

MTN (PTY) LTD.

**PROPOSED MARINE TELECOMMUNICATIONS SYSTEM (ACE
CABLE SYSTEM) TO BE LANDED AT VAN RIEBEECKSTRAND ON
THE WEST COAST OF SOUTH AFRICA**

RISK ASSESSMENT

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1. PROJECT DESCRIPTION

The section of the ACE Cable system which forms part of this risk assessment includes the section of cable from where it enters the shallow waters off the beach of Van Riebeeckstrand (up to 2 km offshore) onto land until it reaches the MTN Cable Landing Station (CLS) at Duynfontein. As such, the project description given below incorporates the materials comprising the ACE Cable System and the methods to be used to install the cable system in the marine and terrestrial environments.

The ACE Cable System is comprised of the following project components from where it enters the shallow waters off Van Riebeeckstrand until it reaches the MTN CLS site in Duynfontein:

- Marine Fibre Optic Cable (marine environment (2 km offshore to the Beach Man Hole).
- Beach Man Hole (BMH) located behind the coastal dune cordon near Van Riebeeckstrand.
- Terrestrial Fibre Optic Cable (Beach Man Hole to the CLS site in Duynfontein)

1.1 Marine Fibre Optic Cable

The cable will be buried beneath the sandy seabed of these shallower marine waters. This is typically achieved with the use of a specially designed plough which is submerged onto the seabed by the cable laying ship. The cable is then fed from the ship to the plough which effectively buries the cable to a depth of approximately 1 - 1.5 metres.

The ACE Cable System will be installed using a purpose-built cable ship fully equipped with all the necessary equipment, tools and facilities to safely handle and install, join, test, and power the submerged plant including simultaneous lay and plough burial. The vessel will have sufficient power and dynamic positioning capability to carry out the installation in the expected weather and current conditions.

1.2 Beach Man Hole

Once the fibre optic cable has made landfall and been buried through the beach section of the route the cable will be anchored at the Beach Man Hole (BMH) which will be constructed on the edge of the residential area at Van Riebeeckstrand. The BMH will be constructed underground and will have the following dimensions: length (4.0 m); breadth (2.0 m) and depth (2.0 m). The BMH is expected to take two months to construct and once complete the only visible sign of the structure will be the manhole covers and cement roof slab.

1.3 Terrestrial Cable

From the BMH the land cable will be installed to the Cable Landing Station (CLS) located in Duynfontein. The final alignment of this cable is as yet unknown but two route alternatives are being considered to get the cable from the BMH positions at the preferred landing point (Site 1) and alternative landing point (Site 2) to the CLS site. The trench for the cable will be dug by both mechanical (TLB) and manual (spades) means depending on the alignment selected and the presence of other service infrastructure within the area. The trench will be excavated to a depth of 1 m before the cable is installed and which will be housed within High-density polyethylene (HDPE) or PVC ducts. The width of the excavated trench is expected to be approximately 500 mm.

Project implementation period

The project construction period for all components of the proposed development is not expected to exceed 6 months until completion.

The risk assessment undertaken below includes all activities associated with the construction of these project components.

2. METHODOLOGY OF IDENTIFYING RISKS

The following methodology was employed in undertaking the risk assessment which can be broken down into five steps as outlined below:

2.1 Step 1

- Identify the hazards in your work environment.

This step involves the identification of possible risks associated with the construction and implementation of the ACE Cable System. This relates primarily to the identification of risks that could reasonably be expected to cause harm, for example: snakes, flooding, passing traffic, criminal elements, etc.

2.2 Step 2

- Who might be harmed and how?

This step involves the identification of who may be harmed or how they might be harmed, i.e. what type of injury or ill health might occur, for example, dehydration, drowning, etc.

2.3 Step 3

- Evaluate the risks and decide on precautions.

