GREEN DOOR environmental

DRAFT BASIC ASSESSMENT REPORT, APPLICATION AND WASTE LICENSE APPLICATION

Proposed Establishment of Four New Broiler-breeder Houses on Waterval East Farm, Located on Portion 31 of the Farm Waterval No. 987, and One New Rearing House on Waterval Farm, Located on Portion 10 of the Waterval No. 987, Wartburg, KwaZulu-Natal

DC22/0035/2012
KZN/EIA/0000788/2012

PREPARED FOR MKABELA POULTRY (Pty) Ltd
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agriculture
& environmental affairs

Department:
Agriculture
& Environmental Affairs
PROVINCE OF KWAZULU-NATAL

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Waste Management Licence Number: (if applicable)	
Date Received:	

BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Agriculture & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
9. The KZN Department of Agriculture & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.

10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Agriculture & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	DC22/0035/2012 and KZN/EIA/0000788/2012
File reference number (Waste Management Licence):	Yet to be provided

SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	Green Door Environmental		
Physical address:	400 Old Howick Road, Hilton		
Postal address:	P.O. Box 11, Hilton		
Postal code:	3245	**Cell:**	072 181 4236
Telephone:	033 343 4176	**Fax:**	033 343 4201
E-mail:	rebecca@greendoorgroup.co.za		

2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Liza Shuttleworth	BSs	IAIA, SAIEA	2 years
Rebecca Bowd	MEnvDev, BA (Hons) Enviro Sci & Geog	EAPSA, IAIA, SAIEA, IWMSA	8 years

3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
Mark Ducasse	MA Dip. Technology, Roads and Transportation	Civil Engineering, Urban & Rural Development	Appendix D1.	Stormwater Management Plans
Frans Prins	MA	Heritage/Cultural	Section C 6.	Heritage Impact

	(Archaeology)		Appendix D2.	Assessment
Gerald Davie GeoZone Geoservices	B.Sc. (Hons), M.Sc., Pr. Sci. Nat.	Geologist	Appendix D3.	Geotechnical Assessments
Celwyn Govender ATP Pumps/Aquatic Pumps	-	Borehole assessor	Appendix D4.	Borehole Study

SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

Proposed Establishment of Four New Broiler-breeder Houses on Waterval East Farm, located on portion 31 of the Waterval No. 987, and One New Rearing House on Waterval Farm, located on Portion 10 of the Waterval No. 987, Wartburg, KwaZulu-Natal.

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

The proposed project is for the establishment of:

- Four new broiler-breeder laying houses on Waterval East Farm, located on Portion 31 of the Waterval No. 987 ('Frostpocket Site'); and
- One new broiler-breeder rearing house on Waterval Farm, located on Portion 10 of the Waterval No. 987('Waterval Site'), Wartburg, KwaZulu-Natal.

The two sites, "Frost Pocket Laying Site" and "Waterval Rearing Site", are located on separate portions of Waterval Farm and are 2.1 km apart. The two portions of the farm total 125.4 ha in extent. Refer to Appendix A1.

1. FROSTPOCKET LAYING SITE

This site is located 4km south east of Wartburg, along the R614 Road. GPS Coordinates: 29°26'53.66"S, 30°37'15.05"E. Refer to Appendix A1 for the location of the site on an aerial Google Earth map and Appendix A2 for an aerial map of the site.

The existing development footprint consists of derelict farm buildings, which will be demolished to accommodate the proposed Broiler-breeder laying houses, and a commercial timber plantation (*Eucalyptus*), covering approximately 70 ha.

The Applicant proposes to build four new Broiler-breeder laying houses. The laying houses will each be 120m x 15m in dimension, hold 6 600 birds and be constructed on a 140m x 23m level platform. The level platforms will be spaced 20m apart. The platforms will be laid out / staggered so as to conform to the natural topography of the site.

The proposed laying houses and related facilities will be built on the existing development footprint (consisting of derelict buildings and open space) so as to minimise the need to fell immature commercial timber during site preparation.

(a) Bio-security Infrastructure

The proposed development footprint will be fenced and gated, creating a bio-secure area. New ablution facilities will be built at the entrance to the bio-secure area, consisting of:

- 4 Showers (2 male and 2 female);
- 2 toilets and urinals for male workers;
- 2 toilets for female workers; and
- 4 wash hand basins.

(b) Access roads

There is an existing gravel access road that runs from the main road to the entrance of the proposed wastewater zone. This road will be upgraded, and it is proposed that new gravel roads will be established, within the bio-secure area, to facilitate access to and from the proposed laying houses.

(c) Waste Management

Chicken litter will be removed from the houses after each 43 week cycle and transferred to the existing composting sites, located in the area (refer to Appendix A3 for the location of the existing compost sites).

It is estimated that 10m^3 of water will be used to wash the floors of each of the laying houses after the chicken litter has been removed (every 43 weeks). This wastewater will be collected via a dedicated system of inlets within the poultry houses and piped to a settling chamber and containment facility, located below the site. Water from the wash-down process will be kept separate from other waste water at all times. Refer to Appendix D1 (Stormwater Management Plan) for the design drawings of the proposed containment facility.

Wastewater from the ablution facilities (greywater and sewage) will be discharged into a septic tank and soak away system. It is estimated that the ablution facilities will generate a maximum of 1m^3 of wastewater per day. The septic tank and soak away system is adequate to handle the proposed volume. Refer to the Storm Waster Management Plan (SWMP) in Appendix D1 for the proposed size of the septic tank system.

(d) Storm water drainage

The storm water drainage system will consist of:

- The new internal gravel roads will have side drains at intervals of 25m or less. Run-off captured by the side drains will be channelled into existing vegetated land.
- It is proposed to create 3m wide, grassed, drains with slopes less of than 1%, on the western boundary of the wastewater area. These drains will capture run-off flowing from the roofs via a concrete apron surrounding the laying houses. The drains will direct water flow into catch pits, from which it will be conveyed to the eastern boundary via concrete pipes (250mm and 450mm pipes). The 450mm pipe will discharge onto a series of rock filled Reno Mattresses and into the existing natural drainage channel which currently accepts all the run-off from the area.

The internal wastewater from the poultry houses will be separated at source and piped to a

dedicated containment dam via a settling chamber. The wastewater will not be able to mix with stormwater at any point. The proposed containment dam will be designed to prevent run-off ingress from the upslope side.

Refer to the SWMP in Appendix D1 for more details on the proposed stormwater drainage plan.

(e) Containment Dam

The dam will be designed to accommodate wastewater from the laying houses and shall have a minimum area of 400m^2 (20m x 20m). The lining of the dam shall consist of a 1.5mm HDPE liner, covered in a 100mm deep layer of 19mm stone aggregate. The pipes will be laid at a minimum slope of 1/50 (minimum diameter to be 160mm) so as to enable the generation of self cleaning velocities.

(f) Septic Tanks

The septic tanks will be located upslope and outside of the bio-secure area. The proposed septic tank will be 5m x 1.5m x 0.6m, and the transpiration area will be 445m^2. These specifications will allow more than sufficient capacity to accommodate the estimated volume of wastewater from the ablution facilities.

2. <u>WATERVAL REARING SITE</u>

This site is located 3.5km east of Wartburg, off the R614 towards Tongaat. GPS Coordinates: 29°26'2.70"S, 30°37'2.15"E. Refer to Appendix A1 for the location of the site on an aerial locality map and Appendix A4 for an aerial map of the rearing site.

The proposed site is located on cultivated land alongside an existing poultry facility, comprising of two poultry rearing houses. The site is adjacent to 30ha of sugar cane and there is a timber plantation to the south. The site slopes in a southerly direction away from the the R614.

The Applicant proposes to build one new poultry rearing house with the capacity to hold 14 012 birds. The proposed poultry rearing house is to be built alongside the two existing rearing houses and will be 120m x 18m in size. The rearing house will be constructed on a level platform, which will be 140m x 25m. The level platform will be positioned to conform to the natural topography of the site. The rearing house footprint will be 2160m^2.

(a) Biosecurity Infrastructure

The existing bio-secure area will be extended to include the additional rearing house. No additional ablution facilities are proposed as the existing ablution facilities (showers, toilets and hand basins) are sufficient to accommodate the increased number of staff required for the additional rearing house.

(b) Access Roads

No new access roads will be required for new rearing house. The existing gravel access road from the R614 to the development site is sufficient to handle the slight increase in vehicle movement associated with the operational phase of the development and will be maintained appropriately to mitigate any damage caused by construction vehicles during the construction phase. The existing gravel roads within the bio-secure area will be extended to reach the new rearing house.

(c) Waste Management

The existing rearing houses are cleared of chicken litter after every 21 week growth cycle. Immediately after removal of the solid litter, the floors are washed down with approximately 10m^3 of water. The wastewater from existing houses is then piped to a settling chamber and containment facility.

The existing waste removal system will be extended to incorporate the new rearing house. The property has sufficient water capacity to accommodate the increase in demand for the new rearing house and the additional wastewater will be directed into the existing settling chamber and containment facility. No expansion of the existing waste disposal system will be required as the existing settling chamber and containment facility have adequate capacity to handle the effluent increase associated with the additional rearing house.

The waste disposal system for greywater and sewage from the ablution facilities is also adequate to handle the increased volume associated with the additional rearing house and no new infrastructure will be required.

(d) Storm water drainage

The existing stormwater drainage system will be upgraded to ensure:

- That all existing and extended gravel roads on the site have side drains at intervals of 25m or less. Run-off captured by the side drains will be channelled into existing vegetated land and allowed to naturally infiltrate the soil.
- Grassed side drains (3m wide) will be established at slopes less than 1% on the downslope side of the development footprint for effective off site stormwater drainage.
- Adequate discharge and drainage pipelines, including catch pits, are included as part of the current stormwater drainage system. Stormwater flowing from the main outfall pipe into the natural drainage channel is dissipated by a series of rock filled Reno Mattresses.

Refer to the SWMP in Appendix D1 for more details on the proposed stormwater drainage system.

(e) Containment Dams

An additional containment dam will not be required, as the existing containment dam has sufficient capacity to accommodate the wastewater from the additional rearing house. Measures will be taken to ensure that the existing containment dam has a freeboard sufficient to prevent overflow during 1:10 year rain events.

