

SECTION F: APPENDICES

APPENDIX E: COMMENTS AND RESPONSES REPORT

COMMENTS RECEIVED DURING THE PROJECT ANNOUNCEMENT AND REGISTRATION PHASE

1. Impacts on Agricultural Land

NO	COMMENT	NAME	DATE	RESPONSE
1.1	<p>Please note I have not been able to open the kmz file for the proposed footprint for the poultry facility, I have looked on the Land Capability classification map.</p> <p>I think I'm still interested to view or visit the site to actually see what is happening on the ground at the moment.</p>	Gcinile Dumse, Dept. of Agriculture, Forestry & Fisheries: LUSM	11 June 2018, Email	<p>The Land Capability map has indicated that the site has a land capability Class VII.</p> <p>A site visit was held with the Dept. of Agriculture, Forestry & Fisheries on the 13 June 2018 and the comments from the site visit are captured in this Comments and Responses Report.</p>
1.2	Rezoning of the breeder / layer structures is not required in terms of Act 70 of 1970.	Gcinile Dumse, Dept. of Agriculture, Forestry & Fisheries: LUSM/ Ruffus Maloma, Dept. of Rural Development & Agrarian Reform	13 June 2018, site visit comments	This comment is noted.
1.3	According to the Departmental records, the properties in question are regarded as agricultural land in terms of the definition of agricultural as stated in section 1 of the Subdivisions of Agricultural Land Act (SALA), Act 70 of 1970. As such, you will require consent in terms of this Act.	Mabule Romodike, Dept. of Agriculture, Forestry & Fisheries: Land Use Adviser	2 May 2018, email and comment form	<p>A site visit was held with Ruffus Maloma (Dept. of Rural Development & Agrarian Reform) and Gcinile Dumse (Dept. of Agriculture, Forestry & Fisheries) on the 13 June 2018. During the site visit, it was confirmed that the land is zoned as Agriculture 1, which allows for intensive feed farm operations and thus rezoning in terms of Act 70/ 1970 is not required.</p> <p>However, in terms of the Municipal Zoning Scheme Regulations, Consent Use is required for intensive feed farming. The property will not be subdivided. Refer to comment 1.2 above from this site visit.</p>

2. Assessment of Alternatives

NO	COMMENT	NAME	DATE	RESPONSE
2.1	<p>The applicant will be recommended to identify alternative site for the proposed poultry breeder facility, the proposed use of 12 ha of irrigated Lucerne lands for poultry structures will not be supported. Land Use and Soil Management will propose to utilise low potential agricultural land for the proposed poultry structures and associated infrastructure.</p> <p>The applicant can identify alternative sites for the proposed development as the applicant will recommend to keep or continue with the 12 ha of irrigated Lucerne lands under the current production of dairy production. The irrigated Lucerne lands are proposed for the preservation and development of agricultural which must be kept in its current production state.</p>	Gcinile Dumse, Dept. of Agriculture, Forestry & Fisheries: LUSM	24April2018, Email and Comment Form	<p>In response to this comment, extensive interaction has been had with the Dept. of Agriculture, Forestry & Fisheries, as well as with the Dept. of Rural Development & Agrarian Reform. This included a site visit on the 13 June 2018. It has been established that the current landowner operates a dairy farm with lucerne fields and that he has sold the farm portions to the project applicant. The project applicant purchased the farm with the express purpose to operate a breeder facility and to replace the lucerne fields with citrus, that is, to discontinue the dairy farm operations. The farm is zoned Agriculture I, which allows for intensive feed farm operations in terms of Act 70/ 1970, that is, a breeder facility. The farm will not require rezoning. However, in terms of the Municipal Zoning Scheme regulations, Consent Use is required for intensive feed farming.</p> <p>The replacement of the lucerne fields with citrus orchards, falls beyond the scope of this assessment. Subsequent to the receipt of this comment, the Dept. of Agriculture, Forestry & Fisheries, in correspondence dated the 11 June 2018, noted that they have no intention of objecting to this application (refer to comment 2.1 below). In addition, during the site visit with the Dept. of Agriculture, Forestry & Fisheries, as well as with the Dept. of Rural Development & Agrarian Reform, it was confirmed that rezoning for the breeder facility was not required (refer to point 1.2 above).</p> <p>Site alternatives will not be assessed as part of this assessment process.</p>
2.2	I do not have intentions to object on the proposed project.	Gcinile Dumse, Department of Agriculture, Land Use and Soil Management	11June2018, Email	This comment is noted and was confirmed during the site visit with the Department of Agriculture held on the 13 June 2018.

3. Potential Impacts on Aquatic Resources

NO	COMMENT	NAME	DATE	RESPONSE				
3.1	The Department expressed concern with regards to the replacement of the Lucerne fields with citrus orchards and the proximity of the orchards to the Sundays River.	Gcinile Dumse, Dept. of Agriculture, Forestry & Fisheries: LUSM/ Ruffus Maloma, Dept. of Rural Development & Agrarian Reform	13June2018, site visit comments	While the potential replacement of the lucerne fields with citrus orchards does not form part of this application, the aquatic specialist has recommended a 60m buffer for the planting of citrus from the Sundays River.				
3.2	We use water from the river for agricultural use. Please confirm that refuse will not be dumped in the river.	Memory Saxton, Adjacent Landowner 32/192	24May2018, mailed comment form	It is illegal to dispose of waste into a water resource (i.e. the Sundays River). All waste, according to type, must be disposed of in the appropriate manner and where applicable, at a suitably licensed waste disposal facility.				
3.3	<p>It is not that SANParks has no concerns. As mentioned in the BID the location proposed for development is an aquatic critical biodiversity area (ABLMC 2b) in terms of the Eastern Cape Biodiversity Conservation Plan and the development is close to the Addo Elephant National Park. The farm portions measure ~196ha in combined extent and the total development footprint, including associated infrastructure, is anticipated to be ~12ha.</p> <table border="1"> <tr> <td>ABLMC 2b</td> <td>A2b</td> <td>Catchments of free flowing rivers important for fish migration</td> <td>Less than 20% of total of sub-quaternary catchment</td> </tr> </table> <p>It is important for SANParks to find a conservation outcome on this transformed property. As a minimum we would require at least a 30m to 50m natural vegetation buffer area (100m is recommended) from the river.</p> <p>Note: An extract from the ECBCP Handbook 2007, for “Recommended buffers for rivers” was included with this comment. Please refer to the full comment attached in Appendix G(iv) of this report.</p>	ABLMC 2b	A2b	Catchments of free flowing rivers important for fish migration	Less than 20% of total of sub-quaternary catchment	Maretha Alant, Garden Route National Park: Environmental Manager	4May2018, email	<p>The development footprint for the proposed Breeder Facility is located more than 300m from the Sundays River, at its nearest point. While the potential replacement of the lucerne fields with citrus orchards does not form part of this application, the aquatic specialist has recommended a 60m buffer for the planting of citrus from the Sundays River.</p> <p>While the Eastern Cape Biodiversity Conservation Plan (ECBCP) identifies the site as an ABLMC2 (Aquatic CBA), potentially due to the proximity of the Sundays River, this is a high-level planning document and requires site verification. The Sundays River Valley Biodiversity Sector Plan (SRVBSP), which is a more recent document and at a finer scale, has indicated that the proposed development site does not fall within a CBA or Ecologically Sensitive Area (ESA).</p> <p>As per the aquatic specialist and in terms of the SRVBSP, the Sundays River estuary should receive a 100m buffer. However, the proposed development footprint is located more than 300m from the edge of the proposed 100m buffer.</p> <p>The existing intact vegetation cover occurring on and adjacent to the banks of the Sundays River will be</p>
ABLMC 2b	A2b	Catchments of free flowing rivers important for fish migration	Less than 20% of total of sub-quaternary catchment					

				conserved, that is, it will not be affected by the proposed development.
3.4	In addition, pollution prevention needs to be addressed for water,	Maretha Alant, Garden Route National Park: Environmental Manager	4May2018, email	<p>While the replacement of the lucerne fields with citrus orchards does not form part of this application, the aquatic specialist has recommended a 60m buffer for the planting of citrus from the Sundays River.</p> <p>As per the aquatic specialist and in terms of the Sundays River Valley Biodiversity Sector Plan (SRVBSP), the Sundays River estuary should receive a 100m buffer. However, the proposed development footprint is located more than 300m from the edge of the proposed 100m buffer.</p> <p>A stormwater detention pond is proposed on site to manage and contain stormwater flow from roofed areas and roadways associated with the proposed poultry breeder facility, as well as to prevent nutrient rich water entering future citrus orchards and the Sundays River.</p> <p>No manure waste may be stockpiled on site but must be transported at the end of each cycle to a suitably licensed waste disposal facility, namely, the Venter Fert Composting and Fertiliser Plant, also owned by the project applicant. All waste must be appropriately stored according to waste type and be disposed of at a suitably licensed waste disposal facility, namely Addo Waste Disposal Facility or Koedoeskloof.</p>

4. Potential Odour Impacts

NO	COMMENT	NAME	DATE	RESPONSE
4.1	<p>Our main concern is with regards to potential odour impacts.</p>	<p>Joy Van Deventer, Adjacent Landowner 33/192</p>	<p>24April2018, telephonic</p>	<p>The proposed breeder houses will be fully enclosed, roofed and ventilated facilities, which will be temperature controlled. Odour is mostly associated with the manure when it is removed from the houses at the end of each cycle. One cycle is ~60 weeks, thus at the end of each cycle (approximately once a year) the chickens are removed from the facility and the houses are cleared of the manure. The manure is not allowed to be stockpiled anywhere on the site and must immediately be removed to a registered composting facility. Most of the remainder of the site, currently planted with lucerne, will be replaced with citrus orchards. That is, the current dairy farm operations will cease.</p> <p>The distance of the nearest breeder house to Portion 33 of Farm 192 is ~410m. A separate Air Quality study will not be undertaken for this assessment. See additional input below with regards to odour impacts.</p>
4.2	<p>I have been discussing this with my Mom recently and we have concerns about the scale of the poultry farm and its immediate impact on our holiday home situated nearby where my late Aunt and Grandmother used to live.</p> <p>We have concerns in that should the poultry farms be within a certain radius the smell emitted from these farms will make our one hectare homestead uninhabitable.</p> <p>I will put together a more formal document regarding our concerns but for now we would definitely like to formally say that we would require a safe distance between the actual placement of the chickens and our homestead.</p> <p>One would need to do proper research to determine what distance is needed to not smell the obnoxious odours emitted from a chicken farm as from past experience and from having had relatives who did</p>	<p>Johnathan Cooper, Executor of Estate Late of Adjacent Landowner 5/192</p>	<p>29Jan2019, email</p>	<p>Refer to Appendix D(vi) of this report for findings of an independent desktop specialist assessment undertaken to assess the potential air quality impacts of a broiler house facility (12 houses), as part of the Basic Assessment Process undertaken for Disco Chicks Farm 1, ~15km north of the proposed breeder facility. This report presents worst case scenario as the stocking densities of a broiler facility are higher than for a breeder facility and manure removal takes place more frequently at a broiler facility.</p> <p>Breeder house facilities may produce ammonia, as well as dust emissions and could result in nuisance odours.</p> <p>The abovementioned specialist assessment indicated that according to the Occupational Exposure Limits (OEL) contained in the Occupational Health and Safety Act (Hazardous Chemical Substances Regulations) emissions are expected to be within the legislated limits, providing that the current management practices implemented at Sovereign Foods contract facilities are</p>

	<p>farming themselves we can say with absolute surety that all chicken farms emit a repugnant smell and odour that can be smelt in the near vicinity.</p>		<p>adhered to:</p> <ul style="list-style-type: none"> • No manure stockpiling on site. • Daily removal of mortalities from site. • Maintenance of a low manure moisture content. <p>It is important to note that the proposed breeder house facility is fully enclosed, auto-ventilated and roofed. Both feeding and watering systems are designed to minimise waste and spillage of moisture to the bedding material which can impact on odours.</p> <p>A source of odours associated with breeder house facilities is the manure contained within the breeder house and the moisture content of the manure. The procedure of providing an enclosed and temperature-controlled environment within the breeder house is vital for maintaining the health and survival of the flock and has indirect benefits for potential air quality and odour impacts to the surrounding environment.</p> <p>In addition, and during the clean-out phase for the houses, which is proposed to take place at the end of the ~60-week cycle (approximately once a year), no manure may be stockpiled on site but must be removed directly to a licensed facility.</p> <p>While the legislated limits for emissions are not expected to be exceeded by the facility, odour impacts are difficult to define and quantify. These are often dependent on the subjective opinion of the receptor. Residual odour impacts cannot be accurately predicted, and mitigation measure should be adapted to ensure that nuisance odours are minimized.</p> <p>The land surrounding the proposed development is agricultural in nature and while the site is currently being used as a dairy farm and planted with pastures (lucerne/ kikuyu), it is proposed to replace the pastures with citrus (not part of this assessment). It is further reasonable to expect a certain amount of odour associated with agricultural activities in an area that is zoned for</p>
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			<p>agriculture.</p> <p>Included in the abovementioned specialist study was the following:</p> <p><i>“...the levels of dust and ammonia exposure at all the test locations were within recommended limits. The highest emission levels were recorded at a measuring station less than 40 m directly down-wind from a broiler house. These levels were measured in week 1 during the catching phase (while litter was being disturbed) with strong winds blowing from the broiler house towards the measuring station. This situation represents a worst case scenario, and the emission rates were still within the recommended limits (Ammonia: 1.45 µg/m³ vs. 340µg/m³ and Particulates: 46.44 mg/m²/day vs. 300 mg/m²/day).</i></p> <p><i>With a further increase in distance from the broiler houses, in excess of 35 meters (the recommended setback to a residence other than the poultry farm owner), it is likely that emissions will be below detectable limits.”</i></p> <p>The boundary of the commentator’s property is ~500 meters from the nearest proposed breeder house.</p>
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5. Potential Noise Impacts

NO	COMMENT	NAME	DATE	RESPONSE
5.1	In addition, pollution prevention needs to be addressed for noise,	Maretha Alant, Garden Route National Park: Environmental Manager	4May2018, email	<p>Based on the experience of the Environmental Assessment Practitioner (EAP) with numerous assessments for breeder house facilities, potential sources of noise are from fans used to ventilate the facilities and from the manitou's used during the cleanout phase. Other potential sources of noise are from general farming operations, including trucks for the delivery and collection of products, which is the current norm in this agricultural area.</p> <p>Based on a desktop review of Specialist Noise Impact Assessments undertaken as part of previous Environmental Assessments for Broiler House Facilities, which were managed by the EAP, the following has reference:</p> <p>In the absence of noise control regulations, which is quite often encountered in Noise Impact Assessments:</p> <p><i>“In such a case it is almost considered standard practice to revert to two sets of approach and information:</i></p> <ul style="list-style-type: none"> • <i>National and international sources of relevant information: regulations applied elsewhere; directives on various issues from national and international standards and codes of practice; relevant publications from the international acoustics literature, etc.</i> • <i>Logical and reasonable reasoning, leading to practicable results.”</i> (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007) <p>SANS 10103:2003 and SANS 10103:2004 provides guidelines for ambient noise in various types of districts:</p> <p><i>“Utilising the most conservative rating in the table typical rural districts have an equivalent continuous rating level for outdoor noise of:</i></p> <p><i>45 dBA for daytime; and 35 dBA for night-time.”</i> (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007).</p>

			<p><i>“The acceptable level by which noise may exceed ambient noise has been a topic of some debate, however the “7 decibel rule” has generally been applied by various local authorities in South Africa with some success.” (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007).</i></p> <p>Noise associated with a heavy truck travelling at 40km/h would be 90dBA and a passenger car at 60km/h would be 75dBA. As part of the Messrs Steenkamp and Russouw specialist assessment, a Manitou (forklift) outside a broiler house, at a distance of 7m from the moving Manitou was measured as exceeding the noise level at day by 28.1 dBA and at night by 38.1 dBA.</p> <p><i>“One of the simplest mitigation measures that may effectively bring noise within the acceptable limits is distance from the source. Noise levels generally drop by 6 dB for each doubling in the distance from the source (Minnesota Pollution Control Agency www.nonoise.org/library).” (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007).</i></p> <p>The closest dwelling to the proposed breeder house facility, located on another farm, is ~470m away, to the south est of the facility fenceline. The nearest boundary of the Addo Elephant National Park is located ~6km east of the proposed breeder house facility.</p> <p>For the reasons outlined above, a Noise Impact Assessment is not proposed to take place as part of this assessment.</p>
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6. Potential Visual Impacts

NO	COMMENT	NAME	DATE	RESPONSE
6.1	In addition, pollution prevention needs to be addressed for, and light.	Maretha Alant, Garden Route National Park: Environmental Manager	4May2018, email	<p>Addo Elephant National Park is located ~6km east of the proposed breeder house facility.</p> <p>The following potential measures are proposed to be included in the Environmental Management Programme Report (EMPr) to reduce potential light pollution such as glare and light spill (light trespass):</p> <ul style="list-style-type: none"> • Outside light fixtures that shield the light and focus illumination on the ground (or only where light is required) should be used to ensure that light does not spill onto neighbouring properties, particularly in the case of glaring lights that may affect neighbouring farmsteads and lodges; • Use minimum lamp wattage within safety/ security requirements; • Avoid elevated lights within safety/ security requirements; • Where possible, use timer switches or motion detectors to control lighting in areas that are not occupied continuously (if permissible and in line with minimum security requirements); and • Switch off lights when not in use in line with safety and security. <p>A separate Visual Impact Assessment is not proposed to be undertaken for this assessment.</p>

7. EIA and Public Participation

NO	COMMENT	NAME	DATE	RESPONSE
7.1	Many thanks for sending	Jonathan Cooper, Executor of Estate Late of Adjacent Landowner 5/192	19April2018, email	This comment was received in response to the project announcement email.
72	Can you please register SANParks as an I&AP. You can send the documentation to me directly.	Maretha Alant, Garden Route National Park: Environmental Manager	2May2018, email and comment form	Attached to this email was a blank comment form. It was confirmed with the commentator on the 3 May 2018 that the contact details at the bottom of the email would be used on the I&AP database. The commentator was

				emailed the Background Information Document and locality map for the proposed Breeder House Facility.
7.3	We will submit more detailed comments once I have been on a site visit.	Maretha Alant, Garden Route National Park: Environmental Manager	4May2018, email	A site visit was held with SANParks on 21 June 2018, no further detailed comments have been received to date from SANParks.
7.4	Please could you give an indication on Portion 40/192 on google map provided where the breeder house will be positioned, my concern being my house is situated right opposite the river (quite close), if consideration can be given in so far as having breeder houses and buildings as far removed as possible within the boundaries of course.	Waldo Orban, Adjacent Landowner 2/192	19April2018, email and comment form	Based on Google Earth Imagery and a draft layout for the proposed development, the distance between the house on Portion 2 of Farm 192 and the nearest breeder house is ~750m.
7.5	We take note of the commenting period but we are of the view that it is a short period for us as we just received the application and we therefore request the extension of the period to at least 30 June 2018.	Mabule Romodike, Dept. of Agriculture, Forestry & Fisheries: Land Use Adviser	2 May2018, email and comment form	The commentator was granted the 30-day extension to the comment period as requested. Subsequent to the receipt of this comment and on the 13 June 2018 a site visit was held with representatives from the Dept. of Agriculture, Forestry & Fisheries, as well as with the Dept. of Rural Development & Agrarian Reform, where it was confirmed that the proposed development is not subject to Act 70 of 1970.
7.6	This serves as a notice of receipt and confirms that your application has been captured in our electronic AgriLand tracking and management system. It is strongly recommended that you use the on-line AgriLand application facility in future.	NV Maumele, Dept, of Agriculture, Forestry & Fisheries: LUSM	3May2008, email and letter	Subsequent to the receipt of this comment and on the 13 June 2018 a site visit was held with representatives from the Dept. of Agriculture, Forestry & Fisheries, as well as with the Dept. of Rural Development & Agrarian Reform, where it was confirmed that the proposed development is not subject to Act 70 of 1970.
7.7	Telephonic request to register interest on the project.	Warren Horne, Private	7Aug2018, telephonic	The project database was updated to include this I&AP's request.
7.8	The following was confirmed via email dated the 19June2018. This email serves to confirm your telephonic conversation with Nico earlier today regarding the employees that are currently staying in the 5 staff houses adjacent to the southern boundary of Middeldrift farm. You have indicated that these employees will be relocating with you and will therefore not remain on the farm when the proposed poultry breeder facility is constructed.	Riaan Oosthuizen, Affected Landowner (6,10 and 40/192)	19June2018, email	As per the email dated the 19June 2018, the current landowner has confirmed the existing staff on the property will be relocated to his new farm.

