



Contractor Document Cover Page						
Collie Battery Energy Storage System Balance of Plant Controlled Document						
Document Information						
Synergy Document No:*		Rev:	2			
Contract No:		Total no. of pages: (incl Doc Cover Sheet)				
Document Title: *	Collie Battery Energy Storage System BOP-CRAW-Project Risk Register					
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Vendor Document No: *	N/A	Rev:	N/A			
Revision History						
Contractor shall ensure that documents have been fully checked and approved prior to submission to Synergy	Prepared	M Bentley	Checked	D Gray	Approved	D Gray
	Date		Date		Date	

Notes:	Supplier/Contractors name, Address and Logo:
	Company Logo here

REVIEWED BY SYNERGY					
1	Accepted. Work may proceed				
2	Accepted. Work may proceed. Submit Final Deliverable.				
3	Accepted. Work may proceed subject to incorporation of changes indicated.				
4	Not accepted. Revise and Resubmit. Work may not proceed.				
5	Review Not Required. Work may proceed.				
1) Deliverables includes document, drawing, sketch and/or any other support for which a Review is needed. 2) Permission to proceed does not constitute approval of design details, calculations, analyses, test methods or material developed or selected by the Contractor. 3) This review: (a) has not included a dimensional check; and (b) does not relieve the Vendor/Contractor from full compliance with Contractual obligations.					
			Rev	Date	Description

Date:		By:		Revisions to Synergy Document No.
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SHE Risk Register Details		
Business	SCEE Electrical	
Project	Synergy Collie Battery Energy Storage System Balance of Plant	
Purpose	Identify key hazards and controls applicable to full scope of the project	
Comments	This document will evolve as the project progresses.	
Risk Owner	Project Manager - David Gray	
Version	Date	Modifications (List changes made to previous version - N/A for original version)
1.0	24/05/2024	Initial document from Construction Risk Assessment Review meeting
2.0	10/07/2024	Use of Telehandler to move and place culverts added
3.0	20/08/2024	Working near water added
4.0	23/08/2024	Entering, working and emergency rescue from RMU units added
5.0	5/09/2024	Use of P2 masks when grinding conduit to culvert joints added
6.0	10/09/2024	Battery transport to site, Crane assembly, Crane operations (Battery landing) added
7.0	19/09/2024	Battery isolation, guarding of open conduit box outs added

Risk Team (List Names and Positions of each person involved in development / review)	Author	Approved by (Risk Owner)	Next Revision Date
	Mike Bentley	Dave Gray	10/07/2024
	Aled Evans	Dave Gray	TBA
	Aled Evans		
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	Aled Evans		
	Aled Evans		
	Aled Evans		

Task / Activity	Hazard	Risk (un-wanted event)	Systems Policy, Plans & Procedures	Controls	Consequence	Likelihood	Cat.	Residual Risk / Impact	Accept or Reject	Recommended Additional Controls	By Whom Person to Action	Target Date
MOBILISATION												
Mobilisation of personnel	Unqualified personnel	Inadequate competency of personnel. Breach of licensing regulations	SCEE-TR-TD-PRO-001 Training and Competency 201047-TR-MAT-001 Training Needs Analysis	Reference and competency checks Training needs analysis / matrix Training Matrix to include role specific requirements Project induction Project site orientation for new starters. Supervisors to conduct relevant Safe Work Practice assessments / observations with new starters. First Swing Program for new starters. Family Star Program	Moderate	Unlikely	2	M7				
Mobilisation of subcontractors	Contractor engagement	Unfamiliarity with SCEE/ Site procedures. Conducting work unsafely or in conflict with site or Principal procedures. High risk and/or specialised tasks. Introduced hazards to the workplace.	SCEE-TR-TD-PRO-001 Training and Competency 201047-TR-MAT-001 Training Needs Analysis	Contractor and Supplier Management Procedure Contractor pre-qualification process in Felix and approved prior to mobilisation. Contractor induction process, including site inductions Project site orientation for new starters. Star Inspectors	Moderate	Unlikely	2	M7		Site First Aiders Site Medic Emergency Channel 39		
Mobilisation of equipment	Poor vehicle hygiene	Spread of weeds, seeds	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SE-FM-002 Mobilisation-Demobilisation Weed Hygiene Certificate	Plant Pre acceptance Checks prior to mobilisation, including weed and seed inspection Decontamination of vehicles where required	Moderate	Rare	2	L5				
Establishment / use of project laydown yard & site office	Hostile third party gaining access to yard / site office	Theft / security incident	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan 201074-SE-PLN-004 CBES Traffic Management Plan 201074-SM-PRO-001 Site Security Procedure	Laydown yard to be fully fenced (and secured after hours) Temporary Fencing will be provided by SCEE other fencing to be undertaken by Principal. Security lighting to be on in hours of darkness Lighting towers for site. Security Company - Including Out of hours security and Mobile Patrols Lone worker communication protocols Lock plant and equipment supervision to secure keys in main office. Fuel farm to be locked after hours	Major	Unlikely	3	M12				
Traffic Management	Close proximity to CPS and adjacent properties	Disruption to project from traffic external to project.	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan WF SMP 201074-SE-PLN-004 CBES Traffic Management Plan	Project Induction Access to site to be via security/gate entry Site signage clearly defining project boundary and entry requirements	Minor	Unlikely	1	L2				
Public Access	Security	Members of the public inadvertently gaining access to yard / site office	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SE-PLN-004 CBES Traffic Management Plan 201074-SM-PRO-001 Site Security Procedure	Principal contractor responsible for project security. Site boundaries secured with fencing in place to discourage access. Signage in place at access points with call out/approval process Card access system to be installed with turnstile/boom gate	Major	Unlikely	3	M12				
Overhead Services on site	Powerlines / Conductors at car park/laydown area and inside of the project boundaries.	Possible MAD breach if using extended crane booms/excavators (note: only until existing line is de-energised & removed)	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SE-PLN-004 CBES Traffic Management Plan	Divert vehicles and plant clear of overhead services on site where machine envelope will encroach MAD. Identify no lifting / no tipping / No raised excavator boom zones within MADs. Traffic Control Plans - (TCP) Provided in Pre-starts SWMS & JHA HV Access Permit (Western Power) if required Install Signage adjacent to the overhead services. Create conditions of delivery note to be sent to external parties due to access the property Project Induction 330KV conductor height known in car park - 15 metres 330KV conductor height known within site boundary - TBA	Moderate	Unlikely	2	M7		Site First Aiders Site Medic Emergency Channel 39		
Offices and Amenities	Toilet / hand washing amenities - availability and suitability	Exposure to biological hazard (illness / disease)	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan 201074-SE-PLN-003 CBES Waste Management Plan	Serviced and maintained ablution facilities To be pumped out and removed by a licenced contractor.	Moderate	Rare	2	L5		Site First Aiders Site Medic Emergency Channel 39		
Site Work	Poor Fitness for Work	Injury / illness as a result of impaired fitness for work	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-HR-POL-004 Fitness for Work Policy	Daily BAC Testing. D&A testing program (pre-employment, random, for-cause, blanket) Conditions of employment Employee Assistance Program (EAP)	Moderate	Unlikely	2	M7		Site First Aiders Site Medic Emergency Channel 39		
Driving / Mobilisation of plant & equipment from site office to work site	Vehicle vs vehicle / vehicle vs pedestrian collision	Psychological and/or physical injuries Property damage	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SE-PLN-004 CBES Traffic Management Plan SCEE-HR-POL-0011 Motor Vehicle Policy	Site Induction Traffic Management Plan SWMS JHA Take 5 Drivers must have a current full driver's license for the appropriate class of vehicle Compliance with road traffic laws Maintenance schedule for fleet vehicles Daily pre-start check. Defects to be reported to workshop to enable repairs Vehicle registration and insurance Fleet cars fitted with First Aid kit Segregated pedestrian walkways Site Speed Limit Limited parking of light vehicles on site	Major	Unlikely	3	M12		Site First Aiders Site Medic Emergency Channel 39		
Loading / Unloading	Unrestrained / Incorrectly restrained Loads	Load shifting during transport causing damage to equipment, other vehicles, surrounding property, persons	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SM-GUI-0001 SCEE Loading and Unloading Guidance Note SCEE-BS-HS-SWM-0022 Loading and Unloading of Material Plant and Equipment on Site	Operators / Drivers to check Trucks, trailers must not be loaded such that rated mass limits and manufacturer's individual component ratings (i.e. front axles, springs etc) are exceeded. Prevent overhanging loads, the load must not project more than 1.0m in front of or behind the truck or trailer or more than 150mm from the sides. Load restraint systems used on vehicles or trailers should be capable of preventing the load from shifting during acceleration, cornering, and braking. Delivery drivers are to be kept clear of unloading / loading and remain in safe place or in the vehicle cab. They may untie and secure loads. Barricade unloading zones or have a spotter in place. Prevent anyone from falling off trucks fitted with gates where possible to provide fall protection when the load is being slung prior to lifting by crane. Where trailers are not fitted with gates, webbing barriers must be installed where possible along the length of the trailer to provide a fall prevention barrier. SWMS JHA & Take 5 Only competent persons to load/unload plant & equipment All loads to be checked prior to mobilisation of vehicle Regular checks to be done on all tie down straps and chains by accredited person	Major	Rare	3	M11		Site First Aiders Site Medic Emergency Channel 39		
SITE SET-UP & ACCESS												
Cultural Heritage	Disturbing cultural heritage items or areas	Unauthorised access or damage to potential items, sites or places of Aboriginal heritage	SCEE-BS-HS-POL-0002 Environmental Policy 201047-HE-PER-0002 Excavation Permit.	Land access enquiries - heritage items not anticipated to be encountered at this project location If any items of possible indigenous significance are discovered during construction, work is to stop immediately and Project Manager to be contacted. Works will not recommence without the prior approval of the appropriate authority. Heritage trees to be marked and protected.	Major	Rare	3	M11		Site First Aiders Site Medic Emergency Channel 39		
Weather Conditions	Adverse / Inclement Weather - Strong Winds / Lightning Flooding	Loose or flying materials. Lightning Strikes. Floods. Personal Injury Property Damage Environmental Impact	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0011 Inclement Weather Management	Monitoring BOM Conducting pre-forecasted storm weather reports Tie - down for equipment and materials. Storm water run-off in to designated detention basins. Communicate weather conditions to supervisors as per weather front details. 30 / 30 rule lighting detected on track within 10 kms of project area. Secure all plant and machinery on firm stable higher ground. Work front inspection prior to re-commencement where event had the ability to significantly change the work environment, at direction of site superintendent	Major	Unlikely	3	M12		Site First Aiders Site Medic Emergency Channel 39		
Operation of mobile plant / equipment	Uncontrolled movement of plant being unloaded	Rollover / Struck by plant falling from ramps	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SM-GUI-0001 SCEE Loading and Unloading Guidance Note SCEE-BS-HS-SWM-0022 Loading and Unloading of Material Plant and Equipment on Site	Dedicated unloading area SWMS JHA Take 5 ROPS and FOPS where required Heavy duty rated loading ramps Exclusion zone large enough for the risk during loading / unloading. Use cones / barricading to prevent access Use spotter during loading / unloading Ensure tracks aligned with ramp Operator seatbelt/harness for plant that is not remote controlled Extra Spotter(s) where required in restricted areas	Severe	Unlikely	4	M17		Site First Aiders Site Medic Emergency Channel 39		
Plant Operations / Adjacent to Bulk Earthworks	Work near earthwork mobile plant.	Interaction between construction personnel and earthworks/civil equipment	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Windrows / Concrete Barriers to provide adequate separation and containment from earthwork mobile plant movements. No access into earthworks areas without Positive Communications between work groups. Restrict plant movements where access is required for entry into earthwork operations .	Severe	Rare	4	M13		Site First Aiders Site Medic Emergency Channel 39		

