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Validation Report

N.Serve Environmental Service GmbH

VALIDATION OF THE CDM-PROJECT:

N2O abatement project at nitric acid plant No. 11 at African Explosives Ltd. (AEL), South Africa

REPORT NO. 1017249

September 27, 2007

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

Industrie Service

Report No.	Date of first issue	Revision No.	Date of this revision	Certificate No.
1017249	2007-09-25	1	2007-09-27	-

Subject: Validation of a CDM Project

Accredited TÜV SÜD Unit:	**TÜV SÜD Contract Partner:**
TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199, D-80686 Munich Federal Republic of Germany	TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199, D-80686 Munich Federal Republic of Germany
Client: N.Serve Environmental Service GmbH Große Theaterstraße 14 D-20354 Hamburg Federal Republic of Germany	**Project Site(s):** African Explosives Ltd. Acid House Modderfontein 1645 Gauteng Province South Africa

Project Title: N2O abatement project at nitric acid plant No. 11 at African Explosives Ltd. (AEL), South Africa

Applied Methodology / Version: AM0034 version 02 **Scope(s):** 5

First PDD Version:		**Final PDD version:**	
Date of issuance:	2007-05-04	Date of issuance:	2007-09-25
Version No.:	1.a.	Version No.:	1.c.
Starting Date of GSP	2007-05-12		

Estimated Annual Emission Reduction: 265,460 tons CO_{2e}

Assessment Team Leader:	**Further Assessment Team Members:**
Werner Betzenbichler	Yutaka Yoshida Nikolaus Kröger

Summary of the Validation Opinion:

☒ 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.

☐ 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.

Abbreviations

ACM	Approved Consolidated Methodology
AEL	African Explosives Ltd.
AM	Approved Methodology
AOR	Ammonia Oxidation Reactor
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
PDD	Project Design Document
PP	Project Participant
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	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:

N2O abatement project at nitric acid plant No. 11 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), 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.

Validation Protocol Table 1: Conformity of Project Activity and PDD				
Checklist Topic / Question	***Reference***	***Comments***	***PDD in GSP***	***Final PDD***
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.	*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.*	*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 **Request** has to be substantiated within this column*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (☑), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification Request (CR)** is used when the validation team has identified a need for further clarification.*	*Conclusions are presented in the same manner based on the assessment of the final PDD version.*

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

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

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

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 in written in bold letters):

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Werner Betzenbichler	**ATL**	☑	☑	☑
Yutaka Yoshida	GHG-A	☑		
Nikolaus Kröger	GHG-A	☑	☑	

Werner Betzenbichler is physicist and head of the department "TÜV Carbon Management Service" located in the head office of TÜV SÜD Industrie Service in Munich. Furthermore he is appointed as head of the certification body "Climate and Energy", which is accredited at UNFCCC as Designated Operational Entity. As project manager and ghg lead auditor he participated in numerous assessments of CDM and JI projects. Before entering this department he worked as expert on air quality measurements and emissions inventories as well as on environmental auditing within the environmental branch of the company.

Yutaka Yoshida is production engineer and responsible for the carbon market of TÜV SÜD in Japan. He is working as ghg auditor and is recently involved in the several CDM projects. He received extensive training on all aspects of the flexible mechanism. For this specific project he was responsible for input to the technical aspects within the chemical industry and the contact to technical expert aside of German project developer.

Nikolaus Kröger is environmental engineer and expert for emissions monitoring and quality assurance at the department "TÜV Carbon Management Service". He is located in the TÜV SÜD Hamburg office and is also engaged as personally accredited verifier in the EU-ETS serving the Northern German market. Being auditor for CDM projects he has already been involved in several CDM activities with a special focus on industrial non-CO2 projects. During 13 years experience at the depart-

ment “Environmental Service” he verified many metallurgical plants, refineries, chemical plants, waste treatment and power plants and process engineering in many types of facilities. One of his former focal points had been implementation and calibration of complex automatic Environment-Data-Systems.

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 May 16 to 17, 2007 TÜV SÜD performed interviews on-site with project stakeholders to confirm selected information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in the context of this on-site visit.

Name	Organisation
Clive Gregor	AEL, Production Engineer
Ronnie Huggins	AEL, Instrument Technician
Nongezile Nyathi	AEL, Technical Officer
Dennis Gregory	Modderfontein Laboratories Ltd., Managing Director
Josias Mokgawa	Modderfontein Laboratories Ltd.
Colin Valentine	Modderfontein Laboratories Ltd., Manager
Eliasmotile Boroboro	AEL, Process Controller

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 and 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 requesting registration by the EB or not.

3 SUMMARY OF FINDINGS

As informed above all finding are summarized in table 2 of the attached validation protocol. In total the assessment team expressed 2 Clarification Requests and 12 Corrective Action Requests.

This project on NO.11 plant is the second CDM project following one on NO.9 plant applying the same AM0034. As a result, the number of requests is not many. The applicability conditions including designed capacity were clearly justified. The additionality discussion is convincing as there was no incentive to invest for N2O abatement technology in the host country other than revenue from CERs.

One of the key findings was still about additionality discussions because NOx emission from the stack was not always in compliance with statutory requirement in South Africa. However, as repairing on heat exchangers was reasonably considered to fix this temporary problem, and as they made communication to the local authority, discussion about this issue was settled.

Another one of key findings was about the way of determining permitted operating range as the project participants determined them from values stated in the plant operating manual but not from historic campaign data because of very limited records. Justification of insufficient records on historic production parameter has been explicitly requested and finally accepted by the assessment team.

Version 02 of AM0034 requires strict monitoring on both baseline and project emissions, the PDD addressed those requirements generally satisfactorily as a plan at validation including elements of EN14181 which will be realised before implementing the project activity. The result of monitoring including QAL2 result will be the most important issue at verification.

Within the original documents there have been some minor inconsistencies on units and calculations delivering the result on the emission reduction estimation. These inconsistencies have been resolved in the final versions of the submitted documents. The given estimation is reproducible and substantiated by verified data and assumptions.

Compliance to the sustainable environment criteria of South Africa including impacts on various aspects was done comprehensively to cover the issues of the criteria. And EIA study was confirmed to be not applicable by the authority, Department of Agriculture, Conservation and Environment.

