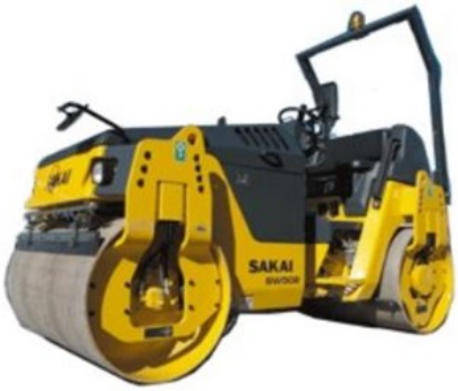
RISK MANAGEMENT REPORT

TYPE	Rollers, Tandem Vibratory
MAKE	Sakai
MODEL	SW502
PRICING GROUP NUMBER	272A

Report Number	15313 20190830-1717
Date	30-Aug-2019
Created By	Nic Mclennan
Assessor	Nic Mclennan
Assist. Assessor(s)	
Completed By	Nic Mclennan
Owner	AB Equipment Limited
Assessment Purpose	Hire
State	NZ



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SECTION 1 IMPORTANT INFORMATION

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This report pertains to this item of plant as it appeared on the day of inspection.

It is the responsibility of the hirer to conform with the instructions and information contained within this report. Any change in condition of this item of plant should be reported to the hire company immediately.

Any information relating to the standard features have been supplied via the manufacturer and should be used as a guide only until verified.

For further information regarding this report contact Online Safety Systems on 1300 72 88 52

SECTION 2 MACHINE DETAILS

MACHINE DETAILS			
	- NOISE TEST RESULTS	1. Manufacturers specified noise level dBA	
		2. Ambient noise level dBA	
		3. Noise level - Operator position (high idle) dBA	
		4. Noise level - Operator position (low idle) dBA	
		5. Noise level LHS dBA @ m (high idle)	
		6. Noise level Front dBA @ m (high idle)	
		7. Noise level RHS dBA @ m (high idle)	
		8. Noise level Rear dBA @ m (high idle)	
	BODY TYPE	Articulated/Rigid	Articulated
		Articulation, either side (deg)	
	BRAKES	Service Braking System -	Hydrostatic dynamic brake through drive system / FNR level
	CAPACITIES	Fuel Tank Capacity (Litres)	50
		Water sprinkler tank capacity (Litres)	310
	DIMENSIONS/WEIGHTS	Height (mm)	2565mm with ROPs
		Length (mm)	3,100mm
		Operating weight (kg)	4,300kg
		Static weight on drums, front/rear (kg)	2,080/2,220kg
		Turning circle diameter (mm)	4400mm
		Width (mm)	1,470mm
	DRIVES	Drive: single drum/double drum	Double drum
	DRUMS	Drum widths front/rear (mm)	1,380mm
		Split drums	
		Vibration: single drum/double drum	Double drum
	ENGINE	Engine Displacement (Litres)	2.197L
		Engine Hours	
		Engine Make & Model	KUBOTA V2203
		Engine Number	
		Net power, SAE rated (kW@rpm)	29.1KW@2,300RPM
		Number of Cylinders	4
	GENERAL	Drum mats for hot mix	Scrapers
	PLANT CLASSIFICATIONS	Class	Double Drum Steel Roller
		Year	
	TRANSMISSION	Max travel speed (km/hr)	10km/hr
		Transmission Type	Hydrostatic
	WORK CAPABILITIES	Centrifugal force, high+low amplitude (kN)	34.3/26.5 KN
		Gradeability w/o vib (%)	38%
		Nominal amplitude, high + low (mm)	.34/.26mm
		Vibratory frequency, max+min (Hz)	55/55HZ
	EXTRAS	ROPS - Two Post	ISO 3471:2008

