

## APPENDIX K: Need and desirability

The following is aligned with the questions regarding need and desirability as contained in the DEA's Integrated Environmental Management Guideline on Need and Desirability.

The need and desirability of the proposed development has been explained above in the introduction and background section. In summary the development is needed for the following reasons:

- The Lactalis SA Bonnievale facility historically generated between 1 200m<sup>3</sup> to 1 300m<sup>3</sup> effluent / day (prior to 2017). In 2017, a decision was taken to relocate the "Simonsberg" plant in Stellenbosch to Bonnievale and a smaller part to Ladismith. The feta production plant, white mould production plant and processed cheese production plant was moved to Bonnievale. This has resulted in more processing equipment in Bonnievale and subsequently more cleaning activities and a considerable increase in effluent wastewater generated;
- To improve on the water quality of the wastewater currently being irrigated on the remainder of Portion 12 of the Farm no. 175, Rietfontein (existing 45ha irrigation area);
- To improve on the water quality of the wastewater currently being stored in an effluent detention dam located on the Remainder of Portion 12 of the Farm no. 175, Rietfontein;
- Lactalis 's production capacity has increased considerably over the past few years. The amount of wastewater produced has therefore also increased. The size of the existing effluent storage dam and irrigation area is insufficient to contain the wastewater. It is therefore needed to discharge wastewater into the Breede River. This can only be undertaken if the wastewater is treated to General Limit Values and this is why the WWTW is required to be installed.
- Bekker (2019) explains that wastewater volume monitoring indicated that the factory started producing a higher than 1 500 m<sup>3</sup> average volume of wastewater per day since the first months of 2018. The increase in average wastewater production started in the middle of 2017. This led to higher than expected effluent levels in the retention dam. At the time of report writing, rainy winter months are here, leaving Lactalis with a problem as the dam is expected to reach its maximum level very soon. The rainy season means that the current, already saturated irrigation area will be further waterlogged, and no more effluent can therefore be irrigated to relieve the pressure on the retention dam. Should the dam overflow, or should untreated effluent be discharged into the river, it will have serious detrimental impacts on the downstream aquatic habitat.
- The WWTW is needed and desired at this location because the property is opposite the factory and it is owned by Lactalis. Therefore, costs will be lower to build the pipeline infrastructure from the factory and the applicant will not need to purchase a new site. In addition, the Option 2 location proposed is a sufficient distance from residents (approximately 300m from Uitsig community) and would not result in an unacceptable visual impact as it's in the "trough" / "valley" between two adjacent hills. The site location is in an area that used to be an effluent dam site historically and has been mostly disturbed / transformed already.

The WWTW is needed and desired at this location because it will have a low impact to aquatic and terrestrial biodiversity, low visual impact, low nuisance impact (odours) and overall low environmental impact given the proposed location and buffer area from sensitive receptors.

This land / site could practically be better suited for agriculture or to remain undeveloped but it is not an unpractical option for the site to build a small scale WWTW as it does not preclude farming activities on the remainder of the property. The preferred site alternative is also not expected to have unacceptable impacts on aquatic and terrestrial biodiversity resources of significance. There is no unacceptable opportunity costs with the development proposal.

The proposal is deemed to be the best practicable environmental option as it would serve to reduce impacts compared to the current effluent management situation, and is proposed on a site that is already disturbed and is an appropriate distance to prevent significant impact on sensitive receptors.

