

Environment and Social Compliance Audit Report

Project Number: 54401-001
Asset-Level Report - Yongcheng No. 3
April 2021

People's Republic of China: Asia Cube Wastewater Treatment Upgrade Project

Prepared by Stantec Environmental Engineering (Shanghai) Co., Ltd. ("Stantec") for the China Cube Water Company (the "Client") and the Asian Development Bank.

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ASSET-LEVEL E&S AUDIT REPORT – YONGCHENG NO.3

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CURRENCY EQUIVALENTS

(as of 12 April 2021)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1526
\$1.00	=	CNY6.5522

ABBREVIATIONS

AAOV	Average Annual Output Value
ACMs	Asbestos Containing Materials
ADB	Asian Development Bank
ADB's SPS	ADB Safeguard Policy Statement
AESR	Applicable E&S Requirements
AO	Anoxic Oxidation
BOD	Biochemical oxygen demand
BOT	Build-Operate-Transfer
BOLAR	Bureau of Land and Resources
CAI	Completion Acceptance Inspection
CAP	Corrective Action Plan
CCW	China Cube Water
COD	Chemical oxygen demand
COVID-19	Coronavirus disease-19
ECAI	Environment Completion Acceptance Inspection
E&S	Environmental and Social
EEB	Ecology and Environment Bureau
EIA	Environmental Impact Assessment
EIF	Environmental Impact Form
EIR	Environmental Impact Registration
ERP	Emergency Response Plan
ESMS	Environmental and Social Management System
EHS	Environmental, Health and Safety
EHSS	Environmental, Health, Safety and Social
FCAI	Fire-fighting Completion Acceptance Inspection
FSR	Feasibility Study Report
GRM	Grievance Redress Mechanism
HR	Human Resource
HW	Hazardous wastes
IFC	International Finance Centre
IH	Industrial Hygiene
IR	Involuntary Resettlement
IP	Indigenous Peoples
MEE	Ministry of Ecology and Environment
MEP	Ministry of Environmental Protection
NGO	Non-Governmental Organizations
NOV	Notices of Violation



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OH	Occupational health
ODSs	Ozone Depleting Substances
PAHs	Project Affected Households
PCB	Polychlorinated Biphenyls
PPE	Personal Protective Equipment
PRC	People's Republic of China
SEP	Stakeholder Engagement Plan
SPS	Safeguard Policy Statement
SS	Suspended Solids
TOT	Transfer-Operate-Transfer
WWTP	Wastewater Treatment Plant

WEIGHTS AND MEASURES

m	meter	mg/m ³	milligram per cubic meter
km	kilometre	ha	hectare
km ²	square kilometre	t/a	tons per annum
m ²	square meter	h	hour
m ³	cubic meter	t	metric ton
mg/kg	milligram per kilogram	°C	degree centigrade
µg/m ³	microgram per cubic meter	dB	decibel



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Executive Summary

The Asian Development Bank (ADB) is considering provision of financing to the I Squared Capital (ISQ), an independent fund which 100% owns China Cube Water Limited (CCW or the Company). CCW focuses on wastewater treatment projects alongside major rivers in China, and operates nine wastewater treatment plants (WWTPs) with a total capacity of 222,500 tons/day, serving over 2 million population in Henan Province (6 WWTPs), Shaanxi Province (1 WWTP), Heilongjiang Province (1 WWTP) and Guangdong Province (1 WWTP), People's Republic of China (PRC).

ADB engaged Stantec Environmental Engineering (Shanghai) Co., Ltd. ("Stantec") to conduct an Environmental and Social (E&S) audit at CCW in support of the proposed loan. On 29 January 2021, Stantec conducted the E&S audit at Yongcheng No.3 WWTP (the Site). This E&S audit was conducted based on Yongcheng No.3 WWTP's current E&S management performance against the Applicable E&S Requirements (AESRs) detailed as Section 1.2.

The Phase I development of Yongcheng No.3 WWTP was originally constructed and operated by the local government in 2010. In 2011, CCW signed the Transfer-Operate-Transfer (TOT) agreement for the Phase I development with Yongcheng City Government and took over the onsite operation. The scope of the TOT agreement covers the operation of the Phase I development of Yongcheng No.3 WWTP for 30 years. In August 2020, CCW signed the Build-Operate-Transfer (BOT) agreement for the Phase II development with Yongcheng City Government. The BOT agreement is valid for 30 years. No offsite auxiliary facilities such pipelines, valves or sludge treatment stations and disposal facilities are included in the TOT and BOT agreements. The wastewater collection pipelines are managed by the local authority including the portions within the site boundaries connecting to the onsite wastewater collection tank. The wastewater collection tank and other wastewater pipelines within the site boundaries are operated and maintained by the site. The construction of the Phase II development has been commenced since early 2020 and is expected to be completed by June 2021. At the time of the site visit, the majority of the construction work was completed and was moving to small scale construction works and equipment installation.

The Site, located in the industrial cluster of Yongcheng City, on the east side of the intersection of Yinhe Road and Jie Ditch, Yongcheng City, Shangqiu City, Henan Province, PRC, covers a total land area of 28,760 m² for both Phase I and II developments. The Site receiving both industrial and domestic wastewater from an area of 14.18 square kilometres (km²) and the service population are about 80,000. The designed wastewater treatment capacity of the Phase I development is 15,000 t/d, and the actual treatment scale is about 13,000 t/d. In addition, the underground pipelines of Yongcheng No.1, No.3, No.4 and No.5 WWTPs are connected and the valves are controlled by local authority. The treatment capacities among these WWTPs can be deployed by the local authority based on the actual demand or when one of the WWTPs is under overhaul.

The Yongcheng Regional Office was established in 2011 and located in the compound of Yongcheng No.5 WWTP, which takes the responsibility of overall management of the five WWTPs in Yongcheng city, i.e. No. 1-5 WWTPs. There is a total of 12 staff in Yongcheng Regional Office, including one general manager, one deputy general manager, one facility supervisor, one financial staff, one administrative staff, one human resource staff and six laboratory technicians. The labour contracts and personnel file information of the 12 staff in Yongcheng Regional Office are distributed in the five WWTPs. It should be noted that the financial, administrative, human resource and laboratory department of Yongcheng Regional Office are shared by the five WWTPs and no such departments are set up in each of the WWTPs.

During the audit, no Red Flag or High Risk (as defined in **Table 2-3**) issues were identified at the Site, whilst lack of a formalized E&S Management System (ESMS) was identified as a High Risk issue. Overall, the Site inherits the EHS procedures from the CCW corporate via the Yongcheng Regional



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Office, which has also developed safety and health oriented procedures including equipment operational procedure, work safety management (e.g. fire and electricity), and safety inspection procedure for the five WWTPs. It is in consistent with CCW corporate EHS procedures. However, no dedicated EHS officer leading its implementation, and a formal E&S Management System (ESMS) was not in place at either the Yongcheng Regional Office or the Site. During the Audit, the Site representatives and management expressed knowledge and experience for E&S management (mainly health and safety oriented), as well as willingness for improvement and positive attitude for the risks identified. For the gaps identified and the corresponding recommendations, please refer to Section 4.



INTRODUCTION

1. INTRODUCTION

1.1 PROJECT BACKGROUND

The Asian Development Bank (ADB) is considering provision of financing to the I Squared Capital (ISQ), an independent fund focusing on infrastructure investment around the globe. In Asia, ISQ owns and manages infrastructure projects including co-generation of heat and power, renewable energy (solar and wind), telecom, data centre, highway, wastewater treatment via multiple platform companies.

Established in 2006, Jiangsu Jiaqing Water Development Co., Ltd. (Jiangsu Jiaqing) headquarters in Nanjing, Jiangsu province, focuses on municipal and industrial wastewater treatment. Jiangsu Jiaqing introduced ISQ as its strategic investor. By the end of 2018, ISQ acquired 100% share of Jiangsu Jiaqing, making Jiangsu Jiaqing its wholly owned flagship platform company in the field of environmental protection industry. In May 2019, Jiangsu Jiaqing changed the company name to China Cube Water Limited (CCW or the Company).

CCW focuses on wastewater treatment projects alongside major rivers in China, such as the Yellow River and Huai River. As of January 2021, CCW operates nine wastewater treatment plants (WWTPs) with a total capacity of 222,500 tons/day, serving over 2 million population in Henan Province (6 WWTPs), Shaanxi Province (1 WWTP), Heilongjiang Province (1 WWTP) and Guangdong Province (1 WWTP), PRC.

Yongcheng No.3 WWTP (the Site) was established in August 2010 and designed into two phases, with a total wastewater treatment capacity of 30,000 tons per day (t/d) (including 15,000 t/d for the Phase I development and 15,000 t/d for the Phase II development). CCW holds 100% of shares of Yongcheng No.3 WWTP. At the time of the site visit, the Phase I development was in operation, and the Phase II development was under construction (since early 2020). Site management reported that the construction is estimated to be completed by June 2021. At the time of the site visit, the majority of the construction work was completed and was moving to small scale construction works and equipment installation.

ADB engaged Stantec Environmental Engineering (Shanghai) Co., Ltd. (“Stantec”) to conduct an Environmental and Social (E&S) audit at CCW in support of the proposed loan. On 29 January 2021, Stantec conducted the E&S audit at Yongcheng No.3 WWTP. This report presents the findings of the E&S audit and provides a gap analysis of the Yongcheng No.3 WWTP’s current E&S management performance against the Applicable E&S Requirements (AESRs) detailed as Section 1.2.

1.2 OBJECTIVE OF THE ASSET-LEVEL E&S Audit

The objective of the E&S audit was to (1) determine the Site’s E&S performance; (2) identify potential risks during the construction and operation of the Site, and (3) verify the compliance status of the Site with the following AESRs:

- ADB Safeguard Policy Statement (SPS) (including SPS SR1, SR2, SR3 & SR4), June 2009;
- ADB’s Social Protection Strategy, 2001;
- ADB Gender and Development Policy, May 1998;
- ADB Access to Information Policy, 2018;
- World Bank Group’s General Environmental, Health and Safety Guidelines, 2007;



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- World Bank Group's EHS Guidelines for Water and Sanitation, 2007; and
- Applicable national, provincial and local laws and regulations pertaining to E&S (including land acquisition and resettlement), health and safety and labour in the RPC.

In particular, the scope of the Asset-level E&S audit is to:

- Provide a description of the Site, including types of wastewater treated, water treatment technology; amount and quality of influent and effluent; methane generation and use, if relevant; electricity consumption, any resource conservation technology currently used and/or to be used in the future.
- Review past, current and potential environmental, involuntary resettlement (IR) and indigenous peoples (IP) impacts from construction and operation of the Site and confirm categorization based on ADB's SPS.
- Determine where the Site, including ancillary facilities such as sludge disposal site and pipelines, may cause or are causing environment, occupational and community health and safety (EHS) impacts and risks and opine on the suitability of the existing ESMS or EMP of the Site, including management of COVID-19 risks, monitoring and reporting and related organizational structure and capacity.
- Review any impacts from extreme weather events due to climate change such as floods, and recommended commensurate adaptation measures, as necessary.
- Review related documents, such as the domestic Environmental Impact Assessment (EIA) documents submitted to or approved by the local environmental authorities, Feasibility Study Reports (FSRs), conditions and requirements in the in the EIA approval documents, permits/clearances/certificates, external/internal monitoring results, and any associated reporting requirements to authorities, and opine on the Site's EHS and social aspects and determine if the Site is in compliance with the AESRs.
- Review the suitability and implementation status of any Corrective Action Plans (CAPs) prepared, if any.
- Review any prior land acquisitions done by the local government for the Site and determine if these were undertaken in compliance with PRC's national laws and ADB's requirements.
- Determine if the Site's operation has any impacts on ethnic minorities and assess whether these have been addressed in accordance with PRC's national laws and ADB's SPS.
- Review the Site's stakeholder engagement activities and information disclosure procedures.
- Review the Site's internal and external grievance redress mechanisms, identify past and ongoing complaints issues or feedbacks and review the current status or resolution.