	We trust that this is an accurate reflection of your discussion with Nico.			
7.9	Should we take the decision to develop the house into a Bed and Breakfast these efforts would be greatly constrained as well.	Johnathan Cooper, Executor of Estate Late of Adjacent Landowner 5/192	29Jan2019, email	<p>Refer to section 4.2 above with regards to concerns raised in respect of odours.</p> <p>The adjacent landowner's property, Portion 5 of 192, falls within an Aquatic Critical Biodiversity Area (CBA) in terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP) and is within 10km of Addo Elephant National Park.</p> <p>In terms of the NEMA EIA Regulations, 2014 (as amended), GN R324 (Listing Notice 3) listed activity no. 5 "The development of resorts, lodges, hotels, tourism or hospitality facilities that sleep less than 15 people...", requires that a Basic Assessment be undertaken and an Application for Environmental Authorisation be submitted to the Department of Economic Development, Environmental Affairs and Tourism, prior to the commencement of any activities on the site.</p>

COMMENTS RECEIVED DURING THE REVIEW OF THE DRAFT CBAR

8. EIA and Public Participation

NO	COMMENT	NAME	DATE	RESPONSE
8.1	Noted.	Rudi Herholdt, SRVM: Infrastructure Planning & Development	21Feb2019, email	The commentator was acknowledging receipt of the emailed correspondence regarding the release of the Draft CBAR for a 30-day comment period.
8.2	<i>Contact information was supplied by the commentator on a comment form.</i>	Hermanus Potgieter, Adjacent Landowner RE/13/192 and 11/192	7Mar2019, emailed comment form	As an adjacent landowner the commentator had been identified as an I&AP at the outset of the Basic Assessment Process and therefore will remain registered on the database.
8.3	Please find attached completed and signed comment form. Please can you also print and attach this e mail to the form (space was limited) as we really need the powers that be that will be signing off on the	Jonathan Cooper, Executor of Estate Late of Adjacent Landowner 5/192	26Mar2019, email and comment form	<p>The issues raised by the commentator in the comment form and the email have been included in this Comments and Responses Report and a copy thereof is attached in Appendix G(iv).</p> <p>The Basic Assessment Report (BAR), including this</p>

	<p>proposed chicken farm development to take into account our concerns and worries discussed on the attached comment form and further below.</p>			<p>Comments and Responses Report is submitted to the competent authority, in this instance, the Department of Economic Development, Environmental Affairs and Tourism (Sarah Baartman Region) for their decision-making.</p> <p>The BAR needs to show the competent authority, DEDEAT (Sarah Baartman Region), as well as the project applicant, what the consequences of their choices will be in biophysical, social and economic terms. Public involvement forms an important component of this process, by assisting in the identification of issues and alternatives to be evaluated.</p>
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9. Potential Odour Impacts

NO	COMMENT	NAME	DATE	RESPONSE
9.1	<p>We have read through the entire proposal and studied in detail the content therein.</p> <p>Should the proposed chicken farm development be erected in close proximity to our current homestead this will be to the detriment of our business options not to mention quality of life in the form of health, hygiene, sanitation and right to fresh clean air.</p> <p>Our main cause for concern is the strong and overpowering odour that will be emitted from any chicken farm positioned in close proximity to our property not to mention attraction of flies etc.</p> <p>Coming from a farming background our family knows all too well the overpowering odour and repugnant smell emitted from a chicken farm on the scale put forward in the proposal.</p> <p>We hereby formally request a minimum 800m to 1000m distance location and exclusion zone away from our homestead because if the chicken farm is</p>	Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192	26Mar2019, email	<p>The commentator provided similar comments regarding potential odour impacts during the project advertisement and registration phase. These comments were provided with a response in the Draft CBAR (see point 4.2 above). In part, the response provided was as follows:</p> <p>“Refer to Appendix D(vi) of this report for findings of an independent desktop specialist assessment undertaken to assess the potential air quality impacts of a broiler house facility (12 houses), as part of the Basic Assessment Process undertaken for Disco Chicks Farm 1, ~15km north of the proposed breeder facility. This report presents worst case scenario as the stocking densities of a broiler facility are higher than for a breeder facility and manure removal takes place more frequently at a broiler facility.</p> <p>Breeder house facilities may produce ammonia, as well as dust emissions and could result in nuisance odours.</p> <p>The abovementioned specialist assessment indicated that according to the Occupational Exposure Limits (OEL) contained in the Occupational Health and Safety</p>

<p>erected in close proximity to our homestead it would be rendered uninhabitable.</p> <p>We have recently furthermore also been involved in discussions to renovate the existing homestead (which is in urgent need to renovation) into a Bed and Breakfast which would bring in much needed revenue for the area and cater for demand with the Addo Elephant National park and other attractions in close vicinity.</p> <p>There is no ways we could open up a B and B on our one hectare property (situated within the current dairy farm) should a chicken farm, on the grand scale proposed, be located within close proximity.</p> <p>We therefore humbly and respectfully request that if the proposed chicken farm development is allowed to proceed that approval is given on the proviso that there is a minimum 800 meter to 1000 meter distance buffer between the proposed checked farm structures and our current homestead.</p> <p>A suitable distance buffer and exclusion zone would be in the interests of good neighbours, clean and pure quality of air, health, hygiene, sanitation and in the best interests of our future business plans to develop our current property "Greenviews" into a viable and profitable Bed and Breakfast establishment.</p> <p>We have plans to make the property work for us by bringing in much needed revenue and at the same time promoting tourism and catering for the high accommodation demand taking into account the Addo Elephant National Park which is nearby and other attractions.</p> <p>Please can you make the above clear to the powers who be that will be signing off and approving the development?</p>			<p>Act (Hazardous Chemical Substances Regulations) emissions are expected to be within the legislated limits, providing that the current management practices implemented at Sovereign Foods contract facilities are adhered to:</p> <ul style="list-style-type: none"> • No manure stockpiling on site. • Daily removal of mortalities from site. • Maintenance of a low manure moisture content. <p>It is important to note that the proposed breeder house facility is fully enclosed, auto-ventilated and roofed. Both feeding and watering systems are designed to minimise waste and spillage of moisture to the bedding material which can impact on odours.</p> <p>A source of odours associated with breeder house facilities is the manure contained within the breeder house and the moisture content of the manure. The procedure of providing an enclosed and temperature-controlled environment within the breeder house is vital for maintaining the health and survival of the flock and has indirect benefits for potential air quality and odour impacts to the surrounding environment.</p> <p>In addition, and during the clean-out phase for the houses, which is proposed to take place at the end of the ~60-week cycle (approximately once a year), no manure may be stockpiled on site but must be removed directly to a licensed facility.</p> <p>While the legislated limits for emissions are not expected to be exceeded by the facility, odour impacts are difficult to define and quantify. These are often dependent on the subjective opinion of the receptor. Residual odour impacts cannot be accurately predicted, and mitigation measure should be adapted to ensure that nuisance odours are minimized.</p> <p>The land surrounding the proposed development is agricultural in nature and while the site is currently being used as a dairy farm and planted with pastures (lucerne/</p>
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	<p>Our family (Rowe family) have been involved in farming activities in the area for decades and our homestead (“Greenviews”) situated on one hectare within the current dairy farm is one of the last remaining properties in possession of the Rowe family.</p> <p>I am the grandson on the late Henry Rowe and who’s father owned and farmed the entire area where the current dairy farm is currently located and where the proposed chicken farm is being put forward.</p> <p>We therefore strongly and respectfully ask that our request of a suitable distance buffer and exclusion zone between the proposed chicken farm and our homestead be seriously taken into consideration and be made condition precedent before any approval is given for the erection of chicken farm on the scale proposed.</p> <p>Our concerns are realistic and the decision will have far reaching consequences going into the future.</p> <p>We want to be good neighbours and encourage development and job creation in the Addo district but this cannot be to the detriment and prejudice current nearby land owners actually situated within the proposed chicken farm development area.</p>			<p>kikuyu), it is proposed to replace the pastures with citrus (not part of this assessment). It is further reasonable to expect a certain amount of odour associated with agricultural activities in an area that is zoned for agriculture.</p> <p>Included in the abovementioned specialist study was the following:</p> <p><i>“...the levels of dust and ammonia exposure at all the test locations were within recommended limits. The highest emission levels were recorded at a measuring station less than 40 m directly down-wind from a broiler house. These levels were measured in week 1 during the catching phase (while litter was being disturbed) with strong winds blowing from the broiler house towards the measuring station. This situation represents a worst case scenario, and the emission rates were still within the recommended limits (Ammonia: 1.45 µg/m³ vs. 340µg/m³ and Particulates: 46.44 mg/m²/day vs. 300 mg/m²/day).</i></p> <p><i>With a further increase in distance from the broiler houses, in excess of 35 meters (the recommended setback to a residence other than the poultry farm owner), it is likely that emissions will be below detectable limits.”</i></p> <p>The boundary of the commentator’s property is ~500 meters from the nearest proposed breeder house.”</p> <p>The facility is proposed to consist of six (6) fully enclosed houses within two (2) separately fenced-in operational areas and will have the capacity to stock 58 740 chickens. Relative to farming operations which are similar in nature (eg. poultry broiler facilities which can have a capacity to house 600 000 birds), the proposed facility is small and has been incorrectly described by the commentator as “on a grand scale”.</p> <p>In addition, it is the EAP’s opinion that the change in land use from a dairy farm to citrus orchards</p>
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				<p>immediately adjacent to and surrounding the commentator's farm is likely to improve the tourism potential and possibly reduce the current odours and prevalence of insects associated with the current diary farming operations.</p> <p>The commentator has provided no scientific or literary references for his assertion that an exclusion zone / buffer of 800m to 1000m is "suitable" to reduce the potential odour impacts and prevent his property from becoming "uninhabitable". The desktop specialist information provided above indicates that during a study of Ammonia levels at a poultry broiler facility the emission rates were within recommended limits at a measuring station located less than 40 m directly down-wind from a broiler house. In addition, this recording event was deemed to represent the worst-case scenario.</p> <p>The specialist also indicated that the recommended setback to a residence other than the poultry farm owner is 35m.</p> <p>As noted above, in the previous response to the commentator, the boundary of the commentator's farm is located ~500 meters from the nearest proposed breeder house. A number of factors have been considered in order to identify the most suitable site for the proposed facility including, but not limited to, distance of sensitive receptors, technical constraints (eg. water, electricity, topography, access), effective management of stormwater and the ecology of the surrounding environment (e.g. proximity of the Sundays River).</p>
9.2	<p>Our family holiday home is within the designated area of proposed chicken farm development. Our property is a 1 hectre homestead that we are considering renovating into a Bed and Breakfast. B&B is very prevalent in the Addo area. We respectfully request, in interest of health, sanitation, quality of clean & pure air and good neighbour that the chicken farm is located as far away as possible from our homestead</p>	<p>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</p>	<p>26Mar2019, emailed comment form</p>	<p>The boundary of the commentator's farm is located ~500 meters from the nearest proposed breeder house.</p> <p>Since the comment included in the comment form regarding potential odour impacts is substantially similar to that provided in the email from the same commentator, please see the response provided in point 4.2 and 9.1 above.</p>

	“Greenviews” which is situated and positioned like an island within the current dairy farm. The smell and bad odour that would be emitted from chicken farm in close proximity would result in the farm home / holiday home being rendered in uninhabitable and the B&B option a failure. We therefore request 800m distance away.			
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10. Access

NO	COMMENT	NAME	DATE	RESPONSE
10.1	Our strongest concern and worry is the close proximity of chicken structures to our homestead which is accessed by means of servitude road and driving through the current farm in order to reach our property called “Greenviews”.	Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192	26Mar2019, emailed comment form	The boundary of the commentator’s farm is located ~500 meters from the nearest proposed breeder house. Access to the commentators’ property will not be inhibited by the proposed poultry breeder facility but will be retained as per the indicated servitude road.

COMMENTS RECEIVED DURING THE REVIEW OF THE CBAR

11. EIA and Public Participation

NO	COMMENT	NAME	DATE	RESPONSE
11.1	<u>Noted.</u>	<u>Rudi Herholdt, SRVM: Infrastructure Planning & Development</u>	<u>30Apr2019, email</u>	<u>The commentator was acknowledging receipt of the emailed correspondence regarding the release of the CBAR for a 30-day comment period.</u>
11.2	<u>Please find attached completed and signed submissions which will need to be taken into consideration before the site chosen for the poultry breeding facility on Middledrift can be approved.</u> <u>It is important for the relevant bodies who will decide on approving the application to note and realise that there is an existing residential dwelling situated within the existing Middledrift farm.</u>	<u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u>	<u>4Jun2019, email</u>	<u>The issues raised by the commentator in the comments and the emails have been included in this Comments and Responses Report and a copy thereof is attached in Appendix G(iv).</u> <u>The Basic Assessment Report (BAR), including this Comments and Responses Report is submitted to the competent authority, in this instance, the Department of Economic Development, Environmental Affairs and Tourism (Sarah Baartman Region) for their decision-making.</u>

				<p><u>The BAR needs to show the competent authority, DEDEAT (Sarah Baartman Region), as well as the project applicant, what the consequences of their choices will be in biophysical, social and economic terms. Public involvement forms an important component of this process, by assisting in the identification of issues and alternatives to be evaluated.</u></p> <p><u>The existing residential dwelling referred to by the commentator has been identified in the Basic Assessment Report and the respective property (Portion 5 of Farm 192) has been indicated in the Site Plan (attached as Appendix A).</u></p>
11.3	<u>Please refer to attached.</u>	<u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u>	<u>4Jun2019, emailed comment form</u>	<u>This comment is noted.</u>
11.4	<u>On Greenviews are two residential houses and dwellings. The approval of the proposed poultry farm construction and operation will therefore greatly affect the owners of Greenviews directly. It is therefore important that the proposed poultry farmer and authority approving the application be aware and take into account the concerns and potential issues around erecting the poultry farm in the direct vicinity and proximity to the owners residential dwelling.</u>	<u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u>	<u>4Jun2019, emailed comments dated 31 May 2019</u>	<p><u>The existing residential dwelling referred to by the commentator has been identified in the Basic Assessment Report and the respective property (Portion 5 of Farm 192) has been indicated in the Site Plan (attached as Appendix A). The commentator was identified as an I&AP prior to commencement of the Basic Assessment Process and has been registered on the I&AP database since the outset of the process. The I&AP has thus been provided with opportunities to raise issues of concern regarding potential impacts of the proposed development during the respective comment periods provided to I&APs.</u></p> <p><u>The issues raised by the commentator in the comments and the emails have been included in this Comments and Responses Report and a copy thereof is attached in Appendix G(iv).</u></p> <p><u>The Basic Assessment Report (BAR), including this Comments and Responses Report is submitted to the competent authority, in this instance, the Department of Economic Development, Environmental Affairs and Tourism (Sarah Baartman Region) for their decision-making.</u></p>

				<p><u>The BAR needs to show the competent authority, DEDEAT (Sarah Baartman Region), as well as the project applicant, what the consequences of their choices will be in biophysical, social and economic terms. Public involvement forms an important component of this process, by assisting in the identification of issues and alternatives to be evaluated.</u></p>
11.5	<p><u>Yes I think it is already shown on the map that was sent out previously</u></p> <p><u>I will print the map and clearly show it. Greenviews is also shown on the map provided by means of the little square</u></p> <p><u>I will also point out where Greenviews is located on the map</u></p> <p><u>I think it is also important to state that the owners of Greenviews want to be good neighbours and on friendly terms with the new owners of Middledrift</u></p> <p><u>I think there are certain synergies that could be achieved because the current owners of Greenviews (the heirs of the estate to the late Romance Thompson) do have water rights attached to Greenviews and there is potential that these water rights could be made available to the new owners as we understand that they also intend to plant orange trees which no doubt will require irrigation</u></p> <p><u>However it is also important to note that the strategic site location and positioning of the proposed poultry breeding facility application cannot be to the detriment of existing residential dwellings and prejudice future business plans to develop going into the future...</u></p>	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>4Jun2019,</u> <u>email</u></p>	<p><u>The commentator was requested to provide a map indicating the servitude road referred to in the comment. The map is included in comment 13.5 below.</u></p> <p><u>The comment regarding water rights was forwarded to the applicant, however it is not deemed to form part of this assessment process.</u></p> <p><u>A number of factors have been considered in order to identify the most suitable site for the proposed facility including, but not limited to, distance of sensitive receptors, technical constraints (eg. water, electricity, topography, access), effective management of stormwater and the ecology of the surrounding environment (e.g. proximity of the Sundays River).</u></p> <p><u>The boundary of the commentator's farm is located ~500 meters from the nearest proposed breeder house. The closest dwelling to the proposed breeder house facility, located on another farm, is ~470m away, to the south west of the facility fenceline.</u></p>

