




## OCCUPATIONAL HEALTH & SAFETY (OHS) SPECIFICATION: BASELINE RISK ASSESSMENT

PROJECT NUMBER:	N/A
PROJECT LOCATION:	Phumlamqashi Informal Settlement
PROJECT DESCR:	Construction of Phumlamqashi Dedicated Pipeline

# BASELINE RISK ASSESSMENT

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### ACTIVITY: TRANSPORTATION OF MATERIALS TO SITE


Task	Hazard	Risk	Consequence	Rating	Controls
<b>Transportation of material to site</b>	<ul style="list-style-type: none"> <li>✓ Unsafe road conditions</li> <li>✓ Un-road worthy vehicles</li> <li>✓ Equipment and material not safely secured</li> <li>✓ Incompetent drivers</li> <li>✓ Driving under the influence of alcohol</li> <li>✓ Inclement weather</li> <li>✓ Speeding</li> <li>✓ Slippery road</li> </ul>	<ul style="list-style-type: none"> <li>✓ Overturning vehicles</li> <li>✓ Vehicle collisions</li> <li>✓ Bumping pedestrians / employees</li> </ul>	<ul style="list-style-type: none"> <li>✓ Injuries</li> <li>✓ Property damages</li> <li>✓ Third party liability</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Adherence to the speed limit</li> <li>✓ Only competent/ authorised drivers should operate the vehicle</li> <li>✓ Inspection of vehicles</li> <li>✓ Equipment and material to be properly secured</li> <li>✓ Alcohol testing to be done</li> <li>✓ The road to be paved to prevent accidents</li> <li>✓ Traffic control to be implemented to avoid collisions</li> </ul>
<b>Offloading of material</b>	<ul style="list-style-type: none"> <li>✓ Faulty lifting machinery &amp; equipment</li> <li>✓ Suspended load</li> <li>✓ Poor housekeeping</li> </ul>	<ul style="list-style-type: none"> <li>✓ Malfunctioning</li> <li>✓ Falling on employees</li> <li>✓ Obstructed walkways by materials</li> </ul>	<ul style="list-style-type: none"> <li>✓ Injuries</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Inspect lifting equipment prior to use.</li> <li>✓ Ensure the safe working load prior to use</li> <li>✓ Train the employees in manual lifting</li> <li>✓ Ensure proper housekeeping</li> <li>✓ The correct PPE must be worn</li> <li>✓ Designate the stacking areas and put signs</li> <li>✓ Stacking and storage inspector must be appointed and in charge</li> </ul>

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### ACTIVITY: SITE ESTABLISHMENT

Task	Hazard	Risk	Consequence	Rating	Controls
<b>Site establishment</b>	<ul style="list-style-type: none"> <li>✓ Sharp objects/wires</li> <li>✓ Uneven surface</li> <li>✓ Faulty connection</li> <li>✓ Poor ergonomics</li> <li>✓ Falling objects</li> <li>✓ Inadequate security services</li> <li>✓ Not enough ablution facilities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Cuts</li> <li>✓ Slips and trips</li> <li>✓ Damage to services</li> <li>✓ Using the environment as ablution facilities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Injuries</li> <li>✓ Back strains and injuries</li> <li>✓ Crime, theft, fights</li> <li>✓ Contracting of communicable diseases</li> <li>✓ Soil, water pollution</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Supervisors to plan during site set up and induct employees</li> <li>✓ A competent electrician must be appointed to connect electrical wires to the site offices and Distribution Board.</li> <li>✓ Ensure there are welfare facilities on site for health and hygiene purposes</li> <li>✓ Awareness on hygiene and use of ablution facilities</li> <li>✓ Detailed Risk Assessment must be drawn before any work commences on site.</li> </ul>
<b>Installing containers</b>	<ul style="list-style-type: none"> <li>✓ Using lifting equipment</li> <li>✓ Faulty equipment</li> <li>✓ Faulty slings / chains</li> </ul>	<ul style="list-style-type: none"> <li>✓ Wind</li> <li>✓ Incompetent personnel</li> <li>✓ Heavy load</li> <li>✓ Failing of lifting equipment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Serious injuries</li> <li>✓ Property damage</li> </ul>	<b>H</b>	<ul style="list-style-type: none"> <li>✓ Check wind speed prior to using the crane.</li> <li>✓ Inspect the crane, slings and chains before use.</li> <li>✓ Load test the crane before use</li> <li>✓ Only carry loads certified to be carried by the crane</li> </ul>
<b>Entry and exit</b>	<ul style="list-style-type: none"> <li>✓ No access control</li> </ul>	<ul style="list-style-type: none"> <li>✓ Unauthorised entry into the construction site</li> </ul>	<ul style="list-style-type: none"> <li>✓ Injuries</li> <li>✓ Theft</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Appoint a full time, registered security guard on site</li> </ul>

