

CERTIFICATION REPORT

Alliance for Water Stewardship (AWS)



Audit Number: AO-001000

SITE DETAILS

Site: **Nanya Technology Fab 3A & 3A-N - Taipei**

Address: No.98 Nanlin Rd., Taishan Dist, New Taipei City 243, Taiwan (R.O.C), 24352, Taipei, Taiwan, P.R. CHINA

Contact Person: Sheng Hsun Wang

AWS Reference Number: AWS-000588

Site Structure: Single Site

CERTIFICATION DETAILS

Certification status: Certified Platinum

Date of certification decision: 2024-May-09

Validity of certificate: 2027-May-08

AUDIT DETAILS

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

Audit Type(s): Initial Audit

Audit Start Date: 2023-Nov-27

Lead Auditor: Vito C.C. Lin

Audit team participants:

Ginny Liao

Milo Y.M. Huang

Site Participants:

Zhou Chun Rong, Project Manager

Chen Long Ren, Chief engineer of water treatment

Zhang Chen Yu, Senior engineer of water treatment

Lin Zheng Long, Team leader of water treatment

Ding Zheng Yu, Team leader of water treatment

Ding Ming Xiao, Team leader of water treatment

Wang Zhi Hao, Senior engineer of water treatment

Wang Sheng Xun, Senior engineer of water treatment

Wu Ji Cheng, Senior engineer of water treatment

Chen Bai Jun, Environmental engineer

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ADDITIONAL INFO

Summary of Audit Findings: A total of six findings were raised during the certification audit, nil major non-conformity, one minor non-conformity, five 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. Minor non-conformities must be closed out by the time of the next annual audit.

The audit team recommends certification of Nanya Technology Fab 3A & 3A-N -Taipei at Platinum level.

CLOSURE OF FINDINGS AND CORRECTIVE ACTION PLAN:

The Client has successfully submitted the corrective action plan 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 Nanya Technology Fab 3A & 3A-N - Taipei against the AWS International Water Stewardship Standard Version 2.

Nanya Technology Fab 3A & 3A-N is located at No. 98&115 Nanlin Road, Taishan District, New Taipei City 243, Taiwan. The site covering the area of 130 thousand square meter, with over 3500 employees.

The site is a wafer fabrication and package plant, and their main product is DRAM. The wafer fabrication process mainly includes washing, etching, degumming, electroplating, polishing and grinding, photolithography and ion implantation.

The package process mainly includes water saw, die bond, wire bond, molding, marking, plating, trim and inspection. The site uses municipal water supplied by Nanlinqing Water Plant, and the ultimate water resource is Taoyuan Canal.

The wastewater is treated by onsite WWTP, and then discharged into Qiancuokeng Creek, and finally goes to Dadan River.

There is no dormitory in the site.

The audit was conducted onsite on 2023.11.27~29.

The onsite visit included the assessment of all facilities in the site, including production building, wastewater treatment plant, water purification system and warehouse.

SCORE

102.00

FINDINGS

NUMBER OF FINDINGS PER LEVEL

Observation	5
Minor	1

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FINDING DETAILS

Finding No:	TNR-009619
Checklist Item No:	1.3.7
Status:	Open
Finding level:	Observation
Checklist item:	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.
Findings:	1. Regarding the annual costs and revenue related to water, it is recommended to add definitions for various expenses in the statistical table. For example, operation costs of the water plant include the operation of the water plant/facility, maintenance costs for the pipelines drawing water from the Taoyuan Canal, outsourcing pipeline inspection costs, and maintenance costs for underground water wells. This ensures a thorough analysis of the relevant water costs included in the statistics. 2. Costs related to water resources for stakeholders (such as providing free water for residents' irrigation, sanitation facilities for temples) or costs related to organizing related activities can also be included in the statistics.
Finding No:	TNR-009187
Checklist Item No:	1.4.2
Status:	Open
Finding level:	Observation
Checklist item:	The embedded water use of outsourced services shall be identified, and where those services originate within the site's catchment, quantified.
Findings:	Suggest establishing a list of outsourced service providers to distinguish their water usage.
Finding No:	TNR-009935
Checklist Item No:	1.6.1
Status:	In Progress - CA plan approved
Finding level:	Minor
Due date:	2024-Nov-29
Checklist item:	Shared water challenges shall be identified and prioritized from the information gathered.
Findings:	The process of shared water challenge identification is not effective, which results in the identified shared water challenges are generic and not specific.
Corrective action:	1.Strength the Brainstorming, to provide more water concerned options in the questionnaires and modified the description to make it more specific. 2.During the engagement, encourage the stakeholders to provide feedbacks other than the provided options.

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Finding No:	TNR-009189
Checklist Item No:	1.7.2
Status:	Open
Finding level:	Observation
Checklist item:	Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.
Findings:	Utilized ISO 14001 to consolidate water opportunities, suggesting providing more specific content for this chapter, including short-term and long-term water opportunities, and organizing them into a list for tracking.
Finding No:	TNR-009190
Checklist Item No:	2.3.2
Status:	Open
Finding level:	Observation
Checklist item:	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.
Findings:	The site has established a water stewardship plan, suggesting adding monitoring, maintenance practices, and responsible personnel for each target. This can be integrated with the requirements in section 2.3.1.
Finding No:	TNR-009620
Checklist Item No:	5.4.2
Status:	Open
Finding level:	Observation
Checklist item:	Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be identified.
Findings:	1. If the company hosts visits from educational or governmental groups to assess water resource management performance, it is advisable to compile detailed information on the activities and the number of participants to demonstrate the effectiveness of proactive communication with stakeholders.

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Report Details

Report	Value
Report prepared by	Vito C.C. Lin
Report approved by	Neringa Pumputyte
Report approved on (Date)	09 May 2024

Surveillance

Proposed date for next audit
2024-Nov-27

Comment The surveillance audit is proposed to be performed in 2024.11.27.

Stakeholder Announcements

Date of publication	Location
22/09/2023	https://www.tuv.com/taiwan/tw/%e9%97%9c%e6%96%bc%e8%90%8a%e5%9b%a0/document-download/
24/09/2023	https://www.nanya.com/ESG/tw/csr_report
16/10/2023	https://a4ws.org/wp-content/uploads/2023/10/AWS-000588-Nanya-Tech-Corp-2023-Stake-Ann.pdf

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Catchment Information



catchment layout.png

Catchment Information

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Dahan Creek is located in the northern part of Taiwan and is one of the three major tributaries of the Tamsui River system. It originates from Pintian Mountain in the Snow Mountain Range, with a main flow of 135 kilometers and a flow area of approximately 1163 square kilometers. The section from Dahan Creek to Xiuluan Village is called Malikuoman Creek. After merging with Baishi Creek at Xiuluan, Taigang Creek turns eastward for one kilometer, then merges with Sanguang Creek and turns northward. It passes through Gaoyi Village and then turns westward near the upstream of Luofu (La Hao), and finally turns eastward at Shimen Dam site. The section from Xiyuan to Shimen Dam Site has a turbulent flow, narrow valley, and multiple cliffs on both banks. Below Shimen, the mountain terrain converges, and the flow rate slows down, eventually merging into the Danshui River at Jiangzicui. The Dahan River has a flow area of 759 square kilometers above Shimen, and a Shimen Dam has been built here. The main tributaries below are Yongfu River and Three Gorges River. The area from Dahan Creek to above Shimen is about 759 square kilometers, belonging to the mountainous area. The Shimen Reservoir was built here, and the middle reaches are vast and fertile river terraces with abundant agricultural products. The lower reaches enter the alluvial plain, with dense population on both banks of the river and developed industrial and commercial industries, which have been incorporated into the Greater Taipei metropolitan area.

Taoyuan Canal, is one of the important water conservancy projects in Taiwan, with the construction of a main line and 12 branch lines connecting Pi Tang. The Taoyuan Canal takes water from the Shimen area upstream of the Dahan River and irrigates 22000 hectares of farmland on the Taoyuan Plateau through a 20 kilometer waterway and a 25 kilometer main line. The Taoyuan Canal System has 132 river weirs and 231 water storage tanks, with a total area of 2218 hectares and a total storage capacity of 66 million cubic meters, as well as 846.5 kilometer water supply road.

