High    | Constantly monitor wind speed when operating in wind sensitive areas.  | B2<br>Low  |
| 2.4 | Using incorrect work platform.   | Crushing<br>Falling     | Operation            | Removable work platform fitted with manufacturer ID plate.   | C4<br>Extreme | Only use work platforms specifically designed for use with the particular plant.   | A1<br>Low  |
| 3   | Plant at worksite  |                         |                      |  |               |  |            |
| 3.1 | Collision with <ul style="list-style-type: none"> <li>- site infrastructure</li> <li>- other plant and/or pedestrians</li> </ul> | Crushing<br>Impact      | Operation<br>Driving | Motion audible and visual alarm present.   | C3<br>High    | Beware of any obstructions around the work area; survey the area before moving the plant.<br>Beware of other plant and persons   | B2<br>Low  |

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|     | Origin  | Consequence            |                      |  |               |   |            |
|     |   |                        |                      |  |               | around the work area, in particular when travelling around corners or blind spots.  |            |
| 3.2 | Exhaust fume build-up in poorly ventilated areas.                   | Asphyxiation           | Operation            | Lithium battery available.   | C4<br>Extreme | Use battery powered option when available.<br><br>Ensure there is enough ventilation at the job site whenever combustion engine is used to operate the plant.<br><br>May require forced mechanical ventilation.   | B1<br>Low  |
| 3.3 | Plant positioned near or driven over large depressions / obstacles. | Overtuning<br>Collapse | Operation<br>Driving | Machine has large outrigger feet.<br><br>Operator's manual recommends avoiding working near ditches and trenches, and using outrigger pads on soft ground.<br><br>Maximum ground pressure is displayed near outriggers and in operator's manual. | C4<br>Extreme | Always maintain a safe distance from ditches, trenches or pit walls while operating plant.<br><br>Plan a route to safely bring the plant to the job site.<br><br>Avoid driving over large obstacles or depressions.<br><br>Assess the ground conditions before setting up the plant: use dunnage under outriggers if necessary.<br><br>Deploy outriggers close to ground to help prevent overturning. | B2<br>Low  |
| 4   | Operation   |                        |                      |  |               |   |            |
| 4.1 | Driving on steep ground   | Overtuning<br>Crushing | Driving<br>Set up    | Follow maximum inclination limits set by manufacturer.<br>Found in plant manual.   | A5<br>High    | Carry out job site risk assessment to determine suitability of the site before commencing any work.<br><br>Avoid driving on steep ground; find alternative routes whenever possible.  | A1<br>Low  |

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|     | Origin                                  | Consequence                  |  |  |               |  |            |
|     |   |                              |  |  |               | Do not stand on the lower side of the plant while driving on steep ground.<br>Never drive across steep ground, always drive with the tracks parallel to ground inclination.<br>Lower outriggers just clear of ground obstacles when driving on steep surface.  |            |
| 4.2 | Sudden change of direction when driving | Crushing<br>Impact           | Set up<br>Driving  | Driving operation from remote control.   | C3<br>High    | Stand a safe distance away from the moving plant and check no person is around it before driving.  | A1<br>Low  |
| 4.3 | Travelling with the fly jib extended    | Crushing<br>Overturning      | Driving  |  | A2<br>Low     | Beware of overhead obstructions.<br>Only drive the plant on permissible ground gradients.  | A2<br>Low  |
| 4.4 | Overturning                             | Crushing<br>Falling<br>Death | Set up<br>Operation<br>Emergency<br>Maintenance<br>Transport | Stability calculations supplied by manufacturer demonstrate plant stability when operated within rated capacity and environmental limitations.<br>Plant stability tested | C5<br>Extreme | Do not exceed plant's rated capacity and working envelope.<br>Pay attention to ground conditions when driving and setting up the plant.<br>Know and understand plant's stability limits before operating the emergency system. When using the emergency recovery system, fully close the telescopic boom before attempting any other movement. | B1<br>Low  |
| 4.5 | Excessive chassis inclination           | Crushing<br>Falling          | Operation  | Australian model plants fitted with automatic levelling function. Level gauge fitted.<br>Chassis inclination monitored via electronic inclinometer,                      | B5<br>Extreme | Visually check chassis inclination via control panel before operating the aerial part of the machine.<br>Check calibration of electronic inclinometer on a regular basis.  | A1<br>Low  |

