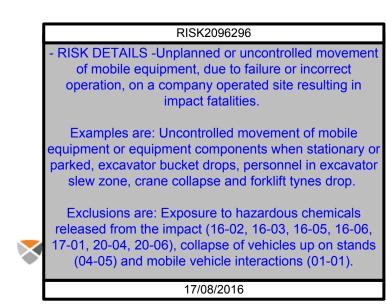
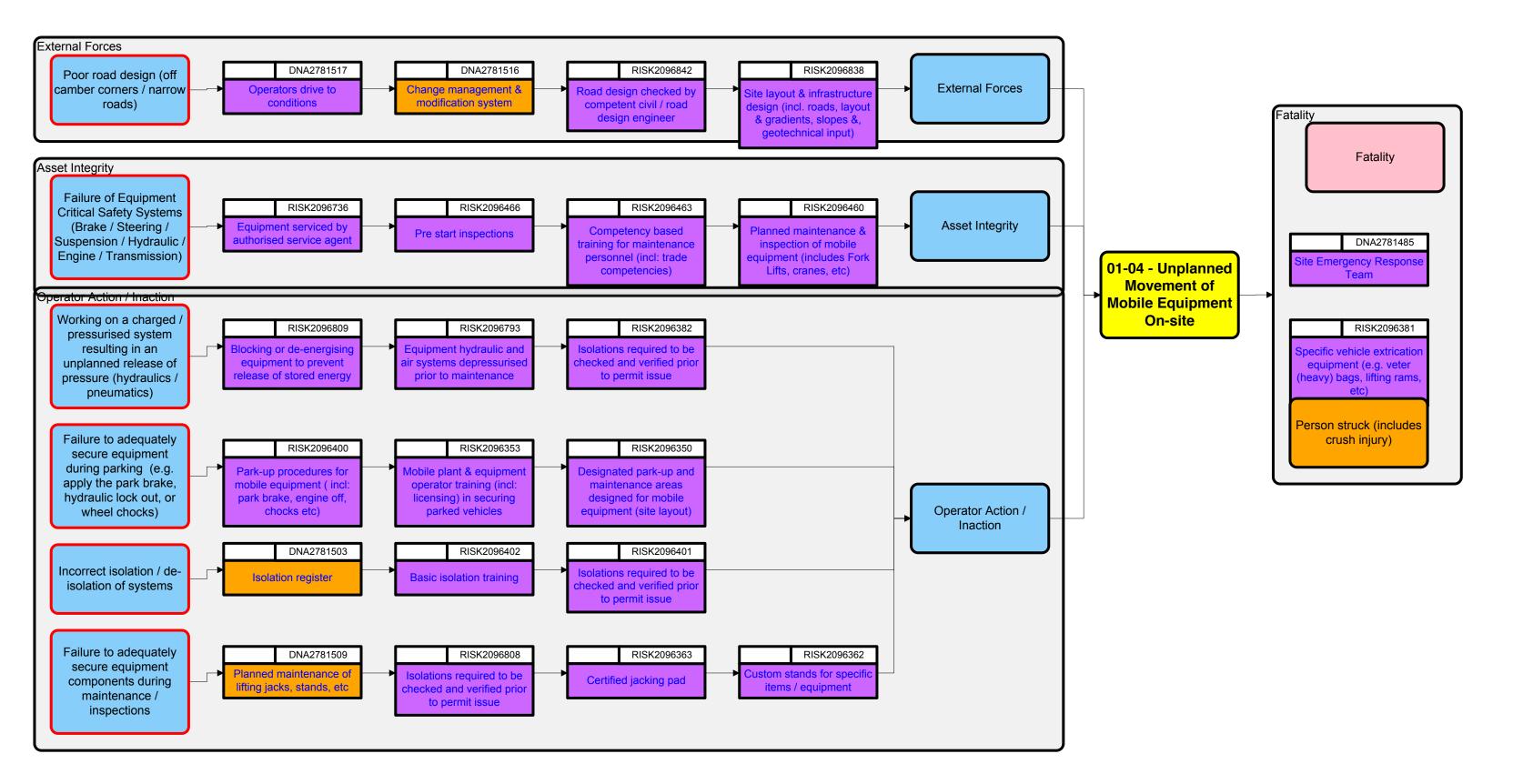
External Forces Inclement weather (e.g. storm washes out the ground, high wind, lightning)	DNA2781514 Site surface water drainage (including road design)	RISK2096749 Place warning cones or bollards if vehicle is broken down	RISK2096748 Designated park-up and maintenance areas designed for mobile	RISK2096747 Park-up procedures for mobile equipment	RISK2096746 Permit to Work used for recovery of bogged equipment	RISK2096544 Fundamentally stable parking	RISK2096543 Berms or windrows	RISK2096542	RISK2096541 Wheel chocks prevent movement	RISK2096540 Park-up and Maintenance area design for mobile equipment	RISK2096539 Mobile plant & equipment operator training (incl: licensing)	RISK2096493 Adverse weather planning (incl: weather monitoring & notification, stop work in	RISK2096492 Weather Bureau Reports & Alerts (e.g. BoM, NOAA)	RISK2096374 Working in inclement weather procedure (incl: lightning)	RISK2096373 Maintenance is conducted under cover				
General ground movement (e.g. subsidence failure, earthquake, voids)	RISK2096771 Geotechnical information communicated to / from relevant parties	RISK2096770 Geotechnical testing (incl: stress cell, rock testing & classification etc.)	equipment (site layout) RISK2096769 → Periodic survey of surface subsidence zone	RISK2096768 Monitoring of subsidence magnitude and rate	RISK2096767 Geotechnical assessments	RISK2096766 Potential for subsidence considered as part of siting decision	RISK2096765 Grouting - for support of subsidence prone ground	RISK2096764 Compliance with mine subsidence design criteria	RISK2096763	RISK2096704 Warning signs indicating forklift operating areas.	RISK2096703 Site Traffic Management Plan - identification of go / no go areas for mobile	extreme weather) RISK2096550 Fundamentally stable parking	RISK2096549 Berms or windrows	RISK2096548 Tyre stops / mounds	RISK2096547 Wheel chocks prevent movement	RISK2096546 Park-up and Maintenance area design for mobile equipment	RISK2096545 Mobile plant & equipment operator training (incl: licensing)	RISK2096498	RI Identificat protection of u pipelines prio usage as pa
Struck by suspended load	RISK2096823 Exclusion zone under and — in the path of lifting operations controlled to prevent access eg barriers,	RISK2096503 Site Traffic Management Plan 	RISK2096502 Communication between Dogman, Rigger & Crane Operator during lift process	RISK2096501 Mobile plant & equipment operator training (incl: licensing)	RISK2096500 Competency based training for Riggers and Dogmen (incl. competency & licence)	RISK2096499 Competency based training for crane operators (incl: certified)	RISK2096376 Refer to C2RI 04-03 Struck By Suspended Load in Motion or Dropped				equipment							ground subsidence	issu
Struck by mobile equipment (incl: In workshops, during recovery)	Spotters, signage RISK2096777 Warning reflectors	RISK2096776 Barriers in place eg other vehicles	RISK2096775 Personnel other than the two drivers located to the side outside a distance of 2x the length of the	RISK2096774 Exclusion zone in place within the path of the vehicle recovery	RISK2096773 Refer to C2RI 02-04 Vehicle Recovery Incident	RISK2096567 Fundamentally stable parking	RISK2096566 Berms or windrows	RISK2096565	RISK2096564 Wheel chocks prevent movement	RISK2096563 Park-up and Maintenance area design for mobile equipment	RISK2096562 Mobile plant & equipment operator training (incl: licensing)	RISK2096509 Designated park-up and maintenance areas designed for mobile equipment (site layout)	RISK2096508 Communication via radio, phone or hand signals	RISK2096507 Breakdown / Bogged mobile equipment procedure (incl. park-up during breakdown)	RISK2096506 Use of Spotters when moving equipment in / out of workshop	RISK2096505 Speed limit signage around workshop area	RISK2096504 Site Traffic Management Plan	RISK2096378 Refer to C2RI 01-01 Vehicle Interactions Onsite	Designated m workshop area