Crane Operations	Failed lift/ Falling load Incorrect lifting equipment techniques/ swinging loads Incompetent/ unlicensed operators and dogmen/ riggers	Injury; Damage to plant and infrastructure	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-0026 Crane Activity (High Risk) SCEE-BS-HS-SWM-0019 General Mobile Crane Work WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SYN-PRC-HSA-006 Synergy Lifting Operations Procedure	No load be lifted over any personnel; Tag lines to be used on all lifts Exclusion zones erected - Hard barricading with warning signs to be in place, only those involved in the works to enter; Laydown areas to be delineated with call up UHF Channel signs displayed at entry points Ensure level, stable ground for plant set up - crane pad design in place and adhered to; Experienced, competent, HRWL personnel to perform lifts; 'CN' class - Only nationally trained and accredited operators shall be authorised to use a Telehandler/IT Loader/Excavator with a job attachment that is greater than 3 tonnes; Dogger/ Rigger to inspect lifting gear prior to use and ensure load is within lifting capacity of the equipment, check load chart, ensure load is secured correctly All lifting equipment to be quarterly tagged and registered on Lifting Gear Register; Lift study/plan above 75% of crane rated capacity; Crane inspection and certificates; Plant pre-mobilisation check; Plant risk assessment; Daily plant prestart checks; Complete PreLift Checklist for each crane setup; Monitor wind conditions; SWMS/ JSA	Severe	Unlikely	H17	Site First Aiders Site Medic Emergency Channel 39
	Crane failure	Injury; Damage to plant and infrastructure	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-0026 Crane Activity (High Risk) SCEE-BS-HS-SWM-0019 General Mobile Crane Work WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SYN-PRC-HSA-006 Synergy Lifting Operations Procedure	Exclusion zones erected - Hard barricading with warning signs, only those involved in the task are to remain in the area; All cranes to be inspected for compliance before being sent to site; Annual Inspections / Crane Safe Servicing Inspections; Crane must be registered with WorkSafe; Complete PreLift Checklist for each crane setup; Plant pre-mobilisation check; Plant risk assessment; Daily plant prestart checks; SWMS/ JSA	Catastrophic	Rare	H19	Site First Aiders Site Medic Emergency Channel 39
	Crane rollover Crane Collision with infrastructure and other plant/ equipment	Injury; Damage to crane, equipment or infrastructure	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-0026 Crane Activity (High Risk) SCEE-BS-HS-SWM-0019 General Mobile Crane Work WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SYN-PRC-HSA-006 Synergy Lifting Operations Procedure	Compliance with load rating on crane; Use crane fitted with ROPS required by legislation or if required by task risk assessment; Crane must be fitted with an external load capacity indication light system; Set crane up on level surface, preferably utilising the sealed road/access way; Experienced personnel, competent, licensed; Inspect ground conditions for buried surfaces, recent excavations/backfill. Services Drawings if available; Ground conditions to be assessed, obtain geotechnical report where required; Confirm crane locations prior to lifts and ensure the operating radius does not cause any risk; Crane must be operated and maintained in accordance with the manufacturer's instructions; Annual Inspections / Crane Safe Servicing Inspections and Inspection report; Person(s) in control of lift dogman/rigger; Use spotter to guide and assist; Dogger/ Rigger to ensure load is within lifting capacity of the equipment; Crane pads to be used as per application; Complete PreLift Checklist prior to use; SWMS/ JSA	Catastrophic	Rare	H19	Site First Aiders Site Medic Emergency Channel 39
	Operation of crane around or above personnel Load suspended over personnel Load coming in contact with personnel	Injury;	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-0026 Crane Activity (High Risk) SCEE-BS-HS-SWM-0019 General Mobile Crane Work WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SYN-PRC-HSA-006 Synergy Lifting Operations Procedure	No load be lifted over any personnel; Exclusion zones erected - only those involved in the works to enter; Experienced personnel, competent, licensed; Warning signs and barricading; Hand signal and line of sight/visual contact communication; UHF radios, Use spotter to guide and assist; Check wind conditions are safe; Certified and inspected lifting gear; Tag lines to be used; SWMS/ JSA; Take 5	Severe	Unlikely	H17	Site First Aiders Site Medic Emergency Channel 39
Working in EWP (Boom Lift)	Fall from heights	Injury;	C2761-WHS-MP-001 WHS Management Plan WHS-SWP-004 Working at Heights; WOP-REG-005 Working at Heights Equipment Register C2761-WHS-MP-002 Emergency Management Plan WHS-FM-022 HRW Rescue Plan (as required)	Keep limbs inside basket at all times; Wear fall arrest system and 100% hook up at all times (boom type EWP) Ensure EWP is on firm level ground; Underground services and infrastructure to be assessed to ensure that they do not compromise the stability of the EWP. Dropped Object Prevention - All equipment and tools shall be secured to prevent them falling from height, tool lanyards shall be used. Personnel to possess HRWL-EWP when using boom type EWP where height of EWP exceeds 11 metres; Verification of competency for operator; EWP pre-mobilisation check prior to mobilisation; Ensure EWP is used in accordance with manufacturer's specifications and log books are available; Conduct daily prestart on EWP; Fall arrest equipment to be inspected before use and inspected/tagged quarterly; Working at Heights Equipment Register; Working at heights permit; Use spotter who holds HRWL-EWP - one spotter per machine; SWMS/ JSA; No shark hooks for use on EWP, triple action karabiners / anchor point attachments shall be used Approved working at heights rescue plan in place ; Wear and carry appropriate PPE	Major	Unlikely	M12	Site First Aiders Site Medic Emergency Channel 39
	Falling tools/ dropped objects	Injury;	C2761-WHS-MP-001 WHS Management Plan WHS-SWP-004 Working at Heights; WOP-REG-005 Working at Heights Equipment Register C2761-WHS-MP-002 Emergency Management Plan WHS-FM-022 HRW Rescue Plan (as required)	Exclusion zone around machine and actively managed drop zone under basket Use of tool lanyards/bags Ensure EWP is on firm level ground; Personnel to possess HRWL-EWP when using boom type EWP where height of EWP exceeds 11 metres; Conduct daily prestart on EWP; Working at heights permit; Use spotter who holds HRWL-EWP - one spotter per machine; SWMS/ JSA; Wear and carry appropriate PPE	Moderate	Unlikely	M7	
	Topping over	Injury;	C2761-WHS-MP-001 WHS Management Plan WHS-SWP-004 Working at Heights; WOP-REG-005 Working at Heights Equipment Register C2761-WHS-MP-002 Emergency Management Plan WHS-FM-022 HRW Rescue Plan (as required)	Wear fall arrest system and 100% hook up at all times (boom type EWP) Ensure EWP is on firm level ground; Periodical EWP maintenance checks to verify operation of safety cutouts Annual inspection of machine Personnel to possess HRWL-EWP when using boom type EWP where height of EWP exceeds 11 metres; Verification of competency for operator; EWP pre-mobilisation check prior to mobilisation; Ensure EWP is used in accordance with manufacturer's specifications and log books are available; Conduct daily prestart on EWP; Fall arrest equipment to be inspected before use and inspected/tagged quarterly; Working at Heights Equipment Register; Working at heights permit; Use spotter who holds HRWL-EWP - one spotter per machine; SWMS/ JSA; Site Emergency Response Team to be notified of workers working at height Underground Services and infrastructure assessed to ensure that they do not compromise the stability of the EWP Approved working at heights rescue plan in place ; Wear and carry appropriate PPE	Major	Unlikely	M12	
TOOLS & EQUIPMENT USE								
Use of electrical powered plant & equipment	Electricity	Electrical shock	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SYN-STD-HAS-0006 Prohibited and Restricted Equipment Standard	Double adaptors/ three-pin (piggy back) and other domestic multi-plug power boards are not permitted in office environment may utilise multi-plug boards that are individually switched) Electrical leads tested and tagged Electrical leads inspected before use All power boards fitted with residual current devices (RCDs). Non-portable 30 mA RCD shall be fitted in all switchboards All portable outlet devices must include over current protection & 30mA RCD All portable RCDs are to be tested before use Extension leads shall not be joined (Daisy chained) together SWMS JHA Take 5	Moderate	Unlikely	2	M7 Site First Aiders Site Medic Emergency Channel 39
Use of High Pressure Water Equipment for exposing services	Stored energy	Injury to eye or skin cuts & abrasions	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0021 Trenching and Excavating (High Risk) WOP-SWP-081 Excavation	Excavation Permit. Only experienced persons in handling of the equipment to carry out high pressure water jetting operations Water jet not to be pointed at workers PPE - safety glasses, face shield, hearing protection, safety boots and gloves Maintain minimum distance of 400mm between end of jet nozzle and subsoil or underground utilities Do not aim at underground utilities Max. 1500 PSI in or around underground utilities SWMS JHA Take 5	Moderate	Unlikely	2	M7 Site First Aiders Site Medic Emergency Channel 39

