



Bulkan North Mine Site

Standard Operating Procedure

SOP-302.01

Safe Operation of Vehicle and Mobile Equipment

(Training Resource Only)

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1. Purpose / Introduction

This Standard Operating Procedure (SOP) provides the requirements for the safe operation, movement, parking, towing and recovery of vehicles and mobile plant on the **Ausmite Bulkan North** mine site, in accordance with sections 66, 69, 70, 71, 72(b) & (d), 73, 74, 75, 76, 77 and 83(3)(b) of the Queensland Coal Mining Safety and Health Regulation.

It does not address all the requirements for:

- Designing or constructing roadways, laydown areas or work pads
- Vehicle standards and specifications
- Hot tyres and tyre fires
- Operation of vehicles or mobile plant on an adjacent site or access road through an adjacent site

This SOP applies to all Coal Mine Workers and visitors at the Bulkan North mine site.

2. Definitions and descriptions

Term	Definition
Plant	CMSHA 1999 Schedule 3 <i>Plant includes-</i> a) <i>Machinery, equipment, appliance, pressure vessel, implement and tool; and</i> b) <i>Personal protective equipment; and</i> c) <i>A component of plant and a fitting, connection, accessory or adjunct to plant.</i>
Mobile Plant	<i>For the purposes of this SOP, the term “mobile plant” refers to earthmoving equipment, mobile cranes including haul trucks, water trucks, excavators, dozers, graders and shovels.</i>
Equipment	<i>For the purposes of this SOP, the term “equipment” is a reference to any vehicles or item of mobile plant or equipment</i>
Fundamental stability	<i>The vehicle or mobile plant cannot move/roll in any direction under its own weight (e.g. where the handbrake is off and the vehicle is in neutral gear, the vehicle still cannot move).</i>
Positive Communication (Pos comms)	Positive Communication (Pos Comms) <i>is the process whereby a message (e.g. a request) is delivered clearly, and the intended listener receives and understands the message and replies accordingly. Intended actions can only commence if Pos Comms has been established and all instructions have been understood.</i>

3. Competencies / Authorisation

Only persons deemed as competent and holding the appropriate prescribed competency shall undertake the driving of vehicles or operation of plant.

Activities that support the driving of vehicles or operation of plant require that personnel be competent and authorised in accordance with the relevant Ausmite Bulkan North procedure.

Authorisation requires that an operator hold a current Australian Motor Driver's licence (MDL). Personnel who's Ausmite Site Authorisation has been suspended or disqualified will require special approval from the SSE.

4. Legal Obligations

The Coal Mining Safety and Health Regulation 2017 prescribes the following relevant obligations:

- **s66 (1)** A coal mine's safety and health management system must provide for the continued effectiveness of braking systems on fixed and mobile plant used at the mine.
- **s69** Pre-start warning system
- **s70** Safe access to plant
- **s71** Safety checks by competent person
- **s72(b)** Managing recovering fixed and mobile plant after an accident or incident; **(d)** carrying persons in mobile plant
- **s73** Checking mobile plant
- **s74** Protective Structures
- **s75** Seat belts
- **s76** Using mobile plant
- **s77** Warning system if mobile plant operator's visibility is restricted
- **s82(3)** Training scheme, **(b)** operating mobile plant
- **s135(2)** Using plant near electricity **(b)** keeping a register of the height of vehicles and mobile plant used on site

5. Parallel or Adjacent Mine

When accessing the site, operators may be required to travel on access roads under the control and jurisdiction of an adjacent mine SSE. In which case, the traffic and vehicular procedures for that mine will take precedence.

A North Bulkan authorised equipment operator shall not operate any form of equipment on an adjacent mine or lease unless they have first received authorisation to do so.

Applicable North Bulkan personnel will make appropriate arrangements to recognise current competencies and authorisation for personnel from an adjacent mine who may be required to operate equipment on the Bulkan North site.

6. Operator Obligations

At commencement of shift, equipment operators must obtain information on the condition of potential travel routes. This applies for both their own work area and for travel on an adjacent mine site.

Prior to the first operation of any equipment, a prestart inspection must be completed and the inspection findings fully documented.