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ACTIVITY: SITE ESTABLISHMENT					
Task	Hazard	Risk	Consequence	Rating	Controls
<b>Electrical installation</b>	<ul style="list-style-type: none"> <li>✓ Electricity</li> <li>✓ Incompetent personnel</li> <li>✓ Wrong tools</li> <li>✓ Damaged cables</li> </ul>	<ul style="list-style-type: none"> <li>✓ Contact with live electricity</li> <li>✓ Incompetent person connecting electricity</li> <li>✓ Electric shocks</li> </ul>	<ul style="list-style-type: none"> <li>✓ Electrocution</li> <li>✓ Serious injuries</li> </ul>	<b>H</b>	<ul style="list-style-type: none"> <li>✓ Follow lock out procedure</li> <li>✓ Ensure that equipment are earthed to an approved earthing point</li> <li>✓ Ensure a zero potential test is performed for electricity is isolated</li> <li>✓ Inspect all tools</li> <li>✓ Use correct tools for the job</li> <li>✓ Appoint a competent electrician/ technician</li> <li>✓ Wear task specific PPE</li> <li>✓ Ensure that there are no exposed wires on the cables</li> </ul>
<b>Stacking and storage</b>	<ul style="list-style-type: none"> <li>✓ Unsafe stacks of materials or pallets</li> </ul>	<ul style="list-style-type: none"> <li>✓ Falling of pallets and material on employees</li> <li>✓</li> </ul>	<ul style="list-style-type: none"> <li>✓ Injuries</li> <li>✓ Property damage</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Supervision of all stacking of materials on site</li> <li>✓ Materials of same base and heights stacked together</li> <li>✓ Barricade the stacking area</li> <li>✓ Unsafe stacks to be removed immediately</li> <li>✓ Never stack materials during knocking off time or late at night.</li> <li>✓ Use task specific PPE</li> <li>✓ Stacking and storage supervisor to be appointed in writing.</li> </ul>



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## **ACTIVITY: SITE ESTABLISHMENT**

<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
					✓ Monthly inspections to be conducted on stacking and storing on site.
	✓ Substandard housekeeping	✓ Trip and falls	✓ Incidents / accidents	<b>L</b>	✓ High standards of housekeeping to be maintained.
	✓ Exposed material / equipment	✓ Theft	✓ Financial losses	<b>M</b>	✓ Ensure that there is sufficient security on site 24/7.



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### ACTIVITY: UNDERGROUND SERVICES