Slippery conditions	DNA2781515 Site surface water drainage (including road design)	RISK2096753 Defensive driver training	RISK2096752 Speed Limiters fitted to forklifts	RISK2096751 Speed limit / traffic control signage 	RISK2096750 Designated park-up and maintenance areas designed for mobile equipment (site layout)	RISK2096693 Park-up procedures for mobile equipment	RISK2096556 Fundamentally stable parking	RISK2096555 Berms or windrows	RISK2096554 Tyre stops / mounds	RISK2096553 Wheel chocks prevent movement	RISK2096552 Park-up area design for mobile equipment	RISK2096551 Mobile plant & equipment operator training (incl: licensing)	RISK2096511 Cement pads / floors e.g in loading / unloading bays, workshops	RISK2096510 Site road design & construction specification					
Poor road design (off camber corners / narrow roads)	DNA2781517 Operators drive to conditions	DNA2781516 Change management & modification system	RISK2096844 Compliance with external / government standards for road design	RISK2096843 Road construction supervised by competent civil engineer	RISK2096842 Road design checked by competent civil / road design engineer	RISK2096841 Defensive driver training	RISK2096840 Driver Induction	RISK2096839 Site Traffic Management Plan 	RISK2096838 Site layout & infrastructure design (incl. roads, layout & gradients, slopes &, geotechnical input)	RISK2096837 Road guard rails installed where roads do not have shoulders	RISK2096836 Road guard rails (e.g. armco barriers)	RISK2096835 Operator feedback from workplace activities (e.g. rounds, driving, etc)	RISK2096834 Road condition inspections as part of monthly housekeeping audit	RISK2096833 Maintenance & monitoring of road surfaces including edges	RISK2096832 Seat belt interlock on forklift to prevent machine movement unless seat belt worn	RISK2096831 Seat belts fitted and worn	RISK2096830 Speed Limiters fitted to forklifts	RISK2096829 Speed limit / traffic control signage	Berms or v
Surface gradients too steep for vehicle	DNA2781523 Mine design (e.g. ramp gradient) is referenced off site vehicle specifications	DNA2781522 Vehicle specifications for all site vehicles	DNA2781521 Change management & modification system	DNA2781520 Compliance with external / government standards for road design	DNA2781519 Road construction supervised by competent civil engineer	DNA2781518 Road design checked by competent civil / road design engineer	RISK2096561 Fundamentally stable parking	RISK2096560 Berms or windrows	RISK2096559	RISK2096558 Wheel chocks prevent movement	RISK2096557 Mobile plant & equipment operator training (incl: licensing)	RISK2096517 Maintenance & monitoring of road surfaces including edges	RISK2096516 Park-up procedures for mobile equipment	RISK2096515	RISK2096514	RISK2096513 Park-up and Maintenance area design for mobile equipment	RISK2096512 Designated park-up and maintenance areas designed for mobile equipment (site layout)		
Asset Integrity Not fit for purpose parts and components (includes underrated)	RISK2096733 Third party inspection of mobile equipment	RISK2096732 Equipment serviced by authorised service agent	RISK2096649 OEM equipment specification and operating limits	RISK2096648 Equipment specs or data sheets referenced during purchasing to ensure correct items are ordered	RISK2096647 Bills of Material in SAP include approved spares	RISK2096646 QA / QC procedures of received stores to ensure correct & appropriate	RISK2096645 Supply Chain delivery contract specifies vehicle requirements	RISK2096644 Contractor delivery vehicle audits to codes / regulations / standards / company requirements	RISK2096643 Maintaining industry and OEM data on equipment issues	RISK2096455 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	RISK2096454 OEM / Industry training for maintenance personnel for equipment (updates & refreshers)	RISK2096453 Industry and OEM reporting of equipment and component issues (recalls)	RISK2096452 Pre start inspections	RISK2096451 Planned maintenance for hoses including Inspection (includes pneumatic, hydraulic, vacuum hoses, etc)	RISK2096450 Condition monitoring of assets (includes VA, oil analysis, thermography, xray, UTT)	RISK2096449 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096448 Approved / preferred suppliers list	RISK2096447 Technical advice from OEMs for maintenance issues (as/when required)	End users or components) authorised se