As soon as practicable after moving the equipment (including hot-seat change over), the operator shall check the safety functions that can only be checked during operation, such as brakes and steering.

On identifying a condition that would or could affect the safe operation of equipment, the operator shall:

- Pull off or over to the side of the road at the first available safe location
- Contact and report the situation to their Supervisor, who will then arrange further action relevant to the particular situation.

7. Pre-start Inspections

No vehicle or mobile plant must be operated unless a Per-Start Inspection has been conducted and no defects/faults have been identified.

All defective equipment must be tagged (Out of Service), isolated and reported immediately. Unless instructed otherwise, defects must be reported to immediate supervisors.

Where a vehicle or mobile plant has been tagged Out of Service, that vehicle or mobile plant must remain out of service until it is deemed ready for return to service by an authorised person.

Pre-Start Inspections Checklists are available from the Bulkan North Safety and Health Management System.

Under no circumstances should defective vehicles or mobile plant be used.

8. Light Vehicle Specifications

All light vehicles driven on this site must comply with the following requirements:

- Must be fitted with a two-way radio (which is tested prior to use for each shift)
- Must be fitted with flashing amber light at roof top level – to be turned on while the vehicle is in use
- Must be fitted with high visibility reflective flag (the top of the flag must be no less than 3.2 m from ground level)
- Reflective stripping
- Headlights must be turned on at all times when the vehicle is in use
- Vehicle ID must be clearly identifiable on both driver and passenger side doors.

9. General Safety Rules for Operators

When operating equipment on a mine lease, operators shall:

- Wear a seat belt at all times when the engine is running or the equipment is in motion
- Only ride in approved and fit for purpose seating and ensure that their passengers do the same
- Verify that all passengers are wearing a seat belt (if fitted) prior to moving. This includes buses and personnel carriers
- Ensure that all windows are closed when the vehicle is in motion
- Have headlights turned on at all times and whip flag fitted, both day and night
- Beacons or flashing lights turned on at all times on a mine lease and turned off on the public road
- Drive to suit the prevailing conditions: visibility, road surface, obstacles and other hazards
- Obey all traffic, warning and direction signage
- Do NOT use mobile electronic devices, including hands-free applications, when driving, other than a two-way radio
- Apply positive communication principles to communicate their intentions to operators of other equipment
- When travelling on watered roads, utilise a dry line where there is one available
- Give way to Pedestrians at marked crossings
- Not commence a manoeuvre without a spotter if there is a risk of colliding with a fixed object or structure
- Cease operations and seek supervisor guidance if there appears to be a risk of loss of control or risk of collision due to a lack of visibility (the indicators and lights of other equipment cannot be seen)

10. Speed Limits

Unless otherwise indicated by signage, the maximum speed limits on site are as follows:

Haul roads:	60 km/h
Pit / waste dump access roads / ramps:	30 km/h
Pits / waste dumps	20 km/h
Go lines / hard stands:	10 km/h
Processing plant zone:	10 km/h
Building access roads / ways:	5 km/h
Light vehicle parking zones:	5 km/h

11. Warning Signals and Reversing

When moving from a stationary position, the operator will sound the horn as per the sequence below. Then pause for a further 10 seconds before starting or moving the vehicle to allow persons to move to a safe position.

Horn blasts		General requirement for all equipment (excluding draglines)
One	1	Before starting the vehicle or mobile equipment
Two	2	The vehicle or mobile equipment is about to move in a forward direction (from parked or standing during a break in operations)
Three	3	The vehicle or mobile equipment is about to move in a reverse direction (from parked or standing during a break in operations)

12. Positive Communication

Positive Communication (Pos Comms) is the process whereby a message (e.g. a request) is delivered clearly, and the intended listener receives and understands the message and replies accordingly. Intended actions can only commence if Pos Comms has been established and all instructions have been understood.

Effective positive communication is where all parties comply with instructions provided during the communication.

Further description:

Note: Pos Comms most often relates to the use of two-way radios and is used to **prevent incidents involving vehicles and mobile plant**.

