CERTIFICATION REPORT

Alliance for Water Stewardship (AWS)

Audit Number: AO-000285

WSAS WATER STEWARDSHIP ASSURANCE SERVICES

SITE DETAILS

Site: **Johnson & Johnson - Bangkok**

Address: 106 Moo 4 Lat krabang Industrial Estate, Lat Krabang, 10520, Bangkok, THAILAND

Contact Person: Chawisa Boonrong

AWS Reference Number: AWS-000358

Site Structure: Single Site

CERTIFICATION DETAILS

Certification status: Certified Core

Date of certification decision: 2022-Nov-21

Validity of certificate: 2025-Nov-21

AUDIT DETAILS

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

Audit Type(s): Initial Audit

Audit Start Date: 2022-Jun-14

Lead Auditor: Tanya Christensen

Audit team participants:

Piyathip Eawpanich

Site Participants:

Chawisa Boonrong, Corporate EHS

Piyapong Deeprasert, Associate EHS Manager

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ADDITIONAL INFO

Summary of Audit Findings: A total of 19 findings were raised during the certification audit, 5 major non-conformities, 11 minor non-conformities, 3 observations. The major non-conformities were of sufficient concern to warrant the categorization of the non-conformity as major and related to Step 1 of AWS V2.0 (i.e. GATHER AND UNDERSTAND).

The audit team recommends certification of Johnson & Johnson Thailand at Core level pending approval of the corrective actions plan and closure of the major non-conformities.

The Client is requested to define corrective actions for each of the non-conformities and submit these to WSAS within 60 days of receipt of the audit report [by 09/11/2022].

The major non-conformities must be sufficiently addressed and evidence submitted to WSAS within 90 days of receipt of the report [by 09/12/2022].

Minor non-conformities shall be addressed and closed out at the next annual surveillance audit.

CLOSURE OF FINDINGS AND CORRECTIVE ACTION PLAN:

The Client has successfully resolved the major non-conformities and submitted the corrective action plan addressing all findings.

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Scope of Assessment: The scope of services covers the Initial certification audit for assessing conformity of Johnson-Johnson Thailand against the AWS International Water Stewardship Standard Version 2.

The J&J Thailand site manufactures and markets a wide range of products, including baby and kids' toiletries, feminine care, oral-hygiene, and adult skin care. The manufacturing process consists of 3 production lines, with very different water uses: Liquid products, Powder Line and Sanitary Products. The J&J Thailand site is located in the Lat Kabrang Industrial Estate, which is on the Eastern outskirts of Bangkok. The site receives all of its water from, and discharges all of its wastewater to, GUSCO, the water service company based on the industrial estate. GUSCO receives all of its water from the Metropolitan Waterworks Authority, which extracts its water from the Chao Phraya river. The Chao Phraya is the main river in Thailand, with its low alluvial plain forming the center of the country, flowing through Bangkok and into the Gulf of Thailand.

The audit was conducted onsite on 14-16 June 2022
The onsite site visit included the assessment of the Johnson & Johnson Thailand's manufacturing site as part of the audit.

FINDINGS

NUMBER OF FINDINGS PER LEVEL	
Observation	3
Minor	11
Major	5

FINDING DETAILS

Finding No:	TNR-001495
Checklist Item No:	1.1.1
Status:	Closed
Finding level:	Major
Due date:	2022-Dec-09
Checklist item:	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.
Findings:	Site has not defined the catchment area. The water extraction and ultimate receiving bodies of effluents are not same. Both need to be considered while defining the site's catchment.
Corrective action:	Define the catchment area including the water extraction and ultimate receiving bodies of effluents
Evidence of implementation:	J&J Thailand catchment area including the water extraction and ultimate receiving bodies of effluents

Finding No:	TNR-000752
Checklist Item No:	1.3.2
Status:	Closed
Finding level:	Major
Due date:	2022-Dec-09
Checklist item:	Site water balance, including inflows, losses, storage, and outflows shall be identified and mapped
Findings:	The site has a separate metered water connection for office buildings but that is not mapped. The water quantity through this connection is also not part of the site water balance.
Corrective action:	Define two separate water meters in site water balance and recheck the water quantity through this connection
Evidence of implementation:	Revise site water balance file (Define two separate water meters and recheck the water quantity through this connection)

Finding No:	TNR-001329
Checklist Item No:	1.3.3
Status:	Closed
Finding level:	Major
Due date:	2022-Dec-09
Checklist item:	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.
Findings:	The quantification of water streams seems mostly assumed, the water balance (presented in "WPS Playbook") doesn't elaborate enough about the purified water (59% of total water consumption) which is used in process. Also, no information about the quantity of water became part of product. Also the site has a separate metered water connection for office buildings but that is not reflecting in site water balance.
Corrective action:	Elaborate the quantification of water streams about the purified water used in process and the quantity of water became part of product as well ass reflect a separate metered water connection for office buildings
Evidence of implementation:	Revise site water balance file (Elaborate the quantification of water streams about the purified water used in process and the quantity of water became part of product as well as reflect a separate metered water connection for office buildings)

Finding No:	TNR-001330
Checklist Item No:	1.3.6
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	On-site Important Water-Related Areas shall be identified and mapped, including a description of their status including Indigenous cultural values.
Findings:	The site has not described the status or condition of the on-site IWRA, nor any potential cultural value.
Corrective action:	Review, study and define Important Water-Related Areas (IWRAs) and Assess current status of on-site IWRA (comment on environmental, cultural, economic or social value)

Finding No:	TNR-001331
Checklist Item No:	1.3.7
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	Annual water-related costs, revenues, and a description or quantification of the social, cultural, environmental, or economic water-related value generated by the site shall be identified and used to inform the evaluation of the plan in 4.1.2.
Findings:	The site has not adequately identified water-related revenues (if any) nor a description of the social, cultural, environmental or economic water-related value generated by the site.
Corrective action:	Breakdown Annual water-related costs (Chemical usage reduction, WWTP operations, etc.) and Describe value creation by Water sub-working stream e.g. Water reduction, Cost saving, etc.

Finding No:	TNR-000754
Checklist Item No:	1.5.1
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	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.
Findings:	The site has not documented how the water governance initiatives identified apply to the site, and there are likely to be additional initiatives that have not been identified.
Corrective action:	Review, study and define MVA initiatives for Chao Praya river improvement

Finding No:	TNR-001332
Checklist Item No:	1.5.3
Status:	Closed
Finding level:	Major
Due date:	2022-Dec-09
Checklist item:	The catchment water-balance, and where applicable, scarcity, shall be quantified, including indication of annual, and where appropriate, seasonal, variance.
Findings:	The site has not adequately defined their water catchment and therefore not able to calculate the water-balance for the catchment.
Corrective action:	Define water catchment and calculate the water-balance for the catchment
Evidence of implementation:	Document of water catchment and calculation of the water-balance for the catchment

Finding No:	TNR-001333
Checklist Item No:	1.5.4
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	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.
Findings:	The site was unable to demonstrate that it has access to water quality data from within the water catchment.
Corrective action:	Review, study and define water quality data from within the water catchment.

