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# Validation Report

**N.Serve Environmental Services GmbH**

PROJECT FOR THE CATALYTIC REDUCTION OF N<sub>2</sub>O  
EMISSIONS WITH A SECONDARY CATALYST INSIDE  
THE AMMONIA REACTOR OF THE NO. 9 NITRIC ACID  
PLANT AT AFRICAN EXPLOSIVES LTD (“AEL”),  
SOUTH AFRICA

REPORT NO. 912444

**2007, May 10**

TÜV SÜD Industrie Service GmbH  
Carbon Management Service  
Westendstr. 199 - 80686 Munich – GERMANY

Validation of the CDM Project:

Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa



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Report No.	Date of first issue	Revision No.	Date of this revision	Certificate No.
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<b>Subject:</b> Validation of a CDM Project	
<b>Accredited TÜV SÜD Unit:</b> TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 - 80686 Munich Federal Republic of Germany	<b>TÜV SÜD Contract Partner:</b> TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 - 80686 Munich Federal Republic of Germany
<b>Client:</b> N.serve Environmental Services GmbH Grubessallee 12 22143 Hamburg Federal Republic of Germany	<b>Project Site(s):</b> African Explosives Ltd. Acid House Modderfontein 1645 Gauteng Province South Africa
<b>Project Title:</b> Project for the catalytic reduction of N <sub>2</sub> O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa	
<b>Applied Methodology / Version:</b> AM0034 version 2	<b>Scope(s):</b> 5
<b>First PDD Version:</b> Date of issuance: 2006-11-16 Version No.: 1.0 Starting Date of GSP 2006-11-18	<b>Final PDD version:</b> Date of issuance: 2007-04-05 Version No.: 2.0
<b>Estimated Annual Emission Reduction:</b> 116,779 tons CO <sub>2e</sub>	
<b>Assessment Team Leader:</b> Werner Betzenbichler	<b>Further Assessment Team Members:</b> Yutaka Yoshida Shuji Iida
<b>Summary of the Validation Opinion:</b> <p><input checked="" type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board in case letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.</p> <p><input type="checkbox"/> The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.</p>	

## Abbreviations

<b>ACM</b>	Approved Consolidated Methodology
<b>AEL</b>	African Explosives Limited
<b>AM</b>	Approved Methodology
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CER</b>	Certified Emission Reduction
<b>CR</b>	Clarification Request
<b>DNA</b>	Designated National Authority
<b>DOE</b>	Designated Operational Entity
<b>EB</b>	Executive Board
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission reduction
<b>GHG</b>	Greenhouse gas(es)
<b>KP</b>	Kyoto Protocol
<b>MP</b>	Monitoring Plan
<b>N<sub>2</sub>O</b>	Nitrous Oxide
<b>NGO</b>	Non Governmental Organisation
<b>PDD</b>	Project Design Document
<b>PP</b>	Project Participant
<b>TÜV SÜD</b>	TÜV SÜD Industrie Service GmbH
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVM</b>	Validation and Verification Manual

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## 1 INTRODUCTION

### 1.1 Objective

The validation objective is an independent assessment by a Third Party (Designated Operational Entity = DOE) of a proposed project activity against all defined criteria set for the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the CDM-EB. The ultimate decision on the registration of a proposed project activity rests at the CDM Executive Board and the Parties involved.

The project activity discussed by this validation report has been submitted under the project title:

Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd (“AEL”), South Africa.

### 1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities the scope is set by:

- The Kyoto Protocol, in particular § 12
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions by the EB published under <http://cdm.unfccc.int>
- Specific guidance by the EB published under <http://cdm.unfccc.int>
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodology (CDM-NM)
- The applied approved methodology
- The technical environment of the project (technical scope)
- Internal and national standards on monitoring and QA/QC
- Technical guideline and information on best practice

The validation is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

Once TÜV SÜD receives a first PDD version, it is made publicly available on the internet at TÜV SÜD's webpage as well as on the UNFCCC CDM-webpages for starting a 30 day global stakeholder consultation process (GSP). In case of any request a PDD might be revised (under certain conditions the GSP will be repeated) and the final PDD will form the basis for the final evaluation as presented by this report. Information on the first and on the final PDD version is presented at page 1.

The only purpose of a validation is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

## 2 METHODOLOGY

The project assessment aims at being a risk based approach and is based on the methodology developed in the Validation and Verification Manual (for further information see [www.vvmanual.info](http://www.vvmanual.info)), an initiative of Designated and Applicant Entities, which aims to harmonize the approach and quality of all such assessments.

In order to ensure transparency, a validation protocol was customised for the project. TÜV SÜD developed a “cook-book” for methodology-specific checklists and protocol based on the templates presented by the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below.

The completed validation protocol is enclosed in Annex 1 to this report.

<b>Validation Protocol Table 1: Conformity of Project Activity and PDD</b>				
<b>Checklist Topic / Question</b>	<b>Reference</b>	<b>Comments</b>	<b>PDD in GSP</b>	<b>Final PDD</b>
<i>The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then further subdivided. The lowest level constitutes a checklist question / criterion.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD or the applied methodology.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any <b>Request</b> has to be substantiated within this column</i>	<i>Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question (See below). <b>Clarification Request (CR)</b> is used when the validation team has identified a need for further clarification.</i>	<i>Conclusions are presented in the same manner based on the assessment of the final PDD version.</i>

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<b>Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests</b>			
<b>Clarifications and corrective action requests</b>	<b>Ref. to table 1</b>	<b>Summary of project owner response</b>	<b>Validation team conclusion</b>
<i>If the conclusions from table 1 are either a Corrective Action Request or a Clarification Request, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 1 where the Corrective Action Request or Clarification Request is explained.</i>	<i>The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 1, under “Final PDD”.</i>

In case of a denial of the project activity more detailed information on this decision will be presented in table 3.

<b>Validation Protocol Table 3: Unresolved Corrective Action and Clarification Requests</b>		
<b>Clarifications and corrective action requests</b>	<b>Id. of CAR/CR 1</b>	<b>Explanation of the Conclusion for Denial</b>
<i>If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.</i>	<i>Identifier of the Request.</i>	<i>This section should present a detail explanation, why the project is finally considered not to be in compliance with a criterion.</i>

## 2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body “climate and energy”. The composition of an assessment team has to be approved by the Certification Body ensuring that the required skills are covered by the team. The Certification Body TÜV SÜD operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL)
- Greenhouse Gas Auditor (GHG-A)
- Greenhouse Gas Auditor Trainee (T)
- Experts (E)

It is required that the sectoral scope linked to the methodology has to be covered by the assessment team.

The validation team was consisting of the following experts (the responsible Assessment Team Leader is written in bold letters):

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
<b>Werner Betzenbichler</b>	ATL	☑	☑	☑
Yutaka Yoshida	GHG-A	☑	☑	
Shuji Iida	GHG-A	☑	☑	

**Werner Betzenbichler** is head of the department Carbon Management Service of TÜV SÜD and head of the “Certification Body for Climate and Energy” and expert for conventional energy generation, renewable energy, energy expansion planning and familiar with the recent version of CDM and JI criteria as necessary for the implementation of Art. 6 and Art. 12 of the KP. Since 2000 he has been working in the international climate change and emission trading business as a verifier.

**Shuji Iida** is chemical process engineer and working as GHG auditor and ISO14000/ ISO9000 auditor for TÜV SÜD Japan. He is recently involved in several CDM projects. He received extensive training on all aspects of the flexible mechanisms. For this specific project he was responsible for input to technical aspects within the chemical industry, for performing the on-site audit and preparing the initial validation protocol.

**Yutaka Yoshida** is mechanical engineer responsible for the development of the carbon business at TÜV SÜD Japan. He received recently appointment as GHG auditor and is involved in several CDM and JI activities. He received extensive training on all aspects of the flexible mechanisms. For this specific project he was responsible for review of supporting documents and attended the on-site audit.

## 2.2 Review of Documents

The first PDD version submitted by the client and additional background documents related to the project design and baseline were reviewed as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

## 2.3 Follow-up Interviews

In the period of December 04 to 05, 2006 TÜV SÜD performed interviews on-site with project stakeholders to confirm all presented information. The table below provides a list of all persons interviewed in the context of this on-site visit.

Name	Organisation
P. Schutte	AEL, Team Manager
Dennis Gregory	Modderfontein Laboratories Ltd., Laboratory Manager
Ronnie Huggins	AEL, Instrument Technician
Nongi Nyathi	AEL, Technical Officer
Leon Aucamp	AEL, Nitrates Manager
Clive Gregor	AEL, Production Manager

After submitting the revised PDD interviews were made by phone with the project developer N.Serve Environmental Services GmbH whenever specific questions arose.

## **2.4 Resolution of Clarification and Corrective Action Requests**

The objective of this phase of the validation is to resolve the requests for corrective actions and clarifications and any other outstanding issues which needed to be clarified for TÜV SÜD's positive conclusion on the project design. The Corrective Action Requests and Clarification Requests raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarised in chapter 3 below and documented in more detail in the validation protocol in annex 1.

## **2.5 Internal Quality Control**

As final step of a validation the validation report and the protocol have to undergo an internal quality control procedure by the Certification Body “climate and energy”, i.e. each report has to be approved either by the head of the certification body or his deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one.

It rests at the decision of TÜV SÜD's Certification Body whether a project will be submitted for re-requesting registration by the EB or not.

### 3 SUMMARY OF FINDINGS

As informed above all findings are summarized in table 2 of the attached validation protocol. In total the assessment team expressed 4 Clarification Requests and 22 Corrective Action Requests.

Although the amount of requests is comparatively high, this fact is more related to the aspect that this has been one of the first PDDs of the project developer that underwent a complete validation.

The key findings in the first PDD version were related to the fact that originally the project participants intended to have the results of the baseline campaign verified in conjunction with this validation. Although by the guidance given by EB-31, § 28, this is deemed to be possible, the identified situation did not allow a verification of the previous production campaign considering it already as baseline campaign. Hence the project participant decided to revise the PDD accordingly using available data only for the purpose of estimating the emission reductions. Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE. All data indicated as being available at time of validation (section B.6.2. of the report) will have to be adjusted in the context of the first verification.

Information / additional documents have been requested explicitly where the submitted documents did not allow a judgement on statements given by the first PDD version.

