

DEA REFERENCE NUMBER: 14/12/16/3/3/2/969

COMMENT AND RESPONSE REPORT

PROPOSED INSTALLATION OF SULPHUR
DIOXIDE (SO₂) ABATEMENT

EQUIPMENT AT ANGLO AMERICAN

PLATINUM LIMITED:

POLOKWANE SMELTER

PUBLIC

JUNE 2017

COMMENT AND RESPONSE REPORT

PROPOSED INSTALLATION OF
SULPHUR DIOXIDE (SO₂) ABATEMENT
EQUIPMENT AT ANGLO AMERICAN
PLATINUM LIMITED:
POLOKWANE SMELTER

Anglo American Platinum Limited

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Public

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WSP | Parsons Brinckerhoff
199 Bryanston Drive
Bryanston
2152

Tel: +27 11 361 1392
Fax: +27 11 361 1381
www.wspgroup.com
www.pbworld.com

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1 INTRODUCTION

Anglo American Platinum Limited (AAP) owns and operates three smelting complexes, namely Polokwane, Mortimer and Waterval. This project relates to the Polokwane Smelter, which is located in the Limpopo Province of South Africa.

The Polokwane Smelter is an existing metallurgical industrial furnace where sulphide concentrates are smelted. Wet concentrate is received and dried in a flash drier. The dry concentrate is smelted through an electric furnace, resulting in the recovery of platinum group metals (PGMs) and other base metals. The furnace matte is then tapped, cast and crushed. The resulting furnace slag is stockpiled at a dedicated slag storage facility. The furnace off-gas is currently cooled in a forced draft cooler (FDC) before entering a bag-house which de-dusts the off-gas. The off-gas is then vented into the atmosphere via a 150m stack.

The National Environmental Management Air Quality Act (No. 39 of 2004) (NEM:AQA) requires that furnaces at metallurgical industries be operated with efficient SO₂ abatement systems by 2015, however Polokwane Smelter was given an extension until 2020. In order to comply with new South African legislation and associated more stringent emission standards, an SO₂ abatement system must be installed at the Polokwane Smelter.

The proposed strategy to reduce SO₂ to achieve the Minimum Emission Standards (MES) is the installation of a WSA Plant that will convert the SO₂ contained in the off-gas into commercial-grade concentrated sulphuric acid (H₂SO₄). The exhaust from the WSA plant (containing reduced SO₂ concentrations) will be vented into the atmosphere, and the commercial grade sulphuric acid will be temporarily stored before being dispatched into the commercial market.

The area upon which the development will be located is within the Polokwane Smelter complex, and is hereafter referred to as the development site.

WSP| Parsons Brinckerhoff, Environment and Energy, Africa (WSP | Parsons Brinckerhoff) has been appointed in the role of Independent Environmental Assessment Practitioner (EAP) to undertake the S&EIR processes for the development.

2 COMMENTS RECEIVED

Comments received from registered stakeholders have been captured and responded to within the comments and response table included in Section 3. The original comments and responses are included in **Appendix A**.

3 COMMENTS RECEIVED

STAKEHOLDER DETAIL	COMMENT	RESPONSE	REPORT REFERENCE
Air Quality			
Capricorn District Municipality Ms. Nokuthula Shiburi	Provide Clarity and/or more information on the coal burning at the informal settlement referred to in section 7.8 of your report.	Your concern regarding the statement in section 7.8 of the Draft Scoping Report is noted. This statement relates to the regional baseline environment and was extracted from documents relevant to the greater Polokwane Area (add reference document) and not just Polokwane Smelters. This statement hence does not intend to deflect from Polokwane Smelter but to provide a background of all activities taking place in the area. The proposed Air Quality Impact Assessment will assess the existing operations (baseline) and the impact of the proposed SO ₂ Abatement Plant. It is anticipated that there will be a positive air quality impact (reduced SO ₂ emissions).	Section 8.8
	You are requested to submit a plan of study detailing the general overview of the intended modelling approach for the modelling which will be conducted as part of the Air Quality Impact Assessment.	The updated plan of study was submitted via email on 25 May 2017 and is attached hereto in Appendix B .	Section 9.8
Limpopo Consumer Coalition Mpedi Maluleke	The description of the development site reads thus: The air quality at the development site is currently being influenced by the existing sources at Polokwane Smelter, these include the drying process, smelting process and crushing process.	Your concern regarding the statement in section 7.8 of the Draft Scoping Report is noted. This statement relates to the regional baseline environment and was extracted from documents relevant to the greater Polokwane Area (example – please reference a document that was used) and not just Polokwane Smelters. This statement hence does not intend to deflect from Polokwane Smelter but to	Section 9.8 Appendix E-2

STAKEHOLDER DETAIL	COMMENT	RESPONSE	REPORT REFERENCE
	<p>It is further noted by the project document that: Silicon Smelters situated south-east of Pietersburg is situated close to Palmietfontein site. Visible dust fallout and particulates can be observed originating from this source.</p> <p>And elsewhere the project document it is noted that: Polokwane Smelters contains 68 megawatt furnace and produces a furnace gas with high dust content.</p> <p>Nevertheless the project info does a 360 turn and puts the pollution squarely on consumer-citizens provocatively.</p> <p>The project states that 'Contributions to SO₂, PM10 and dust fall in the area may primarily be from the informal settlements.</p> <p>This air quality assessment narrative is hypocritical, contradictory and a profit-push tactic arguable to a point of 'no project'.</p> <p>However, we remain heartened by the knowledge that the 'AQIA report will include all methodology and technical information needed to support the findings, as well as focusing on the potential impact on sensitive receptors and mitigation measures to be taken to minimize the potential impacts'</p> <p>We are also convinced that the truth about 2% SO₂ emissions at Silicon is disturbingly economical.</p>	<p>provide a background of all activities taking place in the area.</p> <p>Refer to Section 9.8 and Appendix E-2 of the EIAR for the impact assessment.</p>	
Rationale for Choosing the Preferred Technology			
Limpopo Consumer Coalition	LCC wish to raise objections regarding the profit-orientated preference of the technology chosen during the pre-feasibility study.	In order to meet compliance with the SO ₂ minimum emission standard at Polokwane Smelter, the SO ₂ abatement project team have considered the environmental cost-benefits of currently available technologies. These available	Section 6 Section 7

STAKEHOLDER DETAIL	COMMENT	RESPONSE	REPORT REFERENCE
Mpedi Maluleke	<p>We are adamant that the reason for choosing the WSA Plant is because of the 'lowest capital and operating cost that produces a saleable by-product'</p> <p>The CDMA process is not an option simply because 'Polokwane Smelters do not wish to produce gypsum'.</p> <p>Why the LUREC Plant which 'has the capability to process the highest inlet SO₂ concentration as compared to the other SO₂ abatement technologies' was not chosen and the reasons have not been included in the Scoping Report. Does it come with additional operational costs associated with the CDMA plant?</p>	<p>technologies were investigated as part of the pre-feasibility study and the WSA plant has been chosen as the most suitable option. This is not a profit-generating project and is focused on SO₂ emissions compliance, hence the motivation for the technology with the lowest capital and operating cost solution.</p> <p>The operating costs of the dual alkali technology (CMDA), would be higher than the WSA technology and also introduce a potential risk of an additional gypsum by-product hence introducing another potential waste stream at the smelter. This was deemed undesirable when compared to a sulphuric acid by-product from the WSA, which can be reused productively. The Lurec technology in this case, was not chosen because it would need to be coupled with a Cansolv process and hence the project would need two new technologies instead of one. Another factor considered was that the Cansolv process is very energy intensive; from an energy efficiency and operating cost perspective, the Cansolv and Lurec technology was less favourable than the WSA option.</p> <p>If you would like further information on the technologies and process design information, please feel free to contact us.</p>	
Alternatives			
Limpopo Consumer Coalition Mpedi Maluleke	MM enquired why the initial access route alternative was abandoned for the route in close proximity to the wetland.	AS explained that the route is not feasible as it will not be feasible to reroute existing pipelines in the proposed area	Section 7
Archaeological Sites			
Limpopo Consumer Coalition Mpedi Maluleke	It is typical capital behaviour to temper with archaeological sites for unsound reasons.	Refer to Section 9.12 and Appendix E-4 of the EIAR for the impact assessment.	Section 9.12 Appendix E-4

