Gert Sibande District Municipality

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ATMOSPHERIC EMISSION LICENCE AS CONTEMPLATED IN SECTION 43 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 2004, (ACT NO. 39 OF 2004) (NEMAQA) AS AMENDED

I, **Tsunke Daniel Hlanyane**, in my capacity as **License Officer** (hereinafter referred to as "the Licensing Authority"), in terms of section 43 of the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004, hereinafter referred to as the "Act"), and as provided for in section 36(1) of the Act, hereby grant an Atmospheric Emission Licence to **Sasol South Africa Ltd: Secunda Chemicals Operations- Polymers Division** ('the Applicant)."

This Atmospheric Emission Licence is issued to **Sasol South Africa Ltd: Secunda Chemicals Operations- Polymers Division** in terms of section 41(1) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("the Act"), in respect of Listed Activity **Category 2:Sub-category 2.1 Combustion Installations; Category 6: Organic Chemicals Industry**. The Atmospheric Emission Licence has been issued on the basis of information provided in the company's application dated **21 February 2019** and information that became available during processing of the application.

The Atmospheric Emission Licence is valid upon signature for a period not exceeding five (05) years from the date of issue of the licence. The reason issuance of the licence is for renewal. The Atmospheric Emission Licence is issued subject to the conditions and requirements set out below which form part of The Atmospheric Emission Licence and which are binding on the holder of the Atmospheric Emission Licence ("the holder").

1 ATMOSPHERIC EMISSION LICENCE ADMINISTRATION

Name of the Licensing Authority	Gert Sibande District Municipality
Atmospheric Emission Licence Number	Govan Mbeki/Sasol South Africa Ltd: Secunda Chemicals Operations-Polymers Division/0021/2019/F03
Atmospheric Emission Licence Issue Date	14 May 2019
Atmospheric Emission Licence Type	Renewal
Expiry date	14 May 2024

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2 ATMOSPHERIC EMISSION LICENCE HOLDER DETAILS

Enterprise Name	Sasol South Africa Ltd
Trading as	Secunda Chemicals Operations-Polymers Division
Enterprise Registration Number (Registration Numbers if Joint Venture)	1968/013914/06
Registered Address	Sasol Place 50 Katherine Street Sandton, Gauteng
Postal Address	Private Bag X1000 Secunda 2302
Telephone Number (General)	017 610 5105
Industry Sector	Industrial Organic Chemicals
Name of Emission Control Officer	Wilma Groenewald
Telephone Number	017 610 5105
Cell Phone Number	071 680 4315
Fax Number	Not Available
Email Address	wilma.groenewald@sasol.com
After Hours Contact Details	082 902 1789
Land Use Zoning as per Town Planning Scheme	Industrial Special

3. LOCATION AND EXTENT OF PLANT

3.1. Facility Address

Physical Address of the Premises	PDP Kruger Secunda 2302
Description of Site (Erf)	Highveld Ridge Mpumalanga
Coordinates of Approximate Centre of Operations	[redacted]
Extent (km²)	24.05
Elevation Above Mean Sea Level (m)	1597
Province	Mpumalanga
Metropolitan/District Municipality	Gert Sibande District Municipality
Local Municipality	Govan Mbeki Local Municipality
Designated Priority Area	Highveld Priority Area

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3.2. Description of surrounding land use (within 5 km radius)

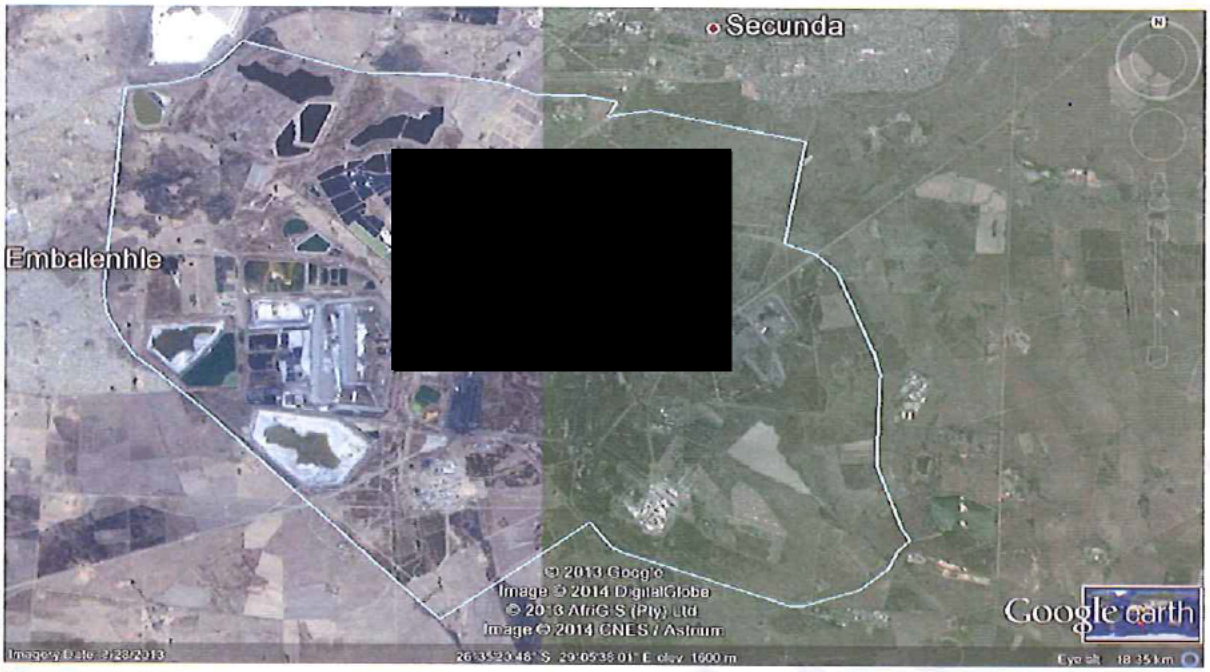

Figure 1: Google Earth Image of area surrounding the site (5km).

