

ENVIRONMENTAL MANAGEMENT PLAN

FOR THE

MANAGEMENT OF CONSTRUCTION

OF DEVELOPMENT (CEMP)

WITHIN

BRIDGE CITY

**SITUATED ADJACENT TO THE
MR 93 BETWEEN NTUZUMA AND PHOENIX SOUTH
WITHIN THE NORTH ADMINISTRATIVE AREA
OF ETHEKWINI MUNICIPALITY**

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A. INTRODUCTION

1.1 BACKGROUND AND PURPOSE OF THIS CEMP

A major new development with Tongaat Hulett Developments (Pty) Ltd as project managers in association with eThekweni Municipality is the Bridge City urban regeneration project on a 50 ha site situated between Phoenix, KwaMashu, Ntuzuma and Inanda. This project literally involves the building of a new town centre – supermarkets, civic buildings, and spaces, commercial, business and light industrial areas and transport links and transport links and terminuses. It will have a major economic and lifestyle impacts for people living in the surrounding under-serviced residential areas. A Management Association will be established between Tongaat Hulett Developments (Pty) Ltd and the municipality to oversee the development of Bridge City.

The purpose of this particular document is to provide a Construction Environmental Management Plan (CEMP), which ensures that environmental considerations and appropriate measures are incorporated into all the construction processes associated with the Bridge City development.

To achieve this purpose, this CEMP provides a procedural framework and specific measures to be applied for both the provision of infrastructure for the overall site, and also for the individual site – specific developments that will occur within it.

This CEMP is intended to be a practical and achievable plan of management to ensure that any negative environmental impacts are minimized and any possible environmental, safety and efficiency benefits are maximized during the construction phase of a development. This CEMP therefore provides practical guidelines for environmental management to ensure that all works undertaken by the developer, engineer/s, contractor/s and sub – contractor/s have minimal impact on the environment and are in accordance with all relevant legislation, policies and norms and standards, including those contained within the Environmental Management System ISO 14001 of Tongaat Hulett Developments (Pty) Ltd.

It is the intention of Tongaat Hulett Developments, the project manager of this development, to establish a Management Association to manage certain aspects of the development and the on-going management of the Town Centre, during and post construction. It is recorded that, in this CEMP, reference to Management Association includes reference to Tongaat Hulett Developments as is applicable in the circumstances in terms of the timing of establishment of the Management Association and the responsibilities allocated to the Management Association from time to time.

1.2. DESCRIPTION OF THE SITE

The approximately 50 ha Bridge City site is bordered by the MR 93 to the north and the Piesang River floodplain to the south. All areas of the proposed development are above the 1 : 100 year floodplain. The site consists of a previously leveled platform that was created some years ago, but which was never fully developed, except for some tarred roadworks which are laid out on the site.

There will be additional earthworks associated with the proposed development, in the form the reworking of existing banks to create a uniform platform for the

development. Storm water management proposals for run off from the development area into the Piesang River will be subject to the approval of the Drainage and Coastal Engineering Department of eThekweni Municipality.

The development site is not considered to be an environmentally sensitive one. There has been the previous alteration of existing ground levels and all previous vegetation has been removed from the site in this process. There is no significant indigenous vegetation or other environmentally sensitive features on the site, such as drainage lines or wetland areas.

The main focus of environmental management of the site is therefore on ensuring that there is no pollution, nuisance or hazard to the occupants of the site and surrounding residents, and ensuring that all proper environmental management norms, controls and standards are maintained to the highest levels, acceptable to the local authority, being eThekweni Municipality, and in accordance with the project manager's, Tongaat Hulett Developments (Pty) Ltd's, ISO 14001 Environmental Management System.

1.3 Tongaat Hulett's Environmental Requirements

Tongaat Hulett has been accredited with ISO 14001 certification and thereby requires all development to be undertaken within this philosophy and includes a number of specific requirements that must be adhered to.

The primary, overriding foundation for any and all development is represented by Tongaat Hulett's SHE Policy and SHE Ground Rules which are attached hereto.

1.3.1 Tongaat Hulett's Responsibilities

- Selling sites to private purchasers and construction of roads and services to individual sites and in some instances, for construction of gatehouses, fencing and community facilities
- Appointment of Environmental Consultant to implement and audit the EMP specifically with respect to road construction and services installation

1.3.2. Engineering Consultants to Tongaat Hulett

- Appointed by Tongaat Hulett for design of roads and services
- Responsible for managing the primary contractors
- Responsible for ensuring that Tongaat Hulett's ISO and SHE reports are completed by the Primary Contractor as required and that all ISO and SHE documentation is in place at the construction site camp.

1.3.3 Primary Contractor

- Appointed by Tongaat Hulett for construction of roads and services
- Is responsible for providing space and location for the following ISO and SHE documentation and signage onsite (both at the site camp and where the work is being done):-

(English and Zulu)

Display of Tongaat Hulett SHE Policy and Ground Rules

Display of Environmental awareness posters

Hard copy of the EMP

Files for the following-

- Complaints Register
- Waste Disposal
- Emergency Response details
- Training Records
- Incident Reports

- Is responsible for completing all of the above records for submission to Tongaat Hulett
- Is responsible for complying with all relevant and applicable legislation and By-Laws

1.3.4 Purchasers and their contractors and Environmental Control Officer (ECO) (where applicable)

- Responsible for construction of private buildings on a site
- Responsible for adhering to EMP requirements and provisions
- Responsible for appointing a separate, ECO to monitor and audit building construction work on a site and to submit such audits to Tongaat Hulett's Environmental Consultant
- Is responsible for complying with all relevant and applicable legislation and By-Laws

