



**CITY OF  
TSHWANE**  
IGNITING EXCELLENCE

**Environment and Agriculture Management  
Department**

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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)**

The Atmospheric Emission Licence is issued to **SASOL SOUTH AFRICA LIMITED – EKANDUSTRIA OPERATIONS** in terms of section 40(1) (a) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("the Act"), in respect of the following Listed Activity:

- **Subcategory 4.13: Lead Smelting**
- **Category 6 : Organic Chemicals Industry**
- **Subcategory 8.3 :Burning Grounds**

The Atmospheric Emission Licence has been issued on the basis of information provided in the application form, subsequent site inspections and information that became available during processing of the application.

The Atmospheric Emission Licence is valid until **31 March 2027**

The reason for issuance of the licence is to ensure compliance with the terms of section 41 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).

The Atmospheric Emission Licence is issued subject to the conditions and requirements set out below which are binding on the holder of the Atmospheric Emission Licence (**SASOL SOUTH AFRICA LIMITED – EKANDUSTRIA OPERATIONS**).

**1. ATMOSPHERIC EMISSION LICENCE ADMINISTRATION**

Name of the Licensing Authority	City of Tshwane
Atmospheric Emission Licence Number	<u>9/16/1/2/10/R</u>
Atmospheric Emission Licence Issue Date	<u>17/03/2022</u>
Atmospheric Emission Licence Type	Atmospheric Emission Licence
Review Date, not later than	30 September 2026
Renewal Date	Six (6) months before AEL expiry date



Executive Director: Environmental Management and Parks  
Air Quality Officer: City of Tshwane

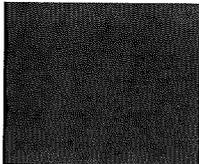
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2. ATMOSPHERIC EMISSION LICENCE HOLDER DETAILS

Enterprise Name	Sasol South Africa Limited through its Ekandustria Operations
Trading as	N/a
Enterprise Registration Number (Registration Numbers if Joint Venture)	1968/013914/06
Registered Address	486 Brandbach road Ekandustria
Postal Address	PO Box 1467 Bronkhorstspuit 1020
Industry Sector	Manufacture of Explosives
Name of Responsible Officer	CM Norden
Name of Emission Control Officer	Ristoff van Zyl
Telephone Number	016 960 4900
Cell Phone Number	083 632 5975
Fax Number	011 219 2438
Email Address	ristoff.vanzyl@sasol.com
After Hours Contact Details	083 632 5975
Land Use Zoning as per Town Planning Scheme	Industrial

3. LOCATION AND EXTENT OF PLANT

Physical Address of the Premises	486 Brandbach road, Ekandustria
Description of Site (Erf)	Portion 2, Lunseriem 612 JR
Coordinates of Approximate Centre of Operations	Latitude : North-South:  Longitude : East-West 
Extent (km <sup>2</sup> )	3.65
Elevation Above Mean Sea Level (m)	1501
Province	Gauteng
Metropolitan/District Municipality	City of Tshwane
Local Municipality	City of Tshwane
Designated Priority Area	None

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#### 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 environmental impact 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 approval by the City of Tshwane.
- (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 City of Tshwane.
- (e) The licence holder must, in writing, inform the licensing authority of any change of ownership of the enterprise. The City of Tshwane must be informed within 30 (thirty) days after the change of ownership.
- (f) The licence holder must immediately on cessation or decommissioning of the listed activity inform, in writing, the City of Tshwane.

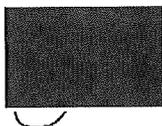
##### 4.2 General Duty of Care

- (a) The holder of the license must, when undertaking the listed activity, adhere to the duty of care obligations as set out in section 28 of the NEMA.
- (b) The license 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.
- (c) Failure to comply with the above condition is a breach of the duty of care, and the license holder will be subject to the sanctions set out in section 28 of the NEMA.

##### 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. A different method may be acceptable to the City of Tshwane as long as it has been consulted and agreed to the satisfactory documentation necessary in confirming the equivalent test reliability, quality and equivalence of analyses.
- (b) 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.

