

Environmental Monitoring Report

Project Number: 52026-001
Semi-annual Report (January–June 2022)
July 2022

People's Republic of China: Anhui Huangshan Xin'an River Ecological Protection and Green Development Project

Prepared by Huangshan Project Management Office for the Huangshan Municipal Government and the Asian Development Bank.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 30 June 2022)

Currency unit	–	Yuan (CNY)
CNY1. 00	=	€ 0. 1384
€1. 00	=	CNY 7.2229

ACRONYMS AND ABBREVIATIONS

ADB	-	Asian Development Bank
CSC	-	Construction Supervision Company
EA	-	Executing Agency
EEB	-	Ecology and Environment Bureau
EHS	-	Environmental, Health and Safety
EIA	-	Environment Impact Assessment
EMA	-	External Monitoring Agency
EMP	-	Environmental Management Plan
EMR	-	Environmental Monitoring Report
ESMS	-	Environmental and Social Management System
GAP	-	Gender Action Plan
GIF	-	Green Investment Fund
GRM	-	Grievance Redress Mechanism
HMG	-	Huangshan Municipal Government
HPMO	-	Huangshan Municipal Project Management Office
HTIC	-	Huangshan Trust and Investment Corporation
HXIC	-	Huangshan Xintou Investment Corporation
KfW	-	Kreditanstalt für Wiederaufbau
IA	-	Implementing Agency
IEE	-	Initial Environmental Examination
LIEC	-	Loan Implementation Environment Consultant
MIS	-	Management Information System
PAM	-	Project Administration Manual
PMO	-	Project Management Office
PRC	-	People's Republic of China
RP	-	Resettlement Plan
SME	-	Small and medium-sized enterprise
SPS	-	Safeguard Policy Statement
TA	-	Technical Assistance
WWTS	-	Wastewater Treatment Station
YREB	-	Yangtze River Economic Belt

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SUMMARY PROJECT INFORMATION

GENERAL INFORMATION	
Project title:	Anhui Huangshan Xin'an River Ecological Protection and Green Development Project
Date of project effectiveness:	25 September 2020
Executing agency:	Huangshan Municipal Government
Implementing agency:	Huangshan District Government Huizhou District Government Tunxi District Government Xiuning County Government She County Government Yi County Government Qimen County Government Huangshan Xintou Investment Corporation and their respective Project Implementing Units
PMO (name of agency):	Huangshan municipal project management office
PMO Environment Officer (name, email):	Mr. Yin Quan, Tel: 0559-2355872, Email: hsshxmb@126. com
Loan implementation consultant / firm:	ESD
LIEC:	Mr. Zhang Defa, ESD
ADB web link to EMP:	https://www.adb.org/projects/documents/prc-52026-001-pam
Domestic web link to EMP:	http://fgw.huangshan.gov.cn/tzgg/8879220.html
ENVIRONMENTAL SAFEGUARD MONITORING	
ADB environment safeguard category:	B
Environmental report prepared as per ADB requirements for this category:	Initial Environmental Examination
Domestic safeguard report:	Project EIA
Quarterly period covered by this report:	1 January to 30 June 2022
# EMRs to date including this report:	4
Agency/person responsible for internal environmental monitoring:	Seven district or county IA and Construction Supervision Company

Agency/person responsible for external environment monitoring:	Huangshan Angel Environmental Monitoring Co. , Ltd
Agency/person responsible for EMP implementation and progress monitoring:	Mr. Zhang Defa, LIEC from ESD
Agency/person responsible for independent compliance monitoring:	This is environment safeguard category B project. No independent compliance monitoring for this project is required
Overall status of environmental safeguards:	On track