Client Description and Site Details



layout map.png

Client/Site Background

Nanya Technology Fab 3A & 3A-N is located at No. 98&115 Nanlin Road, Taishan District, New Taipei City 243, Taiwan. The site covering the area of 130 thousand square meter, with over 3500 employees.

The site is a wafer fabrication and package plant, and their main product is DRAM.

The wafer fabrication process mainly includes washing, etching, degumming, electroplating, polishing and grinding, photolithography and ion implantation.

The package process mainly includes water saw, die bond, wire bond, molding, marking, plating, trim and inspection.

The site uses municipal water supplied by Nanlingqing Water Plant, and the ultimate water resource is Taoyuan River, one of the tributaries of Dahan River.

The wastewater is treated by onsite WWTP, and then discharged into Qiancuokeng Creek, and finally goes to Dahan River.

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Summary of Shared Water Challenges

Summary of Shared Water Challenges

To understand the importance of various stakeholders on water issues, a water-related questionnaire was established, and Google forms and paper copies were sent to all stakeholders for filling out and answering.

Via the summary result of the questionnaire, the site has concluded three major shared water challenges as below:

1. Ranked first

Water shortage caused by extreme weather conditions (floods/droughts) and the interruption of operations.

2. Ranked second

Shortage of water resources in the supply chain, which leads to the interruption of raw material supply.

3. Ranked third

The ecological impact on the natural water environment.

0.1 General Requirements for Single Sites, Multi-Sites and Groups

0.1.1 Eligibility Criteria

0.1.1.1 *The site(s) occupy one catchment OR an exception has been granted.*



Yes

Comment The site occupies one catchment.

0.1.1.2 *The scope of the proposed certification shall be under the control of a single management system.*



Yes

Comment The scope of the proposed certification is under the control of a single management system.

0.1.1.3 *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.*



Yes

Comment The scope of the proposed certification is homogeneous with respect to primary production system, water management, product or service range, and the main market structures.

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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.


Yes

Comment

1. All water sources, wastewater, rainwater, piping network, groundwater (including the groundwater aquifer) and water well discharge locations have been marked and identified.
2. There is a discharge point (D01).
3. The facility has five water wells, and two additional wells are located at the golf course, which have been identified and double checked while on-site visiting.
4. The ultimate receiving water body is Danshui River.
5. The facility has a water purification plant (Taoyuan Canal) and a tap water plant.
6. The locations of Lord of the Land (Tudi Gong) Temple was indicated nearby residential areas, which water resource is supplied by Nanya Tech for free.
7. The municipal water supply (service provider) is basin water treatment plant.
8. Dahan Creek is located in the northern part of Taiwan and is one of the three major tributaries of the Tamsui River system.

The site mainly uses water from Taoyuan Canal, whose percentage was about 96.6% in 2022. Both the municipal water for domestic use and rainwater for gardening takes about 1.6% of total water consumption. Groundwater used as backup source, whose percentage was about 1.8%.

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.


Yes

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Comment	The site has identified seven types of stakeholders, including employees, shareholders, customers, suppliers, government, community and media. They also developed a stakeholder communication process, to discuss the water-related and other topics with stakeholders via multiple ways like survey, email, visit or consultation etc.. The site provided the identification sheet and survey for review.	
1.2.2	<i>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.</i>	Yes
Comment	The site has performed a survey about water-related issues, combine with the impact of operation, then identify the current and potential degree of influence between site and stakeholder.	
1.3	<i>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.</i>	
1.3.1	<i>Existing water-related incident response plans shall be identified.</i>	Yes
Comment	Water-related incident response plans have identified: 1. Emergency response procedures for water restrictions in the Northern Plant (Z20003, Ver 00). 2. Emergency response procedures for abnormal situations (CNDCZ-0005, Ver 1.9). Includes handling emergencies related to typhoons, heavy rain causing flooding, and chemical leaks. 3. Water treatment system equipment maintenance specifications (CNDCI-6059, Ver 2.7). Describes leak detection methods during water treatment system operation. < 18 Additionally, maintenance contracts with external contractors are signed. 4. Water treatment operation specifications (CNDCI-6046, Ver 4.1). Mainly explains abnormal handling procedures from incoming water (pure water) to outgoing water (wastewater), including dealing with pipeline ruptures. 5. Wastewater system operation specifications (CNDCI-6049, Ver 1.9). Focuses on the procedures for handling equipment malfunctions in the wastewater system. 6. Clean water treatment system operation specifications (BNDCI-6069, Ver 2.8). Mainly describes the procedures for handling abnormalities in the pure water equipment. 7. Diesel tanker loading operation specifications (CNDCI-6044-1, Ver 1.3). Mainly explains the procedures for handling diesel leaks. 8. Conduct emergency response drills semi-annually. Held NaOCl chemical tanker leak drill on August 28, 2023, and hydrogen fluoride (HF) leak drill on October 19, 2023.	
1.3.2	<i>Site water balance, including inflows, losses, storage, and outflows shall be identified and mapped</i>	Yes
Comment	The site has drawn a water balance map that demonstrates detailed water flow including inflows, losses, storage, and outflows. For example, the map shows the incoming water, discharge water, evaporate water, recycle water and water consumption of different workshop or production processes, the water for utilities, water for domestic use. The site mainly uses water from Taoyuan Canal, whose percentage was about 96.6% in 2022. Both the municipal water for domestic use and rainwater for gardening takes about 1.6% of total water consumption. Groundwater used as backup source, whose percentage was about 1.8%.	
1.3.3	<i>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.</i>	Yes

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Comment	The site installed various of intelligence sensor or meters to collect the water volume data, and summary the data at monthly basis. Therefore, the annual variance could be identified as well. The site used the data to draw the water balance maps for 2022, which depict total water inputs, water inputs for each major process, predicted losses, reuse water and total discharge. The annual variance could be identified as well.	
1.3.4	<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>	 Yes
Comment	The Water Treatment Department has established a summary specification form for the operation of water treatment system (CNDCl-6056), which enables personnel to confirm the operation status of on-site equipment during on-site inspections, in order to prevent and handle system abnormalities, and provide system operation history records for future reference. In addition to the internally measured and recorded data, the site regularly samples, inspects, and tracks the discharge water and downstream basins of the factory area, and the monitoring frequency is quarterly.	
1.3.5	<i>Potential sources of pollution shall be identified and if applicable, mapped, including chemicals used or stored on site.</i>	 Yes
Comment	The potential sources of pollution has identified and mapped, including the chemical storage area (such as TMAH, photoresist, hydrochloric acid), diesel tanks, waste storage area and laboratories.	
1.3.6	<i>On-site Important Water-Related Areas shall be identified and mapped, including a description of their status including Indigenous cultural values.</i>	 Yes
Comment	The groundwater wells are only used by the site. As per site tour and interview, no onsite IWRA is in the site.	
1.3.7	<i>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.</i>	 Obs.
Comment	The water-related costs sheet was provided for review, including 1. Water supply invoice; 2. Water purification cost 3. Waste from water purification plant 4. Wastewater treatment cost (including waste disposal) 5. Wastewater discharge cost 5. Environmental monitoring and wastewater testing 6. Waste liquid disposal cost 7. Water related training and awareness promotion activities cost 8. Water related incoming	
1.3.8	<i>Levels of access and adequacy of WASH at the site shall be identified.</i>	 Yes
Comment	The site has counted the number of hygiene facilities including drinking water machine, faucets, wash sinks, urinals, and bathrooms. As per the statistic, the number of restrooms and urinals is more than building regulations.	

