RoU Project Verification Report Form (VR)		
BASIC INFORMATION		
Name of approved UWR Project Verifier / Reference No.	SQAC Certification Pvt. Ltd.	
Type of Accreditation	RoU Accreditation UWR Water Audit/Water Footprint Expertise	
Approved UWR RoU Scopes for Project Verification	Scope 4: Conservation measures taken to recycle and/or reuse water, spent wash, wastewater etc. across or within specific industrial processes and systems, including wastewater recycled/ reused in a different process, but within the same site or location of the project activity. Recycled wastewater used in off-site landscaping, gardening or tree plantations/forests activity are also eligible under this Scope.	
Validity of UWR approval of Verifier	April 2022 onwards.	
Completion date of this VR	28/10/2024	
Title of the project activity	STP Wastewater Recycling and Gainful Reuse by Parul University, Vadodara, Gujarat.	
Project reference no.	UWR ID: 466	
Name of Entity requesting verification service	Parul University, Vadodara, Gujarat &	
	Yojan Solutions Pvt. Ltd.	
Contact details of the representative of the Entity.	Dipti Raval – Director	

Accredited by 5 Jupiter House, Callera Park, Aldermaston, Reading Berkshire RG7 8NN, United Kingdom (UK).

India Office: Off. No. 4, Fifth Floor, Buildmore Business Park, New Canca Bypass Road, Khorlim, Mapusa, Goa – 403
507

Web: www.sqac.in

Email: <u>info@sqac.in</u> Tel: 7219716786 / 87

requesting verification service	Yojan Solutions Pvt. Ltd.
Country where project is located	India.
Applied reference documents used for estimation (approved water data and reference guides under the UWR Rou Standard used)	UWR Rainwater Offset Unit Standard
Project Verification Criteria: Mandatory requirements to be assessed	 ✓ UWR Standard ✓ Applicable Approved Calculations ✓ Applicable Legal requirements /rules of host country ✓ Eligibility of the Project Type ✓ Start date of the Project activity ✓ Meet applicability conditions in the applied methodology ✓ Credible Water Data Sets ✓ Do No Harm Test ✓ RoU calculations ✓ PCNMR ✓ No Double Counting ✓ Others (please mention below)
Project Verification Criteria: Optional requirements to be assessed	 Environmental Safeguards Standard and do-no-harm criteria Social Safeguards Standard do-no-harm criteria
Project Verifier's Confirmation: The UWR Project Verifier has verified the UWR project activity and therefore confirms the following:	The UWR RoU Project Verifier SQAC Certification Pvt. Ltd., certifies the following with respect to the UWR Project Activity STP Wastewater Recycling and Gainful Reuse

by Parul University, Vadodara, Gujarat The Project Owner has correctly described Project Activity in the PCNMR dated 30/09/2024 including the applicability of the guidance documents and water data as outlined in the UWR RoU Standard, Scope 4 -Conservation measures taken to recycle and/or reuse water, spent wash, wastewater etc. across or within specific industrial processes and systems, including wastewater recycled/ reused in a different process, but within the same site or location of the project activity. Recycled wastewater used in off-site landscaping, gardening tree or plantations/forests activity are also eligible under this Scope. The Project Activity is likely to generate **11,66,565** RoUs as indicated in the PCNMR, which are applicable with UWR rules The Project Activity is not likely to cause any net-harm to the environment and/or society \bowtie The Project Activity complies with all the applicable UWR rules and therefore recommends UWR Program to register Project activity with RoUs.

Project Verification Report, reference number and date of approval	Verification Report UWR Project ID: 466 dated 28/10/2024
Name of the authorised personnel of UWR Project Verifier and his/her signature with date	
	Oscillication of the state of t
	Santosh Nair Lead Verifier (Signature)
	SQAC Certification Pvt Ltd

r

PROJECT VERIFICATION REPORT

Yojan Solutions Pvt. Ltd. has contracted SQAC Certification Pvt. Ltd. to carry out the verification of the project activity "STP Wastewater Recycling and Gainful Reuse by Parul University, Vadodara, Gujarat", UWR approved project ID:466, to establish number of RoUs generated by water project over the monitoring period from **01/10/2022 to 31/07/2024** (01 year, 10 months). The project activity aims to implement a STP Wastewater Recycling for Gainful Reuse.

We believe that the total Rainwater Offset Units or Water Credits (RoU) generated over the monitoring / verification period stated in the Project Concept Note & Monitoring Report (PCNMR), submitted to us is accurate and in line with the UWR guidelines.

The Rainwater Offset Units or Water Credits (RoU) were calculated based on UWR Protocols which draws reference from, UWR Rainwater (RoU) Standard, version 6.1. The verification was done remotely by way of video calls / verification, phone calls and submission of documents for verification through emails as per UWR guidelines.

