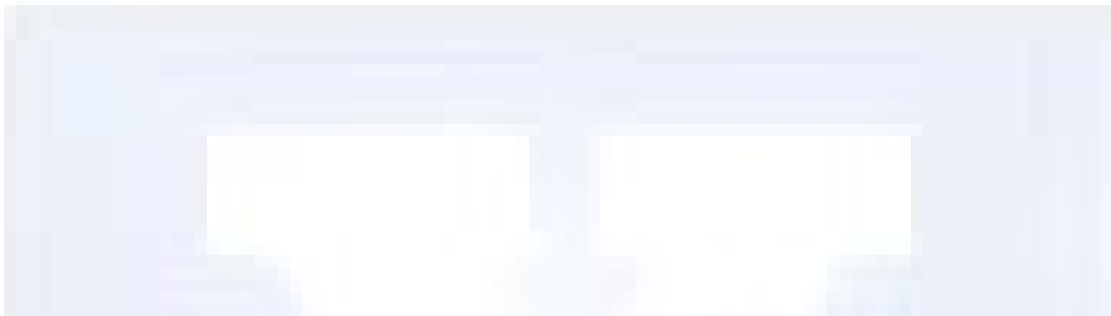




Standard Operating Procedure Spray Painting and Spraying other Substances





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1. PURPOSE

The purpose of this procedure is to describe the requirements and to ensure the effective management of hazards and risk associated with Spray Painting and Spraying Other Substances at the Vulcan Mine.

This procedure has been developed to ensure compliance with section 145 of the CSMHR.

- Section 145 Spray Painting and Spraying Other Substances.

2. SCOPE

This procedure is applicable to all persons at the Vulcan Mine including employees, contractors and visitors.

The controls within this procedure are mandatory.

3. DEFINITIONS

Authorised Person	A Person who has been assessed as competent and authorised under the authority of the SSE/SSE delegate to undertake a specific task at Vulcan Mine.
Competent Person	A person for a task at a coal mine that has the demonstrated skill and knowledge required to carry out the task to a standard necessary for the safety and health of persons.
CMSHA	Queensland Coal Mining Safety and Health Act (1999).
CSHR	Coal Mining Safety and Health Regulation (2017).
CMW	Coal Mine Worker.
HST	Health, Safety and Training.
JHA	Job Hazard Analysis.
MOP	Mine Operating Procedure
OEM	Original Equipment Manufacturer.
PPE	Personal Protective Equipment.
RPE	Respiratory Protective Equipment
SDS	Safety Data Sheet.
SHMS	Safety and Health Management System.
SOP	Standard Operating Procedure.
SSE	Site Senior Executive.
Take 5	Personal Risk Assessment.

4. RISK MANAGEMENT

Where Spray Painting and Spraying Other Substances are to be conducted onsite or where there is a potential of injury when performing Spray Painting and Spraying Other Substances, the Risk Management



process shall be followed to the level of the task being undertaken in accordance with **VUL-MOP-049-Risk and Hazard Management**.

The risk management process shall consider the following points:

- Control measures for Spray Painting;
- Control measures for Spraying Other Substances;
- Control measures for Hazardous Substances;
- Spray painting zones;
- Personal Protective Equipment;
- Maintenance For Equipment;
- Environmental Impact;
- Environmental Controls;

NOTE - Workers have a duty to take reasonable care for their own health and safety and to not adversely affect the health and safety of other persons. Workers must comply with reasonable instructions, as far as they are reasonably able, and cooperate with reasonable health and safety policies or procedures that has been notified to workers, including information, instructions and training in relation to work carried out by the worker in a confined space. If personal protective equipment (PPE) is provided, the worker must so far as they are reasonably able, use or wear it in accordance with the information, instructions and training provided.

NOTE - If the task is decided that it cannot be controlled onsite then alternative off-site work must be considered. Major spray-painting tasks shall preferably be conducted off-site by a competent organisation.

5. PROCEDURE

5.1. General

Exposure to hazardous chemicals is a significant risk in spray painting activities including during preparation (preparing surfaces, tinting, mixing and pouring paints), storage, clean-up and disposal.

The hazardous chemicals that workers may be exposed to include paints, solvents, powders, lacquers, paint strippers, adhesives, surface preparation products, rust converters and rust removers. In most cases the product label and safety data sheet (SDS) will identify any hazardous chemicals.

Elimination of the hazardous substance or use of an alternative substance for spray painting shall be considered.

Control measures implemented to either prevent the exposure, or if this is not practicable, ensure the exposure is minimised to as low as reasonably achievable and no greater than the national exposure section for the substance.

Work involving manual handling of spare painting equipment, especially air hoses etc., shall be undertaken with care and correct techniques observed in accordance with **VUL-SOP-096b-Manual Handling Tasks and Ergonomics**.