STAKEHOLDER DETAIL	COMMENT	RESPONSE	REPORT REFERENCE
	<p>Palmietfontein archaeological footprint close to Silicon would be inconsiderately affected as 'the offices, contractors area and a proposed new roads will have to be cleared.</p> <p>If the environmental health of Palmietfontein area is distressed or compromised then why destroy it further just to erect working quarters?</p>		
Biodiversity			
<p>Limpopo Coalition Mpedi Maluleke</p> <p>Consumer</p>	<p>We very much convinced that a new study may uncover evidence which will refute available data and expose grave 'environmental fatal flaws' that were not identified prior to the construction of the smelter. Nothing could have prohibited the construction of Silicon pre-1994.</p> <p>The proposed project plan must ensure the restoration of:</p> <ol style="list-style-type: none"> The natural habitat of the grass owl and the African wild cat. A new audit of the flora and fauna found or erased by the construction of the smelter and also the foreseeable damage to be caused by the planned SO₂ project. Topographical damage making it possible for flooding and water runoff to Polokwane Game Reserve, which may be compromising the health and existence of flora and fauna including soil quality at the reserve and neighbouring villages. 	<p>Refer to Section 9.5 and 9.6 and Appendix E-3 of the EIAR for the impact assessment.</p>	<p>Sectionm 9.5 Section 9.6 Appendix E-3</p>
Climate Change			
<p>Limpopo Coalition</p> <p>Consumer</p>	<p>MM noted that he is concerned about climate change.</p>	<p>Refer to Section 9.4 and Appendix E-6 of the EIAR for the impact assessment.</p>	<p>Section 9.4 Appendix E-6</p>

STAKEHOLDER DETAIL	COMMENT	RESPONSE	REPORT REFERENCE
Mpedi Maluleke			
Water Quality			
Limpopo Consumer Coalition Mpedi Maluleke	MM noted that the community is concerned that the water quality is being affected by industrial operations.	Polokwane Smelter undertakes water quality monitoring and it has been agreed that for the SO ₂ Abatement Plant there will be no water abstracted from boreholes. In addition the SO ₂ Abatement Plant will be located within the dirty stormwater management area which reports to the existing PCD.	Section 8.4 Section 8.5 Section 9.9 Section 9.10
Public Participation Process			
Limpopo Consumer Coalition Mpedi Maluleke	Lastly, LCC is concerned that there is no document in Sepedi as 75% the residents at Ga-Maja/Ga-Chuene speak the language predominantly. The Wards 1&6 cllrs are not informed about the Silicon project and so are the communities they serve. We are in contact with most of the stakeholders identified on the stakeholder list who have never attended any meeting about this project.	<p>We acknowledge that Sepedi is prevalent in the area, however due to the technical nature and size of the EIR the documentation will only be distributed in English.</p> <p>We would however like to follow an inclusive process and as such will ensure that a translator is present at the proposed public meeting in June 2017.</p> <p>WSP notified all stakeholder on the database via site notices, adverts, emails and telephonically of the SO₂ Abatement Plant project. However, should stakeholders have erroneously been excluded from the stakeholder database please provided us with the correct contact information to ensure that they are notified.</p> <p>No public meetings have been held to date. A public meeting is proposed for June 2017 to present the project and associated specialist studies. All registered stakeholders will be notified of the availability of the Draft EIAR and public meeting via site notices, email and telephonically.</p>	Section 4.3.3

STAKEHOLDER DETAIL	COMMENT	RESPONSE	REPORT REFERENCE
Specialist Studies			
Limpopo Coalition Mpedi Maluleke	Consumer In conclusion, LCC is pleased to understand 'a number of environment impacts have been identified as requiring some more in-depth investigation and the identification of detailed mitigation measures'.	Thank you. Comment Noted.	
Limpopo Coalition Mpedi Maluleke	Consumer Requested an electronic copy of the Draft EIAR.	It was agreed that a cd containing the Draft EIAR will be delivered to MM once available.	

Appendix A

ORIGINAL COMMENTS RECEIVED

LIMPOPO CONSUMER COALITION

Enquiries:072 245 8204

PUBLIC COMMENT

BRIEF INTRODUCTION

Limpopo Consumer Coalition(LCC) is an organization-based consumer protection group which operates in the province of Limpopo. We are a representative voice of 76 grassroots,community-based organization with an interest in the health of our immediate environment.

LCC is recognized in Limpopo by the department of Economic Development, Environment and Tourism (LEDET)

We hereby intend to submit consumer-citizens comment on the installation and operation of an 'efficient SO₂ abatement system at the Polokwane Smelters' which would ensure that the company meet the NEM:AQA legislation requirements by 2020.

CONSUMER-CITIZENS COMMENTARY

We would appreciate it if the project managers can look into the following matters:

1.RATIONALE FOR CHOOSING THE PREFERRED TECHNOLOGY

LCC wish to raise objections regarding the profit-orientated preference of the technology chosen during the pre-feasibility study.

We are adamant that the reason for choosing the WSA Plant is because of the **'lowest capital and operating cost that produces a saleable by-product'**

The CDMA process is not an option simply because **'Polokwane Smelters do not wish to produce gypsum'**.

Why the LUREC Plant which **'has the capability to process the highest inlet SO₂ concentration as compared to the other SO₂ abatement technologies'** was not chosen and the reasons have not been included in the Scoping Report. Does it come with additional operational costs associated with the CDMA plant?

AIR QUALITY NARRATIVE

The description of the development site reads thus:

The air quality at the development site is currently being influenced by the existing sources at Polokwane Smelter,these include the drying process,smelting process and crushing process.

It is further noted by the project document that:

Silicon Smelters situated south-east of PIETERSBURG is situated close to Palmietfontein site. Visible dust fallout and particulates can be observed originating from this source.

And elsewhere the project document it is noted that:

Polokwane Smelters contains 68 megawatt furnace and produces a furnace gas with high dust content.

Nevertheless the project info does a 360 turn and puts the pollution squarely on consumer-citizens provocatively.

The project states that '**Contributions to SO₂,PM₁₀ and dust fall in the area may primarily be from the informal settlements.**

This air quality assessment narrative is hypocritical,contradictory and a profit-push tactic arguable to a point of 'no project'.

However,we remain heartened by the knowledge that the '**AQIA report will include all methodology and technical information needed to support the findings,as well as focusing on the potential impact on sensitive receptors and mitigation measures to be taken to minimize the potential impacts**'

We are also convinced that the truth about 2% SO₂ emissions at Silicon is disturbingly economical.

ARCHAEOLOGICAL SITES

It is typical capital behavior to temper with archaeological sites for unsound reasons.

Palmietfontein archaeological footprint close to Silicon would be inconsiderately affected as 'the offices,contractors area and a proposed new roads will have to be cleared.

If the environmental health of Palmietfontein area is distressed or compromised then why destroy it further just to erect working quarters?

ADDITIONALLY;

The desktop studies undertaken are a serious cause our concerns as consumer-citizens regardless of the fact that:

1.Endangered fauna species have been categorized as occurring in the area of Palmietfontein site.

2.There exist an audit of fauna observed or deduced to be on the Palmietfontein site prior to the construction of Polokwane Smelter toeka.

3.No Red Data floral species were found during the survey prior to the construction of the smelter and it is highly unlikely that any occur within the study area at present.

We very much convinced that a new study may uncover evidence which will refute available data and expose grave 'environmental fatal flaws' that were not identified prior to the construction of the smelter. Nothing could have prohibited the construction of Silicon pre-1994.

The proposed project plan must ensure the restoration of:

- a. The natural habitat of the grass owl and the African wild cat.
- b. A new audit of the flora and fauna found or erased by the construction of the smelter and also the foreseeable damage to be caused by the planned SO₂ project.
- c. Topographical damage making it possible for flooding and water runoff to Polokwane Game Reserve, which may be compromising the health and existence of flora and fauna including soil quality at the reserve and neighbouring villages.

Lastly, LCC is concerned that there is no document in Sepedi as 75% the residents at Ga-Maja/Ga-Chuene speak the language predominantly. The Wards 1&6 cllrs are not informed about the Silicon project and so are the communities they serve. We are in contact with most of the stakeholders identified on the stakeholder list who have never attended any meeting about this project.

In conclusion, LCC is pleased to understand '**a number of environment impacts have been identified as requiring some more in-depth investigation and the identification of detailed mitigation measures**'.

