



**Verification and certification report form for
CDM programme of activities
(Version 04.0)**

BASIC INFORMATION

Title and GS ID of the programme	Title: Safe Water Programme in Africa and Asia GS Ref. No. GS10959																							
Version of PoA-DD(s) to which this report applies	05																							
Title and GS ID (s) of the project (s) covered by monitoring report	<table border="1"> <thead> <tr> <th>GS ID</th> <th>Titles</th> </tr> </thead> <tbody> <tr> <td>GS 11098</td> <td>GS10959 VPA01 Safe Water Project in Rwanda I</td> </tr> <tr> <td>GS 11133</td> <td>GS10959 VPA02 Safe Water Project in Rwanda II</td> </tr> <tr> <td>GS 11134</td> <td>GS10959 VPA03 Safe Water Project in Rwanda III</td> </tr> <tr> <td>GS 11135</td> <td>GS10959 VPA04 Safe Water Project in Rwanda IV</td> </tr> <tr> <td>GS 11136,</td> <td>GS10959 VPA05 Safe Water Project in Rwanda V</td> </tr> <tr> <td>GS 11137</td> <td>GS10959 VPA06 Safe Water Project in Rwanda VI</td> </tr> </tbody> </table>			GS ID	Titles	GS 11098	GS10959 VPA01 Safe Water Project in Rwanda I	GS 11133	GS10959 VPA02 Safe Water Project in Rwanda II	GS 11134	GS10959 VPA03 Safe Water Project in Rwanda III	GS 11135	GS10959 VPA04 Safe Water Project in Rwanda IV	GS 11136,	GS10959 VPA05 Safe Water Project in Rwanda V	GS 11137	GS10959 VPA06 Safe Water Project in Rwanda VI							
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Version number of the PDD/VPA-DD (s) applicable to this monitoring report	08																							
GS Version applicable	GS4GG																							
Version number of the verification and certification report	2																							
Completion date of the verification and certification report	18/04/2024																							
Monitoring period number and duration of this monitoring period	Monitoring Period: 2 nd <table border="1"> <thead> <tr> <th>VPA No.</th> <th>Start date</th> <th>End date</th> </tr> </thead> <tbody> <tr> <td>VPA01</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA02</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA03</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA04</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA05</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA06</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> </tbody> </table>			VPA No.	Start date	End date	VPA01	25/07/2022	24/07/2023	VPA02	25/07/2022	24/07/2023	VPA03	25/07/2022	24/07/2023	VPA04	25/07/2022	24/07/2023	VPA05	25/07/2022	24/07/2023	VPA06	25/07/2022	24/07/2023
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VPA06	25/07/2022	24/07/2023																						
Version number and Completion date of	Version 03, dated 07/04/2024																							

theGS monitoring report to which this report applies			
Project Representative/CME	Ji BAO /Guangzhou Iceberg Environmental Consulting Services Co., Ltd.		
Host Parties	Rwanda		
Applied methodologies and standardized baselines	Technologies and Practices to Displace Decentralized Thermal Energy Consumption" version 3.1		
Mandatory sectoral scopes	Sector 3/Technical Area 3.1		
Conditional sectoral scopes, if applicable	N/A		
Estimated amount of SDG impact for this monitoring period in the included VPAs covered in this report	SDG	GS ID	Values estimated in ex ante
	13	GS 11098	58,480 tCO ₂ e
		GS 11133	58,480 tCO ₂ e
		GS 11134	58,480 tCO ₂ e
		GS 11135	58,480 tCO ₂ e
		GS 11136	58,480 tCO ₂ e
		GS 11137	58,480 tCO ₂ e
	3	GS 11098	18.45%
		GS 11133	18.45%
		GS 11134	18.45%
		GS 11135	18.45%
		GS 11136	18.45%
		GS 11137	18.45%
	5	GS 11098	44.44%
		GS 11133	44.44%
		GS 11134	44.44%
		GS 11135	44.44%
		GS 11136	44.44%
		GS 11137	44.44%
	6	GS 11098	32,726 persons

		GS 11133	32,726 persons
		GS 11134	32,726 persons
		GS 11135	32,726 persons
		GS 11136	32,726 persons
		GS 11137	32,726 persons
Total amount of certified SDG impact for this monitoring period for the included VPAs covered in this report	SDG	GS ID	Values Certified
	13	GS 11098	59,964 tCO ₂ e
		GS 11133	56,191 tCO ₂ e
		GS 11134	57,324 tCO ₂ e
		GS 11135	59,233 tCO ₂ e
		GS 11136	59,801 tCO ₂ e
		GS 11137	57,505 tCO ₂ e
	3	GS 11098	38.45%
		GS 11133	38.45%
		GS 11134	38.45%
		GS 11135	38.45%
		GS 11136	38.45%
		GS 11137	38.45%
	5	GS 11098	51.11%
		GS 11133	51.11%
		GS 11134	51.11%
		GS 11135	51.11%
		GS 11136	51.11%
		GS 11137	51.11%
	6	GS 11098	33,750 persons
		GS 11133	31,855 persons

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	GS 11134	32,320 persons
	GS 11135	33,221 persons
	GS 11136	33,514 persons
	GS 11137	32,314 persons
Name and UNFCCC reference number of the VVB	4K Earth Science Private. Limited UNFCCC Ref No. CDM-E-0069	
Name, position and signature of the approver of the verification and certification report	 Chandrakala R. Managing Director	

SECTION A. Executive summary

>>4K Earth Science Private Limited (4KES) has performed the 2nd performance review (verification) of the GS-VER VPAs vide the reference numbers GS 11098, GS 11133, GS 11134, GS 11135, GS 11136 & GS 11137. The verification includes confirming the implementation of the monitoring plan of the registered/most recent version of GS4GG PoA/VPA-DDS and the application of the applied monitoring methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” version 3.1. A physical assessment was conducted to check the implementation of registered monitoring plan and verify the data submitted in the monitoring report. 4KES confirms the following has been reviewed;

- (a) The registered/most recent version of GS4GG VPA/PoA DD and the monitoring plan and the corresponding validation opinion;
- (b) The validation report;
- (c) The applied monitoring methodology(ies);
- (d) The monitoring report to verify that it is as per the standardized format;
- (e) Monitoring results for the applied monitoring period
- (f) Any other information and references relevant to the project activity’s emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or Laboratory analysis and national regulations);
- (g) VER calculations sheets and all supporting documents.

4K Earth Science Private Limited (4KES) confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements.

Based on the information seen and evaluated, we confirm that the implementation of the project has resulted in following SDGs.

SDG	GS ID	Values Certified
13	GS 11098	59,964 tCO ₂ e
	GS 11133	56,191 tCO ₂ e
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	GS 11134	32,320 persons
	GS 11135	33,221 persons
	GS 11136	33,514 persons
	GS 11137	32,314 persons

Product Vintages Certified for SDG#13

VPA No.	Start Dates	End Dates	VERs
VPA01	25/07/2022	31/12/2022	26,286
	01/01/2023	24/07/2023	33,678
VPA02	25/07/2022	31/12/2022	24,632
	01/01/2023	24/07/2023	31,559
VPA03	25/07/2022	31/12/2022	25,128
	01/01/2023	24/07/2023	32,196
VPA04	25/07/2022	31/12/2022	25,965
	01/01/2023	24/07/2023	33,268
VPA05	25/07/2022	31/12/2022	26,214
	01/01/2023	24/07/2023	33,587
VPA06	25/07/2022	31/12/2022	25,208
	01/01/2023	24/07/2023	32,297
		Total	350,018

Methodology:

4KES follows a rule-based verification approach, wherein, as a first step, the contract review is undertaken as per latest version of CDM Accreditation Standard/ GS Principles & Requirements.

A desk review of the project documentation is undertaken, which is followed by interviews by the members of verification team in accordance with the latest version of CDM AS/ GS Principles & Requirements. The verification protocol is filled by the verification team that is based on standard auditing practices and GS validation & Verification Standard version 1 in

conjunction with version 03.0 of “CDM validation and verification standard for programmes of activities”, to capture the assessment of applicable CDM and GS requirements viz., version 03.0 of “CDM project standard for programme of activities”, applicable GS4GG requirements, registered PoA-DD/14/ and VPA-DD/2/, applied methodology, applied standardized baseline and/or tools and recent decisions. The verification protocol provides transparent means to record the observations and compliances by the verification team members and the nonconformities, if any. The verification protocol is an internal document, and is available on request.

After successful closure of findings (CARs/CLs), the draft verification report is prepared which went through Independent technical review as per 4KES internal procedures and the TR comments were given for any gaps in audit findings. After closure of the TR comments, final verification report is prepared then followed by final approval for the decision made. The approved verification report is given to PP which shall be submitted for request for issuance.

Following are the major milestones for the verification under consideration.

Verification contract	22/10/2023
Interviews	26/01/2024 & 27/01/2024
Draft Verification Report	14/02/2024
Final Verification Report	18/04/2024

4K Earth Science Private Limited confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements.

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team members**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	Onsite inspection	Interview(s)	Validation findings
1.	Team Leader and Technical expert (TA 3.1)	EI	Kandari	Sanjay	Central Office	✓		✓	✓
2.	Technical Expert (TA 3.1) & Local Expert	EI	Isingizwe	Sylvie	Central Office	✓	✓	✓	✓

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer (TA 1.1, 3.1)	IR	Puratchikkanal	Ma Paa	Central office
2.	Approver	IR	R	Chandrakala	Central office

SECTION C. Application of materiality in conducting the verification**C.1. Consideration of materiality in planning the verification**

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Error in Data Transfer from Plant Logbook/survey forms to ER Spread sheet. The measurements are conducted with the aid of calibrated equipment's and errors could result from human errors during the information transfer from the source to emission reduction sheet.	High	Possible human error during transfer of data to ER spreadsheets and MR	Verification Team checked all the records from plant log books and compared with ER spread sheet to check for any material error during data transfer.

C.2. Consideration of materiality in conducting the verification

>>

The prescribed thresholds for materiality, as per section 9.6 Application of materiality of 'GS Validation & Verification Standard, Version 1'.

Prescribed range of ERs/annum	500,000+	300,000+ to 500,000	300,000	SSC Pas	MSC PAs
Prescribed Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The identified/selected materiality threshold for the project activity under current monitoring period is 1% as project activity is small scale project activity.

	MR Version (Draft)	MR Version (Final)
Emission reductions/annum	350,018 t CO ₂ e	350,018 t CO ₂ e
Identified Threshold	1%	1%

SECTION D. Means of verification

D.1. Desk/document review

>> The verification is performed primarily as a desk review of the documents submitted at various stages of assessments. The review is performed by assessment team using verification protocols (checklists). The assessment team cross-checked the information provided in the MR and information from sources other than those used, if available, and conducts independent background investigations. 4KES conducted a desk review, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of documents reviewed is included in the section 'Appendix 3' of this report.

D.2. On-site inspection

Duration of on-site inspection: 26/01/2024 to 27/01/2024				
No.	Activity performed	Site location	Date	Team member
1.	- General aspects of the project - Changes since validation / previous verification - Remaining issues from validation/ previous verification - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the Monitoring - Maintenance - Data analysis - Data Analysis - Issues in the MR - ER calculation	Various Locations under VPA covered in Rwanda	26/01/2024 to 27/01/2024	Sylvie Isingizwe

D.3. Interviews

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D.4.

S. No.	Interviewee			Connection with Borehole ID	Date	Subject	Team member
	Last name	First name	Affiliation				
1.	Bao	Ji	Guangzhou Iceberg Environmental Consulting Services Co., Ltd. (CME)	-	26/01/2024 to 27/01/2024	- General aspects of the project - Changes since validation / previous verification - Remaining issues from validation/ previous verification - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the Monitoring - Maintenance - Data analysis - Data Analysis - Issues in the MR ER calculation	Sylvie Isingizwe

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2.	BAZIRANKENDE	Mr. David	Guangzhou Iceberg Environmental Consulting Services Co., Ltd. (CME)	-	26/01/2024 to 27/01/2024	Survey Methodology and Sampling	Sylvie Isingizwe
3.	UWIZERA	CLAUDE	Borehole User	IR 183	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
4.	Muhire	Paul	Borehole User	IR 183	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
5.	MUSONI	BONIFACE	Borehole User	IR 183	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
6.	EZEKIEL	SHIMWUMUREMYI	Borehole User	IR 183	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
7.	Francine	Akimana	Borehole User	IR 98	26/01/2024	- Awareness about ownership of VERs - Working condition of	Sylvie Isingizwe

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						borehole unit - SD parameters verification	
8.	Vincent	Baziyaka	Borehole User	IR 30	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
9.	Ladislav	Bizmana	Borehole User	IR 98	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
10.	Stanislav	Ngezahayo	Borehole User	IR 98	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
11.	Saustene	Nymavumba	Borehole User	IR 98	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
12.	Tomir	Twagirumukiza	Borehole User	IR 98	26/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe

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13.	Vincent	Baziyaka	Borehole User	IR 30	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
14.	Ruteribuga	Jean Marie Vianney	Borehole User	IR 30	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
15.	Bugingobushya	Samuel	Borehole User	IR 30	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
16.	Faustin	Twahirwa	Borehole User	IR 30	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
17.	Bosco	Uwamungu	Borehole User	IR 30	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
18.	Karamage	Alphonse	Borehole User	IR 183	27/01/2024	- Awareness about ownership of VERs - Working condition of	Sylvie Isingizwe

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						borehole unit - SD parameters verification	
19.	Aimable	Kagambe	Borehole User	IR 183	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
20.	Elsion	Mbanziriza	Borehole User	IR 183	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
21.	Louis	Murindarugamba	Borehole User	IR 183	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
22.	Augustin	Shumbusho	Borehole User	IR 183	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
23.	Charles	Shumbusho	Borehole User	IR 183	27/01/2024	- Awareness about ownership of VERs - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe

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24.	KARAMAGE	ALPHONSE	Borehole User	IR 183	27/01/2024	- Awareness about ownership of VERS - Working condition of borehole unit - SD parameters verification	Sylvie Isingizwe
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D.5. Sampling approach

>> During the on-site verification, a random sampling approach has been used by the verification team to verify the reported values of the monitored parameters as listed in the MR which are determined through sampling by VPA Implementer.