NOTE - The use of flammable materials in spray painting, for example organic solvents, increases the risk of fire and explosion because of the amount of solvent vapour in the air.

Equipment coming to site must be in accordance with the following VUL-MOP-071-Equipment Compliance.

5.2. Hazardous Substances

A hazardous chemicals register is a list of hazardous chemicals at the workplace, accompanied by the current SDS for each chemical. This could include any paints, coatings, solvents and thinners, fillers, strippers and cleaning products. The purpose of this register is to provide a source of information all CMW/s and anyone else affected by a hazardous chemical, and to assist in the management of substances used or generated in spray painting activities.

A hazardous chemicals register is required under the WHS Regulation to be prepared and kept up to date so that information about chemicals stored, handled or used at the workplace can be easily found.

The register must be readily accessible to anyone in the workplace who is likely to be affected by a chemicals and workers who are involved in using, handling or storing a chemical in the register.



The following chemicals must not be used, handled or stored for spray painting:

- Arsenic
- Arsenic compounds
- Benzene (benzol), if the substance contains more than one per cent by volume
- Carbon disulphide (carbon bisulphide)
- Lead carbonate
- Methanol (methyl alcohol), if the substance contains more than one per cent by volume
- Tetrachloroethane • tetrachloromethane (carbon tetrachloride)
- Tributyl tin.

NOTE - Paint and other harmful substances shall not be used on site unless it has been confirmed that the product is approved for use on site in accordance with VUL-SOP-056 – Hazardous Substances.

5.3. Personal Protective Equipment and Respiratory Protective Equipment

The standard site specific PPE should be worn at all times as per **VUL-SOP-065-PPE**.

There are two important factors to consider when selecting a respirator:

- The level of protection given by the respirator is suitable for the level of air contamination.
- The filter in the respirator is suitable for the type of airborne contaminants in the workplace.

The two main types of respirators are:

- Air-purifying respirators – protect the wearer by using a filter to purify the air being breathed in. These types of respirators can be disposable or reusable and either
 - Mon-powered – uses the wearer's breathing to draw air through the filter
 - Powered – uses a fan to draw air through the filter.
- Supplied-air respirators – protect the wearer by supplying clean breathing air from an independent source such as an air compressor or compressed air cylinder.
- For other paints a respirator with a combined vapour/particulate filter should be worn where the exposure standard is likely to be exceeded.

For other paints a respirator with a combined vapour/particulate filter should be worn where the exposure standard is likely to be exceeded. The sprayer should also wear full length overalls, appropriate chemically resistant gloves and eye protection.

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Never use an air-purifying respirator in an area where oxygen levels may be low, such as a confined space

NOTE - Wearing PPE can restrict air movement and sweat evaporation which can prevent the worker's body from undergoing natural cooling due to sweat evaporation. This should be considered in assessing the risks associated with heat.

NOTE - The PPE required for spray painting shall be determined in accordance with a risk assessment with consideration of the relevant SDS.

5.4. Spray Painting Zones

A spray zone may be designated on-site for temporary spray painting with a distance adequate to prevent interaction e.g. fumes, with any adjacent work activity.