This step involves the review of the project construction plan and what activities are to take place on site. Included in this phase of the risk assessment is the review of what controls are in place and how the work is organised. Key aspects to take into consideration during this phase of the risk assessment are as follows:

- Can the hazard be avoided altogether?
- What are the chances of certain risks occurring (level of risk)
- How can the risks be controlled so that harm is unlikely?
- When controlling risks, apply the principles below, if possible in the following order:
 - Try a less risky option (for example, switch to using a less hazardous chemical).
 - Prevent access to the hazard (for example, by guarding).
 - Organise work to reduce exposure to the hazard.
 - Issue personal protective equipment (for example, clothing, footwear, etc).
 - Provide welfare facilities (for example, first aid).

2.4 Step 4

- Record findings from the risk assessment and implement the measures identified to mitigate risks.

Putting the findings of the risk assessment into practice will make a difference when staff are on site and help to avoid incidents on site during construction. It should be noted that the mitigation measures provided in the risk assessment should be simple and easy to implement on site. A risk assessment does not need to be perfect but it must be suitable and sufficient. Ideally the risk assessment should be able to show that:

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- A proper check was made.
- Potentially affected staff were identified.
- All significant hazards have been taken into account.
- The precautions are reasonable and clear responsibilities are outlined (who will lead on what action, and by when).

A good plan of action includes a mixture of options such as:

- Short-term solutions.
- Long-term solutions to those risks most likely to cause accidents or ill health.
- Long-term solutions to those risks with the worst potential consequences.
- Arrangements for training employees on the main risks that remain and how they are to be controlled.
- Regular checks to make sure that the control measures stay in place.
- Clear responsibilities – who will lead on what action, and by when.

2.5 Step 5

- Review your assessment and update if necessary

Few workplaces stay the same and as such the risk assessment should be considered a living document and updated as and when conditions change on site. As such, the risk assessment should be reviewed on an ongoing basis.

3. RISK ASSESSMENT

Threat	Hazards	Level of Risk	Risks	Control measures
Emergency Evacuation	<ul style="list-style-type: none"> • Fire. • Strike/Civil unrest. • Nuclear incident at Koeberg 	<ul style="list-style-type: none"> • Low 	<ul style="list-style-type: none"> • Injury to persons. • Loss of life. 	<ul style="list-style-type: none"> • The sound of an air horn will indicate an emergency evacuation. • In the event of an incident at Koeberg sirens and the public address system will be utilized to notify residents of Van Riebeeckstrand and Duynfontein of the evacuation processes to be followed. • In any other event where total evacuation from the site is needed, the escape routes are to be followed as indicated by the appointed health and safety representative and the public address system. • Stay calm and follow instructions from management, Security or the Police. • Respond immediately and do not go back and try to retrieve items. • Ensure that a roll call of all staff is undertaken once evacuation from the site has taken place. • Ensure that sufficient transportation is provided on site to evacuate all staff. • Obey all traffic rules and speed limits when evacuating the site.
Fire	<ul style="list-style-type: none"> • No open flames are allowed on site where it could pose a fire risk. • Wild fires entering the site from surrounding areas. 	<ul style="list-style-type: none"> • Low 	<ul style="list-style-type: none"> • Loss of equipment. • Damage to persons/property. • Loss of life. 	<ul style="list-style-type: none"> • Evacuate the area immediately. • All vehicles to be equipped with a fire extinguisher which is to be serviced annually. • Assemble at a safe place outside of area at risk. • Take a roll call to ensure that all staff have evacuated the area.

