

Doc No.:	SLD-ENG-0015-HAS-RA-0001
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Date:	15/11/2023



Baseline Risk Assessment

Transnet National Ports Authority
Baseline Risk Assessment
Operational Facility for the Infrastructure Maintenance Depot
for
Port of Saldanha

Doc. Number: SLD-ENG-0015-HAS-RA-0001

Compiled by:	Terrence Vilakazi Safety Practitioner	 Signature	14/12/2023 Date
Reviewed by:	Netaneel Pieters Risk Specialist	 Signature	18/12/2023 Date
Accepted by:	Phakama Mbarane Project Manager	 Signature	10/01/2024 Date

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Introduction and Background

- a) The Infrastructure Maintenance Depot was relocated to the current premises behind the Bayvue Centre Administration Block (TNPA offices) in 2013. Figure 1 shows the locality map of the current location of the Infrastructure Maintenance Depot. The Infrastructure Maintenance Depot was previously located in the Main Port area, occupying prime Port land. The growing demand in Port facilities necessitated the Infrastructure Maintenance Depot to relocate. In operating the new facility, it was noticed that not all the equipment and material have dedicated storage areas and are standing outside. The operational life of the equipment is reduced because they are stored outside.
- b) This project was therefore identified to provide additional storage facilities around the Infrastructure Maintenance Depot for the material and equipment that is currently standing outside in the harsh environmental conditions the area experiences. These facilities will help to prevent the effects that the harsh environmental conditions have on the material and equipment and help to ensure that the material and equipment remain functional for their intended life span. The facilities would also provide the Port with the ability to store all the critical spare material that the Depot requires to respond quickly and efficiently to a breakdown in the Port. This would be an improvement for the Port, as currently the Depot does not have sufficient space to store all the critical spare materials.

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Figure 1: Locality Map for the location of the Infrastructure Maintenance Depot

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Risk Assessment Team				
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Facilitator	Terrence Vilakazi	Health & Safety Practitioner	021 449 3589	Terrence.vilakazi@transnet.net
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Team Member 2	Netaneel Pieters	Risk Specialist		Netaneel.pieters@transnet.net

Inherent Risk
• Traffic congestion. • Excessive dust • Working in an operational area. • Working at Heights

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Activities Covered	
The Scope of Work for this Contract includes the following: a) The Employer seeks to acquire the services of a suitably qualified and resourced Multidisciplinary Engineering Contractor to undertake project execution work and all engineering related activities, procure all material and equipment and execute all the works associated with the construction of Operational Facilities for Infrastructure Maintenance Depot project. The Works must include the following: I.The Civil, Architectural, and Structural engineering scope: a) Setting out of the site and site preparation works including site clearance and exposing and protection of existing services. b) Bulk excavation, earthworks and construction or rework of layer works as per design requirements. Including vehicle access routes, laying of kerbing, fillets, manhole covers, concrete bases, concrete plinths and concrete channels where required. c) All structures to be masonry structures. Portal frame structure with roller shutter doors, roof structures and covered carport. d) Permanent road markings. e) Bulk services infrastructure: • Electrical service reticulation infrastructure, including service sleeves and manholes. • Stormwater drainage infrastructure, including concrete conduits, inlet structures and manholes. f) The installation of rainwater harvesting tanks.	

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II.The electrical engineering scope:

- a) Installation of new electrical service cabling, distribution boards and associated equipment for the servicing of the new operational facilities.
- b) Installation of exterior and internal luminaires as per design requirements.
- c) Design, supply and installation of earthing and lighting protection system.
- d) Testing, certification of compliance and commissioning of the entire new installation.

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Scope of Risk Assessment

The risks identified are those that will have a direct effect on the contractors during construction but also those that could have a detrimental effect on the project directly or indirectly from a time delay and cost point of view.

Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
Access Control	Driving under the influence of alcohol and drugs.	Injury to persons and property damage Disruptions to Port operations Construction activities and movements causing disruptions to active properties. Site occupants/ employees' interaction with construction vehicles which may lead to accidents.	All employees entering the Port shall subject to an alcohol Breathalyzer or drug test. The contractor's drivers shall abide by road traffic rules as stipulated in the National Road Traffic Act (Act 93 of 1996) and Regulations thereto or otherwise. Liaison to be in place with properties management regarding the construction project and safety measures to be implemented.	3	2	MEDIUM

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Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Construction site camps and working to be fully barricaded with suitable barriers to separate from public. Construction site camps and activities to be design in a manner that will not cause disturbances to the occupied areas/ public. Site offices that have electrical installations must have Certificate of Compliance (COC).			
	Non-compliance with Port rules Speeding Parking in areas not designated for parking. Defective/non-compliant vehicles entering the Port.	Port Entry Denied. Injury to persons and property damage. Suspension from the Port. Obstruction to the road and lead to injury to persons/ property damage. Disruptions to Port operations.	All Contractor employees including visitors, suppliers and deliveries must undergo TNPA safety induction before entering the Port and Construction site. TNPA permits to be requested through TNPA Security at the contractor's expense. All drivers shall abide by the speed limit of 20km/h inside the Port. The contractor's drivers shall abide by road traffic rules as stipulated in the National Road Traffic Act (Act 93 of 1996)	3	2	MEDIUM

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Adherence to Vehicle and Transportation Management procedure and the Road Traffic Act such as daily inspection and maintenance of vehicles entering the Port. Contractor shall ensure that all their drivers' park in designated areas to avoid obstruction on the road due to high vehicle movement. Contractor's employees must ensure that they use designated routes to get to their respective site. Contractor must ensure that a traffic management plan is developed and implemented when activities affect road traffic.			
Site Establishment	Unapproved site camp and layout Temporal or permanent electrical connections Using drinking water from un-identified source/ connection	Electrocution and property damage Sickness of employees resulting from drinking water from unsafe sources. Communicable disease due to poor hygiene practices.	Site camp must be approved by the Client to be safe for use by the Contractor and ensure underground services identified. Electrical connection must be only done by a registered person and Certificate of Compliance (CoC) to be provided after completion.	4	5	EXTREME

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Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	No ablution facilities. No designated eating area. Defective tools used (drill, welding machine, grinders, and hand tools) Unauthorised access to site. Inadequate space for construction vehicle and plant movement, working space, staking and storage space. Compliance with COVID-19 Protocols.	Employees contracting diseases due to eating at hazardous areas on site. Injuries to employees. Public exposure to construction hazards. Accidents from inadequate working safely. COVID-19 virus infectious on site.	Drinking water must only be source from a connection identified and safe for drinking. Contractor to adhere to OHS Act, 85 (85 of 1993), and applicable regulations and TNPA Health and Safety Specification. Contractor to ensure all electrical and hand tools are inspected before use. Contractor to comply with TNPA health and safety site specification. Site entrances to have COVID-19 screening and isolation area. Sufficient space to be allowed for site office's establishment, facilities, works execution, plant and construction vehicle movement, material and waste, staking and storage within site boundaries. Offices, welfare facilities and all site facilities to be designed to allow social distancing of one and half meters.			

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
Placing of Signs and Notices	Insufficient information and warning signs on construction site	Disruption Injury to employees Injury to public Damage to property	Construction safety warning signs to be placed at the entrance and should contain the following minimum information: • Construction Activities ahead. • No authorised entry. • Speed limit 20 km/h. • Personal Protective Equipment signs which include safety boots, reflective vest, hard hat signs etc. • Visitors to report to site office. • COVID-19 signs for screening, social distancing and hand sanitiser. Notice board indicating man-hours worked and incidents/ accidents statistics to displayed at the site entrance. First Aid kits, Name of first aiders and fire extinguishers signs to be displayed where they are located. Assembly point sign and all other required warning signs as per hazards on site to be erected appropriately where the hazards exist.	2	2	LOW