1.3 REPORT STURCTURE

The remainder sections of this report are structured as follows:

- Section 2: Application Standards and Methodology;
- Section 3: Site Assessment;
- Section 4: Corrective Action Plan.

This report is supported by the following annexures:

Annex A: List of Documents Reviewed

Annex B: Stakeholders Engaged during the E&S Audit

Annex C: Photo Log



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1.4 LIMITATIONS

The report was prepared in accordance with a scope of work agreed by ADB. The results of the Site are based on conditions at the time of site visit and documents provided by Yongcheng No.3 WWTP. A change in any of these conditions may alter the findings, observations and report content presented herein by Stantec. A site walkthrough, by nature, is limited in its ability to fully assess potential Environmental, Health, Safety and Social (EHSS) liabilities or concerns associated with a property or operation. Further investigations would be required to identify the presence or absence of potential EHSS liabilities but are beyond detection by performance of the scope of this project. Laws and regulations, if referenced in this report, are provided for information purposes only and should not be construed as legal opinion or recommendation.

The limitations encountered during the site visit include the following:

- 1) As the site visit was arranged close to the Chinese New Year Holiday, no construction activities were conducted at the Phase II development of the Site and no construction contractors were present. Hence, the review of the contractors' management and performance was conducted primarily by document review and interview of Yongcheng No.3 WWTP management team.
- 2) The site visit was conducted during winter, and limited odour from the WWTP was noticed during the site visit.
- 3) Due to time constraints, the document review (e.g. labour contracts, inspection records) was conducted by random sampling. The sampling process was not designed to be a comprehensive document review, but rather to verify the current status by sampling for risk screening purpose.
- 4) Only the payroll records in September 2020 were provided for review, whilst the attendance records and payroll records in other months were not provided for review.
- 5) The land acquisition was undertaken by the local government before 2009. CCW management is not aware of the detailed information about the history of the land and no interview was conducted with representatives from corresponding stakeholders such as affected person and the local authority.



2. APPLICATION STANDARDS AND METHODOLOGY

2.1 APPLICABLE STANDARDS

This E&S audit was undertaken in accordance with the following AESRs:

- ADB Safeguard Policy Statement (SPS) (including SPS SR1, SR2, SR3 & SR4), June 2009;
- ADB's Social Protection Strategy, 2001;
- ADB Gender and Development Policy, May 1998;
- ADB Access to Information Policy, 2018;
- World Bank Group's General Environmental, Health and Safety Guidelines, 2007;
- World Bank Group's EHS Guidelines for Water and Sanitation, 2007; and
- Applicable national, provincial and local laws and regulations pertaining to E&S (including land acquisition and resettlement), health and safety and labour in the RPC.

In the PRC, wastewater treatment projects are governed by the following key applicable Chinese E&S regulations listed in *Error! Not a valid bookmark self-reference..*

Table 2-1: Related E&S Laws and Regulations

Title	General Description
Environment	
<i>Law on Environment Protection (2015)</i>	The law is an umbrella under which relevant laws on air, noise and wastewater emissions, as well as waste management and disposal are integrated. The Law authorizes environmental authorities to establish two types of standards: environmental quality (ambient) standards and discharge/emission standards. Ambient standards are the maximum allowable concentrations of pollutants in water, air or soil. Discharge / emission standards are the maximum allowable concentrations of pollutants' emissions or discharges. The standards provide a basis for the inspection activities of the environmental authorities. The Law on Environmental Protection allocates responsibility for the implementation of environmental protection policies and environmental monitoring to relevant government organizations. Specific details, permits and procedures are stipulated under the relevant State laws for air, water, noise, waste management etc.
<i>Law on Environmental Impact Assessment (2018)</i>	<p>All construction projects are required to comply with a series of environmental protection procedures and policies, principally the following:</p> <ul style="list-style-type: none"> • Environmental Impact Assessment (EIA) Policy; • "Three Synchronies" Policy; and • Pollutant Discharge Permitting. <p>There are three categories of EIA in the PRC, including (a) Full EIA report for projects with significant environmental impacts, (b) Environmental Impact Form (EIF) for project with moderate environmental impacts, and (c) Environmental Impact Registration (EIR) for projects with limited environmental impacts.</p>
<i>Management Regulations for Environmental Protection for Construction Projects (2017)</i>	
<i>Catalogue for Management of Environmental Impact</i>	



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APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
<i>Assessment of Construction Projects (2021)</i>	between 500 tons and 100,000 tons, and the EIR is applicable for the rest WWTP with the daily treatment capacity below 500 tons.
<i>Measures on Environmental Impact Post-Assessment of Construction Project (2016)</i>	The measure stipulates the legal requirements of Environmental Impact Post-Assessment for required construction projects, and the post-assessment registration requirement.
<i>Catalogue for management of Pollutant Discharge Permit (2019)</i>	According to the amount of pollutants generated and discharged by the enterprises, public institutions or other business operators and the degree of environmental hazards, three types of pollutant discharge permits (key regulatory, simplified regulatory and registration management) shall be implemented.
<i>Law on the Prevention and Control of Atmospheric Pollution (2018)</i>	The Law on the Prevention and Control of Atmospheric Pollution (2018) provides the basis for air quality protection in China. The Integrated Emission Standard of Air Pollutants (1996) specifies the discharge standards for air emissions.
<i>Integrated Emission Standard of Air Pollutants (1996)</i>	
<i>Law on the Prevention and Control of Water (2017)</i>	The Law on the Prevention and Control of Water (2017) is the key law for water pollution control. It applies to the pollution prevention and control of groundwater and all surface water bodies excluding the sea. It contains water pollution prevention and control standards; monitoring requirements and the management guidelines for water pollution prevention and control; measures for water pollution prevention and control; the pollution prevention and control measures for special water bodies including drinking water sources; the treatment of water pollution events; and legal liabilities. For industrial projects, a Water Pollutant Discharge Permit is required from the Ecology and Environment Bureau (EEB) prior to operational discharges to surface water.
<i>Discharge Standard of Pollutants for Municipal Wastewater Plant (2002)</i>	
<i>Environmental Quality Standards for Surface Water (2002)</i>	
<i>Integrated Wastewater Discharge Standard (1996)</i>	
<i>Law on the Prevention and Control of Environmental Noise Pollution (2018)</i>	Noise is regulated by the Law on the Prevention and Control of Environmental Noise Pollution (2018). This Law sets out the general requirements for noise control including noise from industrial sites, construction sites and transportation.
<i>Emission Standard of Environmental Noise for Boundary of Construction Site (2011)</i>	The Emission Standard of Environmental Noise for Boundary of Construction Site (2011) and the Emission Standard for Industrial Enterprises Noise at Boundary (2008) are applicable for construction and operational activities, respectively.
<i>Emission Standard for Industrial Enterprises Noise at Boundary (2008)</i>	
<i>Law on the Prevention and Control of Solid Waste Pollution (2020)</i>	Law on the Prevention and Control of Solid Waste Pollution (2020) stipulates the requirements for general industrial waste, domestic waste, and hazardous



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APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
Management Regulation for Hazardous Waste Transfer Manifests (1999)	waste management including collection, storage, transportation, treatment, recycling and disposal.
Standard for Pollution Control on Industrial Solid Waste Storage and Landfill (2020)	The on-site storage and disposal of industrial solid waste is subject to the Standard for Pollution Control on Industrial Solid Waste Storage and Landfill (2020). The Management Regulation for Hazardous Waste Transfer Manifests (1999) stipulates the documentation and tracking procedures for hazardous waste generators, transporters and disposal operators.
Law on Energy Conservation (2018)	The Law on Energy Conservation (2018) and Law on Cleaner Production Promotion (2012) stipulates the legal requirements on energy saving during both construction and operation of a development project.
Law on Cleaner Production Promotion (2012)	
Law on the Prevention and Control of Soil Pollution (2019)	The Environmental Quality Standards for Construction Soil Pollution Risk Control (Trial) (2018), Environmental Quality Standards for Agriculture Soil Pollution Risk Control (Trial) (2018), Law on the Prevention and Control of Soil Pollution (2019) and the Quality Standard for Ground Water (2017) define the quality standards applicable for soil and groundwater depending on the different uses.
Environmental Quality Standards for Construction Soil Pollution Risk Control (Trial) (2018)	
Environmental Quality Standards for Agriculture Soil Pollution Risk Control (Trial) (2018)	
Environmental Quality Standard for Ground Water (2017)	
Methods for Public Participation in Environmental Impact Assessment (2019)	The Methods for Public Participation in Environmental Impact Assessment (2019) prescribes the requirements for public consultation during the process of EIA for a development project. And it requires that public consultation should be conducted while preparing full EIA Report, whilst there is no specific legal requirement regarding consultation with communities for EIF and EIR.
Health & Safety	
Law on Work Safety (2014)	These laws stipulate principles on work safety, occupational health and fire protection issues, including work safety and occupational hazards assessment, facility design and construction, completion acceptance inspection, training, monitoring and medical check-up, facility inspection and maintenance, etc.
Law on Occupational Diseases Prevention (2018)	
Law on Fire Protection (2019)	
Biodiversity	
Law for Wildlife Protection (2018)	Law for Wildlife Protection (2018) and Regulation on Wild Plant Protection (2017) stipulates the requirements for protecting and saving wildlife or wild



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APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
<i>Regulation on Wild Plant Protection (2017)</i>	plant, defines the wildlife or wild plant habitat, and establishes disciplinary measures.
Land Acquisition and Resettlement	
<i>Law on Land Administration (2020)</i>	The Land Administration Law stipulates that where land acquisition is necessary ¹ , compensation shall be made in accordance with the original usage of the acquired land, which shall include a land compensation fee, a resettlement subsidy (if applicable) and a compensation fee for land “attachments“ (e.g. various trees and houses) and standing crops. The land compensation fee for cultivated land is six to10 times the average annual output value (AAOV) of the land in the three years preceding the land acquisition. The relevant compensation standards for land “attachments” and standing crops are to be determined by the local government.
<i>Regulations on Implementation of Land Administration Law (2014)</i>	
Labour	
<i>Labour Law (2018)</i>	Labour law (2018) stipulates the rights and corresponding obligations of workers, states that “employees enjoy the rights of equal employment and choice of occupation, the right to receive labour remuneration, the right to rest and vacation, the right to obtain labour safety and health protection, the right to receive vocational skill training, the right to enjoy social insurance and welfare, the right to apply for settlement of labour disputes and other labour rights stipulated by law” and “laborers should complete their labour tasks, improve their professional skills, implement labour safety and health regulations, and abide by labour discipline and professional ethics”.
<i>Labour Contract Law (2012)</i>	
Cultural Heritage	
<i>Cultural Relics Protection Law (2017)</i>	It stipulates project proponents to undertake baseline archaeological surveys to determine the presence and condition of cultural relics where construction works have the potentiality to damage them.
<i>Implementation Regulations of the Law on Cultural Relics Protection (2017)</i>	
Public Consultation and Information Disclosure	
<i>Methods for Public Participation in Environmental Impact Assessment (2019)</i>	It stipulates that construction projects that may have significant effects on the environment should incorporate public comments into the EIA report. Either the Site proponent (or the EIA agency on behalf of the Site proponent) should provide project information to the public and to the local EEB during the process of environmental impact assessment. A summary EIA report shall be provided for public review in hard copy format at a designated location or in electronic format on a public website.
Gender	
<i>Law on the Protection of Women's Rights and Interests (2018)</i>	It stipulates women's rights in social and economic life, including political rights, cultural and educational rights and interests, labour and social security rights

¹ The Site Affected Households (PAHs) can reject the land acquisition as long as it is not for the public good projects. The land law applies to all land acquisition activities, as long as it is ‘land acquisition/ expropriation’.