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#### 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) This licence does not relieve the licence holder from complying 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 licence must be made available to the environmental management inspector representing the licensing authority who requests to see it.
- (d) The licence holder must inform, in writing, the City of Tshwane of any change to its details including the name of the emission 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 National Environmental Management: Air Quality Act.

### 5. NATURE OF PROCESS

#### 5.1 Process Description

##### Production of Monomethylaminenitrate:

Monomethylamine Nitrate (MMAN) is a sensitizer used in the production of explosives. It is manufactured by combining monomethylamine (MMA) with nitric acid. The combination of the two liquids is done in a reactor creating an exothermic reaction which forms MMAN and due the heat of the reaction the water contained in the nitric acid is boiled off. The steam from the reaction leaves the top of the reactor through a stack that enters a scrubber column. The MMAN formed is further processed and pumped to storage tanks.

Due to the violent boiling action in the reactor there are traces of MMAN and MMA entrained in the steam leaving the reactor. The steam enters the scrubber column from the base and flows up the scrubber column and exits through the scrubber stack. Flowing counter current to the steam is scrubber liquid at the correct PH which will react with any free MMA to form MMAN and the MMAN entrained in the steam will be scrubbed out by the liquid. The monomethylaminenitrate is then used in downstream processes to produce a variety of explosives in non-listed activity processes. Lead is also used as part of the process to produce detonators. All the off specification lead related products from the process are processed in a lead furnace, where the lead is recovered for recycling.

##### Lead Furnace

Boxes of lead are inserted into the lead furnace per 1 hour cycle. Melting of the lead takes place between 350 – 400 degrees Celsius. After melting of lead has occurred in the pot, the slag is scooped off and packed in drums for disposal. Pure molten lead in the pot is cast into moulds to produce Lead ingots. Once cooled lead ingots are packed for sale.

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### Burning Ground:

Access and type of waste taken to the burning ground is controlled and burning normally takes place daily on Monday to Friday. The fire is lit in the afternoons and allowed to burn out and cool overnight. This is done for safety reasons.

There is one fenced off burning ground where access is controlled, however there are 5 burning areas on the burning ground where different waste types are combusted.

### 5.2 Listed Activity or Activities

Listed Activity Number	Category of Listed Activity	Sub-category of the Listed Activity	Listed Activity Name	Description of the Listed Activity
1	4	4.13	Lead Smelting	The extraction, processing and use of lead in production by the application of heat
2	6	6	Organic Chemicals Manufacturing	The production of organic chemicals not specified elsewhere
3	8	8.3	Burning Grounds	Facilities where waste material from the manufacture of explosives and contaminated explosive packaging material; are destroyed.

### 5.3 Unit Process or Processes

Unit Process	Function of Unit Process	Batch or Continuous
Neutraliser unit	React monomethylamine with nitric acid to form monomethylaminenitrate	Batch
Burning grounds	Thermal destruction of explosive contaminated waste	Batch
Lead furnace	Recovering of lead with heat	Batch