Pos comms is required in the following situations:

- When a driver of a vehicle wishes to overtake another vehicle or mobile plant.
- When a driver of a vehicle or mobile plant (other than designated area production vehicles or plant) wishes to enter a pit, waste dump, processing plant, maintenance building
- When entering any area where signage is present requiring Pos Comms to be established before entry

After three (3) attempts:

Where three (3) attempts at positive communication have failed, the messenger must call the site control office of Ch 16 to seek instructions.

Under no circumstances is any worker permitted to proceed with their intended actions if positive communications is required but has not been established.

13. Light Vehicle and Mobile Plant Interaction

Light vehicles are not permitted to travel within 50m of mobile plant unless **all of the following controls** have been implemented:

1. **Positive communication has been made with the mobile plant operator**
2. **The mobile plant has ceased operations and any attachments have been grounded**
3. **The operator of the mobile plant has provided permission for the light vehicle to approach**

Where the above criteria have not been met, the operator (and all passengers) of the light vehicle must remain in the vehicle, maintain visual contact with the mobile plant and remain at least 50m from the mobile plant.

14. Parking / Unattended Equipment

Equipment must be parked:

- In a manner that does not pose a hazard to other vehicles or people
- In a designated parking / lay-up area where possible
- Reverse inwards when using a dedicated parking bay area

When leaving equipment unattended after parking, operators must ensure the following:

- The equipment is placed in gear if manual transmission or “park” if an automatic transmission
- The park brake (or park brake system) is applied
- Any ground engaging tools are lowered to the ground
- The engine is switched off or shut down
- Fundamental stability is assured by chocks, v-drain, bund/verge, or parking on non-sloping ground

15. Break Down or Emergencies

In a break down or emergency situation, the driver or operator must assess and control the following hazards:

- Uncontrolled movement of the vehicle during the braking period and after coming to a stop
- Whether it is safer to remain in or exit the equipment. And particularly if intending to provide assistance to others
- The means of egress to the ground if the normal means of exit are damaged or access is precluded
- Equipment and pedestrian interactions in the immediate area
- Environmental hazards – such as solar radiation, lightning, rising water or dust

These considerations must also be balanced (urgency v exposure) with the need to report the situation to a Supervisor at the earliest opportunity.

16. Prior to Towing or Recovery

Prior to commencing a recovery or towing of plant, a JSA shall be completed and the following factors considered:

- Environmental conditions:
 - Ground conditions – if unsure, then a geotechnical assessment must be completed
 - Landscape hazards such as drop-offs or faces
 - Potential interaction with fixed structures
 - Lighting
 - Weather
- Status of plant or equipment to be moved or recovered:
 - Weight and position
 - The effect of immersion in mud, sand or other material that restricts free movement
 - Fluids that may spill / containment that may be breached during recovery
 - Energy sources that should be isolated – and particularly kinetic
 - Access to, the known load rating and means of connection to certified tow points
- Recovery equipment:
 - Towing and/or lifting capacity of plant and equipment
 - Potential contact with personnel. Line of Fire clearance requirements
 - Potential interaction with vehicles or pedestrian in the area or approaching the area

17. Towing and Recovery

Towing

Kevlar slings with metal bolt-on towing eye plate are not permitted for recovery operations.

Lifting slings must not be used for towing or recovery purposes. Towing and recovery equipment must not be used for lifting and shall be clearly marked as to their intended purpose.

If towing on ramps is required, the disabled vehicle or equipment must be equipped with a method of stopping should the towing equipment fail.

Whilst towing is in progress, the towing speed shall not exceed 40kph OR as determined by the site rules, JSA OR site conditions at that time.

Non-essential personnel shall be directed to remain outside the required delineation for an exclusion zone that will be determined by the exact conditions and arrangements for any particular recovery. As a minimum, all vehicles and pedestrians shall be precluded from entering within 50 metres from the recovery operation.

Transporting Heavy Plant and Supplies

Loads must be secured with fit for purpose securing systems. Heavy transport vehicles entering the North Bulkan site will be inspected at the point of entry to determine the security and nature of the load.

Transport that requires access to the North Bulkan site with a non-compliant or unsafe load will either be:

- Denied access to site until their load has been secured or is deemed safe; or
- Escorted onto site and directed to a specific location or lay-down area where the load security is to be addressed or the cargo unloaded

An escort vehicle is required for all non-inducted heavy transport vehicles operators.