1.3.5 Tongaat Hulett's Environmental Consultant

- Preparation of the EMP
- Implementation and auditing of the EMP on a regular (at least monthly) basis and submission of audit reports to Tongaat Hulett
- Audit must include auditing of ISO requirements
- Responsible for training of contractor staff on the EMP and environmental awareness

1.3.6 Standard Requirements

- Shade cloth is to be provided around each and every site during the entirety of the construction period.
- Whilst Tongaat Hulett's environmental consultant shall be responsible for the overall implementation of the EMP, purchasers of sites shall appoint their own Environmental Control Officers (ECO) for the construction of their developments who shall assume responsibility for implementation of the detailed EMP requirements as identified.

1.4 RESPONSIBILITY FOR THE IMPLEMENTATION OF THIS CONSTRUCTION CEMP

An independent Environmental Control Officer (ECO) shall be appointed by the project managers, Tongaat Hulett Developments (Pty) Ltd, to ensure compliance with all the measures contained within the CEMP during the construction of the Bridge City development.

The duties of the ECO will include regular site inspections and attendance of site meetings as required, liaison with the developers and principal contractors involved in public areas affected by construction, and the production of monthly compliance audit reports to the principal contractor and the project manager responsible for managing the overall construction of the Bridge City development and, when established, the Management Association. Roles and decisions to be taken by the Management Association are identified within the measures described within Section B of this report.

Any transgressions or non-compliance with the measures contained within the CEMP will lead to suitable sanctions implemented, on the advice of the ECO, by the Management Association, and may include fines, the halting of work, or the rectification of the impacts of any particular transgressions, if necessary, by the project manager or Management Association, at the cost of the developer.

It is the developer of a particular site who is ultimately responsible for the implementation of the measures contained within this CEMP. The developer is therefore also liable for any sanctions that may be imposed. The developer cannot abrogate its responsibility or blame to contractors or sub-contractors involved in their particular development.

1.5 DOCUMENTATION ASPECTS ASSOCIATED WITH THE PROVISION AND USE OF THIS CEMP

Provision of this CEMP in tender documents and sales agreements

This CEMP will be included in all tender documents associated with the construction of the overall Bridge City development (including earthworks, roads, electricity, water and wastewater provision) as well as in the sales agreements for the individual sites situated within Bridge City.

It is important that the presence and contents of this CEMP are drawn to the attention of all affected parties, such as the contractors tendering on projects and the developers purchasing individual sites for development. Constraints and potential costs associated with the implementation of this CEMP must be taken into account in the project planning, costing and implementation of all projects.

Availability of this CEMP during construction

This CEMP must be kept within an environmental file on site during all construction processes and will be made available for inspection during any site inspection by the ECO and/or the relevant authorities.

This Environmental File will also contain all accessory documentation associated and prescribed by the CEMP. This will include, but may not necessarily be restricted to the following:

Complaints Register, Material Handling Safety Data Sheets, Record of Incidents, Documentation showing legal proof of material supply and waste disposal to an approved waste disposal site, Material used during environmental education and any supporting information in this regard.

A copy of all monthly compliance reports will also be included in the on-site environmental file.

1.6 STRUCTURE AND CONTENT OF THIS CEMP

This report is comprised of the following sections and the issues that they deal with:

Section A: Introduction

Section B: Environmental measures to be implemented during construction, as follows :

1. Encroachments or other impacts on public areas or adjoining properties
2. Deliveries and lay down areas
3. Screening of the construction site.
4. Vendors servicing construction sites
5. Working hours
6. Access to construction sites and internal roads on site.
7. Public information and neighbour relations
8. Security and fencing
9. Signage and Visual Impact
10. Setting up of construction site camps
11. Maintenance of construction camps
12. Waste disposal
13. Storage of materials
14. Material management and sourcing
15. Management of hazardous substances and materials
16. Worker conduct
17. Storm water management and erosion protection.
18. Managing water quality concerns.
19. Dust management
20. Noise management
21. Cultural resource management
22. Post construction management

Section C: 1. SAFETY, HEALTH AND ENVIRONMENTAL (SHE) "POLICY AND STRATEGIES".

2. SAFETY, HEALTH AND ENVIRONMENTAL (SHE) "GROUND RULES".

1.7. EDUCATION IN REGARD TO THE MEASURES CONTAINED WITHIN THIS CEMP

It is the responsibility of the contractor, with the assistance of the ECO, in implementing environmental education measures to ensure that all workers and all sub-contractors on the site are aware of and appreciate the need to implement the measures contained within this CEMP.

Records of all environmental education / training / induction activities are to be kept and stored within the environmental management file on the site.