SECTION 3 RISK ANALYSIS / RISK EVALUATION

RISK ANALYSIS

LIKELIHOOD \ CONSEQUENCE	1. INSIGNIFICANT Dealt with by in house first aid	2. MINOR Treated by medical professionals, hospital out patients	3. MODERATE Significant non permanent injury overnight hospital stay	4. MAJOR Extensive permanent injury eg. Loss of fingers, extended hospital stay	5. CATASTROPHIC Death, permanent disabling injury eg. Loss of hand, quadriplegia
A. Almost certain to occur in most circumstances	MEDIUM 8	HIGH 16	HIGH 18	CRITICAL 23	CRITICAL 25
B. Likely to occur frequently	MEDIUM 7	MEDIUM 10	HIGH 17	HIGH 20	CRITICAL 24
C. Possibly and likely to occur at sometime	LOW 3	MEDIUM 9	MEDIUM 12	HIGH 19	HIGH 22
D. Unlikely to occur but could happen	LOW 2	LOW 5	MEDIUM 11	MEDIUM 14	HIGH 21
E. May occur but only in rare circumstances	LOW 1	LOW 4	LOW 6	MEDIUM 13	MEDIUM 15

RISK EVALUATION

CRITICAL	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below.
HIGH	Act immediately to mitigate risk. Implement risk treatment(s) in accordance with the risk treatment table below. If the appropriate risk treatments are not immediately accessible establish interim risk treatment strategies. Permanent risk treatments must be implemented within one week.
MEDIUM	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within one month.
LOW	Take reasonable steps to mitigate and monitor the risk. Implement risk treatment(s) in accordance with the risk treatment table below. Permanent risk treatments must be implemented within three months.

RISK TREATMENT

Selecting the most appropriate risk treatment option involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory and other requirements. (source AS/NZS ISO 31000:2009)	
Eliminate	Eliminate the risk source.
Substitute	Provide an alternative that is capable of performing the same task which is safer.
Engineering	Provide or construct a physical barrier or guard.
Administration	Develop policies, procedures, practices and guidelines in consultation with employees to mitigate the risk. Provide training, instruction and supervision about the risk source.
Personal protective	Provide personal protective equipment to protect the individual from the risk source.

SECTION 4 RISK TREATMENTS REQUIRED

This section of the report pertains to hazards created by use of this item of plant which currently do not have risk treatments in place. The risk treatments recommended in this section have been developed based on relevant Australian Standards, health & safety legislation, the hierarchy of risk treatment in accordance with the guidelines set forth in AS/NZS ISO 31000 – Risk Management and various other sources. The recommended risk treatment measures must be developed, implemented and validated as effective prior to the operation, maintenance or testing of this item of plant. Treatments applied must be dated and initialled adjacent the recommendations. All operators must read and understand the entire contents of this section prior to operating this item of plant.

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating	Time Frame	Due Date	Date Rectified	Initial

SECTION 5 RISK TREATMENTS IN PLACE

This section of the report pertains to risk treatments currently in place on this item of plant. This section must be read in conjunction with the safety section of the manufacturers handbook. All operators must read and understand the entire contents of this section prior to operating this item of plant. These treatments or equivalent must remain in place at all times whilst this item of plant is in operation.

	HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
DELIVERY	**CRUSHING**	HIGH 22	MEDIUM 15
	Risk Treatments in Place: **SWMS Loading/Unloading** Ensure that all operators follow approved SWMS/SOP when loading and unloading this machine to and from a flat top truck or trailer, low loader or tilt tray. **References:** Work Health & Safety Act & Regulations-		
	CRUSHING	HIGH 22	MEDIUM 15
	Risk Treatments in Place: **SWMS Load Restraint** Ensure that all operators follow the approved SWMS/SOP when restraining this machine for transport. **References:** Work Health & Safety Act & Regulations-		
OPERATION	**INCORRECT OPERATION**	CRITICAL 24	MEDIUM 15
	Risk Treatments in Place: **Operator Competency** Only persons who are qualified, trained and experienced and/or hold the relevant certification/license can operate this item of plant. If there is not a competent/licensed person available for operation of this item of plant then only persons who are supervised by a competent/licensed person can operate this item of plant. **References:** Work Health & Safety Act & Regulations-		
	INCORRECT OPERATION	HIGH 22	MEDIUM 15
	Risk Treatments in Place: **Operation Handbook** The manufacturer's operation handbook has been supplied for this item of plant. This handbook must be available at all times to all potential operators and supervisory staff. All potential operators must read and be familiar with this handbook prior to operating. A complete risk assessment/Job Safety Analysis must be undertaken covering all operating processes and environments associated with this item of plant. SWMS should be produced for specific tasks associated with use of this item of plant.		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
INCORRECT OPERATION	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Pre-op Checklist Roller, Tandem Vibratory** A pre-operational checklist is available for this Roller, Tandem Vibratory. All operators must complete this checklist prior to operating this Roller, Tandem Vibratory.		
References: Work Health & Safety Act & Regulations-		
INCORRECT OPERATION	HIGH 22	MEDIUM 15
Risk Treatments in Place: **SOP Roller, Tandem Vibratory** Safe Operation Procedures are available for this Roller, Tandem Vibratory. The information in the Safe Operation Procedures must be followed at all times whilst operating this Roller, Tandem Vibratory.		
References: Work Health & Safety Act & Regulations-		
INCORRECT OPERATION	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Control Labels** All controls including all levers, buttons, pedals, switches etc. are clearly labelled as to their purpose and method of operation. These labels must be maintained in a clean and serviceable condition at all times.		
References: AS/NZS4024.1905		
CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: **ROPS seat belt label** This item of plant is fitted with a ROPS and has an advisory label stating that "seatbelts must be worn". This label must be present, clean and legible at all times. All operators and passengers must wear seatbelts whilst on this item of plant.		
References: AS2294, ISO3471		
POISONING, EXPLOSION, BURNS	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Tank ID Label** The tank(s) on this item of plant have clear, legible label(s) identifying their contents, and if appropriate any necessary controls re: the contents. These must be present, clear and legible at all times. (this includes radiator, hydraulic and petrol/diesel tanks)		
References: Work Health & Safety Act & Regulations-		
FIRE	HIGH 21	MEDIUM 15
Risk Treatments in Place: **Fire Extinguisher** This item of plant is fitted with an approved and maintained fire extinguisher. Fire extinguisher(s) must be present and fully functional at all times. They must be readily accessible to the operator. Regular inspections must also be carried out in accordance with the manufacturer's requirements and AS 1851 – 1995		
COLLISION, CRUSHING	MEDIUM 12	LOW 6
Risk Treatments in Place: **Warning Device (horn)** This item of plant is fitted with a fully functional audible warning device such as a horn. This must be easily accessed by the operator, and easily identifiable by nearby pedestrians. All operators should ensure the warning devices are functional at the start of each shift, by completing pre-start checklists. Warning devices should operate automatically where appropriate (eg reversing)		
References: ISO7731, ISO9533		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
BURNS	MEDIUM 12	MEDIUM 12

Risk Treatments in Place: **Open Cabin**
Dust, exhaust fumes, chemical fumes, sunstroke and sunburn pose serious risk to the operator both short and long term. The appropriate controls for all of these hazards must always be available whilst this item of plant is in operation. If these controls e.g. hats, sunscreen, dust masks etc are not available then operation of this item of plant must cease until these are made available to all operators.

References: ISO31000

COLLISION	MEDIUM 9	LOW 5

Risk Treatments in Place: **Recovery Point Label**
This item of plant is fitted with a hazard warning label adjacent the recovery tow point which states “Recovery tow point – Read manufacturer’s towing instructions before towing". Failure to do so could result in DEATH or SERIOUS INJURY.

This label must be clear and legible at all times whilst this item of plant is in operation.

References: ISO31000

DESIGN COMPLIANCE

COLLISION, CRUSHING	CRITICAL 24	MEDIUM 15

Risk Treatments in Place: **Park Brake**
This item of plant is fitted with a fully functional park (hand) brake which meets the following requirements –
a) is separate to the service brakes
b) has a device which maintains the brake in the on position until intentionally disengaged &
c) requires at least two separate and distinct movements to disengage the park brake.