	<u>...I will try and send the map tomorrow if that is ok? I will highlight the servitude road and also Greenviews plot of land</u>			
11.6	<p><u>Many thanks for feedback Marisa</u></p> <p><u>I have been in meetings and had deadlines this week so didn't get a chance to send to you the map showing the current servitude road, apologies for this.</u></p> <p><u>I will still nonetheless send you the map today showing the current servitude road</u></p> <p><u>But what you describe below pretty much describes the current layout of Greenviews</u></p> <p><u>Greenviews has been in the family for decades and has been handed down and kept in the family for generations going back all the way to when my forebears the Rowe family (my Mom is formerly a Rowe and the Rowe family name is included on my ID)</u></p>	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>13Jun2019,</u> <u>email</u></p>	<p><u>The commentator was requested to provide a map indicating the servitude road referred to in the comment. The map is included in comment 13.5 below.</u></p> <p><u>These comments are noted.</u></p>
11.7	<p><u>Would you be able to confirm what the physical distance in meters will be between Greenviews and the proposed poultry breeding facility?</u></p>	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>13Jun2019,</u> <u>email</u></p>	<p><u>The commentator was sent an electronic copy of the Comments and Responses Report for comments raised prior to the release of the CBAR. It contains the responses provided to the issues which the commentator had raised previously including the distance of the "Greenviews" property from the proposed facility, amongst others.</u></p>

12. Potential Odour Impacts

NO	COMMENT	NAME	DATE	RESPONSE
12.1	<p><u>This will include...</u></p> <ul style="list-style-type: none"> <u>the bad smell and foul odors emitted from any chicken farm and breeding operation / facility...</u> <u>attracting of flies and other pests etc...</u> 	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>4Jun2019,</u> <u>emailed</u> <u>comments</u> <u>dated 31 May</u> <u>2019</u></p>	<p><u>The commentator provided similar comments regarding potential odour impacts during the pre-application phase. These comments were provided with a response in the Draft CBAR (see point 4.2 and 9.1 above). In part, the responses provided were as follows:</u></p>

	<ul style="list-style-type: none"> • <u>dust created</u> 		<p><u>“Refer to Appendix D(vi) of this report for findings of an independent desktop specialist assessment undertaken to assess the potential air quality impacts of a broiler house facility (12 houses), as part of the Basic Assessment Process undertaken for Disco Chicks Farm 1, ~15km north of the proposed breeder facility. This report presents worst case scenario as the stocking densities of a broiler facility are higher than for a breeder facility and manure removal takes place more frequently at a broiler facility.</u></p> <p><u>Breeder house facilities may produce ammonia, as well as dust emissions and could result in nuisance odours.</u></p> <p><u>The abovementioned specialist assessment indicated that according to the Occupational Exposure Limits (OEL) contained in the Occupational Health and Safety Act (Hazardous Chemical Substances Regulations) emissions are expected to be within the legislated limits, providing that the current management practices implemented at Sovereign Foods contract facilities are adhered to:</u></p> <ul style="list-style-type: none"> • <u>No manure stockpiling on site.</u> • <u>Daily removal of mortalities from site.</u> • <u>Maintenance of a low manure moisture content.</u> <p><u>It is important to note that the proposed breeder house facility is fully enclosed, auto-ventilated and roofed. Both feeding and watering systems are designed to minimise waste and spillage of moisture to the bedding material which can impact on odours.</u></p> <p><u>A source of odours associated with breeder house facilities is the manure contained within the breeder house and the moisture content of the manure. The procedure of providing an enclosed and temperature-controlled environment within the breeder house is vital for maintaining the health and survival of the flock and has indirect benefits for potential air quality and odour impacts to the surrounding environment.</u></p>
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			<p><u>In addition, and during the clean-out phase for the houses, which is proposed to take place at the end of the ~60-week cycle (approximately once a year), no manure may be stockpiled on site but must be removed directly to a licensed facility.</u></p> <p><u>While the legislated limits for emissions are not expected to be exceeded by the facility, odour impacts are difficult to define and quantify. These are often dependent on the subjective opinion of the receptor. Residual odour impacts cannot be accurately predicted, and mitigation measure should be adapted to ensure that nuisance odours are minimized.</u></p> <p><u>The land surrounding the proposed development is agricultural in nature and while the site is currently being used as a dairy farm and planted with pastures (lucerne/kikuyu), it is proposed to replace the pastures with citrus (not part of this assessment). It is further reasonable to expect a certain amount of odour associated with agricultural activities in an area that is zoned for agriculture.”</u></p> <p><u>“In addition, it is the EAP’s opinion that the change in land use from a dairy farm to citrus orchards immediately adjacent to and surrounding the commentator’s farm is likely to reduce the current odours and prevalence of insects associated with the current diary farming operations.</u></p> <p><u>A number of factors have been considered in order to identify the most suitable site for the proposed facility including, but not limited to, distance of sensitive receptors, technical constraints (eg. water, electricity, topography, access), effective management of stormwater and the ecology of the surrounding environment (e.g. proximity of the Sundays River).”</u></p> <p><u>During construction, it is anticipated that some degree of dust pollution will be generated from construction activities. This site will require levelling and earth moving</u></p>
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				<p>activities, and there is limited vegetation cover. Soils will be largely bare and unconsolidated and thus vulnerable to erosion by wind and water. Vehicular and pedestrian movement over loose ground and unpaved roads may generate dust. Dust may also be generated from soil stockpiles on site. The following mitigation measures have been included in the Construction EMP in order to reduce or mitigate the potential impacts of dust during the construction phase:</p> <ul style="list-style-type: none"> • <u>Limit disturbance outside the construction footprints</u> • <u>Erosion protection measures to be placed on disturbed areas in case of heavy rainfall events during construction</u> • <u>Vegetation and topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils</u> • <u>Topsoil and soil stockpiles must be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation.</u> • <u>A water cart must be employed on windy days to wet soils that would be prone to wind erosion to limit dust generation.</u> • <u>Disturbed areas are to be rehabilitated in parallel with construction completion.</u> • <u>Compile and implement an Environmental management Programme; and audit reporting by an Environmental Control Officer during construction.</u>
12.2	<p><u>There needs to be a realistic buffer zone whereby the poultry facility is placed as far away as possible. I have experienced first hand the stench given off by poultry farms and the stench is unbearable given that there are thousands of chickens living in a small confined space</u></p> <p><u>No matter how much a poultry breeding facility is enclosed and confined the stench can always be smelt in the air and all that the owners are requesting is that a decent buffer zone of around 1,000 meters be factored in to make living on the plot situated within Middledrift bearable and inhabitable...</u></p>	<p><u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u></p>	<p><u>4Jun2019, email</u></p>	<p><u>Since the comment included in the emailed comments regarding the potential odour impacts is substantially similar to that provided in the email from the same commentator, please see the response provided in point 12.1 above.</u></p> <p><u>In addition, the commentator has provided no scientific or literary references for his assertion that a buffer zone of around 1000m is required to “make living on the plot situated within Middledrift bearable and inhabitable...”</u></p> <p><u>The desktop specialist information provided above indicates that during a study of Ammonia levels at a poultry broiler facility the emission rates were within</u></p>

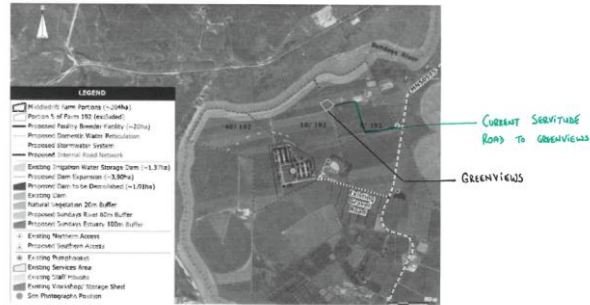
				<p>recommended limits at a measuring station located less than 40 m directly down-wind from a broiler house. In addition, this recording event was deemed to represent the worst-case scenario.</p> <p>The specialist also indicated that the <i>recommended setback to a residence other than the poultry farm owner is 35m.</i></p> <p>The boundary of the commentator's farm is located ~500 meters from the nearest proposed breeder house.</p>
12.3	<p><u>I went through very quickly the attached you sent earlier</u></p> <p><u>I noted on one of the pages that there is approximately 500 meters distance between the chicken breeding facility and Greenviews?</u></p> <p><u>As documented in submissions sent to your selves the owners require at least 750 meter to 1000 meters distance between residence and the proposed poultry breeding facility</u></p> <p><u>The stench coming from a poultry farm of this magnitude would be unbearable situated in close proximity and render Greenviews uninhabitable should there be no appropriate buffer zone between Greenviews and the proposed poultry breeding facility</u></p> <p><u>We would formally request that the proposed poultry breeding facility is repositioned further away to take into account the above concerns and those concerns already raised and submitted</u></p>	Jonathan Cooper, Representative of Estate <u>Late of Adjacent Landowner 5/192</u>	<u>13Jun2019,</u> <u>email</u>	<p><u>The commentator is correct in noting that his farm is located ~500 meters from the nearest proposed breeder house.</u></p> <p><u>Since this comment regarding a request for a buffer due to potential odour impacts is substantially similar to that provided in the emailed comments as well as an earlier email from the same commentator, please see the response provided in points 12.1 and 12.2 above.</u></p>

13. Access

<u>NO</u>	<u>COMMENT</u>	<u>NAME</u>	<u>DATE</u>	<u>RESPONSE</u>
<u>13.1</u>	<u>This residential dwelling is known as Greenviews and can only be accessed by means of servitude</u>	<u>Jonathan Cooper,</u> <u>Representative of Estate</u>	<u>4Jun2019,</u> <u>email</u>	<u>Access to the commentators' property will not be inhibited by the proposed poultry breeder facility.</u>

	<p><u>road that runs within Middledrift.</u></p> <p><u>The owners also request that the servitude road is not situated near the proposed poultry facility and also that the proposed poultry facility be situated at least 750 to 1000 meters away from existing Greenviews property lines.</u></p>	<p><u>Late of Adjacent Landowner 5/192</u></p>		<p><u>The commentator was requested to provide a map indicating the servitude road referred to in the comment. The map is included in comment 13.5 below.</u></p> <p><u>The title deeds and SG diagrams for the farm portions that make up the farm known as Middledrift were consulted in order to determine the position of the referenced servitude road. However, no servitude road running through the farm to Greenviews (Portion 5 of Farm 192) could be determined. The applicant has however confirmed that access will continue to be provided to the owners of Greenviews across Middledrift, and a right of way servitude could be registered to ensure this in perpetuity. The access road will likely follow a similar path to the existing main access to the farm in the north eastern corner of the property (in close proximity to the existing offices and dairy shed). Since the poultry breeder facility is proposed to be constructed near the southern boundary of the property, the access road to Greenviews will not be situated near to the proposed facility.</u></p> <p><u>The boundary of the commentator's farm is located ~500 meters from the nearest proposed breeder house.</u></p>
13.2	<p><u>List of issues and concerns regarding the proposed construction and operation of the Middledrift poultry breeder operation on Portins 6,10 and 40 of Farm 192 Addo ("Middledrift").</u></p> <p><u>As a direct neighbour, our current residential dwelling is situated on "Greenviews", the name of a small plot of land which is situated and positioned as an island of land, designated by clear property lines and fenced off accordingly, within Middledrift which can only be accessed by means of a servitude road through Middledrift.</u></p>	<p><u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u></p>	<p><u>4Jun2019, emailed comments dated 31 May 2019</u></p>	<p><u>Access to the commentators' property will not be inhibited by the proposed poultry breeder facility.</u></p> <p><u>Since the comment included in the emailed comments regarding the road servitude is substantially similar to that provided in the email from the same commentator, please see the response provided in point 13.1 above.</u></p>
13.3	<p><u>Lastly the owners of Greenviews request that the</u></p>	<p><u>Jonathan Cooper,</u></p>	<p><u>4Jun2019,</u></p>	<p><u>Access to the commentators' property will not be</u></p>

	<p><u>proposed poultry breeding facility is not placed or sited near to the existing servitude road running through Middledrift which allows the owners of Greenviews to access the residential houses situated on Greenviews. Strategic placement of the poultry breeding facility will save the owners costs and time in having to apply to council to strategically move the current servitude road away from any future development.</u></p>	<p><u>Representative of Estate Late of Adjacent Landowner 5/192</u></p>	<p><u>emailed comments dated 31 May 2019</u></p>	<p><u>inhibited by the proposed poultry breeder facility.</u></p> <p><u>Since the comment included in the emailed comments regarding the road servitude is substantially similar to that provided in the email from the same commentator, please see the response provided in point 13.1 above.</u></p>
13.4	<p><u>Also the Middledrift farm has seen different owners in previous decades and each new owner took it upon himself to change the servitude road sometimes to the detriment of Greenviews</u></p> <p><u>Currently our servitude road, despite numerous complaints, is also used by the cattle of the current owners and heavy duty trucks collecting milk which has created numerous problems and in effect destroyed the previous good condition of the servitude road</u></p> <p><u>Needless to say the state of our servitude road deteriorated significantly when the dairy farm came into operation a number of years back and when it rains the road turns onto mud mixed with the cow manure</u></p>	<p><u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u></p>	<p><u>13Jun2019, email</u></p>	<p><u>This comment is noted.</u></p> <p><u>The project applicant purchased Middledrift Farm from the current landowner, with the intention of constructing poultry breeder houses on a portion thereof and while the farm is currently being used as a dairy farm and planted with pastures (lucerne/ kikuyu), it is proposed to replace the pastures with citrus (not part of this assessment).</u></p> <p><u>The title deeds and SG diagrams for the farm portions that make up the farm known as Middledrift were consulted in order to determine the position of the referenced servitude road. However, no servitude road running through the farm to Greenviews (Portion 5 of Farm 192) could be determined. The applicant has however confirmed that access will continue to be provided to the owners of Greenviews across Middledrift, and a right of way servitude could be registered to ensure this in perpetuity. The access road will likely follow a similar path to the existing main access to the farm in the north eastern corner of the property (in close proximity to the existing offices and dairy shed).</u></p>
13.5	<p><u>As requested attached is map showing servitude road and Greenviews in relation to chicken farm</u></p>	<p><u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u></p>	<p><u>13Jun2019, email</u></p>	<p><u>The title deeds and SG diagrams for the farm portions that make up the farm known as Middledrift were consulted in order to determine the position of the referenced servitude road. However, no servitude road running through the farm to Greenviews (Portion 5 of Farm 192) could be determined. The applicant has however confirmed that access will continue to be provided to the owners of Greenviews across</u></p>

				<p>Middledrift, and a right of way servitude could be registered to ensure this in perpetuity. The access road will likely follow a similar path to that which is indicated in the map provided by the applicant (in the north eastern corner of the property and in close proximity to the existing offices and dairy shed). Since the poultry breeder facility is proposed to be constructed near the southern boundary of the property, the access road to Greenviews will not be situated near to the proposed facility.</p>
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14. Assessment of Alternatives

NO	COMMENT	NAME	DATE	RESPONSE
14.1	<p><u>It must be further remembered that Greenviews, the property that is direct neighbour to the owner or future owner of Portion 6,10 and 40 of farm 192 Addo on which site the poultry farm and breeding facility will be erected upon application being successful, is a residential dwelling and has been for the past few decades.</u></p> <p><u>Serious consideration needs to be given to the chosen site of the poultry farm and the operations surrounding the successful running thereof. This will include...</u></p> <ul style="list-style-type: none"> <u>closeness and proximity of the chosen site to the current residential dwelling...</u> <u>proximity to Greenviews</u> 	Jonathan Cooper, Representative of Estate <u>Late of Adjacent Landowner 5/192</u>	4Jun2019, emailed comments dated 31 May 2019	<p><u>The Basic Assessment includes the consideration of layout alternatives. The project applicant purchased Middledrift Farm from the current landowner, with the intention of constructing poultry breeder houses on a portion thereof and therefore, site alternatives have not been assessed in this assessment process.</u></p> <p><u>Layout alternatives have been informed by the following features, amongst others:</u></p> <ul style="list-style-type: none"> <u>Slopes on site and breeder house alignment.</u> <u>Location of various facilities to optimise logistics.</u> <u>Access and internal road network requirements.</u> <u>Bulk services requirements for stormwater management.</u> <u>Distance from potential sensitive receptors including the Sundays River and dwellings on adjacent properties.</u> <p><u>The boundary of the commentator's property is ~500 meters from the nearest proposed breeder house.</u></p>
14.2	<p><u>We request that a suitable and sufficient distance (that serves as a buffer zone between the residence on Greenviews and property line of the poultry breeding facility) is placed between the site chosen to erect the chicken breeding facility and the residential dwelling situated on</u></p>	Jonathan Cooper, Representative of Estate <u>Late of Adjacent Landowner 5/192</u>	4Jun2019, emailed comments dated 31 May 2019	<p><u>The commentator provided similar comments regarding a buffer zone during the project advertisement and registration phase. These comments were provided with a response in the Draft CBAR (see point 4.2 and 9.1 above). In part, the response provided was as follows:</u></p>

