Draft Basic Assessment Report

for

CONSOLIDATED LIMEWORKS (PTY) LTD
REF: 16/3/3/6/7/1/F5/16/2262/24

Prepared by:

Bucandi Environmental Solutions

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November 2024

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Western Cape Government
Environmental Affairs and Development Planning

FORM NO. BAR10/2019

BASIC ASSESSMENT REPORT

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

NOVEMBER 2019

(For official use only)	
Pre-application Reference Number (if applicable):	
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

Malmesbury expansion of a granular fertilizer plant and addition of a liquid fertilizer plant with capacity for 490 m^3 of hazardous materials.

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.

2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 19998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.

4. All applicable sections of this BAR must be completed.

5. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.

6. This BAR is current as of **November 2019**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at http://www.westerncape.gov.za/eadp to check for the latest version of this BAR.

7. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.

8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.

9. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.

10. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.

11. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.

12. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.

13. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link

https://screening.environment.gov.za/screeningtool to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

14. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ('NEM:AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: REGION 1 and REGION 2 **(Region 1: City of Cape Town, West Coast District)** **(Region 2: Cape Winelands District & Overberg District)**	**GEORGE OFFICE: REGION 3** **(Central Karoo District & Garden Route District)**
BAR must be sent to the following details: Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1 or 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1 and 2) at: Tel: (021) 483-5829 Fax (021) 483-4372	BAR must be sent to the following details: Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 805 8650

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken. Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and

	Public Works) that will be affected by the proposed development must be included in the Report.
Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following: • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development **must** be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): o Watercourses / Rivers / Wetlands o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable); o Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): o Ridges; o Cultural and historical features/landscapes; o Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as **Appendix C**. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as **Appendix D**.
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as **Appendix A3**.

ACRONYMS

DAFF:	Department of Forestry and Fisheries
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape

NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ **(**tick) or a **x** (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

APPENDIX			**✓ (Tick) or x (cross)**
Appendix A:	**Maps**		
	Appendix A1:	**Locality Map**	√
	Appendix A2:	**Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning**	
	Appendix A3:	**Map with the GPS co-ordinates for linear activities**	
Appendix B:	**Appendix B1:**	**Site development plan(s)**	√
	Appendix B2	**A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;**	√
Appendix C:	**Photographs**		√
Appendix D:	**Biodiversity overlay map**		√
Appendix E:	**Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.**		
	Appendix E1:	**Final comment/ROD from HWC**	
	Appendix E2:	**Copy of comment from Cape Nature**	
	Appendix E3:	**Final Comment from the DWS**	
	Appendix E4:	**Comment from the DEA: Oceans and Coast**	
	Appendix E5:	**Comment from the DAFF**	
	Appendix E6:	**Comment from WCG: Transport and Public Works**	
	Appendix E7:	**Comment from WCG: DoA**	

	Appendix E8:	**Comment from WCG: DHS**	
	Appendix E9:	**Comment from WCG: DoH**	
	Appendix E10:	**Comment from DEA&DP: Pollution Management**	
	Appendix E11:	**Comment from DEA&DP: Waste Management**	
	Appendix E12:	**Comment from DEA&DP: Biodiversity**	
	Appendix E13:	**Comment from DEA&DP: Air Quality**	
	Appendix E14:	**Comment from DEA&DP: Coastal Management**	
	Appendix E15:	**Comment from the local authority**	√
	Appendix E16:	**Confirmation of all services (water, electricity, sewage, solid waste management)**	√
	Appendix E17:	**Comment from the District Municipality**	√
	Appendix E18:	**Copy of an exemption notice**	
	Appendix E19	**Pre-approval for the reclamation of land**	
	Appendix E20:	**Proof of agreement/TOR of the specialist studies conducted.**	
	Appendix E21:	**Proof of land use rights**	√
	Appendix E22:	**Proof of public participation agreement for linear activities**	
Appendix F:	**Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required.**		√
Appendix G:	**Specialist Report(s)**		
Appendix H:	**EMPr**		√
Appendix I:	**Screening tool report**		√
Appendix J:	**The impact and risk assessment for each alternative**		Included in Section H of the DBAR

Appendix K:	**Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline**	√
Appendix L:	**Details of the EAP and EAPASA certificate**	√

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE:		GEORGE OFFICE:
	REGION 1 (City of Cape Town, West Coast District	REGION 2 (Cape Winelands District & Overberg District)	REGION 3 (Central Karoo District & Garden Route District)

Duplicate this section where there is more than one Proponent Name of Applicant/Proponent:	Consolidated Limeworks (Pty) Ltd	
Name of contact person for Applicant/Proponent (if other):	Danie van der Merwe	
Company/ Trading name/State Department/Organ of State:	Consolidated Limeworks (Pty) Ltd	
Company Registration Number:		
Postal address:	P O Box 103, Stellenbosch	
		Postal code: 7599
Telephone:	(011)317 2000	Cell: 082 441 7970
E-mail:	danie.vandermerwe@kynoch.co.za	Fax: ( )
Company of EAP:	Bucandi Environmental Solutions	
EAP name:	Dr Helen Prinsloo	
Postal address:	P. O. Box 317, Viljoenskroon	
		Postal code: 9520
Telephone:	( )	Cell: 076 682 4369
E-mail:	helen@bucandi.co.za	Fax: ( )
Qualifications:	D Tech (Conservation Management)	
EAPASA registration no:	EAPASA 2022/5586	
Duplicate this section where there is more than one landowner Name of landowner:	Consolidated Limeworks (Pty) Ltd	
Name of contact person for landowner (if other):	Danie van der Merwe	
Postal address:	P O Box 103, Stellenbosch	
		Postal code: 7599
Telephone:	(011)317 2000	Cell: 082 441 7970
E-mail:	danie.vandermerwe@kynoch.co.za	Fax: ( )
Name of Person in control of the land:	Consolidated Limeworks (Pty) Ltd	
Name of contact person for person in control of the land:	Danie van der Merwe	
Postal address:	P O Box 103, Stellenbosch	
		Postal code: 7599
Telephone:	(011)317 2000	Cell: 082 441 7970
E-mail:	danie.vandermerwe@kynoch.co.za	Fax: ( )

Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall:	Swartland Local Municipality	
Contact person:	Jo-Ann Krieger	
Postal address:	Private Bag X52, Malmesbury	
		Postal code: 7299
Telephone	(022) 487 9400	Cell:
E-mail:	swartlandmun@swartland.org.za	Fax: ( )

SECTION B: CONFIRMATION FOR SPECIFIC PROJECT DETAILS AS INCLUDED INT THE APPLICATION FORM

1.	Is the proposed development (please tick):	New	X	Expansion	X
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain.				
Brownfield. The proposed development site forms part of a site that is currently used for the production of granular fertilizer and is located in an Industrial Area (Zoned as Industrial Zone 1).					
3.	**For Linear activities or developments**				
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:				
3.2.	Development footprint of the proposed development for all alternatives.				
3.3.	Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.				
3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.				
3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives				
3.6.	**Starting point co-ordinates for all alternatives**				
	Latitude (S)	°	‘	“	
	Longitude (E)	°	‘	“	
	Middle point co-ordinates for all alternatives				
	Latitude (S)	°	‘	“	
	Longitude (E)	°	‘	“	
	End point co-ordinates for all alternatives				
	Latitude (S)	°	‘	“	
	Longitude (E)	°	‘	“	
Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.					
4.	**Other developments**				
4.1.	Property size(s) of all proposed site(s):				69 435.05 m²
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):				15 517.78 m²
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:				3 757.62 m²
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities).				

Consolidated Limeworks (Pty) Ltd is proposing the expansion of a granular fertilizer plant and addition of a liquid fertilizer plant with capacity for 490 m³ of hazardous materials on Portion 9 of the Farm Rozenburg 771 situated in Malmesbury District within Swartland Local Municipality. The need for a Basic Assessment is triggered by Listing 1; Activity 14 in GN R327 dated 4 December 2014 and amended on 07 April 2017. The total area of the proposed project is 3 757.62 m². The site is located within an industrial area and contains building that will be renovated. The project will entail the following:

- Construction of a bunded and roofed area for liquid storage.
- Erection of tanks for storage of liquid NPK fertilizer in the bunded area.
- Expansion of current granular fertilizer store.
- Installation of a 2.4 m electric fence around the site.

	Indicate how access to the proposed site(s) will be obtained for all alternatives.

The R302 runs directly adjacent to the site with Old Malmesbury Road providing access to the site.

4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:	C	0	4	6	0	0	0	0	0	0	0	0	0	7	7	1	0	0	0	0	9

4.7.	Coordinates of the proposed site(s) for all alternatives:			
	Latitude (S)	33º	28‘	30.72“
	Longitude (E)	18º	43‘	6.04“

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	YES	NO X

2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	YES	NO X
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.	YES	NO X
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.	YES	NO X
The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.	YES	NO X
The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM:WA")	YES	NO X
The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").	YES	NO X
The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").	YES	NO X
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.	YES	NO X

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.
Section 25(2) of the Swartland Planning By-law requires the portion to be used for the proposed liquid fertilizer plant to be zoned to Industrial Zone 3.

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.
Swartland Spatial Development Framework Western Cape Biodiversity Spatial Plan - Swartland

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Describe the portion of the proposed development to which the applicable listed activity relates.
Activity 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with containers with a capacity of 80 cubic meters or more but not exceeding 500 cubic meters.	The expansion of a granular fertilizer plant and addition of a liquid fertilizer plant with total capacity for 490 m^3 of hazardous materials.
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed development to which the applicable listed activity relates.

Note:

- The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted.
- Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.

List the applicable waste management listed activities in terms of the NEM:WA

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Category A**	Describe the portion of the proposed development to which the applicable listed activity relates.

List the applicable listed activities in terms of the NEM:AQA

Activity No(s):	Provide the relevant **Listed Activity(ies)**	Describe the portion of the proposed development to which the applicable listed activity relates.

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.