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Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Signs indicating offices, safe drinking water, ablution facilities and eating area to be displayed.			
Delivery of Containers	Overloading and speeding. Incompetent Crane Operator Soft and/or sloping ground Non-complying delivery vehicles and machines Hitting overhead cables Employees walking under the container. Unsafe practices	Containers and materials falling off causing injuries and property damages. Road accidents Property damage, injuries and/or fatalities	Contractor to ensure Crane truck is not overloaded. The contractor's drivers shall abide by road traffic rules as stipulated in the National Road Traffic Act (Act 93 of 1996). Contractor's driver must be competent and appointed in writing. Ground where containers are to be placed to be stable to bear the intended weight. Overhead cables to be identified and offloading not be done under overhead cables. Lifting machines to comply with the mass loads designed to carry.	4	5	EXTREME

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Ropes and chains for the lifting machines to have safety factor with respect to load they designed to lift. Lifting machines operators to have competency certificates from an approved organisation by Chief Inspector. Inspections to ensure all plant and equipment in the operation are safe for use and records to be kept on the file. Supervisor to ensure that the task is done in a safe manner. Banksman to be provided. Area to be demarcated, unauthorised personnel to be not allowed. Full PPE by personnel involved in the task such as reflector vest, overalls, safety boots, hard hat and gloves etc. Safe Working Procedures to be provided.			

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
Temporary Electrical Installation	Uncertified installer/ electrician Exposed Wires Cables running over the ground	Electrocution Fire Property damage Tripping and falling	All electrical installations to be conducted by an electrician registered with Department of Employment and Labour. All cables to run safely overhead or underground and Certificate of Compliance (COC) to be provided for all installations. Temporary Electrical Installations to be inspected weekly by competent person.	3	4	HIGH
Emergency Preparedness	Inability to attend to emergencies on site	Injuries Fatalities Property damage Emergency services taking long to reach site. COVID-19 emergencies	Detailed emergency plan to be provided as per emergency situations that can be encountered which included: • Fire • Community unrests • Structural collapse • Venomous Animal's such as snakes, bees and scorpions etc. The following emergency equipment to be provided: • Warning alarms • First Aid kits • Fire Extinguishers • Spill Kits etc.	2	5	HIGH

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Competent team which includes emergency coordinator, first aiders and fire fighters to be appointed. Emergency drills to be conducted every six months. Site to have COVID-19 isolation area by entrance to address COVID-19 cases on site.			
Staking, Storage and laydown area of material	Inadequate space for storage of various materials. Poor/ unsafe storage of material. Poor housekeeping	Accidents Damage to property	Allow sufficient space for laydown and storage of material during the planning stage of site layout. All material to be stacked within the barricaded sites boundaries. Stacking, storage and laydown areas to have easy and safe access and demarcated. Material that can roll down to be properly secured. Stacks to be not three times higher than the base. Hazardous Chemical Substances to be stored as per Material Safety Data Sheets. Good Housekeeping to be maintained in the stacking and storage area.	3	2	MEDIUM

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Offloading of office containers and materials.	Substandard rigging and lifting practices.	Loads falling causing injuries and property damages.	Competent rigger to be appointed.	4	5	EXTREME
	Mechanical failure of lifting equipment (mobile cranes/crane trucks)	Loads swinging causing injuries and property damages.	Valid crane, hook, rope, load, and calibration test to be submitted service provider.			
	Poor ground stability	Crane tipping over causing injuries to employees and damage to property.	Competent Rigging and lifting equipment inspector appointed (LMI).			
	High wind speeds	Loads falling causing injuries and property damages.	Pre-use checks to be conducted by the appointed competent person.			
	Employees working under suspended loads.	Loads swinging causing injuries and property damages.	All lifting and rigging equipment tested and certified, proof to be kept on file.			
	Incompetent rigger and crane operator.	Back injuries.	Storage of lifting and rigging equipment to be done in an approved manner.			
	Incorrect manual Handling.	Pinch points.	Contractor to ensure inspection of ground stability before outriggers are extended.			
	Load exceeding lift capacity of crane.		Contractor to take note of the weather prior to any lifting activities.			
			Contractor to ensure that no lifting must take place when there is inclement weather and/ or the wind speed is equal or more than 30km/h.			
			Contractor to ensure that no person walks or works under suspended loads.			
			Competent operator and riggers with previous experience and competencies must be appointed.			