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|     | Origin  | Consequence                                       |                                    |   |               |  |            |
|     |   |   |                                    | which prevents the work platform from leaving the transport / stowed position if the chassis level is outside maximum allowable inclination.  |               |  |            |
| 4.6 | Load-sensing and position control system failure. | Crushing  | Operation                          | Operator's manual recommends pre-operation check of safety devices at the start of every shift.   | C5<br>Extreme | Always perform pre-operation inspection.<br><br>Do not operate a faulty plant.   | A1<br>Low  |
| 4.7 | Excessive work platform inclination               | Falling   | Operation                          | Work platform automatic levelling system present.<br><br>Work platform movements are disabled if inclination exceeds 3 degrees.   | A5<br>High    | Wear fall-arrest harness.<br><br>Regularly check operation of work platform levelling system.  | A1<br>Low  |
| 4.8 | Operator control                                  | Worker falls from basket<br>Overturning<br>Impact | Operation                          | Model comes with option of remote control.  | C5<br>Extreme | Operate the drive control levers gently in order to avoid abrupt and jerky movements.<br><br>When driving, pay special attention to stability and the dimensions, especially the length, of the machine.<br><br>Wear safety harnesses and keep them fastened whenever operating the machine. | B2<br>Low  |
| 4.9 | Remote control failure                            | Crushing<br>Impact<br>Uncontrolled movement       | Set up<br>Operation<br>Maintenance | Remote control system intrinsically safe, all functions stop if a failure occurs.<br><br>Cable available with plant to connect remote control to electric cabinet in the event of remote-control failure. | A4<br>High    | Ensure remote control battery is fully charged before the start of a job.<br><br>Test operation of emergency stop buttons at the start of every job.   | A1<br>Low  |

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|      | Origin  | Consequence                       |  |   |               |  |            |
| 4.10 | Damage to tracks  | Overturning<br>Crushing<br>Impact | Operation  | Prestart inspection as per manufacturers recommendation.  | C3<br>High    | Avoid driving on the following terrains or work sites <ul style="list-style-type: none"> <li>• Environments with crushed stone, iron bars, scrap metal or similar recycling material</li> <li>• Daily/continuous driving on asphalt or concrete</li> <li>• Work sites with sharp objects, such as broken stones or concrete waste</li> <li>• Work sites with corrosive substances (fuels, oil, salt or fertilisers)</li> </ul> | B2<br>Low  |
| 4.11 | Uncontrolled movement of plant components i.e. outriggers | Crushing<br>Impact<br>Shearing    | Set up<br>Operation<br>Maintenance<br>Cleaning<br>Troubleshoot | Prestart inspection as per manufacturers recommendation.<br><br>Crush, shear hazard decals on machine.  | C3<br>High    | Isolate power to plant and remove the main switch key when performing maintenance and cleaning tasks.<br><br>Follow manufacturer's instructions to set up the outriggers.<br><br>Stay clear of components which may swing or drop unexpectedly.<br><br>Maintenance to be carried out by a competent person.<br><br>Pay attention to crush and shear hazard decals to machine.  | B2<br>Low  |
| 4.12 | Inadvertent / abrupt / unintended operation of controls   | Crushing<br>Impact<br>Severing    | Set up<br>Operation<br>Maintenance<br>Emergency                | Plant controls protected with function-enable button / foot switch.<br><br>Plant fitted with proportional controls which allow reasonably smooth operation. | C5<br>Extreme | Always depress the emergency stop button whenever the plant is not being operated.<br><br>Do not leave the remote-control unit unattended during plant operation.  | B2<br>Low  |