This site consists of existing buildings that will be upgraded, surrounded by planted lawn grass in an industrial area. Old Malmesbury Road leads directly to the site. S1 is flat and the costs and impacts of earthworks before construction will be minimal. Swartland Local Municipality currently provides services on the site including electricity and water supply, sewage system and refuse removal. The site is located relatively high and stays dry year-round. The total area of the proposed project is 3 757.62 m^2. The site is located within an industrial area and contains buildings that will be renovated and one building that will be enlarged. The project will entail the following:

- Construction of a bunded and roofed area for liquid storage.
- Erection of tanks for storage of liquid NPK fertilizer in the bunded area.
- Expansion of current granular fertilizer store.
- Installation of a 2.4 m electric fence around the site.

2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.

The site is currently zoned as Industrial Zone 1, which is suitable for the granular fertilizer plant. Rezoning is currently being applied for pertaining to the section that will be used for the proposed liquid fertilizer plant (Industrial Zone 3 required). Proof of this application will be included in the FBAR.

3.	Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.

Rezoning is currently being applied for pertaining to the section that will be used for the proposed liquid fertilizer plant (Industrial Zone 3 required). Proof of this application will be included in the FBAR.

4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.

Supporting Agricultural Development and Rural Economy: The Western Cape PSDF emphasises the importance of agriculture as a key economic sector. The fertilizer plant will support local agriculture by providing farmers with accessible, nutrient-rich fertilizers tailored to the needs of the region's crops, which will enhance productivity and encourage economic resilience in rural communities.

Promoting Resource Efficiency and Sustainability: The PSDF places strong emphasis on environmental sustainability and the responsible use of natural resources. A fertilizer plant that uses sustainable production methods, minimises waste, and recycles nutrients aligns with this objective, especially if it reduces reliance on imported or chemical-heavy fertilizers that may harm soil and water quality.

Encouraging Industrial Growth in Targeted Areas: The framework identifies the area for industrial development, particularly where such activities can stimulate economic opportunities without compromising environmental and social values. The fertilizer plant will integrate low-impact technologies, and contribute positively to industrial growth while minimising adverse effects.

4.2	The Integrated Development Plan of the local municipality.

Boosting local economic development: The Swartland IDP places high priority on economic growth and job creation, particularly through supporting industries that add value to local agriculture. The fertilizer plant will contribute by creating jobs, fostering skills development, and stimulating local supplier and transport networks. This aligns with the IDP's focus on industrial and economic growth that benefits local communities.

Supporting the agricultural sector: Agriculture is a significant sector within the Swartland region, and the municipality's IDP highlights the importance of supporting farming activities. The fertilizer plant will enhance local agriculture by providing readily available, affordable fertilizer products tailored to regional crops, improving crop yields and supporting the resilience of the farming sector. This aligns with the IDP's focus on strengthening agricultural supply chains.

Promoting resource efficiency and environmental sustainability: The Swartland IDP emphasises sustainable development and resource-efficient practices. The fertilizer plant will adopt environmentally sustainable methods, such as minimising water and energy use, and managing waste responsibly. It will align well with these sustainability objectives. Additionally, it willd help prevent potential environmental issues that could arise from transporting fertilizers over long distances, which often adds to greenhouse gas emissions.

Improving climate resilience: The Swartland IDP incorporates goals related to climate resilience, especially as drought and soil degradation impact agricultural productivity.

Infrastructure development and land use alignment: The IDP includes provisions for developing infrastructure in ways that support industry while protecting valuable agricultural land. By situating the plant within the designated industrial zones, the development aligns with Swartland's spatial planning principles, avoiding land-use conflicts and supporting efficient infrastructure utilisation.

Collaboration with local stakeholders: The Swartland IDP emphasises the importance of collaboration with local stakeholders in development projects. By engaging with local farmers, community members, and municipal officials, the plant's development will ensure that its operations align with local needs and contribute positively to the community, which is a core principle of the IDP.

4.3.	The Spatial Development Framework of the local municipality.

Supporting Agricultural Activity and Rural Economy: The Swartland SDF emphasises the importance of agriculture as a cornerstone of the local economy. The fertilizer plant will directly benefit the agricultural sector by supplying essential inputs for crop production. By supporting local farmers with more accessible, potentially affordable fertilizers, the plant strengthens the agricultural economy, in line with the SDF's aim to sustain and grow agricultural activities in the region.

Promoting Sustainable Industrial Development in Appropriate Zones: The SDF guides industrial development to designated zones, aiming to limit environmental impact and prevent land-use conflicts with agriculture and conservation areas. The fertilizer plant is sited in an existing industrial area, and aligns with the SDF's spatial planning principles, contributing to orderly growth and helping to manage urban sprawl. This also ensures the plant has access to necessary infrastructure without disrupting agricultural or residential areas.

Encouraging Value-Adding Industries: The Swartland SDF seeks to attract industries that add value to primary sectors, especially agriculture. The fertilizer plant will directly support and enhance agricultural productivity, adding value to the region's primary sector. This development can contribute to Swartland's goals of diversified and resilient economic growth by creating jobs and encouraging skill development, both critical elements of value-added industrialisation.

Promoting Resource Efficiency and Environmental Responsibility: The SDF places importance on environmental conservation and resource efficiency, particularly given the area's reliance on natural resources. The fertilizer plant will adopt sustainable practices, such as recycling nutrients, managing waste efficiently, and reducing pollution. Its operations will align well with these environmental objectives..

Enhancing Climate Resilience and Supporting Sustainable Agriculture: The SDF addresses the need for climate resilience, especially considering the agricultural sector's vulnerability to climate change impacts like drought. The fertilizer plant will produces soil-improving fertilizers and support sustainable farming practices and soil health, enhancing the resilience of the region's agricultural lands. This helps the municipality meet its objectives of climate adaptation and sustainable agricultural development.

Aligning with Infrastructure and Service Provisions: The SDF's focus includes strategically aligning new developments with existing infrastructure to avoid overextending municipal resources. By positioning the fertilizer plant near existing roads, utilities, and other infrastructure, the development will support the SDF's efficient service provision and infrastructure planning goals.

Mitigating Potential Environmental and Land Use Conflicts: The SDF aims to protect valuable agricultural land and biodiversity, as well as minimise conflicts between land uses. By adhering to environmental impact guidelines and locating the plant in an industrial area, the fertilizer plant will help maintain this balance, preserving agricultural and natural areas as intended by the SDF.

4.4.	The Environmental Management Framework applicable to the area.

Promoting Sustainable Agricultural Support: The EMF emphasises the sustainable use of natural resources and the promotion of environmentally responsible agriculture. The fertilizer plant will support local agriculture sustainably by producing fertilizers that improve crop yields without depleting soil quality. By supplying fertilizers locally, the plant

reduces the carbon footprint associated with transport, helping the agricultural sector operate more efficiently within environmental limits.

Siting in Environmentally Suitable Zones: The EMF identifies areas that are appropriate for different types of development to minimise environmental impacts. The fertilizer plant aligns with the EMF, as it is located in an industrial zone with minimal environmental sensitivity, away from critical biodiversity areas, agricultural land, and water resources. This ensures that the plant does not contribute to land degradation or habitat fragmentation, which the EMF aims to prevent.

Mitigating Pollution and Managing Waste: The EMF emphasises reducing pollution and ensuring proper waste management. The fertilizer plant will align with this by adopting best practices for waste minimisation, recycling by-products, and managing emissions to air and water. This aligns the plant's operations with the EMF's standards for pollution prevention.

Enhancing Resource Efficiency: The EMF encourages developments to optimise resource use, including water and energy, to reduce environmental strain. The fertilizer plant will utilise water- and energy-efficient technologies and recycle water where possible.to align with the EMF's resource efficiency objectives. Such practices help reduce the plant's environmental footprint and contribute to Swartland's goals of sustainable resource use.

Aligning with Community and Stakeholder Engagement Requirements: The EMF encourages stakeholder engagement to ensure that developments align with community needs and environmental values. By engaging with local farmers, residents, environmental groups, and municipal officials during the planning and operational phases, the fertilizer plant will address concerns, ensure transparency, and foster community support. This aligns with the EMF's principles of inclusive development.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
No comments have been received regarding biodiversity.	
6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
The biodiversity rankings as determined by the WCBSP is indicated on the Layout Plan and the proposed development falls outside of any sensitive areas.	
7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
Industrial Zone 1 is intended for manufacturing, processing, and production activities that may involve some environmental impact but are still managed within regulated limits. A fertilizer plant, which typically involves the production and possible chemical processing of materials, aligns with these permitted uses, as long as it meets local environmental and safety standards. The objective of Industrial Zone 3 is to provide for those industries which are noxious or which carry a high risk in the event of fire or accident.	
8.	Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.
The screening report has not changed. However, it may change with submission of the FBAR as the exact location for the expansion of the granular store has not been finalised and my move slightly,	
9.	Explain how the proposed development will optimise vacant land available within an urban area.
The proposed development will mostly make use of existing buildings that will be upgraded and any other expansion will be done on vacant land that is part of the same property.	
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
The proposed development will mostly make use of existing buildings that will be upgraded. No additional roads or infrastructure, other than expansion of buildings, will be necessary.	
11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).
The necessary services are available and provided by the Swartland Local Municipality. See confirmation of services in Appendix E16.	
12.	In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.
See Appendix K.	

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

N/A

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

Please see Appendix F1 for a copy of the newspaper notice that was placed in "The Swartland" on 13 August 2024. Please see Appendix F2 for a photo of the notices placed at the site. Please see Appendix F3 for the notifications that were sent to all the neighbours as well as the Local and District Municipalities and Department of Water and Sanitation on 13 August 2024. Please see Appendix F4 for the Comments and Responses Report. All comments received has been addressed. This process will also be repeated with a description including the expansion of the granular fertilizer plant, as the initial PPP was undertaken before this expansion was added. A copy of the draft BAR will be sent to all I&APs.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

West Coast District Municipality	022 433 8410	wmarkus@wcdm.co.za
Swartland Local Municipality Jo-Ann Krieger	022 487 9400	swartlandmun@swartland.org.za
Swartland Ward 7 Allan Williams	081 528 9596	rdl.williamsa@outlook.com
DWS George Nel	082 8785 707	nelg@dws.gov.za

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

N/A

5. if any of the State Departments and Organs of State did not respond, indicate which.

No comments have been received from DWS or the West Coast District Municipality.

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

The Swartland Local Municipality commented that the area earmarked for the proposed liquid fertilizer plant should be rezoned as Industrial Zone 3.

