Fezile Dabi
District Municipality

Fezile Dabi District Municipality
John Vorster Road
P.O Box 10
Sasolburg, 1947
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Aiming above the horizon

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Atmospheric Emissions Licence Holder: Sasol South Africa Limited, through its Group Technology

Atmospheric Emissions licence Reference Number: FDDM-MET-2013-18-R2

ATMOSPHERIC EMISSIONS LICENCE ISSUED IN TERMS OF SECTION 40 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 2004, (ACT NO. 39 OF 2004)

This Atmospheric Emissions Licence issued to **Sasol South Africa Limited, operating through its Group Technology** in terms of section 40 (as read with Section 47) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("the Act"), in respect of listed activity No. 6.1. The Atmospheric Emissions Licence has been issued on the basis of information provided in the company's renewal application and information that became available during processing of the application.

The Atmospheric Emissions Licence is valid until **30 April 2029**

The Atmospheric Emissions Licence is issued subject to the conditions and requirements set out below which form part of the Atmospheric Emissions Licence and which are binding on the holder of the Atmospheric Emissions Licence, Sasol South Africa Ltd through its Research and Technology facilities, hereinafter referred to as the ("the licence holder").

1. ATMOSPHERIC EMISSIONS LICENCE ADMINISTRATION

Name of the Licensing Authority	Fezile Dabi District Municipality
Atmospheric Emissions Licence Number	FDDM-MET-2013-18-R2
Atmospheric Emissions Licence Issue Date	Date of Signature by Air Quality Officer
Atmospheric Emissions Licence Type	Final
Review Date, not later than	30 April 2029

2. ATMOSPHERIC EMISSIONS LICENCE HOLDER DETAILS

Enterprise Name	Sasol South Africa Limited, through its Research & Technology facility
Trading as	N/a
Enterprise Registration Number (Registration Numbers if Joint Venture)	1968/013914/07
Registered Address	50 Katherine Street Sandton
Postal Address	PO Box 1 Sasolburg 1947
Telephone Number (General)	016 960 1111
Industry Sector	Petrochemical
Name of Responsible Officer	[redacted]
Name of Emission Control Officer	[redacted]
Telephone Number	[redacted]
Cell Phone Number	[redacted]
Fax Number	[redacted]
Email Address	[redacted]
After Hours Contact Details	[redacted]
Land Use Zoning as per Town Planning Scheme	Industrial