Title	General Description
	and interests, property rights, personal rights, marriage and family rights and interests.
Ethnic Minorities	
<i>Law on Regional National Autonomy (2001)</i>	It stipulates that regional ethnic autonomy is a basic political system in China. Article 10 emphasizes that the organs of self-government in national autonomous areas shall guarantee the freedom of all ethnic groups in the region to use and develop their own languages and characters, and the freedom to maintain or reform their own customs and habits.

In addition, in regard to flood risk control, as per the Code of Design of Outdoor Wastewater Engineering (GB 50014-2006 amended in 2014), the site selection should not be impacted by flooding, and the flood control standard of the site should be as least meeting the local city flood control standard (as per the Standard for Flood Control (GB 50201-2014), mainly taking the population and economic of the city into consideration) with good drainage condition. In both the FSR and EIA documents, a simple description of the local meteorological condition is included, stating the status quo of temperature, precipitation, wind direction, etc. in the local area, however, it is not an extreme weather impact assessment covering historic and future situations, nor mentioning the historical events as only the historical max precipitation data is included.

2.2 E&S PERMITTING REQUIREMENTS

In general, for a wastewater treatment project, the following key topical assessments and applications are required (**Table 2-2**):

Table 2-2: E&S Permitting Requirements

E&S Permit	Applicable Standard Type	Description
Site selection application	National Standard	An approval issued by the local authorities on whether the project comply with local planning requirement.
Feasibility Study Report (FSR)	National Standard	A comprehensive analysing report based on economic, technological, production, supply and marketing, social, environmental and legal factors, to determine the feasibility of the project.
Land Use documents	National Standard	Land users are required to obtain Construction Land Use Certificate. The land certificate is issued by the local government. It is a written document certifying that the holder has the ownership or right to use a certain area of land.
Environmental Impact Assessment (EIA) documents	National Standard	Based on Catalogue for Management of Environmental Impact Assessment of Construction Projects (2021), the EIF report is applicable for the Site as the WWTP with the daily treatment capacity between 500 tons and 100,000 tons. However, for the phase II development, based on local EEB requirement, the full EIA report was prepared by the Site. The EIF report is generally consisting of applicable standards, project description, pollution control analysis, ecological impacts, extreme weather analysis (including climate, flooding,



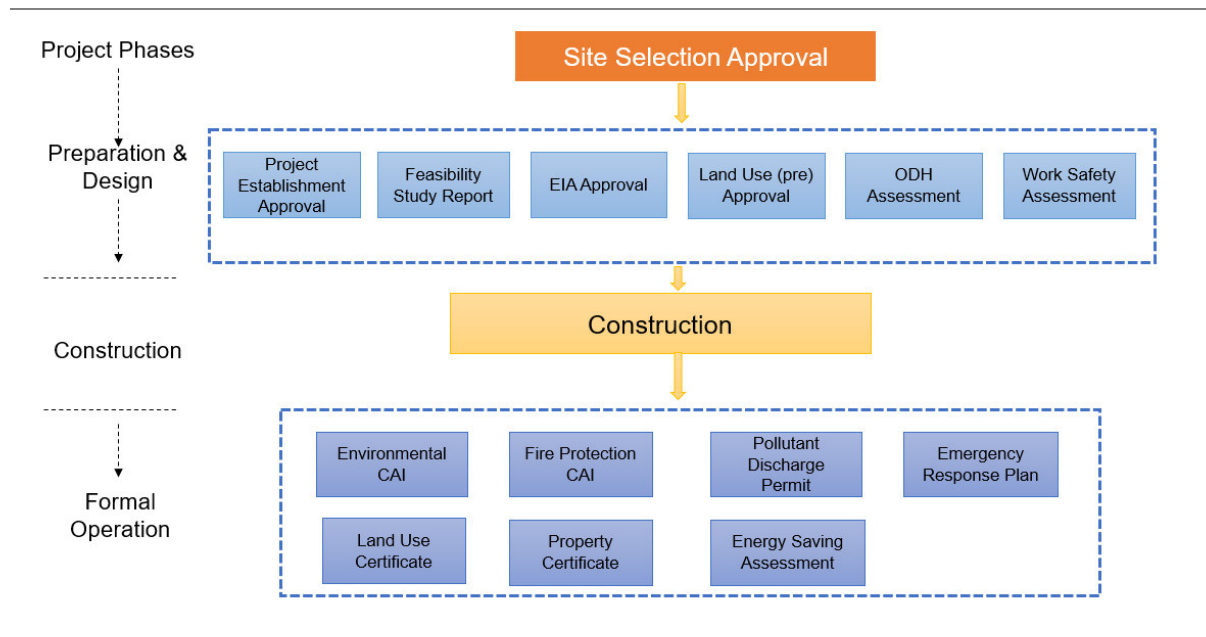
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APPLICATION STANDARDS AND METHODOLOGY

		earthquake, etc.), while the EIA report also covers public participation.
Environmental Completion Acceptance Inspection (ECAI)	National Standard	<p>Since November 2017, China government has been implementing self-conducting ECAI procedures (meaning the corresponding monitoring and acceptance are conducted by the project owner) for environmental protection by phases.</p> <p>In November 2017, the air emission self-conducting ECAI has been commenced;</p> <p>In January 2018, the wastewater discharge self-conducting ECAI has been commenced;</p> <p>In December 2018, the boundary noise self-conducting ECAI has been commenced;</p> <p>In September 2020, the solid waste self-conducting ECAI has been commenced.</p>
Pollutant Discharge Permit (PDP)	National Standard	For wastewater and air emission discharge companies, the PDP was required from local EEB, which illustrate the pollutant discharge capacity, discharge points, and monitoring programme.
Fire Protection CAI	National Standard	An approval issued by the local authorities on whether the project comply with fire protection design and implementation requirement.
Work Safety Assessment	National Standard	The report identifies and analysis of project's production and business operation activities of potential danger and harmful factors, and safety standards, to predict the likelihood of accidents and its severity, and then puts forward feasible safety control measures.
Occupational Disease Hazards (ODH) Assessment	National Standard	The report identifies and analysis of potential occupation health hazards within the project's production processes and compare with local standards to predict the likelihood of occupational health hazard and its severity, and then puts forward feasible safety control measures.
Emergency Response Plan (ERP)	National Standard	<p>The ERP includes sudden environment and safety ERPs.</p> <p>The sudden environment ERP consists of applicable standard, environmental risk analysis (including chemical storage and spills, water pollution, soil pollution, ecological conditions, etc.), and emergency response methods.</p> <p>The safety ERP consists of applicable standard, safety risk analysis (including fire, explosion, equipment hazards etc.), and emergency response methods.</p>
Energy Saving Assessment	National Standard	The Energy Saving Assessment consists of applicable standard, energy supply and consumption conditions, and applicable energy saving measures.

Error! Reference source not found. below presents the general permitting process that a project will need to maintain compliance over the full life cycle with applicable E&S regulations.



Figure 2-1: Indicative Project Permitting Flowchart by Project Phases

Please note that the above flowchart is indicative only under the current regulatory regime, which has been and continues to evolve rapidly. Meanwhile, local implementation of the national level laws and regulations often varies, which may lead to variations to the permitting flowchart presented in this report.

2.3 METHODOLOGY

2.3.1 Approach

An integrated approach with three steps was proposed by Stantec for subproject level E&S audit as stated below. This approach was subsequently agreed by the ADB.

Step 1: Document Request and Desktop-based Review:

Stantec requested documents from Yongcheng No.3 WWTP including (i) CCW and Yongcheng No.3 WWTP ESMS or policies and official commitments related to environmental, health, safety and social safeguards, policies and procedures that would typically be covered by an ESMS; (ii) Information about the system for project planning to manage environmental and social risks; (iii) Information about Yongcheng No.3 WWTP's training records for staff regarding environmental and social safeguards; (iv) Human Resource (HR) management and procurement policies and procedures, gender disaggregated information, labour contract, attendance sheet and salary records in Yongcheng No.3 WWTP; (v) Information about Yongcheng No.3 WWTP's main stakeholder groups, activities through which they are engaged and consulted, and any grievance redress system and its results log; and (vi) Information about the environmental, health, safety and social monitoring records, pollutant prevention and reporting system.

Stantec conducted a review of documentation of Yongcheng No.3 WWTP through intermediaries and onsite review. Annex A lists the key documents provided by Yongcheng No.3 WWTP and reviewed by Stantec during this E&S audit.



Step 2: Site Visit

Stantec conducted onsite visit at Yongcheng No.3 WWTP on 29 January 2021. During the onsite visit, Stantec's E&S team:

- Reviewed documentation available at the Site (listed in Annex A);
- Conducted selected interviews with site representatives and representative from the local environmental authority (listed in Annex B);
- Conducted a limited visual observation of the Site (WWTP sections/areas observed with photos are in Annex C); and
- Reviewed the implementation and compliance status of the E&S mitigation and management measures.

Step 3: Gap Analysis and Reporting

Based on the information obtained during Steps 1 and 2, gaps against the AESRs were identified at the Site (refer to Section 3). A CAP setting out the steps that would be required to close the identified gap(s) is outlined in Section 4.

2.3.2 Risk Categorization

Risk levels were adopted in evaluating identified E&S risks and issues against the Applicable Standards: "High", "Medium" and "Low" risks as defined in **Table 2-3**.

Table 2-3: Definition for Risk Categorization

Risk Level	Definition
Red Flag	Trigger of ADB SPS Prohibited Activities or issue with potential severe consequences and limited opportunities of mitigating, leading to operation shut down (e.g. catastrophic or multiple-casualty accidents; large community or NGO protest(s); reputational damage/possibilities of significant reputational risks arising in the future; impacts to sensitive environmental and social receptors including critical habitats and Indigenous Peoples/Ethnic Minorities/Tribes and criminal proceedings).
High	Significant non-conformance with the AESRs, which may result in operation /construction interruption; and/or affect sensitive receptors, and/or induce community opposition that may damage Owner's/Investor's reputation.
Medium	Non-conformance with the AESRs, which may result in rectification cost or fine, and is unlikely to result in the short-term business discontinuity in current regulatory enforcement context.
Low	Minor regulatory or safeguard non-compliance, which may result in limited cost or only require management time to address the issue.
Best Practice	Best practice; approach is considered prudent but does not pose a compliance issue.



