CERTIFICATION REPORT

Alliance for Water Stewardship (AWS)

Audit Number: AO-001649

SITE DETAILS

Site: **PT Hanjaya Mandala Sampoerna, Tbk. SKT Plant Rungkut 1**
Address: Jl Rungkut Industri Raya 18, Rungkut Tengah, Gununganyar, 60293, Surabaya, INDONESIA
Contact Person: Amanda Hadi IsTianti
AWS Reference Number: AWS-000787
Site Structure: Single Site

CERTIFICATION DETAILS

Certification status: Certified Core
Date of certification decision: 2025-Dec-19
Validity of certificate: 2028-Dec-18

AUDIT DETAILS

Audited Service(s): AWS Standard v2.0 (2019)
Audit Type(s): Initial Audit
Audit Start Date: 2025-Sep-23
Audit End Date: 2025-Sep-25
Lead Auditor: Hasudungan Sahat

Audit team participants:
Leong Siew Mui

Site Participants:
Sianggono Harisan, Manager Hand-Rolled Plant
Sulung Prasetyo, Manager MNF Sustainability
Is Tianti Amanda Hadi, Sustainability
Agung Sulistiyono, Manager Hand-rolled Engineering
Diyan Nugroho, Manager Production & Quality
Oktani Rendra Purwanto, IFMS Manager
Rini Anggraeni, IFMS Engineer
Kukuh Kristianto, External Affairs
Aniek Suryani, Lead Production Unit
Andhika Sapta K, Supervisor Logistic
Farida Anggraeni, Sustainability
Bachtiar Izza, Sustainaibility

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AUDIT TIMES

Dates	Audit from	Duration	Auditor	Description
2025-Sep-23	08:00:00 - 17:30:00	09:30	Hasudungan Sahat	
2025-Sep-24	08:00:00 - 17:00:00	09:00	Hasudungan Sahat	
2025-Sep-25	08:00:00 - 16:00:00	08:00	Hasudungan Sahat	

WSAS
2 Quality StreetNorth Berwick, EH39 4HW, UNITED KINGDOM

ADDITIONAL INFO

Summary of Audit Findings: During the initial certification audit , 2 of non-conformity and 3 observations were raised.

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 7 days of receipt of the audit report by 14/11/25.

The non-conformities must be closed within 90 days of the end of the audit. In order to meet this timeline evidence is to be submitted to WSAS by 07/12/2025.

The audit team recommends certification of PT Hanjaya Mandala Sampoerna Tbk. – SKT Plant Rungkut 1 at Core level pending approval of the corrective actions plan and closure of the non-conformities.
The Site has successfully closed all Non-conformities.

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Scope of Assessment: The scope of services covers the initial certification audit for assessing the conformity of PT Hanjaya Mandala Sampoerna Tbk. – SKT Plant Rungkut 1 against the AWS International Water Stewardship Standard Version 2.

PT HM Sampoerna Tbk Plant Rungkut 1 is a hand-rolled cigarette manufacturing facility that specializes in secondary processing operations. The plant receives cut filler from the primary processing facility located at Sampoerna Sukorejo Plant and focuses solely on the packing process. The primary raw materials used in production include cut filler, cigarette paper, and packaging materials. Water is not utilized in the core production process but is limited to supporting activities such as glue preparation and sanitary hygiene, including toilet facilities, cleaning of tools, and provision of drinking water for employees. The site is situated within the SIER (Surabaya Industrial Estate Rungkut) Industrial Estate Area.
The site employs a total of 1400 people as of August 2025. The facility covers a total site area of 22767 square meters with a built-up area of 12074 square meters. The site consists of manufacturing buildings, administrative facilities, and supporting infrastructure necessary for cigarette packing operations, wastewater treatment, and employee services. The site comprises manufacturing buildings, administrative facilities, and supporting infrastructure essential for cigarette packaging operations, wastewater treatment, and employee services. The treated effluent is discharged into the PT SIER (Industrial Estate Pipeline connection to estate WWTP. Rainwater and stormwater are channeled through the plant's internal drainage system, which flows to rainwater ponds and then ultimately to the city's drainage channels.
The PT HM Sampoerna Tbk Plant Rungkut 1 is located within the Surabaya, Rejoso, and Kedunglarangan Watershed.
The site's primary location is situated on the Surabaya watershed. Surabaya Watershed is a tributary of the Brantas River, which has a river flow from the Mlirip DAM sluice gate to the Jagir sluice gate, which is a cross-city river. Morphologically, the Surabaya Watershed features a low-altitude plain topography that is predominantly characterized by swamps. The rock layers in Surabaya City are mostly composed of alluvial deposits, which are favorable for agriculture. As a result, many water channels in the city, which were originally used for irrigation, can still be found.

The audit was conducted on-site on September 23-25, 2025.
The onsite visit involved assessing various elements, including the site's water infrastructure, main process areas, the wastewater treatment plant (WWTP), the glue production unit, wastewater discharge points, as well as chemical and fuel storage, and visiting the Industrial Estate WWTP (PT SIER)
The following external stakeholders were interviewed during the audit: UPT Welang-Pekalen (Welang-Pekalen Watershed Management Division, East Java Public Works Agency), the Gunung Anyar Sub-District (local government), Gunung Anyar Health Center, and Perum Jasa Tirta 1 (East Java Provincial River Management Agency).

FINDINGS

NUMBER OF FINDINGS PER LEVEL

Observation	3
Non-Conformity	2

FINDING DETAILS

Finding No:	TNR-021432
Checklist Item No:	1.3.1
Status:	Open
Finding level:	Observation
Checklist item:	Existing water-related incident response plans shall be identified.
Findings:	The site has estabilish standard operating procedure for failure to water supply in document "Tanggap Darurat Water Supply System "which explains corrective action steps if there is E. coli contamination in drinking water but does not include other parameters that are part of drinking water standards (other physical, chemical, and biological parameters) in accordance with Regulatory of Health Minister No. 02/2023.

Finding No:	TNR-021436
Checklist Item No:	1.5.6
Status:	Closed
Finding level:	Non-Conformity
Due date:	2025-Dec-24
Checklist item:	Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.
Findings:	The site has identified 11 water-related infrastructure facilities within the watershed area. These include the condition of waste management infrastructure in the industrial area (SIER), communal sanitation facilities (toilets), and communal wastewater treatment plants in the Rungkut Tengah District, as well as the status of water supply infrastructure (PDAM Kota). Based on the conditions observed in the Surabaya watershed and the results of stakeholder interviews, there are several flood control infrastructures, including the Jagir sluice gate, the Gebung rubber dam, and the Wonokromo sluice gate, among others. These flood control infrastructures are not included and identified in the list of catchment water-related infrastructure document.
Corrective action:	- To include water infrastructure related flooding extream event such as floodgates, bozem in Surabaya River on water related infrastructure list - To identify level of condition and water challenge related flooding extream event such as floodgates, bozem in Surabaya River - To have inventory evidence of water infrastructure related flooding extream event such as floodgates, bozem in Surabaya River existing condition
Evidence of implementation:	Including water infrastructure related flooding extream events (floodgates and bozem in Surabaya River) on water related infrastructure list, such as: 1. Jagir Sluice Gate 2. Wonokromo Sluice Gate 3. Gunungsari DAM 4. Gubeng Rubber DAM 5. Mlirip Sluice Gate 6. Wonorejo Bozem

Finding No:	TNR-021441
Checklist Item No:	3.1.1
Status:	Open
Finding level:	Observation
Checklist item:	Evidence that the site has supported good catchment governance shall be identified.
Findings:	The site has gathered water quality data from both upstream and downstream locations based on their own laboratory tests. The laboratory results indicate that levels of Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) exceed regulatory standards in upstream areas, while BOD levels also surpass the limits downstream. This data has already been shared with PT SIER, the Estate Management team. However, the site does not monitor the PT SIER expanded to include the water agencies responsible for managing the BOD and COD levels that exceed the regulatory limit in ultimate water bodies, nor does it communicate to the relevant agencies who are responsible for the river

Finding No:	TNR-021444
Checklist Item No:	3.4.2
Status:	Open
Finding level:	Observation
Checklist item:	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.
Findings:	The site identified water quality on the catchment is one of the Shared Water Challenges. As an initiative, the site has gathered water quality data from both upstream and downstream locations based on its own laboratory tests. The laboratory results indicate that levels of Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) exceed regulatory standards in upstream areas, while BOD levels also surpass the limits downstream as part of Surabaya Watershed. From these result the site not yet provide initiatives to address the BOD and COD pollution, e.g. exploring their potential of exerting leverage on the municipal entities upstream of their sub-catchment and downstream (from where the BOD pollution originates) by forming larger stakeholder interest groups around this topic.

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Finding No:	TNR-021446
Checklist Item No:	5.4.1
Status:	Closed
Finding level:	Non-Conformity
Due date:	2025-Dec-24
Checklist item:	The site's shared water-related challenges and efforts made to address these challenges shall be disclosed.
Findings:	Not all stakeholders (keyplayer water agencies) have received the disclosed laboratory results for Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) that exceed regulatory standards in upstream areas, including BOD levels that surpass permissible limits downstream in the Surabaya Watershed. Only PT SIER, the estate management company, has received these results, while the relevant water environment agencies have not yet received them.
Corrective action:	- Discussion with related stakeholder to ensure water quality context and shared risks on Perbatasan River. - Reporting the quality of Perbatasan river water to all relevant stakeholders
Evidence of implementation:	- Discussion with related stakeholder (Environmental of East Java Province Agency and Environmental of Surabaya City Agency) to ensure water quality context and shared risks (BOD and COD Parameters that exceed regulatory standards in upstream areas) on Perbatasan River. - Reporting the quality of Perbatasan river water to relevant stakeholders (Environmental of East Java Province Agency and Environmental of Surabaya City Agency)

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WSAS WATER STEWARDSHIP ASSURANCE SERVICES

Report Details

Report	Value
Report prepared by	Hasudungan Sahat
Report approved by	Lorenzo Brioschi
Report approved on (Date)	05/11/2025

Surveillance

Proposed date for next audit
2026-Sep-22

Stakeholder Announcements

Date of publication	Location
12/06/2025	WSAS Website
12/06/2025	AWS Website
16/07/2025	local newspaper (Memorandum)

Catchment Information

Water Source.jpg

Catchment.jpg

Catchment Information

Catchment Name
The site is located within the Surabaya watershed.

Water Supply & Discharge Catchment

PT HM Sampoerna SKT Plant Rungkut 1 does not directly withdraw groundwater. The site receives clean water from Perumda Surya Sembada (City municipal water supplier), which sources surface water from the Surabaya River and Umbulan spring located in the Surabaya and Rejoso watersheds. Additionally, the site's drinking water is supplied by CV Sumber Gading, which sources its water from groundwater located in the Kedunglarangan Watershed. The water received from CV Sumber Gading is processed into drinking water using internal water purification technology and accounts for approximately 3% of the total water usage. All incoming water undergoes treatment through the site's water purification system before consumption. For discharge, the treated wastewater is released into the Avur Wonorejo River, which flows into the Madura Sea. The facility does not utilize desalination plants or discharge into maritime bodies.

Groundwater Aquifers
The site does not withdraw groundwater itself

Catchment Water Service Providers
The site does not directly withdraw groundwater. Instead, its water supply comes from three watersheds: Surabaya, Rejoso, and Kedunglarangan.

The site has two primary water service providers:

1. Perumda Surya Sembada (Primary Supplier) - This provider supplies surface water sourced from the Surabaya River and Umbulan spring, drawing from the Surabaya and Rejoso watersheds.

2. CV Sumber Gading (Drinking Water Supplier) - This supplier provides drinking water, which is sourced from groundwater in the Prigen Sub-district, part of the Kedunglarangan Watershed.

All incoming water is treated through the site’s internal water purification system before consumption. Additionally, the site operates a Wastewater Treatment Plant (WWTP) to manage domestic wastewater generated from toilet use, handwashing, and equipment cleaning. The treatment process includes stages of equalization, anoxic treatment, aeration, and clarification.

Treated wastewater from the site is directed to the pipe systems of the Industrial Estate Wastewater Treatment Plant (WWTP), operated by PT SIER, and leads directly to the facility. The effluent from the industrial estate is then discharged into the Perbatasan River. Stormwater is partially collected in infiltration ponds for irrigation, while the remaining runoff is channeled through the factory's drainage system into the city's drainage network.

Catchment Features

The Surabaya watershed is characterized by flat terrain. Research and discussions with stakeholders have identified areas in the Kalirungkut and Kedung Baruk sub-districts, particularly around the Rungkut 1 plant, as prone to flooding. These areas are categorized as having a moderate to high risk of flooding. No inter-basin transfers. The watershed system operates within Indonesia's tropical climate zone, and the drainage basin characteristics include a mix of residential settlements, traditional markets, and industrial facilities.

Client Description and Site Details

Site Location 2.jpg

Site location.jpg

Client/Site Background

Site Location
PT HM Sampoerna SKT Plant Rungkut 1 is located in Gunung Anyar District, Surabaya City, East Java, at Jalan Rungkut Industri Raya No. 18. The site coordinates are 7°19'51.08"S, 112°45'42.76"E.

Briefly Describe Surroundings
The site is situated within the SIER (Surabaya Industrial Estate Rungkut) Industrial Estate Area.

Describe What the Site Produces
PT HM Sampoerna SKT Plant Rungkut 1 is a hand-rolled cigarette manufacturing facility that specializes in secondary processing operations. The plant receives cut filler from the primary processing facility located at Sampoerna Sukorejo Plant and focuses solely on the packing process. The primary raw materials used in production include cut filler, cigarette paper, and packaging materials. Water is not utilized in the core production process but is limited to supporting activities such as glue preparation and sanitary hygiene, including toilet facilities, cleaning of tools, and provision of drinking water for employees. The plant does not operate boilers or cooling towers and therefore does not consume water for energy production purposes.

Describe the Water-Related Infrastructure
The site maintains several water-related infrastructure systems on site:
1. Water sources: Municipal water
2. Water treatment facilities: Water purifier system for drinking water treatment, the drinking water is bought from a supplier.
3. Water use for production: Bottled water is utilized in supporting activities for glue-making processes
4. Water use in energy facilities: Not applicable as the facility does not operate boilers or cooling towers
5. Wastewater treatment facilities: Wastewater Treatment Plant (WWTP) with Biofil system for domestic wastewater processing
6. Cooling towers: Not present at the facility
7. Rainwater harvesting infrastructure: None
8. Stormwater management infrastructure: Storm drainage systems are integrated with a rainwater pond.
9. Fire water: Water sources come from municipal water.
10. Other infrastructure: Biopore systems for rainwater infiltration.

