

STANDARD OPERATING PROCEDURE

Approaching Equipment

Document Number: 962C-SOP-042

Original Approval Date: Feb 09, 2010

Revision Number: 3

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Latest Revision Date: Mar 11, 2020

Next Revision Date: Mar 11, 2023

Document Approval Level: 4

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APPROACHING EQUIPMENT

03-11-20


3	APP	Mar 11, 2020	Approved	T. Siver	T. Siver	B. Palmer
2	APP	AUG 17, 2015	Approved	T. Siver	L. Norris	B. Palmer
Rev	Status	Rev. Date	Status Description	Prepared by	Reviewed by	Approved by

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The following is a step by step procedure on how to complete a specific task or meet a facility specific requirement. Standard Operating Procedures (SOPs) are written for all identified critical tasks. By virtue of the hazard or complexity associated with critical tasks it is paramount that the SOP be followed as written. SOPs contain a listing of high-level hazards associated with the task, for detailed hazard analysis reference the applicable Task Hazard Assessments. SOPs do not replace the requirements contained in the company Standards, Codes, and Processes nor does it replace the need to comply with required legislation. Section 8.0 references documentation that the worker shall understand before work commences.

1.0 PURPOSE

- To establish a Company standard to safely and effectively carry out work as it applies to approaching powered mobile equipment.

2.0 SCOPE AND APPLICATION

- This document applies to all Company Heavy Construction Mining operations. Ensure all site-specific requirements are being met or exceeded before performing the task.

3.0 HAZARDS AND CONTROLS

- Contact between light vehicles and **mining equipment** causing damage and/or injury:
 - Do not approach closer than 50 metres to mining equipment unless direct verbal communication and positive acknowledgement has been established.
 - Approach and maintain line of sight with the equipment operator. Where possible approach from the front cab side of the equipment. Refer to equipment specific safe approach diagrams (Appendix A) for additional information.
 - Do not proceed closer than 10 metres unless the equipment has been parked with the park brake engaged, transmission disengaged, implements (if applicable) grounded, and operator is out of the cab.
 - Light vehicles are permitted to encroach closer than 10 metres when passing equipment provided the following conditions are met:
 - Haul trucks, articulated trucks and float trucks are parked with their four-way flashers on;
 - Support equipment (i.e. grader) has provided clear positive communication that it is safe to pass;
 - Slow moving equipment (i.e. dozer, excavator) has provided clear communication that it is safe to pass, and its implements have been grounded;
 - Site passing rules are followed.
 - Follow the site's mine driving rules; follow all posted signage.
 - Maintain a minimum distance of four (4) equipment lengths when following heavy equipment; distance may be greater if road and/or mine conditions dictate. Remain in the equipment operator's view (cab side mirror) as much as possible.
 - Cab to cab talking is not permitted between pieces of mining equipment or between mining equipment and light vehicles. Use the radio or other approved communication methods, such as hand signals and/or horn signals, to communicate between equipment. Light vehicles may engage in cab to cab talking with another light vehicle provided conditions are assessed and deemed safe.
 - Light vehicles are not permitted to park in active work areas.