Task	Hazard	Risk	Consequence	Rating	Controls
<b>Working close to Eskom line</b>	✓ High voltage	✓ Electrocution	<ul style="list-style-type: none"> <li>✓ Fatalities</li> <li>✓ Power cuts</li> <li>✓ Property damages</li> </ul>	<b>H</b>	<ul style="list-style-type: none"> <li>✓ Proper scanning of services prior to starting with excavations</li> <li>✓ Obtain wayleaves from Eskom prior to starting with work</li> <li>✓ Do not use lifting equipment in close proximity to power lines unless authorized to do so.</li> <li>✓ Appoint an OHRVS to supervise all work done in close proximity to power lines</li> <li>✓ Contact Eskom if services are identified for isolation</li> <li>✓ Develop a method statement and risk assessment</li> <li>✓ Train employees in the method statement as well as risk assessment</li> <li>✓ Develop emergency response procedures for explosions</li> </ul>
<b>Working close to gas lines</b>	✓ Gas leaks	<ul style="list-style-type: none"> <li>✓ Explosion</li> <li>✓ Suffocation</li> <li>✓ Inhalation</li> </ul>	<ul style="list-style-type: none"> <li>✓ Fatalities</li> <li>✓ Property damages</li> </ul>		<ul style="list-style-type: none"> <li>✓ Proper scanning of services prior to starting with excavations</li> <li>✓ Obtain wayleaves from service provider prior to starting with work</li> <li>✓ Develop a method statement and risk assessment</li> <li>✓ Develop emergency response procedures for leaks and explosions</li> </ul>




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PROJECT NUMBER:	N/A
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## ACTIVITY: EXCAVATION


Task	Hazard	Risk	Consequence	Rating	Controls
Excavation	<ul style="list-style-type: none"> <li>✓ Deep excavations</li> <li>✓</li> </ul>	<ul style="list-style-type: none"> <li>✓ Collapse</li> <li>✓ Falling</li> <li>✓ Unsafe entry and exit</li> </ul>	Fatalities	H	<ul style="list-style-type: none"> <li>✓ Recommendations from the Geotech survey should be followed.</li> <li>✓ Shoring of the excavation</li> <li>✓ No unauthorised entry into the project site.</li> <li>✓ Fencing off of the excavation and prompt supervision of the area.</li> <li>✓ Full time security on site to monitor entry and exit.</li> <li>✓ Safe method of entry and exit to be provided for employees</li> <li>✓ Spoil material to be stored at least 2m away from the excavation</li> <li>✓ Signage to be displayed indicating deep excavations</li> <li>✓ Tracked excavator to be used where shallow soft rock is found</li> </ul>
	<ul style="list-style-type: none"> <li>✓ Incompetent operator</li> <li>✓ Faulty excavator</li> </ul>	<ul style="list-style-type: none"> <li>✓ Overturning</li> <li>✓ Bumping against people</li> </ul>	✓ Serious injuries	H	<ul style="list-style-type: none"> <li>✓ Only competent personnel may operate the excavator</li> <li>✓ All excavators must be inspected prior to use</li> </ul>

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<b>ACTIVITY: EXCAVATION</b>					
<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
<b>Mechanical excavation</b>	✓ Ignition on	✓ Accidental movement	✓ Fatalities ✓ Property damages	<b>H</b>	✓ Operators should ensure that the ignition is off prior to leaving the plant. ✓ Keys should be removed from the ignition and returned to the office for safekeeping,
<b>Deep excavation</b>	✓ Lack of safety signage	✓ Employees / passersby falling into excavations	✓ Fatalities	<b>H</b>	✓ Ensure that deep excavation signage is placed and visible. ✓ Deep excavations must be fenced off and access controlled.
	✓ Spoil material	✓ Collapse of excavation walls. ✓ Entrapment	✓ Fatalities	<b>H</b>	✓ Excavated soil to be placed at least 2m away from the excavation wall.
	✓ Underground service	✓ Contact with plant	✓ Injuries ✓ Property damages ✓ Electrocutation	<b>H</b>	✓ All underground services to be identified and marked prior to excavation. ✓ Wayleaves from all service providers to be obtained prior to starting with excavations.
	✓ Unsafe access and exit	✓ Falling	✓ Injuries	<b>H</b>	✓ TLB / Excavator may not be used by employees to access and exit the excavation