Sampling approach during verification audit is conducted in accordance with “Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities, Version 04.0” and the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities, Version 09.0”/6/.

The verification team followed the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” version 09, para 29 and 33, esp. for taking samples out of the VPA Implementer’s sample. Verification has adopted the acceptance sampling approach in order to verify the sampling result of the CME/VPA Implementer for the applied verification period.

For the determination of VVB’s acceptance sample size in the checklist, verification team assumed the following factors:

1. Acceptable quality level (AQL) - 0.5%
2. Unacceptable Quality Level (UQL) – 15%
3. Producer risk- 5%
4. Consumer risk- 15%

Verification team has determined acceptance sample size based on the “Table. Sample size and acceptance number based on AQL, UQL, and producer and consumer risks” of standard “Sampling and surveys for CDM project activities and programme of activities” version 09.0. From the above assumed factors, the verification team determined the minimum sample size (n) as 25 minimum samples for end user places under the project and acceptance number (c) as One. The verification team shared the samples with the VPA Implementer during physical on-site visit.

The actual number of sample size where the acceptance survey was done given below:

Parameters	Total Population	VPA Implementer’s sample size	Acceptance sample size (n)	Acceptance Number (z)	Sampling method used
Monitoring parameters as per the MR	49,057 (HHS) & 251 Boreholes	160 for Monitoring Survey	22	0	Acceptance sampling using Random sample

During site visit, Verification team visited sample households applying the random selection technique to cross check the data reported by VPA Implementer. Verification team has checked the VPA Implementer samples result with the on-site interview, monitoring survey results /12/, End-user agreements /16/ and households data base as per the ER sheet /03/ and found consistent. The result of the survey is given below:

Parameters	VVB Sample size (n)	No of VPA Implementer’s record beyond unacceptable level (C)	Accepted Samples VVB By	Accepted/ Rejected
Monitoring parameters as per the MR	22	0	22	Accepted

All the visited samples were showing similar result as reported by VPA Implementer in its monitoring records. Onsite audit results/observation is found to be in line with VPA

Implementer surveys and results. Further, all the primary monitoring records during in person onsite assessment were reviewed to assess the consistency of information in MR and ER calculation spreadsheet and found the monitoring data to be correctly transcribed. Based on that, verification team concludes that sampling results and values presented by CME in the MR and spread sheet and results of survey are consistent with the on-site observation and interview with the end users.

Hence, verification team confirms that VPA Implementer 's survey/sampling records to be acceptable in-line with the requirements of the Sampling Standard and Guidance /6/.

D.6. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General			
Compliance of the monitoring report with the monitoring report form	-		-
Remaining forward action requests from validation and/or previous verifications	-	-	FAR#01
VPAs considered for verification and covered in this report	-	-	-
Programme of activities			
Compliance of the programme implementation with the registered PoA-DD	-	-	-
Implementation and operation of the management system	-	-	-
Post-registration changes	-	-	-
• Corrections	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents ¹	-	-	-
• Changes to the programme design	-	-	-
• Addition of VPA inclusion template	-	-	-
• Change of coordinating/managing entity	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Component project activities	-	-	-
Compliance of the VPA implementation with the included VPA design document	-	-	-
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
• Corrections	-	-	-
• Changes to the start date-of the crediting period	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	-	-	-
• Changes to the project design	-	-	-

¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

• Changes specific to afforestation and reforestation activities	-	-	-
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
• Data and parameters monitored			
• Implementation of sampling plan	CL#01, CL#02 CL#03 CL#04		
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	-	-	-
• Calculation of project GHG emissions or actual net GHG removals by sinks	-	-	-
• Calculation of leakage GHG emissions	-	-	-
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	-	-	-
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included VPA	-	-	-
• Remarks on difference from estimated value in included VPA	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	04	00	01

SECTION E. Verification findings

E.1. General

E.1.1. Compliance of the monitoring report with the monitoring report form

Means of verification	PP used GS monitoring report template, version 1.1. Verification team checked the GS monitoring report /02/ with latest version of "GS Template" /6/ and found OK. All the sections of the form were filled as per the GS4GG guidelines and provide all the relevant details.
Findings	Nil
Conclusion	Verification team confirms that final monitoring report /01/ is completed using the latest valid version of the applicable monitoring report form /4/, hence the monitoring report is complying with the monitoring report form.

E.1.2. Remaining forward action requests from validation and/or previous verifications

>> FAR#01 was raised by the GS during the first performance review, and addressed by CME. The adequate corrections are applied as per the FAR during the verification. Please refer the FAR in the Appendix 4 of the verification team wherein the assessment of the same has been demonstrated in detail. The FAR is closed.

E.1.3. VPAs considered for verification and covered in this report

Title and GS reference number of the VPA included in the PoA as of the end of this monitoring period	Is the VPA considered for this verification? (yes/no)	The date when the VPA was included (Date of Design Certification)	Version of the PoA-DD	Confirmation that a request for issuance including the VPA has been published for the previous monitoring period (Y/N)
GS10959 VPA01 Safe Water Project in Rwanda I (GS 11098)	Yes	19/08/2021	05	Y
GS10959 VPA02 Safe Water Project in Rwanda II (GS 11133)	Yes	19/08/2021	05	Y
GS10959 VPA03 Safe Water Project in Rwanda III (GS 11134)	Yes	19/08/2021	05	Y
GS10959 VPA04 Safe Water Project in Rwanda IV (GS 11135)	Yes	19/08/2021	05	Y
GS10959 VPA05 Safe Water Project in Rwanda V (GS 11136)	Yes	19/08/2021	05	Y
GS10959 VPA06 Safe Water Project in Rwanda VI (GS 11137)	Yes	19/08/2021	05	Y
GS10959 VPA07 Safe Water Project in Bangladesh I (GS 11150)	No	19/08/2021	05	Y
GS10959 VPA08 Safe Water Project in Bangladesh II (GS 11151)	No	19/08/2021	05	Y
GS10959 VPA09 Safe Water Project in Bangladesh III (GS 11152)	No	19/08/2021	05	Y
GS10959 VPA10 Safe Water Project in Bangladesh IV (GS 11153)	No	19/08/2021	05	Y

E.2. Programme of activities

E.2.1. Compliance of the programme implementation with the registered programme design document

Means of verification	CME:	Guangzhou Iceberg Environmental Consulting Services Co., Ltd.
	Project Parties:	NA being a voluntary project
	Title of voluntary project activity:	1. GS10959 VPA01 Safe Water Project in Rwanda I 2. GS10959 VPA02 Safe Water Project in Rwanda II 3. GS10959 VPA03 Safe Water Project in Rwanda III 4. GS10959 VPA04 Safe Water Project in Rwanda IV 5. GS10959 VPA05 Safe Water Project in Rwanda V 6. GS10959 VPA06 Safe Water Project in Rwanda VI
	GS registration No:	GS 11098, GS 11133, GS 11134, GS 11135, GS 11136, GS 11137
	Baseline and monitoring methodology:	Gold Standard Voluntary Methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption" version 3.1/6/
	Project Type:	Access to safe drinking water.
	Location of the project activity:	Rwanda
	Project's crediting period:	GS 11098: 27/11/2021-26/11/2026, GS 11133: 26/11/2021-25/11/2026, GS 11134: 26/11/2021-25/11/2026, GS 11135: 09/01/2022-08/01/2027, GS 11136: 12/12/2021-11/12/2026, GS 11137: 10/01/2022-09/01/2027 The VPA DDs mentioned the expected dates of the crediting periods as all the VPAs were not implemented at the time of VPA inclusions therefore expected date as per Paragraph 4.1.40 of Principles & Requirements (Version 1.2) was mentioned. During the verification the start date is mentioned actual date of rehabilitation of first borehole. The date is verified in compliance with the above cited para of the 'Principles & Requirements (Version 1.2). The dates were verified with the certificates of rehabilitation of first borehole in each VPA.
	Total Duration of the project:	5 years (renewal)

	Period verified in this verification:	<table border="1"> <thead> <tr> <th>VPA No.</th> <th>Start date</th> <th>End date</th> </tr> </thead> <tbody> <tr> <td>VPA01</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA02</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA03</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA04</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA05</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> <tr> <td>VPA06</td> <td>25/07/2022</td> <td>24/07/2023</td> </tr> </tbody> </table>			VPA No.	Start date	End date	VPA01	25/07/2022	24/07/2023	VPA02	25/07/2022	24/07/2023	VPA03	25/07/2022	24/07/2023	VPA04	25/07/2022	24/07/2023	VPA05	25/07/2022	24/07/2023	VPA06	25/07/2022	24/07/2023
		VPA No.	Start date	End date																					
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		VPA02	25/07/2022	24/07/2023																					
		VPA03	25/07/2022	24/07/2023																					
		VPA04	25/07/2022	24/07/2023																					
		VPA05	25/07/2022	24/07/2023																					
		VPA06	25/07/2022	24/07/2023																					
(including both dates)																									
As part of the onsite assessment, the verification team was able to confirm that the project implementation is in accordance with the project description in the VPA DDs. The voluntary project activities GS 11098, GS 11133, GS 11134, GS 11135, GS 11136, GS 11137 aims to reduce greenhouse gas emissions, curb deforestation and improve air quality by providing the access to safe & clean drinking water. The use of non-renewable biomass such as wood in baseline scenario for water boiling, leads to the emission of greenhouses gases, deforestation and poor indoor climate. The VPA involves installation of infrastructure, thus improving the access to safe water for communities in the southern provinces of Rwanda in East Africa, under the PoA, to significantly reduce the consumption of non-renewable biomass and other greenhouse gas emitting fuels for water treatment.																									
The project activity is implemented in line with the registered/recent version of VPA-DDs.																									
There are 251 boreholes repaired in the project and verified with the database along with physically verified during site visit based on accepting sampling. In the monitoring period, the boreholes were maintained by the CME and VPA implementer, functioning well to provide enough clean water to over 190,000 local people.																									
The GHG offset during this monitoring period are 350,018 tCO₂e covering all the 6 VPAs in this current batch of verification/performance review. The list of beneficiaries by the VPA was submitted to VVB and based on the review of list, their agreement with CME, water quality test reports and other evidence inter alia, VVB concluded that the VPAs were implemented in line with the registered VPA-DDs and in line with the framework of registered PoA.																									
The end date for the last borehole rehabilitated of each VPA included in the MR, the data was verified from the project database/9/ and the evidence/11/ submitted to the project verification team.																									
It was verified that the carbon rights of the project technology are explicit with the CME, this was verified from the signed agreements between the CME and the users, the HHs have no other water source. CME has undertaken the usage survey to reaffirm the same and this was also confirmed as part of acceptance sampling undertaken by the VVB. According to the result of the Usage Survey by PP, acceptance sampling by VVB, there is no access to an alternative water purification technology.																									
According to the data of World Bank provided by the CME, the population density of Rwanda is 546 people per square kilometers. In other word, with the borehole as the center of the circle and a radius of 660 meters, the population of 251 boreholes could reach 187,756.																									
The data source is: https://data.worldbank.org/indicator/EN.POP.DNST?locations=RW Moreover, as part of physical inspection during the onsite audit, it was found that the villages are significantly distanced from each other in the implemented VPAs. Therefore, verification team rules out any overlapping.																									
Findings	Nil																								

Conclusion	The project activity was implemented, and the details of beneficiaries described in the recent version of GS4GG VPA-DDs. Based on physical site visit, interview and the reviewed project documentation along with documentary evidence, it can be confirmed that the project implementation is in accordance with realized technology. The project has been implemented and operated as described in the recent version of VPA-DDs.
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E.2.2. Implementation and operation of the management system

Means of verification	The verification team determined the implementation and operation management system through the audit and interview with the CME representative. The verification team checked whether the actual management system implemented in accordance with the management system described in the PoA-DD /14/. During audit, verification team checked the procedures implemented for inclusion of VPA, roles and responsibilities, quality check etc.
Findings	No CAR/CL raised in this regard.
Conclusion	The verification team confirms that the implementation and operation of the PoA management system, including the record-keeping system, complies with the PoA-DD /14/.

E.2.3. Post-registration changes**E.2.3.1. Corrections**

>> Not applicable.

E.2.3.2. Inclusion of a monitoring plan

>> Not applicable.

E.2.3.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

>>

Not applicable.

E.2.3.4. Changes to the programme design

>>

Not applicable.

E.2.3.5. Addition of VPA inclusion template

>> Not applicable.

E.2.3.6. Change of coordination/managing entity

>> Not applicable.

E.2.3.7. Changes specific to afforestation and reforestation activities

>> Not applicable.