Material or component defect (latent defect)	DNA2781513 QA / QC procedures of received stores to ensure correct & appropriate	RISK2096805 Routine equipment monitoring (VA, oil analysis, thermography etc.)	RISK2096735 Third party inspection of mobile equipment	RISK2096734 Equipment serviced by authorised service agent	RISK2096650 Planned maintenance & inspection of vehicles	RISK2096459 Pre start inspections	RISK2096458 Approved / preferred suppliers list	RISK2096457 Industry and OEM reporting of equipment and component issues (recalls)	RISK2096456 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)										
Failure of Equipment Critical Safety Systems (Brake / Steering / Suspension / Hydraulic / Engine / Transmission)	RISK2096807 End users orders (parts, components) from OEM or authorised service agent	RISK2096789 Components comply with applicable design standards (e.g. AS4649)	RISK2096778 Third party audits of vehicle maintenance eg National Heavy Vehicle Assurance Accreditation Scheme	RISK2096737 Third party inspection of mobile equipment	RISK2096736 Equipment serviced by authorised service agent	RISK2096692 Hydrostatic transmission on mobile equipment	RISK2096688 Mobile plant & equipment operator training (incl: licensing)	RISK2096657 OEM equipment specification and operating limits	RISK2096656 Supply Chain delivery contract specifies vehicle requirements	RISK2096655 Contractor delivery vehicle audits to codes / regulations / standards / company requirements	RISK2096654 Pre-load spot check of contractor vehicle integrity	RISK2096653 Maintaining industry and OEM data on equipment issues	RISK2096652 Vehicle Monitoring alarms / systems (i.e. VIMS) on some equipment	RISK2096466 Pre start inspections	RISK2096465 OEM / Industry training for maintenance personnel for equipment (updates & refreshers)	RISK2096464 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096463 Competency based training for maintenance personnel (incl: trade competencies)	RISK2096462 Approved / preferred suppliers list	RI Industry a reporting of eq component iss
Tyre failures	RISK2096786 Refer to C2RI- 01-03 - On Site Tyre Incident	RISK2096785 Puncture proof tyres on forklifts, skid steer loaders or telehandlers	RISK2096784 No repaired tyres placed on company heavy vehicles. Tyres replaced.	RISK2096783 No retreads on company vehicles	RISK2096782 Tyre awareness for operators (as part of Mobile Operator Training)	RISK2096781 On-site tyre management (OTML & independent tyre management contractor)	RISK2096780 Tyres fitted by a qualified / competent tyre technician / fitter (contractor or	RISK2096779 Third party audits of vehicle maintenance eg National Heavy Vehicle Assurance Accreditation	RISK2096739 Third party inspection of mobile equipment	RISK2096738 Equipment serviced by authorised service agent	RISK2096664 OEM equipment specification and operating limits	RISK2096663 Pre-load spot check of contractor vehicle integrity	RISK2096661 Planned maintenance (weekly) of tyres including pressure, visual inspections and condition	RISK2096660 Temperature monitoring and logging of bearings and wheel hubs on	RISK2096659 Vehicle Monitoring alarms / systems (i.e. VIMS) on some equipment for tyre, brake, bearing	RISK2096658 Tyres rated for loads, and speeds. Appropriate Tonnes Kilometres Per Hour (TKPH) rating for	RISK2096470 Approved / preferred suppliers list	RISK2096469 Pre start inspections	Planned mai inspection equipment (in Lifts, crar
Boom creep (gradual drop) during servicing	RISK2096788 Anti rupture valves (anti drop valves) on hydraulics	RISK2096787 Boom fully lowered for maintenance	RISK2096741 Third party inspection of mobile equipment	RISK2096740 Equipment serviced by authorised service agent	RISK2096689 Mobile plant & equipment operator training (incl: licensing)	RISK2096665 Exclusion zone under and in the path of boom operations controlled to prevent access eg barriers,	Company) RISK2096477 OEM / Industry training for maintenance personnel for equipment (updates & refreshers)	Scheme RISK2096476 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096475 Lock-outs on equipment components (including: boom articulation and axle oscillation)	RISK2096474 Custom stands for specific items / equipment	RISK2096473 Basic isolation training	RISK2096472 Isolations required to be checked and verified prior to permit issue	RISK2096471 Permit to work covers requirements to restrain equipment items that can move	vehicles	temperature	duty.			