Describe Where the Wastewater and Stormwater are Discharged

Wastewater at the site is generated from domestic sanitation and hygiene activities, including toilet use, hand washing, and appliance cleaning. The site is located in an industrial area, so wastewater from Rungkut 1 Plant must be managed at SIER WWTP. Wastewater is directed through the site's piping system and collected in a central outlet control tub. This process consolidates all discharge points before the wastewater is released into the SIER pipeline network. These piping systems are connected to the inlet of the SIER Wastewater Treatment Plant (WWTP) Facility. Rainwater and stormwater are channeled through the plant's internal drainage system, which flows to rainwater ponds and then finally goes to the city drainage channels.

Provide a Short Description of the Site

The site employs a total of 1400 people as of August 2025. The facility covers a total site area of 22767 square meters with a built-up area of 12074 square meters. The site consists of manufacturing buildings, administrative facilities, and supporting infrastructure necessary for cigarette packing operations, wastewater treatment, and employee services.

	Summary of Shared Water Challenges

Summary of Shared Water Challenges
Based on the analysis, five shared water challenges that impact the site and its catchment area have been identified: flood at the Surabaya watershed and the Rejoso Watershed, forest and land fires at the Rejoso watershed, water quality in the Surabaya watershed, unimproved/improper sanitation and hygiene at Rungkut district, and drought risk at the Surabaya watershed.

0.0.1	Water Source & Discharge Locations

0.01 *Have any water source or discharge locations been visited during the audit, if so, which and where? If none were visited, please provide justification.*

Yes

Comment

During the audit, the auditor inspected the Industrial Estate WWTP (PT SIER), which was responsible for managing the wastewater from the site and its discharge into the Perbatasan River. The auditor did not visit the water source company since they had previously been to the PMI Affiliate (PT HM Sampoerna SKT Plant Rungkut 2). From this visit, the staff at the Industrial Estate WWTP explained that their company solely manages biological wastewater treatment with a minimum COD level of 2000, and the oil and grease parameter is 30 PPM; if these two parameters are not met, tenants are required to either treat it themselves or send it to another WWTP service provider. The management of the Industrial Estate also informed all tenants to handle their wastewater concerning chemical and physical parameters before discharging it into the industrial wastewater pipeline.

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	The site has mapped and documented its boundaries, water infrastructure, and discharge points. The primary water sources for the site are municipal supplies from the Surabaya and Rejoso watersheds, which are used for general purposes. For drinking water, the site purchases water from a vendor that sources it from groundwater located in Prigen Sub-district, part of the Kedunglarangan watershed. The water storage infrastructure consists of three PDAM water tanks with capacities of 265 m³, 92 m³, and 92 m³, and one PRIGEN water tank with a capacity of 6,000 liters. A pump house distributes water from these storage tanks throughout the facility. Wastewater generated from toilets, hand wash facilities, tool wash facilities, and water purifier backwash flows through the wastewater piping system to the outlet and sampling control tubs. The site has three control tubs positioned at the East, Middle, and West sections. Flow meters monitor the wastewater volume before it exits the site boundary at the Middle Control Tub outlet point. From the site discharge point, wastewater flows to WWTP SIER (Wastewater Treatment Plant SIER) located at Rungkut Industri, Kecamatan Gunung Anyar, Kota Surabaya. The wastewater treatment plant operates as a third-party service managed by PT SIER, serving the entire SIER industrial area. After treatment at WWTP SIER, the treated wastewater is discharged into the Perbatasan River. WWTP SIER has a discharge permit issued by the East Java Provincial Environmental Agency (Dinas Lingkungan Hidup Provinsi Jawa Timur) dated February 8, 2024, with permit number 600.4/106/111.2/2024. The facility includes live monitoring of effluent water quality at the discharge point. The site affects and depends upon three watershed areas: the Surabaya Watershed, Rejoso Watershed, and Kedunglarangan Watershed. The primary site watershed is the Surabaya Watershed.	
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

Comment

The site identified 59 stakeholder organizations across internal, external institutional, and external industrial categories within the Surabaya Watershed (covering Surabaya City, Gresik City, Sidoarjo City, Mojokerto City) and Rejoso Watershed (Pasuruan City, East Java Province). The stakeholder composition includes 27 government authorities (4 provincial agencies and 23 local government entities including environmental services, water resources management, health offices, public health centers, district and sub-district administrations, and river basin management); 2 academic institutions (universities conducting baseline studies and hydrogeology research); 8 civil society organizations (1 community-based organization, 6 community groups including women's welfare associations and neighborhood councils, and 1 media association); 9 environmental and water infrastructure entities (1 mangrove conservation facility and 8 water service providers, with the municipal water company supplying 93% from the Surabaya River and 5% from spring sources); 16 private sector entities (retail, manufacturing, hospitality, tobacco production, beverage bottling, healthcare, and industrial estate management); and 12 internal stakeholders (employees, water stewardship team, labor union, and 9 service providers). The river basin management authority oversees four major rivers: Surabaya, Wonokromo, Kalimas, and Brantas.

The site conducted comprehensive two-way stakeholder consultations to identify shared water challenges through the AWS Stakeholder Forum and Sharing Session held on April 23, 2025 at Novotel Hotel, Surabaya, with 81 participants representing 35 stakeholder organizations. Stakeholders were asked to identify and articulate water challenges they experienced rather than simply validating pre-determined issues. Government authorities shared concerns about industrial/domestic waste pollution, illegal riverbank development, and enforcement challenges; PERUMDA Surya Sembada described upstream-downstream pollution impacts, infrastructure limitations (only 1 reservoir post-Kediri despite rainfall pattern shifts after 2023), and climate-induced changes; BBWS Brantas discussed riverbank erosion requiring reinforcement and flood control programs; Perum Jasa Tirta explained reservoir operations and water quality monitoring systems; health offices emphasized sanitation gaps and household liquid waste management needs; and industrial stakeholders confirmed water demand pressures and shared aquifer dependencies. Based on stakeholder feedback analysis, 97% agreed on water-related risks, with identified challenges including flooding (29%), hygiene and sanitation (26%), excess water use (26%), drought (11%), tidal flood (5%), and no water-related risks (3%). Additionally, 92% of stakeholders reported implementing small initiatives that have a significant impact on wise water use in corporate, community, or family environments.

Responding to sanitation challenges raised by stakeholders (26% of feedback combined with other WASH-related issues), the site engaged vulnerable and minority communities through the Clean and Healthy Living Education Program on July 29, 2025, reaching 110 participants from health offices, health centers, district communities, and plant staff. This program utilized women's welfare movement members as community cadres to provide education on healthy latrine use, clean water quality standards, proper handwashing techniques, and household waste management practices to minority communities in two villages (Kali Rungkut and Kedung Baruk). The engagement confirmed that Indigenous peoples are not present in the watershed areas per the Indigenous Territory Registration Agency (BRWA) mapping, which documented only 9 Indigenous territories across Java island, none within the site's catchment area.

The site maintains ongoing two-way communication through documented individual consultations and engagement activities. Initial stakeholder engagement with PT SIER (Surabaya Industrial Estate Rungkut) was conducted on December 2, 2024, followed by a field visit to SIER's WWTP on December 17, 2024. The site conducted field visits to PDAM Surya Sembada's IPAM Karangpilang water treatment plant on July 26, 2025, and to Umbulan Spring on both July 14, 2025 and August 28, 2025 (with water quality testing submission to UPT Welang Pekalen). Additional consultations were conducted with CV Sumber Gading (drinking water supplier), Prigen and Winongan Health Centers, the Mangrove Botanical Garden, and IPLT Keputih (emergency wastewater service provider). The site also participated in multi-stakeholder initiatives, including the East Java Forestry Department's Forum on July 31, 2025. Community engagement activities included Water Management Socialization sessions with Rungkut Tengah RW 4 community on November 29, 2024 and March 26, 2025, with employee public transportation drivers on March 28, 2025, and a World Water Day 2025 celebration on March 21, 2025. The site has prioritized stakeholder engagement based on interest and influence levels identified through these two-way

consultations, using an engagement matrix with four categories: 'Key Player Manage Closely', 'Keep Satisfied & Meet Need', 'Keep Informed & Show Consideration', and 'Monitor (Least Important Player)'.

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

Comment The site has established a bidirectional influence framework to assess stakeholder relationships across the Surabaya, Rejoso, and Kedunglarangan watersheds. Using a Stakeholder Influence and Interest Matrix, the site evaluates both the level of influence the site has on each stakeholder and the influence the stakeholder has on the site, categorizing them as HIGH, MEDIUM, or LOW. All communication and documentation are stored in the "1.2.1-1.2.2 Stakeholder List & Communication Memorandum" document.

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

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

Comment The Site has identified potential water-related emergencies and has documented a response plan to address them. These responses are integrated into the site's comprehensive Emergency Response Plan (ERP), which includes specific procedures and practical drills designed to address emergencies that could impact water resources, such as supply interruptions or contamination events. The emergency management structure is formally defined, with a designated Site Commander and coordinators for various functions, including safety, security, and medical response, to ensure a structured reaction to any incident.

The site maintains procedures for WWTP system failures, water supply emergencies, domestic water supply pumps, flood pump systems, fire pump systems, and Prigen drinking water quality issues, including tank leaks and pump failures. These procedures detail prevention and response systems, such as ensuring 24-hour facility security, maintaining adequate lighting and safety signage, having fire suppression equipment available, and establishing clear communication networks with the internal Emergency Response Team and external services like the local fire department.

However, the site document standard operating procedure for failure to water supply in document "Tanggap Darurat Water Supply System "which explains corrective action steps if there is E. coli contamination in drinking water it does not include other parameters that are part of drinking water standards (other physical, chemical, and biological parameters) in accordance with Regulatory of Health Minister No. 02/2023. Even though the site does the drinking and clean water quality test.

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

Comment

The site has mapped the complete water flow process from input sources through distribution to final discharge points. The site uses a Sankey diagram to visualize this water flow system.

Input: The site receives water from three primary sources: PDAM SKT as the dominant municipal supply, Prigen Water as a secondary source for drinking purposes, and Cleo Water specifically for glue manufacturing processes.

Storage and Distribution Network: Upon entry, water flows into storage infrastructure, including the Water Tank - Prigen, Fire Tanks for emergency systems, and a three-tub system (West Tub serving as the main active storage, East Tub as secondary storage, and Middle Tub currently inactive). From these storage points, water is distributed through an extensive metering network comprising 36 water meters (WM 1-36) that track flow to specific facility zones.

Consumption Points: Water is distributed to multiple operational areas: production Units 6 through 12 with dedicated toilets and hand washing facilities; the Head Office complex including PA offices, Data Center, and the administrative offices; support facilities such as the canteen with cleaning stations, tool wash areas at various units (Ronda, Unit 10, Unit 12), and parking areas; religious facilities at the Masjid; health and safety locations including East and West HRC, Poliklinik, EHS, and TPS LB3; Hall Spektakuler with associated toilet facilities; and corridor areas (lorong) connecting Units 6-7, 7-8, 8-9, 12 East, and 12 West, plus the East Genset area.

Wastewater Collection System: Used water from these facilities flows through designated wastewater meters into collection systems. Major collection points include WM 30 (Effluent Masjid), WM 32 (Effluent POS 4), WM 31 (Effluent Office SKT), and WM 35 (Effluent Hall Spekta), which consolidate wastewater streams. These effluent streams merge and are monitored by the main effluent meter (WM Effluent SKT&HO to SIER) before treatment.

Output: The site manages five distinct water output routes: treated wastewater flows to WWTP SIER for final treatment and discharge to receiving water bodies; gardening water is manually applied and absorbed into soil at both Head Office and SKT locations; Prigen drinking water is consumed directly by employees; backwash water from filter cleaning processes (WM 36) exits the system; and glue manufacturing water is absorbed into finished products. The system also accounts for unaccounted water losses attributed to leakages, evaporation, and unidentified losses within the distribution infrastructure.

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

Yes

Comment	The site has identified its water balance quantification through six distinct measurement conditions from full year 2024 to September 2025, through improvements in monitoring accuracy and reduction of unaccounted water. In Condition 1 (Full Year 2024), the daily average inflow was 23.17 m³ from PDAM and 0.80 m³ from Prigen Water, totaling 23.97 m³, with unaccounted water at 7.32 m³ (30.54%). In Condition 2 (11-24 February 2025), after installing a water meter at WWTP, unaccounted water decreased to 4.33 m³ (11.48%) and daily inflow increased to 37.71 m³. In Condition 3 (16-30 May 2025), with 36 water meters installed, daily inflow rose to 39.11 m³, with wastewater discharge reaching 126 m³. Condition 4 (21 July-21 August 2025) saw stabilizing daily inflow at 33.35 m³, while wastewater totaled 29.39 m³ (88.11%), leading to an effluent discharge of 48.08 m³. During Condition 5.1 (1-17 August 2025), inflow was maintained at 34.71 m³, collecting 49.80 m³ for WWTP discharge. Condition 5.2 (18 August-1 September 2025) included a water meter installation at Hall Spektakuler, achieving a daily inflow of 34.78 m³ with unaccounted water reduced to 1.50 m³ (4.31%), the lowest loss rate recorded. The wastewater collection system consistently operated with West Tub as the primary active storage (ranging from 48.08 m³ to 126 m³ across conditions), East Tub providing minimal secondary collection (0.39 m³ when active), and Middle Tub remaining inactive throughout all measurement periods. This progressive reduction in unaccounted water from 30.54% to 4.31% through the installation and calibration of metering infrastructure. Annual variance in water usage rates shows the water consumption rate was 13.37 m³/million cigarettes in 2022, increased to 16.15 m³/million cigarettes in 2023 (2.78% increase), further increased to 16.43 m³/million cigarettes in 2024 (0.28% increase), and decreased to 14 m³/million cigarettes in 2025 year-to-date (2.43% reduction). Total water consumption increased from 8,829 m³ in 2022 to 11,459 m³ in 2023 (0.30% increase), then decreased to 10,150 m³ in 2024 (0.11% reduction), with 2025 year-to-date showing 5,373.67 m³ (0.47% reduction compared to the same period in 2024). Monthly water consumption rates demonstrate variance with peaks reaching 31.55 m³/million cigarettes in April 2024 and lows of 11.42 m³/million cigarettes in March 2022, representing a span of approximately 20.13 m³/million cigarettes between extreme highs and lows across the measurement period, and the unaccounted water loss is 4.31%. Seasonal operational variations affected consumption patterns, with May 2025 showing peak inflows at 39.11 m³ daily compared to lower consumption periods. Production level fluctuations across different units caused facility-specific variances, particularly in tool wash operations where cleaning frequency changes created 85.7% variance in Unit 12. Measurement methodology improvements, particularly the installation of effluent meters at WWTP and Hall Spektakuler, enabled more accurate wastewater tracking and reduced unaccounted water. Employee behavior changes, facility utilization patterns, and leak detection initiatives during the progressive monitoring implementation contributed to consumption reductions at specific facilities like Unit 10 (66.7% reduction) and Unit 7 (50.1% reduction).