 Johannesburg Water	<b>OCCUPATIONAL HEALTH &amp; SAFETY (OHS) SPECIFICATION: BASELINE RISK ASSESSMENT</b>	
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<b>ACTIVITY: EXCAVATION</b>					
<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
	✓ High water table	✓ Water ingress	✓ Drowning		✓ Continuous dewatering should be done where groundwater is encountered. ✓ Trenches should not be opened for longer periods, except with prior written consent ✓ Excavations must be inspected periodically and results recorded in an inspection checklist. ✓ Where there is uncertainty about the safety of the excavation, the declaration shall be made by a registered Engineering Technologist on the safety of the excavation. ✓ Backfilling should be done as per the relevant SANS code. ✓ If saturation of the trench occurs, sidewalls should be either battered or supported laterally.
	✓ Open excavations	✓ Falling of employees ✓ Collapse	✓ Injuries		✓ Trenches should not be opened for more than 3 days to prevent deterioration in trench stability and to reduce the risk of persons and motorists falling inside.
<b>Backfilling</b>	✓ Soil	✓ Entrapment	✓ Serious injuries	<b>M</b>	✓ Backfilling to be done by mechanical means where excavations are deep ✓ No unauthorized entry ✓ The correct types of backfilling material to be used for backfilling

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<b>ACTIVITY: EXCAVATION</b>					
<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
	✓ Unstable ground	✓ Excavation collapse	✓ Serious injuries ✓ Fatalities	<b>H</b>	✓ Ensure that backfilling is done according to relevant standards. ✓ Ensure that the area is well barricaded. ✓ Compaction tests to be done ✓ Put relevant signage ✓ No unauthorized entry to the construction site
<b>Compacting</b>	✓ Compactor ✓ Noise ✓ Dust ✓ Vibration	✓ Overexposure to noise and vibration ✓ Collapsing excavation wall ✓ Inhalation of dust	✓ Noise induced hearing loss ✓ Raynaud's Syndrome ✓ Injuries Respiratory problems	<b>M</b>	✓ Use of earmuffs by compactor operator ✓ Dust mask to be worn by compactor operator ✓ Compactor operator to be declared competent before using the machine ✓ Provide operator with anti-vibration gloves and provide rest periods in between. ✓

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ACTIVITY: OPERATING CONSTRUCTION VEHICLES					
Task	Hazard	Risk	Consequence	Rating	Controls
Operating construction vehicles and mobile plant	✓ Moving bucket / arm	✓ Hitting employees	✓ Injuries	M	✓ Workers to stand clear of the path of the construction vehicles and mobile plant ✓ Rigger to direct the loading and offloading activities
	✓ Incompetent operator	✓ Hitting employees; ✓ Bumping vehicles and properties	✓ Injuries ✓ Property damages	M	✓ Only trained, competent and appointed operators may operate a concrete truck ✓ Flagman to be posted to direct the operator
	✓ Unhealthy operator	✓ Collapsing whilst operating	✓ Fatalities ✓ Injuries to other people ✓ Property damages	H	✓ All operators to undergo annual medical examinations prior to resumption of duties ✓ All sick employees must report to their supervisors, and not be allowed to operate construction vehicles and mobile plant.
	✓ Speeding	✓ Hitting employees; ✓ Bumping vehicles and properties	✓ Injuries ✓ Property damages	M	✓ Site speed limits to be adhered to at all times
Parking	✓ No visibility ✓ Parking on a blind spot ✓ Uncontrollable movement	✓ Collision with other vehicles ✓ Bumping into people	✓ Fatalities ✓ Property damages	H	✓ Ensure that construction vehicles are parked at safe areas while conducting operations ✓ Use signage where trucks are parked in / near the road ✓ Place stop blocks to prevent any movement. ✓ Ensure that the key is removed from the ignition when parked.
Maintenance & inspection	✓ Suction hose ✓ Vacuum pump	✓ Heating up during operations	✓ Severe burns	M	✓ Avoid contact with the vacuum pump during or immediately after operation. ✓ Do not touch hot fluid or equipment ✓ Do not touch exhaust pipe of truck unless you are a trained professional carrying out maintenance or repairs ✓ Refueling to be carried out in

