

	Project specific environmental guidelines	Duvha Power Station
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Title: **Potential Impacts and their Recommended Mitigation Measures for the Duvha fencing project.**

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1. Potential Impacts and their Recommended Mitigation Measures

The following section provides the potential impacts which the project could have as well as the recommended mitigation measures to be implemented for each impact as identified. The largest risk of the development is related to the following issues:

1.1. Activity: Handling waste, general- and hazardous material on the site during construction.

Mitigation:

- All rubble and litter should be cleared from the site and stored in designated waste bins and/or stockpile areas respectively.
- Strict waste management should be implemented during construction.
- Sufficient waste receptacles should be placed around the facility to encourage people to use them.
- The principle of reduce, re-use and recycle should be followed.
- Construction site should be kept clean and tidy.
- Any waste should be disposed in a registered landfill and not be allowed to be dumped in the surrounding landscape.
- No dumping of waste or any other materials is allowed within any stormwater channels, drainage lines or the watercourses.
- Storage of material, waste, spoil and construction equipment on or in stormwater drainage or in watercourses areas – is strictly prohibited.
- All surfaces used for waste storage should have an impermeable surface.
- Drip trays to be placed beneath stationary vehicles and generators.
- Machinery should be maintained and inspected for leaks. All hazardous chemicals should be handled and stored on impermeable surfaces.
- Hazardous chemicals should be kept on an impermeable bund area.
- Stormwater and run-off should be managed and diverted to not be in contact with waste.
- Regularly inspect all construction vehicles for leaks. Re-fuelling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into topsoil.
- If any spills occur, they should be immediately cleaned up.
- An emergency response plan should be available for any chemical spill or ecological damage.
- Spill kits and material safety data sheets must be stored on site: In case of accidental spills of oil, petroleum products etc., good oil absorbent materials must be on hand to allow for the quick remediation of the spill. The kits should also be well marked, and all personnel should be educated to deal with the spill. Vehicles must be kept in good working order and leaks must be fixed immediately on an oil absorbent mat. The use of a product such as Sunisorb is advised.
- Proper toilet facilities must be available during constructional. Chemical toilets must be provided which should always be well serviced and spaced as per occupational health and safety laws and placed outside the 1:100-year flood lines.
- No dirty water runoff from the construction site must be permitted to reach the watercourses around the proposed site.

1.2. Activity: Clearing of vegetation and habitat near or in a watercourse.

Mitigation:

- Construction activities should be limited to the smallest possible area.
- Construction vehicles must use existing roads.
- Any bare areas must be rehabilitated effectively to prevent erosion.
- Erosion control measures must be implemented where erosion is present.
- The fencing must remain within disturbed footprints as far as possible.

Personnel must remain outside of delineated watercourses; where feasible.

- Method Statements must be compiled for the following activities:
 - Handling of general waste
 - Handling of hazardous waste
 - Installation of the fence within watercourses
 - Creation and maintenance of fire breaks
- Implement suitable alien invasive species establishment prevention measures during the construction phase such as proper storage, transport and disposal of plant material and minimising disturbance to the areas surrounding the development footprint.
- Alien invasive vegetation material cleared during construction activities must be adequately contained and disposed of at a suitable, certified 'green waste' disposal site to prevent further spreading.
- Areas around the proposed project footprint must be adequately rehabilitated to prevent significant alien invasive species establishment.
- Fire breaks, if required, are not to exceed their demarcated footprints.
- All trenching or digging must be conducted by hand where the fence falls within a delineated watercourse.

1.3. Activity: Development, construction activities and movement of vehicles within watercourses and within the regulated area of a watercourse. These activities may have impacts on water quality and hydrology of the wetland units.