We thank you for an opportunity to comment for and in the interest of consumer-citizens

Mpedi Maluleke

Convener
LCC

DATE: 27 MARCH 2017



CAPRICORN

DISTRICT MUNICIPALITY

41 Biccard Street
P O Box 4100
POLOKWANE
0700

Tel: (015) 294 1000 x 1287
Fax: 086 662 5217
Web: www.cdm.gov.za
E-mail: rangwatom@cdm.org.za

Reference: 16/2/2/3/1

Enquiries: Ms. Nokuthula Shiburi

22 March 2017

WSP Environmental (Pty) Ltd
P.O. Box 98867
SLOANE PARK
2152

Attention: Ms Anri Scheepers

Dear Madam

COMMENTS ON DRAFT SCOPING REPORT FOR THE PROPOSED INSTALLATION OF THE SULPHUR DIOXIDE ABATEMENT EQUIPMENT AT ANGLO AMERICAN PLATINUM LIMITED: POLOKWANE SMELTER

This letter serves to acknowledge that we have received a draft scoping report for the proposed development above. A review of the report resulted in the following comments for your attention:

1. Provide clarity and/or more information on the coal burning at the informal settlement referred to in section 7.8 of your report;
2. You are requested to submit a plan of study detailing the general overview of the intended modelling approach for the modelling which will be conducted as part of the Air Quality Impact Assessment.

Please do not hesitate to contact the writer hereof should you require further clarity.

Yours faithfully


MS. THUSO NEMUGUMONI
ACTING MUNICIPAL MANAGER

23/03/2017
DATE



MEETING NOTES

199 Bryanston Drive
Bryanston
2191

Tel: +11 361 1392
Fax: +11 361 1381

www.wspgroup.com
www.pbworld.com

Job Title	Proposed Installation of Sulphur Dioxide Abatement Equipment at Polokwane Smelter
Project Number	31101
Date	19 May 2017
Time	10:00 – 11:00
Venue	Getaway Gateway Polokwane Place
Subject	Proposed Installation of Sulphur Dioxide Abatement Equipment at Polokwane Smelter – Limpopo Consumer Coalition Meeting
Client	Anglo American Platinum Limited
Present	See Attached Attendance Register (Appendix A)
Apologies	None
Distribution	As per the Attendance Register

ACTION

1.0 WELCOME AND INTRODUCTIONS

1.1 Anri Scheepers thanked the Limpopo Consumer Coalition (LCC) for the opportunity to meet with them to discuss the Proposed Installation of Sulphur Dioxide (SO₂) Abatement Equipment at Polokwane Smelter.

1.2 A round of introductions was done, including:

- LCC – Mpedi Maluleke
- Anglo American Platinum Limited – Pierre Malan, Nkhensani Baloyi and Adriaan Venter
- WSP Environmental (Pty) Ltd (WSP) – Anri Scheepers

1.3 Anri Scheepers mentioned that the presentation (**Appendix B**) would be attached to the minutes together with the attendance register (**Appendix A**).

2.0 PROJECT BACKGROUND

2.1 Anglo American Platinum Limited (Anglo) owns and operates the Polokwane Smelter, which is located off the R37 to Burgersfort on Portions 6 and 49 of the farm Palmietfontein 24KS. The Polokwane Smelter is an existing metallurgical industrial furnace where sulphide ores are smelted.

2.2 The National Environmental Management Air Quality Act (No. 39 of 2004) (NEM:AQA) requires that furnaces at metallurgical industries be operated with efficient SO₂ abatement systems by 2015, however Polokwane Smelter has been given an extension until 2020. In order to comply with new South African legislation, and associated more stringent emission standards, an SO₂ abatement system must be installed at the Polokwane Smelter.

2.3 The proposed strategy to reduce SO₂ to achieve the Minimum Emission Standards (MES) is the installation of a Wet Gas Sulphuric Acid (WSA) Plant that will convert the SO₂ contained in the off-gas into commercial-grade concentrated sulphuric acid (H₂SO₄). The exhaust from the WSA plant (containing reduced SO₂ concentrations) will be vented into the atmosphere, and the commercial grade sulphuric acid will be temporarily stored before being despatched into the commercial market.

ACTION

3.0 LIMPOPO CONSUMER COALITION

3.1 MM explained that the LCC is a grass root consumer protection group. He indicated that they operate in terms of the Consumer Protection Act and is not politically motivated.

3.2 The LCC is interested in the project to ensure consumer protection.

4.0 CLIMATE CHANGE

4.1 MM noted that he is concerned about climate change.

4.2 It was noted that a Climate Change Assessment is being undertaken and will be included in the Environmental Impact Assessment Report (EIAR).

5.0 WATER QUALITY

5.1 MM noted that the community is concerned that the water quality is being affected by industrial operations.

5.2 Polokwane Smelter undertakes water quality monitoring and it has been agreed that for the SO₂ Abatement Plant there will be no water abstracted from boreholes. In addition the SO₂ Abatement Plant will be located within the dirty stormwater management area which reports to the existing PCD.

6.0 INITIAL PROPOSED CONSTRUCTION ACCESS ROAD

6.1 MM enquired why the initial access route alternative was abandoned for the route in close proximity to the wetland.

6.2 AS explained that the route is not feasible as it will not be feasible to reroute existing pipelines in the proposed area.

7.0 DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

7.1 It was agreed that a cd containing the Draft EIAR will be delivered to MM once available.

WSP

Appendix A – Attendance Register

Appendix B - Presentation

Proposed Installation of Sulphur Dioxide Abatement Equipment at Polokwane Smelter

Anglo American Platinum Limited



19 May 2017
Limpopo Consumer Coalition

AGENDA

- 1. Welcome and Introduction**
- 2. Role Players**
- 3. Project Location**
- 4. Project Background**
- 5. Project Description**
- 6. Alternatives**
- 7. Legislative Requirements**
- 8. Specialist Studies**
- 9. Comments Received**
- 10. Proposed Schedule**
- 11. Questions and Discussions**

WELCOME AND INTRODUCTION

Competent Authority

Limpopo Department: Economic Development, Environment and Tourism – Environmental Authorisation (EA)

Capricorn District Municipality – Atmospheric Emissions Licence (AEL)

Commenting Authorities

Department of Water and Sanitation

Applicant

Anglo American Platinum Limited

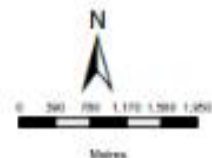
Environmental Assessment Practitioner

WSP | Parsons Brinckerhoff, Environment & Energy, Africa

**ANGLO AMERICAN
PLATINUM LIMITED**
POLOKWANE SMELTER
LOCATION

Legend

 Polokwane Smelter



DATA SOURCE: AEC ON 10/12/10

PROJECTION: WGS 1984 UTM ZONE 35N

PROJECT: 100% PROPOSED INSTALLATION OF SLAGHUR
DEVICE ABATEMENT EQUIPMENT AT ANGLO AMERICAN
PLATINUM LIMITED, POLOKWANE SMELTER

PROJECT NO: 0102

SCALE: 1:50,000 AT A4

DATE: 1 OCTOBER 2010

DRAWN BY: ANRI SCHROEDER

REVIEWED BY: SIGEL SEED



WSP GROUP FILE 010

DISCLAIMER

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroX, Geomatics, Aeroport, IGN, IGA, swisstopo, and the GIS User Community