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- Be alert for horn signals when equipment is about to move.
- Light vehicles will not place themselves in the path of a machine while the operator's attention is focused elsewhere.
- Light vehicles will take every precaution to ensure they can be seen by equipment operators especially during times of limited visibility (i.e. night, fog, etc.).
- Contact between ground personnel and **mining equipment** causing injury:
 - Mining equipment will slow to a maximum speed of 10 km/hr and provide a minimum distance of 10 metres when passing ground personnel.
 - Ground personnel will notify equipment operators of the location they are working in.
 - Ground personnel will follow the safe approach controls as discussed in Section 3.0 Bullet 1 and will not proceed within 10 metres of active equipment unless the equipment has been parked with the park brake engaged, transmission disengaged, implements (if applicable) grounded, and operator is out of the cab.
 - There may be situations where ground personnel are required to work within close proximity to active mining equipment; examples can include: surveying for trenches and attaching rigging to excavators. In these situations, the following controls must be implemented:
 - Additional hazard assessment completed and reviewed by supervisor;
 - Communication plan between equipment operator and ground personnel established;
 - Spotters designated and used;
 - Implements grounded, machine placed in park, hydraulic lock and/or controls lock engaged, operator's hands removed from controls.
- Contact between ground personnel and **non-mining support equipment** causing injury:
 - Support equipment is defined as material handling equipment such as forklifts, skid steers, and small loaders, as well as labouring equipment such as small packers, and lifting equipment such as small excavators.
 - Establish a communication plan between ground workers and equipment operators. Ensure everyone is aware of the hand and horn signals.
 - Approach and maintain line of sight with the equipment operator. Where possible approach from the front cab side of the equipment.
 - Ground workers are not permitted to approach within 3 metres of equipment unless the equipment operator has lowered all implements, placed the machine in park, engaged the hydraulic lockout (if equipped) and exited the cab.
 - If it is required that the ground personnel work in close proximity to the equipment and the implements cannot be lowered or the operator must remain in the cab, the operator must place the unit in park, engage the machine's hydraulic lock and/or controls lock and remove their hands from the controls (dog everything) until the ground personnel are safely away from the machine. This step can only be completed if there is no other way to do the job with the implements on the ground and the operator out of the equipment. Use an additional person as the primary spotter to assist in communication if the equipment operator has the potential to lose sight of the ground personnel.
 - An additional hazard assessment must be completed and reviewed by the supervisor prior to the task.
 - Ground workers shall not place their body parts in the line of fire or pinch points on equipment (i.e. placing feet under raised loader bucket).

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- Ground personnel are not permitted to walk behind support equipment unless it is stopped, and the operator has provided clear communication to proceed.
- Ground personnel will not place themselves in the path of a machine while the operator's attention is focused elsewhere.
- Be alert for horn signals when equipment is about to move.
- Contact between light vehicles and **non-mining support equipment** causing damage and/or injury:
 - Approach and maintain line of sight with the equipment operator. Where possible approach from the front cab side of the equipment.
 - Establish communication and positive acknowledgement with equipment operator prior to proceeding into work area.
 - Light vehicles are not permitted to drive behind non mining support equipment unless it is stopped, and the operator has provided clear communication to proceed.
 - Be alert for horn signals when equipment is about to move.
 - Light vehicles will not place themselves in the path of a machine while the operator's attention is focused elsewhere.

4.0 CHECKLIST

- Attend all preparatory meetings (IE: daily PSI; job scope; review of JSA's and SOP's for the job).
- Complete FLRA cards before starting the work.
- Ensure all personnel involved in the task are aware of the hazards and the controls to be used, as identified in the SOP's; JSA's; and FLRA's
- Conduct a pre-job inspection of all equipment to be worked on and tools to be used.
- Standard of Training required for working on this job: On-the job training.**

5.0 DEFINITIONS

5.1 Company

- North American Construction Group (NACG) divisions, departments, or subsidiaries.

5.2 Mining Equipment

- Large equipment used in a mining and/or construction environment. Includes haul trucks, articulated trucks, dozers, shovels, excavators, graders, float trucks, loaders.

5.3 Non-Mining Support Equipment

- Small to medium sized equipment used in a construction environment. Support equipment is defined as material handling equipment such as forklifts, skid steers, and small loaders, as well as laboring equipment such as small packers, and lifting equipment such as small excavators.

6.0 PROCEDURE

- 1) Complete FLRA and/or JSA for task.
- 2) Communicate with equipment operator prior to entering their work area. Positive acknowledgement must be received before entering area.

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- 3) Follow safe approach rules for mining equipment and non-mining support equipment as identified in the Hazards and Controls section of this document.
- 4) Approach and maintain line of sight with the equipment operator. Where possible approach from the front cab side of the equipment.
- 5) Maintain safe distance when following equipment, minimum four equipment lengths for mining equipment will be maintained in ideal conditions.
- 6) Notify mining equipment if ground personnel will be working in the area or on an active haul road.
- 7) Follow safe approach rules when passing equipment.
- 8) Mining equipment will slow to a maximum speed of 10 km/hr and provide a minimum distance of 10 metres when passing ground personnel.

