

Validation Report

Canabrava Landfill Gas Project

CDM.Val0129

28th July, 2006

SGS Climate Change Programme
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ANNEX 1

REPORT ON COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

Canabrava Landfill Gas Project

Project No. CDM.Val0129

Date: 28/07/2006

1 INTRODUCTION

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall make invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This report describes this process for this particular project.

2 PROJECT DETAILS

2.1 Project title

Canabrava Landfill Gas Project.

2.2 Description of how and when the PDD was made publicly available

The Project Design Documents and its annexes were made publicly available from 18-08-2005 until 16-09-2005 on the website

<http://cdm.unfccc.int/Projects/Validation/DB/T46Q9H9LEZKWSMU0N7MP3WVM3JD2BH/view.html> and comments were invited through the UNFCCC CDM homepage.

3 COMMENTS RECEIVED

3.1 Description of how comments were received and made publicly available

Comments could be submitted through a web interface or by email or fax.

As per procedures on public availability of the CDM project design documents and for receiving comments as referred to in paragraphs 40b and 40c of the CDM modalities and procedures, any received comments are displayed from the end of the 30 days commenting period, at the website listed in section 2.2.

3.2 Compilation of all comments received

No comments received to the DOE during the 30 days commenting period.

4 EXPLANATION OF HOW COMMENTS HAVE BEEN TAKEN INTO ACCOUNT

No comments received.



ANNEX 2

LIST OF DOCUMENTS ATTACHED

Canabrava Landfill Gas Project (CDM.VAL0129)

Project No. CDM.Val0129

Date: 28/07/2006

- /1/ Annex 1: Report on Comments by Parties, Stakeholders and NGOs
- /2/ Annex 2: Comprehensive list of documents attached
- /3/ Annex 2: List of persons interviewed
- /4/ Annex 4: Validation Protocol (UK.AU4.CDM.Val0129)
- /5/ Annex 5: Overview of findings (UK.Findings.CDM.VAL0129)
- /6/ Annex 6: Answers from local assessor
- /7/ Annex 7: Validation Report (UK.AR6.CDM.VAL0129)
- /8/ Annex 8: Modalities of communication
- /9/ Letter of Approval from the Government of Brazil
- /10/ Letter of Approval from the Government of Canada
- /11/ Letter of Approval from the Government of United Kingdom
- /12/ Letter of Approval from the Government of Japan



ANNEX 3

Overview of documentation that has
been reviewed and list of persons
interviewed

CANABRAVA LANDFILL GAS PROJECT

Project No. CDM.Val0129

Date: 28/07/2006

This document is an Annex to the validation report for CDM project activity registration. It gives overview of documentation that has been reviewed and names of persons that have been an interviewed as part of the validation.

List of documents reviewed

- /1/ Project Design Document, Canabrava Landfill Gas Project (version of 26 July 2005; 31 October 2005; 14 November 2005; version 5, 28 July 2006).
- /2/ Approved consolidated baseline methodology ACM0001 - "Consolidated baseline methodology for landfill gas project activities" (Version 4, 28 July 2006).
- /3/ Approved consolidated monitoring methodology ACM0001 - "Consolidated monitoring methodology for landfill gas project activities" (Version 4, 28 July 2006).
- /4/ Tool for the demonstration and assessment of additionality (version 2, 28 November 2005).
- /5/ Letter of Approval Government of Brazil.
- /6/ Letter of Approval Government of Canada.
- /7/ Letter of Approval Government of United Kingdom
- /8/ Letter of Approval Government of Japan

List of persons interviewed

	Name and position	Company name	Date interviewed
/1/	Guy L. Treadwell	CRA - Conestoga-Rovers & Associates	October 2005
/2/	Luciano Fiuza	CRA - Conestoga-Rovers & Associates	October 2005
/3/	Francisco Brito	Centro de Recursos Ambientais - Estado da Bahia	October 2005

Annex 4 - Validation Protocol

This validation protocol is designed to ensure that the project meets the requirements for CDM projects that are detailed in paragraph 37 of the CDM modalities and procedures. Each requirement is covered in a separate table. The following requirements are discussed in this protocol:

Requirement	Description	
Participation requirements	The participation requirements as set out in Decision 17/CP7 need to be satisfied	Covered in table 1
Baseline and monitoring methodology	The baseline and monitoring methodology complies with the requirements pertaining to a methodology previously approved by the Executive Board	Baseline methodology is covered in table 2 Monitoring methodology is covered in table 4
Additionality	The project activity is expected to result in a reduction in anthropogenic emissions by sources of greenhouse gases that are additional to any that would occur in the absence of the proposed project activity	Covered in table 3
Monitoring plan	Provisions for monitoring, verification and reporting are in accordance with relevant decisions of the COP/MOP	Covered in table 5
Environmental impacts	Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party;	Covered in table 6
Comments by local stakeholders	Comments by local stakeholders have been invited, a summary of the comments received has been provided, and a report to the designated	Covered in Table 7

Other requirements	operational entity on how due account was taken of any comments has been received; The project activity conforms to all other requirements for CDM project activities in relevant decisions by the COP/MOP and the Executive Board. Covered in Table 8
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Small sale projects and AR projects have specific requirements, which are covered in Table 9-11. Small scale SSC projects have special requirements, which might deviate from the requirements of other CDM projects. These requirements are tested in table 9. Please note that some questions in table 9 overlap with questions in the other tables. Where the questions in table 9 contradict or overlap questions elsewhere in the checklist, the questions in table 9 shall prevail. For the validation of small scale projects, assessor is required to address the questions in table 9 first before starting with the questions in the other tables.