4. GENERAL CONDITIONS

4.1. Process and ownership changes

(a) The holder of the Atmospheric Emission Licence must ensure that all unit processes and apparatus used for the purpose of undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing atmospheric emissions, are at all times properly maintained and operated.

(b) No building, plant or site of works related to the listed activity or activities used by the licence holder shall be extended, altered or added to the listed activity without an environmental authorisation from the competent authority. The investigation, assessment and communication of potential impact of such an activity must follow the assessment procedure as prescribed in the Environmental Impact Assessment Regulations published in terms of Section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended.

(c) Any changes in processes or production increases, by the licence holder, will require prior written approval by the licensing authority.

(d) Any changes to the type and quantities of input materials and products, or to production equipment and treatment facilities will require prior written approval by the licensing authority.

(e)The licence holder must, in writing, inform the licensing authority of any change of ownership of the enterprise. The licensing authority must be informed within thirty (30) working days after the change of ownership.

(f) The licence holder must immediately on cessation or decommissioning of the listed activity inform, in writing the licensing authority.

(g) The licence holder must notify the Licensing Authority in writing and submit the closure and rehabilitation plan three (3) months prior to the decommissioning of the facility.

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4.2. General duty of care

(a) The holder of the Licence must, when undertaking the listed activity, adhere to the duty of care obligations as set out in section 28 of the NEMA.

(b) The Licence holder must undertake the necessary measures to minimize or contain the atmospheric emissions. The measures are set out in section 28(3) of the NEMA as amended.

(c) Failure to comply with the above condition is a breach of the duty of care, and the Licence holder will be subject to the sanctions set out in section 28 of the NEMA as amended including Part III Section 3 of Gert Sibande District Municipal Air Quality by-laws.

4.3. Sampling and/or analysis requirements

(a) Measurement, calculation and /or sampling and analysis shall be carried out in accordance with any nationally or internationally acceptable standard in line with (Annexure A) of NEMAQA as amended.

(b) Methods other than those contained in Annexure A of NEMAQA as amended may be used with the written consent of the National Air Quality Officer.

(c) In seeking the written consent referred to in paragraph (b), an applicant must provide the National Air Quality Officer with any information that supports the equivalence of the method other than that contained in Annexure A to a method contained in Annexure A.

(d) The licence holder is responsible for quality assurance of methods and performance. Where the holder of the licence uses internal or external laboratories for sampling or analysis, only accredited laboratories by the national accreditation body shall be used. The certified copy of accreditation of the internal or external laboratory must be submitted to the license authority annually including its external audits certification.

(e) The licence holder must provide the licensing authority on request with raw data obtained during sampling and or analysis including proof of agreed methodology used to reach the final results submitted for compliance.

4.4. General requirements for licence holder

(a) The licence holder is responsible for ensuring compliance with the conditions of this licence by any person acting on his, her or its behalf including but not limited to an employee, agent, sub-contractor or person rendering a service to the holder of the licence.

(b) The licence does not relieve the licence holder to comply with any other statutory requirements that may be applicable to the carrying on of the listed activity.

(c) A copy of the licence must be kept at the premises where the listed activity is undertaken. The original licence must be made available to the Environmental Management Inspector / Air Quality Officer or an authorised officer representing the licensing authority who requests to see it.

(d) The licence holder must inform, in writing, the licensing authority of any change to its details but not limited to the name of the Emission Control Officer, postal address and/or telephonic details within five (05) working days after such change has been effected.

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(e) The Emission Control Officer or facility representative must attend the Highveld Priority Area Implementation Task Team or Air Quality Stakeholder Forum Meetings quarterly.

(f) The licence holder must report and submit annual emission report on the National Atmospheric Emission Inventory System (NAEIS) for the preceding year in terms of GNR 283 in Government Gazette 38633 of 02 April 2015.

(g) The licence holder must hold an environmental consultation meeting with affected and interested parties annually to give feedback on the impact of the facility on related matters, and must provide written prove of such consultation to the licensing authority annually.

4.5. Statutory obligations

The licence holder must comply with the obligations as set out in Chapter 5 of NEMAQA (Act no. 39 of 2004) as amended, Chapter 10 and 11 of the National Health Act 61 of 2003, National Environmental Management Act 108 of 1998 as amended, National Water Act No.36 of 1998, and National Waste Management Act No. 59 of 2008 including Gert Sibande District by-laws.

5 NATURE OF PROCESS

5.1 Process Description

5.1.1. Polypropylene

5.1.1.1. Polymerisation

The purpose of the polypropylene plants (polypropylene one and two – PP1&2) is to produce polypropylene pellets from the monomer feed streams, namely liquid propylene and gaseous ethylene. Liquid propylene is taken from [redacted] and stored in five pressure vessels (bullets tanks). Gaseous ethylene is taken from [redacted] Polymerisation reactors convert monomer feed streams to polymer powder which is then extruded to produce polypropylene pellets.

Polymerisation is carried out in [redacted] reactors using suitable catalyst [redacted]

Polymer powder is discharged from the reactor by expanding the reactor and a mixture of polymers and carrier gas leaves the reactor. The gas or solid mixture is then separated in the degassing vessel. The carrier gas is recovered and sent back to the monomers plant for further processing.

