



# PLANT RISK ASSESSMENT REPORT

## SECTION 1: PLANT IDENTIFICATION

Report Number:	er: 407/9029b		Assessment Date:	3 <sup>rd</sup> April 2023	
Company:	Wacker Neuson		Plant Type:	Skid Steer & Track Loaders	Server Street St
Models:	SW1	.0, SW16, SW17, SW21, ST11, ST28, S	T31 & ST50		
Assessment		Operational risks associated with the	ne unit as it stands -	– On site	The windly with the
Purpose:	<ul><li>Operational risks associated with t</li><li>Access Systems</li></ul>		ne unit as it stands -	– Desk top analysis	
		Modification/s			
		Other : Generic 'Group type' asses	sment		2
Assessed by:	Darr	en Husson – VEHTEC Pty Ltd			

# SECTION 2: PLANT SUMMARY

**Preamble:** This new range of skid steer loaders can be wheeled or tracked, vertical or radial lift and supplied with an enclosed ROPS certified open cab or enclosed cabin. The operating weights range from approx. 1,850kg to 4,843kg, with Rated Operating Capacities (ROC) ranging from 450kg to 1,587kg (@35% Tip load). The sealed operator's compartment offers a wide access air-conditioned environment for operation. The units can be supplied with a hydraulically controlled 4-in-1 bucket or GP bucket and a variety of attachments. The machine can be supplied with a range of accessories. The machine is well decaled with safety warnings and operator instructions. This risk assessment covers the configuration at the time of inspection. This document is intended to highlight Occupational Health Safety and Welfare related risks that may present during on-site set up and operation and has been conducted in accordance with the Work Health and Safety Act (SA).

Is the plant designed for its intended use?	🛛 Yes 🗌 No	Final Sign off by Employer/Owner user - All actions/recommendations complete
Has the plant been modified from the original design?	🗌 Yes 🔀 No	Name: Position:
Is the plant in good working condition?	🛛 Yes 🗌 No	
Is action required before the plant can be safely used?	🔀 Yes 🗌 No	Signed:Date:Date:
Has the required action / remedy been undertaken?	Yes N/A	



Photographs are for illustrative purposes only. Functions, layout, engines and bodies will vary between models

#### SECTION 3: RISK ANALYSIS LIKELIHOOD AND CONSEQUENCES

	Table 1	L. Measure of Likelihood (L)		Table 2. Measure of Consequences or Impact (C)		
Level	Description	Detail	Level	Description	Detail	
A	Very Likely	The event is almost expected to occur in most circumstances	1	Insignificant	Near miss, no injuries, low financial loss	
В	Likely	Strong possibility that the event will occur in most circumstances	2	Minor	First Aid treatment, on site release immediately contained, medium financial loss, non-life altering	
С	Possible	The event should occur at some time, i.e. once per year	3	Moderate	Medical treatment required, <2 days lost, on site release contained with outside assistance, high financial loss	
D	Unlikely	The event could occur at some time, i.e. once every three (3) years	4	Major	Extensive injuries, >2 days lost, loss of production capability, off site release with no detrimental effects, major financial loss	
E	Highly Unlikely	The event may occur only in exceptional circumstances	5	Catastrophic	Death, permanent injury, release off site with detrimental effect, huge financial loss	

		Table 3.	Risk Analysis			Legend				
			Consequences						Extreme Risk – Immediate action required.	
Likelihood		InsignificantMinorModerateMajorCatastrophic12345			Very High Risk - Priority detailed research and managemen					
Α	(Very Likely)	L	Н	VH	E	E			High Risk - Senior management attention needed	
В	(Likely)	L	М	Н	VH	E			Continuous review.	
С	(Possible)	L L	М	М	Н	VH			Madium Diale Managament regnangihility Deviadia review	
D	(Unlikely)	L L	L	М	н	VH			medium Risk - Management responsibility. Periodic review	
E (Highly Unlikely)		L L L M H			Н			Low Risk - Manage by routine procedures. Periodic review to		
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\*Only hazards with a risk deemed higher than 'low' need to be controlled.

