

Safe Work Method Statement (SWMS)

Equipment:

Category: Vacuum Excavation Plant
Equipment Type: Vacuum Excavator (Truck or Trailer)
Equipment Make Model: VM400/850/2000/3000/4000/4500

Risk Ranking Matrix

Consequence Likelihood	Low (C1) Low level impact Environmental impact small localised and contained; Possible first aid	Minor (C2) FAI most probable outcome; Environmental impact, contained impact, requiring minor remedial action.	Moderate (C3) MTI or LTI most probable outcome; Environmental impact, medium term contained impact requiring considerable remedial action.	Major (C4) LTI most probable outcome; Environmental contamination off-site, considerable remediation required	Critical (C5) A fatality(s) most probable outcome; irreparable environmental contamination.
Rare (L1) Consequences may occur under exceptional circumstances	L2	L3	L4	M5	M6
Unlikely (L2) Consequence may occur at some time	L3	L4	M5	M6	H7
Possible (L3) Consequence could occur at some time	L4	M5	M6	H7	H8
Likely (L4) Consequence will probably occur at some time	M5	M6	H7	H8	E9
Almost certain (L5) Consequences expected to occur in most circumstances	M6	H7	H8	E9	E10

Minimum Requirement for operating Vacuum Excavation Equipment

Mandatory PPE	Pre-start checks / maintenance required	Specific Personnel Qualifications and Training
• Appropriate Clothing / Gloves / Safety Boots • Eye Protection / Face Shield • Hearing Protection	• Daily pre start of the equipment • Plant pre start checklist • Regular equipment maintenance	• Operator must be competent and trained in the use of the machinery • Project and site specific training • Work Safely in the Construction Industry

Assessment of: Vacuum Excavator (Truck / Trailer)

Risk Assessment						
Activity Sub Hazard / Aspect Activity			Treatment			
			Inherent Risk			Residual
			L	C	S	
Obtain relevant Licenses, PPE and Site Inductions, prior to traveling to site	Unsafe work practices due to insufficient general or site specific safety training	Personal injury	3	3	6	2 2 L4
Ensure operator has appropriate truck license onsite; Induction prior to start of work. Ensure correct PPE is worn at all times without exception; Safety glasses , ear plugs, long sleeves shirt and pants, steel cap boots, hi-visibility shirt/vest, UV sunscreen, Sufficient drinking water & breaks in heat stress Environments. Recommended PPE : long sleeves and pants, gloves, chaps, high-impact face shield, hearing protection.						
Travel to work site	Vehicle accidents and breakdowns	Personal injury and plant damage	3	3	6	2 3 M5
Ensure to complete 'Daily Plant & Equipment Checklist' prior to driving to site. Ensure vehicle is roadworthy. All employees MUST not be under the influence of drugs and/or alcohol. Ensure the appropriate driver's license for the type of vehicle to be driven. Ensure Vehicle is rated to tow trailer ie. 2T, 3.5T with electric brakes etc						
Attaching Vacuum Excavator to Towing Vehicle (trailer only)	Personal injury and plant damage	Personal injury and plant damage	3	3	6	2 2 L4
Secure cable to the tow vehicle hitch, leave slack in cable to allow for the turning radius of the trailer. Check Trailer Breaking system Pull out the cable switch on trailer with electric brakes. Pull the surge brake lever forward on surge brake trailers. Pull the trailer forward with the tow vehicle. The brakes of the trailer should be engaged and provide resistance to motion. Install the cable switch. Connect the trailer electrical connector. Familiarise yourself with the hazard alert decals on the vacuum excavator. ie (80 km /hr) Make sure all components are stored & secured properly Close all valves and doors						

Assessment of: Vacuum Excavator (Truck / Trailer)

Risk Assessment									
Activity Sub Hazard / Aspect Activity				Treatment					
				Inherent Risk			Description of Control		Responsible Person
				L	C	S			
	Allow Traffic Control (TC) to setup as per the TCP	Collision /incident with vehicles or pedestrians		3	4	7	Have Traffic Control Plans in place. If necessary, acquire legible Traffic Control Plans, and ensure setup as per onsite TC Plans. Temporary Road Closure Cert, and Permit from Traffic Control (TC) may be required, do not plan or begin works until all permits are approved and Traffic Control is accurately set up as per TCP		Supervisor
	Uncontrolled pedestrian access			3	4	7	Never have pedestrians walk out onto road, between parked vehicles, or near excavation to get past the work area. As per WHS Reg (2011) a barricade or hoarding at least 900mm must be erected around an excavation Ensure redirection and correct pedestrian controls are in place		Supervisor/Work Team
Acquire Dial Before You Dig (DBYD) plans before commencing works	Underground utilities	Personal injury – Electrical shock, electrocution Damage to services		3	4	7	DBYD plans MUST be on-site before starting When close to services proceed with caution using non-destructive vacuum excavation.		Supervisor
Safely position Vacuum Excavation Unit	Reversing/collision	Personal injury and plant damage		3	3	6	Use a Spotter, proceed slowly with caution. Ensure no obstructions or overhead utilities prior to operation. Stay inside Traffic Control area as per onsite TC Plans.		Supervisor/Work Team
Start Vacuum Excavator	Manual handling, slips, trips and falls	Personal injury – Strains, sprains, brakes		3	3	6	Always start work at furthest excavation first, working progressively closer to Truck, to reduce exposure to slips/trips/falls. Ensure to walk calmly and never run onsite. Stay aware of ground level hazards & maintain site tidiness Ensure unused equipment stored out of work zone.		Supervisor/Work Team
Remain alert to existing & developing hazards in vac excavation work-zone	Flying Debris and spread of fuels and oil.	Personal injury. Environmental damage		3	3	6	Use correct PPE and manual handling lifting techniques Ensure adequate lighting. Clean job site, remove any rubbish or excess materials from site.		Supervisor/Work Team