B MEASURES FOR THE MANAGEMENT OF CONSTRUCTION

1. ENCROACHMENTS OR OTHER IMPACTS OR ACTIVITIES ON PUBLIC AREAS OR ADJOINING PROPERTIES

- 1.1 All construction work and related activities shall be carried out within the site or a pre-approved encroachment beyond the extent of the site, and all such locations and work shall be screened/hoarded to the satisfaction of the Management Association in accordance with procedures as described below. The carrying out of any work, creation of lay down areas or the loading/unloading of materials, except in exceptional circumstances and following prior notification to the project manager, outside of such hoarded off and agreed areas, shall constitute a breach of the CEMP and be liable to penalties as may be imposed by the Management Association.
- 1.2 Where it is unavoidable that the area of a construction site must extend into a public area, such as a road reserve, or onto an adjoining property in order to allow construction to proceed effectively:
 - 1.2.1 Permission must be obtained from the Management Association or the owner of the adjoining property, as the case may be, for the encroachment, and an approved plan showing the location of the encroachment must be provided to these authorities. This plan shall show the position of all services, roadways and paving layouts and street furniture, and shall detail steps to be taken to protect or remove and reinstate such elements.
 - 1.2.2 The encroachment may only be implemented after written approval from these bodies is provided and shall comply with all conditions specified in such approvals.
 - 1.2.3 Details of the screening barrier/hoarding shall be to the approval of the Management Association.
- 1.3 If it is unavoidable that the road reserves or other off--site spaces be used for the erection of construction cranes or other machinery:
 - 1.3.1 Written permission to use these areas must be obtained in advance from the Management Association or the landowner as the case may be. The application shall be accompanied by a clear motivation and plan of the area proposed, and the nature of the use to which it is to be put.
 - 1.3.2 The environmental, hazard and safety measures that will apply to the installation and operation of cranes or other machinery in these areas shall be described in detail. These measures will include, but not be restricted to:
 - 1.3.2.1 The erection of hoarding around the areas of operation.
 - 1.3.2.2 The movement of materials, vehicles or personnel between this installation and the rest of the construction site.
 - 1.3.2.3 The appropriate warning signage that must be put in place.
 - 1.3.2.4 Any additional warning and protection measures that must be put in place.
 - 1.3.2.5 The manner of operation of the crane or other machinery that must occur to reduce hazards and inconvenience to the public.
 - 1.3.3 No use of these areas may occur without the prior written permission from these authorities.
- 1.4 Where any encroachments for hoardings, lay down areas, cranes or other machinery, or any other construction related activity outside of the property boundary is permitted, the developer shall be responsible for the complete removal of the encroachment forthwith on completion of the work and the

reinstatement of the area to its original condition to the satisfaction of the Management Association / land owner.

- 1.5 Construction staff for a particular development must be employed to clean surfaced roads adjacent the construction site where materials have been spilt or deposited, including mud from wheels of vehicles.
- 1.6 Prescribed routes shall be designated to and from all development sites for construction vehicles that must be adhered to. All developers shall provide a plan showing the routes that apply to their particular developments for approval by the Management Association. These routes may be changed from time to time, depending on particular circumstances.
- 1.7 Roads within the overall Bridge City site may be temporarily closed by the Management Association, if it is deemed necessary by the Management Association, in the interest of ensuring safe and efficient development.
- 1.8 In view of the close proximity of building works and excavations to existing services and public interfaces, extreme caution shall be taken to ensure that these are not damaged or compromised. No work shall commence until "As Built" drawings of all applicable existing services are kept on the site. It is emphasized that this includes all conventional utilities, but also irrigation, landscaping, paving, street furniture and security and other ducting drawings that represent assets of the Management Association. Furthermore, all services shall be carefully proven to confirm the accuracy of the as built information prior to commencing work. The contractor shall be responsible for the protection and reinstatement of all services to the satisfaction of the relevant service owner.
- 1.9 No significant excavations shall be commenced without an engineer first having approved the excavation and lateral support plan, taking particular cognisance to proximity to existing services and public interfaces.

2. DELIVERIES AND LAY DOWN AREAS

All deliveries shall take place within the site or additional areas hoarded off by agreement as per 1. above.

Deliveries shall not take place in such a way as to cause streets to be blocked or the safety and convenience of the public otherwise compromised.

The Management Association may agree to undeveloped sites within Bridge City being allocated on a temporary basis as areas for site establishment and/or material lay down areas. In this event, the areas shall be utilized strictly in terms of conditions imposed by the Management Association in respect of fencing, screening, security, signage, rental or any other matter.

3. SCREENING OF THE CONSTRUCTION SITES

All individual construction sites (excluding those involved in the provision of primary infrastructure to the overall site) shall be surrounded and screened off from the surrounding environment by means of either solid board hoardings or shade cloth placed

on a wire support fence. Such screening shall be a minimum of 1.8m in height, and must be kept in a state of good repair.

4. VENDORS SERVICING CONSTRUCTION SITES

If any site permits vendors to provide a service to construction staff, they shall be located on the site within the hoarded off area and shall under no circumstances be permitted to operate from vacant sites, road reserves or any other public area in Bridge City without the prior approval of the Management Association. The developer shall be held responsible for the cleanliness and general management of their areas of operation, of all activities undertaken by vendors and for the vendors vacating their areas of operation forthwith upon completion of construction.

5. WORKING HOURS

Working hours shall not exceed the times permitted by the local authority and shall take cognisance of residents and businesses surrounding the site. Specific conditions may have to be imposed by the Management Association depending on the adjoining land uses.