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1.4	<i>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.</i>	
1.4.1	<i>The embedded water use of primary inputs, including quantity, quality and level of water risk within the site's catchment, shall be identified.</i>	Yes
Comment	1. Commissioned National Taiwan University of Science and Technology to conduct an LCA (Life Cycle Assessment) report, selecting the top 20 water suppliers based on "Water Use," and collecting annual water usage data from these suppliers. 2. After confirming the top 20 water suppliers, it was found that all are located outside the catchment. 3. Conduct annual audits of suppliers to confirm water-related risks.	
1.4.2	<i>The embedded water use of outsourced services shall be identified, and where those services originate within the site's catchment, quantified.</i>	Obs.
Comment	Outsourced services mainly include machine parts cleaning and cleanroom garment cleaning, and the suppliers are located outside the catchment.	
1.4.3	<i>Advanced Indicator The embedded water use of primary inputs in catchment(s) of origin shall be quantified.</i>	Yes
Comment	The site has commission Taiwan Tech annually to complete an LCA report, the contents of which include: 1.Environmental impact for all of DRAM types from Nanya Tech. 2.The primary input in products of Nanya tech included water usage (ex. pure water production, wastewater treatment etc.), electricity, raw material and auxiliary material of wafer production. 3. Via the LCA data and annual production, the water usage of different raw materials could be quantified, so the embedded water uses in the catchments of origin could be quantified as well.	
Score	7	
1.5	<i>Gather water-related data for the catchment, including water governance, water balance, water quality, Important Water-Related Areas, infrastructure, and WASH</i>	
1.5.1	<i>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.</i>	Yes
Comment	The site has prepared a catchment report with relevant explanations for catchment plans, water-related public policies, major publicly-led initiatives under way etc.	
1.5.2	<i>Applicable water-related legal and regulatory requirements shall be identified, including legally-defined and/or stakeholder-verified customary water rights.</i>	Yes
Comment	The site has established Environmental Safety and Health Regulations Inspection Procedure (BNDBU-0001), and performed compliance evaluation regularly every year. The Industrial Safety/Environmental Protection Department compiles, preserves, and grasps the comprehensive inspection operations and results of each department. The water related regulations inspection is mainly carried out by the Water Treatment Department. The 2022 regulatory inspection list is shown in the attachment.	
1.5.3	<i>The catchment water-balance, and where applicable, scarcity, shall be quantified, including indication of annual, and where appropriate, seasonal, variance.</i>	Yes

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Comment	The Catchment Background Survey Report provides an analysis of water balance for Dahan River. The water balance in the catchment is analyzed based on the rainfall (mm), the storage water of Shimen Reservoir (m3), total water consumption(m3) and loss. All the data is collected from government website and publishing report.	
1.5.4	<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>	Yes
Comment	The Catchment Background Survey Report provides a detailed analysis of water quality for the catchment. The site obtained the relate information from the government website. The data includes the water quality of the water reservoir, the municipal water and the final discharged water body. The data is published monthly, therefore, the annual variances could be identified.	
1.5.5	<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>	Yes
Comment	The site has mapped IWRA locations, including Taoyuan Canal, and Wugu Ecological Park, describing their functions, status, and potential risks: Taoyuan Canal: The quality monitoring of irrigation water in Taoyuan Canal irrigation system can be divided into two parts for monitoring and management: reservoir water supply and river water intake. The water quality of the part supplied by Shimen Reservoir is quite good, but there is still water flowing through the Cacal water diversion road during the water delivery process. , trunk lines and branch lines may be polluted, so they monitor them at any time to prevent them, and build special sewage discharge channels from the beginning of the trunk line to the edge of the Qiejuan River section to achieve the purpose of separating irrigation and drainage, and often divide them into sections. Dedicated personnel are patrolling to prevent illegal discharges and leaks. Once contaminated, the waterway will be stopped from diverting water into the storage water and the supply of irrigation water to the area will be stopped. The source of the pollution will be further traced and eliminated, and the report will be reported to the environmental protection unit according to relevant procedures., closely observe its processing results. Wugu Ecological Park: the wetland has a good water management and abundant ecology for birds, insects etc. , but there is a threat from invasive species - Mikania micrantha, it blooms between Oct. to Mar. every year and spreads rapidly that it has to be removed annually.	
1.5.6	<i>Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.</i>	Yes
Comment	The site has explained the functions of each facility, including relevant infrastructure such as reservoirs, and considered potential future risks such as reservoir siltation and river eutrophication.	
1.5.7	<i>The adequacy of available WASH services within the catchment shall be identified.</i>	Yes
Comment	The facility obtained the WASH status in the catchment from government website. For 2022, the tap water penetration rate was over 99%, the wastewater treatment rate was about 88%.	
1.5.8	<i>Advanced Indicator Efforts by the site to support and undertake catchment level water-related data collection shall be identified.</i>	Yes

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Comment	The site actively collected the water quality data of the catchment. The following testings have been conducted. 1. The site has conducted groundwater quality monitoring annually for catchment IWRA; Monthly tests are performed on water quantity, and the proper functioning of pumping equipment is verified. In case of abnormal water levels, groundwater well observations are carried out, and a report with photographs documenting the observations is produced. 2. The site also monitored water quality for the Taoyuan Canal (the water source) including turbidity, pH, conductivity, and water quantity.	
Score	All of the data will be shared to the government agencies.	6
1.5.9	<i>Advanced Indicator</i> <i>The adequacy of WASH provision within the catchments of origin of primary inputs shall be identified.</i>	 N/A
Comment	The site collected the WASH facility of the suppliers of primary inputs, but did not identify the WASH within the catchments of origin of primary inputs.	
1.6	<i>Understand current and future shared water challenges in the catchment, by linking the water challenges identified by stakeholders with the site's water challenges.</i>	
1.6.1	<i>Shared water challenges shall be identified and prioritized from the information gathered.</i>	 No
Comment	To understand the importance of various stakeholders on water issues, a water-related questionnaire was established, and Google forms and paper copies were sent to all stakeholders for filling out and answering. Via the summary result of the questionnaire, the site has concluded three major shared water challenges as below: 1. Ranked first Water shortage caused by extreme weather conditions (floods/droughts) and the interruption of operations. 2. Ranked second Shortage of water resources in the supply chain, which leads to the interruption of raw material supply. 3. Ranked third The ecological impact on the natural water environment.	
		Finding No: TNR-009935
1.6.2	<i>Initiatives to address shared water challenges shall be identified.</i>	 Yes
Comment	In response to the aforementioned shared water challenges, the site has identified measures to address them, including the public initiatives and site's action plan. Faced with the challenge of climate change, in order to meet the needs of flood control, water resources, and water environment, the public water related initiatives includes three major construction axes: "water and development", "water and security", and "water and environment".	
1.6.3	<i>Advanced Indicator</i> <i>Future water issues shall be identified, including anticipated impacts and trends</i>	 Yes

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Comment	Future water issues were identified in the catchment Background Survey Report, including anticipated impacts and trends. Overall speaking, the rainfall of catchment is sufficient, and the overall water supply capacity can meet the recent requirement. But with the increasing population and industrial development in the future, the water resource may become tense. The main action is to strengthen water source scheduling and add backup water source facilities.	
Score	3	
1.6.4	<i>Advanced Indicator</i> <i>Potential water-related social impacts from the site shall be identified, resulting in a social impact assessment with a particular focus on water.</i>	 N/A
Comment	The site does not perform this indicator.	
1.7	<i>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.</i>	
1.7.1	<i>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.</i>	 Yes
Comment	Compiled a water risk list, including: 1. Excessive ammonia nitrogen discharge from organic waste causing abnormal water discharge, 2. High turbidity caused by typhoons/drought-induced periodic water restrictions 3. Leaks during wastewater transportation 4. Increased costs due to water fee collection. All of risks are identified and evaluated by severity, occurrence every year, and potential costs and business impact are also included.	
1.7.2	<i>Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.</i>	 Yes
Comment	The site has identified the major business opportunities considering how the site may participate, cost assessment of potential saving, magnitude of potential financial impact, cost assessment of potential saving. Opportunity 1: Expansion of hydrogen fluoride wastewater recovery system Recycling hydrogen fluoride wastewater can reduce wastewater discharge and also save some water costs, including wastewater treatment and water extraction costs. Opportunity 2: Copper foil reuse Add a copper waste liquid electrolysis treatment system to separate copper from the waste liquid and make copper foil for reuse. Reduce emissions from waste disposal.	
1.8	<i>Understand best practice towards achieving AWS outcomes: Determining sectoral best practices having a local/catchment, regional, or national relevance.</i>	
1.8.1	<i>Relevant catchment best practice for water governance shall be identified.</i>	 Yes