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			Contractor to comply with Driven Machinery regulations, 2015 and 18(11). Guide ropes to be used to control load. Contractor to ensure employees are trained on correct manual lifting techniques. Employees to use appropriate gloves when doing manual handling.			
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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
Excavation Work	Excavations left open and not barricaded. Poor Ground condition Inclement weather (poor visibility conditions i.e., fog, rain, blind spots); Mechanical failure of machines (brakes, steering, park brake, leaks, exc.). Machines not in safe and serviceable condition. Unprotected excavations. Unsafe Access and Egress into and from excavations.	Heavy Machinery Equipment's (HME) or employees falling into excavations may result to injuries and fatalities. Communities and animals falling into excavations may result to injuries and fatalities. Electrocution from the damage underground electrical cables. Inhalation of dust may cause respiratory diseases. Property damage. Damage water pipes. Walls of excavation cave in and burying employees.	Appoint a competent person in writing as the Excavation Supervisor. Underground services to be detected before excavations are conducted. Soil composition must be identified and control systems to be designed as per condition. The sides of excavations must be safe to prevent any person from being buried or trapped by a fall or dislodge of material in the excavation. Construction vehicles and plants to keep a safe distance from the edges of the excavations to prevent causing pressure on walls which may lead to collapse. All excavations on site to be barricaded with a strong physical barrier to restrain people/ animals from fall in excavations. Drawing indicating existing services.	2	4	HIGH

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Unstable excavation walls (even after inclement weather). Loose Objects on the side walls of excavations. Underground services being struck/damaged. Dust		Bracing of excavations. Provision of excavation permits. Inducting employees and visitors. Clearly marked underground services. Isolation procedures to be put in place. Rerouting of services. Access restriction. Project health and safety specification. Ensure competent, trained personnel are used. Dedicated pedestrian walkways where practical. Safe access and warnings.			

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			inspections of excavations by competent and appointed persons to ensure compliance including checks pertaining to inclement weather. Excavators/TLB used for deep excavations. Competent and certified operators. Adequate supervision to stop all excavation work at the first visible sign of foreign material (e.g., electric cable sheath, PVC piping material).			
Use of Construction Machinery /Mobile Plant (i.e., HME -TLB, graders, excavators, tippers etc.)	Defective mobile plant. Incompetent operator. Open/uneven surfaces. Collision with Port equipment. Intoxicated operator.	Multiple injuries/fatalities; property damage.	Compliance to Project Health and Safety Specification. Pre-use inspections. Operator Competence verification. Valid medical assessments. Solid barricading. Alcohol testing.	3	4	HIGH

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Medically unfit operator. Man/machine interface.		PPE (reflector vests) for high visibility. Appointment of spotters/flagmen. Designated walkways for personnel			
Concrete Work (Pouring)	Improper handling or working with concrete (i.e., contact with eyes or skin). Holding of concrete weighted equipment. Incompetent concrete mix operator. Slipping and tripping. Pinch point at concrete chute.	Skin and or eye irritation. Back pain. Incidents (collision) resulting fatality injuries. Injuries to limb.	Project health and safety specification. Medical Surveillance (Certificate of Fitness). Concrete mix equipment inspection. DSTI and Toolbox Talk. Use of correct PPE (i.e., footwear, eye and hand protection etc). Spotter for concrete truck mixer. Supervision.	4	2	MEDIUM