3. SITE ASSESSMENT

3.1 BASIC INFORMATION

The Site is located in the industrial cluster of Yongcheng City, on the east side of the intersection of Yinhe Road and Jie Ditch, Yongcheng City, Shangqiu City, Henan Province, PRC. The location of the Site is shown in *Error! Reference source not found.*

The Site history is mainly obtained through interview with CCW's senior management and onsite management, and is summarized as below:

- Prior to 2009: The history was unknown by the Site representatives before 2009;
- December 2009: Construction of the Phase I development was commenced by the local government;
- August 2010: Phase I development Construction was completed. Operation was commenced;
- 2011: CCW signed the Transfer-Operate-Transfer (TOT) agreement for the Phase I development with Yongcheng City Government;
- 2017: two diatomite bio-filters tanks were replaced to secondary sedimentation tanks;
- 2018: the denitrification process (carbon source chemical dosing system) was added;
- April 2019: The hydrolysis acidification tank of the Phase I development was upgraded;
- 2020: CCW signed the Build-Operate-Transfer (BOT) agreement for the Phase II development with Yongcheng City Government. Construction of the Phase II development was commenced;
- June 2021 (estimated): Phase II development completion.

The Site receives both industrial and domestic wastewater from an area of 14.18 square kilometres (km²) and the population covered are about 80,000. The designed wastewater treatment capacity of the phase I development is 15,000 t/d, and the actual treatment scale is about 13,000 t/d. In addition, the wastewater of Yongcheng No. 1, 4 and 5 WWTPs can be transferred to Yongcheng No. 3 WWTP through existing municipal wastewater pipeline network. The treatment capacities of Yongcheng No. 3 WWTP can be further deployed by the local authority based on the actual demand of the local areas where are serviced by Yongcheng No. 1, 4 and 5, for instance, when one of these WWTPs is under overhaul. The Project run in a two-shifts working system for 365 days a year, with 14 staffs.

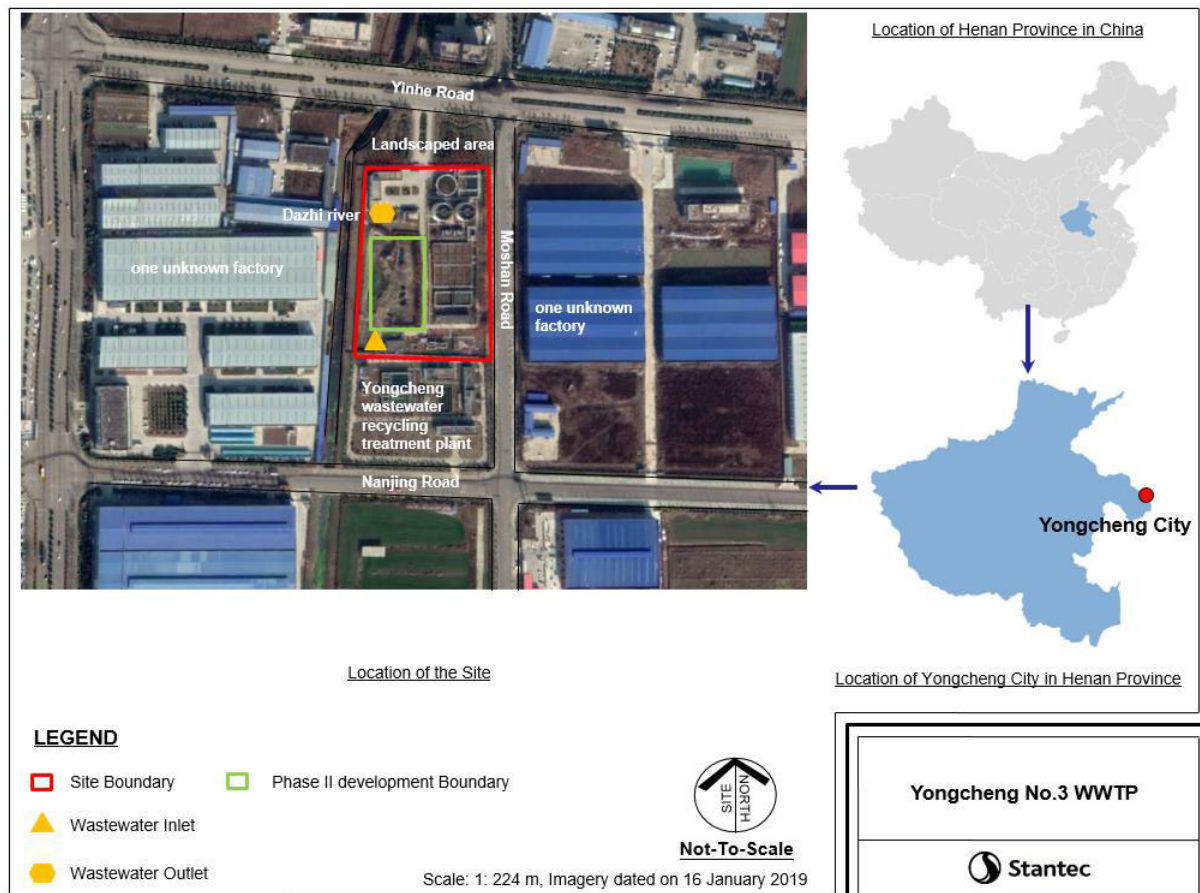
The Site covers a total land area of 28,760 m² for both Phase I and II developments. According to the EIF for the Phase I development dated 2008 and EIA report for the Phase II development dated 2019, the buffer zone area is determined as a 200 m radius of the production area. The Adjacent facilities and properties of the Site were identified as follows:

- North boundary: Landscaped area and Yinhe Road.
- South boundary: Yongcheng wastewater recycling treatment plant and Nanjing Road.
- East boundary: Moshan Road. Further east is one unknown factory.
- West boundary: Dazhi River. Further west is one unknown factory.

The Site is classified as a construction land and is not within area of the ecological red line (which in China refers to the strictly controlled boundary demarcated in accordance with law in key ecological function zones, sensitive and fragile areas of the ecological environment). There are no natural reserves, drinking water protection zone, scenic spot, national key protected animals and plants, seed fields, cultural relics and historic sites located in the 1 km area around the Site. The Site meets the requirements of the overall planning of Yongcheng City. Based on onsite observation, no sensitive receptors were located within 200 m to the Site boundary or production area.



Figure 3-1: Site Location



Source: Google Earth Pro

3.2 PROJECT DESCRIPTION

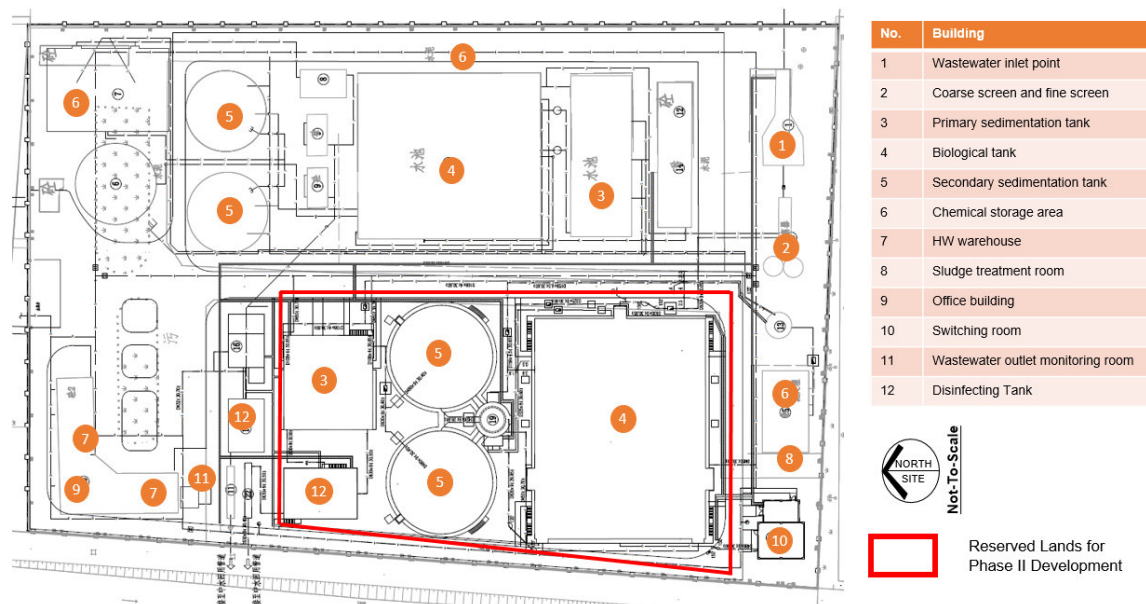
The main structures of the Site cover wastewater treatment facilities, environmental protection facilities, and office building. Pumps houses, switching room, and ventilation room were built, operated and maintained by the Site. The wastewater collection pipelines are managed by the local authority including the portions within the site boundaries connecting to the onsite wastewater collection tank. The wastewater collection tank and other wastewater pipelines within the site boundaries are operated and maintained by the site. In addition, the inlet and outlet monitoring rooms were built by the Site, operated and maintained by the local EEB. The layout of the Site is presented in **Figure 3-2**.



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Figure 3-2: Site Layout



The Yongcheng No.3 wastewater treatment processes for phase I development consists of three stages: pre-treatment, biological treatment, and tertiary treatment. The main treatment processes are Wastewater Feeding, Coarse Screen and Fine Screen, Anaerobic Tank, Anoxic Tank, Oxidic Tank, Reaction & Sedimentation Tank, Filter Tank, Disinfection Tank and Final Discharge.

Chemicals used for wastewater treatment include carbon source, and polymeric ferric sulphate and polyacrylamide. These chemicals are in bulk storage and the corresponding storage condition is described in Section 3.3.4.

The Site adopts Anaerobic-Anoxic-Oxic and Deep Treatment Technologies which are commonly adopts for WWTPs for industrial and domestic wastewater treatment in PRC. Based on review of the available document and interview with site management, no violation with regard to wastewater discharge has been taken place at the Site.

The sludge is dehydrated onsite to around 80% and is transferred by the sludge truck owned and operated by the subproject company to Yongcheng Sludge Drying Plant for incineration. Yongcheng Sludge Drying Plant is the sludge treatment party appointed by the local government as per the signed TOT agreement.

The treated wastewater shall comply with the Class I Level A Discharge Standard of Pollutants for Municipal Wastewater Plant (2002) and then discharged to the Dazhi River which is located 8 m to the west of Yongcheng No.3 WWTP.

The chemical used, treatment technologies, sludge disposal and applicable standards for Phase II development are same with the Phase I development.



3.3 EHS ASSESSMENT

3.3.1 Regional Office Management

The Yongcheng Regional Office was established in 2011 and is located in the compound of Yongcheng No.5 WWTP. The Yongcheng Regional Office takes the responsibility of overall management of the five WWTPs in Yongcheng city, i.e. No. 1-5 WWTPs. There is a total of 12 staff in Yongcheng Regional Office, including one general manager, one deputy general manager, one facility supervisor, one financial staff, one administrative staff, one human resource staff and six laboratory technicians. The labour contracts and personnel file information of the 12 staff in Yongcheng Regional Office are distributed in the five WWTPs, and their headcounts are calculated in the WWTPs in the corresponding WWTP reports:

- The administrative staff and one of the laboratory staff are from Yongcheng No.1 WWTP;
- The facility supervisor, the human resource staff and one of the laboratory staff are from Yongcheng No.2 WWTP;
- The deputy general manager and one of the laboratory staff come from Yongcheng No.3 WWTP;
- One of the laboratory staff is come from Yongcheng No.4 WWTP;
- The general manager, the financial staff and two of the laboratory staff are from Yongcheng No.5 WWTP.