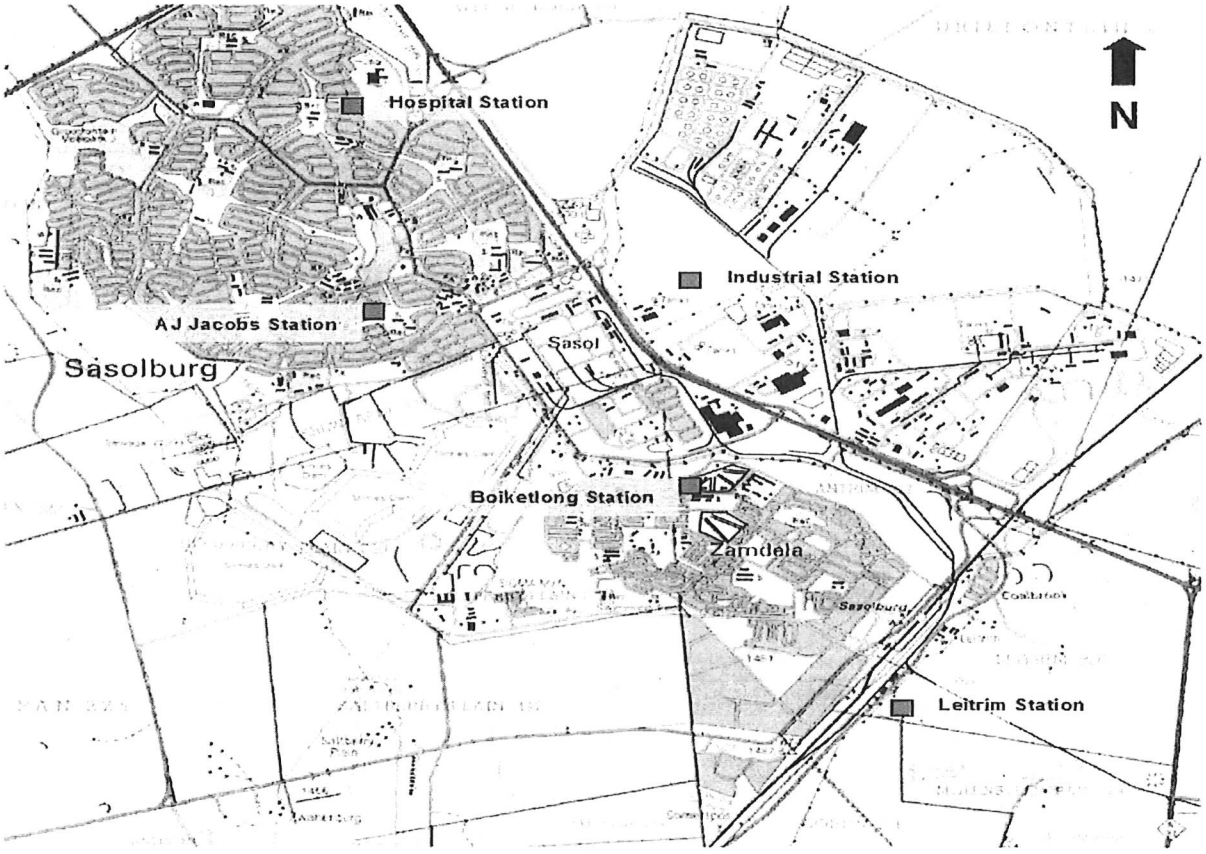
3. SITUATION AND EXTENT OF PLANT

3.1 LOCATION AND EXTENT OF PLANT

Physical Address of the Premises	Sasol One Site Klasie Havenga Street Sasolburg 1947
Description of Site (Erf)	Subdivision 6 of 2 of Driefontein No- 2 and certain subdivisions of the farm Saltberry Plain, Roseberry Plain Flerewarde and Antrim and subdivision 5 of 4 of Montrose, District of Sasolburg, Free State.
Coordinates of Approximate Centre of Operations	Sasol 1 Latitude: S 26.82678 Longitude: E 27.84206
Extent	15.51 km^2
Elevation Above Mean Sea Level (m)	1 498 m
Province	Free State Province
District Municipality	Fezile Dabi District Municipality
Local Municipality	Metsimaholo Local Municipality
Designated Priority Area	Vaal Triangle Priority Area

3.2 Description of Surrounding Land Use within 5 km radius

Within a 5 km radius from the Sasol One facility is the town of Sasolburg, a residential area as well as an informal settlement called Zamdela. Other land use includes heavy as well as light industries. Sasol's water treatment facility and waste areas also falls within this 5 km radius.


Hospital Station
AJ Jacobs Station
Sasolburg
Sasol
Industrial Station
Boiketlong Station
Zamdela
Leitrim Station
N

4. GENERAL CONDITIONS

4.1. Process and ownership changes

The holder of the atmospheric emissions 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.

Building, plant or site works related to the listed activity or activities used by the licence holder shall be extended, altered or added subject to the applicable requirements for an environmental authorisation from the competent authority as per the provisions of the National Environmental Management Act 1998 (Act No. 107 of 1998) (NEMA), as amended read with the Environmental Impact Assessment Regulations thereunder. The investigation, assessment and communication of potential impact of such an activity must follow the required assessment procedure as prescribed in the Environmental Impact Assessment Regulations published in terms of section 24(5) of the National Environmental Management Act.

Any changes in processes or production increases which may have an impact on atmospheric emissions, by the licence holder, will require prior approval by the licensing authority.

