

Rock Removal

Issue date: 09/04/08

Review date: 15/02/11

SWMS number: SMS-06-SW-0973	SWMS Name: Rock Removal			SWMS Team: Civil Construction Review Team
Custodian (Position): Services Manager Civil	Assumptions: Site specific risks are addressed and assessed in pre- work briefing			
Approving Authority (Position): Safety and Quality Manager, Commercial / Renewals	Equipment/Plant/Tools: <ul style="list-style-type: none">Crane, Excavator, Backhoe, Bobcat, Hi-Rail Excavator, TrolleyBarricades, Demarcation Fencing, Signs, Markers, Plywood, Safety Tape, Shoring, Separation FencingConstruction Equipment, Pelican PickSilt Fencing, Hay Bales, Bungs, sediment ClothNo-Spill Fuel Cans, Spill Response Kit	Records/Reporting: <ul style="list-style-type: none">Worksite Protection PlanPre-work BriefElectrical Test TagsSite Specific Management PlanServices searchesEnvironmental Protection Plan Electrical PermitsDaily Plant ChecklistPollution Control Approval	Permits/licences required: <ul style="list-style-type: none">Electrical Permit HolderCrane / Excavator / Backhoe / Bobcat / Hi-Rail Excavator Operator Certificate	Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group) GM Civil Services and SEQ Coordinator Asset Management, Commercial Renewals.
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none">OH&S Act 2000OH&S Regulation 2001Rail Safety Regulation 2003RailCorp Network Rules & ProceduresRailCorp Safety Management System.MSDS for all chemicals and hazardous Substances used on siteWorking near Overhead Power LinesNational Code of Practice for Manual Handling [NOHSC:2005]EC14 – Guide to Electrical Workers’ Safety EquipmentWorkCover NSW Plant Guide				
	Inspection requirements Nil	Service schedule: Nil	Training/Qualification required: <ul style="list-style-type: none">Construction Industry InductionTrack Safety Awareness or RISI (Rail Industry Safety Induction)	Personal Protective Equipment required: <ul style="list-style-type: none">Safety BootsHigh Visibility VestsHardhatsProtective ClothingSafety Glasses or Face Shield And as specified below. <ul style="list-style-type: none">GlovesDuring all Site Works a FIRST AIDER MUST be Present
		MIMS or METRE Ref: Nil		

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1	Delivery Of Materials	Manual handling injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-060GD-0001
		Contact with live o/h wiring or other services	A	Maintain regulated clearances on wires at all times. Isolate power where required.	C+	All Staff, Permit Holder Qel29	Electrical equipment sms-06-gd-0268 Electrical permits sms-06-en-0577
		Personnel struck by machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	All Staff Team Leader Work Group Leader	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225
		Oil/fuel leakage or loss	C-	Plant to be inspected daily. Use correct methods for filling machinery. Maintain spill response kits on-site.	D	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 ENVIRONMENTAL PROTECTION PLAN Plant SMS-06-GD-0225
2	Mark Out	Manual handling injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-060GD-0001
3	Set-Up Of Machinery	Personnel struck by machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	All Staff Team Leader Work Group Leader	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225
		Plant roll-over	B+	Plant fitted with roll-over-protection.	C-	Ticketed Operator	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225
		Contact with live o/h wires	A	Maintain clearances at all times. Isolate power	C+	All Staff, Qel23, Qel29	Electrical equipment sms-06-gd-0268 electrical permits sms-06-en-0577