E.3. Voluntary project activities

E.3.1. Compliance of the VPA implementation with the included VPA design document

Means of verification	The voluntary project activities GS 11098, GS 11133, GS 11134, GS 11135, GS 11136, GS 11137 aims to reduce greenhouse gas emissions, curb deforestation and improve air quality by providing the access to safe & clean drinking water. The use of non-renewable biomass such as wood in baseline scenario for water boiling, leads to the emission of greenhouses gases, deforestation, and poor indoor climate. The VPA involves installation of infrastructure, thus improving the access to safe water for communities in the southern provinces of Rwanda in East Africa, under the PoA, to significantly reduce the consumption of non-renewable biomass and other greenhouse gas emitting fuels for water treatment.																									
	The project activity is implemented in line with the registered/recent version of VPA-DDs.																									
	There are 251 boreholes repaired in the project and verified with the database along with physically verified during site visit based on accepting sampling. In the monitoring period, the boreholes were maintained by the CME and VPA implementer, functioning well to provide enough clean water to over 190,000 local people.																									
	The GHG offset during this monitoring period are 350,018 tCO₂e covering all the 6 VPAs in this current batch of verification/performance review. The list of beneficiaries by the VPA was submitted to VVB and based on the review of list, their agreement with CME, water quality test reports and other evidence inter alia, VVB concluded that the VPAs were implemented in line with the registered VPA-DDs and also in line with the framework of registered PoA.																									
	Monitoring procedure of GHG data is found sufficient and in accordance with the procedures stipulated under the registered monitoring plan.																									
	The timeline of the project's implementation is as follow:																									
	<table><tr><th>Milestone of the project activity</th><th>Timeline</th><th>Assessment by the verification team</th></tr><tr><td colspan="3">Crediting period:</td></tr><tr><td>1)</td><td>GS 11098: 27/11/2021-26/11/2026,</td><td></td></tr><tr><td>2)</td><td>GS 11133: 26/11/2021-25/11/2026</td><td></td></tr><tr><td>3)</td><td>GS 11134: 26/11/2021-25/11/2026,</td><td></td></tr><tr><td>4)</td><td>GS 11135: 09/01/2022-08/01/2027,</td><td></td></tr><tr><td>5)</td><td>GS 11136: 12/12/2021-11/12/2026,</td><td></td></tr><tr><td>6)</td><td>GS 11137: 10/01/2022-09/01/2027</td><td></td></tr></table>			Milestone of the project activity	Timeline	Assessment by the verification team	Crediting period:			1)	GS 11098: 27/11/2021-26/11/2026,		2)	GS 11133: 26/11/2021-25/11/2026		3)	GS 11134: 26/11/2021-25/11/2026,		4)	GS 11135: 09/01/2022-08/01/2027,		5)	GS 11136: 12/12/2021-11/12/2026,		6)	GS 11137: 10/01/2022-09/01/2027
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	The VPA DDs mentioned the expected dates of the crediting periods as all the VPAs were not implemented at the time of VPA inclusions therefore expected date as per Paragraph 4.1.40 of Principles & Requirements (Version 1.2) was mentioned. During the verification the start date is mentioned actual date of rehabilitation of first borehole. The date is verified in compliance with the above																									

	cited para of the 'Principles & Requirements (Version 1.2). The dates were verified with the certificates of rehabilitation of first borehole in each VPA.				
	1 st monitoring period (Issued)	VPA No.	Start date	End date	Verification team has verified the same from the first performance review documents available on the GS registry. Also, the monitoring period is within the first crediting period of respective VPAs. The crediting periods dates also verified from the GS review forms.
		VPA01	27/11/2021	24/07/2022	
		VPA02	26/11/2021	24/07/2022	
		VPA03	26/11/2021	24/07/2022	
		VPA04	09/01/2022	24/07/2022	
		VPA05	12/12/2021	24/07/2022	
		VPA06	10/01/2022	24/07/2022	
The water flow test undertaken by the CME to check the capacity of boreholes was verified also by undertaking the sample checks during the previous verification as well as in the current verification. The number of strokes to fill a bucket were reconfirmed during the onsite audit. According to Page 9, Table 1 of Document 18 (technical specification) submitted to the verification team, the India Mark hand pumps studied in the report can reach more than 30,000 strokes per day. And by the technical specifications it can provide 7371 Liters/day water, which is way beyond the cap of 2000 Liters/day for 300 users. CME has also submitted the video of the same.					
Findings	Nil				
Conclusion	The VPA were implemented, and the details of beneficiaries described in the recent version of GS4GG VPA-DDs. Based on site visit, interview and the reviewed project documentation along with documentary evidence, it can be confirmed that the project implementation is in accordance with realized technology. The project has been implemented and operated as described in the recent version of VPA-DDs. The monitoring and sustainable development indicators parameters are also monitored as per the recent version of VPA-DDs and GS4GG guideline and found to be appropriate.				

E.3.2. Post-registration changes

E.3.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

>> Not applicable.

E.3.2.2. Corrections

>>

Not applicable.

E.3.2.3. Changes to the start-date of the crediting period

>>

Not applicable.

E.3.2.4. Inclusion of a monitoring plan

>> Not applicable.

E.3.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

>>

Not applicable.

E.3.2.6. Changes to the project design

>>

Not applicable.

E.3.2.7. Changes specific to afforestation and reforestation activities

>>

Not applicable.

E.3.3. Compliance of the registered monitoring plan with applied methodologies and standardized baselines

Means of verification	The VVB verification team was able to confirm that the monitoring plan contained in the recent version of GS4GG POA/VPA-DDS//14/, /2/ is in accordance with the approved methodology applied by the project activity “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” version 3.1/6/. The monitoring plan along with sampling & survey for baseline as well as the project case is described in the recent version of GS4GG POA/VPA-DDS. During the verification all relevant monitoring parameters (as listed in the POA/VPA-DDS /14/, /2/) have been verified about the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures.
Findings	N/A
Conclusion	The monitoring plan mentioned in the registered/recent version of GS4GG POA/VPA-DDS is in line with the applied methodology i.e. “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” version 3.1/6/. The monitoring mechanism is in line with the methodology and is effective and reliable.

E.3.4. Compliance of monitoring activities with the registered monitoring plan

E.3.4.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO ₂ e SDG 6 / Indicator 6.1.1
	Data/parameter	Cj
	Unit	Percentage
	Description	Percentage of users of project technology who were already in baseline using a non-boiling safe water supply
	Source of data	Baseline surveys The data is obtained through baseline survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)". The Baseline Survey was conducted by representative and random sampling during from 08/06/2021 to 15/06/2021. The result is 0.0083.
	Value(s) applied	0.0083
	Choice of data or Measurement methods and procedures	Deemed valid by the methodology
	Purpose of data	Calculation of baseline and project emissions (SDG 13) as well as number of persons consuming safe water supplied by the Project (SDG 6)
	Additional comment	
	Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO ₂ e
	Data/parameter	W _{b,y}
	Unit	Tons/litre
	Description	Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies representatives of baseline scenario b during year y
	Source of data	Default value
	Value(s) applied	0.0004 (Default)
	Choice of data or Measurement methods and procedures	The default value of W _{b,y} for firewood as per "Application of TPDDTEC Methodology to Safe Water Supply Projects"
	Purpose of data	Calculation of baseline emissions
	Additional comment	-
	Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO ₂ e
	Data/parameter	W _{p,y}
	Unit	Tons/litre

	Description	Quantity of wood fuel or fossil fuel required to boil 1 litre of water using technologies representatives of project scenario p during year y
	Source of data	Default value
	Value(s) applied	0.0004 (Default)
	Choice of data or Measurement methods and procedures	According to the baseline and project survey, the same water boiling technology is applied in the baseline and project scenarios. So $W_{b,y}$ and $W_{p,y}$ are equal
	Purpose of data	Calculation of project emissions
	Additional comment	-
	Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO₂e
	Data/parameter	$f_{NRB,b,y} / f_{NRB,p,y}$
	Unit	Percentage
	Description	Fraction of biomass used that can be established as non – renewable biomass in the baseline scenario b during year y & Project scenario p respectively.
	Source of data	As per the “TOOL30: Calculation of the fraction of non-renewable biomass, version 3.0”. Please refer to registered PDD.
	Value(s) applied	96.82% (Validated by the validating VVB and approved by the Sustaincert)
	Choice of data or Measurement methods and procedures	As per the “TOOL30: Calculation of the fraction of non-renewable biomass, version 3.0”.
	Purpose of data	Calculation of baseline emissions
	Additional comment	
	Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO₂e
	Data/parameter	$NCV_{b,fuel} / NCV_{p,fuel}$
	Unit	TJ/ton
	Description	Net calorific value of firewood in baseline scenario b & Project scenario p respectively.
	Source of data	IPCC 2006 default for firewood
	Value(s) applied	0.0156
Choice of data or Measurement methods and procedures	Deemed valid by the methodology	
Purpose of data	Estimation of CO ₂ e emissions reductions	
Additional comment	-	
Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO₂e	
Data/parameter	$EF_{b,fuel,co2} / EF_{p,fuel,co2}$	

Unit	tCO ₂ /TJ
Description	CO ₂ emission factor of fuels used in the baseline scenario b & Project scenario p respectively.
Source of data	IPCC default value for Wood: IPCC 2006 Guidelines for National Greenhouse gas Inventories Chapter 2: Stationary Combustion Page 2.23 Table 2.5
Value(s) applied	112
Choice of data or Measurement methods and procedures	According to the baseline survey, wood is the only fuel used in the baseline scenario.
Purpose of data	Calculation of baseline emissions
Additional comment	-

Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO ₂ e
Data/parameter	X _{boil(i)}
Unit	Percentage
Description	Percentage of premises that in the absence of the project activity would have used non-GHG emitting technologies like chlorine treatment techniques (if available) in the project boundary.
Source of data	Baseline survey in registered VPA DD/2/
Value(s) applied	0
Choice of data or Measurement methods and procedures	The data is obtained through baseline survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)". The Baseline Survey was conducted by representative and random sampling during from 08/06/2021 to 15/06/2021. The result is 0.

Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO ₂ e
Data/parameter	GWP _{CH4}
Unit	-
Description	Global warming potential for CH ₄
Source of data	IPCC Fifth Assessment Report: Climate Change 2014
Value(s) applied	28
Choice of data or Measurement methods and procedures	As per "IPCC Fifth Assessment Report: Climate Change 2014", the value is 28.

Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO ₂ e
Data/parameter	GWP _{N2O}
Unit	-
Description	Global warming potential for N2O
Source of data	IPCC Fifth Assessment Report: Climate Change 2014
Value(s) applied	265
Choice of data or Measurement methods and procedures	As per "IPCC Fifth Assessment Report: Climate Change 2014", the value is 265.

Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO ₂ e
Data/parameter	$EF_{b,fuel,non\ CO_2} / EF_{p,fuel,non\ CO_2}$
Unit	tCO ₂ /TJ
Description	Non-CO2 emission factor of fuels used in the baseline scenario & Project scenario respectively.
Source of data	IPCC default value for Wood: IPCC 2006 Guidelines for National Greenhouse gas Inventories Chapter 2: Stationary Combustion Page 2.23 Table 2.5 IPCC Fifth Assessment Report: Climate Change 2014
Value(s) applied	9.46
Choice of data or Measurement methods and procedures	According to the baseline survey, wood is the only fuel used in the baseline scenario. As per "IPCC 2006 Guidelines for National Greenhouse gas Inventories", the default emission factor of CH ₄ and N ₂ O for stationary combustion is 0.3t/TJ and 0.004t/TJ, respectively. As per "IPCC Fifth Assessment Report: Climate Change 2014", the global warming potential for CH ₄ and N ₂ O is 28 and 265, respectively. So $EF_{b,non\ CO_2} = 0.3 \times 28 + 0.004 \times 265 = 9.46$.

Relevant SDG Indicator	SDG 5 / Gender Equality
Data/parameter	T _b
Unit	Hour
Description	Time spent to fetch and purify water by women and girls per household per day in the baseline scenario
Source of data	Baseline survey in the registered PDD
Value(s) applied	0.90
Choice of data or Measurement methods and procedures	The data is obtained through baseline survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)". The Baseline Survey was

		conducted by representative and random sampling during from 08/06/2021 to 15/06/2021. The result is 0.90.	
	Purpose of data	Calculation of percentage reduction of time spent to fetch and purify water by women and girls	
	Additional comment	-	
	Relevant SDG Indicator	SDG 3 / Good Health and Well-Being	
	Data/parameter	I _b	
	Unit	Percentage	
	Description	Waterborne illness incidence in the baseline scenario	
	Source of data	Baseline survey in the registered PDD	
	Value(s) applied	38.45%	
	Choice of data or Measurement methods and procedures	The data is obtained through baseline survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)". The Baseline Survey was conducted by representative and random sampling during from 08/06/2021 to 15/06/2021. The result is 38.45%.	
	Purpose of data	Calculation of reduction of waterborne illness incidence	
	Additional comment	-	
Findings	Nil		
Conclusion	The default values applied were found to be consistent with the recent version of GS4GG POA/VPA-DDS/2/,/14/, applied methodology and other relevant sources of data. The values fixed at the time of validation were from IPCC report and few were conservative values.		

E.3.4.2. Data and parameters monitored

Means verification of	Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO₂e	
	Data/parameter	Q _{p,y}	
	Unit	Litres/person.day	
	Description	Quantity of safe water in litres consumed in the project scenario p and supplied by project technology per person per day	
	Source of data	Water consumption field test Means of Verification by VVB: Database was verified by the VVB and confirmed that the capped value is used in the calculation of emission reductions. VVB undertaken the acceptance sampling to verify the appropriateness of CME's sampling during onsite inspection and concluded that the per person water consumption was higher than the capped value.	

