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MANAGING DUST, RUNOFF AND EMISSIONS

16 April 2026



JOHOR PORT OVERVIEW



A Member of  MMC Group

Malaysia Southern Gateway
Multi-purpose Port



CONVENTIONAL



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Malaysia Southern Gateway
Multi-purpose Port



7 MILLION FWT
ANNUAL CAPACITY

4 BERTHS

818m QUAY
LENGTH

13.5m MAX
DEPTH

1 CONTINUOUS
UNLOADER CRANE

5 LEVEL LUFFING
CRANE

1 BULK GANTRY
CRANE

3 OPEN BELT
CONVEYOR SYSTEM

2 PIPELINE CONVEYOR
SYSTEM



DRY BULK
OPERATIONS

MANAGING DUST, RUNOFF AND EMISSIONS



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Malaysia Southern Gateway
Multi-purpose Port



www.johorport.com.my



Johor Port Berhad

WHY THIS MATTERS

Dry bulk operations are exposed to environmental risks due to:

- Open cargo handling activities
- Multiple transfer points
- Yard and stockpile exposure
- Heavy equipment and truck movement
- Weather conditions such as wind and rain



Main environmental concerns:

Dust – airborne particulate during handling dry bulk cargoes

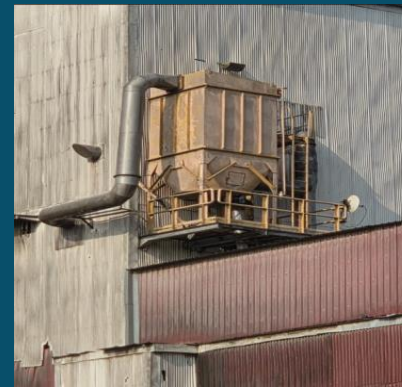
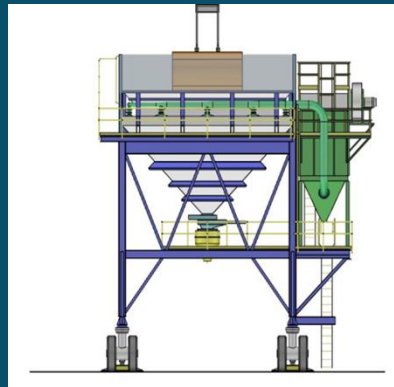
Runoff – cargo residue carried by rainwater into the sea

Emissions – fuel combustion from machinery and transport

DUST MANAGEMENT

Operational controls applied:

- Installing deduster system on the hoppers
- Using open belt conveyor and pipe conveyor system
- Controlling the cargo drop height



Hopper with Deduster System



Open Belt Conveyor



Pipe Conveyor



Controlling Grabs

Environmental Benefit:

- Reduces airborne dust and surrounding pollution
- Reduces cargo spillage from tipper trucks during travelling

RUNOFF AND SURFACE CONTAMINATION

Operational measures include:

- Deployment of loading bins to minimize spillage
- Covering loading bins with tarpaulins during rainy conditions
- Port Reception Facilities - Proper wastewater disposal through IETS.
- Covering tipper truck bucket with tarpaulin during transfer



Loading Bin



PRF - Industrial Effluence Treatment System



Covered Truck

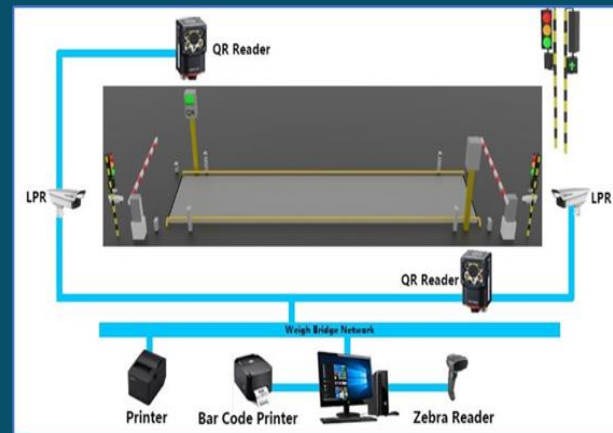
Environmental Benefit:

- Reduces material spillage
- Protects cargo from rain and surface runoff
- Prevents cargo contamination
- Eliminates cargo mixing that could cause unnecessary schedule waste

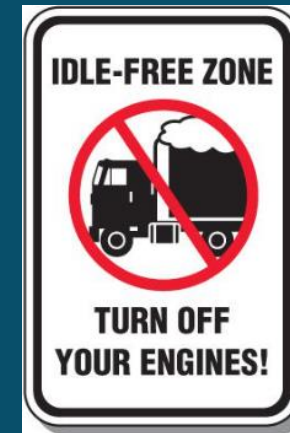
EMISSIONS MANAGEMENT

Operational measures include:

- Install Unmanned and Auto Weighing system - Reduce tipper trucks waiting time at weighbridge from 5 min to 30 sec
- Idle zone and turn off engine policy while waiting for cargo
- Managing route for tipper trucks (shorter route)
- Planning of trimming equipment deployment – Just In Time



Unmanned Weighbridge



Idle Zone and Turn Off Engine Policy



Trimming Machine
JIT

Environmental Benefit:

- Reduces fuel consumption of heavy equipment
- Lowers greenhouse gas emissions (CO₂)
- Improves energy efficiency in terminal

OPERATIONAL CHALLENGES

Operational Challenges in Dry Bulk Ports:

- Different cargoes create different environmental risks
- Open terminal operations are affected by weather
- Need to balance productivity and environmental control
- Space and infrastructure limitations at existing terminals
- Environmental improvements may require capital investment



Strong coordination needed between:

- Port operator
- Contractor
- Transporter
- Cargo owner

CONCLUSION

Key Takeaways:

Dry bulk cargo handling presents ongoing challenges in:

- Dust
- Runoff
- Emissions

Effective control begins with:

- Good planning
- Strong housekeeping
- Equipment discipline
- Continuous monitoring

At Johor Port Berhad, environmental management is implemented through the following measures:

- Practical controls
- Operational supervision
- Continuous improvement



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THANK YOU



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