

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

### SITE DETAILS

Site: **Samsung Electronics Multisite - Gumi**

Address: #302, 3 gongdan 3-ro, Gumi-city, Kyung-Buk, 39388, KOREA, REPUBLIC OF

Contact Person: Yonggyu Oh

AWS Group Reference Number: AWS-G-000017

Site Structure: Multi Site

### CERTIFICATION DETAILS

Certification status: Certified Platinum

Date of certification decision: 2024-Jan-26

Validity of certificate: 2027-Jan-26

### AUDIT DETAILS

Audited Service(s): AWS Standard v2.0 (2019)

Audit Type(s): Initial Audit

Audit Start Date: 2023-Nov-13

Lead Auditor: Naoya Ogawa

Audit team participants:

Sa-Myeong Gim

Site Participants:

Jieun Lee, Corporate EHS

JoeJeong Lee, Corporate EHS

Hyemin Kwon, Corporate EHS

JueHong Park, Corporate EHS

SangMin Lee, Corporate EHS

DalYoung Jug, Corporate EHS

KyungSik Cho, Corporate EHS

InTae Park, Corporate EHS

HyunCheol Kim, Corporate EHS

HyunSoo Lee, Corporate EHS

Juhyun Jo, Corporate EHS

Youngseon Yu, Corporate EHS

Yeunhee Kim, Other

Jaehyun Baik, Consultant

Yeunhee Kim, Consultant

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### AUDIT TIMES

Dates	Audit from	Duration	Auditor	Description
2023-Nov-13	08:30:00 - 09:30:00	01:00	Naoya Ogawa	Opening meeting
2023-Nov-13	09:30:00 - 10:00:00	00:30	Naoya Ogawa	Interview with plant managers
2023-Nov-13	10:00:00 - 12:00:00	02:00	Naoya Ogawa	Site tour
2023-Nov-13	13:00:00 - 15:00:00	02:00	Naoya Ogawa	Site tour
2023-Nov-13	15:00:00 - 16:00:00	01:00	Naoya Ogawa	Document review
2023-Nov-13	16:00:00 - 17:00:00	01:00	Naoya Ogawa	Visit to Promotion Hall
2023-Nov-13	17:00:00 - 17:45:00	00:45	Naoya Ogawa	Document review
2023-Nov-14	08:30:00 - 12:00:00	03:30	Naoya Ogawa	Catchment tour
2023-Nov-14	13:00:00 - 14:00:00	01:00	Naoya Ogawa	Document review
2023-Nov-14	14:00:00 - 17:00:00	03:00	Naoya Ogawa	Stakeholder interview
2023-Nov-14	17:00:00 - 17:30:00	00:30	Naoya Ogawa	Document review
2023-Nov-15	08:30:00 - 12:00:00	03:30	Naoya Ogawa	Document review
2023-Nov-15	13:00:00 - 17:30:00	04:30	Naoya Ogawa	Document review
2023-Nov-16	08:30:00 - 12:00:00	03:30	Naoya Ogawa	Document review
2023-Nov-16	13:00:00 - 17:30:00	04:30	Naoya Ogawa	Document review
2023-Nov-17	08:30:00 - 12:00:00	03:30	Naoya Ogawa	Document review
2023-Nov-17	13:00:00 - 15:00:00	02:00	Naoya Ogawa	Document review
2023-Nov-17	15:00:00 - 16:10:00	01:10	Naoya Ogawa	Auditors' review meeting
2023-Nov-17	16:10:00 - 17:00:00	00:50	Naoya Ogawa	Closing meeting

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### ADDITIONAL INFO

**Summary of Audit Findings:** A total of 20 findings were raised during the certification audit, no major non-conformities, 9 minor non-conformities, 11 observations.

The Client is requested to perform a root cause analysis and define corrective actions for each of the non-conformities and to submit these to WSAS within 30 days of receipt of the audit report by 22 January 2024.

Minor non-conformities must be closed out by the time of the next annual audit.

The audit team recommends certification of Samsung Electronics Multisite - Gumi at Platinum level pending approval of the corrective actions plan.

### CLOSURE OF FINDINGS AND CORRECTIVE ACTION PLAN:

The Client has successfully resolved the corrective action plans addressing all findings. Proof of implementation has been requested for the Minors and this will be evaluated during the Surveillance Audit. The client is requested to upload evidence of implementation prior to the Surveillance Audit.

**Scope of Assessment:** The scope of services covers the Initial certification audit for assessing conformity of Samsung Electronics Multisite - Gumi against the AWS International Water Stewardship Standard Version 2.

Samsung Electronics Gumi sites are the campuses of DX Division, developing and manufacturing Mobile Phones. The main campus is Campus 2, and a part of Campus 1 is rented out to other companies. □Water management in Campus 1 and 2 is conducted by Samsung Electronics. Samsung Electronics Gumi Campus 1 is located at 224, 1gongdan-ro(Gongdan-dong), Gumi-si, Gyeongsangbuk-do, and Campus 2 at 302, 3gongdan-ro(Imosu-dong), Gumi-si, Gyeongsangbuk-do, Republic of Korea. Campus 1 is located in the Industry complex 1, and Campus 2 is located in the Industry complex 3, along Nakdong River. The area of Campus 1 is 184,000m<sup>2</sup>, and Campus 2 is 328,000m<sup>2</sup>. The number of employees in Campus 1 is about 130 (and 1600 of outsourced companies), and in Campus 2 is 7970.

Samsung Electronics Gumi Campus 1 and 2 are located in the middle of the Nakdong River area. The sites use tap water, surface water and ground water. The water for tap water is taken from the Nakdong River and purified in Haepyeong Intake Station in Gumi city by K-Water and supplied to the site. Each site has wastewater treatment plant, and treated wastewater is discharged to the Gumi city's public sewage treatment plant. Sewage water from both campuses is directly discharged to the public sewage treatment plant. Treated water at the public sewage treatment plant is finally discharged to the Nakdong River.

The audit was conducted onsite on 13-17 November 2023.

The onsite visit included the assessment of water tank of tap water, wastewater treatment plant, WASH facilities, manufacturing process, oil-water separator of storm water both in Campus 2 and Campus 1, discharging point of storm water from Campus 2, discharging point from Gumi sewage treatment plant, and Haepyeong Intake Station.

The following external stakeholders were interviewed during the audit: Environmental Safety Manager Association, Administrative Welfare Center in Jinmi-dong region, Gumi city hall Ecology department, Environment Engineers Council, Water quality measurement company, and Canteen company.

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### SCORE

90.00

### FINDINGS

#### NUMBER OF FINDINGS PER LEVEL

Observation	11
Minor	9

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## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

### FINDING DETAILS

Finding No:	TNR-008306
Checklist Item No:	1.1.1
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-13
Checklist item:	The physical scope of the site shall be mapped, considering the regulatory landscape and zone of stakeholder interests, including: <ul style="list-style-type: none"><li>- Site boundaries;</li><li>- Water-related infrastructure, including piping network, owned or managed by the site or its parent organization;</li><li>- Any water sources providing water to the site that are owned or managed by the site or its parent organization;</li><li>- Water service provider (if applicable) and its ultimate water source;</li><li>- Discharge points and waste water service provider (if applicable) and ultimate receiving water body or bodies;</li><li>- Catchment(s) that the site affect(s) and is reliant upon for water.</li></ul>
Findings:	<p>The site also uses groundwater but the relevant aquifer or catchment area (if it is upper layer, i.e. groundwater table) of ground water has not been defined and its map was not provided.</p> <p>And although a map of the full Nakdong river catchment is provided, the site bases its activities and analysis on an oval area around the site - this area is not a sub-catchment and its boundaries are not related to hydrology and topography.</p>
Corrective action:	<ul style="list-style-type: none"><li>- We will review the information of catchment presented by water-related public authorities and expert opinions from local environmental organizations and research institutes, and re-identify the catchment of surface water and groundwater after the review.</li></ul> <p>[Preventive Action]</p> <ul style="list-style-type: none"><li>- We will continue to monitor changes in water supply and ultimate water body, identify the scope of impact accordingly, and re-identify the catchment areas for surface water and groundwater based on catchment information presented by water-related public authorities and expert opinions from local environmental organizations and research institutes.</li></ul>

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Audit Number: AO-000750

Finding No: TNR-008307  
Checklist Item No: 1.2.1  
Status: In Progress - CA plan approved  
Finding level: Minor  
Due date: 2024-Nov-13  
Checklist item: Stakeholders and their water-related challenges shall be identified. The process used for stakeholder identification shall be identified. This process shall:  
- Inclusively cover all relevant stakeholder groups including vulnerable, women, minority, and Indigenous people;  
- Consider the physical scope identified, including stakeholders, representative of the site's ultimate water source and ultimate receiving water body or bodies;  
- Provide evidence of stakeholder consultation on water-related interests and challenges;  
- Note that the ability and/or willingness of stakeholders to participate may vary across the relevant stakeholder groups;  
- Identify the degree of stakeholder engagement based on their level of interest and influence.

Findings: However, stakeholder list was not identified based on stakeholder analysis, i.e. the results of analysis presented for the stakeholder identification were not sufficiently used. Stakeholders such as vulnerable, women, minority, children, farmers, fishers, stakeholders of the site's ultimate water source and ultimate receiving water body were not considered.

Corrective action: - After re-identifying the catchment area, we will identify stakeholders in a broader area. We will also consider farmers and vulnerable populations that share the water source and add them to the stakeholder list.

[Preventive Action]  
- We will continue to update our stakeholder list annually through a process of analysis and re-identification of stakeholders within the identified catchment area.

Finding No: TNR-008308  
Checklist Item No: 1.3.4  
Status: Open  
Finding level: Observation  
Checklist item: Water quality of the site's water source(s), provided waters, effluent and receiving water bodies shall be quantified. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be quantified.

Findings: Although not required by law, water quality of discharging point of storm water from Campus 1 is not monitored.

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Finding No: TNR-008309  
Checklist Item No: 1.3.6  
Status: Open  
Finding level: Observation  
Checklist item: On-site Important Water-Related Areas shall be identified and mapped, including a description of their status including Indigenous cultural values.  
Findings: Water tank may not be IWRA according to the Auditor Guidance: ""any water-related infrastructure does not qualify as an IWRA, unless it has a shared value (ecological, cultural) or is publicly available.""

Finding No: TNR-008310  
Checklist Item No: 1.5.2  
Status: In Progress - CA plan approved  
Finding level: Minor  
Due date: 2024-Nov-13  
Checklist item: Applicable water-related legal and regulatory requirements shall be identified, including legally-defined and/or stakeholder-verified customary water rights.  
Findings: Evidence whether there is stakeholder-verified customary water rights was not submitted. For example, in the catchment, there are farmers and fishers.  
Corrective action: - After updating the stakeholder list, we will identify customary water rights for farmers, fishermen, and others.  
  
[Preventive Action]  
- Based on the updated stakeholder list, we will conduct interviews to identify stakeholders' customary water rights.

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## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Finding No:	TNR-008311
Checklist Item No:	1.5.3
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-13
Checklist item:	The catchment water-balance, and where applicable, scarcity, shall be quantified, including indication of annual, and where appropriate, seasonal, variance.
Findings:	The percentage of the site's groundwater withdrawal compared to the total groundwater withdrawals does not reflect the groundwater balance, i.e. it does not say whether the withdrawals are not higher than the recharge.
Corrective action:	<ul style="list-style-type: none"><li>- We will continue to monitor groundwater level data within the reidentified groundwater catchment area from groundwater measurement networks provided by the National Groundwater Information Center (<a href="https://www.gims.go.kr/natnObsvStts.do">https://www.gims.go.kr/natnObsvStts.do</a>)</li><li>- In the future, we will conduct investigations of the underlying rock formations and groundwater quantities within the identified catchment areas.</li><li>- We will identify the water balance of the catchment, including the groundwater quantity investigated.</li></ul> <p>[Preventive Action]</p> <ul style="list-style-type: none"><li>- Continuous monitoring of groundwater levels will be conducted in conjunction with investigation of underlying rock formations and groundwater quantity.</li></ul>



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Finding No:	TNR-008312
Checklist Item No:	1.5.5
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-13
Checklist item:	Important Water-Related Areas shall be identified, and where appropriate, mapped, and their status assessed including any threats to people or the natural environment, using scientific information and through stakeholder engagement.
Findings:	IWRAs identified by the site are areas that may be affected by the site rather than areas in the catchment that are valuable (environmentally, socially etc), to understand their status and potential threats. I.e. the definition of IWRAs from the standard and guidance was not sufficiently followed. And IWRAs were identified only based on the simple questionnaire for stakeholders and Gumi city office. Identification process was insufficient, according to the IWRA guidance in the AWS Guidance document.
Corrective action:	<p>- In accordance with AWS Guidance, we will re-identify IWRAs by identifying the importance of each element (environmental, community, cultural, economic) for each IWRA, including who it applies to and why it is important.</p> <p>We will also identify IWRAs through closer communication with stakeholders, as well as surveys, and gather opinions from experts to supplement the IWRAs list and mapping.</p> <p>[Preventive Action]</p> <p>- We will update the list and mapping of IWRAs by re-conducting the IWRA identification process in accordance with the AWS Guidance.</p>

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Audit Number: AO-000750

Finding No:	TNR-008313
Checklist Item No:	1.5.6
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-13
Checklist item:	Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.
Findings:	Current status and potential exposure to extreme events of water-related infrastructure were not identified.
Corrective action:	<p>- In addition to publicly available information on water-related infrastructure (water purification and sewage treatment plants), we will engage with relevant stakeholders to identify the approximate status of infrastructure, and use the WRI aqueduct tool to estimate the level of exposure to each risk (Water stress and depletion, Riverine and Coastal flooding, and Drought).</p> <p>[Preventive Action] - In addition to existing publicly available information, we will regularly engage with relevant stakeholders to maximize information about the facility and use the WRI aqueduct tool to understand the extent of potential risk exposure.</p>
Finding No:	TNR-008314
Checklist Item No:	1.5.7
Status:	Open
Finding level:	Observation
Checklist item:	The adequacy of available WASH services within the catchment shall be identified.
Findings:	The data is for Gumi city, not for the catchment, although it is possible the WASH status around Gumi city is almost the same as in the catchment area.
Finding No:	TNR-008315
Checklist Item No:	1.6.1
Status:	Open
Finding level:	Observation
Checklist item:	Shared water challenges shall be identified and prioritized from the information gathered.
Findings:	Water pollution issue was identified as 1st priority based on opinions from stakeholders. However, there is no water pollution in the catchment currently based on the data collected. This may be because bad memory of the past water pollution accident in the resion. If this is true and the current status of water quality is not challenge, the priroitisation, or initiatives to address the challenge (e.g. improving the awareness of stakeholders), should be re-considered.

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Finding No: TNR-008316  
Checklist Item No: 1.6.2  
Status: Open  
Finding level: Observation  
Checklist item: Initiatives to address shared water challenges shall be identified.  
Findings: The site has mainly identified own activities but it should also be aware of any existing public sector efforts or plans to address the identified shared water challenges (so as to avoid duplication or conflicting actions)

Finding No: TNR-008317  
Checklist Item No: 2.3.1  
Status: Open  
Finding level: Observation  
Checklist item: A water stewardship strategy shall be identified that defines the overarching mission, vision, and goals of the organization towards good water stewardship in line with this AWS Standard.  
Findings: A number of goals are focused only on Samsung site boundary and should better relate to the catchment level.

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## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Finding No:	TNR-008318
Checklist Item No:	2.3.2
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-13
Checklist item:	A water stewardship plan shall be identified, including for each target: <ul style="list-style-type: none"><li>- How it will be measured and monitored</li><li>- Actions to achieve and maintain (or exceed) it</li><li>- Planned timeframes to achieve it</li><li>- Financial budgets allocated for actions</li><li>- Positions of persons responsible for actions and achieving targets</li><li>- Where available, note the link between each target and the achievement of best practice to help address shared water challenges and the AWS outcomes.</li></ul>
Findings:	<p>The sites have developed WS plan (modified in 2022 and modified in July, Sep, Oct 2023) including target, action, timeframe, budget, cost, responsible person, progress(%), link to outcomes, to best practice, and priority. Timeframes for every action have been identified. Persons responsible for actions and achieving targets have been provided. The site has made the link between each actions and the AWS outcomes and best practice.</p> <p>However,</p> <ul style="list-style-type: none"><li>- Most of their targets do not have quantified metrics to measure and monitor their performances, instead, every action has progress (%) but many of them was calculated from timeframe</li><li>- Lack of targets and actions associated with catchment level shared-water challenges, especially no such targets in Water Balance, Water Quality category</li><li>- Financial budgets were allocated only for 35 action plans out of 80. Budgets for 45 action have not been identified.</li></ul>
Corrective action:	<ul style="list-style-type: none"><li>- We will set specific targets so that progress and performance can be monitored with quantitative indicators.</li><li>- The progress of each target will be checked according to the progress of each target (cycle, achievement rate), and the calculation criteria will be diversified according to the type of each action. For some insufficient targets and budgets, we will establish future targets and review them in detail to ensure that nothing is missed.</li></ul> <p>[Preventive Action]</p> <ul style="list-style-type: none"><li>- We will establish a regular process to monitor the rate of targets and achievements, and modify the outcomes evaluation form to include important items for performance monitoring such as budget, cost, and period.</li></ul>

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## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Finding No: TNR-008319  
Checklist Item No: 2.4.1  
Status: In Progress - CA plan approved  
Finding level: Minor  
Due date: 2024-Nov-13  
Checklist item: A plan to mitigate or adapt to identified water risks developed in co-ordination with relevant public-sector and infrastructure agencies shall be identified.  
Findings: Plans to mitigate or adapt to identified water risks were made by Samsung, referring to questionnaire results from stakeholders, but not developed in co-ordination with relevant public-sector and infrastructure agencies.  
Corrective action: - We will communicate and collaborate directly through methods such as face-to-face meetings and expert interviews, as well as surveys of water-related public authorities, to reflect the list of identified water risks and plans for addressing them.

[Preventive Action]  
- We will build a list of water risks and plans for addressing them through direct communication and collaboration, including face-to-face meetings and expert interviews, as well as surveys of water-related public organizations.

Finding No: TNR-008320  
Checklist Item No: 3.1.2  
Status: Open  
Finding level: Observation  
Checklist item: Measures identified to respect the water rights of others including Indigenous peoples, that are not part of 3.2 shall be implemented.  
Findings: Above activities are not related to measures to respect the water rights of others. In 1.5.2, evidence that if there is stakeholder-verified customary water rights was not submitted. Therefore, measures to respect the water rights of others are not identified.

Finding No: TNR-008321  
Checklist Item No: 4.1.2  
Status: Open  
Finding level: Observation  
Checklist item: Value creation resulting from the water stewardship plan shall be evaluated.  
Findings: For some performance it was not clear from which actions or from which part of the WSP the performance came.

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Audit Number: AO-000750

Finding No:	TNR-008322
Checklist Item No:	4.4.1
Status:	Open
Finding level:	Observation
Checklist item:	The site’s water stewardship plan shall be modified and adapted to incorporate any relevant information and lessons learned from the evaluations in this step and these changes shall be identified.
Findings:	Although the WSP is reviewed and revised more than once a year, it was not clear if the revised WSP incorporated any relevant information and lessons learned from the evaluations in this step.
Finding No:	TNR-008323
Checklist Item No:	5.1.1
Status:	Open
Finding level:	Observation
Checklist item:	The site’s water-related internal governance, including positions of those accountable for compliance with water-related laws and regulations shall be disclosed.
Findings:	<p>The sites have disclosed their water-related internal governance, including names and responsibilities in their homepage (<a href="https://www.samsung.com/sec/sustainability/digital-library/policy-document/">https://www.samsung.com/sec/sustainability/digital-library/policy-document/</a>). But those accountable for compliance with water-related laws and regulations are not clearly identified in the same disclosure materials.</p> <p>The sites claims that the person in charge of compliance with water quality regulations and each water resource work, their duties, name, position, and contact information of the person were posted on the Samsung Smart City website (<a href="https://www.samsungsmartcity.com/2646?category=131557">https://www.samsungsmartcity.com/2646?category=131557</a>), however, the page is not easy to find from the top page.</p>

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Finding No: TNR-008324  
Checklist Item No: 5.3.1  
Status: In Progress - CA plan approved  
Finding level: Minor  
Due date: 2024-Nov-13  
Checklist item: A summary of the site's water stewardship performance, including quantified performance against targets, shall be disclosed annually at a minimum.  
Findings: Samsung DX Division's sustainability report contains 2030 goals and brief water reduction amounts, and the AWS outcomes document published on the Samsung website contains brief performance information of Gumi sites, but it lacks quantitative performance information (Water reduction, securing basic water rights according to the amount saved, etc.) and lacks explanation of performance against targets.  
Corrective action: - We will disclose the performance of the site on quantitative performance information and percentages achieved against targets, etc.  
[Preventive Action]  
- We will create conditions to systematically manage and clearly disclose information on quantitative as well as qualitative performance.

Finding No: TNR-008325  
Checklist Item No: 5.4.1  
Status: Open  
Finding level: Observation  
Checklist item: The site's shared water-related challenges and efforts made to address these challenges shall be disclosed.  
Findings: Sufficient evidence was not identified that the sites effectively disclosed the identified shared water challenge to the relevant stakeholders. There was no specific feedback from stakeholders in the survey results, and the contents of the disclosed document were too brief.

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### Report Details

Report	Value
Report prepared by	Naoya Ogawa
Report approved by	Neringa Pumputyte
Report approved on (Date)	22 December 2023

### Surveillance

**Proposed date for next audit**

Comment      Surveillance audit should be conducted before 17 November 2024.

### Stakeholder Announcements

Date of publication	Location
08/08/2023	WSAS website <a href="https://watersas.org/wp-content/uploads/2023/08/AWS-G-000017-Stakeholder-Announcement-Multi-Site-Gumi-R1.pdf">https://watersas.org/wp-content/uploads/2023/08/AWS-G-000017-Stakeholder-Announcement-Multi-Site-Gumi-R1.pdf</a>
01/04/2023	Samsung Electronics website <a href="https://www.samsungsmartcity.com/2646?category=131557">https://www.samsungsmartcity.com/2646?category=131557</a>
11/08/2023	<a href="https://a4ws.org/wp-content/uploads/2023/08/AWS-000614631-Samsung-Gumi-2023-Stakeholder-Announcement.pdf">https://a4ws.org/wp-content/uploads/2023/08/AWS-000614631-Samsung-Gumi-2023-Stakeholder-Announcement.pdf</a>



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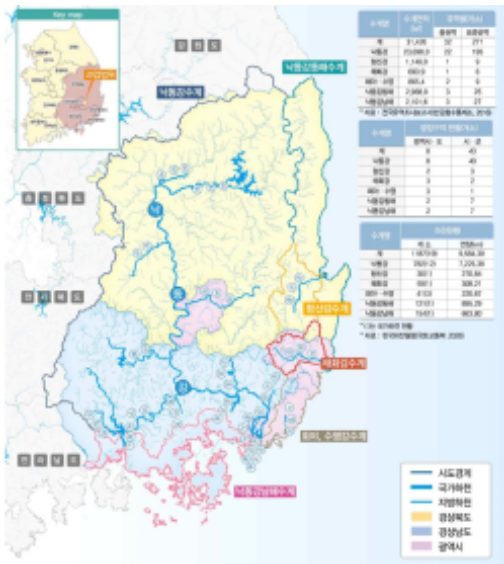
## Alliance for Water Stewardship (AWS)

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### Catchment Information

#### Catchment Information

Samsung Electronics Gumi Campus 1 and 2 are located in the middle of the Nakdong River area. The sites use water from the municipal supply (called 'tap water' in the rest of the report), stormwater that is called surface water in the rest of this report, and ground water. The water for tap water is taken from the Nakdong River and purified in Haepyeong Intake Station in Gumi city by K-Water and supplied to the site. Each site has wastewater treatment plant, and treated wastewater is discharged to the Gumi city's public sewage treatment plant. Sewage water from both campuses is directly discharged to the public sewage treatment plant. Treated water at the public sewage treatment plant is finally discharged to the Nakdong River. The relevant catchment is Nakdong River Catchment.