SQAC is able to certify that the Rainwater Offset Units or Water Credits (RoU) from the project STP Wastewater Recycling and Gainful Reuse by Parul University, Vadodara, Gujarat, India, (UWR ID - 466) for the period 01/10/2022 to 31/07/2024 amounts to **11,66,565 RoUs**

Project Verification team, technical reviewer and approver

Section B. Project Verification Team

Sr.	Role	Last	First	Affiliation	Involvement in		
No.		name	name		Doc review	Off-Site inspection	Interviews
1.	Team Leader	Nair	Santosh	n/a	yes	yes	yes
2.	Validator	Nair	Santosh	n/a	yes	yes	yes

Technical reviewer and approver of the Project Verification report

Sr.	Role	Type of	Last name	First	Affiliation
No.		resource		name	
1.	Technical	IR	Shinganapurkar	Praful	SQAC Certification Pvt. Ltd.

	reviewer				
2	Approver	IR	Shinganapurkar	Praful	SQAC Certification Pvt. Ltd.

Section C. Means of Project Verification

C.1. Desk/document review

As part of the review and validation process, Yojan Solutions Pvt. Ltd. submitted a Project Concept Note & Monitoring Report (PCNMR), Water Calculation Sheet, Operational Log Sheets, Calibration Certificates, Water Lab Test Reports, and additional data provided upon request pertaining to this project for examination to the Lead Verifier. These documents were thoroughly reviewed to ensure compliance with relevant standards and guidelines, and to validate the accuracy and completeness of the information provided.

C.2. Off-site inspection

Sr.	Activity performed Off-Site	Site location	Date
No.			
1.	Interview conducted over Video call / Telephonic discussions.	Vadodara, Gujarat	24/10/2024
2.	Supporting documents provided before, during, and after the verification.	Vadodara, Gujarat	21/10/2024 till 26/10/2024

C.3. Interviews

Sr.		Interview			Subject
No.	Name	Designation	Affiliation		
1	Mr.	Incharge	Yogan solutions	24/10/2024	Site layout, Design
	Madhav		Pvt. Ltd.		Specifications
	Rawal				
2	Mr.	Incharge water	Parul University,	24/10/2024	Site layout, Design
	Kamlesh	supply	Vadodara,		Specifications and
	bhai		Gujarat		overview
	Patel				
3	Vinay	Operator	Parul University,	24/10/2024	Operational
	Barayia		Vadodara,		Logsheets
			Gujarat		

C.4. Sampling approach

Not applicable

C.5. Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	No. of CL	No. of CAR	No. of
Rainwater Offset Units or Water C	redits (RoU)		17
Identification and Eligibility of project type	Nil	Nil	Nil
General description of project activity	Nil	Nil	Nil
Application and selection of methodologies and			
standardized baselines			
- Application of RoU methodologies and	Nil	Nil	Nil
standardized data sets			
- Deviation from methodology and/or	Nil	Nil	Nil
methodological tool			
- Clarification on applicability of methodology,	Nil	Nil	Nil
tool and/or standardized data sets			
- Project boundary and unutilized water	Nil	Nil	Nil
sources.			
- Likely scenario without RoU Project	Nil	Nil	Nil
- Estimation of RoU's	Nil	Nil	Nil
- PCNMR	Nil	Nil	Nil
Start date, crediting period and duration	Nil	Nil	Nil
Positive environmental impacts on water table	Nil	Nil	Nil
and/or groundwater recharge and/or water security			
in the area			
Project Owner- Identification and communication	Nil	Nil	Nil
Others (please specify)	Nil	Nil	Nil
Total	Nil	Nil	Nil

Section D. Project Verification Findings

D.1. Identification and eligibility of project type (Approved Project Activities (Positive List))

Means of Project Verification	Project Documentation: Detailed project reports, including the Project Concept Note & Monitoring Report (PCNMR), outlining the project's scope, objectives, and outcomes. Off-Site Inspection: Off-Site visit to verify the implementation and operation of the project activities. Data Monitoring: Continuous monitoring and recording of data through operational log sheets related to water recycling and reuse, ensuring compliance with the UWR RoU standards.
Findings	Upon verification, it was found that the project, "STP Wastewater Recycling and Gainful Reuse by Parul University," is identified as eligible under the UWR RoU program's Scope 4, which includes conservation measures for recycling and reusing wastewater within specific industrial processes. This project is pre-approved and listed on the positive list of activities, as it effectively treats and reuses wastewater, thereby reducing reliance on freshwater sources and mitigating groundwater depletion. The initiative aligns with sustainable practices and contributes to environmental conservation, making it a model for similar projects.
Conclusion	In conclusion, the project description adheres to the recycling and reuse of wastewater through its Sewage Treatment Plant (STP), is pre-approved under the Universal Water Registry (UWR) RoU program for Scope 4. This scope includes measures that recycle and/or reuse water, spent wash, and wastewater within specific industrial processes and systems, as well as for off-site landscaping, gardening, or tree plantations. The project effectively addresses water conservation, reduces reliance on freshwater sources, and supports groundwater recharge, making it a model for sustainable water management practices.