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Comment	The facility collected best practices from the ESG report of the enterprise of same industrial or similar industrial or relevant standard. Example: 1. Regular review and update: Management review meetings, quarterly sustainable development meetings, and business risk meetings will include water related issues in regular reviews and updates 2. Report to the General Manager on management review meetings, sustainable development quarterly meetings, and business risk meetings 3. Promote sustainable water management policies to all employees 4. Collaborate with the Agricultural Water Resources Bureau to establish a flow monitoring system to instantly grasp water volume information and promote sustainable water management 5. Publicly disclose the internal water resource management policy. 6. Publicize sustainable water management reports within the factory to the public and promote AWS practices within the factory	
1.8.2	<i>Relevant sector and/or catchment best practice for water balance (either through water efficiency or less total water use) shall be identified.</i>	 Yes
Comment	The facility collected best practices from the ESG report of the enterprise of same industrial or similar industrial or relevant standard. Following indicator were collected and used to compare: the water consumption target per unit product, actual achievement status, water conservation amount, water resource recovery amount and recovery rate, wastewater discharge amount, and wastewater discharge amount per unit production capacity.	
1.8.3	<i>Relevant sector and/or catchment best practice for water quality shall be identified, including rationale for data source.</i>	 Yes
Comment	The facility collected best practices from the ESG report of the enterprise of same industrial or similar industrial or relevant standard. Example: In addition to designing water-saving processes, Nanya Technology emphasizes water reduction and recycling to reduce wastewater volume. Set more stringent internal control standards based on internal processing capabilities compared to regulations. Perform irregular internal audit to ensure that the wastewater meets the standards. Wastewater discharge outlet equipped with an automatic continuous monitoring system in accordance with laws and regulations, which regularly sends water quality information back to the competent authorities, enabling government agencies and the public to understand the water quality status in real time. Publish quarterly wastewater discharge testing data on the official website, so that stakeholders can understand the wastewater treatment result.	
1.8.4	<i>Relevant catchment best practice for site maintenance of Important Water-Related Areas shall be identified.</i>	 Yes

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Comment The facility collected best practices from the ESG report of the enterprise of same industrial or similar industrial or relevant standard.
Example:
Conduct water quality monitoring of the water receiving body of discharge water, the parameters including pH, copper, nickel, chemical oxygen demand, and suspended particles etc..
Lead employees and family members to visit the IWRA together, so that everyone can understand the purpose of the IWRA's establishment and the design principles of the gravel water purification facilities, thereby enhancing everyone's understanding of water and the surrounding environment.
Collaborating with the local conservation association to remove the invasive species from the Wetland, to maintain the integrity of biodiversity and habitat, allowing native organisms to survive in the habitat and avoid harm.

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

Comment The facility collected best practices from the ESG report of the enterprise of same industrial or similar industrial or relevant standard.
Example collected like: Set the number of toilets and urinals which superior to building regulations.
Provide shower facilities in sports area of the site, so the employee could use after sport.

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2	STEP 2: COMMIT & PLAN - Commit to be a responsible water steward and develop a Water Stewardship Plan	
2.1	<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>	
2.1.1	<i>A signed and publicly disclosed site statement OR organizational document shall be identified. The statement or document shall include the following commitments:</i> - That the site will implement and disclose progress on water stewardship program(s) to achieve improvements in AWS water stewardship outcomes - That the site implementation will be aligned to and in support of existing catchment sustainability plans - That the site's stakeholders will be engaged in an open and transparent way - That the site will allocate resources to implement the Standard.	 Yes
Comment	1.The AWS Report has disclosed on Nanya technology official website, and the report has signed by Mr.Lu (the Direct of Facility Division) in 2023.08 2.The AWS policy has signed by Mr. Lee, who is the president in the organization (2023.07)"	
2.1.2	<i>Advanced Indicator</i> <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>	 Yes
Comment	1.The AWS Report has disclosed on Nanya technology official website, and the report has signed by Mr.Lu (the Direct of Facility Division) in 2023.08 2.The AWS policy has signed by Mr. Lee, who is the president in the organization (2023.07)	
Score	1	
2.2	<i>Develop and document a process to achieve and maintain legal and regulatory compliance.</i>	
2.2.1	<i>The system to maintain compliance obligations for water and wastewater management shall be identified, including:</i> - Identification of responsible persons/positions within facility organizational structure - Process for submissions to regulatory agencies.	 Yes
Comment	According to the requirements of the ISO 14001 environmental management system, the site conducts regular identification of environmental protection regulations every year and conducts regulatory identification in accordance with the BNDBU-0001 environmental safety and health regulatory inspection procedure. The industrial safety department is responsible for providing applicable regulatory information on environment, safety, and health, and regularly updating, consolidating, preserving, and mastering the comprehensive audit operations and results of various departments operating in the entire factory area. It also establishes relevant applicable regulations and other requirements signed by the company and inform relevant departments. The site conducts a detailed inspection of applicable regulations and other requirements signed by the company, and record them in the regulatory registration form BNDBU-0001-1 and regulatory inspection form BNDBU-0001-2. The files can be stored in computer or paper format in various departments.	

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2.3	<i>Create a water stewardship strategy and plan including addressing risks (to and from the site), shared catchment water challenges, and opportunities.</i>	
2.3.1	<i>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.</i>	Yes
Comment	The water stewardship strategy for the site: 1. Reduce cumulative water consumption per unit capacity by 39% till 2025 (compared to 2017). 2. Achieve an annual average process water recycling rate of 93% (compared to 2017). 3. Address production losses of wafers due to water restrictions. 4. Reduce COD in discharged water to 50 ppm. 5. Reduce ammonia nitrogen in discharged water to 20 ppm.	
2.3.2	<i>A water stewardship plan shall be identified, including for each target:</i> - 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.	Obs.
Comment	The site has developed a Water Stewardship Plan (Year 2023), which specifies targets, required actions, measurement, status, effectiveness evaluation, accountable and deadline, etc. The Water Stewardship Plan is associated with five main outcomes of AWS, including good water governance, sustainable water balance, good water quality status, IWRA and WASH. The detail could refer to the attachment.	
2.3.3	<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	The site worked with local government agency within the catchment on water stewardship activities. 1. Collaborated with the Water Resources Agency for the "Flow Monitoring System Implementation Operation" by installing flow meters. 2. Collaborated with the Wilderness Conservation Association for the removal of Mikania micrantha in the Wugu Ecological Park.	
Score	4	
2.3.4	<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	Nanya Plastic Group established an energy-saving service team for providing guidance to other factories within the group (including subsidiaries), with an estimated water savings of 2,237 m3/day in 2022 The energy-saving service include but not be limited to within the site's catchment or outside catchment.	
Score	4	

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2.3.5	<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>	 N/A
Comment	The site does not perform this indicator.	
2.4	<i>Demonstrate the site's responsiveness and resilience to respond to water risks</i>	
2.4.1	<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>	 Yes
Comment	The site 1. Provided explanations for the functions of each facility, including relevant infrastructure explanations such as reservoirs, and considered potential risks each facility might face, such as reservoir siltation and river eutrophication. 2. For public sector (especially for Water Resources Agency) water risk plans, emergency response measures have been formulated.	
2.4.2	<i>Advanced Indicator</i> <i>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.</i>	 Yes
Comment	Due to the impact of global climate change, water scarcity has caused great risks to Nanya's operations. In order to reduce the risks of water scarcity, Nanya Technology not only plans relevant contingency measures internally, but also cooperates and communicates with public-sector and infrastructure to ensure stable water supply, and conduct relevant information analysis and collection to reduce water scarcity risks.	
	The main plans are as follows:	
	1. The site participated in semi-annual communication platform meetings with relevant public departments of the Ministry of Economic Affairs and the Water Resources Administration, they gather relevant climate analysis data (provided by the Central Weather Bureau), understand the government's water resource construction and progress, and use this platform to communicate with public departments on relevant issues.	
	Nanya Technology mainly uses the Shimen Reservoir as its water source, which is then treated by the Taoyuan Canal to supply production water. In order to avoid the short-term water shortage risk caused by congenial geographical conditions, Nanya Technology has 7 backup wells, which can maintain the normal production of the factory for 47 days when the raw water is completely cut off. In addition, the site collaborates with neighboring companies to establish emergency response organizations for water shortage. Based on the water restriction emergency response operations in the northern industrial zone area (Nanya and it neighboring companies), through this emergency response organization, they will urgently allocate water sources to support each other.	
	2. Currently, the process water is supplied via Taoyuan Canal by Shimen Reservoir. The site has signed a water supply contract with the management unit of Taoyuan Canal, the Agricultural Water Resources Bureau, to mainly supply water to ensure water supply stability.	
	3. Develop diversified water sources, cooperate with the expansion of new factories, and apply for the supply of process tap water with the water company to diversify water sources and reduce production risks.	
Score	6	