	Value(s) applied	Capped at 6.66
	Measurement methods and procedures	The data obtained by WCFT through sampling survey as per the applied methodology as well as “Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)” and “Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)”. The data obtained by WCFT through sampling survey as per the applied methodology as well as “Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)” and “Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)”. The WCFT was conducted by CME and ARDE from 26/07/2022-18/08/2022. The actual value is 8.96 L. According to the applied methodology, the cap value for full-day premises is 7. So CME capped this value as 7 for each project borehole. As an average value for all project boreholes, the result is 6.66. VVB also verified the water consumption during onsite audit and found no significant variation in both. Moreover, the capped value of water consumption is used thus it also confirms the meeting of sampling reliability. It was noted that $Q_{p,y}$ was established through the water consumption tests undertaken by the CME during the previous verification by using the cluster sampling. The sampling approach was verified and found it was complying the CDM sampling requirements pertaining to the cluster sampling. Please also note that in the cluster sampling, if the required samples are monitored higher than the minimum sample size calculated and all samples were selected, it is considered that the desired confidence/precession is met. The excel worksheet including the detailed calculations of sample size which includes all the desired input/output put values for the cluster sampling viz standard deviation (SD), average of SD, cluster mean inter alia were verified correct.
	Monitoring frequency	At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology
	QA/QC procedures	<u>Means of Verification by VVB:</u> The trained staff of CME was deployed for the surveys and VVB interviewed the staff and found them knowledgeable and competent.
	Purpose of data	Calculation of CO ₂ e emissions reductions

	Additional comment	-
	Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO₂e
	Data/parameter	Q _{p,rawboil,y}
	Unit	Litres per person per day
	Description	Quantity of raw or unsafe water that is still boiled after installation of the water treatment technology.
	Source of data	Water consumption field test Means of Verification by VVB: Database was verified by the VVB and confirmed that the capped value is used in the calculation of emission reductions. VVB undertaken the acceptance sampling to verify the appropriateness of CME's sampling during onsite inspection and concluded that the using of raw water boiling is no more in use after the rehabilitation of project boreholes.
	Value(s) applied	0
	Measurement methods and procedures	Water Consumption Field Test Means of Verification by VVB: The data obtained by WCFT through sampling survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)". The WCFT was conducted by the CME and ARDE from 26/07/2022 to 18/08/2022. CME considered the 160 samples to monitor the value by taking 20 samples from each of 8 boreholes. The sampling/survey was undertaken by the trained staff of CME, the HH's selected for survey were distributed 20 Liters jerrycans for water collection and then the CME's staff monitored the water consumption during WCFT. Database was verified by the VVB and confirmed that the capped value is used in the calculation of emission reductions. VVB undertaken the acceptance sampling to verify the appropriateness of CME's sampling during onsite inspection and concluded that the using of raw water boiling is no more in use after the rehabilitation of project boreholes. VVB also verified the water consumption during onsite audit and found no significant variation in both. It was noted that Q_{p,rawboil,y} was established through the water consumption tests undertaken by the CME during the previous verification by using the cluster sampling. The sampling approach was verified and found it was

		complying the CDM sampling requirements pertaining to the cluster sampling. Please also note that in the cluster sampling, if the required samples are monitored higher than the minimum sample size calculated and all samples were selected, it is considered that the desired confidence/precession is met. The excel worksheet including the detailed calculations of sample size which includes all the desired input/output values for the cluster sampling viz standard deviation (SD), average of SD, cluster mean inter alia were verified correct.
	Monitoring frequency	At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology.
	QA/QC procedures	Means of Verification by VVB: The trained staff of CME was deployed for the surveys and VVB interviewed the staff and found them knowledgeable and competent.
	Purpose of data	Calculation of CO ₂ e emissions reductions
	Additional comment	Nil

Relevant SDG Indicator	SDG 13 (Climate Action), SDG 6 (Safe Water and Sanitation)
Data/parameter	Q _{p, cleanboil, y}
Unit	Liters per person per day
Description	Quantity of safe (treated, or from safe supply) water boiled in the project scenario p, after installation of project technology
Source of data	Water consumption field test Means of Verification by VVB: Database was verified by the VVB and confirmed that the capped value is used in the calculation of emission reductions. VVB undertaken the acceptance sampling to verify the appropriateness of CME's sampling during onsite inspection and concluded that the using of raw water boiling is no more in use after the rehabilitation of project boreholes.
Value(s) applied	0
Measurement methods and procedures	Water Consumption Field Test Means of Verification by VVB: The data obtained by WCFT through sampling survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)".

			-The WCFT was conducted by CME and ARDE (Implementation partner) from 26/07/2022-18/08/2022. -At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology Means of Verification by VVB: The trained staff of CME was deployed for the surveys and VVB interviewed the staff and found them knowledgeable and competent. CME considered the 160 samples to monitor the value by taking representative samples from each VPA. CME considered the 160 samples to monitor the value by taking 20 samples from each of 8 boreholes. The sampling/survey was undertaken by the trained staff of CME, the HH's selected for survey were distributed 20 Liters jerrycans for water collection and then the CME's staff monitored the water consumption during the survey. Database was verified by the VVB and confirmed that the capped value is used in the calculation of emission reductions. VVB undertaken the acceptance sampling to verify the appropriateness of CME's sampling during onsite inspection and concluded that the using of raw water boiling is no more in use after the rehabilitation of project boreholes. VVB also verified the water consumption during onsite audit and found no significant variation in both. It was noted that $Q_{p, cleanboil, y}$ was established through the water consumption tests undertaken by the CME during the previous verification by using the cluster sampling. The sampling approach was verified and found it was complying the CDM sampling requirements pertaining to the cluster sampling. Please also note that in the cluster sampling, if the required samples are monitored higher than the minimum sample size calculated and all samples were selected, it is considered that the desired confidence/precession is met. The excel worksheet including the detailed calculations of sample size which includes all the desired input/output values for the cluster sampling viz standard deviation (SD), average of SD, cluster mean inter alia were verified correct.	
		Monitoring frequency	At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology	
		QA/QC procedures	Means of Verification by VVB: The trained staff of CME was deployed for the surveys and VVB interviewed the staff and found	

		them knowledgeable and competent.																	
	Purpose of data	Calculation of project emissions																	
	Additional comment	Nil																	
	Relevant SDG Indicator	SDG 6 (Clean Water and Sanitation) Indicator 6.1.1 – Proportion of population using safely managed drinking water services																	
	Data/parameter	Quality of the treated water																	
	Unit	As appropriate in alignment with QA/QC procedures																	
	Description	Performance of the treatment technology – less than 1 CFU of E.Coli / 100 ml of safe water																	
	Source of data	Water Quality Tests Reports/18/ issued by the third-party labs																	
	Value(s) applied	Acceptable <table border="1"> <thead> <tr> <th>Date</th> <th>No.</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>24/08/2022</td> <td>2nd Water Quality Test</td> <td>Pass</td> </tr> <tr> <td>15/11/2022</td> <td>3rd Water Quality Test</td> <td>Pass</td> </tr> <tr> <td>24/02/2023</td> <td>4th Water Quality Test</td> <td>Pass</td> </tr> <tr> <td>24/05/2023</td> <td>5th Water Quality Test</td> <td>Pass</td> </tr> </tbody> </table>			Date	No.	Result	24/08/2022	2nd Water Quality Test	Pass	15/11/2022	3rd Water Quality Test	Pass	24/02/2023	4th Water Quality Test	Pass	24/05/2023	5th Water Quality Test	Pass
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24/05/2023	5th Water Quality Test	Pass																	
Measurement methods and procedures	Water Quality Test																		
Monitoring frequency	Quarterly lab tests undertaken by the third-party lab <u>Means of Verification by VVB:</u> The water test results were furnished to VVB and based on the submitted evidence. CME confirmed that they had also undertaken the tests during the current verification in the accredited labs as per the methodology to compare the results of current lab. Moreover, the methodology has the following monitoring requirements as the applied version 3.1 of TPDDTEC under monitoring parameter. verification approach of water quality was undertaken by the two-step approach: I. Review of all water quality reports issued by the third-party lab; II. Confirmation of the water quality sample collection through the interviews of village heads/users to confirm that the representative of third party collected the samples and villages head (primarily the custodian of boreholes) was informed or not. Therefore, the verification of water quality test results through the review of 'Water Quality Reports' does not fall under the acceptance sample as 100% records were verified.																		

	impact																
Additional comment	$U_{p,y}$ is based on accumulative active connections at the end of the monitoring period, since it's second MP and all the devices were found working, no drop-off registered, hence $U_{p,y}$ is set to 1. Means of Verification by VVB: The survey results furnished to VVB and it was witnessed that no drop-off cases found. VVB also undertaken the acceptance sampling and found the similar trend during the onsite inspection.																
Relevant SDG Indicator	SDG 13 / Climate Change Mitigation measured as reduced tCO₂e and SDG 6 / Indicator 6.1.1																
Data/parameter	$N_{p,y}$																
Unit	Persons.days																
Description	Number of person. days consuming water supplied by project scenario p through year y																
Source of data	D16-22 of sheet SDG13 of Excel spreadsheet "1-SDG Outcomes Calculation Form-MP2nd"																
Value(s) applied	<table border="1"> <thead> <tr> <th>VPA No.</th><th>Persons.days</th></tr> </thead> <tbody> <tr><td>01</td><td>12,340,897</td></tr> <tr><td>02</td><td>11,564,471</td></tr> <tr><td>03</td><td>11,797,656</td></tr> <tr><td>04</td><td>12,190,541</td></tr> <tr><td>05</td><td>12,307,382</td></tr> <tr><td>06</td><td>11,834,797</td></tr> <tr><td>Total</td><td>72,035,744</td></tr> </tbody> </table>	VPA No.	Persons.days	01	12,340,897	02	11,564,471	03	11,797,656	04	12,190,541	05	12,307,382	06	11,834,797	Total	72,035,744
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Measurement methods and procedures	Calculated value based on the database records																
Monitoring frequency	At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology.																
QA/QC procedures	Transparent data analysis and reporting																
Purpose of data	Calculation of CO ₂ e Emissions																
Additional comment	Means of Verification by VVB: The data sources have been made available to the VVB. $N_{p,y}$ determined by multiplying the number of households serviced by average number of people per household in the sell D16-22 of sheet SDG13 of Excel table "1-SDG Outcomes Calculation Form-MP1st" respectively, all evidences shared with VVB. The calculation was found adequate by the VVB. $N_{p,y}$ is a calculated parameter and it has been calculated based based on the operational days in the monitoring period of each borehole multiplied by the users connected. The demonstration of calculation was assessed correct in the SDG spreadsheet.																

	Relevant SDG Indicator	SDG 13/ Climate Change Mitigation measured as reduced tCO₂e														
	Data/parameter	LE _{p,y}														
	Unit	tCO ₂ e per year														
	Description	Leakage in project scenario p during year y														
	Source of data	The baseline survey and other literature survey														
	Value(s) applied	0														
	Measurement methods and procedures	Means of Verification: Baseline and monitoring surveys Individual participants were selected from the borehole user data base using the random sampling process outlined in the monitoring plan. Sample sizes are in line with the Gold Standard requirements. VVB confirms based on the above-mentioned justification and verified by VVB during the site visit that no HHs are transferring to other methods of water treatment, so argument for not accounting the leakage is reasonable.														
	Monitoring frequency	Biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology.														
	QA/QC procedures	Transparent data analysis and reporting														
	Purpose of data	Calculation of leakage														
	Additional comment	No leakage														
	Relevant SDG Indicator	SDG 6 indicator 6.1.1														
	Data/parameter	Hygiene campaigns														
	Unit	Not Applicable														
	Description	Hygiene campaigns carried out among project technology users														
Source of data	<table border="1"> <thead> <tr> <th>Date</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>15/11/2022</td> <td>Hygiene campaign held at Mbuye sector, Nyakarekare cell Bereshi village</td> </tr> <tr> <td>15/11/2022</td> <td>Hygiene campaign held at Mugina sector, Kabugondo cell, Mataba sud village</td> </tr> <tr> <td>21/11/2022</td> <td>Hygiene campaign held at Byimana sector, Kamusenyi cell Kabusheshe village</td> </tr> <tr> <td>21/11/2022</td> <td>Hygiene campaign held at Kibirizi sector, Rwtso cell Seruhembe I village</td> </tr> <tr> <td>22/11/2022</td> <td>Hygiene campaign held at Ruhango sector, Munini cell Kabaja village</td> </tr> <tr> <td>22/11/2022</td> <td>Hygiene campaign held at Kinazi sector, Kinazi cell Kacyiru II village</td> </tr> </tbody> </table>	Date	Location	15/11/2022	Hygiene campaign held at Mbuye sector, Nyakarekare cell Bereshi village	15/11/2022	Hygiene campaign held at Mugina sector, Kabugondo cell, Mataba sud village	21/11/2022	Hygiene campaign held at Byimana sector, Kamusenyi cell Kabusheshe village	21/11/2022	Hygiene campaign held at Kibirizi sector, Rwtso cell Seruhembe I village	22/11/2022	Hygiene campaign held at Ruhango sector, Munini cell Kabaja village	22/11/2022	Hygiene campaign held at Kinazi sector, Kinazi cell Kacyiru II village	
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Value(s) applied	Completed															

		Means of Verification: Through the review of videos and the interviews with the user during the onsite by asking the questions whether such campaign was undertaken or not. Moreover, the methodology of survey was also confirmed by the verification team during the onsite assessment. It was confirmed by the HHs that Hygiene campaign included the sanitation amenities, equipment, and infrastructure, as well as to the behaviour in respect to regular and correct use of such amenities. It also included the behaviour aspects that prevents infections from water-related diseases. Which confirms the laid down requirements of methodology for 'Hygiene Campaign'. During the assessment the verification team was also informed that the users did not suffer from any water borne illness after the use of borehole. This demonstrates the effectiveness of the campaign carried out by the CME.																													
	Measurement methods and procedures	Questionnaires and interviews are used in hygiene campaigns to assess hygienic handling of clean water.																													
	Monitoring frequency	Annually																													
	QA/QC procedures																														
	Purpose of data	Assessment of achievement of SDG 6																													
	Additional comment	-																													
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	acceptance sampling.
Monitoring frequency	At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology.
QA/QC procedures	-
Purpose of data	Calculations of CO ₂ e emission reductions
Additional comment	-

Relevant SDG Indicator	SDG 5
Data/parameter	T _{p,y}
Unit	Hour
Description	Time spent to fetch and purify water by women and girls per household per day in the project scenario during year y
Source of data	B128 of Excel table "2-Data Recording Form for Project Survey" Monitoring Survey
Value(s) applied	0.44
Measurement methods and procedures	The data is obtained by project survey through sampling survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)". The project survey was conducted by the CME and ARDE from 25/07/2022-25/08/2022 and the result is 0.44.
Monitoring frequency	At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology.
QA/QC procedures	Transparent data analysis and reporting
Purpose of data	Calculation of percentage reduction of time spent to fetch and purify water by women and girls
Additional comment	-

Relevant SDG Indicator	SDG 3
Data/parameter	I _{p,y}
Unit	Percentage
Description	Waterborne illness incidence in the project scenario during year y
Source of data	B127 of Excel table "2-Data Recording Form for Project Survey"
Value(s) applied	0
Measurement methods and procedures	The data is obtained by project survey through sampling survey as per the applied methodology as well as "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)" and "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)". The

		project survey was conducted by the CME and ARDE from 25/07/2022-25/08/2022 and the result is 0. Means of Verification: The records verified by the VVB and concluded that figure is correct. The VVB also verified from the onsite inspection from the sampled HHs and it was concluded that no such cases identified. Moreover, all the water quality tests undertaken by the third party also substantiates it.
	Monitoring frequency	At least biennially; the above value is valid from 26/11/2021 to no later than 25/11/2023 as per the applied methodology.
	QA/QC procedures	Transparent data analysis and reporting
	Purpose of data	Calculation of reduction of waterborne illness incidence
	Additional comment	-
Findings	CL#01, CL#02, CL#03 & CL#04 were raised and closed.	
Conclusion	The adequacy and compliance of the monitoring plan in the Monitoring report was found as per the requirements laid by the monitoring methodology and the recent version of GS4GG POA/VPA-DDS. The information flow (from data generation, aggregation, to recording, calculation and reporting) is already included under respective parameter above. The verification team has verified all the data and collected evidence as per the required monitoring frequency and found to be correct and appropriate meeting the requirements of the applied methodology and recent version of GS4GG POA/VPA-DDs.	