- One site escort vehicle may escort more than one vehicle at the same time provided they are travelling in a convoy sequence and all vehicles have the same destination
- Vehicles travelling to different destinations within the North Bulkan site will each require their own escort vehicle
- A maximum of three vehicles may be escorted at a time

All drivers under escort must have two way radio communications with their escort. Escort vehicles are to have their hazard lights flashing when escorting.

18. Road Surfaces

As part of their regular work area inspections the shift OCE will inspect the condition of the North Bulkan site production areas including haul roads and work area access roads/ramps. The OCE shall seek updates from operators who have recently used those roads.

Periodic road maintenance is to be anticipated and this may involve interacting with slow moving equipment in the vicinity (graders, rollers, water carts).

Maintenance work will be communicated to potential users in advance and appropriate warning signs shall be placed on approaches to roadways where road maintenance is being conducted.

Local arrangements for traffic control, passing and detours will be communicated to operators at start of shift.

Appendix: Summary of Key Points

- 🔑 When operating equipment on a mine lease, operators shall ensure:
 - 🔑 They have been authorised to operate that particular item of equipment
 - 🔑 All occupants wear a seat belt at all times. Including in buses and personnel carriers
 - 🔑 Have headlights turned on at all times and whip flag fitted, both day and night
 - 🔑 Beacons or flashing lights turned on at all times on a mine lease and turned off on the public road
 - 🔑 Drive to suit the prevailing conditions: visibility, road surface, obstacles and other hazards
 - 🔑 Do NOT use mobile electronic devices, including hands-free applications, when driving
 - 🔑 Use positive communication when interacting with other equipment
 - 🔑 When travelling on watered roads, utilise a dry line where there is one available
 - 🔑 Cease operations and seek supervisor guidance if there is a risk that cannot be controlled
- 🔑 Complete a prestart inspection of the equipment before operating it and document the findings
- 🔑 When commencing to operate the equipment, complete the critical function checks as soon as possible and when safe to do so
- 🔑 When parking equipment, ensure:
 - 🔑 It does not pose a hazard to other vehicles or people.
 - 🔑 use a designated parking / lay-up area and reverse parking where possible,
- 🔑 Unless appropriate controls have been implemented, light vehicle must remain at least 50m from mobile plant
- 🔑 When leaving equipment unattended after parking, ensure the following:
 - 🔑 Equipment is placed in gear if manual transmission or “park” if an automatic transmission
 - 🔑 Park brake (or park brake system) is applied
 - 🔑 Ground engaging tools are lowered to the ground
 - 🔑 Engine is switched off or shut down
 - 🔑 Equipment is, and will remain, fundamentally stable
- 🔑 Report all breakdowns, emergencies and concerns about equipment serviceability to a Supervisor
- 🔑 In an emergency, give full consideration as to whether it is safer to remain in, or to exit the equipment
- 🔑 Before commencing recovery, confirm you are authorised to do so. Complete a JSA. Consider:
 - 🔑 Environmental conditions that may impact on the recovery
 - 🔑 Status, stability and integrity of plant or equipment to be moved or recovered
 - 🔑 Recovery equipment available, required and that will be used
 - 🔑 Traffic – both vehicular and pedestrian
- 🔑 Only equipment designed or dedicated to towing and recovery shall be used for that purpose
- 🔑 An item of lifting equipment that has been used for towing or recovery purposes shall be immediately withdrawn from service and destroyed
- 🔑 If towing on a ramp is required, the vehicle or equipment under tow must be equipped with an independent or secondary method of stopping should the towing equipment fail
- 🔑 Non-essential personnel must remain outside the required exclusion zone

Worker / Contractor Declaration of Compliance

I (Print Name) _____ declare that I have read and understood the requirements and procedures of this Ausmite Bulkan North Mine Site SOP being document number and title:

SOP-302.01 Safe Operation of Vehicle and Mobile Equipment.

I acknowledge that while performing any work on the Ausmite Bulkan North mine site, I must comply with all aspects of this SOP. I understand that failure to comply with this SOP may result in me being escorted from the work site with re-admission and/or approval to continue work duties being at the sole discretion of Ausmite management.

Signature: _____

Date: _____

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