7.0 NOTES

If this task is to be done by a method different than described in this SOP, the work must **STOP**, and the alternate method must be **DOCUMENTED** with an adequate hazard assessment tool such as a JSA. The document must be **APPROVED** by a supervisor before such procedures are implemented.

8.0 REFERENCES

- OSSA-RCOP-DIM-2015 Driving in the Mine

9.0 APPENDICES

- Appendix A – Areas of Safe Approach to Mining Equipment

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Appendix A Areas of Safe Approach to Mining Equipment

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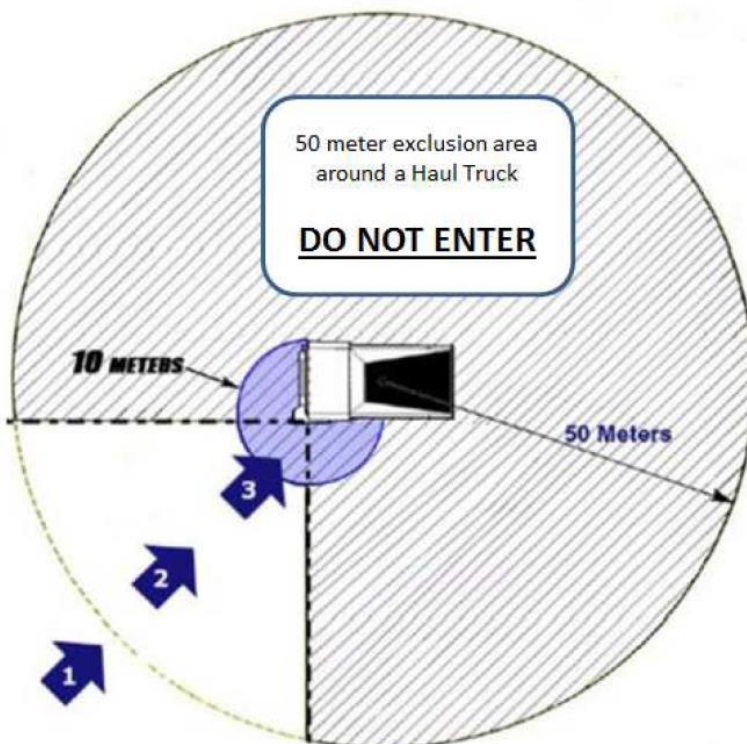
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Figure 1 - Haul Truck

Key Points:

- 1) No one shall approach any closer than 50 meters to a haul truck, unless direct verbal communication and positive acknowledgement have been established.
2. Approach and maintain line of sight with the haul truck operator.
3. Wait until the haul truck operator leaves the cab before getting within the final 10 meters of the haul truck.



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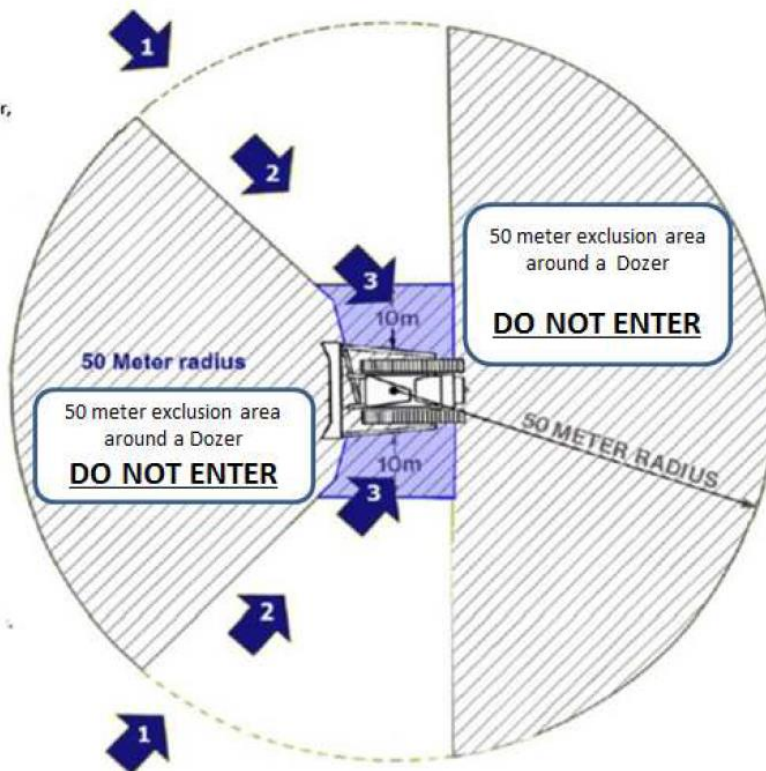
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Figure 2 – Dozer