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ACTIVITY: OPERATING CONSTRUCTION VEHICLES					
Task	Hazard	Risk	Consequence	Rating	Controls
					<ul style="list-style-type: none"> <li>✓ designated areas. Ensure spill kits are available and shutdown valve of the pump is available.</li> <li>✓ Conduct a risk assessment of the refueling station</li> </ul>
	✓ Hydraulic oil	✓ Contact with skin	<ul style="list-style-type: none"> <li>✓ Severe burns</li> <li>✓ Skin disease</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ All pipe clamps fitted</li> <li>✓ Pressure protection valves and Anti Drop valves fitted to hydraulic system.</li> <li>✓ High pressure warning decals</li> <li>✓ Hydraulic fluid lines to be inspected daily; cracks, tears and deformed lines must be reported and repaired prior to use.</li> </ul>

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ACTIVITY: PUMPING OUT WATER					
Task	Hazard	Risk	Consequence	Rating	Controls
Pumping out water using machinery	✓ Vibration	✓ Over exposure	✓ Raynaud's syndrome	M	✓ Regular maintenance of all equipment ✓ Provide employees with anti-vibration gloves ✓ Provide rest periods for every 1hr worked
	✓ Noise	✓ Over exposure	✓ Noise induced hearing loss	M	✓ Regular maintenance of all equipment ✓ Provide employees with proper hearing protection ✓ Provide rest periods for every 1hr worked
	✓ Damaged pump / valves	✓ Sewer spillages	✓ Land and water pollution	M	✓ Inspect all equipment prior to starting work ✓ Perform bioremediation in case of spillages
	✓ Steep slopes	✓ High flow velocities	✓ Blockages ✓ Erosion (water forced around the pipe)		✓ Ensure that the flow is diverted to mitigate high velocities. ✓ Implement staged lining approach where smaller sections of the pipe are lined incrementally.
	✓ Mud	✓ Slip and falls	✓ Injuries	L	✓ Demarcate areas that are affected by pumping.
	✓ Formation of ponds	✓ Employees / public falling inside	✓ Fatalities	H	✓ Ensure that approval is given for formation of ponds. ✓ Ensure that ponds are fenced of

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	PROJECT DESCR:	Construction of Phumlamqashi Dedicated Pipeline


ACTIVITY: HDD					
Task	Hazard	Risk	Consequence	Rating	Controls
Inserting the drilling rig	✓ Underground services such as gas or electricity	✓ Explosion ✓ Damages	✓ Fatalities	H	✓ Proper scanning of services prior to starting with excavations ✓ Obtain wayleaves from all utilities prior to starting with work ✓ Develop a method statement and risk assessment ✓ Train employees in the method statement as well as risk assessment ✓ Develop emergency response procedures for explosions
Inserting the drilling rig	✓ Vibration	✓ Road collapse	✓ Fatalities ✓ Property damages	H	✓ Only experienced service providers for pipe cracking should be appointed. ✓ Check Geotech conditions prior to starting with HDD ✓ Ensure that the correct depth is used for HDD ✓ HDD from JRA are always valid, and are complied with.
	✓ Vibration	✓ Exposure to excessive vibration	✓ Raynaud's syndrome	M	✓ Provide employees with sufficient rest periods for every 1hr worked.
Insertion	✓ Improper handling	✓ Hands getting caught ✓ Pipe slipping from hands	✓ Injuries	L	✓ Only trained employees may perform that task ✓ Training in the correct handling and connecting of bursting head

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ACTIVITY: HDD					
Task	Hazard	Risk	Consequence	Rating	Controls
	✓ Machinery	✓ Exposure to excessive noise above 85dB(A)	✓ Noise-induced hearing loss	<b>M</b>	✓ Provide employees with hearing protection ✓ Regular servicing and maintenance of equipment ✓ Have a barrier wall where possible to shield the community from the noise.

