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| **Business Unit:** | C2V+ | **Contract No. & Name:** | Macclesfield C14998 |

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| ACTIVITY: | MOB Media Removal | | RAMS Ref.: | 000 | | Rev: | 1 |
| Location and scope of Works: | This Risk Assessment and Method Statement (RAMS) outlines the comprehensive safety measures, procedural steps, and responsibilities required for media removal, maintenance, and inspection in Lane 2 of the MOB tank. The task includes initial access using a crane basket (manrider), erecting an Alloy tower, utilizing tube and fitting scaffolding, and manually cleaning diffuser heads to avoid damage. A 3-tonne excavator will be lowered into individual cells using a 120-tonne crane for media removal, with media redistributed to Lanes 1 and 3 via 500-litre crane buckets. This document addresses specific rescue plans, environmental considerations, and quality assurance measures to ensure compliance with health, safety, and environmental standards. The operation, while not classified as a confined space, requires constant monitoring, strict adherence to safety protocols, and precise execution. | | | | | | |
| Start date: | 28th January 2025 | Anticipated completion date: | | | 3rd February 2025 | | |

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| APPROVAL & AMENDMENT RECORD | | | | | | | |
| Rev | Prepared by | | Date | Reviewed / Approved by | | Date | Amendment Details |
| 0 | Name | Jonathan Jackson | 25/01/25 | Name | Ellen Griffin |  | First issue |
| Signature |  | Signature |  |

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| REVIEW / CHANGE LOG | | | |
| Date | Reviewer | Comments | Rev No. |
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| Personnel consulted during preparation of this document: |  |

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| Distribution List: | | |
| Name | Company | Position |
| James Woods | C2V+ | Foreman |
| Chris Robinson | C2V+ | Works Manager |
| Ellen Griffin | C2V+ | Senior Engineer |
| Josh Price | C2V+ | Commissioning Manager |