D.2. General description of Project Activity

Means of Project Verification	Project Documentation: Detailed records of the project activity, including design, implementation, and operational data.
	Off-Site Inspection: off-site visit to verify the setup and operational status of the project.
	Monitoring Reports: Periodic reports that track the project's performance, water recycling rates, and compliance with standards.
	Stakeholder Feedback: Input from local communities, project staff, and other stakeholders to ensure the project meets its objectives and addresses any concerns
Findings	Upon verification it was found that the project activity at Parul University in Vadodara, Gujarat, involves the installation and operation of a Sewage Treatment Plant (STP) with a capacity of 3.5 million litres per day (MLD). This STP treats wastewater generated from various campus activities, including process washings, utilities, and domestic usage. The treated water is reused within the campus for purposes such as gardening and toilet flushing, significantly reducing the reliance on freshwater sources and mitigating local groundwater depletion. This initiative not only addresses water conservation but also contributes to groundwater recharge, supporting the local ecosystem and demonstrating a sustainable, resource-efficient approach to water management.
Conclusion	In conclusion, the project activity at Parul University involves a comprehensive wastewater recycling initiative using a 3.5 MLD Sewage Treatment Plant (STP). This project effectively treats and reuses wastewater generated from various campus activities, significantly reducing reliance on freshwater sources and mitigating groundwater depletion. By implementing advanced treatment technologies, the university ensures the treated water is safe for non-potable

uses such as gardening and toilet flushing. This initiative not only addresses water scarcity but also promotes sustainable water management practices, serving as a model for other institutions and contributing positively to the local ecosystem

D.3. Application and selection of water data and calculation parameters

D.3.1 Application of methodology and standardized data sets

Means of Project Verification

Application of Methodology: The project follows a standardized methodology for wastewater recycling and reuse, ensuring consistency and accuracy in data collection and analysis.

Standardized Data Sets: Utilizes established data sets for water quality and quantity measurements, ensuring reliability and comparability across different monitoring periods.

Verification Process: Involves regular monitoring and reporting, with data verified by independent auditors to ensure compliance with the Universal Water Registry (UWR) standards.

Calculation Parameters: Includes specific metrics such as flow rates, water quality indicators, and reuse volumes, measured using calibrated instruments and validated through periodic audits.

Findings

Upon verification, it is found that the application and selection of water data and calculation parameters, such as the application of methodology and standardized data sets, focuses on ensuring accuracy and consistency in water usage reporting. This involves utilizing reliable and validated data sources to measure water consumption and recycling accurately. The methodology is found to be transparent and replicable, allowing for consistent application across different projects. Standardized data sets help in benchmarking performance and identifying areas for improvement. Overall, these practices support sustainable water management by providing a clear framework for monitoring and optimizing water use, ensuring compliance with environmental standards, and promoting resource conservation.

Conclusion

In conclusion, the application and selection of water data and calculation parameters, such as the application methodology and standardized data sets, emphasizes the importance of using accurate, reliable, and consistent data to ensure the effectiveness and credibility of water management projects. By adhering to standardized methodologies and data sets, such as those outlined by the Universal Water Registry (UWR) RoU Standard, projects can achieve precise quantification of water reuse and conservation efforts. This not only enhances the transparency and comparability of results but also supports sustainable water management practices, contributing to broader environmental and community benefits.

D.3.2 Clarification on applicability of methodology, tool and/or RoU estimates

Means of Project Verification

Monitoring Reports: Detailed reports documenting the quantity of treated wastewater, its reuse, and compliance with environmental standards.

Flow Meters: Installation of flow meters to measure the volume of treated water used, ensuring accurate data collection.

Stakeholder Feedback: Engagement with local stakeholders to gather feedback and ensure the project's positive impact on the community and environment.

Findings

Upon verification, it was found that the document details the STP Wastewater Recycling and Gainful Reuse project by Parul University in Vadodara, Gujarat, which aims to recycle and reuse wastewater to mitigate local water scarcity. The project, operational since July 2022, treats 3.5 million litres of sewage per day, converting it into usable water for gardening and campus facilities, thus reducing reliance on groundwater. The initiative has generated over 1.16 million Rainwater Offset Units (RoUs) during its first monitoring period, aligning with multiple Sustainable Development Goals (SDGs) and showcasing a model for sustainable water management. The

	project employs advanced treatment technologies and		
	emphasizes educational and community engagement, promoting environmental stewardship and resource		
	efficiency.		
Conclusion	The conclusion for the clarification on the applicability of		
	methodology, tool, and/or RoU estimates is that the project		
	activity at Parul University effectively demonstrates the use of		
	advanced wastewater recycling technologies to address local		
	water scarcity. By treating and reusing wastewater, the project		
	not only meets regulatory standards but also significantly		
	reduces reliance on freshwater sources, thereby promoting		
	sustainable water management. The methodology and tools		
	applied ensure accurate measurement and monitoring of		
	RoUs, validating the project's impact on water conservation		
	and environmental protection. This initiative serves as a model		
	for similar projects, highlighting the importance of innovative		
	water management practices in achieving sustainability goals.		

D.3.3 Project boundary sources and RoUs

	Flow Meters: Installed at various points to measure the
Means of Project Verification	quantity of treated wastewater.
	Operational Records: Detailed logs of the STP's daily operations, including inflow and outflow data.
	Water Quality Tests: Regular testing to ensure treated water meets safety and quality standards.
Findings	Upon verification it was found that the project boundary sources for the STP Wastewater Recycling and Gainful Reuse by Parul University include various campus facilities such as Shakuntala Bhavan, Azad Boys' Hostel, and Sarojini Bhavan C, which generate wastewater from process washings, utilities, and domestic use. The project successfully treated and reused 1,166,565 RoUs (1 RoU = 1000 liters) of wastewater during the monitored period from October 2022 to July 2024. This initiative significantly reduced the reliance on freshwater sources, mitigated groundwater depletion, and contributed to

	sustainable water management practices on campus
Conclusion	In conclusion, the project boundary sources for the STP Wastewater Recycling and Gainful Reuse by Parul University include various campus facilities generating sewage, such as Shakuntala Bhavan, Azad Boys' Hostel, and Sarojini Bhavan C. The project effectively treats and reuses this wastewater, significantly reducing reliance on freshwater sources and preventing groundwater depletion. Over the monitored period from October 2022 to July 2024, the project generated a total of 1,166,565 Rainwater Offset Units (RoUs), demonstrating a
	sustainable approach to water management and setting a model for other institutions to follow.