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| 1.   | How will this development (and its separate elements/aspects) impact on the ecological integrity of the area? |
| The WWTW will not impact on the ecological integrity of the area. The road and service trench will require removal of an endangered vegetation type, however the botanist determined that this is insignificant (very low negative impact) and will not compromise the integrity of this ecosystem. The proposed ongoing irrigation with treated wastewater will present an improvement to the current situation where poor-quality effluent is irrigated, however, it still constitutes impacts on aquatic biodiversity as it remains disposal of wastewater (albeit treated) into the environment. The freshwater ecologist rated these impacts and proposed mitigation to ensure the ecological integrity of the freshwater systems are maintained. |   |

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| 1.1.  | How were the following ecological integrity considerations taken into account?:  |
| 1.1.1.  | Threatened Ecosystems  |
| A botanist was appointed to determine the impact of the proposal on the Endangered Breede Shale Renosterveld. The resultant report indicated that the majority of the structures and infrastructure will not impact on this ecosystem, but that a small portion of the road and service trench will result in removal of heavily degraded representation of this vegetation type. This was however deemed acceptable to the botanist provided that the service trench be  |  |
| 1.1.2   | Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure  |
| No shores, or estuaries relevant. The aquatic specialists determined that impact on aquatic features of importance (rivers, streams and wetlands) can be limited to acceptable levels, provided that the mitigation measures and buffer areas are maintained as proposed. These were all included in the BAR and EMPr.  |  |
| 1.1.3.  | Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs")   |
| The terrestrial and aquatic specialists considered the mapped presence of these important areas and confirmed / refuted their respective roles based on the ground-truthing of botanical and freshwater sensitivities on the site. Where the presence was refuted, no further action was required according to the specialists, and where resources that warrants such CBA / ESA designations did occur, mitigation and buffers were proposed to limit impacts. These were incorporated into the BAR and EMPr.  |  |
| 1.1.4.  | Conservation targets   |
| The proposal will have a negligible effect on the conservation targets for the Endangered Breede Shale Renosterveld. This is predominantly due to the small size of the affected portion of the vegetation type and the fact that it is so degraded that it bears little resemblance to this ecosystem. The fallow lands that also intersects with the development footprint has over the many years shown no evidence of re-establishment of the original vegetation type, and hence, won't rehabilitate to contribute to conservation targets.  |  |
| 1.1.5.  | Ecological drivers of the ecosystem  |
| The proposal will not compromise the ability of ecological drivers from continuing (e.g. fire, pollinators etc.).   |  |
| 1.1.6.  | Environmental Management Framework   |
| The EAP is not aware of a municipal EMF.  |  |
| 1.1.7.  | Spatial Development Framework  |
| The Lactalis factory site as well as the 'Uitsig' area is included as 'Existing Development' in the 2015 SDF for the Langeberg Municipality (see Figure 5 of the BAR). <u>The WWTW however lies outside the urban edge. The local municipality indicated that most WWTW in the area lies outside the urban edge. The proposal is therefore not incongruent with the spatial objectives of the municipality.</u>   |  |
| 1.1.8.  | Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.)  |
| The only international responsibility relating to the proposed development would be that of climate change considerations. Climate change is likely to result in more erratic weather conditions (more intensive storm events, prolonged periods of no / lower rainfall), which will affect stream flow in the Breede River and its tributaries that can be affected by the proposed discharge and irrigation of treated wastewater. The Water Use Licence stipulates that discharge to the Breede River may only take place in winter months and times when there is high flow in the river. This would need to be carefully managed given the potential for more infrequent and potentially shorter high flow events. |  |
| 1.2.  | How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts? 17 |
| While the development will result in the loss of a portion of highly degraded remnant Breede Shale Renosterveld, this will not impact on the diversity of this vegetation type in this remnant patch. The cultivation footprint was placed such that it avoids areas of higher botanical diversity in species composition.  |  |
| The proposed buffers around the affected wetland will prevent further degradation and improve the water quality of these ecosystems. Continuance of the no-go (irrigation with poorly treated effluent) could have led to their ultimate demise of these resources.   |  |

