

Environment and Social Compliance Audit Report

Project Number: 54401-001
Asset-Level Report - Yongcheng No. 1
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.1

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CURRENCY EQUIVALENTS

(as of 20 April 2021)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1539
\$1.00	=	CNY6.4964

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
BOLAR	Bureau of Land and Resources
BOT	Build-Operate-Transfer
CAI	Completion Acceptance Inspection
CAP	Corrective Action Plan
Capex	Capital Expenditure
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
EMP	Environmental Management Plan
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
GIIP	Good International Industry Practice
GRM	Grievance Redress Mechanism
HR	Human Resource
HW	Hazardous wastes
IFC	International Finance Centre
IH	Industrial Hygiene
IR	Involuntary Resettlement
IP	Indigenous Peoples
ISQ	I Squared Capital



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MEE	Ministry of Ecology and Environment
MEP	Ministry of Environmental Protection
MSDS	Material Safety Data Sheet
NGO	Non-Governmental Organizations
ODH	Occupational Disease health
ODSs	Ozone Depleting Substances
Opex	Operating Expenses
PAHs	Project Affected Households
PCB	Polychlorinated Biphenyls
PDP	Pollutant Discharge Permit
PPE	Personal Protective Equipment
PRC	People's Republic of China
SEP	Stakeholder Engagement Plan
SOP	Standard Operating Procedure
SPS	Safeguard Policy Statement
SS	Suspended Solids
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 31 January 2021, Stantec conducted the E&S audit at Yongcheng No.1 WWTP (the Site). This E&S audit was conducted based on Yongcheng No.1 WWTP's current E&S management performance against the Applicable E&S Requirements (AESRs) detailed as Section 1.2.

The Site, located in the middle of Dongfang Avenue, Dongcheng District, Yongcheng City, Shangqiu City, Henan Province, PRC, was originally constructed and operated by the local government from 2005. In 2011, CCW Signed the Transfer-Operate-Transfer (TOT) agreement with Yongcheng City Government and took over the onsite operation. The scope of the TOT agreement covers the operation of Yongcheng No. 1 WWTP for 30 years. No offsite auxiliary facilities such pipelines, valves or sludge treatment stations and disposal facilities are included in the TOT agreement. The pipelines and valves are part of the existing Yongcheng City wastewater treatment network. 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 sludge treatment stations and/or designated disposal site for dewatered sludge are appointed by the local government as per the concession agreement. These auxiliary facilities are operated and maintained by Yongcheng City and third parties. The Site receives domestic wastewater from the area north of the Tuo River and the west of the Xuefeng Road in Dongcheng District. The designed wastewater treatment capacity is 10,000 tons per day (t/d), and the actual treatment scale is about 8,300 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 (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 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 for 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



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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), People's Republic of China (PRC).

Yongcheng No.1 WWTP (the Site) was established in September 2006 by the local government, with a total wastewater treatment capacity of 10,000 tons per day (t/d). CCW holds 100% of shares of Yongcheng No.1 WWTP. At the time of the site visit, the subproject was in operation.

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 31 January 2021, Stantec conducted the E&S audit at Yongcheng No.1 WWTP. This report presents the findings of the E&S audit and provides a gap analysis of Yongcheng No.1 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;
- 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:



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- 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

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.1 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



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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) The site visit was conducted during winter, and limited odour from the WWTP was noticed during the site visit.
- 2) 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.
- 3) 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.
- 4) The land acquisition was undertaken by the local government before 2006. 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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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>	Standard for Odour Pollutants Emission (1993) indicates the odour emission standards for enterprises.
<i>Standard for Odour Pollutants Emission (1993)</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>	



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Title	General Description
<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 waste management including collection, storage, transportation, treatment, recycling and disposal. 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.
<i>Management Regulation for Hazardous Waste Transfer Manifests (1999)</i>	
<i>Standard for Pollution Control on Industrial Solid Waste Storage and Landfill (2020)</i>	
<i>Law on Energy Conservation (2018)</i>	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.
<i>Law on Cleaner Production Promotion (2012)</i>	
<i>Law on the Prevention and Control of Soil Pollution (2019)</i>	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.
<i>Environmental Quality Standards for Construction Soil Pollution Risk Control (Trial) (2018)</i>	
<i>Environmental Quality Standards for Agriculture Soil Pollution Risk Control (Trial) (2018)</i>	
<i>Environmental Quality Standard for Ground Water (2017)</i>	
<i>Methods for Public Participation in Environmental Impact Assessment (2019)</i>	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	
<i>Law on Work Safety (2014)</i>	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.
<i>Law on Occupational Diseases Prevention (2018)</i>	
<i>Law on Fire Protection (2019)</i>	



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APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
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 plant, defines the wildlife or wild plant habitat, and establishes disciplinary measures.
Regulation on Wild Plant Protection (2017)	
Land Acquisition and Resettlement	
Law on Land Administration (2020)	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.
Regulations on Implementation of Land Administration Law (2014)	
Labour	
Labour Law (2018)	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”.
Labour Contract Law (2012)	
Cultural Heritage	
Cultural Relics Protection Law (2017)	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.
Implementation Regulations of the Law on Cultural Relics Protection (2017)	
Public Consultation and Information Disclosure	
Methods for Public Participation in Environmental Impact Assessment (2019)	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	

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’.