Inconsistencies based on mixing physical units (ppm and mg/m<sup>3</sup>) have been corrected leading finally in a large increase of the amount of estimated emissions reductions.

Baseline determination and additionality are correctly discussed by the final PDD. There is no concern on the discussion on the continuation of the current situation as no other incentive for the project activity than CDM has to be expected throughout the project's crediting period.

#### 4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on UNFCCC website by installing a link to TÜV SÜD's own website and invited comments by Parties, stakeholders and non-governmental organisations during a period of 30 days.

The following table presents all key information on this process:

<b>webpage:</b> <a href="http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=2437&amp;Ebene1_ID=26&amp;Ebene2_ID=690&amp;mode=1">http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=2437&amp;Ebene1_ID=26&amp;Ebene2_ID=690&amp;mode=1</a>	
<b>Starting date of the global stakeholder consultation process:</b> 2006-11-18	
<b>Comment submitted by:</b> -	<b>Issues raised:</b> -
<b>Response by TÜV SÜD:</b> -	

Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa



TÜV SÜD has performed a validation of the following proposed CDM project activity:

The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board.

An analysis as provided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the final PDD version.

The validation is based on the information made available to us and the engagement conditions detailed in this report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Primer Contrato

Certification Body "climate and energy"  
TÜV SÜD Industrie Service GmbH

R

Assessment Team Leader

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## **Annex 1: Validation Protocol**

## Validation Protocol

Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

Date of Completion: 2007-05-10

Number of Pages: 60



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CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
<b>A. General description of project activity</b>					
<b>A.1. Title of the project activity</b>					
A.1.1.	Does the used project title clearly enable to identify the unique CDM activity?		The project title clearly enables the identification of the CDM activity. No second CDM activity exists with a similar title or at the same site.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.2.	Are there any indication concerning the revision number and the date of the revision?		The revision number and the date of the issuance of this revision are correctly indicated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.3.	Is this consistent with the time line of the project's history?		The given dates are in consistency with the time line of the project development.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.2. Description of the project activity</b>					
A.2.1.	Is the description delivering a transparent overview of the project activities?		The description of the project activity delivers a transparent overview of the project activities. During on-site inspection, the letter submitted to DNA dated November 28, 2006, was confirmed as the proof of the information on the shares of profit going to the community development fund in PDD page 3.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.2.	What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?		During on-site inspection, the Commissioning Report of NO.9 Nitric Acid Plant at Modderfontein Factory dated Jul. 17, 1968 was confirmed. It mentions that the plant went into operation in 1968.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.3.	Is the information provided by these proofs consistent with the information provided by the PDD?		PDD page 3 mentions that the project has already received Letters of Endorsement from South Africa and German governments and that a Letter of Approval from South Africa government is only obtainable once the project have been validated. During on-site inspection, Letter of Endorsement from South Af-	<b>CR1</b>	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
			rica government was confirmed. However, that from German government could not be confirmed because AEL does not have its copy. <b><u>Clarification Request No. 1</u></b> Letter of Endorsement from German government to be submitted to the validation team to be confirmed.		
A.2.4.	Is all information presented consistent with details provided by further chapters of the PDD?		During document review and on-site inspection, it was confirmed that all information is consistent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.3. Project participants</b>					
A.3.1.	Is the form required for the indication of project participants correctly applied?		The form for indicating project participants Is not correctly applied as it includes a third participant (Escrow Agent) without providing details. During on-site inspection, it was confirmed that the project participants are AEL (African Explosives Ltd.) and N.serve Environmental Services GmbH at this stage but Escrow Agents is not a specific name of company or organization which will be determined to make it transact CERs in the possible future. <b><u>Corrective Action Request No.1</u></b> It is necessary either to delete Escrow Agent from the participants and or to add it with detailed information when participating in PDD page 3 and Annex 1.	CAR 1	<input checked="" type="checkbox"/>
A.3.2.	Is the participation of the listed entities or Parties confirmed by each one of them?		See CAR1	CAR 1	<input checked="" type="checkbox"/>
A.3.3.	Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in		See CAR1	CAR 1	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
particular annex 1)?				
<b>A.4. Technical description of the project activity</b>				
<i>A.4.1. Location of the project activity</i>				
A.4.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?		The information provided on the project activity clearly enables the identification of this project's location. The address of the plant is given as well as corresponding maps and an image by Google™Earth.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.1.2. How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?		During on-site inspection, the followings were confirmed. <ul style="list-style-type: none"> <li>- AEL is the owner and operator of NO.9 Plant and bears the project cost itself and that N.serve is the developer and bears only the cost of CDM validation,</li> <li>- Letter of Intent from N.serve dated Dec. 13, 2004,</li> <li>- the approval for plant modification of this CDM project is not required,</li> <li>- according to the letter from Department of Agriculture, Conservation and Environment dated Sep. 19, 2006, EIA and environmental authorization are not required.</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>A.4.2. Category(ies) of project activity</i>				
A.4.2.1. To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?		The project belongs to category 5 (chemical industries), which is correctly indicated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>A.4.3. Technology to be employed by the project activity</i>				
A.4.3.1. Does the technical design of the project activity reflect current good practices?		By introducing this technology, AEL obtains a clean technology which is not yet widely commercialized even in industrialized countries.  Different abatement technologies for nitrous oxide in industrial	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		installations have been developed by several entities recently.		
A.4.3.2. Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance?		The description of the technology allows a rough overview on the abatement technology.	☑	☑
A.4.3.3. Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?		The catalyst is transferred from an annex-I-country to South Africa.	☑	☑
A.4.3.4. Is the technology implemented by the project activity environmentally safe?		The catalyst is made by precious metals with high costs of raw material. Therefore the used catalyst will be recycled at the end of its lifetime.	☑	☑
A.4.3.5. Is the information provided in compliance with actual situation or planning?		The information provided is in compliance with actual situation and planning. During on-site inspection, the presentation materials related to the project technology, which are provided by AEL and the catalyst suppliers, were confirmed.	☑	☑
A.4.3.6. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?		In South Africa the use of DeN <sub>2</sub> O-technology is neither common nor regulated. Such technology is only applied in the context of CDM activities.	☑	☑
A.4.3.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?		A replacement of the technology to be installed during the project period is not reasonably.	☑	☑
A.4.3.8. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?		Extensive training is only required in the context of monitoring. This is correctly described by the PDD. During on-site inspection, it was confirmed that the experienced instrument technician is employed in this project and that he re-	☑	☑

## Validation Protocol

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Date of Completion: 2007-05-10

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		ceived the training from AMS supplier during the installation of AMS, Jul. 23 and Nov. 28, 2005.		
A.4.3.9. Is information available on the demand and requirements for training and maintenance?		Information on this issue is available.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.10. Is a schedule available for the implementation of the project and are there any risks for delays?		During on-site inspection, the schedule of NO. 9 Plant was confirmed. The CDM project activity is two weeks behind the schedule and it is prospected that the project operation will be started on Mar. 07, 2007. However it still depends upon what happens in this validation process. And PDD shall be amended in case of delays.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.4.4. Estimated amount of emission reductions over the chosen crediting period</b>				
A.4.4.1. Is the form required for the indication of projected emission reductions correctly applied?		The PDD uses the correct form in chapter A.4.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.4.2. Are the figures provided consistent with other data presented in the PDD?	29 30	<p>The figures as provided are consistently presented throughout the PDD.</p> <p><b><u>Corrective Action Request No.2</u></b></p> <p>Due to calculation error in latter chapter, EF<sub>BL</sub> 3,31 kgN<sub>2</sub>O / tHNO<sub>3</sub> in PDD page 6 is incorrect. Accordingly, the figures and the table in PDD page 7 are incorrect.</p> <p>In addition, there are several issues which are likely to make affection on the estimated amount of ERs, e.g. automatic unusual value elimination of every 2 seconds monitoring data, changes on monitoring uncertainty after further investigation. Those are to be determined and included in the revised values.</p>	<b>CAR 2</b>	<input checked="" type="checkbox"/>

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<b>A.4.5. Public funding of the project activity</b>				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?		The public funding is not applied to this CDM project. AEL bears the project costs itself and N.serve bears the cost of CDM validation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?		See above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B. Application of a baseline and monitoring methodology</b>				
<b>B.1. Title and reference of the approved baseline and monitoring methodology</b>				
B.1.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?		Reference number, version number, and title of the baseline and monitoring methodology are clearly indicated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.1.1.2. Is the applied version the most recent one and / or is this version still applicable?		The PDD applies AM0034, version 2 and refers in the baseline section to AM0028, version 3. For both methodologies the referred version is the most recent one.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.2. Justification of the choice of the methodology and why it is applicable to the project activity</b>				
B.2.1.1. Is the applied methodology considered the most appropriate one?		AM0034 is solely addressing the destruction of nitrous oxide by secondary measures. Hence it is considered that AM0034 is the appropriate choice for this project activity also applying a secondary technology in the ammonia burner of a nitric acid plant.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Integrate the required amount of sub-checklists on the applicability criteria as given by the applied methodology and comment on at least every line answered with "No";				

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B.2.2. Criterion 1: The applicability is limited to the existing production capacity measured in tonnes of nitric acid, where the commercial production had began no later than 31 December 2005. Definition of “existing” production capacity is applied for the process with the existing ammonia oxidization reactor where N2O is generated and not for the process with new ammonia oxidizer. Existing production “capacity” is defined as the designed capacity, measured in tons of nitric acid per year.		<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>During on-site inspection, the Commissioning Report of NO.9 Nitric Acid Plant at Modderfontein Factory dated Jul. 17, 1968 was confirmed. It mentions that the plant went into operation in 1968.</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.3. Criterion 2: The project activity will not result in the shut down of any existing N2O destruction or abatement facility or equipment in the plant.		<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>During the monitoring check it has been verified that there is no abatement technology installed.</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.4. Criterion 3: The project activity shall not affect the level of nitric acid production		<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>During on-site inspection, the level of nitric acid production in the past and the future was confirmed. It is almost stable and is not expected to increase due to the project activity. Future prospect</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											