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				<ul style="list-style-type: none"> Contact the City of Cape Town Disaster Management Centre Tel: 021 480 7700 or Melkbosstrand SAPS Tel: 021 553 8220) of any smoke or fires observed on site.
Drowning	<ul style="list-style-type: none"> Drowning while working in the intertidal zone and shallow offshore waters. 	<ul style="list-style-type: none"> Low Medium if proposed control measures are not implemented on site. 	<ul style="list-style-type: none"> Injury Loss of life 	<ul style="list-style-type: none"> Lifejackets must be worn by staff at all times. The Melkbosstrand NSRI (Tel: 082 990 5958) must be notified of any work to be undertaken in the shallow offshore waters and intertidal zone prior to project implementation taking place. All recommendations or requests by the Melkbosstrand NSRI must be adhered to. All staff must be briefed on the dangers associated with the installation of the cable in these environments and regular safety talks must be undertaken with all staff. The following emergency numbers should be available on site at all times (City of Cape Town Disaster Management Centre Tel: 021 480 7700; Melkbosstrand NSRI Tel: 082 990 5958 and Melkbosstrand SAPS Tel: 021 553 8220). A roll call of all staff must be undertaken at the end of each shift. Staff must always work as pairs; no staff member is permitted to perform tasks alone and out of sight from other staff while near or on the water.
Snakes	<ul style="list-style-type: none"> Finding/stepping on a snake on site. 	<ul style="list-style-type: none"> Low 	<ul style="list-style-type: none"> Snake bite/spitting at the person. Possible loss of limbs. 	<p>Wear appropriate PPE: closed shoes, long pants and eye protection.</p> <p>If you come across a snake on site:</p> <ul style="list-style-type: none"> Avoid contact. Let the snake flee naturally.

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			<ul style="list-style-type: none"> • Possibly fatal 	<ul style="list-style-type: none"> • Warn others. • Place an observer at a safe distance if the snake has to be removed (at least 5 m away from the snake). • Phone City of Cape Town Disaster Management Centre Tel: 021 480 7700 to call out the snake catcher if required. • Keep very still or move extremely slowly – snakes may bite if there are sudden movements. • Never handle or attempt to handle any snakes. <p>If bitten by a snake:</p> <ul style="list-style-type: none"> • Stay calm, do not panic. • Avoid unnecessary movement. • If possible, the victim should be carried to the vehicle. • Try to identify the snake. • City of Cape Town Disaster Management Centre Tel: 021 480 7700 to find out which hospital is best equipped to deal with snake bites. <p>If a snake spits in your eyes:</p> <ul style="list-style-type: none"> • Do not rub the eyes. • Wash eyes with liquid e.g. water. • City of Cape Town Disaster Management Centre Tel: 021 480 7700 to find out which hospital is best equipped to deal with snake bites.
<p>Walking on site</p>	<ul style="list-style-type: none"> • Uneven terrain. 	<ul style="list-style-type: none"> • Medium 	<ul style="list-style-type: none"> • Sprained ankles. • Eye injuries. • Scratches. 	<ul style="list-style-type: none"> • Wear PPE such as SABS approved working boots when walking on site.

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Open excavations	<ul style="list-style-type: none"> Falling into open excavations 	<ul style="list-style-type: none"> Low Medium if proposed control measures are not implemented on site. 	<ul style="list-style-type: none"> Injury Loss of life 	<ul style="list-style-type: none"> All open excavations must be suitably demarcated with barrier mesh at all times. No unauthorised person/persons are permitted to enter the working area. The appointed Health and Safety officer must regularly check that excavations are suitably demarcated. Toolbox talks must be given to staff highlighting the dangers of open excavations.
Small Mammals	<ul style="list-style-type: none"> Disease (Rabies). 	<ul style="list-style-type: none"> Low 	<ul style="list-style-type: none"> Animal bites. Disease (Rabies). 	<ul style="list-style-type: none"> Do not try to capture any small mammals on site such as moles, rats, mice, etc. Seek medical attention within 12 hours of being bitten by a small mammal (Tetanus and Rabies inoculation may be required).
Crossing waterways	<ul style="list-style-type: none"> Contaminated/polluted water. 	<ul style="list-style-type: none"> Low 	<ul style="list-style-type: none"> Water-borne diseases. 	<ul style="list-style-type: none"> Avoid walking through water. When walking through water cannot be avoided, wear gum boots to prevent contracting water-borne diseases.
Contact with mobile vehicles	<ul style="list-style-type: none"> Being run over and injured from a passing vehicle 	<ul style="list-style-type: none"> Low Medium if proposed control measures are not implemented on site. 	<ul style="list-style-type: none"> Injury Loss of life Damage to property 	<ul style="list-style-type: none"> While on site remain alert for vehicles. When vehicles approach move off the road surface and remain stationary until the vehicle or vehicles have passed. Do not leave any equipment, personal effects or construction material on any road surface. This includes the informal access track to the beach. If walking on site requires walking along access roads ensure that a reflective vest is worn at all times. When nearing or walking along a road ensure that no ear protection is being worn as this will impact on ability to hear vehicles approaching.