Further remarks on the use of this document:

- text in *italic blue* is meant as guidance for the assessor
- MoV = Means of Verification, DR= Document Review, I= Interview

This protocol should be adapted as required. For example, if the project is not a small scale project or an AR project, some tables can be deleted.

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website) All CDM project activities

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and	DR	PDD	No Letter of Approval from an Annex I (Canada) country has been provided. No LoA from Uk and Japan (parties included in the revised	CAR 1	

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
be entered into voluntarily.			PDD, 31 October 2005).		
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	DR	PDD	No Letter of Approval by host country (Brazil) has been submitted to the validator, this will only be obtained on delivery of a validation report. [Brazilian DNA requires <i>inter alia</i> the Validation Report and the version of PDD to be submitted to EB to issue the LOA]	CAR 2	
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	PDD	Yes, Brazil – date of ratification 23-August-2002 Canada – date of ratification 17-December-2002 Japan - – date of ratification 4-June-2002 UK - – date of ratification 31 - May - 2002	Ok	Ok
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario	DR	PDD ACM 001	Yes, The current practice at Canabrava landfill is to allow the uncontrolled release of LFG into the atmosphere. The collection and destruction of the methane in the project activity will reduce GHG emissions. ACM001 is correctly applied.	Ok	Ok
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	DR	UNF CCC site	PDD publicly available until 2005/09/16. No comments received. http://cdm.unfccc.int/Projects/Validation/DB/T46Q9H9LEZ/KWSMU0N7MP3WVM3JD2BH/view.html	Ok	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	DR	PDD	Almost; CDM PDD version 2 was used. Section A.3, it is missing to define private or public entity project participants. To close out CAR 6, the PDD was revised and status of project participants was included.	CAR 6	CAR 06 was closed out on 3 rd November, 2005.
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR	PDD	No ODA has been provided for this project. To be confirmed by local assessor (interview with project proponents).	Verify	Ok
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?			N/A		
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects			N/A		
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment.	DR	PDD	The current version is used. See also table 5 and 6 of the present checklist. To close out the CARs and NIRs, a new version of PDD was prepared, including the necessary details and information.	See NIRs 8, 9 and 10.	Ok.
1.11 Does the PDD use accurate and	DR	PDD	For the most of data, yes.	NIR 12	Ok, NIR 12

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
reliable information that can be verified in an objective manner?			For the electricity consumption by the project activity: it is not clear (there is no reference or source of data) for the information about electricity production in Brazil (in the PDD, it was informed that 97% of electricity in Brazil come from hydroelectric).		was closed out on 3 rd November; information was provided in the revised PDD.

Table 2 Baseline methodology (ies) (Ref: PDD Section B and E and Annex 3 and AM) Normal CDM projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD AM	DR	Yes. ACM 0001 is applicable to landfill gas capture project activities, where the baseline scenario is the partial or total atmospheric release of the gas (as verified in Canabrava landfill, total release) and the project activities include the situation where the captured gas is flared (as mentioned in item (a) of the methodology.	Ok	OK
2.2 Is the project boundary consistent with the approved methodology	PDD AM	DR	Yes. The project boundary is the site of the project activity where the gas is captured and destroyed. It is consistent with ACM 0001	Ok	Ok
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD AM	DR	Yes. ACM 0001 defines that project proponents should provide an ex ante estimate of emissions reductions, by projecting the future GHG emissions of the landfill using verifiable methods.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			The total methane emissions in the absence of the project activity are estimated based on the waste tonnage of the landfill using a United States Environmental Protection Agency (USEPA) first-order kinetic model for landfill gas.		
2.4 Are the project emissions determined in accordance with the methodology described	PDD AM	DR	<p>Yes.</p> <p>As described in the PDD, the landfill gas not captured by the landfill gas collection and flaring system cannot be monitored, as this emission is diffused over the landfill. The amount of landfill gas collected and destroyed by combustion can be monitored using a flow meter. Project emissions are thus comprised of the quantity of methane collected and not flared due to flaring inefficiency, and this amount is subtracted from the measured amount of collected methane (expected efficiency is upwards of 99.99%).</p> <p>In addition, ACM0001 defines that possible CO2 emissions should be accounted as project emissions. The electricity required for the operation of the project activity should be accounted and monitored. Project proponents should account for CO2 emissions by multiplying the quantity of electricity required with the CO2 emissions intensity of the electricity displaced (CEFelectricity,y).</p> <p>It was considered in Canabrava project (PDD, page 25, Table 4 and table 5 ("Total Project activity Emissions").</p>	Ok	Ok
2.5 Is the leakage of the project	PDD	DR	No leakage effects need to be accounted under ACM	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
activity determined in accordance with the methodology described	ACM		0001 Emissions from electricity consumption is calculated and subtracted from the project emissions reductions (PDD, pages 24-25).		
2.6 Are the emission reductions determined in accordance with the methodology described	PDD ACM	DR	Yes. ACM 0001 defines that the emission reduction achieved by the project activity during a given year “y” (ER _y) is the difference between the amount of methane actually destroyed during the year (MD _{project,y}) and the amount of methane that would have been destroyed during the year in the absence of the project activity (MD _{reg,y}) 3, times the approved Global Warming Potential value for methane (GW _{PCH4}). - Electricity and thermal energy emission reductions do not apply to the project Canabrava. - The “Adjustment Factor” was considered as the flare efficiency. - CO ₂ emissions resulting from electricity consumption was accounted and deducted from the emission reductions.	Ok	Ok