1.3.4	*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.*	Yes

Comment

The site has identified and maintained water quality through scheduling water tests with the accredited laboratory EnviLab. Primary water sources include the municipal supply for the SKT plant and drinking water from Prigen sources, which undergo testing twice a year in accordance with Health Minister Regulation No. 02/2023. The clean water lab result for the municipal supply on July 2025 confirms that the municipal supply meets microbiological standards for E. coli and Total Coliform at 0 CFU/100 mL, with Total Dissolved Solids at 266 mg/L (the legal requirements max. 300 mg/L) and a Nitrate of 0.01 mg/L (the legal requirements max. 3 mg/L), with all heavy metals below detection limits. The result also shows all parameters within acceptable standards.

Drinking water from purified outlets across production areas is monitored monthly, consistently showing compliance. Recent tests (July 2025) indicate E. coli and Total Coliform levels at 0 CFU/100 mL, TDS between 108-230 mg/L (regulatory limit max. 300 mg/L), turbidity below 0.04 NTU (regulatory limit: 3 NTU), and color consistently at 0 Pt/Co (regulatory limit: 10 Pt/Co).

The site used the Industrial Eastated WWTP (PT SIER) regulations to check their effluent wastewater. All parameters for wastewater PT SIER are lower than the regulatory limit from the Industrial East Java Governor's Regulation No. 72/2013. As the Industrial Estate WWTP effluent is mandatory to meet the regulatory limit, then PT SIER processes all wastewater from tenants with their WWTP to meet these legal requirements.

From January to August 2025, effluent wastewater indicates variance in Ammonium, COD, BOD, and TSS parameters. For example, during March 2025, the level of Ammonium indicates a start from February to March increasing from 10.8 mg/L to 14.8 mg/L (March) then decreased to 2.61 mg/L in April 2025. This is due to increased total production of cigarettes from February to March, and in April 2025, the production decreased.

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

Yes

Comment

The site has identified potential sources of water pollution and has compiled a list of chemical materials available during the audit. At every point that could potentially cause pollution, the site provides spill kits. Additionally, some points are also guarded by a ban wall to prevent spillage from spreading directly to the environment.

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

Yes

Comment

No on-site IWRA.

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

Yes

Comment

The site has identified and documented water-related costs in "1.3.7 Water related Cost Rungkut 1 Plant", which includes deep wells monthly payments, portable drinking water gallons, technological maintenance (such as piping system improvements, WWTP quality performance upgrades, rejuvenation, drinking water purifier system upgrades, etc.), wastewater treatment plant operations, water quality testing (drinking water monitoring, wastewater monitoring, environmental health monitoring, etc.), social activities (such as clean living behavior education, WASH assessment, social mapping, construction of 50 biopores in Rungkut Tengah District, water bodies monitoring, AWS stakeholder forum 2025, Catchment baseline study by Brawijaya University, etc.), and others (AWS certification audit).

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

Yes

Comment	The site has identified and provided appropriate toilet facilities, as well as free and accessible drinking water, and the monitoring of all Water, Sanitation, and Hygiene (WASH) facilities by third parties (ISS). The site offers WASH amenities for 1755 employees (comprising 76 males and 1679 females), fulfilling the minimum requirements stipulated in Minister of Manpower Regulation No. 5/2018. The facility maintains a total of 90 toilets, surpassing the regulatory requirement of 48 toilets by 15 units, thus reflecting a surplus. The regulation mandates 1 toilet per 1-15 individuals, 2 toilets per 16-30 individuals, ascending to 6 toilets per 81-100 individuals, with an additional toilet required per 40 persons thereafter. The drinking water infrastructure encompasses two water tanks located in Prigen Timur and Prigen Barat, water purifiers, and drinking water stations situated in Buildings 2-3, 3, 5, 6, 7, 8, 9, and 12-13. Laboratory analyses conducted by EnviLab confirm that the water quality adheres to the Indonesian National Standard (SNI) criteria for microbiological and physicochemical parameters. All toilet facilities are equipped with handwash wastafels, sanitary waste bins, closets, and urinals, with comprehensive cleaning checklists maintained for both drinking water and toilet facilities.

1.4 *Gather data on the site's indirect water use, including: its primary inputs; the water use embedded in the production of those primary inputs the status of the waters at the origin of the inputs (where they can be identified); and water used in out-sourced water-related services.*

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

Comment	The site has identified and mapped 4 vendors that supply products, categorized into two types: LEAF and DIM (the packaging products). To gather information, the site sent out a questionnaire to all suppliers and outsourced services, asking about their location, water-related risks, water quality issues (such as water quality monitoring frequency), and water quantity (for example, water use per tonne of product manufactured). According to their location, all suppliers are outside the catchment area.

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

Comment	The site mapped and monitored indirect water consumption from 8 outsourced services used by the site. These services include cleaning, security, canteen operations, policlinic, WWTP operations, and maintenance and project buildings. The site inquired about their locations, water-related risks, water quality issues, such as monitoring frequency, and water quantity. All outsourced services use the same water source from the deep well on the site during their operations.

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

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

Comment	The site has identified and documented water governance initiatives at both national and municipal levels. At the national level, Indonesia's National Medium Term Development Plan 2020-2024 (RPJMN), governed by Presidential Regulations 37/2023 and 18/2020, establishes National Water Security targets aligned with SDGs, mandating 100% access to safe drinking water and 90% access to sanitation by 2024, prioritizing the Brantas and Bengawan Solo watersheds among 15 critical river basins for restoration, and requiring 150,000 hectares of critical land reforestation. At the municipal level, Surabaya's Regional Development Plan 2021-2026 (RPJMD) under Regional Regulation 4/2021 focuses on maintaining river border green spaces, improving river water quality, developing proper sanitation infrastructure, including waste and sewage networks, implementing community-based sanitation programs (sanimas), and upgrading drainage systems toward a flood-free city.

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

Comment

The site upholds environmental compliance through Red-on-Line, a digital EHS solution designed for efficient regulatory monitoring and legal register management. This system enhances compliance tracking, facilitates proactive monitoring of potential water regulation non-compliances, and provides weekly email updates. The plant has designated personnel responsible for environmental oversight, ensuring that compliance actions are properly executed.
HM Sampoerna's Rungkut 1 facility operates in accordance with multiple layers of Indonesian regulations, including Government Regulation No. 22 of 2021 concerning environmental protection and management, Minister of Environment Regulation No. 5 of 2014 on wastewater quality standards, and East Java Governor Regulation No. 72 of 2013 on industrial wastewater standards. The facility must adhere to specific obligations such as monthly wastewater quality monitoring, quarterly reporting to relevant authorities, maintaining certified personnel for wastewater treatment operations, and complying with discharge limits established for cigarette manufacturing facilities categorized under Category IV standards. The facility also reports through Indonesia's SIMPEL (Environmental Electronic Reporting Information System) to the Ministry of Environment, ensuring transparency with regulatory authorities. Their legal register tracks 63 water-related regulatory articles, where 47 apply to the site, 13 are for information, and 3 are not applicable. The legal register includes wastewater discharge permits and quality standards for groundwater management and pollution control procedures. The site maintains all necessary certifications for wastewater treatment personnel, systematically reports any non-conformities, and submits mandatory quarterly reports to local environmental authorities along with semi-annual reports to the national Ministry of Environment, thereby ensuring comprehensive adherence to all water-related legal requirements.

1.5.3	*The catchment water-balance, and where applicable, scarcity, shall be quantified, including indication of annual, and where appropriate, seasonal, variance.*	Yes

Comment	The site has collaborated with Brawijaya University and Averroes to analyze the catchment water balance of three watersheds for the year 2025. The research document is titled "Water Stewardship Study (Clean Water Supply and Wastewater Disposal) PT HM Sampoerna SKT Plant Rungkut 1". For Surabaya Watershed, surface water inflow totals 359,630,469 m³/yr from river debit (calculated using F.J. Mock Method with 80% reliability discharge based on 2010-2023 rainfall data), with constant outflow of 288,733,524 m³/yr (9.16 m³/s) for commercial water abstractions, resulting in an annual surplus of 70,896,972 m³/yr. Seasonal variance is significant: the wet season (January through June, Period III) shows a consistent surplus ranging from 1.55 m³/s to 14.12 m³/s, with peak availability in April (Period I, 23.28 m³/s potential). The dry season exhibits deficits from July Period II through December Period II, with the highest deficit values of 6.5 m³/s recorded in October Period I and November Periods I and II. The most severe dry season shortage occurs in October and November (2.61-2.84 m³/s potential). Groundwater balance was not calculated because industrial groundwater extraction is prohibited in Surabaya. For the Rejoso Watershed, the surface water inflow is 195,477,000.00 m³/yr (river debit), with an outflow of 74,092,000.00 m³/yr for agriculture/irrigation and forestry, resulting in a surplus of 121,385,000.00 m³/yr. Groundwater inflow via infiltration (Thornthwaite-Mather method using 2012-2022 precipitation and temperature data) is 166,752,561.30 m³/yr, with outflow of 148,019,000.00 m³/yr (industrial abstractions 8,824,000.00 m³/yr plus human consumption 139,195,000.00 m³/yr), yielding an 18,733,561.30 m³/yr surplus. For Kedunglarangan Watershed, surface water inflow is 255,150,979.99 m³/yr with outflow of 129,985,084.80 m³/yr (surplus 125,165,895.19 m³/yr), but groundwater shows a deficit: inflow of 206,500,000.00 m³/yr versus outflow of 334,078,628.91 m³/yr (deficit 127,578,628.91 m³/yr). The groundwater deficit is driven by industrial water abstractions totaling 332,750,000.00 m³/yr, which accounts for 99.6% of total groundwater outflow, far exceeding natural infiltration recharge capacity.	
1.5.4	*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.*	Yes

Comment	The site has identified water quality conditions across three watersheds through monitoring conducted during 2024-2025, testing physical, chemical, and biological parameters against Government Regulation No. 22 of 2021 (for surface water) and Ministry of Health Regulation No. 2 of 2023 (for drinking water sources). In the Surabaya Watershed, monitoring indicates seasonal variations in water quality parameters. BOD and COD consistently surpassed Class III river standards across all monitoring periods: in June 2024, upstream BOD was 19 mg/L and downstream 22 mg/L (standard: 3 mg/L), with COD at 52 mg/L upstream and 54 mg/L downstream (standard: 25 mg/L). July 2024 showed similar exceedances, with upstream BOD at 15 mg/L and downstream 16 mg/L, and COD at 52 mg/L and 54 mg/L, respectively. By February 2025, BOD improved to 4 mg/L at both locations (meeting standards), while COD also decreased to 13 mg/L upstream and 10 mg/L downstream (within standards). The plant's outfall measurements reported BOD at 24 mg/L (June 2024) and 23 mg/L (July 2024), with COD at 77 mg/L and 86 mg/L, respectively, exceeding standards. Other parameters, including pH (7.10-8.54), DO (4-5 mg/L), TSS (9-24 mg/L), temperature (29.0-31.8°C), ammonia (0.21-2.52 mg/L), and total coliform (1700-7800 MPN/100 mL) displayed seasonal fluctuations but mostly remained within acceptable limits. Testing at Avur Wonorejo in 2025 showed Pollution Index values of 3.57 upstream and 3.78 downstream, categorizing water as "slightly contaminated." For the Rejoso Watershed, collaborative testing with UPTPSDA Welang Pekalen at Umbulan Spring on August 22, 2025, showed all parameters below drinking water standards: pH 7.80, temperature 23.9°C, TDS 108 mg/L, nitrate 0.031 mg/L, iron ≤0.04 mg/L, and manganese ≤0.04 mg/L, confirming good water quality. In the Kedunglarangan Watershed, the Prigen Water from CV Sumber Gading was monitored through a water laboratory analysis conducted by Envilab in January 2025. Samples were collected from six locations, including four deep wells (Deep Wells 1, 2, 4, and 5) and two groundwater points from CV Sumber Prigen. All tested parameters met the Ministry of Health standards. Key measurements included fluoride (1.5 mg/L), nitrate (0.07-3.0 mg/L), iron (0.07-0.2 mg/L), sulfate (250-267 mg/L), and temperature (25.2-30.7°C). The seasonal water quality test has identified organic pollution from domestic and industrial sources as the main threat in the Surabaya Watershed. There was a measurable improvement in Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) parameters between mid-2024 and early 2025. Meanwhile, the Rejoso and Kedunglarangan watersheds maintained suitable water quality for their intended uses.

1.5.5	*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.*	Yes

Comment	The site has identified eleven Important Water-Related Areas (IWRAs) across three catchments: Surabaya, Rejoso, and Kedunglarangan. This identification was based on baseline studies, stakeholder interviews, and scientific sources, including the Brantas watershed website, report from water infrastructure agency analyses, SiPongi KLHK (Ministry of Forest and Environmental Information), and InaRisk data (National Disaster Portal) . The IWRAs were mapped at a scale of 1:150,000 and include the following: - Brantas River (38 km from the plant) - Surabaya River (4.1 km) - Perbatasan River (1 km) - Two mangrove forests (7.4-7.8 km) - Two city parks (3.4-6.4 km) - Arjuno-Welirang Mountain (48 km) - Umbulan Spring (51 km) - Bromo Tengger Mountain (79 km) - Plintahan Spring - Sumbersono Spring The identification process involved using GPS coordinates, satellite imagery, water quality laboratory analysis, and consultations with local governance entities. The assessed status of these areas ranged from Status 2 (somewhat degraded and in need of restoration) to Status 4 (in good condition and requiring protection). The assessment results revealed that six IWRAs received a Status 2 due to river water quality degradation (with BOD concentrations to water quality standards (C/WQS) ratios of 4.89-5.17 for the Avur River) and forest fires (which occurred in July 2024 on Arjuno-Welirang and in June 2024 on Bromo Tengger). Five IWRAs received a Status of 3-4. Notably, the mangrove forests saw an increase of 115.87 hectares from 2017 to 2023, although they are facing threats from plastic waste pollution. The identified water-related risks include contamination of water quality requiring control, flooding in drainage systems, waste and wastewater management issues affecting biodiversity, forest and land fires that lead to ecosystem degradation, and occurrences of drought. In particular, predictions indicate increases in drought conditions within the Rejoso catchment, which could adversely affect the Umbulan Spring water supply that serves about 3 million people.
1.5.6	*Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.*

closed

Comment

The site has identified eleven water-related infrastructure facilities serving water supply, treatment, and sanitation functions. The mapped infrastructure includes five water supply facilities (PDAM-IPAM Karangpilang at 5.950 l/s, PDAM-IPAM Ngagel at 4.550 l/s, Pump House Ketegan at 300 l/s, Pump House Putat Gede at 450 l/s, and SPAM Umbulan at 4.000 l/s serving 310,000 people), one raw water provider (CV Sumber Gading at 181 m3/day), three wastewater treatment facilities (WWTP SIER at 10,000 m3/day, IPLT Keputih at 300 m3/day, and two communal wastewater treatment plants), one holding pond (SIER Holding Pond at 16 Ha), and communal sanitation facilities with 2-5 cubicles per point. The result of assessed conditions using a 0-5 scale shows seven facilities rated at status 5 (excellent condition requiring only maintenance), two at status 4 (good condition requiring little work apart from protection), and two at status 3 (acceptable condition benefiting from improvement).
Regarding exposure to extreme events, flooding has been identified as a specific risk for the SIER Holding Pond, which functions to collect rainwater and surface runoff to prevent flooding in the industrial area. The assessed infrastructure risks include water quality degradation and distribution water leakage for all water supply facilities, wastewater infrastructure leaks/failures for treatment facilities, and flooding for the stormwater management system. The SIER Holding (WWTP service provider) Pond requires regular depth monitoring to prevent silting that could compromise its flood control capacity. No drought-specific risks were mapped in the infrastructure assessment, though water quality concerns across all supply infrastructure indicate vulnerability to water scarcity impacts on source water quality.
However, based on the conditions observed in the Surabaya watershed and the results of stakeholder interviews, there are several flood control infrastructures, including the Jagir sluice gate, the Gebung rubber dam, and the Wonokromo sluice gate, among others. These flood control infrastructures are not included and identified in the list of catchment water-related infrastructure document.