6. ACCESS TO CONSTRUCTION SITES AND INTERNAL ROADS ON SITES

- 6.1. All construction access points and roads must be planned and approved by the Management Association ahead of construction activities commencing.
- 6.2. Contractors shall construct formal drainage on all temporary haulage roads in the form of side drains to prevent erosion and point source discharge of run off.
- 6.3. Haulage roads must allow for the natural flow of water where required.
- 6.4. Contractors shall ensure that all side and mitre drains and scour check walls on access and haul roads are functioning properly and are well – maintained.
- 6.5. Contractors should ensure that access roads are maintained in good condition by attending to potholes, corrugations, and stormwater damage as soon as these develop.
- 6.6. Unnecessary compaction of soils by heavy vehicles must be avoided; construction vehicles must be restricted to demarcated access points, haulage routes and turning areas.
- 6.7. Cognizance of vehicle weight / dimensions must be taken to avoid damage when using access routes constructed out of certain materials, e.g. paved surfaces.
- 6.8. Contractors shall be liable for damage caused by any construction related vehicles that cause damage to any private, local authority or Management Association property.

7. PUBLIC INFORMATION AND NEIGHBOUR RELATIONS

- 7.1. Contractor's activities and movement of staff is to be restricted to the designated construction areas.
- 7.2. Should construction staff be approached by members of the public or other stakeholders, they should assist them in locating the principal agent or contractor, or provide a telephone number by which they can be contacted.
- 7.3. The conduct of the construction staff shall at all times be polite and courteous when dealing with the public.
- 7.4. Disruption of access for local residents will not be permitted without the prior approval of the Management Association.
- 7.5. The contractor is to inform neighbours in writing of disruptive activities at least 24 hours beforehand. This can take place by way of leaflets placed in the postboxes giving the principal agents and contractor's details, or other methods approved by the principal agent.
- 7.6. The site must be kept clean and in a workmanlike condition at all times.
- 7.7. Machinery and vehicles are to be kept in good working order for the duration of the project, to minimize noise and fumes to neighbours.
- 7.8. Notice of particularly noisy activities must be given to residents / businesses adjacent to the construction site. Examples of these include:
 - 7.8.1. Noise generated by jackhammers.
 - 7.8.2. Blasting
 - 7.8.3. Drilling
 - 7.8.4. Dewatering pumps.
 - 7.8.5. Noisy activities must be restricted to between 8.00 am and 4.30 pm on weekdays only.

8. SECURITY AND FENCING

- 8.1. The site shall be secured in order to reduce the opportunity for criminal activity in the locality of the construction site.
- 8.2. Potentially hazardous areas such as trenches are to be demarcated and clearly marked.
- 8.3. Any lighting on site is to be set out to provide maximum security and to enable easier policing of the site, without creating a visual nuisance to local residences or businesses.
- 8.4. All interested and affected parties, such as nearby residents and businesses, should be notified at least 24 hours in advance of any potential risks associated with the construction site and activities on it. Examples of these activities are:
 - stringing power lines
 - blasting

- earthworks / earthmoving machinery on steep slopes above houses or infrastructure
- risk to residents along haulage roads / access routes.

9. SIGNAGE AND VISUAL IMPACT

- 9.1 Appropriate signage indicating contact details of contractors, details of the project under way, its street address and hazard warning signs must be erected on the screening on each side of the site that can be accessed or viewed by the public.
- 9.2 Storage facilities, elevated tanks, and other temporary structures should be located such that they have as little visual impact on local residents as possible.
- 9.3 Special attention should be given to the screening of any highly reflective materials on site.

10 SETTING UP OF CONSTRUCTION CAMP SITES

- 10.1 Choice of the location of the contractor's camp site requires permission from the Management Association, and must take into account the location of local residents and businesses.
- 10.2 The construction camp will be limited to the following uses:-
- site office
 - ablution facilities
 - designated first aid area
 - staff toilet and ablution facilities
 - storage areas
 - refueling area (if required)
 - vehicle maintenance area (if required)
- 10.3 Adequate parking must be provided on site or at a remote location pre-approved by the Management Association for staff and visitors and its use strictly enforced.
- 10.4 The contractor must attend to drainage of the campsite to avoid standing water and / or sheet erosion.
- 10.5 In regard to ablutions:
- 10.5.1 When water borne sewerage is not available, temporary chemical toilets must be provided for site staff.
- 10.5.2 The construction of "long drop" toilets is forbidden.
- 10.5.3 Under no circumstances may open areas of the surrounding land be used as toilets.

11. MAINTENANCE OF CONSTRUCTION CAMPS

- 11.1 The contractor must monitor and manage drainage of the campsite to avoid standing water and soil erosion.
- 11.2 Run off from the camp site must not discharge into neighbouring properties.
- 11.3 Chemical toilets are to be maintained in a clean state and should be moved if required to ensure that they adequately service the work areas.
- 11.4 The contractor is to ensure that open areas in the surroundings are not being used as a toilet facility.
- 11.5 The contractor shall ensure that all litter is collected from the work and camp areas regularly, so that it does not ever overflow the litter areas.
- 11.6 Bins / skips shall be kept in the camp and shall be emptied regularly. Waste shall be disposed of at a registered landfill site. Waybills for such disposals are to be kept by the contractor on site.
- 11.7 A registered chemical waste company is to be used to remove waste from chemicals toilets on site.
- 11.8 Eating areas shall be regularly serviced and cleaned to ensure the highest possible standards of hygiene and cleanliness.
- 11.9 All litter throughout the site shall be picked up and placed in the bins provided.
- 11.10 The contractor shall ensure that his camp and working areas are kept clean and tidy at all times.