Table 3 Additionality (Ref: PDD Section B3 and AM) Normal CDM projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to	PDD AM	DR	ACM0001 methodology requires the use of the “Tool for the demonstration and assessment of additionality”. The	Ok	Ok

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
determine the additionality			five steps were clearly described and demonstrated in the PDD (section B.3)		
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD AM	DR	Yes.	Ok	Ok
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD AM	DR	Yes from doc review. Confirmed by local assessor	Ok	Ok
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD AM	DR	Yes from doc review. Confirmed by local assessor	Ok	Ok

Table 4 Monitoring methodology (PDD Section D and AM) Normal CDM Projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD AM	DR	Yes. ACM 0001 is applicable to landfill gas capture project activities, where the baseline scenario is the partial or total atmospheric release of the gas and the project activities include situations where the captured gas is flared (the case of Canabrava project).	Ok	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD AM	DR	No monitoring of baseline emissions is required; monitoring methodology is based on the direct measurement of the quantity of LFG captured, collected and destroyed by the LFG management system.	Ok	Ok
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology	PDD AM	DR	No, Section D.2.2.1 don't consider items 1, 11. The methane content of the flare should be analysed to determine the fraction of methane destroyed within the flare.	CAR 7	CAR 07 was closed out on 3rd November, 2005.
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD AM	DR	No leakage needs to be accounted. CO2 emissions resulting from electricity consumption was accounted and deducted from the emission reductions (see also item 2.6 of this checklist).	Ok	Ok
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD AM	DR	Section D.3 don't inform the QC/QA for item 1. CAR close out details: it was inserted in the revised PDD.	See CAR 7	CAR 07 was closed out on 3rd November, 2005.

Table 5 Monitoring plan (PDD Annex 4) Normal CDM Project activities only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts	PDD	DR	There was no indicator for monitoring of sustainable performance in the Annex 4 of PDD. CAR close out details: A revised PDD was prepared (version from 31st October, 2005), including monitoring of sustainable development indicators and environmental impacts: Job creation, Income generation, impact of odour on neighbours, Subsurface migration of landfill gas, Landfill safety, and Technology transfer.	CAR 3	CAR 3 was closed out on 3rd November.
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	PDD	DR	No. See above. See CAR close out details in 5.1	See 5.1 and CAR 3	CAR 3 was closed out on 3rd November.
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	No. See above See CAR close out details in 5.1	See 5.1 and CAR 3	CAR 3 was closed out on 3 rd November.
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	No. See above. See CAR close out details in 5.1.	See 5.1 and CAR 3	CAR 3 was closed out on 3 rd November.
5.1.4 Are the sustainable development indicators	PDD	DR	No indicators were defined.	See 5.1	CAR 3 was closed out

ge A-10

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
in line with stated national priorities in the Host Country?			See CAR close out details in 5.1.	and CAR 3	on 3 rd November.
5.2 Project Management Planning	PDD	DR	Yes. To be confirmed by local assessor.	Verify	Ok
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR	Yes. Confirmed by local assessor; also verified technical responsibility.	Verify	Ok
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR	Yes, PDD section D.4	Ok	
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR/I	Yes, PDD section D.4 and Annex 4. To be confirmed by local assessor: it is not implemented yet, but there is a plan for training people and to prepare an operation manual and procedures.	Verify	Ok
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	No.	CAR 4	CAR 4 was closed out on 3 rd November.
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR/I	Yes. To be confirmed by local assessor: it is not implemented yet, but there is a plan for preparing an operation manual	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			and procedures, including calibration.		
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	Yes. To be confirmed by local assessor: it is not implemented yet, but there is a plan for preparing an operation manual and procedures.	Verify	ok
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR	Yes. To be confirmed by local assessor: it is not implemented yet, but there is a plan for preparing an operation manual and procedures.	Verify	Ok
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR	Yes. Procedures are not implemented yet, but there is a plan for preparing an operation manual and procedures (see PDD section D.4 and Annex 4).	Verify	Ok
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	Yes. Procedures are not implemented yet, but there is a plan for preparing an operation manual and procedures (see PDD section D.4 and Annex 4).	Verify	Ok
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR	Yes. See item above	Ok	Ok
5.2.11 Are procedures identified for internal audits of GHG project	PDD	DR	Yes. To be confirmed by local assessor. See item above	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
compliance with operational requirements where applicable?					
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR	Yes (section 2.4, annex 4)	Ok	Ok
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR	Yes (section 3, annex 4)	Ok	Ok