For the production of co-polymers, a second reactor system is used [redacted]. Ethylene is fed to the second reactor to enable the incorporation of a rubber phase in the polymer. An alcohol is added in the process to reduce the activity of the catalyst in the reactor. Polymers powder is transferred to the extrusion plant where it is pelletized before being bagged at the bagging plant.

Polypropylene two plant (PP2) is equipped with a [redacted] unit, [redacted] to remove and clean plastic material [redacted] The unit is normally offline and only operate on demand, i.e. once in three months [redacted]. Stack emissions [redacted] are minimal and not analysed for carbon footprint.

Hydrogen and other organic gases from the plant are destroyed in the PP1 and PP2 flares.

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5.1.2. Monomers

5.1.2.1. Propylene purification plants 1, 2 and 3

Propylene purification plant 1 is referred to as unit 70, propylene purification plant 2 is referred to as unit 285 and propylene purification plant 3 is referred to as unit 288.

The propylene purification units (PPU) are designed to upgrade a propylene rich feedstock from Secunda Synfuels Operations (SSO) as well as recycle feed stream from the propylene polymerization (PP) plants to a high purity propylene product.

The purification of the propylene in the feedstock is achieved by means of a two-stage fractionation process. From this process the propylene is routed to tankfarm where it is stored and distributed throughout the value chain.

All organic gasses are routed to SSO main factory flares system for destuction.

5.1.2.2. Ethylene purification plant

The ethylene purification units (EPU), commonly referred to as unit 24 and 280, produces high purity ethylene product via two main feedstocks.

- C2 rich feedstock is received from SSO. This feedstream contains ethylene and ethane. The ethylene is seperated out and purified from this feedstream. This C2 rich feed processing is performed on both EPU 2 & 3 (unit 24 & unit 280).

- The ethane removed from the C2 rich feed from SSO as well as other additional ethane feedstreams are thermally cracked at EPU2 (unit 24) into a variety of different molecules including hydrogen sulphide (H_2S) and carbon dioxide (CO_2). These contaminants are removed via an amine and caustic scrubbing section. The remaining hydrocarbon rich stream is then purified via various fracitonation steps into their respective product streams, namely etylhene, ethane (routed to the start of the process) as well as other less valuable products each routed to a next user in the Sasol value chain.

There are two locations, with a total of six point sources, at the ethylene purification plant whereby emissions to atmosphere occurs, namely five ethane furnaces hence five stacks to atmosphere. The amine system removes acid gasses from the process by a circulating amine solution. This amine solution is passed through a regeneration section whereby the regenerated amine solution is routed back to the process and the acid gasses are routed to atmosphere.

All organic gasses are routed to SSO main factory flares system for destuction.

5.1.2.3. Unit 558 Oil water sewer reservoir

Unit 558 is an oil water sewer reservoir. This reservoir is designed to separate out any residual oils and contaminants from the storm water system for SSO unit (unit 293 – SCC) and for SCO units (unit 590 and 288). The cleaner water is then routed to SSO for further processing.

5.2 Listed activities

Listed Activity Number	Category of Listed Activity	Sub-category of the listed activity	Description of the Listed Activity	Application	Polymers Processes
2.1	Petroleum Industry	Combustion installation	Combustion installation not used primarily for steam raising or electricity generation (furnaces and heaters)	All refinery furnaces and heaters	Unit 24 ethane furnaces
6	Organic Chemical Industry	N/A	The production, or use in production of organic chemicals not specified elsewhere including acetylene, acetic, maleic or phthalic anhydride or their acid, carbon disulphide, pyridine, formaldehyde, aceltaldehyde, acrolein and its derivatives, acrylonitrile, amines and synthetic rubber. The production of organometallic compounds, organic dyes and pigments, surface=active agents. The polymerisation or co-polymerisation of any unsaturated hydrocarbons, substituted hydrocarbon (including vinyl chloride). The manufacture, recovery or purification or acrylic acid or any ester of acrylic acid. The use of toluene di-isocyanate or other di-isocyanate of comparable volatility or recovery of pyridine.	All installations producing and or using more than 100 tons per annum of any of the listed compounds	Polypropylene 1 and 2, Propylene feed storage tanks, Propylene purification plants 1, 2 and 3, Ethylene purification plant 2 and 3

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5.3 Unit process or processes

Unit process	Function of unit process	Batch or continuous process	Operating hours per day	No. days operation per year
Polypropylene				
Co-catalyst preparation [redacted]	Batch preparation of [redacted] and iso-propanol [redacted] through dilution with [redacted] and storage of [redacted] in hold up tanks.	Batch	24	365
Polymerisation	To produce polypropylene powder.	Continuous	24	365
Propylene feed storage	Storage of propylene feed in five pressure vessels (bullet tanks)	Continuous	24	365
Extrusion	Conversion of polypropylene powder to pellets.	Continuous	24	365
Flare	Destruction of hydrocarbon gases released during abnormal operations.	Batch	24	365
Bagging	Storage and bagging of pallets.	Continuous	24	365
Ethylene purification plant 2 - unit 24				
Ethane crackers	Cracks the gas into an ethylene rich stream.	Continuous	24	365
Quench water system	Utilized for inter stage cooling.	Continuous	24	365
Cracked gas system	Compress gasses and creates the required pressure for transfer through all the subsequent processes.	Continuous	24	365
Amine system scrubber	Remove hydrogen sulphide (H_2S) and carbon dioxide (CO_2) from the cracked gas.	Continuous	24	365
Amine regeneration system	Stripping off the contaminated amine.	Continuous	24	365
Caustic scrubber	Further removes any remaining CO_2.	Continuous	24	365
Pre-cooling and drying	Cool down the gas in order to knock out all possible free moisture and heavy hydrocarbons.	Continuous	24	365
Turbo expanders	Utilized to expand the hydrogen (H_2) rich to facilitate the separation of the C_2 fractions remaining in the H_2 stream.	Continuous	24	365
De-methanizer	Utilized to separate the C_{3+} from the C_2 fractions.	Continuous	24	365
C_2 hydrogenation	Acetylene (C_2H_2) present in the C_2 gas is converted into ethylene (C_2H_4) by means of hydrogenation.	Continuous	24	365