Use of vibrating tools and equipment	Vibration	Injuries caused by vibration & manual handling	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WEM-SWP-104 Noise, Dust and Vibration Management	Rotate tasks; Vibration resistant gloves; Scheduled maintenance & inspection of tooling; Manual handling technique awareness; JHA Take 5	Moderate	Unlikely	2	M7	Site First Aiders Site Medic Emergency Channel 39		
Working with ladders	Slip/ fall from ladder	injury	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-0020 Portable Ladders WHS-SWP-004 Working at Heights; SYN-PRC-HAS-0010 Safe Work at Height Procedure	Fixed industrial single ladders are to be used for access only, no work to be carried out from these types of ladders; Only platform ladders with back bar to be used for any type of work; Inspect ladder before use and tagged quarterly; JHA Take 5;	Major	Unlikely		M12	Site First Aiders Site Medic Emergency Channel 39		
Working with mobile scaffold	Slip / fall from scaffold Scaffold collapse	Injury	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-0004 Scaffolding Safety	Ensure scaffold is built in accordance with manufactureres instructions; Ensure footings are firm (compacted), and stable prior to building mobile scaffold Underground Services and infrastructure is assessed to ensure that they do not compromise the stability of the Scaffold. Scaffold not to be constructed where there is a potential for ground slippage or erosion. All scaffolding must be erected by a person holding a High Risk Work Licence in Scaffolding; Scaffolding shall be inspected by competent person/Site Supervisor prior to use; SWMS/ JSA							
Hot works Cutting Welding Grinding	Dust & Noise	Injury	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0015 Hot Work (High Risk) WOP-SWP-042 Hot Works SYN-PRC-FE-HSE-006 Hot Works Procedure	Shielding of grinding operations from other works; Screening of welding operations; Hot work permit; Only qualified personnel to use hot work apparatus; JHA, Take 5; Wear double eye protection when cutting and grinding; Wear ear protection/muffs plugs and protective gloves	Moderate	Unlikely		M7	Site First Aiders Site Medic Emergency Channel 39		
	Welding flash causing burns to body parts	Injury	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0015 Hot Work (High Risk) WOP-SWP-042 Hot Works SYN-PRC-FE-HSE-006 Hot Works Procedure	Only qualified and trained personnel to use hot work apparatus; Check equipment before use; Exclusion zone, barricading, welding screens; JHA, Take 5; Welder to wear welding helmet, and welding gloves, safety glasses with side shields for spotter/fire watch;	Moderate	Unlikely		M7	Site First Aiders Site Medic Emergency Channel 39		
	Electric Shock	Injury	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0015 Hot Work (High Risk) WOP-SWP-042 Hot Works SYN-PRC-FE-HSE-006 Hot Works Procedure	Welders to have VRD Fitted; Ensure gloves and PPE are dry; Ensure return lead is positioned as close to the work as possible; Handpiece to be held in hand when removing stubs and changing rods for MMAW ; JHA, Take 5;	Moderate	Unlikely		M7	Site First Aiders Site Medic Emergency Channel 39		
	Fires/ explosion from this type of work being performed	Destruction of property; Destruction of flora and fauna; Injury or death to personnel or public	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0015 Hot Work (High Risk) WOP-SWP-042 Hot Works SYN-PRC-FE-HSE-006 Hot Works Procedure	Hot Works Permit; Maintain 10m exclusion zones from Hydrocarbon or flammable materials storage areas; JHA Take 5; Monitoring of DFES Fire Alerts; Daily fire danger rating to be communicated by Supervisor at pre-starts; Observe total fire bans unless exemption is granted and supported by risk assessment; Fire protection equipment on mobile plant and vehicles (fire extinguishers and/or knapsacks); Inspection & servicing of fire extinguishers; Equipment inspected before use;	Major	Unlikely	3	M12	Site First Aiders Site Medic Emergency Channel 39	Project Manager	Ongoing
MOBILE PLANT OPERATION											
Operation of mobile plant / equipment	Plant / equipment not maintained	Equipment failure Practical Completion (PC) date not met due to plant unavailability	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Service and maintain plant and equipment according to manufacturer's service and maintenance schedule; Maintenance logs maintained; Only qualified and competent persons to carry out the repairs, services and inspections; SWMS JHA Take 5	Moderate	Unlikely	2	M7	Site First Aiders Site Medic Emergency Channel 39		
Operation of mobile plant / equipment	Hydraulic / oil spill	Release and impact to land / water	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Equipment pre-start; Spill kits; Personnel trained to use spill kits; Project Induction; SWMS JHA Take 5;	Moderate	Unlikely	2	M7	Site First Aiders Site Medic Emergency Channel 39		
Operation of mobile plant / equipment	Work in proximity to mobile plant	Personnel and / or other plant struck by mobile plant	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Traffic Management Plan; Controlled exclusion zones established on site; (50/20/10) approach process for personnel and vehicles entering into the work area of mobile plant; Positive communication to be established for any interaction between personnel and / or mobile equipment; Designated Pedestrian Walkways, segregated with fencing/crowd control barricade in high traffic areas; Licensed, qualified, competent operators; SWMS JHA Take 5;	Severe	Unlikely	4	H17	Site First Aiders Site Medic Emergency Channel 39		
EARTHWORKS											
Installation of underground services.	Underground services	Contact with underground utility (e.g. HP water, electricity) Damage to utility / equipment Injury or fatality Schedule delays from redesign	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-Trenching and Excavation (High Risk) WOP-SWP-081 Excavation 201074-SE-0004 Excavation Permit SYN-PRC-FE-HSE-014 Excavation and Penetration Works Procedure	Excavation Permit; Licensed plant operators; Project Manager to determine whether utility owner permits are required (e.g. WP Vicinity Access permit), at pre-planning stage of every job; Pre-job JHA & SWMS (inc. MADs, potholing where appropriate); Pothole utilities within 2m of any excavation and at every entry and exit point for drilling; Use non-destructive digging tools only (e.g. shovel, prodder, vacuum excavation); Maximum Water Jetting to 1500psi (100 bar) to avoid damaging services; Work Scheduling and Planning before job is undertaken; Protect the utility once exposed; Water main to be supported at every connection or joint; Commence only when plan to execute work is clear & all services have been located; Maintain Minimum Approach Distances (MADs) (300mm min. from underground utilities) (increase distance for HP / HV services per utility owner requirements); No trenches or excavated holes left open exposing services; SWMS JHA Take 5;	Moderate	Unlikely	2	M7	Site First Aiders Site Medic Emergency Channel 39		
Working near overhead services	Overhead services	Contact with live power sources resulting in electrocution, electric shock, arc flash or burns Damage to service / network outages	201074-SE-PLN-001 Collicie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-Trenching and Excavation (High Risk) WOP-SWP-081 Excavation 201074-SE-0004 Excavation Permit SYN-PRC-FE-HSE-014 Excavation and Penetration Works Procedure	Excavation Permit; Eliminate unloading zones under neath overhead services; Placement of overhead protection warning / barriers to MADs overhead services; SWMS JHA Take 5; HV Vicinity Permit (Western Power); Pre-job JHA incorporating any overhead hazards; Maintain MADs; Spotter mandatory; Licenced, qualified and competent operators;	Catastrophic	Rare	5	H19	Site First Aiders Site Medic Emergency Channel 39		

Vegetation Management	Land / tree disturbance	Tree damage, death or destabilisation	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan C2761-WEM-MP-001 Environmental Management Plan SCEE-BS-HS-WIN-Trenching and Excavation (High Risk) WOP-SWP-081 Excavation 201074-SE-0004 Excavation Permit SYN-PRC-FE-HSE-014 Excavation and Penetration Works Procedure	Exclusion Zone around trees; SWMS JHA Take 5; Avoid disturbance wherever possible;	Moderate	Unlikely	2	M7		
Excavations and Trenches	Open excavation	Injury to personnel and equipment damage by falling into excavations Collapse of trench, falling plant or personnel Damage to nearby fences / structures Collapse of road	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-Trenching and Excavation (High Risk) WOP-SWP-081 Excavation 201074-SE-0004 Excavation Permit SYN-PRC-FE-HSE-014 Excavation and Penetration Works Procedure	Excavation Permit; Barricading and signage; Excavations to be closed as soon as possible; Check stability of buildings, roads or structures that may be affected by the excavation before starting work; Do not place loads near edge of the excavations where there is a potential of load falling into excavation; Barricade to be set back 500mm from edge of trench; Stock pile soil minimum 1m away from side of trench; Redesign alignment to move away from fence line; If personnel are required to enter excavation: - Excavation planned to be < 1.5m where possible; - No tools/equipment left unattended within 1m of excavation edge where is risk of falling onto people below; - Examination of excavation integrity by a competent person before entry; - Any excavation that is over 1.5m must have either shoring, battering of the side of the trenches or/and trench walls stepped down; SWMS JHA Take 5	Major	Unlikely	3	M12	Site First Aiders Site Medic Emergency Channel 39	
Flora Fauna Interaction	Flora & Fauna	Trapped fauna resulting in injury or death to fauna	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan C2761-WEM-MP-001 Environmental Management Plan SCEE-BS-HS-WIN-Trenching and Excavation (High Risk) WOP-SWP-081 Excavation 201074-SE-0004 Excavation Permit SYN-PRC-FE-HSE-014 Excavation and Penetration Works Procedure	Contact Principal local authorities / qualified competent fauna handler to remove injured fauna; Inspect trenches/ excavations for trapped fauna prior to starting work; Where excavations open out of hours fauna ramps every 15 meters; Backfill as soon as practicable; Project to report any injury caused to fauna to Synergy SHEQ team;	Moderate	Unlikely	2	M7	Site First Aiders Site Medic Emergency Channel 39	
HEALTH & HYGIENE										
Outdoors work	UV radiation exposure Exposure to extreme temperature (heat)	Heat-related illness Skin cancers	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Air-conditioning fitted to vehicles, can be used as refuge; Adequate provision of water; Portable shade made available; PPE - sunscreen, UV rated long clothing, sunglasses, hard hat brim; Hydration monitoring during warm months; JHA Take 5;	Moderate	Unlikely	2	M7	Site First Aiders Site Medic Emergency Channel 39	
Hazardous manual tasks	Sprains and strains	Musculoskeletal injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0006 Manual Handling WHS-SWP-801 Manual Handling	Use mechanical aids and additional manpower for heavy loads; Keep hands/feet/fingers clear of line of fire at all times; Clear and accessible work area allowing for safe movement of people, equipment and materials; Manual handling induction site induction; Employ correct manual handling techniques at all times; Warm up/stretching activities; Raise awareness at site induction and toolbox meeting/ daily prestart; JHA, Take 5; Regular checks on PPE; Wear appropriate PPE e.g. Safety boots, gloves, Safety glasses etc.	Major	Unlikely	3	M12	Site First Aiders Site Medic Emergency Channel 39	
	Cuts, Abrasions & Lacerations	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0006 Manual Handling WHS-SWP-801 Manual Handling	Keep hands/feet/fingers clear of line of fire at all times; Clear and accessible work area allowing for safe movement of people, equipment and materials; Manual handling component of site induction; correct manual handling techniques; Raise awareness at toolbox meeting/ daily prestart; JHA, Take 5; Regular checks on PPE; Wear appropriate PPE e.g. Safety boots, gloves, Safety glasses etc.	Moderate	Unlikely		M7	Site First Aiders Site Medic Emergency Channel 39	
	Crush-pinch points	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-0006 Manual Handling WHS-SWP-801 Manual Handling	Keep hands/feet/fingers clear of line of fire at all times; Clear and accessible work area allowing for safe movement of people, equipment and materials; Manual handling component of site induction; Correct manual handling techniques; Raise awareness at toolbox meeting/ daily prestart; JHA, Take 5; Regular checks on PPE; Wear appropriate PPE e.g. Safety boots, gloves, Safety glasses etc.	Moderate	Unlikely		M7	Site First Aiders Site Medic Emergency Channel 39	
Dangerous Goods & Hazardous Chemicals - Storage, Handling and Transport	Hazardous materials contacting workers or released to environment	Adverse impact on worker health Adverse environmental impact, contamination of soil, groundwater, or transfer of contaminated material to river following rain event	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan C2761-WEM-MP-001 Environmental Management Plan SCEE-BS-HS-WIN-0021 Hazardous Materials Handling and Storage (High Risk) 201074-SE-PLN-002 Emergency Response Plan (incorporating DG Storage Licence Requirements)	Correct storage facilities; Haz chem cabinets contain bunds with excess capacity to contain all chemicals; All decanted chemicals are to be appropriately labelled and stored in containers that are fit for use; Spill kit; Report all spill incidents immediately; WOP-FM-001 Daily housekeeping inspection; WEM-FM-002 Weekly Environmental inspection; WOP-FM-002 Monthly site inspection; Housekeeping; Align with SDS requirements for storage, use, PPE and cleanup; Hazardous Chemicals Register (Chem Alert); Hazardous Chemicals Risk Assessments (no 'red-rated' chemicals in use); Quantities of hazardous chemicals are classified as 'minor storage'; Hand washing facilities available; First aid kit available; JHA, Take 5	Moderate	Unlikely		M7	Site First Aiders Site Medic Emergency Channel 39	
Site Work	Noise (environmental)	Noise, light and vibration emissions during construction works. Nuisance to Stakeholders	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-PRO-009 Noise Control and Hearing Protection WEM-SWP-104 Noise, Dust and Vibration Management	Approved normal construction hours within Synergy Operation Hours; Hearing protection in proximity to operating plant; Task rotation; JHA/Take 5;	Moderate	Unlikely	2	M7		
Site Work	Extreme wind or environmental work conditions	Injury from windborne dust, loose objects,	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WEM-SWP-104 Noise, Dust and Vibration Management	Supervisors and SHEQ to review and monitor BoM for expected extreme weather and wind conditions; Loose materials to be secured to prevent flying particles or objects; When storm force wind levels present risk of injury to workers construction manager shall identify alternative work areas shall be identified, i.e. in workshops, offices, buildings, switchyards; AS/NZS 1336 Eye and face protection to be worn. This may include over goggles if works are to proceed in work environments where flying particles cannot be controlled by isolation or engineering controls; JHA, Take 5;	Moderate	Unlikely	2	M7	Site First Aiders Site Medic Emergency Channel 39	
Provision of Medic services	exposure to pathogens	infection of personnel through contact with infected bodily fluids or airborne pathogen	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan 201074-SM-PRO-002 Medical Services and First Aid	Qualified and competent personnel; Processes used by medic to follow established best practice in disease prevention; Medical room equipped with disinfectant; Regular cleaning of medical room and equipment; Use of disposable, single use supplies; PPE - disposable surgical masks, examination gloves, disposable smock;	Moderate	Unlikely		M7	Site First Aiders Site Medic Emergency Channel 39	
Site Work	Fatigue	Event and/or injury resulting from worker fatigue	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan Mental Health Policy WHS-POL-003 WHR-POL-001 Fitness for Work Policy; WHR-PR-001 Fitness For Work Procedure SCEE-BS-HS-PRO-0025 Fatigue Management SCEE-OP-OP-TEM-0021 Worker Fatigue Checklist	Mandatory rest period of 10 hours before next shift; Rostered break amongst site personnel where applicable; Task rotation where required; Site Supervisor to monitor and ensure the workers stay hydrated; Site Supervisor to observe for symptoms of fatigue; Raise awareness on fatigue at induction and toolbox meetings & daily prestart meeting; Fatigue management covered in JHA where relevant; Fatigue Checklist;	Major	Unlikely		M12	Site First Aiders Site Medic Emergency Channel 39	
Site Work	Mental Health	Health issues	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan Mental Health Policy WHS-POL-003	Mental Health First Aid available; Employee Assistance Program (EAP) available; Site induction cover mental health; Site Supervisor to observe symptoms of fatigue/Stress /burnout; Management ensures structure of shifts and rosters are compliant with site management plan, correct shift rotations etc; Peer on peer monitoring;	Major	Unlikely		M12	Site First Aiders Site Medic Emergency Channel 39	