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

Yes

Comment

The site has identified and gathered data on WASH services within the catchment area, utilizing data obtained from the Central Statistics Agency (BPS) of East Java Province (2025) as well as local assessments.
Drinking Water Access:
In East Java Province, the access to drinking water is reported at 96.93%, serving a population of 41.81 million individuals. Within the Surabaya watershed, drinking water access is as follows: Surabaya City at 100%, Sidoarjo Regency at 98.07%, Gresik Regency at 97.65%, and Mojokerto Regency at 97.46%. In the Rejoso and Kedunglarangan watersheds, Pasuruan Regency demonstrates a drinking water access rate of 98.62%. Specifically, in Ring 1, encompassing the Kalirungkut and Kedung Baruk subdistricts, there is a 98.1% rate of easy access to drinking water; additionally, 87.6% of residents utilize the municipal water supply for sanitation, while 67.8% rely on it for cooking purposes.
Sanitation Access:
The overall access to sanitation in East Java Province stands at 85.56%. Within the Surabaya watershed, the breakdown reveals that Surabaya City has a sanitation access rate of 97.69%, Sidoarjo at 97.95%, Gresik at 93.22%, and Mojokerto at 91.14%. In the Rejoso and Kedunglarangan watersheds, Pasuruan Regency reflects an 86.36% access rate. In Ring 1, 95.7% of households possess their own toilets, and 99.1% utilize septic tanks for sanitation purposes.
Hygiene Practices (Ring 1, WASH Assessment 2025):
According to the WASH Assessment conducted in 2025 for Ring 1, 87.0% of individuals reported washing their hands before meals, while 73.0% stated that they use soap. Additionally, 61.9% of households reported having handwashing soap available at home.

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

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

Yes

Comment

The site has identified five shared water challenges through consultations with stakeholders and the analysis of multiple data sources, including a Baseline Study and stakeholder interviews. The identified challenges are as follows:
1. Floods: These are primarily caused by low land elevation, a high percentage of impervious surfaces resulting from urban development, inadequate drainage systems, significant seasonal rainfall, and tidal fluctuations in the downstream areas of both the Surabaya and Rejoso watersheds.
2. Unimproved/Improper Sanitation: This challenge is characterized by a limited number of waste disposal sites in the Rungkut Tengah urban village and the proximity of wells to septic tanks, posing serious health risks.
3. Water Quality: The Border River (Kali Perbatasan) is classified as Water Class IV, exhibiting elevated total coliform levels due to domestic waste, poorly managed industrial waste, and runoff from rainfall.
4. Forest and Land Fires: These incidents in the Rejoso Watershed are driven by factors such as dry vegetation, steep slopes, high temperatures that accelerate soil moisture evaporation, and prevailing south-to-north winds.
5. Drought Risk: This issue is linked to land degradation stemming from deforestation and uncontrolled changes in land use that diminish the watershed's capacity for absorption and groundwater replenishment.
Prioritization of these challenges was based on a risk level assessment. Floods were assigned a high priority (ranked 1) due to their immediate impact across multiple watershed areas. Unimproved sanitation was also deemed a high priority (ranked 2) due to direct contamination risks associated with inadequate waste management. Water quality was classified as moderate priority (ranked 3), reflecting the concerns surrounding the Border River's classification. Conversely, forest and land fires were given a lower priority (ranked 5) as a localized issue, while drought risk was deemed of low priority (ranked 6) as a longer-term concern.

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

Comment

The site has identified both public sector and collaborative initiatives aimed at addressing the shared water challenges within the catchment area. Public sector initiatives include the Clean Lifestyle Program initiated by the Surabaya City Health Office to tackle sanitation issues; wastewater disposal monitoring conducted by the Department of Environment and Hygiene (DLH) of East Java Province; normalization of rivers and urban drainage by relevant authorities; the implementation of water bombing and construction of water ditches by forestry authorities for fire prevention; and the installation of additional pumps by local government. Furthermore, local government efforts include the provision of integrated waste bins, communal latrines, and support for the renovation of Temporary Waste Processing Sites (TPST) in the first ring area.
Site-specific actions consist of channeling wastewater to the SIER Wastewater Treatment Plant (WWTP) with routine monitoring to ensure compliance with PT SIER's quality standards; the dissemination of the AWS commitment through stakeholder forums and Water Stewardship campaigns utilizing social media, site radio, websites, and WIKI platforms; employee participation in initiatives for clean water optimization and biopore implementation; the water aerator program; WASH assessment social research conducted in the first ring area; baseline studies concerning the geographical and environmental conditions of the catchment; educational programs for local communities on clean living and the importance of healthy latrines; the installation of additional pumps to mitigate waterlogging; and the deployment of firefighting teams.
Collaborative initiatives include reforestation projects in upstream and fire-prone areas involving multiple stakeholders; education on watershed management and sluice gate utilization; normalization of rivers and drainage systems; community education focused on flood mitigation, watershed protection, and forest fire awareness; revitalization of water sources in conjunction with relevant agencies; and renovation of TPST infrastructure in collaboration with local government and community members.

1.7	*Understand the site's water risks and opportunities: Assess and prioritize the water risks and opportunities affecting the site based upon the status of the site, existing risk management plans and/or the issues and future risk trends identified in 1.6.*	
1.7.1	*Water risks faced by the site shall be identified, and prioritized, including likelihood and severity of impact within a given timeframe, potential costs and business impact.*	Yes
Comment	The site has identified 19 water risks with the following likelihood and severity: Very Likely (almost once every year): 1. Flooding - Low severity (local impact, very limited damage, minor event). 2. Surface water quality degradation - Low severity (local impact, very limited damage, minor event). 3. Unimproved sanitation in catchment - Low severity (local impact, very limited damage, minor event). 4. Unimproved clean water facility in catchment - Low severity (local impact, very limited damage, minor event). Likely (once every 3-5 years): 5. Exceeding wastewater discharge limits - Medium severity (local impact, some damage, moderate event of limited duration) 6. Exceeding drinking water limits - Medium severity (local impact, some damage, moderate event of limited duration) 7. Exceeding fresh water limits on site - Low severity (local impact, very limited damage, minor event) 8. Exceeding fresh water limits on catchment - Medium severity (local impact, some damage, moderate event of limited duration) 9. Drinking water treatment system failure - Medium severity (local impact, some damage, moderate event of limited duration) 10. Fresh water piping leakage - Medium severity (local impact, some damage, moderate event of limited duration) 11. Forest and land fires (IWRAs degradation) - Low severity (local impact, very limited damage, minor event) 12. Loss of biodiversity - Low severity (local impact, very limited damage, minor event) 13. Coastal abrasion - Low severity (local impact, very limited damage, minor event) 14. Unimproved sanitation/clean water facility on site - Low severity (local impact, very limited damage, minor event) 15. Drought occurrence - Low severity (local impact, very limited damage, minor event). Unlikely (once every 10 years): 16. Wastewater pump failure - Serious severity (local impact, recognizable damage, major event of extended duration) 17. Unit/piping leakage - Medium severity (local impact, some damage, moderate event of limited duration) 18. Wastewater treatment system failure - Serious severity (local impact, recognizable damage, major event of extended duration). Almost Never: 19. Hazardous waste storage permit lapse - Low severity (local impact, very limited damage, minor event).	
1.7.2	*Water-related opportunities shall be identified, including how the site may participate, assessment and prioritization of potential savings, and business opportunities.*	Yes

Comment

The site has identified water-related opportunities using a prioritization framework that evaluates likelihood of successful execution (from "almost never" to "very likely - certain execution within a year") and positive impact (from "insignificant mitigation" to "maximum mitigation of water risk/improvement of environmental performance"). The assessment categorizes potential savings as: low (less than $5,000), moderate ($5,000-$20,000), and high (over $20,000). Potential costs are similarly categorized as low, moderate, or high.
The methodology extends beyond site-specific implementation, incorporating collective action with catchment stakeholders to address shared water challenges in the Surabaya and Rejoso watersheds. Opportunities range from short-term actions (very likely within one year) to long-term initiatives (probable execution within three years, or potential execution within five years). The assessment includes forward-looking evaluations of risk reduction through collective action and environmental performance improvements.
Very High Priority Opportunities:
- Tree planting in upstream areas to increase soil absorption capacity and prevent waste littering that clogs river flows (likelihood: very likely, impact: significant mitigation, potential savings: low, potential cost: low)
- Normalization of river and urban drainage through collaborative action with stakeholders (likelihood: very likely, impact: significant mitigation)
- Donation of pumps to reduce waterlogging (likelihood: very likely, impact: significant mitigation)
- Donation of 50 biopores at 50 points in Rungkut Tengah sub-district (likelihood: very likely, impact: significant mitigation)
- Collaborative action with SIER for Border River (Tambak Oso) cleanup (likelihood: very likely, impact: significant mitigation)

High Priority Opportunities:
- Water Stewardship socialization with Ring 1 communities (likelihood: very likely, impact: medium mitigation, potential savings: low, potential cost: low)
- Collaborative Border River cleanup with SIER (likelihood: very likely, impact: medium mitigation)

Moderate Priority Opportunities:
- Piping system improvement to detect leaks early, including regular inspection and water meter rejuvenation (likelihood: unlikely within 5 years, impact: significant mitigation, potential savings: moderate, potential cost: moderate)
- Water aerator program on site (likelihood: very likely, impact: insignificant mitigation, potential savings: moderate, potential cost: moderate)
- Employee involvement in optimizing clean water usage (likelihood: very likely, impact: insignificant mitigation)
- AWS commitment socialization within site and catchment through stakeholder forums and campaigns (likelihood: very likely, impact: insignificant mitigation, potential savings: low, potential cost: low)
- Water Stewardship campaigns on site through videotron, TV, website, and WIKI (likelihood: very likely, impact: insignificant mitigation)
- WASH campaigns on site through multiple media channels (likelihood: very likely, impact: insignificant mitigation, potential savings: low, potential cost: low)
- Routine sampling of clean water and drinking water on site (likelihood: very likely, impact: insignificant mitigation)
- Healthy Living and Behavior (PHB) education in Rungkut Tengah sub-district (likelihood: very likely, impact: insignificant mitigation, potential savings: low, potential cost: low)
- Sanitation awareness socialization in stakeholder forums (likelihood: very likely, impact: insignificant mitigation)

Low Priority Opportunities:
- Collaborative tree planting in upstream/forest fire areas, planned for 2026 (likelihood: probable within 3 years, impact: insignificant mitigation, potential savings: low, potential cost: low)
- Cleanup activity in mangrove botanical garden area, planned for 2026-2027 (likelihood: probable within 3 years, impact: insignificant mitigation, potential savings: low, potential cost: low)

Existing initiatives include wastewater and drinking water treatment system monitoring, piping system maintenance, flow meter installation and recording, wastewater quality monitoring coordinated with SIER, surface and fresh water quality monitoring in catchment areas every

semester, pump condition monitoring, emergency SOPs for wastewater systems, permit monitoring logbooks, and ongoing stakeholder engagement forums.

1.8 *Understand best practice towards achieving AWS outcomes: Determining sectoral best practices having a local/catchment, regional, or national relevance.*

1.8.1 *Relevant catchment best practice for water governance shall be identified.* Yes

Comment The site conducted an investigation into water governance best practices from over 15 organizations, including government agencies (e.g., Ministry of Environment, Water and Agriculture), regulatory bodies (PERMENLHK), research institutions (Brawijaya University), the Indonesian River Affairs Research Agency (BRUIN), and water utilities (Manila Water). The analysis examined governance frameworks from national ministries, provincial governments (like West Java's Regional Action Plan for Drinking Water and Environmental Health), local health agencies, and multi-stakeholder initiatives involving various partners. The site identified and adopted 8 specific governance best practices for catchment-level implementation. These include:
1. Baseline study data sharing covering geohydrological conditions, IWRA status, and water risks across Surabaya, Rejoso, and Kedunglarangan Watershed.
2. Stakeholder engagement forums.
3. Water quality monitoring data sharing from upstream and downstream locations on the Avur Wonorejo River and the Umbulan Spring.
4. Public-private partnership with the Surabaya City Environmental Service for hygiene facility donations.
5. Collaborative planning discussions with the local government for injection well installation in the Rejoso River Basin.
6. Cooperative tree planting program with the Municipal -Perumda Surya Sembada Surabaya City.
7. Community-based WASH Assessment involving respondents from 2 villages.
8. Catchment cleanup initiatives, including planned mangrove area restoration in the Kandangjati River.

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

Comment The site conducted an investigation into water balance best practices from over 10 organizations, including international development agencies (USAID IUWASH), industrial companies (PT. BAT, PT Danone, PT TMMIN, Petrokimia Gresik), water utility providers, government agencies implementing technical standards, academic institutions (Politeknik Negeri Malang), and community-based organizations. The site then analyzed and reviewed how PMI affiliates and other companies improve water use. PMI Sukorejo has installed water-saving faucets, sensor-equipped taps, upgraded piping systems, enhanced stormwater management for cooling, and recycled wastewater for cleaning purposes. PT SIER utilizes IoT for real-time leak detection, started reusing wastewater, and follows the 4R approach (reduce, reuse, recycle, reclaim). Politeknik Negeri Malang is building biopores for water infiltration, while Kawasan Industri Suryacipta Karawang operates a wastewater treatment plant using green technology. PT KT&G monitors water use to spot trends and manage drought risks. The site identified and adopted 9 specific water balance best practices. These include:
1. Installation of water aerators on all water faucets.
2. Toilet renovation from wet to dry systems for reducing water.
3. Upgrade of piping system (phases 1 and 2).
4. Digitalization of 38 water meters with automatic leak detection capabilities.
5. Installation of 40 additional biopores on site to increase rainwater infiltration.
6. Revitalization of retention ponds to capture, store, and absorb rainwater.
7. Addition of a gardening pump for rainwater utilization distribution.
8. Revitalization of ex-sumpit into biofil pretreatment to increase wastewater treatment efficiency.
9. Water meter rejuvenation across multiple locations to improve water balance calculation accuracy.