Finding No:	TNR-001334
Checklist Item No:	1.5.5
Status:	Closed
Finding level:	Major
Due date:	2022-Dec-09
Checklist item:	Important Water-Related Areas shall be identified, and where appropriate, mapped,and their status assessed including any threats to people or the natural environment, using scientific information and through stakeholder engagement.
Findings:	The site has not adequately identified, mapped or assessed the status of catchment IWRAs.
Corrective action:	Identify catchment IWRAs, map and assess the status
Evidence of implementation:	Document to Identify catchment IWRAs, map and assess the status

Finding No:	TNR-001335
Checklist Item No:	1.5.6
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	Existing and planned water-related infrastructure shall be identified, including condition and potential exposure to extreme events.
Findings:	The site has not adequately defined the existing water-related infrastructure, their age, condition and potential exposure to extreme events.
Corrective action:	Review, study and define Catchment Water Infrastructures, age, condition and potential exposure to extreme events.

Finding No:	TNR-000753
Checklist Item No:	1.5.7
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	The adequacy of available WASH services within the catchment shall be identified.
Findings:	The site has not supplied any evidence to demonstrate the adequacy of available WASH services within the catchment.
Corrective action:	Review, study and define adequacy of available WASH services within the catchment.

Finding No:	TNR-001339
Checklist Item No:	1.8.3
Status:	Open
Finding level:	Observation
Checklist item:	Relevant sector and/or catchment best practice for water quality shall be identified, including rationale for data source.
Findings:	The site has demonstrably identified and benchmarked water quality practices within the Industrial Estate, but it would be beneficial to identify examples of best practice within the wider water catchment.
Corrective action:	Identify examples of best practice for Chao Praya river improvement

Finding No:	TNR-001496
Checklist Item No:	2.3.1
Status:	Open
Finding level:	Observation
Checklist item:	A water stewardship strategy shall be identified that defines the overarching mission, vision, and goals of the organization towards good water stewardship in line with this AWS Standard.
Findings:	It was told that the water stewardship strategy is embedded within the 'J&J Consumer Health Healthy Lives Framework' strategy and the 2022 EH&S Strategy. However, A copy was not made available during the assessment.
Corrective action:	Create document to identify WSP strategy to J&J Consumer Health Healthy Lives Framework and 2022 EH&S Strategy

Finding No:	TNR-000755
Checklist Item No:	2.3.2
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	A water stewardship plan shall be identified, including for each target: - How it will be measured and monitored - Actions to achieve and maintain (or exceed) it - Planned timeframes to achieve it - Financial budgets allocated for actions - Positions of persons responsible for actions and achieving targets - Where available, note the link between each target and the achievement of best practice to help address shared water challenges and the AWS outcomes.
Findings:	The site must prepare a new Water Stewardship Plan that reflects the new projects being developed, as the targets in the initial WSP had all been met.
Corrective action:	Prepare new WSP & reflects the new projects being developed, as the targets in the initial WSP

Finding No:	TNR-001497
Checklist Item No:	3.3.2
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	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.
Findings:	Site has shared the contradictory water intensity targets i.e. tons of water/ ton of production. The values are not aligned in WSP playbook (slide# 52) and water related cost document (provided against indicator 1.3.7). Also the consumptions values are consistently not meeting the target from last couple of years.
Corrective action:	Revise water intensity targets i.e. tons of water/ ton of production and water related cost and provide note if the consumptions values are consistently not meeting the target from last couple of years.

Finding No:	TNR-000756
Checklist Item No:	3.5.1
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be implemented.
Findings:	The site has not identified IWRA specific targets in their Water Stewardship Plan, despite undertaking projects that could be considered best practice.
Corrective action:	Identify IWRA specific improvement targets in WSP

Finding No:	TNR-001498
Checklist Item No:	3.9.2
Status:	Open
Finding level:	Observation
Checklist item:	Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.
Findings:	Site has shared the contradictory water intensity targets i.e. tons of water/ ton of production. The values are not aligned in WSP playbook (slide# 52) and water related cost document (provided against indicator 1.3.7). Also the consumptions values are consistently not meeting the target from last couple of years.
Corrective action:	Revise water intensity targets i.e. tons of water/ ton of production and water related cost and provide note if the consumptions values are consistently not meeting the target from last couple of years.

Finding No:	TNR-001494
Checklist Item No:	4.4.1
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	The site's water stewardship plan shall be modified and adapted to incorporate any relevant information and lessons learned from the evaluations in this step and these changes shall be identified.
Findings:	The site has made significant progress with their initial WSP, but there was no evidence presented to demonstrate the achievement of water intensity targets or the Plan has been modified and adapted to incorporate lessons learnt.
Corrective action:	Provide evidences to demonstrate the achievement of water intensity targets and explain the modified plan to adapt to incorporate lessons learnt (to achieve target)

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Finding No:	TNR-001499
Checklist Item No:	5.3.1
Status:	Open
Finding level:	Minor
Due date:	2023-Jun-15
Checklist item:	A summary of the site's water stewardship performance, including quantified performance against targets, shall be disclosed annually at a minimum.
Findings:	The site has not disclosed the site performance against water stewardship plan.
Corrective action:	Officially communicate WSP performance to key external stakeholders

Signature WSAS

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Alliance for Water Stewardship (AWS)

Audit Number: AO-000285

Report Details

Report	Value
Report prepared by	Tanya Christensen
Report approved by	Rizwan Masood
Report approved on (Date)	08 Sep, 2022

Surveillance

Proposed date for next audit
2023-Jun-13

Stakeholder Announcements

Date of publication	Location
2022-May-11	LKB Industrial Estate Website
2022-May-11	J&J Thailand Facebook page
2022-May-09	AWS website
2022-May-09	WSAS website

Comment WSAS observed the following stakeholder announcement activities

Catchment Information

image-007.jpg

image-009.jpg

image-008.jpg

Catchment Information

The J&J Thailand site is located in the LKB Industrial Estate, which is on the Eastern outskirts of Bangkok. The site is owned by the Industrial Estate Authority of Thailand (IEAT) and all water and waste water is managed by the onsite water supply company GUSCO, who receive all the water for the Estate from the Municipal Water Authority. The Metropolitan Water Authority (MWA) extracts all its water from the Chao Phraya river, which is the major river in Thailand. The river supplies water to about 20-25% of Thailand and is considered a major water highway. The low alluvial plain of the Chao Phraya forms the centre of the country, flowing through Bangkok and into the Gulf of Thailand. The MWA can also extract water from the neighbouring Tha Chin river. WSAS notes that the site still needs to undertake some work to understand its water catchment better.

Client Description and Site Details

Client/Site Background

J&J Thailand was established in 1971 and moved to the Lat Kabrang site in 1985. The Lat Kabrang industrial estate is one of 30 in Thailand, which are owned by the Industrial Estate Authority of Thailand (IEAT). The site receives all of its raw water from GUSCO, the water supply company on the Industrial Estate and it discharges all waster water back to GUSCO. J&J Thailand operate 3 Waste Water Treatment Plants (WWTP) on site, that undertake the primary treatment of any waste water before it is discharged back to GUSCO for secondary treatment, before the treated water is discharged into the Bung Bua Canal. The WWTPs are managed by Sahapornprom (Waste Water Management Company), who are present onsite 24/7 over two shifts. The company conducts 4 daily tests on all three WWTP and the collection tank for all three. All water is segregated onsite: wastewater, storm water and effluent/sewage.