E.3.4.3. Implementation of sampling plan

Means of verification	Description of staff conducting monitoring activities All surveys are administered by trained staffs of CME, local to the area and conversant in the local dialects to ensure that responses were consistent and not biased by any regional language barriers. Field staffs were provided with an English version of the questionnaire to provide for the greatest possible standardisation of responses. It was explained to the respondents that the answers to the survey are analysed as a group and that no individual names are used in this analysis; the reason to take peoples' names and addresses is so that they can be found again to conduct further monitoring tasks. The staff conducting the monitoring activities were interviewed at the time of physical assessment and found that staff is well versed and has proper knowledge of conducting the monitoring activities. Maintenance of total water Beneficiaries Accurate records were kept and stored both electronically and in paper format. The agreement signed with the end users were verified by the verification team and also the users were interviewed during the physical assessment by the VVB. The data base in the following template as reproduced in MR was verified by the VVB during physical assessment. The users IDs were further verified through interviewing the HHs during the physical assessment undertaken. The following details are recorded in the project database, refer the template below:
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	Bore hole ID
	Rehabilitation Date
	End date of MR1
	Days out of work
	Days of work
	Hand Pump Type
	Geographic Coordinates
	province
	district
	province district cell
	cell
	Village
	Number of households
	Number of persons

Filed Tests

Complying the VPA-DDS requirements, the following field studies were performed:

- Water Consumption Field Test (Surveyed by CME and verified by the VVB)
- Water quality tests by the third-party labs.

These surveys and studies have been made available to the VVB and are the verification is summarized below.

Water Quality Tests (WQTs)

The quality of the treated water is assessed to ensure that it fits human consumption. The standard used to assess the water quality meets requirements of the applied methodology. It is conducted quarterly, with the first test conducted within 6 months of the project start date. At least once every two years, the water quality test will be performed in accredited laboratories. The samples were selected by Simple Random Sampling. We used equation (1) of "Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)" to calculate the sample size. The result is 18.78. Furthermore, according to paragraph 14 of "Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)", a minimum sample size of 30 shall be chosen. CME chose 35 samples out of 251 boreholes to ensure the precision. The water quality test has been made in the Water Quality Testing Laboratory of the NGO Forum during this monitoring period on 24/08/2022, 15/11/2022, 24/02/2023 and 25/05/2023 in the IPRC Kigali Engineering Laboratory during this monitoring period, which is a national accredited laboratory/18/. The detailed results of each test have been submitted to VVB and VVB found that the tests met the water quality in terms of *E.coli* and other parameters i.e. (Arsenic Arsenic and Fluorides). The third party was appointed by the CME to undertake the test, the samples were

also drawn by the third party and carried out the tests as per the WHO standard. The labs test reports furnished by CME to VVB and VVB based on the local expertise concluded that the tests were adequately undertaken by the third party including the accredited lab for the current verification. VVB observed that the samples were taken higher than the desired samples and the sampling results met the desired confidence/precision as reported in the previous section. Since none of the sample tested for the WCFT failed for Ecoli and other parameters therefore the required precision was sufficiently met.

Verification approach of water quality was undertaken by the two-step approach:

- I. Review of all water quality reports issued by the third-party lab;
- II. Confirmation of the water quality sample collection through the interviews of village heads/users to confirm that the representative of third party collected the samples and villages head (primarily the custodian of boreholes) was informed or not.

Therefore, the verification of water quality test results through the review of 'Water Quality Reports' doesn't fall under the acceptance sample as 100% records were verified.

Usage Survey - The Usage Survey is included in the Project Survey, there is no individual questionnaire for Usage Survey. The Project Survey was carried out between 12/08/2023 to 06/09/2023. The result from the usage survey is 100% used to calculate emission reduction. VVB undertaken the acceptance sampling test to verify the appropriateness of CME's survey and based on the VVB's sampling it can be concluded that the survey undertaken by the CME were adequate as no variation found between the VVB's survey and CME's survey. The user survey was considered by taking a total of 160 samples and multi stage sampling approach as per the CDM sampling guidelines, since the usage was found 100% therefore VVB concluded that the desired confidence/precision was adequately met.

Water Consumption Filed Tests (WCFT)

The WCFT was carried out between 26/07/2022 to 18/08/2022. As per the methodology, results of each household were capped at 7L. Hence the result of Qp,y is 6.66L applied by the CME and the same has been verified in the subsequent section under monitoring parameters. VVB undertaken the acceptance sampling test to verify the appropriateness of CME's survey and based on the VVB's sampling it can be concluded that the survey undertaken by the CME were adequate as no variation found between the VVB's survey and CME's survey. The WCFT survey was considered by taking a total of 160 samples and multi stage sampling approach as per the CDM sampling guidelines, since the capped value is applied therefore VVB concluded that the desired Confidence/Precision was adequately met.

The sampling approach was verified and found it was complying the CDM sampling requirements pertaining to the cluster sampling. Please also note that in the cluster sampling, if the required samples are monitored higher than the minimum sample size calculated and all samples were selected, it is considered that the desired confidence/precision is met. The excel worksheet including the detailed calculations of sample size which includes all the desired input/output values for the cluster sampling viz standard deviation (SD), average of SD, cluster mean inter alia were verified correct.

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Project Survey - Sampling according to “Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)” and “Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)” to conduct Project Survey. CME calculated that 2 was the minimum number of boreholes should be sampled to satisfy the 95/10 rule of applied methodology being a mean parameter. Hence, CME randomly chose 8 boreholes covering the all 6 VPAs to maintain the representativeness. CME also randomly chose 20 user households from each borehole, i.e. 160 user households in 8 boreholes. Data collected during the project surveys explores the following characteristics:

General information - Name, address, telephone number etc.

Household socio-demographic information.

Water use characteristics.

The Project Survey was carried out between 25/07/2022 to 25/08/2022, which surveyed the usage rate between 26/11/2021 to 24/07/2022. The Usage Survey for the second monitoring period was carried out between 12/08/2023 to 06/09/2023, which surveyed the usage rate between 25/07/2022 to 24/07/2023. A more detailed description of the results is made in a separate document “2-Data Recording Form for Project Survey”, and furnished to the VVB.

The project survey was considered by taking a total of 160 samples and multi stage sampling approach as per the CDM sampling guidelines, since the usage was found 100% therefore VVB concluded that the desired Confidence/Precision was adequately met.

Hygiene campaign – CME undertaken annually. The campaign held six hygiene campaigns in six villages from six VPA respectively during this monitoring period. The information is shown below:

Date	Location
15/11/2022	Hygiene campaign held at Mbuye sector, Nyakarekare cell Bereshi village
15/11/2022	Hygiene campaign held at Mugina sector, Kabugondo cell, Mataba sud village
21/11/2022	Hygiene campaign held at Byimana sector, Kamusenyi cell Kabusheshe village
21/11/2022	Hygiene campaign held at Kibirizi sector, Rwotso cell Seruhembe I village
22/11/2022	Hygiene campaign held at Ruhango sector, Munini cell Kabaja village
22/11/2022	Hygiene campaign held at Kinazi sector, Kinazi cell Kacyiru II village

The detailed description of the hygiene campaigns during this monitoring period has been provided in a separate document.

The above hygiene campaigns are for the first year of the crediting period (from 26/11/2021 to 25/11/2022) . The hygiene campaigns for the second year of the crediting period (from 26/11/2022 to 25/11/2023) were held from 18/10/2023 to 31/10/2023. Since they do not fall in the current monitoring period, they will be reported in the MR of the next monitoring period.

Each hygiene campaign was held with many habitants of villages. The agenda of campaign was:

- The campaign was started with greeting from village's leader.
- Self-introduction of village administration committee leaders and local boreholes rehabilitation project staff.
- Presentation of prepared module related to Hygiene and Sanitation campaign done by an expert from the borehole's rehabilitation project.
- Questions, wishes and recommendations proposed by habitants.
- Community work of cleaning on boreholes.

	The videos of the hygiene campaigns were furnished to the VVB and based on the review of videos, reconfirmation by HHs during the onsite inspection, it has been concluded that that the CME adhered the requirements of hygiene campaign.
Findings	CL#02 & CL#03 were raised and closed.
Conclusion	Verification team confirms that survey/sampling records to be acceptable in line with the requirements of the Sampling Standard and Guidance.

E.3.5. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	N/A as water quality tests were undertaken in third party labs. No other parameter parameter requires the instrumental monitoring.
Findings	N/A
Conclusion	N/A

E.3.6. Assessment of data and calculation of emission reductions or net removals

E.3.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification

Emissions reductions were calculated using the results of the, Usage Surveys and baseline survey, water quality test inter alia, taking into consideration values for NRB and leakage.

The monitoring has been carried out in accordance with the monitoring plan contained in the recent version of GS4GG POA/VPA-DDs/2/.

The verification team assessed the monitoring techniques and each monitoring value in the monitoring report; and provide a short summary on the verification of every parameter listed in the monitoring plan and used for calculation of emission reductions.

The monitored parameters of the project are in line with the recent version of GS4GG POA/VPA-DDs and the applied GS4GG methodology /6/. Brief descriptions of the monitored parameters are listed below:

The CME submitted all the relevant data and parameters required to be monitored to the verification team along with the monitoring report. All the parameters required to be monitored as per the recent version of GS4GG VPA DDs/PoA DD have been monitored and reported in the monitoring report. Verification team has reviewed the calculation worksheet /3/ for the emission reduction calculation for the monitoring period as indicated at the cover page (including both the days). Verification team confirms that the formulas, conversions, aggregations and factors are consistent with the monitoring plan in the POA/VPA DDs. The reported data was checked as follows:

- All the necessary data and all the parameters required to be monitored in the recent version of GS4GG VPA-DDS //14/, /2// were reviewed to ensure accuracy.

$$B_{b,y} = (1 - X_{boil}) * (1 - C_j) * N_{p,y} * W_{b,y} * (Q_{p,y} + Q_{p,rawboil,y})$$

VPA No.	B _{b,y}
01	32,603.28
02	30,552.05
03	31,168.10
04	32,206.05
05	32,514.73
06	31,266.22
Total	190,310.43

Parameter	Description	Unit	Value	Verification Remarks

	B _{b,y}	Quantity of fuel consumed in baseline scenario b during the year in tons	ton	<table border="1"> <tr> <th>VPA No.</th> <th>B_{b,y}</th> </tr> <tr> <td>01</td> <td>32,603.28</td> </tr> <tr> <td>02</td> <td>30,552.05</td> </tr> <tr> <td>03</td> <td>31,168.10</td> </tr> <tr> <td>04</td> <td>32,206.05</td> </tr> <tr> <td>05</td> <td>32,514.73</td> </tr> <tr> <td>06</td> <td>31,266.22</td> </tr> <tr> <td>Total</td> <td>190,310.43</td> </tr> </table>	VPA No.	B _{b,y}	01	32,603.28	02	30,552.05	03	31,168.10	04	32,206.05	05	32,514.73	06	31,266.22	Total	190,310.43	Formula in line with TPDDTEC, V3.1 Calculated value presented in ER spreadsheet, VVB confirms that the calculation complies with the methodology as well as the approach registered in VPA-DDs.
	VPA No.	B _{b,y}																			
	01	32,603.28																			
	02	30,552.05																			
	03	31,168.10																			
	04	32,206.05																			
05	32,514.73																				
06	31,266.22																				
Total	190,310.43																				
f _{NRB,b,y}	Fraction of biomass used that can be established as non – renewable biomass in the baseline scenario b during year y	fraction	0.9682	f _{NRB} determined by complying the tool 30 of CDM, refer the assessment above regarding appropriateness of value.																	
NCV _{b,fuel}	Net calorific value of fuels used in the baseline scenario	TJ/ton	0.0156	- IPCC 2006 default for firewood - The Value is in line with PoA DD/VPA-DDS																	
EF _{b,fuel,co2}	CO2 emission factor of fuels used in the baseline scenario	tCO ₂ /TJ	112.00	- IPCC 2006 default for firewood - The Value is in line with PoA DD/VPA-DDS																	
EF _{b,fuel,non-co2}	Non-CO2 emission factor of fuels used in the baseline scenario	tCO ₂ /TJ	9.46	- IPCC 2006 default for firewood - The Value is in line with PoA DD/VPA-DDS																	
Baseline Emission Reductions: $BE_{b,y} = B_{b,y} * ((f_{NRB,b,y} * EF_{b,fuel,CO2}) + EF_{b,fuel,non-CO2}) * NCV_{b,fuel} \quad (2)$ Where: BE_{b,y} Baseline emissions during year y B_{b,y} Quantity of fuel consumed in baseline scenario b during the year in tons; the applied value as per calculation in this section above; f_{NRB,b,y} Fraction of biomass used that can be established as non-renewable biomass in baseline scenario b during year y; the applied value is 96.82% as per section D.1 of the MR. EF_{b,fuel,CO2} CO₂ emission factor of fuels used in the baseline scenario; the applied value is 112 as per section D.1 of the MR. EF_{b,fuel,non-CO2} Non-CO₂ emission factor of fuels used in the baseline scenario; the applied value is 9.46 as per section D.1 of the MR.																					