APPLICATION STANDARDS AND METHODOLOGY

Title	General Description
<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 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. The EIF report is generally consisting of applicable standards, project description, pollution control analysis, ecological impacts, extreme weather analysis (including climate, flooding, earthquake, etc.).



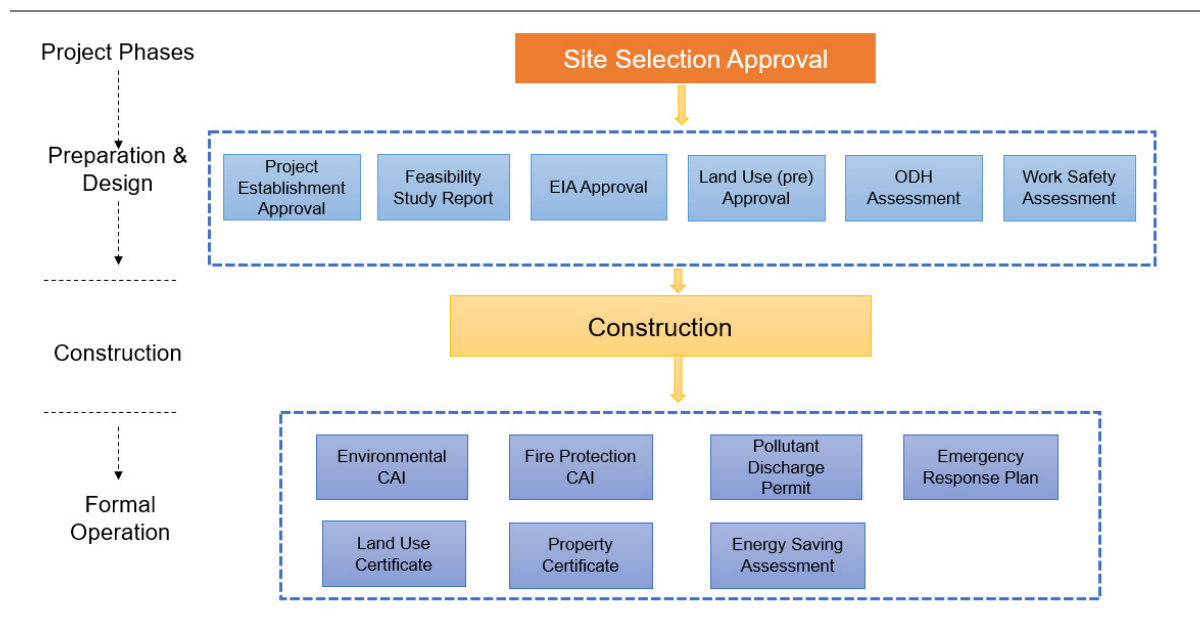
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APPLICATION STANDARDS AND METHODOLOGY

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.1 WWTP including (i) CCW and Yongcheng No.1 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.1 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.1 WWTP; (v) Information about Yongcheng No.1 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.1 WWTP through intermediaries and onsite review. Annex A lists the key documents provided by Yongcheng No.1 WWTP and reviewed by Stantec during this E&S audit.



Step 2: Site Visit

Stantec conducted an onsite visit at Yongcheng No.1 WWTP on 31 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 middle of Dongfang Avenue, Dongcheng District, Yongcheng City, Shangqiu City, Henan Province, PRC. It borders with Chunfeng Road to the north, Dongfang Avenue to the south, Xuefeng River to the east and Yuzi Hotel to the west. 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 2005: The history was unknown by the Site representatives before 2005;
- November 2005: Construction by the local government was commenced;
- September 2006: Construction was completed. Operation was commenced;
- 2011: CCW signed the Transfer-Operate-Transfer (TOT) agreement with Yongcheng City Government;
- 2017: A Membrane Biological Reactor (MBR) system for wastewater treatment was added; and
- 2018: Odour treatment facility was installed.
- November 2020: Overall equipment and pipeline maintenance and repair.

The scope of the TOT agreement covers the operation of Yongcheng No. 1 WWTP for 30 years. No offsite auxiliary facilities such as pipelines, valves or sludge treatment stations are included in the TOT agreement. 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 Site receives domestic wastewater from the area north of the Tuo River and the west of the Xuefeng Road in Dongcheng District. The service area is about 100 square kilometres (km²) and the service population are about 60,000. The designed wastewater treatment capacity is 10,000 tons per day (t/d), and the actual treatment scale is about 8,300 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 Site runs in a two-shifts working system for 365 days a year, with 15 staffs.

The Site covers a total land area of 7,321 m². The buffer zone was not determined by the Environmental Impact Status Quo Assessment Statement Form dated 2016 due to it was not required by the local authorities at the time of the Site establishment. However, due to the residential buildings nearby, the Site performed a series of modifications to reduce its environmental impacts (for details, please refer to Section 3.4.4). The Adjacent facilities and properties of the Site were identified as follows:

- Southwest: An unknown small road and several shops, such as clothing stores, hotels, etc.
- Northeast: Xuefeng River. Further east is Fuxi Residential area (located about 100 m away from the Site).
- Northwest: Chunfeng Road and a residential building which is about 5 m away from the site boundary. Further northwest is Xiaolongren No. 3 Kindergarten (located about 30 m away from the Site).
- Southeast: Dongfang Avenue.