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| 1.3.   | How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?  |
| The proposal to treat the effluent generated at the Lactalis factory is effectively a means to limit the impacts of the current effluent management and disposal practices. There is no option to eliminate / prevent the impacts altogether and hence, reduction is appropriate.  |   |
| Due to space constraints at the factory site, the WWTW cannot be accommodate at the facility. In terms of the alternative locations, the mitigation hierarchy was applied to avoid the option associated with higher impact on botanical and freshwater resources.   |   |
| 1.4.   | What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?   |
| Solid waste will be limited to sludge from the effluent treatment process and office / kitchen waste for 1 staff member and visitors to the facility.<br>In lieu of disposal of the sludge waste to landfill, the sludge will be taken to a licenced composting facility for beneficiation. Recyclable wastes will be separated to avoid disposal to landfill.   |   |
| 1.5.   | How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?   |
| The development is not likely to impact on heritage, archaeological or palaeontological resources. This was confirmed by HWC. A Palaeontological Chance Finds procedure was included in the EMPr.  |   |
| 1.6.   | How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?   |
| The facility will use power, and in this regard, the following will be implemented:<br>The following energy efficient designs will be incorporated: <ul style="list-style-type: none"> <li>• Maximum use of gravity to let effluent flow naturally from high too low to the various treatment sections.</li> <li>• Maximum use of VSD ( "variable speed drives" ) to reduce energy usage.</li> <li>• LED lighting.</li> <li>• Sufficient piping systems to reduce friction losses.</li> </ul> Furthermore, the facility will use water, however this will be limited to the office and latrine usage by 1 staff member and visitors to the facility. |   |
| 1.7.   | How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts? |
| Implications for vegetation and aquatic systems have been extensively discussed above. No further impact on renewable natural resources.   |   |
| 1.7.1.   | Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)   |
| The only material resource use that will be increased compared to the current situation is electricity. However, this is unavoidable in light of the urgent need for the effluent from the dairy factory to be treated. Provided that above-mentioned energy efficiency measures are implemented, the EAP is satisfied that the resource use is justified.   |   |

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| 1.7.2.  | Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?)   |
| See 1.7.1 above.  |   |
| 1.7.3.  | Do the proposed location, type and scale of development promote a reduced dependency on resources?  |
| See 1.7.1 above.  |   |
| 1.8.  | How were a risk-averse and cautious approach applied in terms of ecological impacts?  |
| Specialists were involved to determine the most appropriate location of the WWTW and route of the service trench and road. The option that presented the lowest ecological risk, weighed up against related impacts on the social environment (visual / noise etc.), were chosen (Option 2, preferred site location).<br>Furthermore, all the mitigation proposed by the specialists will be implemented.   |   |
| 1.8.1.  | What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?  |
| There are no apparent gaps in knowledge at this time, noting that public participation (and information that will be gathered from I&APs) for this application is yet to be undertaken.<br><br>Assumptions and limitations by the specialists are detailed in the respective specialist reports and in the interest of brevity, is therefore not repeated here.<br><br>The following assumptions underpin the BAR:<br><ul style="list-style-type: none"> <li>• All information received from sources contributing to this project is accurate and unbiased;</li> <li>• That all organs of state and I&amp;APs with the intent to comment on the documentation will do so within the prescribed timeframes, or, failing this, that they do not have any comment; and</li> <li>• That the applicant will implement the recommendations resulting from this study.</li> <li>• The location of the proposed WWTW, emergency effluent detention dam and effluent discharge point / discharge structure and associated road and pipeline infrastructure is a conceptual design that has been based on geotechnical and civil engineering input. It is therefore assumed to be reasonably accurate despite the fact that the detailed civil engineering design phase has not yet been undertaken. The exact co-ordinates of the route of the pipeline and road is therefore uncertain but has at this stage been reasonably accurately estimated.</li> </ul> |   |
| 1.8.2.  | What is the level of risk associated with the limits of current knowledge?  |
| Very low. The EAP and specialists feel confident in their findings and conclusions. The Applicant acknowledged the need to conform to environmental specifications of the EMPr and conditions attached to an approval, if granted.  |   |
| 1.8.3   | Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?  |
| Specialists were involved to inform the assessment in respect of any environmental theme / aspect that could have relevance to the application. See 1.8 and 1.8.1 above.  |   |
| 1.9.  | How will the ecological impacts resulting from this development impact on people's environmental right in terms following:  |
| 1.9.1.  | Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? |
| Negative impacts on people will be limited to nuisance associated with dust and noise generation while site clearing and preparation is underway. In the operational phase, odour may occur (but is not likely) and noise / other impacts are expected to be negligible. The site location with the largest buffers to potential sensitive human receptors were chosen to prevent / limit such impacts. Therefore, it is not believed that the proposal will impact on any rights (healthy environment, resources or otherwise) of I&APs.   |   |
| 1.9.2.  | Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?  |
| While not a positive impact, it is worth noting that the treatment of effluent will present an improvement in the current effluent management practices of the facility, however this will still be associated with negative impacts.<br><br>The predominant positive impact will be relating to the investment and the impact on the economy in the construction and operational phases.   |   |