Site Work	Psychosocial Risk	Illness; Injury; Distress	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan Mental Health Policy WHS-POL-003	Mental Health First Aider available; Employee Assistance Program (EAP) available; Site induction to cover mental health; Maintain Regular Communication; Well-being checks; Provide opportunity for skills development; Ensure workers know where they can get help from; Supportive leadership skills (open door); Promote positivity; Foster a culture of transparency, openness, respect and equity; Provide workers with ways to report issues and raise concerns; Provide positive feedback and acknowledgement; Ensure communication systems and emergency procedures are developed and in place; Reward and Recognition program in place; Zero tolerance of aggression towards workers;	Major	Unlikely		M12		Site First Aiders Site Medic Emergency Channel 39
GENERAL										
Site Work	Simultaneous Operations (e.g. work around other trades)	Impact to other works	SIMOPS	Daily communication / consultation with stakeholders; Communication between work groups; SCEE Project Manager to resolve priority access if required; JHA, Take 5;	Moderate	Unlikely	2	M7		Site First Aiders Site Medic Emergency Channel 39
Site Work	COVID-19	Contraction of COVID-19 from other workers	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Comply with Mandated Government Procedures; Provision of hand wash facilities / sanitiser; Only trained personnel to conduct drug and alcohol testing;	Moderate	Unlikely	2	M7		Site First Aiders Site Medic Emergency Channel 39
Site Work	Smoking	Personnel contracting disease from exposure to passive smoke	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-POL-005 Non Smoking Policy	Smoking in designated smoking areas only; No smoking or vaping on wider construction site;	Minor	Unlikely	1	L2		Site First Aiders Site Medic Emergency Channel 39
WASTE MANAGEMENT										
Waste Disposal	Site waste entering waste stream in uncontrolled manner	Wastage of recyclable goods, contamination of waste streams, electricity consumption	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SE-PLN-003 Waste Management Plan	Project Induction; Segregated Waste Bins; All waste removed from site; Scrap metal, PVC, general and recycling skip bin(s) to be made available;	Moderate	Unlikely	2	M7		Site First Aiders Site Medic Emergency Channel 39
	Incorrect disposal of site generated controlled waste	Controlled waste entering local environment, breach of legislation	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SE-PLN-003 Waste Management Plan	Segregation and labelling of controlled waste; Disposal of waste using licenced controlled waste contractor;	Moderate	Unlikely		M7		Site First Aiders Site Medic Emergency Channel 39
EMERGENCY										
Emergency Incident	Fire, explosion, medical emergency, utility strike, severe weather, bomb threat, intruder	Personal injury or fatality	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan 201074-SE-PLN-002 CBESS Emergency Response Plan	Emergency Management Plan; Trained First Aiders; Site medic and medical room; Scheduled servicing and inspection of emergency and firefighting equipment; First aid kits available; Natural ventilation for fuel and Hazchem storage areas; Emergency WA RSS feed monitored by SHEQ department; Drills / testing frequency as per Emergency Drill Schedule. Formal effectiveness review following each evacuation (drill or actual); Water cart with cannon to be maintained on site at all times.	Moderate	Unlikely	2	M7		Site First Aiders Site Medic Emergency Channel 39

Register Type	Project Risk Register
Project(s)	CBSS BOP
Approved by	

Task / Activity	Hazard	Risk (un-wanted event)	Systems Policy, Plans & Procedures	Controls	Consequence	Likelihood	Calc.	Residual Risk / Impact	Accept or Reject	Recommended Additional Controls	By Whom Person to Action	Target Date
Installation of Underground Services												
Use of laser level	Damage to eyesight	Eye injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Elimination Never look directly into the laser beam or point the beam into the eyes of others. Engineering The maximum radiant power output of laser is less than 5mW; Set the laser at a height that prevents the beam from shining directly into others' eyes; Administrative Train personnel to use the equipment; Do not remove any warning signs from the laser Inform all nearby crews of operations about to take place.	Moderate	Unlikely		M7		Site First Aiders Site Medic Emergency Channel 39		
Noise, dust and vibration from plant and equipment operations	Excessive noise, dust and vibration from construction works - earthwork, excavation, compaction, plant movement, stockpiling etc.	Air pollution affecting vegetation, wildlife and health of people (exposure injuries); Complaints on excessive noise, vibration and pollution; Legal non-compliance	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WEM-MP-001 Environmental Management Plan WEM-SWP-104 Noise, Dust and Vibration Management	Isolation Exposed surface to be minimised Engineering Use watercart if dust is excessive; Construction equipment selected, operated and maintained to minimise noise impacts and where necessary fitted with noise suppressing device; Administrative Implement and adhere to Environmental Management Plan; Work within designated working hours; Provide respite periods for high noise generating activities; Strenuous activities shall be rotated between workgroup team members where required and feasible; Regular maintenance of plant; Plant pre-mobilisation checks; Plant risk assessments; Daily plant prestart checks; Awareness training will be provided during the site induction; Conduct weekly environmental inspections Community liaison with stakeholders through notifications where required; JSA PPE Wear and/or carry correct and required PPE as signposted (dusk masks, ear plugs, ear muffs); Class 5 ear plugs and hearing protection shall be used as a minimum	Moderate	Unlikely		M7		Site First Aiders Site Medic Emergency Channel 39		
Use of Franna/ Tele/ Crane/Excavator for Loading/Unloading	Failed lift, Falling load/ equipment rollover, Incorrect lifting equipment/techniques, Swinging loads, collision with other plant/equipment Incompetent/unlicensed operators, dogmen or riggers.	Injury, Damage to plant and infrastructures.	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SCEE-B5-HS-WIN-0026 Crane Operations (High Risk) SCEE-B5-HS-WIN-0027 Forklift Telehandler (High Risk) SCEE-B5-HS-PRO-0027 5 Star Commitment	No load to be lifted over any personnel at any time. Engineering Follow load rating on plant, Use equipment fitted with ROPS required by legislation or if required by task risk assessment, Crane must be fitted with an external load capacity indication light system, Set laydown area on level surface. Ground conditions and underground services/ infrastructure to be surveyed/ assessed to ensure that they do not compromise the cranes stability Underground services and infrastructure surveyed/assessed to ensure that they are not compromised by the crane set up. Isolation Exclusion zones erected - delineation/barricading with warning signs to be in place, only personnel involved in the lift/works be allowed to enter, Laydown areas to be delineated with call up UHF Channel signs displayed at entry points. Administrative Only licensed, ticketed, VOC'd and experienced personnel, 'CN' class - Only nationally trained and accredited operators shall be authorised to use a Telehandler/IT Loader with a job attachment that is greater than 3 tonnes, Dogman or rigger to inspect lifting gear prior to use and ensure load is within lifting capacity of the lifting equipment, check load chart and ensure load is correctly slung and secured, All lifting equipment to be quarterly tagged and registered on Lifting Gear Register, Lift study/plan below 75% of crane rated capacity, Crane inspection and certificates, Plant pre-mobilisation check,	Major	Unlikely		M12		Site First Aiders Site Medic Emergency Channel 39		
Use of Telehandler to move and place culverts	Failed lift, Falling load/ equipment rollover, Incorrect lifting equipment/techniques, Swinging loads, collision with other plant/equipment Incompetent/unlicensed operators, dogmen or riggers.	Injury, Damage to plant and infrastructures.	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SCEE-B5-HS-WIN-0026 Crane Operations (High Risk) SCEE-B5-HS-WIN-0027 Forklift Telehandler (High Risk) SCEE-B5-HS-PRO-0027 5 Star Commitment	Engineering Ensure level, stable ground for plant set up - stable surface to be verified by compaction test; All lifting equipment has been inspected on arrival to confirm it has been tested and certified by the manufacturer or a testing authority accredited by NATA; Ensure use of positive closure fittings (e.g. shackles, hooks, etc) to prevent detachment from load while lifting; Administrative Trained, competent HRWL personnel to perform lifting activities (Craneage & Dogging/Rigging); 'CN' class (for non-slewing telehandler) or C2 (for slewing) - Only nationally trained and accredited operators shall be authorised to use a Telehandler/IT Loader/Excavator, fitted with a job attachment that combined have a capacity of greater than 3 tonnes; Dogger/ Rigger to inspect lifting gear prior to use and ensure load is within lifting capacity of the equipment, check load chart, ensure load is secured correctly; All lifting equipment to be quarterly tagged and registered on Lifting Gear Register; Lift study/plan developed where lifting above 75% of crane rated capacity or where lifts classed as medium or critical; Crane inspection and certificates completed and available on site; Plant risk assessment available in telehandler; Daily plant prestart checks; Complete Pre-lift Checklist daily; Monitor wind conditions at all times, where necessary lifting activities to cease; SWMS/ JSA	Major	Unlikely		Unlikely		Site First Aiders Site Medic Emergency Channel 39		
	Dropped Loads during lifting and/or transport	Injury, Damage to plant and infrastructures.	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SCEE-B5-HS-WIN-0026 Crane Operations (High Risk) SCEE-B5-HS-WIN-0027 Forklift Telehandler (High Risk) SCEE-B5-HS-PRO-0027 5 Star Commitment	Elimination No load to be lifted over personnel; Isolation Exclusion zones erected - Hard barricading with warning signs to be in place, only those involved in the works to enter; Dogmen/riggers to guide loads using tag lines; Dual taglines to be used, where necessary, when landing culverts into trench to control the load - dogman in trench and dogman above trench; Personnel shall ONLY touch a suspended load to move into final position, ensuring the load is as close to the ground as possible Engineering Rubber magnetic strips to be placed on fork tynes prior to transporting culverts from laydown to work area	Major	Unlikely		Unlikely				
	Telehandler Failure	Injury, Damage to plant and infrastructures.	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SCEE-B5-HS-WIN-0026 Crane Operations (High Risk) SCEE-B5-HS-WIN-0027 Forklift Telehandler (High Risk) SCEE-B5-HS-PRO-0027 5 Star Commitment	Elimination Equipment which is not deemed fit for purpose during onboarding inspections shall not be used until approved for site; Equipment which is not deemed fit for purpose during daily prestart inspections shall not be used until defects are rectified Administrative All equipment/plant to be inspected for compliance before being sent to site; Annual Inspections / Crane Safe Servicing Inspections where applicable; Telehandler must be registered with Worksafe (where being used as a crane); Operator to complete Pre-lift Checklist daily; Plant risk assessment; Daily plant prestart inspection	Major	Unlikely		Unlikely		Site First Aiders Site Medic Emergency Channel 39		
	Working/ transport of culverts in the vicinity of other work crews/ unauthorised personnel in area	Injury,	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SCEE-B5-HS-WIN-0026 Crane Operations (High Risk) SCEE-B5-HS-WIN-0027 Forklift Telehandler (High Risk) SCEE-B5-HS-PRO-0027 5 Star Commitment	Isolation Exclusion zones erected - Hard barricading (around BESS) with warning signs to be in place, only those involved in culvert crew to enter culvert installation work areas; Delineation via hard barricading between culvert work crew and earthworks crew when working within the same BESS work area; Movement of culverts from laydown to BESS work areas shall be staggered to ensure minimal interaction with culvert delivery crew; Movement of culverts from laydown area to work area shall remain in barricaded/ cone delineated areas; Administrative Contractor Culvert Work area call up UHF Channel signs displayed at entry points; Gate Call up for culvert movements to be numbered and signposted; Telehandler transporting culverts shall have right of way at all times - to be reiterated at prestart meetings; Traffic Movement Plan in place and adhered to	Moderate	Unlikely		Unlikely		Site First Aiders Site Medic Emergency Channel 39		
	Poor Manual Handling/ pinch points	Injury,	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-022 Lifting equipment WOP-SWP-012 Mobile Crane SCEE-B5-HS-WIN-0026 Crane Operations (High Risk) SCEE-B5-HS-WIN-0027 Forklift Telehandler (High Risk) SCEE-B5-HS-PRO-0027 5 Star Commitment	Elimination Keep clear of line of fire at all times; Substitution Use mechanical aids and/or additional manpower for heavy loads; Engineering Packers to be taped to previous culvert prior to dropping in following culvert; Administrative Employ correct manual handling techniques at all times; Clear and accessible work area allowing for safe movement of people, equipment and materials; JSA; Take 5; Regular checks on PPE PPE Wear appropriate PPE e.g. Safety boots, gloves, Safety glasses etc.	Moderate	Unlikely		Unlikely		Site First Aiders Site Medic Emergency Channel 39		
Use of Mobile Plant	Faulty plant	Injury; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan Safe work procedures on various plant Plant & Equipment Register	Engineering ROPS, lights, beacons, radios as per site requirements; Administrative Only operators with correct tickets and in date VOCs to complete daily plant prestart; Plant pre-mobilisation check prior to use on site; Plant risk assessment; Regular maintenance of plant; Establish Plant & Equipment Register; Measuring and testing equipment are calibrated; Safe work procedures on various plant Isolation Exclusion zone using Flagging/ hard barricading/ windows Engineering ROPS, lights, beacons, radios as per site requirements Administrative Competent, licensed/ticketed, operators; Daily prestart check of plant; Hand signal and line of sight/visual contact communication; Positive communication at all times; Communication of all VMP changes in site notices; UHF radios to be used in work areas; Use spotter to guide and assist; SWMS/JSA; Drive to conditions at all times; Adhere to Traffic Management Plan/Vehicle Movement Plan PPE Ground personnel to wear appropriate PPE i.e. Hi vis clothing, hard hat, Safety glasses, Safety boots	Major	Unlikely		M12		Site First Aiders Site Medic Emergency Channel 39		
	Collision with or reversing into personnel/ other plant/ vehicle	Injury; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Isolation Exclusion zone using Flagging/ hard barricading/ windows Engineering ROPS, lights, beacons, radios as per site requirements Administrative Competent, licensed/ticketed, operators; Daily prestart check of plant; Hand signal and line of sight/visual contact communication; Positive communication at all times; Communication of all VMP changes in site notices; UHF radios to be used in work areas; Use spotter to guide and assist; SWMS/JSA; Drive to conditions at all times; Adhere to Traffic Management Plan/Vehicle Movement Plan PPE Ground personnel to wear appropriate PPE i.e. Hi vis clothing, hard hat, Safety glasses, Safety boots	Severe	Unlikely		H17		Site First Aiders Site Medic Emergency Channel 39		
	Topping over/ Rollover	Injury; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Isolation Delineation of Plant operations in place via barricading/ windows etc Plant shall not operator Engineering Follow load rating on plant; Ground conditions to be level and smooth as practicable at all times free of obstructions Administrative Competent, licensed, operators; Regular maintenance of plant; Daily prestart check of plant; Hand signal and line of sight/visual contact communication; Use spotter to guide and assist where needed; Drive to conditions at all times; SWMS/ JSA; Adhere to Traffic Management Plan/ Vehicle Movement Plans	Severe	Unlikely		H17		Site First Aiders Site Medic Emergency Channel 39		

