Industrie Service

Choose certainty.
Add value.

Validation Report

AGCERT INTERNATIONAL LTD

Validation of the AWMS GHG Mitigation Project, MX06-S-35, Jalisco and Michoacan, Mexico

Report No. 816279 rev. 2

13 November 2006

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.
816279	18 July 2006	2	13 November 2006	-
Subject:		Validation of a CDM Project		
Executing Operational Unit:		TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 - 80686 Munich Federal Republic of Germany		
Contact:		www.tuev-sued.de		
Client:		AgCert International LTD Apex Building, Blackthorn Road, Sanyford Business Park Dublin 18, IRLAND		
Contract approved by:		Werner Betzenbichler		
Report Title:		Validation of the AWMS GHG Mitigation Project, MX06-S-35, Jalisco and Michoacan, Mexico		
Number of pages		22 (excluding annexes and cover page)		

Summary:

The Certification Body ”Climate and Energy” has been ordered by AgCert International LTD (AgCert International) to perform a validation of the above mentioned project.

In summary, it is TÜV SÜD´s opinion that the project “AWMS GHG Mitigation Project, MX06-S-35, Jalisco and Michoacan, Mexico”, as described in the revised project design document of 13 November 2006, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology AMS III.D. / version 09 "Methane recovery"

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 137946 tonnes CO_{2e} over a crediting period of 10 years, resulting in a calculated annual average of 13794 tonnes CO_{2e} represents a reasonable estimation using the assumptions given by the project documents.

Work carried out by:	Thomas Kleiser Javier Castro Ivan Hernandez	Internal Quality Control by:	Werner Betzenbichler

Abbreviations

AgCert Mexico	AgCert México Servicios Ambientales, S. de R.L. de C.V.
AgCert International	AgCert International LTD
AWMS	Animal Waste Management Systems
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DOE	Designated Operational Entity
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
PDD	Project Design Document
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

Table of Contents

1 INTRODUCTION

1.1 Objective

AgCert International LTD has commissioned TÜV SÜD Industrie Service GmbH (TÜV SÜD) to validate the AWMS GHG Mitigation Project, MX06-S-35, Jalisco and Michoacan, Mexico.The validation serves as design verification and is a requirement of all CDM projects. The purpose of a validation is to have an independent third party assess of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakech Accords.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. TÜV SÜD has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The audit team has been provided with the first PDD-version in 16 April 2006. Based on this documentation a document review and a fact finding mission in form of an on-site audit has taken place. The demanded additional information is addressed in annex 1. Requested information was given and the PDD was updated accordingly. That final PDD was submitted in 13 November 2006 and serves as the basis for the final assessment presented herewith. The changes were not significant as only farms had to be removed from the final PDD, thus the global stakeholder process was not repeated.

Studying the existing project documentation, it was obvious that the competence and capability of the validation team has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Environmental and Social Impact Assessment
- Skills in environmental auditing (ISO 14000, EMAS)
- Quality assurance
- Agricultural operations especially regarding manure management
- Technical aspects of gas flaring and bio digester operation
- Monitoring concepts
- Political, economical and technical random conditions in host country

According to these requirements TÜV SÜD has assembled a project team in accordance with the appointment rules of the TÜV certification body “climate and energy”:

Thomas Kleiser is a lead auditor for CDM and JI projects at TÜV Industrie Service GmbH TÜV SÜD Group. In his position he is responsible for the implementation of verification and certifications processes for GHG mitigation projects. He has received extensive training in the CDM and JI validation processes and participated already in more than 20 CDM and JI project assessments.

Javier Castro is an auditor for environmental management systems at the department “Carbon Management Service” in the head office of TÜV Industrie Service GmbH, TÜV Süd Group in Munich. He is specialised in environmental issues.

Ivan Hernandez participated as local auditor in the audit and functioned as local expert. Ivan has received extensive training in the CDM validation processes.

The audit team covers following requirements:

- Knowledge of Kyoto Protocol and the Marrakech Accords (All)
- Environmental and Social Impact Assessment (All)
- Skills in environmental auditing (ISO 14000, EMAS) (All)
- Quality assurance (Thomas Kleiser)
- Agricultural operations especially regarding manure management (Kleiser/ Castro)
- Technical aspects of gas flaring and biodigester operation (Kleiser/ Castro)
- Monitoring concepts (All)
- Political, economical and technical random conditions in host country (Ivan Hernandez/)

In order to have an internal quality control of the project, a team of the following persons has been composed by the certification body “climate and energy”:

Werner Betzenbichler –Head of the Certification Body “Climate and Energy”

1.3 GHG Project Description

The purpose of this project is to mitigate and recover animal effluent related GHG by improving AWMS practices.

This project proposes to apply the Methane Recovery methodology identified in Section III.D, of the Indicative Simplified Baseline and Monitoring Methodologies for Small-Scale CDM Project Activity Categories, to swine CAFOs located in Jalisco and Michoacán, México. The proposed project activities will mitigate and recover AWMS GHG emissions in an economically sustainable manner, and will result in other environmental benefits, such as improved water quality and reduced odour. In simple terms, the project proposes to move from a high-GHG AWMS practice, an open air lagoon, to a lower-GHG AWMS practice, an ambient temperature anaerobic digester with capture and combustion of resulting biogas.

Project participants are AWMS GHG Mitigation Project, MX06-S-35, Jalisco and Michoacan, Mexico Host Party of the project activity is Mexico.

The category of the project activity is in Scope 13 - Waste Handling and Disposal, and Scope 15 – Agriculture. The approved and applied baseline and monitoring methodology is AMS III.D. / version 09 "Methane recovery".

According to the PDD and involved parties the starting date of the project activity is 8 February 2005. The crediting period is committed as a 10 years non renewable crediting period and it starts on 1 September 2006.

2 METHODOLOGY

The validation of the project consists of the following three phases:

- Desk review
- Follow-up interviews
- Resolution of clarification and corrective action requests

In order to ensure transparency, a validation protocol was customized for the project, according to the Validation and Verification Manual. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes 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 Figure 1.

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

Validation Protocol Table 1: Mandatory Requirements			
Requirement	**Reference**	**Conclusion**	**Cross reference**
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Validation report.	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.

Validation Protocol Table 2: Requirement checklist				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	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.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification is used when the validation team has identified a need for further clarification.

Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	**Ref. to checklist question in table 2**	**Summary of project owner response**	**Validation conclusion**
If the conclusions from the draft Validation 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 2 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 summarized in this section.	This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1 Validation Protocol Tables

2.1 Review of Documents

The project design document submitted by the client and additional background documents related to the project design and baseline were reviewed. The audit team has been provided with the first PDD-version issued on 16 April 2006 which had been made public on www.netinform.de under the link:

http://www.netinform.net/KE/Wegweiser/Guide2.aspx?ID=1664&Ebene1_ID=26&Ebene2_ID=464&mode=1. The project design document was assessed by several revisions addressing changes to the baseline and monitoring methodology requested by the CDM Executive Board and clarification requests issued by TÜV SÜD. The final updated PDD submitted on 13 November 2006 serves as the basis for the assessment presented herewith.