(f) Septic Tanks

No additional ablution facilities are required for the proposed rearing house as the existing facilities are sufficient for the minor increase in effluent associated with the staff required for the single additional rearing house.

3. AVAILABLE SERVICES ON BOTH SITES

(a) Water Resources

The two sites currently use borehole water. Approximately 40m^3 of groundwater will be pumped per 43 week growth cycle for use in poultry houses at the Frostpocket Laying Site, and 10m^3 per 21 week growth cycle at the Waterval Rearing Site, for wash-down purposes. Drinking

water for the two proposed developments combined will be approximately 160m^3. Water for ablution facilities (combined) will be 60m^3 per month.

The Applicant is currently in the process of finalising the borehole registration applications for submission to the Department of Water Affairs (DWA). However, Umgeni Water has confirmed that there is the possibility of using Umgeni water supply at both sites (Appendix G1). Umgeni Water is in the process of modifying the water supply in the Wartburg area and modifications are expected to be completed by the end of August 2013. Once the modifications are complete, Umgeni Water will be able to supply the 20KL per day that the operations will require.

(b) Electricity supply

It has been confirmed by Eskom that both sites currently have access to Eskom's electrical supply and that the grid capacity, on both sites, is sufficient to meet the increased demand associated with the proposed developments.

(c) Waste Management

The two sites will both utilise an Integrated Waste Management System.
Refer to the Integrated Waste Management Plan (IWMP) contained in the Environmental Management Programme (EMPr) attached in Appendix F.

Chicken litter

Litter from the existing poultry facilities is transferred to various composting sites and processed into fertilizer. There are currently five chicken litter composting sites located in the area (refer to Appendix A3). The nutrient rich fertilizer generated from these composting sites is then applied to the farm's sugar cane fields in place of commercial fertilizers.

The chicken litter produced by the proposed laying houses at the Frostpocket site and the additional rearing house on the Waterval site will be incorporated into the system used for litter from the existing poultry facility and be transferred the composting sites. The current capacity of the composting sites is sufficient to accommodate the expected increase in litter.

The amount of chicken litter currently being produced by the operational poultry houses is sufficient to fertilize 60% of the farm's sugarcane fields. Fertilizer for the remaining 40 % is brought in from elsewhere. The proposed poultry houses, if authorised, will generate enough compost to fertilize a further 20% of the farm's fields. This will increase the quantity of free compost available to them to 80% of their requirements and halve the costs associated with buying in fertilizer.

Grey and sewerage wastewater

Wastewater from ablution facilities currently produced on the Waterval rearing site is managed via a soak-away and septic tank system, similar to the system proposed for the Frostpocket Laying site.

No additional ablutions or shower facilities will be required for the proposed rearing house expansion. Sewage will continue to be disposed of via the existing septic tank located outside of the wastewater area, which has adequate capacity to meet the negligible increase in demand created by the addition of the single rearing house.

Domestic waste

The non-recyclable domestic waste generated by personnel and from the administrative operations of the proposed poultry facilities, will be disposed of in clearly marked, lined bins and then disposed of at the uMshwathi landfill site. Recyclable waste, such as paper, plastic, glass and tin will be separated and stored in separately labelled waste receptacles and then be transferred to the nearest recycling depot.

Medical or veterinary waste

The Veterinary physician will ensure that any medical waste generated is taken off site and disposed of via existing formal medical waste disposal streams.

Mortalities

At present, mortalities from the Waterval rearing site are disposed of in the existing mortality pits, located adjacent to the Sweetlands compost site. In order to accommodate the anticipated increase in mortalities as a result of the proposed additional rearing house, it is proposed to establish an additional mortality pit at the Waterval rearing site. The proposed mortality pit will be located adjacent to the existing rearing houses, on the southern periphery of the of the development footprint. The mortality pit will be within the bio-secure area and downslope of the development (refer to Appendix A5 for the location of the proposed mortality pit).

It is also proposed to establish a new mortality pit at the Frostpocket Laying site. The Frostpocket mortality pit will be located to the west of the existing development footprint, within the timber plantation, a short distance from the location of the proposed laying houses. (Refer to Appendix A6 for the location of the proposed mortality pit).

The proposed mortality pits will be:

- Built to industry norms and standards;
- Situated on flat and well drained terrain, more than 200 m from existing surface and groundwater resources;
- Lined with a suitable geomembrane to prevent leachate seepage;
- Covered with an airtight 'lid' of concrete or wood and plastic sheeting to prevent the attraction of vermin and odour nuisance; and
- Well maintained to extend lifespan and maintain optimum efficiency.

The current mortalities from the Waterval rearing site are adequately disposed of at the Sweetlands mortality pit. No additional infrastructure is required for the existing operation.

The mortalities from the proposed rearing house on the Waterval site, and the four laying houses on the Frostpocket site, are anticipated to average 5% per cycle. The four Frostpocket laying houses are expected to hold 6 600 birds per house (26 400 in total) at any give time. The Waterval rearing house is expected to hold 14 012 birds at any given time. The two sites combined will hold 40 412 at any given time. The 5% average equates to approximately 2020 birds requiring disposal per house per growth cycle (or 44 birds per day) for the two sites combined. These mortalities will be collected every second day and disposed of in the proposed mortality pits.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

GNR 544

Part 5: The construction of facilities or infrastructure for the concentration of:
(ii) more than 5000 poultry per facility situated outside an urban area.
The new facilities will house a combined total of more than 5000 poultry.

Part 32: The expansion of facilities for the concentration of poultry, excluding chicks younger than 20 days, where the capacity of the facility will be increased by:
(ii) more than 5000 poultry per facility situated outside an urban area.
The expansion/addition to the Waterval rearing site will house more than 5000 poultry.

Part 36: The expansion of hatcheries, outside industrial complexes, where the development footprint of the hatchery will be increased by an area of 2000m^2 or more.
The expansion/additional rearing house will have a footprint greater than 2000 m^2.

GNR 718 - Category A

Part 1: The storage, including the temporary storage, of general waste at a facility that has the capacity to store in excess of 100m3 of general waste at any one time, excluding the storage of waste in lagoons.
Chicken litter will be removed to composting sites on the property where it will be processed and then used as fertilizer for sugar cane fields.

Part 3: The storage, including the temporary storage of general waste in lagoons.
Washwater will go into a septic tank system before being discharged into an evapotranspiration area (containment dam).

Part 7: The recycling or re-use of general waste of more than 10 tons per month.
Chicken litter stored at the poultry facility will be composted on the property and will be spread over crops as fertilizer.

Part 9: The biological, physical or physico-chemical treatment of general waste at a facility that has the capacity to process in excess of 10 tons of general waste per day.
The composting of chicken litter from the poultry facility constitutes a biological treatment of waste. The composting site will have the capacity to process in excess of 10 tons of chicken litter.

Part 11: The treatment of effluent, wastewater or sewage with an annual throughput capacity of more than 2 000 cubic meters but less than 15 000 cubic meters.
The Washwater from the poultry houses will be disposed of via a containment dam. This process is regarded as a 'treatment' process.

Part 17: The storage, treatment or processing of animal manure at a facility in excess of one ton per day.
Manure in the form of chicken litter, in excess of 1 ton per day, will be stored, composted and applied to crops.

Part 19: The expansion of facilities, or changes to existing facilities, for any process or activity, which requires an amendment of an existing permit or license or a new permit or license in terms of legislation governing the release of pollution, effluent or waste.
The proposed expansion, in addition to the existing waste facilities, requires a waste licence.

4. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

(a) the property on which or location where it is proposed to undertake the activity;
(b) the type of activity to be undertaken;
(c) the design or layout of the activity;
(d) the technology to be used in the activity;
(e) the operational aspects of the activity; and
(f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

ALTERNATIVES:

The following alternatives have been considered in this report:

- Alternative poultry facility development sites;
- Alternative chicken litter storage areas;
- Alternative mortality disposal methods;
- Alternative chicken litter disposal methods;
- Alternative washwater disposal; and
- Alternative energy sources.

Alternative poultry facility development sites (refer to Appendix A1 for map):

1. **WATERVAL REARING SITE**

- Preferred Site (29°26'2.70"S, 30°37'2.15"E): This is the most economically feasible site as it is located next to an existing and operational poultry facility which reduces the costs required for establishing new poultry related infrastructure, roads and services. The site is also located within an existing bio-secure area which is advantageous to the health and safety of the birds. The site is currently located on previously disturbed, cultivated land which reduces the cost and time involved in site preparation and vegetation removal, as well as the associated environmental impacts. Locating the proposed layer house next to the existing poultry facility results in a compact, integrated layout which in turn results in localised environmental impacts associated with the proposed development.

- Alternative Site (29°25'57.80"S, 30°36'53.93"E): is located upslope and to the North

West of the preferred development site. The alternative site outside the existing poultry facility's development footprint. The site is also next to a seasonal stream which often floods during heavy rain events. The area is therefore prone to flooding. In addition, it is located far from existing infrastructure and is thus not economically feasible in terms of infrastructural cost. The alternative site is comprised of equal portions of cultivated land and degraded grasslands. The cost of establishing a second wastewater area has significant environmental health, logistical and economical constraints. For these reasons, the Applicant has decided not to pursue this site for development.

2. FROSTPOCKET LAYING SITE

- Preferred Site (29°26'53.66"S, 30°37'15.05"E): is the most economically feasible, as it is located within an existing development footprint which makes it easy and cost effective to utilise existing infrastructure. It has a strategic advantage in that it is located near to a major road and has a good, existing access road. The site is also shielded by trees growing along the boundary facing the main road, off the R614 which will reduce the visual impact.

- Alternative Site (29°26'57.03"S, 30°37'19.62"E): is not economically feasible as the site is covered by an exotic tree plantation which is not yet ready for harvesting. In addition, the cost of de-stumping to make-way for the establishment of infrastructure contributes to making this site not economically feasible. Furthermore, establishing the proposed laying houses on this site, once trees are cleared, would be visually intrusive. For these reasons, the Applicant has decided not to pursue this site for development.

Alternative chicken litter storage sites:
No new chicken litter compost sites or facilities will be established as the existing sites have enough storage capacity for the additional chicken litter produced by the proposed poultry houses. Refer to Appendix A3 for a locality map of the existing composting sites.

Alternative sites for the mortality pits:
New mortality pits will be established for both the Frostpocket Laying site and the Waterval Rearing site (refer to Appendix A5).