The Consumer Health division manufactures and markets a wide range of products, including baby and kids' toiletries, feminine care, oral-hygiene and adult skin care; the site manufacturers well-known brands, including Tylenol, Neutrogena, Aveeno, Listerine, OGX and Johnson's. The Consumer Health manufacturing process consists of 3 production lines, with very different water uses: Liquid products, Powder Line and Sanitary Products. This is a Smart Factory using check weigher machines and digitalisation to account for all raw materials that are used to manufacture batches of products. An estimated 65% of the raw water goes to the purified water plant to produce pharma grade purified water, for use in the liquid products section. The conversion rate is 32m3 of raw water to get 20m3 of purified water. All equipment cleaning in the Liquid Products section is done with purified water, to keep the production conditions sterile. The steam generated from the boilers is used to sterilise powders, before they are used on the powder line. The powder production line and the sanitary products section are 'dry areas' where all cleaning is done with alcohol, rather than water.

J&J Thailand have developed a comprehensive 'Water Stewardship Plan Playbook' that consists of a 142 slide PowerPoint presentation, collating evidence against each core indicator that they are seeking certification for. The site engages an AWS Consultant to undertake an initial gap-analysis and assist with developing the initial Water Stewardship Plan.

Summary of Shared Water Challenges

Summary of Shared Water Challenges

The site has identified the following early Shared Water Challenges in consultation with their stakeholders:

- Off-spec water discharged to central wastewater treatment on the industrial estate.
- Pollution from households, discharging wastewater into the canals.
- High water consumption in the supply-chain.

0.1	**General Requirements for Single Sites, Multi-Sites and Groups**	
0.1.1	*Eligibility Criteria*	
0.1.1.1	*The site(s) occupy one catchment OR an exception has been granted.*	Yes
Comment	The site is located within a single water catchment.	
0.1.1.2	*The scope of the proposed certification shall be under the control of a single management system.*	Yes
Comment	The J&J Thailand site operates under a single management system.	
0.1.1.3	*The scope of the proposed certification shall be homogeneous with respect to primary production system, water management, product or service range, and the main market structures.*	Yes
Comment	The scope of certification is for a homogenous primary production system, water management, product range and market structure.	

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.

closed

Comment

The J&J Thailand site are located in the LKB Industrial Estate, which is on the Eastern outskirts of Bangkok. The site is owned by the Industrial Estate Authority of Thailand (IEAT) and any water supply and WWT is managed by the company GUSCO, who receive all the water for the Estate from the Municipal Water Authority. The Metropolitan Water Authority (MWA) extracts all its water from the Chao Phraya river, which is the major river in Thailand. The river supplies water to about 20-25% of Thailand and is considered a major water highway. The low alluvial plain of the Chao Phraya forms the centre of the country, flowing through Bangkok and into the Gulf of Thailand, the MWA can also extract water from the neighbouring Tha Chin river.

GUSCO are the water service provider for the industrial estate and J&JT have contracts and permits in place with GUSCO regarding volume of water they receive and water quality, with the incoming Water Supply having two meters; All industrial units on the Estate have to undertake primary treatment of their waste water before discharging it to GUSCO for secondary treatment. Primary waste water treatment consists of the following processes: oil trap and cool down tank, equalisation tank, coagulation and flocculation tank, dissolved air flotation (DAF). GUSCO have a secondary waste water treatment facility on the industrial estate before all water goes into the Bueng Bua Canal. J&JT have mapped the canal network Testing is undertaken twice a month on the waste water being returned to GUSCO and J&JT use an onsite water treatment consultant (Sahapronpom) to manage the three waste-water treatment units located within the site boundaries. Any waste water sample taken is split between GUSCO and the waste water treatment consultant and then result are compared. GUSCO takes the sample, rather than J&JT, ensuring that the sampling is undertaken in an impartial manner.

Finding No: TNR-001495

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 has undertaken a stakeholder analysis for water related issues, which includes regulatory and government representatives. The 'Stakeholder analysis' document, lists relevant stakeholders, how they interact with the site on water issues, level of interest, level of power and how the site communicates with them. The site has identified stakeholders across the following groups: Government, Local Government, Water Supply Company, Site's Indirect Water Use, Schools/Communities/,Neighbouring Companies and so forth. The site holds ISO 14001 certification and that process requires the involvement of environmental stakeholder, this has been adapted to meet AWS requirements. There is a 'Communication and Consultation' (SOP-022103, Rev. 3) in place that supports the stakeholder consultation process. J&J held an Open House on June 10th 2022 for water-related stakeholders, to undertake consultation on water related interests and challenges. There were 17 participants present from a wide range of stakeholder: IEAT, GUSCO, Sahapornprom, Community Leaders, Site indirect water users (LDO & Sprinkle). The site has secured the participation of representatives from the site's ultimate water source and receiving water bodies, including local community participation, from villages around the canals that receive the treated water. The site supplied robust examples of stakeholder consultation activities, such as: - Monthly site inspections/gemba walks with Sahapornprom, the licensed wastewater controller - Communicating new laws and regulations with stakeholders, keeping them up-to-date on the site's regulatory requirements - Developing a community grievance redressal mechanism to proactively seek feedback Please refer to section 1.2 of the 'WSP Playbook' for additional supporting evidence.	
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	This has been mapped appropriately against the AWS matrix, please refer to the 'WSP Playbook slides 13-15.	
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.*	Yes

Comment

The site has a range of comprehensive incident response plans in place, the risks are summarised in the 'Risk Assessment of Potential Emergency Situations with Control Measures'. because the site stores alcohol on site, they have extra safety measures in place for foie hazards. The site has identified three extremely high risks: fire, chemical spill and floods. They utilise a 5x5 risk matrix, likelihood and severity ratings. Biological hazard and other health hazards are now deemed High Risk as a result of the Covid 19 crisis. The site employs an on-site Nurse and Doctor (Full Time) and conformed that the last major incident was in 2018, from an overspill tank.

The site have the following procedures in place to address water-related emergency events:
- Spill Management Procedure (SOP-022051, Rev.4) covers chemical spill and the potential risk to water sources.
- Emergency Preparedness and Response Procedure (SOP-0002781, Rev.1)

The site conducts annual emergency drills for fire and chemical spills and all response equipment is checked every other week. It is mandatory by Law to have a fire response plan and annual drills. The site shared the outcome of the Chemical Spill Drill Training from 2021, with pictures shown of the training and drill exercises. The site has calculated the amount of contaminated water that would be generated (7,540 l/m) in case the automatic sprinkle system is activated, the duration if a fire suppression event (2hrs) and the volume of water that would be dispersed in the storm drains (954 m3), please refer to slide 122 in the 'WSP Playbook'.