2.2 Follow-up Interviews

In 9 - 11 May 2006 TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the farms and AgCert Mexico Servicios Ambientales S. de R.L. de C.V. were interviewed. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Representatives of the farms	• Project design • Technical equipment • Sustainable development issues • Additionality • Crediting period • Monitoring plan • Management system • Environmental impacts

	• Stakeholder process
AgCert Mexico	• Project design • Technical equipment • Sustainable development issues • Baseline determination • Additionality • Crediting period • Monitoring plan • Environmental impacts • Stakeholder process • Approval by the host country

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needed to be clarified for TÜV SÜD's positive conclusion on the project design. The Corrective Action Requests (CAR) and Clarification Requests (CR) raised by TÜV SÜD were resolved during communications between the Client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarized in chapter 3 below and documented in more detail in the validation protocol in Annex 1.

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.

3 VALIDATION FINDINGS

In the following sections the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

1) The findings from the desk review of the project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Validation Protocol in Annex 1.

2) Where TÜV SÜD had identified issues that needed clarification or that represented a risk to fulfil project objectives, a Clarification Request or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Annex 1. The validation of the project resulted in several Corrective Action Requests and Clarification Requests.

3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the Client and TÜV SÜD to resolve these Clarification or Corrective Action Requests is summarized.

4) The final conclusions for validation subject are presented.

The validation findings relate to the project design as documented and described in the final project design documentation.

3.1 General Description of Project Activity

3.1.1 Discussion

The project participant are AgCert International plc and AgCert México Servicios Ambientales, S. de R.L. de C.V. The project is developed by AgCert International LTD. Mexico as the host Party meets all relevant participation requirements. The project has been approved by the national DNA and the Letter of Approval has been issued on 2 May 2006.

The objective of the project “AWMS GHG Mitigation Project, MX06-S-35, Jalisco and Michoacan, Mexico” is to apply to the farm GHG mitigation measures which will mitigate GHG emissions in an economically sustainable manner. The project foresees to replace the open air lagoons by positive pressure covered lagoon cells, creating ambient temperature anaerobic digesters.

The project design does reflect current good practice. The design has been professionally developed. A validation of the compatibility of the single components carried out by the project developer resulted in a positive conclusion. The project does moreover apply state of the art equipment.

The project boundaries are clearly defined. The project bundles 5 farms with installations of digesters in Mexico. During this assessment TÜV SÜD contacted and visited all sites as indicated on the Information Reference List. As the project participant is operating/developing several similar CDM projects in the same or neighbouring region, the validation process has shown that no farm of this project is included in any other existing (draft) PDD.

The project equipment can be expected to run for the whole project period and it can not be expected that it will be replaced by more efficient technologies.

Initial training and maintenance efforts are required. In the PDD and during the visit on site the project developer confirmed that such training has taken place and/or is envisaged. Documentation on executed and/or planned training activities has been submitted.

The project is currently in line with the relevant legislation and plans in the host country. The required environmental licenses are valid and have been submitted to the validation team.

The project is considered to be in line with the sustainable development policies of Mexico as improvements to manure management as well as energy supply are relevant issues in the national Mexican policy. The question can finally be answered with the issuance of the Letter of Approval by the DNA of Mexico.

It can be expected that the project will create additional environmental benefits by reducing emissions of Volatile Organics Compounds (VOCs). The project does moreover improve the quality of the fertilizer produced as a by-product to the farming activities.

The funding for the project does not lead to a diversion of official development assistance, as according to the information obtained by the audit team, ODA does not contribute to the financing of the project.

The project starting date and the operational lifetime are clearly defined. The crediting period is clearly defined.

3.1.2 Findings

Clarification Request No. 1:

San Carlos:

In the PDD this site is described like one farm property of San Carlos ASP SPR de RL, but there are two different sites (one next to the other), one is San Carlos which is conformed for 21 barns and three lagoons (two primary and one secondary); the other farm is Porcicola Angulo property of Ramon Angulo P, this site is conformed for 6 barns and two lagoons. This issue need to be clarified.

Response:

These site has been removed from the PDD. Therefore is the issue solved.

Clarification Request No. 2:

La Soledad

At the moment of the Audit a primary lagoon was operating which is not included in the description of the PDD.

Response:

One of the two original primary lagoons was used for the construction of the digester, and the secondary lagoon is now used as a primary. So this site has two primary lagoons. The PDD has been updated, hence this issue solved.

Clarification Request No. 3:

El Coyote:

The description of the PDD indicates that this site works with one primary lagoon and other secondary lagoon. The way that the lagoon system has been operating is with two primary la-

goons, one receives the manure from 5 barns and the other receives the manure of other 5 barns, there is any connection between these lagoons.

Response:

The PDD has been corrected to reflect the fact that this site has two primary open lagoons.

Clarification Request No. 4:

San Antonio:

There are two carcamos working, in the PDD just is described one.

Response:

These site has been removed from the PDD. Therefore is the issue solved.

Clarification Request No. 5:

La Soledad:

The address described in the PDD is not enough to describe the location. Please clarify this issue.

Response:

La Soledad is in the district of Trejos and the city of Ixtlahuacan del Rio, and is found 3 km. southeast of the Rumbo al Cerro de La Higuera. In addition, GPS coordinates are provided in the PDD. Therewith is this issue clarified.

Clarification Request No. 6:

The project schedule is missing this document needs to be submitted to the validator.

Response:

The missing document has been sent and the same correctly shows the schedule for this project.

3.1.3 Conclusion

The project reflects current good practices, it has been developed in a professionally manner. Additionally it is currently in line whit the national legislation and a letter of approval has been submitted demonstrating that the project is in line with the national sustainable development policies. Furthermore the above mentioned requests are answered sufficiently.

3.2 Baseline Methodology

3.2.1 Discussion

The project is based on the approved methodology: AMS III.D. / version 09 "Methane recovery". The methodology has been approved by the CDM Executive Board. The selected methodology has been designed for this project and hence the project is part of the methodology on which it is build upon. Therefore the respective baseline methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the baseline methodology.

The application of the methodology and the discussion and determination of the baseline are transparent. The application follows exactly each of the steps outlined in the methodology and answers the corresponding sections in a proper manner.

The baseline is been determined using reliable assumptions. The parameter “population” as one of the decisive parameters for the quantitative prognosis is determined by using reliable data and is moreover based on date obtained from a three year period in the past. During the visit on site the availability of such comprehensive data could be observed predominantly. Hence plausible data has been provided from traceable sources ensuring the reliability of the parameter. As the parameter is moreover monitored ex-post and compared with the metered data for biogas flow the correct amount of emissions reductions will be determined in the verification process.

The baseline has been based on project specific data and does sufficiently take into account policies and developments regarding legal, economic and social issues. There is no legal requirement to capture and combust greenhouse gases produced by swine manure in AWMS. There is currently also no planned legislation that is directed towards the emission of GHG as related to AWMS. The open air lagoon is hence considered the common AWMS practice in Mexico.

Concluding it can be stated that it has been made plausible that the chosen baseline scenario is the one deemed most realistic under the given frame conditions.