The proposed location of the new mortality pit at the Waterval Rearing site is the most suitable for the following reasons: it is within the wastewater area which prevents potential meat scavengers and odour nuisances; it is located far from any existing ground or surface water resources; it is a relatively flat, well drained area.

The proposed location of the new mortality pit at the Frospocket Laying site is the most suitable for the following reasons: it has established vegetative screening, it is far from any residential settlements; it is in close proximity to the proposed poultry facility; and it is on well drained land, far from any surface and groundwater resources.

Thus no other suitable alternative mortality pit sites have been identified.

Alternative mortality disposal methods:

Rendering

Rendering is a process that converts waste animal tissue into stable, value-added materials. This process involves a series of drying and separating processes by which the material is sterilized and the fats and proteins are extracted to produce tallow and meat-and-bone meal.

The raw material can be processed wet or dry. The wet processing involves either boiling water or steam being added to the material causing the fat to rise to the surface; while in dry processing, fat is released by dehydrating the raw material. In addition, there are variations with regards to the temperature used and whether the process is run as a batch or continuously.

The advantages of rendering include:

- Pathogens are completely destroyed by the treatment process; and
- The product produced by the treatment process is useful.

The disadvantages of the rendering process include:

- The process requires high energy costs and is therefore comparatively expensive;
- Wastewater produced by the rendering process requires treatment prior to release;
- The rendering process generates bad odours; and
- Expensive technology is required for odour control.

Buried in mortality pits on-site (Preferred)–

This is the method of disposal currently being utilised for the existing poultry facility mortalities on the farm. The burial of mortalities is done in covered trenches with a lockable lid. The trenches are also lined before being used for disposal to prevent leakage or seepage.

Alternatively, mortalities can also be disposed of at registered landfills. The landfill site must be in possession of a valid permit to dispose of condemned products and carcasses which are unfit for human consumption. Disposal at a landfill should only be pursued as a last resort as the contaminated meat is often eaten by scavengers or people living off food refuse sites, and could cause a significant health problem leading to possible disease and death.

Therefore, disposal by burial on site is the safest, economical and environmentally sustainable way of managing the mortalities generated by the operational breeder and layer facilities. The farm has readily available land for the expansion or digging of new mortality pits. In addition, in terms of the Meat Safety Act 2000 (No 40 of 2000), this is an approved method of mortality disposal.

Alternative chicken litter disposal methods:

Composted and used as fertilizer (preferred) –

Chicken litter is a valuable organic fertiliser which can be used in agriculture. The composted chicken litter is applied as organic fertiliser on the surrounding sugar cane.

The composting is conducted in open windrows. These windrows are periodically mechanically turned to allow oxygenation for effective decomposition. This method facilitates the rapid decomposition of the litter material, reducing the composting period to a few weeks or months. Periodic monitoring of temperature and moisture content is required to achieve optimum decomposition. As a part of the process, high temperatures are reached thereby destroying pathogens and weed seeds. Optimum decomposition reduces odour nuisance but also allows the loss of nutrients. This method is labour intensive as the composted material needs to be

regularly turned for aeration, which, while economically disadvantageous to the developer, does increase job creation and job security.

Landfill –
Chicken litter produced can alternatively be disposed of at the nearest permitted landfill site. This is not the preferred option for disposal as it is not a sustainable option: the landfill is already under high pressure and the nutrients contained within the litter are not being utilised.

As the farm has established and well maintained chicken litter sites, and land filling is not a sustainable practice, as the chicken litter has a value, composting is the preferred method of chicken litter disposal.

Alternative washwater disposal methods:

A combination of evaporation pans and containment dams (preferred) –
This is the preferred option as no water is released to the environment, thus removing the risk of contamination of water resources. This method of washwater treatment is compliant with the requirements of the Department of Water Affairs and is an affordable option for the Applicant. In addition, this method is not technically advanced and will thus not be prone to breakdowns or have high maintenance costs.

Package plant –
This option has not been pursued as it is highly expensive and would compromise the economic viability of the project. Furthermore, the maintenance costs and technical requirements of a package plant make it an undesirable option in the long term. In addition, the use of a package plant would generate treated washwater that would require discharge to the environment. This would result in an increase in the amount of water flowing in the local drainage lines, as well as alter the flow regime of these drainage lines. This is likely to have significant impacts on the riverine system, both at the point of discharge and further downstream.

Septic tank and honey sucker –
The use of a septic tank and honey sucker system for the disposal of washwater has not been pursued as this option would be very expensive. Due to the large volumes of washwater being generated by the facility, the honey sucker truck would need to visit the site very frequently, making this a very expensive method of washwater disposal.

This system will only be used for the disposal of grey and sewage wastewater from the ablution facilities.

Alternative energy source:
Gas (Preferred)–
The Applicant is currently using gas fired boilers to provide heat to the existing rearing houses. Although expensive, gas will continue as the primary energy for heating the boilers. It is a readily available source of energy. The Applicant requires a reliable source of fuel for the boiler as steady temperatures in the poultry houses need to be maintained in order to minimise mortalities. Gas is readily available in nearby towns hence there is no need for storage on site. Additional gas cylinders will be installed for the new boilers in a secure, well ventilated area.
Coal–

This is the cheapest and most economical fuel source used by most poultry farmers for heating their boilers. However, it is labour intensive and has high air emissions, which contribute to the depletion of the ozone layer. Thus coal is not a sustainable fuel source.

Biofuel –
Very little research has been conducted on the pelletizing and burning of chicken litter as a biofuel. The Applicant is interested in investigating the option in the future once more research has been conducted, with the idea of converting to the use of biofuel on the site.

Eskom (100%) –
The remaining poultry facility operations and equipment are currently powered by Eskom electricity. The same services will be extended to the new breeder and layer houses. However, Eskom supplies have become unreliable, due to intermittent powercuts. As explained above, this would be an unacceptable scenario for the Applicant as he would experience huge numbers of chicken losses. In addition, electricity is an expensive fuel source and is not the most economically viable option for the Applicant. In terms of impacts on the environment, if electricity was used, it would be derived from coal fuelled power stations. Therefore the Applicant is encouraged to invest in alternative, renewable energy sources as a long term strategy to meet current and future energy requirements. However, electricity will remain as the preferred energy source for the time being.

Solar –
The installation of solar energy infrastructure for the generation of energy to run the boiler would have very high outlay costs, due to the huge amount of infrastructure required to provide sufficient power for the facility. The establishment of a poultry facility is a very expensive exercise. The boiler would need to run 24 hours a day, and solar infrastructure cannot supply a reliable source of energy for this entire period.

Sections B 5 – 15 below should be completed for each alternative.

5. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

WATERVEL REARING SITE

Alternative:	**Latitude (S):**			**Longitude (E):**		
Alternative S1[1] (preferred or only site alternative)	29 o	26 ‘	02.70 “	30 o	37 ‘	02.15 “
Alternative S2 (if any)	29 o	25 ‘	57.80 “	30 o	36 ‘	53.93 “

[1] “Alternative S..” refer to site alternatives.

FROSTPOCKET LAYING SITE

Alternative:	Latitude (S):			Longitude (E):		
Alternative S1[2] (preferred or only site alternative)	29 º	26 '	53.66 "	30 º	37 '	15.05 "
Alternative S2 (if any)	29 º	26 '	57.03 "	30 º	37 '	19.62 "

6. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

WATERVAL REARING SITE

Alternative:	Size of the activity:
Alternative A1[3] (preferred activity alternative)	Poultry houses 0.360 ha, excluding the bio-secure area / existing poultry houses.
Alternative A2 (if any)	Poultry houses 0.360 ha, excluding the bio-secure area / existing poultry houses.

FROSTPOCKET LAYING SITE

Alternative:	Size of the activity:
Alternative A1[4] (preferred activity alternative)	Poultry houses 0.7584 ha, excluding the bio-secure area
Alternative A2 (if any)	Poultry houses 0.7584 ha, excluding the bio-secure area

7. SITE ACCESS

Does ready access to the site exist?	YES
If NO, what is the distance over which a new access road will be built	N/A m

Describe the type of access road planned:

Both sites are linked by well maintained gravel roads: from the R614 to the Waterval Rearing site; and from the main road, off the R614, to the Frostpocket Laying site.

[2] "Alternative S.." refer to site alternatives.
[3] "Alternative A.." refer to activity, process, technology or other alternatives.
[4] "Alternative A.." refer to activity, process, technology or other alternatives.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

8. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this report.

The site or route plans must indicate the following:

8.1. the scale of the plan which must be at least a scale of 1:500;
8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
8.4. the exact position of each element of the application as well as any other structures on the site;
8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
8.6. walls and fencing including details of the height and construction material;
8.7. servitudes indicating the purpose of the servitude;
8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
- rivers, streams, drainage lines or wetlands;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);

8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
8.10. the positions from where photographs of the site were taken.

9. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

11. ACTIVITY MOTIVATION

11.1. Socio-economic value of the activity

What is the expected capital value of the activity on completion?	**R 10 million**
What is the expected yearly income that will be generated by or as a result of the activity?	**R 1.5 million**
Will the activity contribute to service infrastructure?	**NO**
Is the activity a public amenity?	**NO**
How many new employment opportunities will be created in the development phase of the activity?	**15**
What is the expected value of the employment opportunities during the development phase?	**R 450 000.00**
What percentage of this will accrue to previously disadvantaged individuals?	**90 %**
How many permanent new employment opportunities will be created during the operational phase of the activity?	**4**
What is the expected current value of the employment opportunities during the first 10 years?	**R 11 million**
What percentage of this will accrue to previously disadvantaged individuals?	**85%**

11.2. Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

Earning potential within South Africa has increased dramatically in recent years, most notably in and around urban centres. This increase in income has resulted in a greater percentage of the population being able to increase the amount of protein in their diets. Poultry is a significant and favoured source of protein in South Africa. This increase in demand has outstripped local supply and over the past few years, poultry imports from abroad have increased significantly. However, despite the volume of imported chicken, the local industry has grown steadily.

With the growth of the poultry industry within South Africa, the availability of chicken litter as a beneficial, organic by-product has increased dramatically, as has the awareness of the benefits of this product. There is currently high demand for chicken litter compost as it can be applied to any agricultural crops as a highly nutritious, organic fertilizer at low cost to the farmer.