R37

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Image © 2016 DigitalGlobe

Google Earth

Tour Guide



2001

Imagery Date: 9/9/2016 24°01'46.08" S 29°28'07.22" E elev 1420 m eye alt 3.75 km



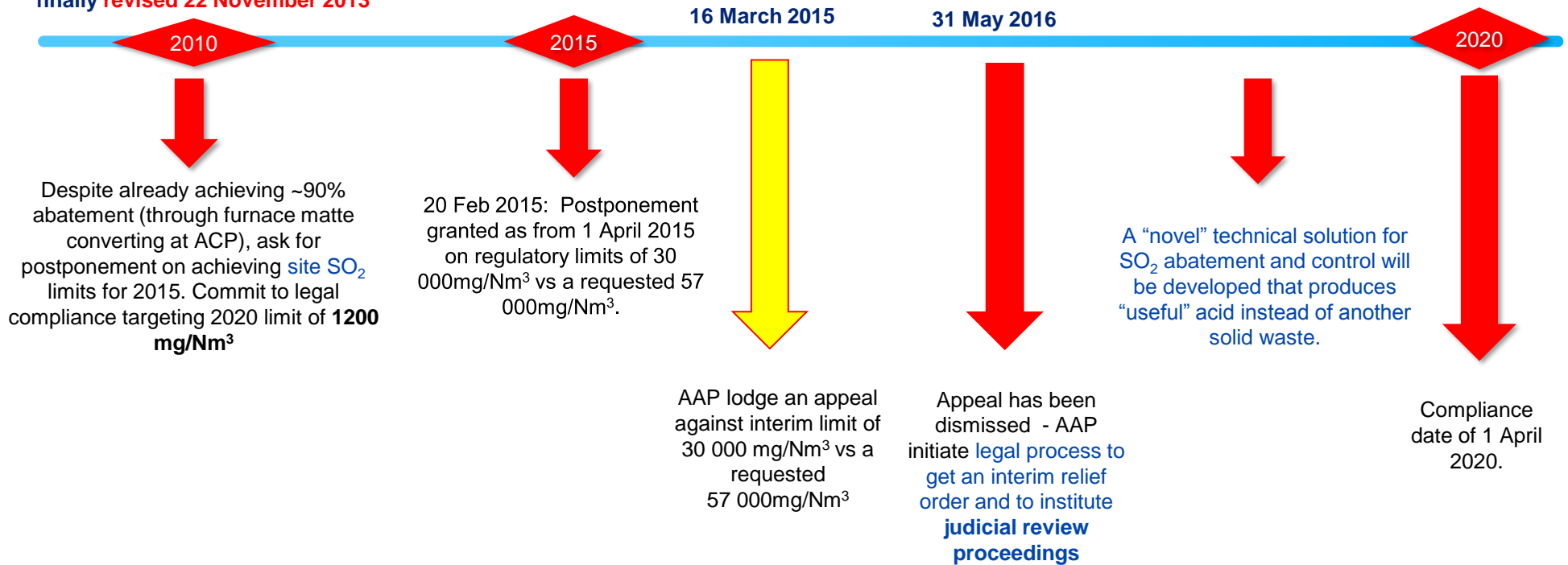
PROJECT BACKGROUND

SO₂ postponement & related appeal

Government notice of Minimum Emission Standards (MES) are published in the Government Gazette: 1 April 2010, then amended for Parliamentary Portfolio Review, and finally revised 22 November 2013

MES: SO₂ for existing facility: 3500mg/Nm³

MES: SO₂ for new/all facility: 1200mg/Nm³



SO ₂ Compliance requirements	Polokwane Smelter
Pre-2015 AEL condition	2500 mg/Nm ³
1 April 2015 MES requirement	3500 mg/Nm ³
1 April 2015 – 31 March 2020 postponement limit	30 000 mg/Nm ³ (requested 57 000 mg/Nm ³)
1 April 2020 MES requirement (require abatement)	1200 mg/Nm ³



PROJECT DESCRIPTION

- Electric Furnace Primary Gas Cleaning (Existing)
- Secondary Gas Cleaning (new additional cleaning)
- WSA Acid Plant
- Effluent Treatment Plant (401m³/day)
- Acid Concentrating Plant
- Acid Plant Cooling Water
- Dangerous Goods Storage and Handling
 - Acid – 1 200m³
 - LPG – 68m³
- Water Usage and Storage
 - Required - 869m³/day
 - Storage – 3 338m³
- Roads



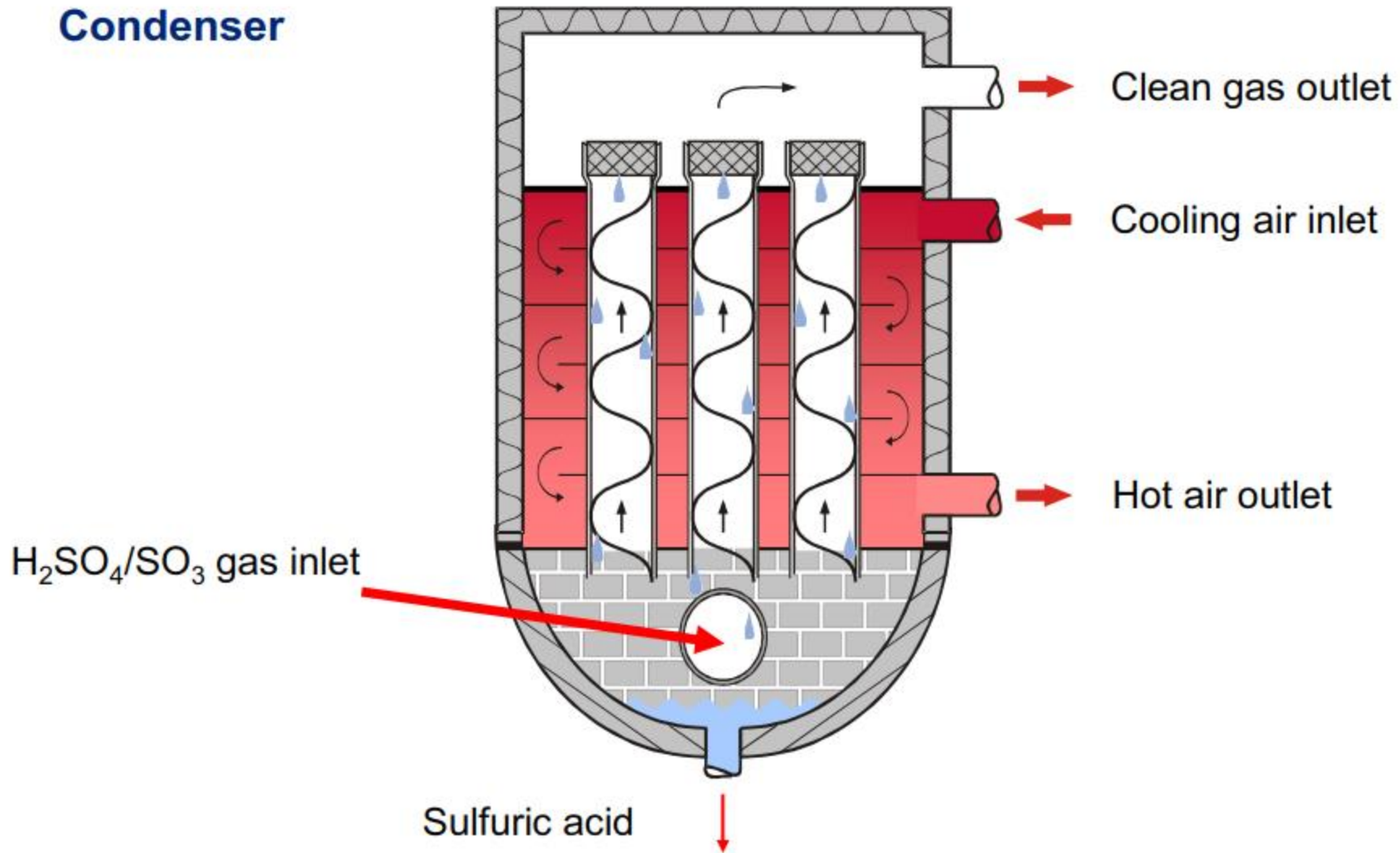
ALTERNATIVES

- **Location – None**
- **Type of activity – None**
- **Design or Layout of Activity**
 - Contractor facilities
 - Operational
 - Construction Access
- **Technology**
- **Operational Aspects – None**
- **No-Go**
 - Legal non-compliance



Process / Metallurgy

Condenser





Process / Metallurgy



ter



LEGISLATIVE REQUIREMENTS

National Environmental Management Act (No. 107 of 1998)

- **EIA Regulations (GNR 982)**
- **Listing Notice 1 (GNR 983)**
 - Activity 12 – Construction access road within 32m of watercourse
 - Activity 24 - The development of a road wider than 8 metres
 - Activity 27 – Clearance of construction area in excess of 1 ha
 - Activity 34 – Amendment of AEL

LEGISLATIVE REQUIREMENTS

National Environmental Management Act (No. 107 of 1998)

→ Listing Notice 2 (GNR 984)

- Activity 4 – The storage of acid in excess of 500 cubic metres of dangerous goods

→ Scoping and Environmental Impact Reporting Process

LEGISLATIVE REQUIREMENTS

National Environmental Management Act (No. 107 of 1998)

→ Listing Notice 3 (GNR 985)

- Activity 2 – The development of reservoirs within 10km of nature reserves
- Activity 4 – The development of a road within 10km of nature reserves
- Activity 14 - Construction access road within 32m of watercourse and within 10km of nature reserves

LEGISLATIVE REQUIREMENTS

**National Environmental
Management Air Quality Act (No. 59
of 2008)**

Due to the changes in emissions (positive) from the Mortimer Smelter an amendment to the existing Atmospheric Emissions Licence as well as a revised emissions inventory will be required for the proposed project (once authorised)

In terms of section 21 of the NEM:AQA a list of scheduled processes were published in GNR893 (November 2013). Potential scheduled processes applicable are Subcategory 4.1 and Subcategory 4.16

LEGISLATIVE REQUIREMENTS

National Water Act (No. 36 of 1998)