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

Comment

The site investigated water quality best practices from over 20 organizations, including government agencies and industrial companies. It reviewed various management approaches, finding that industrial operations use green technology, such as WWTPs with aerobic bacteria, while government programs implement eco-friendly infrastructure to reduce pollution.

The site identified and adopted 12 specific water quality best practices. These include:
1. Quarterly preventive maintenance and monitoring of water purifier systems.
2. UV lamp replacement in water purifier treatment units for enhanced disinfection.
3. Addition of 10-inch filter cartridges in all drinking water purifiers for improved filtration.
4. Proactive cleaning of clean water reservoirs and filter tanks to prevent contamination.
5. Replacing lamella media with bioballs in WWTP to increase biological processing efficiency.
6. Revitalization of the ex-sumpit into biofil pretreatment to reduce pollutant load before main treatment.
7. Construction of secondary containment at IPAL holding 110% of the maximum tank volume to prevent spills.
8. Addition of a submersible pump for the WWTP effluent emergency response system.
9. Biofil capacity expansion.
10. Separation of process wastewater and rainwater discharge systems.
11. Water reuse for primary cleaning activities.
12. Canteen relocation away from WWTP to reduce contamination risk.

Catchment Water Quality Practices:
13. Analyzed water quality upstream and downstream in catchment rivers to address gaps in public data.
14. Conducted fresh water quality sampling in the catchment area from residents' wells and water utility sources.
15. Analyzed the clean water quality at spring sources used by water utility providers.
16. Collaborated with water utility providers to rejuvenate plumbing systems and address E. coli contamination.

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

Comment

The site conducted an investigation into IWRA maintenance best practices from over 25 organizations, including government agencies (Ministry of Environment and Forestry, East Java Government, Satgas Citarum Harum), environmental research agencies, water utility providers, industrial companies, academic institutions, community-based organizations, and PMI affiliates.

The site analyzed and reviewed IWRA maintenance approaches implemented across different types of water-related areas in the sector and catchment. Environmental research agencies conducted mangrove cleanup and restoration planting hundreds of seedlings, while government programs implemented large-scale reforestation in mountainous areas, watersheds, and critical lands including 1,000 tree seedlings to protect spring sources. Industrial and government stakeholders constructed infiltration ponds and injection wells to increase groundwater recharge, normalized irrigation canals and drainage channels for improved water flow, and implemented sedimentation management programs for watershed maintenance.

The site identified and adopted 5 specific IWRA maintenance best practices. These include:
On-Site IWRA Practices:
1. Revitalization of retention ponds including 45 meters of wall repair to prevent erosion and optimize rainwater capture, storage, and absorption.
Catchment IWRA Practices:
2. Baseline Study completion mapping IWRA status, water quality status, and water risks in Surabaya, Rejoso, and Kedunglarangan Watershed.
3. Analysis of clean water quality at Umbulan spring water source to monitor IWRA health and raw water quality for water utility providers.
4. Tree planting collaboration with water utility providers on upstream catchment areas to increase recharge zones and improve watershed conditions.
5. Planned cleanup activity in Mangrove Botanical Garden Area to prevent biodiversity loss from waste accumulation in Kandangjati River area.

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 site evaluated WASH best practices from more than eight organizations, including health agencies, regulatory bodies, community groups, and international health organizations. Based on the WASH assessment carried out by the site in partnership with local NGOs, the report shows that in Kelurahan Rungkut Tengah, households that did not have soap specifically for handwashing recorded a significantly higher prevalence of diarrhea (77.2%) than households that provided soap (22.8%). These findings highlight issues of water contamination and poor hygiene habits in both areas.

As an initial step to address this problem, the site identified four best practices and adapted them for implementation at the site, which are:
1. Raising awareness and sharing basic principles of water management to implement clean and healthy living behavior at Rungkut Tengah Sub-District.
2. Clean Living Behavior Education in Rungkut district.
3. Donation of trash bins and plastic bottle sorting hangars as part of efforts to reduce waste in the Rungkut Tengah sub-district.
4. Toilet Renovation on the plant.

2	STEP 2: COMMIT & PLAN - Commit to be a responsible water steward and develop a Water Stewardship Plan	
2.1	*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.*	
2.1.1	*A signed and publicly disclosed site statement OR organizational document shall be identified. The statement or document shall include the following commitments:* *- 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	The site has displayed the AWS commitment statement on notice boards located in the office lobby, security area, production unit, and main hall. These areas are accessible to visitors and external parties entering the facility. The commitment documents are framed and positioned on bulletin boards throughout the operational areas that are open to the public. The AWS commitment document is titled "Rungkut 1 Plant Water Stewardship Commitment," dated 01 May 2025. It is signed by Sianggono Harisan, Manager of the Hand-Rolled Plant Rungkut 1, and features the official company stamp. The document includes all required commitments: 1. Implementation and disclosure of progress on water stewardship programs to achieve AWS outcomes: • Point 1 commits to support, sustain, and uphold the five water management goals of AWS: good water governance, sustainable water balance, water quality, important areas related to water and clean water, and sanitation and health for all (WASH) • Point 9 commits to disclose relevant information related to water to stakeholders and relevant parties in achieving improvements in water stewardship 2. Alignment to and support of existing catchment sustainability plans: • Point 4 explicitly commits to "Implement the AWS Standard in alignment and in support of existing catchment sustainability plans" 3. Stakeholder engagement openly and transparently: • Point 2 explicitly commits to "Engage and involve stakeholders openly and transparently" 4. Resource allocation to implement the Standard: • Point 7 commits to "Allocate necessary resources needed to complete the implementation and maintenance of all requirements on AWS standards" The commitment document also includes additional provisions for legal compliance, stakeholder collaboration, ongoing improvement of water stewardship efforts, and support for national and international water treaties.	
2.2	*Develop and document a process to achieve and maintain legal and regulatory compliance.*	
2.2.1	*The system to maintain compliance obligations for water and wastewater management shall be identified, including:* *- Identification of responsible persons/positions within facility organizational structure* *- Process for submissions to regulatory agencies.*	✓ Yes

Comment	The site maintains water and wastewater regulatory compliance through the Online System and updates information from External Affairs. The responsibilities have been documented in the "AWS Organization," and the person responsible for legal correspondence has also been documented. Each year, the site reviews all compliance regulations in the management review process. The site also used the Red-on-Line system, which is a global, comprehensive EHS solution for regulatory compliance to effectively maintain EHS compliance. The system tracks 88 total water-related regulations, with a compliance status breakdown of 43.18% compliant, 2.27% for information, and 54.55% not applicable, as of June 2025. Additionally, each month, the site reports all water activity to the government to ensure that all parameters meet the requirements.

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

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

Yes

Comment: The site has developed an AWS strategy that defines the company's vision, mission, and goals for water stewardship through a formal Water Stewardship Commitment with five specific objectives: (1) assess water-related risks and shared challenges at plant and catchment levels to identify mitigation opportunities, (2) ensure compliance with water-related laws and regulations, (3) ensure quality of water used and discharged meets local regulations and AWS standards, (4) create, maintain, and evaluate the Rungkut 1 Plant Water Management Strategy Plan including location and catchment-based actions targeting five AWS outcomes (good water governance, good water quality status, sustainable water balance, important water-related areas, and WASH), and (5) involve relevant stakeholders from various sectors for joint initiatives supporting catchment areas and shared water resources. The document was signed by Sianggono Harisan, Manager of the Hand-Rolled Plant Rungkut 1.

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

Yes

Comment

The site has planned 39 total initiatives across water stewardship activities. Of these, 31 initiatives are completed (S3 status), 2 initiatives are currently in progress (S2 status), and 6 initiatives remain as proposed ideas (S1 status). This distribution indicates that 79.5% of planned activities have been executed, 5.1% are being implemented, and 15.4% remain in the conceptual stage. Where the conceptual stage the site already plotting the budget, timeline, positions of persons, and target.

The WS plan indicate activity that include on-site and catchment. Activity on on-site are planned such as upgrading pipe line to minimize the leaks, rejuvenation of water meters that are indicated to be faulty or troubled so that they have the potential to affect the accuracy of the on-site water balance. replacement is carried out for water meter units 6,7,8,9 and 12, and other actions. These planned already identified actions to achieve and maintain it, timeframe, budget, and personal in charges. Including what site want achieve in AWS outcomes.
Actions to achieve targets include technology upgrades such as installing 39 water aerators on faucets (exceeding the 25-unit target), implementing three-phase piping system upgrades, replacing UV lamps in water purifier units, and installing grease traps on sink toilets. Social and community actions include radio broadcast campaigns conducted three times weekly for one week, repeated quarterly, and the World Water Day 2025 "Grebek Quiz AWS" activity where employees answered five questions about water stewardship in each unit.
Infrastructure maintenance actions involve quarterly pump house monitoring and water purifier system maintenance to ensure zero breakdowns and 100% drinking water distribution to all units.
The plan's timeframes are structured from January 2024 through December 2027, with specific milestones for each initiative. Short-term actions completed in 2025 include aerator installation (May 2025), grease trap installation (July 2025), and the three piping upgrade phases (December 2024-August 2025). Long-term monitoring extends through 2027, with ongoing quarterly maintenance for pump houses (January 2024-September 2025) and water purifiers (January 2024-December 2025), plus continuous monthly and semi-annual water quality monitoring through December 2027. The total financial budget allocated is USD 3,782.32, distributed across initiatives ranging from USD 122 for aerator installation to USD 27,816 for Phase 3 piping improvements, with other significant allocations including USD 17,385 for water meter installation (Phase 2) and USD 9,503.03 for pump house maintenance. Responsible personnel are clearly designated, with Plant Rungkut 1 personnel overseeing most initiatives, iFMS managing infrastructure and maintenance projects, and the Sustainability department coordinating the World Water Day activities.
These targets directly link to AWS outcomes and best practices addressing shared water challenges. Good Water Governance is achieved through the radio campaign that reached 97.63% employee awareness and the World Water Day quiz program, promoting water stewardship understanding across all units. Sustainable Water Balance is demonstrated through piping upgrades that systematically identified unaccounted water at 11.49% (Phase 1), 19.49% (Phase 2), and 4.31% (Phase 3), with economic value creation of USD 914.63 in cost avoidance through compliance with PERMENLHK No. 14/2025 regulations and USD 50.14 savings from reduced water usage. Good Water Quality Status is maintained through regulatory compliance monitoring, showing 75% achievement for freshwater, 87.50% for wastewater, and drinking water. Safe Water, Sanitation, and Hygiene outcomes are realized through water purifier maintenance, ensuring employee health and basic needs provision, and grease trap installation, reducing oil/fat waste pollution and odors.

2.4 *Demonstrate the site's responsiveness and resilience to respond to water risks*

2.4.1 *A plan to mitigate or adapt to identified water risks developed in co-ordination with relevant public-sector and infrastructure agencies shall be identified.*

Yes

Comment

The site developed water risk mitigation plans through coordination with public-sector and infrastructure agencies documented in the AWS Stakeholder Forum 2025 on April 23, 2025 and subsequent bilateral engagements.
Stakeholder Forum (April 23, 2025): 81 participants from 35 stakeholder organizations attended at Novotel Hotel, Surabaya. Participants included:
Public Sector Agencies:
- East Java Province Environmental Service
- East Java Province Water Resources Public Works Department
- Surabaya City Environmental Service
- Public Works and Public Housing Office Surabaya City
- Water Resources and Highways Department of Surabaya City
- Public Health Office Surabaya City
- BBWS Brantas
- Kecamatan Gunung Anyar
- Kelurahan Rungkut Tengah
- Puskesmas Gunung Anyar

Infrastructure Owners:
- PDAM Surya Sembada Surabaya
- PT Surabaya Industrial Estate Rungkut (SIER)
- Perum Jasa Tirta 1 (PJT 1)
- Pengelola Mata Air Umbulan

Forum Results:
- 97% of stakeholders identified water risks in the catchment.
- Main risks identified: Flooding (29%), Hygiene and Sanitation (26%), Excess water use (26%), Drought (11%), Tidal Flood (5%).
- 92% of stakeholders implemented water use initiatives.

Bilateral Coordination:
1. PDAM Surya Sembada: Discussed raw water sources (5% Umbulan, 95% Surabaya River), water quality challenges during dry season, and conservation programs including upstream tree planting.
2. DSDABM (Water Resources and Highways Department): Discussed flood control systems for four main rivers in Rungkut area, plans for Rungkut Menanggal pump station construction, and drainage system maintenance.
3. UPT Welang Pekalen - Umbulan Spring Management: Site visits July 14 and August 28, 2025, discussed water discharge decrease (400-300 m^3/second), proposed 1,000 infiltration wells and reforestation program in upstream area. Water quality testing conducted.
4. DLH Kota Surabaya (Environmental Agency): Discussed environmental monitoring, STBM 5 Pillars program for household wastewater treatment, and planned World Environment Day event in Rungkut area.
5. PT SIER: December 2, 2024 sharing session on AWS and water management; December 17, 2024 field visit to WWTP SIER.
6. IPAM Karangpilang: July 26, 2025 field visit confirmed clean water source from Surabaya River with supplementary supply from Umbulan SPAM.
7. IPLT Keputih: Designated as emergency wastewater service provider for domestic and non-hazardous waste if SIER WWTP malfunctions.
8. Mangrove Botanical Garden: Visit identified main problem as downstream trash accumulation disrupting mangrove ecosystem.

Mitigation Actions with Stakeholder Coordination:
- Infiltration well installation program (1,000 wells) with UPT Welang Pekalen in upstream Rejoso area, with 4 locations already realized.
- Reforestation program in upstream catchment areas with Umbulan spring management.
- Flood control infrastructure planning with DSDABM (pump station construction in Rungkut Menanggal).
- Water quality monitoring collaboration with PDAM Surya Sembada and DLH.
- Emergency wastewater management arrangement with IPLT Keputih.

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

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

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

Comment: The site has gathered water quality data from both upstream and downstream locations based on their own laboratory tests. The lab results show that levels of Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) exceed regulatory limits in upstream areas, and BOD also surpasses limits downstream. This information has already been shared with PT SIER and the Estate Management team. However, the site has not expanded its monitoring to include water agencies (such as the Department of Environment, PJT 1, etc.) responsible for managing the elevated BOD and COD levels in the water bodies, nor has it communicated with the relevant agencies in charge of river management.

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

Comment: No Indigenous Peoples have been identified in the site's operational area, which is located in the center of the city. Residents access water through a combination of municipal supply, private wells, and community-based water providers.