| **RISK ASSESSMENT for:** | | MOB Media Removal | | | RAMS Ref.: | 000 | | Rev: | 1 |
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| No. | Hazard | Person(s) at Risk | Undesired event | Control Measures  *(List control measures that are required)* | | | Actioned by | | Date |
|  | Unconscious worker in tank | * Tank operatives | Delay in rescue or inability to evacuate | Equip site with an electronic rescue winch and stretcher. Ensure crane and manrider are available for backup rescue. Train all personnel on rescue procedures and conduct drills. | | | Rescue Coordinator | |  |
|  | Wind affecting crane operations | * Crane operators, Groundworkers | Instability during lifts causing accidents | Monitor wind speeds daily; cease crane operations if wind exceeds 9m/s (20mph). Adhere to 50% lifting capacity rules. | | | Lift Supervisor | |  |
|  | Unauthorized personnel in work area | * All personnel | Interference causing injury or delays | Segregate work area with barriers and signs; restrict access to authorized personnel. Use a site access log. | | | Site Manager | |  |
|  | Working at height on Alloy tower | * Operatives erecting/using the tower | Falls causing serious injury or fatality | Ensure the Alloy tower is erected per PASMA guidelines, secured with eyebolts and straps. Use fall arrest systems. | | | Supervisor | |  |
|  | Operating crane basket (manrider) | * Workers in basket | Fall or instability during lift | Inspect basket before each use. Limit personnel to 50% of rated capacity. Ensure workers wear harnesses and lanyards. | | | Lift Supervisor | |  |
|  | CO2 from excavator operation | * Tank operatives | Respiratory distress or asphyxiation | Use calibrated gas detectors to continuously monitor CO2 levels. Stop operations if thresholds are exceeded. | | | Supervisor | |  |
|  | Damage to brittle diffusers | * Tank workers, Excavator operators | Breakage causing delays and increased costs | Restrict excavator operations to designated areas. Clean diffuser cells manually using handheld brushes. | | | Supervisor | |  |
|  | Manual handling of scaffold components | Operatives assembling scaffold | Strains, sprains, or back injuries | Provide manual handling training. Use mechanical aids or distribute loads among multiple workers. | | | Supervisor | |  |
|  | Dropping tools/materials | Workers below elevated areas | Injury caused by falling objects | Use tool lanyards for all tools used at height. Establish exclusion zones below elevated work areas. | | | Supervisor | |  |
|  | Scaffold instability during erection | Scaffolders | Falls or structural collapse | Erect scaffold according to CISRS standards. Inspect scaffold before and after use. | | | Scaffolding Foreman | |  |
|  | Noise exposure | All personnel | Hearing damage over time | Provide hearing protection. Monitor noise levels and ensure workers take breaks from noisy environments. | | | Supervisor | |  |
|  | Instability of Alloy tower | Tank workers | Collapse or movement causing injury | Secure tower with eyebolts and straps. Regularly check stability during operations. | | | Supervisor | |  |
|  | Hygiene risks | All personnel | Illness or contamination from wastewater exposure | Provide handwashing stations. Enforce hygiene practices including the use of disposable gloves. | | | Supervisor | |  |
|  | Slips, trips, and falls | All personnel | Injuries caused by wet or uneven surfaces | Inspect and maintain clean work areas. Ensure workers wear proper footwear. | | | Supervisor | |  |
|  | Rescue equipment failure | Rescue team | Delayed response in emergencies | Inspect winch and stretcher daily. Keep backup equipment available. | | | Rescue Coordinator | |  |
|  | Vibration from tools | Tank operatives | Hand-arm vibration syndrome (HAVS) | Use low-vibration tools. Rotate tasks and monitor exposure times. | | | Supervisor | |  |
|  | Communication failures | Crane operator, Top man, Tank workers | Miscommunication causing unsafe operations | All personnel to use radios set to Channel 1 for communication. Ensure radios are tested before work begins. | | | Lift Supervisor | |  |
|  | Fatigue from repetitive tasks | All personnel | Reduced focus and increased risk of accidents | Rotate tasks among workers. Enforce adequate rest breaks. | | | Supervisor | |  |
|  | Extended working hours | All personnel | Fatigue causing unsafe practices | Adhere to working hours of 07:30–17:00. Ensure breaks are taken as required. | | | Site Manager | |  |
|  | Environmental impact from media handling | Site personnel | Spillage contaminating surrounding areas | Ensure proper handling and transfer of media to designated lanes. Monitor site for spills. | | | Supervisor | |  |

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| METHOD STATEMENT | | | | | | | |
| Personnel REQUIRED  *Give the number and role of personnel required to carry out activity including any specific skills, fitness levels, training or qualifications required.* | | | | | | | |
| No. of | Role | | Qualifications / Experience required | | | | |
|  | Site Manager | | SMSTS certified, 5+ years of experience managing projects | | | | |
|  | Supervisor | | SSSTS certified, 3+ years of experience in supervisory roles | | | | |
|  | Lift Supervisor | | Certified lift supervisor training, experience with crane operations | | | | |
|  | Scaffolding Foreman | | CISRS card, experience erecting tube and fitting scaffolding | | | | |
|  | Operatives | | CSCS card, PASMA training, and confined space awareness | | | | |
|  | Banksman/ Slinger | | Certified banksman training, experience guiding crane operations | | | | |
|  | Rescue Coordinator | | Confined space and rescue training, experience with rescue equipment | | | | |

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| Associated Documents: | | | | | | | | | |
|  | | | | Required | | Location of document if not attached to this RAMS | | | |
| Yes | No |
| COSHH Assessment Ref. | | | |  |  |  | | | |
| Lift Plan (Nonroutine) H5503 / R07 | | | |  |  |  | | | |
| Rescue Plan *(for working at height)*: | | | |  |  |  | | | |
| Other Documents: *(such as drawings, sketches, consents, licenses, etc.)* | | | |  |  |  | | | |
| Permits / PLANS Required *Indicate those that apply or add other contract specific permits* | | | | | | | | | |
| Permit to Break Ground  H1401 / H1401R | Hot Works Permit  HSE27 | Confined Space Permit  HSE21 | Routine Lift Plan  H5503 /  R07 | | Permit to Operate Plant  H0909 | | Work Near Power Lines  H1408 | Temporary Works  Q25 | Permit to Pump  EMS29 |
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| ACTIVITY: | MOB Media Removal | RAMS Ref.: | 000 | Rev: | 1 |
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| RESOURCES REQUIRED | | | | | |
| Operated Plant | | | | | |
| Crane  3 tonne excavator  Gas detector  Rescue winch | | | | | |
| Non-Operated Plant / Small Tools / Equipment | | | | | |
| Crane Buckets, brushes, shovels | | | | | |
| Materials | | | | | |
| None | | | | | |