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|      | Origin  | Consequence   |  |  |               |   |            |
|      |   |   |  | Plant movement stops when controls are released.   |               | Understand the risks associated with inadvertent operation and avoid placing yourself in compromising positions.  |            |
| 4.13 | Lowering / Raising<br>- outriggers<br>- work platform<br>Moving parts | Crushing<br>Impact<br>Shearing<br>Drawing<br>Severing | Set up<br>Operation<br>Maintenance<br>Troubleshoot | Decals indicating crush hazards affixed to plant.<br><br>Plant fitted with guards to cover engine and slewing mechanism. | C4<br>Extreme | Take appropriate safety measures e.g. barricades to keep people away from plant's operating areas.<br><br>Ensure all persons are clear of moving components before performing a movement.<br><br>Maintenance to be carried out by a competent person.   | B2<br>Low  |
| 4.14 | Entering/exiting the work platform (basket)                           | Falls   | Operation  | Use fold down step to help gain access.  | C3<br>High    | Ensure work platform is placed close to the ground before entering / exiting.<br><br>Do not move between the basket and a structure outside the machine, machine stability could be jeopardised. Workers and equipment must enter and exit the basket only when it is at ground level.<br><br>Always face inwards and maintain 3-points of contact when entering or exiting the basket. | B1<br>Low  |
| 4.15 | Manoeuvring the work platform near fixed structures                   | Crushing<br>Shearing                                  | Set up<br>Operation                                | Work platform fitted with inner handrails to prevent crushing of fingers/hands by fixed structures.                      | C4<br>Extreme | Do not reach out or have body parts outside the work platform's rails while the work platform is moving.<br><br>Beware of overhead obstructions during plant movement.  | B1<br>Low  |



| ID   | Description of Hazard Potential                                     |                                   | Activity                            | Risk control measures already implemented  | Risk          | Supplementary risk control measures  | Risk score |
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|      | Origin  | Consequence                       |                                     |  |               |  |            |
| 4.16 | Driving plant from the work platform                                | Crushing<br>Falling<br>Impact     | Set up<br>Driving                   | Plant cannot be driven unless the work platform is in the stowed position.<br><br>Residual risks associated with driving operation given in Operator's Manual. | A5<br>High    | Hold on to grabrails while the plant is in motion.<br><br>Use remote control from a safe distance away from the plant whenever possible.   | B1<br>Low  |
| 4.17 | Unexpected work platform movement.                                  | Impact<br>Crushing<br>Falling     | Operation                           | Harness anchor points fitted to work platform.   | B5<br>Extreme | Wear safety harness when in the work platform.<br><br>Hold on to grab rails during platform movement.  | B1<br>Low  |
| 4.18 | Platform overload   | Crushing<br>Falling<br>Impact     | Operation                           | Plant limitation displayed on work platform and Operator's Manual.<br><br>Plant fitted with load and moment sensing system.                                    | B5<br>Extreme | Do not overload the work platform.   | B1<br>Low  |
| 4.19 | Faulty/out of calibration load-sensing and position control system. | Crushing<br>Impact<br>Overturning | Operation                           |  | B5<br>Extreme | Perform periodic testing and calibration of load control system as per manufacturer's recommendations and/or local authority requirements.   | B1<br>Low  |
| 4.20 | Falling objects   | Falling objects<br>Impact         | Operation                           | Work platform fitted with solid floor and kick board to prevent object from falling out of the work platform floor.  | C3<br>High    | Secure items such as tools and consumables which could fall from basket.<br><br>Barricade work area under fall zone to create a no-go zone.<br><br>Lay items flat and evenly across the floor of the basket. | B2<br>Low  |
| 4.21 | Large surface area objects on the plant.                            | Overturning                       | Operation<br>Maintenance<br>Storage | Operator's manual warns about the dangers of placing large surface area objects on the plant.  | B4<br>High    | Do not place large surface area objects on the plant, such as panels or banners.   | A1<br>Low  |