# Table 4. Hazard Treatment – Hierarchy of Controls

**1.** Elimination – Elimination of the risk source.

**2.** Substitution – Provide a safer alternative that is capable of performing the same activity.

**3.** Engineering – Redesign of equipment or addition of physical barriers to reduce the hazard.

4. Administration – Develop and implement process, practices and guidelines to mitigate the risk – may include training and/or supervision, signage, etc.

5. Personal Protective Equipment (PPE) – Provision of personal protective equipment to protect the individual from the risk source.

SECTION	4: HAZARD IDENTIFICATION				
Hazard	Hazard Item	Horord		(	Diale
Item N°	Observation Detail	паzaru	L	L	RISK
1	Plant in its current state has potential to cause injury/illness due to:				
1.1	Entanglement (Bystander moving into the operating range of machine, bucket or attachment. Fitting of a reverse camera will improve operator field of view)	Yes	D	5	VH
1.2	Puncturing (Bystander moving into the operating range of machine, bucket or attachment. Fitting of a reverse camera will improve operator field of view)	Yes	D	5	VH
1.3a	Cutting (Bystander moving into the operating range of machine, bucket or attachment. Fitting of a reverse camera will improve operator field of view)	Yes	D	4	н
1.3b	(Unit tipping or rolling over in steep/uneven terrain or slippery surfaces – ROPS cabin / open compartment with operators seatbelt)	Yes	D	4	н
1.3c	(Operator inadvertent involvement with the cabin, engine compartment cover and door)	Yes	D	3	М
1.4a	Stretching (Operator incorrect entry/egress from operator compartment)	Yes	D	3	м
1.4b	(Operator manually locating any attachment)	Yes	D	3	М
1.5	Stabbing (Bystander moving into the operating range of machine, bucket or attachment. Fitting of a reverse camera will improve operator field of view)	Yes	D	4	н
1.6a	Trapping (Bystander moving into the operating range of machine, bucket or attachment)	Yes	D	4	н
1.6b	(Unit tipping or rolling over in steep/uneven terrain or slippery surfaces – ROPS cabin / open compartment with operators seatbelt)	Yes	D	3	М
1.6c	(Operator inadvertent involvement with the cabin, engine compartment cover and door)	Yes	D	3	м
1.6d	(Uncontrolled movement if bucket overloaded or hydraulic/mechanical failure, unit not fitted with hose burst protection)	Yes	D	4	н
1.7a	Abrasion (Bystander moving into the operating range of machine, bucket or attachment. Fitting of a reverse camera will improve operator field of view)	Yes	D	3	М
1.7b	(Bystander caught in product being tipped)	Yes	D	3	м
1.8a	Engulfment (Bystander caught in product being tipped)	Yes	D	3	М
1.8b	(Operator inadvertent involvement with the cabin, engine compartment cover and door)	Yes	D	4	н
1.9a	Crushing (Bystander moving into the operating range of machine, bucket or attachment. Unit has good forward visibility. Fitting of a reverse camera will improve operator field of view)	Yes	D	5	н
1.9b	(Unit tipping or rolling over in steep/uneven terrain or slippery surfaces – ROPS cabin / open compartment with operators seatbelt)	Yes	D	3	М
1.9c	(Operator inadvertent involvement with the cabin, engine compartment cover and door)	Yes	D	3	М
1.9d	(Uncontrolled movement if bucket overloaded or hydraulic/mechanical failure, unit not fitted with hose burst protection)	Yes	D	4	Н
1.10a	Shearing (Bystander moving into the operating range of machine, bucket or attachment. Fitting of a reverse camera will improve operator field of view)	Yes	D	4	н
1.10b	(Operator inadvertent involvement with the cabin, engine compartment cover and door)	Yes	D	3	М
1.11a	Tearing (Operator incorrect entry/egress from operator cabin)	Yes	D	3	м