Unit process	Function of unit process	Batch or continuous process	Operating hours per day	No. days operation per year
2nd demethanizer	Serves as a second demethanizer column stripping off methane (CH_4) and hydrogen (H_2) from the C_2's.	Continuous	24	365
C_2 splitter	The final separation stage where the only two gases-ethylene and ethane enters the column and is separated by means of distillation.	Continuous	24	365
C_3/C_4 debutanizer	Separates C_3/C_4.	Continuous	24	365
C_3/C_4 hydrogenation	Selectively converts acetylene and dienes.	Continuous	24	365
KC-5001/2	Is utilized to compress the C_2 rich gas into the C_2 rich header to Sasol 1.	Continuous	24	365
KC 6001/2	Is utilized to compress the ethylene into the ethylene header to Sasol 1.	Continuous	24	365
Propylene purification plant 1 - unit 70				
70VL0101 de-ethanizer distillation column	Removes C_2 components C_3 condensate by means of low pressure (LP) stream. The C_2 components are recovered to unit 24.	Continuous	24	365
70VL0102 de-propanizer distillation column	Separates propane from propylene (which is the final product) by means of LP steam.	Continuous	24	365
70VL0101 de-ethanizer distillation column	Removes C_2 components C_3 condensate by means of LP stream. The C_2 components are recovered to unit 24.	Continuous	24	365
70KX010 ammonia compressor	Utilized for cooling purposes.	Continuous	24	365
Ethylene purification plant 3 - unit 280				
Amine wash column	Amine wash to remove sour gas.	Continuous	24	365
Caustic wash	Caustic wash to remove remaining sour gas.	Continuous	24	365
Precool and drying section	Precooks feed to splitter and removes traces of moisture in the feed.	Continuous	24	365
C_2 splitter	Separation of ethylene from ethane and heavier.	Continuous	24	365
Ethane compressor	Compresses ethane from splitter to put into ethane header to unit 24.	Continuous	24	365
Flare vaporizer	Vaporizes hydrocarbons to flare (if required).	Continuous	24	365
Regent system	Regenerates driers.	Batch	24	365
Propylene refrigeration loop	Closed loop propylene loop providing heating and cooling utility to splitter section.	Continuous	24	365

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Unit process	Function of unit process	Batch or continuous process	Operating hours per day	No. days operation per year
Propylene purification plant 2 - unit 285				
Feed system	Buffer system feeding splitter.	Continuous	24	365
C_3 splitter	Separates propylene from heavier hydrocarbons.	Continuous	24	365
Condensate system	Collects and pumps steam condensate to battery limit (BL).	Continuous	24	365
Flare drum	Flare knockout drum.	Continuous	24	365
Propylene purification plant 3 - unit 288				
Feed preheat	Preheats feed to splitter.	Continuous	24	365
C_3 splitter	Separates propylene from heavier hydrocarbons.	Continuous	24	365
C_2 stripper	Strips of light ends from propylene side draw of C_3 splitter.	Continuous	24	365
Condensate system	Collects and pumps steam condensate to users and BL.	Continuous	24	365
Flare system	Flare knockout drum with vaporizer and pump out to cat poly for heavy hydrocarbons.	Continuous	24	365
Oil water sewer reservoir-unit 558				
Sump	Collection sump for storm water runoff from unit 288, 590 and 293, and separation of traces of oil.	Continuous	24	365
Pumping system	Pumps for sending collected rain water to water treatment plant (OBL).	Continuous	24	365

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5.4 Graphical Process Information