	NCV_{b,fuel} Net calorific value of fuels used in the baseline scenario; the applied value is 0.0156 as per section D.1 of the MR. As a result, BE_{b,y} is shown as follows: <table border="1" data-bbox="619 277 1189 537"> <thead> <tr> <th>VPA No.</th><th>BE_{b,y}</th></tr> </thead> <tbody> <tr><td>01</td><td>59,964</td></tr> <tr><td>02</td><td>56,191</td></tr> <tr><td>03</td><td>57,324</td></tr> <tr><td>04</td><td>59,233</td></tr> <tr><td>05</td><td>59,801</td></tr> <tr><td>06</td><td>57,505</td></tr> <tr><td>Total</td><td>350,018</td></tr> </tbody> </table> <u>SDG 3: Good health and well-being</u> The outcome of SDG 3 is quantified as the reduction of waterborne illness incidence compared to baseline scenario. The waterborne illness incidence in the baseline scenario is 38.45% according to Baseline Survey and this has been validated by the validating VVB. <u>SDG 5: Gender equality</u> The outcome of SDG 5 is quantified as percentage reduction of time spent to fetch and purify water by women and girls. The time spent to fetch and purify water by women and girls per household in the baseline scenario is 0.90 hour according to Baseline Survey and this has been validated by the validating VVB. <u>SDG 6: Clean Water and Sanitation</u> The outcome of SDG 6 is quantified as number of persons consuming safe water supplied by the project, the direct outcome is calculated, section E.2 of MR and also verified by the VVB in previous sections.	VPA No.	BE _{b,y}	01	59,964	02	56,191	03	57,324	04	59,233	05	59,801	06	57,505	Total	350,018
VPA No.	BE _{b,y}																
01	59,964																
02	56,191																
03	57,324																
04	59,233																
05	59,801																
06	57,505																
Total	350,018																
Findings	Nil																
Conclusion	The verification team confirms the following: • The calculations of baseline SDG impact have been carried out in accordance with the equations and methods described in the registered monitoring plan and applied methodology. • Any assumptions used in emission or removal calculations have been justified. • Appropriate emission factor and other reference values have been correctly applied. It can be confirmed that the baseline calculation is overall correct. • The ER calculation sheet provided is clear, transparent and the calculations provided in the sheet are reproducible. Hence, the baseline emission in the monitoring report for the monitoring period(i.e., 350,018 tCO₂e) is verified to be correct.																

E.3.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	Project Scenario SDG 13: Climate Action Project Scenario Fuel Consumption Calculation $B_{p,y} = (1 - C_j) * N_{p,y} * W_{p,y} * (Q_{p,rawboil,y} + Q_{p,cleanboil,y}) \quad (3)$ Where: B_{p,y} Quantity of fuel f consumed in project scenario p during the year y in tons C_j Percentage of users of project technology who were already in baseline scenario using a non-boiling safe water supply; the applied value is 0 as per section D.1 of MR. N_{p,y} Number of person.days consuming water supplied by project scenario p through year y; the applied value as per Section D.2 of MR.
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	$W_{p,y}$ Quantity of fuel in tons required to treat 1 litre of water using technologies representative of baseline scenario b in year y as per baseline water boiling Test; the applied value is 0.0004 as per Section D.1 of MR. $Q_{p,rawboil,y}$ Quantity of raw water boiled in the project scenario p per person per day; the applied value is 0 as per Section D.2 of MR. $Q_{p,cleanboil,y}$ Quantity of safe water boiled in the project scenario p per person per day in year y; the applied value is 0 as per Section D.2 of MR. As a result, $B_{p,y} = 0$ t Project Emission Reductions: $PE_{p,y} = B_{p,y} * ((f_{NRB,p,y} * EF_{p,fuel,CO2}) + EF_{p,fuel,non-CO2}) * NCV_{p,fuel}$ (4) Where: $BE_{b,y}$ Baseline emissions during year y $PE_{p,y}$ Project emissions during year y $B_{p,y}$ Quantity of fuel consumed in project scenario p during the year y in tons; the applied value is 0 as per calculation in this section above; $f_{NRB,p,y}$ Fraction of biomass used that can be established as non-renewable biomass in project scenario p during year y; the applied value is 0.9682 as per section D.1 of MR. $EF_{b,fuel,non-CO2}$ Non-CO₂ emission factor of fuels used in the baseline scenario; the applied value is 9.46 as per section D.1 of MR. $EF_{p,fuel,CO2}$ CO₂ emission factor of fuels used in the project scenario; the applied value is 112 as per section D.1 of MR. $EF_{p,fuel,non-CO2}$ Non-CO₂ emission factor of fuels used in the project scenario; the applied value is 9.46 as per section D.1 of MR. $NCV_{p,fuel}$ Net calorific value of fuels used in the project scenario; the applied value is 0.0156 as per section D.1 of MR. ER_y Overall emission reductions achieved by the project activity during year y $U_{p,y}$ Cumulative usage rate for technologies in project scenario p during year y, based on cumulative installation rate and drop off rate; the applied value is 100% as per section D.2 of MR. $LE_{p,y}$ Leakage from project scenario p during year y; the applied value 0 as per section D.2 of MR. As a result, $PE_{p,y} = 0$ tCO₂e SDG 3: Good health and well-being The outcome of SDG 3 is quantified as the reduction of waterborne illness incidence compared to baseline scenario, which is calculated as follows: $I_{r,y} = I_b - I_{p,y} \quad (5)$ Where: $I_{r,y}$ Reduction of waterborne illness incidence in year y I_b Waterborne illness incidence in the baseline scenario; the applied value is 38.45% as per section D.1 of MR. $I_{p,y}$ Waterborne illness incidence in the project scenario during year y; the applied value is 0 as per section D.2 of MR.
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As a result, $I_{r,y} = 38.45 \%$

SDG 5: Gender equality

The outcome of SDG 5 is quantified as percentage reduction of time spent to fetch and purify water by women and girls, which is calculated as follows:

$$T_{r,y} = (T_b - T_{p,y})/T_b \quad (6)$$

Where:

$T_{r,y}$ Percentage reduction of time spent to fetch and purify water by women and girls in year y

T_b Time spent to fetch and purify water by women and girls per household per day in the baseline scenario; the applied value is 0.90 as per section D.1 of MR.

$T_{p,y}$ Time spent to fetch and purify water by women and girls per household per day in the project scenario during year y; the applied value is 0.44 as per section D.2 of MR.

As a result, $T_{r,y} = 51.11\%$

SDG 6: Clean Water and Sanitation

The outcome of SDG 6 is quantified as number of persons consuming safe water supplied by the Project, which is calculated as follows:

$$P_y = P_{p,y} * (1 - C_j) * U_{p,y} \quad (7)$$

Where

P_y Number of additional persons consuming safe water supplied by the Project compared to the baseline scenario during year y

$P_{p,y}$ Number of persons consuming water within the project area during year y; the applied value as per section D.2 of MR.

C_j Percentage of users of project technology who were already in baseline scenario using a non-boiling safe water supply; the applied value is 0 as per section D.1 of MR.

$U_{p,y}$ Cumulative usage rate for technologies in project scenario p during year y; the applied value is 100% as per section D.2 of MR.

As a result, P_y is shown as follows:

VPA No.	P_y
01	33,750
02	31,855
03	32,320
04	33,221
05	33,514
06	32,314
Total	196,974

$P_{p,y}$ i.e. Number of persons consuming water within the project area during year y, is sourced from the database and the sworn statements by chairman of Water Management Committee of each borehole, which was founded to manage the borehole. The same was verified during the onsite audit. The same information is recorded/documented in the database maintained by the CME.

Findings

CL#01 was raised and closed.

Conclusion

The verification team confirms that:

- The complete data set for the monitoring parameters was available as mentioned in the monitoring plan in the PoA/VPA-DDs for the duration of monitoring period.
- The cross checks were undertaken for all the parameters indicated in the

	respective sections and were found complying with the requirements of the monitoring plan of the registered PoA/VPA-DDs. c) Appropriate methods and formulae for calculating baseline emission, project emissions and leakage have been followed; d) The claimed emission reductions are free from material errors, omissions or misstatements, with a reasonable level of assurance.
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E.3.6.3. Calculation of leakage GHG emissions

Means of verification	As per the applied methodology and the registered VPA DD, the leakage is expected to be 0, which can be ignored. However, to confirm that leakage can be deemed very low, the below described leakage assessment regarding the potential leakage sources (listed in the methodology TPDDTEC, pages 15) shall be completed every two years. During this monitoring period, $LE_{p,y}$ is estimated as follows:	
	Potential Influence Factor	Interpretation
	The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.	The displaced baseline technology is three stones. It has not been reused outside the project boundary because it still be used for cooking after the implementation of the project.
	Non-project users who previously used lower emitting energy sources use the non-renewable biomass or fossil fuels saved under the project activity.	The costs of low emitting water purification technologies, such as filtration and chlorination, are much higher than boiling with wood fuel. Users of these technologies are not price sensitive. Therefore, the implementation of the VPA does not lead these users to boil water with wood fuel, even if the price of wood fuel becomes cheaper because of the reduction of demand caused by the project.
	The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario.	Considering that the VPA only saves 190,310 tons ($B_{b,y}$) of biomass annually while the total amount of above-ground biomass of Rwanda is 75 million tons, the VPA does not affect NRB fraction.
	The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by retaining some use of inefficient technology.	The space heating effect of boiling water is negligible. Therefore, it is highly unlikely that some other form of heating will be adopted for compensating the space heating effect of boiling water.
	By virtue of promotion and marketing of new technology with high efficiency, the project stimulates substitution within households who commonly used a technology with relatively lower emissions, in cases where such a trend is not eligible as an evolving baseline.	The project does not promote any new technology with high efficiency. It does not stimulate people to boil water.

	In conclusion, $LE_{p,y} = 0$ VVB confirms based on the above-mentioned justification and also verified by VVB during the site visit that no HHs are transferring to other methods of water treatment, so argument for not accounting the leakage is reasonable.
Findings	Nil
Conclusion	Verification team concludes that there is no leakage for this monitoring period.

E.3.6.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

Means of verification	Emissions reductions were calculated using the results of the, Usage Surveys and baseline survey, water quality test inter alia, taking into consideration values for NRB and leakage.					
	The monitoring has been carried out in accordance with the monitoring plan contained in the recent version of GS4GG POA/VPA-DDs/2/.					
	The verification team assessed the monitoring techniques and each monitoring value in the monitoring report; and provide a short summary on the verification of every parameter listed in the monitoring plan and used for calculation of emission reductions.					
	SDG	SDG Impact	GS ID	Baseline estimate	Project estimate	Net benefit
	13	Reduce emission from water boiling by non-renewable biomass	GS 11098	59,964	0	59,964
			GS 11133	56,191	0	56,191
			GS 11134	57,324	0	57,324
			GS 11135	59,233	0	59,233
			GS 11136	59,801	0	59,801
			GS 11137	57,505	0	57,505
			Total	350,018	0	350,018
	3	Reduce the incidence of waterborne illness within the project area		38.45%	0	38.45%
	5	Reduce the time spent to fetch and purify water by women and girls		0.90 hour	0.44 hour	51.11%
	6	Provide safe water to local residents	GS 11098	283	34,033	33,750
			GS 11133	267	32,122	31,855
			GS 11134	271	32,591	32,320
			GS 11135	279	33,500	33,221
			GS 11136	281	33,795	33,514
GS 11137			271	32,585	32,314	
		Total	1,652	198,626	196,974	

Findings	Nil
Conclusion	The verification team confirms the following: • The summary table in the MR has been filled correctly and the values are in line with the related emissions reduction spreadsheet /04/. • Each SDG impact is calculated as per the VPA-DD /06/ and the selected methodology /39/.

E.3.6.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included VPA

Means of verification	The verification team has checked whether the MR includes a comparison of actual values of SDG Impacts of the monitoring period with the estimations in the VPA-DD /06/.			Section E.5 of the MR includes a comparison of the calculated SDG Impacts with the ex-ante calculated values in the VPA-DD /06/.		
	SDG	GS ID	Values estimated in ex ante calculation of approved PDD for this monitoring period		Actual values² achieved during this monitoring period	
	13	GS 11098	58,480 tCO ₂ e		59,964 tCO ₂ e	
		GS 11133	58,480 tCO ₂ e		56,191 tCO ₂ e	
		GS 11134	58,480 tCO ₂ e		57,324 tCO ₂ e	
		GS 11135	58,480 tCO ₂ e		59,233 tCO ₂ e	
		GS 11136	58,480 tCO ₂ e		59,801 tCO ₂ e	
		GS 11137	58,480 tCO ₂ e		57,505 tCO ₂ e	
	3	GS 11098	18.45%		38.45%	
		GS 11133	18.45%		38.45%	
		GS 11134	18.45%		38.45%	
		GS 11135	18.45%		38.45%	
		GS 11136	18.45%		38.45%	
		GS 11137	18.45%		38.45%	
	5	GS 11098	44.44%		51.11%	

² Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

		GS 11133	44.44%	51.11%
		GS 11134	44.44%	51.11%
		GS 11135	44.44%	51.11%
		GS 11136	44.44%	51.11%
		GS 11137	44.44%	51.11%
	6	GS 11098	32,726 persons	33,750 persons
		GS 11133	32,726 persons	31,855 persons
		GS 11134	32,726 persons	32,320 persons
		GS 11135	32,726 persons	33,221 persons
		GS 11136	32,726 persons	33,514 persons
		GS 11137	32,726 persons	32,314 persons
Findings	No CAR/CL is raised in this section.			
Conclusion	The estimated SDG Impact and the actual SDG Impact achieved for the monitoring period are correctly reported in the section E.5 of MR /02/.			