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3	STEP 3: IMPLEMENT - Implement the site's stewardship plan and improve impacts	
3.1	<i>Implement plan to participate positively in catchment governance.</i>	
3.1.1	<i>Evidence that the site has supported good catchment governance shall be identified.</i>	 Yes
Comment	The site has supported good catchment governance. The site coordinate with the Irrigation Association, discontinued the use of water from the Taoyuan Canal for maintenance of tunnel water facilities. The site meetings quarterly with the Environmental Quality Monitoring Committee, with participants from the Environmental Protection Bureau, community representatives, representatives of South Asia Technology, and experts/scholars, and discuss about the environmental issue. The site has awarded the Green Factory Mark by the Industrial Bureau of the Ministry of Economic Affairs. As a local model manufacturer, the site has accepted the visiting from other parties like governments, schools, and enterprises. Every year, the site cooperates with the Ministry of Economic Affairs Industrial Bureau Talent Base Plan, and accepted the visiting of college teachers and students□ Additionally, the site provided guidance to suppliers for clean production assessments. The site also participated in CDP and TCSA water-related questionnaires and corporate sustainability initiatives.	
3.1.2	<i>Measures identified to respect the water rights of others including Indigenous peoples, that are not part of 3.2 shall be implemented.</i>	 Yes
Comment	According to the document review and interview, the water rights are respected under legal and regulatory mechanisms.	
3.1.3	<i>Advanced Indicator Evidence of improvements in water governance capacity from a site-selected baseline date shall be identified.</i>	 Yes
Comment	The enhancement of water management capabilities includes various water-saving and water quality improvement measures, with a focus on expanding the COD and total nitrogen wastewater treatment system(Approximately13.43 million US\$). According to the water plan specifications, the process recycling rate should ideally reach74.17%, and this has been consistently met and reported to the Water Resources Agency of the Ministry of Economic Affairs every year, up to2023. Utilizing SCADA, FDC, monitoring various water qualities, including inlet, pure water, and wastewater discharge. Additionally, daily reviews of the previous day's water usage are conducted on the Share pointplatform. TDS system: Internal training platform for employees, physical meetings for supplier training, and participation in external association training courses such as DuPont'sRO membrane education and training.	
Score	2	
3.1.4	<i>Advanced Indicator 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.</i>	 Yes

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Comment	In 2022, in terms of international recognition, Nanya Technology was awarded the "A-Leadership Level" in the CDP Climate Change Assessment and the highest honor in the Water Security Assessment, the "A List Leadership Level"; In terms of domestic recognition, Nanya Technology has won multiple awards, including the National Enterprise Environmental Protection Award from the Environmental Protection Agency, the TCSA Top Ten Sustainable Model Taiwan Enterprise Award - Water Resources Management Leader Award, and the New Taipei Enterprise Classic Award - "Outstanding Enterprise". It has ranked in the top 5% of corporate governance evaluations four times. All of the above showing that the site is seen as positively contributing to the good water governance of the catchment.		
Score	2		
3.2	<i>Implement system to comply with water-related legal and regulatory requirements and respect water rights.</i>		
3.2.1	<i>A process to verify full legal and regulatory compliance shall be implemented.</i>		Yes
Comment	The site performed environmental compliance audit to ensure the compliance of laws and regulations. The site did not have environmental violating in the past five years (Attachment - Environmental Penalty Record). The site has obtained the necessary pollution discharge permit in accordance with the law, with the following license numbers (Taoshi Huanpai Xu Zi No. H2832-05, Taoshi Huanpai Xu Zi No. H0811-07, Taoshi Huanpai Xu Zi No. H3446-10, and Taoshi Huanpai Xu Zi No. H1897-10).		
3.2.2	<i>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.</i>		Yes
Comment	The site's water usage meets legal requirements and cooperates with the government to regulate water usage; In addition, the site is not located in a specific water source protection area.		
3.3	<i>Implement plan to achieve site water balance targets.</i>		
3.3.1	<i>Status of progress towards meeting water balance targets set in the water stewardship plan shall be identified.</i>		Yes
Comment	Since 2017, a total of 5 expansions have been executed for wastewater recycling systems and pollution control, with a total expenditure of approximately 16.9 million US\$. Diversifying water resources: For the ongoing construction of 5 plants, the water source is tap water. Additionally, a water purification system has been established within the plant to reuse purified wastewater for cooling systems, flushing toilets, and other secondary purposes. Example: ☐ Nanya has set up a storage tank with a capacity of 43,000 cubic meters and two detention ponds with a capacity of 4.06,000 cubic meters, which can effectively recover rainwater for use during the rainy season. ☐ In 2017, the organic wastewater recycling system was expanded, with a daily increase of 1,500 tons of organic wastewater recycling water, an investment of 28,095 thousand yuan, an annual benefit of 6,132 thousand yuan, and a recycling life of 4.6 years.		

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3.3.2	<i>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.</i>	 Yes
Comment	In addressing the common challenge of water shortages, there are plans to invest in establishing wastewater recycling systems. Assumptions have been made for water scheduling actions under water scarcity scenarios, prioritizing the use of reserve well water. Furthermore, goals have been set to improve water recovery rates and reduce unit water consumption(tons/kpc). Nanya Technology's production capacity in 2022 decreased by 3% compared to 2021. The company's total water intake for the year decreased by 2% compared to 2021. In terms of water intensity, the water consumption per unit of production capacity in 2022 increased 1.1% compared to 2021.	
3.3.3	<i>Legally-binding documentation, if applicable, for the re-allocation of water to social, cultural or environmental needs shall be identified.</i>	 Yes
Comment	No legally-binding documentation is issued by local government authorities to the site for the re-allocation of water to social, cultural or environmental needs.	
3.3.4	<i>Advanced Indicator The total volume of water voluntarily re-allocated (from site water savings) for social, cultural and environmental needs shall be quantified.</i>	 N/A
Comment	The facility does not perform this indicator.	
3.4	<i>Implement plan to achieve site water quality targets</i>	
3.4.1	<i>Status of progress towards meeting water quality targets set in the water stewardship plan shall be identified.</i>	 Yes
Comment	Internal personnel at Nanya Technology conduct daily inspections, monthly environmental impact assessments(14 parameters), periodic regulatory compliance inspections(39 parameters), autonomous monitoring of well water quality(18 parameters), weekly internal process water purity monitoring(15 parameters), and real-time monitoring through the Environmental Protection Bureau's CWMS system(7 parameters). Stricter discharge standards have been set based on regulatory limits when water quality exceeds standards. Example: ☐ In line with the plant expansion plan, NT\$430 million has been invested in a new hydrofluoride wastewater COD and total nitrogen treatment system. In addition to solving the problem of excessive COD and total nitrogen in hydrofluoride wastewater from future machines, it can also recycle hydrofluoride wastewater at the same time. It is expected to be It will recycle 1 million liters of hydrofluoride wastewater per day and will be officially put into operation in 2023. ☐ In 2022, 2 improvements were completed, mainly the improvement and expansion of the FAB 3AN hydrofluoride wastewater recovery system and the improvement of the front-end water quality of the FAB 3AN cooling water tower. The investment amount was 37,390,000 yuan, the water saving was 430CMD, and the annual benefit was 1,758,000 yuan.	
3.4.2	<i>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.</i>	 Yes