D.3.4 Baseline scenario of the water shed or activity prior to project commissioning

Means of Project Verification	Assessment of Groundwater Extraction: Evaluating the extent of groundwater extraction in the absence of the project, which would have involved installing multiple bore wells, leading to the depletion of local groundwater resources.
	Water Usage Data: Collecting data on water usage from existing sources, such as bore wells or municipal supplies, to establish a baseline for comparison.
	Environmental Impact Studies: Conducting studies to understand the environmental impact of water extraction and usage prior to the project, including effects on local water bodies and ecosystems.
	Flow Meter Readings: Using flow meters to measure the quantity of water extracted and used, ensuring accurate baseline data for comparison with post-project scenarios
Findings	Upon verification, it was found that the baseline scenario for the watershed or activity prior to the project commissioning at Parul University involved the potential installation of multiple bore wells within the project boundary. This would have led to the depletion of local groundwater resources and/or the diversion of existing water resources from the surrounding area for campus toilet facilities and gardening. In the absence

	of the project, untreated wastewater would have continued to
	be discharged, exacerbating water scarcity and environmental
	degradation in the region. The project activity, therefore,
	significantly mitigates these issues by recycling and reusing
	treated wastewater, reducing reliance on freshwater sources,
	and promoting sustainable water management practices
Conclusion	In conclusion, the baseline scenario for the watershed or
	activity prior to the project commissioning at Parul University
	involved the potential installation of multiple bore wells,
	leading to the depletion of local groundwater resources and/or
	the diversion of existing water resources from the surrounding
	area for campus facilities. In the absence of the project,
	untreated wastewater would have continued to pollute local
	water bodies, exacerbating water scarcity and environmental
	degradation. The project activity, by treating and reusing
	wastewater, significantly mitigates these issues, promoting
	sustainable water management and conservation.

D.3.5 Implementation Benefits to Water Security

Means of Project Verification	Water Reuse and Conservation: Verification through flow meters measuring the quantity of treated wastewater reused for non-potable applications like gardening and toilet flushing.
	Environmental Protection: Compliance with standards set by the Gujarat Pollution Control Board, ensuring treated sewage does not contaminate local water bodies.
	Improved Campus Infrastructure: Regular monitoring and maintenance records of the STP and associated infrastructure.
	Educational Opportunities: Documentation of educational programs and student engagement activities related to the STP.
Findings	Upon verification it was found that the implementation of the 3.5 MLD Sewage Treatment Plant (STP) at Parul
	University significantly enhances water security on campus by enabling the recycling of treated wastewater for non-potable applications such as gardening and toilet

	flushing, thereby conserving valuable freshwater
	resources. This initiative also protects local water bodies
	from pollution, supports environmental sustainability, and
	provides educational opportunities for students to learn
	about modern wastewater treatment technologies.
	Additionally, it sets a positive example for the community,
	encouraging similar sustainable practices and contributing
	to regional water security efforts.
Conclusion	In conclusion, the implementation of the 3.5 MLD Sewage
	Treatment Plant (STP) at Parul University significantly
	enhances water security on campus by enabling the
	recycling of treated wastewater for non-potable
	applications such as gardening and toilet flushing. This
	initiative reduces reliance on freshwater sources,
	conserves valuable water resources, and supports
	environmental sustainability. Additionally, it serves as an
	educational resource for students, promotes community
	engagement, and sets a model for other institutions to
	adopt similar sustainable practices, thereby contributing
	positively to the overall well-being of the surrounding
	environment and community.

D.3.6 Estimation of RoUs or net water saved / recycled / reused

Means of Project Verification	Flow Meters: Installed at the site to measure the total quantity of treated water.
	Operational Days: Assumed to be 330 days per year for conservative estimates.
	Uncertainty Factor: A 10% uncertainty factor is applied for conservative purposes.
	Performance Metrics: Regular assessments and feedback mechanisms to evaluate and improve the effectiveness of the STP (Sewage Treatment Plant).
Findings	Upon verification, it was found that the estimation of RoUs (Rainwater Offset Units) for the project at Parul University indicates a significant achievement in water conservation. Over the monitored period from October 2022 to July 2024, the project generated a total of 1,166,565 RoUs, equivalent to 1,166.565 million litres of treated wastewater. This treated water was gainfully reused for non-potable

	applications such as gardening and campus toiletries,
	effectively reducing the reliance on fresh water sources
	and mitigating groundwater depletion in the region. The
	project demonstrates a successful model of sustainable
	water management and resource efficiency.
Conclusion	The conclusion for the estimation of RoUs (Rainwater
	Offset Units) or net water saved/recycled/reused in the
	project by Parul University highlights the significant impact
	of their STP (Sewage Treatment Plant) initiative. The project
	successfully generated approximately 1,166,565 RoUs
	over the monitored period from October 2022 to July 2024,
	equating to 1,166.565 million litres of treated water. This
	treated water was effectively reused for non-potable
	applications such as gardening and campus toiletries,
	thereby conserving freshwater resources and mitigating
	groundwater depletion. The initiative demonstrates a
	sustainable approach to water management, setting a
	model for other institutions to follow.