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation) Normal CDM Project Activities only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	No, need more information. Close out details: additional information was included in revised PDD.	NIR 8	NIR was closed out on 3 rd November
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	Inform about any requirements for EIA. No EIA requirement for the project. Representative of Bahia State Environmental Agency was interviewed during the site visit; he informed that it is necessary a specific license and there is evidence that the project	NIR 9	NIR was closed out on 3 rd November

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			proponents contacted the environmental agency for the license requesting.		
6.3 Will the project create any adverse environmental effects?	PDD	DR	No. To be confirmed by local assessor. It was verified that there is no adverse environmental effect.	Verify	Ok
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	No significant environmental impacts expected. To be confirmed by local assessor.	Verify	Ok
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	Section F.1 “beneficial environmental impacts reducing emissions of methane and other trace gases.” Verify impact over Mocambro River and Coroado River: it was verified during site visit and by interview with environmental agency representative.	NIR 10	NIR was closed out on 3 rd November
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	Verify licence(s). Required documents relate to licensing process was presented to Bahia State Environmental agency by project proponents in June 2005. The license has been not issued yet. Environmental Agency representative was interviewed and informed that there is no pending and that the license will be issued soon.	Verify	Ok

Table 7 Comments by local stakeholders (Ref PDD Section G) All CDM Project Activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	Yes, see PDD section G.1	Ok	Ok
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Verify. To be confirmed by local assessor. Yes, the letters were sent in local language; also, a public meeting with local stakeholders was held in Salvador on June 21, 2005 to present the project to the public as well as to official authorities; documented evidences and records regarding this meeting were verified and copies provided to SGS.	Verify	Ok
7.3 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?	PDD	DR	No, the project need to send a letter to stakeholders according "Resolution #1 (2003/09/11) Brazil". Invitations were published in two different local newspapers of broad circulation announcing the project's public meeting. The letters were sent in June 2005 and copies were verified.	CAR 5	CAR 5 was closed out
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	Yes.	Ok	Ok
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	Yes.	Ok	Ok

Table 8 Other requirements All CDM project activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	Yes, no changes have been observed.	Ok	Ok
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	Yes.	Ok	Ok
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Yes. There are other CDM projects using similar technology.	Ok	Ok
8.2.2 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?	PDD	DR	To combust the LFG, an enclosed flare with full process controls and instrumentation will also be constructed and operated. Verified the documentation and plans, because the project will be implemented in 2006	Ok	. Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	It is expected not.	Ok	Ok
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR/I	<p>All continuously measured parameters (LFG flow, CH₄ concentration, flare temperature, and flare operating hours) will be recorded electronically.</p> <p>As described on the PDD, during the operational phase, there will be new jobs created locally for duties related to operations and maintenance, landscaping, plumbing, monitoring and security personnel. These people will be fully trained by CRA on their duties and tasks. CRA will conduct a training and quality control program to ensure that good management practices are ensured and implemented by all project operating personnel in terms of record-keeping, equipment calibration, overall maintenance, and procedures for corrective action. An operations manual will be developed for the operating personnel.</p>	Ok	Ok
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	<p>Section C.1.1 – starting date 4th quarter of 2006.</p> <p>Section C.1.2 – there is other information in addition to the lifetime; inform only the lifetime 10 years 0 months.</p> <p>The project starting date depends on the project implementation. It was verified during field audit that there</p>	CAR 11	<p>CAR 11 closed out on 3rd November.</p> <p>PDD was revised and lifetime</p>

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			is an implementation plan and that they have started the construction of the landfill gas collection system. Operational lifetime is defined as 10 years (potential landfill gas production for Canabrava landfill).		informed correctly.
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Yes, section C.2.2.2 – fixed crediting period: 10 years, starting 27/10/2006.	Ok	Ok
8.3.3 Does the project's operational lifetime exceed the crediting period	PDD	DR	No.	Ok	Ok