### 5.4 Hours of Operations

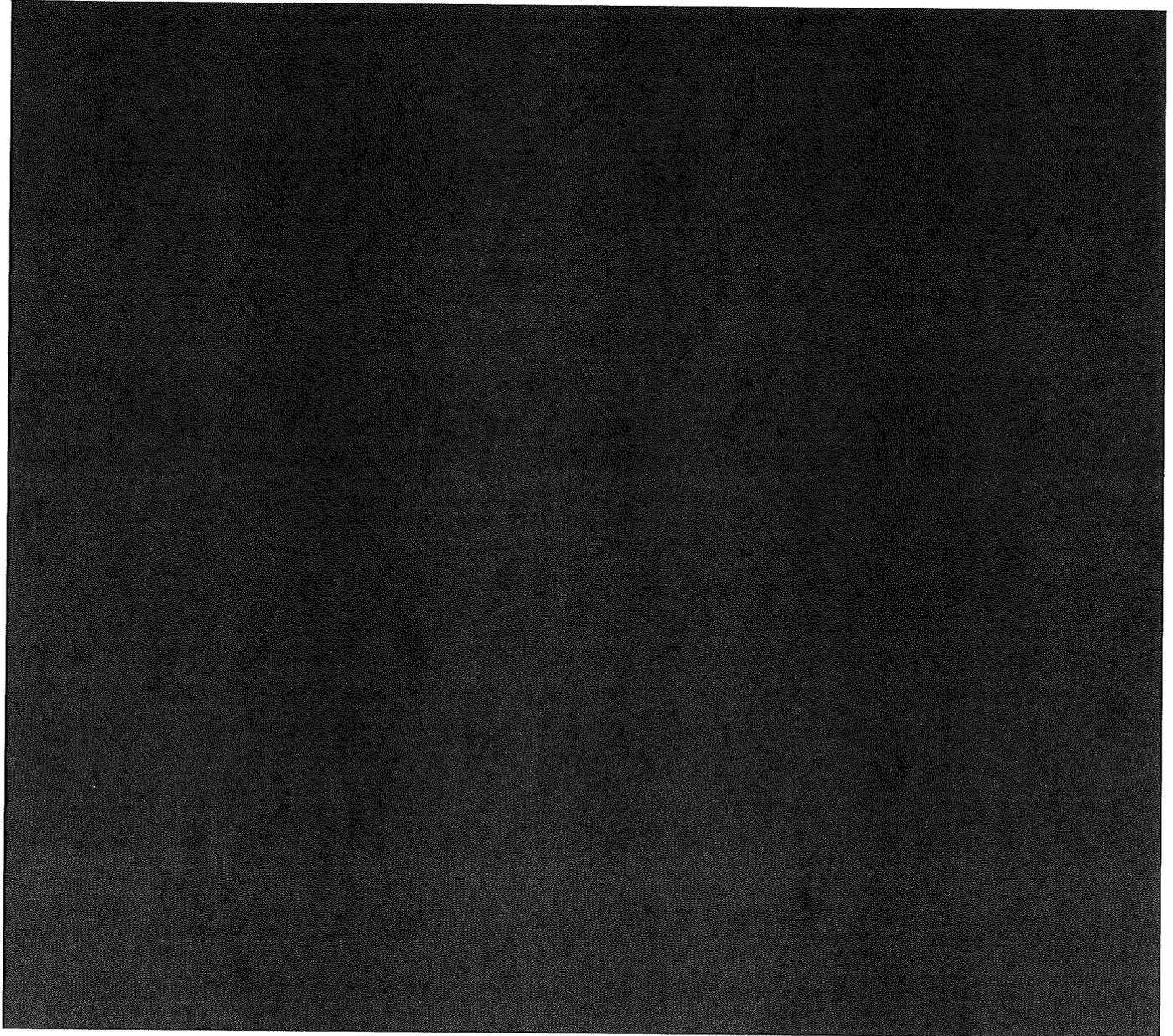
Unit Process / Plant	Operating Hours	No. of Days Operation per Year
Neutraliser unit	24 hours	365
Burning grounds	24 hours	365
Lead furnace	24 hours	365

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5.5 Graphical Process Information