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that "*Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority.*"

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
    - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
    - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
    - if a facsimile was sent, a copy of the facsimile Report;
    - if an electronic mail was sent, a copy of the electronic mail sent; and
    - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	YES	NO X
1.2.	Provide the name and or company who conducted the specialist study.		
N/A			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		
N/A			
1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.		
N/A			

2. Surface water

2.1.	Was a specialist study conducted?	YES	NO X
2.2.	Provide the name and/or company who conducted the specialist study.		
N/A			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		
N/A			

3. Coastal Environment

3.1.	Was a specialist study conducted?	YES	NO X
3.2.	Provide the name and/or company who conducted the specialist study.		
N/A			
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		
The proposed development is not located in a coastal environment.			
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
The proposed development is not located near an estuary.			
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.		
The proposed development is not located near any of these zones.			

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO X
4.2.	Provide the name and/or company who conducted the specialist studies.		
N/A			
4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.		
The placement of the proposed development was determined using the following guidelines: Swartland Spatial Development Framework Western Cape Biodiversity Spatial Plan - Swartland NFEPA wetlands Vegetation Map of South Africa, Lesotho, and Swaziland (2009) All these aspects are indicated on the Layout Plan and the Biodiversity Map.			
4.4.	Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.		
The proposed development is located outside any sensitive areas as determined by the above guidelines.			
4.5.	Explain what impact the proposed development will have on the site-specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.		
The proposed development will not have any impact on the site-specific features as it is located on transformed land and outside of any sensitive areas.			

4.6.	If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.
The proposed development is not located in a protected area.	
4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.
The proposed development is located in an industrial area on land that has been entirely transformed.	

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.
The proposed development is located in an industrial area on land that has been entirely transformed and will not have an impact on geographical aspects.

6. Heritage Resources

6.1.	Was a specialist study conducted?	YES	NO X
6.2.	Provide the name and/or company who conducted the specialist study.		
N/A			
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		
The proposed			

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.
The proposed development is located in an industrial area on land that has been entirely transformed and will not have an impact on historical or cultural aspects.

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
	The Swartland Local Municipality is a Category B municipality situated within the West Coast District in the Western Cape Province. It is one of the five municipalities in the district. It has its head office and main infrastructure based in Malmesbury, which is situated 70km north of Cape Town on the N7. In 1743, Malmesbury began as a settlement in the wide Diep River Valley around a mineral source and fountains in the area. The town was officially proclaimed on 21 May 1827 and was named after the Governor of the Cape, Sir Lowry Cole's father-in-law, the first Earl of Malmesbury in England. The town obtained municipal status in 1860. Malmesbury fulfils an important urban niche in the region and the province. Its high development potential can be attributed to factors such as its relative accessibility along the N7 road/rail corridor; closeness to Cape Town; diversified economic base, which not only accommodates agriculture but also well-developed industrial and commercial sectors; and supportive infrastructure. The high property values in the Cape Town Metropole and the attraction of a local tranquil atmosphere are moving people to settle here and commute to Cape Town on a daily basis. Malmesbury is home to a number of large companies, as well as regional offices of provincial and national government departments. **Area:** 3 708km² **Cities/Towns:** Abbotsdale, Chatsworth, Darling, Grotto Bay, Kalbaskraal, Koringberg, Malmesbury, Moorreesburg, Riebeeck Kasteel, Riebeeck West, Riverlands, Yzerfontein **Main Economic Sectors:** Manufacturing (26.0%), wholesale and retail trade, catering and accommodation (18.2%), agriculture, forestry and fishing (12.5%), finance, insurance, real estate and business services (9.3%), transport, storage and communication (7.2%), community, social and personal service (6.9%)

	2022	2016	2011
Population	148 331	133 762	113 762

	Age Structure			
	Population under 15	23.4%	25.3%	25.0%
	Population 15 to 64	69.4%	69.1%	69.1%
	Population over 65	7.2%	5.5%	5.9%
	Dependency Ratio			
	Per 100 (15-64)	44.1	44.7	44.7
	Sex Ratio			
	Males per 100 females	94.0	98.7	98.6
	Population Growth			
	Per annum	2.58%	3.68%	n/a
	Labour Market			
	Unemployment rate (official)	n/a	n/a	12.7%
	Youth unemployment rate (official) 15-34	n/a	n/a	17.9%
	Education (aged 20 +)			
	No schooling	3.6%	4.9%	6.0%
	Matric	n/a	32.2%	24.2%
	Higher education	11.0%	8.9%	9.2%
	Household Dynamics			
	Households	44 856	39 139	29 324
	Average household size	3.3	3.4	3.9
	Female headed households	n/a	30.4%	28.5%
	Formal dwellings	89.5%	94.6%	90.9%
	Housing owned	n/a	65.0%	52.3%
	Household Services			
	Flush toilet connected to sewerage	96.8%	86.2%	90.8%
	Weekly refuse removal	82.8%	83.5%	76.1%
	Piped water inside dwelling	90.6%	84.0%	80.6%
	Electricity for lighting	97.8%	98.7%	97.8%

8.2.	Explain the socio-economic value/contribution of the proposed development.

Expected annual income: R 800 000.00
Capital value: R 11 000 000.00
Workers employed during Construction Phase: 40
Remuneration for workers during Construction Phase: R 300 000.00
Workers employed during Operational Phase: 5 permanent and 3 temporary
Total compensation during first 10 years of operation: R 6 024 000.00
Percentage of new employees considered “previously disadvantaged”: 95%

8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.

Employees will undergo ongoing training and educational upliftment through job related certification programmes.

8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.
Since the proposed project is located in an industrial area, these impacts are considered minimal. However, all the mitigation measures identified in Section H will implemented to minimise any possible negative impacts on people and the environment.	

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred property and site alternative.

Consolidated Limeworks (Pty) Ltd is proposing the expansion of a granular fertilizer plant and addition of a liquid fertilizer plant with capacity for 490 m^3 of hazardous materials on Portion 9 of the Farm Rozenburg 771 situated in Malmesbury District within Swartland Local Municipality. The total area of the proposed project is 3 757.62 m^2. The site is located within the Malmesbury Industrial Area. This site consists of existing buildings that will be upgraded, surrounded by planted lawn grass in an industrial area. Old Malmesbury Road leads directly to the site. S1 is flat and the costs and impacts of earthworks before construction will be minimal. Swartland Local Municipality currently provides services on the site including electricity and water supply, sewage system and refuse removal. The site is located relatively high and stays dry year-round. The project will entail the following:

- Construction of a bunded and roofed area for liquid storage.
- Erection of tanks for storage of liquid NPK fertilizer in the bunded area.
- Expansion of current granular fertilizer store.
- Installation of a 2.4 m electric fence around the site.

Provide a description of any other property and site alternatives investigated.

No site alternative was investigated as the activity will be closely related to the granular fertilizer plant already present on site.

Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix.

The site was positioned to utilise existing buildings and transformed areas, and to be clear of any sensitive areas in terms of biodiversity.

Provide a full description of the process followed to reach the preferred alternative within the site.

The site was positioned to utilise existing buildings and transformed areas, and to be clear of any sensitive areas in terms of biodiversity.
It was also designed in such a way as to facility ease of product flow within the plant as it will utilise infrastructure already present on site.

Provide a detailed motivation if no property and site alternatives were considered.

No site alternative was investigated as the activity will be closely related to the granular fertilizer plant already present on site.

List the positive and negative impacts that the property and site alternatives will have on the environment.

Specific impact or risk	Preferred site
Contamination of soils as a result of leaks or spills from the factory.	Negative
Contamination of soils due to leakages from vehicles entering and exiting the site.	Negative
Erosion and subsequent sedimentation of surface water.	Negative
Air pollution on a local and cumulative level.	Negative
The construction and operation of the fertiliser plant will provide employment opportunities to the local communities.	Positive
Soil pollution due to ineffective waste management.	Negative
Chemical pollution of surface and ground water sources.	Negative
Degradation of the access road to the building.	Negative
Increase in noise in the area.	Negative
Increasing environmental awareness during the operation.	Positive

1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred activity alternative.

The granular fertilizer plant will be expanded by adding approximately 1 100m2 of floor space. This facility will be used for mixing of fertilizer and storage of granular finished product.
The liquid fertilizer will be used for storing of chemicals used in the process, mixing of source material and storage of finished product. The entire liquid fertilizer plant will be bunded and any possible spillage will be directed back into the production area to be reused in the fertilizer mixing process. The following chemicals will be stored:

Product	Type	Tons	Quantity (m3)	Classification
Phosphoric Acid	Liquid	350	248	Hazardous
Aqueous Ammonia	Liquid	52	42	Hazardous
Zinc Sulphate	Liquid	35	28	Potentially hazardous
Ammonium Nitrate Solution	Liquid	150	133	Hazardous
Urea	Granule	300	Unlimited	Non-hazardous
Potassium Chloride	Powder	100	Unlimited	Non-hazardous
Ammonium Sulphate	Powder	70	Unlimited	Non-hazardous
Potassium Nitrate	Granule	34	39	Hazardous
Water	Liquid	350	Up to 50 000	
NPK final products	Liquid	700		Non-hazardous due to acceptable dilution
Total Hazardous (including Zinc Sulphate)			490	

Provide a description of any other activity alternatives investigated.

The "no-go" alternative was considered and involves the continuation of the currently operating granular fertilizer plant, where the existing out-buildings are used for storage of materials and equipment.

Provide a motivation for the preferred activity alternative.

Upgrading of derelict buildings will **decrease the visual impact** of the site.
Upgrading of derelict buildings will **increase the safety** of the site.

Enhanced Agricultural Productivity:

- **Increased Crop Yields:** Fertilizers provide essential nutrients that improve soil fertility and promote plant growth. Local access to fertilizers can enable farmers to boost crop yields, supporting consistent agricultural output and helping meet food demand.
- **Soil Health and Quality:** Fertilizers improve soil health and structure over time. This is beneficial for sustainable agriculture, as it prevents soil degradation and erosion, preserving land productivity.