The project demonstrates via description of barriers that it is not the baseline scenario. Each step of the respective section of the methodology has hereby been applied in a correct manner. The elaborations in the PDD got substantiated by an external expert review. Concluding it has been made clear that the continuation of the AWMS by operating open air lagoons would be the most attractive course of action and hence the baseline scenario.

During the validation process the audit team obtained the information and evidenced that the start of project activities has been before the registration date of the first clean development mechanism project. It is described in detail and based on defined dates how the CDM has been taken into account from the beginning of the project.

The legal constraints and the common practice have been identified as potential risks to the baseline. The subsequent evaluation resulted in the assessment that no major risks to the baseline exist. This assessment is considered as being plausible.

References have been made to all data sources used.

3.2.2 Findings

Corrective Action Request No.1:

- Tejas 1
- San Antonio

To determinate the baseline in a conservative way (for the sites listed above) it should be considered the operation of solid separators, taking in account the time that were operating.

Response:

These sites have been removed from the PDD. Hence this issue is solved.

Corrective Action Request No.2:

- San Antonio
- San Carlos

To determinate the baseline in a conservative way (for the sites listed above) it should be considered the manure removal form the gestation area realized like common practice of cleanness. It should be considerate in the assumptions.

Response:

These sites have been removed from the PDD. Hence this issue is solved.

Corrective Action Request No.3:

- Rancho San Miguel
- La Soledad

The canals through the manure are transported to the lagoons shows a lot of solids accumulation. This issue needs to be considered in the assumptions.

Response:

The sites use canals made of dirt, and there is a thin crust of manure on the surface of the canals, but all of the effluent reaches the canals underneath the crust. In the future, the farmer will install PVC piping to direct the manure to the lagoon rather than the dirt canals.Hence this issue has been solved.

Corrective Action Request No.4:

La Soledad:

Five barns Keep the manure in the fosas during three months approximately, and just are discharged when the fosas are filled.

Response:

The system has Pull-plug as its AWMS, and whatever is left over after pulling and plugging the “fosa” is minimal (appx. 0.01% of the total manure that leads to the lagoon). The pulling and plugging happens daily. The “fosas” are cleaned every 3 months. All of the manure flows to the lagoon. This approach is technically correct and plausible therefore this issue has been closed.

Clarification Request No. 7:

- Tejas 1

The lagoons of this site receive manure from a Dairy cattle farm, it is not described in the PDD.

Response:

These site has been removed from the PDD. Hence this issue is solved.

3.2.3 Conclusion

It has been made plausible that the chosen baseline scenario is the one deemed most realistic under the given frame conditions. Furthermore the above mentioned requests are answered sufficiently.

3.3 Duration of the Project / Crediting Period

3.3.1 Discussion

The duration of the project and crediting period are clearly define in the chapter C of the PDD. The starting date of the project is 8 February 2005, and the starting date of the period is stated as on 1 September 2006. The same was confirmed during the on-site visit.

3.3.2 Findings

None

3.3.3 Conclusion

The project does comply with the environmental requirements.

3.4 Monitoring Plan

3.4.1 Discussion

The project is based on an approved monitoring methodology AMS III.D. / version 09 "Methane recovery". The methodology has been approved by the CDM Executive Boar.

The selected methodology has been designed for this project and hence the project is part of the methodology it is build upon. Therefore the respective monitoring methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the monitoring methodology.

Details of the methodology as parameters to be obtained, recording frequency and archiving methods are considered being reasonable and appropriate.

The methodology and its application are described in detail and in a transparent manner. During the visit on site the implementation of the operations and maintenance manual and the data management system in order to ensure a proper implementation of the monitoring plan could be evidenced.

The monitoring plan does include all relevant parameters to determine baseline and project emissions and it is possible to monitor and/or measure the currently specified GHG indicators. The indicator methane content will be measured quarterly and more frequently if necessary. The Flare efficiency is monitored by the two components. The first component is the fraction of time which will be assessed weekly, in case the flare is not working the time is based on the last positive documented check to assure a continuous functionality of the sparking system that is used. The second is the efficiency of the flaring which will be tested by a certified laboratory using national standards. The parameters defined allow calculating the baseline and projecting emissions in a proper manner as described in chapter D.3 of the PDD.

In accordance with the baseline methodology contained in appendix B of the simplified M&P for small scale CDM project activities, leakage calculations are not required and renewable energy equipment used in this proposed project activity is being supplied new.

The project is considered to have no negative environmental, social and economic effects and a monitoring of such data is also not required by the applied monitoring methodology. This approach is deemed sufficient.

The PDD in combination with the Operations and Maintenance Manual does clearly indicate the authority and responsibilities within the given project structure. During the visit on site it has

been described in detail how the respective organizational structure is already implemented and/ or planned. During the visit on site the validation team moreover realized that the project owner is well aware of the tasks and responsibilities.

The overall management responsibility is with AgCert International, Ireland. The company operates also trained staff in Mexico. The farm owner or representatives supports the AgCert staff during the on site audits and carries out the daily supervision of the project components and their performance. The responsibilities for each task are clearly defined and allocated to the Farm owners, AgCert and the service providers.

The quality and environmental management system (QMS and EMS), currently under implementation within AgCert, will help to support the project participants in operating the respective organizational structure.

3.4.2 Findings

Clarification Request No. 8:

The detail of the metering equipment needs to be submitted to the validator including the analysis methods.

Response:

This information is correctly provided in Section D.5 of the PDD.

3.4.3 Conclusion

The QA/QC manual for all involved staff is sufficient. The validation team agreed with the parameters to be monitored to estimate and or calculate the emission reductions.

The QA/QC manual for all involved staff and their responsibility regarding monitoring is ruled sufficiently. Signed contracts are submitted to the validation team.

The validation team can not identify any risks due to inadequate management structure or quality assurance. The above mentioned request is answered sufficiently.

3.5 Calculation of GHG Emissions by Source

3.5.1 Discussion

The project spatial boundaries are clearly described and limited to the farm site. An exact and correct description of the project boundaries is included in chapter B.4 of the PDD.

The projects components are clearly defined in the PDD and described in figure B1 of the PDD. During the visit on site the given information has been confirmed.

Details of direct and indirect emissions are discussed in the PDD in an appropriate manner. All aspects are covered by the current approach. Methane (CH4) emissions have been considered.

The calculations resulting in the final numbers have been submitted. The formulae used are correctly applied.

Since most estimates are derived from accepted international sources, it seems reasonable to assume that they are accurate. The approach is deemed sufficient.

According to the methodology leakage is not necessary to be addressed.

Concluding it can be stated that the project emissions will be reduced compared to the baseline scenario by 137946 tonnes CO_{2e} over a crediting period of 10 years, resulting in a calculated annual average of 13794 tonnes CO_{2e}.

3.5.2 Findings

Corrective Action Request No.5:

The values showed in the PDD in the section E.2 are not the values used to calculate the EF. The values showed are for dairy cattle characteristics not for swine characteristics. This issue needs to be corrected.

Response:

The PDD has been correctly updated.

3.5.3 Conclusion

The calculation of GHG emissions and used data are according to applied methodology and its requirements. The above mentioned request is answered sufficiently.

3.6 Environmental Impacts

3.6.1 Discussion

The environmental impacts can be seen as being low. These low impacts have been sufficiently described in the PDD.