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

closed

Comment

The site has identified and mapped the components that make up their water balance, they have supplied a simplified water-flow diagram identifying the inflows, outflows and onsite storage. The flow diagram is presented alongside a site plan, showing the location of the components included in the water balance. WSAS notes that the schematic has not explicitly included the water contained in the pipework and it would be beneficial to consider this in future iterations. The site also supplied a 'Storm and Sewer Drainage Layout' (Drawing M-D-403) schematic, that shows the sites outflow layout in more detail.
However the site has not mapped a separate water supply and discharge for office buildings.

Finding No: TNR-000752

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.*

closed

Comment

The site has quantified their water balance using monthly avg. data for 2021, to calculate the balance. The site stated that there is no real annual variance on water usage rates, as the products are everyday products, ut what little variance there is should be quantified. Overall the water balance would benefit form clarifying the source of the data, time period it is taken over and seasonal variation. WSAS queried which figures are obtained from meter readings and which ones are assumed and the site amended the water balance during the assessment to clarify what date was metered, calculated or estimated. The amended version of the water balance is located on slide 29 in the 'WSP Playbook', it also contains a better legend e.g. explaining assumptions.

The water balance identifies both MWA and GEM Environmental Management as supplying water to GUSCO, and GEM weren't identified in earlier discussion about the catchment source. As such the site need to further understand the catchment supply to the site. The storm water drainage has been clearly outlined in the 'Storm and sewer drainage layout' schematic (indicator 1.3.2) but storm water has not been identified or quantified in the site's water balance. The site is conducting a feasibility study on whether can utilise it, but there is no data on the volume of storm water.

Finding No: TNR-001329

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 a comprehensive water quality testing plan in place, that is underpinned by procedures. As a result of the AWS standard process the site now receives monthly water supply quality data from GUSCO and they might consider adopting the same standards as J&J. The incoming water is tested for conductivity, pH and a range of chemical and microbiological parameters. J&J Thailand now also conducts full annual tests of incoming water, started June last year, to compare with GUSCO figures. The purified water system is subject to daily tests and an example test sheet has been supplied. This conducted in line with the 'Purified Water' (SOP-008471, Rev.1) procedure.

The site operates three separate Waste Water Treatment Plants (WWTP) which are managed in line with the 'Management of waste water treatment plant' (SOP-021868, Rev.2) procedure. Sahapornprom conducts the effluent monitoring andis responsible for the management of the WWTPs. Effluent monitoring consists of COD rapid test every time before pumping the waste water out, which is during day time only, can't discharge unless has been tested. They also conduct pH tests every hour and the company are on site constantly (24hrs, 2x 12 hrs) or on call to monitor waste water quality.

GUSCO conducts monthly WW monitoring and split the sample with Sahapornprom (waste water consultant) and J&JT. The site conduct effluent trend analysis (monthly) and shared an example monthly report, one is produced for each WWTP. Site shared the WWTP 2 report for May 2022, which was in Thai, but Local Auditor confirmed the content .The data trend charts collates data over three years. The wastewater sludge is monitored by the recycling company Asia Recycle Technology and used for fertiliser. The recycling company provides the site with test results from the sludge testing, so the sludge can be classified as non-hazardous waste, as per national regulations on waste classification.

Annual stormwater quality monitoring is conducted annually, there is no national standard for storm water discharge. There are 4 storm drainage points on site and the site supplied test reports for 2019, 2020 and 2021.

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 adopted an ISO 14001 approach, and identified a number of sources of pollution. The top 5 are all moderate risks;

1. Spillage/ leakage of chemicals
2. Effluent water from WWTP
3.Disposal of hazardous waste off-site
4. Air emissions form boilers
5. Energy and water consumption

The chemical store was checked by the audit team during the site tour and deemed safe. It is a temperature controlled room with authorised access only. Any authorised personnel have their pictures displayed on the access door and are available 24hrs a day, over two shifts. All contents of the chemical store are subject to an automated storage system, all products are tracked and traced through SAP. Any hazardous waste is safely stored and disposed off by a [licensed operator, working under a disposal permit.

1.3.6	*On-site Important Water-Related Areas shall be identified and mapped, including a description of their status including Indigenous cultural values.*	No

Comment

This is an urban area and the site is located within the Lad Krabang industrial estate, which is sat within the Lam Prathew District. The site is surrounded by canals and they have identified the 5 canals near to the site as on-site IWRAs:

- Bung Bua Canal
- Ta Sua Canal
- Lam Makham Canal
- Lam Ko Phai Canal
- Tang Mo Canal

The canals have been identified and mapped, but the site has not supplied any information on the status of the canals, or their condition. Please refer to the AWS Standard Guidance as it contains a Special Subject annex on IWRA.

Finding No: TNR-001330

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.*

No

Comment

The site has been recording monthly water-related costs since January 2019, across the following categories: area maintenance costs, portable water costs, raw water costs, WWT costs calculations based on BOD. There are two meters for incoming water, but it's only Meter 1 that applies to the site. Meter 2 records the supply to the two other companies that are located on the site, but they are offices only.

The site acknowledges that water intensity, and hence water costs, fluctuate proportionally to Liquid product volume. Water cost per liquid product improves from cleaning and sanitisation water reduction, chemical usage reduction and WWTP operations and analysis optimisation. Please refer to the 'WSP Playbook' for supporting graphics to the indicator.

The site is commended for the detailed breakdown of water-related costs, but the evidence supplied does adequately identify water-related revenues (if any) nor a description of the social, cultural, environmental or economic water-related value generated by the site. This could include water efficiency projects with stakeholders and the associated water savings resulting from this. Nor the revenue, in the form of savings, generated from any of the operational efficiency projects that are being explored by the site.

Finding No: TNR-001331

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

Yes

Comment

Levels of access and adequacy of WASH at the site has been identified and J&J have conducted a WASH Status Assessment for all employee categories that operate on the site. They have also prepared a table listing what the national minimum requirements for toilet facilities are in Thailand, and what the site provides on site. Please refer to slide 44-48 in the 'WSP Playbook' for additional supporting evidence against this indicator. The site undertakes drinking water tests and test results from Sprinkle were supplied for review. The audit team verified that the WASH facilities were adequate during the audit.

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 have compiled a list outlining the 'Top 10 Raw Materials by Spend' and it contains the annual volume consumed of the product, their location and what water catchment they are based in. The methodology for identifying a supplier was: - High water consumption (considered from type of manufacturing) - High spending or high volume of raw material to the sites production - Identical material (not easy to find replacement) Out of the ten suppliers identified, one is deemed within the site's catchment (Bak Pakong River), namely L PURE 96% (Ethanol 96%, LDO). The table could be improved by adding a column that describes the raw material and how it is used in the production process. The site has engaged extensively with this supplier, but this will be addressed in the implementation section.