Key Points:

- 1) No one shall approach any closer than 50 meters to a dozer, unless direct verbal communication and positive acknowledgement have been established.
- 2) After the dozer has come to a complete stop and all raised implements have been lowered to the ground you may approach and maintain line of sight with the dozer operator.
- 3) Wait until the dozer operator leaves the cab before getting within the final 10 meters of the



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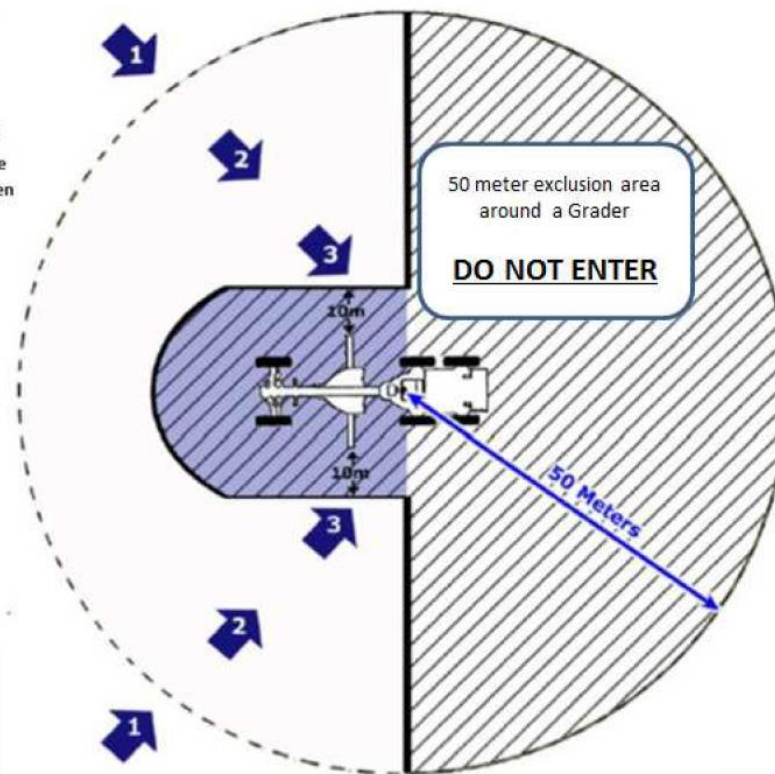
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Figure 3 – Grader

Key Points:

- 1) No one shall approach any closer than 50 meters to a grader, unless direct verbal communication and positive acknowledgement have been established.
2. After the grader has come to a complete stop and all raised implements have been lowered to the ground you may approach and maintain line of sight with the grader operator.
- 3) Wait until the grader operator leaves the cab before getting within the final 10 meters of the grader.