| ACTIVITY: | | MOB Media Removal | RAMS Ref.: | 000 | Rev: | 1 |
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| Programme of Operations and Potential Interface with Others: | | | | | | |
| Sequence of Activities / Safe System of Work  *(to include access / egress, plant & pedestrian segregation, limitations & constraints and state any HOLD POINTS)* | | | | | | **Hold Point** |
|  | **Scope of Works**  The scope includes media removal and maintenance works within Lane 2 of the MOB tank. Access will be achieved initially via a crane basket (manrider). An Alloy tower will be erected and secured with eyebolts and straps for safe entry. Tube and fitting scaffolding will be installed for stability. A 3-tonne excavator will be used for media removal, with media transferred to Lanes 1 and 3 using 500-litre crane buckets. Diffusers will be manually cleaned using handheld tools to prevent damage. Doors between cells will be refixed using cordless and hammer drills. After the tasks are complete, all equipment will be dismantled and removed, leaving the site clean and safe. | | | | |  |
|  | **Personnel and Responsibilities**  Site Manager - SMSTS certified, 5+ years of experience managing projects  Supervisor - SSSTS certified, 3+ years of experience in supervisory roles  Lift Supervisor - Certified lift supervisor training, experience with crane operations  Scaffolding Foreman - CISRS card, experience erecting tube and fitting scaffolding  Operatives - CSCS card, PASMA training, and confined space awareness  Banksman/ Slinger - Certified banksman/slinger training, experience guiding crane operations  Rescue Coordinator - Confined space and rescue training, experience with rescue equipment | | | | |  |
|  | **Hold Points**  **Pre-Lift Inspections and Permit to Lift:**  Inspect all lifting equipment, including crane basket, slings, and electronic rescue winch, to ensure it is in safe working condition. Defective equipment must be replaced immediately.  Verify wind speeds do not exceed the crane’s operational threshold (maximum 9m/s or 20mph). Document all pre-lift checks in the lifting log.  Ensure the Permit to Lift is approved and signed off by the Lift Supervisor before beginning lifting operations.  **Gas Monitoring:**  Deploy calibrated gas detectors to continuously monitor CO2 levels within the tank. Readings must be verified before personnel enter.  If gas levels exceed safety thresholds, work must pause until adequate ventilation is established and the area is deemed safe.  **Alloy Tower Stability Test:**  Conduct a stability test once the Alloy tower is secured to the tank walls using eyebolts and tension straps.  The Site Supervisor must inspect and approve the setup to ensure the tower is safe for use before allowing personnel to proceed.  **Scaffold Inspection and Work at Height Permit:**  Upon completion of scaffolding erection, the Scaffolding Foreman must inspect the scaffold for structural integrity.  Tag the scaffold as safe to use and ensure the Work at Height Permit is issued and displayed prominently.  **Diffuser Cleaning and Access Door Inspection:**  Diffuser cells will be manually cleaned using handheld tools to avoid damage to the brittle components. Operatives must take extra care during cleaning.  Each cell must be inspected thoroughly after cleaning, and before refixing access doors. Supervisors must sign off the inspection before proceeding.  **Final Tank Inspection and Permit Closure:**  Conduct a thorough final inspection of the tank to confirm all work is complete, no hazards remain, and the area is clean.  Close all relevant permits (e.g., Permit to Work and Permit to Lift) after the Site Manager signs off on the inspection report. | | | | |  |
|  | **Sequence of Activities:**  **1. Mobilisation:**  - Deliver all required equipment to the site, including the 120-tonne crane, 3-tonne excavator, Alloy tower components, scaffolding materials, cordless drills, hammer drills, and safety gear. Equipment delivery must be coordinated to minimize disruption to other site activities.  - Conduct toolbox talks led by the Site Manager, covering key safety protocols such as working at height, rescue procedures, lifting operations, and environmental considerations. Attendance must be documented.  - Inspect all lifting equipment, including slings, crane basket (manrider), and the rescue winch, for any defects. Document pre-lift checks, and replace any damaged equipment.  - Set up exclusion zones with physical barriers and signage to prevent unauthorized personnel from entering the work area. Access to the site must be logged and controlled by the Site Supervisor.  - Distribute radios to all operatives, set to Channel 1, and conduct a communication test to ensure all devices are functional.  **2. Initial Tank Access:**  - Operatives will access the MOB tank using a manrider basket. Each operative must wear a full-body harness secured to designated anchor points.  - The electronic rescue winch and stretcher will be installed and tested by the Rescue Coordinator to ensure operational readiness. Backup systems, including the crane for emergency extraction, must also be verified.  - Calibrated gas detectors will be deployed to monitor CO2 levels in the tank continuously. The Supervisor must confirm readings are within safe thresholds before allowing entry.  - Operatives entering the tank will conduct a visual inspection to identify potential hazards such as debris or water accumulation. Any issues must be reported immediately.  **3. Alloy Tower Erection:**  - The Alloy tower will be lowered into the tank using the crane, under the supervision of PASMA-certified operatives. The tower must be assembled per the manufacturer’s specifications.  - Secure the Alloy tower to the tank walls using eyebolts and tension straps. Perform a stability test to confirm it is safe for use.  - Install a fall arrest system at the top of MOB using the davit sockets provided. All anchor points must be inspected and approved by the Site Supervisor.  - Place and secure scaffolding boards on the tower platform to create a stable working surface for operatives.  **4. Scaffolding Installation:**  - CISRS-certified scaffolders will erect tube and fitting scaffolding tied into the Alloy tower. The scaffold must be aligned and secured to provide stability during media removal and maintenance tasks.  - Scaffolders will use tool lanyards to prevent tools from falling during assembly. Exclusion zones will be enforced below the scaffold.  - Once the scaffold is complete, the Scaffolding Foreman will conduct a full inspection. The scaffold must be tagged to indicate it is safe for use before operatives can proceed.  **5. Media Removal:**  - The 3-tonne excavator will be lifted into individual tank cells using the crane. The Lift Supervisor will oversee this operation to ensure the excavator is properly secured with certified slings.  - The excavator will load media into 500-litre crane buckets, ensuring loads do not exceed weight limits. The top man, stationed at high level, will guide the crane operator via radio communication to evenly distribute the media into Lanes 1 and 3.  - Adjacent diffuser cells will be cleaned manually using handheld brushes to prevent damage. Operatives must work around diffuser heads with care, as they are highly brittle.  - This process will be repeated for each cell until all necessary media has been removed to enable maintenance works.  **6. Maintenance Tasks:**  - Operatives will refix doors between cells using cordless drills and hammer drills. Pre-marked drilling locations will ensure precision and alignment.  - Mixers within the tank will be visually inspected for signs of damage or debris buildup. Any issues identified must be documented and reported to the Site Manager immediately.  - Operatives must clean tools and equipment after use to maintain hygiene and prevent contamination.  **7. Demobilisation:**  - Dismantle all scaffolding and Alloy tower components, ensuring they are lifted out of the tank safely. PASMA- and CISRS-certified personnel must handle the dismantling process.  - Clear the work area of all equipment and materials. Ensure waste is managed according to site protocols and environmental guidelines.  - Conduct a final inspection of the tank, led by the Site Supervisor, to confirm it is safe and clean. The Site Manager must sign off the inspection report before concluding the task.  - Ensure all personnel return equipment to the designated storage area and log out before leaving the site. | | | | |  |