Nakdong River.jpg



Catchment area.png

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### Client Description and Site Details

#### Client/Site Background

Samsung Electronics Gumi sites are the campuses of DX Division, developing and manufacturing Mobile Phones. The main campus is Campus 2, and a part of Campus 1 is rented out to other companies. Water management in Campus 1 and 2 is conducted by Samsung Electronics.

Samsung Electronics Gumi Campus 1 is located at 224, 1gongdan-ro(Gongdan-dong), Gumi-si, Gyeongsangbuk-do, and Campus 2 at 302, 3gongdan-ro(Imso-dong), Gumi-si, Gyeongsangbuk-do, Republic of Korea. Campus 1 is located in the Industry complex 1, and Campus 2 is located in the Industry complex 3, along Nakdong River. The area of Campus 1 is 184,000m<sup>2</sup>, and Campus 2 is 328,000m<sup>2</sup>. The number of employees in Campus 1 is about 130 (and 1600 of outsourced companies), and in Campus 2 is 7970.



Site map.png

### Summary of Shared Water Challenges

#### Summary of Shared Water Challenges

The shared water challenges are identified as follows:

1. Water pollution (wastewater-sewage)
2. Drought and water shortage risk
3. Water pollution in water sources
4. Lack of communication and cooperation between government/regulatory agencies, businesses, and civic groups
5. Destruction of aquatic ecosystems and decline in biodiversity
6. WASH issues among vulnerable populations

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0.1 General Requirements for Single Sites, Multi-Sites and Groups	
0.1.1	<i>Eligibility Criteria</i>
0.1.1.1	<i>The site(s) occupy one catchment OR an exception has been granted.</i> <span style="float: right;">✔ Yes</span>
Comment	Gumi Campus 1 and Campus 2 are located in the same industrial area in Gumi city, so the both sites occupy one catchment.
0.1.1.2	<i>The scope of the proposed certification shall be under the control of a single management system.</i> <span style="float: right;">✔ Yes</span>
Comment	Gumi Campus 1 and Campus 2 are controlled by a single management system of Gumi site.
0.1.1.3	<i>The scope of the proposed certification shall be homogeneous with respect to primary production system, water management, product or service range, and the main market structures.</i> <span style="float: right;">✔ Yes</span>
Comment	Both Gumi Campus 1 and Campus 2 are mainly for smartphone production.

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0.3 Requirements for Groups	
0.3.1	Group Management Requirements
0.3.1.1	The management of the group shall be clearly defined. <span style="float: right;">↓ N/A</span>
0.3.1.2	The group shall identify the person with overall management responsibility for the group. <span style="float: right;">↓ N/A</span>
0.3.1.3	The group shall nominate an 'AWS Group Representative' who assumes overall responsibility for the group's implementation of and compliance with the AWS Standard and AWS certification requirements and serves as the primary contact for AWS communications. <span style="float: right;">↓ N/A</span>
0.3.1.4	The Group Management shall have clearly defined responsibilities. <span style="float: right;">↓ N/A</span>
0.3.2	Group Internal Control System
0.3.2.1	The group shall operate an Internal Control System (ICS) which meets the requirements of the AWS Standard and AWS certification requirements. <span style="float: right;">↓ N/A</span>
0.3.2.2	The ICS shall include: a) a documented set of procedures covering group processes; b) a detailed description of how production units are structured; c) appropriate procedures for maintenance of records; d) records from internal audits of production units; and e) a description of the responsibilities of staff of production units and ICS. <span style="float: right;">↓ N/A</span>
0.3.2.3	The ICS shall identify the applicable AWS Standard and define procedures and sanctions for dealing with non-conformities resulting from internal audits. <span style="float: right;">↓ N/A</span>
0.3.3	Group Membership Agreement
0.3.3.1	Each group member shall indicate their entry into an agreement with group management to coordinate AWS certification as a group (known as the 'Group Membership Agreement'). <span style="float: right;">↓ N/A</span>
0.3.3.2	Group management shall make sure that each group member understands the implications of entering into the Group Membership Agreement. <span style="float: right;">↓ N/A</span>

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<b>0.3.3.3</b>	<i>The Group Membership Agreement shall contain at least the following: a) a commitment by the group member to fulfil the requirements of the AWS Standard and applicable AWS Certification Requirements; b) a commitment by the group member to provide the group management with required information in a timely manner; c) acceptance by the group member of internal and external audits; d) an obligation for the group member to report non-conformities; and e) the rights of group management to terminate the membership of any member if continued participation by that member threatens the credibility of the group.</i>	 N/A
<b>0.3.4</b>	<i>Group Member Requirements</i>	
<b>0.3.4.1</b>	<i>All Group members shall have an adequate understanding of the AWS Standard and access to the specified requirements determined by the group (Standard and certification requirements).</i>	 N/A
<b>0.3.4.2</b>	<i>Records covering the relationship between the group management and group members shall be maintained and kept up to date.</i>	 N/A
<b>0.3.4.3</b>	<i>The AWS Group Manager shall keep the following information up to date: a) Copies of contracts between the group and individual group members; b) group member list; c) maps of sites and property areas; d) internal audit reports; e) non-conformities (both minor and major), sanctions and follow-up action arising from both internal audits and external audits; and f) complaints and appeals (to group management, the CAB, or AWS directly).</i>	 N/A
<b>0.3.4.4</b>	<i>The internal audits shall be conducted with sufficient scope and detail to provide group management with a robust appraisal of whether or not each group member continues to maintain conformity with the AWS Standard and certification requirements</i>	 N/A
<b>0.3.4.5</b>	<i>Each member of the group shall be internally audited on at least once per year.</i>	 N/A
<b>0.3.4.6</b>	<i>New or proposed group members shall always be subject to an internal audit before they may be added to the list of group members.</i>	 N/A
<b>0.3.4.7</b>	<i>The AWS Group Representative shall perform an annual review of the status of all members of the group and shall take a decision as to continuing membership of each member. This decision shall be based on internal audits and other information.</i>	 N/A
<b>0.3.4.8</b>	<i>Safeguards shall be in place to ensure that internal auditors are not unduly influenced in their findings by group management or group members.</i>	 N/A
<b>0.3.4.9</b>	<i>Group members shall have the right to appeal internal audit findings of non-conformity.</i>	 N/A

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- 0.3.4.10** *All group members shall be recorded on a list. The list of group members shall be updated annually or more often if necessary and shall include at least the following information for each member:*
- a) name of the member or code assigned to the member;*
  - b) location*
  - c) the nature (product types) and volume of production (units);*
  - d) volume of water use (inputs and outputs) specify units;*
  - e) Group membership status (including any non-conformities and corrective action plans);*
  - f) date(s) of most recent internal audit;*
  - g) date(s) of most recent external audit; and*
  - h) any other group-specific information as may be needed.*



# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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### 1 STEP 1: GATHER AND UNDERSTAND

**1.1** *Gather information to define the site’s physical scope for water stewardship purposes, including: its operational boundaries; the water sources from which the site draws; the locations to which the site returns its discharges; and the catchment(s) that the site affect(s) and upon which it is reliant.*

- 1.1.1** *The physical scope of the site shall be mapped, considering the regulatory landscape and zone of stakeholder interests, including:*
- *Site boundaries;*
  - *Water-related infrastructure, including piping network, owned or managed by the site or its parent organization;*
  - *Any water sources providing water to the site that are owned or managed by the site or its parent organization;*
  - *Water service provider (if applicable) and its ultimate water source;*
  - *Discharge points and waste water service provider (if applicable) and ultimate receiving water body or bodies;*
  - *Catchment(s) that the site affect(s) and is reliant upon for water.*

 in progress

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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- Comment
- 1. Site boundary and catchment**
    - Samsung Electronics' Gumi Campus 1 is located at 224, 1gongdan-ro(Gongdan-dong), Gumi-si, Gyeongsangbuk-do, Campus 2 at 302, 3gongdan-ro(lmsu-dong), Gumi-si, Gyeongsangbuk-do and are located in the middle of the Nakdong River area.

The relevant catchment is Nakdong River Catchment. The site's activities and analysis are however based in a smaller area.
  - 2. Water-related infrastructure**
    - The business site includes facilities and related plants for water use and treatment, such as sewage pipes, wastewater pipes, rainwater pipes, groundwater pipes, surface water pipes, and wastewater treatment plants.
    - Groundwater: Water supplied through own wells through legal permission for development and use.
    - Surface water: Leaked groundwater and rainwater seeped into the ground surface
  - 3. Source of water supply for providing water**
    - Campus 1 uses tap water and groundwater, and Campus 2 uses tap water, surface water, and gray water.
    - In terms of the Campus 1, water is used for process water such as water for cooling towers, facilities, and laboratories, as well as domestic water such as drinking water and toilet water. Groundwater is used for domestic purposes such as landscaping, firefighting, water storage tanks, and parks, as well as sewage treatment water. When it comes to the Campus 2, water is used for process purposes such as cooling towers and facilities, as well as domestic water such as drinking water, toilet water, landscaping water, etc. Surface water is used as make-up water for cooling tower water tanks. Gray water is used as process water and sanitary water.
  - 4. Final water source of water source provider**
    - Water is supplied through Korea Water Resources Development Corporation (K-water). The Campus 1 uses groundwater autonomically without a separate provider and the Campus 2 uses surface water autonomously without a separate provider. The water withdrawn from the Haepyeong water intake station of K-water is supplied to sites through Sinpyeong Distribution Reservoir and Gumi Water Purification Plant.
  - 5. Final water body of discharge point or wastewater treatment service provider**
    - Industrial wastewater generated from Campuses 1 and 2 is treated at an internal industrial wastewater treatment plant and then sent to the Gumi City Sewage Treatment Plant, a public sewage treatment plant. Wastewater treated at the public sewage treatment plant is discharged directly into Gwangam Stream and discharged into the Nakdong River. Sewage (non-industrial wastewater) from the site is sent to the Gumi City sewage treatment plant without any on-site special treatment - all treatment is at the municipal sewage treatment plant. Rainwater is sent through the stormwater pipe directly connected to the site without any separate processing in the Campus 1 and is discharged directly into Igye Stream in the Campus 2. In addition, Campus 2 discharges more surface water (stormwater) than its usable capacity directly into Igye Stream.
  - 6. Stakeholder's IWRA**
    - The Gumi site conducted the first AWS stakeholder survey targeting government agencies, regulatory agencies, local residents, partners, companies near the site, customers, NGOs, and environmental protection groups. As a result of the survey, it was confirmed that water-related facilities (Gumi Water Purification Plant) and Igye Stream are important water-related areas (IWRA) in our catchment that stakeholders think of. Also, the Gwangam Stream, the final discharge point, is included in IWRA in the Gumi site.

Public pipelines of tap water and sewage water are also mapped.

Although there is a public map of Nakdong river catchment area (larger catchment), there is no clear catchment map the site identified for the AWS activities. The catchment is not defined by geography, hydrology, and geology.

Also, the site uses ground water but there is no catchment map of ground water.

**Finding No: TNR-008306**



# CERTIFICATION REPORT


## Alliance for Water Stewardship (AWS)

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**1.2** *Understand relevant stakeholders, their water related challenges, and the site's ability to influence beyond its boundaries.*

**1.2.1** *Stakeholders and their water-related challenges shall be identified. The process used for stakeholder identification shall be identified. This process shall:*

- *Inclusively cover all relevant stakeholder groups including vulnerable, women, minority, and Indigenous people;*
- *Consider the physical scope identified, including stakeholders, representative of the site's ultimate water source and ultimate receiving water body or bodies;*
- *Provide evidence of stakeholder consultation on water-related interests and challenges;*
- *Note that the ability and/or willingness of stakeholders to participate may vary across the relevant stakeholder groups;*
- *Identify the degree of stakeholder engagement based on their level of interest and influence.*

 in progress

Comment

1. 1st Stakeholder survey  
 - In order to identify stakeholders and identify water resource issues they share, the Gumi business site conducted the first AWS stakeholder survey targeting government agencies, regulatory agencies, local residents, partners, companies near the site, customers, NGOs, and environmental protection to identify stakeholders and identify water resource issues they share.  
 - By combining the results of a survey on stakeholders' interest and influence on water and opinions from the sites, the stakeholders of Samsung Electronics' Gumi site were defined as executives and employees, Gumi City Hall, Gongdan-dong and Jinmi-dong, nearby companies, measurement companies, local schools, NGOs, and Daegu Regional Ministry of Environment, and a Stakeholder power, interest and engagement matrix was drawn up.

2. Stakeholder database  
 - Referring to the survey results, a stakeholder database listing how stakeholders are linked to the organization, any water-related concerns or challenges stakeholders face, summary of communications with stakeholders etc was drawn up.

3. Stakeholder location and IWRA mapping  
 - Reflecting the survey results, stakeholder locations and stakeholders' IWRA were mapped. Water-related facilities (Gumi Water Purification Plant), Igye Stream, Haepyeong wetland and Gwangam stream are designated as important water-related areas (IWRA) for stakeholders.

Questionnaire was sent to 345 stakeholders.  
 However, stakeholder list was not identified based on stakeholder analysis, i.e. the results of analysis presented for the stakeholder identification were not sufficiently used. Stakeholders such as vulnerable, women, minority, children, farmers, fishers, stakeholders of the site's ultimate water source and ultimate receiving water body were not considered.

**Finding No: TNR-008307**

**1.2.2** *Current and potential degree of influence between site and stakeholder shall be identified, within the catchment and considering the site's ultimate water source and ultimate receiving water body for wastewater.*

 Yes

Comment

1. Identifying the influence between the site and stakeholders  
 A stakeholder influence and engagement matrix by identifying the current and potential level of influence between the site and stakeholders was drawn up. Each stakeholder was classified into Partner, Involve, Consult, Inform, and Reciproca categories to determine the way engagement works.

**1.3** *Gather water-related data for the site, including: water balance; water quality, Important Water-Related Areas, water governance, WASH; water-related costs, revenues, and shared value creation.*

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## Alliance for Water Stewardship (AWS)

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**1.3.1** Existing water-related incident response plans shall be identified.



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Comment

1. Water Emergency Response Process

- In order to protect the lives of executives and employees and company assets from various risks that may occur at the site, the 'Gumi Emergency Treatment Rules' was first created in 2022. It includes contents such as responsibility and authority as well as emergency response procedures in the event of an emergency, and is stipulated to be updated every two years. An automatic notification mailing system are being established so that it can be updated through the mail system in accordance with the update cycle, and is updated when necessary outside of the update cycle.

- The Gumi site has water-related emergency response scenarios for storm and flood damage, including typhoons and strong winds, which specifies the order, procedure, equipment to be mobilized, time required, and duties and personnel for each organization for each scenario.

2. Water Emergency Response Training

- The Gumi site conducts water-related emergency response training every year to maintain an emergency response capability system. They conduct emergency response training for leakage of wastewater treatment chemicals due to damage to the drain pipe of the spilled chemical (caustic soda) in the wastewater treatment plant.

- Together with other sites belonging to the Gumi 3-1 Complex Chemical Safety Community, the Campus 2 conducted 'Chemical Safety Community chemical accident first response road training' assuming a hydrogen fluoride leak in March 2022 and emergency maneuver training assuming a leak situation due to a chemical transport vehicle overturning in December 2022.

- In August 2022, the Gumi site conducted the 'Ulchi Freedom-Guardian', a government-wide emergency drill jointly conducted by the public, private sector, and military once a year in preparation for national emergencies. Through the 'Ulchi Freedom-Guardian', a drill in which hypothetical situations are disseminated on a nationwide scale and action is taken on paper, they developed response scenarios at the Gumi site in situations such as water supply disruptions.

3. Establishing a '3 days water supply system' in preparation for water outages

- Through the examples of water outages in the Gumi area since 2008, the Gumi site has established a '3-day water supply system', in the existing water storage system that exceeds daily water usage, that always secures water storage volume equivalent to 3 days of water usage for both the campus 1 and 2 in order to establish a water supply base so that the manufacturing environment within the workplace will not be affected in the event of a water outage. For this, the Campus 1 secured insufficient water supply by constructing a piping network for existing groundwater. And the Campus 2 secured the insufficient water through the expansion of two water storage tanks and the development of surface water. In addition, they have established a system that can operate for 3 days even in a water outage situation through water-saving operation through limited water supply and holding water outage emergency scenarios.

4. Conducting flood safety assessments

- The Gumi site conducted a flood risk safety diagnosis through the Samsung Fire & Marine Insurance Corporate Research Center to prevent floods due to the effects of increased rainfall such as localized heavy rain, the Four Major Rivers Project, and the installation of the Nakdong River barrage. Based on the highest hourly and daily rainfall in Gumi City, they analyzed the flood risk in the Gumi area and the flood risk of Campus 1 and 2 and Daegu Creation Center for two scenarios: Nakdong River flooding and Igye Stream flooding. Based on the diagnosis results, flood prevention risk management areas were designated for each campus 1 and 2, and supplementary measures for flood prevention were also identified to resolve the risk.

The expected flooding results for each scenario are as follows:

- Nakdong River flooding risk(when rainfall occurs with a frequency of 500 years): Expected flooding depth in the Campus 1 is approximately 0.5 to 1 m.

- Igye River flooding risk(when rainfall occurs with a frequency of 500 years: The risk of flooding on the Campus 2 is low.

Flood prevention risk management areas and measures

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- Campus 1: main entrance(requiring installation of water blocking facilities at the entrance door), rear parking lot boundary(requiring installation of blocks or water barriers)
- Campus 2: joint area vent(the gaps between foundation floor fixings need to be sealed with silicone, etc.), roads around building UT1·154KV (a curbstone on the road that is at least 20cm higher than the road needs to be installed), ventilation at the bottom of Building C(acrylic and steel plates that can block approximately 30cm from the ground need to be installed), main parking lot south entrance(speed bump length needs to be extended to function as a water barrier).

5. Acquiring ISO 22301 certification  
- By acquiring ISO 22301 certification in 2021, Gumi site's Business Continuity Management System (BCM), which comprehensively manages organizational resilience and effective response capabilities to various natural disasters, including water-related emergencies, was recognized.

**1.3.2** *Site water balance, including inflows, losses, storage, and outflows shall be identified and mapped*



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- Comment
1. Water Balance management system
    - Despite it not being the mandatory TMS attachment site, the Gumi site does monitoring through TMS and records water withdrawal and discharge data in the G-EHS system in order to manage water withdrawal and discharge data according to product production and wastewater treatment plant operation. Therefore, the company's water withdrawal volume, volume of treatment of purified water, water usage volume, reuse volume, sewage treatment volume, wastewater treatment volume, discharge volume are monitored in real time. This data is disclosed to the outside through the sustainability report and environmental information disclosure system. Furthermore, Global Green Management System (G-EHS), a company-wide integrated environmental information management system, to identify water balance, including inflow, loss, storage, and outflow, at each site is also identified. Inflow, loss, storage and outflow of water was mapped.
  2. Gumi site water balance
    - Gumi site withdraws and discharges water as follows:  
Tap water: Haepyeong Water Intake Plant → Sinpyeong Distribution Reservoir → Gumi Water Purification Plant → Campus 1, 2 → Gumi Sewage Treatment Plant → Gwangam Stream → Nakdong River  
the site also uses groundwater from own wells and what it calls 'surface water', which is leaked groundwater and stormwater.
    - In the case of Campus 1, tap water and groundwater are supplied to the main building, training building, public affairs building, N/W building, Jeongdamwon CMF building as well as landscaping, firefighting, water storage tank, sewage treatment plant, park, and rental companies (Hanwha buildings, Madison building) etc. Some of the water supplied to the cooling tower through the N/W building is lost in the form of evaporation. And Wastewater is treated at the internal wastewater treatment facility and the Gumi City sewage treatment plant and then discharged into Gwangam Stream and ultimately into the Nakdong River. Various sewage flows into the Gumi City sewage treatment plant without any additional treatment, and after treatment, it is discharged into the Nakdong River through Gwangam Stream.
    - In the case of Campus 2, tap water flowing in from the Gumi Water Purification Plant is supplied to the computer center, A~G buildings, UT 1 and 2 buildings, water storage tank, 2 restaurants, Hanmaeum building, back door drivers' waiting room, dormitory, and landscaping water. Moreover, the inflowed surface water is used as cooling tower water tank supplementary water in UT Building 1 and Building B~C, and then flows out in the form of evaporation and surface water exceeding the usable capacity is discharged directly into Igye Stream. Gray water reused through gray water treatment is used as process water and sanitary water. After being treated at the internal wastewater treatment facility□, the wastewater passes through the Gumi City Sewage Treatment Plant and is discharged into the Nakdong River through Gwangam Stream. Various sewage flows into the Gumi City sewage treatment plant without any additional treatment, and after treatment, it is discharged into the Nakdong River through Gwangam Stream. Furthermore, the unused portion of the gray water produced through treatment flows into the Gumi City Sewage Treatment Plant, and after treatment, is discharged into the Nakdong River through Gwangam Stream.