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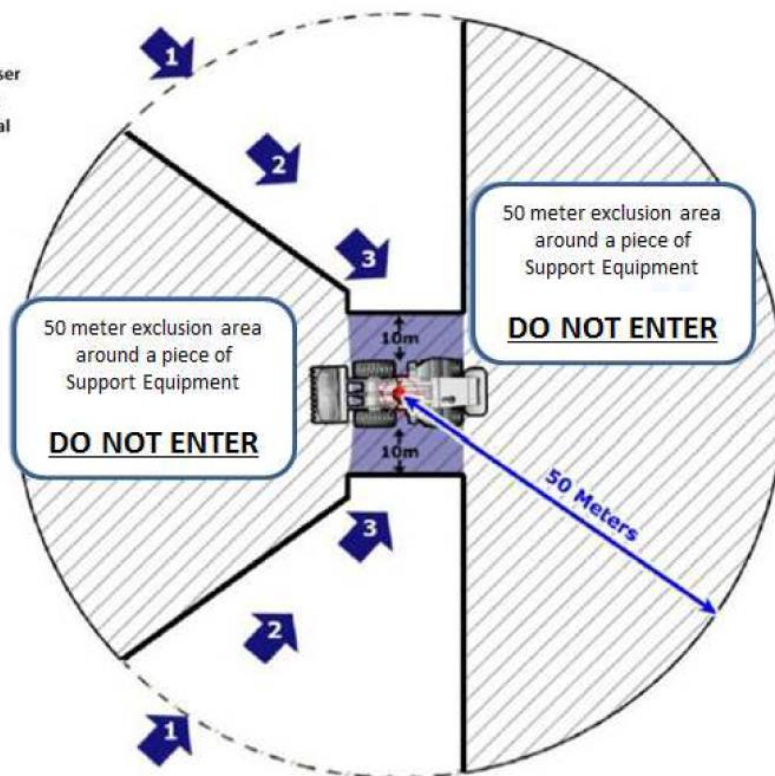
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Figure 4 – Other Support Equipment

Key Points:

- 1) No one shall approach any closer than 50 meters to any support equipment, unless direct verbal communication and positive acknowledgement have been established.
- 2) After the support equipment has come to a complete stop and all raised implements have been lowered to the ground you may approach and maintain line of sight with the operator.
- 3) Wait until the operator leaves the cab before getting within the final 10 meters of the support equipment.



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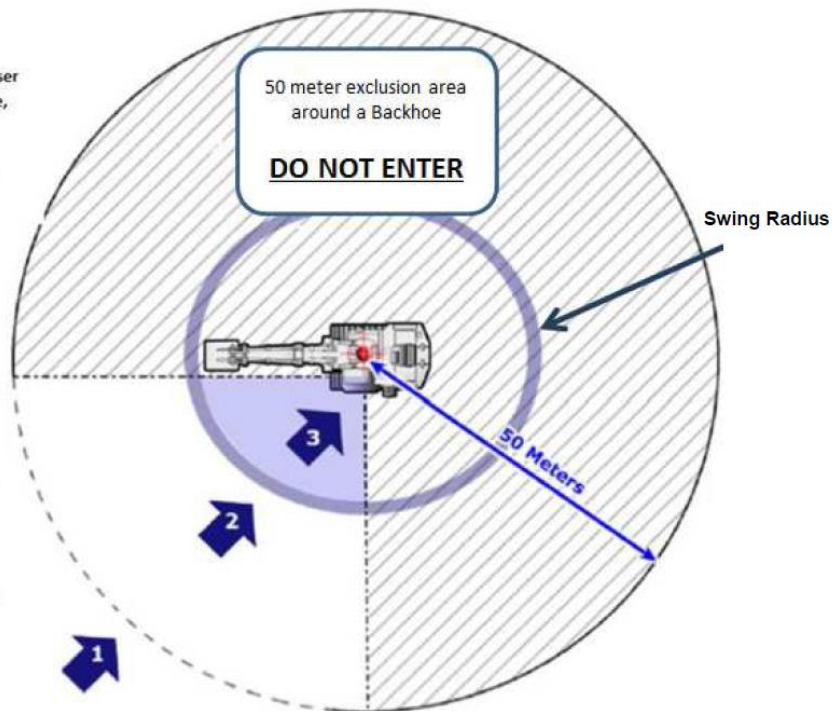
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Figure 5 – Backhoe & Hydraulic Shovel

Key Points:

- 1) No one shall approach any closer than 50 meters to any backhoe, unless direct verbal communication and positive acknowledgement have been established.
- 2) After the backhoe has come to a complete stop and the bucket has been lowered to the ground you may approach up to the point of the backhoe's swing radius and maintain line of sight with the operator.
- 3) Wait until the operator leaves the cab before getting within the backhoe's swing radius.

NOTE: The swing radius is determined by its furthest reach at full extension.



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Figure 6 – Float Truck