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EXECUTIVE SUMMARY

1. **Overview.** This semi-annual report presents the status of compliance with the environment management plan (EMP) during the project implementation covering the reporting period from 1 January to 30 June 2022.
2. **Institutional setup.** The environment persons of the project agencies have been appointed. For this reporting period, PMO, Huangshan Trust Investment Group/Huangshan Trust Investment Corporation (hereinafter referred to as HTIC/HXIC) respectively designated qualified environment person to be responsible for coordinating the implementation of safeguard and environmental management requirements, and there has been no changes or adjustment in environment person in-charge compared from previous reporting period. Each of the contractors, the construction supervision companies have assigned qualified environmental personnel to coordinate the implementation of environmental management, monitoring and reporting requirements.
3. **Contractual arrangement.** HPMO has distributed the EMP to respective County PMOs, IAs and design institutes. Relevant environmental requirements have been included in the bidding documents, civil works contracts with contractors and supervision contracts with construction supervision companies. The contractual arrangement is fully in compliance with the EMP.
4. **Implementation of mitigation measures.** The contractors have prepared site environment, occupational health, and safety management plans. These site management plans have been properly implemented by contractors. During the reporting period, the mitigation measures before/during/after construction are well implemented based on EMP and domestic environmental requirements, which were strictly monitored and complied with by PMOs, with the assistance of consultants. No environmental pollution, health and safety accident and/or incident was recorded during this reporting period. The implementation of mitigation measures are in compliance with the EMP requirements.
5. **Implementation of ESMS.** The first FI investment project was carried out smoothly, and the investment project activities were implemented in strict accordance with the requirements of ESMS. During the process, HTIC/HXIC took excellent management and monitoring measures, and submitted a semi-annual ESMS implementation progress report as required (see Appendix 4). Within this reporting period, the selection, environmental and social due diligence of the technology research and development and industrialization projects of the investment project under the new green investment fund - Huangshan Tiandu Environmental Technology Development Co., Ltd. has been prepared. This is the second Equity Investment Project under GIF. The REA and worksheets have been submitted and reviewed. ADB's comments were provided and revised due diligence / environmental assessment to be submitted by 3rd week August 2022.
6. **Internal monitoring** (i) Regular site inspections have been performed by the CSCs on a daily basis; (ii) Regular site inspections have been performed by the IAs Environment Officer with assistance of CSCs on a weekly basis. The internal monitoring results have been prepared by the CSCs and submitted to IAs for review on a monthly basis (ii) random site inspections performed by HPMO and CPMOs. The consulting company assists in carrying out on-site EHS supervision in daily management, and introduces ADB's environmental management policies and EMP to the construction participants. During the reporting period, various environmental, occupational health and safety problems observed and corrective actions were implemented.

7. **External monitoring** was carried out as per EMP requirement, and the results comply with the relevant standards defined in the IEE. Huangshan Angel Environmental Monitoring Co., Ltd. was requested to conduct the onsite environment monitoring in the first half of 2022 and the results were issued in June 2022. The monitoring results in construction period comply with the EMP and domestic environmental protection requirements. During the reporting period, the PMOs, the IAs and consultants visited the project sites regularly and found that EMP was effectively implemented without significant environmental impacts. The noise environment and ambient air quality during construction and operation meet the requirements of domestic environmental protection standards stipulated in IEE and EMP. . Monitoring activities for the reporting period will be carried out in accordance with the EMP monitoring plan.

8. **Public participation and Grievance Redress Mechanism (GRM)** have been implemented. The public participation activities have been implemented before/during construction by IAs, design institutes, and contractors. In addition, GRM has been established and implemented as required and no complaints were received up to the end of June 2022.

9. **Training and capacity-building** plan have been carried out effectively. During the reporting period, with the assistance of consultants, the Municipal PMO organized the whole-process management training of the project involving Environmental safeguards on 11 March 2022. The HPMO also organized 6 times on-site special inspections on environment, safety and health protection. During these inspections, the consultants provided trainings on implementation of EMP. Seminar and training on ESMS implementation for project managers was organized by HTIC on 8 March 2022. The requirements of environmental management are included in the training of Supervision companies in construction site management.

10. **Compliance with covenants of Loan Agreement (LA).** The implementation activities of the EMP complied with the covenants of environmental safeguard clauses of LA.

11. **Follow-up of issues documented in MOU.** Actions proposed in the MOU of ADB and KfW review mission in December 2021 have been completed as required. The environmental measures proposed in the MOU including i) the PMO will submit the revised EMR before December 30, 2021; ii) submit the third semi-annual environmental monitoring report, which covers the period from July 1 to December 31, 2021 ;iii) The PMO, implementing agency, supervision company and LIEC will supervise the implementation of the contractor's health & safety plan, and report the implementation in the project progress report and environmental monitoring report; iv) Submit the second green development fund investment proposal, are completed as required.