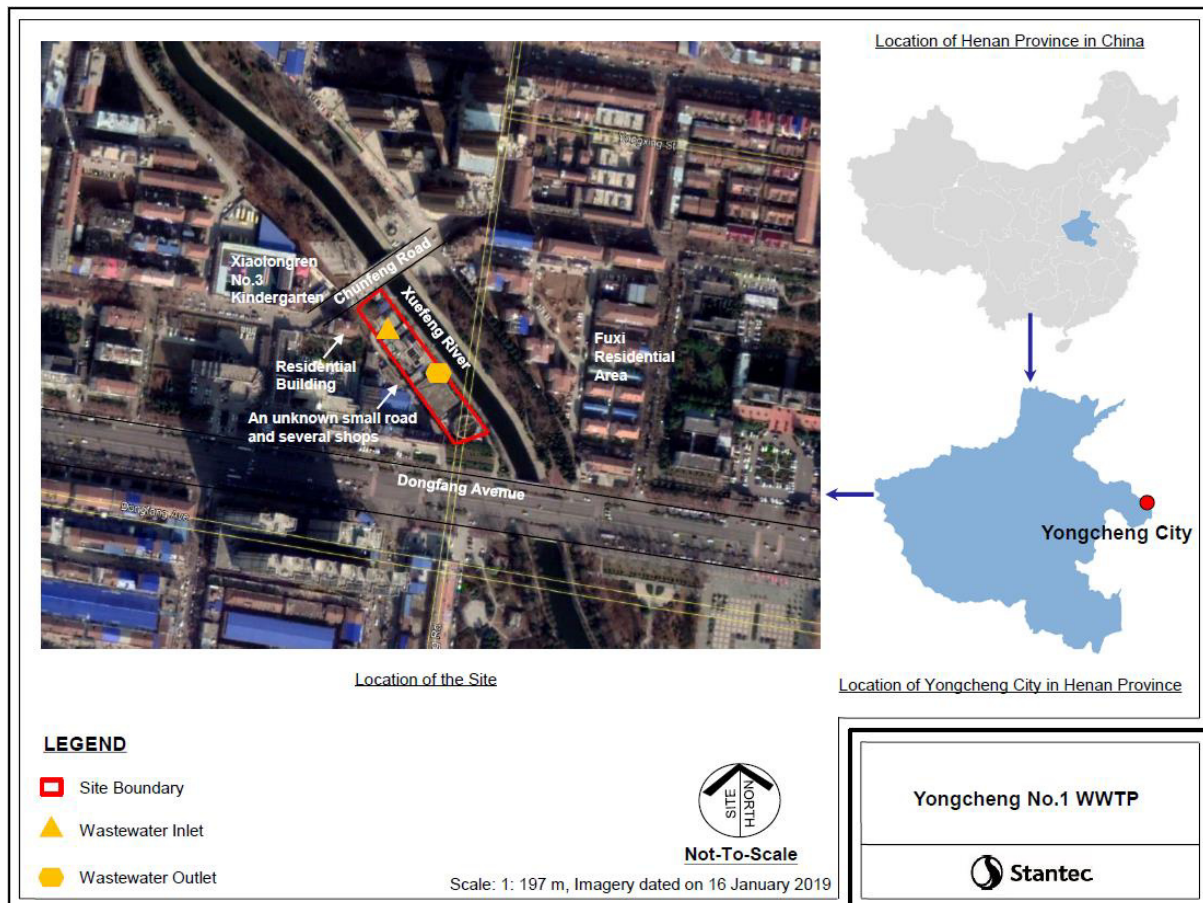
The Site is classified as a construction land and is not within area of the ecological red line (which in China refers to the strictly controlled boundary demarcated in accordance with law in key ecological function zones, sensitive and fragile areas of the ecological environment). There are no natural reserves, drinking water protection zone, scenic spot, national key protected animals and plants, seed fields,



SITE ASSESSMENT

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, the nearest sensitive receptor of the Site is a residential area which is located approximately 5 m to the northwest of the Site, Xiaolongren No. 3 Kindergarten which is located approximately 30 m to the northwest of the Site, and Fuxi Residential area which is located approximately 100 m to the east of the Site.