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| 1.10.  | Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?   |
| <p>The groundwater impact assessment determined that there are no groundwater users in the area that will be affected by any potential changes in groundwater quality and quantity. While unlikely, the proposal may result in odour and noise nuisances, however, this is unlikely to significantly impact on land users in the area more than just an annoyance. Furthermore, there are additional mitigation that can be applied, should this be deemed concerning due to complaints received.</p> <p>The improved quality of effluent to be irrigated, and proposed buffers will improve the ecosystem services offered by the wetlands in question. Furthermore, it will reduce the malodorous conditions currently experienced around these wetlands. This improvement will likely be experienced by surrounding landowners.</p> |   |
| 1.11.  | Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?   |
| <p>On balance, the negative ecological impacts can be limited to acceptable levels of significance (as determined by specialists, where warranted). Positive impacts on the economy will benefit society as a whole. Ecological integrity and objectives / targets will not be impacted in any significant way given the mitigation and buffers proposed by the specialists.</p>   |   |
| 1.12.  | Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations? |
| <p>Due to space constraints at the factory site, the WWTW cannot be accommodate at the facility. The 2019 application considered 3 site / location alternatives. The preferred (Option 2) site was deemed the best practicable environmental option as it resulted in fewer biophysical (botanical and freshwater) impacts compared to Option 1 and fewer social (visual, noise, odour) impacts compared to Option 3.</p> <p>The proposal is deemed to be the best practicable environmental option as it would serve to reduce impacts compared to the current effluent management situation, and is proposed on a site that is already disturbed and is an appropriate distance to prevent significant impact on sensitive receptors.</p>  |   |
| 1.13.  | Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?  |
| <p>The EAP is not aware of other planned development in the area. The botanical and freshwater specialists concluded that residual cumulative negative impacts on these biophysical aspects will be low or very low. No positive impacts on ecological / biophysical aspects.</p>  |   |
| 2.1.   | What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?:  |
| 2.1.1.   | The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area,  |
| <p>The Langeberg Draft IDP (2019-2020) states that the Langeberg Municipality intends to create an enabling environment for economic growth and decent employment (stated as part of Strategic Objective No 3 – Local Economic Development). Lactalis SA provides hundreds of jobs to the Bonnievale community. These jobs are directly dependant on the construction of the WWTW being approved. Further jobs will also be created during the construction and operation of the WWTW and associated infrastructure.</p> <p>The IDP further indicates that it plans to align National Objectives / Outcomes listed in the National Development Plan with Langeberg Municipality's Strategic Objectives. The following National Outcomes have been aligned with the Strategic Objectives of the Langeberg Municipality:</p>             |   |
| National Outcome (National Development Plan)   | Langeberg Strategic Objective   |
| Outcome 2: a long and health life for all South Africans   | SO4 an efficient, effective, responsive and accountable administration  |
| Outcome 4: decent employment through inclusive economic growth.  | so2 Local Economic Development: create an enabling environment for economic growth and decent employment  |
| Outcome 10: environmental assets and natural resources that is well protected and continually enhanced.  | SO3 Local Economic Development: create an enabling environment for economic growth and decent employment  |