The legislation does not require an EIA for this type of project. Negative environmental effects are not expected to be created by the project. Given the nature of the project design this seems to be reasonable.

Transboundary effects are not expected as the project site is far from the national boundary.

As no significant environmental impacts are expected, such impacts have not influenced the project design.

3.6.2 Findings

None

3.6.3 Conclusion

The project does comply with the environmental requirements.

3.7 Comments by Local Stakeholders

3.7.1 Discussion

A formal consultation process with local stakeholders has taken place and corresponding information has been submitted to the audit team. The stakeholders consulted included people from the local community and also the representatives of the local communities and the states. In addition neighbours to the site have been interviewed.

The stakeholders have been invited to meetings via post and electronic mail and which has also been published in local and regional newspapers.

No stakeholder process is required according to national legislation.

The comments to the project design have been recorded and provided. As all comments have been positive, the project design has not been changed due to stakeholder comments.

3.7.2 Findings

None

3.7.3 Conclusion

The Comments of the stakeholders were without exception positive. The project does comply with the requirements.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on its website from 25 April 2006 to 24 May 2006 and invited comments within 30 days, by Parties, stakeholders and non-governmental organizations.

The following site has been installed:

http://www.netinform.net/KE/Wegweiser/Guide2.aspx?ID=1665&Ebene1_ID=26&Ebene2_ID=464&mode=1

During the commenting period there have been no comments received.

5 VALIDATION OPINION

The Certification Body ”Climate and Energy” has been ordered by AgCert International LTD to validate the project AWMS GHG Mitigation Project, MX06-S-35, Jalisco and Michoacan, Mexico .

By avoiding GHG emissions from open air lagoons, the project results in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of investment, technological and legal barriers 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.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 137946 tonnes CO_{2e} over a crediting period of 10 years, resulting in a calculated annual average of 13794 tonnes CO_{2e} represents a reasonable estimation using the assumptions given by the project documents.

It is opinion of TÜV SÜD that the project as described in the final project design document issued on 13 November 2006, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board; furthermore that the project meets all relevant host country criteria and correctly applies the baseline and monitoring methodology AMS III.D. / version 09 "Methane recovery"

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

The written approval of the DNA of Mexico including confirmation that the project assists in achieving sustainable development, dated 2 May 2006 has been submitted to the validator

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, 13.11.06

Werner Betzenbichler

Head certification body
“climate and energy“

Munich, 13.11.06

Thomas Kleiser

Project Manager

Annex 1: Validation Protocol

Table 1 Project's Environment

REQUIREMENT	REFERENCE	Comment	CONCLUSION
1. The host country shall be a Party to the Kyoto Protocol	Marrakech Accords, CDM Modalities §30	Mexico has the Kyoto Protocol ratified on 7th September, 2000.	☑
2. Parties participating in the CDM shall designate a national authority for the CDM	Marrakech Accords, CDM Modalities §29	The "Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT) is the designated national authority for the CDM in Mexico.	☑
3. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof.	Kyoto Protocol Art. 12.2, Marrakech Accords, CDM Modalities §40a	Mexico DNA already has issued the Letter of Approval (LoA) for this project on May 2nd, 2006 The approval does contain all elements specified in EB 16, annex 6.	☑
4. The project shall have the written approval of voluntary participation from the designated national authorities of each party involved.	Kyoto Protocol Art. 12.5a, Marrakech Accords, CDM Modalities §40a	See point 3.	☑
5. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3. A letter of approval for participants originating from Annex-I-Countries should be available.	Kyoto Protocol Art.12.2	Not applicable, the project is unilateral	☑
6. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation re-	Marrakech Accords, CDM Modalities, §40	A global public stakeholder process on the UNFCCC website started on	☑

REQUIREMENT	REFERENCE	Comment	CONCLUSION
quirements for minimum 30 days, and the project design document and comments have been made publicly available		25 Apr 06 finished on 24 May 06 (see link: http://www.netinform.net/KE/Wegweiser/Guide2.aspx?ID=1665&Ebene1_ID=26&Ebene2_ID=464&mode=1	
7. The project design document shall be in conformance with the UNFCCC CDM-PDD format	Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The PDD is in conformance with the currently valid CDM Project Design Document for small-scale project activities (version 02).	☑
8. The project participants shall submit a letter on the modalities of communication (MoC) before submitting a request for registration	EB-09 F_CDM_REG form	The MoC April 17, 2006 has been submitted to the validator	☑