12. **Lessons learned and next steps.** Lessons learned during the reporting period includes: i) The original domestic investment activities of the implementing agency mainly conducts due diligence on the financial, business and legal compliance of the sub-projects. By incorporating ESMS into investment business procedures and corresponding personnel training, priority in new domestic investment activities will also be given to project screening against ESMS, which improves the ability to manage and mitigate associated environmental and social risks in investment activities. Next steps includes: i) PMO with assistance by project implementation consultants will conduct centralized training and in-work environment management training as planned, and maintain regular communication with potential project-affected stakeholders. Monitoring activities for the next period (1 July to 31 December 2022) will be carried out in accordance with the EMP monitoring plan and the next semi-annual environmental monitoring reports will be submitted as planned. ii) HTIC plan to complete the investment activities of 2 sub-projects in the second half of the year, continue to track the implementation of ESMS.

13. **Next steps include:**

- updating domestic EIA on 30 September 2022 and update IEE and EMP on 15 November 2022 covering Project adjustments as discussed during the August 2022 ADB mission;
- carry out the required public consultation during preparation of the updated EIA/EMP;
- carry out information disclosure and dissemination;
- update ESMS and prepare subproject / activity specific REA / worksheets for new type of subproject using GIF fund by August 2022. This includes strengthening through training of staff of the implementing agency and the staff of sub-projects, to apply ESMS steps for screening, identification, and post-investment management of subsequent sub-projects.
- submit next EMR covering the period of July 2022 to December 2022 by 31 January 2023.

I. INTRODUCTION

A. Purpose of report

14. The purpose of this environmental monitoring report (EMR) is to describe and assess progress for implementation of the environmental management plan (EMP) for the Anhui Huangshan Xin'an River ecological protection and green development project, covering the reporting period from 1 January 2022 to 30 June 2022. This EMR is submitted in compliance with the Safeguard Policy Statement (SPS) of the Asian Development Bank (ADB) and the loan agreement between ADB and the project executing agency.

15. This is the 4th EMR for the project. It covers the bidding and construction phases of the project. The report describes: (i) project readiness with respect to fulfilling environmental requirements (ii) implementation of mitigation measures; (iii) monitoring activities; (iv) public consultations and including grievance redress; (v) training and capacity building; (vi) reporting; and (vii) an overall assessment of key achievements, challenges, issues, corrective actions, and lessons learned, during the reporting period.

B. Project outcomes and outputs

16. The project is aligned with the following impact: sustainable economic growth and environmental improvement in the Yangtze River Economic Belt(YREB) achieved. The project will have the following outcome: economic and environmental conditions in the upstream of Xin'an River improved.

17. The project is expected to produce four outputs, namely,

- **Output 1: Urban point source pollution management facilities upgraded.** This output will include (i) sewage and storm water management through upgrading the existing centralized sewerage systems in Huangshan's central district and four county Urban Areas; and (ii) river rehabilitation and flood control through river embankment.
- **Output 2: Rural point and non-point source pollution control facilities and systems enhanced.** Innovative approaches supporting green agricultural and ecological practices will be adopted. This includes point and non-point source pollution controls through (i) decentralized sewage and on-site treatment system and environment management in rural villages; (ii) changing fertilizer application practices, including the improved use of organic fertilizer and biological pesticides with low toxicity at agricultural and forestry sites; and (iii) improvement of pine forest conditions through disease monitoring and prevention.
- **Output 3: Green financing mechanisms piloted.** This includes the establishment, piloting and operationalization of a (i) Green Incentive Fund to encourage farmers to adopt sustainable farm management practices to address agricultural non-point source pollution in Huangshan; and (ii) green investment fund to invest in SMEs involved in green business.
- **Output 4: Capacity for ecological system and project management strengthened.** This will enhance HMG's capacity in water resources and flood forecasting management in the Xin'an River Basin. This includes (i) establishing environmental, health, and safety management systems to strengthen its industrial and urban environmental monitoring and emergency response capacity; (ii) integrated smart¹⁰ MIS; (iii) studies on Huangshan city green development strategy, eco-

compensation mechanisms, rural wastewater discharge standards, and green farming certification; and (iv) HMG implementation support and capacity development.

C. Project implementation progress

18. The date of project effectiveness is 25 September 2020. As of 30 June 2022, procurement of 26 civil construction contracts were completed and initiated. Eight of the contracts have been completed or the civil works have been completed; the construction of fifteen (15) contracts is being conducted; three contracts are still in the construction preparation stage. Implementation progress for subcomponents is summarized in Table 1.

