

# Excess Ballast Levelling and Removal

Issue date: 11/04/08  
Review date: 21/02/11

<b>SWMS number:</b> SMS-06-SW-1076	<b>SWMS Name:</b> Excess Ballast Levelling and Removal			<b>SWMS Team:</b> Track Review Team
<b>Custodian (Position):</b> Track Works Manager Commercial / Renewals	<b>Assumptions:</b> Site specific risks are addressed and assessed in pre- work briefing			<b>Content reviewed by Technical expert (SME) and RailCorp safety professional</b> (position including Div/Group) Track Works Manager & SEQ Coordinator Asset Management Group Commercial / Renewals
<b>Approving Authority (Position):</b> Safety and Quality Manager, Commercial / Renewals	<b>Equipment/Plant/Tools:</b> <ul style="list-style-type: none"> <li>▪ RMV (Gang Bus, Car)</li> <li>▪ Hi-rail Excavator with different sized gummy/batter buckets</li> <li>▪ Dumper truck</li> <li>▪ Pelican picks/shovels/broom</li> <li>• Height Restrictor, attached to Excavator</li> </ul>			<b>Permits/licences required:</b> <ul style="list-style-type: none"> <li>• Electrical Power out Permit or Height Restrictor attached to Excavator</li> </ul>
<b>Applicable Standards, Codes of Practice and guidance:</b> <ul style="list-style-type: none"> <li>• OH&amp;S Act 2000</li> <li>• OH&amp;S Regulation 2001</li> <li>• Rail Safety Regulation 2003</li> <li>• RailCorp Network Rules &amp; Procedures</li> <li>• RailCorp Safety Management System.</li> <li>• MSDS for all chemicals and hazardous Substances used on site</li> <li>• AS 2958.0 2000 Earth Moving Machinery</li> <li>• WorkCover NSW Plant Guide</li> <li>• EC14 – Guide to Electrical Workers Safety Equipment</li> <li>• National Code of Practice for Manual Handling [NOHSC:2005]</li> </ul>	<b>Inspection requirements</b> Nil	<b>Records/Reporting:</b> <ul style="list-style-type: none"> <li>• Worksite Protection Plan</li> <li>• Pre-Work Brief</li> <li>• Daily Plant Check List</li> <li>• Material Safety Data Sheets</li> </ul>	<b>Service schedule:</b> Resurfacing Team Leader	<b>PPE required:</b> <ul style="list-style-type: none"> <li>• Safety Boots</li> <li>• High visibility orange vest</li> <li>• Hard hats</li> <li>• Safety Glasses</li> <li>• Protective Clothing</li> <li>• Hearing protection (as required)</li> <li>• Gloves (as required)</li> </ul>
			<b>MIMS or METRE Ref:</b> Nil	<b>Qualification required:</b> <ul style="list-style-type: none"> <li>• Construction Industry Induction</li> <li>• Track Safety Awareness or</li> <li>• RISI (Rail Industry Safety Induction)</li> <li>• Applicable plant and safeworking competencies</li> </ul>

# Excess Ballast Levelling and Removal

Issue date: 11/04/08  
Review date: 21/02/11

Number	Step	Hazard or human error (Safety/Environmental hazards identified, including physical environment, human errors, plant and equipment)	Risk ranking before controls	Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed In accordance with (name associated documentation)
1	Unloading and driving of Hi-rail excavator on site	<ul style="list-style-type: none"> <li>▪ Live railway lines</li> <li>▪ Overhead wiring, possible electrocution</li> <li>▪ Staff in the way sustaining injuries</li> <li>• Obstructions, other workgroups and Equipment left on track</li> </ul>	B +	<ul style="list-style-type: none"> <li>• Correct Safeworking Procedures in accordance with Network Rules and Procedures</li> <li>• Correct Unloading procedure</li> <li>• Height Restrictor attached to excavator</li> <li>• 6 m exclusion zone when operating</li> <li>• Check Excavator Functions and Safety features including Height Restrictor and Hi-Rail attachment</li> </ul>	C -	Excavator Operator Work Site Protection Officer	<ul style="list-style-type: none"> <li>• RailCorp Network Rules and Procedures</li> <li>• Excavator Operation Manual and SWMS</li> <li>• Daily Plant Checklist</li> <li>• Ticketed Operator</li> </ul>
2	Operation of Hi-rail excavator, on and off track	<ul style="list-style-type: none"> <li>• Live railway lines</li> <li>• Overhead wiring, possible electrocution</li> <li>• Staff in the way sustaining injuries</li> <li>• Obstructions, other workgroups and Equipment left on track</li> </ul>	C-	<ul style="list-style-type: none"> <li>• Height Restrictor attached to excavator</li> <li>• 6 m exclusion zone when operating</li> <li>• Correct Safeworking Procedures in accordance with Network Rules and Procedures</li> </ul>	C-	Excavator Operator, Ground Staff Work Site Protection Officer	<ul style="list-style-type: none"> <li>• Excavator Operation</li> <li>• RailCorp Network Rules and Procedures</li> </ul>
3	Marking location of buried track cables and marking cables with fluorescent paint	<ul style="list-style-type: none"> <li>• Inhaling spray paint</li> </ul>	C -	<ul style="list-style-type: none"> <li>• Adjust spray direction to wind direction</li> </ul>	D	All Staff	Spray Paint MSDS
4	Manual removal of excess ballast to locate and free up cables	<ul style="list-style-type: none"> <li>• Manual handling</li> <li>• Slips, Trips and Falls</li> <li>• Damaging Track Cables</li> </ul>	D	<ul style="list-style-type: none"> <li>• PPE (Safety boots, hard hats, HV vests, eye protection)</li> <li>• Correct Manual handling Technique</li> <li>• Spraying Cables with fluorescent paint</li> </ul>	D	All Staff	Guide to Manual Handling <u>SMS-06-GD-0001</u>