1.11b	(Operator manually locating any attachment)	Yes	D	3	м
1.12	Asphyxiation	No			
1.13	Slips, Trips (Wet or muddy access steps boarding/alighting - good step traction provided)	Yes	D	3	м
1.14	Falls (Operator incorrect entry/egress from operator cabin)	Yes	D	3	М
1.15	Falling Objects (Product falling out of bucket onto cabin roof, load falling from bucket impacting bystanders)	Yes	С	3	М
1.16	Expelled Parts (Use of attachments)	Yes	D	4	Н
2	Plant in its current or intended state has the potential to create a hazardous condition due to:				
2.1	Pressured Content (Burst hydraulics line – limited exposure to lines – never attempt to locate sources of hydraulic fluid leaks with machine running)	Yes	D	2	L
2.2	Explosion (No smoking around machine in particular the battery and fuel system, ensure unit is switched off during re- fueling)	Yes	D	2	L
2.3	Radiation	No			
2.4	Vapour	No			
2.5	Dust (Open operator cabin variant. Appropriate PPE to be worn as per Employer/Owner SWP)	Yes	D	2	L
2.6	Moisture (Open operator cabin variant. Machine use to be controlled by Employer/Owner operating policies. Appropriate PPE to be worn as per Employer/Owner SWP)	Yes	D	2	L
2.7	Gases (Exhaust directed to the rear, unit not to be operated in confined spaces)	Yes	D	2	L
2.8	Fire	No			
2.9	Vibration (Duration of use controlled by Employer/Owner SWP)	Yes	D	3	м
2.10	Electricity (Raised arms, attachment or bucket contacting low overhead power lines or bucket contacting buried power lines)	Yes	E	5	н
2.11	Friction (Designed to turn via the use of friction)	No			
2.12	Ice Formation	No			
2.13	Laser Beams	No			
2.14	Hot and Cold Parts (When checking engine, operators are not to attempt to open hot radiator or hydraulic tank. All engine fluid level checks are to be undertaken when the engine is cold)	Yes	D	2	L
2.15	Temperature Extremes (Open operator cabin. Appropriate PPE to be worn as per Employer/Owner SWP. Enclosed operator compartment – Machine use subject to Employer/Owner SWP and internal policies)	Yes	С	3	М
2.16	Noise (High dB levels) (Open operator platform. Appropriate PPE to be worn as per Employer/Owner SWP)	Yes	E	2	L
	Yes	/ No / N	/A		
3	Manual handling requirements have been assessed as acceptable (Employer/Owner assessment required when manually moving attachments - Employer/Owner assessment required)	Yes	D	3	М
4	Repetitive, forceful, awkward, sustained movements have been minimised/eliminated	Yes			
5	The current guard (s) and their condition are adequate for this plant (Unit designed for application)	Yes			
6	Is the guarding appropriate for all work requirements (Unit designed for application)	Yes			
7	Operator controls are located for ease of use by operators	Yes			

8	Operator controls are identified and marked appropriately	Yes			
9	Emergency stops are clearly marked (Via start key – E-Stop if fitted as an accessory)	Yes	E	5	н
10	Emergency stops are located at the most likely place (s) for emergency use (Ignition point. E-Stop if applicable – Employer/Owner assessment required)	Yes	E	5	н
11	The power source of the plant has been designed, constructed, installed, protected, maintained as to minimise the risk of harm to employees (Unit maintained as per Section 6)	Yes			
12	There is provision to lock out the plant, and dissipate energy (Lockable battery and/or starter motor isolator may be fitted as an accessory)	Yes			
13	Access platforms/ladders/handrails are provided	N/A			
14	Access to moving parts from the platform can be performed safely	N/A			
15	Access platforms/ladders/handrails provide secure, non-slipping access	N/A			
16	Lighting is adequate for plant operation, maintenance and cleaning at any time (External work lights fitted. Additional work lights may be fitted as an accessory)	Yes			
17	Noise levels have been assessed as below 85dB (A) (Enclosed operator's compartment. Appropriate PPE to be worn as per Employer/Owner SWP)	No	D	2	L
18	Personal Protective Equipment (PPE) has been provided for safe operation of this plant (Employer/Owner responsibility)	N/A			
19	PPE requirements are signposted (Employer/Owner responsibility)	N/A			
20	There is provision for safe cleaning of this plant	Yes			
21	Safe access to areas to be cleaned has been provided	Yes			
22	There is provision for easy and safe scrap removal	Yes			
23	The plant has the potential to jam/block (Mechanical or hydraulic failure when the loader arms are elevated)	Yes	D	5	VH
24	A safe system of work has been established to remove jam/blockage (Only trained personnel should attempt to repair elevated bucket if it becomes jammed. Employer/Owner responsibility)	N/A			
25	Safe system of work has been established for any sample retrieval	N/A			
26	There is adequate provision to properly service and routinely grease and oil the plant	Yes			
27	Safe systems of work have been established for hazards associated with any necessary maintenance of the plant (Service agent responsibility)	Yes			
28	The rigidity and stability of the plant and supporting structure is adequate (Providing unit is operated within gradeability limits and rated operating capacities)	Yes			
29	The environment in which the plant is situated has been assessed for its interrelationship with this plant as acceptable (WZTM controls in place to keep bystanders at safe distances)	Yes			
30	Ventilation and/or other air flow needs are adequate (Unit not to be operated in confined spaces due to carbon monoxide build-up)	Yes			
31	Static electricity hazards have been assessed and controlled	N/A			
32	Workplace substances associated with the use of the plant have been assessed	N/A			
33	Authorised entry systems for the plant and surrounds have been established	N/A			