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| Outcome 11: create a better South Africa and contribute to a better and safer Africa and world.  | SO4 An Efficient, effective, responsive and accountable administration  |
| <p>The IDP Vision for the Municipality is as follows: "To create a stable living environment and sustainable living conditions for all citizens". The development of the WWTW and associated infrastructure will greatly improve on the status quo with the aim of creating sustainable conditions for those surrounding businesses and residents.</p>   |   |
| <p>The proposed project is thus aligned with the strategic objectives and vision of the local IDP.</p>   |   |
| 2.1.2.   | Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),                                   |
| <p>This is irrelevant to the development proposal. In terms of the SDF The Lactalis factory site as well as the 'Uitsig' area where the WWTW and infrastructure is proposed is included as 'Existing Development' in the 2015 SDF for the Langeberg Municipality. The proposal is therefore congruent with the developed nature of the area as set out in the SDF, and will not compromise any of the spatial development goals or objectives of this municipal area.</p>  |   |
| 2.1.3.   | Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and  |
| <p>The area comprises of a mix of land uses. The industrial nature of the Lactalis factory and residential extension of Uitsig constitutes urban development which is nestled between the rural agricultural setting in the area. The WWTW will constitute a new structure in the landscape, however this is unlikely to change the character of the greater area to a significant extent.</p> <p>There are no cultural landscapes of significance that would be compromised.</p>  |   |
| 2.1.4.   | Municipal Economic Development Strategy ("LED Strategy").   |
| <p>Not specifically available, but the project is aligned with the MSDF, which would take account of the Municipal LED strategy. The development will not impinge on the ability of the municipality to implement this strategy, and in fact, it will support this through spending in the local economy, and other indirect impacts.</p>  |   |
| 2.2.   | Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area? |
| <p>The predominant socio-economic impacts in the implementation and operational phase would be the impact on the economy. This will be achieved through spending on goods and services required for the WWTW and related infrastructure. These impacts will be amplified through the multiplier effects created through increased production of goods, or increased business sales. Approximately 100 temporary employment opportunities will be provided during the construction phase at a value of approximately R10 million. The capital value of the project upon completion of construction is approximately R80 million rand. The development provides a benefit to the local community in terms of job provision.</p> <p>The Lactalis SA factory is major employer in this area with approximately 1 000 people directly and indirectly dependent on the business. The operation of the WWTP will allow the factory to continue business. The operational phase of the WWTW will result in 1 permanent additional employment opportunity in addition to the hundreds already provided by Lactalis.</p> <p>In addition, continued operation of the factory (at a profitable scale allowed for by the new WWTW) contributes to government revenue through the payment of companies' tax, VAT, personal income tax (by all those employed at the factory), as well as other locally applicable rates and taxes.</p> <p>Negative social impacts relate to the potential for odour and noise. This should however be limited to acceptable levels of change with the proposed management measures. The visual environment in the vicinity of the WWTW will also change. The preferred site presents the lowest impact in this regard, and is acceptable in the geographical and land use context of the area.</p> |   |
| 2.2.1  | Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?  |
| <p>To some extent. See 2.1.4 and 2.2 above.</p>  |   |
| 2.3.   | How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?   |
| <p>The development will serve to improve the quality of dairy effluent being released into the nearby environment. It will be an improvement on the status quo for land users in the area. Other than this, the development has little bearing on current needs in the area, except in so far as the preferred site location was chosen to prevent / limit social impacts.</p>   |   |