**1.3.3** *Site water balance, inflows, losses, storage, and outflows, including indication of annual variance in water usage rates, shall be quantified. Where there is a water-related challenge that would be a threat to good water balance for people or environment, an indication of annual high and low variances shall be quantified.*

  
Yes

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Comment	<p>1. Gumi site water balance</p> <ul style="list-style-type: none"><li>- The water balance of the Gumi site as of 2021 and 2022 is as follows, and the water balance can be checked through the attached file.</li><li>- 2021 water balance<ul style="list-style-type: none"><li>□. Campus 1<ul style="list-style-type: none"><li>1) Inflow : Tap water (120,201 tons) + Underground water (20,962 tons) =141,163 tons</li><li>2) Outflow : Gumi Sewage Treatment Plant (117,458 tons) = 117,458 tons</li><li>3) Loss : Evaporation (23,705 tons) = 23,705 tons</li></ul></li><li>□. Campus 2<ul style="list-style-type: none"><li>1) Inflow : Tap water (618,270 tons) + Surface water (56,995 tons) = 675,265 tons</li><li>2) Outflow : Gumi Sewage Treatment Plant (524,660 tons) [□ Sewage treatment(90,459 tons) and Gray water(56,646 tons) are included in the Gumi Sewage Treatment Plant] = 524,660 tons</li><li>3) Loss : Evaporation (150,605 tons) = 150,605 tons</li></ul></li></ul></li><li>- 2022 water balance<ul style="list-style-type: none"><li>□. Campus 1<ul style="list-style-type: none"><li>1) Inflow : Tap water (115,060 tons) + Underground water (30,263 tons) =145,323 tons</li><li>2) Outflow : Gumi Sewage Treatment Plant (123,173 tons) = 123,173 tons</li><li>3) Loss : Evaporation (22,150 tons) = 22,150 tons</li></ul></li><li>□. Campus 2<ul style="list-style-type: none"><li>1) Inflow : Tap water (569,595 tons) + Surface water (99,330 tons) = 668,925 tons</li><li>2) Outflow : Gumi Sewage Treatment Plant (501,424 tons) [□ Sewage treatment (125,636 tons) and Gray water(24,803 tons) are included in the Gumi Sewage Treatment Plant] = 501,424 tons</li><li>3) Loss : Evaporation (167,501 tons) = 167,501 tons</li></ul></li></ul></li></ul> <p>2. Annual variance in water usage</p> <ul style="list-style-type: none"><li>- The Gumi site collects and monitors monthly data through G-EHS to manage energy and utilities used in the process. Seasonal variations are analysed.</li><li>- Compared to 2021, Gumi site's water inflow decreased by 2,180 tons (-0.267%) in 2022. The site reduced water usage by reusing water, installing water-saving facilities, and inspecting and repairing facilities to protect the water balance of the catchment area.</li></ul>	
<b>1.3.4</b>	<p><i>Water quality of the site's water source(s), provided waters, effluent and receiving water bodies shall be quantified. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be quantified.</i></p>	<p>Q Obs.</p>

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- Comment
1. Water quality of inflow water
    - The quality of tap water is monitored monthly through data released through the Gumi City Waterworks and Sewerage Office website (<https://water.gumi.go.kr/>). Gumi City Waterworks and Sewerage Office conducts water quality analysis of 6 items once a day for tap water, water purification plant water quality test of 53 items once a month, faucet water quality test of 4 items, and old pipe water quality test of 10 items and is releasing monthly analysis data.
    - The quality of groundwater used on Campus 1 is analyzed by an external contractor once a year. An external consignment company analyzes the water quality of groundwater for 13 items, including nitrate oxygen, chloride ion, and cadmium, and provides water quality data to Campus 1 and they collect and manage the water quality test results.
    - The quality of surface water used as make-up water for cooling towers on Campus 2 is analyzed by an external contractor once a month. An external consignment company analyzes the water quality for 3 items, including pH, TOC and trichlorethylene, and provides water quality data to Campus 2 and they collect and manage the water quality test results.
  2. Water quality of discharge water
    - Despite it not being the mandatory installation site, the Gumi site has installed Tele Metering System. The emission concentration of contaminants is measured and the measured data is transmitted online and in real-time through communication media to monitor automatically. The measured items are COD, T-N, T-P, SS, and pH of the discharge water from Campus 1 and the raw water and discharge water from Campus 2. When the allowable emission concentration is exceeded or an abnormal measurement occurs, an alarm is sent to the person in charge, allowing rapid response.
    - The Gumi site installs an automatic pH meter at the final discharge outlet of the site and monitors it 24 hours a day. It is operated in conjunction with a blocking valve and the results are managed in conjunction with a monitoring system.
    - Campus 2 conducts regular monthly water quality analysis at points before and after the confluence of Igye Stream, which directly discharges rainwater and surface water exceeding the usable capacity. In order to minimize and prevent negative impacts on water quality and the aquatic ecosystem, they monitor the water quality at the Nakdong River-Igye Stream confluence every month. They are analyzing water quality for 2 items, pH and TOC, to determine whether the water quality at the Nakdong River-Igyecheon confluence is contaminated.
    - The quality of final discharge water of the Gumi City Sewage Treatment plant can be checked through the public website, Sewerage Information System (<https://www.hasudoinfo.or.kr/stat/statOperation.do>). The website provides monthly water quality analysis data for a total of 7 items, including BOD, COD, TOC, SS T-N, T-P, and coliform count. The Gumi site monitors the data on a monthly basis.
    - The water quality of the Nakdong River discharge point (Gwangam Stream) can be checked through the public website, Water Environment Information System ([https://water.nier.go.kr/web/autoMeasure/confirm?pMENU\\_NO=576](https://water.nier.go.kr/web/autoMeasure/confirm?pMENU_NO=576)). Water quality has been measured once a day from November 2012 to the present, and there are a total of 11 measurement items including water temperature, pH, electrical conductivity, dissolved oxygen, and turbidity. The Gumi site is continuously monitoring the data.
  3. Challenges related to water quality
    - There was no harm to the water quality of rivers and streams in the catchment or to the water ecosystem. Through monitoring, they confirmed that the Gumi Water Purification Plant and Gumi Sewage Treatment Plant are supplying and discharging water in compliance with legal water quality standards. In order to reduce negative impacts, the Gumi site sets and complies with a water quality standard of 50% of the legally allowed discharge water quality standard (i.e. stricter limits).

Although not required by law, water quality of discharging point of storm water from Campus 1 is not monitored.

**1.3.5** *Potential sources of pollution shall be identified and if applicable, mapped, including chemicals used or stored on site.*



Yes



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Comment

1. Potential pollutant  
 - Facilities using chemical and wastewater treatment plants are identified as potential sources of contamination. And contaminants are displayed on the site map and chemical usage for each facility are recorded for special management.

2. Use of chemicals and hazardous substances  
 - Usage for wastewater treatment plant and UT facility at Campus 1 and wastewater treatment plant, UT facility, MAIN and SMD trial production, mold production, CNC and hinge production, glass processing and printing at Campus 2 are managed through the G-EHS system. Buildings using chemicals/hazardous substances and waste storage areas are mapped and specifically managed on the site map.  
 - They have standards for storage and management of hazardous chemicals to manage potential contaminants, of which purpose is to minimize environmental safety risks and contamination by regulating the storage, handling, and operation management of hazardous chemicals. It includes definitions of hazardous chemicals, implementation methods, work regulations for handlers, chemical storage, and daily safety inspection logs for hazardous chemicals.  
 - They have water quality management standards for wastewater treatment plant management, of which purpose is to manage water contaminants generated by the organization's activities, products, and services in accordance with environmental safety policies, goals, and detailed goals, and to minimize the discharge of water contaminants by properly maintaining and operating discharge and prevention facilities. It includes relevant business procedures, wastewater treatment plant operations, etc.

Waste and hazardous waste storages and oil tanks are also mapped as potential pollutants.

**1.3.6** *On-site Important Water-Related Areas shall be identified and mapped, including a description of their status including Indigenous cultural values.* 🔍  
Obs.

Comment

1. IWRA features, status water-related hazards  
 - The 'pond' and 'water tank' at each campus 1 and 2 are designated as On-site IWRA.  
 - The site take pictures of ponds and water tanks every half a year and evaluate their condition (good, bad, or deteriorated) according to AWS guidance.

2. IWRA management  
 - Every half year, they analyze the water quality of ponds and water tanks through an external contract company to determine whether there is contamination. An external consignment company provides water quality data to site by analyzing water quality for 56 items including hydrogen ion concentration, turbidity, and E. coli items in ponds and free residual chlorine, hardness, and turbidity in water tanks every half a year. It is managed on a semi-annual basis.

Water tank may not be IWRA according to the Auditor Guidance: ""any water-related infrastructure does not qualify as an IWRA, unless it has a shared value (ecological, cultural) or is publicly available.""

**1.3.7** *Annual water-related costs, revenues, and a description or quantification of the social, cultural, environmental, or economic water-related value generated by the site shall be identified and used to inform the evaluation of the plan in 4.1.2.* ✅  
Yes



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Comment	<p>1. Water-related cost</p> <ul style="list-style-type: none"><li>- Water-related costs at the Gumi site include tap water supply costs, wastewater treatment costs, gray water production costs, and investment costs for water-related facilities and equipment. Water-related spending amounts were identified for 2021 and 2022 for:<ol style="list-style-type: none"><li>1) tap water supply</li><li>2) wastewater treatment</li><li>3) investment and repair costs for water-related facilities (Campus 1,2 are managed together)</li></ol></li></ul> <p>2. Water related profit</p> <ul style="list-style-type: none"><li>- By Jan to Sep 2023, Gumi site will have saved KRW 41,531,874 by reducing water usage by about 10,657 tons through the utilization of reused water (gray water) and KRW 107,995,807 by reducing water usage by about 44,116 tons through the recycling of boiler condensate.</li></ul> <p>3. Social, cultural, environmental or economic water-related values</p> <p>[Social]</p> <p>The Gumi site created social water value by participating in a multi-stakeholder cooperation platform on water-related issues in the Gumi catchment.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Partner Water Resource Support Councils: They operate a Water Resource Support Council with major suppliers to manage water resources and protect the water environment. Through the meetings, they shared water reduction cases at Samsung Electronics' Gumi site and other sites, as well as water resource improvement cases for each partner.</li><li><input type="checkbox"/> AWS Task Force: They established the AWS Task Force to strengthen internal water management and external water stewardship. TF activities include quarterly AWS meetings with water sources and Gumi sites, benchmarking best practices, stakeholder communication (surveys, visits, trainings, etc.), and sharing best practices at sites.</li><li><input type="checkbox"/> DX division's 100% Water Replenishment Project by 2030: The amount of water reduced in the first half of 2023 was 109,317 tons (the total amount of water reduced by Samsung Electronics' DX division Gwangju, Suwon, and Gumi plants), supporting stable water supply for areas suffering from drought.</li></ul> <p>They strengthened internal water governance through the council and T/F activities, and created social water value for the vulnerable through water reduction projects.</p> <p>[Cultural]</p> <p>Gumi site has created cultural values for its business through the following activities.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Hosting contests: They participated as an organizer of the Daegu-Gyeongbuk Environmental Love Writing and Drawing Contest every year to energize local children and spread the importance of environmental protection awareness, including water, through participation in the contest. In particular, they shared Gumi site's AWS performance in 2022 and plans for 2023 at the 2023 contest winners' exhibition. They posted the activities on the Samsung Electronics Smart City blog.</li></ul> <p>By organizing the contest, they raised awareness of water resources.</p> <p>[Environmental]</p> <p>The Gumi site created the environmental value of the site through the following activities.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Internal IWRA monitoring: They conduct quarterly status assessments and semi-annual water quality analysis to manage IWRA water quality.</li><li><input type="checkbox"/> Cleanup activities for nearby streams: Employees conduct cleanup activities for nearby streams every year.</li></ul> <p>Through such monitoring and cleanup activities, they manage the water environment inside the workplace in a clean and safe manner and prevent negative environmental impacts outside.</p> <p>[Economic]</p> <p>The Gumi Plant created the economic water value of the site through the following activities. (Amount of savings in the first half of 2023, estimated annual savings in 2023)</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Facility improvement activities: Installing water-saving equipment in restroom sanitation facilities saved KRW 0.3 billion in the first half of 2023 and is expected to save KRW 0.5 billion annually.</li><li><input type="checkbox"/> Reusing water: They reduced water consumption by 56,646 tons in 2021 and 24,803 tons in 2022 by treating wastewater, producing gray water, and reusing it for process and sanitary water, which translates to approximately KRW 217,186,738 in 2021 and KRW 98,997,127 in 2022. In addition, the amount of water bill reduction due to the use of gray water is KRW 90,341,540 in 2021 and KRW 39,131,450 in 2022.</li></ul>
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# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Utilization of groundwater and surface water: Campus 1 uses groundwater for landscaping and firefighting, and Campus 2 uses surface water to supplement cooling towers. This saved KRW 100 million in the first half of 2023 and is expected to save KRW 230 million annually.

**1.3.8**

*Levels of access and adequacy of WASH at the site shall be identified.*



Yes

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- Comment
1. WASH facility status by site  
- They ensure that all employees and visitors to our Gumi site have access to safe and clean water, sanitation, and health facilities. They provide toilets, showers, cleaning sinks, bidets, etc., and the number of each facility within the site is as follows.  
1) Restrooms: 80 (campus 1) / 264 (campus 2)  
2) Washbasins: 268 (campus 1) / 1,254 (campus 2)  
3) Urinals: 145 (campus 1) / 497 (campus 2)  
4) Toilets: 277 (campus 1) / 1,177 (campus 2)  
5) Showers: 158 (campus 1) / 435 (campus 2)  
6) Cleaning sinks: 38 (campus 1) / 82 (campus 2)
- Samsung Electronics has a toilet management guide for manufacturing sites. The Gumi site identified the status of WASH-related facilities within the site and confirmed whether the WASH-related facilities it owned satisfied the standards for calculating the number of sanitary equipment in the guide.  
Toilets: Suitable, 1,454 (in stock)/ 465 (as standard)  
Urinals: Suitable, 642 (in stock)/ 518 (as standard)  
Washbasin: Suitable, 1,522 units (in stock)/ 541 units (as standard)
2. RBA (Responsible Business Alliance) inspection  
- In November 2020, the Gumi site conducted an RBA audit for the campus 2. The RBA Code of Conduct is a standard for establishing a safe working environment, ensuring respect and dignity for workers, and operating an environmentally friendly and ethical business. The RBA's code of conduct consists of five sections: A, B, C, D, and E. And B. Safety and Health (7) Hygiene, Food, and Housing states that employees must be provided with clean restrooms, drinking water, sanitary food preparation and storage facilities, and cafeteria facilities. Two findings emerged from the audit of the Gumi site, but they were not WASH-related issues. Through audits, the Gumi site can prove that it provides easy access to appropriate WASH to its employees. The site also had an RBA VAP audit in October 2023.
3. WASH-related in-company management rules  
- Samsung Electronics' Gumi site has WASH-related sanitary equipment design and construction standards and hygiene and quarantine management rules.  
 Sanitary appliance design and construction standards: The guidelines establish standards for the required quantity of appliances, installation specifications and processes, and inspection. The Gumi site is constructing WASH facilities based on applicable standards.  
 Hygiene and quarantine management rules: Standards for quarantine locations, number of disinfections, etc. are established for the purpose of conducting regular disinfection to prevent and manage infectious diseases and contribute to creating a healthy and comfortable working environment for executives and employees.
4. Analysis results of WASH-related facilities  
- For water tank sanitation management, the Gumi site has integrated Campus 1, and 2 and is conducting water quality tests once a year, hygiene inspections once a month, and cleaning and disinfection once a half-year  
 Water quality test (once a year): Campus 2 (G building, UT 2 building)  
 Hygiene inspection (once a month): Campus 1 (Service Academy\_Machine Room, Main Building\_Machine Room), Campus 2 (Building G\_Water Tank Room, UT Building 1\_Underground Machine Room, UT Building 2\_Water Tank Room)  
 Cleaning and disinfection (once a half-year): Campus 1 (Service Academy\_Machine Room, Main Building\_Machine Room), Campus 2 (Building G\_Water Tank Room, UT Building 1\_Underground Machine Room, UT Building 2\_Water Tank Room)
- The number of toilets are higher than national standard. Water purifiers are also identified and maintained in good status.
- 1.4** *Gather data on the site's indirect water use, including: its primary inputs; the water use embedded in the production of those primary inputs the status of the waters at the origin of the inputs (where they can be identified); and water used in out-sourced water-related services.*

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

**1.4.1** *The embedded water use of primary inputs, including quantity, quality and level of water risk within the site's catchment, shall be identified.* ✔  
Yes

Comment

1. Determine water usage by partners within the catchment
  - Win-Win EHS Group understands the status of water resource use and water usage for major partners at each Samsung Electronics site.
  - Last year, they conducted a survey on water usage for 168 of all partners at the Gumi site. Among the 166 companies surveyed, 13 partners account for more than 1% of the total purchase amount, 7 partners are located in the Nakdong River catchment, and 159 partners are located outside the catchment.
  - As a result of the investigation, it was confirmed that the total water usage of all 168 partner companies was 24,113,167 tons. Among these, the water usage of 7 partner companies within the Nakdong River catchment is 27,708 tons, and the water usage of 159 partner companies outside the catchment is 24,085,458 tons.
2. Identify the status of water quality management at partner companies
  - Samsung Electronics conducts an RBA evaluation every year for major partners at each site. RBA assessment items include water quality issues such as pollutant and energy reduction, water pollution source and discharge management, as well as issues such as the environment, safety and health, labor, business ethics, and management systems.
  - By applying the RBA Samsung judgment criteria established internally according to the RBA evaluation standards, each issue is evaluated as Priority, Major, Minor, Not Applicable, and Conformance. In addition, they monitor issues that are insufficiently managed by our partners by recording the points and improvement results.
  - Through the water resource use status survey conducted by the Win-Win EHS Group, they are checking whether there have been environmental incidents or accidents such as pollution accidents, water use, or hazardous substances among our partners.
3. Identifying partner company risk level
  - They are using the WRI Aqueduct tool to check the physical risk quantity, physical risk quality, and regulatory and reputational risk levels of 7 partner companies in the Nakdong River catchment.
  - They identified the risk level for a total of 13 risk factors: Water Stress, Water Depletion, Interannual Variability, Seasonal Variability, Groundwater Table Decline, Riverine Flood Risk, Coastal Flood Risk, Drought Risk, Untreated connected wastewater, Coastal eutrophication potential, Unimproved/no drinking water, Unimproved/no sanitation, Peak RepRisk country ESG risk index
  - Among the 7 partners in the catchment, 5 are at risk of water stress, 7 are at risk of coastal eutrophication potential, and no partner is at risk of unimproved/no sanitation.

Based on the cost, there are no suppliers of primary inputs that account for over 5% of the total the costs. 2% is the highest.


Once a year they conduct survey of suppliers by questionnaire, asking how much water is used for inputs for Samusung. There is a platform to upload evidences from suppliers. Water quality of suppliers is also surveyed.

**1.4.2** *The embedded water use of outsourced services shall be identified, and where those services originate within the site's catchment, quantified.* ✔  
Yes

Audit Number: AO-000750

Comment They estimated the water use for car washes for company vehicles conducted outside of campus as shown below.  
 Commuting bus (Car wash cycle: 3 times per month): 65 buses  
 Business-vehicle (Car wash cycle: 1 time per month): 42 vehicles  
 Annual water usage by car wash for commuting buses: 65 buses (Number of bus) \* 3 times/month (Car washes in month) \* 12 months/year \* 180 L/time (Water use) = 421,200 L/year  
 Annual water usage by car wash for business-vehicles: 42 vehicles (Number of vehicle) \* 1 times/month (Car washes in month) \* 12 months/year \* 300 L/time (Water use) = 453,600 L/year  
 Annual water usage by total car wash: 421,200 + 453,600 = 874,800 L/year


There is no laundry service.  
 Inside the sites, outsourced service is Cafeteria. Tap water is mainly used for cafeteria and toilets, and water use volume within the sites is identified.

**1.4.3** *Advanced Indicator*  
*The embedded water use of primary inputs in catchment(s) of origin shall be quantified.*  N/A

Comment 1. Determine water usage by partners outside of the catchment  
 - Win-Win EHS Group understands the status of water resource use and water usage for major partners at each Samsung Electronics site.  
 - Last year, they conducted a survey on water usage for 166 of all partners at the Gumi site. Among the 166 companies surveyed, 13 partners account for more than 1% of the total purchase amount, 7 partners are located in the Nakdong River catchment, and 159 partners are located outside the catchment.  
 - As a result of the investigation, it was confirmed that the total water usage of all 166 partner companies was 24,113,167 tons. Among these, the water usage of 7 partner companies within the Nakdong River catchment is 27,708 tons, and the water usage of 159 partner companies outside the catchment is 24,085,458 tons.

Based on the cost, there are no suppliers of primary inputs that account for over 5% of the total the costs. 2% is the highest. Because there is no primary input suppliers, this indicator is not applicable.

**1.5** *Gather water-related data for the catchment, including water governance, water balance, water quality, Important Water-Related Areas, infrastructure, and WASH*

**1.5.1** *Water governance initiatives shall be identified, including catchment plan(s), water-related public policies, major publicly-led initiatives under way, and relevant goals to help inform site of possible opportunities for water stewardship collective action.*  Yes

Audit Number: AO-000750

**Comment** Gumi site continuously monitors catchment plan, water-related public policies, major publicly-led initiatives. Monitoring targets include catchment and water-related infrastructure facilities such as Imha Dam, Bisan Withdrawal Plant, Nakdong River, Gumi Water Purification Plant, Gumi Water Withdrawal Plant, Haepyeong Water Withdrawal Plant, Sinpyeong Reservoir, Seonsan Sewage Treatment Plant, Gumi Sewage Treatment Plant, Gwangam Stream, Igye Stream, and Gwangpyeong Stream. Site identifies the impact of catchment plans, policies, and initiative activities on business operations and establish and implement response plans.

1. Catchment plan and water-related public policies  
 - Catchment plan and water-related public policies were confirmed for rivers, streams, dams, water withdrawal plants, and water purification plants in the catchment related to water withdrawal and discharge at the Gumi site. There are catchment plans and policies to manage AWS's five major areas: Governance, Water Balance, Water Quality, IWRA, and WASH. In particular, as the Ministry of Environment established a basic plan for water reuse starting in 2011, Samsung Electronics' Gumi site is participating in government policy by operating a gray water use facility within the site.

2. Major publicly-led initiatives under way  
 - Government-led initiatives in the catchment include green business council, Nakdong River system management committee, Nakdong River council, Nakdong River lower area water source diversification public-private council, Nakdong River coastal policy council, resident participatory local council for flood vulnerable districts, Gyeongbuk environment citizens' association, Haepyeong water catchment Gumi coexistence association, Gyeongbuk nature lovers' association.  
 These initiatives involve various stakeholders in the catchment and are working to solve shared water resource problems and increase the sustainability of water resources. The Gumi site joined the green business council and participates in Gumi City's river purification activities and removal of plants that disrupt the ecosystem every year. Additionally, they are contributing to spreading awareness of environmental conservation in the catchment by participating as an organizer of the 'Daegu·Gyeongbuk love environment writing and drawing contest' sponsored by the Ministry of Environment.

3. Relevant goal to help inform site of possible opportunities for water stewardship collective action  
 - By monitoring water governance initiatives in the Han River catchment, the Gumi site was able to identify the following opportunities for water stewardship collective action.  
 1) Drinking water support project for vulnerable groups: Provide drinking water to vulnerable groups in the catchment area through an agreement with Gumi City Hall  
 2) Every year, employees participate in river cleanup activities in Gumi-si and remove plants that disturb the ecosystem.

**1.5.2** *Applicable water-related legal and regulatory requirements shall be identified, including legally-defined and/or stakeholder-verified customary water rights.* ↗  
in progress





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Comment

1. Catchment water balance

In order to receive a stable supply of water for site operations, the water balance of the catchment is very important. The site collects water inflow, storage, and outflow data for all water storage and supply infrastructure facilities in the catchment to monitor water balance in the catchment. Water balance data is checked on the water information portal website ([https://www.water.or.kr/kor/menu/sub.do?menuId=13\\_91\\_93](https://www.water.or.kr/kor/menu/sub.do?menuId=13_91_93)) operated by the K-Water.

- There are a total of 21 water storage and supply infrastructure facilities in the Nakdong River catchment, classified into 5 types according to use.

1) Multi-purpose Dam : Andong Dam, Imha Dam, Hapcheon Dam, Namgang Dam, Miryang Dam, Gunwi Dam, Gimcheon Buhang Dam, Yeongju Dam, Seongdeok Dam, Bohyeonsan Dam

2) Water Dam : Yeongcheon Dam, Angye Dam, Gampo Dam, Unmun Dam, Daegok Dam, Sayeon Dam, Daeam Dam, Seonam Dam, Yeoncho Dam, Gucheon Dam

3) Multi-purpose Weir : Sangju Weir, Nakdan Weir, Gumi Weir, Chilgok Weir, Gangjeong-Goryeong Weir, Dalseong Wier, Hapcheon Changnyeong Weir, Changnyeong Haman Weir

4) Barrage in Estuary : The Barrage in Nakdong River Estuary

- As of 2021 and 2022, the water balance of water storage and supply facilities located in the Nakdong River catchment is as follows. and the water balance for each facility can be checked through the attached file. Change refers to changes due to factors such as ground water, evapotranspiration, and soil moisture.

- 2021 Water balance

58,668,043,997 ton (Inflow) = 58,790,618,726 ton (Outflow) + (-) 765,530 ton (Change) + (-) 121,809,200 ton (Change in storage volume)

- 2022 Water balance

36,002,397,974 ton (Inflow) = 54,021,171,933 ton (Outflow) + (-) 17,332,203,774 ton (Change) + (-) 686,569,800 ton (Change in storage volume)

\*Changes due to factors such as ground water, evapotranspiration, and soil moisture

The water balance by facility can be found in the attached file.