The park brake must be regularly inspected and tested. These inspections and tests must be documented as part of your plant safety programme.

References: AS2958

Assessor Comments: SAHR/Panel Buttom

STRIKING, BURNS	HIGH 22	MEDIUM 15

Risk Treatments in Place: **Hydraulic Hoses**
This item of plant has hydraulic hoses. These hoses must be inspected each day or before each use for wear and tear. If there are visible signs of wear immediate action must be taken to control the risk arising from this wear. These inspections must be documented.

Hydraulic fluid at high pressure can penetrate the skin, never use any part of your body to check for leaks. If oil penetrates the skin seek medical advice immediately. Always use a piece of cardboard or similar to check for suspected leaks.

Hydraulic pressure can be stored and is a hazard. Before disconnection or connection of hydraulic hoses complete the following steps -

1. Stop engine
2. Keep all bystanders clear of the work area
3. Refer to operators manual as to methods to release pressure
4. Wait 5 minutes

References: AS2671, AS4024

STRIKING, ENTANGLEMENT, COLLISION, CRUSHING	HIGH 22	MEDIUM 15

Risk Treatments in Place: **Neutral Start**
This item of plant has neutral start control in place. It must be fully functional and serviceable at all times whilst this item of plant is in operation.

References: AS4024.1603

CRUSHING	HIGH 22	MEDIUM 15

Risk Treatments in Place: **Seat Belt**
This item of plant is fitted with an operator seat belt. This seat belt must be free from damage, and permanently and sturdily attached at all times whilst this item of plant is in operation. Operators must use this seat belt at all times during operation.