It should be noted that the financial, administrative, human resource and laboratory department of Yongcheng Regional Office are shared by the five WWTPs and no such departments are set up in each of the WWTPs.

Yongcheng Regional Office is responsible for:

- Coordinating with the CCW corporate to implement operational and EHS (mostly safety oriented) related policies, programs, guidelines and other legal requirements;
- Evaluating operational work plan and supervision of the implementation at five WWTPs;
- Arranging operational and EHS (mostly safety oriented) training every month, and organizing weekly meeting with managers of the five WWTPs;
- Arranging third-party environmental monitoring, solid waste, sludge and hazardous waste management for the five WWTPs;
- Organizing internal audits for the five WWTPs on a regular basis and tracking correction action progress;
- Coordinating negotiate and evaluate with local authorities for project operation, upgrade, investment or expansion affairs;
- Giving the five WWTPs' performance feedback to the Production Technology Department of CCW corporate in a regular basis;
- Collecting and managing the EHSS permits and labour related documents for the five WWTPs;
- Performing the pollutant monitoring tests for inlet and outlet wastewater for the five WWTPs in the laboratory;
- Collecting the capital expenditure (Capex) and operating expenses (Opex) for the five WWTPs and submitting to the Production Technology Department of CCW corporate every year.

Apart from the operation phase, during the construction phase, the Yongcheng Regional Office is also in charge of the supervision and management of the engineering, procurement and construction activities, including contractor management and EHS requirements implementation, with the support from the Production and Technology Department of CCW corporate. Such mechanism applies to the ongoing construction of the Phase II development of the Site.



3.3.2 EHS Management Overview

Yongcheng No.3 WWTP is certified to ISO 9001, valid from 6 November 2020 to 13 October 2023. The EHS issues arising from the Site are under the jurisdiction of Yongcheng EEB, Yongcheng Health Bureau, Yongcheng Emergency Management Bureau and Fire Brigade of Yongcheng Public Security Department. Mr. Wandai Cairang (General Manager of the Site) and Mr. Zhao Hongli (Manager of the Production Department) are responsible for the general on-site environmental and safety management. The day-to-day EHS status are reported to the Yongcheng Regional Office via weekly meeting, and reported to the Production Technology Department of CCW corporate via monthly and annual reports.

The Site inherits the EHS procedures from the CCW corporate via the Yongcheng Regional Office, which has also developed safety and health oriented procedures including equipment operational procedure, work safety management (e.g. fire and electricity), and safety inspection procedure for the five WWTPs. A formal EHS and social management system has not been developed by the Yongcheng Regional Office or the Site.

According to the management interview, at Yongcheng No.3 WWTP, the safety inspections were conducted as follows:

- Subsidiary-level safety overall inspection conducted by the manager of the Yongcheng Regional Office on a randomly basis. The inspection reports and corresponding mitigation measures are submitted for the Production Technology Department of corporate for review.
- Subproject-level daily safety and operational inspection is conducted by the Manager of Yongcheng No.3 WWTP.

Based on the management interview and document review, the E&S related Capex and Opex application for the subproject is prepared by the subproject manager in October every year, and then collected by the Yongcheng Regional Office and submitted for General Manager Office of CCW corporate for review and approval. The Capex (including items such as safety correction, COVID-19 prevention material, etc.) and Opex (including items such as environmental monitoring, sludge monitoring, equipment maintenance, laboratory material, routine check-ups, PPE, etc.) for Yongcheng No.3 WWTP in 2021 was provided for review, with a total of RMB 773,767. Specially, as per the requirement of the EIA approval dated 2019, an odour collection and treatment system is required for both the Phase I and II developments. Subsequently a Capex of RMB 4 million has been proposed for this item. At the time of the site visit, such system was not yet installed. Site management reported that the odour collection and treatment system will be completed at the same time of the construction of the Phase II development (June 2021).

Key EHS related findings and issues were summarized as follow:

- A formal environmental and social management system has not been developed and implemented by Yongcheng No.3 WWTP or the Yongcheng Regional Office.
- A budget of RMB 4 million has been proposed for the odour collection and treatment system covering the Phase I and II developments of the Site.

3.3.3 EHS Permit

The permit compliance status of the Site is summarized as follows in the **Error! Reference source not found.**



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Table 3-1: Permit Compliance Status

Permit	Review
Site Selection Application	Site Selection Application approval approved by Yongcheng Development and Reform Committee on 16 September 2008
FSR and its approval	FSR approval for the initial Phase I and Phase II Development issued by Yongcheng Development and Reform Committee on 16 September 2008
Land Permit	Construction Land Use Certificate for 3,798m ² area issued by the local Land and Resources Bureau on 25 December 2012
EIA and its approval	<ul style="list-style-type: none"> • EIF and its approval for the Phase I development issued by Yongcheng EEB on 21 November 2008 • Environmental CAI (Phase I development) approved by Yongcheng EPB on 26 September 2010 • EIA report and its approval for the Phase II development issued by Yongcheng EEB on 16 October 2019
PDP	PDP issued by Yongcheng City EEB, valid from 28 June 2019 to 27 June 2022. Upon completion and operation of the Phase II development, the PDP shall be updated
Water Abstraction Permit	Not applicable as Yongcheng No. 3 WWTP does not utilise groundwater
Fire Protection CAI	Not available
Work Safety CAI	No available
Occupational Disease Hazards Assessment	Not available
Sudden Environmental Emergency Response plan (ERP) and its registration record	Sudden Environmental Emergency plan and its registration record issued by local EEB dated on December 2020
Safety Production ERP and its registration record	Not available
Energy Saving Assessment	The document is not required at the time of the Site establishment given the requirement of the local authorities

The EIF for the Phase I development dated 2008 and EIA report for the Phase II development dated 2019 during the permitting phase identified air emission/odour and solid waste/sludge as the key environmental impacts during construction and operation and the project was required implementing corresponding dust control measures such as sprinkler for construction vehicles, proper treatment of construction waste, etc. during construction and regular boundary odour monitoring and ensuring sludge is treated by the third party appointed by the local government during operation. Compared to an environmental assessment required by ADB's SPS the public consultation and alternative analysis are not included in the EIF for the Phase I development, however, for the Phase II development with the similar production process and chemical usage, i.e. similar environmental impacts, a full EIA report was prepared and approved by the local EEB, and the content of the EIA report for the Phase II development is generally in line with an environmental assessment required by ADB's SPS.



SITE ASSESSMENT

The project Phase I development started operation and obtained the ECAI in 2010 which confirmed that the WWTP complied with the standards of boundary odour, wastewater discharge, boundary noise and solid waste treatment.

Key EHS related findings and issues were summarized as follow:

- The ECAI for the Phase II development has not been obtained given the construction has not been completed.
- Fire-fighting design registration or fire-fighting CAI approval is required, but have not been obtained. This applies to both the Phase I and II developments.
- Work Safety Assessment is required, but has not been conducted. This applies to both the Phase I and II developments.
- ODH assessment is required, but has not been conducted. This applies to both the Phase I and II developments.
- No Safety Production ERP and the corresponding registration record is required, but have been prepared/obtained. This applies to both the Phase I and II developments.

3.3.4 EHS Performance

3.3.4.1 Operation Performance for Phase I Development

Water Supply, Domestic and Storm Wastewater

Water used for sanitary purpose is from the municipal tap; water for drinking purpose is purchased bottled water; water for production purposes (wastewater treatment) is the treated wastewater from the onsite facility. No stormwater system has been installed at the Site. The domestic wastewater generated onsite is collected and discharged to onsite municipal wastewater inlet for further treatment.

Wastewater and Sludge from the Wastewater Treatment Process

Treated wastewater is discharged to the Dazhi River which is located 8 m to the west of the Yongcheng No.3 WWTP. According to the Site's EIA documents, the Dazhi River is a Type IV water body as defined in the Environmental Quality Standards for Surface Water (2002), which refers to surface water mainly used for industrial area and recreational water area. Project management reported that the treated wastewater discharge from the Phase I development of Yongcheng No.3 WWTP is strictly monitored as the following:

- Yongcheng EEB installed the real-time influent and effluent wastewater online monitoring system at the wastewater discharge point to conduct pollutant tests on a two-hours basis. This is confirmed with local EEB representative;
- Yongcheng EEB conducts treated wastewater sampling test on a monthly basis;
- Yongcheng No.3 WWTP engages a licensed third party to conduct wastewater test on a monthly basis;
- The laboratory of the Yongcheng Regional Office conducts the influent and effluent wastewater test once a day.

According to local authority's requirement, CCW signed a wastewater discharge agreement since 2020 with Yongcheng Jincheng Development Investment Co., Ltd. (Jincheng) for reclaimed water purpose. The discharge standard remains unchanged (Class I Level A Discharge Standard of Pollutants for Municipal Wastewater Plant (2002)). This agreement covers the Yongcheng No. 1 and 3 WWTPs. Based on site interview, at current stage the Site still discharges treated wastewater to Dazhi River, whilst in future based on instruction of the local government as well as the receive capacity of Jincheng, the onsite treated wastewater will be discharged to Jincheng with the detail schedule not provided. The



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change of final destination of the onsite treated wastewater will not affect the onsite operation or EHS management.

The five pollutants including chemical oxygen demand (COD), suspend solids (SS), total nitrogen, total phosphorus and ammonia nitrogen are monitored by both onsite laboratory and online monitoring system every day, thus, they are not covered in the third-party monitoring reports. Based on internal monitoring data (in average of 2020) and the latest sampled monitoring reports conducted by a licensed third party dated December 2020 provided for review (refer to **Table 3-2**), the results met the Class I Level A Discharge Standard of Pollutants for Municipal Wastewater Plant (2002). As there is no ADB or IFC standards for the wastewater discharge, the national regulatory standard is the applicable standard.

Table 3-2: Wastewater Monitoring Results

Monitoring Type	Elements	Unit	Monitoring Results of wastewater discharge point	Local Standard	Compliance Statue
Internal Monitoring (in average of 2020)	COD	mg/L	21.61	40	Meet the standards
	SS	mg/L	/	10	Meet the standards
	Total nitrogen	mg/L	11.49	15	Meet the standards
	Total phosphorus	mg/L	0.16	0.5	Meet the standards
	Ammonia nitrogen	mg/L	1.21	5	Meet the standards
Third Party Monitoring (dated December 2020)	pH	—	7.15	6-9	Meet the standards
	SS	mg/L	8	10	Meet the standards
	BOD ₅	mg/L	9.2	10	Meet the standards
	Petro	mg/L	0.10	1	Meet the standards
	Oil and grease	mg/L	0.19	1	Meet the standards
	Chroma	Times	2	30	Meet the standards
	Hexavalent chromium	mg/L	ND	0.05	Meet the standards
	Anionic surfactant	mg/L	ND	0.5	Meet the standards
	Total coliform bacteria	MPN/L	<20	1×10 ³	Meet the standards
	Total lead	mg/L	ND	0.1	Meet the standards
	Total cadmium	mg/L	ND	0.01	Meet the standards
	Total chromium	mg/L	ND	0.1	Meet the standards
	Total mercury	mg/L	ND	0.001	Meet the standards



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Monitoring Type	Elements		Unit	Monitoring Results of wastewater discharge point	Local Standard	Compliance Statue
	Total arsenic		mg/L	0.0006	0.1	Meet the standards
	Alkyl mercury	Methylmercury	NP	ND	Not Allowed	Meet the standards
		Ethylmercury	NP	ND	Not Allowed	Meet the standards

*Note:

1. The monitoring is conducted by Henan Bo Sheng Inspection Technology Co., Ltd.

2. Local Standard refers to Class I Level A Discharge Standard of Pollutants for Municipal Wastewater Plant (2002)

3. ND means Not Detected

In China, the annual pollutant mass loading quotas are allocated to WWTP projects during the EIA stage based on (1) designed wastewater treatment capacity; (2) pollutant removal efficiency and discharge limits; (3) local environmental capacity. As per the pollutant mass loading quotas control requirement from the local EEB and the local environmental capacity, the annual pollutant discharge quotas for wastewater pollutants COD, ammonia nitrogen, total nitrogen and total phosphorus are 273.15 t, 27.375 t, 82.12 t and 2.7375 t respectively. Given the current actual wastewater treatment is below the designed wastewater treatment capacity (13,000 t/d versus 15,000 t/d), and the treated wastewater meet the local standards, Phase I development of Yongcheng No.3 WWTP is well below the allocated pollutant mass loading quotas.