M.M.A.N. PLANT FLOW DIAGRAM

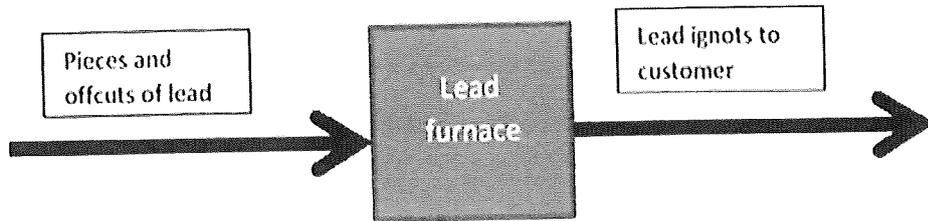


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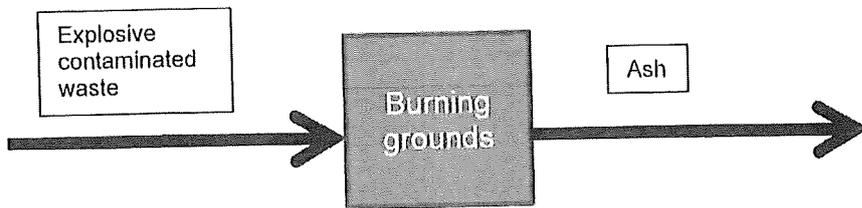


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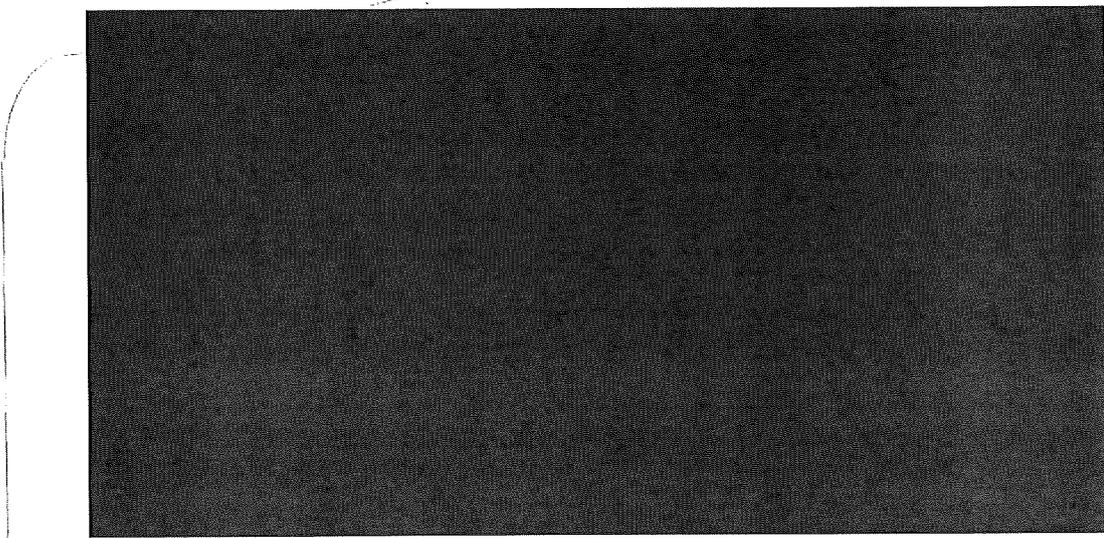
5.5.1 Lead Furnace



5.5.2 Burning Ground



BURNING GROUND LAY-OUT



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## 6. RAW MATERIALS AND PRODUCTS

### 6.1. Raw Materials Used

Raw material type	Maximum permitted consumption rate (volume)	Design consumption rate (volume)	Actual consumption rate (volume)	Units (quantity/period)
Monomethyl amine	N/a	Not available	660	t/a
Nitric acid	N/a	Not available	2 220	t/a
Lead waste	N/a	Not available	226.944	t/a

### 6.2. Production Rates

Production name	Maximum production capacity permitted (volume)	Design production capacity (volume)	Actual production capacity (volume)	Units (quantity/period)
Monomethylamine	N/a	Not available	2 880	t/a
Lead ingots	N/a	Not available	210.804	t/a

### 6.3. By Products rates

By-product name	Maximum production capacity permitted (volume)	Design production capacity (volume)	Actual production capacity (volume)	Units (quantity/period)
Slag	N/a	Not available	16.332	t/a

### 6.4. Energy Sources Used

Energy Source	Actual Consumption Rate (Volume)	Units (quantity/ period)
Electricity	700 000	kWh/month
Backup electrical generators	400 085	kVA