Figure 2: Polypropylene process flow diagram

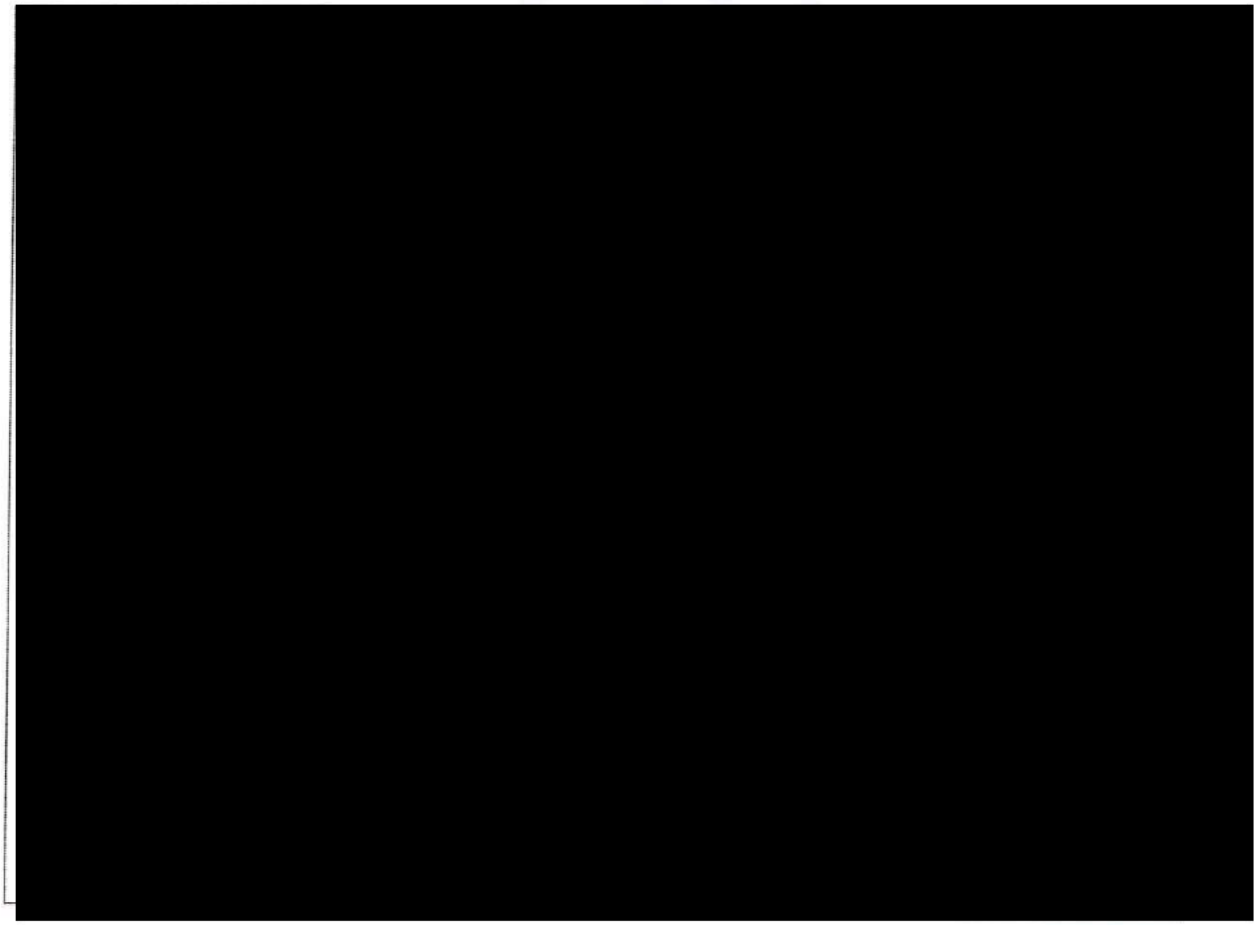

Figure 3: Propylene purification plants 1, 2 and 3 process flow diagram

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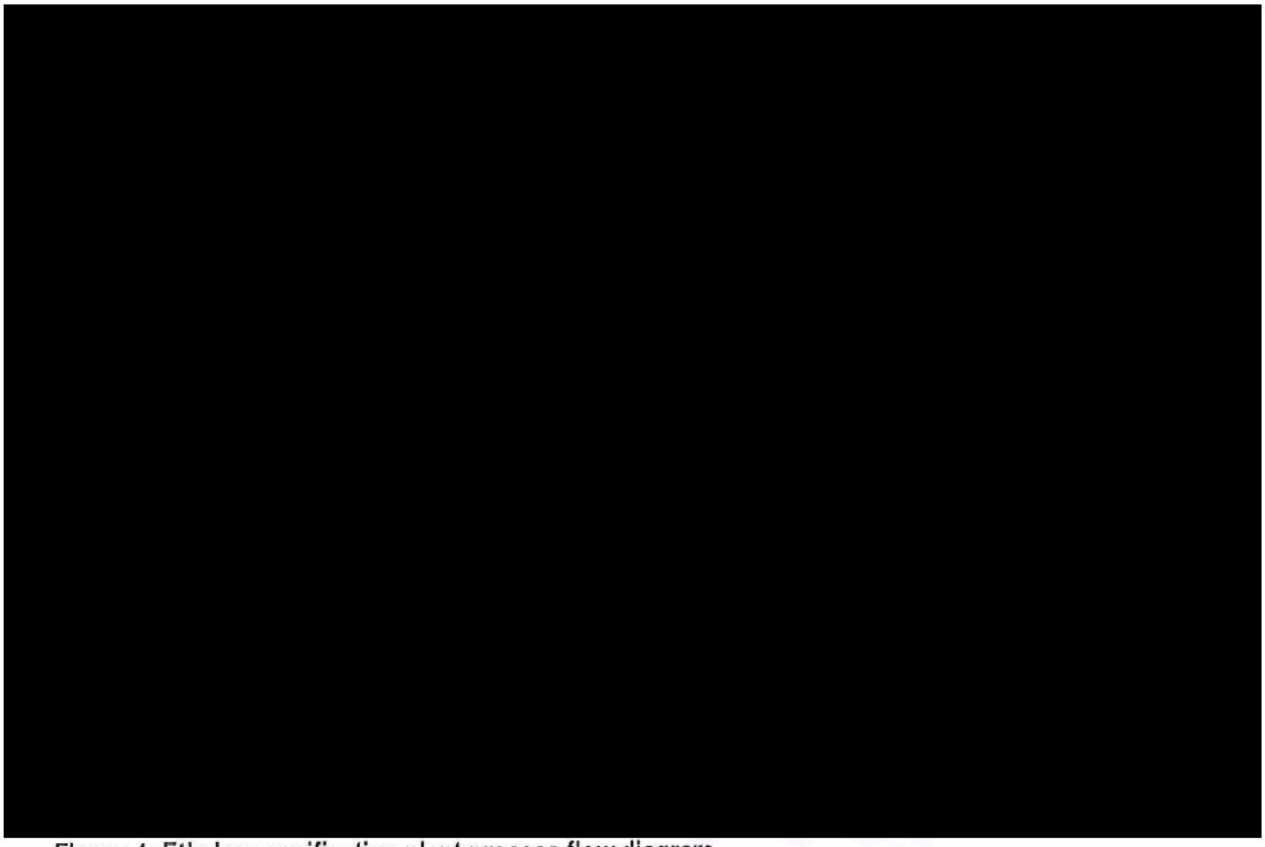