| ID   | Description of Hazard Potential                                  |   | Activity                 | Risk control measures already implemented                            | Risk          | Supplementary risk control measures   | Risk score |
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|      | Origin   | Consequence                                 |                          |  |               |   |            |
| 4.22 | Falling from basket  | Fall<br>Death                               | Operation                | Drop gate.<br>Lanyard attachment point.                              | C5<br>Extreme | Check that the sliding bar which protects the opening of the basket is closed and positioned correctly.<br>Safety harness to be worn at all times and secured to the designated hook in the basket. | B2<br>Low  |
| 4.23 | Jib boom knuckle at head height of operator in the work platform | Impact                                      | Operation<br>Maintenance |  | B2<br>Low     | Beware of jib boom knuckle when closing the jib boom.   | A1<br>Low  |
| 4.24 | Raising boom   | Crush between fixed structure and basket    | Operation                | Check surroundings prior to starting and continually throughout job. | C4<br>Extreme | Be aware of potential crush hazards in the direction of movement before moving the work platform.<br>Hard hat may be required if working near overhead obstructions.                                | B2<br>Low  |
| 4.25 | Removal/installation of work platform                            | Impact<br>Musculoskeletal injury            | Maintenance<br>Transport |  | D3<br>High    | 2-person lift is required to lift the work platform in position.<br>Use mechanical aids such as forklift or floor crane to support the basket.  | A1<br>Low  |
| 4.26 | Operation of hand pump   | Fatigue<br>Muscle strain                    | Emergency                | Electric auxiliary pump may be used for emergency recovery.          | B3<br>Medium  | Use sound ergonomic principles to minimise the risk of injuries.  | A1<br>Low  |
| 4.27 | Engine exhaust pipe  | Burn  | Operation                | Exhaust pipe guarded.<br>"Hot surface" decal in place.               | C2<br>Medium  | Do not touch exhaust pipe when hot.   | A1<br>Low  |
| 4.28 | Refuelling   | Explosion<br>Fire<br>Burn<br>Skin condition | Maintenance              |  | B4<br>High    | When refuelling:<br><ul style="list-style-type: none"> <li>• Keep away from ignition sources</li> <li>• Do not smoke</li> <li>• Avoid spilling fuel over hot engine</li> </ul>                      | A2<br>Low  |

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|      | Origin   | Consequence                                   |                                       |   |               |   |            |
|      |  |   |                                       |   |               | <ul style="list-style-type: none"> <li>• Avoid fuel contact with body parts.</li> </ul>   |            |
| 4.29 | Faulty/out of order, or poorly maintained plant          | Crushing<br>Impact<br>Trauma                  | Operation<br>Emergency<br>Maintenance | Operator's manual outlines plant maintenance schedule.<br>Current maintenance inspections up to date as per manufacturers recommendation. | B4<br>High    | Always perform pre-operation inspection before operating the plant.<br>Implement 'tag out' procedure to isolate faulty/out of order plants.<br>Do not use an 'out of order' plant.<br>Perform plant maintenance as per manufacturer's maintenance schedule.<br>Keep maintenance records / plant logbook up to date. | B1<br>Low  |
| 4.30 | Boom / hydraulic system repairs                          | Crushing<br>Impact<br>Shearing<br>Injection   | Maintenance                           |   | B4<br>High    | Do not perform maintenance tasks unless trained to do so.<br>Ensure boom is externally supported before carrying out maintenance of hydraulic system.   | B1<br>Low  |
| 4.31 | Inadequate maintenance procedures.                       | Crushing<br>Shearing<br>Severing<br>Injection | Maintenance                           | Basic maintenance instructions available in the service manual.   | B4<br>High    | Only properly qualified technicians to performed maintenance tasks.   | A1<br>Low  |
| 4.32 | Plant modifications after completion of risk assessment. | Crushing<br>Overturning                       | Operation<br>Set up                   |   | C5<br>Extreme | Ensure modifications made to the plant are inspected, assessed, and approved by a competent person.<br>Review hazard analysis and risk assessment after plant modifications.  | B1<br>Low  |
| 5    | Transport  |   |                                       |   |               |   |            |
| 5.1  | Loading and unloading – driving on                       | Overturning<br>Crushing                       | Transport                             | Use remote controls always as they provide a safe operating   | C4<br>Extreme | Follow appropriate loading procedures including using weight rated ramps, have ramps at a low   | B2<br>Low  |