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		obviously has varieties and it depends on the demand. However assuming no change compared to past 5 years average was considered as a feasible estimation.										
B.2.5. Criterion 4: There are currently no regulatory requirements or incentives to reduce levels of N <sub>2</sub> O emissions from nitric acid plants in the host country.		<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>During on-site inspection, it was discussed and confirmed that there are currently no regulatory requirements or incentives to reduce levels of N<sub>2</sub>O emissions from nitric acid plants in South Africa.</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.6. Criterion 5: No N <sub>2</sub> O abatement technology is currently installed in the plant.		<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>During the monitoring check it has been verified that there is no abatement technology installed.</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.7. Criterion 6: The project activity will not increase NO <sub>x</sub> emissions.		<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>NO<sub>x</sub> monitoring is already performed due to requirements by the environmental authority. No increases should occur. The concentrations will be monitored anyway.</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											

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B.2.8. Criterion 7: NOx abatement catalyst installed, if any, prior to the start of the project activity is not a Non- Selective Catalytic Reduction (NSCR) DeNOx unit.		<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>During on-site inspection, it was confirmed that there is no NOx abatement catalyst installed.</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.9. Criterion 8: Operation of the secondary N2O abate- ment catalyst installed under the project activity does not lead to any process emissions of greenhouse gases, directly or indirectly.		<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>There is no further impact on greenhouse gas emissions by this kind of technology.</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.2.10. Criterion 9: Continuous real-time measurements of N2O concentration and total gas volume flow can be carried out in the stack: - prior to the installation of the secondary catalyst for one campaign, and - after the installation of the secondary catalyst throughout the chosen crediting period of the project activity		<table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> <p>During the monitoring check it has been verified that the required measurement equipment is installed..</p>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
B.3. Description of the sources and gases included in the project boundary												
Integrate the required amount of sub-checklists for sources and gases as given by the methodology applied and comment on at least every line answered with “No”												

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B.3.1. Source: Waste stream exiting the stack of the Nitric Acid plant (Burner inlet to stack) Gas(es): N <sub>2</sub> O Type: Baseline Emissions and Project Emissions		<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed in the PDD?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table>		Boundary checklist	Yes / No	Source and gas(es) discussed in the PDD?	Yes	Inclusion / exclusion justified?	Yes	Explanation / Justification sufficient?	Yes	Consistency with monitoring plan?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Boundary checklist	Yes / No														
Source and gas(es) discussed in the PDD?	Yes														
Inclusion / exclusion justified?	Yes														
Explanation / Justification sufficient?	Yes														
Consistency with monitoring plan?	Yes														
B.3.2. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?		The boundaries as verified at the monitoring check comply with the discussion in the PDD		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario															
The baseline scenario shall be identified using procedure for Identification of the baseline scenario described in the approved methodology AM0028 "Catalytic N2O destruction in the tail gas of Nitric Acid Plants" version 03.															
B.4.1. Have all technically feasible baseline scenario alternatives (at least all scenarios listed under step 1a in AM0028, vers.3) to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete?		All options as provided by step 1a of the baseline tool of this methodology have been considered within this section. There are no further scenarios that might present attractive options to those ones presented.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
B.4.2. Have all technically feasible alternatives (at least all scenarios listed under step 1a in AM0028, vers.3) to handle NOx emissions been identified and discussed by the PDD?		All options as provided by step 1a and 1b of the baseline tool of this methodology have been considered within this section. It has been discussed in a convincing manner that two of the options presented by the methodology are not applicable for this project.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										

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B.4.3. Does the project identify correctly and exclude those options not in line with regulatory or legal requirements?		All remaining options comply with regulatory requirements; hence none of them has been eliminated from further discussion.	✓	✓
B.4.4. Have applicable regulatory or legal requirements been identified?		The information on national environmental legislation is correct. During on-site inspection, the certificate of No.9 Nitric Acid Plant from Department of Environmental and Tourism dated Dec. 12, 2003 was confirmed. According to this certification, the tail gas vented of NO.9 plant is to be less than 400 ppm (v/v) nitrogen oxide containing.	✓	✓
B.4.5. Is a complete list of barriers developed that prevent alternatives to occur (step 3a)?		A suitable list of barriers is presented. The PDD is claiming for investment barriers, technological barriers and barriers due to prevailing practice.	✓	✓
B.4.6. Is transparent and documented evidence provided on the existence and significance of these barriers?		They are transparently documented in the PDD.	✓	✓
B.4.7. Is it transparently shown that at least one of the alternatives is not prevented by the identified barriers (step 3b)?		It is discussed that the continuation of the current practice would not be prevented by any barrier.	✓	✓
B.4.8. Does the PDD include an appropriate discussion if and how any alternatives generate financial or economic benefits? (step 4)		Although it is not presented explicitly it can be concluded from the previous steps that no alternative is remaining that would generate financial or economic benefits.	✓	✓
B.4.9. In case of Option I: Is the least costly alternative clearly identified?		The continuation of the recent situation is clearly identified as the least costly option.	✓	✓
B.4.10. In case of Option II: Is the most suitable financial indicator clearly identified?		Not applicable	✓	✓

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B.4.11. In case of Option II: Is the calculation of financial figures for this indicator correctly done for all remaining alternatives?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.12. In case of Option II: Is the investment analysis presented in a transparent manner providing public available proofs for data?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.13. In case of Option II: Is the sensitivity analysis evidencing the robustness of the financial attractiveness of the selected baseline scenario?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.14. In case of Option II: Have reasonable variations been applied in critical assumptions?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.15. In case of a re-assessment in the course of the project's lifetime: Are there any new or modified NO <sub>x</sub> -emission regulations, which may address the project baseline?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.16. In case of a re-assessment in the course of the project's lifetime: Have new baseline scenarios been properly discussed reflecting the altered situation?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.17. In case of a re-assessment in the course of the project's lifetime: Are there any new or modified N <sub>2</sub> O-emission regulations, which may address the project baseline?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.4.18. In case of a re-assessment in the course of the project's lifetime: Have new base-		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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line scenarios been properly discussed reflecting the altered situation?					
<b>B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):</b>					
B.5.1.	In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?		As in chapter B.4 the investment analysis has been selected as the appropriate choice of possible methods.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.2.	In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?		It is clearly shown that there is no economical benefit by the reduction of the nitrous oxide concentration other than the CDM revenues.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.3.	In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.4.	In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.5.	In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.6.	In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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the utilized data?					
B.5.7.	In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.8.	In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.9.	In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.10.	Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?		There is already a similar CDM activity ("Sasol Nitrous Oxide Abatement Project") under validation applying a tertiary technology. This project is not referred in PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.11.	If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)?		See above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.5.12.	Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers (step 5)?		As there is no other incentive than the CDM this criterion is fulfilled.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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<b>B.6. Emissions reductions</b>				
<b>B.6.1. Explanation of methodological choices</b>				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?		The discussion under section B.6.1 is referencing all formulae and emissions in compliance with the applied methodology and the project boundaries as presented earlier in the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?		The selection of options in particular for the determination of the operation ranges is correctly described and justified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.1.3. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?		All formulae are correctly presented.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.1.4. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?		All formulae are correctly presented.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.1.5. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?		Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.1.6. Are the formulae required for the determination of emission reductions correctly presented?		All formulae are correctly presented.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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B.6.2. Data and parameters that are available at validation																						
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?		The list of parameters is complete.	☑	☑																		
Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with “No”																						
B.6.2.2. Parameter Title: NCSG <sub>BC</sub> N2O concentration in the stackgas	29, 30	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>The data unit of NCSG<sub>BC</sub> ppmv is incorrect. Since the value of ppmv was applied to the calculation, the calculated NCSG<sub>BC</sub> and therefore EF<sub>BC</sub> became incorrect. AEL has already found this error and the recalculation was conducted.</p> <p><b><u>Corrective Action Request No.3</u></b></p> <p>The data unit ppmv should be converted to mgN<sub>2</sub>O / m3 and the applied value also should be changed. As commented in CAR2, the relative calculation should be recalculated.</p> <p><b><u>Corrective Action Request No.4</u></b></p>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	No	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	No	Measurement method correctly described?	Yes	CAR3 CAR4 CAR5 CAR6 CAR7 CAR8 CAR9	Correct value to be confirmed by the verifier ☑
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	No																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	No																					
Measurement method correctly described?	Yes																					

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		<p>The proper unit mgN<sub>2</sub>O / m<sup>3</sup> and the proper value should be put in PDD and they should be reflected in other chapter of PDD.</p> <p>According to PDD, page 51 to 52, and according to AM0034 the project activity requires the use of EN14181 as guidance for installing and operating the an AMS for N<sub>2</sub>O concentration.</p> <p>However, at the time of purchasing of the AMS by AEL, no AMS vendors had yet conducted the QAL1 but the basic calibration of the AMS was carried out by the vendor Environmental S.A. prior to shipment and installation. The calibration report contains information about the cross sensitivities of the analyser.</p> <p>In the QAL2 required in EN14181 again, the difficulty with fully complying EN14181 is the lack of a regulatory N<sub>2</sub>O emissions level and measurement uncertainty limit and South Africa currently has no laboratory that would meet with the accreditation requirements of EN14181. Therefore, AEL staff conducted themselves equivalent procedures as required by QAL2.</p> <p>Since the methodology requires "good industrial practice and performance" as an ultimate objective, the validation team determined to see justification about how to make and maintain it in the range of industrial best practice.</p> <p>During on-site inspection, the followings are confirmed.</p> <p>(1) QAL1 (Basic calibration by the vendor)</p> <p>The basic calibration report dated Sep. 22, 2005, was confirmed. The analyser vendor's report includes the calibration data and the cross interference data with mixed gas at several</p>		

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		<p>different concentration levels. AEL used these data to determine uncertainty in the analyser specification.</p> <p>The cross interference on the measured values was also discussed at the audit. The above data provided by the vendor did not show significant difference between pure N<sub>2</sub>O in N<sub>2</sub> gas and mixture of gases although those differences are stringently considered to determine uncertainty. Therefore the audit team acknowledged these data as a specification and determined to see actual result as well as statistical studies about monitoring performance, e.g. QAL2.</p> <p><b><u>Corrective Action Request No.5</u></b></p> <p>As QAL 1 is required to be done by an independent entity (other than manufacturer) the applied approach is deviating from the recent version of AM0034. In case the baseline campaign should be verified within the validation process a request for deviation to the EB has to be submitted.</p> <p>(2) QAL2 (Calibration Factor determination)</p> <p>For SRM of QAL2, 15 stack gas samples were sampled and they were checked by gas chromatography in the laboratory Modderfontein Laboratory Services Ltd. The laboratory applies the standard gas 1000 ppm N<sub>2</sub>O prepared and certified by Afrox for the check of sampled gasses.</p> <p>The results of sampled gas checks were applied for calculation of the calibration function. However, the N<sub>2</sub>O concentra-</p>		