There is currently a high demand for both direct poultry products, such as meat and eggs and for indirect poultry products such as the chicken litter compost used as an organic fertilizer.

Indicate any benefits that the activity will have for society in general:

An increased amount of locally produced poultry will help keep prices low. Keeping the poultry price low will enable a greater percentage of the population to have protein from chicken and eggs in their diet. Chicken and eggs are excellent sources of protein and having these in ones diet can promote health and wellness. This is very important considering the high prevalence of HIV and Aids in South Africa.
In addition, an increase in the availability of chicken litter compost as a cost effective and organic fertiliser will, in turn, promote environmental health and promote the use of organic fertilizer for commercial crops such as sugar cane. Society in general will benefit from a healthier environment and fewer chemicals used in the production of food sources.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

More jobs will be created during the construction and operational phases, which will benefit the local community and enhance their quality of life.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
The Constitution of the Republic of South Africa (Act 108 of 1996)	**South African Government**	**1996**
National Environmental Management Act (Act 107 of 1998)	**Dept of Environmental Affairs and Tourism**	**1998**
National Water Act (Act 36 of 1998)	**Dept of Water Affairs and Forestry**	**1998**
Conservation of Agricultural Resources Act (Act 43 of 1983)	**Dept of Agriculture**	**1983**
National Veld and Forest Fire Act (Act 101 of 1998)	**Dept of Water Affairs and Forestry**	**1998**
Foodstuffs, Cosmetics and Disinfectants Act (Act No. 54 of 1972)	**Department of Agriculture**	**1972**
Animal Diseases Act (Act No. 35 of 1984)	**Department of Agriculture**	**1984**
Animal Protection Act (Act No. 71 of 1962)	**Department of Agriculture**	**1962**
National Environmental Management: Waste Act (Act No. 29 of 2008), Government Notice 718 (in Gazette No. 32368), Category A:	**Department of Environmental Affairs and Tourism**	**3 July 2009**
Animal Health Act (Act No. 7 of 2002)	**National**	**2002**
Policy and Strategy for Groundwater Management	**National**	**2000**
National Environmental Management: Biodiversity Act No. 10 of 2004	**National**	**2004**

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase? **At the Frostpcket Site.**

YES	[redacted]

If yes, what estimated quantity will be produced per month?

Cannot be estimated.

How will the construction solid waste be disposed of? (describe)

The existing derelict buildings/structures at the Frostrpocket site will be demolished to create space for the proposed Broiler-breeder laying houses. The building rubble that is of no use to the farm and which cannot be used by the local community will be removed and taken to the uMshwathi landfill site for disposal. Any building materials which are re-usable will be used on the farm or donated to the local community. Topsoil generated by cut and fill activities will be separated into a portion to be retained for use on the areas to be revegetated/grassed once construction is complete. The excess will spread onto existing crop lands. This will take place within a month of the topsoil having been push-piled.

Most of the building structures required for the poultry facilities come in pre-painted pack form and only need to be assembled on site. There is very little construction waste created during assembly. However, any waste generated will be gathered and disposed of at the uMshwathi landfill site.

All concrete will arrive on site ready mixed and there will be no concrete bags requiring disposal.

Where will the construction solid waste be disposed of? (provide details of landfill site)

Any construction solid waste which is of no use to the farm will be disposed at the uMshwathi landfill by the construction contractor.
Hazardous waste or contaminated material will be disposed of at the nearest H:h Landfill site (Shongweni).

Will the activity produce solid waste during its operational phase?	**YES**
If yes, what estimated quantity will be produced per month?	**Litter 117 m^3** **Mortalities 1300 birds** **Domestic 0.25 m^3** *(for the two proposed sites combined)*

How will the solid waste be disposed of? (provide details of landfill site)

The chicken litter will be removed from each house at the end of each 45 day growth cycle and taken to one of the five existing compost sites.

Mortalities will be removed from the poultry houses, on a daily basis, and disposed of in lined and covered mortality pits. The mortality pits will be located adjacent to the two proposed poultry facility sites and will be regularly inspected for vermin and vector attraction, leachate seepage and capacity availability.

The amount of domestic waste (office waste and food packaging from employees) created directly from the facility is minimal. This waste will go into the existing waste stream, which comprises the direct transfer of waste to the uMshwathi landfill site.

Medical waste generated by veterinary practitioners visiting the site will be retained and immediately removed by the Veterinary physician. This waste will be disposed of via the existing waste disposal stream at the Veterinarian's practice.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

- Chicken litter: On site composting (Refer to Appendix A3 for the location of composting sites).
- Mortalities: Lined and covered mortality pits (refer to Appendix A5 and A6 for the location of the mortality pits).
- Domestic waste: uMshwathi landfill site.
- Medical Waste: Disposed of by Veterinarian via practice disposal stream.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with

the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	**YES** [redacted]

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

A small amount of hazardous waste will be created from time to time due to veterinarian work on the birds. This waste will be immediately removed and disposed of, by the Veterinarian, at their practice which, as required by law, has an official hazardous waste disposal stream.

Is the activity that is being applied for a solid waste handling or treatment facility?	[redacted] **NO**

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

13.2. Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	[redacted] **NO**
If yes, what estimated quantity will be produced per month?	**N/A**
Will the activity produce any effluent that will be treated and/or disposed of on site?	**YES** [redacted]

It is estimated that 10 000 litres of washwater will be created at the end of each cycle during the cleaning of each house. This washwater will be directed, via a system of inlets within each house, to a settling chamber and containment facility. After settling, the washwater will be directed into an evaporation pan and be allowed to evaporate. Solids will be disposed of (composted) together with the litter. The containment dam will be designed with a freeboard sufficient to prevent overflow during any 1:10 year (24 hour) rain event.

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Will the activity produce effluent that will be treated and/or disposed of at another facility?	[redacted] **NO**

If yes, provide the particulars of the facility:

Facility name:	**N/A**		
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of wastewater, if any:

N/A

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	YES
If yes, is it controlled by any legislation of any sphere of government?	NO

If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.

If no, describe the emissions in terms of type and concentration:

Dust will temporarily be created during the demolition of the existing building structures on the Frostpocket site and from cut and fill activities and construction vehicles during the construction phase on both the Frostpocket and Waterval sites.

The only increase in dust during the operational phase will be from the minor increase in vehicle movement on the access roads. However, it is highly unlikely that any additional traffic associated with the proposed expansion will impact on local road users and / or surrounding landowners.

The existing poultry facility uses gas fired boilers for heating, which do not constitute emissions to atmosphere. It is proposed to use gas heating for the additional houses as well.

Nuisance odours are commonly associated with poultry facilities and litter composting. These odours generally occur when litter is being scraped out of a house at the end of a growth cycle, when water comes into contact with the litter. The existing odour control methods and technology will be implemented for the proposed expansion. In addition, the proposed houses have a ventilation system which can be alternated depending on wind direction. To date there have been no complaints received from neighbours regarding any offensive odours. The composted chicken litter in windrows will be regularly turned to aid the decomposition process thereby reducing odours. It is not expected that the additional poultry houses will have an adverse affect on local residents in terms of odour nuisance.

13.4. Generation of noise

Will the activity generate noise?	YES
If yes, is it controlled by any legislation of any sphere of government?	NO

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

Poultry farming is not considered to be a noisy activity.
Temporary noise will be generated during the construction phase due to the operation of machinery and increased movement of construction vehicles. However, the impact of this noise of local residents will be very low as there are no residences in close proximity to the proposed development sites.

14. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

municipal	water board	**groundwater**	river, stream, dam or lake	other	the activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	The maximum water requirements for the proposed (combined) poultry facilities are estimated to be 20 kilolitres per month. (Both the Borehole and Umgeni Water can supply this amount of water)
Does the activity require a water use permit from the Department of Water Affairs?	**YES**

The Applicant is in the process of compiling all the necessary paper work for the registration of their boreholes for submission to the Department of Water Affairs.

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

It is proposed, at present, to use Borehole water. However, the Applicant has been informed, by a representative of Umgeni Water, that there will also be sufficient water and supply infrastructure for the proposed developments to use water from Umgeni Water at the end of August 2013.

15. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

- LED lighting will be used.
- Cone ventilation fans will be installed to reduce energy consumption.
- An automated ventilation system for heating and cooling, which removes human error and the associated risk of unnecessary/wastage of power usage, will be installed.
- Misters will be installed to supply evaporative cooling, which will help reduce the need for air conditioning.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

The houses will be painted white, in order to reduce the need to cool the houses.
All buildings will be insulated to minimise heating and cooling gains and losses, minimising the amount of work to be done by the automated system to regulate temperatures.
Refer to the 'Alternatives' Section at the beginning of this document for an investigation into alternative energy sources.

SECTION C: SITE/ AREA/ PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g. A): **N/A**

- Subsections 1 - 6 below must be completed for each alternative.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1 (preferred) Waterval Rearing Site:

Flat	**1:50 – 1:20**	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S1 (preferred) Waterval Mortality Pit:

FLAT	**1:50 – 1:20**	**1:20 – 1:15**	**1:15 – 1:10**	**1:10 – 1:7,5**	**1:7,5 – 1:5**	**STEEPER THAN 1:5**

Alternative S1 (preferred) Frostpocket Laying Site:

FLAT	**1:50 – 1:20**	**1:20 – 1:15**	**1:15 – 1:10**	**1:10 – 1:7,5**	**1:7,5 – 1:5**	**STEEPER THAN 1:5**

Alternative S1 (preferred) Frostpocket Mortality Pit Site:

FLAT	**1:50 – 1:20**	**1:20 – 1:15**	**1:15 – 1:10**	**1:10 – 1:7,5**	**1:7,5 – 1:5**	**STEEPER THAN 1:5**

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (**Please cross the appropriate box**).

Alternative S1 (preferred site) Waterval Rearing Site:

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	**Undulating plain/low hills**	Dune	Sea-front

Alternative S1 (preferred site) Waterval Mortality Pit:

Ridgeline	**Plateau**	**Side slope of hill/mountain**	**Closed valley**	**Open valley**	**Plain**	**Undulating plain/low hills**	**Dune**	**Sea-front**

Alternative S1 (preferred site) Frostpocket Laying Site:

Ridgeline	**Plateau**	**Side slope of hill/mountain**	**Closed valley**	**Open valley**	**Plain**	**Undulating plain/low hills**	**Dune**	**Sea-front**

Alternative S1 (preferred site) Frostpocket Mortality Pit:

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	**Undulating plain/low hills**	Dune	Sea-front

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE.