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<b>ACTIVITY: MECHANICAL LIFTING</b>					
<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
<b>Lifting using a crane</b>	✓ Overhead lines	✓ Contact with crane	✓ Electrocution ✓ Property damages	<b>H</b>	✓ All lifting activities to be planned at least 2m away from overhead lines ✓ Obtain wayleaves from Eskom ✓ Appoint ORHVS
	✓ Wind / Unfavourable weather	✓ Deflection ✓ Loss of control	✓ Injuries ✓ Property damages	<b>H</b>	✓ Do not use during unfavourable weather conditions
	✓ Incompetent operator	✓ Loss of control ✓ Hitting structures and people	✓ Injuries ✓ Property damages	<b>H</b>	✓ Only trained and competent operators may operate the crane
	✓ Overloading	✓ Collapse of material	✓ Injuries ✓ Property damages	<b>H</b>	✓ Display safe working load on the crane
	✓ Faulty crane	✓ Malfunctioning	✓ Injuries ✓ Property damages	<b>H</b>	✓ Cranes to be inspected by competent persons prior to being used ✓ All faulty cranes to be tagged and locked out


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<b>ACTIVITY: PIPE LAYING &amp; WELDING</b>					
<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
Pipe laying	<ul style="list-style-type: none"> <li>✓ Steel</li> <li>✓ Employees working around the excavation</li> </ul>	<ul style="list-style-type: none"> <li>✓ Static electricity</li> <li>✓ Rough edges</li> <li>✓ Heavy steel</li> <li>✓ Hit by pipe</li> </ul>	<ul style="list-style-type: none"> <li>✓ Electrocution</li> <li>✓ Injuries</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Ensure that pipes are earthed</li> <li>✓ Provide gloves to employees</li> <li>✓ Heavy pipes to be lifted mechanically</li> </ul>
Pipe laying	<ul style="list-style-type: none"> <li>✓ Crane</li> </ul>	<ul style="list-style-type: none"> <li>✓ Failure of the crane</li> <li>✓ Employees</li> </ul>	<ul style="list-style-type: none"> <li>✓ Fatalities</li> </ul>	<b>H</b>	<ul style="list-style-type: none"> <li>✓ Inspect the crane prior to use.</li> <li>✓ Only trained and competent person to operate the crane</li> <li>✓ Employees to steer clear of lifting operations</li> <li>✓ Faulty cranes to be tagged and not used</li> <li>✓ Wind speed and direction to be considered before using the crane</li> <li>✓ Crane to be load tested</li> <li>✓ Only certified loads to be carried on the crane</li> </ul>
Tie ins & pressure testing	<ul style="list-style-type: none"> <li>✓ Pressurized water</li> </ul>	<ul style="list-style-type: none"> <li>✓ Hitting employees</li> <li>✓ Burst</li> </ul>	<ul style="list-style-type: none"> <li>✓ Fatalities</li> <li>✓ High water losses</li> </ul>	<b>E</b>	<ul style="list-style-type: none"> <li>✓ Ensure that the water is shut down</li> <li>✓ Ensure that the correct class of pipe is used as well as valve specifications are correct</li> <li>✓ Develop and follow a method statement</li> <li>✓ Use only competent person to perform the task.</li> <li>✓ Don't exceed pipe operating pressure, ensure pipe is correct diameter and is not damaged.</li> </ul>


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**ACTIVITY: PIPE LAYING & WELDING**