Figure 3-1: Site Location



Source: Google Earth Pro

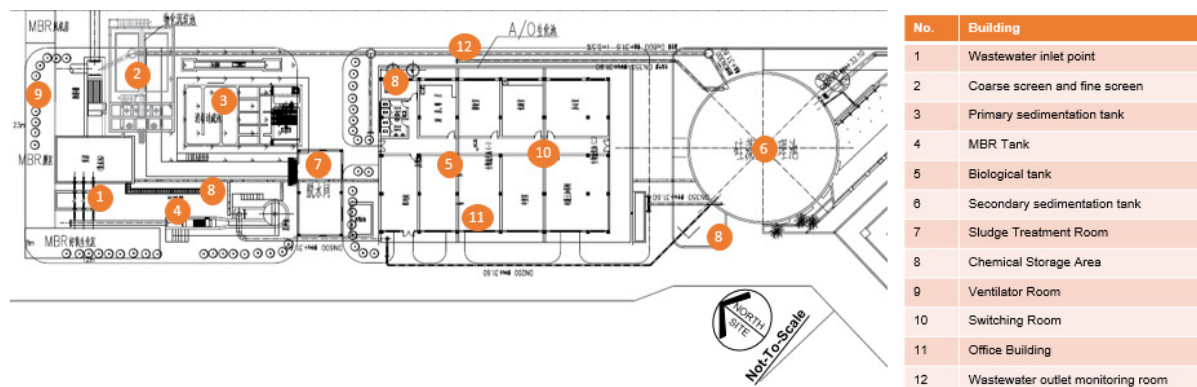
3.2 SITE DESCRIPTION

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



Yongcheng No.1 WWTP processes consists of three stages: pre-treatment, biological treatment (or secondary treatment), and tertiary treatment. The main treatment processes are Wastewater Feeding, Coarse Screen and Fine Screen, Primary Sedimentation Tank, Anaerobic Tank, Anoxic Tank, Oxic Tank, MBR System, Secondary Sedimentation Tank, Filter Tank, Disinfection Tank and Final Discharge. Chemicals used for wastewater treatment include carbon source, sodium hypochlorite and polymeric ferric sulphate, polyacrylamide, and alkaline. 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 is 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 Xuefeng River which is located 5 m to the east of Yongcheng No.1 WWTP.

3.3 EHS ASSESSMENT

3.3.1 Yongcheng Regional Office

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;



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- 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.

3.3.2 EHS Management Overview

Yongcheng No.1 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. Wang Qi (General Manager of the Site) and Mr. Wang Jiacheng (Technician) 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. There is no dedicated EHS personnel equipped at CCW's corporate level or at the regional office level. However dedicated EHS manager from other company of ISQ was invited to provide technical assistant as needed, especially when the EHS risks were deemed significant by CCW. In Q3 of 2018, there was a need for underwater work in Yongcheng No.1 WWTP. The EHS personnel, Mr. Lu, was invited to conduct training and provided assistance to the preparation of the work. In November 2020, Yongcheng No.1 WWTP was undergone overhaul and Mr. Lu was invited to review the construction EHS related plans.

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.1 WWTP, the safety inspections were conducted as follows:



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- 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.1 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, sludge vehicle purchase, etc.) and Opex (including items such as environmental monitoring, sludge monitoring, equipment maintenance, laboratory material, routine check-ups, PPE, etc.) for Yongcheng No.1 WWTP in 2021 was provided for review, with a total budget of RMB 1,150,437.

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.1 WWTP or the Yongcheng Regional Office.

3.3.3 EHS Permit

The permit compliance status of the Site is summarized as follows in the **Table 3-1**.

Table 3-1: Permit Compliance Status

Permit	Review
Site Selection Application	Certificate of compliance status of Yongcheng No.1, No.2 and No.3 TOT WWTPs issued by Housing and Urban-Rural Development Bureau of Yongcheng City dated 11 August 2014
FSR and its approval	
Land Permit	Construction Land Use Certificate issued by the local Land and Resources Bureau on 25 December 2012
EIA, ECAI and the approvals	<ul style="list-style-type: none">• The original EIF document could not be located for review; subsequent ECAI approval for the initial development issued by Yongcheng City EEB on 18 November 2007 was provided for review• Environmental Impact Status Quo Assessment Statement Form issued by Henan Jinhuan Environmental Impact Assessment Co., Ltd. in October 2016• Registration Notice of Environmental Impact Status Quo Assessment Statement Form issued by Yongcheng City EEB on 8 November 2016
PDP	PDP issued by Yongcheng City EEB, valid from 28 June 2019 to 27 June 2022
Water Abstraction Permit	Not applicable as Yongcheng No. 1 WWTP does not utilise groundwater
Fire Protection CAI	Not available
Work Safety CAI	Not available
Occupational Disease Hazards Assessment	Not available
Sudden Environmental Emergency Response plan (ERP) and its registration record	Sudden Environmental Emergency plan and its approval issued by local EEB dated December 2020



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Permit	Review
Safety Production ERP and its registration record	Not available
Energy Saving Assessment	This document was not required by the local authorities at the time of the Site establishment.

The Environmental Impact Status Quo Assessment Statement Form prepared for this project 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.

During construction, there are typical EHS requirements in PRC, including the dust control, solid waste management, Personal Protective Equipment (PPE), regular monitoring, etc. No findings were identified.

The project started operation in 2006 and obtained the ECAI in 2007 which confirmed the 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:

- Yongcheng No 1 WWTP installed a MBR system, two acid and alkaline washing towers for odour treatment during the technical transformation in 2017 and 2018. An EIA document is required, but have not been prepared for this upgrade.
- Fire-fighting design registration or fire-fighting CAI approval is required, but have not been obtained.
- ODH assessment is required, but have not been conducted.
- Work Safety Assessment is required, but have not been conducted.
- Safety Production ERP and the corresponding registration record is required, but have not been prepared/obtained.
- Compared to an environmental assessment required by ADB's SPS the public consultation and alternative analysis are not included in the project EIA document.

3.3.4 EHS Performance

Water Supply and Wastewater Discharge

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. Separate wastewater and stormwater drainage systems were established for the Site. The domestic wastewater generated onsite is collected and discharged to the onsite facility for further treatment. Stormwater generated onsite is collected and discharged via the same treated wastewater outlet, which is ultimately discharged to the Xuefeng River.

Wastewater and Sludge from the Wastewater Treatment Process

Xuefeng River is located 5 m to the east of Yongcheng No.1 WWTP. According to the Site's EIA documents, the Xuefeng 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



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recreational water area. Site management reported that the treated wastewater discharge from Yongcheng No.1 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-hour basis. This is confirmed with local EEB representative;
- Yongcheng EEB conducts treated wastewater sampling test on a randomly basis;
- Yongcheng No.1 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.