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Comment	The Environmental Protection Agency tightened the ammonia nitrogen standards for Nanya Technology in 2013. Since then, Nanya Technology has implemented a diversion system using ammonium fluoride machines for specialized collection. In 2015, the final settling tank was converted into an aerobic nitrification tank, and a biological membrane was added as the final treatment unit. In response to increasingly stringent future regulations, in 2018, Nanya Technology added a COD treatment tank and an IPA treatment system for inorganic wastewater, ensuring the discharge of COD and ammonia nitrogen. In 2023, a biological acute toxicity test was introduced for continuous improvement of discharged water and downstream ecosystems.	
3.5	<i>Implement plan to maintain or improve the site's and/or catchment's Important Water-Related Areas.</i>	
3.5.1	<i>Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be implemented.</i>	Yes
Comment	1. Conduct groundwater quality monitoring annually for site IWRA; Monthly tests are performed on water quantity, and the proper functioning of pumping equipment is verified. In case of abnormal water levels, groundwater well observations are carried out, and a report with photographs documenting the observations is produced. 2. Conduct groundwater quality monitoring annually for catchment IWRA; Monthly tests are performed on water quantity, and the proper functioning of pumping equipment is verified. In case of abnormal water levels, groundwater well observations are carried out, and a report with photographs documenting the observations is produced. 3. For catchment IWRA, assist in removing Mile-a-minute Weed in Wugu Ecological Park annually since 2020 4. For catchment IWRA, monitor water quality daily for the Taoyuan Canal, including turbidity, pH, conductivity, and water quantity.	
3.5.2	<i>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.</i>	N/A
Comment	The facility does not perform this indicator.	
3.5.3	<i>Advanced Indicator 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.</i>	N/A
Comment	The facility does not perform this indicator.	
3.6	<i>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.</i>	
3.6.1	<i>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.</i>	Yes

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Comment	1. Drinking water dispensers are installed in the tea rooms of each building and floor in the factory area. There are a total of 66 drinking water dispensers in the entire factory area, with sufficient drinking water sources. To ensure drinking water safety, the admin regularly outsources professional third-party lab to conduct water quality testing, and posts the testing results on the drinking water dispensers. There are regular cleaning personnel to maintain the cleanliness of the tea rooms, and there are regulations for the use of tea rooms, which are posted in prominent areas of the tea rooms to remind users to maintain hygiene and cleanliness. 2. The number of restrooms and urinals is more than building regulations. All staff offices on each floor of each building are equipped with facilities. The site also posts slogans of correct usage at the locations of each toilet and urinal to remind users to maintain hygiene and cleanliness. Adequate toilet paper is placed in each toilet, and regularly supplement. Each bathroom has sufficient hand washing sinks and provide hand sanitizer and wiping paper for convenient cleaning and use by personnel. Cleaning personnel will regularly perform toilet cleaning to provide clean toilet space. 3. Water conservation advocacy signs have also been posted inside the factory to remind users to save water and avoid water wasting.	
3.6.2	<i>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.</i>	 Yes
Comment	No evidence is showed that the site is impinging on the human right to safe water and sanitation of communities through their operations according to the interviews with the site's employees, local community and local government authorities.	
3.6.3	<i>Advanced Indicator</i> <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.</i>	 N/A
Comment	The facility does not perform this indicator.	
3.6.4	<i>Advanced Indicator:</i> <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.</i>	 N/A
Comment	The facility does not perform this indicator.	
3.7	<i>Implement plan to maintain or improve indirect water use within the catchment:</i>	
3.7.1	<i>Evidence that indirect water use targets set in the water stewardship plan, as applicable, have been met shall be quantified.</i>	 Yes

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Comment	Conduct annual audits of suppliers under RBA, encouraging more than 20 suppliers to implement water-saving measures. In May 2023, assess the water resource disclosure of the top20 major suppliers before the LCA report, primarily using the simapro database(Version9.4.0.2). Encourage future adoption. Nanya requires suppliers to implement water management plans, systematically record, classify, track and reduce water use in operations, and encourage them to look for water saving opportunities. Among them, the "TOSOH QUARTZ" company has formulated a water and electricity usage management procedure. Through wastewater recycling in 2021, it will save 29,342 tons of water throughout the year, saving 20% of water; "fstech" company carries out water-saving improvements every year. In 2021, it completed 3 water-saving improvements through process water reduction and recycling, with a water saving of 0.0132CMD; "FUJIMI INCORPORATED" company completed the full recycling of RRO concentrated water, with annual water saving benefits 300 tons/year.	
3.7.2	<i>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.</i>	 Yes
Comment	Each year, NanYa Technology sets quantifiable goals for suppliers and conducts audits on the top 20 suppliers for carbon emissions, including auditing the content of water resource assessments. This includes aspects such as water management plans(water reduction), drinking water quality testing, wastewater pollution concentration testing, environmental risk assessments, and related water-saving experiences sharing. South Asia Technology has already obtained information on the annual water usage and water quality of collaborating suppliers (outside the watershed). In the future, efforts will be intensified to promote South Asia Technology's water-saving policies.	
3.7.3	<i>Advanced Indicator</i> <i>Actions taken to address water related risks and challenges related to indirect water use outside the catchment shall be documented and evaluated.</i>	 Yes
Comment	Annually, Nanya Technology conducts water resource surveys on suppliers, covering water-related issues such as WASH, water conservation, and water quality control. In 2022, Nanya Technology, along with 2 suppliers, applied for the Ministry of Economic Affairs Industrial Bureau's Green Factory Certification. Additionally, Nanya Technology collaborates with suppliers on water-saving projects related to facilities, equipment, and processes. Two education and sharing sessions on Nanya Technology's sustainable supply chain were held on 2023.05.26, and 2023.09.13, with 38 participating suppliers.	
Score	7	
3.8	<i>Implement plan to engage with and notify the owners of any shared water-related infrastructure of any concerns the site may have.</i>	
3.8.1	<i>Evidence of engagement, and the key messages relayed with confirmation of receipt, shall be identified.</i>	 Yes
Comment	The communication channels between the site and the regulatory authorities include official documents, on-site inspection records, and meeting minutes. According to statistics, there were a total of 37 water related projects in 2022, including 32 related to water use, 1 related to wastewater and sewage, and 4 related to well water. Among them, the damage and maintenance of the Taoyuan Grand Canal's water diversion road, as well as the cooperation with the future Taoyuan Railway's underground raw water pipeline, will be of great concern to the site. Therefore, the two projects will have many days of water outage construction, which will affect the site's water supply scheduling; The communication targets, time, and content of various official documents are shown in the attachment.	

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3.9	<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>	
3.9.1	<i>Actions towards achieving best practice, related to water governance, as applicable, shall be implemented.</i>	 Yes
Comment	The site has formulated a water stewardship policy, and issued an AWS disclosure report to be published on the official website. Water stewardship related information is shared with stakeholders, and there is also a window to respond when stakeholders have problems that need to be addressed, allowing the site to respond and handle them immediately. The site required the employees to brainstorm and develop water-saving plans and actions. They also communicate and promote water related knowledge and awareness to employees.	
3.9.2	<i>Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.</i>	 Yes
Comment	Continuous monitoring is conducted to ensure that water usage and quality are maintained within the standards outlined in the water plan. Since 2017, a total of 5 expansions have been executed for wastewater recycling systems and pollution control, with a total expenditure of approximately 16.9 million US\$. In 2022, two major improvements were completed, mainly including the improvement and expansion of the FAB 3AN hydrogen fluoride wastewater recovery system and the improvement of the water quality at the front end of the FAB 3AN cooling water tower. These two actions can recycle about 430m3 water per day.	
3.9.3	<i>Actions towards achieving best practice, related to targets in terms of water quality shall be implemented.</i>	 Yes
Comment	Wastewater is classified within the plant through more than 20 pipeline divisions, and subsequent treatments are carried out based on various water qualities. Internal staff at Nanya Technology conduct daily inspections, monthly environmental impact assessments (14 parameters), periodic regulatory compliance inspections (39 parameters), autonomous monitoring of well water quality (18 parameters), weekly internal process water purity monitoring (15 parameters), and real-time monitoring through the Environmental Protection Bureau's CWMS system (7 parameters). Stricter discharge standards have been set based on regulatory limits when water quality exceeds standards. Emergency response measures are implemented if water quality exceeds the standards.	
3.9.4	<i>Actions towards achieving best practice, related to targets in terms of the site's maintenance of Important Water-Related Areas shall be implemented.</i>	 Yes
Comment	Nanya Technology has implemented best practices for maintaining important water-related areas, including well water testing, discharge water testing reports, collaboration with NGO to maintain the Wu-Ku wetlands, monitoring biodiversity in the basin, and participating in mountain and river cleaning activities. On 2022.09.17, Nanya Technology joined industries for a beach cleaning event at the mouth of the Tamsui River.	
3.9.5	<i>Actions towards achieving best practice related to targets in terms of WASH shall be implemented.</i>	 Yes

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Comment 1. Drinking water dispensers are installed in the tea rooms of each building and floor in the factory area. There are a total of 66 drinking water dispensers in the entire factory area, with sufficient drinking water sources. To ensure drinking water safety, the admin regularly outsources professional third-party lab to conduct water quality testing, and posts the testing results on the drinking water dispensers. There are regular cleaning personnel to maintain the cleanliness of the tea rooms, and there are regulations for the use of tea rooms, which are posted in prominent areas of the tea rooms to remind users to maintain hygiene and cleanliness.