References: ISO6683

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Seat Belt** The operator seat belt fitted to this item of plant must be fully functional and serviceable at all times. (N.B. It must not be attached to the ROPS). Operator seat belts must be worn at all times whilst this item of plant is in operation.		
References: ISO6683		
COLLISION, CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Reverse Movement Alarm** A reverse movement sensor alarm is fitted to this item of plant. It must be fully functional and serviceable at all times whilst this item of plant is in operation.		
References: ISO7731, ISO9533		
COLLISION, POOR VISIBILITY	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Machine Lights** This item of plant is fitted with self contained lighting. All of these lights must be fully functional and serviceable whilst this item of plant is in operation in areas of reduced light. If any of these lights stop working the operation must cease immediately and the faulty light be repaired before operation can continue in the areas of reduced light.		
References: ISO20474-		
CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Articulated Joint Locking Device** This item of plant is fitted with a safety locking device to the articulated joint (either a locking arm or cylinder locking devices) and clear, legible instruction labels on both sides of the articulated joint which state that either of these devices must be engaged during any maintenance to the articulated joint. These must be present, serviceable and employed at all times whilst this item of plant is in operation.		
References: AS1319- , AS/NZS4024.1201		
COLLISION	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Beacon** This item of plant is fitted with a safety beacon. This beacon must meet the following criteria at all times whilst this item of plant fitted is in operation - - Is visible up to 200m in all directions (allowing for intermittent obstruction from the plant structure whilst the plant is in operation) - Is fitted in the most appropriate location on machine to maximise visibility without risking continual damage NOTE: more than one beacon may be fitted to meet these criteria.		
References: ISO20474-		
OPERATIONAL MALFUNCTION	HIGH 22	LOW 2
Risk Treatments in Place: **Plant Modification** The plant is in original condition.		
ENTRAPMENT	HIGH 21	MEDIUM 15
Risk Treatments in Place: **Two Operator Exits** The operator cabin/work area on this item of plant has a minimum of two (2) possible exits. These must be functional and accessible at all times whenever the item of plant is manned, whether during operation or maintenance activities.		
References: AS5327		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
INCORRECT OPERATION	HIGH 20	MEDIUM 14
Risk Treatments in Place: **Intuitive Controls** The controls fitted to this item of plant are orientated so that the movement of the control is consistent with the action of the machine e.g. moving a control lever to the left results in the machine turning to the left. This design feature must be maintained at all times whilst this item of plant is in operation. **References:** AS/NZS4024.1906		
STRAINS	HIGH 19	LOW 5
Risk Treatments in Place: **Controls Ergonomics** All controls including all levers, buttons, pedals, switches etc, are placed near the operator work position and are easy to reach and operate during the execution of the operator's normal duties. This applies for all persons within the 95th percentile of the normal population distribution. **References:** AS/NZS4024.1901		
SLIPPING, INCORRECT OPERATION	HIGH 17	LOW 6
Risk Treatments in Place: **Control Levers/Pedals/Buttons** All controls including all levers, buttons, pedals, switches etc. must be kept non-slip and free from damage at all times. **References:** AS/NZS4024.1901		
INCORRECT OPERATION, OPERATIONAL MALFUNCTION	MEDIUM 14	MEDIUM 13
Risk Treatments in Place: **Restricted Access Switches** This item of plant is fitted with a device to restrict operators. A code/key must only be given to those that have appropriate experience or training. **References:** AS/NZS4024.1201		
SLIPPING	MEDIUM 12	LOW 6
Risk Treatments in Place: **Operator Work Area Access/Egress** Safe access and egress to the cabin/work area(s) must be maintained at all times whilst this item of plant is in operation. It must be non slip, free from damage, located at a height so as to not cause undue body stresses and strains with three points of contact available to personnel at all times. All personnel must - 1. Always face the item of plant during access and egress. 2. Always maintain three points of contact during access and egress. 3. Never carry an object(s) in his/her hand(s) during access and egress. 4. Never jump off machine. **References:** AS5327		
SLIPPING, FALLING	MEDIUM 12	LOW 6
Risk Treatments in Place: **Access/Egress Instruction Label** An instruction label is fitted adjacent access/egress areas to advise all personnel of the following - 1. Always face the item of plant during access and egress. 2. Always maintain three points of contact during access and egress. 3. Ensure the steps are clean. 4. Never jump off machine. This label must be clear and legible at all times whilst this item of plant is in operation. **References:** ISO31000		
COLLISION, POOR VISIBILITY	MEDIUM 12	MEDIUM 11
Risk Treatments in Place: **Operator Mirrors** The operator rear view mirrors fitted to this item of plant must be fully functional and kept clean at all times. There must always be at least one mirror on each side to provide rear vision to the operator to avoid striking bystanders and objects. **References:** ISO14401.1, AS/NZS4024.1201		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
 **ELECTRIC SHOCK, BURNS**	MEDIUM 12	LOW 6
Risk Treatments in Place: **Battery Cover** All batteries fitted to this item of plant are constrained to prevent displacement & fitted with a permanent sturdy cover which allows for ventilation. The constraint and cover must be present and fully functional and serviceable at all times whilst this item of plant is in operation.		
References: AS/NZS4024.1201		
 **SLIPPING, INCORRECT OPERATION**	MEDIUM 9	LOW 4
Risk Treatments in Place: **Operator Floor** All work area floors are non-slip and free from damage & debris. Floor area must remain non-slip and free from damage & debris, including rubbish, tools and other items, at all times whilst this item of plant is in use.		
References: AS/NZS4024.1201, ISO20474-		
 **STRAINS**	MEDIUM 9	LOW 1
Risk Treatments in Place: **Operator Seat** The operator seat fitted to this item of plant must remain free from damage and tears, and be permanently and securely fitted at all times.		
References: AS/NZS4024.1401 , ISO20474-		
 **BURNS**	MEDIUM 9	LOW 5
Risk Treatments in Place: **Exhaust** The engine exhaust on this item of plant is fitted with a guard to prevent injury to any person and control the risk of initiating a fire. It must be present and fully functional and serviceable at all times whilst this item of plant is in operation.		
References: AS/NZS4024.1201		
MAINTENANCE		
 **COLLISION, CRUSHING**	CRITICAL 25	MEDIUM 15
Risk Treatments in Place: **Brakes** The brakes fitted to this item of plant must be fully functional at all times whilst this item of plant is in operation. The brakes must be regularly inspected and tested. These inspections and tests must be documented as part of your plant safety programme.		
References: AS2958		
 **CURRENT OR PREVIOUS STRUCTURAL DAMAGE**	CRITICAL 25	MEDIUM 15
Risk Treatments in Place: **Structural Integrity** Regular checks for structural damage must be undertaken. Look for cracks in frames/chassis (current or repaired), bends or damage to structural components, etc.		
 **INCORRECT OPERATION**	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Maintenance Manual** The manufacturer's maintenance manual(s) has been supplied for this item of plant These manual(s) must be available at all times to all users and maintenance staff of this item of plant. All users and maintenance staff must read and be familiar with these handbook(s) prior to maintaining or repairing this item of plant. A complete risk assessment/JSEA must be undertaken covering all inspection, maintenance, servicing and transportation requirements of this piece of plant prior to use. A full assessment of the competence of people using the book(s) must also be undertaken		
References: Work Health & Safety Act & Regulations-		
Assessor Comments: On Request		