Has a specialist been consulted for the completion of this section?	**YES**

If YES, please complete the following:

Name of the specialist:	**Gerald Davie – GeoZone**		
Qualification(s) of the specialist:	B.Sc. (Hons), M.Sc., Pr. Sci. Nat.		
Postal address:	Unit 3, Pin Oak, Pin Oak Avenue, Hilton.		
Postal code:	3245		
Telephone:	033 343 3915,	Cell:	082 926 0626
E-mail:	info@geozone.co.za	Fax:	-

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	**NO**
If YES, specify and explain:	**N/A**
Are their any special or sensitive habitats or other natural features present on any of the alternative sites?	**NO**
If YES, specify and explain:	**N/A**
Are any further specialist studies recommended by the specialist?	**NO**
If YES, specify:	**N/A**
If YES, is such a report(s) attached in Appendix D?	**YES**
Signature of specialist: **See appendix D3**	Date: **See Appendix D3**

Is the site(s) located on any of the following (cross the appropriate boxes)?

Alternative S1 - Waterval Rearing Site	
Shallow water table (less than 1.5m deep)	**NO**
Dolomite, sinkhole or doline areas	**NO**
Seasonally wet soils (often close to water bodies)	**NO**
Unstable rocky slopes or steep slopes with loose soil	**NO**
Dispersive soils (soils that dissolve in water)	**NO**
Soils with high clay content (clay fraction more than 40%)	**NO**
Any other unstable soil or geological feature	**NO**
An area sensitive to erosion	**NO**

Alternative S1 - Waterval Mortality Pit	
Shallow water table (less than 1.5m deep)	**NO**
Dolomite, sinkhole or doline areas	**NO**

Seasonally wet soils (often close to water bodies)	**NO**
Unstable rocky slopes or steep slopes with loose soil	**NO**
Dispersive soils (soils that dissolve in water)	**NO**
Soils with high clay content (clay fraction more than 40%)	**NO**
Any other unstable soil or geological feature	**NO**
An area sensitive to erosion	**NO**

Alternative S1 – Frostpocket Laying Site

Shallow water table (less than 1.5m deep)	**NO**
Dolomite, sinkhole or doline areas	**NO**
Seasonally wet soils (often close to water bodies)	**NO**
Unstable rocky slopes or steep slopes with loose soil	**NO**
Dispersive soils (soils that dissolve in water)	**NO**
Soils with high clay content (clay fraction more than 40%)	**NO**
Any other unstable soil or geological feature	**NO**
An area sensitive to erosion	**NO**

Alternative S1 - Frostpocket Mortality Pit

Shallow water table (less than 1.5m deep)	**NO**
Dolomite, sinkhole or doline areas	**NO**
Seasonally wet soils (often close to water bodies)	**NO**
Unstable rocky slopes or steep slopes with loose soil	**NO**
Dispersive soils (soils that dissolve in water)	**NO**
Soils with high clay content (clay fraction more than 40%)	**NO**
Any other unstable soil or geological feature	**NO**
An area sensitive to erosion	**NO**

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUNDCOVER

The proposed Waterval poultry site is located alongside an existing poultry facility. The proposed site is comprised of cultivated land and previously disturbed, degraded grassland. The site is bounded by the existing poultry facility the west and sugarcane cultivation to the north, south and east. No significant indigenous species of flora will be impacted by the proposed development.

The proposed Waterval mortality pit is to be located within the existing poultry facility footprint. The proposed mortality pit will not have any impact on indigenous flora.

The proposed Frostpocket poultry site is located within an existing development footprint consisting of old, derelict buildings. The site is surrounded by commercial timber plantation. No indigenous flora will be impacted upon by the proposed development.

The proposed Frostpocket mortality pit is to be located within the commercial timber plantation. The proposed mortality pit will not have any impact on indigenous flora.

Has a specialist been consulted for the completion of this section?			**NO**
If YES, please complete the following:			
Name of the specialist:	**N/A**		
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?			**NO**
If YES, specify and explain:	**N/A**		
Are their any special or sensitive habitats or other natural features present on any of the alternative sites?			**NO**
If YES, specify and explain:	**N/A**		
Are any further specialist studies recommended by the specialist?			**NO**
If YES, specify:	**N/A**		
If YES, is such a report(s) attached in Appendix D?			**NO**
Signature of specialist:		Date:	

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Waterval Rearing Site:

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

Waterval Mortality Pit:

Natural veld - good condition[E]	Natural veld with scattered	Natural veld with heavy alien	Veld dominated by	Gardens

	aliens[E]	infestation[E]	alien species[E]	
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

Frostpocket Laying Site:

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

Frostpocket Mortality Pit:

Natural veld - good condition[E]	Natural veld with scattered aliens[E]	Natural veld with heavy alien infestation[E]	Veld dominated by alien species[E]	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "[E] "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Land use character			Description
Natural area		NO	
Low density residential		NO	
Medium density residential		NO	
High density residential		NO	
Informal residential		NO	
Retail commercial & warehousing		NO	
Light industrial		NO	
Medium industrial		NO	
Heavy industrial		NO	
Power station		NO	
Office/consulting room		NO	
Military or police base/station/compound		NO	
Spoil heap or slimes dam		NO	
Quarry, sand or borrow pit		NO	
Dam or reservoir		NO	
Hospital/medical centre		NO	
School/ creche		NO	
Tertiary education facility		NO	
Church		NO	
Old age home		NO	
Sewage treatment plant		NO	
Train station or shunting yard		NO	

Railway line		**NO**	
Major road (4 lanes or more)		**NO**	
Airport		**NO**	
Harbour		**NO**	
Sport facilities		**NO**	
Golf course		**NO**	
Polo fields		**NO**	
Filling station		**NO**	
Landfill or waste treatment site		**NO**	
Plantation	**YES**		The Frostpocket poultry site is surrounded by commercial timber plantation. The proposed establishment of the poultry houses and mortality pit will not impact significantly on the adjacent plantation. The proposed Waterval poultry site is bounded by sugar cane cultivation and the existing poultry facility. The proposed rearing house and mortality pit will not significantly impact on the sugar cane cultivation.
Agriculture	**YES**		The two proposed development sites are located on agricultural land comprising of commercial timber plantations, sugar cane fields and the existing poultry facilities.
River, stream or wetland	**YES**		A perennial stream drains from the north into a recharge dam located 150m west of the Waterval development site.
Nature conservation area		**NO**	
Mountain, hill or ridge		**NO**	
Museum		**NO**	
Historical building		**NO**	
Protected Area		**NO**	
Graveyard		**NO**	
Archaeological site		**NO**	
Other land uses (describe)		**NO**	

6. CULTURAL/ HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site?		**NO**

If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:	A Heritage Impact Assessment was conducted for the proposed poultry houses by Frans Prins of Active Heritage. No archaeological, cultural heritage or paleontological artefacts were noted on site. However, the following recommendations are made in the report :

	'*The proposed poultry facility may proceed from an archaeological point of view as no heritage sites or features are in danger of being destroyed or altered. It should, however, be pointed out that the KwaZulu-Natal Heritage Act requires that operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.'* Refer to Appendix D2 for the Heritage Impact Assessment Report.	
Will any building or structure older than 60 years be affected in any way?		**NO**
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)? If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.		**NO**

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

(a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  (i) the site where the activity to which the application relates is or is to be undertaken; and
  (ii) any alternative site mentioned in the application;

(b) giving written notice to—
  (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  (v) the local and district municipality which has jurisdiction in the area;
  (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
  (vii) any other party as required by the competent authority;

(c) placing an advertisement in—
  (i) one local newspaper; or
  (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  (i) illiteracy;
  (ii) disability; or
  (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

(a) indicate the details of the application which is subjected to public participation; and

(b) state—
  (i) that an application for environmental authorization has been submitted to the KZN Department of Agriculture & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
  (iii) a brief project description that includes the nature and location of the activity to which the application relates;
  (iv) where further information on the application can be obtained; and
  (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Agriculture & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality? **NO**

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

No comment was received in response to the Background Information Document. Comment in this report will be included in the Final Basic Assessment Report.

Has any comment been received from the local municipality? **NO**

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

No comment was received in response to the Background Information Document. Comment in this report will be included in the Final Basic Assessment Report.

Has any comment been received from a traditional authority? **NO**

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

This is not applicable as the development footprint and the surrounding farm lands land are privately owned.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders? **YES** [redacted]
If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Michelle Nicol, Eskom, 27 July 2012

- We confirm that an investigation has been carried out with regard to the supply of electricity, as well as encroachment into Eskom Servitudes, in respect of the development as set out above.
- The result of this investigation is that a supply is available within the standard Eskom tariffs and conditions.
- A building restriction of 12 m on either side of any reticulation line must be considered when building developments are planned.
- A developer taking a new supply from Eskom, and increase in supply or line deviation is required, application can be made to Eskom via the Eskom toll free number 0860037566, and will be processed in terms of Eskom's standard customer connection tariffs, conditions and policies, the costs of which are for the developer's account.

Andrew Ferendinos, KZN Crane Foundation, 20 July 2012

- Thank you for advising the KZN Crane Foundation of this proposed development.
- We do not have significant biodiversity concerns with the site.
- However, the Umkomaas river is one of our Provinces healthier river systems with a rich biota and is one of the few river systems of its size in South Africa that has no major dams on it (making it also I understand a popular river for canoeists). For this reason waste needs to be well managed so as not to impact negatively on downstream water quality.
- Impacts on water quality are a potential concern since we understand the development proposal to be for a major chicken litter composting operation, ie it will receiving litter from a number of poultry farms.
- We recommend that water samples both pre and post development should therefore be taken of the nearest tributary of the Umkomaas (some 500 metres to the southeast). Of course there are other potential sources of pollution but by taking water samples upstream and downstream of the development site we can determine the development's impact on water quality.
- We would support all measures contained in the Basic Assessment Report aimed at preventing pollution.
- You are welcome to treat these as our final comments.