For groundwater, the Gumi site determines the ratio of groundwater usage at the Gumi Campus 1 to total groundwater usage in the Gumi region through the groundwater survey annual report published by the Ministry of Environment and the K-Water every year as follows. (surface water of Campus 2 is excluded)

- Groundwater usage in Gumi City in 2021: 8,946,175 m<sup>3</sup> / groundwater usage in Campus 1: 20,962 m<sup>3</sup> / groundwater usage rate in Campus 1: 0.23 %

- Groundwater usage in Gumi City in 2022: 11,023,167 m<sup>3</sup> / groundwater usage in Campus 1: 30,263 m<sup>3</sup> / groundwater usage rate in Campus 1: 0.27 %

The two-year average groundwater usage at the Gumi site is approximately 0.25%, which accounts for a very small portion of the total groundwater usage in the Gumi region.

However, the percentage of the site's groundwater withdrawal compared to the total groundwater withdrawals does not reflect the groundwater balance, i.e. it does not say whether the withdrawals are not higher than the recharge.

2. Water balance variance

- Since top water, the main water source used at the Gumi site, is withdrawn from the Nakdong River, the water balance of the Nakdong River is very important for the normal operation of the site. Nakdong River's water balance data and annual and seasonal fluctuation trends are monitored in real time through the K-Water website.

- The inflow of the Nakdong River in 2022 is 36,002,397,974 tons, a 39% decrease compared to 2021. Gumi City, where the site is located, also receives water from Imha Dam. However, in 2022, the inflow of Imha Dam decreased by 55.7% compared to 2021, and the water storage volume will also decrease at the same time so more than 200 days a year were recorded at 'Risk 4 Severe', the highest level of drought response. As a result, a drought crisis occurred in Gumi too, which receives water from Imha Dam. The Gumi site recognized the seriousness of the drought problem and in response to this, they conducted frequent water conservation training internally, and carried out a drinking water support project for vulnerable groups.

Water conservation training: Frequent training and spread using in-house bulletin boards, emails, and restaurant bulletin boards/banners

Drinking water support project for vulnerable groups: Collaborating with volunteer centers to





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provide drinking water to vulnerable groups (3000 bottles of 500ml)

However, the submitted data is water balance of whole Nakdong River catchment. Since identification of catchment of surface water and groundwater is not conducted appropriately (see 1.1.1), water balance of the catchment is not clear.

**Finding No: TNR-008311**

<b>1.5.4</b>	<p><i>Water quality, including physical, chemical, and biological status, of the catchment shall be identified, and where possible, quantified. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be identified.</i></p>	 Yes
Comment	<p>1. Catchment water quality</p> <ul style="list-style-type: none"> <li>- Water quality in catchment upstream and downstream of the site can affect its operations. Upstream water contamination of the site can have a negative impact on process efficiency, employee WASH services, etc and downstream water contamination of the site can cause damage to nearby aquatic ecosystems and outbreaks of water-borne diseases. The site recognizes the importance of water quality in the catchment and continuously monitors the data.</li> <li>- Water quality data in the Nakdong River catchment, the catchment of the Gumi site, is checked through the Ministry of Environment's water environment information system website (<a href="https://water.nier.go.kr/web/onecPopUp">https://water.nier.go.kr/web/onecPopUp</a>). This site compiles and discloses water quality measurement result data for rivers and streams in each region. Water quality measurement items are COD, BOD, DO, TN, TP, Cloyd a, TOC. Geumho River 5 point is measured once a month, and the measurement cycle for other measurement points in the catchment is once a week.</li> <li>- Moreover, through an external consignment company, they are identifying river water quality data by analyzing the water quality of two points in Igye Stream which is selected as an IWRA. There are 2 water quality measurement items: pH and TOC, and the measurement is done once a month.</li> </ul> <p>2. Water quality variance</p> <ul style="list-style-type: none"> <li>- They check seasonal variation for each water quality measurement item through the website. Nonetheless, at this time, no water quality risks have been detected that pose a threat to people or the environment. In order to reduce negative impacts, the Gumi site also sets and complies with a water quality standard of 50% of the legally allowed discharge water quality standard.</li> </ul>	
<b>1.5.5</b>	<p><i>Important Water-Related Areas shall be identified, and where appropriate, mapped, and their status assessed including any threats to people or the natural environment, using scientific information and through stakeholder engagement.</i></p>	 in progress

Audit Number: AO-000750

Comment

1. IWRA features, status, water-related hazards

- The Gumi site established the IWRA as follows through the first stakeholder survey. Inside the site: Pond at Campus 1, Pond at Campus 2, Water Tank at Campus 1, Water Tank at Campus 2
- Outside the site: Igye Stream(Before confluence, After confluence), Gumi Water Purification Plant, Gwangam Stream(Before confluence, After confluence)
- For internal IWRA, photos are taken semi-annually, and for external IWRA, Igye Stream and Gwangam Stream, photos are taken once a month, and the condition (good, bad, deteriorated) is evaluated according to AWS guidance.
- Gumi site monitor the water quality data of the Gumi Water Purification Plant, which is released every month by the Gumi City Waterworks and Sewerage Office on its website, to determine whether IWRA is contaminated.

2. Management of IWRA

- The Gumi site continuously monitors the water quality data of its water bodies to preserve the IWRA. Water quality information for IWRA can be found in the one-click comprehensive information (<https://water.nier.go.kr/web/onecPopUp>). The measurement items are COD, BOD, DO, TN, TP, chloride a, and TOC, and the measurement frequency is 1 to 4 times per month.
- In addition to monitoring public data, the plant voluntarily analyzes the water quality of secondary springs and mineral springs every semi-annually to identify contamination. The water quality is analyzed for pH and TOC, and the data is documented in Excel and managed on a semi-annual basis.
- They monitor the reliability of public water quality data by comparing the results of voluntary water quality analysis with public water quality data from the same period.
- In addition, they are conducting streamside cleanup activities every year to eliminate water pollution in the surrounding streams, including Igye Stream.

Overall, IWRA identified by the site are areas that may be affected by the site rather than areas in the catchment that are valuable (environmentally, socially etc), to understand their status and potential threats. I.e. the definition of IWRA from the standard and guidance was not sufficiently followed. And IWRA were identified only based on the simple questionnaire for stakeholders and Gumi city office. Identification process was insufficient, according to the IWRA guidance in the AWS Guidance document.

**Finding No: TNR-008312**

**1.5.6** *Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.* 🚩  
in progress

Audit Number: AO-000750

Comment

1. Water-related infrastructure

- Gumi site relies on municipal water supply. For stable operation of the site, it is important to understand the status of water-related infrastructure. Important infrastructure are Imha Dam, Haepyeong Intake Station, Sinpyeong reservoir, Gumi purification plant, Gumi sewage treatment plant, Gwangam stream, and they are identifying general scale, condition, and upgrade projects for each facility to prepare for climate events.
- Through monitoring of water-related infrastructure facilities, the Gumi site is striving to improve the sustainability of water resources by understanding the stability of current and future water supply and through continuous communication and cooperation with relevant public institutions.
- The Gumi site used the WRI Aqueduct tool to evaluate baseline and future water risks for each facility. The baseline evaluation items are 13, including water stress, water depletion, seasonal volatility, coastal eutrophication potential, and unimproved/no drinking water, etc and the four future evaluation items are water stress, water supply, water demand, and seasonal volatility. As a result of the baseline water risk assessment, all facilities were analyzed to have eutrophication risk. Furthermore, as a result of future water risk assessment, all facilities were analyzed to have water stress risk and seasonal volatility risk.

2. Percentage of catchment population served

- The 2020 and 2021 percentage of the catchment population with access to safe and sufficient water in Gumi-si, Gyeongsangbuk-do, where the site is located, are 100% and 99.9%, respectively. Additionally, the percentage connected to wastewater collection and treatment services in 2020 and 2021 is 98.4%. Most of the population within the site catchment is provided with safe and stable water-related services.

However, current status and potential exposure to extreme events of water-related infrastructure were not identified.

**Finding No: TNR-008313**

**1.5.7** *The adequacy of available WASH services within the catchment shall be identified.* 🔍  
Obs.

Comment

1. Current status of water and sewage supply to local residents

- Gumi City Waterworks Office collects water supplied from Imha Dam from Haepyeong Water Withdrawal Station, supplies it to Sinpyeong Reservoir, processes it through Gumi Water Purification Plant, and then supplies water to the local community. Additionally, water used by community residents is sent to a sewage treatment plant for treatment through a connected sewage system.
- The Ministry of Environment annually surveys and discloses the current status of water supply and sewage supply in all regions of the country. They monitored the water supply rate and sewage supply rate in the catchment where the Gumi site is located, referring to the 2021 water supply statistics and sewerage statistics published by the Ministry of Environment in 2022. According to the 2021 water supply statistics published by the Ministry of Environment in 2022, the population of Gumi City's water supply is 416,315, and the water supply rate was 99.8%. And according to the 2021 sewage statistics published by the Ministry of Environment in 2022, the sewage treatment population in Gumi City is 411,021, and the sewage treatment penetration rate is 97.8%.

2. Status of sanitary facilities in the catchment

- There are a total of 299 public toilets and 40 private open toilets in Gumi City, and any local resident can use them. Information on the location of the toilet is publicly available on the Gumi City website(<https://www.gumi.go.kr/portal/contents.do?mld=0608060300>), so all local residents can access the information.

However, the data is for Gumi city, not for the catchment, as the catchment area is not clearly identified (see 1.1.1), although the WASH status around Gumi city are almost same as Gumi city.

**1.5.8** *Advanced Indicator*  
*Efforts by the site to support and undertake catchment level water-related data collection shall be identified.* 🚀  
No

Audit Number: AO-000750

Comment


1. Water quality inspection at Igye Stream, Gwangam Stream, Groundwater, Surfacewater

- The Gumi site discharges rainwater and surface water exceeding the usable capacity directly into Igye Stream, located near the site. In order to minimize and prevent negative impacts on water quality and the aquatic ecosystem, they monitor the water quality at the Nakdong River-Igyecheon confluence every month. They are analyzing water quality for 2 items, pH and TOC, to determine whether the water quality at the Nakdong River-Igyecheon confluence is contaminated.
- The quality of groundwater used on Campus 1 is analyzed by an external contractor once a year. An external consignment company analyzes the water quality of groundwater for 13 items, including nitrate oxygen, chloride ion, and cadmium, and provides water quality data to Campus 1 and they collect and manage the water quality test results.
- The quality of surface water used as make-up water for cooling towers on Campus 2 is analyzed by an external contractor once a month. An external consignment company analyzes the water quality for 3 items, including pH, TOC and trichlorethylene, and provides water quality data to Campus 2 and they collect and manage the water quality test results.

2. Sharing water quality test results with stakeholders

- In July 2023, the Gumi site shared the results of the Igye Stream water quality test, which was autonomously conducted, through a briefing session with a total of 30 people, including public officials from Jinmi-dong of Gumi City Hall and bank managers from nearby areas within the catchment. Like this, by sharing water-related data, they can promote cooperative activities when issues occur in the surrounding water ecosystem.

However, an occasional presentation of data at an event is not meeting the intent of the indicator as described in the Guidance - it is not clear how information presented at an event could be used by the relevant authorities. There is no continuous efforts by the sites to support and undertake catchment level water-related data collection.

**1.5.9** *Advanced Indicator*  
*The adequacy of WASH provision within the catchments of origin of primary inputs shall be identified.*   
N/A


Comment

1. WASH status in the region where the partner company is located

- Gumi site identified people's accessibility to clean drinking water in the areas where primary input partners are located.
- Gumi site identified people's accessibility to health and hygiene services in the areas where primary input partners are located.
- Gumi site identified the status of WASH-related facilities in the area where primary input partners are located.

However, as there is no primary input, this indicator is not applicable.

**1.6** *Understand current and future shared water challenges in the catchment, by linking the water challenges identified by stakeholders with the site's water challenges.*

**1.6.1** *Shared water challenges shall be identified and prioritized from the information gathered.*   
Obs.

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Comment

1. 1st Stakeholder survey

- The Gumi site conducted the first AWS stakeholder survey targeting government agencies and regulatory agencies, local residents, internal and external partners, companies near the site, customers, NGOs, and environmental protection groups. Through the first survey, they identified the water resource problem of the Nakdong River catchment, which is the catchment of the Gumi site.
- A total of 6 water resource issues were shared by stakeholders, including the risk of drought and water shortage, water contamination such as sewage and wastewater, water contamination in water supply, destruction of the aquatic ecosystem and decline in biodiversity, and WASH for vulnerable groups.

2. Prioritizing water resource issues

- They evaluated the Significance and Urgency of each water resource issue shared by stakeholders and assigned priorities. Significance and Urgency are rated from '\*' to '\*\*\*\*\*' based on the criteria established by Gumi site. Water contamination such as sewage and wastewater, which is a water resource problem shared by government agencies, regulatory agencies, partners, companies near the site, and executives and employees, was designated as the 1st priority and drought and water shortage risks, which are water resource issues shared by government agencies, regulatory agencies, partners, and employees, were designated as the 2nd priority.

Water pollution issue was identified as 1st priority based on opinions from stakeholders. However, there is no water pollution in the catchment currently. This may be because bad memory of the past water pollution accident in the resion. If this is true and the current status of water quality is not challenge, the prioritisation, or initiatives to address the challenge (e.g. improving the awareness of stakeholders), may need to be re-considered.

**1.6.2** *Initiatives to address shared water challenges shall be identified.* 🔍  
Obs.

Comment

Identifying initiatives to address water issues

- Initiatives to solve each shared water resource problem were identified and reflected in the WS Plan to carry out the project.

However, some activities are only the company's own activities, not activities in order to address shared water challenge.

**1.6.3** *Advanced Indicator* ✅  
Yes  
*Future water issues shall be identified, including anticipated impacts and trends*

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**Comment** 1. Anticipated impacts and trends

- Anticipated impacts and trends of population changes, industrial changes, climate trends, and water-related infrastructure facilities in the catchment near the Gumi site were identified.
- population changes : As of June 2023, the population of Gyeongsangbuk-do is 2,588,860, and is expected to be 2,256,705 in 2050, a decrease of approximately 12.8% compared to the peak in 2023.
- industrial changes : There are 6 industrial complexes within Gumi City, where the site is located. Most industries in the industrial complex are low-water intensity industries, such as (high-tech) electronics, semiconductors, and electronic/information devices.
- climate trends : Average temperature, precipitation and precipitation intensity are expected to increase for both SSP1-2.6 and SSP5-8.5.except precipitation decrease in SSP5-8.5 in 2021-2040, SSP1-2.6 in 2041-2060, SSP1-2.6 in 2081-2100.
- water-related infrastructure facilities : As a result of assessing baseline and future water risks using the WRI Aquaduct tool, currently, all infrastructure facilities such as Imha Dam, Haepyeong Withdrawal Station, Sinpyeong Reservoir, Gumi Water Purification Plant, and Gwangam Stream are exposed to water stress risk and are expected to be exposed to seasonal volatility risk and water stress risk in the future.

In addition, the Gumi site identified anticipated impacts and trends for the entire Nakdong River Basin through the 'Nakdong River Basin Water Management Comprehensive Plan (2021~2023)' (draft).

- Population change: The population of the Nakdong River Basin is expected to decrease from 13,082,000 in 2017 to 12,450,000 in 2030.
- Change in industrial wastewater generation: It is expected to increase from 1,896,482□/day to 1,911,219□/day in 2030.
- Water cycle forecast: The impervious area rate in the Nakdong River basin is 6.72% as of 2017 and 7.30% as of 2025, taking into account development, which is expected to increase by 0.58%.
- Water demand forecast: Living water demand is expected to decrease by 43 million m3 from 1,816 million m3/year in 20 to 1,773 million □/year in 30, and industrial water demand is expected to decrease by 33 million m3 from 656 million m3/year in 20 to 623 million □/year in 2030.

2. Review of the impacts

- They reviewed the impact of population changes, industrial changes, climate trends, and water-related infrastructure facilities on the site, catchment populations, and the natural environment, and the review details are attached as files. The Gumi site was able to identify future water issues by predicting changes that could affect water as well as reviewing related impacts. In addition, based on what they have learned, they are working to ensure water supply stability, increase response to water-related climate events, and reduce the impact on the aquatic ecosystem.

**Score** 3

**1.6.4** *Advanced Indicator*  
*Potential water-related social impacts from the site shall be identified, resulting in a social impact assessment with a particular focus on water.* ↓  
N/A

**Comment** Social Impact Assessment was not conducted.



**1.7** *Understand the site's water risks and opportunities: Assess and prioritize the water risks and opportunities affecting the site based upon the status of the site, existing risk management plans and/or the issues and future risk trends identified in 1.6.*

**1.7.1** *Water risks faced by the site shall be identified, and prioritized, including likelihood and severity of impact within a given timeframe, potential costs and business impact.* ✔  
Yes

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Comment	<p>1. Identifying the list of water risks for the site</p> <ul style="list-style-type: none"> <li>- By combining the results of a water risk survey(1st) targeting water-related public institutions and the opinions of Gumi site, they evaluated the Severity of Impact and Likelihood of 22 water risk factors.</li> <li>- Depending on the type of water risk, it is classified into Physical risks (General), Physical risks (Site), Regulatory risks, and Reputational risks.</li> <li>- Potential costs and business impact have been assessed.</li> <li>- Prioritization of water risk was designated by considering the Severity of Impact and Likelihood evaluation results, Business Impact, and Financial Impact.</li> </ul> <p>Priorities were categorized into High, Medium-high, Medium, Medium-low, and Low, and a Plan to address identified water risks has been established for risk factors with a priority of 'Medium' or higher. Risk factors with a priority of 'Medium' or higher are as follows.</p> <ol style="list-style-type: none"> <li>1) Water scarcity</li> <li>2) Sudden infrastructure failure, such as breaks or leaks, leading to interruption of water supply</li> <li>3) Contamination outbreak in water source or supply (e.g. from pollution in reservoir, or leaky pipework)</li> <li>4) Inadequate access to water, sanitation, and hygiene services</li> <li>5) Contamination outbreak in groundwater</li> <li>6) Groundwater depletion</li> <li>7) Poor water quality due to failure of on-site wastewater treatment system</li> </ol>	
<b>1.7.2</b>	<p><i>Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.</i></p>	<p> Yes</p>
Comment	<p>1. Identifying the list of water opportunities for the site</p> <ul style="list-style-type: none"> <li>- 6 major business opportunities were evaluated, including how the site may participate, Cost assessment of potential saving, Magnitude of potential financial impact, and Cost assessment of potential saving.</li> <li>- Considering the evaluation result of How the site may participate, Cost assessment of potential saving, Magnitude of potential financial impact, Cost assessment of potential saving, prioritization of potential saving was designated.</li> <li>- Priorities were categorized into High, Medium-high, Medium, Medium-low, and Low, and opportunities with a priority of 'Medium-high' or higher are as follows.</li> </ul> <ol style="list-style-type: none"> <li>1) Boiler condensate reuse</li> <li>2) Groundwater is used as landscaping water (Campus 1) and surface water is used as supplementary water for cooling towers (Campus 2).</li> <li>3) Reprocess wastewater discharge and use it as gray water</li> </ol>	
<b>1.8</b>	<p><i>Understand best practice towards achieving AWS outcomes: Determining sectoral best practices having a local/catchment, regional, or national relevance.</i></p>	
<b>1.8.1</b>	<p><i>Relevant catchment best practice for water governance shall be identified.</i></p>	<p> Yes</p>




# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

- Comment
1. Research best practices from companies in the same catchment and sector  
They collected and documented best practices in terms of Governance, Water Balance, Water Quality, IWRA, and WASH through research on the websites, annual reports, and news of companies located in the Nakdong river catchment (same basin) and electronics (same sector) companies.
  2. Setting best practice of Water Governance  
Through case studies of companies in the same catchment and sector, the following activities were set as Water Governance best practices.
    - Internal resource efficiency program and evaluation system
    - Joint declaration issued by international water-related organizations and multinational corporations to encourage global action on water-related issues
    - Supporting partner company's environmental programs
    - Conducting education on biodiversity conservation and environmental protection initiatives for students in nearby areas
    - Performing sewage treatment reuse project in agreement with local government
    - Strengthening employee awareness through environmental management training
    - Signing a joint declaration on biodiversity conservation and sustainable use with government ministries
  3. Gumi site's Water Governance best practice Goal and implementation activities  
Goal: Expanding water-related technical assistance to all suppliers (inside of the catchment and Primary input suppliers outside of the catchment) by 2030  
Implementation activities:
    - Appointing a person in charge of AWS activities and conducting regular meetings
    - Operating the Partner Water Resource Support Council
    - Chairman of the Gyeongbuk-Daegu Region of the Green Company Council

**1.8.2** *Relevant sector and/or catchment best practice for water balance (either through water efficiency or less total water use) shall be identified.*   
Yes



Audit Number: AO-000750

- Comment
1. Research best practices from companies in the same catchment and sector  
They collected and documented best practices in terms of Governance, Water Balance, Water Quality, IWRA, and WASH through research on the websites, annual reports, and news of companies located in the Nakdong river catchment (same basin) and electronics (same sector) companies.
  2. Setting best practice of Water Balance  
Through case studies of companies in the same catchment and sector, the following activities were set as Water Balance best practices.
    - Installing reverse osmosis type seawater desalination facility to secure a water supply source, reduce local river water usage, and prevent rivers from drying out.
    - Developing equipment life extension technology to reduce wastewater generation
    - Reusing water for landscaping and industrial purposes by introducing a zero-discharge water system
    - Acquiring product water footprint certification from the UK Carbon Trust demonstrating our efforts to reduce water emissions
    - Introducing water saving facilities
    - Recycling concentrated water, washing water, and discharge water discharged as wastewater.
    - Managing water data by inventorying water sources, usage, discharge volume, and water pollutant emissions
    - Establishing a real-time monitoring system
    - Reducing water usage through partner sustainability programs
    - Requesting that partners set water usage reduction goals and implement measures
    - Introducing water-saving facilities as well as rainwater and wastewater reuse facilities
    - Developing a method to calculate the optimal dosage of water purification plant coagulant through AI
  3. Gumi site's Water Balance best practice Goal and implementation activities  
Goal: Achieving 100% of water reclamation by 2030  
Implementation activities:
    - 100% Water replenishment project with Korea Rural Community Corporation to 2023
    - Installing sanitary and water-saving facilities at the site
    - Recovering and reusing steam condensate
    - Reusing gray water in Hanmaeum Plaza(Building)

**1.8.3** *Relevant sector and/or catchment best practice for water quality shall be identified, including rationale for data source.*

  
Yes

- Comment
1. Research best practices from companies in the same catchment and sector  
They collected and documented best practices in terms of Governance, Water Balance, Water Quality, IWRA, and WASH through research on the websites, annual reports, and news of companies located in the Nakdong river catchment (same basin) and electronics (same sector) companies.
  2. Setting best practice of Water Quality  
Through case studies of companies in the same catchment and sector, the following activities were set as Water Quality best practices.
    - Applying internal wastewater quality standards that are stricter than legal standards
    - Operating an integrated disaster prevention center to strengthen emergency response capabilities
    - Self-analyzing discharged water and requesting analysis to a certified inspection agency
  3. Gumi site's Water Quality best practice Goal and implementation activities  
Goal: Managing water quality at 30% above the legal standard and Reconsidering the perception of stakeholders by 2025  
Implementation activities:
    - Monthly management and risk analysis of water contaminants within 50% of legal standards
    - Using recycled materials (waste fishing nets) in mobile phones : Except S23

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

**1.8.4** *Relevant catchment best practice for site maintenance of Important Water-Related Areas shall be identified.* ✔  
Yes

Comment

1. Research best practices from companies in the same catchment and sector  
They collected and documented best practices in terms of Governance, Water Balance, Water Quality, IWRA, and WASH through research on the websites, annual reports, and news of companies located in the Nakdong river catchment (same basin) and electronics (same sector) companies.