	<p><u>Greenviews.</u></p>		<p><u>“Refer to Appendix D(vi) of this report for findings of an independent desktop specialist assessment undertaken to assess the potential air quality impacts of a broiler house facility (12 houses), as part of the Basic Assessment Process undertaken for Disco Chicks Farm 1, ~15km north of the proposed breeder facility. This report presents worst case scenario as the stocking densities of a broiler facility are higher than for a breeder facility and manure removal takes place more frequently at a broiler facility.</u></p> <p><u>Included in the abovementioned specialist study was the following:</u></p> <p><u>“...the levels of dust and ammonia exposure at all the test locations were within recommended limits. The highest emission levels were recorded at a measuring station less than 40 m directly down-wind from a broiler house. These levels were measured in week 1 during the catching phase (while litter was being disturbed) with strong winds blowing from the broiler house towards the measuring station. This situation represents a worst case scenario, and the emission rates were still within the recommended limits (Ammonia: 1.45 µg/m³ vs. 340µg/m³ and Particulates: 46.44 mg/m²/day vs. 300 mg/m²/day).</u></p> <p><u>With a further increase in distance from the broiler houses, in excess of 35 meters (the recommended setback to a residence other than the poultry farm owner), it is likely that emissions will be below detectable limits.”</u></p> <p><u>The desktop specialist information provided above indicates that during a study of Ammonia levels at a poultry broiler facility the emission rates were within recommended limits at a measuring station located less than 40 m directly down-wind from a broiler house. In addition, this recording event was deemed to represent the worst-case scenario.</u></p> <p><u>The specialist also indicated that the recommended</u></p>
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				<p><u>setback to a residence other than the poultry farm owner is 35m.</u></p> <p><u>As noted above, in the previous response to the commentator, the boundary of the commentator's farm is located ~500 meters from the nearest proposed breeder house. A number of factors have been considered in order to identify the most suitable site for the proposed facility including, but not limited to, distance of sensitive receptors, technical constraints (eg. water, electricity, topography, access), effective management of stormwater and the ecology of the surrounding environment (e.g. proximity of the Sundays River).</u></p>
14.3	<p><u>The location of nearby homes and residential dwellings should be the number one consideration when evaluating potential locations for any poultry facilities on the scale proposed in the application.</u></p> <p><u>It is further a recommended best business practice that the site location relative to current existing residential homes and dwellings are taken into consideration before any application is approved and construction plans are drawn up in the best interests of good and civil neighbourliness.</u></p>	<p><u>Jonathan Cooper, Representative of Estate Late of Adjacent Landowner 5/192</u></p>	<p><u>4Jun2019, emailed comments dated 31 May 2019</u></p>	<p><u>The Basic Assessment includes the consideration of layout alternatives. The project applicant purchased Middledrift Farm from the current landowner, with the intention of constructing poultry breeder houses on a portion thereof and therefore, site alternatives have not been assessed in this assessment process.</u></p> <p><u>Layout alternatives have been informed by the following features, amongst others:</u></p> <ul style="list-style-type: none"> • <u>Slopes on site and breeder house alignment.</u> • <u>Location of various facilities to optimise logistics.</u> • <u>Access and internal road network requirements.</u> • <u>Bulk services requirements for stormwater management.</u> • <u>Distance from potential sensitive receptors including the Sundays River and dwellings on adjacent properties.</u> <p><u>The boundary of the commentator's property is ~500 meters from the nearest proposed breeder house. The closest dwelling to the proposed breeder house facility, located on another farm, is ~470m away, to the south west of the facility fenceline.</u></p>

15. Health Impacts (Biosecurity)

NO	COMMENT	NAME	DATE	RESPONSE
15.1	<p><u>This will include...</u></p> <ul style="list-style-type: none"> • <u>potential diseases that poultry could carry or transmit which could potentially break out like bird flu for example</u> • <u>and the effect that this could have on nearby residential neighbours</u> 	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>4Jun2019,</u> <u>emailed</u> <u>comments</u> <u>dated 31 May</u> <u>2019</u></p>	<p><u>It is important to note that the proposed breeder house facility is fully enclosed, auto-ventilated and roofed.</u></p> <p><u>Biosecurity control and disease management on site are important in order to ensure the health and survival of the flock. This entails various measures to prevent the introduction of diseases to the flock, contamination between flocks, as well as a response plan in case of an outbreak of disease, as follows:</u></p> <ul style="list-style-type: none"> • <u>Disinfection and clean out between flocks (14 days) which entails both a dry and wet cleaning procedure.</u> • <u>Strict limited access to the site (permission is required to access the site).</u> • <u>Fencing of the site, as well as the facility to limit unrestricted access.</u> • <u>Disinfection protocol for vehicles, personnel or others entering or exiting the facility. This entails the washing down of all vehicles and includes individuals showering in and out before entering or exiting a facility.</u> • <u>In case of the outbreak of a disease Sovereign Foods subscribes to the “CONTINGENCY PLAN IN CASE OF AN OUTBREAK OF NOTIFIABLE AVIAN INFLUENZA (NAI) IN POULTRY IN SOUTH AFRICA” as compiled by: Dr RF Horner, Allerton PVL, Pietermaritzburg and Dr ACE Pienaar. National Directorate of Animal Health, Pretoria (EDITION 3 REVISED JUNE 2009).</u> <p><u>The following has been extracted from a “Question and Answer on Avian Influenza” pamphlet prepared by the South African Poultry Association:</u></p> <ul style="list-style-type: none"> • <u>“There are 15 different types of bird flu known to regularly infect birds around the world. Most strains infect only birds (though they can potentially infect other species such as pigs), but they do not infect humans. The type that has mostly affected people is H5N1, of which there is more than one sub-type.”</u> • <u>“Avian influenza is nothing new in wild bird populations, but to date South Africa remains free of</u>

				<p><i>the highly-pathogenic H5N1 strain of avian influenza.”</i></p> <ul style="list-style-type: none"> • <i>“Humans generally acquire the virus through direct contact with living, infected birds or their faeces. This has happened almost exclusively in the informal sector where people are in very close contact with their poultry. Even then it has been shown to be very difficult to get the disease. Spread between people has occurred on only one or possibly two occasions.”</i> (http://www.sapoultry.co.za/pdf-disease/avian-influenze-q&a.pdf)
15.2	<p><u>This will include...</u></p> <ul style="list-style-type: none"> • <u>disposal of mortalities</u> 	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>4Jun2019,</u> <u>emailed</u> <u>comments</u> <u>dated 31 May</u> <u>2019</u></p>	<p>The breeder houses are checked every 2nd to 3rd day and dead chicks are bagged and removed from the house for storage in a locked freezer facility on site (2 x 450L freezer facility). Thereafter, the chicken carcasses are removed on a weekly basis, dependent on mortality rates and capacity of the mortality chamber, from the site for disposal at a registered disposal facility (Aloes).</p>

16. Noise Impacts

<u>NO</u>	<u>COMMENT</u>	<u>NAME</u>	<u>DATE</u>	<u>RESPONSE</u>
16.1	<p><u>This will include...</u></p> <ul style="list-style-type: none"> • <u>noise pollution by the running of the operation, including machinery</u> 	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>4Jun2019,</u> <u>emailed</u> <u>comments</u> <u>dated 31 May</u> <u>2019</u></p>	<p>Based on the experience of the Environmental Assessment Practitioner (EAP) with numerous assessments for breeder house facilities, <u>potential sources of noise are from fans used to ventilate the facilities and from the manitou's used during the cleanout phase. Other potential sources of noise are from general farming operations, including trucks for the delivery and collection of products, which is the current norm in this agricultural area.</u></p> <p><u>Based on a desktop review of Specialist Noise Impact Assessments undertaken as part of previous Environmental Assessments for Broiler House Facilities, which were managed by the EAP, the following has reference:</u></p> <p><u>In the absence of noise control regulations, which is quite often encountered in Noise Impact Assessments:</u></p>

			<p><u><i>“In such a case it is almost considered standard practice to revert to two sets of approach and information:</i></u></p> <ul style="list-style-type: none"> <u><i>• National and international sources of relevant information: regulations applied elsewhere; directives on various issues from national and international standards and codes of practice; relevant publications from the international acoustics literature, etc.</i></u> <u><i>• Logical and reasonable reasoning, leading to practicable results.”</i></u> (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007). <p>SANS 10103:2003 and SANS 10103:2004 provides guidelines for ambient noise in various types of districts:</p> <p><u><i>“Utilising the most conservative rating in the table typical rural districts have an equivalent continuous rating level for outdoor noise of:</i></u></p> <p><u><i>45 dBA for daytime; and</i></u> <u><i>35 dBA for night-time.”</i></u> (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007).</p> <p><u><i>“The acceptable level by which noise may exceed ambient noise has been a topic of some debate, however the “7 decibel rule” has generally been applied by various local authorities in South Africa with some success.”</i></u> (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007).</p> <p><u>Noise associated with a heavy truck travelling at 40km/h would be 90dBA and a passenger car at 60km/h would be 75dBA. As part of the Messrs Steenkamp and Russouw specialist assessment, a Manitou (forklift) outside a broiler house, at a distance of 7m from the moving Manitou was measured as exceeding the noise level at day by 28.1 dBA and at night by 38.1 dBA.</u></p> <p><u><i>“One of the simplest mitigation measures that may effectively bring noise within the acceptable limits is distance from the source. Noise levels generally drop by 6 dB for each doubling in the distance from the source</i></u> (Minnesota Pollution Control Agency</p>
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				<p><u>www.nonoise.org/library).</u>" (Messrs Steenkamp and Russouw, Rocklands Poultry Farms, 2007).</p> <p>The closest dwelling to the proposed breeder house facility, located on another farm, is ~470m away, to the south west of the facility fenceline.</p> <p>For the reasons outlined above, a Noise Impact Assessment has not been undertaken for this assessment.</p>
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17. Traffic Impacts

NO	COMMENT	NAME	DATE	RESPONSE
17.1	<p>This will include...</p> <ul style="list-style-type: none"> • <u>traffic</u> 	<p>Jonathan Cooper, Representative of Estate <u>Late of Adjacent Landowner 5/192</u></p>	<p>4Jun2019, emailed comments dated 31 May 2019</p>	<p>A traffic specialist assessment has been undertaken during the Basic Assessment Process. The following presents a summary of the findings regarding the potential traffic related impacts associated with the proposed development:</p> <ul style="list-style-type: none"> • <u>Access to the proposed development can be provided directly from MN50595;</u> • <u>The access road (private gravel road) must be widened to 7m in order to accommodate entering and exiting heavy vehicles;</u> • <u>MN50595 is in a poor condition and should be regularly maintained by the Eastern Cape Department of Transport;</u> • <u>A total of 7 truck trips per day (3 in and 4 out) generated at full development, will have minimal impact on the operational capacity of the adjacent road network.</u> <p>The following mitigation measures have been included in the Construction EMPr in order to reduce or mitigate the potential traffic related impacts during the construction phase:</p> <ul style="list-style-type: none"> • <u>The road must be maintained during the construction phase to mitigate the impact of the additional heavy vehicle traffic.</u> • <u>Stockpiling construction material and maintain a</u>

				<p>construction plant on-site.</p> <ul style="list-style-type: none"> • <u>Erect additional warning signage.</u> • <u>Ensure compliance with Health and Safety requirements.</u> <p><u>The following mitigation measures have been included in the Operational Phase EMP in order to reduce or mitigate the potential traffic related impacts during the operational phase:</u></p> <ul style="list-style-type: none"> • <u>Additional appropriate warning traffic signs (in accordance with the South African Road Traffic Signs Manual) should be erected on the approaches to the proposed access point to warn road users</u> • <u>Conduct regular road maintenance.</u> • <u>Dust generation can be negated should the road be regularly maintained or surfaced.</u>
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18. Potential Impacts on Aquatic Resources

<u>NO</u>	<u>COMMENT</u>	<u>NAME</u>	<u>DATE</u>	<u>RESPONSE</u>
18.1	<p><u>This will include...</u></p> <ul style="list-style-type: none"> • <u>quality of water</u> 	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>4Jun2019,</u> <u>emailed</u> <u>comments</u> <u>dated 31 May</u> <u>2019</u></p>	<p><u>While the replacement of the lucerne fields with citrus orchards does not form part of this application, the aquatic specialist has recommended a 60m buffer for the planting of citrus from the Sundays River.</u></p> <p><u>As per the aquatic specialist and in terms of the Sundays River Valley Biodiversity Sector Plan (SRVBSP), the Sundays River estuary should receive a 100m buffer. However, the proposed development footprint is located more than 300m from the edge of the proposed 100m buffer.</u></p> <p><u>A stormwater detention pond is proposed on site to manage and contain stormwater flow from roofed areas and roadways associated with the proposed poultry breeder facility, as well as to prevent nutrient rich water entering future citrus orchards and the Sundays River.</u></p> <p><u>No manure waste may be stockpiled on site but must be transported at the end of each cycle to a suitably licensed waste disposal facility, namely, the Venter Fert</u></p>

				Composting and Fertiliser Plant, also owned by the project applicant. All waste must be appropriately stored according to waste type and be disposed of at a suitably licensed waste disposal facility, namely Addo Waste Disposal Facility or Koedoeskloof.
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19. Potential Economic Impacts

NO	COMMENT	NAME	DATE	RESPONSE
19.1	<p><u>Proper forward planning is therefore vital as the owners of Greenviews have intention and plans in place for turning the current residential dwelling into a successful Bed and Breakfast following renovations and upliftment of the current residential houses situated on Greenviews.</u></p> <p><u>The current plan of the owners of Greenviews is to convert the two residential houses situated on Greenviews into an income producing operation by catering for the tourist market and accommodation needs of visitors to the Addo area.</u></p> <p><u>The owners' property, Greenviews, is additionally ideally situated close to the Addo Elephant and other nature reserves and the plot of land situated within Middledrift still retains the original rustic veld environment and charm before the surrounding farmlands was ploughed under in the 1990's and surrounding natural bush and veld cleared.</u></p> <p><u>The erection of a poultry breeding facility situated in close proximity to Greenviews would scuttle and sink the owners' plans and intentions to turn the property into a successful Bed and Breakfast as no visitor would want to stay near or be subjected to bad pollution in the form of bad smells, poor air quality, loud noise, dust and traffic.</u></p>	Jonathan Cooper, Representative of Estate <u>Late of Adjacent Landowner 5/192</u>	<u>4Jun2019, emailed comments dated 31 May 2019</u>	<p><u>The adjacent landowner's property, Portion 5 of 192, falls within an Aquatic Critical Biodiversity Area (CBA) in terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP) and is within 10km of Addo Elephant National Park.</u></p> <p><u>In terms of the NEMA EIA Regulations, 2014 (as amended), GN R324 (Listing Notice 3) listed activity no. 5 "The development of resorts, lodges, hotels, tourism or hospitality facilities that sleep less than 15 people....", requires that a Basic Assessment be undertaken and an Application for Environmental Authorisation be submitted to the Department of Economic Development, Environmental Affairs and Tourism, prior to the commencement of any activities on the site.</u></p> <p><u>The land surrounding the proposed development is agricultural in nature and while the site is currently being used as a dairy farm and planted with pastures (lucerne/kikuyu), it is proposed to replace the pastures with citrus (not part of this assessment). It is further reasonable to expect a certain amount of odour associated with agricultural activities in an area that is zoned for agriculture.</u></p> <p><u>Addo Dung Beetle Guest Farm is a successful Guest Farm located in "close proximity" to a poultry broiler house facility (12 houses), Disco Chicks Farm 1, ~15km north of the proposed breeder facility. Stocking densities of a broiler facility are higher than for a breeder facility and manure removal takes place more frequently at a</u></p>

				<p>broiler facility. It is thus not accurate to predict that the establishment of a Bed and Breakfast on the adjacent property would be unsuccessful should the proposed poultry breeder facility be authorised.</p> <p>See points 12.1 (“bad smells, poor air quality, dust”), 16.1 (“loud noise”) and 17.1 (“traffic”) above for responses regarding the potential air quality, noise and traffic impacts.</p>
19.2	<p>The owners of Greenviews therefore request that a sufficient and suitable distance of at least 750 meters to 1000 meters be maintained between the site chosen for the chicken facility and Greenviews, on which a current residential dwelling already exists. A buffer zone of no less than 750 to 1000 meters will ensure and maintain the viability of a successful Bed and Breakfast being operated on Greenviews and will ensure much needed job creation and income being generated within the Addo area.</p>	<p><u>Jonathan Cooper,</u> <u>Representative of Estate</u> <u>Late of Adjacent</u> <u>Landowner 5/192</u></p>	<p><u>4Jun2019,</u> <u>emailed</u> <u>comments</u> <u>dated 31 May</u> <u>2019</u></p>	<p>The adjacent landowner’s property, Portion 5 of 192, falls within an Aquatic Critical Biodiversity Area (CBA) in terms of the Eastern Cape Biodiversity Conservation Plan (ECBCP) and is within 10km of Addo Elephant National Park.</p> <p>In terms of the NEMA EIA Regulations, 2014 (as amended), GN R324 (Listing Notice 3) listed activity no. 5 “<i>The development of resorts, lodges, hotels, tourism or hospitality facilities that sleep less than 15 people...</i>”, requires that a Basic Assessment be undertaken and an Application for Environmental Authorisation be submitted to the Department of Economic Development, Environmental Affairs and Tourism, prior to the commencement of any activities on the site.</p> <p>The commentator has provided no scientific or literary references for his assertion that a buffer zone of 750m to 1000m is “sufficient and suitable” and “will ensure and maintain the viability of a successful Bed and Breakfast”.</p> <p>A number of factors have been considered in order to identify the most suitable site for the proposed facility including, but not limited to, distance of sensitive receptors, technical constraints (eg. water, electricity, topography, access), effective management of stormwater and the ecology of the surrounding environment (e.g. proximity of the Sundays River).</p> <p>The boundary of the commentator’s property is ~500 meters from the nearest proposed breeder house.</p>

				<p><u>According to figures provided by the applicant, the proposed poultry breeder facility development is anticipated to create 10 new permanent employment opportunities for the lifespan of the project as well as 105 temporary employment opportunities during the construction phase of the project. Positive indirect economic impacts are anticipated to be associated with downstream industries for the collection of product (eggs) and delivery of product (feed).</u></p>
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APPENDIX F: ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

BASIC ASSESSMENT

**Proposed Construction and Operation of the Middledrift
Poultry Breeder Facility and Associated Dam Expansion and
Demolition on Portion 6, 10 and 40 of Farm T'Zoetgeneugd 192,
Sundays River Valley Municipality**

June 2019



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ABBREVIATIONS

BA	Basic Assessment
CARA	Conservation of Agricultural Resources Act
CEMP _r	Construction Phase Environmental Management Programme
DAFF	Department of Agriculture, Forestry and Fisheries
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMP _r	Environmental Management Programme
EA	Environmental Authorisation
OEMP _r	Operational Phase Environmental Management Programme
SEM	Site Environmental Manager

DEFINITIONS

"EIA Regulations, 2014 (as amended)" - In terms of the NEMA EIA Regulations, 2014 (as amended), published in GN R326, 327, 325 and 324, promulgated under Chapter Five of the National Environmental Management Act (Act 107 of 1998) (NEMAA), and published in Government Gazette 40772 on the 7 April 2017, the project requires a Basic Assessment, because it triggers, amongst others, the following listed activity, in Listing Notice 1 (GN R327):

"43. The expansion and related operation of hatcheries or agri-industrial facilities outside industrial complexes, where the development footprint of the hatcheries or agri-industrial facilities will be increased by 2 000 square metres or more."