Local stakeholder process was also conducted carefully as they tried to let broad stakeholders know the project in various ways, e.g. papers, mails, internet homepage. Though a paper was not used as a media to demand opinion explicitly, the result was considered sufficient.

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:

<table>
<tr><td colspan="2">webpage:
http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=3263&Ebene1_ID=26&Ebene2_ID=919&mode=1</td></tr>
<tr><td colspan="2">Starting date of the global stakeholder consultation process:
2007-05-12</td></tr>
<tr><td>Comment submitted by:
-</td><td>Issues raised:
-</td></tr>
<tr><td colspan="2">Response by TÜV SÜD:
-</td></tr>
</table>

5 VALIDATION OPINION

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

N2O abatement project at nitric acid plant No. 11 at African Explosives Ltd. (AEL), South Africa.

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.

Munich, 2007-09-27

Javier Castro

Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH

Munich, 2007-09-27

Werner Betzenbichler

Assessment Team Leader

Industrie Service

Annex 1: Validation Protocol

Validation Protocol

Project Title: Project for the catalytic reduction of N2O emissions with a secondary catalyst inside the ammonia reactor of the No. 11 nitric acid plant at African Explosives Ltd ("AEL"), South Africa

Date of Completion: 2007-09-27

Number of Pages: 45

Industrie Service

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
A. General description of project activity					
A.1. Title of the project activity					
A.1.1.	Does the used project title clearly enable to identify the unique CDM activity?	1,2,3 ,4,5	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.	☑	☑
A.1.2.	Are there any indication concerning the revision number and the date of the revision?	1,2,3 ,4,5	The revision number and the date of the issuance of this revision are correctly indicated.	☑	☑
A.1.3.	Is this consistent with the time line of the project's history?	1,2,3 ,4,5	The given dates are in consistency with the time line of the project development.	☑	☑
A.2. Description of the project activity					
A.2.1.	Is the description delivering a transparent overview of the project activities?	1,2,3 ,4,5	The description of the project activity delivers a transparent overview of the project activities.	☑	☑
A.2.2.	What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1,2,3 ,4,5	During on-site inspection, several references in this section, e.g. Letter of Endorsement which is actually letter of no objection from South African DNA dated 30 June 2005, certificates of ISO 9001 & 14001, commissioning report issued on 12 Nov. 1979 were confirmed.	☑	☑
A.2.3.	Is the information provided by these proofs consistent with the information provided by the PDD?	1,2,3 ,4,5	YES	☑	☑
A.2.4.	Is all information presented consistent with details provided by further chapters of the PDD?	1,2,3 ,4,5	YES	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
A.3. Project participants					
A.3.1.	Is the form required for the indication of project participants correctly applied?	1,2,3 ,4,5	**Corrective Action Request No.1.** LoAs from both parties shall be obtained before submitting request for registration to UNFCCC.	**CAR#1**	☑
A.3.2.	Is the participation of the listed entities or Parties confirmed by each one of them?	1,2,3 ,4,5	YES, it is.	☑	☑
A.3.3.	Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1,2,3 ,4,5	YES, it is.	☑	☑
A.4. Technical description of the project activity					
A.4.1.	*Location of the project activity*				
A.4.1.1.	Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1,2,3 ,4,5	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.	☑	☑
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.)?	1,2,3 ,4,5	During on-site inspection, the followings were confirmed. - AEL is the owner and operator of NO.11 Plant and bears the project cost itself and that N.serve is the developer and bears only the cost of CDM validation, - DNA Letter of no objection from the department of Minerals and Energy dated 30 June 2005 - Registration Certificate of the plant, NO.11 Nitric Acid with regard to Atmospheric Pollution Prevention ACT, 1965, issued on 12 Dec. 2003. - Letter dated 19/9/06 from the department of Agriculture, con-	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
			servation and environment with regard to no applicable EIA requirement		
A.4.2.	*Category(ies) of project activity*				
A.4.2.1.	To which category(ies) does the project activity belonging to? Is the category correctly identified and indicated?	1,2,3,4,5	The project belongs to category 5 (chemical industries), which is correctly indicated.	☑	☑
A.4.3.	*Technology to be employed by the project activity*				
A.4.3.1.	Does the technical design of the project activity reflect current good practices?	1,2,3,4,5	No doubt, although its' getting common to N2O abatement CDM at nitric acid production. The letter from the Department of Agriculture, Conservation and Environment endorses its' technological additionality.	☑	☑
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?	1,2,3,4,5	YES	☑	☑
A.4.3.3.	Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?	1,2,3,4,5	YES, simple and effective N2O abatement technology installing 2nd catalyst from Annex I countries.	☑	☑
A.4.3.4.	Is the technology implemented by the project activity environmentally safe?	1,2,3,4,5	The additional catalyst is made of precious metals and does not create significant negative environmental effect. Obsolete catalyst is to be recycled.	☑	☑
A.4.3.5.	Is the information provided in compliance with actual situation or planning?	1,2,3,4,5	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 tech-	1,2,3	YES, it is a state of art technology providing significant N2O emis-	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	nology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	,4,5	sion reduction with simple "end of pipe technology"		
A.4.3.7.	Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2,3 ,4,5	Not likely as it is expected to reduce 80-90% of N2O emission.	☑	☑
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?	1,2,3 ,4,5	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 received the training from AMS supplier during the installation of AMS, Jul. 23 and Nov. 28, 2005, not exclusively for NO.9 (the other CDM) & NO.11(this CDM).	☑	☑
A.4.3.9.	Is information available on the demand and requirements for training and maintenance?	1,2,3 ,4,5	Information on this issue is available.	☑	☑
A.4.3.10.	Is a schedule available for the implementation of the project and are there any risks for delays?	1,2,3 ,4,5	YES, schedule was available. The biggest risk would be at schedule of new AMS delivery and at a result of QAL2 test on existing AMS. They will affect on verification, however risks on project implementation was considered insignificant at on-site audit.	☑	☑
A.4.4.	*Estimated amount of emission reductions over the chosen crediting period*				
A.4.4.1.	Is the form required for the indication of projected emission reductions correctly applied?	1,2,3 ,4,5	The PDD uses the correct form in chapter A.4.4	☑	☑
A.4.4.2.	Are the figures provided consistent with	1,2,3	YES	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	other data presented in the PDD?	,4,5			
A.4.5.	*Public funding of the project activity*				
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?	1,2,3 ,4,5	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.	☑	☑
A.4.5.2.	Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1,2,3 ,4,5	See above	☑	☑
B. Application of a baseline and monitoring methodology					
B.1. Title and reference of the approved baseline and monitoring methodology					
B.1.1.1.	Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1,2,3 ,4,5	Reference number, version number, and title of the baseline and monitoring methodology are clearly indicated.	☑	☑
B.1.1.2.	Is the applied version the most recent one and / or is this version still applicable?	1,2,3 ,4,5	The PDD applies AM0034, version 02 and refers in the baseline section to AM0028, version 04.1. For both methodologies the referred version is the most recent one.	☑	☑
B.2. Justification of the choice of the methodology and why it is applicable to the project activity					
B.2.1.1.	Is the applied methodology considered the most appropriate one?	1,2,3 ,4,5	AM0034 is solely addressing the destruction of nitrous oxide by secondary measures. Hence it is considered that AM0034 is the most appropriate choice for this project activity also applying a secondary technology in the ammonia burner of a nitric acid plant.	☑	☑
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";					