D.3.7 PCN+Monitoring Report

Means of Project Verification	Flow Meters: Measurement of treated water quantity via flow meters to ensure accuracy in reporting the volume of recycled water. Water Quality Testing: Regular testing of treated water to confirm it meets safety and quality standards for reuse. Operational Logs: Detailed logs of the STP operations, including maintenance records and performance metrics. Off-Site Inspections: Remote inspection to verify the infrastructure and operational status of the STP.
Findings	Upon verification, the Project Concept Note & Monitoring Report (PCNMR) for the STP Wastewater Recycling and Gainful Reuse project by Parul University highlights significant achievements. The project successfully recycled and reused 1,166,565 RoUs (1 RoU = 1000 litres) of wastewater over the monitored period from October 2022 to July 2024. This initiative has substantially reduced the reliance on freshwater sources, mitigated groundwater depletion, and contributed to local water security. Additionally, the project aligns with multiple Sustainable Development Goals (SDGs), including clean water and sanitation, sustainable cities, and climate action, showcasing Parul University's commitment to environmental sustainability and resource efficiency.
Conclusion	The conclusion of the Project Concept Note & Monitoring Report (PCNMR) for the STP Wastewater Recycling and Gainful Reuse project by Parul University highlights the university's commitment to sustainable water management. By implementing a 3.5 MLD Sewage Treatment Plant, the project has successfully recycled significant amounts of wastewater, reducing reliance on freshwater sources and mitigating groundwater depletion. This initiative not only addresses local water scarcity but also serves as a model for other institutions, demonstrating effective resource management and

environmental stewardship. The project aligns with multiple Sustainable Development Goals (SDGs), contributing to cleaner urban environments and promoting responsible consumption and production practices.

D.3.8 National Water Security Index

Means of Project Verification	Water Availability: Measurement of per capita water availability and the sustainability of water resources. Water Quality: Assessment of water quality parameters, including contamination levels and compliance with safety standards. Water Use Efficiency: Evaluation of water use efficiency across different sectors, such as agriculture, industry, and domestic use. Water Governance: Analysis of policies, regulations, and institutional frameworks governing water resources.
Findings	Upon verification, it was found that the National Water Security Index for India, as mentioned in the PCNMR is 2. This index indicates the country's overall water security status, reflecting various factors such as water availability, quality, and management practices. The document highlights the importance of projects like the STP Wastewater Recycling by Parul University in improving water security by reducing reliance on freshwater sources and promoting sustainable water management practices.
Conclusion	The National Water Security Index for India, as mentioned in the PCNMR is 2. This index reflects the country's overall water security status, considering factors like water availability, quality, and management practices. The conclusion drawn from this index is that India faces significant challenges in ensuring sustainable water management and needs to implement effective conservation and recycling measures to improve its water security. The project by Parul University is a step in the right direction, showcasing how wastewater recycling can contribute to better water management and sustainability.

D.3.9 Start date, crediting period and duration

Means of Project Verification	Project Documentation: Official records and documents detailing the project's initiation, including the commissioning date and operational timelines. Monitoring Reports: Regularly updated reports that track the project's progress, water recycling volumes, and compliance with the UWR RoU standards. Flow Meter Data: Data from flow meters installed at the site to measure the quantity of treated wastewater reused, ensuring accurate tracking of water usage.
Findings	Upon verification, the project activity at Parul University commenced on 09/07/2022, with the crediting period spanning from 01/10/2022 to 31/07/2024. This duration of 1 year and 10 months reflects the university's commitment to sustainable water management through the recycling and reuse of wastewater. The project has successfully generated 1,166,565 Rainwater Offset Units (RoUs) during this period, demonstrating significant environmental impact and resource efficiency.
Conclusion	The project "STP Wastewater Recycling and Gainful Reuse by Parul University" commenced on October 1, 2022, with the first crediting period spanning from October 1, 2022, to July 31, 2024, covering a duration of 1 year and 10 months. During this period, the project successfully generated 1,166,565 Rainwater Offset Units (RoUs), demonstrating significant progress in water conservation and sustainable practices.

D.3.10 Positive Environmental impacts

Means of Project Verification	Water Quality Monitoring: Regular testing of treated wastewater to ensure it meets environmental and regulatory standards. Flow Meter Readings: Measuring the quantity of treated water reused for non-potable applications like gardening and flushing. Sludge Management Records: Documenting the disposal and repurposing of sludge as organic manure. Environmental Impact Assessments (EIA): Conducting periodic EIAs to evaluate the project's impact on local water bodies and ecosystems.
Findings	Upon verification, the STP Wastewater Recycling and Gainful Reuse project by Parul University demonstrates significant positive environmental impacts. The project effectively reduces reliance on freshwater sources by recycling treated wastewater for non-potable uses such as gardening and toilet flushing. This initiative conserves millions of litres of freshwater annually, alleviating pressure on local groundwater reserves. Additionally, the project prevents pollution by ensuring that treated effluent meets safety standards before reuse, thus protecting local water bodies and ecosystems. The university's commitment to sustainable water management practices serves as a model for other institutions, promoting broader adoption of environmentally responsible initiatives.
Conclusion	In conclusion, the project at Parul University demonstrates significant positive environmental impacts by effectively recycling and reusing wastewater, which conserves freshwater resources and reduces groundwater depletion. The initiative mitigates local water scarcity, supports groundwater recharge, and prevents pollution of natural water bodies. By treating 3.5 million liters of sewage daily, the project not only addresses immediate water management challenges but also promotes sustainable