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Concrete chute to be operated by the handle.			
Placing of Steel Reinforcement	Flaky steel. Sharp edges. Struck by piece of steel. Manual handling. Constant bending over. Unsafe equipment used.	Contact with sharp edges of steel may cause injuries. Struck by the piece of steel may cause injuries. Constant bending may lead to muscle strains and sprains.	Leather gloves to be used when handling steel. Employees to wear full body covering overalls. Employees to carry bars that can manage, team lifting to be implemented where necessary. Good coordination when carrying and placing steel. Job rotation to be implemented to allow rest periods from ergonomics. Suitable pliers that minimise adding pressure to be selected for the job.	4	2	MEDIUM
Cutting of Steel Reinforcement	Operating an angle grinder Defective Electrical Extensions. Noise	Unguarded angle grinder may lead to injuries. Electrocution from defective electrical extensions/ cables.	Appoint competent person in writing as the Portable Electrical Tool Inspector. Trained and competent personnel to operate grinder to cut steel.	4	2	MEDIUM

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Sparks from grinding	Exposure to noise may cause Noise Induced Hearing Loss (NIHL). Sparks generated by grinding may cause fire or injuries.	Inspection to be done on the electrical equipment and electrical cords before use. Personnel cutting steel to wear PPE such as Welding Apron, Welding Gloves, Face shield & Ear Protection. Fire extinguisher to be provided during the activity.			
Brickwork & Plastering	Insufficient Space and access Falls from heights. Dropping of material/ equipment. Overloading platforms/ trestles. Falling of bricks. Poor housekeeping.	Congested working area can cause injuries. Falling from heights can cause injuries and fatality. Falling equipment or material can cause injuries or fatality. Improper placing of material or equipment can cause tripping and falling.	Carry out site inspection and evaluate requirements before start work. Appoint a competent person in writing as the staking and storage supervisor. Only sufficient material and equipment to be brought on site as is required. Remove any superfluous material and ensure housekeeping standard in maintained at all times.	3	4	HIGH

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Dust from cement. Cement bags. Concrete spillages Incompetent concrete mixer operator.	Inhalation of cement dust may cause respiratory illness. Improper disposal of cement bags may lead to environment pollution. Mixing cement directly on the ground may lead to environmental pollution. Contact with wet or dry cement may cause eye irritation and dermatitis.	Fall protection plan for the project to be developed and used. High working platforms to comply with load bearing weight limits. Employees to be fully issued and wearing required PPE for the tasks. Remove any rubble from workstations to designated collection areas. Competent operator of the concrete mixer. Employees to avoid eye contact with dry/wet cement powder and wear eye protection. Employees to wear rubber gloves when working with wet or dry cement. Cement to be mixed on a concrete slab over an impermeable material to prevent concrete spillage.			

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
Plumbing Work	Incompetent Plumber. Off-cut material & Debris. Defective tools	Incompetent person may deviate from the scope of work and cause property damage and waste material. Waste generated from site may cause environmental pollution. Improper/defective tools may cause injuries.	Competent and experienced plumber to be provided. Installation of works to be inspected and recorded on the register. Waste to be discarded as per Waste Management Plan. Appoint a competent person in writing as the Hand tool Inspector.	4	2	MEDIUM
Painting Work	Fumes from paint. Paint spillage. Improper disposal of paint containers.	Contact with paint may cause skin rashes. Inhalation of paint fumes may lead to dizziness and respiratory illness. Paint spills and improper disposal of paint container may lead to environmental pollution.	Disposable suits and masks must be worn as prescribed by the MSDS. Induct employees with regard to the potential dangers associated with not wearing the required PPE. Plastic sheeting must be placed on the ground to prevent spillage on the ground.	4	1	LOW