2. Setting best practice of IWRA  
Through case studies of companies in the same catchment and sector, the following activities were set as IWRA best practices.

- Activities to capture and eradicate organisms that disrupt the ecosystem
- (Nakdong River) Holding clean-up activities, EM mud ball throwing activities, and lights-out events
- Employee participation in a contest regarding how to preserve the ecosystem
- Contribution to the water quality environment of the discharge area through analysis of the impact on the ecosystem around the site and analysis/management of water quality, noise, vibration, and air in each field
- Holding wetland-related training and ecological wetland plugging

3. Gumi site's IWRA best practice Goal and implementation activities  
Goal: Implementing the IWRA (Igye Stream, Gwangam Stream, and Haepyeong Wetland) Ecological Environment Improvement Project by 2030  
Implementation activities:  
- Igye Stream purification activities and ecosystem conservation activities

**1.8.5** *Relevant sector and/or catchment best practice for site provision of equitable and adequate WASH services shall be identified.* ✔  
Yes

Comment




1. Research best practices from companies in the same catchment and sector  
They collected and documented best practices in terms of Governance, Water Balance, Water Quality, IWRA, and WASH through research on the websites, annual reports, and news of companies located in the Nakdong river catchment (same basin) and electronics (same sector) companies.

2. Setting best practice of WASH  
Through case studies of companies in the same catchment and sector, the following activities were set as WASH best practices.

- Complying with RBA regulations
- Complying with UN Global Compact
- Providing drinking water for disaster relief to areas with water shortages due to drought and to disaster-vulnerable groups across the country.

3. Gumi site's WASH best practice Goal and implementation activities  
Goal: Providing 10,000 liters of drinking water to vulnerable people in the catchment area by 2025  
Implementation activities:  
- Providing drinking water to vulnerable groups in cooperation with Gumi City (toilet maintenance)

Audit Number: AO-000750

<b>2</b>	<b>STEP 2: COMMIT &amp; PLAN - Commit to be a responsible water steward and develop a Water Stewardship Plan</b>	
<b>2.1</b>	<i>Commit to water stewardship by having the senior-most manager in charge of water at the site, or if necessary, a suitable individual within the organization head office, sign and publicly disclose a commitment to water stewardship, the implementation of the AWS Standard and achieving its five outcomes, and the allocation of required resources.</i>	
<b>2.1.1</b>	<p><i>A signed and publicly disclosed site statement OR organizational document shall be identified. The statement or document shall include the following commitments:</i></p> <ul style="list-style-type: none"> <li>- <i>That the site will implement and disclose progress on water stewardship program(s) to achieve improvements in AWS water stewardship outcomes</i></li> <li>- <i>That the site implementation will be aligned to and in support of existing catchment sustainability plans</i></li> <li>- <i>That the site's stakeholders will be engaged in an open and transparent way</i></li> <li>- <i>That the site will allocate resources to implement the Standard.</i></li> </ul>	 Yes
Comment	<p>The site has provided a signed commitment to AWS which includes the following references:</p> <ol style="list-style-type: none"> <li>1. Samsung DX division contributes to implementing sustainable water resource management through compliance with AWS standards.</li> <li>2. Samsung DX division regularly evaluates and reports water management performance and establishes improvement plans.</li> <li>3. Samsung DX division establishes water management programs and plans that can support and compatible with existing catchment plans.</li> <li>4. Samsung DX division communicates openly and discloses water management performance transparently with stakeholders.</li> <li>5. Samsung DX division promotes the implementation of water management programs and plans and allocates human and material resources.</li> </ol> <p>It has been signed by: Head of Global EHS Center. It is disclosed on their website but it is only in Korean version.  <a href="https://www.samsung.com/sec/sustainability/digital-library/policy-document/">https://www.samsung.com/sec/sustainability/digital-library/policy-document/</a></p>	
<b>2.1.2</b>	<p><i>Advanced Indicator</i></p> <p><i>A statement that explicitly covers all requirements set out in Indicator 2.1.1 and is signed by the organization's senior-most executive or governance body and publicly disclosed shall be identified.</i></p>	 Yes
Comment	<p>The AWS statement was signed by the senior executive of Samsung DX division - Chief Safety Officer &amp; Vice President - Mr. Kyung-jin Kim, The statement was publicly disclosed via the Samsung Electronics website in June 2023.  <a href="https://www.samsung.com/sec/sustainability/digital-library/policy-document">https://www.samsung.com/sec/sustainability/digital-library/policy-document</a></p>	
Score	1	
<b>2.2</b>	<i>Develop and document a process to achieve and maintain legal and regulatory compliance.</i>	
<b>2.2.1</b>	<p><i>The system to maintain compliance obligations for water and wastewater management shall be identified, including:</i></p> <ul style="list-style-type: none"> <li>- <i>Identification of responsible persons/positions within facility organizational structure</i></li> <li>- <i>Process for submissions to regulatory agencies.</i></li> </ul>	 Yes

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## Alliance for Water Stewardship (AWS)

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**Comment** The site has provided an EHS group chart with names and their responsibilities including certifications and water-related licensing and disclosed as stated in 5.1.1. Mr Oh and Mr Gwon are the legally designated environmental engineers for campus 1 and 2, respectively, which is stated in thier internal document. Each person in charge is appointed through internal approval, must be legally licensed, and regularly attend training on related laws and regulations.

The site have been maintaining regulatory compliance by four legally required disclosure: National pollution source survey (1/year, <https://wems.nier.go.kr>), Specific substance harmful to water quality emissions survey (data collection 2/year, submmition 1/year, <https://wems.nier.go.kr/swems>) , Environmental information disclosure (1/year, <https://www.env-info.kr/member/main/main.do>), real-time information delivery through TMS to regulatory. The sites have shown the disclosed data in those website during the audit.

The sites internally conduct compliance evaluations once a year. Group leaders, part leaders, and working-level managers from the Gumi site attended the DX division's standard change committee to track changes in water-related laws. In addition, compliance with laws related to serious civil disasters is reviewed twice a year by a law firm. The sites have uploaded the evidences of above mentioned actions.

**2.3** *Create a water stewardship strategy and plan including addressing risks (to and from the site), shared catchment water challenges, and opportunities.*


**2.3.1** *A water stewardship strategy shall be identified that defines the overarching mission, vision, and goals of the organization towards good water stewardship in line with this AWS Standard.*

 No

**Comment** The sites have defined the overarching mission, vision, and goals of the organization towards good water stewardship in line with this AWS Standard including five outcomes. However, a number of goals are focused only on Samsung site boundary and should better relate to the catchment level.

**Finding No: TNR-008317**

**2.3.2** *A water stewardship plan shall be identified, including for each target:*  
*- How it will be measured and monitored*  
*- Actions to achieve and maintain (or exceed) it*  
*- Planned timeframes to achieve it*  
*- Financial budgets allocated for actions*  
*- Positions of persons responsible for actions and achieving targets*  
*- Where available, note the link between each target and the achievement of best practice to help address shared water challenges and the AWS outcomes.*

 in progress

**Comment** The sites have developed WS plan (modified in 2022 and modified in July, Sep, Oct 2023) including target, action, timeframe, budget, cost, responsible person, progress(%), lint to outcomes, to best practice, and priority:





However,  
 - Most of their targets do not have quantified metrics to measure and monitor their performances, instead, every action has progress (%) but many of them was calculated from timeframe  
 - Lack of targets and actions associated with catchment level shared-water challenges, especially no such targets in Water Balance, Water Quality category  
 - Timeframes for every action have been identified  
 - Financial budgets were allocated only for 35 action plans out of 80. Budgets for 45 action have not been identified.  
 - Persons responsible for actions and achieving targets have been provided  
 - The site has made the link between each actions and the AWS outcomes and best practice

**Finding No: TNR-008318**

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

<b>2.3.3</b>	<i>Advanced Indicator</i> <i>The site's partnership/water stewardship activities with other sites within the same catchment (which may or may not be under the same organisational ownership) shall be identified and described.</i>	 Yes
Comment	<p>The site has identified the following activities with other stakeholders within the same catchment:</p> <ol style="list-style-type: none"> <li>1. 'World Water Day' activity with Gumi city hall, neighboring companies, NGO, nearby residents. The site conducted cleaning activity around Han stream, Igye stream together with stakeholders</li> <li>2. Endangered species conservation activities in partnership with Gumi city and Daegu regional environment agency. The sites have been supporting the crane breeding research in their nearby IWRA (Haepyeong wetland). Last year, the sites visited National Institute of Ecology with ecology department of Gumi city since they are in discussions with Gumi City to support an investment of about KRW 15 million over the next three years.</li> <li>3. The site participated in 'Chemical incident initial response simulation training' together with neighboring companies in Gumi industrial complex under City authority.</li> <li>4. The site shared the latest technology and introduced AWS certification at a meeting with environmental managers in the Gumi region.</li> </ol>	
Score	4	
<b>2.3.4</b>	<i>Advanced Indicator</i> <i>The site's partnership/water stewardship activities with other sites in another catchment(s) (either under same corporate structure or with another corporate site) shall be identified.</i>	 Yes
Comment	<p>The sites have identified the following water stewardship activities outside of their catchment:</p> <ol style="list-style-type: none"> <li>1. The sites have engaged with their partner company (Korea Circuit, Wisol) located in Han river catchment to provide informations of water saving valve.</li> <li>2. The sites claim that they have developed zero water toilet together with Bill &amp; Melinda Gates Foundation. However, Gumi sites' role and related catchment have not been identified.</li> <li>3. In cooperation with Royal DSM and Hanhwa Compound, Samsung DX Division has developed plastic derived from waste fishnet collected from the ocean near the Indian coast. Indian NGO collect the fishnet (160 ton in 22')-&gt; Primary processing by Royal DSM -&gt; producing plastic pellet by Hanhwa -&gt; using as material for cell phone by Samsung (around 32 ton in 22')</li> </ol>	
Score	4	
<b>2.3.5</b>	<i>Advanced Indicator</i> <i>Stakeholder consensus shall be sought on the site's water stewardship plan. Consensus should be achieved on at least one target. A list of targets that have consensus and in which stakeholders are involved shall be identified.</i>	 No
Comment	<p>The sites have collected survey three times from their stakeholders including employees, government officials, public infrastructure agencies, supplier, NGO, neighboring companies. The survey contains a part of Gumi sites' WS plan and activities, and questions to seek stakeholders's consensus were delivered in the form of yes or no and note. However, all of stakeholders choose 'yes' without any other comment or inputs. There is not enough evidence provided that the sites have built consensus based on specific feedbacks of their stakeholders.</p>	
<b>2.4</b>	<i>Demonstrate the site's responsiveness and resilience to respond to water risks</i>	
<b>2.4.1</b>	<i>A plan to mitigate or adapt to identified water risks developed in co-ordination with relevant public-sector and infrastructure agencies shall be identified.</i>	 in progress

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Comment      The sites have identified the following plan to mitigate or adapt to water risks :

1. In the event of a water outage due to a pipe break, K-Water and Gumi City will first notify the Gumi site and immediately respond to the water outage situation with the site's own water reserves (3-day water supply system).
2. In the event of water source contamination, K-Water and Gumi City will notify the Gumi site. K-Water immediately stops the inflow of city water, and the sites respond with their own water reserves (3-day water supply system).
3. When the Gumi City sewage treatment plant ceases operation, the sewage treatment plant immediately contacts the site, and the site adjusts the amount of cooling tower drain, which accounts for most of the wastewater generated, and uses a preliminary collection tank to suspend operation of the wastewater treatment plant until the Gumi City sewage treatment plant restarts.

Plans to mitigate or adapt to identified water risks were made by Samsung, referring to questionnaire results from stakeholders, but not developed in co-ordination with relevant public-sector and infrastructure agencies.

**Finding No: TNR-008319**

**2.4.2**      *Advanced Indicator* ➤  
*A plan to mitigate or adapt to water risks associated with climate change projections developed in co-ordination with relevant public-sector and infrastructure agencies shall be identified.* No

Comment      The sites have developed a plan to mitigate extreme event in Gumi site, however their climate change projections have not been identified properly.  
 As a result of the Samsung Insurance Corporate Research Institute's investigation into the possibility of flooding at the Gumi business site, the risk was found to be low. No investigation into drought, red tide, insect outbreaks, etc.

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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**3 STEP 3: IMPLEMENT - Implement the site’s stewardship plan and improve impacts**

**3.1** *Implement plan to participate positively in catchment governance.*

**3.1.1** *Evidence that the site has supported good catchment governance shall be identified.*

  
Yes



Audit Number: AO-000750

Comment Samsung Electronics' Gumi site engages in various activities to protect water resources with related organizations in the site's catchment.

### 1. Chemical safety community

External leakage of chemicals used in the factory or an accident due to a disaster/catastrophe can cause significant damage to people and the aquatic ecosystem in the nearby area. To prevent such accidents in advance, we have formed and are operating a chemical safety community with companies in the area near where our Gumi site is located. In order to respond quickly in the event of an emergency, nearby companies divide their roles by transporting disaster prevention supplies, traffic control, and chemical neutralization until the Gumi City Chemical Disaster Prevention Center arrives. To ensure the successful performance of our roles, we conduct preventive activities against accidents such as disasters and catastrophes.

In 2022, we conducted training on first responders to chemical accidents as a community activity, shared domestic and overseas chemical accident cases through working-level council meetings every quarter, and shared information such as amendments to the Chemical Substances Management Act. Additionally, in 2023, Samsung Electronics' AWS certification plan and water conservation practices being implemented by Samsung Electronics were shared at the Chemical safety community council.

### 2. Green Company council

- The Gyeongbuk/Daegu Green Company Council and the Daegu environmental office hold practical meetings and workshops every year to discuss environmental laws and policy trends, share legal guidance, inspection directions and enforcement cases and share environment-related information and best practices among member companies. Moreover, we are discussing difficulties and suggestions related to green companies through meetings between Green Company council member companies and the Daegu Regional Environmental Office.

- At the practical meeting held in 2022, cases of the latest laws and guidance inspection were shared, and a meeting was held between green companies and the Daegu environmental office to discuss ways to improve the ESG competitiveness of green companies and reduce the burden on companies. And in collaboration with 9 companies, we carried out stream clean-up activities in the Hancheon area of Gumi-si.

- As a head of The Gyeongbuk/Daegu Green Company in 2023, we are participating in workshops and working-level meetings, and are sharing Samsung Electronics' water resource management and AWS certification achievements.

### 3. Meetings with Environmental Managers in the Gumi Region

- In 2023, Samsung Electronics' Gumi site operated four meetings to exchange information among environmental managers in the Gumi region to improve their ability to identify and manage legal and regulatory trends. In particular, the meeting held in June discussed water-related issues (wastewater, water, and pure water), and the meeting held in October promoted AWS certification and disclosed the water-related performance of the Gumi site.

- Through these meetings, the Gumi site supports good watershed governance with companies in the Gumi region.

### 4. Biodiversity Activities and Endangered Species Conservation Activities

Since 2013, Samsung Electronics' Gumi site has been supporting the activities of the Avian Ecology and Environment Research Center to create and artificially breed cranes in partnership with Gumi City and Daegu Regional Environment Agency. The institute started research in 2013 by importing two pairs of cranes with the support of our site, and succeeded in artificially loading them in 2016. As of 2023, the institute is conducting research on 46 cranes. In addition, we are in discussions with Gumi City to support an investment of about KRW 15 million over the next three years for feeding and habitat restoration activities for crane reproduction and restoration. We have disclosed related information on the Samsung Electronics website. (Website URL:

<https://news.samsung.com/kr/%ED%9D%AC%EA%B7%80-%EC%B2%A0%EC%83%88%EB%93%A4%EC%97%90%EA%B2%8C-%EB%B3%B4%EA%B8%88%EC%9E%90%EB%A6%AC%EB%A5%BC-%EC%9E%AC%EB%91%90%EB%A3%A8%EB%AF%B8-%EB%B3%B5%EC%9B%90->



# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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5. Nakdong River Basin Management Fund  
- The Gumi site pays the Nakdong River Basin Management Fund separately from the water bill as a fee for using water supplied by the Gumi City Water and Sewerage Works. The Nakdong River Basin Management Fund is a fund to properly manage water resources and pollution sources in the Nakdong River Basin, and to efficiently promote water quality improvement in the upstream areas of the water source and support projects for residents. In order to respect the water resource rights of residents in the Nakdong River catchment area, the fund is used for support projects for residents in the Nakdong River catchment area, installation and operation of environmental infrastructure facilities, water quality improvement support projects, total pollution management projects, and eco-friendly cleanup projects. The amount paid to the Nakdong River Basin Management Fund in 2023 is KRW 81,516,640.

**3.1.2** *Measures identified to respect the water rights of others including Indigenous peoples, that are not part of 3.2 shall be implemented.* Q  
Obs.

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**Comment** Samsung Electronics' Gumi site is carrying out various activities to protect water resources around the site and respect the water rights of indigenous people.

1. Stream clean-up activities  
Samsung Electronics' Gumi site carries out stream clean-up activities with stakeholders every year to commemorate Environment Day. In 2023, various activities were carried out, such as cleaning up the Igye Stream near the site, picking up trash, conducting a water resource protection campaign, and making clay balls.
2. Environment love writing and drawing contest  
Samsung Electronics' Gumi site has been hosting the Environment love writing and drawing contest since 1993. This is to raise stakeholder awareness of the environment, including water resources, and encourage participation in environmental protection activities which is conducted once a year.  
In addition, they promoted AWS at an exhibition of competition winners in 2023 and shared our water performance at the Gumi site in 2022.
3. Drinking water and WASH support project for vulnerable groups  
Samsung Electronics' Gumi site provides drinking water to welfare facilities and soup kitchens as part of its measures to protect the water rights of vulnerable groups near the site, and is carrying out support projects to improve WASH at welfare centers.
4. 200,000 drinks provided to the '25th World Scout Jamboree'  
Samsung Electronics provided 200,000 drinks through the Red Cross for the '25th World Scout Jamboree' held in Saemangeum, Buan-gun, Jeollabuk-do. It can be found on the Samsung Electronics Newsroom website (Website URL: <https://news.samsung.com/kr/%EC%82%BC%EC%84%B1-%EC%83%88%EB%A7%8C%EA%B8%88-%EC%9E%BC%EB%B2%84%EB%A6%AC%EC%97%90-%EC%9D%8C%EB%A3%8C-20%EB%A7%8C%EA%B0%9C-%EC%A7%80%EC%9B%90>).
5. Nakdong River Basin Management Fund  
- The Gumi site pays the Nakdong River Basin Management Fund separately from the water bill as a fee for using water supplied by the Gumi City Water and Sewerage Works. The Nakdong River Basin Management Fund is a fund to properly manage water resources and pollution sources in the Nakdong River Basin, and to efficiently promote water quality improvement in the upstream areas of the water source and support projects for residents. In order to respect the water resource rights of residents in the Nakdong River catchment area, the fund is used for support projects for residents in the Nakdong River catchment area, installation and operation of environmental infrastructure facilities, water quality improvement support projects, total pollution management projects, and eco-friendly cleanup projects. The amount paid to the Nakdong River Basin Management Fund in 2023 is KRW 81,516,640.
6. Signed a water restoration project with the Korea IEcology and Environment institute  
- In addition, in the second half of 2023, they signed a water reclamation project with the Korea Ecology and Environment Institute for the Ogok-ri area in Haman-gun, Gyeongsangnam-do, which is within the same catchment area of the Gumi site. The project aims to secure water for agriculture in the area, which is included in the Nakdong River catchment area, through sedimentation channel dredging and upstream expansion of the reservoir. The projected reduction volume in 2024 is 70,000 tons(Minimum( to 100,000 tons(Maximum).

However, above activities are not related to measures to respect the water rights of others. In 1.5.2, evidence that if there is stakeholder-verified customary water rights was not submitted. Therefore, measures to respect the water rights of others are not identified.

**3.1.3** *Advanced Indicator*   
*Evidence of improvements in water governance capacity from a site-selected baseline date shall be identified.* Yes

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Comment

1. Baseline date selected by the Gumi site
  - The Gumi site improved its internal water governance capabilities by establishing an AWS TF team in 2023 compared to the baseline of January 1, 2022.
2. Establishment of the internal AWS TF team
  - Gumi Site set acquisition of AWS Certification as a goal to enhance capability of water resources management and formed AWS Task Force Team to progress effectively it. The AWS TF Team temporarily transferred employees from EHS group, Infra group, EHS/Purchasing, General, Gwangju branch to support for internal water management and external cooperative activities and external consultants also participated for higher expertise. AWS TF Team consistently implements activities such as data collection, establishment and implementation of AWS Plan, communication with the external and discovery of cooperative opportunities, performance assessment, disclosure, etc. according to guidance. The activities of AWS TF Team in 2022 and 2023 are as follows.
    - Implementation of questionnaire survey on stakeholders in the catchment three times
    - Benchmarking of water-related best practices of other companies in the same sector or in the catchment such as TSMC, Career and Apple once a year
    - Sharing water-related best practices with Suwon Site and Gwangju Site once a year
    - Sharing of the plan achievement status and the future schedule with the headquarters, Suwon Site and Gwangju Site once a week
    - Implementation of an AWS meeting with the headquarters, Suwon Site and Gwangju Site once a quarter

Score 2

**3.1.4** *Advanced Indicator* ✎ No  
*Evidence from a representative range of stakeholders showing consensus that the site is seen as positively contributing to the good water governance of the catchment shall be identified.*

Comment

1. Communicating with stakeholders about water stewardship performance
  - The Gumi site collects stakeholder opinions on water stewardship performance through face-to-face and non-face-to-face (email) stakeholder surveys(3rd). All stakeholders who participated in the third survey responded positively to the performance of each activity at the Gumi site in terms of water governance and its contribution to stakeholders and the local community.

2. 3rd Stakeholder Survey
  - The Gumi site created an AWS Outcomes evaluation for five AWS outcome areas. AWS Outcomes evaluation includes the site's contribution to performance against target, achieving water stewardship outcomes, value creation, etc.
  - The water governance area includes communication and cooperation activities carried out for catchment conservation with stakeholders in the catchment at the Gumi site.
  - AWS Outcomes evaluation was disclosed to stakeholders such as executives and employees, government institutions, public institutions, partners, civic groups, NGOs, and nearby companies. And through the third survey, they asked for opinions to be shared on whether the site's water resource management (stewardship) performance was effective and what areas needed improvement.
  - All who participated in the survey responded that the Gumi site contributed positively to water governance.

However, the survey was mainly done by sending questionnaire, and the related question was ""Do you think that Samsung Electronics' Gumi Site's '23 water-related governance activities have been effective and have contributed to stakeholders and communities?"" and answer selection was ""satisfied"" or ""insufficient"". The question did not ask about contribution to the governance of the catchment, and Yes or No answer is insufficient. It cannot be said that consensus was shown from a representative range of stakeholders.