practices that can be replicated by other institutions. This comprehensive approach enhances the local ecosystem, contributes to water security, and sets a benchmark for environmental stewardship in the region.

D.3.11 Project Owner-Identification and communication

Means of Project Verification	Identification: The project owner, Parul University, is identified through detailed project information, including the project name, location, and scope. The university's role and responsibilities in the project are clearly defined. Communication: Regular monitoring reports and project documentation are prepared and communicated. These include data on water usage, treatment processes, and the impact on local water resources. The project owner also engages with stakeholders through reports and updates.
Findings	Upon verification it was found that, the project owner, Parul University, has effectively identified and communicated the critical aspects of their STP Wastewater Recycling and Gainful Reuse project. They have demonstrated a strong commitment to sustainable water management by implementing advanced treatment technologies and ensuring the treated wastewater is reused for non-potable purposes such as gardening and campus toiletries. This initiative not only conserves freshwater resources but also sets a precedent for other institutions. The university's transparent communication of project details, including the environmental benefits and alignment with Sustainable Development Goals (SDGs), highlights their leadership in promoting sustainable practices and community well-being.
Conclusion	In conclusion, the project at Parul University in Vadodara, Gujarat, demonstrates a successful implementation of a 3.5 MLD Sewage Treatment Plant (STP) that effectively recycles wastewater for non-potable uses such as gardening and toilet flushing. This initiative significantly reduces reliance on freshwater sources, conserves local

groundwater, and promotes sustainable water management practices. By treating and reusing wastewater, the university not only addresses water scarcity but also sets a model for environmental stewardship and community leadership, contributing positively to regional water security and sustainability goals.

D.3.12 Positive Social Impact/Ecological Aspects/Recharge Aspects

Means of Project Verification	Water Quality Testing: Regular testing of treated wastewater to ensure it meets safety and environmental standards. Usage Monitoring: Tracking the volume of recycled water used for non-potable purposes like gardening and flushing. Environmental Impact Assessments: Conducting periodic assessments to evaluate the project's impact on local ecosystems and groundwater levels. Community Feedback: Gathering feedback from students, staff, and local residents on the project's benefits and any areas for improvement.
Findings	Upon verification, the project activity at Parul University demonstrates significant positive social and ecological impacts. The STP initiative effectively addresses water scarcity by recycling wastewater for non-potable uses, conserving freshwater resources, and enhancing local water security. It promotes environmental protection by preventing untreated sewage discharge, thus safeguarding local ecosystems. Additionally, the project serves as an educational resource, fostering awareness and engagement in sustainable practices among students and the community. By avoiding the use of borewells, it prevents groundwater depletion, contributing to the sustainable management of natural resources and setting a model for other institutions.
Conclusion	In conclusion, the project at Parul University demonstrates

a significant positive social impact by enhancing water security and promoting sustainable practices. advanced STP system effectively recycles wastewater, reducing reliance on freshwater sources and mitigating groundwater depletion. This initiative not only supports environmental conservation but also serves as an educational resource, fostering awareness and engagement in sustainable water management among students and the local community. The implementation of artificial recharge structures further contributes to groundwater replenishment, ensuring long-term ecological balance and resilience against water scarcity. Overall, the project exemplifies a comprehensive approach to sustainable development, benefiting both the environment and society.

D.3.13 Sustainable development aspects

Means of Project Verification	Water Reuse and Conservation: Monitoring the quantity of treated wastewater reused for non-potable applications like gardening and toilet flushing. Environmental Protection: Ensuring treated sewage meets Gujarat Pollution Control Board standards to prevent contamination of local water bodies. Educational Opportunities: Providing practical learning resources and awareness programs on water conservation for students. Community Impact: Demonstrating effective wastewater treatment and reuse strategies to inspire similar initiatives
	in local communities.
Findings	Upon verification, the project at Parul University demonstrates significant contributions to sustainable development. The STP wastewater recycling initiative aligns with multiple Sustainable Development Goals (SDGs), including SDG 3 (Good Health and Well-being) by reducing water pollution and associated health risks, SDG 4 (Quality Education) through educational programs on sustainability,

SDG 6 (Clean Water and Sanitation) by enhancing water conservation, SDG 11 (Sustainable Cities and Communities) by reducing urban pollution, SDG 12 (Responsible Consumption and Production) by promoting water reuse, and SDG 13 (Climate Action) by improving climate resilience through responsible water management. This project sets a precedent for sustainable practices in educational institutions.