	Incompetent operator	Injury; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Administration Competent, licensed/ticketed, operators; Operator to be in control of plant at all times; Operator shall only commence operating plant after instruction to do so by supervisor; Operator's manual available in plant for reference; Safe work procedures on various plant made available to operators	Severe	Rare	M13		Site First Aiders Site Medic Emergency Channel 39
	Falling load	Injury; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Isolation Exclusion zone using Flagging/ hard barricading/ windrows around work area Do not lift or suspend load over any person Engineering Use plant fitted with FOPS required by legislation or if required by task risk assessment; Administrative Competent, licensed, operators; Load to be slung by Dogman/Rigger; Drive to conditions at all times; Warning signs; Hand signal and line of sight/visual contact communication; UHF radios for positive communications; Use spotter to guide and assist; SWMS/JSA; PPE Wear appropriate PPE e.g. hard hat	Severe	Rare	M13		Site First Aiders Site Medic Emergency Channel 39
	Plant on fire	Injury; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Administrative Fire extinguisher on plant; Regular maintenance of plant; Plant pre-mobilisation check prior to use on site; Plant risk assessment; Daily prestart check of plant	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
	Slip, trip or fall while using plant or in vicinity of plant	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Isolation Remove any objects that may obstruct personnel E.g. build-up of mud on steps. Engineering Ground conditions to be level and smooth as practicable at all times; Remove or stack neatly in a safe location all unwanted material from area Administration Climb in and out of cab and not jump down from the cab; Always maintain 3 points of contact when climbing; Maintain good housekeeping; SWMS/JSA; PPE Wear correct PPE	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
	Hydrocarbon	Hydrocarbon spill from mobile plant (including crane, telehandler, earthmoving equipment) entering environment and/or Collie River	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan SCEE-BS-HS-WIN-0021 Hazardous Materials Handling and Storage	Spill kit, on plant where practicable; Regular maintenance of plant; Plant pre-mobilisation check prior to use on site; Plant risk assessment; Daily prestart check of plant; Should a hydraulic leak develop, stop using the plant as soon as safe to do so and remove from service; Use of absorbent pads/sauzages if required;	Moderate	Unlikely	M7		Notification of event to Synergy Environmental Representative as soon as possible
	Excessive noise & vibration & emission	Fauna disturbance; Public nuisance & complaints; Health risk to personnel; Structural damage to buildings	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Substitution Use alternative plant where necessary Engineering Adjust the compaction frequency of compaction equipment to reduce vibration, use plant as designed and intended plant manufacturer. Administrative Regular inspection and maintenance of plant; Work within designated working hours; Plant risk assessment; Daily prestart check of plant PPE Workers to wear ear plugs when working close noise environment	Major	Rare	M11		Site First Aiders Site Medic Emergency Channel 39
Excavation	Damage to existing services	Damage to services; Injury;	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation; WOP-SWP-051 Working near Underground and Overhead Services	Obtain current services drawings from management team/ BYDA Review and understand the detailed services drawings; Locate services with cable locator and potholing/vac truck by SCEE Use spotters when required; Excavation Permit approved & in place; Personnel trained in excavation permit; Conduct regular excavation inspection by competent person; All personnel to stand well back out of the line of fire when working near or around stored energy; Competent Operators to complete the works; SWMS/JSA	Major	Rare	M11		Site First Aiders Site Medic Emergency Channel 39
	Excavation collapse;	Injury; Engulfment; Infrastructure damage;	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation	Engineering Battering where required; Benching where required; Shoring where required; Spotter to be in area when personnel are in excavations Use of Trench boxes for drainage excavations where required Temporary Works Design undertaken based on geotechnical information and the intended use of trench boxes; Trench boxes to be installed as per the engineered design requirements, as detailed in the Temporary Works Design; Should a change be required to the design or installed system, works shall cease and reassessment shall be undertaken in consultation with the Temporary Works Designer Administrative No placing of material, plant and loads near the edge of excavation; Spoils not placed closer than 1.5m to edge of trench; Conduct regular excavation inspection by competent person i.e. Engineer or Site Supervisor; Trench box system shall be detailed on up-to-date drawings/plans; The persons who install and remove the ground support system shall be competent, and have awareness of the suppliers proprietary ground support system (Mabey product user guide); The shoring system shall be verified as correctly installed prior to use by a competent person, in accordance with the Temporary Works Design; When changes to the design or installed system are made, changes must be authorised and signed off by a competent person. Competent Operators to complete the works; SWMS/JSA	Major	Rare	M11		Site First Aiders Site Medic Emergency Channel 39
	Slip and fall into excavation	Injury;	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation	Elimination Back fill excavations as soon as practical; Personnel to remain away from excavation edge at all time; Trench boxes, where used, to be fitted with hand rails and shall exceed ground level where possible Isolation Ensure where trench boxes do not exceed ground level, hand rails are installed Erect windrows / hard barricading around excavation – outside the excavation zone of influence 1V:1H (no less than 600mm where this is not possible) Engineering Safe means of ingress and egress - cut away steps, ladder, ramp Use of designated access platform and ladder system for trench box when applicable, alternatively use of access / egress ramp with trench box. Administrative Erect signage - EXCAVATION at entry point of excavation and along for approaching vehicles/ plant/personnel; Conduct regular excavation inspection by competent person i.e. Engineer or Site Supervisor; SWMS/JSA	Major	Rare	M11		Site First Aiders Site Medic Emergency Channel 39
	Plant/Vehicle reversing into excavation	Injury; Infrastructure damage; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation	Isolation Erect bunting/windrows/hard barricades around excavation; Machinery restricted from working too close to trench (1.5 from edge); Machinery restricted from working inside the excavation zone of influence 1V:1H, (no less than 600mm where this is not possible); Administrative Ensure spotter in place where necessary; Conduct regular excavation inspection by competent person i.e. Engineer or Site Supervisor Competent Operators to complete the works; SWMS/JSA;	Major	Rare	M11		Site First Aiders Site Medic Emergency Channel 39
	Person working in excavation being struck	Injury;	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation	Elimination Personnel not involved in excavation works to remain away from barricaded areas at all times When drainage equipment / trench boxes are being lifted into place, personnel shall stand clear of slew zone. No working under a suspended load at any time Engineering Benching and/or battered/ trench boxes used, if deeper than 1.5m; Safe means of ingress and egress-ladder, ramp, cut away steps Administration Competent Operators to complete the works; No one is to enter an open excavation > 1.5m deep unless excavation approved by a qualified person; Excavation inspected and approved by a competent person as safe to work in; Daily excavation inspection completed by Engineer/ Site Supervisor; SWMS/JSA PPE Wear appropriate PPE	Major	Rare	M11		Site First Aiders Site Medic Emergency Channel 39
	Person working in excavation being struck by falling object/plant	Injury;	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation	Engineering Double action movement to release bucket, avoiding accidental release Isolation Erect bunting/windrows/hard barricades around excavation; Personnel/spotter MUST not approach excavator unless bucket is on ground Administrative Loads must not be lifted, suspended or moved over a person under any circumstances; Spotter at ground level to monitor work activity and control work area in communication with operator; Competent Operators to complete the works; SWMS/JSA PPE Wear correct PPE	Major	Rare	M11		Site First Aiders Site Medic Emergency Channel 39
	Unexpected encounter of contaminated material while excavating e.g. asbestos	Health risk; Environmental risk	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation WHS-SWP-5009 Asbestos	Engineering Erect Flagging/ barricading around unexpected contaminated material Administrative Manage material as per Safe Working Procedure; Competent Operators to complete the works; SWMS/JSA PPE Wear appropriate PPE P2 dust masks are to be available if required	Minor	Unlikely	M7		Site First Aiders Site Medic Emergency Channel 39