"The Department/ Competent Authority" - The Department of Economic Development, Environmental Affairs and Tourism, Sarah Baartman Region.

"Commencement" - Any physical activity on site that can be viewed as associated with the clearing and site preparation phase.

1.1 INTRODUCTION AND BACKGROUND

The project proponent, Die Boeram Venter Trust, proposes the construction and operation of a poultry breeder facility on a portion of Portion 6, 10 and 40 of Farm T'Zoetgeneugd 192 (referred to hereinafter as Middledrift), in the Sundays River Valley Municipality. The facility is proposed to consist of six (6) fully enclosed houses within two (2) separately fenced-in operational areas, as well as associated infrastructure, and will have the capacity to stock 58 740 chickens. In addition, an existing irrigation water storage dam measuring 13 670m² in extent and with a current storage capacity of 19 600m³ is proposed to be expanded in order to ensure a secure water supply for the proposed poultry breeder facility, as well as the future agricultural activities on the remainder of the farm. The expanded dam is proposed to have a footprint of 39 035m² and a capacity to store 94 698m³ of irrigation water.

Middledrift is currently zoned for agricultural use (Agriculture 1) and is surrounded by farms that are engaged in various agricultural activities. It is located outside of the urban edge of Addo/Nomathamsanqa, ~4km northeast of the farm. It is anticipated that the affected portion of the farm to be occupied by the proposed poultry breeder facility, will require Special Consent zoning.

The proposed Basic Assessment Process has been undertaken in terms of the NEMA EIA Regulations, 2014 (as amended). **This Draft EMPr** has been prepared in line with the amendments to the NEMA EIA Regulations 2014. In terms of the NEMA EIA Regulations, 2014 (as amended), the project requires a Basic Assessment, prior to the commencement of any activities on the site.

1.1.1 Activities and Regulations for which Application has been made:

Proponent Die Boeram Venter Trust
Location of Activity Portion 6, 10 and 40 of Farm T'Zoetgeneugd 192, Sundays River Valley Municipality
Activity Description INTRODUCTION The project proponent, Die Boeram Venter Trust, proposes the construction and operation of a poultry breeder facility on a portion of Portion 6, 10 and 40 of Farm T'Zoetgeneugd 192 (referred to hereinafter as Middledrift), in the Sundays River Valley Municipality. The facility is proposed to consist of six (6) fully enclosed houses within two (2) separately fenced-in operational areas, as well as associated infrastructure, and will have the capacity to stock 58 740 chickens. In addition, an existing irrigation water storage dam measuring 13 670m ² in extent and with a current storage capacity of 19 600m ³ is proposed to be expanded in order to ensure a secure water supply for the proposed poultry breeder facility, as well as the future agricultural activities on the remainder of the farm. The expanded dam is proposed to have a footprint of 39 035m ² and a capacity to store 94 698m ³ of irrigation water. The farm Middledrift, measuring ~204ha in combined extent, is zoned Agriculture I and the majority thereof is planted with pastures (lucerne/ kikuyu), as the farm is currently being operated as a dairy farm. The proposed poultry breeder facility and associated infrastructure including the proposed dam expansion is proposed to occur within the existing pastures. The total proposed development footprint, including associated infrastructure, is anticipated to be ~24ha. The remaining portions of the farm, which are not proposed for development and are currently planted with pastures, will, in future, be replaced with citrus orchards. However, this component of the project does not trigger any listed activities in terms of the NEMA EIA Regulations 2014 (as amended), therefore, the project activities and assessment of impacts in this report is primarily

focused on the listed activities which require Environmental Authorisation.

PROJECT LOCALITY

Middledrift is currently accessed by turning off the tarred MR00450 (R335) road onto the gravel MN50595 road and continuing for a distance of ~2.7km, before turning right onto a private, 4m wide gravel road, situated along the southern boundary of Portion 6. The nearest boundary of the Addo Elephant National Park is located ~6km east of the proposed development area.

SURROUNDING LAND USE

Land-uses on the properties adjacent to Middledrift include commercial agriculture in the form of citrus, cattle rearing and goat farming. The Sundays River is located adjacent to the northern and westernmost boundary of the farm. The broader landscape surrounding Middledrift is similarly characterised by agricultural activities associated with the 'Sundays River Valley'. Numerous Game Farms are located on the far side of the Sundays River, to the west and north of the farm.

SITE OVERVIEW

The following section provides an overview of the existing land-use and activities on Middledrift.

At present, the Middledrift is being utilized as a dairy farm by the current landowner. Thus, the majority of the farm is planted with pastures (lucerne/ kikuyu). The proposed poultry breeder facility and associated infrastructure, including the proposed dam expansion is proposed to occur within the existing pastures. A services area including offices, sheds, milking sheds and workshops are located in the north eastern corner of the farm. Adjacent to the southern boundary, in the vicinity of the dam proposed for expansion are five (5) staff houses, as well as a workshop/ storage shed.

There are two irrigation water storage dams in the southern portion of the farm. The most eastern dam (14 450m³/ 10 140m²), adjacent to the southern boundary is proposed to be demolished. This will include the removal of the associated irrigation infrastructure (inlet and outlet pipelines), as well as the pumphouse. The second dam (19 600m³/ 13 670m²), located towards the centre of the southern portion of the farm is proposed for expansion in order to ensure a secure water supply for the proposed poultry facility, as well as the future agricultural activities on the remainder of the farm. A smaller dam is located near the services area, however, it does not appear to be utilised for irrigation purposes and is likely utilised to control stormwater/ runoff.

All of the existing structures, for example houses, sheds, offices etc. are proposed to be utilised to support the new proposed poultry breeder facility, as well as future agricultural activities on the remainder of the farm.

The Sundays River is located adjacent to the northern and westernmost boundary of the farm. A ~20m buffer of natural vegetation has been retained between the existing pastures and the river bank. The proposed development will be located ~300m from the river at its nearest point.

There are two (2) existing access roads onto the farm. The northernmost access road provides direct access off the gravel MN50595 to the existing services area. The southernmost access is via a private 4m wide access road onto the gravel MN50595.

Located within the farm is a separate farm portion, namely Portion 5 of Farm 192, which is not owned by the proponent or the current landowner. Located on this portion is a private residential dwelling and gardens which appear to consist largely of indigenous natural vegetation.

PROJECT OVERVIEW

The project proponent, Die Boeram Venter Trust, proposes the construction and operation of a poultry breeder house facility on the Farm Middledrift. The facility is proposed to consist of six (6) fully enclosed houses within two (2) separately fenced-in operational areas, as well as associated infrastructure, and will have the capacity to stock 58 740 chickens. In addition, an existing irrigation water storage dam is proposed to be expanded in order to ensure a secure water supply

for the proposed poultry breeder facility, as well as the future agricultural activities on the remainder of the farm.

Breeder farms are primarily for the production of fertilised eggs over a 60-week period, with an additional 6 weeks required for cleanout, disinfection and maintenance, thus a 66-week cycle. This assessment is being undertaken based on a worst-case scenario, assuming all in and all out for the entire farm.

Construction of the proposed breeder facility will entail the following components:

- 6 x roofed and fully enclosed breeder houses, measuring 120m x 16m (1 920m²) each.
- 6 x egg collection rooms.
- 1 x incubator room.
- 2 x mortality freezer rooms.
- 1 x centralised boiler room for the piping of heat to each of the six (6) houses, including a coal store.
- 3 x employees' houses.
- 2 x shower rooms and wash areas.
- 1 x generator room.
- 1 x tool shed.

In addition, and in order to ensure that the associated services (access, water, stormwater, effluent) are effectively provided and managed, the facility is proposed to include the following components:

- Expansion of the existing irrigation water storage dam.
- Expansion and formalisation of existing access.
- Widening of private gravel road.
- Installation of water reticulation system for the six (6) breeder houses, as well as for domestic consumption (3 x employees' houses) and associated on-site water treatment facility.
- Installation of foul sewer system, including conservancy tanks for the 3 x residential dwellings, as well as 2 x shower rooms.
- Construction of the internal road network.
- Installation of stormwater management infrastructure including pipes, canals and a stormwater detention pond.

The proponent also proposes to demolish an existing dam located in the south eastern corner of the farm. While this isn't directly linked to the primary activity (i.e. poultry breeder facility), it is connected to the future agricultural activities on the remainder of the farm and triggers listed activities. It is thus being included in this assessment process.

Access

Access to the existing farm portions is currently obtained via a private 4m wide access road onto the gravel minor road MN50595, ~2.7km south of MR00450 (R335). MN50595 intersects with MR00450, ~200m east of the Sundays River.

It is proposed to upgrade the access road to 7m in width to accommodate truck traffic for delivery and collection of chicks, feed, and collection of fertilised eggs, as well as manure.

Shoulder sight distance at the MN50595 intersection with the access road was assessed in terms of TRH 17: Geometric Design of Rural Roads (**Error! Reference source not found.**). TRH17 recommends that a single unit and trailer vehicle entering a road with a design speed of 60kph, turning left or right, requires shoulder sight distance of 250m. The requirement for a passenger car is 145m.

Shoulder sight distance (SSD) from the existing access road onto MN50595 to both the north and south are in excess of the minimum requirements.

The internal road network will comprise of roads varying in width between 4m and 8m, widened at corners to accommodate truck turn paths (~30m).

The above information has been provided by a traffic specialist. The full Traffic Impact Assessment is attached as Appendix D(v).

Pre-Construction Phase

Prior to commencement with construction activities on site, the detailed design drawings for the proposed poultry breeder facility and associated supporting infrastructure must be finalised.

Construction Phase

It is anticipated that the proposed construction phase of the project will entail the following activities on the site:

- Demarcation of the development footprint and equipment laydown area.
- Clearing of vegetation from the development footprints, including removal of existing pastures.
- Fencing in the site.
- Stockpiling of equipment and construction material.
- Site excavation and levelling.
- Construction of the proposed poultry breeder house facility and associated infrastructure including:
 - Expansion and formalisation of existing access.
 - Widening of private gravel road.
 - New internal road network.
 - Water storage and reticulation infrastructure.
 - Effluent management infrastructure.
 - Stormwater management infrastructure.
 - Construction of employees' houses.
- Expansion of an existing irrigation water storage dam.
- Demolition of an existing irrigation water storage dam.
- Rehabilitation of disturbed areas on the site.

Roads and Access

Access to the existing farm portions is currently obtained via a private 4m wide access road onto the gravel minor road MN50595, ~2.7km south of MR00450 (R335). MN50595 intersects with MR00450, ~200m east of the Sundays River. It is proposed to upgrade the access road (indicated on Map 5 below) to 7m in width to accommodate truck traffic for delivery and collection of chicks, feed, and collection of fertilised eggs, as well as manure. Shoulder sight distance (SSD) from the existing access road onto MN50595 to both the north and south are in excess of the minimum requirements. The internal road network will comprise of roads varying in width between 4m and 8m, widened at corners to accommodate truck turn paths (~30m). For more information regarding potential traffic related impacts see the Traffic Impact Assessment attached as Appendix D(v) of the Report.

Expansion of an Existing Irrigation Water Storage Dam

An existing irrigation water storage dam measuring 13 670m² in extent and with a current storage capacity of 19 600m³ is proposed to be expanded in order to ensure a secure water supply for the proposed poultry breeder facility, as well as the future agricultural activities on the remainder of the farm. The expanded dam is proposed to have a footprint of 39 035m² and a capacity to store 94 698m³ of irrigation water.

It is anticipated that the following construction phase activities will be associated with the expansion of the dam:

- Existing dam will be emptied of water prior to demolition.
- Existing dam walls will be demolished and rebuilt during the proposed expansion by earth-moving machinery.

- Excavation of topsoil will be achieved with the aid of earth moving machinery and is proposed to be stockpiled temporarily, while the dam construction and shaping (cutting) is undertaken.
- Compaction of a 200mm layer of clay along the bottom of the new dam, to maintain impermeability.
- Excavated topsoil to be used in the construction of the dam wall and indigenous vegetation, to rehabilitate the proposed new dam walls in order to manage potential erosion.
- Installation of an outlet irrigation pipeline with an internal diameter of ~75mm, including the removal of topsoil, temporary stockpiling thereof and reinstatement of the soil after installation of the pipe. It is anticipated that an installation corridor of ~1m will be required.

Irrigation water from the LSRWUA canal system is proposed to be reticulated into the expanded dam via an existing concrete canal, which will continue to be utilised for this purpose.

Demolition of an Existing Irrigation Water Storage Dam

An existing dam measuring 10 140m² and having a capacity of 16 450m³, located in the south eastern corner of the farm is proposed to be demolished. It is anticipated that the following construction phase activities will be associated with the demolition of the dam:

- Existing dam will be emptied of water prior to demolition.
- Existing dam walls will be demolished by earth-moving machinery.
- Existing pumphouse and associated infrastructure will be removed.
- The dam site will be levelled.
- Rehabilitation of the disturbed area.

In the future this portion of the farm is likely to be planted with citrus orchards.

Operational Phase

Once the necessary infrastructure has been constructed, the poultry breeder facility will commence operations. The facility is proposed to consist of six (6) fully enclosed houses within two (2) separately fenced-in operational areas (3 x houses per area) and will have the capacity to be stocked with 58 740 chickens. The standard 66-week breeder model will apply to the proposed facility. A brief summary of the cycle is outlined below:

WEEK	OPERATION
0 - 30	Delivery of feed to silos.
	Delivery of day-old chicks into the facility (maximum of 58 740).
	Removal of mortalities bi-weekly. Temporary storage in mortality freezer rooms for weekly disposal.
31 – 60	Collection of eggs produced, transported to Sovereign Foods hatchery. ¹
	Removal of mortalities bi-weekly. Temporary storage in mortality freezer rooms for weekly disposal.
60	End of cycle. Chickens are collected and sold to registered cull buyers or sent to Sovereign Foods rendering facility. ²
61 - 66	Removal of mortalities bi-weekly. Temporary storage in mortality freezer rooms for weekly disposal.
	Removal of manure to registered composting facility.
	House disinfection.
	Maintenance activities.

A typical breeder house is a totally enclosed and environmentally controlled facility, making use of a computer-controlled ventilation system. The ongoing maintenance of this system is directly linked to the health and survival of the flock, as well as having indirect environmental and other benefits. It is vital that the correct temperature, humidity and air quality level be maintained within the house at all times. However, the specific environment varies for the age of the chicks. Being a computer-controlled system, any breakdown within the system triggers remote alarms, thus

¹ See Appendix G(viii) for confirmation from Sovereign Foods that they will purchase all of the eggs laid at this proposed facility.

² See Appendix G(viii) for confirmation from Sovereign Foods of capacity at the rendering facility.

ensuring a prompt response and intervention.

Associated Infrastructure Requirements

Stormwater Management

A design perspective to avoid flooding of the proposed poultry breeder houses, employees' housing and operational structures on the site, as well as the areas adjacent to the northern boundary of the site, has been adopted as a priority.

Considering the topography on and near the site, as well as the proposed site layout, the catchment area which will drain to the detention pond is ~20ha. Due to the fact that the six (6) breeder houses will be fully roofed and enclosed to floor level, with a concrete floor and a 600mm high concrete stub wall (except for the door openings at the gable ends), the chances are virtually nil that the litter of the breeder houses could end up in an uncontrolled manner in the stormwater system during or after rain storms. The stormwater overland run-off from each breeder house will be diverted by an open channel and piped stormwater system to flow around and/ or away from the respective breeder houses (Refer to Map 4 in the Report).

In an attempt to address the post-development stormwater drainage in a responsible way, including adherence to the accepted objectives, the following preliminary design proposals are recommended:

- Subject to the detailed design of earthworks, roads and stormwater system, the upgraded internal roads to the site will be designed to not act as shallow stormwater channels but will accommodate the natural flow of stormwater, as far as practically possible.
- The operational access ways on the site will also not act as shallow stormwater channels. The access ways will be designed to accommodate the distributed overland sheet flow, which will be intercepted by the open channel stormwater system.
- The overland run-off will be intercepted adjacent to the up-stream side of each breeder house, to prevent flooding of the building and will be channeled down-stream to the stormwater detention pond.
- The intercepted stormwater will mainly be conveyed via pipes near or under the proposed internal roads. In accordance with our design calculations, the pipe diameters will vary from 300mm up to 600mm, and the total length of the piped stormwater system will exceed 1000m.
- The stormwater detention pond shall be designed to intercept the overland run-off as well as piped stormwater from the breeder house development to retain post-development major design storm inflows up to 1 in 100-year recurrence interval and shall release a design outflow associated with a pre-development 1 in 5-year rain storm.
- In accordance with our preliminary calculations, the stormwater detention pond will have an effective storage capacity of 6 360m³ and a footprint of 3 112m².
- The stormwater detention pond will be designed to function as a "dry" detention pond after the release of the intercepted stormwater.
- The intercepted stormwater from the stormwater detention pond will be released to the existing stormwater run-off route via 2 x 450mm diameter piped outlets, with adequate erosion protection.
- The disturbed area of the stormwater detention pond will be vegetated with an indigenous drought-resistant ground cover to limit possible erosion, as specified by a specialist. As confirmed with Nico Venter on 6 February 2019, the natural watercourse directly north of the stormwater pond outlets will be vegetated with kikuyu to also serve as pastures for livestock.
- The gradient of constructed embankments to the main internal stormwater system and stormwater detention pond will as far as practically possible, not be steeper than 1 in 3, to accommodate the establishment of vegetation and soil stability under wet conditions.
- The inlet and outlets to the piped portions of the stormwater system on the site will be done with non-rigid geo-textile lined gabion structures, complete with Reno mattress erosion protection.
- It is further recommended to establish indigenous drought-resistant ground cover to the stormwater outlet areas, the disturbed cut and fill areas and the verges of the constructed road areas to limit the transport of sediment in these affected areas by water or wind.

Water Supply System

Currently, water is provided for irrigation purposes from the Lower Sundays River Water User Association (LSRWUA) to the existing irrigation water storage dam, Dam A (storage capacity of 19 600m³), located on Portion 10, near the south-eastern corner of the site. The farm has been allocated water use entitlements of 193.6ha of water. Water entitlements from the LSRWUA provide for 900mm/ha/yr (9000m³/ha/yr). This equates to 1 742 400m³ per year and on average 4 773.7m³ per day. See Sales Agreements for Portions 6, 10 and 40 of Farm 192 T'Zoetgeneugd attached in Appendix G(viii) of the Report indicating the Water Use Entitlements assigned to the respective properties.