Table 1: Implementation Status of Civil Work Contracts, as of 30 June 2022

No.	Contract Name	Contract Content	Contract Status	Date of Constr. Started	Contractor	Supervisor	Implementation Description
1	Works-HS-1	Xinhua Village Green Agriculture Demonstration Project in Huangshan District	Under Construction	2021/6	Fujian Yuchen Construction Co., Ltd	Chuangda Consult Ltd	Approximately 55% of works completed
2	Works-HS-2	Sewage and Stormwater Sewer Upgrade Project in Huangshan District	Under Construction	2021/6	Jiangsu Shuigong Construction Co., Ltd	Anhui Chizhou Jiuhua Engineering Consulting Co., Ltd.	Approximately 75% of works completed
3	Works-HS-3	Xinhua Village Environment Improvement Project in Huangshan District	Under Construction	2022/5	Zhongdi Yingang Construction Group Co. LTD	Zhongxin Chuangda Consulting Co. LTD	About 15% of the project is completed
4	Works-HS-4	Caocun River Rehabilitation Project in Huangshan District	Completed	2020/12	Zhejiang Jiuhe Environmental Co., Ltd	Hubei Three Gorges Construction Project Management Co. LTD	Engineering entity completed
5	Works-HZ-1	Sewage and Stormwater Sewer Upgrade Project in Huizhou District-1	Completed	2021/3	Shanhu Construction Group Co., Ltd	Anhui Hengzheng Construction Project Management Co. LTD	Construction Completed
6	Works-HZ-2	Village Environment Improvement Project in Huizhou District	Completed	2021/3	Kunpeng Construction Group Co., Ltd	Jiangsu Yutian Engineering Consulting Group	Construction Completed

No.	Contract Name	Contract Content	Contract Status	Date of Constr. Started	Contractor	Supervisor	Implementation Description
7	Works-QM-1	Sewage and Stormwater Sewer Upgrade Project in Qimen County-1	Under Construction	2021/9	Anhui Xinjian Holding Group	Anhui Hengxin Construction Engineering Management Co. , Ltd	Approximately 65% of works completed
8	Works-QM-2	Sewage and Stormwater Sewer Upgrade Project in Qimen County-2	Under Construction	2022/2	Shanhu Construction Group Co., Ltd	Anhui Hengxin Construction Engineering Management Co. , Ltd	Approximately 10% of works completed.
9	Works-SX-1	Sewage and Stormwater Sewer Upgrade Project in She County-1	Under Construction	2021/4	China Petroleum Pipeline Engineering Co., Ltd	Jianjing Investment Consulting Co., LTD	Approximately 65% of works completed
10	Works-SX-2	Sewage and Stormwater Sewer Upgrade Project in She County-2	Under Construction	2022/6	Tianjin Pipeline Engineering Group Co., Ltd.		Application for construction permit.
11	Works-SX-5	Xitou Village Environment Improvement Project in She County-2	Completed	2021/6	Xingrun Construction Co., Ltd		Engineering entity completed
12	Works-SX-6	Xitou Village Environment Improvement Project in She County-1	Under Construction	2021/6	Tianjin Pipeline Engineering Group Co., Ltd		Approximately 75% of works completed
13	Works-SX-7	Environmental Infrastructure Improvement along Xin'an River in She County	Under Construction	2022/6	Shanhu Construction Group Co., Ltd		Application for construction permit.

No.	Contract Name	Contract Content	Contract Status	Date of Constr. Started	Contractor	Supervisor	Implementation Description
14	Works-SX-8	Xi'an River Green Agriculture Demonstration Project in She County	Under Construction	2021/12	Gorden Road Group & Zhejiang Jiuhe Environment Co.,Ltd		Approximately 45% of works completed
15	Works-SX-9	Xitou and Yancun Water Supply Network Construction	Under Construction	2022/6	Tianjin Pipeline Engineering Group Co., Ltd.		Application for construction permit.
16	Works-TX-1	Village Environment Improvement Project in Tunxi District-1	Completed	2020/9	Hangzhou Xiaoshan Landscape Group Co., Ltd	Anhui Hengxin Construction Engineering Management Co. , Ltd	Construction Completed
17	Works-TX-2	Village Environment Improvement Project in Tunxi District-2	Completed	2021/1	Kunpeng Construction Group Co., Ltd		Engineering entity completed
18	Works-TX-3	Village Environment Improvement Project in Tunxi District-3	Completed	2020/12	Kunpeng Construction Group Co., Ltd		Construction Completed
19	Works-XN-1	Sewage and Stormwater Sewer Upgrade Project in Xiuning County - 1	Under Construction	2020/12	Anhui Xinda Construction & Installation Co. Ltd	Anhui Hongji Construction Project Management Co. , Ltd	Approximately 90% of works completed
20	Works-XN-2	Sewage and Stormwater Sewer Upgrade Project in Xiuning County - 2	Under Construction	2021/6	Tiangong Fangyuan Construction Group Co. Ltd	Hebei Sanyuan Construction Supervision Co. Ltd	Approximately 70% of works completed