# Excess Ballast Levelling and Removal

Issue date: 11/04/08  
Review date: 21/02/11

Number	Step	Hazard or human error (Safety/Environmental hazards identified, including physical environment, human errors, plant and equipment)	Risk ranking before controls	Control (to be implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed in accordance with (name associated documentation)
5	Excavator operated removal, redistribution and levelling of excess ballast to free up cables and lower ballast profile	<ul style="list-style-type: none"> <li>• Damaging Track Cables</li> <li>• Electrocution</li> <li>• Staff in the way sustaining injuries</li> </ul>	B -	<ul style="list-style-type: none"> <li>▪ Cables identified with fluorescent paint</li> <li>▪ 6 m exclusion zone when operating</li> <li>▪ Height restrictor attached to excavator</li> </ul>	C -	All Staff	Ticketed Operator Excavator Operator
6	Manual tidying up, redistribution and levelling of ballast as well as filling in ballast around train stops	<ul style="list-style-type: none"> <li>▪ Manual handling</li> <li>▪ Damaging Track Cables</li> </ul>	C -	<ul style="list-style-type: none"> <li>• Correct Manual handling Technique</li> <li>• Spraying Cables with fluorescent paint</li> </ul>	D	All Staff	Guide to Manual Handling <u>SMS-06-GD-0001</u>
7	Excavator operated removal, fill in, redistribution and levelling of excess ballast around trainstops	<ul style="list-style-type: none"> <li>▪ Staff in the way sustaining injuries</li> <li>▪ Damaging Train stop</li> </ul>	B -	<ul style="list-style-type: none"> <li>• 6m exclusion zone when operating</li> <li>• Marking Train Stop elements with fluorescent paint</li> </ul>	C -	All Staff	Ticketed Operator Excavator Operator

## **Excess Ballast Levelling and Removal**

Issue date: 11/04/08  
Review date: 21/02/11

**NOTE: Each work group or team member must sign off on the SWMS to acknowledge they have been briefed about or instructed in the SWMS**

# Excess Ballast Levelling and Removal

Issue date: 11/04/08  
Review date: 21/02/11

RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency							Definition for Use - Regional & Local level (Workplace)	
		Event Frequency	Less than once every 1000 years	Once every 100 to 1,000 years	Once every 10 to 100 years	Once every 1 to 10 years	More than once per year up to and including 10 times per year	More than 10 times per year		
Consequence	Historical (Likelihood)	Unheard of in the rail industry	Has occurred once or twice in the rail industry	Has occurred many times in the rail industry, but not in NSW	Has occurred once or twice in NSW	Has occurred frequently in NSW	Has occurred frequently at specific locations	As an example, the Level 2 scale would be used when examining the risk of slips, trips and falls on specific RailCorp platforms within a region or at a particular station, or the risk of fire within a depot.		
	Workplace Predictive (Likelihood)	Not expected to occur	May occur only in exceptional circumstances	Could occur at some time but not likely	You would expect it to occur at least once in the next 10 years performing similar activities	You would expect it to occur at least once this year performing similar activities	You would expect it to occur at least once this month performing similar activities	There are 3 options for descriptors which can be used to determine the frequency category. One set of descriptors is provided for frequency, one for historical likelihood, and one for predictive likelihood in the workplace. Choose the most appropriate.		
		F1	F2	F3	F4	F5	F6	To score the risk, follow the steps:		
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	1. Identify the magnitude of the credible consequence if the risk were to occur. If applicable, risks should be considered in terms of the safety (this matrix), commercial and environmental impact (using other matrices).		
2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	A	2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)		
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	A	3. Score the risk using the combination of likelihood and consequence ranking.		
1 Major Injury	C3	Major	D	C-	C+	B-	B+	Note: Where there are a range of credible consequences which may lead to a different level of risks and/or where the controls may be different. It may be useful to score the risk more than once.		
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-			
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-		