<table>
<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td colspan="6"></td></tr>
<tr><td>B.2.2.</td><td>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.</td><td></td><td><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>During on-site inspection, the Commissioning Report of NO.11 Nitric Acid Plant at Modderfontein Factory dated 25 Sep. 1979 was reviewed. It mentions that the plant went into operation in 1979. And the stated designed capacity, 775 tHNO3/day in PDD was justified with the memorandum issued on March 31 1995 which was talking about increasing production capacity from 775 tHNO3/day to 820 tHNO3/day with an additional new air compressor. As the compressor was never functioned, the original capacity has been chosen as the designed capacity.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.3.</td><td>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.</td><td></td><td><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>During on-site audit, no such equipment was not seen both in documents and actually in the site.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.4.</td><td>Criterion 3:
The project activity shall not affect the level of nitric acid production</td><td>1,2,3,4,5</td><td><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></td><td>☑</td><td>☑</td></tr>
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<table>
<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td colspan="2"></td><td></td><td>During on-site inspection, the level of nitric acid production in the past 7 years was shown with records. As NO.11 plant is "base loaded" plant, the production was/is relatively stable. And the current estimation which is 7 years average is regarded consistent and reasonable.</td><td></td><td></td></tr>
<tr><td>B.2.5.</td><td>Criterion 4:
There are currently no regulatory requirements or incentives to reduce levels of N_2O emissions from nitric acid plants in the host country.</td><td>1,2,3,4,5</td><td><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>During on-site inspection, it was discussed and confirmed that there are currently no regulatory requirements or incentives to reduce levels of N_2O emissions from nitric acid plants in South Africa.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.6.</td><td>Criterion 5:
No N_2O abatement technology is currently installed in the plant.</td><td>1,2,3,4,5</td><td><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>No abatement technology installed was seen at on-site audit.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.7.</td><td>Criterion 6:
The project activity will not increase NO_x emissions.</td><td>1,2,3,4,5</td><td><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>No increase of NOx emission is expected with this technology.</td><td>☑</td><td>☑</td></tr>
</table>

<table>
<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.2.8.</td><td>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.</td><td>1,2,3 ,4,5</td><td><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>During on-site inspection, no NOx abatement catalyst was seen both in documents and in the site.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.9.</td><td>Criterion 8:
Operation of the secondary N_2O abatement catalyst installed under the project activity does not lead to any process emissions of greenhouse gases, directly or indirectly.</td><td>1,2,3 ,4,5</td><td><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>As the secondary catalyst does not consume any fuel or energy, there is no significant process emissions of greenhouse gas expected.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.2.10.</td><td>Criterion 9:
Continuous real-time measurements of N_2O 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</td><td>1,2,3 ,4,5</td><td><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>As the baseline campaign had started, such appropriate monitoring system was functioning at on-site audit.</td><td>☑</td><td>☑</td></tr>
<tr><td colspan="6">B.3. Description of the sources and gases included in the project boundary</td></tr>
<tr><td colspan="6">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"</td></tr>
</table>