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		<p>tions of these samples were almost similar, compared with daily N<sub>2</sub>O concentration data and therefore there is the possibility that they do not form the proper distribution of N<sub>2</sub>O concentrations for the calculation.</p> <p><b><u>Corrective Action Request No.6</u></b></p> <p>QAL2 should be carried out again. SRM gases should be sampled again to form the proper distribution in N<sub>2</sub>O concentration so that their N<sub>2</sub>O concentrations represent that of stack gas.</p> <p>In PDD page 52, in the absence of a valid ELV, an assumed value of 400 ppm was applied as the ELV. However, the N<sub>2</sub>O concentration of stack gas is usually more than 700 ppm. And 30% was applied as the uncertainty requirement in accordance with annex E of EN 14181 however this annex tells particulate monitoring and reasons for using the same value for N<sub>2</sub>O monitoring shall be provided. In re-QAL2, this also should be considered.</p> <p>(3) QAL3 (Daily maintenance)</p> <p>The zero and span drift check with the tolerance 20ppm is implemented once a week. For the span drift check, AEL's own standard gas 1000 ppm N<sub>2</sub>O, prepared and certified by Afrox, is applied.</p> <p>However, the span drift sometimes shows errors 50 to 100 ppm, (as the worse case, 130 ppm higher on Nov. 8 and 125ppm lower on Nov. 9 ) from the span value 1005 / 1074 ppm, but only the readjustment of analyzer is performed afterwards without evaluating the previous data recorded.</p> <p>Whether the span drift is valid or not, the daily data of NCSG</p>		

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		<p>have also wide deviation.</p> <p><b><u>Corrective Action Request No.7</u></b></p> <p>The causes of the errors in the span drift check should be investigated and the reliability of the NCSG data during baseline campaign should be reconsidered. Since this can affect to broad issues, e.g. Zero/Span check mechanism, entire reliability of measured data, actual uncertainty calculation of monitoring data, adequacy of QA/QC procedures including reaction plan as well as cross checking with laboratory results, reliability of analyser including QAL1/QAL2 related issues, overall consistency among those related issues shall be provided as well as finding reasons of unusual span drifting.</p> <p>The response time was regularly recorded in the zero/span check sheet however they were entire working time from start to end of the task but was not exact "response time". Even if the time is defined in the program of the analyser, its adequacy shall be justified.</p> <p><b><u>Corrective Action Request No.8</u></b></p> <p>The definition of the response time should be reconsidered and the check should be implemented.</p> <p>N<sub>2</sub>O concentration, gas flow rate, stack gas temperature and pressure are monitored every two seconds and recorded automatically. However, error readings are not eliminated from these data because such soft program is not yet provided.</p> <p><b><u>Corrective Action Request No.9</u></b></p> <p>Such soft program that automatically eliminates error readings in</p>		

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		N2O concentration and gas volume flow rate monitoring should be provided and all figures in the calculation for baseline campaign emission factor should be recalculated.																				
B.6.2.3. Parameter Title: VSG <sub>BC</sub> Volume flow rate of the stack gas	29, 30	<table border="1"><thead><tr><th>Data Checklist</th><th>Yes / No</th></tr></thead><tbody><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></tbody></table> <p>During on-site inspection, the followings are confirmed. The standard factor 0.5306 was discussed and confirmed. As the basic calibration records, Test Protocol of the flow meter of the supplier Rosemount dated Apr. 25, 2006 and Flow Measurement Report by Modderfontein Laboratory Service dated Jul. 23, 2006 were confirmed.</p> <p>As the calibration record after installation of flow meter, the Calibration Procedure Log Sheet of the flow meter dated Jul. 19, 2006 was confirmed. This calibration was carried out by the instrument engineer of AEL for not only stack gas volume flow but also stack gas temperature and pressure.</p>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	CAR10	Correct value to be confirmed by the verifier ☑
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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		<p>PDD requires the flow meter calibration for at least every 4 months between campaigns (the plant has to be shut down to conduct calibration), on the other hand, the Calibration Procedure Log Sheet mentions the validity periods of calibration 7 months. Actually, the next calibration is not conducted yet although 4 month passed sine the calibration in July.</p> <p><b><u>Corrective Action Request No.10</u></b></p> <p>The appropriate validity periods of flow meter calibration should be determined and implemented.</p> <p>See CAR8</p>																				
B.6.2.4. Parameter Title: OH <sub>BC</sub> Operating hours	29, 30	<table border="1"><thead><tr><th>Data Checklist</th><th>Yes / No</th></tr></thead><tbody><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></tbody></table> <p>Operating hours are calculated from summing every two seconds of N2O concentration etc. monitoring.</p> <p>As mentioned in CAR 8 of the parameter NCSG<sub>BC</sub>, error readings are not eliminated in N2O concentration and gas volume flow rate</p>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	CAR11	Correct value to be confirmed by the verifier <input checked="" type="checkbox"/>
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	No																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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		<p>monitoring. Therefore, the value of OH<sub>BC</sub> in PDD includes the time during error reading also.</p> <p><b><u>Corrective Action Request No.11</u></b></p> <p>The correct value of OH<sub>BC</sub> should be put after eliminating error readings in N2O concentration and gas volume flow rate monitoring.</p>																				
B.6.2.5. Parameter Title: NAP <sub>BC</sub> Nitric acid (100% concentrated) over baseline campaign	29, 30	<table border="1"><thead><tr><th>Data Checklist</th><th>Yes / No</th></tr></thead><tbody><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></tbody></table> <p>NAP is determined by a combination of the mass balance calculation and the flow meter measurement.</p> <p>Mass balance received at tanks was relatively accurate as it relies mainly (approx. 95%) on tank level measurement and 5% delivery to the outside on weighbridge. However such tanks receives nitric acid from both NO.9 and NO.11, and thus they have to rely on flow meters to determine allocation of mass balance between NO.9 and No.11. They monitored both and had accurately recognized difference variation between tank level measurement and flow meter measurement however such variation data had not</p>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	CAR12 CR2	Correct value to be confirmed by the verifier ☑
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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		<p>been used to calculate the uncertainty with the reason that such effects will keep behaving in the same manner. Nevertheless, the reason why we call it uncertainty is unpredictability of behaviour within certain range and such range is to be determined as a conservative approach.</p> <p><b><u>Corrective Action Request No.12</u></b></p> <p>Due to the uncertainty of flow meters, the adjustment way, i.e. to plus/minus the apportioned pro rate, is not conservative. For instance, for NAP over baseline campaign, applying only the calculation value of the mass balance is conservative. For NAP of other campaign, the conservative calculation should be applied, too</p> <p><b><u>Clarification Request No. 2</u></b></p> <p>Please submit the latest calibration record of the center weighbridge carried out in Nov. 2006.</p>																				
B.6.2.6. Parameter Title: TSG Temperature of stack gas	29, 30	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<b>CAR10</b> <b>CAR9</b>	Correct value to be confirmed by the verifier ☑
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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		<p>During on-site inspection, it was discussed and confirmed that the procedure for normalizing stack gas flow for temperature and pressure is same as mentioned in PDD page S22. The uncertainty was determined from the vendor's data sheet and applied to UNC.</p> <p>The calibration was conducted in July. See CAR9 and CAR10 of the parameter VSG.</p>																				
B.6.2.7. Parameter Title: PSG Pressure of stack gas	29, 30	<table border="1"><thead><tr><th>Data Checklist</th><th>Yes / No</th></tr></thead><tbody><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></tbody></table> <p>During on-site inspection, it was discussed and confirmed that the procedure for normalizing stack gas flow for temperature and pressure is same as mentioned in PDD page S22. The uncertainty was determined from the vendor's data sheet and applied to UNC.</p> <p>The calibration was conducted in July. See CAR9 and CAR10 of the parameter VSG.</p>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	CAR10 CAR9	Correct value to be confirmed by the verifier <input checked="" type="checkbox"/>
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	No																					
Has this value been verified?	No																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

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B.6.2.8. Parameter Title: UNC Overall measurement uncertainty of the monitoring system	29, 30	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>NO</td></tr><tr><td>Has this value been verified?</td><td>NO</td></tr><tr><td>Choice of data correctly justified?</td><td>NO</td></tr><tr><td>Measurement method correctly described?</td><td>NO</td></tr></table> <p><b><u>Corrective Action Request No.13</u></b></p> <p>During on-site inspection, the method how to determine the UNC and the source of each uncertainty figure was confirmed. However uncertainty of NAP is to be corrected as a correction to CAR11. And CAR6 indicates a possibility that uncertainty of N2O concentration monitoring can be much more than calculated. Therefore this parameter shall be re-calculated after finishing broad investigation and clarification in relation to CAR6 including another reliable QAL2 study result as a part of justification of overall consistency.</p>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	NO	Has this value been verified?	NO	Choice of data correctly justified?	NO	Measurement method correctly described?	NO	CAR13	Cor- rect value to be con- firmed by the ver- ifier <input checked="" type="checkbox"/>
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	NO																					
Has this value been verified?	NO																					
Choice of data correctly justified?	NO																					
Measurement method correctly described?	NO																					
B.6.2.9. Parameter Title: AFR Ammonia gas flow rate to the AOR	29, 30	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>N/A</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	N/A																					

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		<table><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>During on-site inspection, the historic data of daily NH3 consumption was confirmed including consistent cross check result with data/graph with Nitric Acid product output.</p>		Has this value been verified?	N/A	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes														
Has this value been verified?	N/A																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.10. Parameter Title: AFR <sub>max</sub> Maximum Ammonia gas flow rate to the AOR	29, 30	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>During on-site inspection, the calculation of AFR<sub>max</sub> was confirmed.</p>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.11. Parameter Title: AIFR Ammonia to Air ratio	29, 30	<table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						

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		<table><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>		Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes														
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
		During on-site inspection, the control data sheet for NO.9 Ratio Controller dated Aug. 19, 2006 was confirmed.																					
B.6.2.12. Parameter Title: AIFR <sub>max</sub> Maximum Ammonia to Air ratio		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
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Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
		Same as above.																					
B.6.2.13. Parameter Title: CL <sub>BL</sub> , Campaign length of baseline campaign	29, 30	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	Yes	CAR12	Correct value to be confirmed by the verifier		
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	No																						
Has this value been verified?	No																						
Choice of data correctly justified?	Yes																						