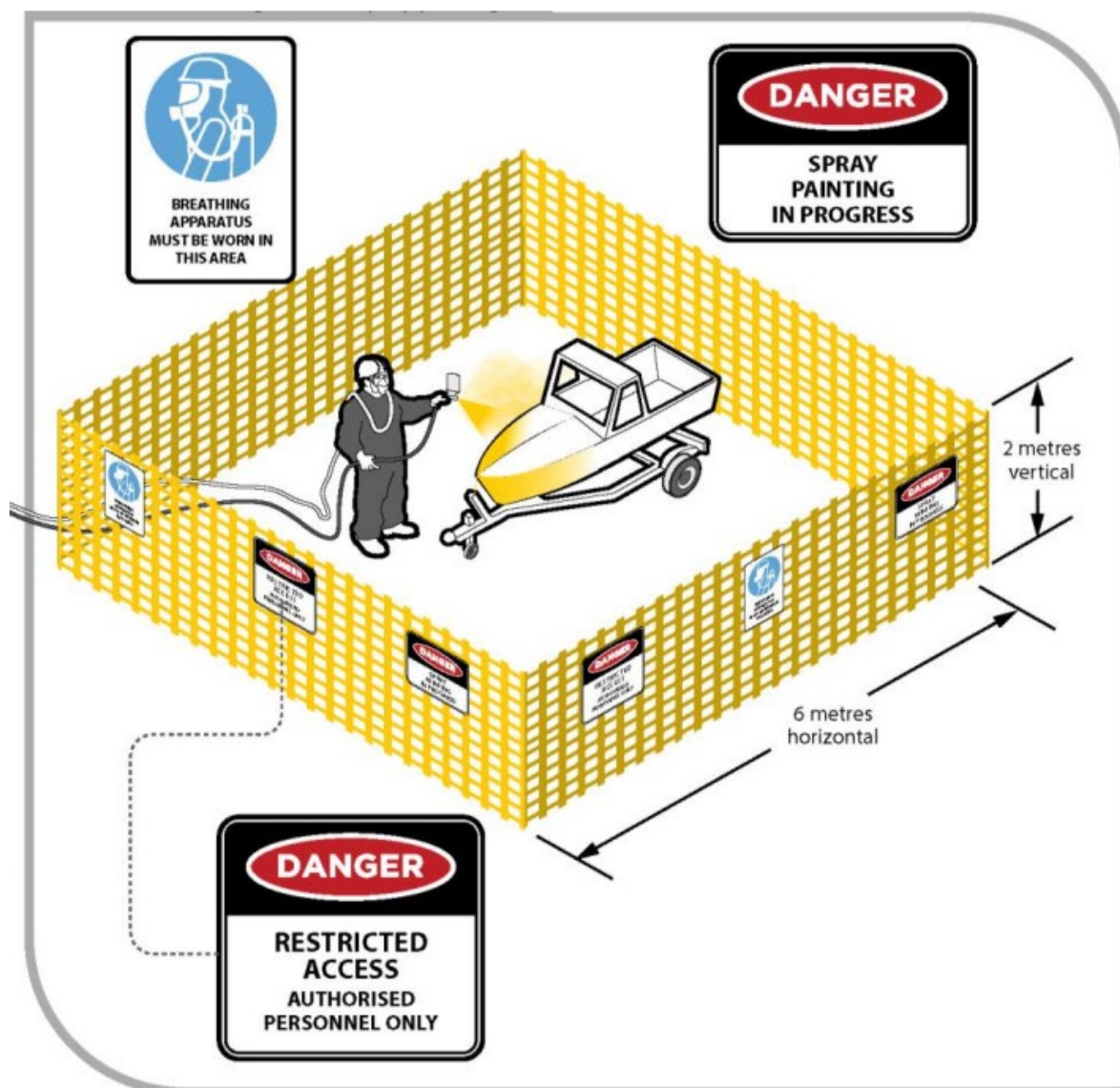
When spraying two-part polyurethane paint and two-part epoxy paint in the open environment the requirements for respiratory protection are the same as for two-part polyurethane paint and two-part epoxy paint above, respectively.

Where it is not reasonably practicable to do spray painting in a booth and it is carried out in a building or structure (other than a confined space), the building or structure should be of open construction, or a mechanical exhaust system should be used to prevent the build-up of flammable or toxic fumes.

When spray painting outside a spray booth or outdoors, a spray painting exclusion zone should be designated around the area where the spray painting is carried out. A sign stating 'SPRAY PAINTING AREA—AUTHORISED PERSONNEL ONLY' should be prominently displayed at the exclusion zone.

Spray zones shall include:

- Signage and barricading as required;
- Ventilation system where required by risk assessment;
- Restricted entry as required; and
- Consideration of a temporary barrier, such as shade cloth or hessian to control any overspray.



NOTE - Spray painting is not to be carried out inside the same enclosure or structure as welding, cutting or any other ignition source.

NOTE - Flammable and hazardous substances not being used immediately shall be stored outside the spray zone area or in an approved hazardous chemical storage location.



5.5. Aerosol Paint Cans

This is achieved by airless spray painting where the paint container is pressurised pushing the paint to the nozzle where it is atomised by the spray gun

Aerosol paint cans are rated as Class 2 Hazardous Goods and shall be handled accordingly.

All personnel who are required to use spray paint aerosol cans as part of their normal duties, e.g. ground mark ups, highlighting work areas etc. shall abide by the conditions set out in the safety data sheet.

PPE in the form of Class P2 masks shall be worn where there is a potential to inhale overspray or particles of paint.

Aerosol paint cans shall be emptied of the contents and the internal can pressure exhausted before being disposed of. Aerosol paint cans shall not be stored within vehicle cabins or deliberately punctured or incinerated.

Paint cans shall be stored in accordance with the SDS and ***VUL-SOP-056-Hazardous Substances***.

All empty aerosol paint cans are to be disposed of as hazardous substances.

5.6. Pressurised Spray Painting

This is achieved by using a conventional air compressor where air is driven across the mouth of a small outlet under pressure to draw liquid paint out of the container and produce an air-paint mist from the nozzle of the spray-gun.

When Pressurised Spray Painting is being conducted, the following should be considered;

- Risk from over pressurisation (pressure should be released before opening to refill);
- Potential for vessel damage and incorrectly fitted hoses and couplings;
- Awkward hazardous manual tasks; and
- More solvents used in maintenance.

