

Risk Register – HARVESTING OPERATIONS

Vault ID #	Task/Area where hazards exists	Hazard – what can cause harm	Potential outcome – what can happen	Likelihood	Consequences	Risk Rating (Inherent)	Required Control Measures List the control measures required to eliminate or minimise the risk of illness or injury for each hazard identified	Frequency of Monitoring or Action Date	Personnel Responsible The person required to action the control measure	Eliminate	Type Minimisation Controls	Likelihood	Consequences	Risk Rating (Residual)
6298	Tree felling – manual	This risk has been relocated to the Generic risk register as it applies to both Harvesting & Forestry (TTW).												
5279	Tree felling – mechanised	Machine tip over, chain shot, using uncertified machinery, using machinery without harnesses, untrained operators, persons in the vicinity of machine operations & being hit by machine, getting in & out of machine, machine maintenance, anchor failure, tree hitting machine, vibration, machine failure	Fatalities, serious injuries, strains, sprains, cuts, lacerations, OOS	A	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Conduct onsite hazard identification, risk assessment & tailgate meetings Purpose built machine or attachment Seat belts must be worn (4pt harness recommended) Trained operators (NZQA US6945) or under direct supervision by a qualified trainer PPE as per ACOP Forest Operations RT communications established All persons to maintain MSD Lock out device must be applied when carrying out machine maintenance & ensure the machine is stabilised Maintain & operate the machinery as per manufacturer manual Anchor machine must be anchored as per manufacturers recommendation If the operator must get out of the machine on the felling face call up is required Regular breaks & micro pauses 	By harvest unit Before starting/daily All times All times All times All times All times 40 mins All times All times All times All times Every anchor shift Before getting out All times Hourly	Pan Pac/ Contractor Contractor Contractor Operator Contractor All persons Contractor Operator All persons Operator Contractor Operator or designated person Operator Operator Operator	X	E, A, PPE	D	5	M
5258	Roadside felling	Trees falling on vehicles or people or near train lines	Fatalities, crushing injuries, serious injuries, third party vehicle damage	B	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Conduct onsite hazard identification, risk assessment & tailgate meetings Maintain all existing felling processes & competencies. Qualified tree feller (minimum level 3) Qualified tree faller for thinning ops (US1247) PPE as per ACOP Forest Operations Traffic management plan (TMP) Establish communication mechanisms 	By harvest unit Before starting/daily All times All times All times All times All times All times	Pan Pac/ Contractor Contractor Contractor Contractor All persons Contractor Contractor	X	I, A, PPE	E	5	M

Type of Minimisation Controls Key: (S = Substitution, E = Engineering, I = Isolation, A = Administration, PPE = Personal Protective Equipment, X = latest amendment)

General Manager Forests

Next Review Date: 01/01/2025

FOR-REG-HS02

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							<ul style="list-style-type: none"> Report members of the public who ignore TMP to the police Winds – consider stop work when unsafe (refer to tree falling manual). If falling near train lines, contact Kiwi Rail. 	All times All times As required	Contractor Contractor Pan Pac					
5280	Tree Felling – machine assisted	Person being struck by a tree, ropes or machine, broken tops, sailers, butt rebound, kick back, chainsaw operations, flying debris, noise, fumes, foreign body, other persons, roads in the vicinity, working around bluffs, machine tip over or pulled over, machine struck by tree or ropes, vibration	Fatalities, crushing or puncture injuries, amputations, cuts, lacerations, eye injuries, noise induced hearing loss, strains, sprains, OOS	A	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Establish minimum controls for Manual Felling #6398 Conduct onsite hazard identification, risk assessment & tailgate meetings Qualified/certified machine assisted faller or under direct supervision of a senior cutter or trainer Qualified machine operator specific to the machine or under direct supervision. Trained in US 1256 Contractor machine assisted procedure and/or ACOP Forest Operations PPE as per ACOP Forest Operations RT communication Machine with certified ROPS, OPS & FOPS Polycarbonate windows as per manufacturer design or retrofitted. Seat belts must be worn (4pt harness recommended) Maintain & operate the machine as per manufacturer's manual Lock out device must be applied when carrying out machine maintenance & ensure the machine is stabilised Specific engineered attachments for machine assisting. Inspect & replace worn or incorrectly constructed wire ropes. 	By harvest unit Before starting/daily Before starting/daily All times All times All times All times All times All times All times All times All times All times All times As required	Pan Pac/ Contractor Contractor Contractor Contractor Contractor All persons Contractor Contractor Contractor Operator Contractor Contractor Contractor All persons Contractor	X	E, A, PPE	D	5	M