Support for Food Security:

- **Stable Food Supply:** Fertilizers play a crucial role in ensuring a reliable and adequate food supply, as they help increase the productivity of staple crops. A local fertilizer plant supports food security by enabling local farmers to produce more efficiently.
- **Resilience Against Supply Chain Disruptions:** Increased availability of locally produced fertilizer reduces dependency on imported fertilizers, which can be subject to supply chain issues, price volatility, and delays. This can lead to a more stable and resilient agricultural sector, better equipped to maintain consistent food supplies.

Economic Growth and Job Creation

- **Employment Opportunities:** The construction, expansion and operation of the fertilizer plant create jobs directly in the plant itself and indirectly in related sectors, including logistics, sales, and distribution. This helps stimulate the local economy and provide employment for residents. A total of 40 jobs will be created during the Construction Phase with 5 permanent and 3 temporary jobs created during the Operational Phase. Approximately 95% of these jobs will be given to people that can be considered "previously disadvantaged".
- **Increased Agricultural Profitability:** By providing locally-produced fertilizers, the plant can lower costs for farmers. Improved profitability for farmers allowing them to reinvest in their operations, purchase additional equipment, and expand their production, further enhancing the local economy.

Environmental and Resource Benefits

- **Improved Resource Efficiency:** The fertilizer plant will be designed to use energy-efficient technologies, recycle water, and manage waste effectively, reducing the environmental impact of production. Additionally, local production reduces the emissions associated with transporting fertilizers over long distances.

Alignment with Climate Resilience Goals

- **Supporting Climate-Adaptive Agriculture:** Fertilizers improve soil moisture retention and enhance root systems that helps crops withstand droughts, which are increasingly common due to climate change.
- **Reduction of Carbon Footprint:** Producing fertilizers locally reduces the emissions associated with importing fertilizers from other regions or countries.

Strengthening Local Supply Chains

- **Greater Self-Sufficiency**: By producing fertilizers domestically, a fertilizer plant strengthens local supply chains, reducing dependency on global suppliers and the vulnerabilities associated with external market fluctuations. This

self-sufficiency is especially valuable in times of global disruptions, such as pandemics or geopolitical tensions, ensuring local farmers have continuous access to essential inputs.

- **Support for Local Businesses:** The fertilizer plant's operations can benefit local businesses involved in raw material supply, transportation, and logistics. This ripple effect supports broader economic growth within the community.

Technological and Knowledge Transfer

- **Advances in Agricultural Technology:** A modern fertilizer plant will bring technological innovation to the region, helping to educate farmers about the latest advancements in soil science, crop nutrition, and sustainable farming practices.
- **Training and Skill Development:** By providing job opportunities in manufacturing, operations, and environmental management, the plant contributes to the upskilling of the local workforce. Employees gain valuable skills in areas such as chemical processing, quality control, and sustainability practices, which are transferable to other industries.

Promotion of Sustainable Agricultural Practices

- **Encouragement of Soil-Friendly Fertilization:** With access to high-quality fertilizers tailored to local soil needs, farmers can adopt more efficient fertilization practices, applying the right amount of nutrients at the right time. This not only optimises crop growth but also minimises nutrient runoff into nearby water bodies, protecting water quality and ecosystems.
- **Reduced Land Degradation:** Fertilizers that are balanced and suited to local soil types can help maintain soil health, preventing issues like nutrient depletion and erosion. This supports long-term land productivity, ensuring that local agriculture remains viable and environmentally sustainable.

Provide a detailed motivation if no activity alternatives exist.

The only activity alternative considered was the "no-go" alternative as a granular fertilizer plant already exist at the site.

List the positive and negative impacts that the activity alternatives will have on the environment.

Specific impact or risk	Preferred activity (Activity alternative 1)
Contamination of soils as a result of leaks or spills from the factory.	Negative
Contamination of soils due to leakages from vehicles entering and exiting the site.	Negative
Erosion and subsequent sedimentation of surface water.	Negative
Air pollution on a local and cumulative level.	Negative
The construction and operation of the fertiliser plant will provide employment opportunities to the local communities.	Positive
Soil pollution due to ineffective waste management.	Negative
Chemical pollution of surface and ground water sources.	Negative
Degradation of the access road to the building.	Negative
Increase in noise in the area.	Negative
Increasing environmental awareness during the operation.	Positive
Decrease in visual impact	Positive
Increase in site safety	Positive
Enhanced agricultural productivity	Positive
Support for food security	Positive
Economic growth and job creation	Positive
Environmental and resource benefits	Positive
Alignment with climate resilience goals	Positive
Technological and knowledge transfer	Positive
Promotion of sustainable agricultural practices	Positive

1.3. Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts

Provide a description of the preferred design or layout alternative.

The liquid fertilizer plant will be entirely bunded in order to prevent any spillage from reaching the environment. Any spillage occurring will be directed back into the production process.

Provide a description of any other design or layout alternatives investigated.

No other design alternatives were investigated.

Provide a motivation for the preferred design or layout alternative.

The proposed design will prevent any spillage from reaching the environment.	
Provide a detailed motivation if no design or layout alternatives exist.	
Other alternatives available are not determined environmentally safe.	
List the positive and negative impacts that the design alternatives will have on the environment.	
The proposed design will prevent any spillage from reaching the environment.	
1.4.	Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred technology alternative:	
No technology alternatives were specifically considered.	
Provide a description of any other technology alternatives investigated.	
Provide a motivation for the preferred technology alternative.	
Provide a detailed motivation if no alternatives exist.	
List the positive and negative impacts that the technology alternatives will have on the environment.	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
No specific operational alternatives were considered.	
Provide a description of any other operational alternatives investigated.	
Provide a motivation for the preferred operational alternative.	
Provide a detailed motivation if no alternatives exist.	
List the positive and negative impacts that the operational alternatives will have on the environment.	
1.6.	The option of not implementing the activity (the 'No-Go' Option).
Provide an explanation as to why the 'No-Go' Option is not preferred.	
The "no-go" alternative is not preferred as the site can be better utilised environmentally and economically by the preferred activity alternative.	
1.7.	Provide and explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.
None	
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
The preferred alternative includes the expansion of the granular fertilizer plant and construction of a liquid fertilizer plant. This activity is planned on a site that is located in an industrial area, on land that has been transformed and where existing buildings can be upgraded and maximally utilised.	

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).
There are no identified "no-go" areas as the entire property has been completely transformed.

3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

- Various site visits were conducted by the EAP and information was gathered regarding the nature of the process and the baseline environment.
- Comments were gathered from I&APS in order to identify additional possible impacts that may have been overlooked.
- The significance of identified impacts were determined as follows:

- **Extent**

The extent of the impact refers to the spatial dimension to which an impact will be felt (i.e. site, study area, local, regional, or national scale). The criteria for rating the impact extent are described in more detail in Table 1.

Table 1: Extent of Impact

Extent					
Rating	1	2	3	4	5
Description	On site or the impact will be restricted to its immediate area	Study area Or the impact will be restricted to the site or route	Local Or the impact will affect an area up to 5 km from the site and route	Regional/Provincial Or the impact will be felt on a Local, district municipal or Provincial level	National/International Or the maximum extent of any impact

- **Duration**

In order to accurately describe the impact, it is necessary to understand the duration and persistence of an impact in the environment. The criteria for rating the duration of the impact are described in more detail in Table 2.

Table 2: Duration of Impact

Duration					
Rating	1	2	3	4	5
Description	Temporary Or the impact will occur very sporadically or less than 1 year from commencement of activity	Short-term Or the impact will continue to occur for a period between 1 to 5 years from commencement of activity	Medium term Or the impact will continue to occur for a period between 5 to 10 years from commencement of activity	Long term Or the impact will continue to occur for a period longer than 10 years from commencement of activity	Permanent Or the impact will be continued until the conclusion of activity

- **Severity**

A description must be given as to whether an impact is destructive, or benign. It determines whether the intensity of the impact on the natural environment or society is permanently, significantly changes its functionality, or slightly alters it. The mitigation potential must be determined for each impact. If limited information or expertise exists, estimates based on experience will be made. The criteria for rating the severity of the impact are described in more detail in Table 3.

Table 3: Severity of Impact

Severity					
Rating	1	2	3	4	5
Description	Temporary impact easily reversible. Insignificant change or deterioration or disturbance Or improvement of natural and social environments	Short-term impact. Low cost to mitigate Small Moderate change or deterioration or disturbance Or improvement of natural and social environments	Medium term impact, which require substantial cost to mitigate. Potential to mitigate and potential to reverse impact Significant change or deterioration or disturbance Or improvement of natural and social environments	Long term impact High cost to mitigate Possible to mitigate Very significant change or deterioration or disturbance Or improvement of natural and social environments	Permanent impact Prohibitive cost to mitigate Little or no mechanism to mitigate Irreversible Disastrous change or deterioration or disturbance or improvement of natural and social environments

- **Degree of certainty**

As with all studies it is not possible to be 100% certain of all facts and for this reason a standard "Degree of certainty" scale is used as discussed in Table 4.

Table 4: Degree of Certainty of Impact Occurrence

Degree of Certainty					
Rating	1	2	3	4	5
Description	Definite Or more than 90% sure of the fact or the likelihood of the impact occurring	Probable Or between 70% and 90% sure of the fact or the likelihood of the impact occurring	Possible Or between 40% and 70% sure of the fact or the likelihood of the impact occurring	Unsure Or less than 40% sure of the fact or the likelihood of the impact occurring.	Unknown or the consultant or specialist believes an assessment is not possible even with additional research.

- **Probability**

The criteria used for rating the likelihood of impact occurrence are described in more detail in Table 5.

Table 5: Probability of Impact Occurrence

Probability					
Rating	1	2	3	4	5
Description	Impossible Or the impact will not occur	Improbable Or the possibility of the impact occurring is very low	Probable Or there is a possibility that the impact will occur, provision must be provided	Highly probable Or it is most likely that the impact will occur at some stage, provision must be provided	Definite Or the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures to contain the impact

- **Significance**

Evaluating the significance of environmental impacts is a critical component of impact analysis. The matrix uses the consequence and the probability of the different activities and associated impacts to determine the significance of the impacts. Consequence is determined by the sum total of criteria like extent, duration and severity, degree of certainty of impact as well as compliance to applicable legislation. Values of 1-5 are assigned to each of the different criteria to determine the overall consequence, which is divided by 3 to give a criterion rating.