Lack of / failed safety interlocks (e.g. anti drop valves)	RISK2096743 Third party inspection of mobile equipment	RISK2096742 Equipment serviced by authorised service agent	RISK2096667 Commissioning inspection & testing procedures	RISK2096666 Pre start inspections of plants after maintenance / extended shutdown	RISK2096484 Anti rupture valves (anti drop valves) on hydraulics	 spotters, signage RISK2096483 Planned maintenance for hoses including Inspection (includes pneumatic, hydraulic, vacuum hoses, etc) 	RISK2096482 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	RISK2096481 OEM / Industry training for maintenance personnel for equipment (updates & refreshers)	RISK2096480 Industry and OEM reporting of equipment and component issues (recalls)	RISK2096479 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096478 Approved / preferred suppliers list	RISK2096371 Planned maintenance and testing of safety interlocks 							
Material fatigue and wear, tear and corrosion	RISK2096745 Third party inspection of mobile equipment	RISK2096744 Equipment serviced by authorised service agent 	RISK2096670 Equipment specs or data sheets referenced during purchasing to ensure correct items are ordered	RISK2096669 Bills of Material in SAP include approved spares	RISK2096668 QA / QC procedures of received stores to ensure correct & appropriate	RISK2096491 Approved / preferred suppliers list	RISK2096490 Pre start inspections	RISK2096489 Condition monitoring of assets (includes VA, oil analysis, thermography, xray, UTT)	RISK2096488 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	RISK2096487 OEM / Industry training for maintenance personnel for equipment (updates & refreshers)	RISK2096486 Technical advice from OEMs for maintenance issues (as/when required)	RISK2096485 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096372 OEM equipment specification and operating limits						
Hydraulic equipment failure (incl: rams, cylinders, valves, hoses, fittings, etc.)	RISK2096822 Equipment serviced by authorised service agent	RISK2096821 Do Not Operate tags for defective equipment	RISK2096820 Hydraulic components comply with applicable design standards (e.g. AS2671, AS3791)	RISK2096819 Protection of hydraulic hoses from wear by routing, overwrapping, clearances, support	RISK2096818 Anti rupture valves (anti drop valves) on hydraulics	RISK2096817 Hydraulic equipment serviced by authorised service agent	RISK2096816 Hydraulic hoses assembled by trained and authorised technician	RISK2096815 Suspended loads not left unattended 	RISK2096814 Exclusion zone under and in the path of lifting operations controlled to prevent access eg barriers, spotters, signage	RISK2096813 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	RISK2096812 Pre-start inspections for mobile equipment	RISK2096811 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096790 Adequate props in place when reaching under the body of a raised tipper						
Operator Action / Inaction Working on a charged / pressurised system resulting in an	RISK2096810	RISK2096809	RISK2096793	RISK2096792 E Stops / Interlocks Fitted	RISK2096681	RISK2096385	RISK2096384	RISK2096383	RISK2096382	RISK2096338 Fit for purpose equipment	RISK2096337 Anti rupture valves (anti	RISK2096336							
unplanned release of pressure (hydraulics / pneumatics) Unintentional operation	includes locks, lockboards and personal locks DNA2781501	equipment to prevent release of stored energy RISK2096690	air systems depressurised prior to maintenance RISK2096683	to equipment RISK2096682	tynes / booms etc lowered to ground during maintenance RISK2096673	Manuals (incl. correct tooling, parts specs / weights)	Pre start inspections RISK2096525	Basic isolation training RISK2096524	checked and verified prior to permit issue RISK2096523	stands, hoists or jacks RISK2096522	drop valves) on hydraulics RISK2096521	pressurised systems (eg accumulators) RISK2096388	RISK2096387	RISK2096386	RISK2096339				
of controls whilst vehicle is parked up Unfit for work (incl. fatigue, drugs, alcohol,	 Vehicles in maintenance placed on jack stands (not left supported on jacks) RISK2096520 Driver health assessments 	 Forklift / wheel loader etc tynes / booms etc lowered to ground during maintenance RISK2096519 Driver health assessments 	 Handbrake alarm on mobile equipment if driver leaves seat without applying handbrake. RISK2096390 Driver Induction including 	 Hydrostatic transmission on mobile equipment e.g. forklift. RISK2096389 Physical check of Driver 	 Park-up procedures for mobile equipment 	 Lockable battery isolation switch outside vehicles 	 Fundamentally stable parking 	Berms or windrows	Tyre stops / mounds	Wheel chocks prevent movement	Park-up and Maintenance area design for mobile equipment	• OEM Operating Manual	 Mobile plant & equipment operator training (incl: licensing) 	 Isolations required to be checked and verified prior to permit issue 	Guards and/or interlocks on some equipment controls				
existing medical conditions etc.) Failure to ground or support telescoping or	RISK2096796	RISK2096795	RISK2096794	RISK2096702	RISK2096526	RISK2096394 Mobile plant & equipment	RISK2096393 OEM Operating Manual	RISK2096392	RISK2096391	RISK2096340 Mobile equipment									
Lack of skills and knowledge (incl.	Carried out by competent maintainer RISK2096709	for servicing of boom includes support requirements RISK2096708	unsupported loads incl: extended telescoping or articulated booms RISK2096674	in the path of boom operations controlled to prevent access eg barriers, spotters, signage RISK2096531	checked and verified prior to permit issue RISK2096530	operator training (incl licensing) RISK2096529	RISK2096528	Manuals (incl. correct tooling, parts specs / weights) RISK2096527	RISK2096346	operating procedure RISK2096345	RISK2096344	RISK2096343	RISK2096342	RISK2096341	RISK2096315	RISK2096314	RISK2096313		