**3.2** *Implement system to comply with water-related legal and regulatory requirements and respect water rights.*

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## Alliance for Water Stewardship (AWS)

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**3.2.1** *A process to verify full legal and regulatory compliance shall be implemented.* ✔  
Yes

Comment

1. Operation of automatic water quality measurement equipment (TMS, Tele Metering System)  
Despite it not being mandatory installation site, Gumi site has installed a TMS (Tele Metering System) to monitor the amount and quality of raw wastewater and discharge water in real time. By monitoring water quality in real time, they can quickly respond to possible contaminant incidents, thereby reducing negative impacts to our catchment. Wastewater is treated using our own in-house standards, which are stricter than the legal allowance, and there has been no case of exceeding the allowed discharge standards.
2. Environmental information disclosure system  
- Through the environmental information disclosure system ([www.env-info.kr](http://www.env-info.kr)) operated by the Korea Environmental Industry and Technology Institute, an organization under the Ministry of Environment, Samsung Electronics prepares the previous year's environmental information by the end of June every year and discloses it to the public in December. And since 2009, they have been disclosing water-related information, including water usage, discharge of water contaminants, and violations of environmental laws.  
- From 2019 to 2021, the number of violations of environmental laws and regulations at the Gumi site was 0 and the fine was KRW 0, and the details were disclosed through the environmental information disclosure system.
3. Compliance assessment through regulatory registers  
- Samsung Electronics' Gumi site periodically monitors the websites of the Ministry of Government Legislation and the Ministry of Environment to determine whether laws have been revised. And through compliance evaluations, they determine compliance with laws and regulations related to water resources, such as the Waterworks Act and the Water Environment Conservation Act.
4. Operate a company-wide Legal & Regulatory Standards Change Management Committee  
- Through the Legal & Regulatory Standards Change Management Committee, Samsung Electronics reviews and identifies various revised laws and regulations, including those in the water sector, and shares the results of reviewing changes to Samsung Electronics' internal standards. Through monthly working meetings and mailings, group heads, agenda-related part heads, and practitioners from each business site attend and share the contents.
5. Checklist of laws and regulations related to serious civic accidents and prevention activities  
- The Gumi site determines whether it is fulfilling its obligations to comply with water-related regulations through a checklist of serious civic accident-related laws that include the provision status of the serious civic accident-related laws applicable to the site, whether they are applicable to the site, and whether they are implemented. Relevant laws applicable to the Gumi site include the Drinking Water Management Act, the Water Supply And Waterworks Installaion Act, and the Water Environment Conservation Act.  
- The Gumi site carries out work such as site inspection, improvement, training, and operation of a council to prevent disasters and eradicate violations of safety and health-related laws. Accordingly, as part of civic disaster prevention activities in the field of water quality management, monthly regular inspections of 5 storm water blocking facilities (once a month), weekly regular inspections of 13 TMS and measuring instruments (once a week), and monthly water quality analysis of 8 items of inflow and discharge water (once a month). They are conducting quarterly water quality analysis (once a quarter) on 7 items of gray water.

**3.2.2** *Where water rights are part of legal and regulatory requirements, measures identified to respect the water rights of others including Indigenous peoples, shall be implemented.* ✔  
Yes

Comment

1. Legal regulations related to water rights  
South Korea has a high water supply rate, and the Gumi region, where Samsung Electronics' Gumi site is located, also has a high water supply rate of 99.8% as of 2021. Therefore, there is no separate legal regulation to respect water rights that they are required to comply with, and their operations are not currently violating the water customs and water rights of local residents.

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## Alliance for Water Stewardship (AWS)

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**3.3** *Implement plan to achieve site water balance targets.*

**3.3.1** *Status of progress towards meeting water balance targets set in the water stewardship plan shall be identified.* ✔  
Yes

Comment 1. Progress status of the water balance target of the water stewardship plan  
 - In order to manage water balance, the Samsung Electronics Gumi site has set 3 targets (Identifying the amount of water reclamation and setting targets, 2% Reduction in water usage, and Expanding gray water supplies) and 9 actions. Accordingly, they are operating a Task Force in charge of water resource management and AWS certification to ensure efficient water resource management. The Task Force checks the progress through periodic meetings to ensure that the plan established according to the Gumi site's annual plan is smoothly implemented, and reports the results to the group leader of the Gumi site. As of October 2023, the average progress rate (%) of 9 actions is 80.9%. Details are as follows.

[Identifying the amount of water reclamation and setting targets]  
 - Identifying the amount of water reclamation and setting targets (Aug): 100%

[Improving water use efficiency]  
 - Monitoring water usage by building in the site (every month): 75%  
 - Daily inspection of water supply facilities and supplementary measures (every day): 75%  
 - Energy council meeting (every quarter): 75%  
 - Sharing daily water usage (purified water, groundwater, graywater) (every day): 75%  
 - Achieving over 70% Recovery rate of steam condensate (every month): 114%  
 - 20% reduction in toilet sanitation water (May): 100%

[Expanding gray water supplies]  
 - Achieving 70% gray water use rate by expanding gray water supplies (Dec): 14%  
 - Recycling gray water as a summer hazmat warehouse coolant (Jul~Sep): 100%

**3.3.2** *Where water scarcity is a shared water challenge, annual targets to improve the site's water use efficiency, or if practical and applicable, reduce volumetric total use shall be implemented.* ✔  
Yes

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Comment

1. Shared water resource issues  
 - Through the first stakeholder survey, water resource issues such as water pollution (sewage water), risk of drought and water shortage, water supply contamination, destruction of aquatic ecosystem and decline in biodiversity, and WASH issues for vulnerable groups were shared by stakeholders.  
 - Drought and water scarcity risks were selected by catchment stakeholders as catchment water issues.

2. Annual targets set to improve the site's water use efficiency  
 - The annual targets for improving water use efficiency at the Gumi site are Identifying the amount of water reclamation and setting targets, 2% Reduction in water usage, and Expanding gray water supplies and 9 actions were set to achieve them. As of October 2023, the average Progress rate (%) of 9 actions is 80.8%. Details are as follows.

[Identifying the amount of water reclamation and setting targets]  
 - Identifying the amount of water reclamation and setting targets (Aug): 100%

[Improving water use efficiency]  
 - Monitoring water usage by building in the site (every month): 75%  
 - Daily inspection of water supply facilities and supplementary measures (every day): 75%  
 - Energy council meeting (every quarter): 75%  
 - Sharing daily water usage (purified water, groundwater, graywater) (every day): 75%  
 - Achieving over 70% Recovery rate of steam condensate (every month): 114%  
 - 20% reduction in toilet sanitation water (May): 100%

[Expanding gray water supplies]  
 - Achieving 70% gray water use rate by expanding gray water supplies (Dec): 14%  
 - Recycling gray water as a summer hazmat warehouse coolant (Jul~Sep): 100%

**3.3.3** *Legally-binding documentation, if applicable, for the re-allocation of water to social, cultural or environmental needs shall be identified.* ✔ Yes

Comment As a result of legal monitoring, Samsung Electronics' Gumi site has no legal binding force on water reallocation.

**3.3.4** *Advanced Indicator* ✘ No  
*The total volume of water voluntarily re-allocated (from site water savings) for social, cultural and environmental needs shall be quantified.*

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Comment      The Gumi site's voluntary activities include operating a water resource support council for partners, water resource restoration projects, and drinking water support activities for vulnerable groups.

1. 100% Water replenishment project with Korea Rural Community Corporation to 2023  
 - Samsung Electronics DX Division has set a goal of '100% replenishment of global water usage in 30 years'. As part of its efforts to achieve its goal, Samsung Electronics' DX Division signed a water replenishment project agreement with the Korea Rural Community Corporation in December 2022. This project aims to solve water shortages in rural areas that have recently suffered from chronic water shortages by installing water storage facilities or tube wells that fill river water or reclaimed water using water pumps in areas where it is hard to have water inflow.  
 - In February 2023, a pumping facility was installed in the Gogeu area of Wando, Jeollanam-do and began operation in March. The facility utilizes the discharged water collected in the reservoir of the Hoeryong Seawall and pumps and stores it in the Baekun Reservoir. The facility's expected annual replenished water is approximately 150,000 tons or more. Water replenishment performance is measured through a flow meter within the pumping facility and the amount of water returned through this project during the first half of 2023 (2023.03~2023.06) is 109,317 tons. In the future, they plan to discover additional water replenishment projects targeting all regions in consultation with the Korea Rural Community Corporation.

2. Signed a water restoration project with the Korea Ecology and Environment institute  
 - In addition, in the second half of 2023, they signed a water reclamation project with the Korea Ecology and Environment Institute for the Ogok-ri area in Haman-gun, Gyeongsangnam-do, which is within the same catchment area of the Gumi site. The project aims to secure water for agriculture in the area, which is included in the Nakdong River catchment area, through sedimentation channel dredging and upstream expansion of the reservoir. The projected reduction volume in 2024 is 70,000 tons (Minimum) to 100,000 tons (Maximum).

3. Drinking water support for vulnerable groups in the catchment  
 - In March 2023, in commemoration of World Environment Day, they collaborated with Gumi City Hall to provide 1,500 liters of drinking water (3,000 bottles of 500 mL water) to vulnerable groups in the catchment.

However, these activities are supporting to improve water sources of some stakeholders, and do not come from site water savings. Therefore, these activities are not related to this indicator.

**3.4**      *Implement plan to achieve site water quality targets*

**3.4.1**      *Status of progress towards meeting water quality targets set in the water stewardship plan shall be identified.*

  
Yes



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## Alliance for Water Stewardship (AWS)

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- Comment
1. Progress status of the water quality target of the water stewardship plan
    - To manage water quality, 4 targets (100% compliance with water-related legal standards, zero legal punishment, proper maintenance of water supply and use facilities (0 incidents of water supply interruption), development of recycled materials for waste fishing nets) and 27 actions were set in the WSP. As of September 2023, the average progress rate (%) for the 27 actions is 77.8%. The details are as follows
    - [100% compliance with water-related legal standards]
      - Response to internal and external inspections and zero violations of laws and regulations (always): 75%
      - Monitoring changes such as enactment of laws and legislative notices (every day): 75%
      - Management of water contaminants within 50% of legal standards and risk analysis (every month): 75%
      - Regular analysis of wastewater treatment plant's discharge water (every month): 75%
    - [Zero legal punishment]
      - Checking compliance with laws and conducting internal reporting (notifying compliance support group) (every month): 75%
    - [Proper maintenance of water supply and use facilities (0 incidents of water supply interruption)]
      - Wastewater treatment plant absorption tower OVERHAUL (June): 100%
      - Replacing advanced treatment facility's activated carbon (February, May, August, November): 75%
      - Replacing wastewater treatment filter media (sand filter) (once in every 2 year): 100%
      - Outsourced Management of TMS at the Wastewater Treatment Plant in Campus 2 (Calibration: Once a week/Accuracy inspection: Once a year(Oct)): 75%
      - Maintaining wastewater monitoring system at Campus 2 (replacing TMS instrument parts) (October): 75%
      - Dredging sewage general drainage (October): 80%
      - Replacing UT1 building water softener resin (once in every 2 year, November): 0%
      - Wastewater treatment plant dehydrator OVERHAUL (Jul): 100%
      - Wastewater treatment plant OVERHAUL(dredging and painting) (Nov): 0%
      - Regular maintenance of ultrapure water manufacturing facilities (October): 80%
      - Cleaning city/gray water storage tanks (every half year): 100%
      - Purchasing ultrapure water, drinking water micro filters, consumables (every quarter): 75%
      - Replacing wastewater treatment plant's consumable measuring instruments and sensors (every half year): 100%
      - Installation of a boiler supply water quality (hardness) meter (hardness) (August): 100%
      - Replacing wastewater treatment plant's old pump (October): 90%
      - Replacing wastewater treatment plant's old FCU (May): 100%
      - Replacing non-electric (high-rise) water pump (April): 100%
      - Inspecting wastewater piping system (every half year): 100%
      - Inspecting hazardous chemicals (every half year): 50%
      - Wastewater treatment plant maintenance activities (always): 50%
      - Regular inspection and repair of rainwater blocking facilities (every month): 75%
    - [Development of recycled materials from discarded fishing nets]
      - Use of recycled materials (fair net) in mobile phones: except S23: 100%

**3.4.2** *Where water quality is a shared water challenge, continual improvement to achieve best practice for the site's effluent shall be identified and where applicable, quantified.*




Yes



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## Alliance for Water Stewardship (AWS)

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- Comment
1. Shared water resource issues
    - Through the 1st stakeholder survey, water resource issues such as water contamination (sewage water), risk of drought and water shortage, water supply contamination, destruction of aquatic ecosystem and decline in biodiversity, and WASH issues for vulnerable groups were shared by stakeholders.
    - Catchment stakeholders selected water contamination (sewage) as the most common catchment problem.
  
  2. Water quality management at the site
    - In order to reduce negative water impacts on operations, the Gumi site sets and complies with in-house water quality standards that are stricter than legal standards. Moreover, although it is not a legal obligation, they autonomously install and operate TMS to monitor compliance with in-house water quality standards in real time.
    - In order to comply with the in-house standard concentration, 50% of the legal standard concentration, they carry out repair and investment activities for underperforming or outdated facilities through regular inspection.
    - The legal standards and in-house water quality standards for the main management items of wastewater treatment plant's discharge water are as follows.
      - 1) TOC : (legal standard) 75mg/L, (in-house standard) 37.5mg/L
      - 2) BOD : (legal standard) 120mg/L, (in-house standard) 60mg/L
      - 3) SS : (legal standard) 120mg/L, (in-house standard) 60mg/L
      - 4) T-N : (legal standard) 60mg/L, (in-house standard) 30mg/L
      - 5) T-P : (legal standard) 8mg/L, (in-house standard) 4mg/L
    - The average discharge concentration for each major item in 2022 (Campus 1 | Campus 2) is as follows, and all of them achieved below the in-house water quality standards.
      - 1) TOC : (6.21 mg/L | 3.33 mg/L)
      - 2) BOD : (1.38 mg/L | 1.36 mg/L)
      - 3) SS : (5.83 mg/L | 0.60 mg/L)
      - 4) T-N : (7.73 mg/L | 5.54 mg/L)
      - 5) T-P : (0.01 mg/L | 0.08 mg/L)
  
  - 3.5 *Implement plan to maintain or improve the site's and/or catchment's Important Water-Related Areas.*
  
  - 3.5.1 *Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be implemented.*   
Yes

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- Comment
1. Monitoring through off-site IWRA water quality analysis
    - Gumi site monitors water quality information by measuring pH and TOC for Igye Stream and Gwangam Stream every month.
  
  2. Monitoring through On-site IWRA water quality analysis
    - The 'pond' in the Campus 1 and 2 were designated as On-site IWRA, and they take pictures every half year, analyze water quality through an external consignment company, and evaluate its condition (good, poor, or deteriorate) according to AWS guidelines. An external consignment company provides semi-annual water quality data to the site by analyzing water quality for SS, pH, TN, TP, and TOC, and the data is documented in Excel and managed on a semi-annual basis.
  
  3. Monitoring through collection of water quality analysis data from external organizations
    - The quality of tap water is monitored monthly through data released through the Gumi City Waterworks and Sewerage Office website (<https://water.gumi.go.kr/>). Gumi City Waterworks and Sewerage Office conducts water quality analysis of 6 items once a day, 53 items for water purification plant's water quality test once a month, 4 items for faucet water quality test, and 10 items for old pipe water quality test. Monthly analysis data is released.
    - Gumi site sends sewage and wastewater treated through wastewater treatment plants at each campus to the Gumi Sewage Treatment Plant, located south of the site, and discharges the treated water into Gwangam Stream. To minimize and prevent negative impacts on water quality and water ecosystems, the Gumi site monitors the quality of the final discharge water from the Gumi Sewage Treatment Plant through the public website, Sewage Information System (<https://www.hasudoinfo.or.kr/stat/statOperation.do>). The website provides monthly water quality analysis data for a total of seven items, including BOD, COD, TOC, SS T-N, T-P, and coliform bacteria count. The Gumi site monitors this data on a monthly basis.
    - The Gumi site strictly treats its wastewater to 50% or less of the legal standard and sends it to the Gumi Sewage Treatment Plant to minimize negative impacts on the nearby water ecosystem, and monitors daily water quality data of the final discharge site, Gwangam Stream, provided by the Water Environment Information System ([https://water.nier.go.kr/web/autoMeasure/noConfirm?pMENU\\_NO=574](https://water.nier.go.kr/web/autoMeasure/noConfirm?pMENU_NO=574)).

In the WSP, the other activities for off-site IWRA are also planned and implemented.

### 3.5.2

#### *Advanced Indicator*


*Evidence of completed restoration of non-functioning or severely degraded Important Water-Related Areas including where appropriate cultural values from a site-selected baseline date shall be identified. Restored areas may be outside of the site, but within the catchment.*

 No

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Comment 1. Biodiversity Activities and Endangered Species Conservation Activities  
 - Since 2013, Samsung Electronics' Gumi site has been supporting the activities of the Avian Ecology and Environment Research Center to create and artificially breed cranes in partnership with Gumi City and the Daegu Regional Environment Office. The institute started research in 2013 by importing two pairs of cranes with the support of our site, and succeeded in artificially loading them in 2016. As of 2023, the institute is conducting research on 46 cranes. In addition, they are in discussions with Gumi City to support an investment of about KRW 15 million over the next three years for feeding and habitat restoration activities for crane reproduction and restoration. (URL: <https://news.samsung.com/kr/%ED%9D%AC%EA%B7%80-%EC%B2%A0%EC%83%88%EB%93%A4%EC%97%90%EA%B2%8C-%EB%B3%B4%EA%B8%88%EC%9E%90%EB%A6%AC%EB%A5%BC-%EC%9E%AC%EB%91%90%EB%A3%A8%EB%AF%B8-%EB%B3%B5%EC%9B%90-%ED%94%84%EB%A1%9C>)  
 - The results of the increase in the number of migratory birds monitored since the partnership was signed in May 2013 are as follows.  
 White-naped crane: (2013: 78 / 2014: 165 / 2015: 388)  
 Mallard duck: (2013: 3,000 / 2014: 2,600 / 2015: 7,100)  
 White-fronted goose: (2013: 5,500 / 2014: 5,800 / 2015: 6,500)  
 Whooper swan: (2013: 356 / 2014: 522 / 2015: 646)  
 Hooded crane: (2013: 1,465 / 2014: 2,472 / 2015: 1,143)  
 Total: (2013: 10,399 / 2014: 11,559 / 2015: 15,777)

However, there is no evidence that the restoration had been completed or still on-going. No Score.

**3.5.3** *Advanced Indicator*   
Yes  
*Evidence from a representative range of stakeholders showing consensus that the site is seen as positively contributing to the healthy status of Important Water-Related Areas in the catchment shall be identified.*

Comment 1. Communicating with stakeholders about water stewardship performance  
 - The Gumi site collects stakeholder opinions on water stewardship performance through face-to-face and non-face-to-face (email) stakeholder surveys(3rd).  
  
 2. Conducting stakeholder briefing sessions and 3rd surveys  
 - The Gumi site held one stakeholder briefing session to share the Gumi site's water resource management plan for 2023 and the results of the IWRA water quality test.  
 - The Gumi site created an AWS Outcomes evaluation for five AWS outcome areas. AWS Outcomes evaluation includes Site's contribution to achieving water stewardship outcomes, Value creation about performance against target.  
 - The IWRA area includes communication and cooperation activities carried out by the Gumi site with catchment stakeholders to preserve the catchment IWRA.  
 - AWS Outcomes evaluation was disclosed to stakeholders such as executives and employees, government institutions, public institutions, partners, civic groups, NGOs, and nearby companies, and through the third survey, they asked for opinions to be shared on whether the Gumi site's water resource management (stewardship) performance was effective and what areas needed improvement.  
 - All who participated in the third survey responded that the Gumi site contributed positively to the catchment IWRA.

Although the survey was conducted by questionnaire only asking ""Do you think the '23 IWRA management activities at Samsung Electronics' Gumi Site were effective and contributed to stakeholders and communities?"" and the answer was Yes or No, other evidences were presented during the audit. Those evidences were articles of medias, news, comment from Gumi city Environmental Department, Professor of Kyong University, and Tegu city. These are evidences from a representative range of stakeholders showing consensus.

Score 2

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**3.6** *Implement plan to provide access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers at all premises under the site's control.*

**3.6.1** *Evidence of the site's provision of adequate access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers onsite shall be identified and where applicable, quantified.*

  
Yes

Comment

1. RBA(Responsible Business Alliance) AMA certification and meeting the requirements  
As a RBA's AMA certified company, the Gumi site meets the standards required by the RBA Code of Conduct for establishing a safe working environment, ensuring respect and dignity for workers, and operating an environmentally friendly and ethical business. The RBA's code of conduct consists of five sections: A, B, C, D, and E. And B. Safety and Health (7) Hygiene, Food and Housing states that employees must be provided with clean restrooms, drinking water, sanitary food preparation and storage facilities, and cafeteria facilities. Two findings emerged from the audit at the Gumi site, but they were not WASH-related issues, and these were improved through corrective action. Through an audit, the Gumi site can prove that it provides easy access to appropriate WASH to employees, and RBA VAP on-site audit was conducted in October 2023.

2. Analysis results of WASH-related facilities

- For the purpose of water storage tank hygiene management, the Gumi site integrates campuses 1 and 2 and conducts water quality inspection once a year, hygiene inspection once a month, and cleaning and disinfection once a semi-annually.

Water quality inspection (once a year): Campus 2 (Building G, Building UT 2 )

Hygiene inspection (once a month): Campus 1 (Machine Room in Service Academy, Machine Room in Main Building), Campus 2 (Water Tank Room in Building G, Machine Room in Building UT 1, Water Tank Room in Building UT 2)

Cleaning and disinfection (semi-annual): Campus 1 (Machine Room in Service Academy, Machine Room in Main Building), Campus 2 (Water Tank Room in Building G, Machine Room in Building UT 1, Water Tank Room in Building UT 2)

3. Determine the appropriate number of WASH facilities at the site

- Samsung Electronics has a restroom management guide for our manufacturing workplaces. The Gumi site identified the current status of WASH-related facilities in the site and checked whether the number of WASH-related facilities met the criteria for calculating the number of sanitary equipment in the guide, as shown below.

Toilets: Satisfactory, 1,682 (owned) / 465 (standard)

Urinals: Satisfactory, 723 (owned) / 518 (standard)

Sinks: Satisfactory, 1,606 (owned) / 541 (standard)

**3.6.2** *Evidence that the site is not impinging on the human right to safe water and sanitation of communities through their operations, and that traditional access rights for indigenous and local communities are being respected, and that remedial actions are in place where this is not the case, and that these are effective.*

  
Yes

Comment

1. Current status of water supply and sewerage supply

- The Ministry of Environment surveys the current status of water supply in all regions of the country every year and discloses the information. Gumi City, where the Gumi site is located, has a water supply rate of 99.8% in 2021. (water supply rate in 2022 will be released in December 2023)

- The Ministry of Environment surveys the current status of sewerage supply in all regions of the country every year and discloses the information. Gumi City, where the Gumi site is located, has a public and private sewerage supply rate of 97.8% in 2021. (sewer supply rate in 2022 will be released in December 2023)




- As of 2021, Gumi City's water supply and sewerage penetration rates are 99.8% and 97.8%, respectively, providing excellent WASH-related public facilities and services to citizens.

Also, from the stakeholder survey, there was no negative comment from stakeholders about the influence of the Gumi site on WASH status within the catchment.