	Stock pile control (dust and erosion)	Air pollution affecting vegetation, wildlife and health of people; Complaints; Legal non-compliance	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan WEM-SWP-104 Noise, Dust and Vibration Management	Administrative Adhere to Environmental Management Plan; Awareness training will be provided during the site induction; Area to be regularly sprayed with water via water truck to minimise air borne dust; Weekly environmental inspections and result of inspections recorded on WEM-FM-002 Weekly Environmental Inspection Checklist	Moderate	Unlikely	M7			Site First Aiders Site Medic Emergency Channel 39
	Fauna falling into excavation/entrapment	Fauna distress, injury or death from becoming trapped and/or exposed; Legal non-compliance	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WEM-MP-001 Environmental Management Plan	Elimination Excavations to be backfilled as soon as possible; Engineering Permanent egress devices, such as ramps, should be installed to allow for the unimpeded movement of fauna into/out of the excavation; Administrative Adhere to Environmental Management Plan; Inspections of the excavation for fauna undertaken daily prior to work commencement	Minor	Unlikely	L2			Site First Aiders Site Medic Emergency Channel 39
	Excavation during wet season/ saturated materials	Excavation collapse; Injury; Delays	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-081 Excavation	Administrative Conduct daily excavation inspection by competent person i.e. Engineer or Site Supervisor; Where risk has been identified post rain/ inclement weather no works in excavation to occur. Work area to be deemed safe by Site Supervisor prior to recommencement of work, Ticketed & VOCd Operators to complete the works; SWMS/JSA	Major	Unlikely	M12			Site First Aiders Site Medic Emergency Channel 39
Working near or around water	Person falling into water body	Drowning Hypothermia	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0023 Working Over or Near Water	Engineering Barricading to be established where necessary Bouyancy aid provided at waters edge Administrative Work area to be deemed safe by Site Supervisor prior to commencement of work, Spotter to monitor work activity at all times SWMS / JHA	Major	Unlikely	Unlikely			Site First Aiders Site Medic Emergency Channel 39
	Tools, materials and/or equipment falling into water body	Environmental risk Delays Equipment damage	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0023 Working Over or Near Water	Elimination Tools, materials and equipment to be securely stored away from waters edge as far as reasonably practicable Engineering Barricading to be established where necessary Tools, materials and equipment to be securely stored away from waters edge as far as reasonably practicable Waterlogged tooling / equipment to be tagged out and inspected for integrity before recommissioning Administrative Work area to be deemed safe by Site Supervisor prior to commencement of work, Spotter to monitor work activity at all times SWMS / JHA	Moderate	Unlikely	Unlikely			Site First Aiders Site Medic Emergency Channel 39
Hydrostatic Testing of pipework and associated components	Equipment failure / pipe, pipe joint failure	Personal injury Equipment damage	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Testing equipment to be tested before use Exclusion zone to be established before test commencement No personnel to be in test area while testing is underway Administrative Work area to be deemed safe by Site Supervisor prior to commencement of work, Spotter to monitor work activity at all times SWMS / JHA	Severe	Unlikely	Unlikely			
	Unauthorised entry into test area	Personal injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Barricading / Signage Notice of test to be issued prior to test commencement Radio broadcast of test 30 minutes prior to test commencement	Moderate	Unlikely	Unlikely			
Civil Works (Form Work & Concreting)										
	Concrete splash over a wide area	Injury; Environmental contamination	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction	Administrative Training in safe working procedure on concrete pumping; Provide supervision by competent person; Correct position and set up of boom pump. Prior to Boom Pump set up an assessment of Infrastructure and underground services required to ensure that they do not compromise the stability of the boom pump Clear communication to be maintained between truck driver, concrete or pump operator; During cleaning, remove all reducers and the rubber hose from the delivery line; Regular maintenance and inspection of equipment; Follow the concrete pumps manufacturer's guidelines	Moderate	Unlikely	M7			Site First Aiders Site Medic Emergency Channel 39
	Burn on skin if contact with wet concrete	Injury; Irritation	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction	Isolation Only those directly involved in concreting should be in the work area Administrative Training in safe working procedure on concrete pumping; Provide supervision by competent person PPE Wear suitable PPE i.e. Safety boots, trousers, long sleeve	Moderate	Unlikely	M7			Site First Aiders Site Medic Emergency Channel 39
	Concrete splash to eye	Injury; Irritation	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction	Isolation Only those directly involved in concreting should be in the work area Administrative Training in safe working procedure on concrete pumping; Provide supervision by competent person; PPE Wear suitable PPE i.e. Safety glasses; Eye wash station (disposable bottles) located at site office Refer to Manual Handling - Section 14	Moderate	Unlikely	M7			Site First Aiders Site Medic Emergency Channel 39
	Manual handling injuries	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction	Substitution Where required/feasible, use of laser screed for large area concrete pours Administrative Regular maintenance and inspection of equipment; Training in safe working procedure on concrete pumping; Manual handling awareness during site induction and toolbox; Provide supervision by competent person; Employ correct manual handling techniques at all times; Task stretching, warm up; Take 5; PPE Wear suitable PPE	Major	Unlikely	M12			Site First Aiders Site Medic Emergency Channel 39
	Ear damage & hand arm vibration syndrome	Injury	WEM-SWP-104 Noise Dust and Vibration Management	Engineering Use modern equipment with reduced vibration e.g. vibration resistant handles PPE Wear appropriate PPE	Major	Rare	M11			Site First Aiders Site Medic Emergency Channel 39
	Concrete cutting	Injury; Irritation	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-071 Manual Handling	Refer to Manual Handling - Section 14 Substitution Use mechanical aids and additional manpower for heavy loads Administrative Employ correct manual handling techniques at all times; Clear and accessible work area allowing for safe movement of people, equipment and materials; Raise awareness at site induction and toolbox meeting; Take 5 PPE Wear appropriate PPE e.g. Safety boots, gloves, Safety glasses etc.	Major	Unlikely	M12			Site First Aiders Site Medic Emergency Channel 39
	Grinding concrete fill around conduit entrance to culvert	Injury; Irritation to respiratory tract	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-071 Manual Handling WEM-SWP-104 Noise Dust and Vibration Management	Substitution Use mechanical aids and additional manpower for heavy grinding tasks Administrative Employ correct manual handling techniques at all times; Clear and accessible work area allowing for safe movement of people, equipment and materials; Raise awareness at site induction and toolbox meeting; Take 5 PPE Wear appropriate P2 classification respirator, gloves and double eye protection along with normal site PPE when performing grinding task	Moderate	Possible	Possible			Site First Aiders Site Medic Emergency Channel 39
	Plant accident	Injury; Death; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Isolation Only those directly involved in concreting should be in the work area; Segregated work area, actively managed and barricaded around pump truck; Administrative Regular maintenance and inspection of plant & equipment; Ensure concrete pump operator is competent; Clear communication to be maintained between truck driver, concrete or pump operator; Ensure work area is accessible for concrete truck; Follow the concrete pumps manufacturer's guidelines; PPE Wear appropriate PPE	Major	Unlikely	M12			Site First Aiders Site Medic Emergency Channel 39
	Early Morning Pours Poor Visibility, Fatigue	Injury; Damage to plant	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Engineering Sufficient lighting to be supplied at pour area; Temporary lighting to be setup by dayshift prior to works Administrative Day shift to ensure all areas and access are clear before changeover early morning crew come to site; Ensure good housekeeping dispose waste and stow equipment safely, Sufficient Traffic Management to be in place prior to pour commencement (inclusive of reflective posts and lighting); Fuelling up on night shift is not permitted fuelling up will be done by the day shift, Fuelling management to be no on site and monitored by Site Supervisor / HSE Advisor	Moderate	Unlikely	M7			Site First Aiders Site Medic Emergency Channel 39
	Working with reinforcement	Manual task injury; Scratches or cuts to body	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WHS-SWP-304 Concrete Slab Construction	Isolation Place protective caps over exposed ends of vertical and starter bars; Administrative Obtain assistance to handle heavy or awkward lengths and sheets; Adopt ergonomically sound position; PPE Wear long sleeved shirts and pants; Wear approved hvy gloves	Moderate	Unlikely	M7			Site First Aiders Site Medic Emergency Channel 39
	Walking on rebar	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WHS-SWP-304 Concrete Slab Construction	Isolation Place protective caps over exposed ends of vertical and starter bars; Engineering Installation of Safety mesh above 220x220 SQ Administrative Walk on the top bars of the prepared mat PPE Wear Safety footwear	Major	Unlikely	M12			Site First Aiders Site Medic Emergency Channel 39
	Placing Reinforcement	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-071 Manual Handling	Refer to Manual Handling - Section 14 Substitution Use mechanical aids and additional manpower for heavy loads; Administrative Manual handling induction site induction; Take 5; Employ correct manual handling techniques at all times; Clear and accessible work area allowing for safe movement of people, equipment and materials; Raise awareness at site induction and toolbox meeting PPE Wear appropriate PPE e.g. Safety boots, gloves, Safety glasses etc.	Major	Unlikely	M12			Site First Aiders Site Medic Emergency Channel 39

	Bending reinforcement	Injury	<p>201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan</p> <p>C2761-WHS-MP-001 WHS Management Plan</p> <p>WOP-SWP-071 Manual Handling</p>	<p>Elimination Ensure machine is indoors, is completely dry and is not operated in wet or damp conditions</p> <p>Substitution Use mechanical aids and additional manpower for heavy loads</p> <p>Isolation All bending work should be conducted indoors</p> <p>Engineering Mount and secure machine on level surface capable of carrying the weight of the machine</p> <p>Administration Inspect the machine before each use Training in how to safely operate the machine Ensuring to not attempt to bend rebar outside of the manufacturer's specification</p> <p>PPE Eye protection glasses Wear approved gloves Class 2 hearing protection</p>	Moderate	Unlikely	M7		<p>Site First Aiders Site Medic Emergency Channel 39</p>		
	Cutting Reinforcement	Injury	<p>201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan</p> <p>C2761-WHS-MP-001 WHS Management Plan</p> <p>WOP-SWP-071 Manual Handling</p>	<p>Substitution Use battery operated/cordless grinder; Cutting disc thinner than 1.5mm must not be used; Isolation Shielding of grinding operations; All cutting work must not be conducted near any ignition sources;</p> <p>Administration Hot work permit; Tool handle must be attached; Use of fire spotter if required with the provision of firefighting equipment i.e. 9KG extinguisher; Assess wind conditions; Check equipment before use</p> <p>PPE Double eye protection (glasses and face shield); Wear approved gloves</p>	Moderate	Unlikely	M7		<p>Site First Aiders Site Medic Emergency Channel 39</p>		
Batch Plant Setup and Operation											