- Polokwane Smelter Water Use Licence No: 27085555
- Provision for the abstraction of 218 m³/day from boreholes for watering of gardens and game watering purposes
- The Licence will have to be amended to enable Anglo to use the abstracted water for processing purposes
- Construction access road within 500m of wetland

SPECIALIST STUDIES

- **Air Quality Impact Assessment**
- **Noise Impact Assessment**
- **Biodiversity Assessment**
- **Wetland Assessment**
- **Climate Change Assessment**
- **Heritage Impact Assessment**
- **Major Hazard Assessment**
- **Social Impact Assessment**
- **Closure Assessment and Plan**

COMMENTS RECEIVED

Comment Raised	Response
Rationale for Choosing the Preferred Technology	
<p>LCC wish to raise objections regarding the profit-orientated preference of the technology chosen during the pre-feasibility study.</p> <p>We are adamant that the reason for choosing the WSA Plant is because of the 'lowest capital and operating cost that produces a saleable by-product'</p> <p>The CDMA process is not an option simply because 'Polokwane Smelters do not wish to produce gypsum'.</p> <p>Why the LUREC Plant which 'has the capability to process the highest inlet SO₂ concentration as compared to the other SO₂ abatement technologies' was not chosen and the reasons have not been included in the Scoping Report. Does it come with additional operational costs associated with the CDMA plant?</p>	<p>In order to meet compliance with the SO₂ minimum emission standard at Polokwane Smelter, the SO₂ abatement project team have considered the environmental cost-benefits of currently available technologies. These available technologies were investigated as part of the pre-feasibility study and the WSA plant has been chosen as the most suitable option. This is not a profit-generating project and is focused on SO₂ emissions compliance, hence the motivation for the technology with the lowest capital and operating cost solution.</p> <p>The operating costs of the dual alkali technology (CMDA), would be higher than the WSA technology and also introduce a potential risk of an additional gypsum by-product hence introducing another potential waste stream at the smelter. This was deemed undesirable when compared to a sulphuric acid by-product from the WSA, which can be reused productively. The Lurec technology in this case, was not chosen because it would need to be coupled with a Cansolv process and hence the project would need two new technologies instead of one. Another factor considered was that the Cansolv process is very energy intensive; from an energy efficiency and operating cost perspective, the Cansolv and Lurec technology was less favourable than the WSA option.</p> <p>If you would like further information on the technologies and process design information, please feel free to contact us.</p>

COMMENTS RECEIVED

Comment Raised	Response
Air Quality Narrative	
<p>The description of the development site reads thus:</p> <p>The air quality at the development site is currently being influenced by the existing sources at Polokwane Smelter, these include the drying process, smelting process and crushing process.</p> <p>It is further noted by the project document that:</p> <p>Silicon Smelters situated south-east of Pietersburg is situated close to Palmietfontein site. Visible dust fallout and particulates can be observed originating from this source.</p> <p>And elsewhere the project document it is noted that:</p> <p>Polokwane Smelters contains 68 megawatt furnace and produces a furnace gas with high dust content.</p> <p>Nevertheless the project info does a 360 turn and puts the pollution squarely on consumer-citizens provocatively.</p> <p>The project states that 'Contributions to SO₂, PM₁₀ and dust fall in the area may primarily be from the informal settlements.</p> <p>This air quality assessment narrative is hypocritical, contradictory and a profit-push tactic arguable to a point of 'no project'.</p> <p>However, we remain heartened by the knowledge that the 'AQIA report will include all methodology and technical information needed to support the findings, as well as focusing on the potential impact on sensitive receptors and mitigation measures to be taken to minimize the potential impacts'</p> <p>We are also convinced that the truth about 2% SO₂ emissions at Silicon is disturbingly economical.</p>	<p>Your concern regarding the statement in section 7.8 of the Draft Scoping Report is noted. This statement relates to the regional baseline environment and was extracted from documents relevant to the greater Polokwane Area (Draft Environmental Impact Report for the Proposed Smelter in the Pietersburg Area, dated August 2001) and not just Polokwane Smelters. This statement hence does not intend to deflect from Polokwane Smelter but to provide a background of all activities taking place in the area.</p> <p>The proposed Air Quality Impact Assessment will assess the existing operations (baseline) and the impact of the proposed SO₂ Abatement Plant. It is anticipated that there will be a positive air quality impact (reduced SO₂ emissions).</p>

COMMENTS RECEIVED

Comment Raised	Response
Archaeological Sites	
<p>It is typical capital behaviour to temper with archaeological sites for unsound reasons.</p> <p>Palmietfontein archaeological footprint close to Silicon would be inconsiderately affected as 'the offices, contractors area and a proposed new roads will have to be cleared.</p> <p>If the environmental health of Palmietfontein area is distressed or compromised then why destroy it further just to erect working quarters?</p>	<p>A Heritage Impact Assessment (HIA) will be undertaken in order to identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property. Once identified the significance of the cultural resources will be assessed in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.</p> <p>The HIA will consist of the following phases:</p> <ul style="list-style-type: none"> • Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference. • Baseline assessment – establishment of a broad framework of the potential heritage of an area. • Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation. • Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted. • Phase II mitigation or rescue – planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost. • Phase III management plan – for rare cases where sites are so important that development cannot be allowed.

COMMENTS RECEIVED

Comment Raised	Response
Biodiversity	
<p>We very much convinced that a new study may uncover evidence which will refute available data and expose grave 'environmental fatal flaws' that were not identified prior to the construction of the smelter. Nothing could have prohibited the construction of Silicon pre-1994.</p> <p>The proposed project plan must ensure the restoration of:</p> <p>a. The natural habitat of the grass owl and the African wild cat.</p> <p>b. A new audit of the flora and fauna found or erased by the construction of the smelter and also the foreseeable damage to be caused by the planned SO2 project.</p> <p>c. Topographical damage making it possible for flooding and water runoff to Polokwane Game Reserve, which may be compromising the health and existence of flora and fauna including soil quality at the reserve and neighbouring villages.</p>	<p>A biodiversity assessment will be undertaken on areas that was not previously impacted on and where vegetation needs to be cleared. The biodiversity assessment will consist of a botanical and faunal survey.</p> <p>In addition a Freshwater Habitat Assessment will be undertaken.</p> <p>The objective of the Freshwater Habitat Impact Assessment is to identify the potential impacts of the proposed development on any of the identified freshwater habitats (wetland and riparian systems) present within the propose development footprint and within a 500m radius area of the development boundary. No delineation or functional assessments of any freshwater systems are required to be conducted as delineation and functional assessment has already been compiled for the smelter site.</p> <ul style="list-style-type: none"> • The proposed scope of work required for the assessment would be as follows: • Desktop review of existing information; • Verification of wetland and riparian habitats; • Identification of potential impact and associated mitigative measures; • Risk Matrix Assessment; and, • Reporting (including recommendations in terms of Section 21 of the National Water Act). <p>The specialist studies will however not assess impacts that has already occurred, and will only assess and identify mitigation measures for potential impacts associated with the SO₂ Abatement Plant.</p>

COMMENTS RECEIVED

Comment Raised	Response
Public Participation Process	
<p>Lastly, LCC is concerned that there is no document in Sepedi as 75% the residents at Ga-Maja/Ga-Chuene speak the language predominantly. The Wards 1&6 cllrs are not informed about the Silicon project and so are the communities they serve. We are in contact with most of the stakeholders identified on the stakeholder list who have never attended any meeting about this project.</p>	<p>We acknowledge that Sepedi is prevalent in the area, however due to the technical nature and size of the EIR the documentation will only be distributed in English.</p> <p>We would however like to follow an inclusive process and as such will ensure that a translator is present at the proposed public meeting in June 2017.</p> <p>WSP notified all stakeholder on the database via site notices, adverts, emails and telephonically of the SO₂ Abatement Plant project. However, should stakeholders have erroneously been excluded from the stakeholder database please provided us with the correct contact information to ensure that they are notified.</p> <p>No public meetings have been held to date. A public meeting is proposed for June 2017 to present the project and associated specialist studies. All registered stakeholders will be notified of the availability of the Draft EIAR and public meeting via site notices, email and telephonically.</p>

COMMENTS RECEIVED

Comment Raised	Response
Specialist Studies	
In conclusion, LCC is pleased to understand 'a number of environment impacts have been identified as requiring some more in-depth investigation and the identification of detailed mitigation measures'.	Thank you. Comment Noted.