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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<b>3.6.3</b>	<p><i>Advanced Indicator</i> A list of actions taken to support the provision to stakeholders in the catchment of access to safe drinking water, adequate sanitation and hygiene awareness shall be identified.</p>	 Yes
Comment	<p>1. Measure list of supporting WASH services for stakeholders within the catchment Gumi site conducted the following activities to provide and to improve WASH facilities within the local community:</p> <p>(1) Support for drinking water for vulnerable groups in the catchment</p> <ul style="list-style-type: none"> <li>- In March 2023, in commemoration of World Environment Day, they collaborated with Gumi City Hall to provide 1,500 liters of drinking water (3,000 bottles of 500 mL water) to vulnerable groups in the catchment.</li> </ul> <p>(2) Maintenance of residential facilities and volunteer work for vulnerable groups</p> <ul style="list-style-type: none"> <li>- In order to improve WASH for vulnerable groups in the catchment, the Gumi site is carrying out volunteer activities such as regular inspection and cleaning of contaminated and damaged facilities due to long-term, and is carrying out activities to ensure WASH for stakeholders by repairing damaged facilities.</li> </ul> <p>(3) 200,000 drinks provided to the '25th World Scout Jamboree': Samsung Electronics provided 200,000 drinks through the Red Cross for the '25th World Scout Jamboree' held in Saemangeum, Buan-gun, Jeollabuk-do.</p>	
Score	5	
<b>3.6.4</b>	<p><i>Advanced Indicator:</i> In catchments where WASH has been identified as a shared water challenge, evidence of efforts taken with relevant public-sector agencies to share information and to advocate for change to address access to safe drinking water and sanitation shall be identified.</p>	 Yes
Comment	<p>1. Shared water resource issues</p> <ul style="list-style-type: none"> <li>- Through the first stakeholder survey, water resource issues such as water pollution (sewage water), risk of drought and water shortage, water supply contamination, destruction of aquatic ecosystem and decline in biodiversity, and WASH issues for vulnerable groups were shared by stakeholders.</li> <li>- WASH issues for vulnerable groups were selected by catchment stakeholders as catchment water issues.</li> </ul> <p>2. Efforts to solve the shared water issues</p> <p>The Gumi site disclosed shared water issues to catchment stakeholders, including local governments and public institutions, through the 3rd stakeholder survey. Moreover, the following activities were undertaken to resolve WASH-related issues among vulnerable groups.</p> <p>(1) Support for drinking water for vulnerable groups in the catchment</p> <ul style="list-style-type: none"> <li>- In March 2023, in commemoration of World Environment Day, they collaborated with Gumi City Hall to provide 1,500 liters of drinking water (3,000 bottles of 500 mL water) to vulnerable groups in the catchment.</li> </ul> <p>(2) Maintenance of residential facilities and volunteer work for vulnerable groups</p> <ul style="list-style-type: none"> <li>- In order to improve WASH for vulnerable groups in the catchment, the Gumi site is carrying out volunteer activities such as regular inspection and cleaning of contaminated and damaged facilities due to long-term, and is carrying out activities to ensure WASH for stakeholders by repairing damaged facilities.</li> </ul> <p>Because it is not easy for vulnerable (disabled and/or old) people to get good drinking water and maintain good conditions of toilets of the welfare centre, the Gumi site supports them.</p>	
Score	4	
<b>3.7</b>	<p><i>Implement plan to maintain or improve indirect water use within the catchment:</i></p>	
<b>3.7.1</b>	<p><i>Evidence that indirect water use targets set in the water stewardship plan, as applicable, have been met shall be quantified.</i></p>	 Yes

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Comment 1. Progress status of targets related to indirect water use of the water stewardship plan  
 - To manage indirect water use, they set 1 target (implementing engagement with partners at least twice) and 4 actions. As of September 2023, the average progress rate (%) of the 4 actions is 100%. Details are as follows.  
 [Implementing engagement with partners at least twice]  
 - Survey of participating companies in the water resources management improvement consortium for partners (May): 100%  
 - Consulting on water conservation for partners (June): 100%  
 - Survey on water usage of partners (June): 100%  
 - Congregation training (May, July, September): 100%

**3.7.2** *Evidence of engagement with suppliers and service providers, as well as, when applicable, actions they have taken in the catchment as a result of the site's engagement related to indirect water use, shall be identified.*

  
Yes

Comment 1. Water resources conservation education of ESG sub-committee of Hyupsung Association  
 - The G-EHS Center of Samsung Electronics implemented education about water resources conservation for Mutual Cooperation Center, cooperative companies of ESG Subcommittee within Hyupsung Association three times. The target cooperative companies are 28 in total including all partner companies in and out of the catchment of Gumi Site. The education purpose is to respond to water risks due to climate change and to enhance the capacity of water resources management.  
 - In May 2023, it implemented the first education about the ""Sharing trend of global water resources conservation"". The education includes increasing global companies' interest in water risk management, establishment and external announcement of the mid-term and the long-term goal for water resources of global leading companies, Samsung Electronics' promotion of water resources 100% reduction by 2030, etc.  
 - In July 2023, it implemented the second education on 'Introduction of AWS Certification.' The education includes leading water resources management as internally/externally differentiated strategies of global leading companies, necessarily improving management systems and advancing water resources management by promoting AWS Certification, promoting AWS Certification acquisition for the domestic three sites in the DX division, etc.  
 - In September 2023, the 3rd training session was conducted under the theme of 'Water Resource Reduction and Conservation Activities'. The training includes reviewing inflow/outflow and reuses through water balance analysis for each site, considering site conditions, reviewing water reuse technology and promoting investment, and conducting employee campaigns and collaborative communication with external stakeholders.

2. Operation of a partners water resource support council  
 - In March 2023, they surveyed three suppliers in the Gumi site about their willingness to participate in the water resource management improvement support program. As a result of the survey, several participants expressed their intention to participate in the program.  
 - The Gumi site operates a partner water resources support council with major partners to manage water resources and protect the water environment. In June 2023, Samsung Electronics' water conservation cases and wastewater reuse cases by partner companies were shared through a council meeting. In addition, the Gumi site announced a plan to identify joint tasks for partner companies' water resource management and planned to carry out activities together to establish and support common goals.

**3.7.3** *Advanced Indicator*  
*Actions taken to address water related risks and challenges related to indirect water use outside the catchment shall be documented and evaluated.*

  
Yes



# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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Comment

1. Evaluation and response of partner companies

- Samsung Electronics set its own RBA assessment standard and regularly checks management partners according to items. Water-related items are C2) pollution prevention and C7) water quality pollution. The assessment is classified as 'Conformance', 'Priority', 'Major', 'Minor', and 'N/A' according to achieving the standard. The standards of each item are as follows.
- C2) Pollution prevention and resource-saving: assessment of resources within the site, establishment of target for resource use reduction, related performance
- C7) Water pollution: regular measurement of sewage and wastewater discharge facilities, facility maintenance, management of operating daily, facility manager's completion of compulsory education
- Samsung Electronics conducts actual inspections on the spot to check partner companies' sites and to find necessary improvements. It gives partner companies the findings and demands them to correct them. Partner companies took measures for the relevant matters and then required Samsung Electronics to review. Samsung Electronics continues monitoring until partner companies solve the relevant problems.
- Samsung Electronics responds to indirect water-related risk by discovering partner companies' water-related potential risks and challenges through their assessment and response process.
- The target of the relevant process includes the Gumi Site and other companies different from the catchment.

2. Water resources conservation education of ESG sub-committee of Hyupsung Association

- The G-EHS Center of Samsung Electronics implemented education about water resources conservation for Mutual Cooperation Center, cooperative companies of ESG Subcommittee within Hyupsung Association three times. The target cooperative companies are 28 in total including all partner companies in and out of the catchment of Gumi Site. The education purpose is to respond to water risks due to climate change and to enhance the capacity of water resources management.
- In May 2023, it implemented the first education about the ""Sharing trend of global water resources conservation"". The education includes increasing global companies' interest in water risk management, establishment and external announcement of the mid-term and the long-term goal for water resources of global leading companies, Samsung Electronics' promotion of water resources 100% reduction by 2030, etc.
- In July 2023, it implemented the second education on 'Introduction of AWS Certification.' The education includes leading water resources management as internally/externally differentiated strategies of global leading companies, necessarily improving management systems and advancing water resources management by promoting AWS Certification, promoting AWS Certification acquisition for the domestic three sites in the DX division, etc.
- In September 2023, the 3rd training session was conducted under the theme of 'Water Resource Reduction and Conservation Activities'. The training includes reviewing inflow/outflow and reuses through water balance analysis for each site, considering site conditions, reviewing water reuse technology and promoting investment, and conducting employee campaigns and collaborative communication with external stakeholders.

Score 5

**3.8** *Implement plan to engage with and notify the owners of any shared water-related infrastructure of any concerns the site may have.*

**3.8.1** *Evidence of engagement, and the key messages relayed with confirmation of receipt, shall be identified.*

  
Yes

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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Comment	<p>1. Sharing risk response plan</p> <ul style="list-style-type: none"><li>- Through the first stakeholder survey, Gumi City, Korea Water Resources Corporation, etc. shared the results of the infrastructure risk assessment with the Gumi site. The Gumi site compiled the survey results to discover water-related risks and opportunities, and reflected response activities and cooperation activities for risks in the Gumi site's WS Plan.</li><li>- Gumi site shared the site's AWS plan with K-water Gumi region branch through the 2nd survey.</li></ul> <p>2. Engagement activities conducted with water-related infrastructure facilities</p> <p>[Sharing response measures and facility management plans when issues arise during a visit to the Gumi Metropolitan Water Purification Plant]</p> <ul style="list-style-type: none"><li>- To respond smoothly when major water-related issues arise in the Gumi region where the Gumi site is located, during a visit to the Gumi Metropolitan Water Purification Plant, they benchmarked the water resource management methods being implemented at the Gumi Metropolitan Water Purification Plant and shared response measures in the event of drought, water contamination, and facility failure. They will continue to strengthen water stewardship by promoting continuous communication and joint activities.</li></ul> <p>[Visit to Gumi City Sewage Treatment Plant and Risk Sharing].</p> <ul style="list-style-type: none"><li>- They visited the Gumi City Sewage Treatment Plant operated by the Gumi Facilities Corporation to observe the primary settling tank, aeration tank, and final outlet, and shared water-related risks and preparedness plans. In the future, they plan to establish governance through continuous engagement related to water quality management of the influent and effluent of the sewage treatment plant.</li></ul>
<b>3.9</b>	<p><i>Implement actions to achieve best practice towards AWS outcomes: continually improve towards achieving sectoral best practice having a local/catchment, regional, or national relevance.</i></p>
<b>3.9.1</b>	<p><i>Actions towards achieving best practice, related to water governance, as applicable, shall be implemented.</i></p>



Yes



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Comment	<p>Gumi site's Water Governance best practice Goal and implementation activities            Goal: Expanding water-related technical assistance to all suppliers (inside of the catchment and Primary input suppliers outside of the catchment) by 2030            Implementation activities:            - Appointing a person in charge of AWS activities and conducting regular meetings            - Operating the Partner Water Resource Support Council            - Chairman of the Gyeongbuk-Daegu Region of the Green Company Council</p> <p>These activities are planned in the WSP and implemented.</p> <p>1. Establishment of the internal AWS TF team            - Gumi Site set acquisition of AWS Certification as a goal to enhance capability of water resources management and formed AWS Task Force Team to progress effectively it. The AWS TF Team temporarily transferred employees from EHS group, Infra group, EHS/Purchasing, General, Gwangju branch to support for internal water management and external cooperative activities and external consultants also participated for higher expertise. AWS TF Team consistently implements activities such as data collection, establishment and implementation of AWS Plan, communication with the external and discovery of cooperative opportunities, performance assessment, disclosure, etc. according to guidance. The activities of AWS TF Team in 2022 and 2023 are as follows.            - Implementation of questionnaire survey on stakeholders in the catchment three times            - Benchmarking of water-related best practices of other companies in the same sector or in the catchment such as TSMC, Career and Apple once a year            - Sharing water-related best practices with Suwon Site and Gwangju Site once a year            - Sharing of the plan achievement status and the future schedule with the headquarters, Suwon Site and Gwangju Site once a week            - Implementation of an AWS meeting with the headquarters, Suwon Site and Gwangju Site once a quarter</p> <p>2. Operating Partner Water Resource Support Council            - The Gumi site operates a Partner Water Resource Support Council with major suppliers to manage water resources and protect the water environment. In June 2023, the council met to share examples of water reduction at Samsung Electronics' Gumi site and other sites, as well as examples of water resource improvement by suppliers. In addition, the council announced a plan to identify joint tasks for water resource management of suppliers at the Gumi site, and planned to carry out activities to establish common goals and support the water support council.</p> <p>3. Green Company council            - The Gyeongbuk/Daegu Green Company Council and the Daegu environmental office hold practical meetings and workshops every year to discuss environmental laws and policy trends, share legal guidance, inspection directions and enforcement cases and share environment-related information and best practices among member companies. Moreover, they are discussing difficulties and suggestions related to green companies through meetings between Green Company council member companies and the Daegu Regional Environmental Office.            - At the practical meeting held in 2022, cases of the latest laws and guidance inspection were shared, and a meeting was held between green companies and the Daegu environmental office to discuss ways to improve the ESG competitiveness of green companies and reduce the burden on companies. And in collaboration with 9 companies, they carried out stream clean-up activities in the Hancheon area of Gumi-si.            - As a head of The Gyeongbuk/Daegu Green Company in 2023, they are participating in workshops and working-level meetings, and are sharing Samsung Electronics' water resource management and AWS certification achievements.</p>
<b>3.9.2</b>	<p><i>Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.</i></p>




Yes

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

Audit Number: AO-000750

Comment	<p>Gumi site's Water Balance best practice Goal and implementation activities Goal: Achieving 100% of water reclamation by 2030 Implementation activities: - 100% Water replenishment project with Korea Rural Community Corporation to 2023 - Installing sanitary and water-saving facilities at the site - Recovering and reusing steam condensate - Reusing gray water in Hanmaeum Plaza(Building)</p> <p>These activities are planned in the WSP and implemented.</p> <p>1. Reuse of gray water and condensate water at sites By Jan to Sep 2023, Gumi site will have saved KRW 41,531,874 by reducing water usage by about 10,657 tons through the utilization of reused water (gray water) and KRW 107,995,807 by reducing water usage by about 44,116 tons through the recycling of boiler condensate. - In particular, through the installation of additional graywater reuse facilities, which are supplied as flushing water for in-house toilets, the company expects to save KRW 302 million annually by increasing the water reuse rate to 71% from the current 16%, while benefiting from additional reductions in graywater reuse and reducing water costs. Currently, the gray water reuse facility is only operated in G and Jungdamwon buildings, but it will be expanded to UT 1 and 2, Building A to F, Vision Building, Hanmaeum Plaza, and 2 cafeterias through additional installations.</p> <p>2. Installation of sanitary and water-saving facilities at the site - The Gumi site conducted a water efficiency diagnosis and replaced urinals and faucets with water-saving equipment to reduce water usage. As a result of the pilot operation in 45 locations in Building B, a savings effect of 102 tons/month (24% compared to the previous month) was confirmed, and application to the entire Gumi site is being promoted. Accordingly, it is expected that approximately 28,398 tons of water will be saved annually.</p>	
<b>3.9.3</b>	<p><i>Actions towards achieving best practice, related to targets in terms of water quality shall be implemented.</i></p>	<p> Yes</p>

Audit Number: AO-000750

**Comment** Gumi site's Water Quality best practice Goal and implementation activities  
 Goal: Managing water quality at 30% above the legal standard and Reconsidering the perception of stakeholders by 2025  
 Implementation activities:  
 - Monthly management and risk analysis of water contaminants within 50% of legal standards  
 - Using recycled materials (waste fishing nets) in mobile phones : Except S23

These activities are planned in the WSP and implemented.

1. Compliance with in-house water quality standards that are stricter than legal standards  
 - In order to reduce negative water impacts on operations, the Gumi site sets and complies with in-house water quality standards that are stricter than legal standards. Moreover, although it is not a legal obligation, we autonomously install and operate TMS to monitor compliance with in-house water quality standards in real time.  
 - In order to comply with the in-house standard concentration, 50% of the legal standard concentration, they carry out repair and investment activities for underperforming or outdated facilities through regular inspection.  
 - The legal standards and in-house water quality standards for the main management items of wastewater treatment plant's discharge water are as follows.  
 1) TOC : (legal standard) 75mg/L, (in-house standard) 37.5mg/L  
 2) BOD : (legal standard) 120mg/L, (in-house standard) 60mg/L  
 3) SS : (legal standard) 120mg/L, (in-house standard) 60mg/L  
 4) T-N : (legal standard) 60mg/L, (in-house standard) 30mg/L  
 5) T-P : (legal standard) 8mg/L, (in-house standard) 4mg/L  
 - The average discharge concentration for each major item in 2022 (Campus 1 | Campus 2) is as follows, and all of them achieved below the in-house water quality standards.  
 1) TOC : (6.21 mg/L | 3.33 mg/L)  
 2) BOD : (1.38 mg/L | 1.36 mg/L)  
 3) SS : (5.83 mg/L | 0.60 mg/L)  
 4) T-N : (7.73 mg/L | 5.54 mg/L)  
 5) T-P : (0.01 mg/L | 0.08 mg/L)

2. Developing waste fishing net recycling material with Royal DSM and Hanwha compound  
 - In 2022, they collaborated with global science company Royal DSM and polymer mixing company Hanwha Compounds to develop waste fishing net recycling materials. Abandoned fishing nets are the main culprit in causing suffering to aquatic life and destroying the aquatic ecosystem. First, Royal DSM works with local fishermen to collect discarded polyamide fishing nets('22: 160 tons/ ~ Oct. '23: 133 tons). Collected fishing nets are separated and undergo cutting/cleaning/extrusion operations. Samsung Electronics collaborates with Hanwha Compound to mass-produce 20% of the collected fishing net into pellets using its own mixing technology. The high-performance polyamide resin created as a result of collaboration is applied to various Samsung products, with 32 tons in 2022 and 26.6 tons by October 2023, as shown below.  
 Mobile : A34, A54, Tab S8, Tab S9 ['22: 15.6 tons/ '23: 10.6 tons]  
 Mobile : S22, S3U, Fold4, Flip4, Fold5, Flip5/ NPC : GB2 Pro, GB3 Pro, GB3 Ultra, GB3 Go 360, Chromebook2 360 ['22: 9.6 tons/ '23: 12.4 tons]  
 NPC : GB2, GB3 360 ['22: 6.8 tons/ '23: 3.6 tons]

The production of recycled materials not only contributes to the aquatic ecosystem by collecting discarded fishing nets, but also reduces carbon dioxide by about 25% compared to using regular materials.  
 - Moreover, the relevant contents are published on Samsung Electronics' newsroom website. (<https://news.samsung.com/kr/%ea%b0%a4%eb%9f%ad%ec%8b%9c-%ec%96%b8%ed%8c%a9-%ec%8b%a0%ec%a0%9c%ed%92%88%ec%97%90-%ed%8f%90%ec%96%b4%eb%a7%9d-%eb%93%b1-%ec%9e%ac%ed%99%9c%ec%9a%a9-%ec%86%8c%ec%9e%ac-%ec%a0%81%ec%9a%a9-%ed%99%95>)

**3.9.4** *Actions towards achieving best practice, related to targets in terms of the site's maintenance of Important Water-Related Areas shall be implemented.*



# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)

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Comment Gumi site's IWRA best practice Goal and implementation activities  
Goal: Implementing the IWRA (Igye Stream, Gwangam Stream, and Haepyeong Wetland) Ecological Environment Improvement Project by 2030  
Implementation activities:  
- Igye Stream purification activities and ecosystem conservation activities

These activities are planned in the WSP and implemented.

1. Igye Stream clean-up activities  
- Samsung Electronics' Gumi site conducts Igye Stream clean-up activities and mud ball throwing activities every May. Additionally, in commemoration of Environment Day every year, they carry out Stream clean-up activities with stakeholders. In 2023, various activities were carried out, such as cleaning up the Igye Stream near the site, picking up trash, conducting a water resource protection campaign, and throwing EM mud balls.  
- It is known that one EM mud ball has a water quality improvement effect of about 10 to 20 m<sup>2</sup>. It is estimated that 50 EM mud balls were thrown into Igye Stream through this activity, and therefore, the water quality of Igye Stream was improved by about 10 \* 50 = 500 m<sup>2</sup>(10 m<sup>2</sup>/ball \* 50 balls) to 1,000 m<sup>2</sup>(20 m<sup>2</sup>/ball \* 50 balls).  
(URL related to the EM Mudball Effect (Daegu Council for Sustainable Development):  
<https://blog.naver.com/uni-dgagenda21/223230553112>)  
- They will continue to manage the IWRA at the site through annual stream cleanup activities and EM mud ball throwing activities.

**3.9.5** *Actions towards achieving best practice related to targets in terms of WASH shall be implemented.* ✔  
Yes

Comment Gumi site's WASH best practice Goal and implementation activities  
Goal: Providing 10,000 liters of drinking water to vulnerable people in the catchment area by 2025  
Implementation activities:  
- Providing drinking water to vulnerable groups in cooperation with Gumi City (toilet maintenance)

These activities are planned in the WSP and implemented.

1. Drinking water support for vulnerable groups in the catchment  
- In March 2023, in commemoration of World Water Day, they collaborated with Gumi City Hall to provide 1,500 liters of drinking water (3,000 bottles of 500 mL water) to vulnerable groups in the catchment.

**3.9.6** *Advanced Indicator Achievement of identified best practice related to targets in terms of good water governance shall be quantified.* ✔  
Yes

Comment Achievement of identified best practice related to targets in terms of good water governance is quantified in the WSP. In October 2023, achievement is quantified as 20%.

Score 8

**3.9.7** *Advanced Indicator Achievement of identified best practice related to targets in terms of sustainable water balance shall be quantified.* ✔  
Yes

Comment Achievement of identified best practice related to targets in terms of sustainable water balance is quantified. In October 2023, achievement is quantified as 0%.

Score 8




**3.9.8** *Advanced Indicator Achievement of identified best practices related to targets in terms of water quality shall be quantified* ✔  
Yes

Comment Achievement of identified best practices related to targets in terms of water quality is quantified. In October 2023, achievement is quantified as 18%.

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Score	8	
<b>3.9.9</b>	<i>Advanced Indicator</i> <i>Achievement of identified best practices related to targets in terms of the site's maintenance of Important Water-Related Areas have been implemented.</i>	 Yes
Comment	Achievement of identified best practices related to targets in terms of the site's maintenance of Important Water-Related Areas is quantified. In October 2023, achievement is quantified as 20%.	
Score	8	
<b>3.9.10</b>	<i>Advanced Indicator</i> <i>Achievement of identified best practice related to targets in terms of WASH shall be quantified.</i>	 Yes
Comment	Achievement of identified best practice related to targets in terms of WASH is quantified. In October 2023, achievement is quantified as 15%.	
Score	4	
<b>3.9.11</b>	<i>Advanced Indicator</i> <i>A list of efforts to spread best practices shall be identified.</i>	 No

# CERTIFICATION REPORT

## Alliance for Water Stewardship (AWS)


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Comment

1. 3rd Stakeholder survey
  - The Gumi site evaluated its performance in implementing activities within the water stewardship plan. AWS Outcomes evaluation includes the site's contribution to achieving water stewardship outcomes, value creation, etc. by activity performance.
  - The activities evaluated included water governance, water quality, water balance, IWRA, and WASH improvement activities that Gumi Site selected as best practices.
  - In the 3rd survey conducted on stakeholders such as executives and employees, government institutions, public institutions, partners, civic groups, NGOs, and nearby companies, they were able to share AWS Outcomes evaluation and spread best practices.
  
2. Disclosing in sustainability report
  - Samsung Electronics discloses its plans and performance related to water resource protection, including the best practices of the Gumi site, in the company-wide sustainability report which is published annually.

Excellent water contaminant management: Discharging water by applying their own standards that are stricter than legal standards
  
3. Disclosing water resource management performance documents
  - Samsung Electronics discloses water resource management performance documents on its website (<https://www.samsung.com/sec/sustainability/digital-library/policy-document>). They are disclosing the performance and contribution of each site in Suwon, Gumi, and Gwangju in 5 outcome areas (Water governance, Water balance, Water quality, IWRA, WASH).
  - Best practices from the Gumi site are included in the performance document.
  
4. Sharing performance through the smart city website
  - Samsung Electronics' Gumi site posts water management activities whenever it is carried out and discloses it to internal and external stakeholders through the Smart City website (<https://www.samsungsmartcity.com/>). They are disclosing the water management performance of the Gumi site by publishing posts on various water management activities (Environment Day event, Water Day event, etc.), alongside the AWS certification declaration.
  