HAZARD(S)	Prelim. Risk Rating	Residual Risk Rating
STRIKING, BURNS	HIGH 22	MEDIUM 15
Risk Treatments in Place: **Hydraulic Damage** The hydraulic hoses to this item of plant are free from damage and protected against damage arising from contact with the plant structure. Ensure that hoses are free from damage and that protection is in place at all times whilst this item of plant is in operation. Inspection of the hydraulic hoses and protection system should be conducted regularly and documented as part of your plant safety programme.		
References: AS2671, AS4024, ISO4413		
CRUSHING	HIGH 22	MEDIUM 15
Risk Treatments in Place: **ROPS Damage** The Roll Over Protective Structure (ROPS) fitted to this item of plant must remain free from damage at all times whilst this item of plant is in operation.		
References: AS2294, ISO3471		
OPERATIONAL MALFUNCTION	HIGH 22	LOW 2
Risk Treatments in Place: **Major Fluid Leaks** This item of plant must remain free from leaks at all times whilst in operation (this includes engine, transmission, cooling system, air, fuel, drive line, wheel hubs, steering and hydraulics). Development of a major leak will require this item of plant to be stood-down until repaired. Minor leaks detected must be repaired within 1-14 days.		
References: ISO31000		
OPERATIONAL MALFUNCTION	HIGH 21	MEDIUM 15
Risk Treatments in Place: **Service Records** Service and maintenance records are available for this item of plant. These records must continue to be maintained and stored in a secure area as part of your plant safety management programme. This programme includes the undertaking of regular inspections concerning the general condition of the item of plant including (but not limited to) tyre condition, oil levels and wear and tear on critical items such as brakes and steering, etc. All OEM prescribed, scheduled and non scheduled maintenance must also be documented as part of these records and attended to within a risk management framework.		
References: Work Health & Safety Act & Regulations-		
Assessor Comments: On Request		

SECTION 6 IMAGES AND NOTES

IMAGES

- No Images Available -

NOTES

- No Notes Available -

RISK MANAGEMENT REPORT

TYPE	Rollers, Tandem Vibratory	**Report Number**	15313 20190830-1717
MAKE	Sakai	**Date**	30-Aug-2019
MODEL	SW502	**Created By**	Nic Mclennan
PRICING GROUP NUMBER	272A	**Assessor**	Nic Mclennan
		Assist. Assessor(s)	
		Owner	AB Equipment Limited
		Assessment Purpose	Hire
		State	NZ

OPERATOR ACKNOWLEDGEMENT

I the undersigned acknowledge that I have read and understand the risk management report described above.
I also acknowledge that I have received a copy of this risk management report.

DATE	NAME	COMPANY/POSITION	SIGNATURE