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|     | Origin  | Consequence             |                      |   |               |  |            |
|     |   |                         |                      | distance for loading / unloading.<br>Use low speed / low engine RPM on slopes / ramps.  |               | inclination, all person clear from the loading zone and placing the heavy end towards the front of the tray or tow hitch on a trailer.   |            |
| 5.2 | Loading and unloading – lifting on  | Crush<br>Impact         | Transport<br>Lifting | Lifting procedure included in Operator's Manual.  | C5<br>Extreme | Follow appropriate lifting procedure.  | B2<br>Low  |
| 5.3 | Failure of lifting slings / chains used for lifting or tying down / tie down straps   | Overturning<br>Crushing | Transport<br>Lifting | Plant is fitted with designated lifting and tied down points.   | C5<br>Extreme | Use tie-down points provided on the plant to secure it for transportation.<br><br>Ensure lifting slings and tie down straps are in good condition.<br><br>Ensure lifting slings have a SWL suited to the load.   | B2<br>Low  |
| 6   | Plant Failure   |                         |                      |   |               |  |            |
| 6.1 | Plant failure including:<br>- malfunction of control devices<br>- structural failure of machine components<br>- failure of lift / tie down points | Crushing<br>Impact      | Operation            | Follow routine maintenance inspections by qualified person as per manufacturers recommendation.<br><br>Use designated tie down points.<br><br>Prestart inspection as per manufacturers recommendation.<br><br>Structural calculation supplied by manufacturer demonstrate suitability of structural members for the load combinations considered.<br><br>Plant fitted with adequately designed lifting / tie-down points. | B5<br>Extreme | Carry out pre-operational function tests of safety related functions at the start of every shift.<br><br>Beware of risks associated with inadvertent operation of the machine, avoid compromising machine positions.<br><br>Familiarise with location of emergency stop buttons.<br><br>Regularly inspect the MEWP as per maintenance schedule to ensure integrity of structural members.<br><br>Ensure persons responsible for hauling / lifting the plant are familiar with lifting and transportation procedures. | B2<br>Low  |

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|     | Origin                              | Consequence  |                                       |   |               |   |            |
| 6.2 | Failure of basket to lower.         | Falling  | Emergency                             | Plant fitted with emergency lowering system.<br>Emergency retrieval procedure included in Operator's Manual and on decals on the plant near emergency controls. | C5<br>Extreme | Beware of the dangers of working at heights.<br>Become familiar with emergency rescue procedures.<br>Do not work alone.   | B1<br>Low  |
| 6.3 | Emergency recovery controls failure | Health deterioration<br>Death                      | Emergency                             |   | C4<br>Extreme | Regularly test emergency recovery system.   | A1<br>Low  |
| 6.4 | Burst hydraulic hose                | Crushing<br>Overturning<br>Burn<br>Skin irritation | Set up<br>Operation<br>Maintenance    | Counter-balance valves fitted on lift and extension cylinders.  | A3<br>Medium  | Check hydraulic hose condition during periodic maintenance.<br>Report and "tag out of service" if identified.   | A2<br>Low  |
| 6.5 | Excessive hydraulic oil pressure.   | Impact<br>Crushing                                 | Set up<br>Operation                   | Plant fitted with pressure relief valve.  | C3<br>High    | Check pressure settings during preventative maintenance.  | A1<br>Low  |
| 6.6 | Loss of hydraulic pressure          | Crushing<br>Injection                              | Operation<br>Emergency<br>Maintenance | Load-holding valves fitted on all hydraulic cylinders.  | A5<br>High    | Do not operate a faulty plant.<br>Check operation of counterbalance valves as recommended by manufacturer.<br>Do not disconnect hydraulic hoses, loosen off valves or fittings to attempt the recover a broken-down plant; follow emergency recovery procedures instead.<br>Always support booms, outriggers, etc before disconnecting hoses or valves. | B1<br>Low  |
| 6.7 | Cable reels / cables damaged        | Electrocution<br>Crushing                          | Operation<br>Maintenance              | RCD fitted to machine   | A5<br>High    | Regularly inspect cable reels and cables for signs of damage, wear and UV degradation.  | A1<br>Low  |
| 7   | Electrical                          |  |                                       |   |               |   |            |