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5214*	Cutting wind throw – manual This method can only be used if the machine method is not practicable	Person getting hit by the tree when cutting, root ball moving, person being hit by a sailor or bouncing spars, chainsaw kickback	Fatality, crushing injuries, fractures, serious injuries, lacerations, amputations, cuts	A	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment. Establish minimum controls for Manual Felling #6398 Apply task specific assessment for windthrow, includes; map scale 0.1 h in use, a qualified 2 person felling team, observer must be a certified Snr Feller, Beaufort scale maximum wind conditions to 16-17 knots Harvest Plan must be reviewed & approved by GM Forests Conduct onsite hazard identification, risk assessment & tailgate meetings Qualified/certified wind throw cutter (Level 4 unit standards) Qualified/certified level 4 tree faller as observer (harvesting not thinning ops) 5 step tree felling plan Establish good escape routes Situational awareness – take your time RT communications established PPE as per ACOP & Pan Pac Operations Manual If the above control measures cannot be implemented - leave the tree Advise neighbours/organisations when cutting near assets or infrastructures 	By harvest unit All times Before starting/daily All times All times All times All times All times All times All times All times All times As required	Pan Pac/ Contractor Contractor Contractor Contractor Contractor Faller Faller Faller Faller Faller Faller Contractor workers Contractor workers All persons Pan Pac	X	A, PPE	C	5	H

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5281	Cutting wind throw – machine assisted	Machine tip over, using uncertified machinery, using machinery without seat belt, untrained operators, persons in the vicinity of machine operations & being hit by machine, getting in & out of machine, machine maintenance, person getting hit by the tree when cutting, person being hit by a sailor or bouncing spars, chainsaw kickback	Fatality, crushing injuries, fractures, serious injuries, lacerations, amputations, cuts	A	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Establish minimum controls for Manual Felling #6398 Apply task specific assessment for windthrow, includes; map scale 0.1 h in use, a qualified 2 person felling team, observer must be a certified Snr Feller, Beaufort scale maximum wind conditions to 16-17 knots Harvest Plan must be reviewed & approved by GM Forests Conduct onsite hazard identification & risk assessment & tailgate meetings Qualified/certified wind throw cutter (NZQA US1270) Qualified machine operator specific to the machine or under direct supervision. Trained in US 1256 PPE as per ACOP & Pan Pac Operations Manual Bar length allows cutting from one side. Establish good escape routes Situational awareness – take your time If the above control measures cannot be implemented - leave the tree Seat belts must be worn (4pt harness recommended) RT communications established Maintain equipment as per manufacturers specifications. 	By harvest unit Before starting/daily Before starting/daily & All times All times All times All times All times All times As required All times All times All times All times All times As required	Pan Pac/ Contractor Contractor Contractor Contractor Contractor All persons Faller Faller Faller Faller Contractor All persons Contractor	X	E, A, PPE	D	5	M

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5282	Cutting wind throw - machine	Machine tip over, chain shot, using uncertified machinery, using machinery without harnesses, untrained operators, persons in the vicinity of machine operations & being hit by machine, getting in & out of machine, machine maintenance, anchor failure, vibration	Serious injuries, strains, sprains, cuts, lacerations	A	3	H	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Conduct onsite hazard identification & risk assessment & tailgate meetings Purpose built machines Qualified machine operator specific to the machine or under direct supervision. Trained in US 1256 Seat belts must be worn (4pt harness recommended) Trained operators (NZQA US6945) PPE as per ACOP Forest Operations RT communications established Lock out device must be applied when carrying out machine maintenance & ensure the machine is stabilised Maintain & operate the machine as per manufacturers manual Anchor machine must be anchored as per manufacturers recommendation If the operator must get out of the machine on the felling face RT call up is required Tethered felling machines must not be worked on or maintained under tension. Always walk to a stable area away from the felling site. Regular breaks & micro pauses 	By harvest unit Before starting/daily All times All times All times All times All times All times As required As required Every anchor shift Before getting out All times Hourly	Pan Pac/ Contractor Contractor Contractor Contractor & Operator Operator Contractor All persons All persons Operator or Maintainer Contractor Operator Contractor Operator or designated person Operator	X	S, E, A, PPE	D	2	L