Conclusion

In conclusion, the project at Parul University exemplifies a comprehensive approach to sustainable water management by effectively recycling and reusing wastewater, significantly reducing reliance on freshwater sources. This initiative not only addresses local water scarcity but also promotes environmental protection, educational opportunities, and community leadership. By integrating advanced treatment technologies sustainable practices, the university sets a model for other institutions, contributing to broader water security and environmental sustainability goals.

Section E. Internal Quality Control

During the verification of this project, internal quality control measures were rigorously applied to ensure the accuracy and reliability of the verification process. This included regular internal reviews of verification procedures, documentation, and reports to identify and rectify any errors or inconsistencies. Verification staff underwent continuous training and competency development to ensure proficiency in conducting verifications effectively. Standard Operating Procedures (SOPs) were established to outline clear steps for data collection, analysis, and reporting, promoting consistency and adherence to best practices. Comprehensive documentation management practices were implemented to maintain transparent records of verification activities, including data sources and methodologies used. Peer reviews and discussions among verification team members were facilitated to validate findings and ensure consensus on conclusions. Continuous improvement processes were in place to monitor and evaluate verification practices, identifying areas for enhancement and optimizing performance over time.

Section F. Project Verification Opinion

The Project Verification Opinion for the STP Wastewater Recycling and Gainful Reuse project by Parul University would likely focus on the following key points:

Compliance with UWR RoU Standards: The project adheres to Scope 4 of the UWR RoU standards, ensuring that wastewater is effectively recycled and reused within the campus.

Environmental Impact: The project significantly reduces reliance on freshwater sources and mitigates groundwater depletion, contributing positively to local water security.

Sustainable Practices: By treating and reusing wastewater, the project supports sustainable water management and aligns with multiple Sustainable Development Goals (SDGs).

Operational Efficiency: The STP employs advanced treatment technologies and has demonstrated effective performance in recycling wastewater for non-potable uses.

This opinion would affirm the project's success in meeting its environmental and sustainability objectives.

In our opinion, the total RoU's over the crediting / verification period stated in the Project Concept Note and Monitoring Report, PCNMR submitted to SQAC are found to be correct and in line with the UWR guidelines.

The verification was done remotely by way of video calls / verification, phone calls and submission of documents for verification through emails.

SQAC is able to certify that the RoU's from the STP Wastewater Recycling and Gainful Reuse by Parul University, Vadodara, Gujarat, India, (UWR ID - 466) for the period **01/10/2022** to **31/07/2024** amounts to **11,66,565** RoUs

Appendix 1. Abbreviations

Abbreviations	Full texts
UWR	Universal Water Registry
PP/PO	Project Proponent / Project Owner

PA	Project Aggregator
ROUs	Rainwater offset Units.
SDG	Sustainable Development Goal
CAR	Corrective Action Request
CR	Clarification Request
FAR	Forward Action Request
PCNMR	Project Concept Note & Monitoring report
VR	Verification Report
VS	Verification Statement
COD	Commercial Operation Date

Appendix 2. Competence of team members and technical reviewers

Sr.	Role	Name	Education	Related Experience
No.			Qualification	
1.	Team Leader	Santosh	BE (Chemical) Lead	Water Verifier for all UWR RoU
	/ Lead	Nair	Auditor in ISO	Program sectoral scopes such as
	Verifier /		9001,14001,	Scope 1, 2, 3, 4 & 5.
	Validator		45001,13485,22301	
			,22000,27001,1406	
			4-1,2,3	
2.	Technical	Praful	BE (Mechanical)	Water Verifier for all UWR RoU
	reviewer	Shinganap	Certified Energy	Program sectoral scopes such as
		urkar	Auditor	Scope 1, 2, 3, 4 & 5.
			Lead Auditor in ISO	
			9001,14001 &	
			45001	

Appendix 3. Document reviewed or referenced

Sr. No.	Author	Title	Provider
1.	Maverik Inc.	PCNMR	Maverik Inc.
2.	Maverik Inc.	Water Calculation Sheet	Maverik Inc.
3.	Flowtech Measurement Instruments Pvt. Ltd.	Calibration certificates of Electromagnetic Flow Meter	Maverik Inc.
4.	Aczet	Calibration certificates of Electronic Balance	Maverik Inc.
5.	Parul University, Vadodara, Gujarat	Operating Logbooks	Maverik Inc.

6.	Parul University,	Water Lab Test Report	Maverik Inc.
	Vadodara, Gujarat		

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

Table 1. CLs from this Project Verification

able 1. CLS normalis Project verification			
00	Section no.		Date:
of CL:			
	ı	n/a	
Project Owner's response Date:			
	ı	n/a	
tion provided by	Project Owne	r	
	r	n/a	
t Verifier assess	ment		Date:
	- 1	n/a	
_			
	of CL : er's response ion provided by	of CL: er's response rion provided by Project Owne t Verifier assessment	of CL: //a er's response //a ion provided by Project Owner //a

Table 2. CARs from this Project Verification

CARID	00	Section no.		Date:
Descriptio	n of CAR			
		r	n/a	
Project Ow	ner's response			Date:
		r	n/a	
Documentation provided by Project Owner				
		r	n/a	
UWR Proje	ct Verifier assess	ment		Date:
		r	n/a	