The overall consequence and probability rating are multiplied to give a final significance rating. The values as shown in the following table are then used to rank the significance. It must be said however that in the end, a subjective judging of an impact can still be done, but the reasons for doing so must be qualified. The matrix used to determine the significance of each of the identified impact in this study is shown in Table 6.

Table 6: Impact Significance Matrix

Impact Significance Matrix					
Rating	Very Low	Low	Medium	High	Very High
	1-4	5-10	11-15	16-20	21-25+

Description	There is little or no impact at all	Impact is of a low order and therefore likely to have little real effect In the case of adverse impacts: mitigation and or remedial activity is either easily achieved or little will be required, or both In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur In the case of adverse impacts: mitigation and or remedial activity are both feasible and fairly easily possible In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.	Impact is of substantial order within the bounds of impacts which could occur In the case of adverse impacts: mitigation and or remedial activity are feasible but difficult, expensive, time-consuming or some combination In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.	Of the highest order possible within the bounds of impacts which could occur In the case of adverse impacts: there is no possible mitigation and or remedial activity which could offset the impact In the case of beneficial impacts, there is no real alternative to achieving this benefit.

Table 7: How to Apply the Rating Scale

Consequence
Impact Significance = (Extent + Duration + Severity + Degree of Certainty)/3] X Probability

4. Assessment of each impact and risk identified for each alternative

4.1 Activity alternative 1 – Production of granular and liquid fertilizer

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Contamination of soils as a result of leaks or spills from the plant.	1	1	2	3	3	Low	Negative	Chemical ingredients and products have to be stored under a roof, on a cement floor in a bunded area, with canals leading to a cemented pit, preventing any drainage into soils.
Contamination of soils due to leakages from vehicles entering and exiting the site.	1	1	2	3	3	Low	Negative	Vehicles utilising the road infrastructure should be serviced regularly and in a good condition.
Erosion and subsequent sedimentation of surface water.	3	5	5	2	4	High	Negative	A storm water management plan should be designed and implemented in order for storm water to be directed around the site and into the municipal system.
Air pollution on a local and cumulative level.	2	1	2	1	3	Low	Negative	**1.Emission controls:** a. Dust Control: Implement dust collection systems with filters and scrubbers to capture and remove particulate matter from the air. Use dust suppression techniques such as water sprays, windbreaks, and

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								vegetation cover to reduce dust emissions from storage and handling areas. b. VOC Control: Install vapor recovery systems to capture and treat VOC emissions during the production and storage of ammonia, urea, or other volatile chemicals. Use low-VOC or no-VOC coatings and sealants in equipment and storage tanks. c. NOx Control: Optimize combustion processes by using low-NOx burners and ensuring proper maintenance of combustion equipment. Implement selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) systems to reduce NOx emissions from combustion sources. **2. Greenhouse gas emission reduction:** a. Implement energy-efficient practices and equipment to reduce the carbon footprint of the plant. b. Consider adopting carbon capture and storage (CCS) technology to capture and

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								store CO2 emissions from the plant's operations. **3. Process optimisation:** a. Implement best practices and process improvements to reduce emissions. This may include using more efficient manufacturing techniques or modifying production methods. b. Employ advanced process control systems to optimize operations and minimize emissions. **4. Regular maintenance and inspections:** a. Conduct regular equipment maintenance and inspections to identify and address leaks, malfunctions, or sources of pollution. b. Develop a proactive maintenance schedule to minimize fugitive emissions. **5. Monitoring and reporting:** a. Install air quality monitoring systems to continuously measure air emissions. b. Comply with environmental regulations and promptly report emissions data to the relevant authorities. **6. Training and employee awareness:** a. Train plant personnel on air

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								pollution control measures and the importance of compliance with regulations. b. Encourage employees to report any potential pollution sources or issues. **7. Community engagement:** a. Engage with the local community to address concerns, share information about pollution control efforts, and seek feedback on environmental performance. **8. Environmental Management Systems (EMS):** a. Implement an EMS such as ISO 14001 to ensure a systematic approach to environmental management, including air pollution control. **9. Environmental audits:** Conduct regular environmental audits to identify and address areas where pollution control measures can be improved. **10. Research and development:** Invest in research and development to explore innovative technologies and processes for reducing air pollution in fertilizer manufacturing.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Soil pollution due to ineffective waste management.	3	3	3	2	3	Medium	Negative	**1. Implement Best Management Practices (BMPs):** a. Ensure proper storage and handling of raw materials, including NPK fertilizers, to prevent spills and leaks. b. Regularly inspect and maintain equipment and infrastructure to prevent leaks and emissions. c. Train employees on safe handling and storage practices for hazardous materials. **2. Containment and spill prevention:** a. Use impermeable surfaces for storage areas and implement secondary containment systems, such as bund walls, to capture potential leaks or spills. b. Install spill detection and alarm systems to quickly respond to any accidental releases. **3. Stormwater management:** a. Develop a comprehensive stormwater management plan that includes proper drainage and runoff controls to prevent contaminated water from entering the soil. b. Install sediment basins,

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								detention ponds, or other treatment facilities to remove contaminants from stormwater before it is discharged. **4. Proper waste disposal:** a. Establish procedures for the proper disposal of hazardous waste, such as contaminated soils or wastewater, in accordance with local, state, and federal regulations. b. Consider recycling or reusing certain waste materials if feasible. **5. Pollution monitoring and testing:** a. Regularly monitor and test soil, groundwater, and surface water for contamination, especially in areas near the plant and storage facilities. b. Implement an early warning system to detect pollution incidents quickly. **6. Soil remediation:** a. If contamination is identified, undertake soil remediation activities as necessary. Remediation methods may include excavation and removal of contaminated soil, bioremediation, or chemical treatments. b. Consult with environmental

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								experts and regulatory authorities to develop and execute a site-specific remediation plan. **7. Green infrastructure and vegetation:** a. Plant native vegetation in buffer zones to help absorb and filter contaminants from stormwater. b. Utilize phytoremediation, a process where certain plants can absorb and break down pollutants in the soil. **8. Regulatory compliance:** a. Comply with all relevant environmental regulations and permits. Keep up to date with changes in regulations and adapt your practices accordingly. **9. Emergency Response Plan:** a. Develop a comprehensive emergency response plan to address potential incidents quickly and efficiently. b. Train employees on how to respond to emergencies, including spills and leaks. **10. Public awareness and reporting:** a. Maintain open communication with the local

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								community and regulatory agencies. b. Report any incidents or issues promptly and transparently to relevant authorities and the public. **11. Environmental Management System (EMS):** Implement an EMS such as ISO 14001 to manage environmental aspects, set objectives, and continuously improve environmental performance. **12. Regular audits and inspections:** Conduct regular internal audits and inspections to identify and address potential issues proactively.
Chemical pollution of surface water and ground water sources.	4	5	5	3	3	Medium	Negative	**1. Containment and spill prevention:** Use secondary containment systems to capture and prevent spills of raw materials and finished products from reaching water bodies. **2. Effluent management:** Implement an effective wastewater treatment system to treat process water, reducing nutrient levels and removing contaminants before discharge.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								3. Nutrient management: Develop a nutrient management plan to minimise the risk of excess nutrients (nitrogen and phosphorus) entering water bodies. This may involve optimising production processes to reduce nutrient waste. **4. Best Management Practices (BMPs):** a. Implement BMPs for handling and storing raw materials, such as nitrogen and phosphorus sources, to prevent leaks and spills. b. Implement erosion and sediment control measures to prevent soil erosion and nutrient runoff during construction and operation. **5. Regular inspections and maintenance:** Conduct routine inspections of equipment, storage tanks, and pipelines to identify and repair leaks or damage promptly. **6. Employee training:** Train employees in proper handling and storage of chemicals, spill response, and other pollution prevention measures. **7. Stormwater management:**

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								Develop a stormwater management plan that includes collection and treatment of stormwater to prevent contaminants from entering nearby water bodies. **8. Monitoring and reporting:** a. Continuously monitor water quality parameters in both effluent and nearby water bodies. b. Report any deviations from established standards or regulations to the appropriate authorities. **9. Regulatory compliance:** Stay informed about and adhere to all federal, state, and local regulations related to water quality and pollution control. Obtain the necessary permits for water discharge. **10. Emergency Response Plan:** a. Develop an emergency response plan for potential spills or accidents that could lead to water pollution. b. Train employees on the plan and conduct drills. **11. Public awareness and engagement:** Engage with the local community to raise awareness

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								about your pollution prevention efforts and address concerns they may have. **12. Advanced technologies:** Consider advanced technologies, such as advanced oxidation processes or membrane filtration, to further treat wastewater and remove pollutants.
Degradation of the access road to the building.	3	5	3	2	4	High	Negative	Speed limits should be adhered to at all times Vehicles accessing and leaving the site should not be overloaded.
Increase in noise in the area.	1	5	1	1	5	Medium	Negative	Speed limits should be adhered to at all times Operations causing noise should only take place between normal working hours – Monday to Friday from 8h00 to 17h00.
Increasing environmental awareness during the operation.	3	4	3	1	5	High	Positive	No mitigation suggested.
Decrease in visual impact	3	4	3	1	5	High	Positive	Upgrading of derelict buildings will **decrease the visual impact** of the site.
Increase in site safety	3	4	3	1	5	High	Positive	Upgrading of derelict buildings will **increase the safety** of the site.
Enhanced agricultural productivity	3	4	3	1	5	High	Positive	**Increased Crop Yields:** Fertilizers provide essential

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								nutrients that improve soil fertility and promote plant growth. Local access to fertilizers can enable farmers to boost crop yields, supporting consistent agricultural output and helping meet food demand. **Soil Health and Quality:** Fertilizers improve soil health and structure over time. This is beneficial for sustainable agriculture, as it prevents soil degradation and erosion, preserving land productivity
Support for food security	3	4	3	1	5	High	Positive	**Stable Food Supply:** Fertilizers play a crucial role in ensuring a reliable and adequate food supply, as they help increase the productivity of staple crops. A local fertilizer plant supports food security by enabling local farmers to produce more efficiently. **Resilience Against Supply Chain Disruptions:** Increased availability of locally produced fertilizer reduces dependency on imported fertilizers, which can be subject to supply chain issues, price volatility, and delays. This can lead to a more stable and resilient