inexperience, unfamiliarity with area / lack of understanding)	 Site authorisation to operate mobile equipment RISK2096722 	Mobile equipment operationing procedure RISK2096721	Park-up procedures for mobile equipment	Fundamentally stable parking RISK2096719	Berms or windrows RISK2096718	Tyre stops / mounds RISK2096717	Wheel chocks prevent movement RISK2096716	Park-up and Maintenance area design for mobile equipment RISK2096715	start / progress meetings, shutdown sequencing, suitability for task, conflicting work)	Site driving permit for mobile equipment operators employees, visitors & contractors RISK2096713	Mobile plant & equipment operator training (incl: licensing) RISK2096712	Defensive driver training RISK2096711	Buddy system for new starters & contractors	 Site familiarisation program for new employees RISK2096694 	OEM Operating Manual RISK2096675	OEM Maintenance Manuals (incl. correct tooling, parts specs / weights) RISK2096532	Periodic review of mobile equipment operator competencies RISK2096518	RISK2096396	R
Unauthorised operation of equipment Failure to adequately secure equipment	Employee performance management	Pre employment placement assessment	Employee performance appraisal and development process	Workplace inspections (incl: daily / monthly area inspections)	CCTV monitoring of site roads & loading / unloading areas	Site security (including personnel, CCTV, perimeter gates & fencing)	Security / surveillance systems (eg cameras, user identified login	Site perimeter security (personnel, cameras, gates)	Speed cameras and other monitoring (mobile trailers)	GPS monitoring (e.g. TrackPro / SafeMine) of mobile equipment speed	Physical barriers for controlled entry to site & work areas	Site authorisation to operate mobile equipment	Forklift Operations Procedure	Access to vehicle ignition keys controlled when parked, loading / unloading or during maintenance	Park-up procedures for mobile equipment	Lockable battery isolation switch outside vehicles	Isolation (shutdown) of mobile equipment during operator changeout	Isolation and preparation for maintenance procedures	Mobile plant a operator tra
during parking (e.g. apply the park brake, hydraulic lock out, or wheel chocks)	RISK2096698 → Trailer jacks not wound up until after tug test	RISK2096697 Tug test after coupling trailer	RISK2096696 Competency based training in coupling and decoupling procedures for trailers	RISK2096695 Coupling and decoupling procedure for trailers	RISK2096678 Hydrostatic transmission on mobile equipment	RISK2096677 Mobile equipment operator training - tynes / forks / bucket lowered to ground when parked	Fundamentally stable parking	Berms or windrows	Tyre stops / mounds	RISK2096568	Park-up procedures for mobile equipment (incl: park brake, engine off, chocks etc)	Periodic review of mobile equipment operator competencies	RISK2096398 Site Traffic Management Plan	RISK2096353 Mobile plant & equipment operator training (incl: licensing) in securing parked vehicles	RISK2096352 Breakdown / Bogged mobile equipment procedure (incl. park-up during breakdown)	RISK2096351 Testing "E Stops", limiters & safety interlocks (prior to releasing equipment from maintenance)	RISK2096350 Designated park-up and maintenance areas designed for mobile equipment (site layout)	RISK2096349 Park brake for mobile equipment activated automatically	Mobile equip with jacks to b a parked
Incorrect isolation / de- isolation of systems	DNA2781503	DNA2781502	RISK2096723 Access to vehicle ignition keys controlled during maintenance	RISK2096577 Lockable battery isolation switch outside vehicles	RISK2096576 Fundamentally stable parking	RISK2096575 Berms or windrows	RISK2096574 Tyre stops / mounds	RISK2096573 Wheel chocks prevent movement	RISK2096572 Park-up and Maintenance area design for mobile equipment	RISK2096404 Mobile plant & equipment operator training (incl: licensing)	RISK2096403 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096402 Basic isolation training	RISK2096401 Isolations required to be checked and verified prior to permit issue	RISK2096354 Labelling of approved isolation points					
Failure to ground / support implements (e.g. return bucket / forks to ground)	DNA2781504 Equipment alarm systems fitted to some equipment (e.g. tub up alarm) RISK2096726	RISK2096797 Mobile equipment operator training - tynes / forks / bucket lowered to ground when parked RISK2096725	RISK2096755	RISK2096754 Familiarisation training for new mobile equipment RISK2096700	RISK2096699 Place warning cones or bollards if vehicle is broken down RISK2096684	RISK2096680 Out of Service Tags	RISK2096679 Exclusion zone under and in the path of boom operations controlled to prevent access eg barriers, spotters, signage RISK2096578	RISK2096411 Mobile plant & equipment operator training (incl: licensing) RISK2096413	RISK2096410 OEM Operating Manual RISK2096412	RISK2096409 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights) RISK2096356	RISK2096408 Periodic review of mobile equipment operator competencies RISK2096355	RISK2096407 Park-up procedures for mobile equipment	RISK2096406 Breakdown / Bogged mobile equipment procedure (incl. park-up during breakdown)	RISK2096405					
Unfamiliarity with controls Unauthorised /	Physical barriers for controlled entry to site & work areas	Site authorisation to operate mobile equipment RISK2096757	Mobile equipment operating procedure	Periodic review of mobile equipment operator competencies RISK2096582	OEM Operating Manual held in respective vehicle / on site RISK2096581	Site driving permit for mobile equipment operators employees, visitors & contractors RISK2096580	Buddy system for new starters & contractors	Mobile plant & equipment operator training (incl: licensing) RISK2096419	Guards and/or interlocks on some equipment controls RISK2096418	Controls labelled to indicate functions on mobile equipment RISK2096416	Familiarisation training for new mobile equipment	RISK2096414	RISK2096357						