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|     | Origin                            | Consequence                    |   |   |               |   |            |
| 7.1 | Damaged power cables, components. | Electrocution<br>Shock<br>Fire | Set up<br>Operation<br>Maintenance<br>Troubleshoot<br>Emergency | RCD fitted to 240V circuit.<br>Fuse protection on electrical circuits.<br>Plant fitted with selector switch to choose current rating between 10A and 15A.                 | C1<br>Low     | Ensure plant and extension cord are electrically tested and tagged as per AS 3760.<br><br>Ensure power supply and extension lead match plant's voltage and current requirements.<br><br>Use appropriate means to supply power to the plant. That is, only use extension leads rated to 15 amps.<br><br>Do not operate/use equipment with an expired test tag.<br><br>Ensure inline RCD is used when charging the batteries.<br><br>Visually inspect the plant and extension lead before resetting the thermal fuse and RCD. | B1<br>Low  |
| 7.2 | Electronic component failure      | Crushing                       | Operation   | Electrical and electronic components comply with design safety categories stipulated in AS 1418.10-2011.<br><br>Emergency stop buttons available at each control station. | A5<br>High    | Become familiar with location of emergency stop buttons.<br><br>Perform function tests, including operation of E-Stops at the start of every shift.   | A1<br>Low  |
| 7.3 | Earthing fault                    | Electrocution<br>Shock<br>Fire | Set up<br>Operation<br>Maintenance                              | Plant fitted with thermal fuse and residual current device (RCD).   | C4<br>Extreme | Use appropriate means to supply power to the plant. That is, use extension leads with neutral, live and EARTH wire and pin.<br><br>Ensure the plant's appliance inlet is regularly tested and tagged as per AS 3760.  | A2<br>Low  |

| ID  | Description of Hazard Potential                 |                               | Activity                           | Risk control measures already implemented  | Risk          | Supplementary risk control measures  | Risk score   |
|-----|---|-------------------------------|------------------------------------|--|---------------|--|--------------|
|     | Origin  | Consequence                   |                                    |  |               |  |              |
|     |   |                               |                                    |  |               | Do not operate a plant with an expired electrical safety tag.<br>Visually inspect the plant and extension lead before turning the power ON.  |              |
| 7.4 | Contact with live conductors under plant cover  | Shock<br>Electrocution        | Emergency<br>Maintenance           | Tool / key required to open electrical cabinets.   | C5<br>Extreme | Do not touch terminals/wires inside the electric cabinet.<br><br>Keep electric cabinet closed and locked at all times.   | A2<br>Low    |
| 7.5 | Radiofrequency remote control system operation. | Medical implant interference. | Set up<br>Operation<br>Maintenance | Radiofrequency system uses frequencies in accordance with Australian regulatory authorities.                             | B5<br>Extreme | Ensure radiofrequency system is properly maintained.<br><br>Avoid having remote control in proximity to medical implants such as hearing aids and pacemakers.  | A2<br>Low    |
| 7.6 | Power failure (flat battery)                    | Crushing<br>Being runover     | Operation<br>Emergency             | Hydraulic valve bank over centre type when power is removed.<br><br>Drive system brake is applied when power is removed. | C4<br>Extreme | Prepare emergency procedure for power failure.   | C1<br>Low    |
| 7.7 | Battery charging                                | Burn<br>Fire<br>Explosion     | Maintenance                        |  | C5<br>Extreme | Charge in an area with good ventilation, away from ignition sources.   | A3<br>Medium |
| 7.8 | Battery handling                                | Burn<br>Fire<br>Explosion     | Maintenance                        | Isolate power by turning off factory isolator.   | C5<br>Extreme | When handling the battery, wear protective clothing and eyewear.<br><br>Avoid contact with clothes or skin; if electrolyte gets on your skin or clothes, flush it with a large quantity of water.<br><br>In case of contact with eyes, flush with a lot of water for at least 15 | 3B<br>Low    |

| ID   | Description of Hazard Potential |                        | Activity                                   | Risk control measures already implemented   | Risk          | Supplementary risk control measures   | Risk score   |
|------|---------------------------------|------------------------|--|---|---------------|---|--------------|
|      | Origin                          | Consequence            |  |   |               |   |              |
|      |                                 |                        |  |   |               | <p>minutes and seek medical assistance immediately.</p> <p>Do not touch the battery terminals or cables with tools that may cause spark emissions.</p> <p>In order to avoid spark emissions, always disconnect the (-) cable first and connect it last.</p> <p>Use appropriate lifting techniques, perform 2 person lifting technique for heavy or awkward to reach parts.</p>  |              |
| 7.9  | Overhead power lines            | Electrocution          | Set up Operation<br>Transport<br>Emergency | <p>Operator's manual and decals show minimum safe distances when working near power lines.</p> <p>Decal on work platform states that the plant is not electrically insulated.</p> | C5<br>Extreme | <p>Follow local authorities' regulations regarding safe distance from powerlines.</p> <p>Ensure overhead power is switched off or use a spotter if safe distances cannot be maintained.</p> <p>Be mindful of overhead power lines on roads when transporting the plant on a vehicle.</p> <p>Do not move, approach or come in contact with a plant that has contacted power lines until network power has been isolated.</p> | A3<br>Medium |
| 7.10 | Lightning                       | Electrocution<br>Shock | Set up<br>Operation                        |   | A5<br>High    | Do not use the plant during a thunderstorm.   | A1<br>Low    |