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5265	Felling or operating machinery within two tree lengths of energised power lines. This method can only be used if a shutdown is deemed not reasonably practicable.	Energised powerlines – live high voltage electricity, flash over, step & touch voltages, other persons, fires	Fatalities, electric shock, electrocution, burns, property damage & loss of electrical supply.	B	5	E	<p>Procedure – familiar with & able to apply PP procedure Forest Ops Around Power lines.</p> <p>Close approach permit & safety observation by the power line company if there is potential to breach the 4m or 6m safety clearances.</p> <p>Network Induction (where available) & hold NZQA units 17151 & 18038 – working around power lines</p> <p>Planning - Preoperational hazard identification & risk assessment.</p> <p>Pre-operational risk reduction tree trimming & dismantling by network approved Utility Arborists.</p> <p>Communication – tripartite-developed & agreed Electrical Hazard Management Plan.</p> <p>Separation – maintain safety clearances; 4m <110kV or 6m >110kV for people, plant & any vegetation.</p> <p>12m for loading zones & working/loaded ropes.</p> <p>Reclose Block on the power line. N/A for Transmission Lines.</p> <p>Competency – qualified operators & senior fallers or Network Approved & competent Utility Arborist fallers.</p> <p>Onsite hazard identification & risk assessment & tailgate meetings.</p> <p>Fell trees away from lines. Any trees that cannot be confidently felled away from the lines are to be left & cut by Network Approved Utility Arborists. (#6398)</p> <p>Keep power line corridor clear of non-essential people & plant.</p> <p>Keep staff in machines & off the ground, use mechanised felling as much as possible.</p> <p>Maintain all existing mechanical felling processes & competencies. (#5279, 5280)</p> <p>PPE as per ACOP Forest Operations</p> <p>ACOP Part 2 Tree Maintenance Around Power Lines (minimum standards)</p> <p>Communications maintained with Powerline Co</p> <p>Emergency response procedures.</p> <p>Winds – consider stop work when unsafe (refer to tree falling manual).</p>	<p>Prior starting</p> <p>Prior starting</p> <p>Prior starting</p> <p>Prior starting</p> <p>All times</p> <p>All times</p> <p>All times</p> <p>All times</p> <p>Before starting /daily</p> <p>All times</p> <p>All times</p> <p>All times</p> <p>All times</p> <p>All times</p> <p>All times</p> <p>All times</p> <p>All times</p>	<p>Pan Pac</p> <p>Contractor</p> <p>Pan Pac/ Contractor</p> <p>Pan Pac/ Powerline Co</p> <p>Pan Pac/ Contractor & Powerline Co</p> <p>Contractor</p> <p>Powerline Co</p> <p>Contractor</p> <p>Contractor</p> <p>Contractor</p> <p>All persons</p> <p>Contractor</p> <p>Contractor</p> <p>All persons</p> <p>All persons</p> <p>All persons</p> <p>All persons</p>	X	I, A, PPE	D	5	M

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5266	Felling, pruning or operating machinery within two tree lengths of de-energised power lines	Inadvertent re-livening of powerlines, other persons	Electric shock	D	3	H	<ul style="list-style-type: none"> Procedure – familiar with & able to apply PP procedure Forest Operations Around Power lines. Powerlines disconnected from all sources of supply or isolated & earthed Close approach permit (electrical hazard management plan) Complete pre-operational hazard identification & risk assessment Conduct onsite hazard identification & risk assessment & tailgate meetings Undertake an individual tree assessment & document management plan Where practicable, use a tethered felling machine or machine assisted felling operation Maintain all existing mechanical felling processes & competencies. (#6279, 5280) All persons to stand clear Use a qualified senior cutter PPE as per ACOP Forest Operations If any trees leaning towards the power lines these are to be left & cut by qualified level 2 arborists (#6398) Education sessions working around power lines 	Prior starting Prior starting Prior starting By harvest unit Before starting/daily Before starting/daily All times All times All times As Required All times	Pan Pac Powerline Company Pan Pac Pan Pac/ Contractor Contractor All persons Contractor Contractor Contractor All persons All persons Contractor Pan Pac	X	E, I, A, PPE	E	3	L

[illegible]

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5285	Breaking out – ground based	Person hit by a rope, machine or trees, flying debris, broken ropes, sprags, ropes under tension, slips, trips, falls, poor communications, chainsaw operation	Fatalities, crushing injuries, sprains, strains, cuts, lacerations, foreign body in eyes, amputations, puncture wounds, fractures, dislocations	B	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Conduct onsite hazard identification, risk assessment & tailgate meetings Establish breaking out plan with safe retreat position Range finder Qualified chainsaw operators (US 23411) Trained operator (US 1256) All other workers under training & appropriate supervision No person to stand in the bite of working or loaded ropes Establish communication mechanisms with machine operator to breaker out Maintain & operate the machinery, attachments, & equipment as per manufacturer manual Maintain chainsaw as per manufacturers specifications Emergency & Rescue plan in use & confirmed with minimum medical supplies in place with Breaker Out PPE as per ACOP & Forest Operations Manual 	By harvest unit Before starting/daily Daily All times All times All times All times All times All times All times All times All times All times	Pan Pac/ Contractor Contractor Contractor Contractor Contractor Contractor All persons All persons Contractor Contractor Worker Contractor Worker All persons	X	A, PPE	D	4	M