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								agricultural sector, better equipped to maintain consistent food supplies.
Economic growth and job creation	3	4	3	1	5	High	Positive	**Employment Opportunities:** The construction, expansion and operation of the fertilizer plant create jobs directly in the plant itself and indirectly in related sectors, including logistics, sales, and distribution. This helps stimulate the local economy and provide employment for residents. A total of 40 jobs will be created during the Construction Phase with 5 permanent and 3 temporary jobs created during the Operational Phase. Approximately 95% of these jobs will be given to people that can be considered "previously disadvantaged". **Increased Agricultural Profitability:** By providing locally-produced fertilizers, the plant can lower costs for farmers. Improved profitability for farmers allowing them to reinvest in their operations, purchase additional equipment, and expand their production, further enhancing the local economy.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Environmental and resource benefits	3	4	3	1	5	High	Positive	**Improved Resource Efficiency:** The fertilizer plant will be designed to use energy-efficient technologies, recycle water, and manage waste effectively, reducing the environmental impact of production. Additionally, local production reduces the emissions associated with transporting fertilizers over long distances.
Alignment with climate resilience goals	3	4	3	1	5	High	Positive	**Supporting Climate-Adaptive Agriculture:** Fertilizers improve soil moisture retention and enhance root systems that helps crops withstand droughts, which are increasingly common due to climate change. **Reduction of Carbon Footprint:** Producing fertilizers locally reduces the emissions associated with importing fertilizers from other regions or countries.
Technological and knowledge transfer	3	4	3	1	5	High	Positive	**Advances in Agricultural Technology:** A modern fertilizer plant will bring technological innovation to the region, helping to educate farmers about the latest advancements in soil science,

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								crop nutrition, and sustainable farming practices. **Training and Skill Development:** By providing job opportunities in manufacturing, operations, and environmental management, the plant contributes to the upskilling of the local workforce. Employees gain valuable skills in areas such as chemical processing, quality control, and sustainability practices, which are transferable to other industries.
Promotion of sustainable agricultural practices	3	4	3	1	5	High	Positive	**Encouragement of Soil-Friendly Fertilization:** With access to high-quality fertilizers tailored to local soil needs, farmers can adopt more efficient fertilization practices, applying the right amount of nutrients at the right time. This not only optimises crop growth but also minimises nutrient runoff into nearby water bodies, protecting water quality and ecosystems. **Reduced Land Degradation:** Fertilizers that are balanced and suited to local soil types can help maintain soil health, preventing issues like nutrient

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								depletion and erosion. This supports long-term land productivity, ensuring that local agriculture remains viable and environmentally sustainable.

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.

No specialists were used during the compilation of the report. The following impact management and mitigation measures have been identified.

Specific impact or risk	Impact management / mitigation
Contamination of soils as a result of leaks or spills from the factory.	Chemical ingredients and products have to be stored under a roof, on a cement floor in a bunded area, with canals leading to a cemented pit, preventing any drainage into soils.
Contamination of soils due to leakages from vehicles entering and exiting the site.	Vehicles utilising the road infrastructure should be serviced regularly and in a good condition.
Erosion and subsequent sedimentation of surface water.	A storm water management plan should be designed and implemented in order for storm water to be directed around the site and into the municipal system.
Air pollution on a local and cumulative level.	**1.Emission controls:** a. Dust Control: Implement dust collection systems with filters and scrubbers to capture and remove particulate matter from the air. Use dust suppression techniques such as water sprays, windbreaks, and vegetation cover to reduce dust emissions from storage and handling areas. b. VOC Control: Install vapor recovery systems to capture and treat VOC emissions during the production and storage of ammonia, urea, or other volatile chemicals. Use low-VOC or no-VOC coatings and sealants in equipment and storage tanks. c. NOx Control: Optimize combustion processes by using low-NOx burners and ensuring proper maintenance of combustion equipment. Implement selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) systems to reduce NOx emissions from combustion sources. **2. Greenhouse gas emission reduction:** a. Implement energy-efficient practices and equipment to reduce the carbon footprint of the plant. b. Consider adopting carbon capture and storage (CCS) technology to capture and store CO2 emissions from the plant's operations. **3. Process optimisation:** a. Implement best practices and process improvements to reduce emissions. This may include using more efficient manufacturing techniques or modifying production methods. b. Employ advanced process control systems to optimize operations and minimize emissions. **4. Regular maintenance and inspections:** a. Conduct regular equipment maintenance and inspections to identify and address leaks, malfunctions, or sources of pollution.

	b. Develop a proactive maintenance schedule to minimize fugitive emissions. **5. Monitoring and reporting:** a. Install air quality monitoring systems to continuously measure air emissions. b. Comply with environmental regulations and promptly report emissions data to the relevant authorities. **6. Training and employee awareness:** a. Train plant personnel on air pollution control measures and the importance of compliance with regulations. b. Encourage employees to report any potential pollution sources or issues. **7. Community engagement:** a. Engage with the local community to address concerns, share information about pollution control efforts, and seek feedback on environmental performance. **8. Environmental Management Systems (EMS):** a. Implement an EMS such as ISO 14001 to ensure a systematic approach to environmental management, including air pollution control. **9. Environmental audits:** Conduct regular environmental audits to identify and address areas where pollution control measures can be improved. **10. Research and development:** Invest in research and development to explore innovative technologies and processes for reducing air pollution in fertilizer manufacturing.
Soil pollution due to ineffective waste management.	**1. Implement Best Management Practices (BMPs):** a. Ensure proper storage and handling of raw materials, including NPK fertilizers, to prevent spills and leaks. b. Regularly inspect and maintain equipment and infrastructure to prevent leaks and emissions. c. Train employees on safe handling and storage practices for hazardous materials. **2. Containment and spill prevention:** a. Use impermeable surfaces for storage areas and implement secondary containment systems, such as bund walls, to capture potential leaks or spills. b. Install spill detection and alarm systems to quickly respond to any accidental releases. **3. Stormwater management:** a. Develop a comprehensive stormwater management plan that includes proper drainage and runoff controls to prevent contaminated water from entering the soil. b. Install sediment basins, detention ponds, or other treatment facilities to remove contaminants from stormwater before it is discharged. **4. Proper waste disposal:** a. Establish procedures for the proper disposal of hazardous waste, such as contaminated soils or wastewater, in accordance with local, state, and federal regulations. b. Consider recycling or reusing certain waste materials

	if feasible. **5. Pollution monitoring and testing:** a. Regularly monitor and test soil, groundwater, and surface water for contamination, especially in areas near the plant and storage facilities. b. Implement an early warning system to detect pollution incidents quickly. **6. Soil remediation:** a. If contamination is identified, undertake soil remediation activities as necessary. Remediation methods may include excavation and removal of contaminated soil, bioremediation, or chemical treatments. b. Consult with environmental experts and regulatory authorities to develop and execute a site-specific remediation plan. **7. Green infrastructure and vegetation:** a. Plant native vegetation in buffer zones to help absorb and filter contaminants from stormwater. b. Utilize phytoremediation, a process where certain plants can absorb and break down pollutants in the soil. **8. Regulatory compliance:** a. Comply with all relevant environmental regulations and permits. Keep up to date with changes in regulations and adapt your practices accordingly. **9. Emergency Response Plan:** a. Develop a comprehensive emergency response plan to address potential incidents quickly and efficiently. b. Train employees on how to respond to emergencies, including spills and leaks. **10. Public awareness and reporting:** a. Maintain open communication with the local community and regulatory agencies. b. Report any incidents or issues promptly and transparently to relevant authorities and the public. **11. Environmental Management System (EMS):** Implement an EMS such as ISO 14001 to manage environmental aspects, set objectives, and continuously improve environmental performance. **12. Regular audits and inspections:** Conduct regular internal audits and inspections to identify and address potential issues proactively.
Chemical pollution of surface and ground water sources.	**1. Containment and spill prevention:** Use secondary containment systems to capture and prevent spills of raw materials and finished products from reaching water bodies. **2. Effluent management:** Implement an effective wastewater treatment system to treat process water, reducing nutrient levels and removing contaminants before discharge. **3. Nutrient management:** Develop a nutrient management plan to minimise the risk of excess nutrients (nitrogen and phosphorus) entering water bodies. This may involve optimising production processes to reduce nutrient waste. **4. Best Management Practices (BMPs):**

	a. Implement BMPs for handling and storing raw materials, such as nitrogen and phosphorus sources, to prevent leaks and spills. b. Implement erosion and sediment control measures to prevent soil erosion and nutrient runoff during construction and operation. **5. Regular inspections and maintenance:** Conduct routine inspections of equipment, storage tanks, and pipelines to identify and repair leaks or damage promptly. **6. Employee training:** Train employees in proper handling and storage of chemicals, spill response, and other pollution prevention measures. **7. Stormwater management:** Develop a stormwater management plan that includes collection and treatment of stormwater to prevent contaminants from entering nearby water bodies. **8. Monitoring and reporting:** a. Continuously monitor water quality parameters in both effluent and nearby water bodies. b. Report any deviations from established standards or regulations to the appropriate authorities. **9. Regulatory compliance:** Stay informed about and adhere to all federal, state, and local regulations related to water quality and pollution control. Obtain the necessary permits for water discharge. **10. Emergency Response Plan:** a. Develop an emergency response plan for potential spills or accidents that could lead to water pollution. b. Train employees on the plan and conduct drills. **11. Public awareness and engagement:** Engage with the local community to raise awareness about your pollution prevention efforts and address concerns they may have. **12. Advanced technologies:** Consider advanced technologies, such as advanced oxidation processes or membrane filtration, to further treat wastewater and remove pollutants.
Degradation of the access road to the building.	Speed limits should be adhered to at all times Vehicles accessing and leaving the site should not be overloaded.
Increase in noise in the area.	Speed limits should be adhered to at all times Operations causing noise should only take place between normal working hours – Monday to Friday from 8h00 to 17h00.
Increasing environmental awareness during the operation.	No mitigation suggested.
Decrease in visual impact	Upgrading of derelict buildings will **decrease the visual impact** of the site.
Increase in site safety	Upgrading of derelict buildings will **increase the safety** of the site.
Enhanced agricultural productivity	**Increased Crop Yields:** Fertilizers provide essential nutrients that improve soil fertility and promote plant growth. Local access to fertilizers can enable farmers to boost crop yields, supporting consistent agricultural