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| 2.4.   | Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?                      |
| This has little relevance to the development of a WWTW for the existing factory. There is nothing that will preclude the positive impact on the economy from being experience intra- and inter-generationally in the short and long-term.  |   |
| 2.5.   | In terms of location, describe how the placement of the proposed development will   |
| 2.5.1.   | result in the creation of residential and employment opportunities in close proximity to or integrated with each other,   |
| The temporary component of the construction labour force will come from the local area and skills permitting, the permanent job offered in the operational phase may also be filled from the local community.  |   |
| 2.5.2.   | reduce the need for transport of people and goods   |
| Not applicable to the proposal.  |   |
| 2.5.3.   | result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport),                                |
| Not applicable to the proposal.  |   |
| 2.5.4.   | compliment other uses in the area,  |
| The facility will provide critical support to the existing Lactalis dairy factory in the vicinity, and will improve the quality of wastewater released in the area, which would be more palatable for the residential and farming community in the vicinity.   |   |
| 2.5.5.   | be in line with the planning for the area,  |
| The proposal is fully aligned with the SDF – see details provide elsewhere in this document.   |   |
| 2.5.6.   | for urban related development, make use of underutilised land available with the urban edge,  |
| While it lies outside of the town of Bonnievale, the Uitsig and Lactalis ('Parmalat') areas are collectively included in the urban edge (see SDF). <a href="#">The WWTW however lies outside the urban edge. The local municipality indicated that most WWTWs in the area lie outside the urban edge. The proposal is therefore not incongruent with the spatial objectives of the municipality.</a> |   |
| 2.5.7.   | optimise the use of existing resources and infrastructure,  |
| The proposed WWTW and associated infrastructure will largely make use of existing disturbed land, thereby limiting the resource of greenfield land.  |   |
| 2.5.8.   | opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement), |
| Private infrastructure is proposed for the service trench, pipelines etc. The facility will tap into the municipal water mains for the limited potable water needs. Furthermore, it will also link to the existing municipal electricity point at the Lactalis factory.<br>There are no opportunity cost relating to bulk infrastructure expansions.   |   |
| 2.5.9.   | discourage "urban sprawl" and contribute to compaction/densification,   |
| While the WWTW is proposed in a peri-urban / peri-rural area, it <a href="#">lies outside the urban edge. The local municipality indicated that most WWTWs in the area is located outside the urban edge. The proposal is therefore not incongruent with the spatial objectives of the municipality and due to the nature of the facility, will not encourage urban sprawl.</a>                      |   |
| 2.5.10.  | contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,  |
| Not applicable to the proposal.  |   |
| 2.5.11.  | encourage environmentally sustainable land development practices and processes,   |
| The preferred alternative avoids areas of biophysical, heritage and cultural sensitivity while allowing for justified important infrastructure. This is fully aligned with sustainable land development practices and processes.   |   |
| 2.5.12.  | take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),   |
| The location is ideal as it is close to the Lactalis factory, the proposed discharge from the river and the existing irrigation area. Furthermore, the elevation of the facility will reduce the electricity required for pumping of treated effluent to the river discharge and existing irrigation dam.  |   |
| 2.5.13.  | the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential),  |
| The investment focus is to provide important infrastructure to the existing Lactalis dairy factory. It has little relevance to the socio-economic returns for the greater area.  |   |
| 2.5.14.  | impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and   |