Industrie Service

Table 2 PDD

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of Project Activity					
A.1. Project Title					
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1-3, 4, 7, 9, 11, 16	DR, I	Yes, the bundling is clearly defined and explains in the PDD and Bundling Form.	☑	☑
A.1.2. Are there an indication of a revision number and the date of the revision?	1-3, 13	DR, I	Yes	☑	☑
A.1.3. Is this in consistency with the time line of the project's history?	1-3	DR, I	Yes	☑	☑
A.2. Description of the project activity					
A.2.1. Is the description delivering a transparent overview of the project activities?	1-3	DR, I	Yes, the PDD is clearly defined.	☑	☑
A.2.2. Is all information provided in compliance with actual situation or planning?	1-3	DR, I	Yes	☑	☑
A.2.3. Are proofs available evidencing all information with relevance for the validity, for the determination of baseline and project emissions and for emission projections?	1-3	DR, I	The information given in the PDD, e.g. the animal population, was confirmed in the main during the on-site visit.	☑	☑
A.2.4. Is all information provided in consistency with	1-3,	DR,	No, see the next CARs:	CR 1	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
details provided by further chapters of the PDD?	4, 13	I	**Corrective Action Request No.1.** San Carlos: In the PDD this site is described like one farm property of San Carlos ASP SPR de RL, but there are two different sites (one next to the other), one is San Carlos which is conformed for 21 barns and three lagoons (two primary and one secondary); the other farm is Porcicola Angulo property of Ramon Angulo P, this site is conformed for 6 barns and two lagoons. This issue need to be clarified. . **Corrective Action Request No.2.** - La Soledad At the moment of the audit a primary lagoon was operating which is not included in the description of the PDD. **Corrective Action Request No.3.** El Coyote: The description of the PDD indicates that this site works with one primary lagoon and other secondary lagoon. The way that the lagoon system has been operating is with two primary lagoons, one receives the ma-	CR 2 CR 3 CR 4	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			nure from 5 barns and the other receives the manure of other 5 barns, there is any connection between these lagoons. **Corrective Action Request No.4.** San Antonio: There are two carcamos working, in the PDD just one is described.		
A.3. Project Participants					
A.3.1. Is the form required for the indication of project participants correctly applied?	1-3, 4, 11, 16	DR, I	Yes	☑	☑
A.3.2. Is the voluntary participation of all listed entities or Parties confirmed by each of them?	1-3, 4	DR, I	Yes	☑	☑
A.3.3. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1-3	DR, I	Yes	☑	☑
A.4. Technical description of the project activity					
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1-3, 4, 6	DR, I	Yes in the main. **Corrective Action Request No.5.** La Soledad: The address described in the PDD is not enough to describe the location. Please	CR 5	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			clarify this issue.		
A.4.2. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	1-3, 5, 7	DR, I	Yes, all the entities involved in the project possess the licenses and the document that accredit the ownership.	☑	☑
A.4.3. Is the category(ies) of the project activity correctly identified?	1-3, 4, 11, 16	DR, I	The category of the bundling are clearly identified in the PDD	☑	☑
A.4.4. Does the project design engineering reflect current good practices?	1-3, 6, 15	DR, I	Yes	☑	☑
A.4.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	1-3, 6	DR, I	The description of the technology used is clear and explain how the reduction of the greenhouse gas emissions will be achieved.	☑	☑
A.4.6. Is the brief explanation how the project will reduce greenhouse gas emission transparent and suitable?	1-3, 6	DR, I	Yes, see comment above	☑	☑
A.4.7. Is all information provided in compliance with actual situation or planning as available by the project participants?	1-3, 5, 6, 7	DR, I	Yes.	☑	☑
A.4.8. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1-3, 6	DR, I	Yes, the technology used is not common in the hot country the project will improve the practice.	☑	☑
A.4.9. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1-3, 6	DR, I	No.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.10. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1-3, 6	DR, I	Yes, the training and a maintenance plan are considered. A manual in the host country language with this information was summated to the validator.	☑	☑
A.4.11. Does the project make provisions for meeting training and maintenance needs?	1-3, 6	DR, I	Yes,	☑	☑
A.4.12. Is a schedule available on the implementation of the project and are there any risks for delays?	1-3, 5-8	DR, I	Yes, the construction of the project is implemented under schedule. **Clarification Request No. 1** The project schedule is missing this document needs to be submitted to the validator.	CR 6	☑
A.4.13. Is the form required for the indication of projected emission reductions correctly applied?	1-3, 11, 13, 16	DR, I	Yes.	☑	☑
A.5. Public Funding					
A.5.1. Is all information on public funding provided in compliance with actual situation or planning as available by the project participants?	1-3, 5, 7, 17	DR, I	The project does not use any public funding.	☑	☑
A.5.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 2)?	1-3, 4, 11, 16	DR, I	Yes	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B. Baseline Methodology					
B.1. Choice and Applicability					
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	1-3, 4, 11	DR, I	Yes	☑	☑
B.1.2. Is the choice of the methodology correctly justified by the PDD?	1-3, 4, 11	DR, I	Yes	☑	☑
B.1.3. Is the baseline methodology the one deemed most applicable for this project?	1-3, 4, 11	DR, I	Yes. The methodology AMS III. D. is the only approved small-scale methodology applicable for this project	☑	☑
B.1.4. Is the project in conformance with all applicability criteria of the applied methodology?	1-3, 4, 11	DR, I	Yes	☑	☑
B.2. Application of the Baseline Methodology / Identification of the Baseline Scenario					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	1-3, 4, 11	DR, I	Yes. The application is correct	☑	☑
B.2.2. Does the application consider all potential baseline scenarios in the discussion?	1-3, 4, 5, 7, 9, 10, 11	DR, I	Yes.	☑	☑
B.2.3. Is conservativeness addressed in the way of identifying the baseline?	1-3, 4, 5, 7, 9,	DR, I	**Corrective Action Request No.1.** - Tejas 1 - San Antonio	CAR 1 CAR 2	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	10, 11		To determinate the baseline in a conservative way (for the sites listed above) it should be considered the operation of solid separators, taking in account the time that were operating. **<u>Corrective Action Request No.2.</u>** - San Antonio - San Carlos To determinate the baseline in a conservative way (for these sites) it should be considered the manure removal from the gestation area realized like common practice of cleanness. It should be considerate in the assumptions. **<u>Corrective Action Request No.3.</u>** - Rancho San Miguel - La Soledad The canals through the manure are transported to the lagoons shows a lot of solids accumulation. This issue needs to be considered in the assumptions. **<u>Corrective Action Request No.4.</u>** La Soledad: Five barns keep the manure in the fosas during three months approximately, and just are discharged when the fosas are filled.	CAR 3 CAR 4	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			This issue should be address in the PDD and in the calculations		
B.2.4. Has the baseline been established on a project-specific basis?	1-3, 4, 5, 7, 9, 10, 11	DR, I	See B.2.3	OPEN	☑
B.2.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1-3, 4, 5, 7, 9, 10, 11	DR, I	Yes.	☑	☑
B.2.6. Is the baseline determination compatible with the available data?	1-3, 4, 5, 7, 9, 10, 11	DR, I	See CARs and CRs above	OPEN	☑
B.2.7. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	1-3, 4, 5, 7, 9, 10, 11	DR, I	See CARs and CRs above	OPEN	☑
B.2.8. Does the PDD follow the approach for identifying the baseline scenario as given by the approved methodology?	1-3, 4, 5, 7, 9, 10,	DR, I	See CARs and CRs above	OPEN	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	11				
B.2.9. Is all literature and sources clearly referenced?	1-3, 4, 5, 7, 9, 10, 11	DR, I	Yes.	☑	☑
B.3. Additionality					
B.3.1. Is the discussion of how emission reductions are archived by the project scenario in comparison to the identified project scenario provided in a transparent manner?	1-3, 4, 5, 7, 9, 10, 11, 12	DR, I	Yes	☑	☑