	output and helping meet food demand. **Soil Health and Quality:** Fertilizers improve soil health and structure over time. This is beneficial for sustainable agriculture, as it prevents soil degradation and erosion, preserving land productivity
Support for food security	**Stable Food Supply:** Fertilizers play a crucial role in ensuring a reliable and adequate food supply, as they help increase the productivity of staple crops. A local fertilizer plant supports food security by enabling local farmers to produce more efficiently. **Resilience Against Supply Chain Disruptions:** Increased availability of locally produced fertilizer reduces dependency on imported fertilizers, which can be subject to supply chain issues, price volatility, and delays. This can lead to a more stable and resilient agricultural sector, better equipped to maintain consistent food supplies.
Economic growth and job creation	**Employment Opportunities:** The construction, expansion and operation of the fertilizer plant create jobs directly in the plant itself and indirectly in related sectors, including logistics, sales, and distribution. This helps stimulate the local economy and provide employment for residents. A total of 40 jobs will be created during the Construction Phase with 5 permanent and 3 temporary jobs created during the Operational Phase. Approximately 95% of these jobs will be given to people that can be considered “previously disadvantaged”. **Increased Agricultural Profitability:** By providing locally-produced fertilizers, the plant can lower costs for farmers. Improved profitability for farmers allowing them to reinvest in their operations, purchase additional equipment, and expand their production, further enhancing the local economy.
Environmental and resource benefits	**Improved Resource Efficiency:** The fertilizer plant will be designed to use energy-efficient technologies, recycle water, and manage waste effectively, reducing the environmental impact of production. Additionally, local production reduces the emissions associated with transporting fertilizers over long distances.
Alignment with climate resilience goals	**Supporting Climate-Adaptive Agriculture:** Fertilizers improve soil moisture retention and enhance root systems that helps crops withstand droughts, which are increasingly common due to climate change. **Reduction of Carbon Footprint:** Producing fertilizers locally reduces the emissions associated with importing fertilizers from other regions or countries.
Technological and knowledge transfer	**Advances in Agricultural Technology:** A modern fertilizer plant will bring technological innovation to the region, helping to educate farmers about the latest advancements in soil science, crop nutrition, and sustainable farming practices. **Training and Skill Development:** By providing job opportunities in manufacturing, operations, and environmental management, the plant contributes to the upskilling of the local workforce. Employees gain valuable skills in areas such as chemical processing,

	quality control, and sustainability practices, which are transferable to other industries.
Promotion of sustainable agricultural practices	**Encouragement of Soil-Friendly Fertilization:** With access to high-quality fertilizers tailored to local soil needs, farmers can adopt more efficient fertilization practices, applying the right amount of nutrients at the right time. This not only optimises crop growth but also minimises nutrient runoff into nearby water bodies, protecting water quality and ecosystems. **Reduced Land Degradation:** Fertilizers that are balanced and suited to local soil types can help maintain soil health, preventing issues like nutrient depletion and erosion. This supports long-term land productivity, ensuring that local agriculture remains viable and environmentally sustainable.

2. List the impact management measures that were identified by all Specialist that will be included in the EMPr

Specific impact or risk	Impact management / mitigation
Contamination of soils as a result of leaks or spills from the factory.	Chemical ingredients and products have to be stored under a roof, on a cement floor in a bunded area, with canals leading to a cemented pit, preventing any drainage into soils.
Contamination of soils due to leakages from vehicles entering and exiting the site.	Vehicles utilising the road infrastructure should be serviced regularly and in a good condition.
Erosion and subsequent sedimentation of surface water.	A storm water management plan should be designed and implemented in order for storm water to be directed around the site and into the municipal system.
Air pollution on a local and cumulative level.	**1.Emission controls:** a. Dust Control: Implement dust collection systems with filters and scrubbers to capture and remove particulate matter from the air. Use dust suppression techniques such as water sprays, windbreaks, and vegetation cover to reduce dust emissions from storage and handling areas. b. VOC Control: Install vapor recovery systems to capture and treat VOC emissions during the production and storage of ammonia, urea, or other volatile chemicals. Use low-VOC or no-VOC coatings and sealants in equipment and storage tanks. c. NOx Control: Optimize combustion processes by using low-NOx burners and ensuring proper maintenance of combustion equipment. Implement selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) systems to reduce NOx emissions from combustion sources. **2. Greenhouse gas emission reduction:** a. Implement energy-efficient practices and equipment to reduce the carbon footprint of the plant. b. Consider adopting carbon capture and storage (CCS) technology to capture and store CO2 emissions from the plant's operations. **3. Process optimisation:** a. Implement best practices and process improvements to reduce emissions. This may include using more

	efficient manufacturing techniques or modifying production methods. b. Employ advanced process control systems to optimize operations and minimize emissions. **4. Regular maintenance and inspections:** a. Conduct regular equipment maintenance and inspections to identify and address leaks, malfunctions, or sources of pollution. b. Develop a proactive maintenance schedule to minimize fugitive emissions. **5. Monitoring and reporting:** a. Install air quality monitoring systems to continuously measure air emissions. b. Comply with environmental regulations and promptly report emissions data to the relevant authorities. **6. Training and employee awareness:** a. Train plant personnel on air pollution control measures and the importance of compliance with regulations. b. Encourage employees to report any potential pollution sources or issues. **7. Community engagement:** a. Engage with the local community to address concerns, share information about pollution control efforts, and seek feedback on environmental performance. **8. Environmental Management Systems (EMS):** a. Implement an EMS such as ISO 14001 to ensure a systematic approach to environmental management, including air pollution control. **9. Environmental audits:** Conduct regular environmental audits to identify and address areas where pollution control measures can be improved. **10. Research and development:** Invest in research and development to explore innovative technologies and processes for reducing air pollution in fertilizer manufacturing.
Soil pollution due to ineffective waste management.	**1. Implement Best Management Practices (BMPs):** a. Ensure proper storage and handling of raw materials, including NPK fertilizers, to prevent spills and leaks. b. Regularly inspect and maintain equipment and infrastructure to prevent leaks and emissions. c. Train employees on safe handling and storage practices for hazardous materials. **2. Containment and spill prevention:** a. Use impermeable surfaces for storage areas and implement secondary containment systems, such as bund walls, to capture potential leaks or spills. b. Install spill detection and alarm systems to quickly respond to any accidental releases. **3. Stormwater management:** a. Develop a comprehensive stormwater management plan that includes proper drainage and runoff controls to prevent contaminated water from entering the soil. b. Install sediment basins, detention ponds, or other

	treatment facilities to remove contaminants from stormwater before it is discharged. **4. Proper waste disposal:** a. Establish procedures for the proper disposal of hazardous waste, such as contaminated soils or wastewater, in accordance with local, state, and federal regulations. b. Consider recycling or reusing certain waste materials if feasible. **5. Pollution monitoring and testing:** a. Regularly monitor and test soil, groundwater, and surface water for contamination, especially in areas near the plant and storage facilities. b. Implement an early warning system to detect pollution incidents quickly. **6. Soil remediation:** a. If contamination is identified, undertake soil remediation activities as necessary. Remediation methods may include excavation and removal of contaminated soil, bioremediation, or chemical treatments. b. Consult with environmental experts and regulatory authorities to develop and execute a site-specific remediation plan. **7. Green infrastructure and vegetation:** a. Plant native vegetation in buffer zones to help absorb and filter contaminants from stormwater. b. Utilize phytoremediation, a process where certain plants can absorb and break down pollutants in the soil. **8. Regulatory compliance:** a. Comply with all relevant environmental regulations and permits. Keep up to date with changes in regulations and adapt your practices accordingly. **9. Emergency Response Plan:** a. Develop a comprehensive emergency response plan to address potential incidents quickly and efficiently. b. Train employees on how to respond to emergencies, including spills and leaks. **10. Public awareness and reporting:** a. Maintain open communication with the local community and regulatory agencies. b. Report any incidents or issues promptly and transparently to relevant authorities and the public. **11. Environmental Management System (EMS):** Implement an EMS such as ISO 14001 to manage environmental aspects, set objectives, and continuously improve environmental performance. **12. Regular audits and inspections:** Conduct regular internal audits and inspections to identify and address potential issues proactively.
Chemical pollution of surface and ground water sources.	**1. Containment and spill prevention:** Use secondary containment systems to capture and prevent spills of raw materials and finished products from reaching water bodies. **2. Effluent management:** Implement an effective wastewater treatment system to

	treat process water, reducing nutrient levels and removing contaminants before discharge. **3. Nutrient management:** Develop a nutrient management plan to minimise the risk of excess nutrients (nitrogen and phosphorus) entering water bodies. This may involve optimising production processes to reduce nutrient waste. **4. Best Management Practices (BMPs):** a. Implement BMPs for handling and storing raw materials, such as nitrogen and phosphorus sources, to prevent leaks and spills. b. Implement erosion and sediment control measures to prevent soil erosion and nutrient runoff during construction and operation. **5. Regular inspections and maintenance:** Conduct routine inspections of equipment, storage tanks, and pipelines to identify and repair leaks or damage promptly. **6. Employee training:** Train employees in proper handling and storage of chemicals, spill response, and other pollution prevention measures. **7. Stormwater management:** Develop a stormwater management plan that includes collection and treatment of stormwater to prevent contaminants from entering nearby water bodies. **8. Monitoring and reporting:** a. Continuously monitor water quality parameters in both effluent and nearby water bodies. b. Report any deviations from established standards or regulations to the appropriate authorities. **9. Regulatory compliance:** Stay informed about and adhere to all federal, state, and local regulations related to water quality and pollution control. Obtain the necessary permits for water discharge. **10. Emergency Response Plan:** a. Develop an emergency response plan for potential spills or accidents that could lead to water pollution. b. Train employees on the plan and conduct drills. **11. Public awareness and engagement:** Engage with the local community to raise awareness about your pollution prevention efforts and address concerns they may have. **12. Advanced technologies:** Consider advanced technologies, such as advanced oxidation processes or membrane filtration, to further treat wastewater and remove pollutants.
Degradation of the access road to the building.	Speed limits should be adhered to at all times Vehicles accessing and leaving the site should not be overloaded.
Increase in noise in the area.	Speed limits should be adhered to at all times Operations causing noise should only take place between normal working hours – Monday to Friday from 8h00 to 17h00.
Increasing environmental awareness during the operation.	No mitigation suggested.