| ACTIVITY: | MOB Media Removal | | | RAMS Ref.: | | 000 | Rev: | 1 |
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| Mandatory and additional PPE required:  *(rigger boots or similar are banned from use, wellingtons can only be used following inclusion in the RA)* | | | | | | | | |
| Mandatory PPE: | | | Task Specific PPE: | | | | | |
| Safety helmet  Safety boots  High-visibility vest  Cut-resistant gloves  Orange Hi-viz Overtrousers | | | Waders | | | | | |
| Environmental considerations: *Consider Waste Management pollution prevention measures, protected wildlife / sites / trees, noise / vibration / dust, resource use. Refer to H02G03 Environmental Guidance for RAMS* | | | | | | | | |
| Waste Management | | | | | | | | |
| Media will be transferred to Lanes 1 and 3; no disposal is required. | | | | | | | | |
| Pollution Prevention *(water & ground; consider fuels, concrete & silt)* | | | | | | | | |
| Spills will be monitored and cleaned immediately. Use plant nappies during refuelling. | | | | | | | | |
| Protected & Invasive Species | | | | | | | | |
| None | | | | | | | | |
| Nuisance *(noise, dust, vibration)* | | | | | | | | |
| None | | | | | | | | |
| Resource Use *(fuel, water, aggregates, etc.)* | | | | | | | | |
| Minimize fuel consumption by using plant efficiently. | | | | | | | | |
| Other *(archaeology, NRMM, etc.)* | | | | | | | | |
| Noise control measures in place for plant machinery, and adherence to site working hours. | | | | | | | | |
| Emergency response: | | | | | | | | |
| Event | | Action to be Taken *(indicate location of first aid facilities, fire extinguishers, spill kits, rescue lines)* | | | Emergency Contact Details | | | |
| Fire: | | Raise the alarm, go to the muster point at car park one entrance, fire extinguishers located at MCC notice boards. | | | Alert Fire Warden or 999 | | | |
| Accident: | | Administer first aid (first aid kits in operatives canteen, office reception and MCC noticeboard). Call 999 if needed. | | | Alert First Aider  Ellen Griffin – 07557 104412  Mike Robinson – 07545 345335  Jon Jackson - 07929024920  or 999 | | | |
| Pollution: | | Emergency spill procedure to be actioned. | | | Alert Site Management | | | |
| Water: | | Site management to be informed who will alert UU. | | | Alert Site Management or UU | | | |
| Service strike: | | N/A | | | N/A | | | |