Mitigation:

- Construction activities should be limited to the smallest possible area.
- Water must be allowed to flow through the fence.
- Erosion control must be effectively instated where necessary to prevent siltation of watercourses downstream.
- All areas that have been cleared of vegetation must be rehabilitated effectively.
- Construction vehicles must use existing roads.
- The fencing must remain within disturbed footprints as far as possible.
- Personnel must remain outside of delineated watercourses; where feasible.
- Method Statements must be compiled for the following activities:
 - Handling of general waste
 - Handling of hazardous waste
 - Installation of the fence within watercourses

- The stormwater drainage lines identified in Section 9 must be avoided or reinstated.
- The fence must follow the current (or historic; where applicable) footprint as far as practically possible.
- All trenching or digging must be conducted by hand where the fence falls within a delineated watercourse.
- Water drainage should be properly planned and addressed to drain water from the site and prevent any accumulation on site.
- All stockpiles must be covered and monitored for erosion to ensure that siltation of downstream watercourses is prevented.
- Littering is strictly prohibited.
- No dirty water runoff from the construction site must be permitted to reach the watercourses around the proposed site.
- An effective stormwater management plan must be compiled to ensure effective stormwater drainage.
- Any areas disturbed outside of the footprint must be rehabilitated effectively via a rehabilitation method statement.

1.4. Activity: Control of invasive alien species.

Mitigation:

- Construction activities should be limited to the smallest possible area.
- Construction vehicles should use existing authorised service roads.
- Implement suitable alien invasive species establishment prevention measures during the construction phase such as proper storage, transport and disposal of plant material and minimising disturbance to the areas surrounding the development footprint.
- Alien invasive vegetation material cleared during construction activities must be adequately contained and disposed of at a suitable, certified 'green waste' disposal site to prevent further spreading.
- Areas around the proposed project footprint must be adequately rehabilitated to prevent significant alien invasive species establishment and erosion.

1.5. Activity: Erosion control and stormwater management.

Mitigation:

- Stockpiling of material and waste should be strictly in demarcated and approved areas.
- Implement suitable erosion prevention measures during the construction phase.
- Soil erosion must be controlled as an ongoing management strategy throughout the various phases of the proposed development activities.
- Make use of surface erosion control measures within disturbed areas to avoid erosion in times of high risk (e.g., rain season and time of high wind speeds).
- Implement stormwater management along any roadways and paths to reduce gully erosion formation.
- Adequate stormwater management must be incorporated into the design of the proposed development in order to prevent erosion and the associated sedimentation of the watercourses.

Stormwater management should consider the natural flow direction of the water in the drainage system.

- Removal of debris and other obstructing materials from the site must take place and erosion preventing structures must be constructed. This is done to prevent damming of water.
- Sheet runoff from cleared areas, paved surfaces and access roads needs to be curtailed.
- No materials of any kind are allowed to be stored in the stormwater channels or wetland features
- Areas around the proposed project footprint, must be adequately rehabilitated to prevent significant erosion.
- Soil disturbance must be kept to a minimum within and around the development footprint.
- Regular inspections will be undertaken of any access roads and stormwater management drains for signs of erosion and sedimentation.

1.6. Activity: Operating and maintenance of the fence line.

- Should any part of the fence need to be replaced for maintenance purposes, a maintenance management plan will need to compile and approved by the Department of Environmental Affairs and development Planning.
- Structures must be inspected regularly for the accumulation of debris, blockages, instabilities and erosion with concomitant remedial and maintenance actions.
- Method statements must be compiled for the maintenance of fire breaks.
- Fire breaks are not to exceed their footprints.
- Regular inspections will be undertaken of any access roads and stormwater management drains for signs of erosion and sedimentation.
- Ongoing alien vegetation removal should take in and around the development footprint.
- The fence must be regularly patrolled for litter. Should litter be found in the fence, it must be removed from the site and discarded in a waste bin or recycled.
- Inspection or maintenance vehicles should be restricted to travelling only on designated roadways to limit the ecological footprint of the proposed development activities.

2. MONITORING

- An Environmental Control Officer (ECO) must be appointed to ensure compliance with the requirements during the construction- and decommission phase.
- The risk of contamination in the environment of chemical spills and oil leaks should be closely monitored during construction and decommissioning phases.
- Preconstruction measures must be in place to ensure sediments are trapped and erosion controlled.
- Stormwater management should be closely monitored and any water diversions around the construction site and development should be inspected for signs of erosion and sedimentation.
- Rehabilitation of impacted areas must be monitored via a rehabilitation plan.
- Regular inspection around the trenches and of erosion preventing devices is needed and any new erosion gullies must be remediated immediately.
- Duvha's Environmental department will conduct weekly environmental site inspections on the area of construction.