B.3.2. In case of using calculation models in order to demonstrate emission reductions: Are all formulae and input data based on provable records?	1-3, 4, 5, 7, 9, 10, 11, 12, 13	DR, I	Not applicable	☑	☑
B.3.3. Does the PDD clearly demonstrate the additionality using the approach as given by the methodology?	1-3, 4, 5, 7, 9, 10, 11,	DR, I	Yes the barriers approach is used to demonstrate the additionality	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	12				
B.3.4. In case of using the additionality tool: Are all steps followed in a transparent and provable manner?	1-3, 4, 5, 7, 9, 10, 11, 12	DR, I	Not applicable	☑	☑
B.3.5. Does the discussion sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1-3, 4, 5, 7, 9, 10, 11, 12	DR, I	Yes. National policies are included in the discussion	☑	☑
B.3.6. Does the CDM registration have any impact on the implementation of the project?	1-3, 4, 5, 7, 9, 10, 11, 12	DR, I	Yes	☑	☑
B.3.7. Is the approach for demonstrating additionality provided by the most recent (or still applicable) methodology correctly applied?	1-3, 4, 5, 7, 9, 10, 11, 12	DR, I	Yes	☑	☑
B.3.8. Are other proofs than anecdotal evidence for all assumptions and statements used by the addi-	1-3, 4, 5,	DR, I	Some assumptions are confirmed with the LoA and other during the visit on-site	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
tionality discussion?	7, 9, 10, 11, 12				
B.4. Project Boundary					
B.4.1. Are all emission related to the baseline scenario clearly identified and described in a complete manner?	1-3, 4, 5, 7, 9, 10, 11, 12, 13	DR, I	No. **Clarification Request No. 2** - Tejas 1 The lagoons of this site receive manure from a dairy cattle farm, it is not described in the PDD.	CR 7	☑
B.4.2. In case of grid connected electricity projects: Is the relevant grid correctly identified due to the EB guidance and the underlying methodology?	1-3, 4, 11, 13	DR, I	Not applicable	☑	☑
B.4.3. Are all emission related to the project scenario clearly identified and described in a complete manner?	1-3, 4, 11, 13	DR, I	Yes	☑	☑
B.4.4. Are all emission related to leakage clearly identified and described in a complete manner?	1-3, 4, 11, 13	DR, I	There is no leakage in this project.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.5. Detailed Baseline Information					
B.5.1. Is there any indication of a date when determine the baseline?	1-3, 4, 5, 7, 11, 13	DR, I	Yes, the data use to calculate the baseline emission is base on the inventory data of January to December 2005.	☑	☑
B.5.2. Is this in consistency with the time line of the PDD history?	1-3, 4, 5, 7, 11, 13	DR, I	Yes	☑	☑
B.5.3. Is all data required provided in a complete manner by annex 3 of the PDD?	1-3, 4, 5, 7, 11, 13	DR, I	The baseline is given in the methodology. Small scale projects do not have an annex 3	☑	☑
B.5.4. Is all data given in compliance with the methodology?	1-3, 4, 5, 7, 11, 13	DR, I	Yes	☑	☑
B.5.5. Is all data evidence by official data sources or replicable records?	1-3, 4, 5, 7, 11, 13	DR, I	Yes	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.5.6. Is the vintage of the baseline data correct?	1-3, 4, 5, 7, 11, 13	DR, I	Yes	☑	☑
***C.* Duration of the Project / Crediting Period**					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1-3	DR, I	Yes	☑	☑
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1-3	DR, I	Yes	☑	☑
D. Monitoring Plan					
D.1. Monitoring Methodology					
D.1.1. Is the monitoring methodology previously approved by the CDM Methodology Panel?	1-3, 5, 7, 9, 10, 11, 16	DR, I	Yes	☑	☑
D.1.2. Is the choice of the methodology correctly justified by the PDD?	1-4, 16	DR, I	Yes	☑	☑
D.1.3. Is the project in conformance with all applicability criteria of the applied methodology?	1-4, 16	DR, I	Yes	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.1.4. Does the monitoring methodology provide a consistent approach in the context of all parameter to be monitored and further information provided by the PDD?	1-4, 16	DR, I	The PDD include the necessary parameter for the calculations.	☑	☑
D.1.5. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	1-4, 16	DR, I	Yes as far as the latest EB decisions are taking into account.	☑	☑
D.2. Monitoring of Project Emissions (if applied)					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	1-4, 6, 8, 16	DR, I	The monitoring plan does include relevant parameters to determine project emissions. Due to the choice made regarding the monitoring approach only the relevant parameters have been selected.	☑	☑
D.2.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	1-4, 6, 8, 13, 16	DR, I	Yes. Due to the choice made regarding the monitoring approach only the relevant parameters have been selected.	☑	☑
D.2.3. Will it be possible to determine the specified project GHG indicators?	1-4, 6, 8, 13, 16	DR, I	Yes, it is possible to monitor and/or measure the currently specified GHG indicators. The indicators which are not measured can be obtained from IPCC documents. Data is collected by the AgCert Regional Maintenance Technician and transferred to AgCert headquarters as stated in section 6.0 of the AgCert O&M Plan.	☑	☑
D.2.4. Will the indicators enable comparison of project data and performance over time?	1-4, 6, 8,	DR, I	Yes.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	13, 16				
D.2.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	1-4, 6, 8, 13, 16		See CR 8	CAR 8	☑
D.2.6. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1-4, 6, 8, 13, 16	DR, I	Yes.	☑	☑
D.2.7. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	1-4, 6, 8, 13, 15, 16	DR, I	Yes.	☑	☑
D.2.8. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	1-4, 6, 8, 13, 16	DR, I	Yes.	☑	☑
D.3. Monitoring of Baseline Emissions (if applied)					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions of the baseline emissions during the crediting period?	1-4, 6, 8, 13, 16	DR, I	Yes, the monitoring plan does include all relevant parameters to determine project emissions. Due to the choice made regarding the monitoring approach only the relevant parameters have been selected.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.3.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	1-4, 6, 8, 13, 16	DR, I	Yes. Due to the choice made regarding the monitoring approach only the relevant parameters have been selected.	☑	☑
D.3.3. Will it be possible to determine the specified project GHG indicators?	1-4, 6, 8, 13, 16	DR, I	Yes, it is possible to monitor and/or measure the currently specified GHG indicators. The indicators which are not measured can be obtained from IPCC documents.	☑	☑
D.3.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	1-4, 6, 8, 13, 16	DR, I	**Clarification Request No. 3** The detail of the metering equipment need to be submitted to the validator including the analysis methods.	CR 8	☑
D.3.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1-3, 6, 16	DR, I	Yes.	☑	☑
D.3.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	1-3, 6, 15, 16	DR, I	Yes.	☑	☑
D.3.7. Are all formulas used to determine baseline emission clearly indicated and in compliance with the monitoring methodology.	1-3, 6, 16	DR, I	Yes.	☑	☑
D.4. Direct Monitoring of Emission Reductions (if applied)					
D.4.1. Does the monitoring plan provide for the collec-	1-3,	DR,	The monitoring plan does include relevant	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
tion and archiving of all relevant data necessary for estimation or measuring directly the greenhouse gas emissions reductions during the crediting period?	6, 16	I	parameters to determine project emissions. Due to the choice made regarding the monitoring approach only the relevant parameters have been selected.		
D.4.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	1-3, 6, 16	DR, I	Yes. Due to the choice made regarding the monitoring approach only the relevant parameters have been selected.	☑	☑
D.4.3. Will it be possible to determine the specified project GHG indicators?	1-3, 6, 16	DR, I	Yes, it is possible to monitor and/or measure the currently specified GHG indicators. The indicators which are not measured can be obtained from IPCC documents. Data is collected by the AgCert Regional Maintenance Technician and transferred to AgCert headquarters as stated in section 6.0 of the AgCert O&M Plan.	☑	☑
D.4.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	1-3, 6, 16	DR, I	See CR 8	CAR 8	☑
D.4.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1-3, 6, 16	DR, I	Yes.	☑	☑
D.4.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable	1-3,	DR, I	Yes.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
and reasonably acceptable accuracy?	6, 15, 16				