Table 9 Additional requirements for SSC project activities only – N/A

Table 10 Additional requirements for AR projects – N/A

Table 11 Additional requirements for SSC AR projects – N/A

Table 12 Additional information to be verified by local assessors / site visit

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Confirm the legal status of CRA (company documentation).	Visit	DR/I	There are documents evidencing that CRA Holding Inc, Canada bought 50% of the company Infraconsult Engenharia S.A. (on 10th March, 2005) and that from	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			that date, the company changed its name for Conestoga-Rovers e Associados Engenharia S.A.		
Confirmation of the existence of an agreement between CRA and Prefeitura Municipal de Salvador.	Visit	DR/I	There is an agreement signed for CRA and Prefeitura Municipal de Salvador (Contract between City of Salvador and Conestoga-Rovers & Associates, issued on 20 th May, 2005). From this document, CRA has the right of implement the project and explore the landfill gas, paying defined royalties to Salvador Municipality.	Ok	Ok
Verify technical responsible.	Visit	DR	There is a documented technical responsibility for the project ("ART n° SP0000090405-000007), issued on 25th July, 2005.	Ok	Ok
Verify equipment and infrastructure documentation.	Visit	DR Site visit/I	The project is not implemented. No equipment or order relates to equipment purchasing is available during the site visit time. A list of main equipment was verified ("Lista de equipamentos principais- Projeto canabrava")	Ok	Ok
Verify plant of the landfill and project.	Visit	DR Site visit	It was verified; It was possible to check area and details about the project implementation plan.	Ok	Ok
Verify condition of the landfill like described in the PDD.	Visit	Site visit	The site is like described in PDD (location, area, and neighbourhood).	Ok	Ok
Verify implementation schedule of the project.	Visit	DR	Plan and shedule was presented by CRA representatives during the site visit.	-	Observation: Copy of implementation plan presented during site visit should be sent to SGS.

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Verify organization chart of the project.	Visit	DR	The organizational structure and functions were explained by CRA representatives interviewed during site visit.	-	Observation: Copy of organization chart presented during site visit should be sent to SGS.
Confirm that there are no current regulation requiring removal of methane for safety considerations	Visit	DR/I	Environmental Agency representative was contacted and interviewed about legal requirements. There is no regulation that could affect the baseline emissions. During site visit, it was verified that no LFG has been destroyed; total gas is releasing to atmosphere.	Ok	Ok
Review licences from environmental agency and obtain copies	Visit	DR/ site visit/I	Environmental Agency representative was contacted and interviewed about legal requirements and licensing. Required documents relate to licensing process was presented to Bahia State Environmental agency by project proponents in June 2005. The license has been not issued yet. Copies of these documents were verified	Ok	Ok
Verify that the meeting listed in on page 27-32 (PDD) took place – check minutes and contacts some of the attendees (by telephone if not in person).	Visit	DR/I	Records and photos were verified; invitations and comments from participants were verified. Environmental Agency representative was contacted and interviewed.	Ok	Ok

References consulted during Ground Truthing and brief summary of content / significance [please try to obtain a hard copy where ever possible]:

Ref no.	Title (full bibliographic reference if possible)	Brief note on content / significance	Hard copy (Y/n)
1	Project Design Document: Canabrava Landfill Gas Project, versions issued on 26 July 2005; 31 October 2005; 14 November 2005; version 5, 28 July 2006		Y
2	Approved consolidated baseline methodology ACM0001 "Consolidated baseline methodology for landfill gas project activities" (UNFCCC/CCNUCC ; version 4, 28 July, 2006).		Y
3	Approved consolidated monitoring methodology ACM0001 "Consolidated monitoring methodology for landfill gas project activities" (UNFCCC/CCNUCC ; version 4, 28 July, 2006).		Y
4	Tool for the demonstration and assessment of additionality (UNFCCC/CCNUCC ; version 2, 28 November 2005).		Y
5	Copy of letters sent to stakeholder consultation.		Y
6	Copy of letters/comments received from stakeholders.		Y
7	Documented technical responsibility for the Canabrava project ("ART n° SP0000090405-000007), issued on 25 th July, 2005.		Y
8	Attendance list of the public meeting with the local stakeholders on 21 st June, 2005.		Y
9	Questionnaires distributed to participants in the public meeting in Jun 21 st , 2005.	Questions about the project.	Y

10	Contract between City of Salvador and Conestoga-Rovers & Associates, issued on 20 th May, 2005.	Concession to CRA explores the Canabrava landfill and implement the project.	Y
11	"Requerimento para Licença de Localização" and "Roteiro de caracterização do empreendimento - RCE/Licença de localização para indústrias" (13 July, 2005)	Application questionnaire presented to state environmental agency, with general information about the project and its equipment. Necessary documentation for license requesting.	Y
12	"Termo de responsabilidade ambiental" - TRA, 16 June, 2005.	"Term of Environmental Responsibility", signed by Conestoga-Rovers & Associates representative (on 16 th June, 2005). In this document, there is a CRA commitment to be in compliance with environmental legal requirments, to promote the environemntal quality and to avoid pollution and negative impacts from Canabrava project.	Y
13	"Ata da Assembléia geral Extraordinária realizada em 10 de Março de 2005". Infraconsult Engenharia S.A.	Document evidencing that CRA Holding Inc, Canada bough 50% of the company Infraconsult Engenharia S.A. (on 10th March, 2005) and that from that date, the company changed its name for Conestoga-Rovers e Associados Engenharia S.A.	Y

Individuals interviewed during Validation and Ground Truthing [name, position and contact details, plus a brief summary of points discussed]

Date met	Name	Position	Contact details	Brief note on subject of interview
October 2005	Guy L. Treadwell	Manager	CRA gtreadwell@craworld.com 519 502 3689	All technical information about the project.
October 2005	Luciano Fiuza	Manager	CRA jlfiuza@craworld.com 55 71 2107-1600	All documentation and licences.
October 2005	Francisco Brito	Assessor	Centro Recursos Ambientais fbrito@cra.ba.gov.br 55 71 3117-1259	Operation license, environmental license, stakeholder meeting.