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6.5. Source 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	Height Above Nearby Building (m)	Diameter at Stack Tip/Vent Exit (m)	Actual Gas Exit Temperature	Actual Gas Volumetric Flow (m <sup>3</sup> )	Actual Gas Exit Velocity (m/s)
S1	MMA stack			10.8	3	0.4	91.89	900	1.99
L1	Lead Furnace stack			6.3	1.2	0.4	24.85	4 608	9.24

6.5.2 Area and/or Line Source Parameters

Unique Area Source ID	Source Name	Source Description	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)
3	Burning Ground (5 x burning areas)	Offloading and layout of explosives per type in 5 different burning areas in order to dry and start the combustion of explosive contaminated waste	N/A	N/A	N/A

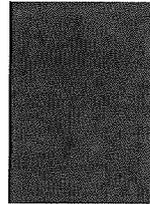
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6.5.3 Point Source Emissions

Point source code	Pollutant name	Maximum hourly release rate		Maximum daily release rate		Average annual release rate			Emission hours (e.g. 07:00 – 17:00)	Type of emission (continuous/ routine but intermittent/ emergency only)		
		(mg/Nm <sup>3</sup> )	(mg/Am <sup>3</sup> )	(g/s)	(mg/Nm <sup>3</sup> )	(mg/Am <sup>3</sup> )	(tons/day)	(mg/Nm <sup>3</sup> )			(mg/Am <sup>3</sup> )	(tpa)
L1	Lead	<0.01	1.53	0.002	0.01	1.53	1	3.65	1.53	196.78	00:00 – 23:59	Intermittent
	PM	2.48	22.93	0.029	2.48	22.93		902.72	22.93	0.914	00:00 – 23:59	Intermittent
S1	Methyl amine	<0.68	6.23	0.002	<0.68	6.23		248.2	6.23	0.063	00:00 – 23:59	Intermittent
	TVOC	<0.01	24 957	6.24	0.01	24 957	1	3.65	24 957	196.78	00:00 – 23:59	Intermittent

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6.5.4 Area Source Emissions

Area source code	Pollutant name	Maximum hourly release rate (g/s)	Maximum daily release rate (tons/day)	Average annual release rate (tons/annum)	Emission hours (eg 07:00 – 17:00)	Type of emission (continuous/intermittent)	Wind dependent (yes/no)
3 (Burning Grounds)	Dust Fall (a)	Provide emission data based on the bucket system on site within 6 months of the issuance of this AEL.			00:00 – 23:59	Intermittent	yes
3 (Burning Grounds)	Sulphur Dioxide (SO <sub>2</sub> ) (b)	Provide emission data based on the passive sampling on site within 6 months of the issuance of this AEL.			00:00 -23:59	Intermittent	yes

(a) Three months running average not to exceed limit value for adjacent land use according to dust control regulations promulgated in terms of section 32 of the NEM: AQA, 2004 (Act No. 39 of 2004), in four/eight principal wind directions.

(b) Twelve months running average not to exceed limit value as per GN 1210 of 24 December 2009. Passive diffusive measurement carried out monthly.



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7. APPLIANCES AND MEASURES TO PREVENT AIR POLLUTION

7.1 Appliances and Control Measures

Associated Source Code	Appliances				Air Pollution Control Technology							
	Appliance / Process Equipment Number	Appliance Type / Description	Appliance Serial Number	Appliance Manufacture Date	Product Name and Model	Technology Type	Commission Date	Date of Significant Modification / Upgrade	Design Capacity	Nominal Capacity	Permitted Minimum Control Efficiency (%)	Permitted Minimum Utilization (%)
S1	MMA Scrubber (E-02)	Scrubber	N/A	1994	N/A	Wet scrubbing	1994	None	1.3m <sup>3</sup> /h	871 kg/h	98	98
L1	Lead recycling plant	C-series Scrubber		2008	Air & Allied Technologies C-series	Wet Packed Bed	Feb 2009	None	2500 m <sup>3</sup> /h @ 500 mg/m <sup>3</sup>	2300 m <sup>3</sup> /h @ 300mg/m <sup>3</sup>	98	98