12. WASTE DISPOSAL

- 12.1 Under no circumstances may the disposal of any waste building materials, rubble or rubbish of any sort be disposed of in the Bridge City site or the surrounding areas. All waste must be disposed of to an approved waste disposal site.
- 12.2 Documentary proof of the use of an approved waste disposal site, in the form of weigh bills or invoices, must be retained on site and produced on demand by the Management Association.
- 12.3 The Management Association may provide and / or prescribe areas where waste may be taken to and stored before being transported away from the Bridge City site to an approved waste disposal site. In the event of this being done, developers will be individually informed of where these areas are, and the conditions that pertain to their use.
- 12.4 Bins and / or skips shall be provided at convenient intervals for disposal of waste within the individual construction camps.

- 12.5. Bins should have inner liner bags for efficient control and safe disposal of wastes.
- 12.6. The excavation and use of rubbish pits on the site is not permitted.
- 12.7. Burning of waste is forbidden.
- 12.8. Refuse must be placed in designated skips / bins which must be regularly emptied. These should remain within demarcated areas and must be designed to prevent refuse from being blown out by wind.
- 12.9. In addition to the waste facilities within the construction camp, when appropriate, provision must be made for waste receptacles to be placed at intervals along the work front.
- 12.10. Littering is forbidden, and the site shall be cleared of all litter at the end of each working day.
- 12.11. Recycling is to be encouraged by providing separate receptacles for different types of waste, and making sure that staff are aware of their uses.
- 12.12. An approved waste contractor must carry out hazardous waste disposal. Waybills must be made available on request to prove the use of approved waste disposal sites.
- 12.13. A sump (earth or other) must be created for concrete waste. This is to be de-sludged regularly and the cement waste is to be removed to an approved waste disposal site.

13. STORAGE OF MATERIALS

- 13.1 Material stockpiles or stacks, such as pipes, must be stable and well – secured to avoid collapse and possible injury to workers / local residents.
- 13.2 Flammable materials should be stored as far as possible from adjacent residences / businesses.
- 13.3 Fire fighting equipment should be present on the site as per OHSA.
- 13.4 Obstruction to driver's line of sight due to stockpiles and stacked materials must be avoided, especially at intersections and sharp corners.
- 13.5 No materials are to be stored in unstable or high-risk areas, such as on steep slopes.
- 13.6 The Management Association may provide and/or prescribe temporary storage areas in the vicinity of the works. Developers will be individually informed of where these areas are and the conditions that pertain to their use.
- 13.7 Choice of location of storage areas on sites must take into account prevailing winds and general site topography.
- 13.8 Storage areas must be designated, demarcated and fenced if necessary.

13.9 Storage areas should be secure so as to minimize the risk of crime. They should be secured to prevent access by children and animals.

13.10 Fire prevention facilities should be present at storage areas.

14 MATERIALS MANAGEMENT AND SOURCING

14.1 Contractors shall prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay etc.).

14.2 Where possible, a signed document from a supplier of natural material should be obtained confirming that they have been obtained in a sustainable manner in compliance with the relevant legislation.

14.3 Where materials are mined / borrowed, proof must be provided on request of authorization to utilize these materials from the landowner / mineral rights owner and / or the Department of Mineral and Energy Affairs.

14.4 Stockpiles should not be situated such that they obstruct storm water run-off from pathways.

14.5 Stockpiles should not exceed 2m in height, unless otherwise permitted.

14.6 If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or sheeting, depending on the duration and scale of the project.

14.7 Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.

14.8 All concrete mixing must take place on a designated impermeable surface.

14.9 No vehicles transporting concrete to the site may be washed on the site.

14.10 No vehicles transporting, placing or compacting asphalt or any other bituminous product may be washed on the site.

14.11 Lime and other powders shall not be mixed during excessively windy conditions.

14.12 All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of / removed from the site.

14.13 Hazardous substances / materials are to be transported in sealed containers or bags.

14.14 Spraying of herbicides / pesticides should not take place under windy conditions and must comply with OHSA specs and other chemical handling laws.

14.15 Emergency numbers should be kept on site and consulted should any accidents or spillages of hazardous substances and / or materials take place.

The contractor is to outline a method statement for the dealing with accidents / spillages of hazardous materials.

15. MANAGEMENT OF HAZARDOUS SUBSTANCES AND MATERIALS

15.1. Hazardous substances are defined as materials that are potentially poisonous, flammable, carcinogenic or toxic. Some examples of hazardous substances are:

- diesel, petroleum, oil, bituminous products
- cement
- solvent based paints
- lubricants
- explosives
- drilling fluids
- hydraulic fluids
- pesticides
- LPG (gas)

15.2 Material Safety Data Sheets (MSDS's) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDS's should additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes.

15.3 Hazardous storage and refueling areas must be bunded and contained within an impermeable liner to prevent groundwater pollution.

15.4 Fuel tanks must meet the relevant specifications and be elevated so that leaks may be easily detected.

15.5 Staff dealing with hazardous materials must be aware of the existence of hazardous storage areas.

15.6 The storage and handling of petroleum fuels on site (for example diesel tanks) requires the obtaining of the necessary Environmental Authorisation from the KZN Department of Agriculture and Environmental Affairs, in terms of Regulation GN. R. 1182 and GN.R. 1183, both of 5 September 1997, as amended by GN. R. 670 and GN. R. 672 respectively of 10 May 2002.