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ANNEX 5 - FINDINGS OVERVIEW

FINDINGS FROM VALIDATION OF CANABRAVA LANDFILL GAS PROJECT – CDM.VAL0129

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
1	CAR	No letter of approval from an Annex I country (Canada) has been provided.	1.1
Date: October 11, 2005 [Comments] CRA Comments: CRA applied for Canadian DNA (Designated Operational Entity) provisional approval on September 15, 2005. A provisional letter of approval is expected to be issued by October 21 st , 2005. CRA will apply for a final letter of approval upon issuance of the SGS validation report.			
Date: November 3 rd , 2005. CAR 1 remains outstanding. The project include 2 more Annex I, United Kingdom and Japan and no letter of approval has been provided. [Acceptance and close out]			

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
2	CAR	No letter of approval by host country (Brazil) has been submitted to the validator, this will only be obtained on delivery of a validation report.	1.2
Date: October 11, 2005 [Comments] CRA Comments: CRA will obtain a letter of approval from Brazilian DNA (Designated National Authority) upon issuance of the SGS validation report.			
Date: CAR 2 remains outstanding [Acceptance and close out]			

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
3	CAR	No monitoring of sustainable development and environmental impacts.	5.1
<p>Date: October 11, 2005</p> <p>[Comments] CRA Comments:The following represents a monitoring methodology for sustainable development and environmental impacts. This methodology will be transferred to the Project Design Document. Sustainable development indicators are present in the areas of economic development, and social and environmental impacts.</p> <p>Economic Development:</p> <p>Job creation: an incremental number of jobs will be created at the site by the implementation of the project activity. Monthly employment records will be used to monitor this indicator.</p> <p>Income generation: an incremental wage increase will be realized by landfill gas management facility personnel as compared to alternative employment. Hourly wages will be used to assess this indicator.</p> <p>Social and Environmental Impact:</p> <p>Odour: the impact of odour on neighbours is expected to decrease and will be monitored through the number of odour reports made by neighbouring residents.</p> <p>Subsurface migration of landfill gas: the driving force for subsurface migration is expected to decrease with the implementation of the project activity. This indicator will be monitored by assessing reports made by neighbouring residents regarding incidents related to landfill gas migration.</p> <p>Landfill safety: implementation of the landfill gas management system is expected to decrease the potential for adverse landfill impacts such as landfill fires. This will be monitored by assessing the number of incidents at the landfill related to fires or other concerns.</p> <p>Technology transfer: the project activity represents an example of technology transfer. Operation of the constructed landfill gas management system will complete monitoring requirements for this performance indicator. A further monitoring procedure will be the communication of the project activity results at conferences or in the technical literature.</p>			
<p>Date: November 3rd, 2005.</p> <p>[Acceptance and close out]: PDD was revised (version of 31 October, 2005) and monitoring of sustainable development and environmental impacts are described in Annex 4.</p> <p>CAR 3 has been closed out.</p>			

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
4	CAR	No procedures for emergency cases can cause unintended emissions.	5.2.4
<p>Date: October 11, 2005</p> <p>[Comments] CRA comments: In case of flare downtime for maintenance or other reasons, the landfill gas would not be collected/combusted, and would be released to the atmosphere. This scenario would be equivalent to the baseline scenario, where the LFG produced at the landfill would undergo uncontrolled release to the atmosphere.</p>			
<p>Date: November 3rd, 2005.</p>			

[Acceptance and close out]: The assessment team accepted the explanation about unintended emissions. CAR 4 has been closed out.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
5	CAR	The stakeholder consultation should follow the DNA requirements: "Resolution #1 (2003/09/11) Brazil".	7.3

Date: October 11, 2005

[Comments] CRA comments: Letters of invitation asking comments about the project were sent to all stakeholders required by "Resolution # 1 (2003/09/11) Brazil". Copies of the letters are attached and will be available for further review during the SGS site visit.

Date:November 3rd, 2005. [Acceptance and close out]: Copies of the letters and evidences that they were sent were verified during the site visit (letters sent in June, 2005 for Conselho de Moradores de Canabrava, Munistério Público do Estado da Bahia, Centro de Recursos Ambientais - Estado da Bahia, Superintendência de Meio Ambiente de Salvador, Secretaria do Meio Ambiente e dos Recursos Hídricos do Estado da Bahia e para Câmara Municipal de Salvador. The letters were sent as required by "Resolution #1 (2003/09/11) Brazil".