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	Liquor Distillery Organisation Exciser (LDO) extract water from the Bang Pakong river, and the site have been in communication with them since September 2020 to gain an understanding of their water use. They have established that they consume 240,000 m3/annum. Their waste water has very high COP so it is treated at neighbouring wastewater facility and gets fed into an AD plant and returned as biogas for fuelling the LDO water. Ethanol is produced through fermentation, domestic water is used to cool the fermentation tank. The company has a business plan in place for water shortage, they can connect to the Provincial Water Work Authority (PWA). J&J have established their water consumption ratio: 70% fermentation, 1% distillation, 19 soft water production, 1% other. water intensity figures 2020: 17.79 and 2021 16.6 . The company is undertaking a project on improving their fermentation process, consequently their water intensity has decreased. The company has shared procedures with J&J Thailand and confirmed that they undertake various CSR activities and they have exchanged water management practice, particularly around setting internal standards for discharge water quality, indication of drainage manholes and integrity test for underground sewer and tanks. Uniform Laundry service provider Sin Chai Hua are located close to J&JT within the same catchment. The company have worked towards developing their own water balance and have the following data: 50% of water is recycled within their business from the wastewater treatment. 20% from MWA and 8% from their own well. They are using water at a rate of 292,000 m3 pr year, the ground water is hard and can be used with detergent. J&J have been working with them on their main water challenge which is high water consumption. The company wants to maintain 50% water recycling, but want to look at reducing water consumption by a project to remove oil contamination from the fabric before laundering. The company is sharing their water analysis report with J&J and are also installing COD online after final discharge point.

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.*

No

Comment

In accordance with the AWS Standard Guidance, water governance refers to how water supply, wastewater, water resources and the associated natural environment are managed by government agencies, institutions and other organisations. The site supplied the following documentation to support the indicator:

- The 53rd Annual Report (2020) from the Metropolitan Water Authority, which supplies water to the Bangkok, Nonthaburi and Samut Prakan areas. The site has not highlighted what elements of the annual report or what, if any, public initiatives apply to the site and could become a shared water challenge.
- The 'GUSCO Drought Prevention and Resolution Plan for the Lat Krabang Industrial Estate' (2015), both the presentation and the plan are in Thai.
- Excerpt from an 2020 academic article titled 'Pollution problems in the Chao Phraya River', which summarises some measures to improve the water quality in the Chao Phraya river.

The site has identified some water governance initiatives, but it has not documented its understanding of the them, how they apply to the site or whether these will be incorporated into ant shared water challenges. WSAS also notes that there are likely to be more water governance initiatives that apply to the site, than the ones listed.

Finding No: TNR-000754

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 has outline the Legal and Regulatory Requirements that they must comply with, these are:

- Regulation of Ministry of Industry (MOI) No.2, BE 2535< issued under the Factory Act; Defines what a factory is and what other regulations the site needs to meet.
- Notification of the Ministry of Natural Resources and Environment. Standard for Discharging Effluent from Factories and Industrial Estates.
- Notification of the Department of Industrial Works, re: Notification for Environmental Personnel of Factory. Environmental Personnel of Factory.

The site operates a Master List Register of Legal and Other Requirements and utilises an 'ENHESA Risk Assessment/score card' to ensure that J&J are reporting against regulation.

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

closed

Comment

The site has not adequately defined the water catchment that the site is located within, whether it is the surface water or groundwater catchment. Consequently the site has not been able to gather data on the catchment water-balance. Understanding the water catchment is critical to understand water risks in the catchment and potential stakeholders for catchment wide shared water challenges.

Finding No: TNR-001332

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.*

No

Comment

The site has supplied a robust level of evidence that they monitor the water quality of all incoming and outgoing water to GUSCO, which it receives and sends back out into the water catchment. But there was little evidence supplied to demonstrate that the site has an understanding of water quality issues within the catchment, including the canals that surround the industrial park.

The site is supplied by Tower No.1, which is monitored monthly and the tap water quality standards are tested. In terms of the Water Supply coming to site, GASCO have shared their SOP for supplying water and for treating waste water, and the monitoring plan for the year. There is no standard for conductivity and GUSCO do not test for it, but J&JT do test for it and there is a seasonal impact on conductivity. During drought periods, conductivity goes up, which has an impact on the water purification process. J&J are trying to encourage GUSCO to start testing for this, so they can monitor annual variances. GUSCO share their water quality data with J&J for waste water treatment, please refer to playbook for an example test report.

The site demonstrated that surface water quality data from the Chao Pra Ya river is available on the Pollution Control Department website and all water quality parameters are under Thailand's national standard. This was the only catchment water quality

Finding No: TNR-001333

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.*

closed

Comment

The site has identified the Bueng Bua Canal as a catchment IWRA, as it receives all the treated waste water from GUSCO. An additional 4 canals were identified against indicator 1.3.6 (on-site IWRA) that should also be considered under this indicator.

Site visit to GUSCO on June 8th 2022, regarding the IWRA Bueng Bua Canal, where waste water is discharged to after treatment. There are potential challenges if the off-spec discharge to central wastewater at night. Met to share waster water management practices, shared water challenge will be improved by installing COD online at intake ponds, to early detection of off-spec water before it goes into the WWTP.

The site has made a good start by focussing on the Bueng Bua Canal, but must also assess the status and map other catchment IWRAs. There might be other IWRAs within the catchment that are not canals or rivers, such as conservation sites, wetlands or water sources that have community or cultural importance. The site has previously mentioned deep bore wells that can act as an emergency backup for GUSCO, but these have not been identified as an IWRA.

Finding No: TNR-001334

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

No

Comment

The site has identified emergency plans and measures with the GUSCO, the water supplier for the industrial estate. J&J started engaging with GUSCO in August 2021 and have mapped out their main source of water and their emergency supply plans. GUSCO supplies 30K m3/day to the LKB industrial estate and buy some water from GEM Environmental. The main source of water is the MWA, which is unlikely to run out of water as they extract 4.4m m3/day. There are underground deep bore wells with max of 17.5K m3/day for emergency backup. The IEAT/GUSCO WWTP has capacity to take 20K m3/day and undertake pre-treatment, secondary treatment and sludge treatment at the plant. After treatment at the IEAT/GUSCO facility al treated water is sent to a retention point for quality inspection before being pumped out to the Bueng Bua canal.

The site has not identified the condition nor potential exposure to extreme events of the existing water-related infrastructure. The AWS Standard defines infrastructure as all manmade equipment and infrastructure for the abstraction, delivery, storage, treatment and provision of water supply, and for the collection, treatment and discharge of wastewater. For the J&JT site it would include the canals, pipes, water tanks, distribution and treatment systems. The AWS Standard Guidance states that the site should provide a summary of all water-related infrastructure, it's general age and condition.

Finding No: TNR-001335

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

No

Comment

The site has not supplied any evidence to demonstrate the adequacy of available WASH services within the catchment. In line with the AWS Guidance, J&JT should identify the percentage of the catchment population with access to good water and wastewater services.

Finding No: TNR-000753

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

J&JT held an Open House the week before their AWS audit, to support the identification of shared water challenges. As a result of the stakeholder event, they have identified three shared water challenges with some corresponding opportunities. These can be found on slide 68 in the 'WSP Playbook' and the challenges are:

IEAT/GUSCO shared water challenge: Off-spec water discharged to central wastewater treatment. Priority : medium

Communities: pollution from households, discharging wastewater into the canals. Priority Medium.