# SECTION 5: RISKS AND CONTROLS

				Summary of Hazards Identified and solution(s) to	adequately ma	anage the respective risk.		
Hazard	Le	vel	of	Action Required / Comments				
				Hazard         Bystander inadvertent involvement with machine, attachment or load being shifted.         Comments         The unit has the capacity to be fitted with a variety of bucket and attachments.	Action Required	Employ controls. Consider in Procedure (SWP).	clusion withi	n a Safe Work
1.1 1.3a 1.5 1.6a 1.6d 1.7a 1.7b 1.8a 1.9a 1.9d 1.10a 1.16 23	m	£	High	Operation of the excavator must occur only within a designated Work Traffic Management Zone (WZTM) area, established prior to operation. Operators to analyse the area for operation prior to commencing job. Operation of the loader is to occur only within a designated Work Zone Traffic Management area. Any attachments are to be attached only within the WZTM area. Bystanders are to keep clear of working machine; minimum bystander clearances are to be maintained. Operators must be gualified, trained, and be experienced with	Responsible Person	Employer/Owner/Operator	Due Date	As Required
	Medi	Hig	Very	Operators must be qualified, trained, and be experienced with the machine controls and use of bucket /s and attachments prior to use of the machine. Refer to the Operator manual/s for detailed safety and operational instruction prior to operation. Complete familiarity with the attachment/s Operation Manual/s shall be considered mandatory prior to operation. Different attachments may impact on current Work Zone Traffic Management paradigms.	Actioned by: (Name & Date)			
				The loader arms are not to be lifted over any person, vehicle or machine as a hydraulic line failure may result in the arms and any load suddenly dropping, if no Anti-Burst valves are installed. Operator shall wear appropriate PPE as per Owner's manual and/or Employer/Owner SWP when setting up and using the plant. Revised Risk Assessment With the above controls in place the risk is considered to be controlled.	Verified by: (Name & Date)			

		Hazard Operator cabin entry. <u>Comments</u>	Action Required	Employ controls. Consider inclusion within a Safe Work Procedure (SWP).			
1.4 1.11	Ę	Access to the operator's compartment is over the front bucket/attachment. <u>Controls</u> Operators to exit the cabin in the same orientation they entered,	Responsible Person	Employer/Owner/Operator	Due Date	As Required	
1.13 1.14	Medi	utilising the three points of contact principle at all times. Ensure mud and debris is cleaned from boots prior to access. Caution is to be used with the operators ensuring that step on bucket is also clear of debris and mud, taking care not to become involved with any hydraulic or electrical lines, couplers etc.	Actioned by: (Name & Date)				
		Revised Risk Assessment With the above controls in place the risk is considered to be controlled.	Verified by: (Name & Date)				
		Hazard Cabin tilt and engine cover access door may cut, trap or shear if inadvertent involvement happens. <u>Comments</u>	Action Required	Employ controls. Consider inclusion within a Safe Work Procedure (SWP).			
1.3c 1.6c	m	Periodic and pre-operation inspection access to the engine, the rear access door and through tilting the operator's compartment forward. Controls Operator is to ensure area is clear of bystanders before undertaking pre-operational checks etc. Detailed operation instructions are outlined in the Operators Manual, operator familiarisation is required prior to operation. Operators are not to place self under the tilted operator's compartment until it is securely and safely supported. No personnel access under the loader arms is allowed unless the safety strut is safely and securely in place. Revised Risk Assessment With the above controls in place the risk is considered controlled.	Responsible Person	Employer/Owner/Operator	Due Date	As Required	
1.8b 1.9c 1.10b	Med		Actioned by: (Name & Date)				
			Verified by: (Name & Date)				