Air Emission

The main sources of air emission of Phase I development of Yongcheng No.3 WWTP is fugitive odour emission from the wastewater treatment tanks. Yongcheng No.3 WWTP engages a licensed third party to conduct fugitive air emission monitoring on a half year basis around the Site boundary following the methodology by Analysis Methods for air and gas emission monitoring (2003). Based on the latest sampled monitoring reports conducted by a licensed third party dated November 2020 provided for review (**Table 3-3**), the results met the Discharge Standard of Pollutants for Municipal Wastewater Plant (2002). As there is no ADB or IFC standards for the fugitive air emission pollutants, the national regulatory standard is the applicable standard.

Table 3-3: Fugitive Air Emission Monitoring Results

Monitoring date	Location	Pollutant	Unit	Monitoring Results	Local Standard	Compliance Statue
14 November 2020 (9:00-10:00)	Boundary	Odour	—	17	20	Meet the standards
		NH ₃	mg/m ³	0.042	1.5	Meet the standards
		H ₂ S	mg/m ³	0.004	0.06	Meet the standards
		CH ₄	%	0.00026	1	Meet the standards
14 November 2020 (10:10-11:10)	Boundary	Odour	—	18	20	Meet the standards
		NH ₃	mg/m ³	0.064	1.5	Meet the standards
		H ₂ S	mg/m ³	0.007	0.06	Meet the standards



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Monitoring date	Location	Pollutant	Unit	Monitoring Results	Local Standard	Compliance Statue
		CH ₄	%	0.00026	1	Meet the standards
14 November 2020 (11:20-12:20)	Boundary	Odour	—	18	20	Meet the standards
		NH ₃	mg/m ³	0.067	1.5	Meet the standards
		H ₂ S	mg/m ³	0.004	0.06	Meet the standards
		CH ₄	%	0.00026	1	Meet the standards

*Note:

1. The monitoring is conducted by Henan Bo Sheng Inspection Technology Co., Ltd.
2. Local Standard refers to Discharge Standard of Pollutants for Municipal Wastewater Plant (2002)
3. ND means Not Detected

Noise Emission

The Site boundary noise is subject to Class II of Emission standard for industrial enterprises noise at boundary (2008), which requires the maximum 60 dB(A) during the daytime (6:00 AM – 10:00 PM) and 50 dB(A) at night (10:00 PM – 6:00 AM). Yongcheng No.3 WWTP engages a licensed third party to conduct boundary noise emission monitoring in November 2020. The results (**Table 3-4**) indicate that the Site met the local standards and the IFC standards.

Table 3-4: Boundary Noise Monitoring Results

Location	Monitoring Date	Results Leq[dB(A)]	Local Standard Leq[dB(A)]	IFC Standard Leq[dB(A)] (Residential)	Compliance Statue
East boundary	14 November 2020 Daytime	54.7	60	70	Meet the standards
South boundary		53.8			Meet the standards
West boundary		55.1			Meet the standards
North boundary		53.4			Meet the standards
East boundary	14 November 2020 Night time	41.2	50	70	Meet the standards
South boundary		42.6			Meet the standards
West boundary		44.6			Meet the standards
North boundary		44.9			Meet the standards

*Note:

1. The monitoring is conducted by Henan Bo Sheng Inspection Technology Co., Ltd.
2. The IFC standard refers to Environmental, Health, and Safety (EHS) Guidelines: General EHS Guidelines (2007)
3. Local Standard refers to Class II of Emission standard for industrial enterprises noise at boundary (2008)

Chemical Management and Solid Wastes

Chemicals consumed by the Phase I development of Yongcheng No.3 WWTP are summarised below:

- Polymeric ferric sulphate is used in secondary sedimentation tank to remove total phosphorus and guarantee the effluent total phosphorus is within the discharge limit. The polymeric ferric sulphate is stored in two aboveground storage tanks. However, a hole was identified on the secondary containment of polymeric ferric sulphate at the time of audit.
- Polyacrylamide is used in sludge dewatering equipment to improve the sludge dewatering efficiency. The polymeric ferric sulphate are stored in 20kg bags in sludge treatment room.



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- Carbon source is used in biological system to optimize Carbon/Nitrogen ratio in the wastewater and improve total nitrogen removal efficiency. The carbon source is stored in two aboveground storage tanks (ASTs).
- Sodium hypochlorite is used for disinfection and is stored in one AST.
- Limited amount lubricant/machine oil that are used for maintenance purposed, are in 200 litre drums and only purchased upon demand. However, the waste oil and waste oil containers were stored in the designated warehouse without secondary containment.

Hazardous wastes (HW) such as empty chemical containers, waste lubricant oil and waste laboratory liquid were stored in three designated warehouses. HW generated onsite is treated by a licensed hazardous waste vendor (Zhonghuanxin Environmental Protection Co., Ltd.). The HW contract was provided for review. Due to limited amount of HW were generated since the contract signed, the first batch of hazardous waste has not been transferred.

Domestic Solid Waste Management

The solid wastes disposal methods are summarized below:

- Domestic wastes including domestic waste generated onsite and the solid waste from the coarse and fine screens and waste packaging materials are collected and transported by the local sanitation station to local municipal domestic waste treatment facilities for landfill or incineration three times per week.
- Based on the EIF for the Phase I development, sludge generated from the Phase I development of Yongcheng No.3 WWTP is not categorized as hazardous waste as per Chinese regulation. Sludge is dehydrated onsite to around 80% and is transferred by the sludge truck owned and operated by the subproject company to Yongcheng Sludge Drying Plant for incineration. The corresponding contract and sludge transfer manifests were provided for review. SOP and safety guidelines were posted in the area.

Emergency Preparedness and Training

No Safety Production ERP and the corresponding registration record were provided for review. The current Sudden Environmental Production ERP covers chemical spills, incidental discharge, transportation hazard, and natural disaster analysis. However, the flooding ERP is not in place and no corresponding drills have been conducted. Based on the management interview and document review, the EHS training and inspection records covering fire drill, environmental emergency drill, equipment operational guidance, pre-job training, working safety and Personal Protection Equipment (PPE) management, and daily onsite equipment safety inspection records and equipment maintenance records were provided for review.

Firefighting equipment installed include fire hydrants, fire extinguishers, fire pool and pump, emergency lights and evacuation signs. The latest fire drill was conducted on 5 December 2020. However, no regular inspection was conducted for all onsite fire-fighting equipment.

Occupational Health and Safety

Based on document review and onsite observations, key occupational disease hazards identified at the Phase I development of Yongcheng No.3 WWTP include chemical exposure and noise. Noticeable noise was identified in the power generator room and ventilator room. The patrol inspection is carried out every two hours (lasts about 20 minutes per inspection). Proper PPE (including helmets, gloves, safety shoes, and masks), hazard warning signs, machine guards, insulation tools and production area monitoring cameras are provided at the site. Routine medical check-ups are provided to all employees



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every year, while no occupational disease hazard assessment was conducted and no occupational health check-ups were provided to staff who are exposed to occupational disease hazards.

Specially, the COVID-19 prevention methods and procedure were established according to CCW corporate and local authorities' requirements. The COVID-19 prevention equipment, including masks, clinic thermometer, hand washing liquid and disinfection agent are provided onsite. In addition, management measures such as travel restriction, quarantine requirements, access registration, body temperature measuring as per the local authorities are also implemented by the Site.

Site management reported that no incidents/accidents have taken place to the onsite staff. According to the Site representatives and document review, the one operator involved in live-line work has obtained the Electrician Certificate for High-voltage electrical operation. No special equipment was used by the Phase I development of Yongcheng No.3 WWTP during the time of visit.

Community Occupational Health and Safety

For the Phase I development, the health and safety risks exposed to surrounding communities mainly includes noise and odour during operation period, emergency accidents, traffic congestion and accident, and surface or underground water contamination. Mitigation measures were adopted as follows:

- The noise and odour hazards are monitored regularly to ensure the compliance status;
- The wastewater treatment and anti-seepage measures are strictly complied with national regulations;
- Vehicle speed is controlled and the truck used for sludge transportation is equipped with cover to prevent leakage of the sludge along the transportation route.

Electricity Supply

Based on the electricity fee provided by the Site, the 2020 electricity consumption (from January to October, as the data for November and December 2020 were not ready at the time of preparation of this report) for the Site is 2,281,770 kwh. The total electricity fee is RMB 1,453,655. There are no energy efficiency measures planned or in place.

Restricted Substances

No onsite sources of Asbestos Containing Materials (ACMs), Polychlorinated Biphenyls (PCB), Ozone Depleting Substances (ODSs) or radioactive materials were reported by Site management and none was observed at the Site by Stantec during the visit.

Notices of Violation

Based on desktop research, and interview with the Site management and Director of Inspection Team of local EEB, no nuisance or complaints regarding the site's noise and vibration, dust or other environmental aspects were identified.

Ecosystem

Due to the treated wastewater met the Class I Level A Discharge Standard of Pollutants for Municipal Wastewater Plant (2002), the treated wastewater discharge will not impact the aquatic ecosystem of the Dazhi River. The design and construction of the WWTP has taken soil and groundwater impact into consideration. Concrete with impermeable layers have been applied to the construction of the WWTP.



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The site area was a modified habitat prior to the construction of the Site, hence, biodiversity impact of the Site is considered limited. No protected fauna and flora were identified in the local area. Given the type of operation of the Site, the potential impact is considered limited.

Staff Capacity and Training

The Site provides two-level training to its new employees, namely plant-level and position-level, covering the SOPs, general plant rules and EHS aspects such as chemical handling (if needed), PPE, etc. In addition, the EHS training and inspection records covering fire drill, environmental emergency drill, equipment operational guidance, pre-job training, working safety and Personal Protection Equipment (PPE) management, and daily onsite equipment safety inspection records and equipment maintenance records were provided for review. The latest fire drill was conducted on 5 December 2020.

Key EHS related findings and issues (apart from which mentioned in Section 3.3.2 and 3.3.3) were summarized as follow:

- No occupation health check-ups were provided to staffs who exposed to occupation hazards.
- A hole was identified in the secondary containment of polyacrylamide at the time of audit. Sodium hypochlorite was stored in one AST without secondary containment. In addition, the waste oil and waste oil containers were stored in the designated warehouse without secondary containment, which are required in compliance with GIIP.
- No regular inspection was conducted for all onsite fire-fighting equipment.
- The safety and flooding ERP are not in place and no corresponding drills have been conducted.