## Validation Protocol

Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		PPD in GSP	Final PDD																		
		<table><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> During on-site inspection, for this parameter, same resource as for NAP was confirmed. See CAR12 in the parameter NAP <sub>BC</sub> .		Measurement method correctly described?	Yes		<input checked="" type="checkbox"/>																
Measurement method correctly described?	Yes																						
B.6.2.14. Parameter Title: CL <sub>normal</sub> Normal campaign length	29, 30	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> Same as above. See CAR11 in the parameter NAP <sub>BC</sub> .		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	No	Has this value been verified?	No	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	CAR12	Correct value to be confirmed by the verifier <input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	No																						
Has this value been verified?	No																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.15. Parameter Title: OT <sub>h</sub> Oxidation temperature for each hour	29, 30	<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						

## Validation Protocol

Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD																		
		<table><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>During on-site inspection, it was confirmed that OT<sub>h</sub> during base-line campaign and the current are monitored and recorded in the database SCADA.</p>	Measurement method correctly described?	Yes																		
Measurement method correctly described?	Yes																					
B.6.2.16. Parameter Title: OT <sub>normal</sub> Normal operating temperature		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>During on-site inspection, the source of this parameter Technical Plant Manual (TM24 June 1977) was confirmed.</p>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	☑	☑
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					
B.6.2.17. Parameter Title: OP <sub>h</sub> Oxidation Pressure for each hour		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	☑	☑		
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					

## Validation Protocol

Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		PPD in GSP	Final PDD																		
		<table><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>During on-site inspection, it was confirmed that OP<sub>h</sub> during base-line campaign and the current are monitored and recorded in the database SCADA.</p>		Measurement method correctly described?	Yes																		
Measurement method correctly described?	Yes																						
B.6.2.18. Parameter Title: OP <sub>normal</sub> Normal operating pressure		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>During on-site inspection, the source of this parameter Technical Plant Manual (TM24 June 1977) was confirmed.</p>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	☑	☑
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						
B.6.2.19. Parameter Title: GS <sub>normal</sub> , Normal gauze supplier for the operation condition campaigns		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	CR3	☑						
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						

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Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		PPD in GSP	Final PDD																		
		<table><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>		Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes														
		Has this value been verified?	Yes																				
		Choice of data correctly justified?	Yes																				
		Measurement method correctly described?	Yes																				
		<p><b><u>Clarification Request No. 3</u></b></p> <p>During on-site inspection, the letter from the gauze supplier Heraeus dated Dec. 01, 2006 was reviewed. The letter mentions about gauze type and the composition of operation campaigns and baseline campaign that the same gauzes called Heraeus FTCplus had been used continuously with few exception as PDD states. Although the composition of the gauze used at baseline campaign had a little difference as the % of Pt was 58% instead of 59% and Pd was 1% less, compared to one used for previous 4 campaign, it was considered as the same product with the same performance. However the PDD is to be amended at this point (% of the composition for baseline campaign)</p>																					
B.6.2.20. Parameter Title: GS <sub>BL</sub> Gauze supplier for baseline campaign		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>		Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																						
Title in line with methodology?	Yes																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	Yes																						
Choice of data correctly justified?	Yes																						
Measurement method correctly described?	Yes																						

## Validation Protocol

Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD																		
		See GS <sub>normal</sub> .																				
B.6.2.21. Parameter Title: GC <sub>normal</sub> Gauze composition during the operation campaign.		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> See GS <sub>normal</sub> .	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					
B.6.2.22. Parameter Title: GC <sub>BL</sub> , Gauze composition during baseline campaign		<table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> See GS <sub>normal</sub> .	Data Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	Yes	Choice of data correctly justified?	Yes	Measurement method correctly described?	Yes	<input checked="" type="checkbox"/>	Correct value to be confirmed by the verifier <input checked="" type="checkbox"/>
Data Checklist	Yes / No																					
Title in line with methodology?	Yes																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	Yes																					
Choice of data correctly justified?	Yes																					
Measurement method correctly described?	Yes																					

## Validation Protocol

Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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<b>B.6.3. Ex-ante calculation of emission reductions</b>				
B.6.3.1. Is the projection based on the same procedures as used for future monitoring?		The projection is done by the same algorithms as used for later monitoring.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?		The calculation of the emission projections are presented in a transparent and complete manner.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.6.3.3. Is the data provided in this section consistent with data as presented in other chapters of the PDD?		The data provided in this section is consistent with data as presented in other chapters of the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.6.4. Summary of the ex-ante estimation of emission reductions</b>				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?		<p>The project activity will result in emission reductions</p> <p><b><u>Corrective Action Request No.14</u></b></p> <p>In the query of N.DBMS Baseline Calculation, for BE calculation, the equation, <math>VSG \cdot NCSG \cdot 10^{-6} \cdot Oh</math>, and the unit, tN<sub>2</sub>O, are applied. However, this is not correct compared with the equation of AM0034. It should be corrected.</p> <p><b><u>Corrective Action Request No.15</u></b></p> <p>As commented in CAR2 and CAR3 of the former chapter, the emission factor of baseline campaign should be corrected. Therefore, all figures in PDD page 39 should be corrected.</p>	CAR14 CAR15	<input checked="" type="checkbox"/>
B.6.4.2. Is the form/table required for the indication		The form is correctly applied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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of projected emission reductions correctly applied?																										
B.6.4.3. Is the projection in line with the envisioned time schedule for the project’s implementation and the indicated crediting period?		The projection is in line with the envisioned time schedule.	☑	☑																						
B.6.4.4. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?		All data is in consistent throughout the PDD.	☑	☑																						
B.7. Application of the monitoring methodology and description of the monitoring plan																										
B.7.1. Data and parameters monitored																										
B.7.1.1. Is the list of parameters presented in chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?		Some parameters are missing, see below.																								
Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with “No”																										
B.7.1.2. Parameter Title: NCSG N2O concentration in the stack gas	29, 30	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	No	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	No	QA/QC procedures described?	Yes	CAR16 CAR17	☑
Monitoring Checklist	Yes / No																									
Title in line with methodology?	Yes																									
Data unit correctly expressed?	No																									
Appropriate description of parameter?	Yes																									
Source clearly referenced?	Yes																									
Correct value provided for estimation?	No																									
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QA/QC procedures described?	Yes																									

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Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD																								
		<table><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> <p>Same comment in CAR 3 to CAR 8 of the parameter NCSG<sub>BC</sub>. <b><u>Corrective Action Request No.16</u></b> It is necessary to indicate the value used for the emission reduction calculation presented under section B.6.4. <b><u>Corrective Action Request No.17</u></b> Information on measurement uncertainty of each component is missing in section B.7.2. This is required by the guidance on the completion of a PDD.</p>	QA/QC procedures appropriate?	No																								
QA/QC procedures appropriate?	No																											
B.7.1.3. Parameter Title: VSG Volume flow rate of the stack gas	29, 30	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> <p>See CAR 15 and CAR16.</p>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	Yes	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	CAR16 CAR17	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	No																											
Has this value been verified?	No																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	No																											
Indication of accuracy provided?	No																											
QA/QC procedures described?	No																											
QA/QC procedures appropriate?	No																											

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD																								
B.7.1.4. Parameter Title: OH Operating hours	29, 30	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table> See CAR 16.	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	CAR16	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	No																											
Has this value been verified?	No																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											
Indication of accuracy provided?	Yes																											
QA/QC procedures described?	Yes																											
QA/QC procedures appropriate?	Yes																											
B.7.1.5. Parameter Title: NAP Nitric acid production (100% concentrated)	29, 30	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	CAR16	<input checked="" type="checkbox"/>						
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	No																											
Has this value been verified?	No																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											

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Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		PPD in GSP	Final PDD																								
		<table><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td></td></tr></table> <p>During on-site inspection, the level of nitric acid production in the past and the future was confirmed. It is almost stable and is not increased due to the project activity.</p> <p>See CAR16.</p>		Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?																					
Indication of accuracy provided?	Yes																												
QA/QC procedures described?	Yes																												
QA/QC procedures appropriate?																													
B.7.1.6. Parameter Title: TSG Temperature of stack gas	29, 30	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> <p>See TSG of baseline campaign (See CAR8, CAR9). See CAR16</p>		Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	CAR8 CAR9 CAR16	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																												
Title in line with methodology?	Yes																												
Data unit correctly expressed?	Yes																												
Appropriate description of parameter?	Yes																												
Source clearly referenced?	Yes																												
Correct value provided for estimation?	N/A																												
Has this value been verified?	N/A																												
Measurement method correctly described?	Yes																												
Correct reference to standards?	Yes																												
Indication of accuracy provided?	Yes																												
QA/QC procedures described?	No																												
QA/QC procedures appropriate?	No																												

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD																								
B.7.1.7. Parameter Title: PSG Pressure of stack gas	29, 30	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table>  See PSG of baseline campaign (See CAR9, CAR10). See CAR17	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	N/A	Has this value been verified?	N/A	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	CAR9 CAR10 CAR17	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	N/A																											
Has this value been verified?	N/A																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											
Indication of accuracy provided?	Yes																											
QA/QC procedures described?	No																											
QA/QC procedures appropriate?	No																											
B.7.1.8. Parameter Title: CL <sub>n</sub> Campaign length	29, 30	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	CAR12	<input checked="" type="checkbox"/>				
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	No																											
Has this value been verified?	No																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											
Indication of accuracy provided?	Yes																											

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		PPD in GSP	Final PDD																								
		<table><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table> See CAR12 in the parameter NAP <sub>BC</sub> .		QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes																						
QA/QC procedures described?	Yes																												
QA/QC procedures appropriate?	Yes																												
B.7.1.9. Parameter Title: GS <sub>project</sub> Gauze supplier for the project campaigns		<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> <b><u>Corrective Action Request No.18</u></b> Information of the gauze supplier has to be monitored at each project campaign. This is missing in the monitoring plan.		Monitoring Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	No	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No	CAR18	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																												
Title in line with methodology?	No																												
Data unit correctly expressed?	No																												
Appropriate description of parameter?	No																												
Source clearly referenced?	No																												
Correct value provided for estimation?	No																												
Has this value been verified?	No																												
Measurement method correctly described?	No																												
Correct reference to standards?	No																												
Indication of accuracy provided?	No																												
QA/QC procedures described?	No																												
QA/QC procedures appropriate?	No																												
B.7.1.10. Parameter Title: GC <sub>project</sub> Gauze composition during project campaign		<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr></table>		Monitoring Checklist	Yes / No	Title in line with methodology?	No	CAR19	<input checked="" type="checkbox"/>																				
Monitoring Checklist	Yes / No																												
Title in line with methodology?	No																												