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|         | None of significance, as determined by the specialists and confirmed by HWC.   |
| 2.5.15. | in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?   |
|         | Not applicable to the proposal as it is limited to important infrastructure for the existing Lactalis dairy factory.   |
| 2.6.    | How were a risk-averse and cautious approach applied in terms of socio-economic impacts?   |
|         | Positive impacts on the economic impacts required no risk management. In terms of social impacts, the preferred alternative 2 presented least impact (in terms of odour, noise, visual aspects) as it allows for maximum benefits to all potential sensitive receptors.  |
| 2.6.1.  | What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?   |
|         | Refer to the BAR where this is clearly indicated.  |
| 2.6.2.  | What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?  |
|         | Very low. The EAP and specialists feel confident in their findings and conclusions. The Applicant acknowledged the need to conform to environmental specifications and conditions attached to an approval, if granted.   |
| 2.6.3.  | Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?   |
|         | Specialists were involved to determine the most appropriate location of the WWTW and route of the service trench and road. The option that presented the lowest ecological risk, weighed up against related impacts on the social environment (visual / noise etc.), were chosen (Option 2, preferred site location).<br>Furthermore, all the mitigation proposed by the specialists will be implemented.  |
| 2.7.    | How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:   |
| 2.7.1.  | Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?  |
|         | The development is highly unlikely to impact on people's health, safety, social ills etc. Odour and noise impacts, if they occur, is unlikely to escalate to impact on human health, but the nuisance factor is acknowledged. The management measures proposed will however prevent / limit these to acceptable levels.  |
| 2.7.2.  | Positive impacts. What measures were taken to enhance positive impacts?  |
|         | See information in 2.6 above.  |
| 2.8.    | Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?  |
|         | The socio-economic returns (benefits) from the proposal will not result in unacceptable ecological impacts given that the mitigation and buffers proposed. The WWTW and associated infrastructure will not compromise any of the ecosystem services used by the surrounding land users. In fact, it will present an improvement in the quality of effluent released to the environment, an improvement for living conditions (in terms of odour) when compared to the current situation.   |
| 2.9.    | What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?   |
|         | Due to space constraints at the factory site, the WWTW cannot be accommodate at the facility. The 2019 application considered 3 site / location alternatives. The preferred (Option 2) site was deemed the best practicable environmental option as it resulted in fewer social (visual, noise, odour) impacts compared to Option 3.<br><br>The proposal is deemed to be the best practicable environmental option as it would serve to reduce impacts compared to the current effluent management situation and is proposed an appropriate distance to prevent significant impact on sensitive receptors. |
| 2.10.   | What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? <sup>34</sup><br>Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?  |

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| <p>The WWTW will ensure that treated effluent be released into the environment, which is an improvement compared to the current effluent management practices. Extensive investigation was also undertaken to ensure that discharge to the Breede River will not impact on downstream water users of all social standing. This will prevent eventual compromising of land users in the area through the ongoing degradation of the freshwater systems affected by irrigation. This presents environmental justice. No other reasonable or feasible alternatives were identified at this point in time, or was further investigation warranted given the significance of impacts.</p> |  |
| 2.11.  | <p>What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?</p>  |
| <p>The proposal has no bearing to equitable access to resources for others.</p>  |  |
| 2.12.  | <p>What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?</p>  |
| <p>All recommendations of the specialists and EAP (as captured in specialist reports and the BAR) was transferred to the pre-application, construction or operational phases of the EMPr. Implementation of this plan will be a legal obligation on the Applicant if approval is granted.</p>  |  |
| 2.13.  | <p>What measures were taken to:</p>  |
| 2.13.1.  | <p>ensure the participation of all interested and affected parties</p>   |
| <p>See public participation report contained in Appendix F of the BAR.</p>   |  |
| 2.13.2.  | <p>provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation</p>  |
| <p>See public participation report contained in Appendix F of the BAR.</p>   |  |
| 2.13.3.  | <p>ensure participation by vulnerable and disadvantaged persons</p>  |
| <p>No measures taken to date as none were required or identified as important to the application, however should vulnerable and disadvantaged persons show interest, their participation will be supported through whatever means necessary.</p>   |  |
| 2.13.4.  | <p>promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means</p>  |
| <p>Limited applicability to the proposal.</p>  |  |
| 2.13.5.  | <p>ensure openness and transparency, and access to information in terms of the process</p>   |
| <p>No parties are excluded from taking part. The BAR offers full disclosure of information available to the EAP and all effort was taken to provide information in a way that is easily understood. The documentation is available in hardcopy and electronic format.</p>  |  |
| 2.13.6.  | <p>ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge</p>  |
| <p>All efforts were taken to pre-identify and notify I&amp;APs of the process. The 2019 I&amp;AP database was used as a starting point, and updated with the kind assistance from the local municipality. Advertising will further provide an opportunity for a wider grouping to register and I&amp;APs. No other local / traditional / ordinary knowledge available to date.</p>   |  |
| 2.13.7.  | <p>ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were be promoted?</p>  |
| <p>Little relevance to the development and site context. No parties are however excluded from becoming involved.</p>   |  |
| 2.14.  | <p>Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g.. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?</p> |
| <p>The nature of the proposal is such that it will provide important infrastructure to the existing Lactalis dairy factory and has little relevance to the interests, needs and values of I&amp;APs, except as it relates to avoiding / minimising impacts on surrounding land users. This is discussed in detail in this report as it relates to odour, visual and noise nuisance impacts.</p>  |  |
| 2.15.  | <p>What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?</p>                                       |
| <p>The provisions of the Occupational Health and Safety Act will be followed and will provide the necessary protection to the staff.</p>   |  |
| 2.16.  | <p>Describe how the development will impact on job creation in terms of, amongst other aspects:</p>  |