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
B.3.1.	Source: Waste stream exiting the stack of the Nitirc Acid plant (Burner inlet to stack) Gas(es): N_2O Type: Baseline Emissions and Project Emissions	1,2,3,4,5	<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>	☑	☑
B.3.2.	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?	1,2,3,4,5	Yes. There was no inconsistency between them.	☑	☑
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 04.1.					
B.4.1.	Have all technically feasible baseline scenario alternatives (at least all scenarios listed under step 1a in AM0028, ver. 04.1) to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete?	1,2,3,4,5	YES **Corrective Action Request No.2.** But they were just copied & pasted from AM0028. Please describe specifically to identify which is it.	**CAR#2**	☑
B.4.2.	Have all technically feasible alternatives (at least all scenarios listed under step 1b in AM0028, ver. 04.1) to handle NOx emissions been identified and discussed by the PDD?	1,2,3,4,5	Same as above	☑	☑
B.4.3.	Does the project identify correctly and exclude those options not in line with regula-	1,2,3,4,5	All options comply with regulatory requirements; hence none of them has been eliminated from further discussion.	**CAR#3**	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	tory or legal requirements?		**Corrective Action Request No.3.** However there was an inconsistency between PDD and current situation as NOx emission currently was not always in compliance with regulatory requirement, 200 ppmv. This could make baseline discussion different and might require SCR or NSCR rather than sticking to status quo. As a result of discussion, the auditor has accepted the conclusion of baseline discussion as the leakage in tail gas heaters were found as the cause of NOx increase in tail gas, this fact was communicated to the authority and new heaters had been already ordered. PDD does not describe this fact and thus not project specific.		
B.4.4.	Have applicable regulatory or legal requirements been identified?	1,2,3,4,5	YES The Atmospheric Pollution Prevention Act NO.45 of 1965, the National Environmental Management Quality Act NO.39 of 2004	☑	☑
B.4.5.	Is a complete list of barriers developed that prevent alternatives to occur (step 3a)?	1,2,3,4,5	**Corrective Action Request No.4.** There is no existing SCR NOx abatement catalyst observed at on-site auditing however PDD is stating that "its' operating" in the page 14.	**CAR#4**	☑
B.4.6.	Is transparent and documented evidence provided on the existence and significance of these barriers?	1,2,3,4,5	**Clarification Request No. 1.** Description about technical barriers in PDD is anecdotal and not reasonable. It is trying to say there are technical barriers because of the possibility of inadequate installation however discussion should be made on the assumption that equipment were installed correctly. Rather than way of explanation, there seems to be no technical barriers but financial barriers.	**CR#1**	☑
B.4.7.	Is it transparently shown that at least one of the alternatives is not prevented by the	1,2,3,4,5	See above	**CR#1**	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	identified barriers (step 3b)?				
B.4.8.	Does the PDD include an appropriate discussion if and how any alternatives generate financial or economic benefits? (step 4)	1,2,3,4,5	It is reasonably 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?	1,2,3,4,5	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	☑	☑
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	☑	☑
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	☑	☑
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	☑	☑
B.4.14.	In case of Option II: Have reasonable variations been applied in critical assumptions?		Not applicable	☑	☑
B.4.15.	In case of a re-assessment in the course of the project's lifetime: Are there any new or modified NOx-emission regulations, which may address the project baseline?		Not applicable	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
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	☑	☑
B.4.17.	In case of a re-assessment in the course of the project's lifetime: Are there any new or modified N_2O-emission regulations, which may address the project baseline?		Not applicable	☑	☑
B.4.18.	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	☑	☑
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.5.1.	In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	1,2,3,4,5	As in chapter B.4 the investment analysis has been selected as the appropriate choice of possible methods.	☑	☑
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?	1,2,3,4,5	Yes. It is clearly shown that there is no economical benefit by the reduction of the nitrous oxide concentration other than the CDM revenues.	☑	☑
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	☑	☑
B.5.4.	In case of Option III (benchmark analysis):		Not applicable	☑	☑

	CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
	Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?				
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	☑	☑
B.5.6.	In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?		Not applicable	☑	☑
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	☑	☑
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	☑	☑
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	☑	☑
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)?	1,2,3 ,4,5	Not in PDD. There are the same type of activities, one for NO.9 plant next to this NO.11 being validated now, and ("Sasol Nitrous Oxide Abatement Project") which has been registered as a CDM. However they are not relevant to this baseline discussion because	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
			they are all CDM projects.		
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)?	1,2,3 ,4,5	See above	☑	☑
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)?	1,2,3 ,4,5	Yes. There is no other financial incentive than expected revenue from the CDM. At the on-site audit, economic and financial barriers were justified with evidences, e.g. prices of secondary catalyst, plan for monitoring, etc.	☑	☑
B.6. Emissions reductions					
B.6.1.	Explanation of methodological choices				
B.6.1.1.	Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1,2,3 ,4,5	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.	☑	☑
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?	1,2,3 ,4,5	**Clarification Request No. 2.** Determination of permitted operating range from the manual is allowed if no historic data is available. But, as it reduces related work significantly, any evidence to justify "no sufficient data" is needed, e.g. previous record format, obsolete procedures, etc.	**CR#2**	☑
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?	1,2,3 ,4,5	All formulae are correctly presented.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
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?	1,2,3,4,5	**Corrective Action Request No.5.** PDD describes "Statistical test comparing baseline campaign with normal operating conditions" although it is not applicable in theory because of insufficient availability of historic data. (statistical comparison between data from operational conditions campaign and data from baseline campaign)	**CAR#5**	☑
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	☑	☑
B.6.1.6.	Are the formulae required for the determination of emission reductions correctly presented?	1,2,3,4,5	All formulae are correctly presented.	☑	☑
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?	1,2,3,4,5	Yes *Note:* Baseline campaign result as well as determined permitted operation range will be verified by a verifier. Although indicated as parameter being available at time of validation all other baseline parameter besides the ones listed below under B 6.2.2 will require being verified later in the course of the first verification. Values of the referenced "baseline campaign" as presented by the PDD are considered as input for the emission reduction estimation only.	☑	☑

<table>
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<tr><td colspan="5">Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with "No"</td></tr>
<tr><td>B.6.2.2. Parameter Title:
AFR_{max}
Maximum Ammonia gas flow rate to the AOR</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>Due to existing constraints in data availability this parameter has been determined by using the maximum of daily ammonia gas flow from historic data sets. This figure will be compared to hourly averages in future (AFR see B.7.1.18) to confirm the operation conditions. Hence this approach is conservative.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.3. Parameter Title:
$AIFR_{max}$
Maximum Ammonia to Air ratio</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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></td><td>☑</td><td>☑</td></tr>
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<tr><td>B.6.2.4. Parameter Title:
CL_{normal}
Normal campaign length</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>Correctly calculated from previous production records.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.5. Parameter Title:
OT_{normal}
Normal operating temperature</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>Correctly referred from the manual.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.2.6. Parameter Title:
OP_{normal}
Normal operating pressure</td><td>1,2,3,4,5,9,12,13,</td><td><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></table></td><td>☑</td><td>☑</td></tr>
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<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>14,
15,
16,
17</td><td>
<table>
<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>
Correctly determined from values in the manual.
</td><td></td><td></td></tr>
<tr><td>B.6.2.7. Parameter Title:
GS_{normal},
Normal gauze supplier for the operation condition campaigns</td><td></td><td>
<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>
Heraeus FTCplus (Extra palladium installed to reduce Pt losses) has been used continuously during 12th -16th campaign in accordance with a letter dated on 28th August 2006.
</td><td>☑</td><td>☑</td></tr>
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<tr><th colspan="2">CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.8.</td><td>Parameter Title:
GC_{normal}
Gauze composition during the operation campaign.</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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_{normal}.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.3.</td><td colspan="5">Ex-ante calculation of emission reductions</td></tr>
<tr><td>B.6.3.1.</td><td>Is the projection based on the same procedures as used for future monitoring?</td><td>1,2,3,4,5</td><td>The projection is done by the same algorithms as used for later monitoring.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.3.2.</td><td>Are the GHG calculations documented in a complete and transparent manner?</td><td>1,2,3,4,5</td><td>The calculation of the emission projections are presented in a transparent and complete manner.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.3.3.</td><td>Is the data provided in this section consistent with data as presented in other chapters of the PDD?</td><td>1,2,3,4,5</td><td>The data provided in this section is consistent with data as presented in other chapters of the PDD.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.6.4.</td><td colspan="5">Summary of the ex-ante estimation of emission reductions</td></tr>
<tr><td>B.6.4.1.</td><td>Will the project result in fewer GHG emissions than the baseline scenario?</td><td>1,2,3,4,5</td><td>The project activity will result in emission reductions