Task	✓ Hazard	✓ Risk	✓ Consequence	Rating	✓ Controls
Pipe welding	✓ Welding equipment	✓ Poor maintenance	✓ Injuries	M	✓ Welding equipment is visually checked before each use;
	✓ Welding	✓ Sparks	✓ Fire	H	✓ Welding screens to be used
		✓ Sparks	✓ Burns	L	✓ Fire resistant overalls and apron to be worn. ✓ Develop method statement for welding inside the pipe
		✓ Glare	✓ Arc eyes	M	✓ Welding glasses to be used
	✓ Confined space	✓ Entrapment ✓ Inability to move	✓ Injuries ✓ Suffocation	H	✓ Develop method statement for welding inside the pipe. ✓ Ensure that the welder is able to fit in properly inside the pipe and move with ease ✓ Use a different method of welding where the pipe's internal diameter is less than 800mm.
Compacting	✓ Compactor ✓ Noise ✓ Dust ✓ Vibration	✓ In-competent employee using the compactor ✓ Hearing loss ✓ Hand-arm vibration syndrome ✓ Collapsing excavation wall ✓ Inhalation of dust	✓ Injuries Respiratory problems	M	✓ Use of earmuffs by compactor operator ✓ Dust mask to be worn by compactor operator ✓ Compactor operator to be declared competent before using the machine

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<b>ACTIVITY: MECHANICAL WORKS</b>					
<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
<b>Cutting and drilling</b>	<ul style="list-style-type: none"> <li>✓ Drilling</li> <li>✓ Drill bit</li> <li>✓ Drill sharp metal fibres</li> <li>✓ High Noise Levels</li> <li>✓ Cutting Grinder/Disc</li> </ul>	<ul style="list-style-type: none"> <li>✓ Vibration</li> <li>✓ Cutting edges</li> <li>✓ Eye penetration</li> <li>✓ Finger cuts</li> <li>✓ Expose to high noise level area</li> <li>✓ Uncontrolled disc</li> <li>✓ Electrical equipment failure</li> <li>✓ Sharp window edges</li> </ul>	<ul style="list-style-type: none"> <li>✓ Damaged hearing</li> <li>✓ Carpal tunnel syndrome</li> <li>✓ Cuts/ injuries</li> <li>✓ Eye irritation / blindness</li> <li>✓ Injuries</li> <li>✓ Eye injuries</li> </ul>	<b>M</b>	<ul style="list-style-type: none"> <li>✓ Use hearing protection when exposed to excessive noise levels (greater than 85 dB over an 8-hour work period)</li> <li>✓ Assess noise level with sound level meter if possibility exists that level may exceed 85dB.</li> <li>✓ Rotate drilling tasks to minimize worker exposure to equipment vibration.</li> <li>✓ Use right size of a drill to drill different layers of the ground</li> <li>✓ Assess manual guide carefully to ensure correct usage of portable electrical devices.</li> </ul>

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<b>ACTIVITY: MECHANICAL WORKS</b>					
<b>Task</b>	<b>Hazard</b>	<b>Risk</b>	<b>Consequence</b>	<b>Rating</b>	<b>Controls</b>
<b>Fueling the generator</b>	✓ Spillages	✓ Slips, trips, falls	✓ Injuries	L	✓ Prevent spillages ✓ Use drip trays ✓ Use funnels for fueling
		✓ Fire	✓ Injuries	M	✓ No smoking allowed near the generator
	✓ Diesel fumes	✓ Inhalation	✓ Respiratory problems	L	✓ Provide employees with respirators
		✓ Skin contact	✓ Skin irritation	L	✓ Provide employees with gloves, safety boots and overalls
	✓ Running engine	✓ Explosion	✓ Injuries	M	✓ Switch engine off before refueling and make sure fuel cap is replaced. ✓ No smoking allowed near the generator
<b>Running the generator engine</b>	✓ Noise	✓ Over-exposure	✓ Noise-induced hearing loss	M	✓ Provide employees with hearing protection ✓ Provide rest periods for employees
	✓ Vibration	✓ Over exposure	✓ Raynaud's Syndrome	L	✓ Provide employees with vibration gloves. ✓ Rotate employees or provide rest periods.
	✓ Fumes	✓ Inhalation	✓ Respiratory problems	L	✓ Provide employees with respirators ✓ Never use indoors




## OCCUPATIONAL HEALTH & SAFETY (OHS) SPECIFICATION: BASELINE RISK ASSESSMENT

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### ACTIVITY: GENERAL ACTIVITIES ON SITE