3.3.4.2 EHS Performance for Phase II Development Construction

As the site visit was arranged close to the Chinese New Year Holiday, no construction activities were conducted at the Phase II development of the Site and no construction contractors were present. Hence, the review of the contractors' management and performance was conducted primarily by document review and interview of Yongcheng No.3 WWTP management team. Site management reported that given the Phase II development was arranged by the local government directly, no engineering procurement construction (EPC) contract or construction supervision contract were signed with the corresponding contractors. Site management reported that the contracts signing processes are expected to be completed by March 2021. Mr. Feng, the General Manager of the Yongcheng Regional Office the support from the Production and Technology Department of CCW corporate, is reportedly overseeing the overall management of the EPC activities as well as the contractor management, including EHS aspects.

The manufacture engineering during the construction period mainly includes:

- land clearance and land levelling;
- buildings and facilities construction; and
- equipment installation and trial run.

The primary pollution sources, impacts and mitigations are described by Site management and are listed as below.

- No sources of wastewater were observed in the construction of the Phase II development. The construction wastewater was reportedly recycled back in the processes after sedimentation and precipitation treatment;
- The domestic wastewater was treated by on site wastewater treatment facilities;
- Dustproof net and fence were installed during the construction period;
- Construction materials temporary storage areas were covered with shed cloth;



SITE ASSESSMENT

- Water were sprayed on the construction place, waste and material storage area twice a day to maintain a certain humidity to reduce dust generation; two mist cannon trucks were identified at the time of the Site visit;
- Vehicles were washed regularly;
- Low-noise equipment were preferred for construction period. According to the site manager, night construction was carried out sometimes, however, the Night Construction Approval from local EEB was not obtained;
- Domestic waste generated by the onsite construction workers were collected and stored by type at designated areas, and transported by sanitation department on a regular basis;
- Construction waste were stored at designated storage area and transported to municipal landfills site in time.

Due to no construction activities were conducted at the time of Site visit, no corresponding records/photos were provided for review in support the aforementioned mitigation measures.

Key EHS related findings and issues were summarized as follow:

- No EPC contract or construction supervision contract were signed.
- Night construction was carried out sometimes, however, the Night Construction Approval from the local EEB was not obtained.
- A contractor E&S management plan is not in place. No corresponding records/photos were provided for review by CCW or the Site in support the construction period EHS mitigation measures.

3.4 SOCIAL ASSESSMENT

3.4.1 LAND ACQUISITION AND RESETTLEMENT

According to the Site management, the Site was established in August 2010 and designed into two phases, occupying a total land area of 28,760 m² (43.14 mu²). At the time of the site visit, the Phase I development was in operation, whilst the Phase II development was under construction (since early 2020).

CCW reached a TOT agreement with the local government for the Phase I Development of Yongcheng No. 3 WWTP in 2011 and reached a BOT agreement with the local government for the Phase II Development of Yongcheng No. 3 WWTP in August 2020. However, the land acquisition and resettlement for the site land was conducted by the local government before 2009, whilst the Site management was not aware of the history of land acquisition and resettlement for the site land.

On 25 December 2012, one Construction Land-use Certificate with an area of 3,798 m² was issued, entitled to Yongcheng Urban and Rural Construction Service Centre. Site management reported that this certificate actually covers an offsite landscaped area located immediately to the north of the Site. A Construction Land-use Certificate for the site area has not been obtained to date. Site management added that the Construction Land-use Certificate for the site area is being processed and is expected to be obtained by the end of 2021.

There is no detailed impact data such as land acquisition impact rosters, compensation agreement, compensation payment voucher, etc. for review. No interview with the original officials who were involved in the land acquisition or representative of PAH was arranged during Stantec's site visit. Site management also added that since CCW took over in 2011, Yongcheng No.3 WWTP has not received any complaints related to land acquisition and resettlement.

² Mu is the Chinese land area unit, and one mu is approximately equal to 666 square meters.



SITE ASSESSMENT

Key Findings and Issues on Resettlement:

- Neither Land Use Pre-approval nor the Construction Land Use Certificate has been obtained for the Site, which is a non-compliance against PRC regulations.
- No documents (such as asset inventory, compensation agreement, etc.) regarding the land use for the Site are held by the Site. There is no in-place procedure to document land acquisition activities, as well as monitor and evaluate the payment status, which is a non-conformance against ADB SR2.
- No land acquisition and compensation audit was conducted by CCW or the Site, which is non-conformance against ADB SPS2.

3.4.2 INDIGENOUS PEOPLE

The Site is located in Yongcheng City Industrial Cluster Area. The ethnic Han is predominant in PRC as well as in the local area, and there are no ethnic minority residential areas identified or affected. Therefore, ADB SR3 is not triggered for the Site.

3.4.3 STAKEHOLDER ENGAGEMENT AND CONSULTATION

It is identified no stakeholder analysis has been conducted for Yongcheng No.3 WWTP and no document records regarding stakeholder engagement were available for review.

According to Stantec's onsite consultation, as well as similar project experience, three major stakeholder groups are identified for this type of project, including (a) government authorities, such as such as Yongcheng EEB and Emergency Management Bureau, (b) local community (wastewater discharge unit / individual), including People's Government of Houling Township, Chenzhuang Village, etc., (c) local residents affected by land acquisition. The Site Company is responsible for liaison with local government.

The Site is following PRC's laws and regulations. In China, consultation with the local communities is a regulatory requirement during the process of EIA as well as land acquisition and resettlement. One full EIA report was developed for the Phase II Development in 2019. A certain number of local residents are consulted through questionnaire survey while preparing the EIA report. Among the interviewees, most expressed support to the Site. while small part of people expressed not concerned. No interviewees expressed objection. Currently, the Phase II Development is under construction and is close to construction completion (by end of 2021).

Key Issues and Findings on Stakeholder Engagement:

- There is no formalized stakeholder engagement procedure established for Yongcheng No.3 WWTP to manage stakeholder identification, analysis, engagement especially for dealing with those concerns related with land acquisition and resettlement, and other community affairs.

3.4.4 GRIEVANCE REDRESS

It was identified there are no grievance procedures or designated personal for managing the grievances of employees and local communities and other stakeholders. No records of grievances are available for review.



SITE ASSESSMENT

For the workers grievances, the site management reported that the workers usually may file a grievance to the HR of the Yongcheng Regional Office directly, if the HR cannot address the grievance, it will be reported to the CCW headquarters HR department. Usually, employees' complaints can be properly resolved at the regional office HR level, and according to Ms. Zhao from HR department of the Regional Office, there are no grievances reported to date.

For the community grievances, the management reported that they have not received any grievances directly so far, the grievances (if any) raised by the local communities would normally be received by the local government. The subproject company would be informed by the local government in case grievances received. The representative from the Environmental Inspection Team of local EEB also stated that no complaints from the local community has been received since the operation of Yongcheng No.3 WWTP. No grievance has been received to date reportedly.

Key Issues and Findings on Grievance Redress:

- There is no system in place to record and track the complaints raised by the local community, employees and construction workers during construction and operation phases. Thus, no record of previous grievances was available for review, which is a non-conformance against ADB safeguards.

3.4.5 LABOR AND SOCIAL PROTECTION

3.4.5.1 Operation Period for Phase I development

At the time of onsite visit, there were 14 employees directly hired by the Site, including one factory manager, one technician, six operational staff, one maintenance staff, one deputy general manager, one laboratory staff, one sludge staff, one chef and one cleaner, which the deputy general manager and laboratory staff belong to the Yongcheng Regional Office. All the 14 employees are formal contracted workers and no temporary, dispatching and outsourcing workers were identified at the Site. 3 out of 14 are female and the rest 11 employees are male. Most employees are Han Chinese. Only one employee, i.e. the factory manager is ethnic minority (Tibetan). As interviewed with the factory manager, Mr. Wandai Cairang (34 years old), reported that he came to Yongcheng City when he was 9 years old. To date, he has lived in Yongcheng for 25 years and his living and custom is almost the same as those of Han Chinese.

Reportedly, the workers except for the operating workers are typically working five day with 40 hours in one shift (8:00~12:00 and 14:00~16:00) between Monday and Friday. The six operating workers were divided into three groups with two shifts (8:00~20:00 and 20:00~8:00 respectively). Each shift had two responsible staff. The Site adopts the comprehensive working hour system for operating workers, however, no approval from the Labour Bureau were provided for review. Wages are paid on the next 10th of each month. The Site provided the payroll records in September 2020 for all 15 employees for review. The payroll record includes working hours and overtime, normal wage, overtime wage and social insurance. The normal wages for workers were above the minimum wage requirement. In September 2020, the monthly overtime hours of 2 out of 8 workers (run in one shift) is 36-64 hours.

No underage or juvenile workers were identified onsite. No sexual harassment or discrimination was identified during onsite interview.

Key social related findings and issues were summarized as follows:

- The WWTP adopts the comprehensive working hour system for operating workers, however, no approval from the labour bureau were provided for review. This is a non-compliance against PRC regulations.



SITE ASSESSMENT

- The monthly overtime hours of 2 out of 8 workers (run in one shift) is 36-64 hours, which exceeded the PRC regulatory requirement (no more than 36 hours per month).

3.4.5.2 Construction Period for Phase II development

Site management reported that the construction of the Phase II development started at the beginning of 2020, and expected to be completed by June 2021. At the time of the site visit, the majority of the construction work was completed and was moving to small scale construction works and equipment installation. As the site visit was arranged close to the Chinese New Year Holiday, no construction activities were conducted at the Phase II development of the Site and no construction contractors were present. Hence, the review of the contractors' management and performance was conducted primarily by document review and interview of Yongcheng No.3 WWTP management team.

There were over 100 construction workers engaged during the construction period. Majority of construction workers were males. There were a few female workers, i.e. chef and cleaner. The contractor was responsible for the food and accommodation for those construction workers whilst no detail was provided. There was no camp constructed onsite. Most of the workers came from local villages, and a few are from other cities. It was reported that the contractor will rent houses for foreign workers. No documents or procedure regarding HR management of the construction workers were provided for review. Hence, it is unable to verify the compliance statuses.

Key social related findings and issues were summarized as follows:

- No documents or procedure regarding HR management of the construction workers were provided for review.

3.4.6 GENDER AND DEVELOPMENT

Although there is no specific procedure regarding gender and development identified in any of the Site's existing policies and procedures, no indication of gender inequality or discrimination is identified from document review and interview.

To date, 3 out of the 14 workers at the Site companies are female, including one laboratory staff, one chef and one cleaner. The males are skilled workers primarily focusing on engineering, whilst most females on non-engineering positions such as administration and logistics. The consulted female employees are treated equally in payment, training and promotion. All the female employees at the Site are entitled to the same specific benefits (98 days of maternity leave, women's toilets, more comprehensive health check and shopping card on Women's Day) as other females in the Company. According to Ms. Zhao from HR department of the Regional Office, the WWTP provides all workers with a free physical examination once a year, among which the physical examination items for female are more comprehensive. The cost of the physical examination for female employees is RMB 420 per capita, which is higher than that for male employees (RMB 270 per capita). Stantec's interview with randomly selected operators did not identify any concern over gender composition of the positions.

No noncompliance regarding gender and development was identified against either the PRC regulations or ADB SPS for the Site. In addition, according to consultation with both site management and the randomly selected workers, no disproportionate impacts were caused by the Site on women.