**Record of briefing of the personnel who are to undertake this work:**

*(Extend the table as necessary to record the briefing on any revisions in separate rows)*

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| ACTIVITY: | MOB Media Removal | RAMS Ref.: | 000 | Rev: | 1 |
| Briefing Given by: *(name)* |  | Signed: |  | Date: |  |

I confirm that I have received and understood the briefing for the task(s) outlined.

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| Forename | Surname | Role  *(in relation to this task)* | Signature | Date and time |
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| ACTIVITY: | MOB Media Removal | RAMS Ref.: | | 000 | | | Rev: | 1 |
| **MINOR AMENDMENTS** | | | | | | | | |
| AMENDMENT TO RAMS CARRIED OUT BY *(Supervisor responsible for works)* | | | | | | | | |
| Name | Position | Signature | | | | Date | | Time |
|  |  |  | | | |  | |  |
| AMENDMENT SUMMARY *changes required & reasons for minor amendment(s)* | | | | | | | | |
|  | | | | | | | | |
| Outline of the significant hazards involved: | | | Outline the controls to be followed to do the work: | | | | | |
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| AMENDMENT TO RAMS APPROVED BY *(Manager responsible for works)[if approval by phone call record date & time]* | | | | | | | | |
| Name | Position | Signature | | | Date | | | Time |
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I confirm that I have received and understood the briefing for the task(s) outlined:

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| Forename | Surname | Role  *(in relation to this task)* | Signature | Date and time |
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