Paint cans shall be stored in accordance with the SDS and ***VUL-SOP-056-Hazardous Substances***.

All empty paint containers are to be disposed of as hazardous substances.

5.7. Equipment Inspection and Maintenance

All equipment used in performing such tasks shall be fit for the purpose for which it is to be used.

Equipment shall be maintained in accordance with OEM specifications. Including but not limited to the following;

- Regular visual checks of equipment and plant such as engineering controls and ventilation systems;
- Regular monitoring and testing of ventilation flow rates;
- Regular servicing of all equipment and plant;
- Procedures for reporting and repairing faulty equipment; and
- Records of servicing, maintenance, repair and testing of plant and equipment.

When undertaking maintenance of equipment, ensure:

- Spraying equipment is regularly cleaned and maintained in accordance with the manufacturer's instructions;
- Spray guns are tested in a safe manner;
- The air filter medium is cleaned according to the manufacturer's instructions;
- Frequent cleaning or replacement of the filter medium is required to prevent deposits blocking air flow;
- Pressurised paint pots and pressurised spray guns are cleaned in accordance with manufacturers' instructions;
- Pressure from the gun and the paint pot should be released prior to cleaning; and
The gun should never be cleaned by covering the nozzle with a cloth or other material held in the hand, as this method of cleaning can result in paint injection injuries when used with airless spray guns.



All equipment shall be subject to a pre-start inspection and any equipment found to be unserviceable shall be tagged Out of Service as per **VUL-SOP-078-Isolation and Tagging** and reported to the relevant supervisor.

5.8. Worker Exposure to high humidity and heat

Exposure to extreme heat is particularly hazardous when working outdoors in direct sunlight, on hot days, humid environments or in confined spaces.

Workers are at risk of heat strain due to working in hot, poorly ventilated or confined spaces and the type of PPE, for example blast helmets and protective suits. Spray painting and powder coating Code of Practice 2021.

Working in a hot environment can cause heat rash, heat stress, heat stroke and result in permanent injury or death. Heat stress is a serious medical condition. It can occur gradually and has a range of symptoms. While discomfort, dehydration and sweating can be easily noticed by a worker, symptoms such as lack of concentration, fatigue, lethargy and confusion are less noticeable.

5.9. Environment Requirements

Disposal of unused paint and substances shall be in accordance with site environmental requirements.
ROLES AND RESPONSIBILITIES

SSE	Shall review and approve this procedure.
Asset Manager	Ensure the Registers are being maintained Shall ensure that all provisions of this procedure are implemented, and that compliance is achieved.
HST Manager	Ensure CMW's are familiar with and have access to this SOP and associated documents Provide adequate training and information for this SOP.
Supervisor	Shall be responsible for their area of operations and the implementation and application of this procedure; Provide adequate supervision to ensure that this procedure is implemented; Carry-out a periodic review of activities to ensure the appropriate application and understanding of this procedure; and Ensure immediate and appropriate steps are taken to investigate and rectify any risks to health and safety arising from these activities. Ensure all CMWs are familiar with, have access to and comply with the requirements set out in this procedure. Ensure the Registered are being updated and maintained.
All CMWs (including visitors and contactor)	Shall comply with the requirements of this procedure.

6. REFERENCES

- AS 1580: Paints and related materials
- AS 1668 Set-2016 The use of ventilation and air conditioning in buildings
- AS/NZS 1716:2012 Respiratory protective devices
- AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment
- AS 3853.1-2006 Health and safety in welding and allied processes – Sampling of airborne particles and gases in the operator's breathing zone – Sampling of airborne particles.
- AS/NZS 4114:2020 Spray painting booths, designated spray areas and paint mixing rooms
- Coal Mining Safety and Health Act 1999 (Qld)
- Coal Mining Safety and Health Regulation 2017
- Globally harmonised system of classification and labelling of chemicals (GHS)
- Spray painting and powder coating Code of Practice 2021.
- <https://www.worksafe.qld.gov.au/safety-and-prevention/hazards/hazardous-exposures/spray-painting>



7. REVIEW

This document shall be reviewed at a minimum every two years, or as follows:

- When there is a change of method and/or technology and/or legal or other requirement that may affect the accuracy of this document;
- When operational changes occur that effect the currency of the document;
- When there has been a significant event to which this document was relevant; and
- As a result of relevant audit findings.

8. Related Documents

- VUL-MOP-049-Risk Management
- VUL-MOP-071-Equipment Compliance
- VUL-SOP-056-Hazardous Substances
- VUL-SOP-096b-Manual Handling Tasks and Ergonomics
- VUL-SOP-078-Isolation and Tagging
- VUL-SOP-065-PPE

9. DOCUMENT CONTROL

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01	02/06/2020	Initial draft	Rachael Dacker
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05	25/10/2023	Review and Update	Kelly Jensen