Decrease in visual impact	Upgrading of derelict buildings will **decrease the visual impact** of the site.
Increase in site safety	Upgrading of derelict buildings will **increase the safety** of the site.
Enhanced agricultural productivity	**Increased Crop Yields:** Fertilizers provide essential nutrients that improve soil fertility and promote plant growth. Local access to fertilizers can enable farmers to boost crop yields, supporting consistent agricultural output and helping meet food demand. **Soil Health and Quality:** Fertilizers improve soil health and structure over time. This is beneficial for sustainable agriculture, as it prevents soil degradation and erosion, preserving land productivity
Support for food security	**Stable Food Supply:** Fertilizers play a crucial role in ensuring a reliable and adequate food supply, as they help increase the productivity of staple crops. A local fertilizer plant supports food security by enabling local farmers to produce more efficiently. **Resilience Against Supply Chain Disruptions:** Increased availability of locally produced fertilizer reduces dependency on imported fertilizers, which can be subject to supply chain issues, price volatility, and delays. This can lead to a more stable and resilient agricultural sector, better equipped to maintain consistent food supplies.
Economic growth and job creation	**Employment Opportunities:** The construction, expansion and operation of the fertilizer plant create jobs directly in the plant itself and indirectly in related sectors, including logistics, sales, and distribution. This helps stimulate the local economy and provide employment for residents. A total of 40 jobs will be created during the Construction Phase with 5 permanent and 3 temporary jobs created during the Operational Phase. Approximately 95% of these jobs will be given to people that can be considered “previously disadvantaged”. **Increased Agricultural Profitability:** By providing locally-produced fertilizers, the plant can lower costs for farmers. Improved profitability for farmers allowing them to reinvest in their operations, purchase additional equipment, and expand their production, further enhancing the local economy.
Environmental and resource benefits	**Improved Resource Efficiency:** The fertilizer plant will be designed to use energy-efficient technologies, recycle water, and manage waste effectively, reducing the environmental impact of production. Additionally, local production reduces the emissions associated with transporting fertilizers over long distances.
Alignment with climate resilience goals	**Supporting Climate-Adaptive Agriculture:** Fertilizers improve soil moisture retention and enhance root systems that helps crops withstand droughts, which are increasingly common due to climate change. **Reduction of Carbon Footprint:** Producing fertilizers locally reduces the emissions associated with importing fertilizers from other regions or countries.
Technological and knowledge transfer	**Advances in Agricultural Technology:** A modern fertilizer plant will bring technological innovation to the

	region, helping to educate farmers about the latest advancements in soil science, crop nutrition, and sustainable farming practices. **Training and Skill Development:** By providing job opportunities in manufacturing, operations, and environmental management, the plant contributes to the upskilling of the local workforce. Employees gain valuable skills in areas such as chemical processing, quality control, and sustainability practices, which are transferable to other industries.
Promotion of sustainable agricultural practices	**Encouragement of Soil-Friendly Fertilization:** With access to high-quality fertilizers tailored to local soil needs, farmers can adopt more efficient fertilization practices, applying the right amount of nutrients at the right time. This not only optimises crop growth but also minimises nutrient runoff into nearby water bodies, protecting water quality and ecosystems. **Reduced Land Degradation:** Fertilizers that are balanced and suited to local soil types can help maintain soil health, preventing issues like nutrient depletion and erosion. This supports long-term land productivity, ensuring that local agriculture remains viable and environmentally sustainable.

3.	List the specialist investigations and the impact management measures that will **not** be implemented and provide an explanation as to why these measures will not be implemented.

None

4.	Explain how the proposed development will impact the surrounding communities.

Specific impact or risk	Impact management / mitigation
Air pollution on a local and cumulative level.	**1.Emission controls:** a. Dust Control: Implement dust collection systems with filters and scrubbers to capture and remove particulate matter from the air. Use dust suppression techniques such as water sprays, windbreaks, and vegetation cover to reduce dust emissions from storage and handling areas. b. VOC Control: Install vapor recovery systems to capture and treat VOC emissions during the production and storage of ammonia, urea, or other volatile chemicals. Use low-VOC or no-VOC coatings and sealants in equipment and storage tanks. c. NOx Control: Optimize combustion processes by using low-NOx burners and ensuring proper maintenance of combustion equipment. Implement selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) systems to reduce NOx emissions from combustion sources. **2. Greenhouse gas emission reduction:** a. Implement energy-efficient practices and equipment to reduce the carbon footprint of the plant. b. Consider adopting carbon capture and storage (CCS) technology to capture and store CO2 emissions from the plant's operations. **3. Process optimisation:**

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	access to high-quality fertilizers tailored to local soil needs, farmers can adopt more efficient fertilization practices, applying the right amount of nutrients at the right time. This not only optimises crop growth but also minimises nutrient runoff into nearby water bodies, protecting water quality and ecosystems. **Reduced Land Degradation:** Fertilizers that are balanced and suited to local soil types can help maintain soil health, preventing issues like nutrient depletion and erosion. This supports long-term land productivity, ensuring that local agriculture remains viable and environmentally sustainable.

5.	Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.

Fertilizers improve soil moisture retention and enhance root systems that helps crops withstand droughts, which are increasingly common due to climate change.

6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.

None

7.	Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.

No specialists were used.

8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.

1. Avoidance

- **Site Selection in Industrial Zone**: The proposed plant is located in an Industrial to avoid impacts on residential, agricultural, or environmentally sensitive areas. Choosing a site designated for industrial activity helps avoid conflicts with land uses that might be incompatible with fertilizer production.
- **Avoidance of Sensitive Ecosystems**: The ecological data were used to identify any nearby sensitive ecosystems or water bodies. The proposed development was placed to avoids these areas, reducing direct impacts on biodiversity and ecosystem health.
- **Avoidance of Pollution Through Best Practices**: By implementing modern production methods and technology, the plant will avoid excessive emissions, chemical spills, and pollution.

2. Minimisation

- **Efficient Resource Use**: Minimising resource consumption such as water, energy, and raw materials is essential.
- **Reduction of Emissions**: By using advanced filtration and emissions control technologies, the plant will minimise air and water pollution. This includes installing scrubbers, carbon filters, or water treatment systems to reduce harmful emissions that would otherwise affect air and water quality.
- **Minimised Transport Impact**: Placing the plant in a strategic location close to primary users (farmers) reduces the need for extensive transport. This decreases vehicle emissions, reduces fuel use, and lessens road congestion.
- **Noise and Odour Control**: Soundproofing measures, odour-neutralizing systems, and limited operating hours will minimise these impacts on surrounding communities.

3. Rehabilitation

- **On-Site Rehabilitation Plans**: The plant will establish a rehabilitation plan for areas disturbed by construction or operation. This will include soil stabilisation and vegetation replanting.
- **Waste and By-Product Management**: By implementing a robust waste management plan, the plant will ensure that any by-products (e.g., chemical residues) are safely treated, recycled, or disposed of.

4. Offsetting

Offsetting was not considered as all the expected impacts can be mitigated.

Achieving the Best Practicable Environmental Option

By applying the mitigation hierarchy at every stage, the fertilizer plant aims to balance operational needs with environmental protection, choosing options that have the least environmental impact and highest community benefit. This structured approach supports a "best practicable environmental option" (BPEO), ensuring that:

- **Unnecessary impacts are avoided** by careful planning and site selection.

- **Unavoidable impacts are minimised** through state-of-the-art technology and efficient resource use.
- **Rehabilitation is planned** for any disturbed areas, including waste management and eventual site decommissioning.

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.
1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)
1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.

2. Recommendation of the Environmental Assessment Practitioner ("EAP")

2.1.	Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr
The chosen site is located within an industrial zone, which helps avoid impacts on residential, agricultural, and ecologically sensitive areas. The plant's location is in line with municipal zoning requirements, minimising conflicts with surrounding land uses and reducing the risk of disturbing nearby biodiversity. Advanced filtration and waste management systems will reduce air and water pollution, controlling impacts on local air quality and surrounding water sources. These measures also reduce the carbon footprint by limiting emissions from production and transport.	
2.2.	Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.
All the mitigation measures identified will be included in the EMPr that should form part of the conditions of the authorisation.	
2.3.	Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.
If these management and mitigations measures are implemented, the impacts can be maintained at a relatively low level. It is recommended that the activity be authorised. Rehabilitation and soil management must adhere to the guidelines provided in the EMPr. Conduct environmental audits every two months during the Construction Phase and every six months during the Operational Phase. Carry out rehabilitation monitoring in accordance with the EMPr. Continue rehabilitation efforts throughout the operational phase	
2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
None	
2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.
The EA is required for 5 years. However, the activity will continue as the site will be operated as a liquid fertilizer plant. Post construction monitoring should continue throughout the entire lifetime of the plant, as failure to implement the necessary mitigation can result in high negative impacts.	

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.
The liquid fertilizer forms a closed system so that no water can be wasted during the process. Any water or spills are collected and reused in the production process. Storm water that runs through the current granular fertilizer plant is collected in reservoirs. Water from these reservoirs will be used in the production of liquid fertilizer to minimise the amount of potable water used.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
Any water or spills are collected and reused in the production process. Storm water that runs through the current granular fertilizer plant is collected in reservoirs. Water from these reservoirs will be used in the production of liquid fertilizer to minimise the amount of potable water used.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
Energy efficient light bulbs will be used throughout. Load reduction motors will be installed. All machinery will be fitted with soft starters.	

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I……, ID number ……in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;

- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;

- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;

- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;

- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;

- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

Signature of the Applicant: Date:

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I ……, EAPASA Registration number …….. as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

Signature of the EAP: Date:

Name of company (if applicable):