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		<table><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> <p><b><u>Corrective Action Request No.19</u></b></p> <p>Information of the gauze composition has to be monitored at each project campaign. This is missing in the monitoring plan.</p>		Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided for estimation?	No	Has this value been verified?	No	Measurement method correctly described?	No	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No						
Data unit correctly expressed?	No																												
Appropriate description of parameter?	No																												
Source clearly referenced?	No																												
Correct value provided for estimation?	No																												
Has this value been verified?	No																												
Measurement method correctly described?	No																												
Correct reference to standards?	No																												
Indication of accuracy provided?	No																												
QA/QC procedures described?	No																												
QA/QC procedures appropriate?	No																												
B.7.1.11. Parameter Title: OP <sub>h</sub> Oxidation Pressure for each hour		<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>		Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																												
Title in line with methodology?	Yes																												
Data unit correctly expressed?	Yes																												
Appropriate description of parameter?	Yes																												
Source clearly referenced?	Yes																												
Correct value provided for estimation?	Yes																												
Has this value been verified?	Yes																												
Measurement method correctly described?	Yes																												
Correct reference to standards?	Yes																												
Indication of accuracy provided?	Yes																												
QA/QC procedures described?	Yes																												
QA/QC procedures appropriate?	Yes																												

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD																								
		OK																										
B.7.1.12. Parameter Title: OT <sub>h</sub> Oxidation Pressure for each hour		<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table> OK	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	Yes																											
Has this value been verified?	Yes																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											
Indication of accuracy provided?	Yes																											
QA/QC procedures described?	Yes																											
QA/QC procedures appropriate?	Yes																											
B.7.1.13. Parameter Title: AFR Ammonia gas flow rate		<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	Yes																											
Has this value been verified?	Yes																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		PPD in GSP	Final PDD																								
		<table><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>		Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes																				
Indication of accuracy provided?	Yes																												
QA/QC procedures described?	Yes																												
QA/QC procedures appropriate?	Yes																												
B.7.1.14. Parameter Title: AIFR Ammonia to Air Flow Ratio		<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>		Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																												
Title in line with methodology?	Yes																												
Data unit correctly expressed?	Yes																												
Appropriate description of parameter?	Yes																												
Source clearly referenced?	Yes																												
Correct value provided for estimation?	Yes																												
Has this value been verified?	Yes																												
Measurement method correctly described?	Yes																												
Correct reference to standards?	Yes																												
Indication of accuracy provided?	Yes																												
QA/QC procedures described?	Yes																												
QA/QC procedures appropriate?	Yes																												
B.7.1.15. Parameter Title: EF <sub>reg</sub> Emissions level set by incoming policies or regulations		<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided for estimation?</td><td>No</td></tr></table>		Monitoring Checklist	Yes / No	Title in line with methodology?	No	Data unit correctly expressed?	No	Appropriate description of parameter?	No	Source clearly referenced?	No	Correct value provided for estimation?	No	CAR20	<input checked="" type="checkbox"/>												
Monitoring Checklist	Yes / No																												
Title in line with methodology?	No																												
Data unit correctly expressed?	No																												
Appropriate description of parameter?	No																												
Source clearly referenced?	No																												
Correct value provided for estimation?	No																												

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		<table><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr><tr><td>Correct reference to standards?</td><td>No</td></tr><tr><td>Indication of accuracy provided?</td><td>No</td></tr><tr><td>QA/QC procedures described?</td><td>No</td></tr><tr><td>QA/QC procedures appropriate?</td><td>No</td></tr></table> <p><b><u>Corrective Action Request No.20</u></b></p> <p>Information on incoming thresholds has to be monitored at each project campaign. This is missing in the monitoring plan.</p>	Has this value been verified?	No	Measurement method correctly described?	No	Correct reference to standards?	No	Indication of accuracy provided?	No	QA/QC procedures described?	No	QA/QC procedures appropriate?	No			
Has this value been verified?	No																
Measurement method correctly described?	No																
Correct reference to standards?	No																
Indication of accuracy provided?	No																
QA/QC procedures described?	No																
QA/QC procedures appropriate?	No																
<b>B.7.2. Description of the monitoring plan</b>																	
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?		<p>During on-site inspection, it was confirmed that the operation and management of the project are subjected to the ISO9001QMS and that there is no specific document for the project.</p> <p><b><u>Clarification Request No. 4</u></b></p> <p>Separate document from PDD regarding the responsibilities in monitoring and reporting to be provided and to be confirmed by the auditor.</p>		CR4	<input checked="" type="checkbox"/>												
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?		See above.		CR4	<input checked="" type="checkbox"/>												
B.7.2.3. Does the monitoring plan provide current good monitoring practice?		<p>The monitoring plan provides in principle current good practice. But procedures as foreseen as foreseen by EN14181 are not correctly presented, in particular the aspects of QAL1 and QAL2.</p> <p>During on-site inspection, as mentioned in the parameters NCSG and VSG of baseline campaign, the basic calibrations were con-</p>		CAR21	<input checked="" type="checkbox"/>												

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		<p>ducted for each. These are not fully met with QAL1 and QAL2 of EN14181.</p> <p>As the basic calibration, however, the calibrations before shipping were carried out by the equipment suppliers, and the calibrations just after installation were done by the laboratory and AEL. Through on-site inspection, It was verified that this is an appropriate manner as the industrial best practice in South Africa.</p> <p><b><u>Corrective Action Request No.21</u></b></p> <p>As mentioned above, reaction after finding out of tolerance at regular Zero/Span calibration was not considered sufficient as only re-adjustment was done. And this is to be considered as insufficiency of monitoring QA/QC procedures to be corrected.</p>		
B.7.2.4. Has the monitoring system installed using the European Norm 14181 (2004)?		See above.	☑	☑
B.7.2.5. Will the three quality assurance levels been met by the planned Automated Measuring System (AMS) according to the EN14181?		See above.	☑	☑
B.7.2.6. Are the specific performance characteristics of the monitoring system chosen by the project listed in the PDD?		<p>In principle yes but information on specific uncertainties is missing at all.</p> <p>See CAR17 of above chapters in parameters.</p>	CAR17	☑
B.7.2.7. Is information on the margins of errors and the cumulative error for the complete measurement system provided in the PDD?		See above	CAR17	☑

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B.7.2.8. Is the inclusion of external accredited services providers for calibration and function tests foreseen in the planning of the project?		As mentioned in above chapters, the basic calibration for the gas analyzer before shipping and installation was conducted by the vendor, N <sub>2</sub> O concentration of the gasses sampled as SRM were measured by the external test laboratory Modderfontein Laboratory Service. The on-site basic calibration of the flow meter was also conducted by Modderfontein Laboratory Service.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.2.9. Are the requirements on the treatment of downtime of the AMS clearly reflected in the envisioned calculation routines?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.7.2.10. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)</b>				
B.8.1.1. Is there any indication of a date when the baseline was determined?		The date is clearly indicated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.2. Is this consistent with the time line of the PDD history?		It is consistent with the time line of the project development.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.3. Is the information on the person(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?		The information is consistent with the actual situation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.8.1.4. Is information provided whether this person / entity is also considered a project		The information is consistent with the actual situation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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participant?				
<b>C. Duration of the project activity / crediting period</b>				
<b>C.1. Duration of the project activity</b>				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?		<p>The project starting date and operational lifetime are clearly mentioned in PDD. However, in fact, the project is two weeks behind the schedule and the schedule forecasts the project will be started on Mar. 07, 2007.</p> <p><b><u>Corrective Action Request No.22</u></b></p> <p>The project start time should be corrected to meet with actual status.</p>	CAR22	<input checked="" type="checkbox"/>
<b>C.2. Choice of the crediting period and related information</b>				
C.2.1. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?		The crediting period and its type are clearly defined.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D. Environmental impacts</b>				
<b>D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts</b>				
D.1.1. Has the analysis of the environmental impacts of the project activity been sufficiently described?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been ap-		During on-site inspection, the requirement neither for EIA nor environmental authorization was confirmed from the letter from Department of Agriculture, Conservation and Environment dated	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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proved?			Sep. 19, 2006.		
D.1.3.	Will the project create any adverse environmental effects?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.4.	Were transboundary environmental impacts identified in the analysis?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party</b>					
D.2.1.	Have the identified environmental impacts been addressed in the project design sufficiently?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.2.	Does the project comply with environmental legislation in the host country?		During on-site inspection, the requirement neither for EIA nor environmental authorization was confirmed from the letter from Department of Agriculture, Conservation and Environment dated Sep. 19, 2006.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E. Stakeholders' comments</b>					
<b>E.1. Brief description how comments by local stakeholders have been invited and compiled</b>					
E.1.1.	Have relevant stakeholders been consulted?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.2.	Have appropriate media been used to invite comments by local stakeholders?		During on-site inspection, the followings were discussed and confirmed.  The consultation with local stakeholders was not conducted by a specific meeting. However, in order to call for the local stake-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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		holder comment, E-mails or mails were sent to various parties including the environmental authorities, various communities, companies in the Industrial complex, NGOs. And the articles were broadcasted on several local newspapers. The same articles were still disclosed at AEL's Website to call for any interest or comments. The tenants on the Modderfontein industrial site and NGOs were informed by E-mail or by letters. These are compiled in Background Information Document (BID).		
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.2. Summary of the comments received</b>				
E.2.1. Is a summary of the received stakeholder comments provided?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.3. Report on how due account was taken of any comments received</b>				
E.3.1. Has due account been taken of any stakeholder comments received?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F. Annexes 1 – 4</b>				
<b>F.1. Annex 1: Contact Information</b>				
F.1.1. Is the information provided consistent with the one given under section A.3?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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F.1.2.	Is the information on all private participants and directly involved Parties presented?		See CAR1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.2. Annex 2: Information regarding public funding</b>					
F.2.1.	Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?		Public funding is not applied for the project. In financing, It is confirmed that AEL bears the project cost itself and that N.serve bears only the cost of CDM validation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.2.2.	If necessary: Is an affirmation available that any such funding from Annex-I countries does not result in a diversion of ODA?		See above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.3. Annex 3: Baseline information</b>					
F.3.1.	If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	29, 30	During on-site inspection, SCADA data was confirmed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3.2.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?		See above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.3.3.	Does the additional information substantiate / support statements given in other sections of the PDD?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.4. Annex 4: Monitoring information</b>					
F.4.1.	If additional background information on monitoring is provided: Is this information		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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	consistent with data presented in other sections of the PDD?				
F.4.2.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.4.3.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?		OK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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**Table 2 Resolution of Corrective Action and Clarification Requests**