Mr JG Le Roux, Group Agri Manager for Sovereign Foods, whom the applicant proposes to supply, has confirmed that the **average water usage for the six (6) chicken breeder houses is anticipated to be 50m³/day.**

Given the afore-mentioned data, it is reasonable to assume and base the design calculations for the six (6) proposed breeder houses, and the 4 x employee houses, on an **Annual Average Daily Demand (AADD) of 55kl/day (55m³/day) and the maximum daily demand on 67kl/day (67m³/day).**

In order to accommodate the afore-mentioned demands, including the normal quota of irrigation water for Portions 6, 10, and 40, Mr. N. Venter (the applicant) intends to expand the existing irrigation water storage dam. The size of the pipe from the dam to the treatment plant measures 75mm in diameter.

The annual water demand for the breeder house development in its entirety, has been calculated to be **20 075m³**. In accordance with our preliminary calculations, the Instantaneous Peak Operational Demand of 5.63L/s and the Fire Demand of 25L/s, equals 30.63L/s.

Subject to the re-registration for a change in water usage and approval by the LSRWUA, the Applicant will be allowed to use a portion of the water entitlements for domestic and operational purposes. In accordance with the afore-mentioned calculations, there will be sufficient water available to serve the proposed breeder house development in its entirety. The annual demand of 20 075m³ is less than 1.15% of the normal water quota for Portions 6, 10 and 40 (193.6ha scheduled water).

In order to limit the dependency of domestic demand on the water supply from the LSRWUA, it is recommended that a rain water storage tank (minimum capacity of 5 000L) be connected to each habitable unit (3 x employees houses).

The Applicant will be required to treat the raw irrigation water to the required standards for operational and domestic use on site to the required standards. The on-site water treatment system will be designed and constructed subject to the outcome of the test results on the raw irrigation water. The on-site water treatment system should consist of a screen filter, sedimentation facility, filter system, chlorinator and storage tanks combined with a booster pump system, to ensure adequate supply to the required design standards. In order to handle the worst-case scenario concerning suspended solids, clay, sand inter alia, the on-site water treatment process could include all of the following:

- 2 x Dual-chamber storage reservoirs adjacent to the on-site water treatment plant, with raised outlets and an effective capacity of 200m³ each (total effective storage capacity of 400m³).
- Pump raw water from the irrigation water storage dam, proposed for expansion (Dam A), to the 2 x dual-chamber storage reservoirs through a manual screen or a Bell series self-cleaning electric screen filter.
- Mixing tank regarding dosing with flocculation additive and pH adjustment, combined with sedimentation tanks with a minimum capacity of 80m³.
- Automatic flushing sand filter.

- 5 Micron cartridge filter and accurate dosing of chlorine dioxide by means of a dosing pump and flow meter.
- Duty and standby booster pump system, including diaphragm pressure tank.

The 2 x dual chamber reservoirs could also be designed to act as a sedimentation facility that would form part of the water treatment system.

In order to accommodate the required minimum residual head pressure of 150kPa under instantaneous peak demand conditions and to accommodate a fire flow of 20 – 25L/s (moderate fire risk), as well as maximum residual head pressures under low flow conditions, the main internal reticulation will consist of a branched/ looped reticulation consisting of 160mm and 110mm diameter PVC-U pipelines Class 12, in accordance with SANS 966: 1998 Part 1 specifications and laid in accordance with SANS 1200 LB. The completed water reticulation will be tested under a minimum pressure of 1800kPa in accordance with SANS 1200 L. The aforementioned reticulation will be combined with an effective pump system, which will consist of at least a duty and standby pump and a duty and standby generator system, to ensure a minimum residual head of **150kPa under maximum fire flow conditions of 25L/s**. The fire hydrants will be the pedestal type, unless otherwise dictated by the Sundays River Valley Municipality. The maximum spacing of the fire hydrants will mainly be in accordance with SANS 0900 – 1972 stipulated for moderate risk fire areas.

The following alternative water sources and water saving proposals should be considered:

- As far as practically possible, provision should be made for roof rain water harvesting in the architectural guidelines.
- The roof-collected water can be used for outdoor and indoor purposes (hot water, washing, toilet, etc).

The use of water can further be reduced by using water saving products listed as follows:

- Water saving toilets (capacity 6L and less), with a dual-flush valve.
- Water saving taps with spray cartridges.
- Water-saver shower heads with a flow rate of 4 to 9L/min, by generating finer droplets.

Foul Sewer System (Domestic Effluent)

The total design Average Dry Weather Flow (ADWF) of domestic effluent which is anticipated to be generated at the 3 x employees houses and at the 2 x shower rooms on site, has been calculated to be **3.125 kilolitres per day** (3 125 m³/day), under full post-development conditions.

The aforementioned habitable units (3 x employees houses) and shower rooms can be served by foul sewer conservancy tanks. The size of each tank (5 x tanks in total) will have an effective storage capacity equal to 2.5 weeks x ADWF. In accordance with our preliminary design calculations the size of each of the five (5) conservancy tanks, (one for each of the dwellings and shower rooms) will be 3m x 3m x 1.8m deep with an effective **storage capacity of 13.125m³, totaling a storage capacity of 65.625m³ for all 5 tanks.**

The domestic effluent of the proposed development will mainly be treated by the Addo Waste Water Treatment Works with a capacity of 1 Ml/day (1 000m³/day), as confirmed with the Acting Manager: Technical Services: Mr. R.J. Herholdt of the Sundays River Valley Municipality, during July 2018. The Applicant will be liable for the effective maintenance and emptying of the conservancy tanks serving the breeder house development. Additionally, the Applicant will be required to enter into an agreement (as approved by the local authority) with a competent registered contractor for the regular emptying of the conservancy tanks and discharge of the mentioned raw effluent to the registered Addo Waste Water Treatment Works.

In accordance with preliminary design calculations, the gravity sewer will mainly consist of 110 PVC-u sewer pipes Class 51 (Class 34 if under roads): SABS 791, to convey the effluent from the habitable units and shower rooms to the respective conservancy tanks. The longitudinal gradients

of the gravity sewers will be designed to accommodate the peak wet weather flows, as well as maintaining minimum self-cleansing velocities higher than 0,7m/s. All main internal sewers and manholes have to be constructed in accordance with SANS 1200 LD, SANS 1200 LB and Municipal Standards and Specifications. For more information including proposed design drawings see the Roads and Wet Services Report prepared by JJ Spies Civil Engineers, attached in Appendix D(iv) of the Report.

Electricity Requirements

The applicant has an existing connection to an Eskom supply which provides electricity to the current dam and dairy operations. It is proposed that an additional 350kVA electricity will be required to service the proposed development. The proponent proposes to install a new 500kVA transformer to support the proposed development. Eskom has confirmed that the additional 350kVA supply can be accommodated on the SR812 Gedeelte 10 van die Plaas Zoet, Feeder Nooitgedacht/ Barkley bridge 22kV line (see confirmation attached as Appendix G(ix) of the report).

Waste Generation

The following potential sources of waste have been identified:

- Poultry Litter.
- Mortalities.
- Domestic waste (general refuse, fluorescent tubing etc.).

Litter Removal and Disinfection

Breeder houses are operated on an “all-in all-out” basis and require time for cleaning and repair between flocks. The most common type of housing for breeders is enclosed with a concrete floor covered with dry bedding. Dry bedding (litter) can be sawdust, wood shavings, chopped straw or other products, depending on availability and cost. Manure, as excreted by birds, has a high water content, thus the litter acts as a moisture absorbent. Stockpiling of manure on site can result in the contamination of the next flock of birds, may result in odour impacts, as well as potentially impact on ground and surface water. Therefore, no manure will be stockpiled on site at the proposed poultry breeder facility. At the end of each cycle the manure is removed from the house within 14 days, both mechanically and by hand, and transported in covered vehicles to a registered manure composting facility and fertiliser processing plant, also owned by the project proponent.

Disposal of Mortalities

The breeder houses are checked every 2nd to 3rd day and dead chicks are bagged and removed from the house for storage in a locked freezer facility on site (2 x 450L freezer facility). Thereafter, the chicken carcasses are removed on a weekly basis, dependent on mortality rates and capacity of the mortality chamber, from the site for disposal at a registered disposal facility (Aloes).

Domestic Waste

General waste that will be generated at the employees houses and at the admin and maintenance areas of the poultry breeder facility, which may contain hazardous elements (e.g. fluorescent tubes/ light bulbs), Such waste will be classified, separated and temporarily stored in a designated waste storage area in suitably marked bins, before final disposal at an appropriate registered facility.

Biosecurity

Biosecurity control and disease management on site are important in order to ensure the health and survival of the flock. This entails various measures to prevent the introduction of diseases to the flock, contamination between flocks, as well as a response plan in case of an outbreak of disease, as follows:

- Disinfection and clean out between flocks (14 days) which entails both a dry and wet cleaning procedure.
- Strict limited access to the site (permission is required to access the site).

- Fencing of the site, as well as the facility to limit unrestricted access.
- Disinfection protocol for vehicles, personnel or others entering or exiting the facility. This entails the washing down of all vehicles and includes individuals showering in and out before entering or exiting a facility.
- In case of the outbreak of a disease Sovereign Foods subscribes to the “CONTINGENCY PLAN IN CASE OF AN OUTBREAK OF NOTIFIABLE AVIAN INFLUENZA (NAI) IN POULTRY IN SOUTH AFRICA” as compiled by: Dr RF Horner, Allerton PVL, Pietermaritzburg and Dr ACE Pienaar, National Directorate of Animal Health, Pretoria (EDITION 3 REVISED JUNE 2009).

See Section A of the Consultation Basic Assessment Report for more information on the proposed project.

1.1.1.1 *Listed activities according to GN R327, 325 and 324 requiring Environmental Authorisation in terms of the NEMA EIA Regulations, 2014 (as amended).*

GN R327 (Listing Notice 1)	
<p>“5. <i>The development and related operation of facilities or infrastructure for the concentration of —</i></p> <p>(ii) <i>more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days;</i></p> <p>(iv) <i>more than 25 000 chicks younger than 20 days per facility situated outside an urban area”</i></p>	<p>The proposed development includes the construction of a facility and associated infrastructure for stocking of each of the six (6) breeder houses with 9 790 day-old chicks, thus totaling 58 740 poultry for the entire facility.</p> <p>The poultry will be reared from day-old chicks to 60 weeks, after which they will be removed from the house and sold to registered cull buyers. While some mortalities are anticipated during the 60-week cycle, it is anticipated that more than 5 000 poultry older than 20 days will be concentrated within the facility, at any given time.</p> <p>The area proposed for development falls outside of an urban area.</p> <p>This listed activity requires Environmental Authorisation.</p>
<p>“8. <i>The development and related operation of hatcheries or agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2 000 square metres or more.”</i></p>	<p>The total development footprint of the proposed breeder facility, inclusive of all associated infrastructure is estimated to not exceed 240 000 square metres (24 hectares) and the proposed facility falls outside of an industrial complex. The breeder facility could be considered an agri-industrial facility in terms of the NEMA EIA Regulations 2014 (as amended) and would require Special Consent Zoning in terms of Municipal Regulations. This listed activity requires Environmental Authorisation.</p>
<p>“9. <i>The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water—</i></p> <p>(i) <i>with an internal diameter of 0,36 metres or more; or</i></p> <p>(ii) <i>with a peak throughput of 120 litres per second or more;”</i></p>	<p>An existing dam on the site is proposed to be expanded in order to provide water to the breeder house facility This includes the installation of an internal water reticulation system, as well as a new water pumping main from the dam proposed to be expanded on site. However, the size of the pipe from the dam to the treatment plant measures 0.075 metres in diameter. Therefore, this listed activity does not apply to the domestic water supply component.</p> <p>The management of stormwater generated by the proposed breeder house facility will include the installation of a network of stormwater outfall pipes. These pipes are anticipated to exceed 1 000 metres in combined length, with a diameter varying between of 0.3 to 0.6 metres and may have a peak throughput capacity equal to or exceeding 120 litres per second. This listed activity applies to the stormwater management component and requires Environmental Authorisation.</p>
<p>“24. <i>The development of a road—</i></p> <p>(ii) <i>with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider</i></p>	<p>The proposed development will require an internal road network varying in widths from 6 meters to 8 meters, widened at corners to accommodate truck turning paths up to 30 meters. The combined length of these roads is anticipated to be in excess of 1 kilometre. This listed activity requires Environmental Authorisation.</p>

<p>than 8 metres;”</p>	
<p>“31. The decommissioning of existing facilities, structures or infrastructure for – ... (v) any activity regardless the time the activity was commenced with, where such activity: (a) is similarly listed to an activity in (i) or (ii) above; and (b) is still in operation or development is still in progress;”</p>	<p>It is proposed that an existing dam with a capacity of 16 450 cubic metres be decommissioned. The development of the dam would have triggered Activity 2. a. ii. (dd) and (ff) in the EIA Regulations 2014 (as amended) if it were to be built today. This listed activity requires Environmental Authorisation.</p>
<p>“50. The expansion of facilities or infrastructure for the off-stream storage of water including dams and reservoirs, where the combined capacity will be increased by 50 000 cubic metres or more.”</p>	<p>In order to provide water to the proposed breeder house development, as well as for domestic consumption, an existing storage dam, with a current capacity of 19 600 cubic metres (13 670 square metres), located on portions of Portion 6 and 10 of Farm 192, is proposed to be expanded by 58 648 cubic metres (15 225 square metres) to have a final development footprint of 39 035 square metres (3.9 hectares) and a total capacity to store 94 698 cubic metres of irrigation water. This listed activity requires Environmental Authorisation.</p>
<p>GN R324 (Listing Notice 3)</p>	
<p>“4. The development of a road wider than 4 metres with a reserve less than 13,5 metres. a. Eastern Cape i. Outside urban areas: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas;”</p>	<p>The proposed development will require an internal road network varying in widths from 6 meters to 8 meters, widened at corners to accommodate truck turning paths up to 30 meters.</p> <p>The area proposed for development falls in the Eastern Cape, outside of an urban area and within 6 kilometres of the nearest boundary of the Addo Elephant National Park.</p> <p>The area proposed for development is located in an Aquatic Critical Biodiversity Area (ABLMC 2b) in terms of the Eastern Cape Biodiversity Conservation Plan. Sections of the farm have been mapped as a Terrestrial Critical Biodiversity Area (BLMC 2). However, no development is proposed for areas identified as Terrestrial CBA.</p> <p>This listed activity requires Environmental Authorisation.</p>
<p>“16. The expansion of reservoirs, excluding dams, where the capacity will be increased by more than 250 cubic metres. a. Eastern Cape i. Outside urban areas: (ff) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres</p>	<p>In order to provide water to the proposed breeder house development, as well as for domestic consumption, an existing storage dam, with a current capacity of 19 600 cubic metres (13 670 square metres), located on portions of Portion 6 and 10 of Farm 192, is proposed to be expanded by 58 648 cubic metres (15 225 square metres) to have a final development footprint of 39 035 square metres (3.9 hectares) and a total capacity to store 94 698 cubic metres of irrigation water.</p> <p>The area proposed for development falls in the Eastern Cape, outside of an urban area and within 6 kilometres of the nearest boundary of the Addo Elephant National Park.</p> <p>The area proposed for development is located in an Aquatic Critical Biodiversity Area (ABLMC 2b) in terms of the Eastern Cape Biodiversity Conservation Plan. Sections of the farm have been</p>

<p><i>from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; or”</i></p>	<p>mapped as a Terrestrial Critical Biodiversity Area (BLMC 2). However, no development is proposed for these areas.</p> <p>This listed activity requires Environmental Authorisation.</p>
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1.2 DURATION OF AUTHORISATION

Should an EA be issued in respect of the project, the duration of the authorisation will be indicated in said document.

1.3 ENVIRONMENTAL MANAGEMENT PROGRAMMES

Environmental Management Programmes (EMPr), or Environmental Management Frameworks (EMF), serve to ensure that environmental impacts associated with particular activities are monitored, minimised and mitigated for the duration of the project. The practical management measures that should be employed to achieve monitoring and mitigation targets are detailed in the EMPr (DEAT 2004). The EMPr is a dynamic document which should be updated and reviewed on a regular basis so that it may be adapted to changing management styles, and to include improved impact mitigation technology, as well as unforeseen environmental impacts. The EMPr should also be adapted if any changes are made to the project. If such changes will result in significant environmental impacts, which differ from those for which DEDEAT has granted authorisation, such changes must be submitted to the DEDEAT for approval before they are implemented.

This EMPr includes, but is not limited to, the environmental impacts identified in the Basic Assessment Report and the proposed mitigation measures that must be employed to minimise the harmful effects that those impacts may have on the environment.

The Basic Assessment Report contains a comprehensive description of the project and the receiving environment and should be read in conjunction with this EMPr. The lead author of the EMPr is Marisa Jacoby of Public Process Consultants. A CV outlining the experience and key competencies of the lead author is included in Appendix G(v) of the Basic Assessment Report.

In addition to a summary of the impacts, this EMPr contains more detailed information on the following:

- The manner in which mitigation will be implemented.
- The scheduling of the implementation of mitigation.
- Responsibility and accountability for mitigation actions.
- Monitoring and reporting procedures.

The life of the Breeder Facility can be broadly divided into three phases:

A **Construction Phase** - which includes all the surveying, land clearing/ levelling of the site, and construction activities associated with the establishment of the Breeder Facility, including associated infrastructure.

An **Operational Phase** - which constitutes the day to day operation of the Breeder Facility for the duration of its lifetime, until it is discontinued/ decommissioned. The Breeder Facility will operate on a 66-week cycle. Initially, each of the six (6) breeder houses will be stocked with day old chicks. In addition to providing feed and water to the birds, egg collection will take place four (4) times a day.

At the end of the 60-week cycle, the birds are sold to registered cull buyers. Thereafter, a 6-week period is required for the removal, cleanout and maintenance of the breeder houses.

A **Decommissioning Phase** - which includes all the activities associated with the cessation of the described activity at the site. At present, it is not anticipated that the development will be decommissioned. However, should the development be decommissioned, the relevant legislation at the time would apply. An existing dam, with a current capacity of 16 450m³ (10 140m²), located on Portion 6 of Farm T'Zoetgeneugd 192, is proposed to be decommissioned.