2. The number of restrooms and urinals is more than building regulations. All staff offices on each floor of each building are equipped with facilities. The site also posts slogans of correct usage at the locations of each toilet and urinal to remind users to maintain hygiene and cleanliness. Adequate toilet paper is placed in each toilet, and regularly supplement. Each bathroom has sufficient hand washing sinks and provide hand sanitizer and wiping paper for convenient cleaning and use by personnel. Cleaning personnel will regularly perform toilet cleaning to provide clean toilet space.

3. Water conservation advocacy signs have also been posted inside the factory to remind users to save water and avoid water wasting.

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

Comment Nanya has achieved the best practiced in terms of water government. Except for the practices mentioned at 3.9.1, Nanya Technology also received many awards that prove their good water governance, including the Green Building Label, Green Factory Label, CDP Water Security Questionnaire A List, the 2022 National Corporate Environmental Protection Award, the 2022 TSCA Water Resource Management Leadership Award.

Score 8

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

Comment Since 2017, a total of 5 expansions have been executed for wastewater recycling systems and pollution control, with a total expenditure of approximately 16.9 million US\$.

In 2023, 11 equipment-side water-saving projects were implemented, resulting in a total water savings of 59,5450,000 tons.

Diversifying water resources:

For the ongoing construction of 5 plants, the water source is tap water. Additionally, a water purification system has been established within the plant to reuse purified wastewater for cooling systems, flushing toilets, and other secondary purposes.

Nanya Technology conducts monitoring of water intake and discharge, and the Employee Relations Department promotes water-saving measures among internal staff. Each department carries out actions to enhance water efficiency and improve water quality. Externally, collaboration with the Water Resources Agency involves maintenance of the Taoyuan Canal water supply tunnel. Additionally, participation in the "Taoyuan City Road Management Center" community provides updates on the latest pipeline leaks. External contractors are deployed for inspections from the inflow point to the factory end.

Score 8

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

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Comment Internal personnel at Nanya Technology conduct daily inspections, monthly environmental impact assessments (14 parameters), periodic regulatory compliance inspections (39 parameters), autonomous monitoring of well water quality (18 parameters), weekly internal process water purity monitoring (15 parameters), and real-time monitoring through the Environmental Protection Bureau's CWMS system (7 parameters). Stricter discharge standards have been set based on regulatory limits when water quality exceeds standards. Emergency SOP response measures are implemented if water quality exceeds the standards.

According to Taiwan's local regulations and water pollution prevention and control permit regulations, the COD emissions of Nanya tech corp.-Sanying plant are 624.6 tons/year. The actual emissions in 2019 were 352.68 tons/year, accounting for 56.5% of the permitted volume; the CU emissions are 42.36 tons/year. The actual discharge volume in 2019 was 3.68 tons/year, accounting for 9% of the permitted volume. The quality of the company's wastewater discharge is far below the discharge standard, and there have been no water-related fines in the past three years.

Score 8

3.9.9 *Advanced Indicator* 
Yes
Achievement of identified best practices related to targets in terms of the site's maintenance of Important Water-Related Areas have been implemented.

Comment Nanya Technology has implemented best practices for maintaining important water-related areas, including well water testing, discharge water testing reports, collaboration with NGO to maintain the Wu-Ku wetlands, monitoring biodiversity in the basin, and participating in mountain and river cleaning activities.

Quarterly testing of drinking water quality is conducted, and internal promotion of water-saving policies is ongoing. Regular checks on groundwater levels are performed using the Reservoir Water Information Network and the Water Resources Agency's subsidence monitoring service to ensure the availability and quality of backup water sources. Periodic reviews of the New Taipei City Government Water Resources Bureau's ecological environment reports are conducted.

Score 8

3.9.10 *Advanced Indicator* 
Yes
Achievement of identified best practice related to targets in terms of WASH shall be quantified.

Comment 1. Drinking water dispensers are installed in the tea rooms of each building and floor in the factory area. There are a total of 66 drinking water dispensers in the entire factory area, with sufficient drinking water sources. To ensure drinking water safety, the admin regularly outsources professional third-party lab to conduct water quality testing, and posts the testing results on the drinking water dispensers. There are regular cleaning personnel to maintain the cleanliness of the tea rooms, and there are regulations for the use of tea rooms, which are posted in prominent areas of the tea rooms to remind users to maintain hygiene and cleanliness.

2. The number of restrooms and urinals is more than building regulations. All staff offices on each floor of each building are equipped with facilities. The site also posts slogans of correct usage at the locations of each toilet and urinal to remind users to maintain hygiene and cleanliness. Adequate toilet paper is placed in each toilet, and regularly supplement. Each bathroom has sufficient hand washing sinks and provide hand sanitizer and wiping paper for convenient cleaning and use by personnel. Cleaning personnel will regularly perform toilet cleaning to provide clean toilet space.

3. Water conservation advocacy signs have also been posted inside the factory to remind users to save water and avoid water wasting.

4.

Score 4

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3.9.11	<i>Advanced Indicator</i> <i>A list of efforts to spread best practices shall be identified.</i>	 Yes
Comment	Through public platforms like (Youtube), Nanya Technology discloses and promotes water resource treatment results through ESG reports. It is connected to the CWAS system of the New Taipei City Environmental Protection Bureau, in 2023, conducts 2 supplier education, student visits, education and training, internal water-saving education and training, and promotes water-saving slogans to community residents.	
Score	3	
3.9.12	<i>Advanced Indicator</i> <i>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.</i>	 Yes
Comment	1. Since 2020, Nanya Technology has been collaborating with the Wilderness Conservation Association to remove the small flower loosestrife from the Wugu Wetland. The small flowered magnolia is listed as one of the world's top 100 invasive species by the International Union for Conservation of Nature (IUCN). In the summer of 2022, the site has organized more than 50 employees and family members to remove the small flower loosestrife in wetland. During this event, 142.5 kilograms of small flower loosestrife had been removed, contributing to the protection of biodiversity and the integrity of the habitat. 2. On the 917 International Clean Beach Day in 2022, Nanya Technology, together with five companies including Advantech, Compaq, Guangbao Technology, South Asia Plastics, and Samsung Electronics, held a clean beach event. In this joint beach cleaning event, more than 50 colleagues and family members had joined this event, and finally picked up 910.7 kilograms of garbage. The above activities could be referred to ESG report P137.	
Score	10	
3.9.13	<i>Advanced Indicator</i> <i>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.</i>	 N/A
Comment	The site does not perform this indicator.	

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4	STEP 4: EVALUATE - Evaluate the site’s performance.	
4.1	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.	
4.1.1	Performance against targets in the site’s water stewardship plan and the contribution to achieving water stewardship outcomes shall be evaluated.	Yes

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Comment The site's Water Stewardship Plan specifies the requirements of evaluating site performance and its contribution to achieving water stewardship results based on the objectives of the water stewardship plan.

For water governance, the site has formulated a water stewardship policy, and issued an AWS disclosure report to be published on the official website.
Water stewardship related information is shared with stakeholders, and there is also a window to respond when stakeholders have problems that need to be addressed, allowing the site to respond and handle them immediately.
They also communicate and promote water related knowledge and awareness to employees.

For water balance
Since 2017, Nanya Technology has set the following water management goals for 2025, and also sets annual goals for the current year. The achievement status is regularly reviewed and published in the annual ESG report.