Specially, 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 (the 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 Xuefeng 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 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	20.83	40	Meet the standards
	SS	mg/L	/	10	Meet the standards
	Total nitrogen	mg/L	10.59	15	Meet the standards
	Total phosphorus	mg/L	0.20	0.5	Meet the standards
	Ammonia nitrogen	mg/L	1.05	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	9.6	10	Meet the standards
	Petro	mg/L	0.09	1	Meet the standards



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Monitoring Type	Elements	Unit	Monitoring Results of wastewater discharge point	Local Standard	Compliance Statue
	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
	Total arsenic	mg/L	0.0005	0.1	Meet the standards
	Alkyl mercury	Methylmercury	NP	ND	Not Allowed
		Ethyl mercury	NP	ND	Not Allowed

*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. The mass loading quotas for wastewater pollutants COD, ammonia nitrogen, total nitrogen and total phosphorus are 182.5 t, 18.25 t, 54.75 t and 1.825 t, respectively. Given the current actual wastewater treatment is below the designed wastewater treatment capacity (8,300 t/d versus 10,000 t/d), and the treated wastewater meet the local standards, Yongcheng No.1 WWTP is well below the allocated pollutant mass loading quotas.

Air Emission

The main sources of air emission for Yongcheng No.1 WWTP is stack air emission of odour from the MBR system and fugitive odour from the other onsite facilities. The stack odour is treated by alkaline washing towers then is discharged through an 8 m height stack. The stack and fugitive odour air emission shall comply with the requirement of Standard for Odour Pollutants Emission (1993). However, the Site did not provide stack air monitoring report for odour emission.

Due to the complaint raised dated in 2018, in order to reduce surrounding odour impacts, the Site subsequently implemented a series of measures in 2018, including installing vibration mitigation device onto the ventilator, modifying on the ventilator room and installing covers on the treatment tank, installing odour collection and treatment facilities.



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Yongcheng No.1 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 11 May 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. According to the Site representative, the fugitive air emission shall be conducted in a half year bases, due to the overall equipment and pipeline maintenance and repair in the end of 2020, the fugitive air emission monitoring will be conducted in March 2021.

Table 3-3: Fugitive Air Emission Monitoring Results

Monitoring date	Location	Pollutant	Unit	Monitoring Results	Local Standard	Compliance Statue
6 May 2020 (08:30-09:30)	Boundary	Odour	—	17	20	Meet the standards
		NH ₃	mg/m ³	0.113	1.5	Meet the standards
		H ₂ S	mg/m ³	0.006	0.06	Meet the standards
	The project area	CH ₄	%	0.00026	1	Meet the standards
6 May 2020 (10:00-11:00)	Boundary	Odour	—	17	20	Meet the standards
		NH ₃	mg/m ³	0.154	1.5	Meet the standards
		H ₂ S	mg/m ³	0.006	0.06	Meet the standards
	The project area	CH ₄	%	0.00025	1	Meet the standards
6 May 2020 (11:30-12:30)	Boundary	Odour	—	18	20	Meet the standards
		NH ₃	mg/m ³	0.145	1.5	Meet the standards
		H ₂ S	mg/m ³	0.007	0.06	Meet the standards
	The project area	CH ₄	%	0.00024	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 main sources of noise are the onsite production facilities such as pumps and ventilator. 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). The nearest sensitive receptor is residential buildings located about 5 m northwest to the Site. In 2018, Mr. Wang who lived in the residential area located about 5 m to the northwest boundary of Yongcheng No.1 WWTP filed a complaint to the local environmental protection department that he was affected by the noise (mainly from the ventilator room) and odour from the WWTP. The Site subsequently implemented a series of measures in 2018, including (1) installation of double glazing window for Mr. Wang; (2) installation of vibration mitigation device onto the ventilator; (3) modification on the ventilator room; (4) installation of odour collection and treatment facilities.



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Yongcheng No.1 WWTP engages a licensed third party to conduct boundary noise emission monitoring in August 2020. The results were shown in **Table 3-4**. The results 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	26 August 2020 Daytime	48.8	60	70	Meet the standards
South boundary		51.1			Meet the standards
West boundary		50.7			Meet the standards
North boundary		51.8			Meet the standards
East boundary	26 August 2020 Night time	43.3	50	70	Meet the standards
South boundary		44.2			Meet the standards
West boundary		44.1			Meet the standards
North boundary		45.6			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 Hazardous Wastes

Chemicals consumed by the Site 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 one aboveground storage tank.
- Polyacrylamide is used in sludge dewatering equipment to improve the sludge dewatering efficiency. The polymeric ferric sulphate is stored in 20kg bags in sludge treatment room.
- 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.
- Alkaline used in the alkaline washing tower are stored in the 20 L containers.
- Limited amount lubricant/machine oil that are used for maintenance purposed, are in 200 litre drums and only purchased upon demand. The waste oil was reused for equipment lubrication, the empty oil containers were recycled by the oil supplier.

All chemicals are stored in onsite aboveground storage tanks or containers. However, the sodium hypochlorite containers were stored in open yard without secondary containment.

Hazardous wastes (HW) such as empty chemical containers, waste lubricant oil and waste liquid are stored in the designated HW warehouse (about 20 m²) with secondary containment, weather-proof and warning sign provisions. The HW are 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:



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- 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 twice per week.
- Based on the Environmental Impact Status Quo Assessment Statement Form, the sludge from the wastewater treatment process 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, equipment operational guidance, confined space, working safety and PPE management, and daily onsite equipment safety inspection records and equipment maintenance records were provided for review.