	Position water and admixture Tanks Placement and positioning of Batch hut and associated Offices and crib buildings	Manual handling: moving/ install of tanks/ drums Availability of Mechanical Lifting equipment Untrained / unskilled personnel Poor install/set up resulting in trip hazards and/or dropped objects	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Isolation: Access and egress to batch plant to be maintained at all times; Works are to be appropriately delineated/barricaded; Locate tanks/pallets and hose away from frequently used areas or if possible bury hoses underground No personnel to work/ be under suspended loads Engineering Ground to be appropriately compacted for required operations; Obtain assistance or the use of mobile plant to move tanks into position; Allow enough room for access by mobile plant to fill tanks or replace drums Administrative Correct manual handling and lifting techniques; Spotter to be utilised as required; Only ticketed/ VDC'd operator to be used; Operator to inspect ground prior to mobilising equipment to a new task area; Correct tool to be used for manual handling / hammering tasks; Signage in place outlining single entry point to area of excavation which is controlled by the operator or spotter; Inspection of areas for loose rock, fauna or similar prior to entry; All task documentation to detail equipment roll-over specific emergency response plan; Task specific JSA to be utilised for vehicle/plant recovery PPE Wear appropriate PPE at all times; Wear gloves when handling pipe/hose	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
	Connection of Batch Plant	Electrocution/ Stored energy	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Isolation Ensure compressor has been drained of stored energy before connection; Ensure all taps turned off before connection of water tank / chiller / batch pump; Cam lock fittings on all connection points; Ensure all guarding in place and un-damaged in transit Engineering Ensure earth stakes inserted and connected. All electrical connection points are plug in Administrative Check all leads, plugs and switch's for damage in transit before connecting; Licensed Electrician for connection to Generator; Licensed Electrician to conduct earth leakage test's, submit documentation for authorisation; Pre-start check on Gen set before starting; Check for correct operation of electrical items singularly; Ensure appropriate SCEE Isolation permits/training in place prior to set up	Moderate	Unlikely	M7		Site First Aiders Site Medic Emergency Channel 39
	Exposure to hazardous Materials & Thermal Heat	Admixture: from previous job in hoses. Environmental (spills)	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Engineering Allow water to run before filling tanks. (Beware of Hot water from taps and hoses if not used for a period of time); Administrative Do not drink the water from hoses and tanks at the plant unless tested and deemed to be safe e.g. potable water; Ensure residue admixture removed from line - Flush admixture hoses with water before demobilisation of plant PPE Gloves are to be worn whilst handling hoses	Moderate	Unlikely	M7		Site First Aiders Site Medic Emergency Channel 39
		Personnel or other workers nearby in the workspace exposed to hazardous chemicals such as volatile vapours, fumes, airborne hazard particulates Personnel exposed to hot motors, exposed flames, flashback, hot fluids likely to cause burns or scalds. High ambient temperature work environments	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Engineering All portable machinery and equipment shall be regularly maintained to help reduce high noise, vibration, temperature and dust levels Administrative SDS's are to be available for all admixtures brought and used onsite. SDS to be stored in site office for batch plant specific chemicals Chemical storage and use in accordance with SDS First aid kit (and suitability) trained personnel to be at immediate work area All chemicals to be bundled or stored appropriately Adequate stocked and maintained spill kits to be at immediate work area Work areas to be have adequate ventilation Heat and Hydration to be monitored/ discussed at pre-start and toolboxes JSA/SWMS/ Take 5, Emergency Response Plan involving spills PPE Appropriate PPE utilised as a minimum to include: P3 dust mask	Moderate	Unlikely	M7		Site First Aiders Site Medic Emergency Channel 39
	Washout of agitator truck and control of waste concrete	Environmental damage cause by incorrect control of waste concrete	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan	Isolation Work area assigned by SCEE and Westforce Construction; Concrete pump truck to be washed out at designated are at pour site; Bunded area plastic lined set up for washout near to the pour site; Site drainage to be set up in accordance with site environmental licence; All sediment laden runoff to be captured Administrative Excess concrete to be used as blinding and/or removed by Hanson to Gelorup quarry, to be recycled and reused for road base material. Environmental Management Plan	Moderate	Unlikely	M7		Site First Aiders Site Medic Emergency Channel 39
Civil Works (Form Work & Concreting)									
Formwork Erection (traditional formwork)	Sustain injury whilst installing/cutting formwork	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction; WHS-SWP-305 Formwork;	Elimination Ensure that wooden formwork is free of nails etc. before handling; Ensure that timber is free of concrete, dirt etc. before cutting Isolation Ensure clear and accessible work area allowing for safe movement of people, equipment and materials Substitution Use mechanical aids and additional manpower for heavy loads Engineering Use correct tools Install personnel access/egress steps or ramps Administrative Raise awareness at site induction and toolbox meeting; Obtain assistance to handle heavy or awkward lengths and sheets; Adopt ergonomically sound position; Take 5; Refer to 'Manual handling' - Section 14 PPE Wear appropriate PPE i.e. safety boots, gloves, safety glasses etc	Moderate	Unlikely	M7		Site First Aiders Site Medic Emergency Channel 39
	Formwork collapse before and after loading	Injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction; WHS-SWP-305 Formwork;	Isolation Establish exclusion zone where formwork is to be erected Administrative Construction and erection to be carried out by competent personnel; Erection to be systematically carried out in accordance with manufacturer's or designer's instructions; Supervision by Site Supervisor; Formwork to be regularly inspected by Project Engineer; Inspection to be carried out before formwork is loaded, after loading, after repairs, alteration or additions to formwork; Avoid 'point' loading on any part of the formwork by placing concrete evenly	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
Formwork Dismantling (traditional formwork)	Formwork collapse	Injury; Death	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction; WHS-SWP-305 Formwork;	Administrative Inspection by Project Engineer before dismantling; Dismantling to be carried out by competent persons	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
	Sustain injury while dismantling formwork	Manual task injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction; WHS-SWP-305 Formwork;	Isolation Establish exclusion zone where formwork is to be dismantled Engineering Use correct tools Administrative Obtain assistance to handle heavy or awkward lengths and sheets; Adopt ergonomically sound position; PPE Wear appropriate PPE i.e. hard hat, Safety boots, Safety glasses, gloves	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
	Formwork collapse	Injury; Death	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction; WHS-SWP-305 Formwork;	Isolation Establish exclusion zone where formwork is to be erected or dismantled; Formwork props must not be removed prior to hook up of formwork where required Engineering Where mechanical aid (crane) needed to remove formwork pans, adhere to controls listed in section 11: Crane & Rigging Administrative Formwork to be designed & certified by Formwork Designer; Formwork to be inspected by Project Engineer before the formwork is loaded, after loading and after repairs to formwork are made; Erection and stripping to be carried out by competent personnel; Erection and dismantling to be systematically carried out in accordance with manufacturer's or designer's instructions	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
	Slip, trip or fall from height	Injury; Death	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction; WHS-SWP-305 Formwork;	Isolation Remove any objects that may obstruct personnel Engineering Install edge protection where required; Administrative Formwork to be inspected by Project Engineer before the formwork is loaded, after loading and after repairs to formwork are made; Continuous supervision by Project Engineer and Site Supervisor; Adopt ergonomically sound position; PPE Wear appropriate PPE i.e. safety boots and hard hat Refer to Manual Handling - Section 14	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39
	Sustain injury while installing/dismantling formwork	Manual task injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan C2761-WHS-MP-001 WHS Management Plan WOP-SWP-031 Concrete Construction; WHS-SWP-305 Formwork;	Isolation Establish exclusion zone where formwork is to be installed/dismantled Engineering Use correct tools; Mechanical aid used where required; Adopt ergonomically sound position Administrative Obtain assistance to handle heavy or awkward lengths and sheets; PPE Wear appropriate PPE	Major	Unlikely	M12		Site First Aiders Site Medic Emergency Channel 39

Task / Activity	Hazard	Risk (un-wanted event)	Systems Policy, Plans & Procedures	Controls	Consequence	Likelihood	Calc.	Residual Risk / Impact	Accept or Reject	Recommended Additional Controls	By Whom Person to Action	Target Date
Cable Installation												
Installation of cable tray in culverts	Fall from height	fall into culvert resulting in injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0017 Working at Height (High Risk) SYN-PRC-HSA-0010 Safe Work at Height Procedure	Barricade / exclusion of personnel from proximity to culvert edge Signage Use of dedicated crossing points with engineered solution to cross culverts Dedicated process for entry to, and egress from, culverts JHA, Take 5 Good housekeeping practices, removal of equipment and materials not required out of the culvert area Star Inspections	Major	Unlikely		M12		Site First Aiders Site Medic Emergency Channel 39		
	Sharp edges	cuts/lacerations	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	PPE - correct gloves used to mitigate task hazard JHA, Take 5 Star Inspections	Moderate	Unlikely		M7		Site First Aiders Site Medic Emergency Channel 39		
	Restricted work area	pinch points/restricted space resulting in hand or finger injuries/abrasions Debris left in bottom of culvert Dust and / or debris blown from culvert into eyes	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Awareness of line of fire situations PPE - correct gloves used to mitigate task hazard Foam backed goggles to be worn when work in culverts is to be carried out Good housekeeping practices, regular cleaning of culverts to remove debris Good housekeeping practices, removal of equipment and materials not required out of the culvert area JHA, Take 5 Star Inspections	Moderate	Unlikely		M7		Site First Aiders Site Medic Emergency Channel 39		
	Uneven ground/walking over existing cable tray	musculoskeletal injury, rolled ankle, slip/trip	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0006 Manual Handling SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Minimise culvert access where possible, essential personnel only Work planning - sequencing and staging of work to reduce scope of impact JHA, Take 5 Use of dedicated crossing points with engineered solution to cross culverts Good housekeeping practices, removal of equipment and materials not required out of the culvert area Star Inspections PPE - well fitted boots, laced correctly to provide ankle support	Major	Likely		H15		Site First Aiders Site Medic Emergency Channel 39		
Installation of conduits around culverts	Hand tool / PVC pipe cement usage while assembling conduit	Cuts / Abrasions Skin irritation Environmental concerns Muscle strain from repetitive bending / unbending	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0006 Manual Handling SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Correct PPE to be worn when cutting conduit - Cut 5 gloves Correct gloves as per SDS when using PVC pipe cement Ensure absorbent mat is under conduit to collect spills / drips when joining conduit with PVC pipe cement Pre task stretches and regular breaks while assembling conduit	Moderate	Unlikely		M6				
	Fall from height	Fall into culvert resulting in injury	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0017 Working at Height (High Risk) SYN-PRC-HSA-0010 Safe Work at Height Procedure	Barricade / exclusion of personnel from proximity to culvert edge Signage Use of dedicated crossing points with engineered solution to cross culverts Dedicated process for entry to, and egress from, culverts JHA, Take 5 Good housekeeping practices, removal of equipment and materials not required out of the culvert area Star Inspections								
	Heavy lifts on uneven slippery ground	Musculoskeletal injury - strain Slips / Trips / Rolled Ankles Cuts / abrasions to hands Sharp Edges	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0006 Manual Handling SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	2 person / mechanical lifts if required Be aware of surroundings Pre Task lift assessment Pre task stretches / warm up JHA / Take 5 Clear work area before task commencement, good housekeeping practices Correct PPE to be used - Cut 5 gloves when lifting								
	Hand tool usage whilst securing conduits in place	Musculoskeletal injury - strain / strains from installing star pickets and lifting Slips / Trips / Rolled Ankles Cuts / abrasions to hands from hand tool usage Sharp edges on conduit and wooden supports Noise from impact driver	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0006 Manual Handling SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Awareness of line of fire situations - Know where your hands are Use star picket driver to install star pickets - Wear impact rated gloves Correct PPE (Cut 5) when handling objects with sharp edges JHA, Take 5 Star Inspections Ear plugs to be worn in noisy environments Good housekeeping practices, removal of equipment and materials not required out of the work area								
Installation of electrical equipment	Heavy equipment	musculoskeletal injury - strain	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0006 Manual Handling SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Use lifting aids/mechanical lifting equipment Team lifts Pre-task lift assessment Task stretching, warm up JHA, Take 5 Good housekeeping practices, removal of equipment and materials not required out of the work area prior to installing equipment Star Inspections	Major	Unlikely		M12		Site First Aiders Site Medic Emergency Channel 39		
Installation of cable in tray	Sharp edges	cuts/lacerations Wind borne dust and debris blown from culvert into eyes	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	PPE - correct gloves used to mitigate task hazard cable ties to be cut such that sharp edges are not present Foam backed goggles to be worn when work in culverts is to be carried out JHA, Take 5 Star Inspections	Moderate	Unlikely		M7		Site First Aiders Site Medic Emergency Channel 39		
Cable pulling with winch	Stored Energy Over-tensioning cable	Stored energy release Plant interaction Personal injury Over-tensioning of cable Damage to cable Damage to equipment	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-WIN-0022 Cable Pulling Work Instruction SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Barricade off area of work - exclusion of unauthorised person Use non energy storing pull rope when winching Drum set up on level ground and barricade. Signage Guards to be in place as per manufacturers specifications Suitably qualified personnel to secure pulling equipment where required JHA & Take 5 Plant operated as per manufacturer's recommendations, Spotter in place Inspect condition of cable connection prior to use. Works are not to commence until the cable connection has been inspected by the Supervisor. Personnel to stay clear of inside bends while cable pulling. Stay on outside Communication - radio communication/hand signals, VSD Winch - CTO Follow VSD work procedure PPE - Impact rated gloves, hard hat, safety glasses Star Inspections	Major	Unlikely		M12		Site First Aiders Site Medic Emergency Channel 39		
Cable Termination	large, heavy cables with low flexibility Sharp edges	musculoskeletal injury - strain cuts/lacerations	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0006 Manual Handling SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Team lifts Pre-task lift assessment Good manual handling technique, task stretching/warm up JHA, Take 5 Good housekeeping practices, removal of equipment and materials not required out of the work area prior to installing equipment No open bladed knives, use of specialist cable stripping tools Star Inspections	Major	Possible		H14		Site First Aiders Site Medic Emergency Channel 39		
Work in RMUs												
Working inside RMU footings	Awkward, restricted access / egress	Musculoskeletal injury - strains, sprains Cuts/Lacerations Awkward egress in case of medical emergency	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Footings condition to be assessed as suitable prior to entry Access to RMU footing to be provided via ramp and fixed ladder Personnel in footings to wear lifting harness for retrieval in case of medical emergency Personnel rescue via inertia reel / rescue reel plus crane in vicinity to assist if needed Spotter to be present at all times personnel are working in footings	Major	Unlikely		M12				
	Trapped Fauna	Injury to personnel Damage to equipment Injury to Fauna	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	Condition of footings to be assessed prior to entry Report all fauna interactions to supervision Synergy environmental team to be advised if fauna discovered in distress	Major	Possible		H14				
Working Inside RMU	Awkward, restricted access / egress	Musculoskeletal injury - strains, sprains Cuts/Lacerations Awkward egress in case of medical emergency	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan	RMU internal condition to be assessed as suitable prior to entry Access to RMU to be provided via ramp and fixed ladder Personnel in RMU to wear lifting harness for retrieval in case of medical emergency Personnel rescue via inertia reel / rescue reel plus crane in vicinity to assist if needed Spotter to be present at all times personnel are working in RMU	Major	Unlikely		M12				