Goal 1: Production loss caused by water limitation. Number of wafers=0 (2022 Goal 0, Actual 0)

Goal 2: Annual average process water recovery rate $\geq$ 93% (2022 target of 90%, actual 92.9%)

Goal 3: Starting from 2018, the cumulative water consumption per unit of production capacity (reduced from 2017) is greater than 39% (2022 target of 38.5%, actual 38.5%)

For water quality

All wastewater from Nanya Technology is collected and discharged into appropriate sewage facilities for treatment. To ensure that the discharge water quality meets the standards, the site has synchronized with the Environmental Protection Bureau to monitor the discharge water quality, and regularly outsource third-party lab sampling and analysis testing every quarter to strengthen the control of wastewater quality.
The wastewater is divided into more than 20 types of pipelines in the diversion section, mainly classified as organic wastewater, general acid-base wastewater, hydrogen fluoride wastewater, and outsourced high concentration waste liquid. So some of the wastewater could be recycled to reduce discharge volume.
The site is gradually upgrading the wastewater treatment facilities. In 2022, the site expanded the FAB 3AN hydrogen fluoride wastewater recovery system.

For IWRA

The site has implemented a few actions to maintain the health status of the IWRAs. Such as conducted groundwater quality monitoring annually for site and catchment IWRA; Assist in removing Mile-a-minute Weed (an invaded species) in Wugu Ecological Park annually since 2020; For catchment IWRA, monitor water quality daily for the Taoyuan Canal, including turbidity, pH, conductivity, and water quantity.

For WASH

There are sufficient drinking water dispensers in the factory area, and to ensure drinking water safety, a drinking water management operation method (BNDCU-0011) has been established. The water quality is regularly inspected to ensure that drinkers can drink with peace of mind. The drinking water dispensers are placed in tea rooms, stairwells, etc., so that employees and other personnel entering the factory can have sufficient drinking water to use.
1. The number of the toilets used by personnel in the factory and the setting of urinals are superior to building regulations.
2. Water conservation promotion signs have also been posted inside the factory to remind users to save water and avoid wasting water resources.

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4.1.2	<i>Value creation resulting from the water stewardship plan shall be evaluated.</i>	 Yes
Comment	Nanya Technology focuses on water resource policies, goals, water resource management, wastewater management (quality), continuous environmental monitoring, and WASH establishes a list and related achievements, with 21 improvement works, totaling an investment of 1.5 million USD(480 million NT\$), saving water costs of 125 thousand USD/year (4 million NT\$).	
4.1.3	<i>The shared value benefits in the catchment shall be identified and where applicable, quantified.</i>	 Yes
Comment	Nanya Technology focuses on water resource policies, goals, water resource management, wastewater management (quality), continuous environmental monitoring, and WASH establishes a list and related achievements, with 21 improvement works, totaling an investment of 1.5 million USD(480 million NT\$), saving water costs of 125 thousand USD/year (4 million NT\$).	
4.1.4	<i>Advanced Indicator 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.</i>	 Yes
Comment	1. Hold a management review meeting once a year and report water stewardship performance to the general manager during the meeting. 2. The company conducts an annual review and evaluation of the current management status, risks, and opportunities related to water, and consolidates the information to report to senior executives; After approval by the senior supervisor, fill out the CDP water questionnaire and upload the information to the public, so that all stakeholders can access the above information. 3. Report to the board of directors on the annual consolidation of water and water-saving achievements.	
Score	3	
4.2	<i>Evaluate the impacts of water-related emergency incidents (including extreme events), if any occurred, and determine the effectiveness of corrective and preventative measures.</i>	
4.2.1	<i>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.</i>	 Yes
Comment	The site established an online department meeting system to notify the water treatment department of daily results. NTC CAR (Corrective Action Request) system is used for severe situations. 2. From 2022.11.01 to 2023.11.29, there were 11 water-related emergency events, including leaks of pure water and chemicals. All incidents were corrected and closed in the NTC CAR system.	
4.3	<i>Evaluate stakeholders' consultation feedback regarding the site's water stewardship performance, including the effectiveness of the site's engagement process.</i>	
4.3.1	<i>Consultation efforts with stakeholders on the site's water stewardship performance shall be identified.</i>	 Yes

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Comment	The site communicates with all stakeholders through online questionnaires and publishes contact information on their website, so that stakeholders can quickly respond to relevant matters through the contact window. The site also communicates and exchange opinions during on-site visits of stakeholders like suppliers and customers. The site will introduce the water stewardship performance during the site visit, and ask the audience to fill the questionnaires.	
4.3.2	<i>Advanced Indicator</i> <i>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.</i>	 N/A
Comment	The site does not perform this indicator.	
Score	6	
4.4	<i>Evaluate and update the site's water stewardship plan, incorporating the information obtained from the evaluation process in the context of continual improvement.</i>	
4.4.1	<i>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.</i>	 Yes
Comment	The site has updated the water management goals annually in the AWS Report, focusing on reducing process water consumption, increasing process water recycling, and lowering wastewater concentration.	

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5 STEP 5: COMMUNICATE & DISCLOSE - Communicate about water stewardship and disclose the site's stewardship efforts	
5.1	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.
5.1.1	The site's water-related internal governance, including positions of those accountable for compliance with water-related laws and regulations shall be disclosed. ✓ Yes
Comment	The site discloses the AWS Sustainable Water Management Report on the corporate website, which includes the responsible person and department for sustainable water management. https://www.nanya.com/ESG/tw
5.2	Communicate the water stewardship plan with relevant stakeholders.
5.2.1	The water stewardship plan, including how the water stewardship plan contributes to AWS Standard outcomes, shall be communicated to relevant stakeholders. ✓ Yes
Comment	The site discloses the AWS Water Management Report on the official website. The site also communicates the water stewardship plan during stakeholder training or meeting. https://www.nanya.com/ESG/tw
5.3	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.
5.3.1	A summary of the site's water stewardship performance, including quantified performance against targets, shall be disclosed annually at a minimum. ✓ Yes
Comment	Quantify performance in AWS Report, ESG Report, and CDP questionnaire annually and publish on the official website.
5.3.2	Advanced Indicator The site's efforts to implement the AWS Standard shall be disclosed in the organization's annual report. ✓ Yes
Comment	Quantify performance in AWS Report, ESG Report, and CDP questionnaire annually and publish on the official website.
Score	1
5.3.3	Advanced Indicator Benefits to the site and stakeholders from implementation of the AWS Standard shall be quantified in the organization's annual report. ✓ Yes
Comment	Quantify relevant benefits in AWS Report, ESG Report annually and publish on the TSMC official website.
Score	1
5.4	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.
5.4.1	The site's shared water-related challenges and efforts made to address these challenges shall be disclosed. ✓ Yes
Comment	Public disclosure of water-related challenges in AWS Report annually.

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5.4.2	<i>Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be identified.</i>	 Obs.
Comment	The site discloses the AWS Water Management Report on the official website. https://www.nanya.com/ESG/tw The site was invited by the Taiwan Printed Circuit Board Association to participate in the "ECO Talent Campus Sharing Conference - Environmental Education" textbook compilation and serve as a lecturer. They have provided relevant publicity to primary and secondary schools where we are interested. Over the past five years, we have served a total of 62 schools and 1604 students, hoping to convey the correct knowledge of environmental protection to students; The site has also organized multiple beach cleaning activities, leading colleagues and family members to participate in beach cleaning activities organized by government agencies and patrol teams around the factory area, allowing everyone to clean up marine debris, understand the impact of arbitrary disposal of garbage on the ocean and other organisms, and cultivate good habits of caring for the environment.	
5.5	<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>	
5.5.1	<i>Any site water-related compliance violations and associated corrections shall be disclosed.</i>	 Yes
Comment	Checked pollution source data for the site in MOENV's pollution source information system and no violation on it.	
5.5.2	<i>Necessary corrective actions taken by the site to prevent future occurrences shall be disclosed if applicable.</i>	 Yes
Comment	Checked pollution source data for the site in MOENV's pollution source information system and no violation on it.	
5.5.3	<i>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.</i>	 Yes
Comment	Checked pollution source data for the site in MOENV's pollution source information system and no violation on it.	

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Photographic Evidence from Audit

✓
Yes



chemical warehouse.jpg



stakeholder interview.jpg



chemical loading area.jpg

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discharge water body.jpg



well.jpg



local community visit.jpg



discharge point.jpg

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gas warehouse.jpg



wastewater treatment.jpg



waste liquid tank.jpg

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wastewater treatment facility.jpg