Environmental impacts, management practices and mitigation measures may differ for different phases of the development. However, some impacts will be present in all phases of the development, resulting in some repetition in the EMPr.

The EMPr report must be read in conjunction with the Basic Assessment Report and EA, as these documents may contain additional, detailed information not included in this report.

1.4 LEGAL REQUIREMENTS

This EMPr does not include all the legislative and regulatory requirements applicable to this development. The representative appointed by the proponent to manage the operation, and the persons responsible for the implementation of the EMPr, must also familiarise themselves with the specific legal requirements applicable to the described activities on site. These may include, but are not limited to:

- Applicable Environmental Law
- Atmospheric Pollution Prevention Act 45 of 1965
- Conditions of Employment Act, 75 of 1997
- Conservation of Agricultural Resources Act 43 of 1983
- Constitution of South Africa No 108 of 1996
- Environment Conservation Act 73 of 1989
- Extension of Security of Tenure Act 62 of 1997
- Hazardous Substances Act 15 of 1973
- Health Act No 63 of 1977
- Labour Relations Act 66 of 1995
- Land Reform (Labour Tenants) Act 3 of 1996
- National Building Regulations and Building Standards Act 103 of 1977
- National Environmental Management: Biodiversity Act 10 of 2004
- National Environmental Management Act 107 of 1998
- National Environmental Management: Air Quality Act 39 of 2004
- National Heritage Resources Act 25 of 1999
- National Road Traffic Act 93 of 1996 – GNR 225 of 17 May 2000
- National Veld and Forest Fire Act 101 of 1998
- National Water Act 36 of 1998
- Nature Conservation Ordinance Act 19 of 1974
- Noise Control Regulations GN R 154 in Government Gazette No. 13717 of 10 January 1992
- Occupational Health and Safety Act of 1994
- The Hazardous Substances Act 115 of 1973
- Local bylaws
- Provincial legislation

PART A: CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (CEMP_r)

**Proposed Construction and Operation of the Middledrift
Poultry Breeder Facility and Associated Dam Expansion and
Demolition on Portion 6, 10 and 40 of Farm T'Zoetgeneugd 192,
Sundays River Valley Municipality**

June 2019



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Part A CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (CEMP_r)

During the Construction Phase, land will be cleared of vegetation, including the removal of existing Lucerne fields, and prepared (excavated and levelled) for the establishment of the Breeder Facility, as well as associated infrastructure. This will include the upgrading of the existing access road, as well as the construction of a new internal road network, the expansion of an existing dam and the installation of reticulation infrastructure, the installation of the foul sewer system, the installation of the stormwater management infrastructure, as well as the decommissioning of an existing dam. It will further entail the replacement of existing pastures with citrus orchards.

The vegetation clearing, site preparation, levelling and landscaping will be done both by hand and with the aid of suitable earth moving equipment (excavators, bulldozers, TLBs, etc.).

Environmental impacts associated with the Construction Phase of the development, as well as the appropriate mitigation actions, have been identified using specialist input for the various components of the affected environment provided in the Basic Assessment Report (BAR).

A.1 MANAGEMENT ACTIONS

The management actions outlined below indicate the actions to be taken to minimise the potential negative impacts that this phase may have on the environment, as well as measures to enhance the potential benefits.

Impact	Mitigation
Ecology	
Loss of Species of Conservation Concern	<ul style="list-style-type: none"> • Limit disturbance outside the construction footprints. • The Environmental Control Officer must conduct a walk-through prior to commencement of vegetation clearing on site to ensure that no SSC occur within the proposed footprint. • If SSCs are identified, then a permit should be obtained from DEDEAT's Biodiversity Unit for their removal. • These species can be utilised in the rehabilitation and stabilisation of the expanded dam wall or the stormwater detention pond.
Destruction and Removal of Exotic Plants	<ul style="list-style-type: none"> • The retained and rehabilitated vegetation must be cleared of invasive alien species and kept clear of these by conducting regular follow-up clearing operations.
Soil Erosion of Disturbed and Unconsolidated Soil in Construction Footprints and Stockpiles	<ul style="list-style-type: none"> • Site offices and storage area, construction areas, material lay-down areas, access routes and infrastructure footprints should be clearly demarcated prior to commencement with construction activities on site. • Limit all access and construction related activities to the demarcated construction area. • Limit disturbance outside the construction footprints. • Vegetation and topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils • Topsoil should be removed and stockpiled in an appropriate manner: <ul style="list-style-type: none"> ○ Stockpiled separately from subsoil, monitored for- and protected from erosion, kept clear of exotic vegetation ○ Topsoil should be replaced and the footprint surrounding the hard-surfaced areas re-vegetated using indigenous species immediately after construction. • Ensure erosion protection measures are put in place on disturbed berms in case heavy rainfall occurs during construction e.g. placement of bidum, geo-fabrics, matting or netting; mulching and brush-layering are other technologies to impede the flow of stormwater run-off. Silt fences and hay/straw bale barriers are temporary filter barriers that can be installed across or at the toe of a berm slope. • Re-vegetated areas should be watered until vegetation has become established. • Care should be taken not to over-water sloped areas during dust abatement watering • Should erosion scars begin to form on the landscape, erosion counter measures should be implemented immediately. • Erosion control and construction disturbance should be an important monitoring facet falling under the control of an Environmental Control Officer (ECO), who should be appointed to implement the environmental management plans (EMP's) during the construction and site rehabilitation phases of this project.
Aquatic	
Demolition and Upgrading of Existing Farm (Earth Wall) Da., i.e. One Dam is being Completely Demolished while the Second will be Expanded	<ul style="list-style-type: none"> • Any water currently within the dam should be removed/ utilised so that no/ little water leaves as the wall is removed. This would limit large volumes of water being lost and reduce the potential for erosion and flooding.
Loss in Artificial Wetland Habitat (Reedbed) when Existing Dam is Demolished	<ul style="list-style-type: none"> • The expansion of the other existing irrigation water storage dam will provide additional habitat in the future.
Loss in Artificial Wetland Habitat (Reedbed) when Existing Dam is Expanded	<ul style="list-style-type: none"> • Habitat will return over a period on the and no intervention is required.

Changes to the Local Hydrological Regime, with Possible Increases in Surface Flows during the Construction Phase	<ul style="list-style-type: none"> • No run-off should be allowed to leave the site. • Sediment traps and stilling basins should be included into the Storm Water Management Plan where areas susceptible to erosion are encountered.
Socio-economic	
Generation of Dust from Construction Activities and Vehicles	<ul style="list-style-type: none"> • Limit disturbance outside the construction footprints • Erosion protection measures to be placed on disturbed areas in case of heavy rainfall events during construction • Vegetation and topsoil should be cleared in a phased manner to avoid large areas of unconsolidated soils • Topsoil and soil stockpiles must be covered, wetted or otherwise stabilised to prevent wind erosion and dust generation. • A water cart must be employed on windy days to wet soils that would be prone to wind erosion to limit dust generation. • Disturbed areas are to be rehabilitated in parallel with construction completion. • Compile and implement an Environmental management Programme; and audit reporting by an Environmental Control Officer during construction.
Noise Generation During Construction Activities	<ul style="list-style-type: none"> • Noise generated as a result of construction activities must be within the limits assigned by the municipal bylaws. • Encourage labourers to not make unnecessary noise. • Construction activities to occur within normal working hours on week days only. <ul style="list-style-type: none"> ○ 07h00-18h00, Monday to Friday, excluding public holidays • No loud music to be played on site • Signage with the contact details of the responsible person must be provided at the site. • A complaints register must be kept to document complaints and the corrective action taken.
A Number of Temporary Employment and Skills Development Opportunities will be Created during Construction	<ul style="list-style-type: none"> • As far as possible preference should be given to local labour for the facility.
General Health and Safety Risks Associated with the Construction Personnel Activities on Site	<ul style="list-style-type: none"> • Construction personnel must not be allowed to light fires on site. • Construction personnel may not stay on site after working hours or set up temporary residences. • Ablution facilities must be provided to construction personnel to prevent ablutions being performed in public. • Litter bins must be provided at the construction footprint for waste generated by construction personnel. • Litter bins must be emptied on a weekly basis at a minimum and waste disposed of at an appropriately licensed waste disposal facility.
Risk to Human Health and Safety due to Open Excavations and Construction Machinery	<ul style="list-style-type: none"> • Construction footprints, including site offices, excavations, storage areas, materials lay-down areas, stockpile area, and workers rest areas must be clearly demarcated or fenced off before construction commences. • All construction activities must be limited to the demarcated areas. • Access to these demarcated areas must be strictly controlled. • Entry points and access routes to the sites must be clearly marked and traffic limited to those areas as far as possible. • Suitable warning and information signage must be erected before construction commences.

Runaway Bush Fires	<ul style="list-style-type: none"> • At the site, exotic tree and shrub species must be eradicated and all litter removed. • No open fires should be allowed on the site, except in a designated controlled area. • Suitable firefighting equipment should be available on site.
Waste	
Generation of Waste and Rubble	<ul style="list-style-type: none"> • Excavated soils should be stockpiled on site for as short a period as possible. • All waste may be temporarily sorted at site before being suitably disposed of at an appropriately licensed and registered waste disposal facility. • Collection of waste to be contracted to an approved contractor and disposed of at an appropriately licenced site. Safe disposal certificate to be obtained and kept as a record. • No construction phase waste to be stockpiled on site. • Litter bins must be provided at the construction footprint for waste generated by construction personnel. • Litter bins must be emptied on a weekly basis at a minimum and waste disposed of at an appropriately licensed waste disposal facility • Appropriate ablutions facilities to be provided on site. If portable toilets are utilised these must be emptied timeously. • Hazardous waste generated at the site should be disposed of at a suitably licensed hazardous waste disposal facility.
Generation of Limited Hazardous Waste	<ul style="list-style-type: none"> • Hazardous waste from construction activities to be separated and stored in acceptable receptacles and disposed to appropriately licenced site. • Hazardous waste to be classified, Safety Data Sheets to be compiled and waste manifest to record the generation, transporting and disposal of the waste. • Initial waste classification to be performed on all hazardous waste generated. • Environmental Officer to perform frequent audits in the waste storage area. • Monthly waste disposal record must be kept of all waste disposed. • Spill response plans and equipment should be available to deal with emergency situations that can arise during the management of waste. • All staff should be trained in the correct handling, storage and disposal of hazardous wastes.
Archaeology	
The Exposure of Significant Archaeological Heritage Remains	<ul style="list-style-type: none"> • Sites and material may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, (during any phase of construction work), it must be reported to the archaeologist at the Albany Museum (Tel. 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel. 043 6422811) immediately. (Possible archaeological sites that maybe found in the area is appended to this EMP Report as Appendix One). • The developer must finance the costs should additional studies be required as outlined above. The onus is also on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act No. 25 of 1999.

Palaeontology	
The Exposure of Significant New Fossils	<ul style="list-style-type: none"> • The ECO responsible for these developments should be alerted to the possibility of important fossil remains being found either on the surface or exposed by fresh excavations during construction. • Should any substantial fossil remains (e.g. vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, these should be safeguarded (preferably <i>in situ</i>) and the ECO should alert the Eastern Cape Provincial Heritage Resources Authority (ECPHRA. Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; Email: smokhanya@ecphra.org.zaso) so that appropriate mitigation (e.g. recording, sampling or collection) can be taken by a professional palaeontologist. • A Chance Fossil Finds Protocol to be appended to the Construction EMPr and implemented should any substantial fossil remains be uncovered.
Traffic	
Additional Traffic Volumes	<ul style="list-style-type: none"> • The road must be maintained during the construction phase to mitigate the impact of the additional heavy vehicle traffic. • Stockpiling construction material and maintain a construction plant on-site.
Traffic Safety Impact due to Slow Moving Traffic	<ul style="list-style-type: none"> • Erect additional warning signage, • Ensure compliance with Health and Safety requirements.

A.2 ROLES AND RESPONSIBILITIES

The ultimate responsibility for the effective implementation of the EMPr lies with the proponent (holder of Environmental Authorisation (EA)), in this case Die Boeram Venter Trust. Responsibility may be delegated to Project Managers, Construction Managers or Environmental Officers appointed by the proponent, during any stage of the development. The delegation of environmental responsibility will be determined by the institutional hierarchy of the organisation.

The proponent will appoint a Project Manager for the Construction Phase of the proposed development. The *Project Manager* will be responsible for the *implementation of the EMPr* during the *Construction Phase* of the development.

An independent *Environmental Control Officer (ECO)* should be appointed to oversee the *implementation of the EMPr* during the *Construction Phase* of the project. The ECO will be responsible for overseeing the implementation of, and monitoring compliance with, the conditions set out in the EA, as well as the Construction Environmental Management Programme (CEMPr). This monitoring role may be supplemented by an internal Site Environmental Officer (SEM) or Site Officer, that will remain on site during the Construction Phase.

Table 1. Hierarchy of responsibility in the implementation of the EMPr.

<p>Project manager</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Overall responsibility for management of the development. • Is familiar with the contents of the BAR, EMPr and the conditions of the EA. • Ensures that policy, legislative and relevant environmental documentation is available to the Construction Manager. • Liaises with Construction/ Site Manager on a regular basis to address any environmental issues (compliance, mitigation, disciplinary action) that may arise.
<p>Construction/ Site Manager</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Selects and appoints contractors. • Is familiar with the institutional environmental policies and Codes of Practice. • Is familiar with the BAR, EMPr, EA, and relevant legislation. • Ensures that the information in the BAR, EMPr, EA, and relevant legislation is communicated to contractors. • Ensures that contractors are familiar with institutional Codes of Conduct for contractors. • Ensure that environmental policies, legislation and guidelines are adhered to. • Monitor implementation of the EMPr by conducting regular site visits and meetings.
<p>Environmental Control Officer</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Responsible for <i>overseeing and monitoring</i> the <i>implementation of the EMPr</i> during the Construction Phase. • Is familiar with the BAR, EMPr, EA, and relevant legislation. • Monitors compliance with the EMPr during the operational phase through annual environmental audits. • Report non-compliance or appropriate remedial action.

<p>Site Manager /Site Environmental Officer</p> <p>Name:</p> <p>Contact number:</p>	<ul style="list-style-type: none"> • Is familiar with the BAR, EMPr, EA, and relevant legislative requirements. • Ensures compliance with the EMPr and EA conditions. • Is familiar with and ensure compliance with the relevant internal institutional policy, and procedural guidelines • Ensures compliance with the relevant institutional policy, and procedural guidelines • Ensures compliance with the legislative requirements. • Implements the EMPr during the operational phase of the development by employing prescribed mitigation and management measures. • Conducts environmental monitoring protocols at the facility. • Conducts regular inspections of the facility in order to monitor compliance with the EMPr. • Takes remedial or disciplinary action where required.
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Should ownership of the project change, any EA granted in respect of the development must be transferred to the new owner, upon notification of the Department (DEDEAT). The EMPr, EA and Conditions of Approval remain binding on the new owner/ operator of the development.

A.3 ENVIRONMENTAL PERFORMANCE MONITORING

Environmental Performance Monitoring has been defined as the activities implemented to measure environmental changes resulting from a particular development or activity (Davy & Paradine 1996). These include anticipated and unexpected changes in the environment. Any change from baseline conditions must initiate remedial action, or a change in mitigation or management approach. Performance monitoring could include both the collection of physical data, as well as input from potentially affected neighbours or Interested and Affected Parties (I&APs).

A.3.1 Baseline data

Environmental Performance Monitoring includes the gathering of baseline data with which the future environmental conditions can be compared. It should be noted that the development footprint falls within already modified (existing Lucerne fields) areas.

The following baseline information, where currently not available, must be obtained before vegetation clearing and site preparation commences:

- Extent and location of alien invasive plants on site.
- Extent and location of erosion features on site.

Collection of baseline information will ultimately be the responsibility of the proponent. However, these tasks can be delegated to the SEM or Site Officer.

A.3.2 Interested and affected parties

Neighbours and parties affected by the development must be afforded opportunity to comment on problems and impacts that they may experience as a result of the development, during the Construction Phase of the project. A complaints register must be kept which details such comments, as well as the intervention initiated to address the comment or complaint, where appropriate. These comments will be used to adapt and improve existing mitigation measures.

A.3.3 Monitoring

During the vegetation clearing and site preparation phase the following must be monitored:

- Monthly monitoring of the compliance with the conditions of approval as given in the EA, as well as the recommendations contained in the EMPr.
- Monthly monitoring of the extent and location of alien invasive plants on the site.
- Monthly monitoring of the extent and location of erosion around the development footprints.
- Monthly conducting of environmental awareness training sessions with the construction personnel.

Information gathered during monitoring exercises, as well as the action taken, or operational adjustments made; must be recorded and these reports made available at the request of the DEDEAT.

A.4 LEGAL ENFORCEABILITY

This EMPr is likely to be a condition of the EA, should authorisation for the activity be granted. As such it is a legally binding agreement between the proponent, as well as all his/ her sub-contractors, and the DEDEAT. The EMPr must be included in the contracts (tender documents or otherwise) entered into by the owner/ developer and any subcontractors. This will ensure that sub-contractors have a legal obligation to abide by the conditions set out in the EMPr. Should it be found that additional codes of conduct for contractors need to be included in this EMPr, this must be done at the first review opportunity.

A.5 IMPLEMENTATION SCHEDULE AND REPORTING

The management measures outlined for the Construction Phase of the development will take effect as soon as vegetation clearing and site preparation on the site is initiated, while the collection of baseline monitoring information must start prior to the commencement of construction activities.

Water quality monitoring, erosion monitoring, alien plant management and stakeholder input reports will be kept as outlined in Section A.3.3 above and be made available at the request of the DEDEAT.

Environmental audit reports, as well as reviewed amended EMPr reports will be kept up to date so that they can be made available at the request of the DEDEAT.

A.6 AUDIT PROCEDURE AND EMPR REVIEW SCHEDULE

The environmental audit is systematic, objective investigation of the environmental information of a development to determine to what extent they conform to the environmental standards set out in the EMPr and EA.

During the Construction Phase, the audit reports, as produced by the ECO after periodic (monthly) site visits, will serve as the auditing mechanism. A schedule for site audits in the Construction Phase must be agreed upon during the appointment of the ECO. The ECO must comment on environmental impacts that are not adequately mitigated, as well as mitigation measures that are not effective, and suggest appropriate further management actions. These comments must be included in an amended CEMPr (Construction Phase EMPr) that must be made available to the DEDEAT on request.