CORRECTIVE ACTION PLAN

4. CORRECTIVE ACTION PLAN

Table 4-1 summarise the E&S issues identified at Yongcheng No.3 WWTP. As implementing the actions described below might signify economic costs to different degrees, estimations were not made.

Table 4-1: Yongcheng No.3 WWTP - Findings and Recommended CAP

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
1	ADB SPS 1 and 2	E&S Management	At the time of the site visit, a formal Environmental and Social Management System (ESMS) not developed and implemented by Yongcheng No.3 WWTP or the Yongcheng Regional Office.	Upon completion of development of the corporate ESMS, the Site should seek for assistance from the CCW corporate and Yongcheng Regional Office and developed subproject level ESMS covering EHS, HR and Social aspects. The subproject level ESMS should be implemented by qualified and trained onsite personnel.	High	1 month after adoption of corporate level ESMS [6 months after ESMS adoption]	Development and adoption of Subsidiary level ESMS ESMS implementation and training record Updates in the annual E&S performance report to ADB on the effectiveness of ESMS implementation
2	ADB SPS 1	E&S Management	A budget of RMB 4 million has been proposed for the odour collection and treatment system covering the Phase I and II developments of the Site.	The Site should ensure the odour collection and treatment system is installed and operated as per the requirement of the EIA document.	Medium	Prior to the commercial operation date	Onsite photos and corresponding records
3	ADB SPS 1	EHS Permit	The ECAI for the Phase II development has not been obtained.	The Site should ensure to obtain ECAI for the Phase II	Medium	Prior to disbursement	Contract/agreement with qualified third party



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CORRECTIVE ACTION PLAN

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
				development after the construction completion		6 months after disbursement	ECAI document
4	ADB SPS 1	EHS Permit	Fire-fighting design registration or fire-fighting CAI approval has not been obtained. This applies to both the Phase I and II developments.	The Site should consult with the local housing and construction authority in this regard and take action accordingly.	Medium	Prior to disbursement 6 months after disbursement	Communication records of consultation with the local housing and construction authority on next steps Fire-fighting design registration and fire-fighting CAI approvals
5	ADB SPS 1	EHS Permit	A Work Safety Assessment has not been conducted. This applies to both the Phase I and II developments.	The Site should consult with the local Emergency Management Bureau in this regard and take action accordingly.	Low	Prior to disbursement 3 months after disbursement	Communication records of consultation with the Emergency management Bureau on next steps Work Safety Assessment
6	ADB SPS 1	Health and Safety	Occupational disease hazard assessment or industrial hygiene monitoring has not been conducted, and occupational health check-ups have not been provided to staffs who are exposed to occupational disease hazards. This applies to both the Phase I and II developments.	The Site should engage licensed third parties to prepare occupational disease hazard assessment and provide occupational health check-ups to staffs who exposed to occupational hazards.	Medium	Prior to disbursement [same time as ESMS]	Contract/agreement with a licensed third party Occupational disease hazard assessment or industrial hygiene monitoring procedure included in the Subsidiary level ESMS



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CORRECTIVE ACTION PLAN

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
						3 months after disbursement	Occupational disease hazard assessment, industrial hygiene monitoring and occupational health check-up reports
7	ADB SPS 1	Emergency Response	Safety Production ERP and the corresponding registration record have not been conducted/obtained. This applies to both the Phase I and II developments. In addition, flooding ERP is not in place and no corresponding drills have been conducted.	The Site should consult with the local Emergency Management Bureau in this regard and take action accordingly. As a minimum, supplementary ERP covering flooding should be prepared and corresponding drills should be conducted.	Medium	<p>Prior to disbursement</p> <p>[same time as ESMS]</p> <p>6 months after disbursement</p>	<p>Communication records of consultation with the Emergency management Bureau on next steps.</p> <p>ERP and the Supplementary ERP included in the Subsidiary level ESMS</p> <p>ERP registration record and drill records</p>
8	ADB SPS 1	Chemical Management	A hole was identified for the secondary containment of polyacrylamide at the time of audit. Sodium hypochlorite was stored in one AST without secondary containment. In addition, the waste oil and waste oil containers were stored in the designated warehouse without secondary containment.	The Site should establish designated warehouse with secondary containments for chemical containers and regular inspect the secondary containment status.	Medium	Prior to disbursement	Onsite photos and corresponding records



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CORRECTIVE ACTION PLAN

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
9	ADB SPS 1	Contractor Management	No EPC contract or construction supervision contract were signed.	The Site should sign the EPC contract and construction supervision contract with the corresponding contractors in a timely manner.	Medium	3 months after disbursement	Signed engineering procurement construction contract Signed construction supervision contract
10	ADB SPS 1	Contractor Management	No corresponding records/photos were provided for review with regard to the EHS and labour management. A contractor E&S management plan is not in place.	The Site should establish and implement a contractor E&S management plan.	Medium	Prior to disbursement	Contractor E&S management plan and corresponding records
11	ADB SPS 1	Contractor Management	Night construction will be carried out sometimes, however, the Night Construction Approval from local EEB was not obtained	The Site should consult with the local EEB in this regard and take action accordingly in the future night construction events.	Low	Prior to disbursement	Night Construction Approval, or communication records
12	ADB SPS 2	Involuntary Resettlement	Neither Land Use Pre-approval nor the Construction Land Use Certificate has been obtained for Yongcheng No.3 WWTP.	The Site should follow with the local government to obtain Land Use Pre-approval and Construction Land Use Certificate for the land permanently acquired.	Medium	9 months after disbursement	Land Use Pre-approval and the Construction Land Use Certificate obtained
13	ADB SPS 2	Involuntary Resettlement	No documents (such as asset inventory, compensation agreement, etc.) regarding Yongcheng No.3 WWTP land use for the Site were provided for review.	Upon development and implementation of the corporate ESMS, the Site should follow the corporate Resettlement Policy Framework to document the compensation payment and evaluate its status.	Medium	9 months after disbursement	Relevant documents
14	ADB SPS 2	Involuntary Resettlement	No land acquisition and compensation audit through an	CCW and the Site should conduct, through an external expert, a land acquisition and compensation	Medium	6 months after disbursement	A Land Acquisition audit report prepared by qualified E&S



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CORRECTIVE ACTION PLAN

No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
			external expert was conducted by CCW or the Site.	audit against SPS 2 requirements. If deficiencies are identified, a CAP should be developed in line with SPS 2 (including full replacement cost and restoration of livelihood).			consultant in line with requirement set in SPS 2.
15	ADB SPS 2	Stakeholder Engagement	There is no system/ procedure in place to guide the Site to identify stakeholders, make analysis, and conduct engagement.	Upon development and implementation of the corporate ESMS, the Site should develop a procedure as part of E&S for the purpose of managing stakeholder engagement process.	Low	[same time as ESMS]	A stakeholder engagement plan (SEP)
16	ADB SPS 2	Grievance Redress	There is no system in place to record and track the complaints raised by the local community, employees and construction workers during construction and operation phases. Thus, no record of previous grievances was available for review.	Upon development and implementation of the corporate ESMS, the Site should develop a site-specific grievance redress procedure to collect and document any complaints and grievances raised by the employees and the broader local community.	Low	[same time as ESMS]	Site specific grievance mechanism (including the employees and the local community) and grievance records
17	Social Protection	Labour and Social Protection	The Site adopts the comprehensive working hour system for operating workers, however, no approval from the Labour Bureau were provided for review.	The Site should consult with the local Labour Bureau and apply for the approval of Comprehensive Working Hour as appropriate.	Low	6 months after disbursement	Communication records and/or approval of Comprehensive Working Hour
18	Social Protection	Labour and Social Protection	The monthly overtime hours of 2 out of 8 workers (run in one shift) is 36-64 hours, which exceeded the PRC regulatory requirement (no more than 36 hours per month).	The Site should reduce the overtime hours within 36 per month for the workers working in one shift.	Low	6 months after disbursement	Attendance records



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Annex A: LIST OF DOCUMENT REVIEWED

ANNEX A: LIST OF DOCUMENT REVIEWED

No.	Name
1	Certificate of compliance status of Yongcheng No.3, No.2 and No.3 TOT WWTPs issued by Housing and Urban-Rural Development Bureau of Yongcheng City dated 11 August 2014
2	Site Selection Application approval was approved by Yongcheng Development and Reform Committee on 16 September 2008
3	FSR approval for the initial Phase I and Phase II Development issued by Yongcheng Development and Reform Committee on 16 September 2008
4	EIF and its approval for the Phase I development issued by Yongcheng EEB on 21 November 2008
5	One Environmental CAI (Phase I Development) approved by Yongcheng EPB on 26 September 2010
6	EIA report and its approval for the Phase II development issued by Yongcheng EEB on 16 October 2019.
7	PDP issued by Yongcheng City EEB, valid from 28 June 2019 to 27 June 2022
8	Sudden Environmental Emergency plan and its approval issued by local EEB dated on December 2020
9	Hazardous Waste Disposal Contract for waste machine oil, waste liquid from the laboratory, waste rags with chemicals and empty chemical containers, valid from 1 September 2020 to 31 August 2021
10	Sludge Disposal Contract signed with Yongcheng Ecology Technology Co. Ltd. dated on 1 January 2020
11	Sampled sludge transfer manifests
12	Sample environmental monitoring reports (regarding treated wastewater, fugitive air, boundary noise and sludge) dated 2020
13	One valid Electrician Certificate for High-voltage electrical operation
14	Sampled routine checkup reports for staffs
15	EHS procedures and safety training record
16	ISO 9001 certification, valid from 6 November 2020 to 13 October 2023
17	Treated Wastewater Reclaimed Agreement signed with Yongcheng Jincheng Development Investment Co., Ltd.
18	Construction Land Use Certificate issued by the local Land and Resources Bureau on 25 December 2012
19	One labour contract sample
20	One physical examination report sample



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Annex B: STAKEHOLDERS ENGAGED DURING THE E&S AUDIT

ANNEX B: STAKEHOLDERS ENGAGED DURING THE E&S AUDIT

Name	Catogory	Department	Title
Mr. Feng Jianqiang	Internal	Yongcheng Regional Office	Regional Manager
Mr. Xie Junwei	Internal	Yongcheng Regional Office	Deputy Regional Manager
Mr. Wandai Cairang	Internal	Management Team	General Manager
Mr. Wang	External	Environmental Inspection Team of local EEB	Director

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Annex C: PHOTO LOG

ANNEX C: PHOTO LOG

Photo Log – Yongcheng No.3 WWTP



Photo 1.1 Entrance of the Site



Photo 1.2 Wastewater Inlet for phase I development



Photo 1.3 Biological Tank for phase I development



Photo 1.4 Secondary Sedimentation Tank for phase I development



Photo 1.5 Disinfection Tank for phase I development



Photo 1.6 Sludge Treatment Room for phase I development

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Annex C: PHOTO LOG

Photo Log – Yongcheng No.3 WWTP



Photo 1.7 Chemical Storage Area



Photo 1.8 Chemical Storage Area



Photo 1.9 HW warehouse



Photo 1.10 HW warehouse



Photo 1.11 Online Treated Wastewater Monitoring Device



Photo 1.12 Online Treated Wastewater Monitoring Device

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Annex C: PHOTO LOG

Photo Log – Yongcheng No.3 WWTP



Photo 1.13 Construction Area for phase II development



Photo 1.14 Construction Area for phase II development



Photo 1.15 Dazhi River is located immediately to the west of the Site



Photo 1.16 Moshan Road is located immediately to the east of the Site



Photo 1.17 South boundary of the Site