	Large, heavy cables with low flexibility Sharp edges Cramped working conditions	Musculoskeletal injury - strain cuts/lacerations	201074-SE-PLN-001 Collie Battery Energy Storage Project Health, Safety and Environment Plan SCEE-BS-HS-PRO-0006 Manual Handling SCEE-BS-HS-PRO-0013 Personal Protective Equipment SCEE-BS-HS-GUI-0004 SCEE Minimum PPE Matrix SCEE-BS-HS-GUI-0005 SCEE Electrical Glove Matrix	Team lifts Pre-task lift assessment Good manual handling technique, task stretching/warm up JHA, Take 5 Good housekeeping practices, removal of equipment and materials not required out of the work area prior to installing equipment No open bladed knives, use of specialist cable stripping tools Star inspections	Major	Possible	H14				
Work in Substations											
Substation entry	Energised equipment	Unauthorised Access to substation Electric Shock		To be revised prior to substation energisation							
Working with Batteries											
Working with batteries	Energised Equipment	Personnel injury from electric shock and / or arc flash Equipment damage		Out of service tags to be placed on the open battery breaker at the bottom of each of the five battery banks Detached connector lead to be removed from the container and secured in offices Battery bank container doors to be locked and keys secured in office lock box	Moderate	Unlikely	M7				
	High fault current	Arc Flash		To be revised pending final battery design as supplied							
Installation of final battery links	High fault current	Electric Shock Battery Short Fire Equipment Damage		To be revised pending final battery design as supplied, and determination of commissioning process							
Testing and Commissioning											
Commissioning	High Voltage (>480 Volts)	Interaction with high voltage electricity resulting in injury to personnel.		To be revised prior to commissioning							
Commissioning	AC 110-480 Volts	Interaction with low voltage electricity resulting in injury to personnel.		To be revised prior to commissioning							

Refer to MYOSH Modules for Actions, or Continuous Improvement and management & tracking

Carry data forward from RO Register			This data needs to be entered				
Ref No.	Opportunity or Risk	Title	Date Action Raised	Action	Responsible	Due Date	MYOSH Action #

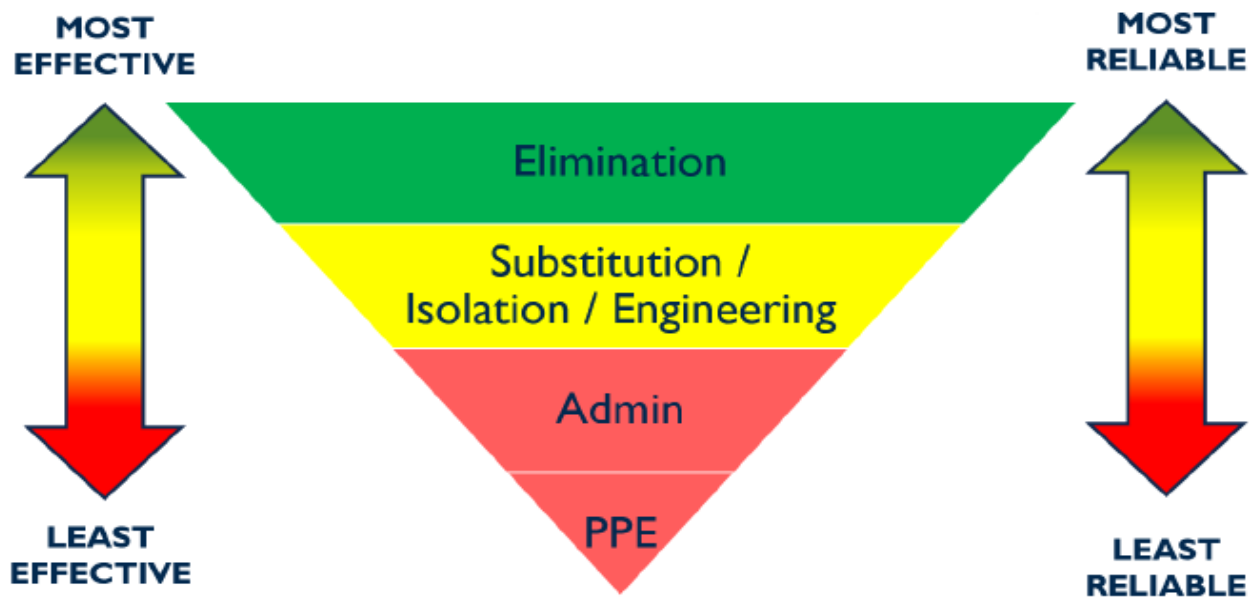
LIKELIHOOD	CONSEQUENCE				
	Minor	Moderate	Major	Severe	Catastrophic
Almost Certain	Medium 6	Medium 10	High 16	Critical 21	Critical 25
Likely	Low 4	Medium 9	High 15	Critical 20	Critical 24
Possible	Low 3	Medium 8	High 14	High 18	Critical 23
Unlikely	Low 2	Medium 7	Medium 12	High 17	Critical 22
Rare	Low 1	Low 5	Medium 11	Medium 13	High 19

	Consequence				
	Minor	Moderate	Major	Severe	Catastrophic
Safety and Health	First aid injury/illness.	Medical treatment injury/illness.	Lost time injury/illness < 2 weeks.	Lost time injury/illness > 2 weeks and/or permanent impairment.	Fatality or multiple serious injuries/illnesses.
Environment	Localised event with no impact to an area of low environmental significance. Recovery – <1 week Remediation - Cosmetic	Low level localised impact to an area of low environmental significance. Recovery – 1 week to 6 months Remediation – Easy	Significant surrounding area impact and/or impact on area of environmental significance. Recovery – 6 months to 1 year Remediation - challenging	Serious widespread impact and/or impact on area of environmental significance. Recovery – 1 to 10 years Remediation - uncertain reversibility	Extensive permanent & irreversible impact on widespread area and/or area of environmental significance, Recovery – More than 10 years Remediation - irreversible
Financial	< \$2,000 impact.	\$2,000 - \$20,000 impact.	\$20,000 - \$750,000 impact.	\$750,000 - \$5M impact.	>\$5M impact
Reputation and Community	Individual complaint; no media coverage	Multiple related complaints; short term local media attention	Coordinated communication of community concerns and complaints; Ongoing adverse local media attention; Client intervention	Loss of trust and credibility with community, client, industry and/or government; Extensive adverse media coverage	Widespread long term loss of trust and credibility with community, client, industry and/or government; Government intervention
Compliance	No legal issue, but breach of company policies and procedures	Legal issue, breach of regulation or breach of contract	Legal breach which is reportable to regulatory authority; Penalties for breach; contract or operations suspension	Significant penalties or undertaking for breach; serious litigation, employee imprisonment; contract termination; loss of certifications (e.g. SHEQ)	Extensive penalties; director or officer imprisonment; loss of operating licence, multiple contract terminations

Likelihood	
Almost certain	Expected to occur regularly under normal circumstances. Could occur weekly.
Likely	Expected to occur at some time. Could occur monthly.
Possible	May occur at some time. Could occur annually.
Unlikely	Not likely to occur in normal circumstances. Could occur more than annually but less than 10 yearly.
Rare	Could occur in exceptional circumstances or once in 10 years.

LIKELIHOOD	Risk Matrix				
	CONSEQUENCE				
	Minor	Moderate	Major	Severe	Catastrophic
Almost Certain	Medium 6	Medium 10	High 16	Critical 21	Critical 25
Likely	Low 4	Medium 9	High 15	Critical 20	Critical 24
Possible	Low 3	Medium 8	High 14	High 18	Critical 23
Unlikely	Low 2	Medium 7	Medium 12	High 17	Critical 22
Rare	Low 1	Low 5	Medium 11	Medium 13	High 19

Risk Actions		
Rating	Response	Action
Critical Risk	Immediate action	Activity / task to be stopped and controls implemented which reduce the risk to at least High.
High Risk	Proactive management	Further risk reductions proactively investigated in consultation with workers and others affected. Higher level control measures (following the Hierarchy of Control) implemented wherever possible. Monitor and review controls to ensure they are implemented effectively. Approval required from EGM before work.
Medium Risk	Active management	Additional control measures implemented where risk can be further reduced. Identified controls monitored to ensure they have been implemented effectively.
Low Risk	Routine management	Control, monitor and review with normal risk management processes.



HIERARCHY OF CONTROLS	
The hierarchy of controls list the ways of controlling SHE risk in priority order, ranked by the highest level of protection and reliability, to the lowest.	
Elimination	Permanent solution where the hazard is completely eliminated or removed (e.g. discontinuing the work process, removing hazardous plant or equipment from use etc).
Substitution	Achieved by replacing hazardous plant, equipment, substances, etc., with a safer alternative (e.g. using a less hazardous cleaning chemical).
Isolation	Physically separating the hazard from people (e.g. using physical barriers) and/or by distance (e.g. remote operations).
Engineering controls	Involves making engineering changes or physical modifications which reduce exposure to the hazard (e.g. mechanically restricting the speed limit on forklifts).
Administrative controls	Establishing policies, procedures and work practices designed to reduce a worker's exposure to a risk. It can also include the provision of specific training and supervision.
Personal Protective Equipment	PPE is anything used or worn by a person to reduce the consequence of being exposed to a hazard and any resultant injury (e.g. safety glasses, safety gloves, safety boots).