PROJECT SCHEDULE

Task	Dates
Pre-Application Meeting - LEDET	27 January 2017
Submission of Application Form	11 February 2017
Stakeholder Review of Draft Scoping Report	11 February 2017 –13 March 2017 (30 days)
Authority Approval of Scoping Phase	17 May 2017
Stakeholder Review of Draft EIAR	9 June 2017 to 10 July 2017 (30 days)
Public Meeting	22 June 2017
Submission of AEL Application	10 August 2017
Authority Approval of EIAR	20 July 2017 to 14 November 2017 (107 days)
AEL Authority Review (Subsequent to receipt of Environmental Authorisation)	16 November 2017 to 7 January 2018 (30 days)

QUESTIONS AND DISCUSSIONS

Appendix B

AIR QUALITY ASSESSMENT PLAN OF STUDY

POLOKWANE SMELTER SO₂ ABATEMENT PLAN OF STUDY

POLOKWANE, LIMPOPO

MAY 2017

POLOKWANE SMELTER SO2 ABATEMENT PLAN OF STUDY

POLOKWANE, LIMPOPO

Anglo American Platinum Ltd

Report (version 1)

Project No: 31102

Date: May 2017

WSP | Parsons Brinckerhoff

South View Block
Bryanston Place Office Park
199 Bryanston Drive
Bryanston 2191

Tel: +27 11 361 1380

Fax: +27 11 361 1381

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1

PROJECT BACKGROUND

The Polokwane Smelter is an existing metallurgical industrial furnace where sulphide concentrates are smelted. Wet concentrate is received and dried in a flash drier. The dry concentrate is smelted through an electric furnace, resulting in the recovery of platinum group metals (PGMs) and other base metals. The furnace matte is then tapped, cast and crushed. The resulting furnace slag is stockpiled at a dedicated slag storage facility. The furnace off-gas is currently cooled in a forced draft cooler before entering a bag-house which de-dusts the off-gas. The off-gas is then vented into the atmosphere via a 150m stack (**Figure 1-1**).

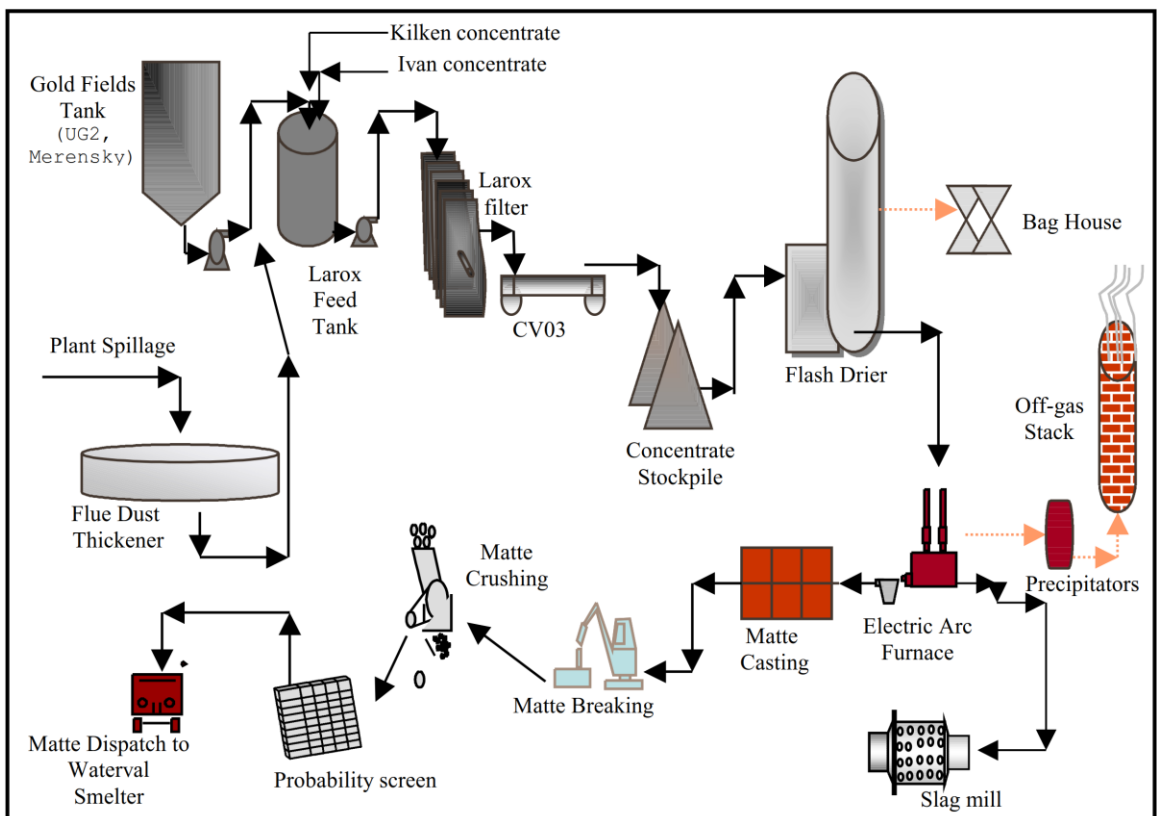


Figure 1-1: Process flow diagram of current operations at Polokwane Smelter (Sima and Legoabe, 2006).

The National Environmental Management: Air Quality Act (No. 39 of 2004) requires that furnaces at metallurgical industries be operated with efficient SO₂ removal abatement systems by 2015, however Polokwane Smelter was given an extension until 2020. In order to comply with new legislation and the more stringent associated emission standards, an SO₂ abatement system needs to be installed at the Polokwane Smelter. Currently, furnace off-gas is de-dusted by a baghouse and emitted from the main furnace stack. The concentration of SO₂ gas emitted from the furnace stack is approximately 2% of total off-gas. Since gas scrubbing technologies are only considered viable for off-gas containing 0.2% SO₂ concentration, more suitable abatement techniques were investigated. The proposed strategy to reduce SO₂ and achieve compliance with the Minimum Emission Standards at Polokwane Smelter is the installation of a Wet Gas Sulphuric Acid (WSA) Plant. The proposed WSA plant will convert SO₂ from the furnace off-gas into commercial-grade concentrated sulphuric acid. Subsequently, the exhaust emissions from the WSA plant (containing ~ 98% reduced SO₂ concentrations) will vent to atmosphere, while commercial-grade sulphuric acid

will be temporarily stored before dispatch into the commercial market. **Figure 1-2** and **Figure 1-3** illustrate the site layout of the existing and proposed facility, respectively.

This purpose of this AQIA is to assess the potential impacts associated with the existing activities at Polokwane Smelter and the construction and operation of the proposed SO₂ abatement plant.

A summary of the scope of work performed by WSP in fulfilment of the requirements of the AQIA is provided below:

→ **Baseline Assessment**

- Project background detailing process description and site layout;
- Review of applicable National ambient air quality legislation;
- Review of the potential pollutants and associated human health effects;
- Identification of neighbouring sensitive receptors, including adjacent communities and residential areas within the surrounding area; and
- Review of baseline ambient air quality and meteorological data for the area.

→ **Impact Assessment**

- Compilation of an emissions inventory for identified sources of emissions;
- Dispersion modelling simulations to assess ambient, ground-level particulate and gaseous concentrations for the existing and proposed facility; and
- Comparison of predicted concentrations to applicable National standards to assess the potential for human health effects.

1.1 PROJECT LOCATION

Polokwane Smelter is located at the Palmietfontein site, approximately 12 km south of Polokwane, off Burgersfort Road (**Figure 1-4**). The Smelter is situated in the Limpopo Province and falls within the Polokwane Local Municipality, which forms part of the greater Capricorn District Municipality.

The site falls within a rural area, with the surrounding land-use being predominantly agricultural. Small-holdings/farmsteads are located mainly to the north and south of the smelter, consisting of grass and shrubland, farming, and low-income residential areas (**Figure 1-5**).



Figure 1-2: Site layout of existing operations at Polokwane Smelter.



Figure 1-3: Site layout of proposed operations at Polokwane Smelter.