Fire-fighting equipment installed onsite include fire hydrants, fire extinguishers, emergency lights and evacuation signs. The latest fire drill was conducted on 9 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 Site 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 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 reportedly used or observed onsite during the site visit.

Community Occupational Health and Safety

Given no construction activities were conducted onsite, no population influx was caused at the time of the audit. The health and safety risks exposed to surrounding communities mainly includes noise and



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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. However, the truck used for sludge transportation is not equipped with cover to prevent leakage of the sludge. Based on review of the Capex application form of Yongcheng No.1 WWTP for 2021, RMB 150,000 is budgeted to replace the current truck with a tank truck.

Electricity Supply

Based on the electricity fee provided by the Site, the 2020 electricity consumption (from January to November, as the data for December 2020 was not ready at the time of preparation of this report) for Yongcheng No.1 WWTP is 1,589,178 kwh. The total electricity fee is RMB 1,014,051. 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, no notices of violation issued by the local EEB, regarding the Site's noise and vibration, dust or other environmental aspects were identified. Based on interview with representative of the local EEB, a verbal complaint regarding the Site's odour and noise was received by the local EEB in 2018. For more details, please refer to **Section 3.4.4**.

Ecosystem

Given the treated wastewater can meet 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 Xiatianyuan 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.

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, equipment operational guidance, confined space, working safety and PPE management, and daily onsite equipment safety inspection records and equipment maintenance records were provided for review.



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

- Air emission monitoring has not been conducted at the stack odour emission to verify its compliance status. In addition, the latest fugitive air emission monitoring was conducted in May 2020 which is not comply with the monitoring frequency.
- The sodium hypochlorite containers were stored in open yard without secondary containment, and the sodium hypochlorite AST was not equipped with secondary containment. which are required in compliance with Good International Industry Practice (GIIP).
- Occupational disease hazard assessment and industrial hygiene monitoring have not been conducted, and occupational health check-ups have not been provided to staff who are exposed to occupational disease hazards.
- No regular inspection was conducted for all onsite fire-fighting equipment.
- The truck used for sludge transportation is not equipped with cover to prevent leakage of the sludge. Based on review of the Capex application form of Yongcheng No.1 WWTP for 2021, RMB 150,000 is budgeted to replace the current truck with a tank truck.
- The flooding ERP is not in place and no corresponding drills have been conducted.

3.4 SOCIAL ASSESSMENT

3.4.1 LAND ACQUISITION AND RESETTLEMENT

CCW reached a TOT agreement with the local government for Yongcheng No. 1 WWTP in 2011, however, the Yongcheng No. 1 WWTP was constructed by the local government in 2005, whilst the Site management was not aware of the history of land acquisition and resettlement for the site land. The Site locates at Middle section of Dongfang Avenue, Dongcheng District, occupying a total land area of 7,321m² (11 mu²). According to the Site management, since the operation of the WWTP is in cooperation with the local government, the site land is free for CCW. The owner of the site land is the local government, whilst CCW has the right to operate Yongcheng No.1 WWTP. On 25 December 2012, the Construction Land-use Certificate of the site area was issued, entitling Yongcheng Urban and Rural Construction Service Centre. 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.1 WWTP has not received any complaints related to land acquisition and resettlement.

Key Findings and Issues on Resettlement:

- No documents (such as asset inventory, compensation agreement, etc.) regarding the land use for the Site are held by Yongcheng No.1 WWTP. 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 documents regarding benefits to stakeholders i.e. affected communities are held by the Site, which is a non-conformance with ADB SR2.

3.4.2 INDIGENOUS PEOPLE

The Site is located in Dongcheng District of Yongcheng City. 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.

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



3.4.3 STAKEHOLDER ENGAGEMENT AND CONSULTATION

It is identified no stakeholder analysis has been conducted for Yongcheng No.1 WWTP and no document records regarding stakeholder engagement were available for review.

According to interview with CCW's corporate, 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 Dongcheng District EEB and Emergency Management Bureau, (b) local community (wastewater discharge unit / individual), including the nearest residential building to the northwest boundary of Site and several shops to the southwest boundary of Site, etc., (c) local residents affected by land acquisition. The Yongcheng Regional Office 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 status quo EIA report was developed for Yongcheng No.1 WWTP in October 2016. A total of 20 local residents were consulted through questionnaire survey while preparing the EIA Report. Among the interviewees, 93% of the respondents were satisfied with the environmental protection work of the Site, and the remaining 7% were quite satisfied. No interviewees expressed dissatisfaction.

Key Issues and Findings on Stakeholder Engagement:

- There is no formalized stakeholder engagement procedure established for Yongcheng No.1 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.

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 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. Reportedly, one complaint from the local community residents has occurred so far. In 2018, Mr. Wang (about 60 years old) who lived in the residential area located about 5 m to the northwest boundary of Yongcheng No.1 WWTP filed a complaint to the local environmental protection department that he was affected by the noise (mainly from the ventilator room) and odour from the WWTP. After receiving the complaint, the environmental protection department conducted onsite inspections and discussed solutions with the affected person (Mr. Wang), as well as the WWTP. During this communication process, Mr. Wang established communication with the site management, and the environmental protection department conducted environmental monitoring covering boundary noise and boundary odour at Yongcheng No.1 WWTP and the results showed compliance. Even so, the Site still subsequently implemented a series of measures in 2018, including (1) installation of double glazing window for Mr. Wang; (2) installation of vibration mitigation device onto the ventilator; (3) modification on the ventilator room; (4) installation of odour collection and treatment facilities. Reportedly Mr. Wang was satisfied with these measures and has not filed any complaints since then. No other grievance has been received to date reportedly and no written records were available for review during onsite audit.