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		Damage to rail infrastructure	B+	Vigilance/cover to protect. Report any damage.	C+	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163
		Oil/fuel spillage	C-	Plant to be inspected daily. Use correct methods for filling machinery. Spill response kits on-site.	D	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 ENVIRONMENTAL PROTECTION PLAN
4	Rock Removal	Personnel struck by machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	All Staff Team Leader Work Group Leader	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225
		Contact with services	B+	Locate services prior to starting work .mark services with paint, use qualified plant operators, hand digging in close proximity to services under supervision by appropriate services representative. Care to be exercised. Service searches to be on site and signed off.	C+	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Excavation & Earthworks SMS-06-GD-0378
		Contact with live o/h wires	A	Power outage	C+	Qualified Permit Holder	Electrical equipment sms-06-gd-0268 electrical permits sms-06-en-0577
		Damage to rail infrastructure	B+	Vigilance/cover to protect	C+	Competent Person	SSMP, Pre work Briefing SMS-06-FM-0163
		Plant roll-over/collapse	B+	SWL of machinery not to be exceeded	C-	Ticketed Operator	Plant SMS-06-GD-0225
		Head injuries	C-	Hard hats to be worn at all times implement exclusion zone for workers not involved in tasks	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Excavation collapse	B+	Shoring, benching, keep plant and employees clear of edges.	C+	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Excavation & Earthworks SMS-06-GD-0378
		Crushed by falling rock	B+	Implement exclusion zone for workers not involved in tasks equipment to have fops canopies where required	C+	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163

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		Objects in eyes / face	C-	Implement exclusion zone Wear eye protection	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Manual handling injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-060GD-0001
		Hand injuries (laceration, crush)	B+	Use correct technique gloves to be worn as necessary.	C-	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Machine hit by train	B+	Operators to be made aware of extent of safe-working area	C+	Wha02, Wpo04	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225
		Contact with live o/h wires (high voltage)	A	Maintain clearances at all times. Isolate power	C+	All Staff, Qel23, Qel29	Electrical equipment sms-06-gd-0268 electrical permits sms-06-en-0577
		Dirt tracking onto external roads	C-	Bobcats with sweepers to clean road. Brooms	D	Team Leader Work Group Leader All Staff	Pollution control approval
		Runoff from stock piles	C-	Sediment traps placed around perimeter	D	Team Leader Work Group Leader All Staff	Environmental protection plan
		Residual dirt on external roads flowing into stormwater	C-	Place hay bale around inlet	D	Team Leader Work Group Leader All Staff	

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5	Reinstatement Of Ballast Profile	Contact with services	B+	Mark position of cables with high visibility marking paint. Be aware.	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Excavation & Earthworks SMS-06-GD-0378
		Personnel struck by machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	All Staff Team Leader Work Group Leader	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225
		Struck by flying object	C-	Protective eye-wear must be worn	D	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		High ballast shoulder	C-	Keep shoulder ballast below head of rail	D	Competent Person	SSMP, Pre work Briefing SMS-06-FM-0163
		Damage to rail infrastructure	B+	Be aware. Report any damage/disturbance.	C+	All Staff	SSMP, Pre work Briefing SMS-06-FM-0163
6	Demobilise Site And Remove Access Ramp	Personnel struck by machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	All Staff Team Leader Work Group Leader	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225
		Contact with live o/h wiring or other services	A	Maintain regulated clearances on wires at all times. Isolate power where required.	C+	All Staff, Permit Holder Qel29	Electrical equipment sms-06-gd-0268 electrical permits sms-06-en-0577
		Contact with services	B+	Locate services prior to starting work. Service searches to be on site and signed off mark and/or isolate services as appropriate maintain regulated clearances on electrical services	C+	Permit Holder Qel29 Team Leader Work Group Leader	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-GD-0225 Electrical Equipment SMS-06-GD-0268

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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

Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date	Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date

RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency						
		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
		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
		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
			F1	F2	F3	F4	F5	F6
Consequence			Incredible	Improbable	Remote	Occasional	Probable	Frequent
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A
2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	A	A
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	A	A
1 Major Injury	C3	Major	D	C-	C+	B-	B+	A
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-

Definition for Use - Regional & Local level (Workplace)

Used for workplace hazards and safety risks that do not consider the whole of the network. Indicatively this matrix is appropriate for use where the hazards under consideration are up to 10% of the total network exposure. This includes regional and local workplace risk assessments.

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.

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.

To score the risk, follow the steps:

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. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)
3. Score the risk using the combination of likelihood and consequence ranking.

Note: Where there are a range of credible consequences which may lead to a different level or risks and/or where the controls may be different. It may be useful to score the risk more than once.