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team Conclusion
<b><u>Corrective Action Request No.1</u></b> It is necessary either to delete Escrow Agent from the participants or to add it with detailed information when participating in PDD page 3 and Annex 1.	A.3.1	As the escrow agent has not been finally chosen by N.serve and AEL, it was deleted from the list of project participants.	☑
<b><u>Corrective Action Request No.2</u></b> Due to calculation error in latter chapter, EF <sub>BL</sub> 3,31 kgN <sub>2</sub> O / tHNO <sub>3</sub> in PDD page 6 is incorrect. Accordingly, the figures and the table in PDD page 7 are incorrect. In addition, there are several issues which are likely to make affection on the estimated amount of ERs, e.g. automatic unusual value elimination of every 2 seconds monitoring data, changes on monitoring uncertainty after further investigation. Those are to be determined and included in the revised values.	A.4.4.2	The EF <sub>BL</sub> was calculated incorrectly by using the ppm value instead of mgN <sub>2</sub> O/Nm <sup>3</sup> as a basis. It has since been corrected and the new EF <sub>BL</sub> has been inserted into the PDD. However, since the analyser at No. 9 was found to be unreliable, the EF <sub>BL</sub> provided in the PDD is only regarded as an estimate. The EF <sub>BL</sub> will be established correctly after a new analyser has been installed.	☑
<b><u>Corrective Action Request No.3</u></b> The data unit ppmv should be converted to mgN <sub>2</sub> O / m <sup>3</sup> and the applied value also should be changed. As commented in CAR2, the relative calculation should be recalculated.	B.6.2.2	The revised calculations have been based on the correct indication and use of physical dimensions. The figures to be used in the estimations have been corrected accordingly, while recent available data are not considered as verifiable baseline campaign.	☑

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<b><u>Corrective Action Request No.4</u></b> The proper unit mgN2O / m3 and the proper value should be put in PDD and they should be reflected in other chapter of PDD.	B.6.2.2	The revised calculations have been based on the correct indication and use of physical dimensions. The figures to be used in the estimations have been corrected accordingly, while recent available data are not considered as verifiable baseline campaign.	The response correctly reflects the real situation. Recalculations have been reassessed. The issue is considered being resolved.  ☑
<b><u>Corrective Action Request No.5</u></b> As QAL 1 is required to be done by an independent entity (other than manufacturer) the applied approach is deviating from the recent version of AM0034. In case the baseline campaign should be verified within the validation process a request for deviation to the EB has to be submitted.	B.6.2.2	A deviation request is not required for the following reasons: <ul style="list-style-type: none"><li>- AM0034 clearly states that EN 14181 serves as <u>guidance</u> document as the basis for the monitoring process (see sections / pages in methodology).</li><li>- At the time when AEL decided to purchase an analyser, a QAL1 certified analyser was not available nor was any vendor pursuing QAL1 certification. Therefore, it can not be set as a prerequisite for this project to require QAL1 certification of the analyser.</li></ul> However, AEL has recently ordered new N2O analysers for both nitric acid plants which will be installed by late April/early May. These analysers have passed the QAL1 suitability tests.	Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE. The issue is considered being resolved.  ☑
<b><u>Corrective Action Request No.6</u></b> QAL2 should be carried out again. SRM gases should be sampled again to form the proper distribution in N2O concentration so that their N2O concentrations represent that of stack gas. In PDD page 52, in the absence of a valid ELV, an assumed value of 400 ppm was applied as the ELV. However, the N2O concentration of stack gas is usually more than 700 ppm. And 30% was applied as the	B.6.2.2	Once the new analysers have been installed, a complete QAL2 audit including SRM measurements will be carried out by a suitable auditor.  To better asses potential cross interferences, the stack gas in the No. 9 plant has been analysed by Modderfontein Lab and the following typical concentrations were found:  N2      93,2 % Ar      1,1 %	Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE. The issue is considered being resolved.

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uncertainty requirement in accordance with annex E of EN 14181 however this annex tells particulate monitoring and reasons for using the same value for N <sub>2</sub> O monitoring shall be provided. In re-QAL2, this also should be considered.		O <sub>2</sub> 5,0 % H <sub>2</sub> O 0,6 % N <sub>2</sub> O 0,1 % NO <sub>x</sub> < 0,1 %	<input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.7</u></b> The cause of the errors in the span drift check should be investigated and the reliability of the NCSG data during baseline campaign should be reconsidered. Since this can affect to broad issues, e.g. Zero/Span check mechanism, entire reliability of measured data, actual uncertainty calculation of monitoring data, adequacy of QA/QC procedures including reaction plan as well as cross checking with laboratory results, reliability of analyser including QAL1/QAL2 related issues, overall consistency among those related issues shall be provided as well as finding reasons of unusual span drifting.	B.6.2.2	New analyser will be installed, span and zero drift established during QAL2 audit.	Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE. The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.8</u></b> The definition of the response time should be reconsidered and the check should be implemented.	B.6.2.2	A new analyser will be installed.	Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE. The issue is considered being resolved. <input checked="" type="checkbox"/>

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<p><b><u>Corrective Action Request No.9</u></b></p> <p>Such soft program that automatically eliminates error readings in N<sub>2</sub>O concentration and gas volume flow rate monitoring should be provided and all figures in the calculation for baseline campaign emission factor should be recalculated.</p>	<p>B.6.2.2 B.6.2.3 B.6.2.6 B.6.2.7 B.7.1.6 B.7.1.7</p>	<p>This is no longer relevant to the current EF<sub>BL</sub>, but the following was conducted for this faulty baseline and will be repeated for the new baseline with the new analyser:</p> <p>The time data series of the NCSG values also provides four fields for analyser alarm settings. During the data analysis by N.DBMS, those NCSG values taken during times when the analyser was reporting an alarm (e.g. zero calibration carried out) will be excluded from the calculation of the mean NCSG value.</p> <p>In addition, it was determined that if the oxidation temperature (OTh) is below 810°C, the plant is considered offline and not producing any nitric acid. Therefore, any NCSG and VSG values taken during times when OTh &lt; 810°C will be excluded from the calculation of BE<sub>BC</sub> and EF<sub>BL</sub>.</p>	<p>Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE.</p> <p>The issue is considered being resolved.</p> <p style="text-align: center;">☑</p>
<p><b><u>Corrective Action Request No.10</u></b></p> <p>The appropriate validity periods of flow meter calibration should be determined and implemented.</p>	<p>B.6.2.3 B.7.1.6 B.7.1.7</p>	<p>PDD currently states that flow meter calibrations should be done at least every 4 months (between campaigns), this schedule will be observed by AEL going forward.</p>	<p>Having a calibration frequency of four month is exceeding the requirements of known international and national standards.</p> <p>The issue is considered being resolved.</p> <p style="text-align: center;">☑</p>
<p><b><u>Corrective Action Request No.11</u></b></p> <p>The correct value of OH<sub>BC</sub> should be put after eliminating error readings in N<sub>2</sub>O concentration and gas volume flow rate monitoring.</p>	<p>B.6.2.4</p>	<p>This is not requested by AM0034. As long as the plant is considered to operate and produce nitric acid, even those OH should be counted when error readings were recorded (and eliminated). Reduction of OH by periods of error measurements would lead to an unjustified underestimation of BE<sub>BC</sub> and consequently of an underestimation of EF<sub>BL</sub>.</p>	<p>The assessment team agrees to the explanation given by the project participants keeping in mind that the same approach will be also required for project emissions in future monitoring periods.</p>

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			<p>The issue is considered being resolved.</p> <p><input checked="" type="checkbox"/></p>
<p><b><u>Corrective Action Request No.12</u></b></p> <p>Due to the uncertainty of flow meters, the adjustment way, i.e. to plus/minus the apportioned pro rate, is not conservative. For instance, for NAP over baseline campaign, applying only the calculation value of the mass balance is conservative. For NAP of other campaign, the conservative calculation should be applied, too.</p>	<p>B.6.2.5 B.6.2.13 B.6.2.14 B.7.1.8</p>	<p>Each of the two plants (No. 9 and 11) has a coriolis flow meter installed at the nitric acid product outlet before it goes into the production storage tank to determine the mass of nitric acid produced from each plant. However, these coriolis flow meters are experiencing a drift which makes their measurements less accurate. Therefore, AEL uses the calculated values for its financial planning and reporting and uses the flow meter results only for plausibility checks.</p> <p>The comparison of flow meter values compared with calculated nitric acid production (between Jan 05 and Oct 06) show that the flow meter was higher than the calculated by an average of 2.45%. In fact it was higher on each but two months. And in those months it was lower by only 0.40%.</p> <p>Nevertheless, the coriolis flow meter results are a useful tool to apportion the Calculated Production resulting from the mass balance calculation to each of the two nitric acid plants by determining the ratio of production resulting from the two coriolis flow meters and applying that to the Calculated Production.</p> <p>To conclude, both for the baseline campaign and for all project campaigns, the calculated mass balance NAP values will be used. This will provide a reliable NAP value and ensure consistency between the baseline and project campaigns as well as throughout the project's crediting period.</p>	<p>Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE.</p> <p>The issue is considered being resolved.</p> <p><input checked="" type="checkbox"/></p>