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Waste paint containers and brushes or trays must be disposed at a registered hazardous landfill and disposal certificate must be produced as proof of disposal.			
Working at elevated position (i.e., Roof Work/ ladders)	Working on unprotected edges. Brittle old roof strictures. Unsafe lifting of material Poor housekeeping leading accumulation of waste and loose materials. Incorrect methods of getting materials, equipment, or tools from and to ground (i.e., throwing).	Falls from the roof resulting in injuries and fatalities. Falling from height resulting to fatality and injuries Objects or materials falling from heights may result fatalities and injuries.	Method Statement for Roof work to be provided. Material that employees shall be walking on i.e., old roof structures to be assessed for strength before any person walks on them to prevent breaking and falling. Fall arrest system in the form of lifeline and safety harness to be developed and used for roof work. Safe working procedure for lifting material to the roof to be developed and approved. Project health and safety specification.	4	5	EXTREME

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Working on rainy weather conditions (slipping) Person falling from the ladder. No ladder assistant used to hold the ladder. Defective ladder used.		Use fall protection and prevention equipment (i.e., guardrails, solid barricade, harnesses). Prior examination of employees for fitness by OMP and undergone a working at heights training thereafter. Ladder assistant to be used. Inspection of Ladders before use. Three-point contact when climbing ladders. SHE Representative Inspections Good House Keeping Supervision			
Scaffolding	Poor planning during erection of scaffold	Scaffolding in a risk of falling or collapsing due to poor planning.	Scaffolding must comply with SANS 10085.	4	5	EXTREME

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Incompetent personnel erecting scaffold Non-compliance with designs. Incompetent scaffold team. Defective scaffold material. Falling from scaffold	Incompetent scaffolding team can cause the scaffolding to collapse that will lead to injuries and fatality. Falling from scaffold may lead to injuries and fatalities. Defective scaffolding material may cause injuries and fatalities.	Scaffolding must be designed by competent person to ensure the following: • Calculation of safe working loads. • Maximum permissible height. Appoint a competent person in writing as the Scaffolding Supervisor, Erector, and Inspector. Competent and experienced scaffolding team members involved in the tasks. Prior examination of employees for fitness by OMP and undergone a working at heights training thereafter. Surface which scaffolding shall be erected must be approved by the scaffolding supervisor or professional engineer. Scaffolding must be erected by trained and under supervision of a competent scaffolding supervisor. Fall Protection Plan and/ or Rescue Plan to be developed.			

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			Safe working procedure for scaffold erection to be provided. Only green tagged scaffolding can be accessed. Scaffolding to be inspected after erecting for safety and thereafter display tag indicating load bearing capacity and whether its safe for use. Hand over certificate to be issued to Construction supervisor before use. Scaffolding to be accessed using safe ladders attached to it. Scaffolding must be inspected for safety weekly or after inclement weather conditions, deviations found to be recorded and safety to be restored before use.			

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			Scaffolding to be numbered, numbering system to be developed on site. Each scaffolding checklist to reflect scaffolding number. Safe work procedure for dismantling scaffolding to be provided, implemented and scaffolding team trained.			
Hot Works – Welding and Grinding	Incompetent Welder or Grinder Operator. Substandard Electrical Tools (e.g., Portable Electrical Grinders, Drills, Welding Machines, Generators) being Used. Performing hot work activities in wet weather conditions. Oil/Fuel leaking generators	Injury requiring medical treatment. Lost Time Injuries. Environmental issues. Fire or explosion	Project health and safety specification. Daily electrical equipment/tools inspection by a competent person. Verified competency training for any person operating electrically driven tools and equipment. All electrical equipment run from portable generators to be double insulated. Generators to be inspected daily. Proper earthing for all welding activities.	3	4	HIGH