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Key social related findings and issues were summarized as follow:

- 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, even though there was one complaint that took place in 2018, which is a non-conformance against ADB safeguards.

3.4.5 LABOUR AND SOCIAL PROTECTION

At the time of onsite visit, there were 15 employees directly hired by the Site, including one factory manager, one technician, six operational staff, two maintenance staff, one laboratory staff, one sludge staff, one administrator, one chef and one cleaner, which the administrator and laboratory belong to the Yongcheng Regional Office. All the 15 employees are formal contracted workers and no temporary, dispatching and outsourcing workers were identified at the Site. All the 15 employees are Han Chinese, 6 out of 15 are female and the rest 10 employees are male.

Reportedly, the workers except for the operating workers are typically working five days with 40 hours in one shift (8:00~12:00 and 14:00~18:00) 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 was 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 4 out of 9 workers (run in one shift) is 60-64 hours.

No underage or juvenile workers were identified onsite. No sexual harassment or discrimination was identified during onsite interview. The workers' union was established by Yongcheng No.1 WWTP and all 15 employees of the Site are members of the workers' union.

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 was provided for review. This is a non-compliance against PRC regulations.
- The monthly overtime hours of 4 out of 9 workers (run in one shift) is 60-64 hours, which exceeded the PRC regulatory requirement (no more than 36 hours per month) in September 2020.

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, 6 out of the 15 workers at the Site companies are female, including one operational staff, one laboratory staff, one administrator, one chef and one cleaner. The males are skilled workers primarily focusing on engineering, whilst most females are 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



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

Table 4-1: Yongcheng No.1 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.1 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	EHS Permit	Fire-fighting design registration or fire-fighting CAI approval has not been obtained.	The Site should consult with the local housing and construction authority in this regard and take action accordingly.	Medium	Prior to disbursement	Communication records of consultation with the local housing and construction authority on next steps



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No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
						6 months after disbursement	Fire-fighting design registration and fire-fighting CAI approvals
3	ADB SPS 1	EHS Permit	Yongcheng No 1 WWTP installed MBR system, two acid and alkaline washing towers for odour treatment during the technical transformation in 2017 and 2018. An EIA document has not been prepared for this upgrade.	It is recommended that Yongcheng No.1 WWTP should consult with the Yongcheng EEB with regard to the upgrade and take action accordingly.	Medium	Prior to disbursement 3 months after disbursement	Communication records of consultation with EEB on next steps Environmental approval, or written consent from Yongcheng EEB
4	ADB SPS 1	EHS Permit	A Work Safety Assessment has not been conducted	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
5	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.	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
6	ADB SPS 1	Emergency Response	Safety Production ERP and the corresponding registration record have not been conducted/obtained. 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>
7	ADB SPS 1	Public Consultation	Compared to an environmental assessment required by ADB's SPS the public consultation and alternative analysis are not included in the project EIA document.	The Site should ensure its ESMS covers gap analysis requirements of existing domestic EIA documents against the ADB's SPS, for instance, procedures for public consultation and alternative analysis.	Medium	[same time as ESMS]	Gap analysis requirements in the Subsidiary level ESMS
8	ADB SPS 1	Pollution Prevention	The Site did not provide air emission monitoring for the stack odour emission.	Upon resolving Item #3 above, the Site should engage a licensed third party to conduct periodic stack air	Medium	Prior to disbursement	Contract/agreement with licensed third party



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No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
		and Abatement	In addition, the latest fugitive air emission monitoring was conducted in May 2020 which is not comply with the monitoring frequency.	emission monitoring to ensure the compliance status. In addition, the Site should engage a licensed third party to conduct fugitive air emission in recent month.		[same time as ESMS] 3 months after disbursement	Environmental Monitoring procedures as part of the Subsidiary level ESMS Stack and fugitive monitoring reports
9	ADB SPS 1	Chemical Management	The sodium hypochlorite containers were stored in open yard without secondary containment, and the sodium hypochlorite AST was not equipped with secondary containment.	The Site should establish designated warehouse with secondary containments for chemical containers.	Medium	Prior to disbursement	Onsite photos and corresponding records
11	ADB SPS 1	Health and Safety	No regular inspection was conducted for all onsite fire-fighting equipment.	The Site should strengthen fire-fighting equipment inspection in regular basis.	Low	[same time as ESMS] 3 months after disbursement	Procedure and schedule of inspection as part of the subsidiary level ESMS Inspection records
12	ADB SPS 1	Waste Management	The truck used for sludge transportation is not equipped with cover to prevent leakage of the sludge. Based on review of the Capex application form, RMB	It is recommended that the Site should implement the plan to replace the truck.	Medium	Prior to disbursement	Replacement plan with information such as number of trucks, capacity, type, date/timing of use/deployment



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No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
			150,000 is budgeted to replace the current truck with a tank truck in 2021.			9 months after disbursement	Photos and corresponding records of trucks with cover.
12	ADB SPS 2	Involuntary Resettlement	No documents (such as asset inventory, compensation agreement, etc.) regarding Yongcheng No.1 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
13	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)
14	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
15	Social Protection	Labour and Social Protection	The Site adopts the comprehensive working hour system for operating workers, however, no approval from the	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