Unintentional reversal, cross connection or bypassing of controls (incl: interlocks)	Change management &	Recommissioning procedure for plant / equipment following maintenance	Commissioning inspection and testing procedure for new / rebuilt equipment prior to operation	Modification of change number linked to permit through the work order system	Pre and post start inspections of plants after maintenance / extended shutdown	Routine inspection and checklists to monitor operation of equipment in the field RISK2096590	Permit to work requires checking modification is authorised RISK2096589	Testing "E Stops", limiters & safety interlocks (prior to releasing equipment from maintenance)	Pre start inspections	OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	Mobile plant & equipment operator training (incl: licensing)	Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc) RISK2096424	• OEM / Industry training for maintenance personnel for equipment (updates & refreshers) RISK2096423	RISK2096421	RISK2096359	RISK2096358			
Operation of equipment with known defects	Permit to work covers controls for operation of equipment with known defects RISK2096760	Pre-load spot check of contractor vehicle integrity	Physical siting and inspection of vehicle registration & licence (in date) RISK2096593	Third party audits of vehicle maintenance eg National Heavy Vehicle Assurance Accreditation Scheme RISK2096425	Contractor delivery vehicle audits to codes / regulations / standards / company requirements RISK2096360	Contract maintenance service provider audits	Approved / preferred suppliers list for maintenance contractors	Performance metrics reported for completion of preventative maintenance work orders	Routine inspection and checklists to monitor operation of equipment in the field	Compliance with road rules (enforced by statutory authorities)	Compliance with Statutory/ DG Code design requirements	Mobile plant & equipment operator training (incl: licensing)	Pre start inspections	Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	Out of Service Tags	Vehicle Monitoring alarms / systems on some equipment			
Poor communication during live testing	Exclusion zone controlled to prevent access eg barriers, spotters, signage	Commissioning inspection and testing procedure for new / rebuilt equipment prior to operation	Permit to work covers controls for live testing	Job planning (incl. pre- start / progress meetings, shutdown sequencing, suitability for task, conflicting work)	Communication via radio, phone or hand signals														
Failure to adequately secure equipment components during maintenance / inspections	DNA2781509 Planned maintenance of lifting jacks, stands, etc	RISK2096808 Isolations required to be checked and verified prior to permit issue	RISK2096803 Site Traffic Management Plan	RISK2096791 Adequate props in place when reaching under the body of a raised tipper	RISK2096759 Exclusion zone controlled to prevent access eg barriers, spotters, signage	RISK2096701 Trailers parked on concrete / hardstand to support jacking legs	RISK2096676 Secondary restraints on loose items or items that can move (incl: ties, stands, props etc)	RISK2096602 Maintenance work instructions including detailed disassembly, assembly, installation and testing instructions	RISK2096601 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights)	RISK2096600 Lockable battery isolation switch outside vehicles	RISK2096599 Fundamentally stable parking	RISK2096598 Berms or windrows	RISK2096597	RISK2096596 Wheel chocks prevent movement	RISK2096595 Park-up and Maintenance area design for mobile equipment	RISK2096594 Permit to work covers requirements to restrain equipment items that can move	RISK2096426 Basic isolation training	RISK2096365 Lock-outs on equipment components (including: boom articulation and axle oscillation)	Vehicle jackin
Overstressing or overloading equipment	DNA2781510 Limit alarms and stops on some gantry / overhead cranes	RISK2096640 Maintenance and inspection schedule determined based on duty and manufacturers recommendations	RISK2096639 Lifting device inspected for significant damage or wear prior to each use	RISK2096638 Incident report raised when lifting equipment malfunctions or is damaged	RISK2096637 Lifting equipment listed in a register	RISK2096636 Lifting equipment uniquely identified and coded to identify its inspection status or next inspection date	RISK2096635 Lifting equipment that has been overloaded withdrawn from service until inspected and tested	RISK2096634 Damaged lifting equipment removed from service until repaired or destoyed	RISK2096633 Classified plant inspections	RISK2096632 Maintenance inspection of lifting equipment by 3rd party specialist	RISK2096631 OEM equipment specification and operating limits	RISK2096630 Technical advice from OEMs as required	RISK2096629 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	RISK2096613 Exclusion zone under and in the path of lifting operations controlled to prevent access eg barriers, spotters, signage	RISK2096612 Working load limit displayed on bridge and gantry crane	RISK2096611 Rated capacity limiter or load limiting device	RISK2096610 Boom angle indicators (on adjustable booms)	RISK2096609	RI Safe working and capacities lifting equ
Incorrect fitting of parts and components	RISK2096806 End users orders (parts, components) from OEM or authorised service agent	RISK2096800 Change management & modification training	RISK2096799 Recommissioning procedure for plant / equipment following maintenance	RISK2096798 Commissioning inspection and testing procedure for new / rebuilt equipment prior to operation	RISK2096731 Equipment serviced by authorised service agent	RISK2096728 Third party inspection of mobile equipment	RISK2096727 Permit to work - inspection of plant during hand back to check completion of work PISK2006445	RISK2096627 Equipment specification or data sheets for pumps, valves, gaskets	RISK2096626 Pre start inspections of plants after maintenance / extended shutdown	RISK2096625 OEM equipment specification and operating limits	RISK2096624 Equipment specs or data sheets referenced during purchasing to ensure correct items are ordered	RISK2096623 Bills of Material in SAP include approved spares	RISK2096622 QA / QC procedures of received stores to ensure correct & appropriate	RISK2096621 Supply Chain delivery contract specifies vehicle requirements	RISK2096620 Contractor delivery vehicle audits to codes / regulations / standards / company requirements	RISK2096619 Approved / preferred suppliers list	RISK2096618 Maintaining industry and OEM data on equipment issues	RISK2096617 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	■ Technical ac OEMs as