Any changes to the type and quantities of input materials and products, or to production equipment and treatment facilities which may have an impact on atmospheric emissions will require prior written approval by the licensing authority.

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 30 (thirty) days after the change of ownership.

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

4.2. General duty of care

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.

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.

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.

4.3. Sampling and/or analysis requirements

Measurement, calculation and/or sampling and analysis shall be carried out in accordance with any nationally or internationally acceptable standard. A different method may be acceptable to the licensing authority as long as it has been consulted, been provided with and agreed to the satisfactory documentation necessary in confirming the equivalent test reliability, quality and equivalence of analyses and has agreed to such method.

The licence holder is responsible for quality assurance of methods and performance. Where the holder of the licence uses external laboratories for sampling or analysis, accredited laboratories shall be used.

4.4. General requirements for licence holder

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.

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.

A copy of the licence must be kept at the premises where the listed activity is undertaken. The licence must be made available to the environmental management inspector representing the licensing authority who requests to see it.

The licence holder must inform, in writing, the licensing authority of any change to its details including the name of the emissions control officer, postal address and/or telephonic details.

4.5. Statutory obligations

The licence holder must comply with the obligations as set out in Chapter 5 of the Act.

4.6. Annual payment of atmospheric emissions licence processing fee

The licence holder must, for the period of validity of the licence, pay the processing fee annually to the licensing authority. Alternatively the licence holder can pay the emissions licence processing fee once off.

4.7 Variation of Atmospheric Emissions Licence

The Air Quality Officer reserves the right to by notice, in writing, set and adjust the emissions limit value or any operating condition after consultation with the licence holder.

4.8 Non- Compliance with Conditions

If the licence holder fails to comply with the conditions or requirements of this Atmospheric Emissions License, the Air Quality Officer may by notice in writing call upon such a holder to comply with such conditions or requirement within a reasonable period specified in the notice, and in the event of failure on the part of such holder to comply with the said conditions or requirement within the period so specified, the Air Quality Officer may cancel the Atmospheric Emissions License or suspend the operation thereof for such period as he or she may deem fit.

5. NATURE OF PROCESS

5.1. PROCESS DESCRIPTION

The Sasol Research and Technology Pilot plants consists of various small plants, continuously changing technology and equipment in various processing units to conduct research and development on various feed, catalyst and product ranges. The purpose of the facility is to grow and expand Sasol's knowledge on its various processes and to search for alternatives in products, raw materials and catalysts. The unit is fed with synthesis and various hydrocarbons to conduct research. A couple of storage areas also exist within the facilities.

Feed rates and process condition varies for each project, therefore the production rate is inconsistent. Values for emission rates for this site are based on maximum design capacities of all plants. Detailed process descriptions for all plants are available on site.

5.2. LISTED ACTIVITY

Listed Activities, as published in terms of Section 21 of the AQA, authorised to be conducted at the premises by the licence holder:

Listed Activity Number	Category of Listed Activity	Sub-category of the Listed Activity	Listed Activity Name	Description of the Listed Activity
1	6	6.1	Organic Chemical Industry	The manufacturing or use in manufacturing of hydrocarbons not specified elsewhere

5.3. UNIT PROCESS OR PROCESSES

List of all unit processes associated with the listed activities to be undertaken at the site of work.

Unit Process	Function of Unit Process	Batch or Continuous Process
Diffusion units	Remove hydrogen from feed gas	Continuous
Filters (pressure leaf)	Clean wax	Continuous
Storage tanks	Store hydrocarbon liquids	Continuous
Coalescers	Separate water and hydrocarbons	Continuous
Distillation units	Separate liquids	Batch
Reactors	Convert gas to hydrocarbon liquids Hydrogenate hydrocarbons Cracking hydrocarbons Preparation of catalyst	Continuous
Separators	Separate liquid fractions	Continuous
Diffusion units	Remove hydrogen from syngas	Continuous
Flares	Incinerate gaseous flammable product	Continuous