<u>Corrective Action Request No.6.</u>
In the excel table of N.DBMS Baseline Calculation, for BE calculation, the equation, "BE=VSG*NCSG*Oh" is not correct as NCSG</td><td>CAR#6</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		is named for the column (ppm) but not for the column (mgN2O/Nm3). The names of parameters shall be the same as one in the methodology.		
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1,2,3,4,5	Yes	☑	☑
B.6.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2,3,4,5	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?	1,2,3,4,5	265,460 tCO2e/year is consistent with other values/figures indicated in PDD. Annual amount over the period is consistent with the schedule too.	☑	☑
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?	1,2,3,4,5	Yes	☑	☑
Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with "No"				
B.7.1.2. Parameter Title: $NCSG_{BC}$ N2O concentration in the stack gas	1,2,3,4,5, 9,12, 13, 14, 15,	Data Checklist: Title in line with methodology? Yes; Data unit correctly expressed? No; Appropriate description of parameter? Yes; Source clearly referenced? Yes		

<table>
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<tr><td></td><td>16,
17</td><td>
<table>
<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>

This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.

<u>Corrective Action Request No.7.</u>
The unit, "ppm" shall be corrected to one indicated in the methodology which is "mgN2O/m3"

ABB Uras14 is going to be installed for project campaigns instead of Environmental SA's MIR9000 which was used during finished baseline campaign. Monitoring results with both are to be verified and determined by a verifier.
QAL2 tests due t EN14181were planned both on existing MIR9000 and on Uras14.</td><td>CAR#7</td><td>☑</td></tr>
<tr><td>B.7.1.3. Parameter Title:
VSG_{BC}
Volume flow rate of the stack gas</td><td>1,2,3
,4,5,
9,12,
13,
14,
15,
16,
17</td><td>
<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>NA</td></tr>
<tr><td>Has this value been verified?</td><td>No</td></tr>
</table>
</td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Choice of data correctly justified? Yes Measurement method correctly described? Yes This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.		
B.7.1.4. Parameter Title: OH_{BC} Operating hours	1,2,3,4,5,9,12,13,14,15,16,17	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? NA Has this value been verified? No Choice of data correctly justified? Yes Measurement method correctly described? Yes This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.	☑	☑
B.7.1.5. Parameter Title: NAP_{BC} Nitric acid (100% concentrated) over base-line campaign	1,2,3,4,5,9,12,13,14,15,	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>16,
17</td><td><table><tr><td>Correct value provided?</td><td>NA</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>
This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.</td><td></td><td></td></tr>
<tr><td>B.7.1.6. Parameter Title:
CL_{BL},
Campaign length of baseline campaign</td><td>1,2,3
,4,5,
9,12,
13,
14,
15,
16,
17</td><td><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>NA</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>
This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.7. Parameter Title:
GS_{BL}
Gauze supplier for baseline campaign</td><td>1,2,3
,4,5,
9,12,
13,
14,</td><td><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></table></td><td>☑</td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>15, 16, 17</td><td><table><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>NA</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>
This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.</td><td></td><td></td></tr>
<tr><td>B.7.1.8. Parameter Title:
GC_{BL},
Gauze composition during baseline campaign</td><td>1,2,3,4,5, 9,12, 13, 14, 15, 16, 17</td><td><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>NA</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>
This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.</td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.9. Parameter Title:
NCSG
N2O concentration in the stack gas</td><td>1,2,3,4,5, 9,12, 13,</td><td><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></table></td><td></td><td></td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>14,
15,
16,
17</td><td>
<table>
<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>
<u>Corrective Action Request No.8.</u>
Please provide a value used to determine "expected emission reduction"
Not only for NCSG but also for other applicable parameters.</td><td>CAR#8</td><td>☑</td></tr>
<tr><td>B.7.1.10. Parameter Title:
VSG
Volume flow rate of the stack gas</td><td>1,2,3
,4,5,
9,12,
13,
14,
15,
16,
17</td><td>
<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>
</td><td></td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><u>Corrective Action Request No.9.</u>
QAL2 test is described in the table of "B.2 VSG_{BC}". On the other hand, QAL2 is not mentioned in this section for project campaigns. The page 6 of the methodology AM0034 states using EN14181 to N2O concentration and gas volume flow.</td><td>CAR#9</td><td></td></tr>
<tr><td>B.7.1.11. Parameter Title:
OH
Operating hours</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>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></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.12. Parameter Title:
NAP
Nitric acid production (100% concentrated)</td><td>1,2,3,4,5,9,12,13,14,</td><td><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></table></td><td>☑</td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>15,
16,
17</td><td>
<table>
<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>

As stated in B.4., the #11 plant is "base-loaded" plant and production was stable and thus continuation of stable production is considered reasonable.</td><td></td><td></td></tr>
<tr><td>B.7.1.13. Parameter Title:
OT_h
Oxidation temperature for each hour</td><td>1,2,3
,4,5,
9,12,
13,
14,
15,
16,
17</td><td>
<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>
<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>

This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.</td><td>☑</td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.7.1.14. Parameter Title:
OP_h
Oxidation Pressure for each hour</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td>
<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>
<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>

This parameter is not measured directly on AOR but on piping between air compressor and Air-NH3 Mixer. The auditor has accepted this way of monitoring because the specifications of manufactures were described in accordance with current configuration, in accordance with sources stated in this table of PDD.