Unplanned removal of rollover check / anti- drop valves during repairs	DNA2781512 Planned maintenance work packs highlight key safety elements of the work task (e.g. re-fitting of check valves) RISK2096804	RISK2096802 Recommissioning procedure for plant / equipment following maintenance RISK2096672	RISK2096801 Commissioning inspection and testing procedure for new / rebuilt equipment prior to operation RISK2096614	RISK2096730 Third party inspection of mobile equipment RISK2096538	RISK2096729 Equipment serviced by authorised service agent RISK2096537	RISK2096641 Pre start inspections of plants after maintenance / extended shutdown RISK2096536	RISK2096445 Maintaining industry and OEM data on equipment issues RISK2096535	RISK2096444 Approved / preferred suppliers list RISK2096534	RISK2096443 Planned maintenance for hoses including Inspection (includes pneumatic, hydraulic, vacuum hoses, etc) RISK2096446	RISK2096442 OEM / Industry training for maintenance personnel for equipment (updates & refreshers) RISK2096367	RISK2096441 OEM Maintenance Manuals (incl. correct tooling, parts specs / weights) RISK2096366	RISK2096440 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc)	RISK2096439 Permit to work - inspection of plant during hand back to check completion of work						
Unplanned movement during change out of operator	Site Traffic Management Plan	Park-up procedures for mobile equipment	Lockable battery isolation switch outside vehicles	Fundamentally stable parking	Berms or windrows	Tyre stops / mounds	Wheel chocks prevent movement	Park-up and Maintenance area design for mobile equipment	Mobile plant & equipment operator training (incl: licensing)	RISK2096367	Procedure for changeout of personnel in mobile equipment								

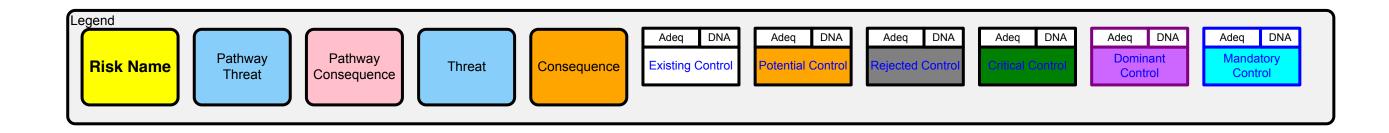
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RISK2096508 ation via radio, and signals Breakdown / Bogged moving equipment in / out Breakdown / Bogged moving equipment in / out Plan Breakdown / Bogged moving equipment in / out Breakdown / Bogged Breakdown / Bogged]	
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RISK2096451 inspections inspections indudes vacuum hoses etc) inspections indudes vacuum hoses indudes vacuum hoses indudes vacuum hoses indudes vacuum hoses indudes vacuum hoses industational vacuum hoses industati			DNA2781495 Medical evacuation capability (e.g. rescue helicopter) DNA2781494 On site ambulance
RISK2006662 Niching alarms/ Le. VIMS) on equipment (updates) + RISK2006669 + RISK2006669 + RISK2006669 + RISK2006690 + RISK200600			DNA2781493 Emergency medical equipment (includes first aid kits, defibrillators, etc) DNA2781492 Advanced first aid training for selected personnel
Immediated Temperature monitoring Immediated Perstart inspections Planed maintenance 4 yres including systems (i.e. VIRS) on some equipment for tyre, brake, bearing systems (i.e. VIRS) on some equipment for tyre, brake, bearing systems (i.e. VIRS) on some equipment for tyre, brake, bearing Perstart inspections Planed maintenance 4 RISK200471 Vehicles Userstart Userstart Userstart Vehicles			DNA2781491 First aid training DNA2781490
RISK2006372 squijament and operating mits		01-04 - Unplanned Movement of Mobile Equipment	Emergency medical training (medical staff & ERT) DNA2781489 On site emergency medical personnel DNA2781488
RISA2080730 props in place ining under the raised tipper		On-site	Incident management team training DNA2781487 Incident Management Team DNA2781486
RISK2096387 It & equipment training (nct: nsng)			DNA2781485 Site Emergency Response Team
			DNA2781484 Site Emergency Management Plan RISK2096707 Roll over protection / cage cabin protection system (ROP's)
RISK2096341 stem for new employees contractors			RISK2096706Seat belt interlock on forklift to prevent machine movement unless seat belt wormRISK2096705Seat belts fitted and worn
RISK20969710 Operations cedure Park-up procedures for beys controlled when parked, loading / unloading or during maintenance Park-up rocedures for beys controlled when parked, loading / unloading or during maintenance Parked, loading / unloading or during maintenance Parket for mobile Parket for			RISK2096381 Specific vehicle extrication equipment (e.g. veter (heavy) bags, lifting rams, etc) RISK2096380 Falling Object cabin
licensing) in securing parked vehicles procedure (incl. park-up during breakdown) releasing equipment fom maintenance) designed for mobile equipment (site layout) a parked position RISK2086401 required to be diversing for proved isolation points Image: Ima			protection system (FOP's) Person struck (includes crush injury)
wn / Bogged equipment (incl. parkup preakdown)	Operator Action / Inaction		
RISK2098357 stry training for gersonnel for t (updates & server RISK2096423 inspections trained maintenance & inspections of mobile equipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Monitoring alarms / sequipment (includes Fork Lifts, cones, etc) Vehicle Fork Lifts, con			
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K2096505 age around area	RISK2096504 Site Traffic Management Plan	RISK2096378 Refer to C2RI 01-01 Vehicle Interactions Onsite	RISK2096377 Designated maintenance workshop area (site layout)					External Forces								
K2096831 and worn K2096513 aintenance or mobile	RISK2096830 Speed Limiters fitted to forklifts RISK2096512 Designated park-up and maintenance areas	RISK2096829 Speed limit / traffic control signage	RISK2096828 Berms or windrows	RISK2096827 Park-up and Maintenance area design for mobile equipment	RISK2096826 Mobile plant & equipment operator training (incl: licensing)	RISK2096825 Wheel chocks prevent movement	RISK2096824 Park-up procedures for mobile equipment									Fatality DNA2781499 MRSD Pressure Infusion Bag DNA2781497