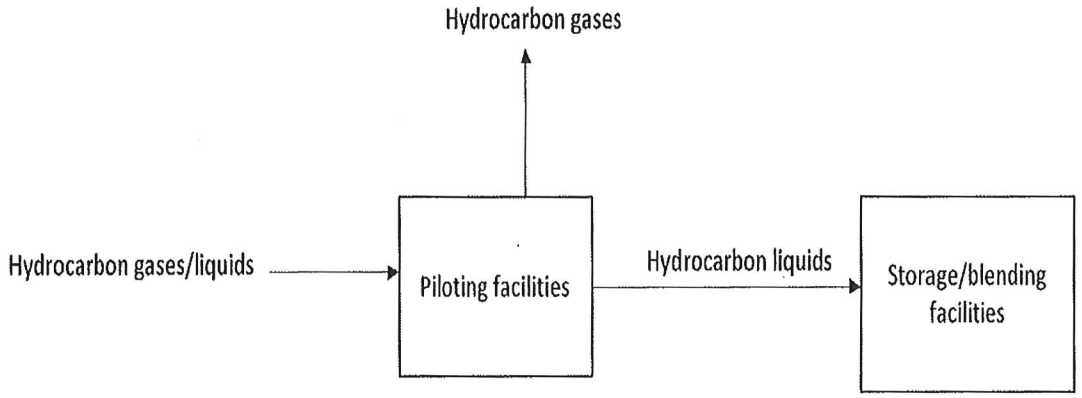
5.4. HOURS OF OPERATIONS

Unit Process	Operating Hours	Days of Operation per Year
Diffusion units	24 Hours	365
Filters (pressure leaf)	24 Hours	365

Storage tanks	24 Hours	365
Coalescers	24 Hours	365
Distillation units	24 Hours	365
Reactors	24 Hours	365
Separators	24 Hours	365
Diffusion units	24 Hours	365
Flares	24 Hours	365

5.5. GRAPHICAL PROCESS INFORMATION

Process flow chart(s) clearly indicating inputs, outputs and emissions at the site of works, including points of potential fugitive emissions and emergency releases.



6. RAW MATERIALS AND PRODUCTS

6.1. Raw materials used

Raw Material Type	Maximum Permitted Consumption Rate (Quantity)	Units (quantity/period)
[redacted]	[redacted]	Nm^3/hr
[redacted]	[redacted]	Kg/hr
[redacted]	[redacted]	Nm^3/hr

6.2. PRODUCTION RATES

Product Name	Maximum Permitted Production Capacity (Quantity)	Units (quantity/period)
Hydrocarbons		

	Variable when the piloting facilities are in operation and dependent on the specific trial and research being conducted.

6.3. MATERIALS USED IN ENERGY SOURCES

Materials for Energy Source	Actual Consumption Rate (Quantity)	Units (quantity/period)	Materials Characteristics
Steam	This is included in the GLUC site energy use values		
Electricity			

6.4. SOURCES OF ATMOSPHERIC EMISSIONS

6.4.1. Point source parameters

Point Source Code	Source Name	Latitude (decimal degrees) South	Longitude (decimal degrees) East	Height of Release Above Ground (m)	Height Above Nearby Building (m)	Diameter at Stack Tip / Vent Exit (m)	Actual Gas Exit Temperature (°C)	Actual Gas Volumetric Flow (m^3/hr)	Actual Gas Exit Velocity (m/s)	Emissions (Hours)	Type of Emissions (Continuous / Batch)
1	Pilot Plant Flare	-26.8221	27.8447	39.0	3.5	0.16	200	2160	~70	24 Hours	Continuously during plant operations
2	Pilot back-up flare	-26.82678	27.84206	42		0.1	200	2 000	~70	24 Hours	Intermittently related to start-up, shut down and upset conditions

6.4.2. Area and/or line source parameters

Area Source Code	Source Name	Source Description	Latitude (decimal degrees) of SW corner	Longitude (decimal degrees) of SW corner	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)	Emissions Hours	Type of Emissions
N/a									

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 (%)
1	Not applicable										

7.2. POINT SOURCE – MAXIMUM EMISSIONS RATES (UNDER NORMAL WORKING CONDITIONS)

Point Source Code	Pollutant Name	Maximum Release Rate			Duration of Emissions
		(mg/Nm³)	Date to be Achieved By	Average Period	
1	Not applicable as the point source is associated with emergency flaring.				