16. WORKER CONDUCT

A general regard for the social and ecological well – being of the site and adjacent areas is expected of the site staff. Workers must be instructed in the following general rules:

16.1 No alcohol / drugs to be present on site.

16.2 No firearms allowed on site or in vehicles transporting staff to and from site, unless used by security personnel.

16.3 No excessive noise or unsocial behaviour.

- 16.4 Bringing pets onto the site is forbidden.
- 16.5 No harvesting of firewood from any surroundings of the site.
- 16.6 Construction staff is to make use of the facilities provided for them, as opposed to ad hoc alternatives (e.g. fires for cooking, the use of surrounding areas for toilets, or for dumping their rubbish).
- 16.7 No trespassing on private / commercial properties adjoining the site.
- 16.8 No driving under the influence of alcohol is permitted.
- 16.9 Other than pre – approved security staff, no workers shall be permitted to live on the site.
- 16.10 No poaching, collecting of plants or any other natural material on site or from its surroundings.
- 16.11 The application of a “clean site” policy to be explained and applied to the workers.
- 16.12 The relevant parts of the CEMP are to be explained to the workers affected by it.

17. STORM WATER MANAGEMENT AND EROSION PROTECTION

The following general storm water management and erosion protection measures will be applied to all construction sites within Bridge City in an appropriate manner:

- 17.1 All road alignment and construction must include appropriate storm water management and erosion protection measures to the satisfaction of the appointed civil engineer involved.
- 17.2 All earthworks, excavations and soil disposal must be done and the bare areas created must be protected in an approved manner to prevent soil erosion.
- 17.3 All cut and fill earthworking must be done in such a way and protected to avoid soil erosion.
- 17.4 Storm water control measures must be properly implemented and maintained during the construction period. These measures will, where appropriate, include:
- Sandbags.
 - Berms (these must be properly constructed and have proper spillway areas, with sandbags or plastic sheets) or designed to have diversion structures to prevent damage caused by their overtopping)
 - Cut off drains.
 - Battens on slopes.
 - Construction of detention dams / silt traps and the diversion of storm water run-off into these structures.

- The installation of either temporary or permanent catch pits as soon as possible to catch storm water run-off and to lead it to the detention structures.
- Strip sodding on steeper slopes (as soon as possible on steep slopes).
- The use of mulch to cover bare soil
- Silt trapping fences made of porous fabrics on supports.
- Plastic sheeting to form spillways and to allow overland flow without erosion in run-off areas

Whatever other measures are identified as being useful, necessary and appropriate to a particular site.

17.5 To avoid soil erosion, there must be minimum areas cleared for minimum time, screening to avoid soil erosion, and topsoil (at least 150mm) is to be set aside and conserved for reuse.

17.6 Soil from earthworks and excavations must not be placed in a position where there can be soil erosion or washing into any sensitive areas adjacent to the site (wetlands, streams, forests, dams etc).

18. MANAGING WATER QUALITY CONCERNS

18.1 Storage areas that contain hazardous substances must be bunded with an approved impermeable liner.

18.2 Spills in bunded areas must be cleaned up, removed and disposed of safely from the bunded area as soon after detection as possible to minimize pollution risk and reduced bunding capacity.

18.3 A designated bunded area is to be set aside for vehicle washing and maintenance. Materials caught in this bunded area must be disposed of to a suitable waste site, or as directed by the engineer.

18.4 Provision should be made during set up for all polluted run off to be treated to the specifications set in the appropriate regulations controlled by the Department of Water Affairs and Forestry before they are released into any natural water courses.

19. DUST MANAGEMENT

The soils on the site are prone to dust creation and construction materials and activities create dust. To prevent or reduce dust:

19.1. Vehicle travel over dirt roads in the development must be restricted to a speed of 25 km per hour.

19.2. Special additional measures may be prescribed by the Management Association, such as additional screening, mulching or substances that mix with the soil.

- 19.3. The mixing of dust generating building materials should be avoided during windy periods.
- 19.4. All potentially dust-generating substances that are transported to and from the site must be enclosed, covered or sealed in such a manner as to prevent dust being generated by their transport.

20. NOISE MANAGEMENT

- 20.1 All construction activities may only occur within the times prescribed by the local authority bylaws and the Management Association, taking into account site-specific constraints and adjoining land uses.
- 20.2 Construction vehicles are to be fitted with standard silencers prior the beginning of construction and silencers must operate effectively at all times.
- 20.3 Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) will be used as per operating instructions and maintained properly during operations.

21. CULTURAL RESOURCE MANAGEMENT

- 21.1. Prior to the commencement of construction, all staff must be advised what possible archaeological or historical objects of value may look like, and they must be instructed to notify the engineer should such an item be uncovered.

22. POST CONSTRUCTION MANAGEMENT

The following measures must be applied at the end of the construction period. Responsibility of the developer does not cease until all the measures below have been implemented to the satisfaction of the Management Association and the local authority.

- 22.1 All structures comprising the construction camp, all signage, temporary works, stockpiled materials etc. are to be removed from the site.
- 22.2 The area that previously housed the construction camp is to be checked for spills or substances such as oil, paint, diesel etc., and these shall be cleaned up.
- 22.3 Any unbuilt areas are to be landscaped (hard or soft landscaping) in the manner prescribed in a Landscaping Plan as prescribed and approved by the Management Association.
- 22.4 The contractor shall arrange for the cancellation of any temporary services.
- 22.5 All unbuilt areas that have been disturbed by construction activities must be cleared of any alien vegetation.