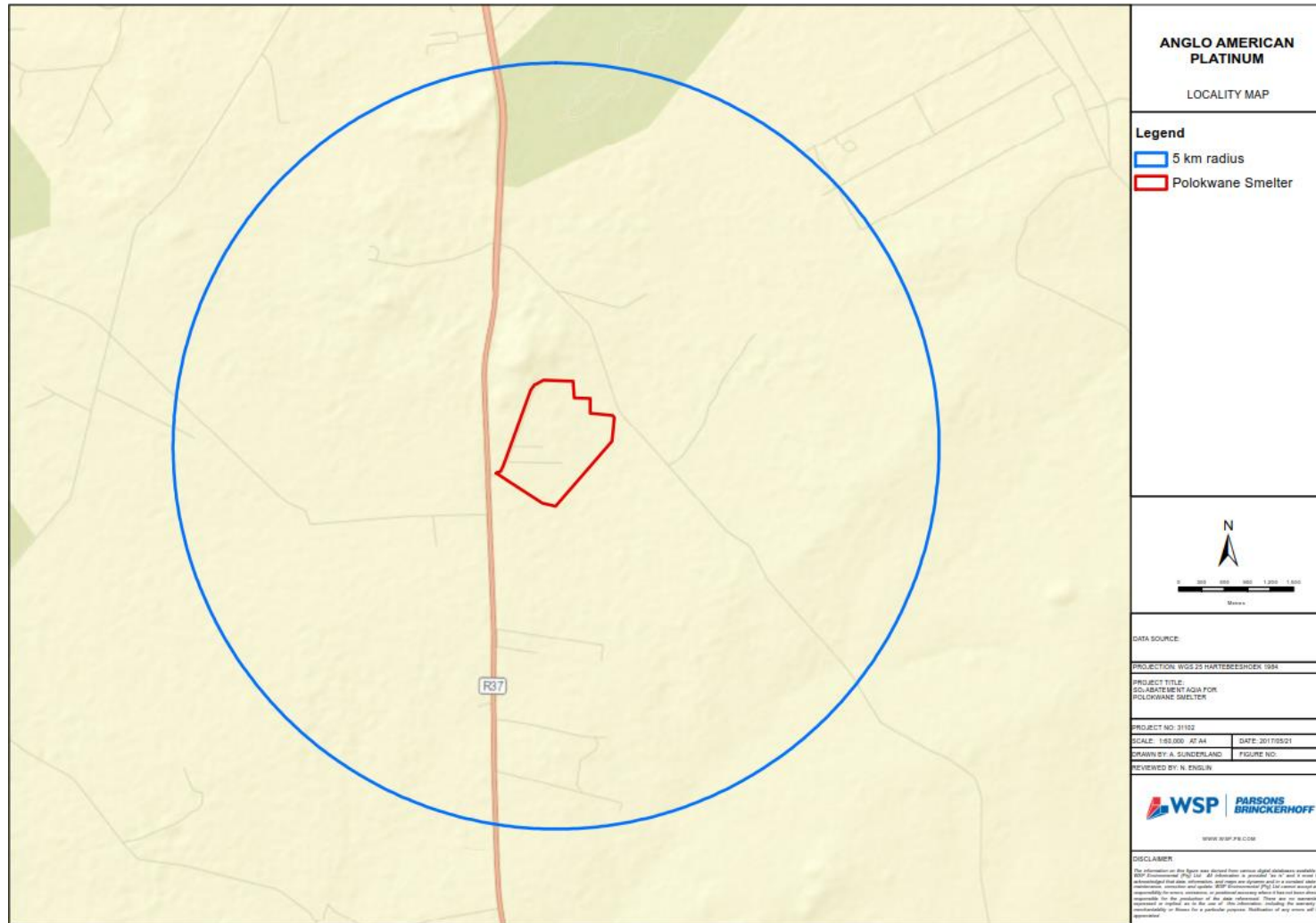


Figure 1-4: Locality map of Polokwane Smelter.

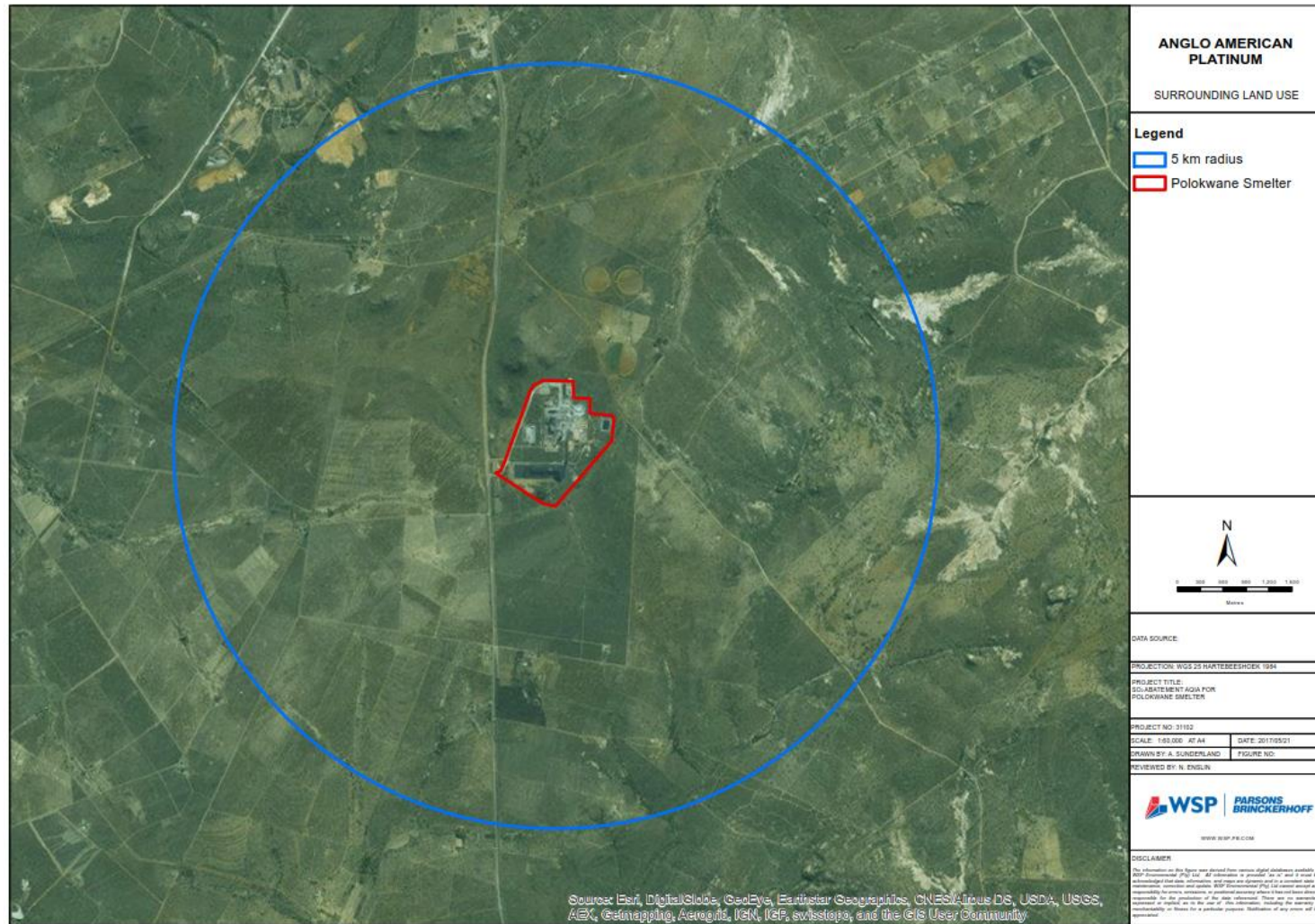


Figure 1-5: Surrounding land-use at Polokwane Smelter within a 5 km radius.

2

EMISSIONS CHARACTERISATION

Emission rates for activities at Polokwane Smelter are to be calculated using the United States Environmental Protection Agency (USEPA) AP-42 and Australian Government National Pollutant Inventory (NPI) emission factors. An emission factor is a value representing the relationship between an activity and the rate of emissions of a specified pollutant. These emission factors have been developed based on test data, material mass balance studies and engineering estimates.

Emission factors are always expressed as a function of the weight, volume, distance or duration of the activity emitting the pollutant. The general equation used for the estimation of emissions is:

$$E = A \times EF \times \left(1 - \frac{ER}{100}\right)$$

Where:

- E = emission rate
- A = activity rate
- EF = emission factor
- ER = overall emission reduction efficiency (%)

Emission estimates for Polokwane Smelter are based on the following USEPA AP-42 sections: 11.19.2 Crushed Stone Processing and Pulverised Mineral Processing; 11.24 Metallic Minerals Processing; 12.5: Iron and Steel Production; 13.2.1 Paved Roads; 13.2.2: Unpaved Roads; 13.2.3: Heavy Construction Operations; 13.2.4: Aggregate Handling and Storage Piles; and 13.2.5: Industrial Wind Erosion. The NPI emissions estimation technique manual for Combustion Engines will be used to calculate tailpipe emissions from vehicles at Polokwane Smelter. Calculations are applied to individual processes to obtain an emission to air estimate, based on information provided by the Client.