D.4.7. Are all formulae used to determine project emission reductions clearly indicated and in compliance with the monitoring methodology.	1-3, 6, 16	DR, I	Yes.	☑	☑
D.5. Monitoring of Leakage (if applicable)					
D.5.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring of leakage emissions during the crediting period?	1-3, 6, 16	DR, I	Not applicable	☑	☑
D.5.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	1-3, 6, 16	DR, I	Not applicable	☑	☑
D.5.3. Will it be possible to determine the specified project GHG indicators?	1-3, 6, 16	DR, I	Not applicable	☑	☑
D.5.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	1-3, 6, 16	DR, I	Not applicable	☑	☑
D.5.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended	1-3, 6, 16	DR, I	Not applicable	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
changes in data records?					
D.5.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	1-3, 6, 15, 16	DR, I	Not applicable	☑	☑
D.5.7. Are all formulas used to determine leakage emissions clearly indicated and in compliance with the monitoring methodology.	1-3, 6, 16	DR, I	Not applicable	☑	☑
D.6. Determination of Emission Reductions					
D.6.1. Are all formulas used to determine leakage emissions clearly indicated and in compliance with the monitoring methodology.	1-3, 6, 13, 16	DR, I	Not applicable	☑	☑
D.6.2. Is the information given for each calculated variable sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1-3, 6, 13, 16	DR, I	Not applicable	☑	☑
D.7. Quality Control (QC) and Quality Assurance (QA) Procedures					
D.7.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.7.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.7.3. Are quality control procedures and quality as-	1-4,	DR,	Yes, all the consideration has been taking.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
surance procedures sufficiently described to ensure the delivery of high quality data?	6, 8, 16	I	to ensure the data quality		
D.7.4. Is it ensured that data will be bound to national or internal reference standards?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.7.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.8. Operational and management structure					
D.8.1. Is the authority and responsibility of project management clearly described?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.8.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.8.3. Are procedures identified for training of monitoring personnel?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.8.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	1-4, 6, 8, 16	DR, I	Yes.	☑	☑
D.9. Monitoring Plan (Annex 4)					
D.9.1. Is the monitoring plan developed in a project	1-4,	DR,	No annex 4 is required	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
specific manner clearly addressing the unique features of the CDM activity?	6, 8, 16	I			
D.9.2. Does the monitoring plan completely describes all measures to be implemented for monitoring all parameter required?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.3. Does the monitoring plan completely describes all measures to be implemented for ensuring data quality of all parameter to be monitored?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.4. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.5. Are procedures identified for calibration of monitoring equipment?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.6. Are procedures identified for maintenance of monitoring equipment and installations?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.7. Are procedures identified for monitoring, measurements and reporting?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.10. Does the monitoring plan provide procedures	1-3,	DR,	No annex 4 is required	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
identified for troubleshooting allowing redundant reconstruction of data in case of monitoring problems?	16	I			
D.9.11. Are procedures identified for review of reported results/data?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.12. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.13. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	1-3, 16	DR, I	No annex 4 is required	☑	☑
D.9.14. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	1-3, 16	DR, I	No annex 4 is required	☑	☑
E. Calculation of GHG Emissions by Source					
E.1. Predicted Project GHG Emissions					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	1-3, 111, 13, 14	DR, I	Yes	☑	☑
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	1-3, 11, 13-14	DR, I	No, the values used to calculate the Emission Factor are base in the IPCC values, but the values showed in the PDD (section E.2, Table E6) are not the values used to calculate the EF.	CAR 5	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Corrective Action Request No.5. The values showed in the PDD in the section E.2 are not the values used to calculate the EF. The values showed are for dairy cattle characteristics not for swine characteristics. This issue needs to be corrected.		
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1-3, 11, 13-14	DR, I	See CRs	Open	☑
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	1-3, 11, 13-14	DR, I	Yes as far as above CARs and CRs are solved	Open	☑
E.1.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	1-3, 11, 13-14	DR, I	Yes.	☑	☑
E.1.6. Is the projection based on provable input parameter?	1-3, 11, 13-14	DR, I	The projection is based on historical inventory data.	☑	☑
E.2. Leakage					
E.2.1. Are potential leakage effects beyond the chosen	1-3,	DR,	Not applicable	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
project boundaries properly identified?	11, 13-14	I			
E.2.2. Have these leakage effects been properly accounted for in calculations?	1-3, 13-14	DR, I	Not applicable	☑	☑
E.2.3. Have conservative assumptions been used to calculate leakage emissions?	1-3	DR, I	Not applicable	☑	☑
E.2.4. Are uncertainties in the leakage estimates properly addressed in the documentation?	1-3	DR, I	Not applicable	☑	☑
E.2.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	1-3	DR, I	Not applicable	☑	☑
E.2.6. Is the projection based on provable input parameter?	1-3	DR, I	Not applicable	☑	☑
E.3. Baseline Emissions					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	1-4, 11, 13-14	DR, I	See CAR 5	CAR 5	☑
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	1-4, 11, 13-14	DR, I	Yes	☑	☑
E.3.3. Are the GHG calculations documented in a	1-4,	DR,	Yes	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
complete and transparent manner?	11, 13-14	I			
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	1-4, 11, 13-14	DR,I	See CARs and CR.	Open	☑
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	1-4, 11, 13-14	DR, I	Yes	☑	☑
E.3.6. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	1-4, 11, 13-14	DR, I	Yes	☑	☑
E.3.7. Is the projection based on provable input parameter?	1-4, 11, 13-14	DR, I	Yes, The calculations are based in the historic animal populations, and the sites do not plan modify their capacity production (decrees or increase), the projections does not shows changes during the crediting period.	☑	☑
E.4. Emission Reductions					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1-4, 11, 13-	DR, I	Yes	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	14				
E.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1-4, 11, 13-14	DR, I	See CAR 5	CAR 5	☑
E.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1-4, 11, 13-14	DR, I	Yes	☑	☑
F. Environmental Impacts					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	1-3, 9-10	DR, I	Yes	☑	☑
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1-3, 9-10	DR, I	An EIA is not necessary.	☑	☑
F.1.3. Will the project create any adverse environmental effects?	1-3, 9-10	DR, I	No	☑	☑
F.1.4. Are transboundary environmental impacts considered in the analysis?	1-3, 9-10	DR, I	Yes	☑	☑
F.1.5. Have identified environmental impacts been addressed in the project design?	1-3, 9-10	DR, I	Yes	☑	☑
F.1.6. Does the project comply with environmental legislation in the host country?	1-3, 9-10	DR, I	Yes	☑	☑
G. Stakeholder Comments					
G.1.1. Have relevant stakeholders been consulted?	1-4, 17	DR, I	Yes	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	1-4, 17	DR, I	Yes	☑	☑
G.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?	1-4, 17	DR, I	Yes	☑	☑
G.1.4. Is the undertaken stakeholder process described in a complete and transparent manner?	1-4, 17	DR, I	Yes	☑	☑
G.1.5. Is a summary of the stakeholder comments received provided?	1-4, 17	DR, I	Yes	☑	☑
G.1.6. Has due account been taken of any stakeholder comments received?	1-4, 17	DR, I	No relevant comments form the Stakeholder.	☑	☑