5. Holding a meeting with environmental managers in the Gumi region
  - The Gumi site participates in a meeting of environmental managers in the Gumi region which is held four times a year (February/April/June/October) for the purpose of understanding legal trends and improving management capabilities through exchanges with environmental workers from nearby companies. Participating companies include Samsung Electronics, SK Siltron, LG Electronics, LG Display, LG Innotek, LG BCM, Toray BSF, Toray Advanced Materials, LS Cable & System, and POSCO Chemical, and the following agenda items were discussed at the meeting.
    - wastewater: Wastewater reuse, discharge water management, discharge concentration management, etc.
    - water: Water reuse, gray water, conservation examples, etc.
    - pure water: Pretreatment, pure water, ultrapure water, technology application examples, etc.
    - AWS-related activities and performance at Samsung Electronics' Gumi site

Although there are a lot of activities to disclose Water Stewardship information, the site's Best Practices were just identified so they haven't been disclosed yet.

**3.9.12** *Advanced Indicator*  Yes  
*A list of collective action efforts, including the organizations involved, positions of responsible persons of other entities involved, and a description of the role played by the site shall be identified.*

# CERTIFICATION REPORT


## Alliance for Water Stewardship (AWS)

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Comment 1. List of cooperative activities  
A list of collaborative activities was created, including the participating organizations, the position of the manager of the participating organizations, and the role of the Gumi site. The Gumi site's role for each cooperative activity is as follows.

- Drinking water support project for vulnerable groups: The Gumi site provided drinking water support (500 ml \* 3,000 bottles) to the Korea Transportation Disabled Association through the Welfare Policy Department of Gumi City Hall.
- Supplier Water Resources Support Council: Through the council meeting, they shared with their suppliers five cases of water reduction at Samsung Electronics' Gumi site and five cases at other companies' sites, and confirmed water quality permits (documents), wastewater treatment plants, and on-site water quality measurement results.
- Water replenishment project: They are carrying out a water resource replenishment project in cooperation with the Korea Rural Community Corporation. Samsung Electronics is investing in the cost of a water resource replenishment project, and the replenishment target is water usage at Samsung Electronics sites, including Gumi.
- Development of a mobile phone made of waste fishing net recycled material: Samsung Electronics collaborated with Hanwha Compound to mass-produce waste fishing net recycled material into pellets using its own mixing technology, and the high-performance polyamide resin created as a result of the collaboration was applied to various Samsung products.

Score 14

**3.9.13** *Advanced Indicator*   
Yes  
*Evidence of the quantified improvement that has resulted from the collective action relative to a site-selected baseline date shall be identified and evidence from an appropriate range of stakeholders linked to the collective action (including both those implementing the action and those affected by the action) that the site is materially and positively contributing to the achievement of the collective action shall be identified.*



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- Comment
- 1. AWS Outcomes evaluation
    - The Gumi site conducted an evaluation of its water stewardship performance. The evaluation target includes all cooperative activities in 3.9.12, and the evaluation contents include shared water resource issues related to each activity, contribution to achieving water stewardship outcomes, and value creation.
  - 2. Stakeholder survey
    - The Gumi business site conducted a total of 3 stakeholder surveys to manage IWRA at the site and catchment. The subjects of the survey are stakeholders in the catchment, including executives and employees, government institutions, public institutions, partners, civic groups, NGOs, and nearby companies.
    - The 3rd survey was conducted for the purpose of identifying the adequacy of the progress made according to the plan, and as a result of the survey, it was confirmed that the water resources-related activities being carried out at the Gumi site were appropriate.
  - 3. Stakeholder Feedback
    - The Gumi site collected feedback from relevant stakeholders on the following three activities. Stakeholders involved in each of the activities evaluated the cases positively.
      - (1) Providing drinking water to the vulnerable through Gumi-si
      - (2) Development of smart phones made from recycled fishing net material
      - (3) 100% Water replenishment project with Korea Rural Community Corporation to 2023

Although the "site-selected baseline date" is not clearly identified, those listed collective actions were conducted in 2022 and 2023, and quantified improvements are identified. For some collective actions, positive comments from involved stakeholders were gained.




- (1) Providing drinking water to the vulnerable through Gumi-si - No clear comment from Gumi-si was presented. The question of the stakeholder survey questionnaire was "Do you think the '23 WASH activities of Samsung Electronics' Gumi operations were effective and contributed to stakeholders and communities?" and Yes or No answers. The evidence is weak to say that stakeholders agree that the site is materially and positively contributing to the achievement of the collective action.
- (2) Development of smart phones made from recycled fishing net material - Positive comments from Hanwha Compound and DSM
- (3) 100% Water replenishment project with Korea Rural Community Corporation to 2023 - Positive comments from Korea Rural Community Corporation

Score: 3+2 (2 actions and feedback) +2 (Water balance and Water quality) = 7

Score 7



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4 STEP 4: EVALUATE - Evaluate the site's performance.	
<b>4.1</b>	<i>Evaluate the site's performance in light of its actions and targets from its water stewardship plan and demonstrate its contribution to achieving water stewardship outcomes.</i>
<b>4.1.1</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 80%;"> <p><i>Performance against targets in the site's water stewardship plan and the contribution to achieving water stewardship outcomes shall be evaluated.</i></p> <p>Comment</p> <p>1. Establishing water stewardship plan - The Gumi site established 19 targets to manage AWS's 5 major areas: Governance, Water Balance, Water Quality, IWRA, and WASH and Metrics were set to evaluate the achievement status of each target. In addition, they set detailed actions to achieve the target and evaluate the progress rate (%) for each action every month.</p> <p>2. Water stewardship plan target achievement rate - To manage governance, they set seven targets (securing resources to promote AWS activities, disclosing 100% of water-related stakeholder requirements, conducting more than 7 external stakeholder engagements, conducting more than 2 engagements with suppliers, conducting employee water conservation awareness activities and water treatment training more than 1 time per year, sustainability management activities, and conducting internal IWRA emergency drills more than 2 times) and 24 actions. As of October 2023, 4 governance targets have been achieved, and the average progress rate (%) of 24 actions is 76.0%. - To manage water balance, they have set 3 targets (Identifying the amount of water reclamation and setting targets, 2% Reduction in water usage, and Expanding gray water supplies) and 9 actions. As of October 2023, the average progress rate (%) of the 9 Actions is 80.9%. - To manage water quality, they have set 4 targets (100% compliance with water-related legal regulations, zero legal penalties, proper maintenance of water supply and use facilities (0 incidents of water supply interruption), development of recycled materials for waste fishing nets), and 27 actions. As of October 2023, the average progress rate (%) of the 27 Actions is 77.8%. - To manage IWRA, they have set 3 targets (100% compliance with internal IWRA tap water quality standards, carrying out external IWRA maintenance and improvement activities at least once a quarter, and carrying out external IWRA ecological restoration activities at least 3 times) and 11 actions. As of September 2023, the average progress rate (%) of the 11 Actions is 54.5%. - To manage WASH, they have set 2 targets (implementing two or more WASH projects in the catchment, improving WASH level at site (making employee VOC zero) and 6 actions. As of September 2023, the average progress rate (%) of the 6 Actions is 66.7%.</p> </div> <div style="width: 15%; text-align: right;"> <p> Yes</p> </div> </div>
<b>4.1.2</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 80%;"> <p><i>Value creation resulting from the water stewardship plan shall be evaluated.</i></p> <p>Comment</p> <p>1. Evaluation of value created through WS Plan implementation - They implemented the WS Plan to achieve goals in five major AWS areas (Water governance, Water balance, Water quality, IWRA, and WASH). The social, environmental, financial, and cultural values created by implementing the WS Plan were evaluated by classifying them into the Gumi site and catchment/stakeholder aspects. It was not clear for some performance from which actions from the WSP the performance came.</p> </div> <div style="width: 15%; text-align: right;"> <p> Obs.</p> </div> </div>
<b>4.1.3</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 80%;"> <p><i>The shared value benefits in the catchment shall be identified and where applicable, quantified.</i></p> </div> <div style="width: 15%; text-align: right;"> <p> Yes</p> </div> </div>

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Comment

1. Quantifying the benefits gained by the catchment and stakeholders

- The reduction in industrial water use at the Gumi site through the use of recycled water (gray water) from January to Oct 2023 is 11,433 tons. As a result of applying the daily water usage per person of 0.277 tons/person·day and converting it to the number of people who can use water per day, it was confirmed that there was a social benefit in guaranteeing the basic water rights of approximately 41,274 nearby residents.
- From January to Oct 2023, the reduction in industrial water use at the Gumi site through recycling boiler condensate is 48,386 tons. As a result of applying the daily water usage per person of 0.277 tons/person·day and converting it to the number of people who can use water per day, it was confirmed that there was a social benefit in guaranteeing the basic water rights of approximately 174,679 nearby residents.
- From January to May 2023, the reduction in industrial water use at the Gumi site through water-saving improvements in toilets is 28,398 tons. As the result of applying the daily water usage per person of 0.277 tons/person·day and converting it to the number of people who can use water per day, it was confirmed that there was a social benefit in guaranteeing the basic water rights of approximately 102,500 nearby residents.
- The amount of water resources expected to be returned in the first half of 2023 by building agricultural water supply infrastructure in rural areas with insufficient water resources is 109,317 tons. When converted to cost by applying the standard water supply price of 1,072 ~ 1,478 KRW/ton to the expected water resource reduction amount of 109,317 tons, it was confirmed that rural residents received a financial benefit of approximately KRW 203.18 million.

**4.1.4** *Advanced Indicator*   
Yes

*A governance or executive-level review, including discussion of shared water challenges, water risks, and opportunities, and any water-related cost savings or benefits realized, and any relevant incidents shall be identified.*

Comment


1. Senior management review

- Water-related work at all of Samsung Electronics' domestic and overseas sites, including the Gumi site, is managed by the Global EHS Center. Water-related work at the Gumi site is managed by the Gumi EHS team.
- Shared water resource issues in the Nakdong River catchment where the Gumi site is located, Samsung Electronics' activities to resolve water resource issues, water-related risks and opportunities, water-related cost reductions or benefits, water-related accidents have been reported to Kim Hyun-Do, Gumi EHS Team Manager. In addition, they compiled the reports from the Suwon, Gumi, and Gwangju sites to the center managers at each site and reported them to Kim Kyeong-jin, CSO of the Global EHS Center. The frequency of CSO reporting is at least monthly.

A sample of meeting minutes was checked. A meeting on 4.5.2023, participated by CSO and managers of Suwon, Gumi, and Gwangju sites.

Score 3

**4.2** *Evaluate the impacts of water-related emergency incidents (including extreme events), if any occurred, and determine the effectiveness of corrective and preventative measures.*

**4.2.1** *A written annual review and (where appropriate) root-cause analysis of the year's emergency incident(s) shall be prepared and the site's response to the incident(s) shall be evaluated and proposed preventative and corrective actions and mitigations against future incidents shall be identified.*   
Yes

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- Comment
- 1. Emergency accident status
    - The Gumi site has no history of emergency accidents occurring in 2022 and the first half of 2023, and information on emergency accident history is posted annually on the environmental information system website (<https://www.env-info.kr/member/open/companyTotalInfoSearch.do>) every year.
  - 2. Preparation for Emergency Accidents
    - Gumi site also has a water-related emergency accident response scenario that specifies the person in charge and a 'Environmental Safety Incident Reporting System of DX division' that specifies who to report to.
  - 3. Checklist of laws and regulations related to serious civic accidents and prevention activities
    - The Gumi site identifies whether it is fulfilling its obligations to comply with water-related regulations through a checklist of major civil disaster-related laws that include the provision status of the major civil disaster-related laws applicable to the site, whether they are applicable to the site, and whether they are implemented. Relevant laws applicable to the Gumi site include the Drinking Water Management Act, the Chemical Substances Control Act, the Water Supply And Waterworks Installation Act, and the Water Environment Conservation Act.
    - The Gumi site carries out work such as site inspection, improvement, training, and operation of a council to prevent disasters and eradicate violations of safety and health-related laws. Accordingly, as part of civic disaster prevention activities in the field of water quality management, monthly regular inspections of 5 stormwater blocking facilities (once a month), weekly regular inspections of 13 TMS and measuring instruments (once a week), and monthly water quality analysis of 8 items of inflow and discharge water (once a month). They are conducting quarterly water quality analysis (once/quarter) on 7 items of gray water.
  - 4. Acquiring ISO 22301 certification
    - In 2021, the Gumi site acquired ISO 22301 certification, and its Business Continuity Management System (BCM), which comprehensively manages organizational resilience and effective response capabilities to various natural disasters, including water-related emergencies, was recognized.

**4.3** *Evaluate stakeholders' consultation feedback regarding the site's water stewardship performance, including the effectiveness of the site's engagement process.*

**4.3.1** *Consultation efforts with stakeholders on the site's water stewardship performance shall be identified.*



Yes

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- Comment
1. Communication with stakeholders on water management performance
    - They prepared an AWS Outcomes evaluation including water management performance details for stakeholders such as executives and employees, government institutions, public institutions, partners, NGOs, and nearby companies. AWS Outcomes evaluation includes Performance against target, Contribution to achieving water stewardship outcomes, and Value creation. They disclosed it to stakeholders and conducted the 3rd survey asking whether the site's water resource management (stewardship) performance was effective and what areas needed improvement. All stakeholders who participated in the third survey responded that the Gumi site's WS Plan would be effective in catchment management (stewardship).
  
  2. Communication with administrative institutions and residents near the site regarding water management performance and plans
    - In July 2023, the Gumi site held an information session to share AWS-related water management achievements and action plans for 30 stakeholders, including public officials in Jinmi-dong, Gumi City Hall, and bank managers in nearby areas. The Gumi site understands that communication with catchment stakeholders is important for achieving higher levels of water management performance. Through this briefing session, they had time to deliver water-related achievements and plans to the relevant stakeholders and collect their opinions.
  
  3. Meetings with Environmental Managers in the Gumi Region
    - In 2023, Samsung Electronics' Gumi site operated four meetings to exchange information among environmental managers in the Gumi region to improve their ability to identify and manage legal and regulatory trends. In particular, the meeting held in June discussed water-related issues (wastewater, water, and pure water), and the meeting held in October promoted AWS certification and disclosed the water-related performance of the Gumi site.
  
  4. Sharing water treatment methods through a visit to the Gumi branch of K-Water
    - Samsung Electronics visited the Gumi branch of the K-Water, which is in charge of water purification treatment, toured the Haepyeong water withdrawal plant, chemical treatment tank, and advanced treatment tank, and shared measures to respond to major water-related issues and facility management methods. Through this, they shared Samsung Electronics' water resources-related activities and excellent management technology, as well as the Gumi site's AWS performance in 2022 and AWS plans for 2023.

**4.3.2** *Advanced Indicator*  
*The site's efforts to address shared water challenges shall be evaluated by stakeholders. This shall include stakeholder reviewing of the site's efforts across all five outcome areas, and their suggestions for continual improvement.*

  
 No

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- Comment
1. Stakeholder evaluation of efforts made by sites to resolve shared water resource issues
    - Through the first stakeholder survey, a total of 5 water resource issues were shared by stakeholders such as risk of drought and water shortage, water contamination, water contamination in water supply, destruction of the aquatic ecosystem and decline in biodiversity, and WASH issues for vulnerable populations.
    - In order to solve each shared water resource problem, the efforts made by Samsung Electronics' Gumi site are disclosed to stakeholders such as executives and employees, government institutions, public institutions, partners, NGOs, and nearby companies, and conducted the third survey asking if the efforts are effective and contributed to stakeholders or the local community. All stakeholders who participated in the third survey responded that the Gumi site's efforts were effective in resolving shared water resource problems, resulting in positive evaluations from stakeholders.
  2. Stakeholder review and recommendations for 5 outcome areas
    - Samsung Electronics' Gumi site collects stakeholders' opinions on 5 outcome areas through the third stakeholder surveys.
    - They prepared an AWS Outcomes evaluation including water management performance details for stakeholders such as executives and employees, government institutions, public institutions, partners, NGOs, and nearby companies. AWS Outcomes evaluation includes Performance against target, Contribution to achieving water stewardship outcomes, Value creation. They disclosed it to stakeholders and conducted the third survey asking whether the site's water resource management (stewardship) performance was effective and what areas needed improvement.

However, the survey was conducted by questionnaire and answer options were only satisfied or not. Therefore it cannot be said that stakeholders evaluated the site's efforts to address shared water challenges and were able to suggest improvements.

**4.4** *Evaluate and update the site's water stewardship plan, incorporating the information obtained from the evaluation process in the context of continual improvement.*

**4.4.1** *The site's water stewardship plan shall be modified and adapted to incorporate any relevant information and lessons learned from the evaluations in this step and these changes shall be identified.*

 Obs.

- Comment
1. AWS plan updates
    - The Gumi site has been reviewing and updating the AWS plan as needed in 2023. The AWS plan was revised in July, September, and October, and the history is kept through an Excel sheet.

Although the WSP is reviewed and revised more than once a year, it was not clear if the revised WSP incorporated any relevant information and lessons learned from the evaluations in this step. Observation.

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5 STEP 5: COMMUNICATE & DISCLOSE - Communicate about water stewardship and disclose the site's stewardship efforts	
5.1	<i>Disclose water-related internal governance of the site's management, including the positions of those accountable for legal compliance with water-related local laws and regulations.</i>
5.1.1	<i>The site's water-related internal governance, including positions of those accountable for compliance with water-related laws and regulations shall be disclosed.</i>
Comment	<p>The sites have disclosed their water-related internal governance, including names and responsibilities in their homepage (<a href="https://www.samsung.com/sec/sustainability/digital-library/policy-document/">https://www.samsung.com/sec/sustainability/digital-library/policy-document/</a>). But those accountable for compliance with water-related laws and regulations are not clearly identified in the same disclosure materials.</p> <p>The sites claims that the person in charge of compliance with water quality regulations and each water resource work, their duties, name, position, and contact information of the person were posted on the Samsung Smart City website (<a href="https://www.samsungsmartcity.com/2646?category=131557">https://www.samsungsmartcity.com/2646?category=131557</a>), however, the page is not easy to find from the top page.</p>
5.2	<i>Communicate the water stewardship plan with relevant stakeholders.</i>
5.2.1	<i>The water stewardship plan, including how the water stewardship plan contributes to AWS Standard outcomes, shall be communicated to relevant stakeholders.</i>
Comment	<p>The site collected questionnaires containing a summary of Samsung's activities and performance and connection with AWS outcomes from stakeholders through email and face-to-face.</p> <p>The sites provided the contents of a questionnaire distributed to stakeholders during the audit as evidence.</p>
5.3	<i>Disclose annual site water stewardship summary, including: the relevant information about the site's annual water stewardship performance and results against the site's targets.</i>
5.3.1	<i>A summary of the site's water stewardship performance, including quantified performance against targets, shall be disclosed annually at a minimum.</i>
Comment	<p>Samsung DX Division's sustainability report contains 2030 goals and brief water reduction amounts, and the AWS outcomes document published on the Samsung website contains brief performance information of Gumi sites, but it lacks quantitative performance information (Water reduction, securing basic water rights according to the amount saved, etc.) and lacks explanation of performance according to targets.</p> <p>Sustainability report  <a href="https://www.samsung.com/global/sustainability/digital-library/sustainability-report/">https://www.samsung.com/global/sustainability/digital-library/sustainability-report/</a></p> <p>AWS outcomes of Gumi site  <a href="https://www.samsung.com/sec/sustainability/policy-file/AYIzAYv6xTEALYNW/AWS_outcome_s_announcement_2023_kr.pdf">https://www.samsung.com/sec/sustainability/policy-file/AYIzAYv6xTEALYNW/AWS_outcome_s_announcement_2023_kr.pdf</a></p> <p style="text-align: right;"><b>Finding No: TNR-008324</b></p>
5.3.2	<i>Advanced Indicator The site's efforts to implement the AWS Standard shall be disclosed in the organization's annual report.</i>



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Comment	<p>Samsung DX division's sustainability report (every June) contains the case of the Hwaseong site that has been certified by AWS, but it does not mention what efforts are being made to obtain AWS certification for Gumi site or what other business sites are preparing for certification.</p> <p>Sustainability report  <a href="https://www.samsung.com/global/sustainability/digital-library/sustainability-report/">https://www.samsung.com/global/sustainability/digital-library/sustainability-report/</a></p>	
<b>5.3.3</b>	<p><i>Advanced Indicator</i>  <i>Benefits to the site and stakeholders from implementation of the AWS Standard shall be quantified in the organization's annual report.</i></p>	 No
Comment	<p>Samsung DX division's sustainability report (every June) contains the case of the Hwaseong site that has been certified by AWS, but it does not mention quantified benefits to the site and stakeholders from the implementation of the AWS standard.</p> <p>Sustainability report  <a href="https://www.samsung.com/global/sustainability/digital-library/sustainability-report/">https://www.samsung.com/global/sustainability/digital-library/sustainability-report/</a></p>	
<b>5.4</b>	<p><i>Disclose efforts to collectively address shared water challenges, including: associated efforts to address the challenges; engagement with stakeholders; and co-ordination with public-sector agencies.</i></p>	
<b>5.4.1</b>	<p><i>The site's shared water-related challenges and efforts made to address these challenges shall be disclosed.</i></p>	 Obs.
Comment	<p>The site notified stakeholders of the identified shared water challenge through the third survey and introduced Samsung's response and activities accordingly. The shared water challenges were disclosed in the AWS outcomes document posted on the Samsung website. The shared water challenges identified through the public hearing for residents and Samsung's activities and achievements were briefly introduced, and the related PPT file was confirmed during the audit. (AWS introduction material)</p> <p>However, sufficient evidence was not identified that the sites effectively disclosed the identified shared water challenge to the relevant stakeholders. There was no specific feedback from stakeholders in the survey results, and the contents of the disclosed document were too brief.</p>	
<b>5.4.2</b>	<p><i>Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be identified.</i></p>	 Yes
Comment	<p>The sites have engaged with the stakeholders and supported govt. authorities and the efforts / activities are summarised as below:</p> <ol style="list-style-type: none"> <li>1. The sites conducted three surveys to communicate with stakeholders, and introduced AWS and their WS plan to Gumi City Hall, environmental groups, and the general public at the Environment Day event.</li> <li>2. In order to support the Daegu Regional Environmental Office, the sites participate in emergency maneuver training every year in which tasks and roles are assigned to each company in the event of an emergency in an industrial complex (scenarios such as chemical leaks and fires).</li> <li>3. The site collaborated with Gumi City Hall to provide drinking water to vulnerable groups and regularly performs cleaning volunteer work to improve WASH at social welfare centers.</li> </ol>	
<b>5.5</b>	<p><i>Communicate transparency in water-related compliance: make any site water-related compliance violations available upon request as well as any corrective actions the site has taken to prevent future occurrences.</i></p>	
<b>5.5.1</b>	<p><i>Any site water-related compliance violations and associated corrections shall be disclosed.</i></p>	 Yes

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Comment The site reported no water-related compliance violations, and a Green Company certification provided evidence of it since no-violation is required to be designated as a Green Company. Also, the Environmental Information Disclosure System provides sites' violation history, which shows none. (<https://www.env-info.kr/member/main/main.do>)

**5.5.2** *Necessary corrective actions taken by the site to prevent future occurrences shall be disclosed if applicable.*   
Yes

Comment No necessary corrective actions as there were no water related violations observed.

**5.5.3** *Any site water-related violation that may pose significant risk and threat to human or ecosystem health shall be immediately communicated to relevant public agencies and disclosed.*   
Yes

Comment The site reported no water-related compliance violations. The sites' compliance with laws related to serious civil disasters is reviewed twice a year by a law firm.

### Photographic Evidence from Audit

  
Yes