Task	Hazard	Risk	Consequence	Rating	Controls
✓ <b>Working on site</b>	✓ Unhappy community	✓ Community coming to survey site ✓ Violence against employees	✓ Property damages ✓ Serious injuries	<b>H</b>	✓ Develop an emergency response procedure ✓ Meet with the community and all stakeholders prior to commencement of the project ✓ Have the contact details of the nearest police station / JMPD offices
	✓ Unfavourable weather conditions	✓ Exposure to temperature extremes	✓ Heat exhaustion ✓ Frost bite	<b>M</b>	✓ Provide employees with water for cooling down. ✓ Provide employees with warm jackets and gloves during winter ✓ Provide 5-minute rest periods for every 30 minutes of exposure to temperature extremes. ✓ No work to be undertaken in rainy conditions
	✓ Housekeeping	✓ Trips and falls	✓ Injuries	<b>M</b>	✓ Ensure that proper housekeeping is maintained on site at all times.
✓ <b>Working near open spaces</b>	✓ Snakes	✓ Bites ✓ Poisoning	✓ Fatalities ✓ Serious injuries	<b>H</b>	✓ Inspect the area for snakes prior to entering ✓ Conduct snake awareness training ✓ Know the do's and don'ts of what to do when coming across snakes
	✓ Bees	✓ Bites	✓ Allergic reaction	<b>M</b>	✓ Inspect the area for bees / wasps prior to entering ✓ Conduct bees awareness training ✓ Know the do's and don'ts of what to do when coming across bees
✓ <b>Working near open spaces</b>	✓ Sharp objects	✓ Getting pricked by sharp objects	✓ Tetanus ✓ Injuries	<b>M</b>	✓ All employees to get Tetanus vaccination. ✓ Provide employees with proper safety boots

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**ACTIVITY: GENERAL ACTIVITIES ON SITE**

Task	Hazard	Risk	Consequence	Rating	Controls
✓ <b>Working near open spaces</b>	✓ Criminals	✓ Getting mugged ✓	✓ Loss of personal possession	<b>M</b>	✓ Personal belongings such as phones and car keys to be safely put in pockets while working. ✓ Employees to report any suspicious activities to the local police. ✓ Equipment to be safely stored while not in use
	✓ Criminals	✓ Employees being attacked	✓ Injuries ✓ Fatalities	<b>H</b>	✓ Ensure that employees do not work in isolation. ✓ Employees to report any suspicious activities to the local police. ✓ Develop an emergency response procedure
	✓ Open excavations (other works)	✓ Falling inside	✓ Injuries	<b>M</b>	✓ Employees to be vigilant while working on site
	✓ Water bodies / channels	✓ Falling inside	✓ Serious injuries ✓ Fatalities	<b>H</b>	✓ Employees to be vigilant while working on site ✓ Emergency procedures to be developed
	✓ Rotating equipment	✓ Entrapment ✓ Getting caught by	✓ Serious injuries ✓ Fatalities	<b>H</b>	✓ Ensure that machinery is isolated or locked out while working on it.

 Johannesburg Water	OCCUPATIONAL HEALTH & SAFETY (OHS) SPECIFICATION: BASELINE RISK ASSESSMENT	
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### RISK ASSESSMENT MATRIX

Likelihood	Consequences				
	Insignificant (minor problem easily handled by normal day to day processes)	Minor (Some disruption possible e.g., damage equal to R150k)	Moderate (significant time / resources required. E.g., damage equal to R500k)	Major (Operations severely damaged. E.g., damages equal to R1m)	Catastrophic (business survival is at risk. Damage equal to R5m – 10m)
Almost certain (90% chance)	High	High	Extreme	Extreme	Extreme
Likely (between 50-90%)	Moderate	High	High	Extreme	Extreme
Moderate (between 10-50%)	Low	Moderate	High	Extreme	Extreme
Unlikely (between 3-10%)	Low	Low	Moderate	High	Extreme
Rare (<3%)	Low	Low	Moderate	High	High