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5286	Extraction – ground based	Machine roll over, rope breaking, slips, trips, falls, getting in & out of machine, machine failure, flying debris, failure to wear seat belt, poor vision, untrained operator, other persons in extraction area or other operational work areas, Broken glass, uncontrolled machine movement, stem entering/damage to machine	Fatalities, crushing injuries, sprains, strains, cuts, lacerations, foreign body in eyes, amputations, puncture wounds, fractures, dislocations, property damage	B	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Conduct onsite hazard identification, risk assessment & tailgate meetings Extraction & skid plan with appropriate machine location, processing plan & systems (including Safe Load Limits) for the setting. Designated work areas to including safe areas for personnel Complete a slope assessment as per manufacturers specifications for the machine Appropriated machine for terrain Qualified machine operators specific to machine or under direct supervision. Trained in US1256 Contractor procedure No person to stand in the bite of working or loaded ropes Establish communication mechanisms with machine operator to other workers Machine with certified ROPS, OPS& FOPS, maintained & in use. Seat belts must be worn (4 pt harness recommended) Maintain & operate the machinery, attachments, & equipment as per manufacturer manual Maintain 3pts of contact on entry, exit & egress PPE as per ACOP & Pan Pac Operations Manual 	By harvest unit Before starting/ daily Daily All times All times All times All times All times All times All times All times All times All times All times	Pan Pac/ Contractor Contractor Contractor Contractor Contractor All persons Contractor Contractor Contractor Operator Contractor Operator Contractor Contractor Contractor Contractor	X	S, A, PPE	D	5	M
5287	Extraction Cables – Nov 23 moved to Hauler Register													

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5288	Skid work – mechanised processing	Chain shot, other persons or machines in the vicinity, person hit by a machine, machine failure, entering & exiting machine, no lock out system when carrying out maintenance, noise, poor vision, vibration, failure to wear seatbelt, untrained operator	Fatalities, crushing injuries, sprains, strains, cuts, lacerations, foreign body in eyes, amputations, puncture wounds, fractures, OOS, dislocations, noise induced hearing loss	L	5	E	<ul style="list-style-type: none"> Implement the controls for skid work – manual processing #5289 Seat belts must be worn (4 pt harness recommended) Machine with certified ROPS, OPS & FOPS, with polycarbonate glass to current standards, maintained & in use. Operate & maintain the machine & attachments within the manufacturer specifications Maintain head and chainsaw to manufacturers specifications Implement the documented chain shot plan with appropriate signage Regular breaks & micro pauses 	All times All times All times All times All times Hourly	Contractor/ Pan Pac Operator Contractor Contractor	X	E, S, A, PPE	D	5	M
5289	Skid work – manual processing	Person hit by machine, ropes or log, chainsaw operation, slips, trips, falls, noise, flying debris, dust, uneven terrain, untrained workers, persons not staying in their designated safe work areas, high stacks	Fatalities, crushing injuries, sprains, strains, cuts, lacerations, foreign body in eyes, amputations, puncture wounds, fractures, dislocations, noise induced hearing loss	A	5	E	<ul style="list-style-type: none"> Complete pre-operational hazard identification & risk assessment Conduct onsite hazard identification, risk assessment & tailgate meetings Extraction & skid plan with appropriate machine location, processing plan & systems (including Safe Load Limits) for the setting. Designated work areas to including safe areas for personnel Skid size aligns with crew & logging specifications Qualified machine operators specific to machine or under direct supervision. Trained in US1256 Contractor procedure Qualified chainsaw operators (US 23411) or under supervision & training PPE as per ACOP Forest Operations Establish communication mechanisms with machine operator & ground workers 	By harvest unit Before starting/ daily Daily All times All times All times All times All times All times	Pan Pac/ Contractor Contractor Contractor Contractor Contractor Contractor Contractor/ all persons Contractor Contractor	X	A, PPE	D	5	M

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							<ul style="list-style-type: none"> • Skid operator must have an operational RT • Notch bearers where needed (i.e., slope or slippery stems) • De-phasing/multi skids • Start processing at SED • Maintain chainsaw to manufacturers specification • Implement manual trimming procedure • <i>Implement the operating chainsaw control measures located in the generic risk register</i> 	All times As required All times All times All times All times All times	Contractor Pan Pac/ Contractor Contractor Contractor Contractor Contractor Contractor							
5290	Loading logs on trucks	Moved to Generic risk register as it applies to Harvesting (skid processing) & Log Yard log loading.														