Assessment of: Vacuum Excavator (Truck / Trailer)

Risk Assessment									
Activity Sub Hazard / Aspect Activity				Inherent Risk			Treatment		
				L	C	S	Description of Control	Responsible Person	Residual
				L	C	S			L C S
	Excavation collapse, or objects / people falling into excavation	Personal and public injury		3	3	6	As per WHS Reg (2011) a barricade or hoarding at least 900mm must be erected around an excavation, unless it is not practicable or no persons are likely to be in the area of excavation.	Supervisor/Work Team	2 2 L4
	Trench collapse, or objects / people falling into excavation	Personal injury – Strains, sprains, broken bones and spinal injury		3	4	7	As per WHS Reg (2011), where a trench is at least 1m deep, erect a barricade at least 900mm high, unless it is not practicable or only persons involved with the trench will be in the work area, or another form of barrier exists (eg: excavated materials near trench)	Supervisor/Work Team	2 4 M6
	Hitting existing underground utilities	Personal injury – Electrical shock, electrocution Damage to service		3	4	7	Utilise DBVD plans to identify underground services. Use trained operators for safe vacuum excavation	Supervisor/Work Team	2 4 M6
	Contact With High Pressure Water	Personal injury		3	3	6	Utilise DBVD plans to identify underground services. Use trained operators for safe vacuum excavation	Supervisor/Work Team	2 2 L4
	Asbestos & Other Contaminants	Personal injury		3	4	8	Equipment is rated for use with contaminated substances. DO NOT collect Asbestos, acidic, alkaline, flammable or combustible materials or controlled waste. Use trained operators for safe vacuum excavation .	Supervisor/Work Team	2 3 M5
Backfilling / Re-instatement of excavated area	Re-instated Surface collapse	Personal and public injury		3	3	6	Ensure sand is placed around all services washed in with water and compacted in 200mm increments. Place lean mix in between 150mm and 450mm below surface. Allow min 150mm for asphalt, use vibratory plate compactor for even finish. For concrete in footpath area endeavor to match existing surface finish with cast in-situ concrete / cold mix.	Supervisor/Work Team	2 2 L4
Open pit or man hole	Pedestrians or workers falling into hole.	Personal injury		3	3	6	Only use approved pit key with safety locks, As per WHS Reg (2011) a barricade or hoarding at least 900mm must be erected around an excavation, unless it is not practicable or no persons are likely to be in the area of excavation. Use of guards, barricading and fences. Use appropriate manual handling techniques, get assistance if required, remove any potential hazards.	Supervisor/Work Team	2 3 M5

Assessment of: Vacuum Excavator (Truck / Trailer)

Risk Assessment									
Activity Sub Hazard / Aspect Activity				Inherent Risk			Description of Control		
				L	C	S	Responsible Person		
				L	C	S	Residual		
Confined Space Entry	Exposure to toxic gases / low oxygen levels	Personal injury – Asphyxiation, unconsciousness	3	4	7		Employees must be certified in confined space and meet the requirements as per state regulations. NO unauthorised person is to enter the confined space.		
Turn on jetter tap	Uncontrolled jet hose flying around under pressure (like a snake)	Personal injury	3	3	6		Mark 1m hose depth indicator (use tape/ paint) before start. Hold hose when turning on tap, make sure controller is off.		
Insert jetter head into duct before turning controller on	Jetter head coming out unintentionally	Personal injury	3	3	6		Insert hose at least 1m then switch on with remote control Keep unrolled hose safely within barricaded work area.		
Pull hose back slowly and turn jetter off	Removing hose too far and jet hose flying around (like a snake)	Personal injury	3	3	6		Only pull hose back to 1m distance indicator then turn off Roll up jet hose and vac up any water or waste in pit		
Close manhole/pit	Hitting existing services	Damage to services inside pit/manhole	3	3	6		Utilise Dial Before You Dig plans to identify underground services. Use trained operators for safe vacuum excavation.		
Clean-up site and wash-down of roadways and paths	Slips, trips, falls	Personal injury – strains, sprains	3	3	6		Step down (don't jump) from truck, enter excavated areas Safely using 3 points of contact (eg: 2 hands and 1 foot) Ensure adequate lighting Clean site – remove any rubbish or excess materials		
	Spread of fuels and oil	Environmental damage	3	3	6		Collect onsite silt socks from all drains, if used. All vac trucks on site have spill kits in them. Contact Fire Dept. for major spills 000 or 112 from mobiles.		
Leave Site	Vehicle accidents	Personal injury, plant and equipment injury	3	3	6		Use Spotter, always use strobe lights & reversing beepers.		