Penny Rees, DUCT, 25 July 2012

- Our interest lies in the fact that this is a part of the Umgeni River catchment, as the four broiler breeding houses are within the Umgeni catchment - part of the upper Nhlambamasoka catchment and consideration of this fact should be taken. DUCT had the following concerns :
- Effects on water quality of the Nhlambamasoka
- We note that under Potential Environmental Impacts you have not listed the possibility of contamination of local water courses. Of concern is the disposal of the muck after chicken houses have been cleaned and preventative measures need to be taken to prevent this from entering water courses. In addition we note that the chicken litter will be added to the current storage sites – it needs to be ensured that these are large enough and that there is no possibility of contamination of nearby water courses. Please indicate on future maps the location of these storage sites

- We look forward to receiving further information.

N.M. Mokoena, Department of Water Affairs, 6 August 2012

- This Department would like the following matters to be addressed on the Basic Assessment Report:
- Management of solid waste (general and hazardous) generated during the construction phase and post construction phase.
- Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc as well as possible pollution impacts and mitigation measures of such water resources.
- Stormwater management plan/system including the prevention of erosion and sedimentation.
- Sewage treatment and disposal – This should also include the type of toilet facilities to be provided for construction workers.
- The following information is required with regard to any water containing waste generated: through amongst others the wash water from the broiler house.
- Type of treatment system to be utilised (include drawing and layout plan)
- Quality and quantity of water containing waste.
- Information regarding the 1:50 and 1:100 year floodlines. This must be clearly demarcated on a map.
- Spill contingency plans for the identified hazards.
- Environmental Management Plan.
- Details for handling, storage and disposal of chicken litter.
- Disposal of mortalities.
- A layout plan showing all the sensitive areas and their associated buffers. Please note that all the development should be located outside all sensitive areas and their buffers.
- In addition the following points need to be taken into consideration:
- The removal of indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.
- Mr Norman Ward from the Water Resources management Section of this Department must be contacted should there be any alteration to beds, banks, course or characteristics of a watercourse or any impedance or diversion of flow of water as well as any abstraction and/or storage of water. In terms of section 21 of the National Water Act.
- This Department awaits a copy of the Basic Assessment Report in order to provide more detailed comments.

Oliver Holley, Neighbour, 14 August 2012

- We have no objection to, or comments on, the development.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

1. The result of this investigation is that a supply is available within the standard Eskom tariffs and conditions.
2. A building restriction of 12 m on either side of any reticulation line must be considered when building developments are planned.

3. A developer taking a new supply from Eskom, and increase in supply or line deviation is required, application can be made to Eskom via the Eskom toll free number 0860037566, and will be processed in terms of Eskom's standard customer connection tariffs, conditions and policies, the costs of which are for the developer's account.
4. The Umkomaas river is one of our Provinces healthier river systems with a rich biota and is one of the few river systems of its size in South Africa that has no major dams on it (making it also I understand a popular river for canoeists). For this reason waste needs to be well managed so as not to impact negatively on downstream water quality.
5. Impacts on water quality are a potential concern since we understand the development proposal to be for a major chicken litter composting operation, ie it will receiving litter from a number of poultry farms.
6. We recommend that water samples both pre and post development should therefore be taken of the nearest tributary of the Umkomaas (some 500 metres to the southeast). Of course there are other potential sources of pollution but by taking water samples upstream and downstream of the development site we can determine the development's impact on water quality.
7. Effects on water quality of the Nhlambamasoka
8. We note that under Potential Environmental Impacts you have not listed the possibility of contamination of local water courses. Of concern is the disposal of the muck after chicken houses have been cleaned and preventative measures need to be taken to prevent this from entering water courses.
9. In addition we note that the chicken litter will be added to the current storage sites – it needs to be ensured that these are large enough and that there is no possibility of contamination of nearby water courses. Please indicate on future maps the location of these storage sites.
10. Management of solid waste (general and hazardous) generated during the construction phase and post construction phase.
11. Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc as well as possible pollution impacts and mitigation measures of such water resources.
12. Stormwater management plan/system including the prevention of erosion and sedimentation.
13. Sewage treatment and disposal – This should also include the type of toilet facilities to be provided for construction workers.
14. Type of treatment system to be utilised (include drawing and layout plan) for the wastewater / washwater.
15. Quality and quantity of water containing waste.
16. Information regarding the 1:50 and 1:100 year floodlines. This must be clearly demarcated on a map.
17. Spill contingency plans for the identified hazards.
18. Environmental Management Plan.
19. Details for handling, storage and disposal of chicken litter.
20. Disposal of mortalities.
21. A layout plan showing all the sensitive areas and their associated buffers. Please note that all the development should be located outside all sensitive areas and their buffers.
22. The removal of indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.
23. Mr Norman Ward from the Water Resources management Section of this Department must be contacted should there be any alteration to beds, banks, course or characteristics of a watercourse or any impedance or diversion of flow of water as well as any abstraction and/or storage of water. In terms of section 21 of the National Water Act.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

1. Noted.
2. Noted.
3. Noted.
4. Noted. Potential impacts in the surrounding water resources is unlikely if wastewater is properly managed. The EAP is confident that if the measures outlined in this report and in the Stormwater Management Plan and the Integrated Waste Management Plan are implemented, there will be a very low possibility of pollution from the proposed facilities.
5. Noted. The composting facilities will only be receiving litter from the proposed poultry facilities detailed in this report and the existing rearing facilities mentioned in this report. The sites have been inspected and they have more than adequate capacity to handle the increase in litter volume estimated for the proposed developments. The composting facilities will be regularly inspected and monitored to ensure that they are in line with industry standards and are not posing a potential pollution problem.
6. Noted. A water quality monitoring program in included in the EMPr (Appendix F)
7. Noted. Please see response No. 4.
8. Noted. Please see response No. 4.
9. Noted. Please see response No. 5 and Appendix A3 for the location of the existing composting sites on an aerial locality map.
10. Solid waste generated through the construction phase will be removed to the Mshwathi Landfill site and Hazardous waste will be removed to the Shongweni H:Landfill site. Prior to being taken to Shongweni, the any hazardous waste will be stored in a watertight container / skip to avoid any potential contamination of groundwater.
11. Noted. The nearest water sources are more than 150m from the development sites. Potential impacts are unlikely at that distance, however, potential impacts and the appropriate mitigation measures are detailed in the EMPr (Appendix F).
12. Noted. Please refer to The Stormwater Management Plan (Appendix D1).
13. Noted. Sewage and greywater will be handled via septic tank and soak away system, serviced by a honey sucker as and when required. The volume of sewage and greywater is estimated to be relatively low and the existing and proposed facilities are more than sufficient to handle the expected volumes.
14. The wastewater from the poultry facilities will be handled via a dedicated pipeline network from source to a settling chamber, containment dam and evaporation pan. The remaining solids will be disposed of with the chicken litter at the existing compost sites.
15. Please refer to section 13 of this report, where types and volumes of wastewater are detailed.
16. Noted. However, this is not applicable to the proposed development sites in this application as they are both in excess of 150m from the nearest watercourse and the nearest watercourses are minor perennial streams.
17. Please refer to the EMPr (Appendix F).
18. The Environmental Management Plan (EMPr) is attached to this report as Appendix F.
19. On removal from the poultry houses, chicken litter will be immediately transferred by truck to the existing composting facilities in the area, where is processed into organic fertilizer and then spread onto the farm's sugar cane crops.
20. Mortalities will be removed daily and disposed of in the proposed anaerobic mortality pits in site.
21. The proposed development sites are not located near any sensitive sites. They are both situated within cultivated agricultural farm lands and are more than 150m from the nearest watercourses.
22. Noted. However, there are no indigenous trees on either site as they are both located on agriculturally cultivated land (sugarcane and commercial timber).
23. Noted.

THE FOLLOWING SECTION HAS BEEN COMPLETED FOR BOTH SITES

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

A. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

Alternative S1 (preferred alternative)

Direct impacts:

- Inadequately designed greywater and washwater disposal systems could result in overflow (due to increase in wastewater volume) and the subsequent contamination of surface and ground water.
- Poorly designed or overloaded chicken litter composting sites may result in increased odour nuisance for surrounding neighbours. It may also result in surface and groundwater contamination due to storm water run-off during the wet season.
- An inadequately planned site layout may result in the unnecessary removal of vegetation during site clearance, leaving the soil amenable to erosion.
- A poorly designed storm water drainage system for the facility may cause soil erosion and subsequent sedimentation of downstream water resources.

Indirect impacts:

- Poorly designed poultry houses could result in unhygienic conditions, inadequate ventilation, odour nuisances, and diseases.

Cumulative impacts:

- The EAP is of the opinion that the vehicles associated with the proposed expansion will not have any significant impact on the current road infrastructure. The R614 linking both sites from Wartburg, is well maintained. The addition of poultry associated vehicles will not cause traffic disruptions, accidents or deterioration of the main road.

No-go alternative (compulsory)

Direct impacts:

- The existing poultry facility will continue producing fewer chickens / eggs for the market, thereby limiting future growth prospects and associated employment opportunities.
- Fifteen new jobs will not be created on site.

Indirect impacts:

- If the demand for poultry products continues to increase and South Africa has to import this product from other countries in order to meet demand, it is likely that the price of poultry products will continue to increase. An increase in poultry product prices will mainly affect the poor who cannot afford alternative meat products.
- If the proposed expansion does not take place, no additional jobs will be created.

Cumulative impacts:

- The poorer sector of society is the most susceptible to illness, as they cannot afford a balanced diet and have limited access to health care. Poultry is a good source of protein and increasing the cost of this protein will impact on the number of people who have access to it. With HIV and AIDS being most prevalent amongst the more impoverished community, there is potential for this lack of protein to affect quality of life for those suffering with illness.