Table 3 Resolution of Corrective Action and Clarification Requests MX35

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables 1 and 2	Summary of project owner response	Validation team conclusion
Corrective Action Request No.1. Tejas 1; San Antonio: To determinate the baseline in a conservative way (for the sites listed above) it should be considered the operation of solid separators, taking in account the time that were operat-ing.	Table 2 B.2.3	**CAR1 –** These sites have been removed from the PDD.	☑

Corrective Action Request No.2. San Antonio; San Carlos To determinate the baseline in a conservative way (for the sites listed above) it should be considered the manure removal from the gestation area realized like common practice of cleanness. It should be considerate in the assumptions.	Table 2 B.2.3	**CAR2 –** San Antonio: 50% of the manure from the nurser barn is collected and deposited in the lagoon on an hourly-daily basis. The other 50% flows to the lagoon through a canal. Everywhere else on the site, the manure flows to the lagoon or to the distribution box and is pumped to the lagoon through a canal system. 100% of the manure reaches the lagoon on a daily basis. See comment in CAR1 and attached photos. San Carlos: In the sow barns, the manure is removed by scrape and deposited into the lagoon. Water is then utilized to clean the facility. This manure management method was taken into consideration. 100% of the manure reaches the lagoon on a daily basis. The amount of manure from these barns should be reduced in the calculation, evidence is in attached photo. These sites have been removed from the PDD.	☑
Corrective Action Request No.3. Rancho San Miguel; La Soledad: The canals through the manure are transported to the lagoons shows a lot of solids accumulation. This issue needs to be considered in the assumptions.	Table 2 B.2.3	**CAR3 -** The sites use canals made of dirt, and there is a thin crust of manure on the surface of the canals, but all of the effluent reaches the canals underneath the crust (if not, the canals would overflow, and there would be no need for the lagoon). In the future, the farmer will install PVC piping to direct the manure to the lagoon rather than the dirt canals.	☑

Corrective Action Request No.4. La Soledad: Five barns keep the manure in the fosas during three months approximately, and just are discharged when the fosas are fulled.	Table 2 B.2.3	**CAR4 -** The system has Pull-plug as its AWMS, and whatever is left over after pulling and plugging the "fosa" is minimal (appx. 0.01% of the total manure that leads to the lagoon). The pulling and plugging happens daily. The "fosas" are cleaned every 3 months. All of the manure flows to the lagoon.	☑
Corrective Action Request No.5. The values showed in the PDD in the section E.2 are not the values used to calculate the EF. The values showed are for dairy cattle characteristics not for swine characteristics. This issue needs to be corrected.	Table 2 E.1.2	**CAR5 -** The PDD has been updated.	☑
Clarification Request No. 1 San Carlos: In the PDD this site is described like one farm property of San Carlos ASP SPR de RL, but there are two different sites (one next to the other), one is San Carlos which is conformed for 21 barns and three lagoons (two primary and one secondary); the other farm is Porcicola Angulo property of Ramon Angulo P, this site is conformed for 6 barns and two lagoons. This issue need to be clarified.	Table 2 A.2.4	**CR1 –** At the time of PDD submittal, San Carlos was one site owned by two brothers. Prior to the on site audit by TUV, the brothers separated the site into 2 individual entities (San Carlos and Porcicola Angulo). Each brother owning one site. The project developer has in turn separated the sites. (I.E. Form A, Form B, etc.) With the exception of 2 names, the site(s) information remains unchanged. PDD has been updated to reflect this name change by now indicating 2 sites. These sites have been removed from the PDD	☑
Clarification Request No. 2 - La Soledad At the moment of the audit a primary lagoon was operating which is not included in the description of the PDD.	Table 2 A.2.4	**CR2 -** One of the two original primary lagoons was used for the construction of the digester, and the secondary lagoon is now used as a primary. So this site has two primary lagoons. The PDD has been updated.	☑

Clarification Request No. 3 El Coyote: The description of the PDD indicates that this site works with one primary lagoon and other secondary lagoon. The way that the lagoon system has been operating is with two primary lagoons, one receives the manure from 5 barns and the other receives the manure of other 5 barns, there is any connection between these lagoons.	Table 2 A.2.4	**CR3 -** The PDD has been corrected to reflect the fact that this site has two primary open lagoons.	☑
Clarification Request No. 4 San Antonio: There are two carcamos working, in the PDD just is described one.	Table 2 A.2.4	**CR4 -** This site has a carcamo (3 x 4 x 0.50 m.) where a solid separator used to be, and has another carcamo (10 x 10x2.5m). Both are used, and the PDD has been corrected. These sites have been removed from the PDD.	☑
Clarification Request No. 5 La Soledad: The address described in the PDD is not enough to describe the location. Please clarify this issue.	Table 2 A.4.1	**CR5 -** La Soledad is in the district of Trejos and the city of Ixtlahuacan del Rio, and is found 3 km. southeast of the Rumbo al Cerro de La Higuera. In addition, GPS coordinates are provided in the PDD.	☑
Clarification Request No. 6 The project schedule is missing this document needs to be submitted to the validator.	Table 2 A.4.12	**CR6 –** Construction schedule has been submitted via email.	☑
Clarification Request No. 7 - Tejas 1 The lagoons of this site receive manure from a dairy cattle farm, it is not described in the PDD.	Table 2 B.4.1	**CR7 -** PDD has been updated. These sites have been removed from the PDD.	☑

Clarification Request No. 8 The detail of the metering equipment need to be submitted to the validator including the methods for analysis.	Table 2 D.3.4	**CR8 -** This information is provided in Section D.5 of the PDD.	☑

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1	On-site interview at the offices and on site with the project developer and the representatives of the farms conducted on May 9th to 11th 2006 by auditing team of TÜV SÜD: **Validation team on-site:** Ivan Hernandez — TÜV America de Mexico, TÜV SÜD Group **Interviewed persons:** Jroberto Garcia — Production Manager, Farm El coyote, Los Charcos 1 Carlos Tuxcalteco Tepo — Production Manager, Farm San Antonio Jaime Ramirez — Production Manager, Farm Tejas Jesus Magallon — Production Manager, Farm San Miguel Jose Ramon Angulo — Co-owner, Farm San Carlos Joaquin Angulo — Co-owner, Farm San Carlos, La soledad Jaime Ramon Angulo — Co-owner, Farm San Carlos, La soledad Roberto Zuzuarregui — AgCert Mexico
2	Draft PDD "AWMS Methane Recovery Project MX06-S-35, Jalisco and Michoacán, México", AgCert, dated 16 April 2006
3	Final PDD "AWMS Methane Recovery Project MX06-S-35, Jalisco and Michoacán, México", AgCert, dated 14 July 2006
4	Validation and Verification Manual, IETA/World Bank (PCF), http://www.vvmanual.info
5	Farm letters of intention, submitted April 2006
6	Operations and Maintenance Plan for AgCert Operations, November 2005
7	Farm Production Data (confidential)
8	Training schedule for the farm sites, AgCert, Submitted June 2006
9	Letter of Approval, Government of Mexico, dated 2nd May 2006
10	Letter issued by Designated National Authority of Mexico regarding the need for environmental licenses and impact assessments, dated July 28, 2005
11	Approved baseline methodology ASM III.D. "Methane Recovery", version 09, UNFCCC, 2006
12	UNFCCC, CDM: Tool for the demonstration and assessment of additionality" approved by the EB (EB 16, annex 1).
13	Calculation of baseline and project emissions "AWMS Methane Recovery Project MX06-S-35, Jalisco and Michoacán, México",

Reference No.	Document or Type of Information
	AgCert, submitted April 2006
14	IPCC: Revised 1996 Guidelines for National Greenhouse Gas Inventories
15	IPCC: 2000, Good Practice Guidance
16	Approved monitoring methodology ASM III.D. “Methane Recovery”, version 09, UNFCCC, 2006
17	Stakeholder meeting documentation for meetings performed: Invitation (direct and via e-mail), meeting report, presentation given at the meeting