POINT SOURCE – OPERATING REQUIREMENTS

The licence holder must notify the licensing authority should there be a change and in plant operation process

7.4. POINT SOURCE – EMISSIONS MONITORING AND REPORTING REQUIREMENTS

Point Source Code	Emissions Sampling / Monitoring Method	Sampling Frequency	Sampling Duration	Parameters to be measured	Parameters to be reported	Conditions under which monitoring should be stopped	Reporting Frequency
1	Not applicable						

7.5. AREA AND/OR LINE 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
Not applicable					

7.6. ROUTINE REPORTING AND RECORD-KEEPING

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, monthly, report to the licencing 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.

7.7 ANNUAL REPORTING

The licence holder must complete and submit to the licensing authority an annual report. 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 60 (sixty) days after the end of each reporting period. The annual report must include, amongst others, the following items:

(a) Pollutant emissions trend;

(b) Compliance audit report(s);

(c) Major upgrades projects (i.e. abatement equipment or process equipment); and

(d) Greenhouse gas emissions in line with the National Greenhouse Gas reporting regulation.

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

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

The disposal of any waste and effluent arising from the abatement equipment control technology must comply with the relevant legislation and requirements of the relevant authorities.

Source Code / Name	Waste / Effluent Type	Hazardous Components Present	Method of Disposal
Not applicable			

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

Failure to comply with any of the licence and relevant statutory conditions and/or requirements is an offence, and licence holder, if convicted, will be subjected to those penalties as set out in section 52 of the AQA.

10. REPORTING OF ABNORMAL RELEASES AND EMERGENCY RESPONSES

The holder must prevent deviations from normal operating conditions that would result in pollution exceeding specified limit values. If any conditions exist that will result in excessive emissions or nuisance must be immediately reported to the Air Quality Officer. If applicable, a section 30 incident must be reported in terms of NEMA and reported to the Air Quality Officer within 24 hours. Where excessive emissions occur, which could cause adverse health and environmental impacts or nuisance, urgent corrective measures must be taken by the holder to contain or minimise the emissions through operational interventions. Remediation, if required shall be carried out to the satisfaction of the licensing authority and/or any other government agencies.

11. APPEAL OF ATMOSPHERIC EMISSIONS LICENCE

11.1 The holder of the authorization must notify every registered interested and affected party, in writing and within five (5) working days of the date of issue, of the holder's receipt of this atmospheric emissions licence.

11.2 The written notification referred to in Condition 11.1 above must –

11.2.1 Specify the date on which the atmospheric emissions licence was issued;

11.2.2 Inform interested and affected parties of the appeal procedure provided for in Chapter 7 the GN No R543 of 18 June 2010; and

11.2.3 Advise interested and affected parties that a copy of the atmospheric emissions licence and reasons for the decision will be furnished on request

11.3 An appeal against the decisions contained in this atmospheric emissions licence must be lodged, in writing with the: Director: Environmental Health and Emergency Services, Fezile Dabi District Municipality, PO Box 10, Sasolburg, 1949, Tel No:016 970 8600, Fax No: 016 973 1582

12. REVIEW

12.1 The authority shall have the right to review the licence continuously within the period as stipulated in clause 1 above or as and when such review is deemed necessary by the Air Quality Officer;

12.2 Such review shall be done as a result of amendments in legislation or by virtue of findings from regular inspections done by the Air Quality Officer;

12.3 The authority shall serve the license holder with a 30(thirty) day notice when such a necessity arises;

12.4 The authority shall under no circumstances be barred by license holder from reviewing the license upon receiving notice of review.