This parameter is listed under section B.6. of the PDD although it will be necessary to monitor it during a baseline campaign which will be verified later by the verifying entity.
</td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.15. Parameter Title:
TSG
Temperature of stack gas</td><td>1,2,3,4,5,9,12,13,14,15,</td><td>
<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>
</table>
</td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
	16, 17	Correct value provided for estimation? N/A 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.7.1.16. Parameter Title: PSG Pressure of stack gas	1,2,3,4,5, 9,12, 13, 14, 15, 16, 17	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? Yes QA/QC procedures appropriate? Yes	☑	☑
B.7.1.17. Parameter Title: AIFR Ammonia to Air ratio	1,2,3,4,5, 9,12, 13, 14, 15, 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? N/A	☑	☑

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td>17</td><td><table>
<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>Yes</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>B.7.1.18. Parameter Title:
AFR
Ammonia gas flow rate to the AOR</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>Yes</td></tr>
<tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr>
</table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.19. Parameter Title:
UNC
Overall measurement uncertainty of the monitoring system</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>No</td></tr>
<tr><td>Choice of data correctly justified?</td><td>Yes</td></tr>
</table></td><td>☑</td><td>☑</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td>Measurement method correctly described? Yes

Currently estimated as 5% and considered as reasonable at validation although it will be verified by a verifier with various operation result, including results of QAL2 test.</td><td></td><td></td></tr>
<tr><td>B.7.1.20. Parameter Title:
CL_n
Campaign length</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>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>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table></td><td>☑</td><td>☑</td></tr>
<tr><td>B.7.1.21. Parameter Title:
$GS_{project}$
Gauze supplier for the project campaigns</td><td>1,2,3,4,5,9,12,13,14,15,16,17</td><td><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>N/A</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></table></td><td>☑</td><td>☑</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Correct reference to standards? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A		
B.7.1.22. Parameter Title: $GC_{project}$ Gauze composition during project campaign	1,2,3,4,5,9,12,13,14,15,16,17	Monitoring Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? N/A 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? N/A Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A	☑	☑
B.7.1.23. Parameter Title: EF_{reg} Emissions level set by incoming policies or regulations	1,2,3,4,5,9,12,13,14,15,16,17	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? N/A Correct reference to standards? Yes		☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
			Indication of accuracy provided? N/A QA/QC procedures described? N/A QA/QC procedures appropriate? N/A **Corrective Action Request No.10.** The auditor agreed that no applicable policy or regulation currently existed as PDD described however "description of measurement method" should describe how to monitor such situation as EF_{BL} shall be restrained immediately in case, e.g. indicating sources of information to be watched, e.g. WEB pages, names of authorities, etc	**CAR #10**	
B.7.2.	*Description of the monitoring plan*				
B.7.2.1.	Is the operational and management structure clearly described and in compliance with the envisioned situation?	1,2,3,4,5	Few are described in PDD however the auditor accepted current description as the essential responsibilities, e.g. maintenance of monitoring equipment, record, forms were defined apparently at on-site audit. It has been considered reasonable at validation.	☑	☑
B.7.2.2.	Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1,2,3,4,5	See above	☑	☑
B.7.2.3.	Does the monitoring plan provide current good monitoring practice?	1,2,3,4,5	Generally Yes. And it addresses major elements sufficiently. However there is a concern left on procedures about Zero/Span check on N2O analyser. Both MIR9000 and Uras14 are/were to be checked periodically however there is no specific reaction plan for "out of tolerance" result although a trained personnel maybe able to take necessary actions. This is to be discussed with a verifier.	☑	☑