E.3.6.6. Remarks on difference from estimated value in included VPA

Means of verification	The actual value of SDG 3 is higher than estimated value due to several reasons: a) clean water supplied by the project has a good quality, which has been proven by the water quality tests; b) local people have developed a better healthy habit by the convenience of getting clean water and hygiene campaigns. The actual value of SDG 5 is higher than estimated value because estimated value ex-ante was a conservative estimate, whereas monitored data is an accurate representation by sampling. The actual values of SDG 6 are a little bit higher than the ex-ante estimated values in VPA 01, 04 and 05 because the ex-antes values are from a general conservative estimation, whereas monitored data is from the sum of the actual data from each project borehole. The actual value of SDG 13 is $(350,880-350,018)/350,880=0.25\%$ lower than estimated value, that is a reasonable margin of error. Also, the VPA wise comparison was also demonstrated in the MR, wherein it has been demonstrated that the VPA DDs have the calculations based on the 347 annual operating days in contrast to 363 annual operating days recorded in the monitoring period. If the similar annual operating days are considered in ex-ante and ex-post scenario the actual SDG#13 numbers would be less than the ex-ante.
Findings	No CAR/CL is raised in this section.
Conclusion	The verification team has determined the SDG Impacts achieved during this

	monitoring period with the estimated value and there was no increase observed in SDG#13.
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E.3.7. Assessment of reported Safeguarding Principles

Means of verification	According to Section B.7 of Design Certified PDD, safety of water disinfectants used in the VPA should be monitored. But during this monitoring period, the water quality meets the relevant requirements, so we have not used water disinfectants. Hence no parameter needs to be monitored in this section.
Findings	N/A
Conclusion	N/A

E.3.8. Stakeholder Inputs & Grievance Mechanism

Means of verification	Stakeholder consultation report (SCR) verified by the VVB which was approved by GS during project design review, stakeholders of Category A-G of "Stakeholder Consultation and Engagement Requirements". It was concluded that the relevant stakeholders have been identified and invited and validated by the validating VVB during the design certification. According to Section B.1.1 and B.1.3 of the SCR available on the GS registry along with the validation reports of the VPAs, various inviting methods were applied for the stakeholder consultation meeting. For the convenience of villagers, an invitation letter in both English and local language was sent to them through broadcast in villages. For some local people, invitation letters were sent to them as formal invitation. Other invitees were invited by email. According to B.1.5 of the SCR, other means and methods to provide feedback for those who are not able to join the consultation meeting are as follows: The first way is to use the phone and they could report problems concerning the project by phone. The following phone numbers were left to participants: 0728684787/0788684787 & 0788443155 & 0788665992. They agreed to converge all related problems they could report them to ARDE/KUBAHO team members. The second way is to put books in the offices of villages and users could report comments in that books. The representatives of ARDE will check the books every month to see the problems reported and find solutions with users. The third way is to visit physically the boreholes location and to discuss with their managers and users. The forth way is to report through email. The following email addressed will be also used for inquiry or comment on the project Iceberg: Mr. Ji BAO baoji@icebergchina.com ARDE: Mr. David BAZIRANKENDE bazirankendebdavid@gmail.com According to Section E of the SCR, a linkage (http://www.icebergchina.com/contents/86/233.html) has been created for providing feedback. An email was sent to stakeholders to invite them to provide feedback. There is a continuous input/grievance mechanism in place for beneficiaries to be able to give feedback on the project. No grievance received during the monitoring period as confirmed by the CME during the physical assessment and also the same has been confirmed by the end users during the physical assessment. In Section G.1 of MR, CME listed all input and grievance mechanism and verified by the VVB during the onsite assessment. Various ways to ensure representation from all the categories under each of the 6 VPAs for inputs and grievances and approved by the GS as all the 6 VPAs were design certified and included through the VVB validation. The Continuous Input Grievance Expression Process Books have been put in all the villages where the VPA has been implemented. In addition, phone No. and emails address have been left for timely connection. Section G.1 of the MR has been revised accordingly. A photo of a Continuous Input Grievance Expression Process Book has been submitted to VVB, VVB found that households are aware of the feedback mechanism and no grievance raised during the current verification.
Findings	No CAR/CL is raised in this section.
Conclusion	In Section G.1 of MR, CME listed all input and grievance mechanism and verified by the VVB during the onsite assessment. Various ways to ensure representation from all the categories under each of the 6 VPAs for inputs and grievances and

approved by the GS as all the 6 VPAs were design certified and included through the VVB validation. The Continuous Input Grievance Expression Process Books have been put in all the villages where the VPA has been implemented. In addition, phone No. and emails address have been left for timely connection. Section G.1 of the MR has been revised accordingly. A photo of a Continuous Input Grievance Expression Process Book has been submitted to VVB, VVB found that households are aware of the feedback mechanism and no grievance raised during the current verification.

SECTION F. Internal quality control

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The draft verification report prepared by team leader is reviewed by an independent technical reviewer before requesting for issuance for this verification period to confirm the internal procedures established by 4KES are duly followed and the verification report/opinion is reached in an objective manner and complies with the applicable GS requirements. The technical review is conducted by the technical reviewer qualified as per the 4KES procedures established for the qualification of CDM/GS personnel as per EB guidelines and GS guidelines.

The independent technical reviewer may approve or reject the draft verification report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before the request for issuance is submitted to GS. The final decision is taken by the Head of the VVB. The technical reviewer approves the final version of the report.

The final approval is authorized by the Managing Director, 4KES once the report is approved by the Head of DOE/DOE Manager.

SECTION G. Verification opinion

>> The verification team confirms that the evidence is of sufficient quantity, appropriate quality and reliable. The reported values, notation, units and sources in the monitoring report for the monitoring parameter have been cross checked with the emission reduction sheet and monitoring report. During verification and interviews, the data submitted by CME was cross verified with the values mentioned in the emission reduction sheet /04/ and monitoring report /02/. The procedure for data monitoring, recording, transfer, and compilation were also verified and found in compliance with the monitoring plan as mentioned in the PoA-DD /05/ and VPA-DD /06/.

Evidences (Documents/interviews) referred for verification of individual monitoring parameter and fixed parameters are defined in section D.3.4 above. It is confirmed by the assessment team that the reported SDG Impacts have been conservatively calculated. A list of referred documents for verification is also included in Appendix 3 of this report.

Based on the information seen and evaluated we confirm that the implementation of the PoA/VPA has resulted in 350,018 tCO₂e emission reductions during monitoring period 25/07/2022 to 24/07/2023 (first and last days are included).

SDG	SDG Impact	GS ID	Baseline estimate	Project estimate	Net benefit
13	Reduce emission from water boiling by non-renewable biomass	GS 11098	59,964	0	59,964
		GS 11133	56,191	0	56,191
		GS 11134	57,324	0	57,324

		GS 11135	59,233	0	59,233
		GS 11136	59,801	0	59,801
		GS 11137	57,505	0	57,505
		Total	350,018	0	350,018
3	Reduce the incidence of waterborne illness within the project area		38.45%	0	38.45%
5	Reduce the time spent to fetch and purify water by women and girls		0.90 hour	0.44 hour	51.11%
6	Provide safe water to local residents	GS 11098	283	34,033	33,750
		GS 11133	267	32,122	31,855
		GS 11134	271	32,591	32,320
		GS 11135	279	33,500	33,221
		GS 11136	281	33,795	33,514
		GS 11137	271	32,585	32,314
		Total	1,652	198,626	196,974

SECTION H. Certification statement

>>

4K Earth Science Pvt. Ltd. has been contracted by 'Guangzhou Iceberg Environmental Consulting Services Co., Ltd.' to undertake independent verification and certification for the SDGs reported from the Guangzhou Iceberg Environmental Consulting Services Co., Ltd., GS 11098, GS 11133, GS 11134, GS 11135, GS 11136, GS 11137 for the monitoring period in the Monitoring Report Version 01 (first version):

VPA No.	Start date	End date
VPA01	25/07/2022	24/07/2023
VPA02	25/07/2022	24/07/2023
VPA03	25/07/2022	24/07/2023
VPA04	25/07/2022	24/07/2023
VPA05	25/07/2022	24/07/2023
VPA06	25/07/2022	24/07/2023

The verification is based on the PoA-DD /14/ & VPA-DD /02/ and the monitoring report for this PoA /02/. Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakeshaccord, as well as those defined by the CDM Executive Board.

The management of the 'Guangzhou Iceberg Environmental Consulting Services Co., Ltd.' is the coordinating/Managing Entity and it is responsible for inclusion of VPAs under this PoA. The calculation and determination of SDGs from the PoA is the responsibility of the management of the 'Guangzhou Iceberg Environmental Consulting Services Co., Ltd.'. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 1 dated 16/10/2023. It is our responsibility to express an independent verification opinion on the calculation of SDGs from the PoA for the monitoring period 25/07/2022 to 24/07/2023 (including both dates) based on the reported SDGs in the Final Monitoring Report Version 2 dated 07/02/2024 for the same period.

In our opinion the GHG emissions reductions reported for the VPA are fairly stated in the Monitoring Report (final) Version 2 dated 07/02/2024. 4KES based on outcome of verification activities, certifies in writing that, during the monitoring period 25/07/2022 to 24/07/2023 (including both days), the registered GS VPA achieved the verified amount of 350,018 tCO₂e reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the VPA.

The Verified and certified SDGs impacts during the monitoring period 25/07/2022 to 24/07/2023 (Including both dates) is stated below:

Reporting period: 25/07/2022 to 24/07/2023 (including both dates)

SDG	SDG Impact	GS ID	Baseline estimate	Project estimate	Net benefit
13	Reduce emission from water boiling by non-renewable biomass	GS 11098	59,964	0	59,964
		GS 11133	56,191	0	56,191
		GS 11134	57,324	0	57,324
		GS 11135	59,233	0	59,233
		GS 11136	59,801	0	59,801

		GS 11137	57,505	0	57,505
		Total	350,018	0	350,018
3	Reduce the incidence of waterborne illness within the project area		38.45%	0	38.45%
5	Reduce the time spent to fetch and purify water by women and girls		0.90 hour	0.44 hour	51.11%
6	Provide safe water to local residents	GS 11098	283	34,033	33,750
		GS 11133	267	32,122	31,855
		GS 11134	271	32,591	32,320
		GS 11135	279	33,500	33,221
		GS 11136	281	33,795	33,514
		GS 11137	271	32,585	32,314
		Total	1,652	198,626	196,974

Product Vintages for SDG#13

VPA No.	Start Dates	End Dates	VERs
VPA01	25/07/2022	31/12/2022	26,286
	01/01/2023	24/07/2023	33,678
VPA02	25/07/2022	31/12/2022	24,632
	01/01/2023	24/07/2023	31,559
VPA03	25/07/2022	31/12/2022	25,128
	01/01/2023	24/07/2023	32,196
VPA04	25/07/2022	31/12/2022	25,965
	01/01/2023	24/07/2023	33,268
VPA05	25/07/2022	31/12/2022	26,214
	01/01/2023	24/07/2023	33,587
VPA06	25/07/2022	31/12/2022	25,208
	01/01/2023	24/07/2023	32,297
		Total	350,018

Appendix 1. Abbreviations

CAR	Corrective Action Request
CME	Coordinating & Managing Entity
CL	Clarification Request
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
CRF	Carbon Rights Form
EB	Executive Board
ER	Emission Reduction
FT	Fuel Test
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GPS	Global Positioning System
GS	Gold Standard
HH	Household
IPCC	Intergovernmental Panel on Climate Change
KPT	Kitchen Performance Test
MKS	Monitoring Kitchen Survey
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
NRB	Non-renewable biomass
OSV	On-site visit
POA DD	Programme of Activity Design Document
PP	Project proponent
PTD	Project Technology Days
QA/QC	Quality Assurance/Quality Control
SC	Sustain Cert
SD	Sustainable Development
SDG	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
VPA	Voluntary Project Activity
VVB	Validation and Verification Body
VER	Voluntary Emission Reduction
VVS	Validation and Verification Standard for project activities

Appendix 2. Competence of team members and technical reviewers

<u>Certificate of Competence</u>						
Name	☒ Mr. ☐ Ms.	Sanjay Kandari				
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.					
Appointed to work as:						
	CDM Validator/Verifier	Team Leader	Team Member	Technical Expert	Technical Reviewer	Financial Expert
<i>Appointed</i>	Yes	Yes	Yes	Yes	Yes	No
<i>Appointed Date</i>	25-03-2023					
Authorized to work as Technical Expert for:						
<i>Authorized Technical Area</i>	Sectoral Scope		TA Code	Technical Area within the scope		
	Energy industries (renewable - / non-renewable sources)		1.1	Thermal energy generation		
	Energy industries (renewable - / non-renewable sources)		1.2	Renewables		
	Energy distribution		2.1	Energy distribution		
	Energy demand		3.1	Energy demand		
	Waste handling and disposal		13.1	Solid waste and wastewater		
	Waste handling and disposal		13.2	Manure		
Authorized to work as Local Expert for:						
<i>Country/Countries</i>	India					
Compliance check by: Anand S. R.						

<u>Certificate of Competence</u>						
Name	☒ Mr. ☐ Ms.	Ma Paa Puratchikkanal				
Qualification Procedure	Fulfil the requirement as per the appointment of personnel procedure of 4KES for Validation and Verification of CDM/VCS/GS/GHG Projects.					
Appointed to work as:						
	CDM Validator/Verifier	Team Leader	Team Member	Technical Expert	Technical Reviewer	Financial Expert
<i>Appointed</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Appointed Date</i>	15-07-2023					

Authorized to work as Technical Expert for:			
Authorized Technical Area	Sectoral Scope	TA Code	Technical Area within the scope
	Energy industries (renewable - / non-renewable sources)	1.1	Thermal energy generation
	Energy industries (renewable - / non-renewable sources)	1.2	Renewables
	Energy demand	3.1	Energy demand
	Construction	6.1	Construction
	Waste handling and disposal	13.1	Solid waste and wastewater
	Waste handling and disposal	13.2	Manure
	Agriculture	15.1	Agriculture
Authorized to work as Local Expert for:			
Country/Countries	India		
Compliance check by: Anand S. R.			