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7.2 Point Source – Permissible Emission Rates (Under normal working conditions)

Listed Activity	Pollutant Name	Maximum Release Rate		Duration of Emissions
		(mg/Nm <sup>3</sup> )	Date to be Achieved By	
Subcategory 4.13 Lead Smelting	Particulate Matter	30	Immediately	Hourly
	Pb (as fraction of total suspended particles)	2	Immediately	Hourly
Category 6 Organic Chemicals Industry				
	Methylamines (CH <sub>5</sub> N)	10	Immediately	Hourly
Category 8.3 Burning Grounds	Total Volatile compounds(non-thermal)	40 000	Immediately	Hourly
	Dust Fall	a	Immediately	Daily
	SO <sub>2</sub>	b	Immediately	Daily

a [Three months running average not to exceed limit value for adjacent land use according to dust control regulations promulgated in terms of section 32 of NEM: AQA (Act no. 39 of 2004)], in eight principal wind directions.

b twelve months average not to exceed limit value as per GN 1210 of 24 December 2009. Passive diffusive measurement approved by the licensing authority out monthly.

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7.3 Area and – Management and Mitigation Measures

Point Source Code	Emissions Sampling / Monitoring Method	Sampling Frequency	Sampling Duration	Parameters to be measured	Parameters to be reported	Reporting Frequency
L1	Periodic	Annually	As per method	PM & Lead	PM & Lead	Annually
S1 Burning Grounds	Periodic	Annually	As per method	TVOC & CH <sub>2</sub> CHCN	CH <sub>2</sub> CHCN & TVOC	Annually
	Periodic	Monthly	As per method	Dust fall	Dust fall	Annually
	Periodic	Monthly	As per method	SO <sub>2</sub>	SO <sub>2</sub>	Annually

7.4 Abnormal Releases and Emergency Responses

Unit Process	Description of Nature of Potential Abnormal Release	Pollutant(s) Released	Briefly Outline Emergency Procedures
Neutraliser	Failing of cooling water to the process resulting in the release of MMA and MMAN.	MMA	Alarm will activate. Confined areas have been installed with air supply, mutton cloth and tape to close off any entry points.
Lead furnace	Scrubber fail	Heavy Metals	N/A

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## 7.5 Routine Reporting and Record-keeping

### Complaint Register

The licence holder must maintain a complaint register at its premises, and such register must be made available for inspections. The complaint register must include the following information of the complainant: 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 report to the City of Tshwane, in a summarised format, 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) Measures implemented or to be implemented to prevent recurrence; and
- (d) Date by which measure will be implemented.

The City of Tshwane must also be provided with a copy of the complaint register. The record of a complaint must be kept for at least 5 (five) years after lodging.

### Annual Reporting

The licence holder must complete and upload to the SAAELIP system, an annual report. The report must include information for the period under review. The report must be uploaded to the SAAELIP system not later than 31 December after the end of each reporting period. The annual report must include, amongst others, the following items:

- (a) Pollutant emission trends;
- (b) External Compliance audit report(s);
- (c) Major upgrade projects (i.e. abatement equipment or process equipment); and
- (d) Greenhouse gas emissions.

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

## 7.6 Investigation

No investigations required.

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8. Disposal of Waste and Effluent Arising from Abatement Equipment Technology

Source Code / Name	Waste / Effluent Type	Hazardous Components Present	Method of Disposal
Lead Furnace	<ol style="list-style-type: none"> <li>1. Solid</li> <li>2. Solid</li> <li>3. Liquid</li> </ol>	<ol style="list-style-type: none"> <li>1. Slag (Pb)</li> <li>2. Filter dust-Pb</li> <li>3. Scrubber effluent -Pb</li> </ol>	<ol style="list-style-type: none"> <li>1. Slag is scooped off from surface of molten lead and placed in a drum</li> <li>2. Dust extracted from Pb melting pot</li> <li>3. Generated from the wet packed scrubber</li> </ol>
MMA Scrubber	Liquid waste	MMAN and Nitric acid	Effluent Dams

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.

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