K2096449 enance . correct specs / s)	designed for mobile equipment (site layout) RISK2096448 Approved / preferred suppliers list	RISK2096447 Technical advice from OEMs for maintenance issues (as/when required)	RISK2096368 End users orders (parts, components) from OEM or authorised service agent													Treatment & Rehabilitation of Injury & Illness Procedure DNA2781495 Medical evacuation capability (e.g. rescue helicopter) DNA2781494 On site ambulance
K2096464 enance . correct specs / s) K2096658 loads, and ropriate etres Per rating for	RISK2096463 Competency based training for maintenance personnel (incl: trade competencies) RISK2096470 Approved / preferred suppliers list	RISK2096462 Approved / preferred suppliers list RISK2096469 Pre start inspections	RISK2096461 Industry and OEM reporting of equipment and component issues (recalls) RISK2096468 Planned maintenance & inspection of mobile	RISK2096460 Planned maintenance & inspection of mobile equipment (includes Fork Lifts, cranes, etc) RISK2096467 Planned maintenance of tyres including pressure,	RISK2096370 Fail safe braking system on mobile equipment	RISK2096369 Multiple levels of braking systems on mobile equipment										DNA2781493 Emergency medical equipment (includes first aid kits, defibrillators, etc) DNA2781492 Advanced first aid training for selected personnel
etres Per rating for			equipment (includes Fork Lifts, cranes, etc)	visual inspections and condition monitoring			Asset Integrity									DNA2781491 First aid training DNA2781490 Emergency medical training (medical staff & ERT)
															01-04 - Unplanned Movement of Mobile Equipment On-site	DNA2781489 On site emergency medical personnel DNA2781488 Incident management team training DNA2781487 Incident Management
																DNA2781486 Emergency response team training DNA2781485 Site Emergency Response Team
																DNA2781484 Site Emergency Management Plan RISK2096707 Roll over protection / cage cabin protection system (ROP's)
K2096314 enance . correct specs / s) K2096532 y isolation vehicles	RISK2096313 Periodic review of mobile equipment operator competencies RISK2096518 Isolation (shutdown) of	RISK2096396	RISK2096395 Mobile plant & equipment													RISK2096706Seat belt interlock on forklift to prevent machine movement unless seat belt wornRISK2096705Seat belts fitted and worn
K2096351 s", limiters ks (prior to ment from nce)	RISK2096350 Designated park-up and maintenance areas designed for mobile equipment (site layout)	for maintenance procedures RISK2096349 Park brake for mobile equipment activated automatically	RISK2096348 Mobile equipment fitted with jacks to be lowered in a parked position	RISK2096347 Park brake alarm systems fitted to some equipment												RISK2096381 Specific vehicle extrication equipment (e.g. veter (heavy) bags, lifting rams, etc) RISK2096380 Falling Object cabin protection system (FOP's) Person struck (includes
														perator Action / Inaction		crush injury)
K2096358 ng alarms / some ent																
K2096594 k covers o restrain s that can	RISK2096426 Basic isolation training	RISK2096365 Lock-outs on equipment components (including: boom articulation and axle	RISK2096364 Vehicle jacking procedure	RISK2096363 Certified jacking pad	RISK2096362 ► Custom stands for specific items / equipment	RISK2096361 Cement floors in workshops										
K2096611 limiter or device K2096619 referred list	RISK2096610 Boom angle indicators (on adjustable booms) RISK2096618 Maintaining industry and OEM data on equipment issues	OSCILLATION) RISK2096609 Load rating charts in cabin RISK2096617 Planned maintenance & inspection of mobile	RISK2096608 Safe working load (SWL) and capacities marked on lifting equipment RISK2096615 Technical advice from OEMs as required	RISK2096607 Competency based training for Riggers and Dogmen (incl. competency & licence) RISK2096438 Routine inspection and checklists to monitor operation of equipment in	RISK2096606 Competency based training for crane operators (incl: certified & licence) RISK2096437 Equipment workshop manuals / drawings etc	RISK2096605 Load Assessment Plan RISK2096436 Condition monitoring of assets (includes VA, oil analysis, thermography,	RISK2096604 Pre-lift load inspection RISK2096435 OEM Maintenance Manuals (incl. correct tooling, parts specs /	RISK2096603 Load weight labelling RISK2096434 Pre start inspections	RISK2096431 Mobile plant & equipment operator training (incl: licensing) RISK2096433 OEM / Industry training for maintenance personnel for equipment (updates &	RISK2096430 In-situ cross check of Heavy Vehicles Tare weight & Gross weight v actual load	RISK2096429 Load computers on mobile equipment	RISK2096428 Maximum load signage visible on lifting equipment including forklifts, loaders, etc	o fixed and			
		equipment (includes Fork Lifts, cranes, etc)		operation of equipment in the field		analysis, thermography, xray, UTT)	weights)		equipment (updates & refreshers)							

y	Pathway Consequence	Threat	Consequence	Adeq DNA Existing Control	DNA Control	Adeq Rejected	DNA Control	Adeq Critical C	DNA Control	Adeq Domin Cont	Adeq Manda Cont	







 RISK DETAILS -Unplanned or uncontrolled movemen of mobile equipment, due to failure or incorrect operation, on a company operated site resulting in impact fatalities.

RISK2096296

Examples are: Uncontrolled movement of mobile equipment or equipment components when stationary or parked, excavator bucket drops, personnel in excavator slew zone, crane collapse and forklift tynes drop.

Exclusions are: Exposure to hazardous chemicals released from the impact (16-02, 16-03, 16-05, 16-06, 17-01, 20-04, 20-06), collapse of vehicles up on stands (04-05) and mobile vehicle interactions (01-01).

17/08/2016