| RISK MATRIX |  |                     |             |                |             | ACTION             | HEIRACHY OF CONTROLS   |
|-------------|--|---------------------|-------------|----------------|-------------|--------------------|--|
|             |  | CONSEQUENCE         |             |                |             |                    | <p><b>EXTREME</b> – Do not proceed, until further control measures are implemented to lower the risk. Senior management attention required.</p> <p><b>HIGH</b> – Review and introduce additional controls to lower level of risk. Needs senior management attention.</p> <p><b>MEDIUM</b> – Monitor and maintain supervision and controls. Specify management responsibility.</p> <p><b>LOW</b> – Monitor and manage by routine procedures and monitoring.</p> |
|             |  | 1.<br>Insignificant | 2.<br>Minor | 3.<br>Moderate | 4.<br>Major | 5.<br>Catastrophic |  |
| LIKELIHOOD  | <b>E. Almost Certain</b><br>Is expected to occur immediately or within a short timeframe | HIGH                | HIGH        | EXTREME        | EXTREME     | EXTREME            |  |
|             | <b>D. Likely</b><br>Will probably occur in most circumstances                            | MEDIUM              | HIGH        | HIGH           | EXTREME     | EXTREME            |  |
|             | <b>C. Possible</b><br>Could happen and has occurred here or elsewhere                    | LOW                 | MEDIUM      | HIGH           | EXTREME     | EXTREME            |  |
|             | <b>B. Unlikely</b><br>Unlikely to occur  | LOW                 | LOW         | MEDIUM         | HIGH        | EXTREME            |  |
|             | <b>A. Rare</b><br>Not expected to occur  | LOW                 | LOW         | MEDIUM         | HIGH        | HIGH               |  |

1. Elimination – controlling the hazard at the source
2. Substitution – e.g. replacing one substance or activity with a less hazardous one
3. Isolation – e.g. use of barriers to shield or isolate the hazard, enclosures for noisy machinery, installing guards on machinery
4. Engineering – e.g. design and install equipment to counteract the hazard
5. Administration – policies and procedures for safe work practices
6. Personal Protective Equipment – e.g. respirators, ear plugs, face masks, safety glasses, safety shoes

| CONSEQUENCE DESCRIPTORS |   |   |  |
|-------------------------|---|---|--|
| SEVERITY                | SAFETY  | ENVIRONMENT   | BUSINESS   |
| <b>5. Catastrophic</b>  | Potential for incident resulting in serious damage and/or fatality                                  | The aspect is legally or contract regulated and has the potential for a disastrous long term impact resulting in prosecution.                     | Loss > \$1M  |
| <b>4. Major</b>         | Potential for incident resulting in serious damage and/or permanent disabling illness or injury     | The aspect is legally or contract regulated and has the potential for a serious long term impact resulting in prosecution.                        | Loss of service provision                                |
| <b>3. Moderate</b>      | Potential for incident resulting in significant damage and/or temporary disabling illness or injury | Significant environmental aspect with short term impact resulting in improvement notice.  | Loss \$100K - \$1M                                       |
| <b>2. Minor</b>         | Potential for incident resulting in moderate damage and/or requiring medical treatment.             | The aspect is legally or contract regulated and has the potential for a moderate reversible short term impact resulting in an improvement notice. | Prolonged reduction in service provision or productivity |
| <b>1. Insignificant</b> | Potential for incident resulting in minor damage and/or injury requiring first aid treatment        | The aspect is not legally or contract regulated and has the potential for a minor negligible impact.  | Loss \$10K - \$100K                                      |