1.3b 1.6b 1.9b			HazardUnit rollover in steep or uneven terrain, or through overloading.ControlsOperators to analyse the area for operation prior to commencing	Action Required	Employ controls. Consider inclusion within a Safe Wo Procedure (SWP).		n a Safe Work	
	ium		job. Operation of the loader is to occur only within a designated Work Zone Traffic Management area. Follow the basic rule of travelling straight up and down a slope, keep the bucket as low as possible, avoid turning on slopes.	Responsible Person	Employer/Owner/Operator	Due Date	As Required	
	Med	Hi	Operators are to strictly adhere to the units Rated Operating Capacity as per manufacturer's instruction and be aware that different ground conditions can affect the ROC.	Actioned by: (Name & Date)				
			Unit is fitted with ROPS/FOPS compliant cabin. Operator to ensure seatbelt is worn at all times when in operation.					
			Revised Risk Assessment With the above controls in place the risk is considered to be controlled.	Verified by: (Name & Date)				
			Hazard Falling or expelled objects. Comments Loader bucket when overfilled may result in product falling backwards onto cabin or into operator area. Attachments may	Action Required	Employ controls. Consider inclusion within a Safe Work Procedure (SWP).			
1 15	Medium		Controls Operators to analyse the area for operation prior to commencing job. Operation of the loader is to occur only within a designated Work Zone Traffic Management area. Caution and awareness of	Responsible Person	Employer/Owner/Operator	Due Date	As Required	
1.15			amount and type of product being carried/loaded or interacted with. Do not fit a 'hungry board' to bucket without consultation with the supplier. Alterations to the bucket will result in the Static Tipping	Actioned by: (Name & Date)				
			Revised Risk Assessment With the above controls in place the risk is considered to be controlled.	Verified by: (Name & Date)				

			HazardPotential hazard to the operator through the set up and use of the machine and attachments.CommentsThe range includes an open operator's compartment variant. All	Action Required	Employ controls. Consider inclusion within a Safe Work Procedure (SWP).			
1.4b 1.11b 2.5 2.6 2.9 2.15 3	lium	gh	machines can be fitted with a range of attachments. <u>Controls</u> Operator is to perform a Safe Work Method Statement (SWMS) or Jobsite Safety Analysis (JSA) prior to set up and operation of the plant. Work Zone Traffic Management (WZTM) procedures need to	Responsible Person	Employer/Owner/Operator	Due Date	As Required	
	Med	H	be implemented prior to picking up attachments etc. and operation. The Operator is to wear and use appropriate PPE when setting up the machine and during operation. The operator may be exposed to the environment and (Open operator's compartment variant) and shall only operate the machine as directed by Employer/Owner SWP	Actioned by: (Name & Date)				
			and site policy. All buckets/attachments shall only be located using mechanical means, or as directed within Employer/Owner SWP, <u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.	Verified by: (Name & Date)				
			Hazard Raised loader arm or bucket/attachment contacting overhead power lines, bucket contacting buried power lines.	Action Required	<ol> <li>A suitably rated fire extinguisher shall be fitted prior to use.</li> <li>Employ controls. Consider inclusion within a Safe Work Procedure (SWP).</li> </ol>			
2.10	4	50	Operators to analyse the area for operation prior to commencing job. Particular attention needs to be paid to low hanging power lines prior to unloading from the trailer.	Responsible Person	Employer/Owner/Operator	Due Date	Immediate	
2.10	=	Ē	Detailed information is available from SA Power Networks: <u>Home</u> <u>Before You Dig Australia (BYDA)</u> and <u>Working around overhead powerlines - SA Power Networks</u>	Actioned by: (Name & Date)	1. 2.			
			Notice in the excitiguisher shall be inteed to the machine         before use. <u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.	Verified by: (Name & Date)	1. 2.			