- 22.6 All vegetation that has been cleared during construction is to be removed from site or used as mulch (except for seeding alien vegetation), as per Landscaping Plan specifications.
- 22.7 The contractor / landscaping contractor is to maintain all planted vegetation until the end of the defects liability period and is to submit a method statement regarding this to the Management Association.
- 22.8 All rubble is to be removed from the site to an approved disposal site. Burying of rubble on site is not permitted.
- 22.9 All surfaces are to be checked for waste products from activities such as concreting or asphaltting and cleared to a waste disposal site.
- 22.10 All embankments are to be trimmed, shaped and replanted to the satisfaction of the engineer, and in accordance with the Landscaping Plan.
- 22.11 Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated.
- 22.12 All residual stockpiles must be removed to spoil or spread on the site as directed by the engineer/ project manager.
- 22.13 All leftover building materials must be removed from the site.
- 22.14 The contractor must repair any damage that the construction works has caused to neighbouring properties.
- 22.15 A meeting is to be held on the site between the contractor, ECO and the Management Association to approve all remediation activities and to ensure that the site has been restored to a satisfactory condition.
- 22.16 Any temporary roads must be closed, made good to the Management Association's approval and access across these blocked.
- 22.17 All areas where services were installed are to be fully and properly rehabilitated.



Policy on Safety, Health and Environment

Tongaat Hulett is an agri-processing business which includes integrated components of land management, property development and agriculture. It employs in excess of 35 000 employees in 19 operations throughout Southern Africa.

At Tongaat Hulett we are committed to a philosophy of sustainable development. Safety, Health, Environmental and Community responsibilities, as components of sustainable development, are integral to the way that we do business. We commit to a continual improvement in our performance, to sustainable use of our natural resources and aspire to prevent or minimise harm to the environment arising out of our activities.

Wherever we operate, we will:

Develop, implement and continually improve SHE management systems targeting internationally recognized standards that enable us to:

- Identify, assess and manage risks to employees, contractors, the communities affected by our operations, and the environment;
- meet, and where appropriate, exceed applicable legal requirements and codes of practice to which Tongaat Hulett subscribes;
- set and achieve targets to prevent or minimise pollution;
- demonstrate active stewardship of land and biodiversity; and
- strive to achieve international best practice and to achieve no fatalities and no injuries in the workplace.

Promote and maintain open and constructive dialogue and working relationships with employees, local communities, regulatory agencies, business organizations and other affected and interested parties to:

- build relations based on honesty, openness, mutual trust and involvement;
- increase knowledge and enhance mutual understanding in matters of common concern; and
- share responsibility for meeting the requirements of this policy.

Seek opportunities to share our successes by:

- communicating our standards to our stakeholders;
- ensuring that, where relevant, the overall capacity of the surrounding community to contribute towards our targets is increased; and
- being an employer of choice within the industries within which we operate.

This policy will be reviewed regularly to reflect the Company's commitment to, and growing understanding of, the principles of sustainable development.

A handwritten signature in dark ink, appearing to read "Peter Staude", is written over a horizontal dashed line.

PETER STAUDE
Chief Executive Officer
11 June 2008



**ENVIRONMENTAL MANAGEMENT SYSTEM
ISO 14001**

**PROCEDURE 4.2.1.1
ESH GROUND RULES RECORD**



Registration No. 81/12378/07



Tonga Hulett

DEVELOPMENTS

ENVIRONMENTAL, SAFETY AND HEALTH (ESH) "GROUND RULES"

These "Ground Rules" are based upon Tongaat Hulett Developments' commitment towards sustainable development and the preservation of natural resources and human life.

Ground Rule 1 – Working Environment

1.1 All employees and contractors will be provided with a safe and healthy working environment.

- The target is to ensure that the working environment, for both employees and contractors, is incident and risk free from a health, safety and environmental perspective.
- Employees and contractors are required to communicate with Tongaat Hulett Developments' to advise and inform where working conditions are not considered safe or healthy.
- No employee or contractor will be expected to work in a situation where he/she is unsafe or where there may be a negative health or environmental impact.

1.2 Motor Vehicles

- All drivers who use a vehicle for business purposes are responsible for ensuring that the vehicle is safe for driving and that it is kept maintained (tyres, brakes etc.) and serviced at the required intervals
- No person shall be made to drive an unsafe vehicle (as deemed unsafe by the driver and/or driver's supervisor and/or Safety Officer)
- If a vehicle is not safe to drive (as deemed by the driver and/or driver's supervisor and/or Safety Officer) it must be reported to the person directly responsible for the maintenance of the vehicle and the faults attended to before the vehicle is driven again.
- All drivers of vehicles on company business must adhere to all traffic laws and regulations including ensuring that passengers use seatbelts.
- Vehicles used to transport employees must have seat belts and seats firmly secured and adequate for the number of employees to be carried.

Ground Rule 2 – Legal Obligations

Tonga Hulett Developments will exceed its legal ESH obligations

- Tongaat Hulett Developments' legal obligations will be used as a minimum basis upon which to improve and implement systems, procedures and controls.

Ground Rule 3 – Planning and Development

3.1 All Planning and Development must be environmentally considerate and sustainable.

- Each and every new development must either be subjected to an EIA or, where an EIA is not required, an Environmental Management Plan (EMP) will be prepared and implemented.

- All contracts, designs and plans must adhere to the EIA and EMP requirements.
- All EMPs must be audited on a regular basis, the regularity of which shall be determined by the nature and extent of the project and contract.

3.2 *No construction tender or contract shall be awarded, nor shall any activity occur on a site unless a Record of Decision has been issued and an Environmental Management Plan (EMP) prepared, or, where no EIA is required, an EMP is in place and a suitably qualified consultant appointed to audit the implementation of the EMP.*

Ground Rule 4 - Contractors

All contractors must be made aware and be required to comply with Tongaat Hulett Developments' ESH Policy and requirements and to all relevant and applicable ESH legislation.