LDO/Sin Chai Hua (suppliers): high water consumption in supply-chain. Priority Low.

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

Yes

Comment	J&JT held an Open House the week before their AWS audit, to support the identification of shared water challenges. As a result of the stakeholder event, they have identified three shared water challenges with some corresponding initiatives (slide 68 in the 'WSP Playbook') these are: Off-spec water discharged to central wastewater treatment (Priority : medium). The initiative: GUSCO to install COD online to provide an early alert, when off-spec inlet water is detected. Pollution from households, discharging wastewater into the canals (Priority Medium). The initiative: Undertake awareness raising within communities about wastewater management. IEAT to support the installation of septic tanks and J&J considering whether they could sponsor the installation of septic tanks in villages as part of annual environmental CSR project. High water consumption (embedded water) in the supply-chain (Priority Low). The initiative: implement more water reduction and water efficiency projects.
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 conducted a water risk assessment for the site, which consists of four parts: (1) Geographic conditions; (2) Impact in last 3 years; (3) Future changes; (4) Scenario Analysis. The form does contain columns on 'associated cost or lost revenue' but these have not been completed. The extract from the Water Risk Assessment Action plan n the 'WSP Playbook' does include a mitigation cost for a particular action. Otherwise the risks are identified, prioritised, likelihood and severity of impact assessed. The site has identified three key risks for Thailand and JnJ LKB: - Watershed health, - Projected future watershed and site demand, - Flood and drought. The site has developed Business Continuity Plans (BCP) for the site in case of operational disruption from water shortages, particularly for the Listerine and OGX production which have the highest water consumption rates.
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 a number of water-related opportunities, which are likely to deliver significant water and revenue savings. The site is is implementing numerous 'Water & Gas Sustainability projects in 2022, which support the strategic 'J&J Thailand - Sustainability Goals 2025'. Please refer to the 'WSP Playbook' for additional evidence to support this indicator. Completed projects - Mobile Tank to IBC for Bulk Storage; IBC intermediate bulk container. - Listerine M1 and PST Cleaning Optimisation (Pirun) Projects underway - Reuse water from CDI loop sanitization for HDI - Reuse water from RO skid sanitisation for HDI - Reuse rejected water from DI system - Managing Site Performance for Water Consumption (phase 1) Projects planned - Study of Listerine Mixing - Hot water loop temperature reduction & sanitization process optimisation

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 J&J Global have been sharing water-related best practice amongst all sites, as the global sustainability team within want to accelerate learning curves across all J&J sites. J&J Thailand will be the reference site for others on how to deliver water stewardship as they are the first site to proceed with certification.

The site has had numerous interactions with GUSCO and are building up a programme of sharing good practice to improve water governance within the Industrial Park, which is a great example of implementing best practice. Overall, the site is very proactive at developing and implementing actions towards demonstrating best practice, but Step 1 of the AWS standard is all about identifying examples of best practice within the catchment. This will allow the site to benchmark their own actions for water governance, water balance, water quality, IWRAs and WASH.

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 are actively working with their supply chain within the catchment, to benchmark their operational water balance and encourage water efficiency activities. The site have benchmarked the water use and water balance of the Ethanol producer LDO and the uniform laundry service provider Sin Cha Hua. Please refer to the 'WSP Playbook' entries for indicator 1.4.1 & 1.4.2 for additional details.

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

Comment The site has identified water quality practices on the LBK industrial estate where they are located and are working with stakeholders to improve water quality operational practices, such as: COD rapid tests of waste water and integrity tests for underground tanks. The site has also set more stringent internal limits on water quality tests, than the requirements set by national laws and regulations.

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

Comment The site has not adequately identified IWRAs, which was raised in 1.5.5, but they have identified a shared water challenge in that the surrounding canals are being polluted by waste water from the villages, and they have identified projects to address this issue. These will improve the IWRAs and could be considered best practice. They are working with a key stakeholder i.e. IEAT/GASCO in identifying and addressing this IWRA issue.

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

Comment This site has maintained adequate WASH arrangements at site howeverbut not adequately addressed WASH issues in the catchment, see 1.5.7., and have not identified any catchment best practice for provision of WASH services.

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 AWS statement has been signed with the change in leadership (June 6 2022) and is now signed by Veeraya Kaewwital (Site Leader). The statement has been publicly disclosed and covers the requirements set in the indicator. The statement is posted on the EHS&S (environmental health & safety and Sustaianbility) communication board.

In preparation for the AWS Standard audit, the stakeholder announcement was publicly disclosed on their website and the company facebook group.

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 operates a Register of Legal and Other Requirements (RORL) and have shared the portion of the register that is related to water and waste water management, this can be found in the 'WSP Playbook', please refer to slides 87-91 for supporting evidence against this indicator. In accordance with the 'EHS&S Regulatory Compliance' (SOP-022099) procedure, it is the responsibility of the EHS&S Team to track, update and proactively identify environmental laws and regulations, then tracking them on the RORL system. The RORL is actively communicated to al relevant departments. The site has an agreement in place with a third party regulatory service, that tracks all regulatory changes in Thailand. The site also uses the 'ENHEASA System' to confirm, rack and implement ant legal or regulatory requirements.

The site submits bi-annual reports to the Department of Industrial Works against their wastewater and wastewater operator permits. This is done online and a screenshot from a submission was shared for the period July-Dec 2021. The 'Management of Wastewater Treatment Plant' (SOP-021868, Rev.2) procedure underpins this process. The site is a registered licensed wastewater controller and wastewater operator, this activity is underpinned by a SOP-021868, the current expiration date of the permit is 24 August 2023.

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

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

No

Comment: The water stewardship strategy is embedded within the 'J&J Consumer Health Healthy Lives Framework' strategy and the 2022 EH&S Strategy. A copy was not made available in the 'WSP Playbook'.

Finding No: TNR-001496

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.

No

Comment

The WSP is uploaded on to the CURVE system and internal operational system and is signed by the executive team. All actions are uploaded onto the CAPA system for monitoring and implementation. The signed version of the WSP initially supplied to WSAS for review, had not been updated to reflect the work undertaken by J&JT in meeting all the actions outlined in the plan, when it was evident that the site had conducted significant work against the targets.

The site is minded to prepare an annual WSP with short and long-term targets, to make it easier to monitor and evaluate progress. The site has in effect met all of the targets in the original plan and are at the stage where they need to develop a new plan, based on the outcomes of their previous activities. This was raised as a finding, in order for the site to develop a meaningful new plan that contains SMART targets.

Finding No: TNR-000755

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

J&J have co-ordinated with IEAT/GUSCO, LDO and Sin Chai Hua to identify relevant water risks and mitigation plans. These are based on activities outlined in the action plan column in the WSP and a screenshot from the CAPA database, listing the activities is included in the 'WSP Playbook'.

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

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

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

Comment

J&J have proactively engaged with Local Government and communities through the Green Star Award platform, to disclose how the site is progressing against a number of sustainability areas, including water. The Industrial Estate Authority of Thailand (IEAT) have also set up an 'ECO Excellent' Committee, which J&JT have been appointed to sit on (30.11.21), to disseminate their sustainability and water. Please refer to slide 98 in the 'WP Playbook'.