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Activation of the Emergency Stops (E-Stops).

#### **Comments**

To meet Employer/Owner requirement or site policy/ies, a dedicated Emergency stop (E-Stop) may be fitted to the plant. Any fitment location of an E-Stop shall be considered for ease of accessibility by either the operator (internally) or bystanders (externally).

## <u>Controls</u>

The operator shall be fully conversant with the implications and result of activation of the E-stop button with the Operator subsequently strictly following the Employer/Owner SWP or site policy following activation.

If the external E-stop button is activated by a bystander/spotter or 3<sup>rd</sup> party, the operator shall action as dictated by the Employer/Owner SWP or site policy or remain safely seated within the cabin awaiting further instruction.

The operator shall only exit the cabin and dismount the machine once the immediate danger and surrounds are assessed by the E-Stop activator and deemed clear and safe to exit the plant.

In terms of the SafeWork SA publication 'Managing the risks of plant in the workplace Code of Practice' item 4.3; Emergency stops, any E-Stop button shall be identified by being ".....prominent, clearly and durably marked", i.e.:



Revised Risk Assessment With the above controls in place the risk is considered to be controlled

	Action Required	Employ controls. Consider inclusion within a Safe Work Procedure (SWP)		
	Responsible Person	Employer/Owner/Operator	Due Date	As required
nt Ξ-	Actioned by: (Name & Date)			
	Verified by: (Name & Date)			

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# **Control Measures**

Pre-Operation	Prior to any operations the operator/supervisor is responsible for conducting a Safe Work Method Statement (SWMS), or Job Site risk assessment (JSA). This is to include but not limited to, the suitability of this piece of plant to integrate and complete the required task. Complete familiarisation of the Operators Manual and all systems shall be considered Mandatory.
General Operation	The unit is intended for relatively flat ground deployment only. Appropriate PPE to be worn by the operator as per Employer/Owner Safe Work Procedures (SWP) and/or site dependant policy.
Operational Risk	This risk assessment does not negate the requirement of the operator/supervisor to conduct an operational risk assessment of this piece of plant for its intended use and its interface with the operators and the suitability of this piece of plant to integrate and complete the required task. This document has been prepared with due care, however cannot be considered complete given the limited knowledge of the intended operational environment.
Work Zone Traffic Management	This risk assessment has been prepared with the knowledge that effective Work Zone Traffic Management (WZTM) systems will be employed in line with AS1742.3, WH&S Act (SA), WH&S Regulations (SA), Road Traffic Act 1961 and internal Safe Work Procedures.
Attachments	The unit has the capacity to be fitted with a variety of attachments. Consultation with the manufacturer regarding suitability shall be considered mandatory. Each attachment may require an additional Risk Assessment to be carried out and/or a revision of this document. Complete familiarity with the attachment/s Operation Manual/s shall be considered mandatory prior to operation. Different attachments may impact on current Work Zone Traffic Management paradigms.
Continuous Review	This document is not intended to be static, nor is it intended to be considered complete for all situations. This document forms the basis to allow the Employer/Owner of the asset to have an informed position. A system of continuous review should be embraced in line with Management Policies.

# **Operator Competencies**

Formal Qualifications:	Must comply with the regulations enforced by the WorkSafe authority within the state that the plant is being operated.	
Compotency Accosed Skills	Skills must comply with the requirements of the guidelines established by the relevant state based WorkSafe authority and assessed by	
competency Assessed Skins.	the state WorkSafe body's authorised assessor.	
General Training Instruction:	On the job training by qualified Operator	
Experience:	As appropriate and assessed (as above)	
Safe Work Procedure (s):	To be developed by the Employer/Owner	

# SECTION 7: PLANT INSPECTIONS, MAINTENANCE AND TESTING

Inspection, Maintenance and Testing Requirements	Frequency	
Manufacturers Operator and Service manuals as supplied with the unit	Refer Operator Manual	
Servicing and Maintenance of attachments	As per Manufacturers guidelines	
Fire Extinguisher	As per fire extinguisher inspection schedule	
Tracks/wheels to be checked	Tyres – Daily/Monthly, Tracks inspected daily, checked for tension as per Manual.	

\*This is not a definitive list and may need to be revised over time