CAR 5 has been closed out.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
6	CAR	Section A.3, it is missing to define private or public entity project participants	1.6

Date: October 11, 2005

[Comments] CRA comments: The section A.3 of the PDD will be updated with the identification of public and private project participants as follows:

- LIMPURB, City of Salvador, State of Bahia (Public Entity)
- Conestoga-Rovers & Associates (Private Entity)
- Natsource Asset Management Corp. (Private Entity)

Date: November 3rd, 2005.

[Acceptance and close out]PDD was revised (version issued on 31 October, 2005) and updated. Two more participants were included (United Kingdom: Natsource (Europe) Ltd., a Private Entity, and Japan: Natsource Japan Co., Ltd., a Private Entity).

CAR 6 has been closed out.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
7	CAR	PDD, Section D.2.2.1, did not consider items 1, 11. According monitoring methodology the methane content of the flare should be analysed to determine the fraction of methane destroyed within the flare.	4.3 / 4.5

Date: October 11, 2005

[Comments] CRA comments: The PDD will be updated and ID # 1 (total amount of LFG captured) and ID # 11 (Regulatory requirements relating to landfill projects) will be added to the table in sections D.2.2.1 as per the requirements in consolidated methodology ACM0001. It is noted however that the total amount of landfill gas captured will differ from the amount of landfill gas flared (ID # 2 of ACM0001) by the flare efficiency. As such, ID # 2 will be a calculated quantity based on ID # 1. The QA/QC table in Section D.3 will be updated to include ID # 1 and ID # 11.

ID # 5 of Table D.2.2.1. identifies that flare efficiency will be monitored by continued measurement of operation time of flare (through temperature) and through periodic measurement of the methane content of flare exhaust gas. This monitoring item is consistent with ID # 5 as outlined in ACM0001.

Date: November 3rd, 2005.

[Acceptance and close out]: The PDD was revised (version 31 October, 2005) and item 1 and 11 were included in section D.2.2.1 and D.3. Annex 4 was updated to include the monitoring of the methane content in the flare emissions.
CAR 7 has been closed out.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
8	NIR	Need more information about the analysis of the environmental impacts of the project activity.	6.1

Date: October 11, 2005

[Comments] CRA comments: An analysis of environmental impacts was provided in sections F.1 and F.2 of the updated version of the PDD. No negative environmental impacts are associated with the project activity. All condensate generated by the project activity will be collected and sanitary water will be properly collected and treated to comply with local environmental regulations. Emissions from the enclosed drum flare are expected to be largely carbon dioxide and water vapour with trace amounts of uncombusted methane. The combustion regime of the flare is carefully monitored to ensure the destruction of methane and other components. Further, noise from the blowers required to induce vacuum on the landfill gas collection wellfield is minimal.

There is a positive environmental impact on the environment due to the project activity. Landfill gas emissions are decreased, reducing greenhouse gas emissions and impacts to localized air pollution. Odour will be diminished at local receptors. Operationally, proper management of the landfill gas will reduce the potential for landfill fires and the associated release of incomplete combustion products. Further, the driving force for subsurface migration of landfill gas and landfill gas components is minimized, protecting adjacent buildings and water bodies such as the Mocambo and Coroado River.

Date: November 3rd, 2005.

[Acceptance and close out]: The PDD was revised (version issued on 31st October, 2005; section E, pages 26-27) to include the information above.
NIR 8 has been closed out.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
9	NIR	It is not clear if there are any requirements for EIA.	6.2

Date: October 11, 2005

[Comments] CRA comments: The local environmental agency (CRA-Centro de Recursos Ambientais) requires an environmental impact assessment for the project activity, and an application has been submitted to them. The application receipt will be available for review during the SGS site visit.

Date: November 3rd, 2005.

[Acceptance and close out]: The application receipt was verified during the site visit ("Protocolo Formação de processo n° 2005 - 004517/TEC/LL-0039", date: 11 August, 2005, fator gerador: LL - implantação de poços de coleta de gás metano - N.S. da Vitória/Salvador - MedP), as well as

the documentation detailing the project, that was sent to the environmental agency for obtaining the license.

Additionally, it was verified the publication in the newspaper "Tribune of the Bahia", of 14 June, 2005 of "Order of License of Localization" presented by the Conestoga-Rovers and Associados for installation of the project. Verified that the company has a "signed Term of Environmental Responsibility" in 16/June/2005), for which she compromises to fulfill with its environmental obligations, to promote the development and the environmental quality, not pollute, not degrade and not impact the environment. The license was still not forwarded by the environmental agency. In an interview (conference call) with representative technician of the environmental agency of the state of Bahia, it was gotten specific information of that it does not have petitions that hinder the installation of the project and that the license will have to be forwarded in briefing.

NIR 9 was closed out.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
10	NIR	Inform about environmental impact over Mocambo River and Coroado River.	6.5

Date: October 11, 2005

[Comments] CRA comments: There will be no adverse environmental impact to the Mocambo River or the Coroado River from the project activity. All condensate generated by the project activity will be collected and sanitary water will be properly collected and treated to comply with local environmental regulations. No liquid streams from the project activity will enter the river system. Additionally, operation of the landfill gas collection and flaring system will reduce subsurface migration of landfill gas and the associated impacts on the river system..