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Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
			All tools to be inspected and checked before use including use of correct cutting disk and backing plates. Grinders may only be used on solid surface. All electrically driven tools must be double insulated and must have a dead man switch fitted, it must not be possible to lock the equipment in the on position. Welding Screens to be use during this activity. Correct PPE to be worn during this activity.			
Fencing	Open excavations. Defective hand tools.	Falling in open excavation that are not fenced or barricaded. Injuries to employees due to using defective hand tools.	Project Health and Safety Specification. Daily inspection of hand tools.	3	2	MEDIUM
Working on or/and near the operational sites.	Construction vehicle and mobile plant on the operational site. Incompetent operators.	Machinery run out of control may cause injuries, fatalities, and property damage incidents. Reckless driving may cause injuries and property damage.	Competent person must be appointed as the machinery operator. Such vehicles and plant should be used for the design and intended purpose.	3	4	HIGH

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Baseline Risk Assessment

Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Defective Heavy Machinery Equipment's. Man/ machine interface. Dust from Plant Machinery. Noise from Plant Machinery.	Inhalation of dust may cause respiratory illness. Exposure to noise may lead to Noise Induced Hearing Loss (NIHL).	Mobile plant must be in a possession of maintenance/service records. Operated by a competent person. Pre-start checklist to be completed before the shift starts, report abnormalities or defects if any. All people coming to site must be inducted and accompanied by a person who is aware of the risks in the area. Training of plant and machinery operators on the Safe Operating Procedure. Competent spotters or flagman's to be appointed to control the movement of Machinery.			
Waste Management	Excessive accumulation of waste Littering on construction site.	Rodents can infest the area and ill-health.	Waste separation and segregation will be implemented.	3	1	LOW

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Baseline Risk Assessment

Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Poor Housekeeping. Improper storage of waste Unapproved disposal landfill	Trip and fall caused injuries to employees. Excessive waste accumulation may cause fire and/ or explosion. Unapproved landfill disposal may result to fines and litigations.	Waste must not accumulate on site, waste to be continuously removed from site and be disposed of in approved landfill site as per waste category. Proper housekeeping to be done on construction site. Waste must be continuously removed from workstations and be placed in dedicated temporary collection areas. Fire emergency plan to be readily available on site.			
Dust from construction activities and stockpiles.	Dust from stockpiles. Dust caused by moving Plants.	Inhalation of dust may cause respiratory illness. Air pollution.	Dust control by means of dust suppression. The use of appropriate P.P.E e.g., dust masks.	3	1	LOW
Travelling to site	Traffic congestion. Speeding. Overloading vehicles.	Collision of vehicles that may cause property damage, injuries and/or fatalities.	The use of designated areas for construction vehicles. Adherence to reverse parking on site. Adherence to site speed limit.	2	4	MEDIUM

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Baseline Risk Assessment

Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Incompetent driver/ intoxicant driver.		Verification of driver's competencies and Alcohol Testing. Comply to Road Traffic Act.			
Access to work areas	Ground Stability Uneven ground surface.	Workers can trip and fall that may cause breaking of limbs. Plant machinery may collapse that can lead to property damage and injuries.	Proper assessment of ground stability. Levelling of work surface for plant before commencement of work.	2	3	MEDIUM
Interface with adjacent construction activities of other contractors	No communication with other contractors on premises in close vicinity of work area. Prevalence of dust	Injuries resulting in permanent disabilities and Fatalities. Inhalation exposure to solid dust results in Respiratory infection (potentially permanent health impact). Lung Irritation / damage to eyes/ red eyes.	Contractor must communicate daily regarding items that may affect 3rd party or site access. Principal contractor to monitor activities to limit potential dust exposure in line with wind speed and direction. Provision of dust masks to personnel to prevent dust inhalation. Dust suppression by means of water truck.	3	4	HIGH