A.7 ENVIRONMENTAL EDUCATION

Environmental education must be provided as part of the environmental induction process for the labourers that will be employed on site, prior to the commencement of the vegetation clearing and site preparation processes at the site. The key requirements of the BAR, EMPr and EA will be included in the material which is presented to personnel during the formal environmental induction process.

- Environmental induction will be facilitated by the SEM, or Site Manager/ Farm Manager if no SEM is appointed for the site.
- No personnel will be allowed to work at the site without having passed through the environmental induction process.
- Labourers will be updated continually on pertinent environmental and safety issues during weekly Toolbox Talks by the SEM or Site Manager/ Farm Manager.
- Appropriate signage will be used to inform personnel of environmental conduct in specific areas.

Environmental induction training must include at a minimum:

- Designation of workers rest areas and sanitation facilities.
- Clarification of the meanings of warning signage used at the site.
- Appropriate sanitation and waste disposal practices.
- Procedures to be followed if heritage artefacts are discovered.

A.8 REFERENCES

DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A. Davy & Paradine, P. 1996. Environmental Performance Monitoring and Supervision. Environmental Assessment Source Book – Update. World Bank Environment Department. Pp. 8.

**PART B: OPERATION PHASE ENVIRONMENTAL
MANAGEMENT PROGRAMME (OEMPR)**

**Proposed Construction and Operation of the Middledrift
Poultry Breeder Facility and Associated Dam Expansion and
Demolition on Portion 6, 10 and 40 of Farm T'Zoetgeneugd 192,
Sundays River Valley Municipality**

June 2019



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Part B OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME (OEMPr)

During its Operational Phase, the Breeder Facility will operate on a 66-week cycle. Initially, each of the six (6) breeder houses will be stocked with day old chicks. In addition to providing feed and water to the birds, egg collection will take place four (4) times a day. At the end of the 60-week cycle, the birds are sold to registered cull buyers. Thereafter, a 6-week period is required for the removal, cleanout and maintenance of the breeder houses. It will further entail the replacement of existing Lucerne fields with citrus orchards.

Potential negative impacts associated with the Operational Phase are limited mainly to impacts on the local resources and infrastructure associated therewith, as well as the natural resources (vegetation, soil and the Sundays River).

Environmental impacts associated with the Operational Phase of the development, as well as the appropriate mitigation actions, have been identified using specialist input for the various components of the affected environment provided in the Basic Assessment Report (BAR).

B.1 MANAGEMENT ACTIONS

The management actions outlined below, indicate the actions to be taken to minimise the potential negative impacts that the operation of the development may have on the environment, as well as measures to enhance the potential benefits.

Impact	Mitigation
Ecology	
Loss of Pastures	<ul style="list-style-type: none"> • None proposed.
Aquatic	
Increase in Size of Dam Walls (Inundated Habitat) and Water Surface Area at Expanded Dam	<ul style="list-style-type: none"> • Habitat will return over a period and no intervention is required. • Removal of alien invasive species on and around the dam should be conducted annually.
Erosion of Dam Wall	<ul style="list-style-type: none"> • The wall must be inspected on a regular basis (quarterly or after heavy rainfall events) and any erosion must be rectified immediately through fill and compaction of disturbed areas. • The wall should also be vegetated using local grass species to assist with erosion protection during the construction phase.
Changes to the Local Hydrological Regime, with Possible Increases in Surface Flows	<ul style="list-style-type: none"> • No run-off from storm water (rain fall) should be allowed to leave the site directly. The areas should be contained using small berms or swales. These areas will then attenuate the flows, while reducing any surface water flows into the natural aquatic waterbodies downstream (Sundays River). • Construction of a stormwater detention pond with the capacity to store the stormwater that would be generated during a high -rainfall event. • The minimum amount of water should be used for irrigation to prevent any increase surface flows, especially if citrus is planted in the future.
Changes to the Local Water Quality due to Potential Contamination from the Breeder Facility should any Waste Enter the Stormwater Management System	<ul style="list-style-type: none"> • No run-off from storm water, treated effluent, holding ponds or irrigated areas should be allowed to leave the site directly. • The minimum amount of chemicals should be applied so that an excess amount does not leave the site within any planted areas. • All hazardous chemicals must be stored within bermed/ bunded or secured areas, together with the applicable spill contingency mechanisms in place.
Socio-Economic	
A Number of Permanent Employment Opportunities will be Created during the Operational Phase of the Facility	<ul style="list-style-type: none"> • As far as possible preference should be given to local labour for the facility.
The Additional Employment and Income Generation will Stimulate the Local Economy	<ul style="list-style-type: none"> • Employ local labour as far as possible.
Improved Supply of Locally Produced Poultry Meat and Eggs, thus Contributing to Local Food Security	<ul style="list-style-type: none"> • None proposed.
Waste	
Increased Stormwater Runoff from the Site due to Impermeable Surfaces and Structures on Site	<ul style="list-style-type: none"> • The recommendations of the Engineer with regards to Stormwater management must be adhered to. These include the following: • <i>“Subject to the detailed design of earthworks, roads and stormwater system, the upgraded internal roads to the site will be designed to not act as shallow stormwater channels but will accommodate the natural flow of stormwater, as far as practically possible.</i>

	<ul style="list-style-type: none"> • <i>The operational access ways on the site will also not act as shallow stormwater channels. The access ways will be designed to accommodate the distributed overland sheet flow, which will be intercepted by the open channel stormwater system.</i> • <i>The overland run-off will be intercepted adjacent to the up-stream side of each breeder house, to prevent flooding of the building and will be channeled down-stream to the stormwater detention pond.</i> • <i>The intercepted stormwater will mainly be conveyed via pipes near or under the proposed internal roads. In accordance with our design calculations, the pipe diameters will vary from 300mm up to 600mm, and the total length of the piped stormwater system will exceed 1000m.</i> • <i>The stormwater detention pond shall be designed to intercept the overland run-off as well as piped stormwater from the breeder house development to retain post-development major design storm inflows up to 1 in 100-year recurrence interval and shall release a design outflow associated with a pre-development 1 in 5-year rain storm.</i> • <i>In accordance with our preliminary calculations, the stormwater detention pond will have an effective storage capacity of 6 360m³ and a footprint of 3 112m².</i> • <i>The stormwater detention pond will be designed to function as a “dry” detention pond after the release of the intercepted stormwater.</i> • <i>The intercepted stormwater from the stormwater detention pond will be released to the existing stormwater run-off route via 2 x 450mm diameter piped outlets, with adequate erosion protection.</i> • <i>The disturbed area of the stormwater detention pond will be vegetated with an indigenous drought-resistant ground cover to limit possible erosion, as specified by a specialist. As confirmed with Nico Venter on 6 February 2019, the natural watercourse directly north of the stormwater pond outlets will be vegetated with kikuyu to also serve as pastures for livestock.</i> • <i>The gradient of constructed embankments to the main internal stormwater system and stormwater detention pond will as far as practically possible, not be steeper than 1 in 3, to accommodate the establishment of vegetation and soil stability under wet conditions.</i> • <i>The inlet and outlets to the piped portions of the stormwater system on the site will be done with non-rigid geotextile lined gabion structures, complete with Reno mattress erosion protection.</i> • <i>It is further recommended to establish indigenous drought-resistant ground cover to the stormwater outlet areas, the disturbed cut and fill areas and the verges of the constructed road areas to limit the transport of sediment in these affected areas by water or wind.”</i>
<p>Potential Impacts Associated with General Waste Generation and Storage on Site</p>	<ul style="list-style-type: none"> • Waste must be separated according to type and stored temporarily in appropriate storage containers prior to removal from site and disposal. • It is recommended that the solid waste generated by the development be collected and stored in containers in a communal refuse area before collection by the Sundays River Valley Municipality or a private licensed Contractor with a safe disposal certificate, as dictated by the Municipality. • It is recommended that the solid waste be collected on a regular basis from the communal refuse area and be disposed of at a permitted land fill site e.g. Koedoeskloof, unless otherwise dictated by the Sundays River Valley Municipality Waste Management Division.
<p>Potential Generation of Nuisance Odours</p>	<ul style="list-style-type: none"> • No stockpiling of poultry litter on site. • Prompt removal of litter at the end of the cycle under controlled conditions, and transportation in covered vehicles to a registered manure composting facility and fertiliser processing plant,

	<ul style="list-style-type: none"> • Keep litter at the optimum moisture content by managing ventilation rates. • Use of an odour masking agent in the event of a breakdown in the litter management system. • Prompt carcass removal and management as per Sovereign Foods standard operating procedures.
Potential Emissions of Ammonia, Dust and Pathogens	<ul style="list-style-type: none"> • All Sovereign Foods contract facilities are required to manage their facilities according to certain standard operating procedures that ensure the minimisation of poultry mortalities, reduction of disease risk, and prevention of elevated ammonia emissions. The operating procedures serve to optimise the rearing conditions for poultry and maximise productivity. These operating practices must be employed at the proposed facility. • All mortalities are to be removed from the facility two to three times a week and temporarily stored in an enclosed freezer room until final disposal once a week. • No stockpiling of poultry litter is to be allowed on the site.
Traffic	
Traffic Safety Impact due to Additional Traffic	<ul style="list-style-type: none"> • Additional appropriate warning traffic signs (in accordance with the South African Road Traffic Signs Manual) should be erected on the approaches to the proposed access point to warn road users.
Road and Intersection Capacity (Additional Traffic Loading)	<ul style="list-style-type: none"> • None proposed.
Deterioration of Public Road Network	<ul style="list-style-type: none"> • Conduct regular road maintenance.
Generation of Dust by Trucks	<ul style="list-style-type: none"> • Dust generation can be negated should the road be regularly maintained or surfaced.
Visual	
The Breeder Houses will have a Visual Impact on the Landscape	<ul style="list-style-type: none"> • Plant fast growing indigenous trees on the boundary of the site, to act as a screening mechanism. • Avoid lights high up against the building – security lights should not need to be higher up than 5 m. • Lighting of the facility should not exceed, in number of lights and brightness, the minimum required for safety and security. • Uplighting and glare (bright light) should be minimised using appropriate light screening features on all external lights. • Light fixtures should not spill light beyond the project boundary (light trespass). • Timer switches or motion detectors should be used to control lighting in areas that are not occupied continuously.

B.2 ROLES AND RESPONSIBILITIES

The ultimate responsibility for the effective implementation of the EMPr lies with the proponent (owner/ developer) of the property at the time of the initiation of development, who, in this case would be Die Boeram Venter Trust. Responsibility may be delegated to Environmental Officers, or Farm/ Project Managers, representing contractors or the proponent on the site during any stage of the development. The delegation of environmental responsibility will be determined by the institutional hierarchy of the organisation.

During the Operational Phase of the development the implementation of the Operational Phase Environmental Management Programme (OEMPr) and the conditions of the EA, as well as environmental compliance monitoring, will be the responsibility of an internal Environmental Officer or a Site/ Farm Manager appointed by the proponent.

Should ownership of the project change, any EA granted in respect of the development must be transferred to the new owner, upon notification of the Department (DEDEAT). The EMPr, EA and Conditions of Approval remain binding on the new owner/ operator of the development.

B.3 ENVIRONMENTAL PERFORMANCE MONITORING

Environmental Performance Monitoring has been defined as, the activities implemented to measure environmental changes resulting from a particular development or activity (Davy & Paradine 1996). These include anticipated and unexpected changes in the environment. Any change from baseline conditions must initiate remedial action, or a change in mitigation or management approach. Performance monitoring could include both the collection of physical data, as well as input from potentially affected neighbours or affected parties.

B.3.1 Baseline data

Environmental Performance Monitoring includes the gathering of baseline data with which the future environmental conditions can be compared.

Baseline data gathered prior to commencement of the Construction Phase, will be used to compare environmental conditions on the site during the Operational Phase of the development, to past (predevelopment) conditions. It should be noted that the development footprint falls within already modified (existing pastures) areas.

B.3.2 Interested and Affected parties

Neighbours and parties affected by the development must be afforded opportunity to comment on problems and impacts that they may experience as a result of the development, during the Operational Phase of the project. A complaints register must be kept which details such comments, as well as the intervention initiated to address the comment or complaint, where appropriate. These comments will be used to adapt and improve existing mitigation measures.

B.3.3 Monitoring

Once the facility becomes operational the following must be monitored:

- Due to the fact that the six (6) breeder houses will be fully roofed and enclosed to floor level, with a concrete floor and a 600mm high concrete stub wall (except for the door openings at the gable ends), the chances are virtually nil that the litter of the breeder houses could end up in an uncontrolled manner in the stormwater system during or after rain storms. However, monitoring

of the stormwater system during or after rain storm events is encouraged. Annual monitoring of the extent and location of alien invasive plants.

- Quarterly monitoring of the extent and location of erosion features on site (or after heavy rainfall events).

Information gathered during monitoring exercises, as well as the action taken, or operational adjustments made; must be recorded and these reports made available at the request of the DEDEAT.

It is anticipated that the person responsible for the implementation of the OEMP_r will also be responsible for environmental monitoring and record keeping for the duration of the project lifetime.

B.4 LEGAL ENFORCEABILITY

This EMP_r is likely to be a condition of the EA, should authorisation for the activity be granted. As such it is a legally binding agreement between the proponent, as well as all his/ her sub-contractors, and the DEDEAT. The EMP_r must be included in the contracts (tender documents or otherwise) entered into by the owner/ developer and any subcontractors. This will ensure that sub-contractors have a legal obligation to abide by the conditions set out in the EMP_r. Should it be found that additional codes of conduct for contractors need to be included in this EMP_r, this must be done at the first review opportunity.

B.5 IMPLEMENTATION SCHEDULE AND REPORTING

The management measures outlined for the Operational Phase of the development will take effect as soon as the facility becomes operational (i.e. once the establishment of the Breeder Facility, as well as associated infrastructure has been completed).

Water quality monitoring, erosion monitoring, alien plant management and stakeholder input reports will be kept as outlined in Section B.3.3 above and be made available at the request of the DEDEAT.

Environmental audit reports, as well as reviewed amended EMP_r reports will be kept up to date so that they can be made available at the request of the DEDEAT.

B.6 AUDIT PROCEDURE AND EMP_r REVIEW SCHEDULE

Once the Breeder Facility is operational, the landowner must comply with all statutory legislation, as well as all of the recommendations as set out in the Basic Assessment Report (BAR). An annual audit must be conducted by a suitably qualified independent ECO, appointed by the landowner during the Operational Phase. These audits must assess the effectiveness of existing management and mitigation measures, and compliance with the OEMP_r and conditions of the EA. The findings of the audit reports must feed into the EMP_r ensuring that management and mitigation measures are adjusted and updated to ensure that impacts are managed effectively and efficiently. Audit reports must be made available to DEDEAT, at their request.

B.7 ENVIRONMENTAL EDUCATION

Environmental education must be provided as part of the environmental induction process for the labourers that will be employed on site during the Operational Phase of the development.

- Environmental induction will be facilitated by the SEM or Site Manager if no SEM is appointed for the site.

- No personnel will be allowed to work at the site without having passed through the environmental induction process.
- Labourers will be updated continually on pertinent Environmental and Safety issues during weekly Toolbox Talks by the SEM or Site Manager/ Farm Manager.
- Appropriate signage will be used to inform personnel of environmental conduct in specific areas.

Environmental induction training must include the relevant requirements of the BAR, EMPr and EA, and must include at a minimum:

- Explanation of workers rest areas and sanitation facilities.
- Clarification of the meanings of warning signage used at the site.
- Appropriate sanitation and waste disposal practices.

Weekly toolbox talks must comment on environmental issues on which non-compliance has been noted during periodic audits.

B.8 REFERENCES

DEAT (2004) Environmental Management Plans, Integrated Environmental Management, Information Series 12, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

A. Davy & Paradine, P. 1996. Environmental Performance Monitoring and Supervision. Environmental Assessment Source Book – Update. World Bank Environment Department. Pp. 8.

Appendix One – Identification of Archaeological Features and Material from Inland Areas: Guidelines and Procedures for Developers

Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general human remains are buried in a flexed position on their side, but are also found buried in a sitting position with a flat stone capping. Developers are requested to be on alert for the possibility of uncovering such remains.

Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m² in extent, should be reported to an archaeologist.

Large stone cairns

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

Stone artefacts

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified.

Fossil bone

Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

Historical artefacts or features

These are easy to identify and include foundations of buildings or other construction features and items from domestic and military activities.

Appendix Two – Chance Fossil finds Procedure

CHANCE FOSSIL FINDS PROCEDURE: Proposed expansion of the Ponders End Packhouse, Portion 316 of the Farm Commando Kraal No. 113 near Addo	
Province & region:	EASTERN CAPE, Sundays River Valley Municipality
Responsible Heritage Resources Authority	ECPHRA (Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; Email: smokhanya@ecphra.org.za)
Rock unit(s)	Late Caenozoic alluvium including sands and gravels
Potential fossils	Vertebrate bones, teeth and horn cores, mollusc and crustacean remains or plant material such as petrified wood
ECO protocol	1. Once alerted to fossil occurrence(s): alert site foreman, stop work in area immediately (<i>N.B.</i> safety first!), safeguard site with security tape / fence / sand bags if necessary.
	2. Record key data while fossil remains are still <i>in situ</i> : <ul style="list-style-type: none"> • Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo • Context – describe position of fossils within stratigraphy (rock layering), depth below surface • Photograph fossil(s) <i>in situ</i> with scale, from different angles, including images showing context (e.g. rock layering)
	3. If feasible to leave fossils <i>in situ</i> : <ul style="list-style-type: none"> • Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation • Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Authority for work to resume
	3. If <i>not</i> feasible to leave fossils <i>in situ</i> (emergency procedure only): <ul style="list-style-type: none"> • Carefully remove fossils, as far as possible still enclosed within the original sedimentary matrix (e.g. entire block of fossiliferous rock) • Photograph fossils against a plain, level background, with scale • Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags • Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist • Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation
	4. If required by Heritage Resources Authority, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.
	5. Implement any further mitigation measures proposed by the palaeontologist and Heritage Resources Authority
Specialist palaeontologist	Record, describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy). Ensure that fossils are curated in an approved repository (e.g. museum / university / Council for Geoscience collection) together with full collection data. Submit Palaeontological Mitigation report to Heritage Resources Authority. Adhere to best international practice for palaeontological fieldwork and Heritage Resources Authority minimum standards.