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.7.2.4. Has the monitoring system installed using the European Norm 14181 (2004)?	1,2,3,4,5	Its' going to be installed in accordance with EN14181. Further discussion will take place with a verifier. **Corrective Action Request No.11.** Please complete date of QAL2 currently stated as "on XXX 2007", or, state a plan instead as a verifier will check the result of QAL2.	**CAR #11**	☑
B.7.2.5. Will the three quality assurance levels been met by the planned Automated Measuring System (AMS) according to the EN14181?	1,2,3,4,5	QAL3 was being provided by ABB simultaneously with a new N2O analyser although this was to be done by operator's level in principle, e.g. statistical maintenance with control chart. The auditor accepted this plan as PDD described this control anyway although actual result will be discussed by a verifier.	☑	☑
B.7.2.6. Are the specific performance characteristics of the monitoring system chosen by the project listed in the PDD?	1,2,3,4,5	Yes, UNC study was made depend on each characteristics and considered satisfactory as one at validation.	☑	☑
B.7.2.7. Is information on the margins of errors and the cumulative error for the complete measurement system provided in the PDD?	1,2,3,4,5	See above	☑	☑
B.7.2.8. Is the inclusion of external accredited services providers for calibration and function tests foreseen in the planning of the project?	1,2,3,4,5	QAL2 was planned to be implemented by an external accredited laboratory.	☑	☑
B.7.2.9. Are the requirements on the treatment of downtime of the AMS clearly reflected in the envisioned calculation routines?	1,2,3,4,5	OK	☑	☑
B.7.2.10. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring pro-	1,2,3,4,5	OK	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	visions?				
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.8.1.1.	Is there any indication of a date when the baseline was determined?	1,2,3 ,4,5	The date is clearly indicated in PDD.	☑	☑
B.8.1.2.	Is this consistent with the time line of the PDD history?	1,2,3 ,4,5	It is consistent with the time line of the project development.	☑	☑
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 situa-tion?	1,2,3 ,4,5	The information is consistent with the actual situation.	☑	☑
B.8.1.4.	Is information provided whether this per-son / entity is also considered a project participant?	1,2,3 ,4,5	The information is consistent with the actual situation.	☑	☑
C. Duration of the project activity / crediting period					
C.1. Duration of the project activity					
C.1.1.	Are the project's starting date and opera-tional lifetime clearly defined and reason-able?	1,2,3 ,4,5	Yes.	☑	☑
C.2. Choice of the crediting period and related information					
C.2.1.	Is the assumed crediting time clearly de-fined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max.	1,2,3 ,4,5	The crediting period and its type are clearly defined.	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	10 years)?				
D. Environmental impacts					
D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts					
D.1.1.	Has the analysis of the environmental impacts of the project activity been sufficiently described?	1,2,3,4,5	OK	☑	☑
D.1.2.	Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	1,2,3,4,5	The letter from Department of Agriculture, Conservation and Environment dated Sep. 19, 2006 states that this project will not make negative environmental impacts and EIA is not legally requested.	☑	☑
D.1.3.	Will the project create any adverse environmental effects?	1,2,3,4,5	See above	☑	☑
D.1.4.	Were transboundary environmental impacts identified in the analysis?	1,2,3,4,5	To clarify one of criteria of South Africa about sustainable development, obsolete catalyst was explained not to be disposed in South Africa and to be returned to be recycled.	☑	☑
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					
D.2.1.	Have the identified environmental impacts been addressed in the project design sufficiently?	1,2,3,4,5	Yes	☑	☑
D.2.2.	Does the project comply with environmental legislation in the host country?	1,2,3,4,5	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	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
			Sep. 19, 2006.		
E. Stakeholders' comments					
E.1. Brief description how comments by local stakeholders have been invited and compiled					
E.1.1.	Have relevant stakeholders been consulted?	1,2,3,4,5	OK	☑	☑
E.1.2.	Have appropriate media been used to invite comments by local stakeholders?	1,2,3,4,5	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 stakeholder comment, E-mails or post mails were sent to broad 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?	1,2,3,4,5	OK	☑	☑
E.1.4.	Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1,2,3,4,5	OK	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
E.2. Summary of the comments received					
E.2.1.	Is a summary of the received stakeholder comments provided?	1,2,3 ,4,5	OK	☑	☑
E.3. Report on how due account was taken of any comments received					
E.3.1.	Has due account been taken of any stakeholder comments received?	1,2,3 ,4,5	OK	☑	☑
F. Annexes 1 – 4					
F.1. Annex 1: Contact Information					
F.1.1.	Is the information provided consistent with the one given under section A.3?	1,2,3 ,4,5	OK	☑	☑
F.1.2.	Is the information on all private partici-pants and directly involved Parties pre-sented?	1,2,3 ,4,5		☑	☑
F.2. Annex 2: Information regarding public funding					
F.2.1.	Is the information provided on the inclu-sion of public funding (if any) in consis-tency with the actual situation presented by the project participants?	1,2,3 ,4,5	Public funding is not applied for the project. In financing, It is con-firmed that AEL bears the project cost itself and that N.serve bears only the cost of CDM validation.	☑	☑
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?	1,2,3 ,4,5	See above	☑	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
F.3. Annex 3: Baseline information					
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?	1,2,3 ,4,5	N/A at validation	☑	☑
F.3.2.	Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1,2,3 ,4,5	N/A at validation	☑	☑
F.3.3.	Does the additional information substantiate / support statements given in other sections of the PDD?	1,2,3 ,4,5	N/A at validation	☑	☑
F.4. Annex 4: Monitoring information					
F.4.1.	If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1,2,3 ,4,5	**Corrective Action Request No.12.** Please insert "Photographs of the sample conditioning unit (pump and dryer) at No. 11" to correct vacancy here. Please insert "**Photographs of the contents of the housing for the analyser (the MIR 9000 is the box in the middle) and the front cover with display of the analyser.**" to correct vacancy here. Please insert objects for vacancy of "**b. The ABB Uras 14 analyser that will be installed before the beginning of the crediting period**", or please state a plan instead.	**CAR #12**	☑

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
F.4.2.	Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1,2,3 ,4,5	Yes	☑	☑
F.4.3.	Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1,2,3 ,4,5	Yes	☑	☑

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
Corrective Action Request No.1. LoAs from both parties shall be obtained before submitting request for registration to UNFCCC.	A.3.1	Have been obtained and forwarded to the DOE.	LoAs and translations have been obtained from both Parties ☑
Corrective Action Request No.2. But they were just copied & pasted from AM0028. Please describe specifically to identify which is it.	B.4.1	Additional explanations were given in the relevant PDD-sections.	Intention of description and possibility of having other alternatives was discussed at on-site audit and the list in PDD has been concluded as sufficient. ☑
Corrective Action Request No.3. However there was an inconsistency between PDD and current situation as NOx emission currently was not always in compliance with regulatory requirement, 200 ppmv. This could make baseline discussion different and might require SCR or NSCR rather than sticking to status quo. As a result of discussion, the auditor has accepted the conclusion of baseline discussion as the leakage in tail gas heaters were found as the cause of NOx increase in tail gas, this fact was communicated to the authority and new heaters had	B.4.3	Additional explanations were given in the relevant PDD-sections.	PDD has been revised to describe this situation as the same as what the auditor observed. ☑

been already ordered. PDD does not describe this fact and thus not project specific.			
Corrective Action Request No.4. There is no existing SCR NOx abatement catalyst observed at on-site auditing however PDD is stating that "its' operating" in the page 14.	B.4.5.	Amended as requested.	Just a wrong wording in PDD which has simply been corrected to respond this CAR appropriately. ☑
Corrective Action Request No.5. PDD describes "Statistical test comparing baseline campaign with normal operating conditions" although it is not applicable in theory because of insufficient availability of historic data. (statistical comparison between data from operational conditions campaign and data from baseline campaign)	B.6.1.4.	Amended as requested.	PDD has been revised to state how to comply with the methodology. Clear reference to technical manual that have been reviewed is made. ☑
Corrective Action Request No.6. In the excel table of N.DBMS Baseline Calculation, for BE calculation, the equation, "BE=VSG*NCSG*Oh" is not correct as NCSG is named for the column (ppm) but not for the column (mgN2O/Nm3) The names of parameters shall be the same as one in the methodology.	B.6.4.1	Amended. Explanation provided. New N.DBMS tables have been inserted into the PDD.	PDD has been revised to respond this CAR appropriately. ☑
Corrective Action Request No.7. The unit, "ppmv" shall be corrected to one indicated in the methodology which is "mgN2O/m3"	B.7.1.2	Amended. N.serve went through all the table units once and corrected all inconsistencies with AM0034.	PDD has been revised to respond this CAR appropriately. ☑