Indicate mitigation measures to manage the potential impacts listed above:
Alternative S1

- All the recommendations of the Stormwater Management Plan must be included in the design and lay-out plans of the poultry houses and their associated waste management systems.
- The storm water drainage system must be adequately designed based on site conditions in order to ensure the free flow of surface run-off. The design must include measures for: reducing the flow velocity, with filters or sedimentation traps at points of discharge; and keeping stormwater and contaminated run-off separate at all times.
- The site lay-out plans must be approved by a qualified engineer.
- The poultry houses must be adequately designed with an appropriate ventilation system that maximises the natural flow of air and sunshine.
- The structural design and roof colour of the proposed poultry houses must be uniform with the existing houses. The existing tree vegetative screen should be maintained.
- Vegetative verges must be kept cut in order for safe sighting distances to be maintained.
- The availability of local water and electricity must be assessed in order to ensure that the proposed poultry facilities can operate sustainably. Investigations into the supply of additional water have been conducted (refer to Appendix D4). Eskom has confirmed that there is enough electricity available for the proposed expansion.

b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

- Optimum positioning of the houses should take into consideration slope angle and slope direction. Inappropriate positioning would result in increased construction costs (as additional cut and fill would be required), as well as the houses not being as energy efficient in terms of warming and cooling.

Indirect impacts:

- The houses are designed to incorporate the latest technology in terms of energy and water efficiency. These efficiencies are beneficial to both running costs and the environment as a whole. If the houses are not built with the latest technologies, this will result in increased running costs for the Farmer and greater resource demand to operate (water and electricity).
- Although there no significant emissions associated with gas fired boilers, there is a potential risk of fire or explosion if the gas cylinders are not properly housed or maintained.

Cumulative impacts:

- None

No-go alternative (compulsory)

Direct impacts:

- Fifteen new jobs will not be created on site.

Indirect impacts:

- If the demand for chicken continues to increase and South Africa has to import this product from other countries in order to meet demand, it is likely that the price of poultry will continue to increase. Increased poultry price will mean that fewer people will be able to afford this source of protein.

Cumulative impacts:

- The poorer sector of society is the most susceptible to illness, as they cannot afford a balanced diet and have limited access to health care. Poultry is a good source of protein and increasing the cost of this protein will impact on the number of people who have access to it. With HIV and Aids being most prevalent amongst the more impoverished community, there is potential for this lack of protein to affect quality of life for those

suffering with illness.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

- The final siting of the houses must take into consideration slope angle and slope direction. (This has been done).
- The proposed poultry house technology must be energy efficient and designed to maximise the flow of natural air and the penetration of sun light.
- The Farmer should investigate other alternative, renewable sources of energy such as biogas from chicken waste.

B. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

Alternative S1 (preferred site)

Direct impacts:

- Soil disturbance and potential loss of topsoil (platform cutting).
- Job creation for professional skilled, semi-skilled, unskilled construction workers.
- Job creation for skilled professionals such as engineers.
- Potential noise and dust pollution during construction, mainly from the operation and movement of construction machinery, plant equipment and vehicles.

Indirect impacts:

- Disturbance to existing chickens.
- Increased opportunity for the establishment of alien vegetation on site and in the surrounding area due to earth works and people movement.
- Potential for contamination to water resources located down slope of the development site.
- Potential for construction workers to trespass onto neighbouring properties.
- Increase in revenue for construction material suppliers.

Cumulative impacts:

- Skills development for construction workers.

No-go alternative (compulsory)

Direct impacts:

- The existing development footprint comprising of two breeder rearing houses on the Watervel site and dilapidated buildings on the Frostpocket site will remain the same, with no development or growth of the facilities.
- The farm cannot diversify into profitable poultry farming.
- The farm will continue to rely on the importation of chicken manure to meet its sugar cane field compost requirements.
- Soils will remain undisturbed.
- Jobs will not be created.

Indirect impacts:

- There will be no opportunities for local construction suppliers and contractors to benefit from the proposed development.

Cumulative impacts:

- There will be no development of skills for construction workers.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

- It is proposed that leftover topsoil will be removed from the site and spread on cultivated fields located on the property. If this cannot be done immediately, the topsoil must be stockpiled (less than 3 m in high) and either vegetated, covered during windy conditions or dampened. The chosen method will be dependent on the length of time the topsoil will be stockpiled for.

- Dust can be controlled by dampening the exposed areas during windy conditions.
- Construction workers should be employed from local communities in order to reduce the possibility of trespassing and conflict.
- Appropriate Stormwater Management structures should be installed during construction to reduce the possibility of surface and ground water contamination.
- Local construction material suppliers should be used where possible.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

- Soil disturbance and potential loss of topsoil (platform cutting).
- Potential for increased soil erosion if the development footprint has no proper storm water drainage infrastructure.
- High energy demand due to the use of artificial lighting and ventilation, if the layout of the poultry houses prevents natural flow of air and penetration of sun light.
- Job creation for professionals (engineers) skilled, semi-skilled, unskilled construction workers.
- Noise and dust will be created during construction from machinery, earth movement and vehicles.

Indirect impacts:

- Increased opportunity for the establishment of alien vegetation on site and in the surrounding area due to earth works and people movement.
- Potential for contamination to water resources located down slope of the development site.
- Potential for construction workers to trespass onto neighbouring properties.
- Increase in revenue for construction material suppliers.

Cumulative impacts:

- It is estimated that construction will take three months to complete. Construction will incorporate both labour intensive methods and specialised machinery to ensure the buildings are of the highest standard. Thus construction will provide both employment and skills development. It is estimated that the construction workforce will be made up of 15 workers in total.

No-go alternative (compulsory)

Direct impacts:

- Soils will remain undisturbed.
- Jobs will not be created.
- There will be no increase in noise or dust being created on the property.

Indirect impacts:

- There will be no opportunities for local construction suppliers and contractors to benefit from the proposed development.

Cumulative impacts:

- There will be no development of skills for construction workers.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

- It is proposed that leftover topsoil will be spread onto nearby cultivated fields. If this cannot be done immediately, the topsoil must be stockpiled (less than 3 m high) and either vegetated, covered during windy conditions or dampened. The chosen method will be dependent on the length of time the topsoil will be stockpiled for.
- The storm water drainage system must be adequately designed to prevent flooding, soil erosion, and contact with waste.
- Dust can be controlled by dampening the exposed areas during windy conditions.

- Construction workers should be employed from local communities in order to reduce the possibility of trespassing and conflict.
- The storm water drainage infrastructure must include sedimentation traps and allow the free movement of water.
- Local construction material suppliers should be used where possible.

C. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

Alternative S1 (preferred alternative)

Direct impacts:

- Increased stormwater runoff.
- Increased chicken litter produced.
- Potential surface and groundwater contamination if the chicken litter storage area is not managed properly.
- Increased poultry production.
- Job creation and skills development.
- Nuisance odour may be created if the facility and chicken litter storage area are not managed correctly.
- Chicken mortalities could cause disease and pollution if not property managed.

Indirect impacts:

- Increased demand for chicken feed.
- Potential for visual impacts (although unlikely).
- Potential for soil, ground water and surface water contamination if the operation is not properly run and maintained.
- Additional stormwater runoff has the potential to cause erosion and damage to other farming activities on the property.
- Slight increase in traffic on local road network.

Cumulative impacts:

- Increased standard of living and job security for those employed and their dependents.
- The facility will help towards meeting the growing demand for poultry products in the local area and the country as a whole. This in turn will help keep the price of chicken (and thus protein) down.
- More people will be able to afford chicken, and this in turn will contribute to a balanced diet. The greater the proportion of the population with a balanced diet, the less dependence on the currently limited health care resources.
- Increased rates for Municipality. Increased rates will allow improved service provision by the Municipality for the area.
- Increased availability of chicken litter will improve crop yields and in turn will produce improved crops at a lower production cost.

No-go alternative (compulsory)

Direct impacts:

- No increase in stormwater runoff.
- No increase in the food supply to meet consumer demand.
- New jobs will not be created and skills development will not occur.

Indirect impacts:

- Additional stormwater runoff would not be created.
- Local chicken feed suppliers will not benefit from an increase demand in chicken feed.
- There will be not potential for stormwater runoff to cause erosion or pollution.
- There will no potential for effluent to contaminate soil and surface and ground water resources.
- There will be no change to current vehicle movements on the local road network.

Cumulative impacts:

- The price of poultry will likely rise if the demand is not met by local markets. This will result in less people being able to have this protein source in their diets.
- Increased reliance on outsourcing of chicken manure to meet fertiliser needs for the surrounding sugar cane fields.
- No local investment and economic development in the area.
- The Municipal rates base will not alter.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

- The findings and recommendations of the Stormwater Management Plan must be adhered to. Stormwater and washwater must be kept separate at all times.
- Employment must be offered to members of the local community before approaching communities farther afield.
- All staff, including the Farm Manager, must receive regular training on best practice.
- The entire facility must be fully maintained and regularly inspected for operational efficiency and sustainability.
- If required, appropriate erosion control structures must be put in place where stormwater is being directly into the natural drainage line. It is recommended that the natural drainage line is photographed before the facility is operational in order to monitor any changes to the drainage line. Erosion could result in sedimentation further downstream if not adequately addressed.
- The Integrated Waste Management Programme in Appendix F must be implemented.
- The EMPr in Appendix F must be implemented by the Farmer and an independent auditor/ECO.
- The mortality pits must be appropriately and adequately lined to prevent any potential leachate seepage.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

- Increased stormwater runoff.
- Increased chicken litter produced.
- Increased poultry production.
- Job creation and skills development.
- Nuisance odour may be created if the facility is not managed correctly.
- Chicken mortalities could cause disease and pollution if not property dealt with.

Indirect impacts:

- Increased demand for chicken feed.
- Potential for negative visual impacts (although unlikely).
- Potential for soil, ground water and surface water contamination if the operation is not run correctly and maintained.
- Additional stormwater runoff has the potential to cause erosion and damage to other farming activities on the property.
- Slight increase in traffic on local road network.

Cumulative impacts:

- Increased standard of living for those employed and the dependents of the new staff.
- The facility will help towards meeting the growing demand for poultry products in this country. This in turn will help keep the price of chicken (and thus protein) down.
- More people will be able to afford chicken, and this in turn will contribute to a balanced diet. The greater the proportion of the population with a balanced diet, the less dependence on the currently limited health care resources.
- Increased rates for Municipality. Increased rates will allow improved service provision by the Municipality for the area.

- Increased GDP.

No-go alternative (compulsory)

Direct impacts:

- No increase in stormwater runoff.
- No increase in the food supply to meet consumer demand.
- New jobs will not be created and skills development will not occur.

Indirect impacts:

- Additional stormwater runoff would not be created.
- Local chicken feed suppliers will not benefit from an increase demand in chicken feed.
- There will be not potential for stormwater runoff to cause erosion or pollution.
- There will no potential for effluent to contaminate soil and surface and ground water resources.
- There will be no change to current vehicle movements on the local road network.

