

Track formation Investigation

Issue date: 19/02/10

Review date: 18/02/13

SWMS number: SMS-6-SW-1324	SWMS Name: Track Formation Investigation			SWMS Team: John Lesiw, Investigation Supervisor Peter Gore, Diamond Driller David Gordon, Diamond Driller Steve Tucker, Diamond Driller John Pace, Monitoring Leader Robert Coventry, Geotechnical Officer Cynthia Lee, Safety Coordinator
Custodian (Position): Investigation Supervisor	Assumptions: Site specific Risks addressed in Pre-work Briefing			Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group) Jatinder Singh, Geotechnical Group Leader Rob Jackson, Manager Compliances & Information
Approving Authority (Position): Principal Geotechnical Engineer	Plant/Equipment/Tools: <ul style="list-style-type: none"> Hired Contractor's Plant (Bobcat) with operator Support vehicle Hand tools 	Records/Reporting: SMS-6-GD-0333 Worksite Protection Plan SMS-06-FM-0163	Permits/licences required: Bobcat Licence	PPE required: <ul style="list-style-type: none"> High Visibility Vests Hard hat Protective clothing Medium Impact Safety Glasses Leather gloves High level cut resistant gloves UV Protective cream Ear muff or ear plugs P2 Face mask SMS-06-GD-0323 PPE Guide
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none"> OHS Regulation 2000 Working with Plant clause 134-144 AS 1726 Geotechnical Site Investigations Code of Practice: Noise Management and Protection of Hearing at Work National Code of Practice for Manual Handling National Standard for Plant Code of Practice: Electrical practices for Construction Work Code of Practice: Control of Hazardous substances WorkCover Code of Practice – Excavation 2000 	Inspection requirements <ul style="list-style-type: none"> SMS-16-FM-0075 Pre-Job Plant Inspection SMS-16-FM-0073 Daily Plant Checklist SMS-16-FM-0085 Plant & Equipment Inspection & Maintenance 	Service schedule: Investigation Supervisor to search underground services Contractor Records MIMS or METRE Ref: N/A	Training/Qualifications required: RISI Rail Industry Safety Induction Electrical Safety Awareness First Aid Certificate Rail Safety Competency PO2 Drillers Certificate (ADITC)	

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1	Site establishment – Organise resources, check Hazardous Locations Register, load vehicle and drive to worksite	Muscular stress or strain	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	Site Controller Site Assistant	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	Possible Train, Vehicular and Pedestrian hazards	B+	Pre-work Briefing covering hazards	C+	Site Controller Site Assistant	SMS-06-0163 Pre-work Briefing SMS-6-GD-0333 Worksite Protection Plan SMS-11-FM-0925 Local Safety Induction
		Slips, trips and falls	C+	Safety boots	D	Site Controller Site Assistant	SMS-06-GD-0323 PPE Guide
3	Set up Traffic Control and/or Worksite Protection	Struck by train, track machine or vehicle	B+	<ul style="list-style-type: none"> Clear Pre-work Briefing and Local Safety Induction to all persons on site Implement Worksite Protection Plan Interface with other work groups on site 	C+	Protection Officer	RailCorp Network Rules & Procedures SMS-6-GD-0333 Worksite Protection Plan SMS-11-FM-0397 Local Safety Induction SMS-06-FM-0163 Pre-work Briefing SMS-11-FM-0925 Local Safety Induction

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4	Commence field work – identify all services at test pit location	Danger from electrical, gas, water and communication cables	C+	<ul style="list-style-type: none"> • Carry out visual services searches on site • Have all services search plans on site • Carry out Dial Before You Dig and internal services search 	D	Site Controller	SMS-06-FM-0384 Services Search
5	(Contractor's job with Bobcat and operator) Setting up Bobcat to excavate test pit of 1 metre	Run over by machine	C+	<ul style="list-style-type: none"> • Lookout to stand in a safe place with clear vision to both directions • Lookout to perform ONLY lookout duty • Ensure all personnel are kept clear when machine is operating 	D	Site Controller Contractor's Operator	Contractor's SWMS / SWI on Bobcat operation
		Slip and trips over rails or track components	C+	<ul style="list-style-type: none"> • All personnel to keep area clear around test pit of 6 metre except Contractor's Operator 	D	Site Controller Contractor's Operator	SMS-06-FM-0163 Pre-work Briefing SMS-11-FM-0925 Local Safety Induction
		Falling into excavation	C+	<ul style="list-style-type: none"> • Check the pit on stability and stand on sleepers • Where no sleepers, stand on stable ground 6 metres away 	D	Site Controller Contractor's Operator	SMS-06-FM-0163 Pre-work Briefing
		Hearing damage from Bobcat	C+	Wear ear plugs or ear muff	D	Site Controller Contractor's Operator	SMS-06-SW-0531 Hearing Protection
6	Operating Dynamic Core Penetrometer and retracting Rods	Hands or fingers being crushed	C+	Always lift up hammer with both hands holding handles during testing operation	D	Site Controller Machine Operator Drillers	SMS-06-GD-0225 Plant SMS-06-FM-0307 Plant hazard ID & Risk Assessment