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				<ul style="list-style-type: none"> • Toolbox talks must be given to staff highlighting the dangers of passing vehicles.
Spiders, wasps, bees and biting invertebrates	<ul style="list-style-type: none"> • Bites from insects. 	<ul style="list-style-type: none"> • Low 	<ul style="list-style-type: none"> • Bites, stings. • Allergic reactions. • Tick-borne diseases. 	<ul style="list-style-type: none"> • Wear long trousers. • Avoid beehives/wasp nests as far as possible.
Criminal elements	<ul style="list-style-type: none"> • Theft. • Assault. • Hijacking. 	<ul style="list-style-type: none"> • Low - Medium 	<ul style="list-style-type: none"> • Loss of property. • Injury. • Loss of life. 	<ul style="list-style-type: none"> • While on site, remain alert and vigilant for persons or people not authorised to be on site. • If unauthorised or suspicious person/persons are observed on site, notify the Melkbosstrand SAPS as soon as possible (Melkbosstrand SAPS Tel: 021 553 8220). • Do not approach or confront unauthorised person/persons on site. • At all times, staff are to work in pairs and never alone.
Weather conditions	<ul style="list-style-type: none"> • Wind • Heavy rains • Lightning 	<ul style="list-style-type: none"> • Low 	<ul style="list-style-type: none"> • Exposure to the wind can lead to ear and eye infections, which in turn impair hearing and vision and increase the risk of accidents. • Heavy rains • Lightning 	<ul style="list-style-type: none"> • Avoid working in adverse weather conditions and if unavoidable wear PPE such as jackets, hard hats and eye protection when working in windy conditions. • Wear hard hats under trees when windy. • Avoid trees during windy conditions. • Avoid working in adverse weather conditions and if unavoidable wear PPE such as rain coats, gum boots, hard hats and eye protection when working in heavy rains. • Avoid working in adverse weather conditions

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				<p>such as lightning storms: seek shelter.</p> <ul style="list-style-type: none">• If you are outdoors when a storm approaches, the best thing to do is get indoors or leave site.• If there are no safe buildings available, seek shelter in a vehicle. Roll up all the windows, close the doors, and do not touch anything metal. Do not use the radio or any other electronic devices until the storm is well past.• If you are stuck outside during a lightning storm:<ul style="list-style-type: none">○ Stay clear of tall, isolated objects such as power poles, antennas, flagpoles.○ Stay away from metal objects. It's better to be in a raincoat under some trees well away from objects that might conduct electricity, such as fences, etc.

4. CONCLUSION

It is ACER's opinion that the risk assessment undertaken for the proposed construction of the ACE Cable System section of cable from where it enters the shallow waters off the beach of Van Riebeeckstrand (up to 2 km offshore) onto land until it reaches the MTN Cable Landing Station (CLS) at Duynfontein adequately addresses the potential risks associated with this development.

It must be noted however, that this risk assessment should be considered a living document and should be updated prior to project implementation commencing once the construction programme has been formalised. The appointed Health and Safety Officer together with the appointed Environmental Control Officer should revisit this risk assessment and update it as required for implementation on site. The risk assessment should also be read in conjunction with the Department of Environmental Affairs (DEA) approved Environmental Management Programme (EMPr) which will be developed for environmental authorization of the proposed development.