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| 2.16.1.  | the number of temporary versus permanent jobs that will be created,  |
| It is anticipated that the proposal will generate ~100 temporary job opportunities in the construction phase, however, the WWTW itself will only require 1 permanent staff member in the operational phase. In absence of the WWTW, the 1000+ job opportunities offered by the Lactalis dairy factory may however be at risk as the current production may require reduction or even factory closure.  |  |
| 2.16.2.  | whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area),   |
| Yes it does. Skills development through on-the-job training will also take place.  |  |
| 2.16.3.  | the distance from where labourers will have to travel,   |
| Approximately 0.5 - 5 km from the area of Uitsig and/or Bonnievale town.   |  |
| 2.16.4.  | the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits), and   |
| Mostly equal for construction phase, however the operational phase presents few job opportunities, and hence, there is no relation to the job opportunities and related distribution of impacts. There will however be economic investment in the area, which will benefit the municipal area at large.  |  |
| 2.16.5.  | the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.).  |
| None for the proposal of the WWTW. The absence of the WWTW may compromise 1000+ jobs offered by the Lactalis factory, and is an opportunity cost associated with the no-go alternative.  |  |
| 2.17.  | What measures were taken to ensure:  |
| 2.17.1.  | that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and   |
| The BAR contains full details of the proposed land use and resource requirements so that this can be taken into account by other organs of state with jurisdiction in a certain aspect (e.g. water use / general authorisation, agricultural land use, heritage aspects etc.). The WUL has already been issued however, and HWC final comment on the development (as received in 2019) is unlikely to change. These commenting authorities (HWC, DWS and BGCMA) will however be offered the opportunity to provide comment on this application and related documentation. In terms of CARA, the Department of Agriculture will also be asked to provide comment (in addition to the comment received confirming that no agricultural impact assessment is required).<br>Importantly, the local municipality will also be asked to comment on the proposal in their area of jurisdiction. |  |
| 2.17.2.  | that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?   |
| No conflict of interest identified as yet.   |  |
| 2.18.  | What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?  |
| The mitigation proposed by specialists are included in the EMPr, which will be conditional on any approval issued in terms of NEMA. The Water Use Licence also contains specifications relating to protection of water resources. Lactalis SA will be obliged through legal provisions to implement these measures, which will serve to limit impacts on the environment, and therefore allow the environment to continue to serve public interest / common heritage.  |  |
| 2.19.  | Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?  |
| The EAP firmly believes that mitigation proposed is warranted, realistic and implementable with no unjustified long-term management burden.  |  |
| 2..20.   | What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?                                      |
| The EMPr will oblige the Applicant to take responsibility for harm to the environment as a result of the proposal, as well as continued practice of irrigation (albeit with better quality treated effluent).  |  |
| 2.21.  | Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations? |
| Due to space constraints at the factory site, the WWTW cannot be accommodate at the facility. The 2019 application considered 3 site / location alternatives. The preferred (Option 2) site was deemed the best practicable environmental option as it resulted in fewer biophysical (botanical and freshwater) impacts compared to Option 1 and fewer social (visual, noise, odour) impacts compared to Option 3.   |  |

The proposal is deemed to be the best practicable environmental option as it would serve to reduce impacts compared to the current effluent management situation, and is proposed on a site that is already disturbed and is an appropriate distance to prevent significant impact on sensitive receptors.

2.22. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?

See Section H of the BAR.