Date: November 3rd, 2005.

[Acceptance and close out]: The project environmental impacts were described on the document submitted to Estado da Bahia Environmental Agency (CRA - Centro de Recursos Ambientais) and it is in process to obtain the environmental license. During the site visit, the project boundaries were verify (the rivers are not close to the site). The audit team accepted the CRA comments about leakage (liquid streams) from the project .

NIR 10 has been closed out.

Date:28/09/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
11	CAR	PDD Section C.1.2 – there is other information in addition to the lifetime of the project. Operational lifetime is not clearly defined.	8.3.1

Date: October 11, 2005

[Comments] CRA comments: The text will be revised and the only information in section C.1.2 of the updated PDD will be: "10 years and 0 months".

Date: November 3rd, 2005.

[Acceptance and close out]The PDD was revised and the new version provides the correct information.

CAR 11 has been closed out.

Date:18/10/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
12	NIR	There is no reference or source of information relate to this statement	1.11

		"Electricity production in Brasil is largely comprised of hydroelectric, with approximately 97% of total energy coming from this sector " (PDD, section E.2).	
Date:			
[Comments] CRA comments: The new version of PDD includes the reference			
Date: November 3 rd , 2005.			
[Acceptance and close out]: The reference was included in the revised version of PDD (31 October, 2005). The source of data was http://countrystudies.us/brazil/76.htm . NIR 12 was closed out.			

Date:28/07/2006

Raised by:Fabian Gonçalves

No.	Type	Issue	Ref
13	CAR	The PDD was revised to attend the methodology ACM0001 version 4, 28 July 2006. To correct some information in the monitoring plan (table in section D.2.2.1 and D.3). To correct starting and ending date of crediting period (to correct all tables presented in the PDD).	PDD, tables with estimation of emission reduction presented
Date: 28/07/2006			
[Comments] CRA comments: The new version of PDD was presented.			
Date: 28/07/2006			
[Acceptance and close out]: The PDD was revised (new version 5, 28/07/2006). Monitoring plan was revised to attend the version 4 of the methodology. Tables 2, 3, 4, 5, 6, section A.4.4.1 of the PDD was correct to present the starting date of crediting period on 27 October 2006, and ending crediting period on 26 October 2016. CAR 13 was closed out.			

Observations:



Annex 6 - Local assessment checklist

Canabrava Landfill Gas Project (CDM.VAL 0129)

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document. It serves as a “reality check” on the project. It is to be completed by SGS Brazil.

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Confirm the legal status of CRA (company documentation).	There are documents evidencing that CRA Holding Inc, Canada bought 50% of the company Infraconsult Engenharia S.A. (on 10th March, 2005) and that from that date, the company changed its name for Conestoga-Rovers e Associados Engenharia S.A.	DR/I	No
Confirm the existence of an agreement between CRA and Salvador Municipality.	There is an agreement signed with CRA and Prefeitura Municipal de Salvador (Contract between City of Salvador and Conestoga-Rovers & Associates, issued on 20 th May, 2005). From this document, CRA has the right of implement the project and explore the landfill gas, paying defined royalties to Salvador Municipality.	DR/I	No
Verify technical responsible.	There is a documented technical responsibility for the project ("ART n° SP0000090405-000007), issued on 25th July, 2005.	DR/I	No
Verify equipment and infrastructure documentation.	The project is not implemented. No equipment or order relates to equipment purchasing is available during the site visit time. A list of main equipment was verified ("Lista de equipamentos principais- Projeto canabrava")	Site visit/DR/I	No
Verify plant of the landfill and project.	It was verified; It was possible to check area and details about the project implementation plan.	DR/site visit	No

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Verify condition of the landfill like described in the PDD.	The site is like described in PDD (location, area, neighbourhood).	DR/site visit	No
Verify implementation schedule of the project.	Plan and shedule was presented by CRA representatives during the site visit.	DR/I	No. Observation: Copy of implementation plan presented during site visit should be sent t oSGS.
Verify organization chart of the project.	The organizational structure and functions were explained by CRA representatives interviewed during site visit.	I	No Observation: Copy of organization chart presented during site visit should be sent t oSGS.
Confirm that there are no current regulation requiring removal of methane for safety considerations	Environmental Agency representative was contacted and interviewed about legal requirements. There is no regulation that could affect the baseline emissions. During site visit, it was verified that no LFG has been destroyed; total gas is releasing to atmosphere.	I/DR/Site visit	No
Review licences from environmental agency and obtain copies	Environmental Agency representative was contacted and interviewed about legal requirements and licensing. Required documents relate to licensing process was presented to Bahia State Environmental agency by project proponents in June 2005. The license has been not issued yet. Copies of these documents were verified.	DR/site visit/I	No
Verify that the meeting listed in on page 27-32 (PDD) took place – check minutes and contacts some of the attendees (by telephone if not in person).	Records and photos were verified; invitations and comments from participants were verified. Environmental Agency representative (who took part in this meeting) was contacted and interviewed.	DR/I	No