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Baseline Risk Assessment

Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
Existing environmental site conditions not associated with any activities.	Bees, snakes, spiders and/or scorpions etc. Thundering/ Lightening. Slippery conditions during rain.	Venomous animals may cause anaphylaxis (Severe allergic reaction) and fatality. Employees struck by lightening may result to fatalities. Car accidents due to slippery conditions and, slip and fall of employees during rainy weather.	Animal Relocation Specialists and Hospitals emergency contact details. Employees must have an animal's awareness training and report any reptiles or animals they see. Employees must be warned not to arm or trap any reptiles or animals. Correct PPE to worn on construction site. Construction works must be stopped during rainy and slippery conditions. Construction works must be stopped during thundering and lightening conditions.	1	5	MEDIUM
Occupational Health and Hygiene	Noise from Construction Plant Machinery/ Equipment. Extreme Temperatures (Heat/Cold).	Exposure to high noise levels may lead to permanent hearing loss or Noise Induced Hearing Loss (NIHL).	Occupational hygiene monitoring and medical surveillance. Hearing conservation programme.	4	5	EXTREME

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Baseline Risk Assessment

Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
	Ergonomics (Manual Handling) Dust particles from earthworks and drilling. Communicable and other infectious diseases such COVID-19, HIV/AIDS, etc.	Exposure to extreme temperatures (heat) may result in dehydration and/or heat exhaustion. Exposure to extreme temperatures (cold) may result in hypothermia. Bending, twisting and muscle strains may cause musculoskeletal injuries and fatigue. Inhalation of dust particles may cause respiratory infections such as lung cancer, etc. Contact with infected person or area may result to COVID-19 infections. Unhygienic practices may cause employees vulnerable to communicable and infectious diseases.	Correct PPE to be worn during noise activity such as Earplugs or Earmuffs. Compliance to Project Health and Safety Specification. Develop a Manual Handling Procedure. Fresh clean drinking water to be provided. DSTI and Toolbox Talks. Correct lifting and handling practices and ergonomic awareness. Hygiene monitoring. Medical surveillance (Certificate of Fitness). Dust suppression by means of water truck. FFP2 dust masks and safety goggles.			

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Hazards, Associated Risks, and Ratings						
Activity, step or action step	Hazards	Associated risk event	Risk controls	L	C	Risk Rating
		Unprotected sexual practices may result to employees infected with HIV/AIDS and STI's.	Training on communicable and infectious diseases during DSTI and Toolbox talks. Practice social distancing. Washing of hands regularly. Use of face masks. Employees reporting to management when sick. Drink plenty of water and keep hydrated, Practice protected sex e.g., use protection			

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Annexure 1 – TNPA Risk Matrix and Descriptions

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Critical
Almost Certain	Medium	Medium	High	Extreme	Extreme
Likely	Low	Medium	High	High	Extreme
Possible	Low	Medium	High	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Low	Medium
Assessed Risk Level	Description of Risk Level		Action Required		
Low	If an incident were to occur, there would be little likelihood that an injury would result		Undertake the activity with the existing controls in place		
Medium	If an incident were to occur, there would be some chance that an injury requiring First Aid would result		Additional controls may be needed		
High	If an incident were to occur, it will be likely that an injury requiring medical treatment would result		Controls will need to be in place before the activity is undertaken		

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Extreme	If an incident were to occur it, it would be likely that a permanent or death would result	Consider alternatives to doing the activity. Significant control measures will need to be implemented to ensure safety
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Likelihood	Description of Likelihood		Consequence	Description of Consequence
1. Rare	Will only occur in exceptional circumstances		1. Insignificant	No treatment required
2. Unlikely	Not likely to occur within the foreseeable future, or within the project lifecycle		2. Minor	Minor injury requiring First Aid treatment (e.g. minor cuts, bruises, bumps)
3. Possible	May occur within the foreseeable future, or within the project lifecycle		3. Moderate	Injury requiring medical treatment or lost time
4. Likely	Likely to occur within the foreseeable future, or within the project lifecycle		4. Major	Serious injury (injuries) requiring specialist medical treatment or hospitalisation
5. Almost Certain	Almost certain to occur within the foreseeable future or within the project lifecycle		5. Critical	Loss of life, permanent disability or multiple serious injuries