PM₁₀ and PM_{2.5} emissions are to be calculated with respect to each of the five modelling scenarios:

→ **Scenario 1: Existing Activities (Status Quo)**

- Contributions from the existing facility including emissions from two point sources, vehicle emissions and fugitive emissions from crushing, materials handling and storage, paved roads and wind erosion.

→ **Scenario 2a: Construction Phase of Proposed Development (without mitigation)**

- Combined assessment of existing activities together with the construction of the proposed site development.

→ **Scenario 2b: Construction Phase of Proposed Development (with mitigation)**

- Combined assessment of existing activities, as well as construction of the proposed site using wet suppression.

→ **Scenario 3: Operational Phase of Proposed Activities (80m Stack Height)**

- Incremental contributions from the proposed activities, including emissions from one point source of 80 m stack height, vehicle emissions and fugitive emissions from paved roads.

→ **Scenario 4: Cumulative Assessment (Existing + Proposed Activities)**

- Total contributions from the proposed plant including emissions from two point sources, vehicle emissions and fugitive emissions from crushing, materials handling and storage, paved roads and wind erosion.

- **Scenario 5: Operational Phase of Proposed Activities (60m Stack Height)**
 - Incremental contributions from the proposed activities, including emissions from one point source of 60 m stack height, vehicle emissions and fugitive emissions from paved roads.
- **Scenario 6: Cumulative Assessment (Existing + Proposed Activities) with increased throughput of raw materials**
 - Total contributions from the proposed plant following the WSA development and increased throughput of raw materials. Emission sources include; two point sources, vehicle emissions and fugitive emissions from crushing, materials handling and storage, paved roads and wind erosion.

3 METEOROLOGICAL DATA

Meteorological variables including; wind speed, wind direction, ambient temperature and humidity, were sourced from the Polokwane Smelter on-site weather station for the period January 2014 – December 2016. This site is located on-site, and as such, is considered representative of the meteorological conditions for the area. Site-specific modelled MM5 meteorological data was also obtained from Lakes Environmental for the period January 2014 to December 2016. The data coverage is centred over Polokwane Smelter (anemometer height of 14 m) with a grid cell dimension of 12 km x 12 km over a 50 km x 50 km domain.

Wind roses are a useful tool in illustrating prevailing meteorological conditions for an area, indicating wind speeds and frequency of distribution. In the following wind roses, the colour of the bar indicates the wind speed while the length of the bar represents the frequency of winds blowing from a certain direction (as a percentage). WRPlot View will be used to process the data and generate period, seasonal and diurnal wind roses.

4 AMBIENT IMPACT ANALYSIS AND AMBIENT LEVELS

4.1 STANDARD LEVELS

Ambient air quality standards and guidelines are specified in the NEM:AQA, SANS 69:2004 as well as SANS 1929:2005. The legislated standards for ambient air quality as it relates to Polokwane Smelter are presented in **Table 4-1**.

Table 4-1: National Ambient Air Quality Standards.

Pollutant	Averaging Period	Concentration ($\mu\text{g}/\text{m}^3$)	Frequency of Exceedence	Compliance Date
Particulate Matter (PM₁₀)	24 hours	120	4	Immediate – 31 Dec 2014
		75	4	01 Jan 2015
	1 year	50	0	Immediate – 31 Dec 2014
		40	0	01 Jan 2015
Particulate Matter (PM_{2.5})	24 hours	65	4	Immediate – 31 Dec 2015
		40	4	01 Jan 2016 – 31 Dec 2029
		25	4	01 Jan 2030
	1 year	25	0	Immediate – 31 Dec 2015
		20	0	01 Jan 2016 – 31 Dec 2029
		15	0	01 Jan 2030

4.2 BACKGROUND CONCENTRATIONS

Background concentrations to be sourced from Site monitoring network to assess ambient daily and annual PM₁₀.

5 MODELLING PROCEDURES

DISPERSION MODELLING

Atmospheric dispersion modelling mathematically simulates the transport and fate of pollutants emitted from a source into the atmosphere. Sophisticated software with algorithms that incorporate source quantification, surface contours and topography, as well as meteorology can reliably predict the downwind concentrations of these pollutants.

AERMOD is a recommended Level 2 model in *The Regulations Regarding Air Dispersion Modelling* (the Modelling Regulations) (Government Gazette 37804). AERMOD is a new generation air dispersion model designed for short-range dispersion of airborne pollutants in steady state plumes that uses hourly sequential meteorological files with pre-processors to generate flow and stability regimes for each hour, that produces output maps of plume spread with key isopleths for visual interpretation and enables, through its statistical output, direct comparisons with the latest National and international ambient air quality standards for compliance testing.

The AERMOD atmospheric dispersion modelling system is an integrated system that includes three modules:

- A steady-state dispersion model designed for short-range (up to 50 km) dispersion of air pollutant emissions from stationary industrial sources.
- A meteorological data pre-processor (AERMET) that accepts surface meteorological data, upper air soundings, and optionally, data from on-site instrument towers. It then calculates atmospheric parameters needed by the dispersion model, such as atmospheric turbulence characteristics, mixing heights, friction velocity, Monin-Obukov length and surface heat flux.
- A terrain pre-processor (AERMAP) whose main purpose is to provide a physical relationship between terrain features and the behaviour of air pollution plumes. It generates location and height data for each receptor location. It also provides information that allows the dispersion model to simulate the effects of air flowing over hills or splitting to flow around hills.

MODELLING STATISTICAL OUTPUTS

- Long-term scenario

The long-term scenario refers to an annual average concentration, which is calculated by averaging all hourly concentrations. The calculation is conducted for each grid point within the modelling domain. The long-term concentration for each receptor point is presented in a results table.

- Short-term scenario

The short-term scenario refers to the 99th percentile concentration for hourly and daily averaging periods (where applicable).

MODEL DOMAIN

A modelling domain of 5 km × 5 km will be used with multi-tier Cartesian grid receptor spacing's of 50 and 100 m as recommended in the Modelling Regulations. A receptor spacing of 50 m will also be located along the site boundary.

MODELLING SIMULATIONS

For the purpose of this study, dispersion modelling simulations will be undertaken for;

- Scenario 1: Existing Activities;
- Scenario 2a: Construction Phase of Proposed Development (without mitigation);
- Scenario 2b: Construction Phase of Proposed Development (with mitigation);
- Scenario 3: Operational Phase of Proposed Development (proposed 80 m stack height);
- Scenario 4: Cumulative Assessment;
- Scenario 5: Operational Phase of Proposed Development (proposed 60 m stack height) and;
- Scenario 6: Cumulative Assessment following proposed increase in throughput.

PM₁₀ and PM_{2.5} emissions to be assessed for each scenario.

CUMULATIVE IMPACTS

The National Framework for Air Quality Management in the Republic of South Africa (Government Gazette 37078) calls for air quality assessment in terms of cumulative impacts rather than the contributions from an individual facility. Compliance with NAAQS is to be determined by taking into account all local and regional contributions to background concentrations. For each averaging time, the sum of the model predicted concentration (C_P) and the background concentration (C_B) must be compared with the National Ambient Air Quality Standards. The background concentrations C_B , must be the sum of contributions from non-modelled local sources and regional background air quality. If the sum of background and predicted concentrations are ($C_B + C_P$) is more than the National Ambient Air Quality Standards, the design of the facility must be reviewed (including pollution control equipment) to ensure compliance with National Ambient Air Quality Standards. For the different facility locations and averaging times, the comparison with the National Ambient Air Quality Standards must be based on recommendations in **Table 5-1**.

Table 5-1: Recommended procedures for assessing compliance with the National Ambient Air Quality Standards.

Facility Location	Annual NAAQS	Short-Term NAAQS (24 hours or less)
Isolated facility not influenced by other sources, C_B insignificant*.	Highest C_P must be less than the NAAQS, no exceedances allowed.	99 th percentile concentrations must be less than the NAAQS. Wherever one year is modelled, the highest concentrations shall be considered.
Facilities influenced by background sources e.g., in urban areas and priority areas.	Sum of the highest C_P and background concentrations must be less than the NAAQS, no exceedances allowed.	Sum of the 99 th percentile concentrations and background C_B must be less than the NAAQS. Wherever one year is modelled, the highest concentrations shall be considered.
Isolated facility not influenced by other sources, C_B insignificant*.	Highest C_P must be less than the NAAQS, no exceedances allowed.	99 th percentile concentrations must be less than the NAAQS. Wherever one year is modelled, the highest concentrations shall be considered.

*For an isolated facility influenced by regional background pollution C_B must be considered.