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7		Back injury, muscular strain	C+	<ul style="list-style-type: none"> Ensure all staff are trained in manual handling techniques and use of tools Deploy job rotation to avoid constant exposure Use other personnel to "share the load" Rod extractor used in this step to reduce back pain 	D	Site Controller Drillers	SMS-06-GD-0001 Manual Handling
		Hearing damage from machine and retracting rods	C+	Wear ear plugs or ear muff	D	Site Controller Machine Operator Drillers	SMS-06-SW-0531 Hearing Protection
		Struck by machine bucket	C+	<ul style="list-style-type: none"> Put Core Penetrometer on idle and not operable when sampling All personnel onsite to keep 6 metres except machine operator with one metre clear 	D	Site Controller Machine Operator Drillers	SMS-06-FM-0163 Pre-work Briefing SMS-11-FM-0925 Local Safety Induction
8		Slipping into test pit	C+	<ul style="list-style-type: none"> Site controller to take samples from bucket on metre from excavated test pit Stand on stable ground or sleeper when taking samples 	D	Site Controller Machine Operator Drillers	SMS-06-FM-0163 Pre-work Briefing SMS-11-FM-0925 Local Safety Induction
		Back injury, muscular strain lifting sample bags	C+	<ul style="list-style-type: none"> Carry sample bag within own capacity Two persons to lift sample bag together 	D	Site Controller Machine Operator Drillers	SMS-06-GD-0001 Manual Handling
		Logging excavated test pit	B+	<ul style="list-style-type: none"> Do not enter test pit greater than 1 metre Stand on sleeper when measuring soil profile Wear safety boots 	D	Site Controller Machine Operator Drillers	SMS-06-FM-0375 Excavations Planning Check
9		Collapsing of excavation sides	C+	Wear ear plugs or ear muff	D	Site Controller Machine Operator Drillers	SMS-06-SW-0531 Hearing Protection
		Noise from logging	C+				

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9	Back filling test pit	Slips, trips and falls	C+	<ul style="list-style-type: none"> • Level ballast to prevent trip hazards • Wear safety boots 	D	Site Controller Machine Operator Drillers	SMS-06-FM-0163 Pre-work Briefing SMS-11-FM-0925 Local Safety Induction
		Back injury, muscular strain	C+	<ul style="list-style-type: none"> • Ensure all staff are trained in manual handling techniques and use of tools • Deploy job rotation to avoid constant exposure • Use other personnel to "share the load" 	D	Site Controller Drillers	SMS-06-GD-0001 Manual Handling
10	Lifting Ballast samples from worksite into vehicle	Back strain from lifting and bending	C+	<ul style="list-style-type: none"> • Use correct lifting method – bend at knees with back straight • Ask for assistance to help lift Ballast samples into vehicle • Use machine bucket to assist • Use hand trolley to mobilise 	D	Site Controller Drillers	SMS-06-GD-0001 Manual Handling
11	Pack up plant and equipment and remove Site Protection	Leaving an unsafe site could cause accident	C+	<ul style="list-style-type: none"> • Check all tools, plant and equipment are collected from site • Correct communication with Protection Officer to remove site protection 	D	Site Controller Protection Officer Drillers	SMS-06-GD-0001 Manual Handling SMS-06-FM-0163 Pre-work Briefing SMS-6-GD-0333 Worksite Protection Plan SMS-11-FM-0925 Local Safety Induction

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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

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		
		F1	F2	F3	F4	F5	F6		
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A	To score the risk, follow the steps:
2-10 Fatalities	C5	Catastrophic	C+	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).
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	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 Major Injury	C3	Major	D	C-	C+	B-	B+	A	3. Score the risk using the combination of likelihood and consequence ranking.
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+	Note: Where there are a range of credible consequences which may lead to a different level of risk and/or where the controls may be different. It may be useful to score the risk more than once.
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-	