- Contractors, through the contract documentation, will be expected to be fully aware and compliant from a legal point of view and to ensure that they adhere to Tongaat Hulett Developments' ESH Policy and requirements.
- Contractors will be monitored for compliance and will be required to report all incidents and issues from an ESH perspective.

4.1 General

It is the responsibility of the contractor to check their sub-contractor's work area and methods to determine that the work is being performed in adherence to these Ground Rules, the Construction Regulations and Environmental Management Plans.

4.2 Housekeeping

A development site and contractor site office must be maintained in a neat and orderly manner. Good housekeeping, eg. litter, waste disposal, fencing, signage etc. provides a good example of the potential performance and responsibility of a contractor. It does furthermore provide the basis for a safe and environmentally friendly site.

4.3 Personal Protective Equipment

Contractors must ensure that their personnel are provided with appropriate safety equipment for the job. All safety equipment must meet the appropriate OSH Act and Construction Regulation standards and requirements.

4.4 Inductions and Site Visits

All development sites must be controlled in terms of access by visitors. There should be adequate signage directing all visitors to a development/construction site to the contractor site office where there should be a visitors registration form that should be completed before any visitor is allowed on site. All visitors should therefore report to the contractor before going onsite. There should also be a brief environmental and safety induction done by the relevant employee of the contractor alerting visitors to key environmental and safety issues and any and all risks. Such induction should take place prior to visitors going onsite.

4.5 Motorised Equipment

All motorised equipment which has a driver and which may or may not carry passengers, must be fitted with seat belts and, where required by law (but shall include forklifts and other heavy contractor equipment), roll bars unless an exemption is formally applied for and granted.

Furthermore, all construction vehicles and mobile plant are to:-

- i.) Be maintained and inspected regularly;
- ii.) Be Properly used; by trained, medically fit operators;
- iii.) Have safe and suitable means of access;
- iv.) be organized and controlled by adequate signaling and movement alarms.

4.6 Passengers

Only vehicles that are legally permitted to carry passengers may transport people and only if they are suitably safe to do so.

Drivers of vehicles shall be required to ensure that passengers adhere to all relevant safety requirements including ensuring the use of seatbelts.

If LDVs (bakkies) and/or small trucks are to be utilised for transporting passengers (in the bin) the following controls shall be required to be adhered to:-

- i.) There shall be a canopy covering on the bin
- ii.) Suitable and safe seating is to be provided in the bin with seatbelts and all passengers will be required to be seated at all times
- iii.) The maximum number of passengers that can safely be accommodated within the bin shall be clearly indicated on the outside of the vehicle
- iv.) The maximum travelling speed whilst conveying passengers must not exceed 80Km/hr on a tarred public roads (excluding national highways where the maximum speed shall be 100Km/hr) and not more than 50Km/hr on all private, non tarred roads
- v.) Tools must be stored separately from passengers in a tool bin that is secured to the vehicle.

Ground Rule 5 – Land Purchasers

All purchasers (of land) will be required to adhere to ESH policies, procedures, controls and plans that have been implemented by Tongaat Hulett Developments for any particular development

- **ESH, development specific policies, procedures, controls and plans (including specifically Environmental Management Plans (EMPS)) must be included in all Sale Agreements with purchasers, and in the individual Title Deeds where possible.**
 - **Where Lot Owners Associations/Management Associations have been established, all purchasers will be required to be members and abide by the Articles and Rules of the Association**
 - **The Articles and Rules of the Association should make specific reference to the need to ensure adherence to the requirements and provisions of the development's EMP.**
 - **Where Lot Owners Associations/Management Associations have been established, these shall be provided with appropriate powers to enable policing and enforcement of all SHE related policies, procedures, controls and plans (specifically EMPs) to the extent that is practically possible by the Association, as a backup to the Local Authority and Provincial Authority responsibilities.**
 - **The use of financial guarantees may be utilised, where appropriate, in order to ensure adherence to SHE requirements**
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Ground Rule 6 - Communication

Tongaat Hulett Developments will ensure proactive, open, managed communication of its SHE issues both internally and externally on a regular, consistent basis.

- It is acknowledged that Tongaat Hulett Developments is a change agent and will therefore have an impact on local communities and the environment in some way.
- ESH sensitive behaviour needs to be seen as a way of doing business
- In order to build relationships and increase knowledge and awareness, success stories as well as areas of failure that can be learnt from are to be communicated to employees, communities and authorities.
- Such communication begins with the planning process with rezonings and EIA's where areas of conflict are raised and resolved.

Ground Rule 7 – Implementation and Consultation

Tongaat Hulett Developments will provide visible leadership and utilise the services of, and be guided by, leading experts in the ESH arena in the implementation of its ESH Policy and Strategies and will work with appropriate conservation bodies in pursuit of environmental sustainability and biodiversity conservation.

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Final – 15 January 2004

Amended 19 November 2004 – Ground Rules 4.1 and 4.2 added.

Amended 09 September 2005 & 05 October 2005 – Ground Rules 3.2, 1.2, 4.2 and 5 amended

Amended 25 May 2006

Amended May 2007 – with 3 new Contractor Ground Rules 4.1-4.4

Amended August 2007 (Logo and Name change)

Amended October 2008 (date change)