The site had a virtual visit from Department of Industrial Works representatives on the 10.05.22 as part of their application to the Prime Minister Awards in the Environment category, showcasing their sustainability initiatives, which includes their AWS activities.

J&J held an Open House event on the 10th June 2022 to engage with site stakeholders, to share site water related information in a transparent manner. Seventeen (17) stakeholder participants attended the day representing Local government, LKB IEAT, Water supply/Wastewater treatment company GUSCO and Sahapornprom, Community Leaders, Site indirect water use (LDO, Sprinkle) suppliers.

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

The site is proactively engaging with the stakeholders within the industrial estate, beyond what they are required to do for their regulatory and legal obligations. Improving water quality, sharing site water data and practices in a transparent manner, engaging with supply-chain partners to identify their water stewardship activities. The Open House event (10.06.22) welcomed local community leaders from the Liab Klon Man and Mitsampan, ensuring that village representatives from the canals surrounding the Industrial Estate are part of the water stewardship process. Please refer to slide 19 & 20 in the 'WSP Playbook'.

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

The site has the 'EHS&S Regulatory Compliance' (SOP-022099) procedure in place and the team has monthly meetings to review any regulatory or legal updates, and what potential impact of updates are on operations. All applicable regulations are recorded in the Register of Legal and Other Requirements (RLOR) tracking spreadsheet. The RLOR is actively communicated to all related Departments via email or meetings. There is a weekly EH&S Department head meeting, where any regulatory updates are communicated.

NPC are an external 3rd party service listing all regulatory and legal updates in Thailand, J&J utilise them and filter down any applicable updated to them. The site supplied some examples of recording templates for applying the process:

-WWTP Inspection Checklist
-WWTP Daily Checklist
-Discharge water record
-Monthly report from Sahapornprom

The site inspect all underground tanks to ensure no leakages can occur to groundwater and they evaluate the integrity of its single-wall sewers every 5 years, documents have been embedded in the 'WSP Playbook'.

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

The site conducts tests of drinking water, to ensure it complies with legal limits and people have access to safe drinking water. The supplier 'Sprinkle' is subject to an annual water quality test which J&J T send offsite for testing, as well as the supplier supplying their own test reports. The site is at the early stages of establishing relationships with the villages and communities on the canals that receive the treated waste water from GUSCO.

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 is ahead of the current Water Stewardship Plan and the next revision of the WSP will reflect the water efficiency projects that J&J are currently conducting. Section 5 'Sustainable Site Water balance' in the site's WSP lists the benchmarking and feasibility stages of the actions that the site is already implementing. The 'Water and gas sustainability projects 2022' (please reference slide 75) contribute towards improving the site water balance and are a continuation of the existing targets listed in the WSP.

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.* No

Comment	Both flooding and water scarcity is a shared water challenge on the industrial park, depending on the time of year. The J&J Water Risk Assessment has a recommendation to 'Evaluate impact of flooding in region on ability to operate' and this risk is linked to the Emergency Response Plan. The 'J&J Water Risk Assessment' has assessed the likelihood of major flood and drought events for the site. The 'risk of significant drought' has been scored as being 'very high' and is linked to the Business Continuity Plan. The site can move production to the J&J Malaysia plant. The corresponding 'Site Action Plan - Water Risk Mitigation Plan of J&J Thailand site' contains section 2 'Likelihood of Major Flood or Drought Events'. Action point 2.4 'Study supply City water and risk assessment for business continuity from drought risk' . Overall the risk of drought to the site is low as both MWA and GUSCO have backup plans if water scarcity becomes an issue. The site has identified opportunities to increase the wastewater reuse and recycling within the plant and the projects are underway and ongoing. Please refer to the slides associated with indicator 1.7.2 in the 'WSP Playbook'. ***Finding No: TNR-001497***	
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 re-allocate any water.	
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	Section 3 'Water Quality' in the current version of the WSP lists 6 actions, which have all been completed. The minutes of the meeting (20.08.21) with GASGO are included in the evidence against indicator 1.5.4. and the site now conducts monthly and quarterly meetings with GUSCO. Please also reference indicator 4.3. One of the actions (15) was to obtain incoming water quality data from GUSCO and J&J now receive a monthly report form GUSCO and are sending their own samples off for testing to compare and contrast with the GUSCO results.	
3.4.2	*Where water quality is a shared water challenge, continual improvement to achieve best practice for the site's effluent shall be identified and where applicable, quantified.*	✓ Yes
Comment	Please reference the graphs and evidence submitted against indicator 1.3.4. in the WSP Playbook. The site has set much more stringent water quality targets than the national limits and the waster water coming out of the WWTPs are testing at much lower levels. The site is transparent with industrial park stakeholders and share test data with GUSCO.	
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.*	✗ No
Comment	The current version of the WSP does not explicitly mention IWRAs, but the site has identified the surrounding canals as IWRAs and the Bung Bua canal in particular, as it receives all water from the GUSCO WWTP. For indicator 1.3.6. the site identifies the IWRAs and issue 2 'Wastewater discharge' in the WSP lists actions that have been implemented to improve the discharge into the Bung Bua canal. WSAS notes that the WSP could be more clear in linking the numerous activities that the site undertakes to the five outcomes in the AWS Standard. ***Finding No: TNR-000756***	
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 provided details of and quantified on-site WASH facilities against indicator 1.3.8.	
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	There is no evidence to suggest that the site is impinging on the human right to safe water.	
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	Indirect water use is currently listed in the WSP in section 6 as 'Supply Chain - Top Materials and Suppliers'. Indirect water use also falls under section 7 'Embedded water use of outsourced services'. The site has identified two suppliers in their supply chain and engaged with them to understand their water consumption, on for raw materials (LDO) and one for services (Sin Chai Hua). J&J T have done significant work with both companies to benchmark their water use and explore actions to improve their water efficiency. The site are in the process of revising their WSP and this has already been raised as a finding against indicator 2.3.2 and the next version of the WSP will include SMART indirect water use targets.	
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 has recorded evidence of engagements with LDO and Sin Chai Hua against indicators 1.4.1 and 1.4.2 in the 'WSP Playbook'. They have benchmarked the water use of LDO and have already seen a reduction in the water intensity. The material supplier delivers CSR activities linked to water conservation and J&JT have shared best practice, such as setting more stringent internal limits 1for water quality and conducting integrity tests for underground tanks and sewers. J&JT have worked with Sin Chua Hue (laundry services) to calculate their water balance and have scheduled quarterly meetings with them, to address water related issues. The laundry service have installed COD online at their final discharge point to monitor quality levels.	
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	Please refer to the evidence outlined so far, regarding the site engaging with IEAT and GUSCO on the shared water infrastructure located within the Industrial Estate particularly the WWTP. The site has also engaged with their suppliers in the catchment, to improve the water intensity of their operations.	
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 achieved best practice in water governance, through their interactions with key stakeholders such as IEAT, GUSCO, and have been recognised for their Environmental Management by receiving a 'Green Star Award' by the IEAT and Department for Industrial Work.	
3.9.2	*Actions towards achieving best practice, related to targets in terms of water balance shall be implemented.*	No
Comment	The site submitted baseline data back in 2020 to set a % reduction vs baseline target for water intensity with other regional J&J sites. They are the only site to have established their baseline data across the Asia region (slide 110). ***Finding No: TNR-001498***	
3.9.3	*Actions towards achieving best practice, related to targets in terms of water quality shall be implemented.*	Yes
Comment	The site is achieving best practice in terms of the water quality testing regimes it has set up with stakeholders on both the incoming water and outgoing waste water. There is no standard for conductivity and GUSCO do not test the incoming water for it, but J&JT do as there is a seasonal impact from conductivity levels. During drought periods, conductivity goes up, which has an impact on the water purification process. The site has set more stringent internal limits on water quality tests, than the requirements set by national laws and regulations and they conduct COD rapid tests of waste water to ensure any anomalies are caught early.	
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	Although the site has some work to undertake in identifying and assessing the condition of IWRAs, they have been proactive in working with the communities on the canal that receive any waste water, as they are also a source of pollution due to the lack of any waste water infrastructure. The site are working with IEAT to identify opportunities to provide septic tanks and undertake awareness training on the impact of effluent to the canals. This has been identified as a high priority water challenge.	
3.9.5	*Actions towards achieving best practice related to targets in terms of WASH shall be implemented.*	Yes
Comment	The site has undertaken water quality tests on the water supplied by the vendor Sprinkle, to ensure that the drinking water supplied on site is safe. This is above any normal practice and can be deemed best practice (slide 44 &45 in the WSP Playbook). The site has also installed backflow prevention for water used in the canteen and ice maker.	

