Cutting Embankment Inspection and Mapping

SWMS number:

SMS-06-SW-1326

SWMS Name: Geotechnical Services

Cutting and Embankment Inspection and Mapping

SWMS Team:
Sandy Pfeiffer, Senior Engineering Geologist
Jatinder Singh, Experienced Geotechnical Engineer
Sarath Fernando, Geotechnical Engineer
Hana Liu, Experienced Geotechnical Engineer
Cynthia Lee, Safety Coordinator

Custodian (Position):

Senior Engineering Geologist

Assumptions:

Site specific Risks Addressed in Pre-work briefing.

Approving Authority (Position):

Principal Geotechnical Engineer

Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group)

Sandy Pfeiffer, Senior Engineering Geologist

Rob Jackson, Manager Compliance & Information

Applicable Standards, Codes of Practice and guidance:

- AS 1726 Geotechnical Site Investigations
- Code of Practice: Working in Hot & Cold Environments
- National Code of Practice for Manual Handling
- National Standard for Plant
- Code pf Practice: Control of Hazardous Substances
- OHS Regulation 2000 Working At Heights Clause 56 and 57
- SMS-06-SW-0257 Fall Arrest Systems (Industrial Rope Access)

Plant/Equipment/Tools:

Support Vehicle

Hand tools & Tape

Abseiling Equipment

Records/Reporting:

Worksite Protection Plan SMS-06-GD-0333

Pre-work Briefing SMS-06-FM-0163

Permits/licences required:

NA

Inspection requirements

As specified by Equipment Manufacture or Supplier

Fall Arrest Systems SMS-06-GD-0241

Fall Arrest Device Inspection SMS-16-FM-0087

Belts and Harness Assembles Inspection Checklist SMS-06-FM-0253

Service schedule:

Investigation Supervisor to search underground services

MIMS or METRE Ref:
N/A

Training/Qualifications required:

RISI Rail Industry Safety Induction

Industrial Rope Access (only for steep and vertical slope), Working at Heights.

First Aid Certificate.

Rail Safety Competency PO2

Industrial Rope Access ll from TRAC International

PPE Required:

Safety Boots

High Visibility Vests

Hard Hat with Chin Strap

Medium Impact Safety Glasses

Leather Gloves

UV Protective cream

Full Body Fall Arrest Harness

PPE requirements shall meet PPE SMS-06-GD-0323

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Cutting Embankment Inspection and Mapping

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	Site establishment. Organise resources, check Hazardous Locations Register, load vehicle and drive to worksite	Muscular stress or stain	C+	Ensure all personnel are already trained in manual handling and use correct tools Job rotation to avoid constant exposure Use other personnel to share load Use correct tools where appropriate	D	Drillers/ Site Controller	SMS-06-FM-0635 Manual Handling ID Risk Assessment Checklist SMS-06-GD-0001 Guide to Manual Handling
2	Arriving on site and receive Pre Work Briefing	Struck by Train, Track machine or Vehicle	C+	Qualified Protection officer to arrange worksite protection	D	Protection Officer.	RailCorp Network Rules & Procedures Worksite Traffic Management SMS-06-GD-0333
3	**Commencing Work** Assess worksite, Prepare and check all equipment, Decide on method of inspection if use of Safety Lines or Industrial Rope Access is required	Struck by Train, Track machine or vehicle	C+	Qualified Protection Officer to arrange worksite protection	D	Site Controller All Qualified Staff Protection Officer	SMS-06-GD-0240 Working At Heights Network Rules & Procedures SMS-06-GD-0333 Worksite Traffic Management

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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)
4	Worksite activity Carrying out Inspections and Mapping	Falling from Heights.	B-	Watch for wet and slippery areas, walk carefully and avoid loose material on ground where possible Use correct PPE – safety boots, hard hat Stand/walk 2 m from top of cutting edge Carry out SMS-06-SW-0257 Fall Arrest Systems (Industrial Rope Access)	D	All Qualified Staff	SMS-06-GD-0240 Working At Heights SMS-06-SW-0257 Fall Arrest Systems (Industrial Rope Access)
		Slipping and Falling down Embankments	B+	As above	D	All Qualified Staff	SMS-06-GD-0240 Working At Heights
		Manual handling of minor equipment	C+	As above	D	All Qualified Staff	SMS-06-GD-0240 Working At Heights
		Trip hazards on rails	C+	As above	D	All Qualified Staff	SMS-06-GD-0240 Working At Heights
5	Clean up worksite & remove Site Protection	Hand and Back Strain	C-	Check that all tools, plant and equipment are collected from site	D	Site Controller / Protection Officer / All Qualified Staff	Manual Handling Guide SMS-06-GD-0001
		Cuts to hands	C+	Wear cut resistant gloves	D	Site Controller / Protection Officer / All Qualified Staff	SMS-06-SW-0530 Protective Gloves
		Leaving unsafe site	C+	Check gate and fence before leaving worksite Inform Possession Officer	D	Site Controller / Protection Officer / All Qualified Staff	

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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

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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-

Extreme
High
Medium
Low

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 liklihood 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 matricies).

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.

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