Figure 4: Ethylene purification plant process flow diagram

6 RAW MATERIAL AND PRODUCTS

6.1 Raw materials used

Material type	Maximum permitted consumption rate	Units (quantity/period)	Design consumption rate	Units (quantity/period)
Polypropylene				
Polypropylene one (PP1)				
Propylene	[redacted]	Tons per annum	[redacted]	Tons per annum
Ethylene		Tons per annum		Tons per annum
Hydrogen		Tons per annum		Tons per annum
Nitrogen		Tons per annum		Tons per annum
Heptane		Tons per annum		Tons per annum
Catalyst		Tons per annum		Tons per annum
Co-catalyst		Tons per annum		Tons per annum
Silane		Tons per annum		Tons per annum
Iso-propanol		Tons per annum		Tons per annum
Polypropylene two (PP2)				
Propylene	[redacted]	Tons per annum	[redacted]	Tons per annum
Ethylene		Tons per annum		Tons per annum

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Hydrogen	[redacted]	Tons per annum	[redacted]	Tons per annum
Catalyst		Tons per annum		Tons per annum
Co-catalyst		Tons per annum		Tons per annum
Silane		Tons per annum		Tons per annum
20 Caustic solution		Tons per annum		Tons per annum
Monomers				
Monomers west				
C2 rich gas	[redacted]	Tons per annum	[redacted]	Tons per annum
Propane		Tons per annum		Tons per annum
Liquid petroleum gas (LPG)		Tons per annum		Tons per annum
Condensate 3 to unit 70		Tons per annum	[redacted]	Tons per annum
Carrier gas		Tons per annum		Tons per annum
Ethane to unit 24		Tons per annum		Tons per annum
Monomers east				
Condensate 2 to unit 288		Tons per annum		Tons per annum
Condensate 3 to unit 288		Tons per annum		Tons per annum
Condensate 3 to unit 285		Tons per annum		Tons per annum
C2 rich gas		Tons per annum		Tons per annum

6.2 Production rates

Production name	Maximum permitted production capacity	Units (quantity/period)	Design production capacity	Units (quantity/period)
Polypropylene				
Polypropylene one (PP1)				
Propylene (Homo grade)	[redacted]	Tons per annum	[redacted]	Tons per annum
Propylene (Copo grade)		Tons per annum		Tons per annum
Polypropylene two (PP2)				
Propylene (Homo grade)	[redacted]	Tons per annum	[redacted]	Tons per annum
Propylene (ICP grade)		Tons per annum		Tons per annum
Propylene (RCP grade)		Tons per annum		Tons per annum

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Production name	Maximum permitted production capacity	Units (quantity/period)	Design production capacity	Units (quantity/period)
Monomers				
Monomers west				
Ethylene (unit 24)	[redacted]	Tons per annum	[redacted]	Tons per annum
Propylene (unit 70)		Tons per annum		Tons per annum
Monomers east				
Ethylene (unit 280)		Tons per annum		Tons per annum
Propylene (unit 285)		Tons per annum		Tons per annum
Propylene (unit 288)		Tons per annum		Tons per annum

6.3 By product

Product name	Production capacity-permitted	Units (quantity/period)	Design production rate	Units (quantity/period)
None				

6.4 Material used in energy sources

Material	Maximum permitted consumption rate	Units (quantity/period)	Design consumption rate	Units (quantity/period)
Polypropylene				
Polypropylene one (PP1)				
Fuel gas	[redacted]	Kilo cubic meters (normal) per annum	[redacted]	Kilo cubic meters (normal) per annum
Electricity		Megawatts hour per annum		Megawatts hour per annum
Steam		Tons per annum		Tons per annum
Polypropylene two (PP2)				
Fuel gas	[redacted]	Kilo cubic meters (normal) per annum	[redacted]	Kilo cubic meters (normal) per annum
Electricity		Megawatts hour per annum		Megawatts hour per annum
Steam		Tons per annum		Tons per annum

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Material	Maximum permitted consumption rate	Units (quantity/period)	Design consumption rate	Units (quantity/period)
Monomers				
Monomers west				
Fuel gas	[redacted]	Kilo cubic meters (normal) per annum	[redacted]	Kilo cubic meters (normal) per annum
Electricity		Megawatts hour per annum		Megawatts hour per annum
40 bar steam		Tons per annum		Tons per annum
MP steam		Tons per annum		Tons per annum
LP steam		Tons per annum		Tons per annum
Monomers east				
Electricity		Kilo cubic meters (normal) per annum		Kilo cubic meters (normal) per annum
MP steam		Tons per annum		Tons per annum
LP steam		Tons per annum		Tons per annum

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6.5 Sources of atmospheric emission

6.5.1 Point Source parameters

Point source code	Source name	Latitude (decimal degrees)	Longitude (decimal degrees)	Height of release above ground (m)	Height above nearby building (m)	Diameter at stack tip / vent exit (m)	Gas exit temperature (°C)	Gas volumetric flow (m³/s)	Gas exit velocity (m/s)	Emission hours	Type of emission (continuous /batch / intermittent)
1	Furnace A stack	[redacted]		34	30	1.25	300	22	18	24	Continuous
2	Furnace B stack			34	30	1.25	300	22	18	24	Continuous
3	Furnace C stack			34	30	1.26	300	21	17	24	Continuous
4	Furnace D stack			34	30	1.25	300	22	18	24	Continuous
5	Furnace E stack			34	30	1.25	300	22	18	24	Continuous