No.	Contract Name	Contract Content	Contract Status	Date of Constr. Started	Contractor	Supervisor	Implementation Description
21	Works-XN-3	Village Environment Improvement Project in Xiuning County-Shangshan 1	Under Construction	2022/4	Centennial Construction Group Co., Ltd.		Approximately 30% of works completed
22	Works-XN-4	Village Environment Improvement Project in Xiuning County-Shangshan 2	Under Construction	2022/4	Centennial Construction Group Co., Ltd.		Approximately 10% of works completed
23	Works-XN-5	Village Environment Improvement Project in Xiuning County-Shangshan 3	Under Construction	2022/3	Tianjin Pipeline Engineering Group Co., Ltd.		Approximately 10% of works completed
24	Works-XN-6	Village Environment Improvement Project in Xiuning County-Xikou	Under Construction	2021/12	Zhejiang Jiuhe Environment Co.,Ltd & Anhui Changcheng Construction Engineering Co., Ltd		Approximately 30% of works completed
25	Works-XN-7	Village Environment Improvement Project in Xiuning County- Wucheng	Under Construction	2021/12	Tonglin Shizheng Construction Co., Ltd		Approximately 35% of works completed
26	Works-YX-1	Sewage and Stormwater Sewer Upgrade Project in Yi County, and Zhang River Rehabilitation Project in Yi County	Completed	2020/12	Anhui Xinjian Holding Group	Jiangsu Yutian Engineering Consulting Group	Engineering entity completed

19. In addition, the project is planned to be adjusted in the mid-term to add 12 civil work contracts. Currently, the feasibility study report and environmental and social impact assessment for these activities are still in preparation, and construction is expected to start in 2023. Details see Appendix 6 provides the list of proposed sub-projects.

20. Green Investment Fund (GIF) implementation progress is as follows:

- Agricultural socialization service for the first investment project. Yixian Younong Ecological Agriculture Co., Ltd. (hereinafter referred to as "Younong Company") provided 7 agricultural cooperatives and 7 family farms with seedling raising, mechanical ploughing, mechanical transplanting and transplanting, application of basal fertilizer, control of pests and weeds, harvesting (rapeseed, corn) services.
- Innovative technologies were used, and research results were applied in the implementation process. i) Younong has applied the technical achievements published by the China Rice Research Institute in the journal Nature to demonstrate intelligent and precise seedling raising, and has achieved high-yield and high-efficiency hybrid rice planting. ii) Cooperate with Nanjing Agricultural University to conduct technology research and development on "Key Technology Research and Industrial Application of Straw Biomass Carbon-Based Product Production". iii) Through the establishment of a technical service center and digital platform, the project provides technical solutions for rice production and convenient, low-cost, and comprehensive social services for local cooperatives and family farms where the company is located.
- During the reporting period, through preliminary visits, 2 sub-projects that met the project selection and ESMS requirements of Huangshan Green Investment Fund were screened, and the due diligence and ESMS assessment of the second sub-project (Huangshan Tiandu Environmental Technology Development Co., Ltd. - technology research and development and industrialization project) were completed. The REA and worksheets has been updated to reflect the new subproject activity (i.e., manufacturing of bag dust collector and filter bag, desulfurization and denitrification equipment and low temperature denitrification catalyst consumables, VOCs management integrated machine and molecular sieve runner consumables and other equipment production). The environmental due diligence / assessment has been updated based on the updated REA and worksheets and submitted to ADB for review, and the report is being revised based on ADB's feedback.

II. SUMMARY OF THE PROJECT ENVIRONMENTAL MANAGEMENT PLAN (EMP)

21. The project environmental management plan (EMP) is the primary reference document for the government and ADB for all environment-related mitigation, monitoring, reporting, and training activities for the project. Timely and effective implementation of the EMP is a key condition of the loan agreement between the government and ADB. The EMP is to be implemented in all phases of the project: design, pre-construction, construction, and operation. The EMP updated in November 2020 is to ensure project compliance with PRC environmental laws and ADB's Safeguard Policy Statement (SPS 2009).