Table 3. FARs from this Project Verification

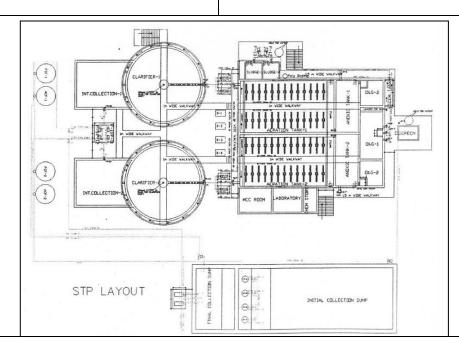
Table 3. FAN	s iroin tills Projec	t verification		
FAR ID	Nil	Section no.		Date:
Description	n of FAR			
	n/a			
Project Owner's response Date:				
n/a				
Document	ation provided by	/ Project Owne	r	
		r	n/a	
UWR Project Verifier assessment Date:				
	_	r	n/a	

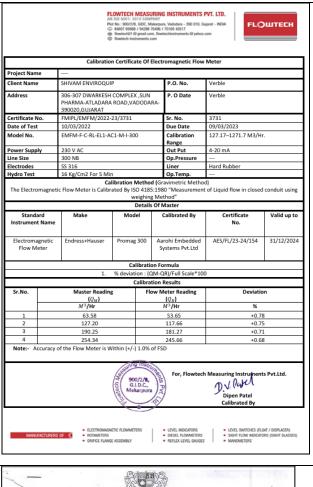


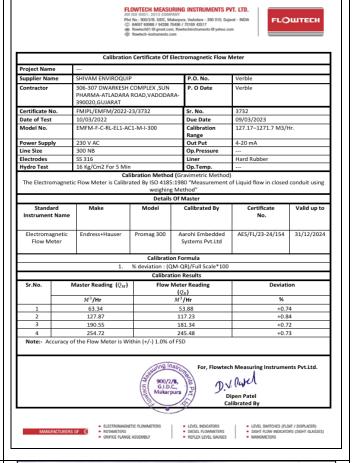




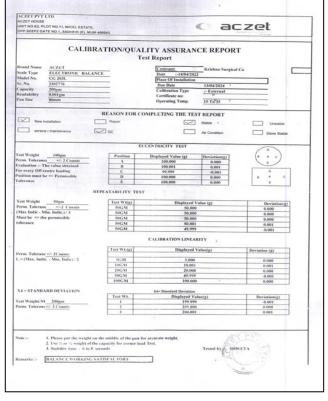












ENVIRONMENTAL AUDIT LAB, PARUL INSTITUTE OF ENGINEERING & TECHNOLOGY, PARUL UNIVERSITY, VADODARA

Report For STP, Parul University.

Date	e:	11/11/2022 & 21/11/22
Com	pany Name:	Sewage Treatment Plant, Parul University
Add	fress:	Post Limda, Waghodia, Gujarat 391760
Nan	ne of person met with sign	7,
Mob	bile number	
E-m	ail id	
1	Water samples	
2	Effluent samples	Results enclosed in Table-1.0
7	Observations/Comments	



1. DETAILS OF QUALITY TRADE EFFULENT

Date of Collection: 11/11/2022 Mode of Collection: Grab

Sr. No.	Parameters	INLET OF STP mg/lit	SECONDARY CLF-1 mg/lit	SECONDARY CLF-2 mg/lit	OUTLET OF STP mg/lit	GPCB Norms mg/lit
1.	pH	7.4	7.8	7,8	7.9	6 to 9
2.	TSS	64	32	26	58	100
3.	TDS	1236.8	1247	1227	1191.5	100
4.	BOD	32	23	22	18	100
5.	COD	100	60	50	80	100 250

Date of Collection: 21/11/2022

		mine deligit,	
Mode of	Collection: G	rab	

Sr. No.		INLET OF STP mg/lit	SECONDARY CLF-1 mg/lit	SECONDARY CLF-2 mg/lit	OUTLET OF STP mg/lit	GPCB Norms mg/lit
1.	pH	7.8	7.6	7.5	7.2	6 to 9
2.	TSS	56	46	35	25	100
3.	TDS	1240	1199	1180	1098	100
4.	BOD	46	38	36	12	100
5.	COD	122	105	62	51	250

1. All results are expressed in mg/liter except pH, BDL: Below Detection Limit



Company Name: Sewage Treatment Plant, Parul Post Limda, Waghodia, Gujarat Contact Person: Name: Number:

Details of Water and Wastewater Samples:

Sr. No.	Location	Parameters.
1	inlet of STP	As per Requirement
2	Secondary CLF-1	As per Requirement
3	Secondary CLF-2	As per Requirement
4	Outlet of STP	As per Requirement
otal Location:		4

Sampling Charges: (Grab Sampling)

	Charges	No. of Samples	First Visit
1st Sample:	960	0	
2nd Sample onwards:	440	0	0
			-

Parameterwise Analysis Charges:

Sr. No	Parameter	Rate	No. of Sample	Total- 11/11/2022	Total- 25/11/2022
- 1	pH	110.00	4	440	440
2	Total Suspended Solids	180.00	4	720	720
1	BOD (3 days@279C)	1050.00	4	4200	
4	C00	620.00	-	2480	4200
- 5	TDS	180.00			2480
otal Parar	meterwise Analysis Charges:	100.00	-	720	720
	T Control of the Charges:			8560	8560.00
_			Total	17120.00	
			ev.	2.45	

17120.00