6.5.2 Area source parameters

Unique ID	Source name	Latitude (decimal degrees)	Longitude (decimal degrees)	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)	Emission hours	Type of emission
6	PP2-D-961A	[redacted]		N/A	N/A	N/A	24	Intermittent
7	PP2-D-961B			N/A	N/A	N/A	24	Intermittent
8	PP2-D-961C			N/A	N/A	N/A	24	Intermittent
9	PP2-D-961D			N/A	N/A	N/A	24	Intermittent
10	PP2-D-961E			N/A	N/A	N/A	24	Intermittent

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7 APPLIANCES AND MEASURES TO PREVENT AIR POLLUTION

7.1 Appliances and control measures

Associated Source Code	Appliances			Abatement Equipment Control Technology							
	Appliance / Process Equipment Number	Appliance Serial Number	Appliance Type / Description	Abatement Equipment Technology Name and Model	Abatement Equipment Technology Manufacture Date	Commission Date	Date of Significant Modification / Upgrade	Technology Type	Design Capacity	Minimum Control Efficiency (%)	Minimum Utilisation (%)
None											

7.2 Point Source – maximum emission rates (under normal working conditions)

Point Source Code	Pollutant Name	Maximum Release Rate		Average Period	Duration of Emissions
		(mg/Nm³) under normal conditions of 10% Oxygen, 273Kelvin, and 101,3-kPa	Date to be Achieved By		
Furnace A stack	Particulate matter (PM)	120	Immediately	Hourly	Continuous
	SO_2	1700	Immediately	Hourly	Continuous
	NO_x as (NO_2)	1700	Immediately	Hourly	Continuous
Furnace B stack	Particulate matter (PM)	120	Immediately	Hourly	Continuous
	SO_2	1700	Immediately	Hourly	Continuous
	NO_x as (NO_2)	1700	Immediately	Hourly	Continuous
Furnace C stack	Particulate matter (PM)	120	Immediately	Hourly	Continuous
	SO_2	1700	Immediately	Hourly	Continuous
	NO_x as (NO_2)	1700	Immediately	Hourly	Continuous
Furnace D stack	Particulate matter (PM)	120	Immediately	Hourly	Continuous
	SO_2	1700	Immediately	Hourly	Continuous

	NO_x as (NO_2)	1700	Immediately	Hourly	Continuous
Furnace E stack	Particulate matter (PM)	120	Immediately	Hourly	Continuous
	SO_2	1700	Immediately	Hourly	Continuous
	NO_x as (NO_2)	1700	Immediately	Hourly	Continuous

The following special arrangements shall apply:

i. No continuous flaring of hydrogen sulphide-rich gases shall be allowed
ii. A bubble cap of all combustion installations and catalytic cracking units shall be at 1.2 Kg SO_2/ton of product for existing plants.
iii. A bubble cap of all combustion installations and catalytic cracking units shall be at 0.4 Kg SO_2/ton of product for new plants.

For Category 6, the following special arrangements shall apply:

(a) The following transitional arrangement shall apply for the storage and handling of raw materials, intermediate and final products with a vapour pressure greater than 14kPa at operating temperature:- Leak detection and repair (LDAR) program must be reviewed, updated and submitted to the Licensing Authority for approval three (03) months after issue of the licence.

(b) The following transitional and special arrangements shall apply for control of TVOC's from storage of raw materials, intermediate and final products with a vapour pressure of up to 14kPa at operating temperature, except during loading and offloading. (Alternative control measures that can achieve the same or better results may be used)-

(i) Storage vessels for liquids shall be of the following type:

Application	**All permanent immobile liquid storage facilities at a single site with a combined storage capacity of greater than 1000 cubic meters**
True vapour of contents at product storage temperature	**Type of tank or vessel**
Type 1: Up to 14 kPa	Fixed roof tank vented to atmosphere, or as per Type 2 and 3
Type 2: Above 14kPa and up to 91 kPa with a throughput of less than 50 000 m3 per annum	Fixed roof tank with pressure vacuum vents fitted as a minimum to prevent 'breathing' losses or as per Type 3
Type 3: Above 14 kPa up to 91 kPa with a throughput of greater than 50 000 m3 per annum	External floating roof tank with primary rim seal and secondary rim seal for tank with diameter greater than 20m, or fixed roof tank with internal floating deck / roof fitted with primary seal, or fixed roof tank with vapour recovery system.
Type 4: Above 91 kPa	Pressure vessel.

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(ii) The roof legs, slotted pipes and/or dipping well on floating roof tanks (except for domed floating roof tanks or internal floating roof tanks) shall have sleeves fitted to minimize emissions.

(iii) Relief valves on pressurized storage should undergo periodic checks for internal leaks. This can be carried out using portable acoustic monitors or if venting to atmosphere with an accessible open end tested with a hydrocarbon analyser as part of the LDAR programme.

7.3 Point source – maximum emission rates (under start-up, maintenance and shut-down conditions)

Point Source Code	Pollutant Name	Maximum Release Rate		Averaging Period	Maximum Gas Volumetric Flow (m^3/hr)	Maximum Gas Exit Velocity (m/s)	Emission Hours	Maximum Permitted Duration of Emissions
		(mg/Nm^3)	Date to be Achieved By					
All Point Source Code	All Point Source Pollutant	N/A	N/A	N/A	N/A	N/A	N/A	Within 48 hours after commissioning of plant or equipment

Should normal start-up, maintenance, upset and shut-down conditions exceed a period of 48 hours, Section 30 of the National Environmental Management, 1998 (Act No. 107 of 1998), shall apply unless otherwise specified by the Licensing Authority.