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

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

Comment: All national and local legal requirements and regulations have been met by the operational processing plant on the site, including the wastewater discharge requirements. The permission documents are appropriately documented and up to date. The site maintains water and wastewater regulatory compliance through the Red-On-Line digital system. This global EHS solution provides weekly monitoring emails and dashboard notifications for new or updated regulations. The site conducts monthly internal meetings to evaluate compliance status updates in the Red-On-Line platform and monitor regulatory changes through both the platform and government websites. Environmental permit tracking is maintained by the sustainability team, which monitors active periods and the status of all water-related permits.

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

Comment: No specific indigenous groups are located within the site plant catchment areas. All national and local legal requirements and regulations have been met by the operational processing plant on the site, including the wastewater discharge requirements.

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

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

Comment

The site established annual targets and implemented a series of strategies to attain a water balance in response to issues related to water loss and efficiency. To address these challenges, the site upgraded its piping system in three distinct phases between December 2024 and August 2025.
Phase 1, from December 2024 to February 2025, focused on reconnecting broken pipes and integrating wastewater lines into the SIER Wastewater Treatment Plant (WWTP) network. The installation of wastewater meters during this phase identified 11.49% unaccounted water in the system, revealing areas where water loss occurred.
Phase 2, from February to May 2025, involved installing additional water meters for monitoring both clean and wastewater. This effort identified unaccounted water at 19.49%, prompting further investigation into the causes of the loss and the development of targeted solutions for remediation.
Phase 3, from May to August 2025, involved installing additional wastewater meters and reducing the pipe diameter in the spectacular hall area. These modifications improved overall water distribution and brought the unaccounted water level down to 4.31%.
In May 2025, the site installed 39 water aerators on faucets, exceeding the target of 25 units. This initiative resulted in measurable savings through decreased water consumption. The site also centralized glue pot washing locations between April and June 2025, achieving a target of 189.21 cubic meters per month in water savings. To enhance water balance calculations, five water meters (units 6, 7, 8, 9, and 12) were replaced between May and June 2025. This upgrade improved the accuracy of measurements, contributing to the final determination of 4.31% unaccounted water (leakeges).

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

Yes

Comment

The site has identified Drought Risk as a shared water challenge, currently assessed at a low risk level with a prioritization rank of 6. This challenge is linked to land degradation, deforestation, and uncontrolled land use changes that compromise the upper watershed's capacity to absorb rainwater and replenish groundwater reserves. The risk of drought increases during prolonged dry seasons when water flow downstream significantly decreases.
In response, the site implemented water use efficiency targets in 2025, which include the following achievements:
1. Installation of water aerators: The target was to install 25 water aerators on faucets. Achievement: 39 water aerators were successfully installed in May 2025.
2. Identification of piping leakage and unaccounted water: The goal was to reduce unaccounted water to a minimum of 5% of total water use across three phases. Achievement: Unaccounted water decreased from 11.49% in Phase 1 to 4.31% in Phase 3.
3. Water savings through centralized glue pot washing: A water savings target of 189.21 m^3 per month was established. Achievement: This target was met between April and June 2025.

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

Yes

Comment

The site does not reallocate water savings for external benefits or uses. After conducting interviews and visiting the site, no legal issues were found. There is no diversion of water for social, cultural, or environmental purposes.

3.4 *Implement plan to achieve site water quality targets*

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

Yes

Comment

The site conducted a Baseline Study from December 2024 to June 2025 to identify geohydrological conditions in the catchment area and the water balance in the catchment. The study included mapping of catchment, IWRA Status, Water Quality Status, and Water Risk in the catchment. The baseline study identified water quality in the catchment as a moderate risk. River water was classified as Water Class IV under PP 22/2021 Appendix VI Surface Water Quality Standard, with high total coliform levels indicating contamination from domestic waste, industrial waste, and rainfall runoff. Based on these findings, the site established water quality targets within its water stewardship plan and implemented specific actions to achieve these targets.
The targets set by the site include ensuring fresh water quality meets Health Minister Regulation No. 02/2023, maintaining wastewater effluent quality that meets PT SIER regulatory standards, ensuring drinking water quality meets Health Minister Regulation No. 02/2023, achieving zero water purifier breakdown, and preventing exceeding limits for drinking water. The actions taken to meet these targets include:
On-Site Actions:
- UV lamp replacement in water purifier systems to maintain drinking water quality standards (completed November 2024).
- Installation of a grease trap on the sink toilet HRC East to prevent sewer blockages and meet hygiene standards (completed July 2025).

Catchment Level Actions:
- Surface water quality monitoring in the catchment area, collecting 1 set of data to identify water quality conditions (completed August 2025).

Current performance data indicate that wastewater monitoring achieved 100% compliance with PT SIER regulatory standards every month. Freshwater monitoring also reached 100% compliance with Health Minister Regulation No. 02/2023 on a semi-annual basis. Additionally, drinking water monitoring attained 100% compliance with Health Minister Regulation No. 02/2023 each month. There were no breakdowns of water purifiers during the distribution of drinking water, and no instances of exceeding drinking water limits were recorded. The site consistently maintains compliance with regulatory effluent quality limits, preventing environmental contamination.

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

Obs.

Comment

The site has identified Water Quality in the Catchment as a shared water challenge (Moderate risk, Priority 3). As an initiative, the site has gathered water quality data from both upstream and downstream locations based on their own laboratory tests.
Catchment monitoring data indicates:
Surabaya Watershed baseline status:
- Discharge point vicinity: BOD 22 mg/L, COD 66 mg/L
- Avur Wonorejo: Pollution Index 3.57-3.78 (slightly contaminated), BOD 36-41 mg/L exceeds Class III standard (6 mg/L) per PP 22/2021
- Surabaya River: BOD, COD, TSS, ammonia exceed Class II standards per PP 22/2021
- Primary contamination sources: domestic waste, poorly managed industrial waste, rainfall runoff

Based on these findings, the site has not yet implemented initiatives to tackle the issues related to BOD and COD pollution, such as investigating their capacity to influence municipal entities both upstream and downstream (where the BOD pollution originates) by creating larger stakeholder interest groups focused on this issue.

3.5 *Implement plan to maintain or improve the site's and/or catchment's Important Water-Related Areas.*

3.5.1 *Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be implemented.*

Yes

Comment	The site has implemented Important Water-Related Areas (IWRA) practices at the catchment level, as no on-site IWRAs were identified. The Perbatasan River has been recognized as a critical IWRA, located 1 kilometer from the facility. An assessment of the river indicated a "somewhat degraded condition, necessitating restoration" (Status 2). The baseline evaluation documented instances of flooding in the vicinity of the river in December 2025 and raised concerns regarding water quality. The primary risks identified include the deterioration of water quality and potential flooding events. To address these issues, the site set a specific target to remove 150 cubic meters of waste and sediment from the Perbatasan River, specifically in the Tambak Oso section. The planned course of action involved normalizing the river through a collaborative cleanup initiative with PT SIER, the local environmental agency (DLH), and other stakeholders. The cleanup operation was completed on September 19, 2025. The site exceeded its target by removing 176 cubic meters of waste and sediment, achieving 117% of the planned volume. Comprehensive documentation of the project includes: - Pre-activity photographs demonstrating waste accumulation and sedimentation - Photographs capturing the cleanup operations - Location maps illustrating the specific cleanup area in relation to WWTP SIER and surrounding facilities The cleanup initiative directly addresses concerns related to water quality and flooding. The removal of 176 cubic meters of sediment and waste mitigates drainage capacity issues that contribute to flooding risks. The activity involved the normalization of the river channel, thereby improving water flow and reducing the likelihood of flooding. The baseline study highlighted flooding as an existing concern in December 2025, and the cleanup was executed in September 2025 as a proactive measure. The site continues to coordinate with local governance to ensure the ongoing management of the IWRA, as outlined in the risk assessment documentation.
3.6	*Implement plan to provide access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers at all premises under the site's control.*
3.6.1	*Evidence of the site's provision of adequate access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers onsite shall be identified and where applicable, quantified.*	Yes

Comment

The site has identified and quantified the WASH (Water, Sanitation, and Hygiene) facilities for all workers onsite by implementing sanitation infrastructure, drinking water systems, and hygiene programs with specific targets and achievement metrics.
Drinking Water Facilities
The site provides drinking water through eight water purifier units located in Unit 3, Units 6-7, Units 7-8, Units 8-9, Unit 12, and the Canteen. Each unit includes water purifier systems with UV lamp treatment to ensure safe drinking water quality.
Drinking water quality is monitored monthly to comply with Health Minister Regulation No. 02/2023. Laboratory tests from January 2025 showed no detection of E. coli and total coliform bacteria within acceptable limits. Temperature and turbidity also met regulatory standards. All drinking water quality parameters from tested locations (Air Minum Lorong Produksi 6-7, Unit 13 Outlet Yamaha Barat, Unit 13 Outlet Yamaha Timur, Lorong Produksi 7-8, Lorong Produksi 8-9, and Blue Kitchen) met defined standards.
Cleaning checklists for drinking water facilities are displayed at each location, documenting routine maintenance activities such as lamp replacement, filter cleaning, and sanitization.
Sanitation Facilities
The site has 90 toilet facilities distributed across 15 buildings. These facilities comply with the requirements of the Minister of Manpower Regulation No. 5/2018 regarding the number of toilets based on workforce size. With 1,755 employees (1,679 female and 76 male), the site requires 48 toilets in total (42 for females and 6 for males). The existing 90 toilets exceed these requirements, providing additional capacity for both female and male employees.
Toilet facilities include separate male and female restrooms, general facilities, plumbing and drainage systems, ventilation, lighting, anti-slip flooring, handwashing sinks with soap dispensers, and cleaning equipment. WASH campaign posters display proper handwashing techniques, water conservation messages, and sanitization guidelines.
The site completed two toilet renovation projects from 2024 to 2025. The Unit 6 toilet renovation in September 2024 involved demolishing old facilities, repairing plumbing and drainage systems, and installing new fixtures. The Unit 12 toilet renovation from December 2024 to January 2025 converted wet toilets to dry toilets, reducing water consumption. Toilet cleaning checklists are displayed at each facility location, documenting daily cleaning activities.
Hygiene Facilities
Handwashing facilities are provided throughout the site, featuring multiple sink stations equipped with soap dispensers and handwashing instruction posters. Tool wash facilities are available in production areas with designated washing stations for cleaning equipment. The canteen area is equipped with sanitation facilities, including handwashing sinks and established sanitizing guidelines. Each of the four canteen vendors—Yatemin, Sufi, Edi Purwanto, and Sukadi—has obtained food handler certifications from the Surabaya Health Department (Dinas Kesehatan), with authorized certification stickers prominently displayed at their respective locations. Cleaning checklists for the canteen are maintained at each food service area.

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

Yes

Comment

During the visit, interviews with the site staff, and field observations, no evidence was found indicating that the site infringes upon the human right to water and sanitation. The information provided by the site and stakeholder demonstrated that their effluents do not impact anyone's ability to access water or sanitation.

3.7 *Implement plan to maintain or improve indirect water use within the catchment:*

3.7.1 *Evidence that indirect water use targets set in the water stewardship plan, as applicable, have been met shall be quantified.*

Yes

Comment	The site does not set any targets in its water stewardship plan, as all suppliers and service providers are outside the site's catchment area, and their water withdrawals do not impact the site's catchment water availability. For the eight service providers that work on the site, their water consumption is already accounted for with the site's direct water withdrawal and is part of the on-site water efficiency program.	
3.7.2	*Evidence of engagement with suppliers and service providers, as well as, when applicable, actions they have taken in the catchment as a result of the site's engagement related to indirect water use, shall be identified.*	Yes
Comment	The site engaged suppliers and service providers regarding indirect water use through emails and standardized questionnaires. The questionnaire collected 18 data points including organization identification, GPS location, contact information, position/title, water needs and impacts description, main water resources used, water usage intensity (m^3/ton for raw material provision), water consumption per ton of material production, regulatory compliance status, water quality assessment methods, monitoring frequency, seasonal water consumption variability, water-related risk perception, water-sensitive infrastructure presence, water quality issues experience, actions taken to remediate issues, and AWS Standard awareness. Two specific groups were contacted via email: 1. Outsourced Service Providers: Email sent on September 8, 2025, to 9 on-site service providers (canteen, cooperation, PT ISS Indonesia, PT Supraco Indonesia, PT G4S Indonesia, Radio Sampoerna, PT Maxima Energi Indokemika, PT Nayaka Era Husada, PT Takenaka Indonesia). These providers handle cleaning, security, canteen operations, polyclinic, WWTP operations, and maintenance services using the site's deep well water source. 2. Raw Material Suppliers: Email sent on July 8, 2025, to 4 suppliers providing LEAF and DIM (packaging) products. All suppliers are located outside the catchment area. The emails explained the Alliance for Water Stewardship certification program, requested participation in the indirect water use survey, and included questionnaires with a response deadline of September 8, 2025. The engagement collected indirect water use data from 12 stakeholders: 8 on-site outsourced service providers with water consumption ranging from 2,500 to 23,750 m^3/month, and 4 off-site raw material suppliers with varying consumption rates. Feedback was received from more than 3 stakeholders within the catchment area (target achieved during June 9-13, 2025).	
3.8	*Implement plan to engage with and notify the owners of any shared water-related infrastructure of any concerns the site may have.*	
3.8.1	*Evidence of engagement, and the key messages relayed with confirmation of receipt, shall be identified.*	Yes

Comment	The site conducted engagements with owners of water-related infrastructure through visits in 2024 and 2025. On July 26, 2025, the team consulted with PDAM Surya Sembada Surabaya to discuss key issues related to water sources, infrastructure, and the challenges associated with them. On the same day, the team toured IPAM Karangpilang, which supplies clean water to the PT HM Sampoerna SKT Plant Rungkut 1, to gather information on water treatment processes and verify the water source used by the plant. On December 2, 2024, the team held a sharing session with PT SIER to discuss the Alliance for Water Stewardship (AWS) and engage on environmental management programs, particularly focusing on water management practices. They also shared information regarding water conditions and risks in the DAS Brantas catchment area. This was followed by a field visit to the WWTP SIER on December 17, 2024, to collect detailed information on wastewater treatment processes. Additionally, the site engaged with CV Sumber Gading to discuss water quality and ensure proper management of groundwater extraction. The team also coordinated with IPLT Keputih as an emergency wastewater service provider in case of any malfunctions at WWTP SIER. Key challenges identified during these engagements included: - A significant decline in raw water quality during the dry season when water gates are closed for conservation, while the volume of wastewater remains constant. - Heavy reliance on the Surabaya River for 95% of PDAM's water supply, with only 5% sourced from the Umbulan spring. - Division of responsibilities for water quality management between PDAM (treatment) and PJT (river dredging and raw water quality). - Limited supplementary water supply from Umbulan SPAM (1,000 m³/s utilized by PDAM) via the Ketegan pump station. - A need for enhanced collaboration on joint water management and conservation efforts. - The necessity for proper wastewater management by industrial facilities to reduce system load. Documentation of these engagements includes photographic evidence from site visits, official correspondence, meeting minutes, and records of consultations with officials from PDAM Surya Sembada Surabaya, PT SIER, CV Sumber Gading, and IPLT Keputih.
3.9	*Implement actions to achieve best practice towards AWS outcomes: continually improve towards achieving sectoral best practice having a local/catchment, regional, or national relevance.*
3.9.1	*Actions towards achieving best practice, related to water governance, as applicable, shall be implemented.*