22. The EMP describes: the roles and responsibilities of all project agencies to implement this EMP; anticipated impacts and mitigation measures; inspection, monitoring, and reporting arrangements; training and capacity building; grievance redress mechanism (GRM); and public consultation and awareness raising.

23. Project institutional arrangements (Section B of the EMP). This section of the EMP describes the roles and responsibilities of relevant agencies for EMP implementation. For this project, the principal person responsible for EMP coordination is the PMO Environment Officer (Yin Quan, HPMO), acting on behalf of the HPMO. The implementing agencies, contractors, and construction supervision companies are responsible for on-site implementation of the EMP. Guidance and supervision to the PMO Environment Officer is given by the Loan Implementation Environment Consultant (Mr. Zhang Defa, ESD).

24. Potential impacts and mitigation (Section C of the EMP). This section of the EMP summarizes the potential impacts of the subprojects in the three districts and four counties during project preparation, design, construction and operation, and proposed mitigation measures. The effectiveness of these measures will be evaluated based on environmental inspections and monitoring to determine whether they should be continued, improved or adjusted.

25. Training (Section E of the EMP). This section of the EMP describes the training program for environmental safeguards, including the recipients and frequency of training.

26. Grievance Redress Mechanism (Section F of the EMP). This section of the EMP identifies the mechanisms to receive and manage any public environmental and/or social issues which may arise due to the project.

27. Environmental monitoring program (Section D of the EMP). Three types of project monitoring will be conducted under the EMP: (i) internal monitoring– to be conducted by the seven IAs and the CSCs; (ii) external monitoring – of air, water and noise standards – to be conducted by the certificated EMA in each project county/district; and (iii) compliance monitoring – to be conducted by both the EMA and LIEC, to ensure the EMP is being implemented.

28. Public Consultation (Section G of the EMP). During construction and operation, the project will continue to seek public consultation and raise awareness of project activities, especially those may impact the public. The public consultation plan includes public participation in evaluating environmental benefits and impacts.

29. Reporting. The reporting requirements for the project, including the responsible agencies and reporting frequency was described in EMP.

III. IMPLEMENTATION STATUS OF ENVIRONMENTAL MANAGEMENT DURING THE REPORTING PERIOD

30. The chapter provides an overview of the implementation progress of the EMP during the reporting period.

A. Institutional setup

31. During the reporting period, The PMO and Huangshan Trust Investment Group/Huangshan Trust Investment Corporation (hereinafter referred to as HTIC/HXIC) respectively designated qualified environmental personnel to be responsible for coordinating the implementation of environmental management requirements, and there has been no changes or new appointments in environmental personnel compared to the previous reporting period. The HTIC has appointed project environmental management officers as required by ESMS, and there are 3 qualified environmental officers (~~2 environmental major~~) to support the environmental management of the GIF. The contractor, the construction supervision company and the consultant designated qualified environmental personnel to coordinate the implementation of the environmental management requirements in accordance with the requirements of ADB. An environmental specialist from the consulting company has been mobilized since November 2020 to support activities related to environmental management. The work management, coordination and communication in EHS of project are generally satisfactory.