Cumulative impacts:

- The price of poultry will likely rise if the demand is not met by local markets. This will result in less people being able to have this protein source in their diets.
- The Municipal rates base will not alter.
- Increased reliance on outsourcing of chicken manure to meet fertiliser needs for the surrounding sugar cane fields.
- No local investment and economic development in the area.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

- The findings and recommendations of the Stormwater Management Plan must be adhered to. Stormwater and washwater must be kept separate at all times.
- Employment must be offered to members of the local community before approaching communities further afield.
- All staff, including the Farm Manager, must receive regular training on best practice.
- The entire facility must be fully maintained and regularly inspected for operational efficiency and sustainability.
- The existing chicken litter composting sites must have a proper stormwater drainage system that prevents flooding and the subsequent wash away of the compost.
- If required, appropriate erosion control structures must be put in place where stormwater is being directly into the natural drainage line. It is recommended that the natural drainage line is photographed before the facility is operational in order to monitor any changes to the drainage line. Erosion could result in sedimentation further downstream if not adequately addressed.
- The Integrated Waste Management Programme in Appendix F must be implemented.
- The EMPr in Appendix F must be implemented by the Farmer and an independent auditor.
- The access roads to the facility must be maintained. They should be dampened if wind-blown dust becomes problematic.
- The mortality pits must be appropriately and adequately lined to prevent any potential leachate seepage.

D. IMPACTS THAT MAY RESULT FROM THE DECOMISSIONING OR CLOSURE PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

Alternative S1 (preferred alternative)

Direct impacts:

- Decommissioning the facility would create rubble and waste/scrap metal.

- Erosion could occur if the cleared site is not rehabilitated.
- Alien vegetation could invade the site following site clearance.
- Jobs would be lost if a new facility was not established. Skills development would also be lost if the facility was not continued.

Indirect impacts:

- Decrease in the standard of living for those who have lost their jobs (and associated dependents) if no new employment opportunities were created.

Cumulative impacts:

- The facility will no longer help meet the local demand for poultry. This could result in the price of poultry increasing and becoming inaccessible for the poorer population.
- The farmer will no longer benefit from the increased availability of chicken litter.

No-go alternative (compulsory)

- **N/A**

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

- If waste rubble cannot be used in the area, it must be transported to the Municipal landfill site for disposal.
- Any scrap metal must be transferred to a metal recycling depot.
- Any other waste material must either be donated to local communities or disposed of at either recycling depots or the Mshwathi Landfill Site. It must be noted that if the material is donated to a local community, the responsibility of appropriate use lies with the farmer. It must not cause any form of pollution.
- Bare soil must be revegetated to avoid windblown dust and erosion (and thus sedimentation of water courses). The sites should either be vegetated with indigenous vegetation or crops.
- An alien vegetation control plan must be implemented on the site following decommissioning.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

- Decommissioning the facility would create rubble and waste/scrap metal.
- Erosion could occur if the cleared site is not rehabilitated.
- Alien vegetation could invade the site following site clearance.
- Jobs would be lost if a new facility was not established. Skills development would also be lost if the facility was not continued.

Indirect impacts:

- Decrease in the standard of living for those who have lost their jobs (and associated dependents) if no new employment opportunities were created.

Cumulative impacts:

- The facility will no longer help meet the local demand for poultry. This could result in the price of poultry increasing and becoming inaccessible for the poorer population.
  The farmer will no longer benefit from the increased availability of chicken litter.

No-go alternative (compulsory)

- **N/A**

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

- If waste rubble cannot be used in the area, it must be transported to the nearest registered landfill site for disposal.
- Any scrap metal must be transferred to a metal recycling depot.
- Any other waste material must either be donated to local communities or disposed of at either recycling depots or the Mshwathi Landfill Site. It must be noted that if the material is donated to a local community, the farmer is still liable for its proper usage and

disposal. It must not cause any form of pollution.
- Bare soil must be revegetated to avoid windblown dust and erosion (and thus sedimentation of water courses). The sites should either be vegetated with indigenous vegetation or crops.
- An alien vegetation control plan must be implemented on the site following decommissioning.

E. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1 (preferred site)

It is recommended that the Environmental Management Programme (EMPr) (Appendix F) be implemented for all phases of the development. This EMPr must be used to monitor the site on a monthly basis during construction and the first six months of operation. Audits will then be reduced if environmental compliance is satisfactory. Auditing must be conducted by an independent Environmental Control Officer in order to ensure compliance with all aspects of environmental management and responsibility.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative S1 (preferred site)

The proposed expansion and development will directly create 15 new contract jobs and 4 new permanent jobs. Further, indirect, jobs will be created through the related chicken production chain such as abattoirs, meat processing and packaging plants, distribution companies and retail outlets. This will benefit employees through improved standards of living and economic welfare.

Service provision has been explored for the proposed expansion, and it can be confirmed that there is sufficient water and electricity access and capacity for the proposed development.

The main environmental area of concern with a facility of this nature is the pollution / contamination of groundwater via wastewater from the regular washing of the facility, contaminated storm water run off and leachate seepage from mortality pits. The appropriate methods of dealing with waste, solid and liquid, must be implemented and consistently maintained in order to minimise the risk of such contamination and pollution. Effective and reliable methods of dealing with waste from the proposed facilities outlined must be followed at all times.

Provided the Stormwater Management Plan is correctly implemented and waste disposal procedures are respected, it is unlikely that contamination will occur. A Water Quality Monitoring Programme is included in the EMPr to ensure that should pollution occur, it will be detected and remediation action taken.

There are several, existing, chicken litter composting facilities located on and around the farm. Additional chicken litter from the proposed breeder rearing and laying houses will be composted at either one or more of these facilities, depending on their proximity and capacity. There is potential for surface and groundwater contamination, if these composting sites are not properly managed. It is, therefore, recommended that the Applicant complies with the Integrated Waste Management Plan in Appendix F. it is further recommended that the Farm Manager complies with all the site specific conditions made in the EMPr (Appendix F) to

ensure the sustainability of these sites.

As long as all recommendations are taken into account and due procedures are followed, it is likely that the potentially negative environmental impacts can be minimised and/or avoided altogether.

No-go alternative (compulsory)

The condition of the proposed development sites will remain the same with the continued deterioration of the existing derelict infrastructure and the invasion of alien vegetation on the Frostpocket site. The land would remain underutilised with no significant investment in the sustainable operation of the poultry farm.

If the proposed expansion does not occur, the existing operation will not grow and 15 new contract jobs and 4 new permanent jobs will not be created, with associated skills development. There will be no knock on effect and there will be no improvement living standards or economic welfare. In addition, the Municipal rates base will not benefit.

If the demand for chicken continues to increase and South Africa has to import this product from other countries in order to meet demand, it is likely that the price of poultry products will continue to increase. Increased poultry price will mean that fewer people will be able to afford this valuable source of protein and the associated health benefits of having a protein rich diet.

SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?	**YES**	■
If "NO", please contact the KZN Department of Agriculture & Environmental Affairs regarding the further requirements for your report.	**N/A**	

If "YES", please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- The EMPr and Integrated Waste Management Plan in Appendix F must be implemented by the farmer and an independent ECO/auditor.

Construction

- During construction it is proposed that leftover topsoil, after it has been separated for use in the re-vegetation of the site, will be spread onto the fields. If this must be done immediately. The stockpiled topsoil must be piled less than 3 m in high and covered during windy conditions or dampened. The chosen method will be dependent on the length of time the topsoil will be stockpiled for, although this time will be relatively short as there is little construction to be done as the building structures are pre-fabricated and need only to be assembled.
- Construction should only take place during normal business hours.
- Dust during construction should be controlled by dampening the exposed areas during windy conditions.
- After construction all exposed areas around the houses must be re vegetated with local endemic plant species, using the topsoil stockpiled. No alien vegetation is permitted.
- Appropriate Stormwater Management structures must be installed during construction to reduce the possibility of surface and ground water contamination.
- Construction and operational staff must be employed from local communities as far as possible.
- Construction material should be bought from local suppliers as far as possible.

Operation

- The findings and recommendations of the Stormwater Management Plan must be adhered to. Stormwater and washwater must be kept separate at all times.
- All staff, including the Farm Manager, must receive regular training on best practice methods.
- The entire facility must be fully maintained and regularly inspected for conformity with Best Environmental Practices.
- If required, appropriate erosion control structures must be put in place where stormwater is being released directly into the natural drainage lines. It is recommended that the natural drainage line is photographed before the facility is operational in order to monitor any changes to the drainage line.
- The access roads to the facility must be regularly maintained. They should be dampened if wind-blown dust becomes problematic.
- All mortalities must be removed from the houses daily and transferred to the mortality pits.
- Mortality pits must be regularly inspected and maintained to industry standards.
- Compost transported on trucks must be covered with a tarpaulin to prevent dispersion.

Compost sites

- Compost sites must be regularly inspected and maintained.
- Areobic conditions must be facilitated regularly to aid the proper breakdown and composting process.
- New chicken litter must be taken to the sites that are least full to prevent over burdening and the associated pollution risks.
- Stormwater run-off must be diverted around composting areas by cut-off channels and berms to prevent run-off contamination and subsequent pollution of downstream water resources
- The Integrated Waste Management Plan and Water Quality Monitoring Plan contained in the EMPr (Appendix F) must be implemented.

SECTION G: APPENDICES

The following appendices must be attached as appropriate:

Appendix A: Site plan(s)
Appendix A1 Alternative sites for the proposed development sites.
Appendix A2 Layout map of the Frostpocket site
Appendix A3 Existing chicken litter composting sites
Appendix A4 Layout map of the Waterval site
Appendix A5 Locality map of the Waterval mortality pit
Appendix A6 Locality map of the Frostpocket mortality pit

Appendix B: Photographs
Appendix B1 Photographs of preferred poultry house sites

Appendix C: Facility illustration(s)
Appendix C1 Photographs of proposed poultry units

Appendix D: Specialist reports
Appendix D1 Stormwater Management Plan
Appendix D2 Heritage Impact Assessment (HIA)
Appendix D3 Geotechnical study
Appendix D4 Borehole test result

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information
Appendix G1 Comment of water provision from Umgeni Water
Appendix G2: Waste License Application