Yes

Comment

The site has established a clear connection between the practices outlined in indicator 1.8.1 and the actions implemented as part of its water stewardship plan under indicators 3.1.1 and 3.9.1. Several best practices for water governance from document 1.8.1 have been successfully implemented:
Best Practice: Comprehensive Catchment Assessments. This practice involves conducting comprehensive assessments of catchment areas, including Integrated Water Resource Assessment (IWRA) mapping, water quality analysis, and water risk identification. The goal is to understand the geohydrological conditions, water availability, and associated risks in the catchment area to inform water management decisions. The site completed a baseline study covering three watersheds—Surabaya, Rejoso, and Kedunglarangan—from December 2024 to June 2025. This study provided detailed mapping of the catchment, an assessment of IWRA status, an evaluation of water quality, and the identification of water-related risks. The findings offered valuable insights into shared water challenges affecting both the catchment and site-specific conditions.
Best Practices: Multi-Stakeholder Engagement and Collaboration. This practice encourages transparent dialogue among water users, government agencies, and communities to address shared water challenges and develop collaborative solutions. In April 2025, the site conducted the AWS Stakeholder Forum 2025, exceeding its target of 20 stakeholders by engaging 81 participants from 35 stakeholder organizations. Participants included representatives from government agencies (Environmental Services, Water Resources Department, BBWS Brantas), infrastructure owners (PDAM Surya Sembada, Perum Jasa Tirta), academic institutions (Brawijaya University), and community representatives. The forum facilitated discussions on water-related risks, risk mitigation strategies, the exchange of best practices, and the identification of collaboration opportunities for water sustainability.
Best Practices: Social Mapping and Stakeholder Analysis. This practice aims to identify conditions, levels of interest, and minority groups within the catchment community, enabling targeted engagement and ensuring inclusive water governance. The site completed social mapping from January to September 2025. This effort identified and mapped 27 stakeholders in the Ring 1 community (with a target of at least 20 stakeholders), particularly in Rungkut Tengah. The mapping analyzed stakeholder conditions and interest levels, providing critical social context for water governance decisions in the catchment area.
Best Practices: Community Education and Awareness Campaigns. This practice promotes behavioral change and community participation in water management by conducting educational campaigns on water stewardship, clean living, and sanitation to reduce water-related risks such as flooding. The site implemented multiple socialization programs, including Water Stewardship Socialization sessions in Rungkut Tengah Community (November 2024 and March 2025, reaching 35 and 18 participants, respectively), a session with employee public transportation drivers (March 2025, 15 participants), Clean Living Behavior Education in collaboration with Gunung Anyar Health Center (July 2025, 30 participants), and a quiz for internal employees on World Water Day 2025 (March 2025). Additionally, an ongoing radio campaign achieved 97.63% employee awareness regarding water stewardship initiatives, exceeding the target of 90%.
Best Practices: Infrastructure Development for Flood Prevention and Sanitation Improvements. This initiative addresses physical water-related hazards and enhances the community's resilience. In July 2025, the site launched a Biopore Development Program and provided sanitation facilities. This initiative included the installation of 50 biopore points throughout Rungkut Tengah to help mitigate flooding during periods of rainfall, the donation of two trash bins and a waste sorting shed to aid in waste reduction efforts, and the provision of one portable water pump to shorten the time it takes for floodwaters to recede in the Rungkut Tengah District.

3.9.2 *Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.*

Yes

Comment

The site has established a clear link between the practices identified in indicator 1.8.2 and the actions implemented as part of their water stewardship plan under indicators 3.3.1 and 3.3.2. Several water balance best practices from document 1.8.2 have been implemented:
Best Practice #34: "Improvement of water piping system, including upgrade of flow meter to prevent water leaks." This practice focuses on enhancing infrastructure to detect and prevent water losses through systematic piping improvements and improved monitoring. The site implemented three phases of piping upgrades between December 2024 and August 2025. Phase 1 (December 2024-February 2025) reconnected broken pipes, integrated wastewater lines into the SIER WWTP network, and installed wastewater meters, identifying 11.49% unaccounted water. Phase 2 (February-May 2025) installed water meters for clean and wastewater monitoring, identifying 19.49% unaccounted water. Phase 3 (May-August 2025) installed additional wastewater meters and reduced pipe diameter in the spectacular hall, achieving 4.31% unaccounted water. Five water meters (units 6, 7, 8, 9, and 12) were replaced in May-June 2025 to improve measurement accuracy.
Best Practice #31: "Promoting and encouraging the installation of water-efficient fittings (i.e., water aerators in toilets, sensors on water taps, etc.) for potable water reduction." This practice promotes water conservation by regulating water flow efficiency to minimize water consumption. The site installed 39 water aerators on faucets in May 2025, exceeding the target of 25 units. Documentation shows installation in the canteen area and across 18 numbered locations on the site map.
Best Practice #47: "University Initiates the Making of Biopores Around Campus." This practice involves capturing and infiltrating rainwater into the ground to increase water availability and reduce surface runoff. The site implemented centralized glue pot washing between April and June 2025, achieving water savings of 189.21 m³/month.

3.9.3 *Actions towards achieving best practice, related to targets in terms of water quality shall be implemented.*

Yes

Comment

The site has established a clear link between the practices identified in indicator 1.8.3 and the actions implemented as part of their water stewardship plan under indicators 3.4.1 and 3.4.2. Several water quality best practices from document 1.8.3 have been implemented:
Best Practice #62: "Drinking water treatment using a water purifier in accordance with the quality standards set by the Minister of Health Regulation." This practice emphasizes ensuring that drinking water quality meets regulatory standards through proper treatment systems. In November 2024, the site replaced UV lamps in the water purification systems to maintain drinking water quality standards and ensure safe consumption for all employees. Target achievement: There were zero recorded cases of exceeding drinking water limits.
Best Practices #67 and #72: "Monitor water quality." This practice involves implementing monitoring systems to ensure that water quality meets applicable standards. In August 2025, the site initiated surface water quality monitoring in the catchment area, collecting data to assess water quality conditions and raise awareness about shared water challenges.
Best Practice #85: "Biofilter septic tank system as an option for wastewater treatment technology in urban areas." This practice focuses on wastewater management in densely populated areas, utilizing simple and effective treatment systems. In July 2025, the site installed a grease trap in the sink of the toilet at HRC East to prevent sewer blockages, reduce oil and fat waste pollution, meet hygiene and environmental standards, and diminish odors in the sink area.

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

Yes

Comment

The site has established a clear connection between the practices identified in indicator 1.8.4 and the actions implemented as part of their water stewardship plan, which aims to maintain Important Water-Related Areas (IWRAs) at the catchment level. Since no on-site IWRAs were identified, all maintenance practices focus on interventions at the catchment level.
Best Practice #15: "Clean Oso River for Zero Waste Program"
The site collaborated with PT SIER to implement this initiative at the catchment level, addressing waste management in the Perbatasan River (specifically the Tambak Oso section), which is part of the same river system. The focus of this practice is on river normalization and waste removal to maintain Important Water-Related Areas.
The site completed the Perbatasan River Cleanup and Normalization initiative, achieving 100% completion as of September 19, 2025. This effort involved collaboration between SIER, the local environmental agency (DLH), and local tenants to undertake river normalization. The goal was to clean up 150 m^3 of waste and sediment from the Perbatasan River (Tambak Oso). The site exceeded this target by removing 176 m^3 of waste and sediment, achieving 117% of the original goal.

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

Yes

Comment

The site has established a connection between the best practices outlined in indicator 1.8.5 and the actions implemented as part of its water stewardship plan. Several Water, Sanitation, and Hygiene (WASH) best practices have been instituted, each with specific targets and measurable outcomes:
Best Practice #62: Drinking Water Treatment
This practice involves the use of water purifiers that comply with the quality standards set by the Minister of Health. In November 2024, the site replaced ultraviolet (UV) lamps in the water purification systems to ensure that drinking water meets regulatory standards. Target Achievement: There were no recorded instances of exceeding drinking water limits. Monthly monitoring throughout 2024 and 2025 confirmed compliance with Health Minister Regulation No. 02/2023 across all eight drinking water locations.
Best Practice #72: Water Quality Monitoring
This practice involves implementing systems to monitor water quality in accordance with applicable standards. The site conducts monthly water quality tests, analyzing parameters such as E. coli, total coliform, temperature, turbidity, color, and odor. Target Achievement: Compliance with regulatory standards was achieved across all monitoring points. Laboratory test results from January 2025 indicated compliance across six drinking water locations within the facility.
Best Practice #122: Facilities for Toilets and Washrooms
This practice emphasizes the provision of sanitation facilities for men, women, and individuals with disabilities. The site operates 90 toilet facilities across 15 buildings, exceeding the regulatory requirement of 48 toilets as specified by the Minister of Manpower Regulation No. 5/2018. In September 2024, the site completed renovations for Unit 6, which involved the demolition of older facilities, repairs to plumbing and drainage systems, and the installation of new fixtures such as toilets, sinks, anti-slip flooring, ventilation, and lighting. Target Achievement: Improvements for employee safety and comfort were fully completed. Between December 2024 and January 2025, the site renovated Unit 12, converting a wet toilet to a dry toilet, achieving full completion, which led to reduced water usage and minimized accident risks.
Best Practice #128: Availability of Sanitizers
This practice ensures that hygiene resources are accessible throughout the facility. The site provides handwashing facilities with soap dispensers at multiple locations, including production areas, toilet facilities, and canteen areas. WASH campaign materials providing handwashing techniques and sanitization guidelines are displayed at all handwashing stations. Target Achievement: Sanitizers are provided at all WASH facilities, with daily replenishment monitored through cleaning checklists.
Best Practice #123: Provision of Clean Water Facilities
The site has installed eight water purifier units in production units and common areas to ensure that all employees have access to safe drinking water. Quarterly maintenance and monitoring of the water purification system are conducted to prevent breakdowns. Target Achievement: Drinking water is distributed to all units, with no recorded incidents of water purifier breakdowns in 2024 and 2025.

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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

Comment

The site conducted a performance evaluation against the targets set in its water stewardship plan, presenting progress using specific metrics across multiple categories. The evaluation includes a clear comparison of current performance against targets and an assessment of contributions to water stewardship outcomes.

Water Balance Targets

The site implemented a three-phase piping improvement program to reduce unaccounted water and improve water balance accuracy. Phase 1 (December 2024 - February 2025) targeted a minimum 5% reduction in unaccounted water and achieved identification of 11.49% unaccounted water through the reconnection of broken pipes, integration of wastewater lines into the SIER WWTP network, and installation of a wastewater meter for monitoring discharge to SIER. Phase 2 (February - May 2025) installed additional water meters for clean water and wastewater, achieving identification of 19.49% unaccounted water. Phase 3 (May - August 2025) installed additional wastewater meters, improved the wastewater piping system, reduced pipe diameter, and added meters in the spectacular hall, achieving identification of 4.31% unaccounted water and meeting the minimum 5% target.

Water meter rejuvenation (May - June 2025) replaced 5 faulty meters in Units 6, 7, 8, 9, and 12 to improve water balance accuracy, achieving 4.31% unaccounted water identification. The aerator installation program (May 2025) exceeded the target of 25 water aerators by installing 39 aerators on water faucets, achieving water savings of USD 50.14 from reduced water usage. The centralization of glue pot washing locations (April - June 2025) achieved the target of 189.21 m^3/month water savings through more effective and centralized washing.

Water Quality Targets

The site has set zero breakdown targets for water purifier systems and drinking water distribution. There have been no failures in the drinking water distribution to any units. Monthly quality monitoring confirms 100% compliance with Health Minister Regulation No. 02/2023 at all eight drinking water locations. Laboratory tests from January 2025 showed compliance with key parameters: E. coli (zero detections), total coliform (acceptable limits), temperature (regulatory range), turbidity (acceptable levels), and absence of color or odor in six locations. Freshwater quality is monitored every semester, maintaining 100% compliance with the Health Minister's regulation, achieving 75% progress toward the December 2025 completion date. Wastewater quality is monitored monthly with 100% compliance to PT SIER/2025, marking 87.5% progress. The water purifier maintenance program has met quarterly targets with zero breakdowns, representing 87.5% progress. A UV lamp replacement in November 2024 resulted in no drinking water quality limit exceedances, also achieving 87.5% progress. The grease trap installed in July 2025 is complete, preventing sewer blockages in the east HRC toilet.

IWRA Targets

The site completed a river normalization activity in collaboration with SIER, DLH (Environmental Agency), and tenants on September 19, 2025. The target was to clean up 150 m^3 of waste and sediment from the Perbatasan River (Tambak Oso). The site exceeded this target by cleaning up 176 m^3 of waste and sediment, achieving 117% of the target. The activity addressed water-related risks identified in the catchment area, specifically flooding risks in the Surabaya Industrial Estate (SIER) area. In December 2024, Surabaya experienced flooding with prolonged duration compared to previous events, particularly affecting the Gunung Anyar and Rungkut Menanggal sub-districts, including the SIER industrial area. High rainfall intensity and stream and drainage capacity that could not accommodate runoff were major factors causing flooding. The river normalization effort aimed to reduce flood risks and maintain river function.

WASH Targets

The site has surpassed the toilet provision requirements outlined in the Minister of Manpower Regulation No. 5/2018. With a total of 1,755 employees (1,679 female and 76 male), the regulatory requirement is for 48 toilets (42 for females and 6 for males). The site currently provides 90 toilets across 15 buildings, which is 187.5% of the minimum requirement, indicating a surplus capacity.

The Unit 6 toilet renovation program was completed in September 2024, achieving 100% completion and successfully enhancing the safety and comfort of one toilet facility for employees. Similarly, the Unit 12 toilet renovation program was completed between December 2024 and January 2025, transforming wet toilets into dry toilets and resulting in reduced water usage.

The WASH Assessment program was also fully completed from January to June 2025. It

involved surveying 298 respondents from two neighborhoods in the Rungkut Tengah District to evaluate hygiene and sanitation conditions in the Ring 1 catchment area.
Additionally, the World Water Day 2025 initiative, held in March 2025, achieved 100% completion. It introduced the Alliance for Water Stewardship through educational activities and quizzes for all workers. The initiative ensured that employees were able to answer five questions about water governance in each unit, demonstrating their understanding of AWS principles.