Appendix 3. Documents reviewed or referenced

S. No.	Name of document
/1/	/1.1/ Monitoring Report, Version 01 dated 16/10/2023 /1.2/ Monitoring Report, Version 02 dated 07/02/2024 /1.3/ Monitoring Report, Version 03, dated 07/04/2024
/2/	- VPA Final VPA-DDs Version 08 dated 14/03/2022 - Validated Stakeholder Consultation Reports available on GS registry
/3/	• ER/SDG spreadsheets corresponding to MR • Sampling workbook demonstrating the CDM sampling requirements for cluster sampling
/4/	• GS4GG Principles & Requirements, Version 1.2 dated October 2019https://globalgoals.goldstandard.org/100-principles-and-requirements/ • GS4GG-Stakeholder Consultation and engagement Requirements Guidelines, v1.2'https://globalgoals.goldstandard.org/102-par-stakeholder-consultation-requirements/ • GS4GG 'Community Services Activity-Requirements', v1.2'https://globalgoals.goldstandard.org/standards/201_V1.2_AR_Community-Services-Activity-Requirements.pdf • Safeguarding Principles & Requirements, v1.2'https://globalgoals.goldstandard.org/103-par-safeguarding-principles-requirements/ • COVID 19 Interim measures • Gold Standard for Global Goals - Programme of Activity Requirements, Version 1.2. https://www.goldstandard.org/project-developers/standard-documents • GS Monitoring report form Version 1.1 https://www.goldstandard.org/project-developers/standard-documents
/5/	WHO criteria for Water Quality (Rules & regulations)
/6/	1) Gold Standard Methodology: "Technologies and Practices to displace decentralized thermal energy consumption" Version 03.1https://globalgoals.goldstandard.org/407-ee-ics-technologies-and-practices-to-displace-decentralized-thermal-energy-tpddtec-consumption/ 2) "Tool for the demonstration and assessment of additionality (Version 7)" 3) GS Validation & Verification Standard, Version 1 4) SITE VISIT AND REMOTE AUDIT REQUIREMENTS AND PROCEDURES, dated 30/05/2023 5) https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf 6) Updated [2018] Environment Impact Assessment and Regulations, 2005 [G.N. No 349/2005) 7) "Standard for Sampling and Surveys for CDM Project Activities and Programme Activities" version 09 8) "Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities, Version 04.0 9) CDM Validation & Verification Standard, version 03 for POAs
/7/	Declaration confirming that there is no double counting

/8/	Technical specification manual of boreholes
/9/	Project database Rwanda: VPA
/10/	Baseline surveys as part of VPA validation
/11/	Sworn Agreements signed between CME and user
/12/	Project Survey Reports/forms
/13/	Water Testing Procedures (Confirmed through Onsite Assessment)
/14/	Final PoA-DD, Version 5.0 dated 15/09/2021
/15/	Sampling and sample size sheet includes screen shot of randomizers etc
/16/	2006 IPCC Guidelines for National Greenhouse Gas Inventories volume 2, chapter 1 https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf
/17/	WASH related documents
/18/	Water Quality Test (WQT) Reports issued by, 'Water Quality Testing Laboratory' Lab IPRC Kigali Engineering Laboratory
/19/	http://onlinelibrary.wiley.com/doi/10.1002/2014WR016770/pdf 5 https://washdata.org/data
/20/	Reports of Hygine campaign undertaken
/21/	Maintenance Log of Boreholes
/22/	Video evidence of project surveys by the surveyors

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FARs from validation and/or previous verification

FAR ID	01	Section no.	E.1.2	Date: 06/02/2024
Description of FAR				
CME shall respond to following FARs raised during the previous verification and how the corrective actions undertaken by them addresses the issue in this verification.				
<i>The PD shall ensure that the next usage survey covers the question of whether the household has obtained access to an alternative water purification technology, such as household water filters, or access to other boreholes, since the start of the project. If such exist, the PD shall clarify if access to such technology is granted under another carbon credit project. If this is the case, the PD shall clarify how double claiming is avoided. The VVB shall verify this claim.</i>				
CME response				Date: 07/02/2024
The PD has put the question of "If the household has obtained access to an alternative water purification technology, such as household water filters, or access to other boreholes, since the start of the project?" in Usage Survey for this monitoring period. Please refer to Question 5 of submitted document "6-Usage Survey Form". The related content is in Section B.1.1 of the MR.				
Documentation provided by the CME				
Usage Survey Forms				
VVB assessment				Date: 14/02/2024
The usage survey forms submitted by the CME demonstrates the usage survey covers the question of whether the household has obtained access to an alternative water purification technology, such as household water filters, or access to other boreholes, since the start of the project. The question 5 explicit covers this requirement, VVB also asked this question during the on-site assessment and confirmed that the project boreholes are the only source of water to them. FAR is closed.				

Table 2. CLs from this verification

CL ID	01	Section no.	E.3.6.2	Date: 06/02/2024
Description of CL				
CME shall clarify how the representativeness among all VPAs were ensured during the selection of boreholes and the beneficiaries for the usage survey. CME shall also mention the dates of previous usage surveys to check the compliance of monitoring frequency.				
CME response				Date: 07/02/2024
The Usage Survey for the first monitoring period was included in the Project Survey, there was no individual questionnaire for Usage Survey. The Project Survey was carried out between 25/07/2022 to 25/08/2022, which surveyed the usage rate between 26/11/2021 to 24/07/2022. The Usage Survey for the second monitoring period was carried out between 12/08/2023 to 06/09/2023, which surveyed the usage rate between 25/07/2022 to 24/07/2023. Hence, the usage rate surveyed annually, which complies with the monitoring frequency. We used multi-stage sampling according to “Standard: Sampling and surveys for CDM project activities and programmes of activities (Version 09.0)” and “Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)” to conduct Usage Survey. We calculated through Equation (33) of “Guidelines for sampling and surveys for CDM project activities and programmes of activities (Version 04.0)” and concluded that 1 was the minimum number of boreholes should be sampled to satisfy the 95/10 rule of applied methodology. Then we randomly chose 8 boreholes from all the VPAs. The representativeness among all VPAs were ensured. The clarification has been added in Section C of the revised MR.				
Documentation provided by the CME				
Revised MR				
VVB assessment				Date: 14/02/2024
The detailed clarification has been reviewed and found addressing the clarification raised on the representativeness. Moreover, this was also confirmed during the on-site assessment that the usage pattern is very similar in all VPAs. The verification team undertaken the onsite assessment therefore finding is closed based on the revisions made to clarify the representativeness in sampling. Finding is closed.				

CL ID	02	Section no.	E.3.4.3	Date: 06/02/2024
Description of CL				
The Usage Survey was carried out from 25/07/2022 to 25/08/2022 as indicated in the section C of MR, CME shall clarify how the how the monitoring frequency is complying?				
CME response				Date: 07/02/2024
The first Usage Survey was included in the Project Survey, there was no individual questionnaire for Usage Survey. The Project Survey was carried out between 25/07/2022 to 25/08/2022, which surveyed the usage rate between 26/11/2021 to 24/07/2022. The second Usage Survey was carried out between 12/08/2023 to 06/09/2023, which surveyed the usage rate between 25/07/2022 to 24/07/2023. Hence, the usage rate surveyed annually, which complies with the monitoring frequency. The clarification has been added in Section C of the revised MR.				
Documentation provided by the CME				
Revised MR				
VVB assessment				Date: 14/02/2024
The detailed clarification has been reviewed and found addressing the clarification raised on annual frequency along with the submitted evidence. The project survey complies the annual frequency. Finding is closed.				

CL ID	03	Section no.	E.3.4.3	Date: 06/02/2024
Description of CL				
It was noticed by the verification team that no hygiene campaign was undertaken in 2022, however the monitoring period also falls in 2023. Though the annual frequency is yet complied for the monitoring period, CME shall inform about any planned campaigns in the calendar year.				
CME response				Date: 07/02/2024
We have conducted six hygiene campaigns in six VPAs between 18/10/2023 to 31/10/2023, the details will be described in MR of next monitoring period. The related contents have been added in Section C and D.2 of the MR				
Documentation provided by the CME				
Revised MR				
VVB assessment				Date: 14/02/2024
The detailed clarification has been reviewed and found addressing the clarification raised on annual frequency along with the submitted evidence. The project survey complies the annual frequency. Finding is closed.				

CL ID	04	Section no.	E.3.4.3	Date: 06/02/2024
Description of CL				
CME shall clarify whether the water quality test for the current verification were undertaken in accredited laboratory?				
CME response				Date: 07/02/2024
The water quality tests have been made in the Water Quality Testing Laboratory of the IPRC Kigali, which is a national accredited laboratory. It has been clarified in Section D of MR.				
Documentation provided by the CME				
Revised MR				
VVB assessment				Date: 14/02/2024
IPRC Kigali is an accredited lab as per the details available online on their website, the finding is closed based on the revised MR and the desk review.				

Table 3. CARs from this verification

CAR ID		Section no.		Date: DD/MM/YYYY
Description of CAR				
CME response				Date: DD/MM/YYYY
Documentation provided by the CME				
VVB assessment				Date: DD/MM/YYYY

Table 4. FARs from this verification

FAR ID	xx	Section No.		Date: DD/MM/YYYY
Description of FAR				
CME response				Date: DD/MM/YYYY
Documentation provided by the CME				
DOE assessment				Date: DD/MM/YYYY

Annexure: Water Quality Protocol

Water Quality Testing Protocol

Prepared by Water Quality Testing Laboratory of the NGO Forum

1. Introduction

WQTL developed a comprehensive Water Quality Testing Protocol for water quality. The Protocol contained a detailed section on operational guideline for monitoring staff and was prepared based on the new information collected from local context and international experience.

2. Sampling

Collect water samples from different sources such as tube wells, hand pumps, and surface water sources. The samples should be collected in clean containers that are free of contaminants.

The required steps are described below:

- a) Wear proper protective equipment such as gloves, eye protection, and waterproof boots.
- b) Select a clean container that is appropriate for the type of analysis required. The container should be free from contaminants and have a tight-fitting lid.
- c) Approach the sampling site and ensure the surrounding area is free from any potential hazards.
- d) Rinse the container three times with the water to be sampled, and discard the rinse water each time.
- e) Submerge the container completely under the surface of the water for several seconds and then tilt it upwards to avoid capturing surface water only.
- f) Fill the container slowly, avoiding any bubbles or splashing.
- g) Once the container is full, carefully remove it from the water and immediately secure the lid.
- h) Label the container with the sampling location and time, and any other relevant information.
- i) Store the sample in a cooler with ice or in a refrigerator, depending on the analysis required.

Analyze the sample as soon as possible, or within the time frame recommended by the laboratory or sampling protocol.

3. Preservation

Preservative tablets should be added to the samples to ensure the water quality remains unchanged during transportation to the laboratory.

The required steps are described below:

- a) Choose appropriate sample container: The container used for preserving water samples should be made of a material that does not react with the water or alter the water quality. Typically, glass bottles or plastic containers made of polyethylene (PE) or polypropylene (PP) are recommended.
- b) Clean the container: Clean the container thoroughly before using it to prevent contamination. A good way to clean is to rinse the container with distilled or deionized water and let it dry.
- c) Add preservatives: Some water samples may require the addition of preservatives to prevent bacterial or chemical changes that can occur during transport and storage. The type and amount of preservative needed depend on the type of water being tested. Common preservatives include sodium thiosulfate, nitric acid, and sulfuric acid.

- d) Label the container: Label the container clearly with the date, time, location, and any other important information related to the sample.
- e) Transport and store the sample: After collecting the sample, it should be stored in an insulated container to prevent temperature changes. The sample should be transported to the lab as soon as possible, and ideally, should be analyzed within 24 hours of collection.
- f) Use appropriate containers: Make sure you have the right containers for your sample type. Glass, plastic, or metal containers with airtight seals can protect against spills or contamination.
- g) Label your sample: Label your sample with any relevant information, such as the type of sample or the date and time of collection.
- h) Transport safely: For samples that require refrigeration, use cool bags or ice packs to keep the sample at the appropriate temperature during transportation. For fragile samples, use protective packaging to prevent damage during transport.
- i) Store correctly: Follow any specific storage requirements for your sample type. Store samples in a cool, dry place away from direct sunlight or any other conditions that can cause degradation or spoilage.
- j) Monitor regularly: Check the integrity and quality of the sample regularly to ensure it has not degraded during storage.

4. Laboratory Analysis

The collected samples should be analyzed in a laboratory with the necessary equipment and expertise to perform the tests.

The required steps are described below:

- a) Gather the materials needed for the analysis, including the equipment, reagents, and samples.
- b) Follow the procedures and protocols of the lab for the specific analysis you are performing.
- c) Record all relevant data, such as the sample types, quantities, and measurements, as well as any observations made during the analysis.
- d) Monitor the equipment and reagents used in the analysis to ensure their accuracy and optimal functioning.
- e) Analyze the data obtained from the analysis and draw conclusions based on the results obtained.
- f) Report and communicate the results obtained to the appropriate stakeholders, such as fellow analysts, researchers, or clients.
- g) Dispose of any hazardous or contaminated materials used during the analysis in accordance with the laboratory's protocols and regulations.
- h) Maintain a clean, organized, and safe work environment throughout the analysis process.
- i) Results Interpretation: The results should be compared against the permissible limits and guidelines

5. Reporting

A report should be generated with the results obtained from the analysis, and the interpretation of these results.

The required steps are described below:

- a) Define the Purpose of the Report: The first step in reporting is to define the purpose of the

report. This can involve identifying the audience, gathering data, and creating a clear outline of what the report should accomplish.

- b) Gather Data: Data is a critical component of any report, so it is essential to gather and analyze relevant data. This can involve conducting research, conducting surveys, and collecting data from multiple sources.
- c) Analyze Data: Once you have gathered the data, you need to analyze it to draw meaningful insights that will help you tell the report's story. This can involve creating visual aids, such as charts or graphs, and using statistical analysis tools.
- d) Develop and Organize the Report: Once you have gathered and analyzed the data, the next step will be to develop and organize the report. This may involve writing an executive summary, creating headings and subheadings, and creating an outline.
- e) Review and Edit: Once you've created a draft of the report, you should review it carefully and edit it to ensure it is clear, concise, and free of errors. Make sure that your report fits the audience you are trying to reach.
- f) Share the Report: The final step in the reporting process is to share the report with your intended audience. You may need to present your findings in a verbal presentation, written report, or a combination of both. Be sure to explain your findings and recommendations clearly and answer any questions your audience has.

6. Information Database

It is important to note that all forms contain water quality test data and the sanitary inspection reports should be preserved as hard copy as well as soft copy. It will help to validate data and also act as a backup system.

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	6 April 2021	Revision to: • Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).
03.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN); • Make structural and editorial improvements.
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
01.0	5 June 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		