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's Water Stewardship Plan identified 37 actions against ten issues to be completed by June 2022. Out of these, 35 actions have been completed and only two actions remain ongoing, which are both regarding wastewater use. All WSP actions were put on CAPA and formally monitored as part of QA process, which means that each action had a defined activity against it, with an action owner and due/completion date. Please refer to the CAPA screenshot in the 'WSP Playbook' against this indicator.

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

Comment: The site has quantified the annual savings, in terms of value creation, from implementing water stewardship projects on water reduction. The site has included the value creation table, resulting from the water savings projects, in the 'WSP Playbook' (slide 116) and the investment associated with each project has been quantified.

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

Comment: The site is at the very early stages of engaging with catchment stakeholders, but it is already creating shared value benefits with stakeholders such as LSO and Sin Chai Hua by improving their operational water intensity. The benefits have been identified and they will be quantified as the projects progress. Please refer to the slides for indicator 1.4.1 and 1.4.2 for additional detail.

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: The site has an Emergency Response Procedure in place and conducts annual drills for chemical spill and fire incidents. The site presented annual reviews for the chemical spill drill training events in 2020 and 2021, documenting the activity with pictures, the objectives and agendas for the training events. Emergency response training is conducted against the risks that have been deemed the highest risk for the site: Fire, Chemical Spill and Flood. There have been no emergency incidents over the last year. WSAS reviewed the 'Spill Incident Record Y2020-2022' and there were 4 minor spillage cases recorded, not contaminated out to site boundary. IEAT also have an emergency response procedure in place for the industrial park and the site partakes in the park wide emergency drills.

The emergency plan is related to water emergency plan to cover spill, storm water pollution, flood prevention for water related issues. Other examples of emergency response protocols were reviewed: Safe work procedure in loading area. The sire has stringent and mandatory EHSS Training.

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 developed a good working relationship with GUSCO and hold quarterly meetings on their mutual water management performance. J&JT did a site visit at GUSCO on the 8th June 2022 to review their water-related infrastructure and overall performance. The J&JT Open House event on the 10th June 2022 was attended by 17 stakeholder representatives and participants were introduced to the site's water stewardship activities and were consulted on their water-related interests and challenges. Please refer to the indicator slides in the WSP Playbook.
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.* — No
Comment	The site has already achieved all the targets set out in the first iteration of their Water Stewardship Plan and the delivery of the plan has been managed through the CAPA system ensuring targets are regularly monitored and evaluated. The site is now at a stage where they need to review the lessons learnt from the first version of the WSP and develop a new WSP that reflects the shared water challenges and water stewardship projects that have emerged from the initial process.

Finding No: TNR-001494

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 presentation for the Open House event (10.06.22) was shared with the team (in Thai), includes Governance structures for water-related governance at the site level; outlining water projects, the water stewardship process and general sustainability issues.

The guidance states the format of disclosure is at the discretion of the site, and they chose to deliver a presentation to their stakeholder community. WSAS also observed the following dissemination activities:

- The site developed a water stewardship brochure for the Open Day.
- The J&J Global intranet carries a water stewardship article,
- The IEAT website published the stakeholder announcements in Thai.

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 WSP was communicated at the Open House event, the week before the AWS audit, to a wide range of water-related stakeholders. The Global J&J '2021 Health for Humanity Report' contains a section on water & waste management, with an article on 'water purification in Thailand'. The article outlines the site's efforts to reduce purified water consumption.

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.* ✗ No

Comment: This is the site's initial certification audit and they were not in a position to disclose their annual water stewardship performance against targets. It was discussed with the site and they are minded to disclose through the IEAT going forward, as that would communicate their annual site water stewardship to all industrial park stakeholders. The J&JT site publishes a 'Healthy Life Mission' document, which discloses all sustainability activities and this will also be used to disclose the annual water stewardship summary going forward. The site has a newsletter for the J&JT team and an annual report will be disseminated internally through this. WSAS is satisfied that the site has identified several outlets to disseminate their annual water stewardship summary going forward.

Finding No: TNR-001499

5.4 *Disclose efforts to collectively address shared water challenges, including: associated efforts to address the challenges;engagement with stakeholders; and co-ordination with public-sector agencies.*

5.4.1 *The site's shared water-related challenges and efforts made to address these challenges shall be disclosed.* ✓ Yes

Comment	The site made use of the Open House event to share their water-related challenges and the projects they are undertaking to address them. The event was well attended by water-related stakeholders and WSAS is satisfied that a similar annual event, would ensure that the site fully disclose their activities to address shared water challenges.	
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 pro-actively held an Open Day with a representative group of water-related stakeholders and have actively engaged with public-sector agencies such as the Industrial Estate Authority of Thailand (IEAT) and the Department of Industrial Works (DIW). This relationship had been described in detail in previous steps and indicators. Please refer to the WSP Playbook for indicator specific evidence.	
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	The site has not had any water-related compliance violations, but they did disclose 4 minor spillage cases in the 'Spill Incident Record 2020-2022', which can be found in slide 123 in the 'WSP Playbook'. The site operates transparent records and any compliance violation would have been disclosed during the audit.	
5.5.2	*Necessary corrective actions taken by the site to prevent future occurrences shall be disclosed if applicable.*	Yes
Comment	This action was not required, as there have been no water-related compliance violations.	
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	This action was not required, as there have been no water-related compliance violations.	
	Photographic Evidence from Audit	
		Yes