4.1.2 *Value creation resulting from the water stewardship plan shall be evaluated.* Yes

Comment

The site invested USD 161,637.82 in water stewardship initiatives from 2024-2025, comprising USD 109,234.90 for technological infrastructure (piping upgrades, water meters, pump and purifier maintenance, aerators, toilet renovations, grease trap, and glue pot centralization), USD 4,257.87 for water quality testing (drinking water, wastewater, and freshwater monitoring), USD 43,265.05 for social activities (catchment studies, WASH assessment, community education, biopore construction, river cleanup), and USD 4,880.00 for AWS certification audit. Total water-related operational costs over 19 months reached USD 42,908,558, averaging USD 2,258,345 monthly, with PDAM supply costs averaging USD 467.12 monthly, clean water distribution electricity costs averaging USD 2,245,241.16 monthly, and wastewater treatment by SIER totaling USD 27,324.45 over 16 documented months.
The site quantified USD 12,742.92 in annual economic returns from four initiatives: aerator installation (39 units, USD 610.00 investment) generating USD 601.68 annual savings, Unit 12 toilet renovation (wet to dry conversion, USD 30,336.72 investment) generating USD 1,165.68 annual savings, piping system improvements (three phases, USD 50,538.50 total investment) generating USD 10,975.56 annual cost avoidance through wastewater regulation compliance under PERMENLHK No. 14/2025, and glue pot centralization (USD 6,399.88 investment) achieving 2,270.52 m^3 annual water savings with monetary value not calculated due to absence of per-unit water cost data. The overall payback period for total water stewardship investment is 12.7 years based on quantified returns, excluding the monetary value of glue pot water savings and non-financial benefits.
Environmental value creation includes the reduction of unaccounted water from 11.49% to 4.31% through three-phase piping improvements, removal of 176 m^3 waste and sediment from Perbatasan River (USD 27.38 per m^3), and the construction of 50 biopores (USD 86.33 per unit). Social value creation includes maintaining 100% regulatory compliance for drinking water (Regulatory of Health Minister No. 02/2023), freshwater, and wastewater (PT SIER/2025 regulatory) across 1,755 employees at USD 2.17 per employee annually for drinking water monitoring, providing 90 toilets against the regulatory requirement of 48 toilets with USD 36,765.72 toilet renovation investment (USD 20.95 per employee), achieving 97.63% employee awareness through radio campaigns, surveying 298 community respondents through WASH assessment (USD 10.44 per respondent), and investing USD 37,010.05 in community engagement activities including education, sanitation facility development, and environmental cleanup.

4.1.3 *The shared value benefits in the catchment shall be identified and where applicable, quantified.* Yes

Comment

The site has identified and quantified shared value benefits delivered to the catchment area across economic, environmental, and social dimensions. Economic benefits include water quality monitoring services for catchment stakeholders, such as upstream and downstream analyses of the Avur Wonorejo River, well water testing for residents, and assessments of the local water utility and Umbulan Spring. These services help reduce testing expenses for community members and local authorities.
Improvements in physical infrastructure include revitalization of retention ponds, with repairs to 45 meters of pond walls that help prevent landslides and property damage, as well as a biopore program that added 25 new units and monitored 41 existing units to reduce waterlogging and flood damage while ensuring accessibility for residents and businesses.
Environmental benefits show improvements in water quality and availability within the catchment area. Piping system upgrades reduced unaccounted water from 38.39% to 4.47%, minimizing wastewater leakage into soil and groundwater that supplies community wells. The installation of biopore units and retention pond enhancements increased rainwater infiltration capacity and elevated groundwater levels, which benefits water availability for all users. A secondary containment IPAL completed in May 2025 prevents wastewater spills during emergencies, protecting water bodies from contamination. Additionally, 15 waste bins and 2 waste banks were supplied to Kedungbaruk and Kalirungkut Sub-districts to help reduce improper waste disposal into drainage channels and rivers.
Social benefits include community education programs and infrastructure development involving over 520 participants. The Clean Living Behavior Education program engaged 110 participants, while the Water Quality Importance Socialization reached 30 participants, and the Reusable Sanitary Napkin Education involved 30 participants. These initiatives raised awareness about water management and health. The delivery of 15 waste bins and 2 waste banks through collaboration with the Surabaya City Environmental Service enables effective waste segregation.
The AWS Stakeholder Forum engaged 117 participants, including stakeholders from multiple sectors, to establish platforms for addressing water-related challenges. Assessments included a WASH survey of 330 respondents across 2 villages and social mapping of 44 stakeholders, including minority groups, to ensure inclusive engagement and inform future interventions for the benefit of catchment communities.

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

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

Yes

Comment

There have been no emergency cases for over 5 years, with management reviews conducted once per year. All events are logged in the online plant portal application, which is accessible only to EHS staff. Any emergency response is also discussed during EHS meetings. The site has established accident reporting and emergency response procedures.

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

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

Yes

Comment

The site has documented stakeholder consultations regarding water stewardship performance conducted at the AWS Stakeholder Forum and Sharing Session on April 23, 2025, at the Novotel Hotel Surabaya. The event was attended by 88 participants representing 35 distinct stakeholder groups, including government agencies (provincial and city environmental services, water resources and public works departments, public health offices), industrial companies, academic institutions (universities), water management authorities (river basin management agencies, water utility companies, spring management entities), sub-district offices, local communities and community organizations, media representatives, and other support services. The consultation addressed water-related risks pertinent to the Surabaya Watershed and the Rejoso Watershed, with comprehensive feedback gathered from stakeholders identifying primary water-related risks as flooding (29%), hygiene and sanitation issues (26%), excess water use (26%), drought (11%), and tidal flooding (5%), with 97% of stakeholders acknowledging water-related risks in their areas and 92% reporting implementation of water-wise initiatives.
Key stakeholder presentations highlighted critical water challenges and initiatives. The water utility company presented their water supply composition utilizing 1,000 m³/second from Umbulan spring, with raw water sources comprising 5% from Umbulan spring and 95% from the Surabaya River, identifying the main challenge as water quality decline during the dry season when water gates remain closed while wastewater volume continues to flow, and expressing readiness to collaborate in integrated water management efforts including tree planting programs. The City Department of Water Resources and Public Works detailed flood management for four main rivers in the Rungkut area, with plans to construct pump houses and implement drainage normalization activities to address flood risks, particularly in areas 3 km from the site. The spring management authority reported decreased water discharge of approximately 300-400 m³/second due to land clearing for mining activities, reducing water catchment zones, with proposed solutions including construction of 1,000 infiltration wells and reforestation programs already implemented at four locations 4-6 km from the spring, alongside implementation of the Water Use Permit System to regulate previously unauthorized water extractions.
The Environmental Service outlined strategic environmental issues in Surabaya, including increasing clean water demand, exceeding water carrying capacity, ecosystem services dominated by low-quality sources, and a declining water quality index, with the Brantas River Basin pollutant load already overloaded. Government programs include environmental education and outreach, recycling programs, particularly for diapers (identified as the highest waste contributor), drainage cleaning programs, water pollution control through stakeholder collaboration, including water patrols and public awareness campaigns, routine water testing, and riverbank revitalization. Environmental monitoring encompasses air quality and soil pollution, with waste management identified as the top priority, while water-related issues include frequent foamy water presence addressed through the 5-Pillar Community-Based Total Sanitation program, including household wastewater treatment supported by communal wastewater treatment plants. Pollution levels in Surabaya are categorized as moderate, with river management falling under the River Basin Management Agency authority and monitoring results available on the environmental quality website updated quarterly, while the nearest water sampling point is categorized as a Class 4 water body. All attendance lists, minutes from the meetings, consultation letters, feedback questionnaires, and photographs are documented and available from the consultation.

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

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

Yes

Comment

Since this is the initial certification for the site, the water stewardship plan will be evaluated after one year and will be presented in the stakeholder forum and during the internal site review in 2026.

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 organizational structure of AWS, along with its water governance policies, is documented internally and externally. These documents outline the positions within the company and their corresponding responsibilities regarding water stewardship and compliance with relevant regulations. The public can access reports outlining the company's efforts in these areas on our website's sustainability page. The public can access reports outlining the company's in the website: https://www.sampoerna.com/resources/docs/default-source/sampoerna-market-documents/annual-report-and-sustainability-report-202448e13bc16c7468f696e2ff0400458fff.pdf?sfvrsn=db9553c8_0

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 communicated the Water Stewardship Plan through multiple channels and provided the following documentation:
Stakeholder Forum and Email Follow-up: The site discussed the WSP during the AWS Stakeholder Forum on April 23, 2025, at the Novotel Hotel Surabaya with 81 participants from 35 stakeholder organizations. This was followed up with emails to outsourced service providers in September 2025 and to DIMS suppliers in July 2025, sharing the AWS Report and requesting feedback. Documentation from the forum presentation and email correspondence is available.
Direct Stakeholder Visits: Communication took place through visits to stakeholders' offices, including PDAM Surya Sembada, DSDABM, DLH Kota Surabaya, and PUSDA Umbulan between April and September 2025. The site also conducted facility visits to PT SIER WWTP (December 17, 2024), IPAM Karangpilang (July 26, 2025), CV Sumber Gading, and Mangrove Botanical Garden. Meeting notes and official minutes (Berita Acara) from these visits are available.
Sharing Session: The site held a sharing session with PT SIER on December 2, 2024, to discuss AWS programs and water management in the catchment area. Workshop presentation materials and photographs are documented.
Official Correspondence: Official letters were exchanged with IPLT Keputih in August-September 2025 regarding cooperation agreements. Water test results were submitted to UPT Welang Pekalen following visits on July 14 and August 28, 2025. All correspondence documentation is available.

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	The site summarized their water management performance on-site, including how they measured up against set targets. This information is available to the public via the company's website, direct message to the relevant stakeholder, and during stakeholder forums and meetings. On the website, the link address can be accessed at this link (page 150 -): https://www.pmi.com/resources/docs/default-source/pmi-sustainability/pmi-integrated-report-2024.pdf?sfvrsn=92e147c8_2 Based on the PMI report, the company has disclosed comprehensive quantified water stewardship performance metrics that demonstrate significant progress against established targets. PMI achieved a water intensity ratio of 2.3 cubic meters per million cigarette equivalents in 2024, substantially exceeding their aspiration of ≤3.1 and representing a 4% improvement from the previous year's 2.4 ratio. The company reported total water withdrawal of 3.23 million cubic meters in 2024, while achieving an impressive 31% absolute reduction in water consumption between 2018 - 2024 and a 51% reduction in water intensity versus the 2018 baseline.
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.*  closed

Comment	The site has identified seven common water challenges based on studies, questionnaires, news reports, and site reviews. These challenges are ranked by risk level: 1. Flooding (Moderate - Priority 1): This occurs due to low land elevation, hard surfaces that don't absorb water, poor drainage, water hyacinth blockages, and tidal changes in the Surabaya and Rejoso Watersheds. 2. Unimproved sanitation and hygiene (Moderate - Priority 2): There are few waste disposal sites, and wells are too close to septic tanks in Rungkut Tengah. 3. Water quality degradation (Moderate - Priority 3): The river water is classified as Class IV under PP 22/2021, with high levels of total coliform from domestic and industrial waste. The Border River serves as the main drainage. 4. Exceeding wastewater limits at SIER WWTP (Low - Priority 4). 5. Risk of system failure at WWTP SIER (Low - Priority 5). 6. Drought risk (Low - Priority 6): Land degradation and deforestation are reducing water absorption. 7. Forest and land fires (Low-Priority 7) in the Rejoso Watershed. Implemented actions such as installing biopore in the Rungkut Tengah urban village, installing pumps, cleaning rivers with PT SIER, testing water quality, conducting sanitation education with the Surabaya City Health Office, and monitoring wastewater regularly. The AWS Stakeholder Forum shared these water challenges on April 23, 2025, at the Novotel Hotel Surabaya. There were 81 participants from 35 organizations, including government agencies (East Java Province Environmental Service, Water Resources Department, BBWS Brantas, PJT 1, Surabaya City departments), PDAM Surya Sembada, PT SIER, academic institutions, and local communities. Feedback from the forum showed that 97% of stakeholders acknowledged the water-related risks in the area. Direct discussions were held with PDAM Surya Sembada about water quality during the dry season, with DSDABM on flood control systems, and with DLH Kota Surabaya about environmental monitoring and water pollution. There were also talks with PUSDA Umbulan on decreasing water discharge and infiltration well programs, with PT SIER about water risks and wastewater treatment processes, and with Mangrove Garden regarding trash issues. The AWS Report was emailed to outsourced service providers in September 2025 and DIMS suppliers in July 2025. This included meeting minutes, presentation materials, photographs, and feedback forms from stakeholders. Laboratory results showed that BOD and COD levels exceed legal limits in upstream areas, and BOD levels are too high downstream in the Surabaya Watershed. These results have been given to PT SIER, which manages the estate. However, this information has not been shared with government agencies like DLH East Java Province, BBWS Brantas, East Java Province Water Resources Department, or Surabaya City Environmental Service. These agencies are responsible for managing watersheds and ensuring environmental compliance. Documentation of this issue has been presented at stakeholder forums, in meeting minutes, field visit reports with photographs, email communications, and feedback collection showing stakeholder involvement, but the specific data on water quality violations has only been sent to PT SIER and not to the regulatory agencies that oversee water quality standards and enforcement.

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5.4.2	*Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be identified.*	Yes

Comment	The site outlines its efforts in stakeholder engagement and coordination with public-sector agencies through visits, consultations, and collaborative programs. Notable visits include the July 26, 2025, consultation at the Karangpilang Water Treatment Plant, confirming its clean water source from the Surabaya River and supplementary supply from the Umbulan SPAM. On July 14, 2025, the team gathered information at Umbulan SPAM about water sources and quality, followed by a follow-up on August 28, 2025, to share water test results with local authorities. A sharing session with industrial estate management on December 2, 2024, discussed water management and risks, which was complemented by a field visit on December 17, 2024. Coordination with public-sector agencies was highlighted during the AWS Stakeholder Forum on April 23, 2025, with 88 participants from 35 organizations discussing water governance in Surabaya. Key concerns identified included flooding, sanitation issues, and drought, with most stakeholders recognizing water-related risks. Government agencies presented their water management programs, and collaboration efforts also involved IPLT Keputih for domestic wastewater management and assessments at the Surabaya mangrove forest. Documentation includes attendance lists, meeting minutes, and correspondence showcasing active coordination on water risk mitigation and infrastructure management.	
5.5	*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.*	
5.5.1	*Any site water-related compliance violations and associated corrections shall be disclosed.*	Yes
Comment	No water-related compliance violations or corrective measures to report.	
5.5.2	*Necessary corrective actions taken by the site to prevent future occurrences shall be disclosed if applicable.*	Yes
Comment	There have been no water-related compliance violations and no associated corrections required.	
5.5.3	*Any site water-related violation that may pose significant risk and threat to human or ecosystem health shall be immediately communicated to relevant public agencies and disclosed.*	Yes
Comment	There have been no water-related compliance violations and no associated corrections required.	

Previous Findings

	All non-conformities raised in the previous audit have been satisfactorily closed.	N/A