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<b><u>Corrective Action Request No.13</u></b> During on-site inspection, how to determine the UNC and the source of each uncertainty figure were confirmed. However uncertainty of NAP is to be corrected as a correction to CAR11. And CAR6 indicates a possibility that uncertainty of N <sub>2</sub> O concentration monitoring can be much more than calculated. Therefore this parameter shall be re-calculated after finishing broad investigation and clarification in relation to CAR6 including another reliable QAL2 study result as a part of justification of overall consistency.	B.6.2.8	Irrelevant as the baseline will be repeated once the new analyser is installed after which also a complete QAL2 will be conducted.	Recent available data are not considered as verifiable baseline campaign. The emission factor resulting from the baseline campaign will be confirmed by the verifying DOE. The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.14</u></b> In the query of N.DBMS Baseline Calculation, for BE calculation, the equation, $VSG * NCSG * 10^{-6} * OH$ , and the unit, tN <sub>2</sub> O, are applied. However, this is not correct compared with the equation of AM0034. It should be corrected.	B.6.4.1	AM0034 requires the use of tN <sub>2</sub> O as units. However, N.DBMS indeed uses the following formula: $VSG * NCSG * 10^{-6} * OH / 1000$ Whereas, AM0034 prescribes the formula $VSG * NCSG * 10^{-9} * OH$ The result is the same but the formula will be corrected in N.DBMS.	The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.15</u></b> As commented in CAR2 and CAR3 of the former chapter, the emission factor of baseline campaign should be corrected. Therefore, all figures in PDD page 39 should be corrected.	B.6.4.1	The figures have been corrected accordingly.	All revised calculations have been re-assessed. The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.16</u></b> It is necessary to indicate the value used for the emission reduction calculation presented under section B.6.4.	B.7.1.2 B.7.1.3 B.7.1.4	For the purpose of calculating expected emission reductions, the total projected annual baseline emissions of 129,755 were multiplied with the projected N <sub>2</sub> O abatement efficiency factor of 90%. It is therefore un-	The issue is considered being resolved. <input checked="" type="checkbox"/>

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	B.7.1.5	necessary to try and derive artificial figures for NCSG, VSG, OH and NAP for the coming project campaigns.	
<b><u>Corrective Action Request No.17</u></b> Information on measurement uncertainty of each component is missing in section B.7.2. This is required by the guidance on the completion of a PDD.	B.7.1.2 B.7.1.3 B.7.1.6 B.7.1.7 B.7.2.6-7	For B.7.1.2 (VSG) this information is contained in the overall uncertainty calculation for the AMS (but not yet in the PDD). For B.7.1.3 (PE) this is not relevant as this is a calculated value. For B.7.1.6 (OTh) the uncertainty of the thermocouples in the converter is 1.0% and for B.7.1.7 (OPh) the pressure sensor the uncertainty is 0.125% (same as for the ones in the stack). However, for both OPh and OTh, the uncertainties of the equipment is irrelevant since these values are not used in the calculation of EF <sub>BL</sub> but are merely used to enable the comparison of one campaign with another in the same plant.	The information provided by this response is sufficient as uncertainty will have to be determined anyway ex-post. The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.18</u></b> Information of the gauze supplier has to be monitored at each project campaign. This is missing in the monitoring plan.	B.7.1.9	Has been incorporated into the monitoring plan.	The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.19</u></b> Information of the gauze composition has to be monitored at each project campaign. This is missing in the monitoring plan.	B.7.1.10	Has been incorporated into the monitoring plan.	The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.20</u></b> Information on incoming thresholds has to be monitored at each project campaign. This is missing in the monitoring plan.	B.7.1.15	Has been incorporated into the monitoring plan.	The issue is considered being resolved. <input checked="" type="checkbox"/>

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<b><u>Corrective Action Request No.21</u></b> As mentioned above, reaction after finding out of tolerance at regular Zero/Span calibration was not considered sufficient as only re-adjustment was done. And this is to be considered as insufficiency of monitoring QA/QC procedures to be corrected.	B.7.2.3	See CAR6	Recent available data are not considered as verifiable baseline campaign. The compliance with correct application of standards will be confirmed by the verifying DOE. The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Corrective Action Request No.22</u></b> The project start time should be corrected to meet with actual status.	C.1.1	The next production campaign is considered to be the baseline campaign which is scheduled to end in the last week of July or first week of August. Subsequently the N <sub>2</sub> O abatement catalyst will be installed and the following campaign is expected to be the first project campaign, starting on 14 August 2007. Therefore, 14 August 2007 is expected to be the start date of the project activity.	The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Clarification Request No. 1</u></b> Letter of Endorsement from German government to be submitted to the auditor to be confirmed.	A.2.3	The project participants decided to use UK as participating Annex-I- country. Hence the issue is obsolete. A letter of approval will be submitted before requesting registration.	The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Clarification Request No. 2</u></b> Please submit the latest calibration record of the centre weighbridge carried out in Nov. 2006.	B.6.2.5	Done. Provided to TÜV on 01 March 07.	The issue is considered being resolved. <input checked="" type="checkbox"/>
<b><u>Clarification Request No. 3</u></b> During on-site inspection, the letter from the gauze supplier Heraeus dated Dec. 01, 2006	B.6.2.19	Table B.24 on page 33 of the PDD already states the correct composition of the gauze during the "test baseline" of 58% Pt, 4% Rh and 38% Pd.	The issue is considered being resolved.

## Validation Protocol

Project Title: Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

Date of Completion: 2007-05-10

Number of Pages: 60



was reviewed. The letter mentions about gauze type and the composite of operation campaigns and baseline campaign that the same gauzes called Heraeus FTCplus had been used continuously with few exceptions as PDD states. Although the composition of the gauze used at baseline campaign had a little difference as the % of PT was 58% instead of 59% and Pd was 1% less, compared to one used for previous 4 campaign, it was considered as the same product with the same performance. However the PDD is to be amended at this point (% of the composition for baseline campaign).			<input checked="" type="checkbox"/>
<b>Clarification Request No. 4</b> Separate document from PDD regarding the responsibilities in monitoring and reporting to be provided and to be confirmed by the auditor.	B.7.2.1	Please refer to internal AEL Nitrates Operations Instructions (Document Ref. NIT 002) "CDM Project Data Accuracy Procedure" which shows the responsibility within AEL for the monitoring procedures.	<input checked="" type="checkbox"/>

**Table 3 Unresolved Corrective Action and Clarification Requests (in case of denials)**

Clarifications and / or corrective action requests by validation team	Id. of CAR/CR	Explanation of Conclusion for Denial
-	-	-


Validation of the CDM Project:

Project for the catalytic reduction of N<sub>2</sub>O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd (“AEL”), South Africa




Industrie Service


## **Annex 2: Information Reference List**

Final Report	2007-05-10	Validation of the proposed CDM project: Project for the catalytic reduction of N <sub>2</sub> O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa Information Reference List	Page 1 of 3	 Industrie Service
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Reference No.	Document or Type of Information
1	On-site interview at African Explosives Limited (AEL), Modderfontein by auditing team of TÜV SÜD <b>Validation team on-site:</b> Yutaka Yoshida                      TÜV SÜD Japan Shuji Iida                            TÜV SÜD Japan <b>Interviewed persons:</b> P. Schutte, AEL, Team Manager Dennis Gregory, Laboratory Manager Ronnie Huggins, AEL, Instrument Technician Nongi Nyathi, AEL, Technical Officer Leon Aucamp, AEL, Nitrates Manager Clive Gregor, AEL, Production Manager
2	Project Design Document: "Project for the catalytic reduction of N <sub>2</sub> O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa", November, 2006.
3	Letter submitted to South African DNA, November 28, 2006
4	Commissioning Report of No.9 Nitric Acid Plant at Modderfontein Factory, July 17, 1968
5	Letter of Endorsement from South Africa government, July 13, 2005
6	Letter from Department of Agriculture, Conservation and Environment, Sep. 19, 2006
7	Certificate of NO <sub>9</sub> Nitric Acid Plant from Department of Environmental and Tourism, Dec. 12, 2003
9	Basic calibration record of the gas analyzer by Environmental S.A., Sep. 22, 2005
10	Breakdown Reports of the gas analyzer, July 24, Aug. 25 and Oct. 26, 2006

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Reference No.	Document or Type of Information
11	Zero/Span Drift Test Records of the gas analyzer, Nov. 8, 9, 29 and Dec. 1, 2006
12	Certificate of the standard gas (1005ppm v/v N <sub>2</sub> O) by Modderfontein Laboratory Services Ltd., Aug. 1, 2006
13	Test Report of the flow meter by Rosemount, Apr. 25, 2006
14	Test Report of the stack gas flow meter by Modderfontein Laboratory Services Ltd., July 23, 2006
15	Test Report of the stack gas volume flow, the stack gas temperature and pressure, (by AEL), July 19, 2006
16	Calculation of the standard factor 0.5306
17	Rosemount Engineering Report of the annubar flowmeter, June 28, 2006
19	Rosemount Data Sheet of the annubar flowmeter, Apr. 28, 2006
20	Letter from Thermocouple Products Ltd., Nov. 24, 2006 (Re: Resistance Temperature Sensor)
21	Reference Manual of the stack gas temperature probe, July 2002
22	Siemens data sheet of the analogue input card
23	Control data sheet for NO.9 Ratio Controller, Aug. 19, 2006
24	Technical Plant Manual (TM24 June 1977, page 94)
25	Technical Plant Manual (TM24 June 1977, page 2)
26	Letter from Heraeus (Re: Precious metal contents of gauzes), Dec. 01, 2006
27	Background Information Document (BIM)
28	SCADA Data of Sep. 18, 2006 (Excel file)
29	Queries from N.DBMS Baseline Campaign (Excel file)
30	Uncertainty Calculation (Excel file)

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Reference No.	Document or Type of Information
31	Project Design Document: "Project for the catalytic reduction of N <sub>2</sub> O emissions with a secondary catalyst inside the ammonia reactor of the No. 9 nitric acid plant at African Explosives Ltd ("AEL"), South Africa", April 2007.
32	Certificate of functional test of calibration, No. TP 2664, Thermocouple Products (PTY) Ltd., 21. Sept 2006
33	AEL Quality Management Manual; OPERATION INSTRUCTIONS; Doc. No. NIT 002; rev. 00 Title: CDM PROJECT DATA ACCURACY PROCEDURE
34	Certificate No. VR 7112; Weighbridge 990882; WRIGHT SCALES (accredited lab); 03. Dec 2006
35	DNA Letter of Approval, DNA of South Africa, 25 January 2007
36	Documented procedure: LABORATORY METHOD; MDF 774; Title: NITROUS OXIDE, DETERMINATION IN A STACK GAS BY GAS CHROMATOGRAPHY