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No.	Applicable E&S Standards	Theme	Description of Issue(s)	Suggested Corrective Action(s)	Risk Level	Suggested Time Frame	Completion Indicator(s)
			Labour Bureau were provided for review.				Comprehensive Working Hour
16	Social Protection	Labour and Social Protection	The monthly overtime hours of 4 out of 9 workers (run in one shift) is 60-64 hours, which exceeded the PRC regulatory requirement (no more than 36 hours per month) in September 2020.	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.1, No.2 and No.3 TOT WWTPs issued by Housing and Urban-Rural Development Bureau of Yongcheng City dated 11 August 2014
2	ECAI approval for the initial development issued by Yongcheng City EEB on 18 November 2007
3	Environmental Impact Status Quo Assessment Statement Form issued by Henan Jinhuan Environmental Impact Assessment Co., Ltd. in October 2016
4	Registration Notice of Environmental Impact Status Quo Assessment Statement Form issued by Yongcheng City EEB on 8 November 2016
5	PDP issued by Yongcheng City EEB, valid from 28 June 2019 to 27 June 2022
6	Sudden Environmental Emergency plan and its approval issued by local EEB dated on December 2020
7	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
8	Sludge Disposal Contract signed with Yongcheng Ecology Technology Co., Ltd. dated on 1 January 2020
9	Sampled sludge transfer manifests
10	Sample environmental monitoring reports (regarding treated wastewater, fugitive air, boundary noise and sludge) dated 2020
11	One valid Electrician Certificate for High-voltage electrical operation
12	Sampled routine checkup reports for staffs
13	EHS procedures and safety training record
14	ISO 9001 certification, valid from 6 November 2020 to 13 October 2023
15	Construction Land Use Certificate issued by the local Land and Resources Bureau on 25 December 2012
16	One labour contract sample
17	One physical examination report sample
18	Treated Wastewater Reclaimed Agreement signed with Yongcheng Jincheng Development Investment Co., Ltd.
19	Payroll records in September 2020



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Annex B: STAKEHOLDERS ENGAGED DURING THE E&S AUDIT

ANNEX B: STAKEHOLDERS ENGAGED DURING THE E&S AUDIT

Name	Category	Department	Title
Mr. Feng Jianqiang	Internal	Yongcheng Regional Office	Regional Manager
Mr. Xie Junwei	Internal	Yongcheng Regional Office	Deputy Regional Manager
Mr. Wang Qi	Internal	Management Team	General Manager
Ms. Zhao Yixuan	Internal	Yongcheng Regional Office	Human Resource Manager
Mr. Wang	External	Environmental Inspection Team of EEB	Director

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Annex C: PHOTO LOG

ANNEX C: PHOTO LOG

Photo Log – Yongcheng No.1 WWTP



Photo 1 Entrance of the Site

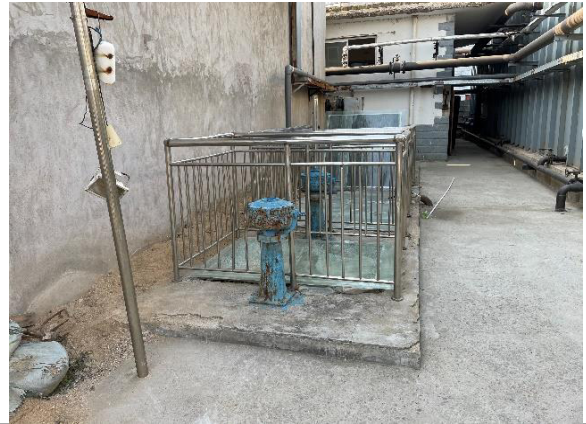


Photo 2 Wastewater Inlet



Photo 3 MBR Tank

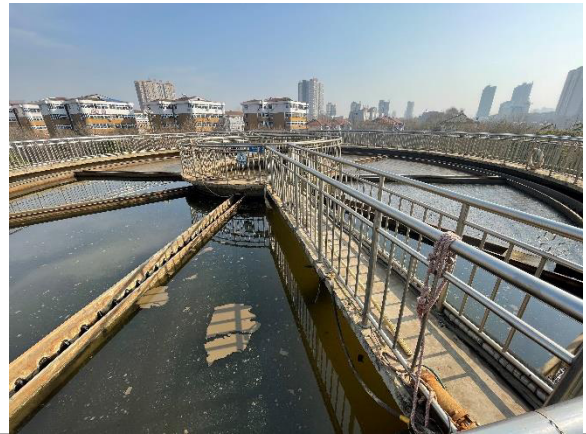


Photo 4 Secondary Sedimentation Tank



Photo 5 Stack Odour Treatment Facility



Photo 6 Sludge Treatment Room

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Annex C: PHOTO LOG

Photo Log – Yongcheng No.1 WWTP



Photo 7 Chemical Storage Area



Photo 8 Chemical Storage Area



Photo 9 Wastewater Outlet



Photo 10 Online Treated Wastewater Monitoring Device



Photo 11 Online Treated Wastewater Monitoring Room



Photo 12 HW Warehouse

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Annex C: PHOTO LOG

Photo Log – Yongcheng No.1 WWTP



Photo 13 Xuefeng River is located immediately to the northeast of the Site



Photo 14 Residential buildings is located to the northwest of the Site