Corrective Action Request No.8. Please state a value used to determine "expected emission reduction" Not only for NCSG but also for other applicable parameters.	B.7.1.9	The requested additional information has been provided for all tables in section 7.1 of the PDD.	Wording has been revised to indicate how they used value to estimate emission reduction in PDD. ☑
Corrective Action Request No.9. QAL2 test is described in the table of "B.2 VSG_{BC}". On the other hand, QAL2 is not mentioned in this section for project campaigns. The page 6 of the methodology AM0034 states using EN14181 to N2O concentration and gas volume flow.	B.7.1.10	In order to follow up on this, the table in section B.6.2 of the PDD has been amended.	PDD has been revised to respond this CAR appropriately. ☑
Corrective Action Request No.10. The auditor agreed that no applicable policy or regulation currently existed as PDD described however "description of measurement method" should describe how to monitor such situation as EF_{BL} shall be restrained immediately in case, e.g. indicating sources of information to be watched, e.g. WEB pages, names of authorities, etc	B.7.1.23	Additional explanations were given in the relevant PDD-sections.	PDD has been revised to indicate how they watch this parameter. ☑
Corrective Action Request No.11. Please complete date of QAL2 currently stated as "on XXX 2007", or, state a plan instead as a verifier will check the result of QAL2.	B.7.2.4	The PDD has been changed, because the QAL2 tests will be conducted at a later stage.	Amended to state a plan appropriately. ☑
Corrective Action Request No.12. Please insert "Photographs of the sample conditioning unit (pump and dryer) at No. 11" to correct vacancy here.	Annex IV F.4.1.	Photographs have been inserted.	Inserted and amended to complete all. ☑

Please insert "**Photographs of the contents of the housing for the analyser (the MIR 9000 is the box in the middle) and the front cover with display of the analyser.** " to correct vacancy here. Please insert objects for vacancy of "**b. The ABB Uras 14 analyser that will be installed before the beginning of the crediting period**" , or please state a plan instead.			
Clarification Request No. 1 Descriptions about technical barriers in PDD are anecdotal and not reasonable. It is trying to say there are technical barriers because of possibility of inadequate installation however discussion should be made on the assumption that equipment were installed correctly. Rather than way of explanation, there seems to be no technical barriers but financial barriers.	B.4.6.	Amended according to request. Statement about technical barriers has been worded with a higher degree of neutrality.	As long as PDD was amended to call this negligible, the auditor does not need to make further discussion, i.e. the amendment is considered acceptable. ☑
Clarification Request No. 2 Determination of permitted operating range from the manual is allowed if no historic data is available. But, as it reduces related work significantly, any evidence to justify "no sufficient data" is needed, e.g. previous record format, obsolete procedures, etc.	B.6.1.2.	Some amendments to the PDD were undertaken. Also, an additional statement from AEL's project representative Leon Aucamp has been inserted in Annex 6 of the PDD. Samples of manually completed log-sheets as used at AEL prior to the installation of the AMS have been submitted to the DOE to illustrate that the plant's historic operational parameters had not been recorded at that time as required by AM0034.	In addition to the statement letter about unavailability of historic data written by Mr.Aucamp, obsolete record examples, e.g. hand-written one made on 15th April 2006 have been reviewed as an evidence of unavailability. ☑

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
-	-	-

Industrie Service

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1	On-site interview at African Explosive Ltd., (Gauteng, South Africa) by auditing team of TÜV SÜD conducted Wednesday 16th and Thursday 17th May 2007 **Validation team on-site:** Yutaka Yoshida TÜV SÜD Japan, TÜV SÜD Group **Interviewed farms and persons:** Clive Gregor, AEL, Production Engineer Ronnie Huggins, AEL, Instrument Technician Nongezile Nyathi, AEL, Technical Officer Eliasmotile Boroboro, AEL, Process Controller Dennis Gregory, Modderfontein Laboratories Ltd., Managing Director Josias Mokgawa, Modderfontein Laboratories Ltd.
2	Project Design Document “N2O abatement project at nitric acid plant No. 11 at African Explosives Ltd. (AEL), South Africa”,
3	AM0034 : Catalytic reduction of N2O inside the ammonia burner of nitric acid plants --- Version 2
4	AM0028 : Catalytic N2O destruction in the tail gas of Nitric Acid or Caprolactam Production Plants --- Version 4.1
5	Commissioning Report for the NO.11 nitric acid plant at Modderfontein Factory, Report NO DD 79/39/B, 12 November 1979
6	LETTER OF NO OBJECTION, issued by South African DNA, 30 June 2005
7	Memorandum about “The Upgrading study” to increase the production capacity to 775t/d HNO3-100%, March 31, 1995
9	Comparison of the No 11 Production between 2002 and 2006
10	Report of Examination of Vessel (Tail Gas Heater No.1 & No.2) , 23/3/06 & 4/8/2004
11	Certificate of registration for NO.11 Nitric Acid plant in accordance with Atmospheric pollution Prevention Act, 1965 issued by

Reference No.	Document or Type of Information
	Chief Air Pollution Control Officer, 12 December 2003
12	Table 7.14.3.5, List of Alarms and Shutdowns, page 250 in the NO.11 technical manual (TM4)
13	Zero/Span check record examples on N2O analyser, 23/02/2007,12/01/2007
14	Procedures to be followed when installing a new gas calibration cylinder, issued by AEL, 01.08.2006
15	System Overview to estimate UNC, date unknown
16	Annubar Calibration Report and Uncertainty Analysis
17	Operation Procedures for Environment MIR9000 analyser, provided by Environment S.A., April 26,2006
19	The Letter from Department of Agriculture, Conservation and Environment about applicability of Environmental Impact assessment Regulations, 2006, published under the National Environmental Management Act(NEMA) (Act No. 107 of 1998) (as amended) (GN R.385)
20	Notice of a Clean Development Project for local stakeholder process, Newspaper Articles “AEL implements clean development project” on Bedfordview and Edenvais News. September 13 2006, “New project will help curb global warming at Modder” on KEMPTON EXPRESS, September 7 2006
21	Prices of catalyst installed at 5th to 16th campaigns, faxed from Heraeus on 28th August 2006 (confidential documents reviewed by the auditor just to confirm one aspect of the additionality discussion)