7.4 Point source – emission monitoring and reporting requirements

Point Source code	Emission Sampling /Monitoring Method	Sampling Frequency	Sampling Duration	Parameters to be Measured	Parameters to be Reported	Reporting Frequency	Conditions under which Monitoring could be Stopped
All Point Source Code	In line with Annexure A of NEMAQA	In line with No. 37054 Government Gazette 22 November 2013	In line with No. 37054 Government Gazette 22 November 2013	In line with No. 37054 Government Gazette 22 November 2013	In line with No. 37054 Government Gazette 22 November 2013	In line with No. 37054 Government Gazette 22 November 2013.	Only on written authorisation by the Licensing Authority

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7.5 Area source – management and mitigation measures

Area and/or Line Source Code	Area and/or Line Source Description	Description of Specific Measures	Timeframe for Achieving Required Control Efficiency	Method of Monitoring Measures Effectiveness	Contingency Measures
All area source parameters	Pressure vessels for storage	A detail plan to manage fugitive emissions to be incorporated into the site fugitive emissions monitoring plan	Immediately	Annually reports to Licensing Authority on the implementation of the site fugitive monitoring plan	In line with Sasol approved fugitive emission monitoring plan

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7.6. Routine reporting and record-keeping

7.6.1 Complaints register

The licence holder must maintain a complaints register at its premises, and such register must be made available for inspections. The complaints register must include the following information on the complainant, namely, the name, physical address, telephone number, date and the time when the complaint was registered. The register should also provide space for noise, dust and offensive odours complaints.

Furthermore, the licence holder is to investigate and quarterly, report to the licensing authority in a summarised format on the total number of complaints logged. The complaints must be reported in the following format with each component indicated as may be necessary:

a) Source code / name;
b) Root cause analysis;
c) Calculation of impacts / emissions associated with incidents and dispersion modelling of pollutants, where applicable;
d) Measures implemented or to be implemented to prevent recurrence; and
e) Date by which measure will be implemented.

The licensing authority must also be provided with a copy of the complaints register. The record of a complaint must be kept for at least 5 (five) years after the complaint was made.

7.6.2 Emergency Incidents

The licence holder must keep record of all plant failure or emergency incidents including section 30 and submit to the licence authority quarterly a report detailing the following:

a) Type of plant and summary description of the equipment
b) Reasons for failure or cause
c) Previous occurrence on the same plant and number of times similar incident occurred
d) Mitigation instituted to prevent similar occurrence
e) Any breach of internal standard operating procedure
f) Number of times similar incident occurred

7.6.3 Annual reporting

The licence holder must complete and submit to the licensing authority an annual report after the facility annual financial year, the report must include information for the year under review (i.e. annual year end of the company). The report must be submitted to the licensing authority not later than sixty (60) days after the end of each reporting period. The annual report must include, amongst others the following:

(a) NEM: AQA Section 21 pollutant emissions trend for listed activity;
(b) External compliance audit report (s);
(c) Major upgrades projects (i.e. abatement equipment or process equipment);
(d) Greenhouse gas emissions annual report in line with the National Greenhouse Gas Emission Reporting Regulations No. 40762 Government Gazette 03 April 2017;
(e) Action taken to address complains received;
(f) Compliance status to statutory obligation (4.5) including any other issued authorisations.

The holder of the licence must keep a copy of the annual report for a period of at least 5 (five) years.

7.6.4. Investigation

Investigation	Purpose	Completion Date
None		

8 DISPOSAL OF WASTE AND EFFLUENT ARISING FROM ABATEMENT EQUIPMENT CONTROL TECHNOLOGY

Source Code / Name	Waste / Effluent Type	Hazardous Components Present	Method of Disposal
N/A			

9. PENALTIES FOR NON-COMPLIANCE WITH LICENCE AND STATUTORY CONDITIONS AND OR REQUIREMENTS

Failure to comply with the any of the above condition and requirements in terms of Chapter 7 Section 51 including Chapter 8Section 53 - 55 of NEMAQA (Act no. 39 of 2004 is a breach of the Licence conditions, and the Licence holder will be subject to the sanctions set out in Chapter 7 Section 52 of NEMAQA (Act no. 39 of 2004), Chapter 10, Section 89 of the National Health Act 61 of 2003,Chapter 7 Section 28,32,33 and 34 of the National Environmental Management Act 108 of 1998, Chapter 16, section 151 of the National Water Act, and Chapter 7 section 68 of the National Waste Management Act, including any penalties contained in the By-laws.

10. APPEAL OF LICENCE

10.1 The Licence Holder must notify every registered interested and affected party, in writing and within ten (10) days, of receiving the District's decision.

10.2 The notification referred to in 10.1. must –

10.2.1 Inform the registered interested and affected parties of the appeal procedure provided for in Chapter 7 Part 3 Section 62 of Municipal Systems Act (Act 32 of 2000), as amended;

10.2.2 Advise the interested and affected parties that a copy of the Atmospheric Emission Licence and reasons for the decision will be furnished on request;

10.2.3 An appeal against the decision must be lodged in terms of Chapter 7 Part 3 Section 62 of Municipal Systems Act (Act 32 of 2000), from the date of issue of this Atmospheric Emission Licence, with:

Municipal Manager,
PO Box 1748,
Ermelo
2350
Fax No. 017-811 1207;

and

10.3. Specify the date on which the Atmospheric Emission Licence was issued.

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11. REVIEW OF ATMOSPHERIC EMISSION LICENCE

In terms of -chapter 5 (44) (45) (46) (47) NEMAQA (Act No. 39 of 2004), Atmospheric Emission Licence is valid for 5 years from date of first issue of the Atmospheric Emission Licence. The licence will be reviewed within five (05) years from date of issue, after which it will or will not be amended.

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