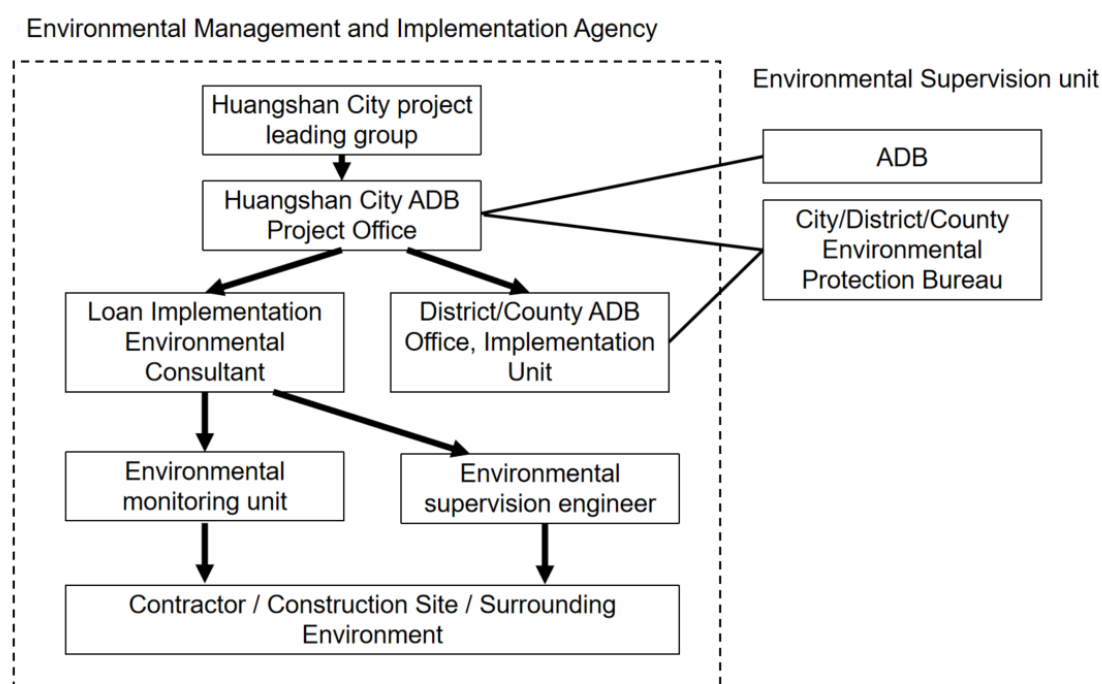


Figure 1 Environmental Management Organization Chart

32. Table 2-1 and Table 2-2 summarizes the project specified environmental management personnel contacts.

Table 2-1: Information of dedicated environmental management correspondents

Cities and counties	Institutions	Name of institution	Environmental Officer	Email
Huangshan City	Huangshan PMO	Huangshan Municipalities	Yin Quan	hssxmb@126.com
Huangshan Mountain	Huangshan District PMO (Implementation Agency)	Huangshan District Government	Qin Ling	122066540@qq.com
Huizhou District	Huizhou District PMO(Implementation Agency)	Huizhou District Government	Zheng Wenjing	405550201@qq.com
Tunxi District	Tunxi District PMO (Implementation Agency)	Tunxi District Government	Cheng Shichang	852428591@qq.com
Xiuning County	Xiuning County PMO (Implementation Agency)	Xiuning County Government	Chen Weisong	512368047@qq.com
She County	She County PMO (Implementation Agency)	She County Government	Fang Xiaohui	hssxshb@126.com
Yi County	Yi County PMO (Implementation Agency)	Yi County Government	Wang Xin	392297684@qq.com
Qimen County	Qimen County PMO (Implementation Agency)	Qimen County Government	Fang Sheng	291536803@qq.com
Huangshan City	Implementing Agency	Municipal Forestry Bureau	Xu Rui	hsssfz@163.com
Huangshan City	Implementing Agency	Huangshan Trust Investment Company	Fan Xianguang	86691776@qq.com
Huangshan City	Implementing Agency	Huangshan Trust Investment Company	Liu Xinyue	86691776@qq.com
Huangshan City	Implementing Agency	Huangshan Trust Investment Company	Chen Junqi	86691776@qq.com

**Table 2-2: Information of dedicated environmental management correspondents
(Subprojects in construction)**

Contract number	Main Content	Company Name		Environmental Officer
Works- HS-1	Xinhua Village Green Agriculture Demonstration Project in Huangshan District	Contractor	Fujian Yucheng Construction Engineering Co., Ltd.	Zhao Sheng
		Supervision company	Chuangda Consult Ltd	Xu Zhonghua
Works- HS-2	Caocun River Rehabilitation Project in Huangshan District	Contractor	Jiangsu Shuigong Construction Co., Ltd	Zhang Han
		Supervision company	Anhui Chizhou Jiuhua Engineering Consulting Co., Ltd.	Su Zhihui
Works- HS-3	Xinhua Village Environment Improvement Project in Huangshan District	Contractor	Zhongdi Yingang Construction Group Co., Ltd.	Xuan Wei
		Supervision company	Anhui Chizhou Jiuhua Engineering Consulting Co., Ltd. Zhongxin Chuangda Consulting Co., Ltd.	Zhang Biao
Works- HS-4	Sewage and Stormwater Sewer Upgrade Project in Huangshan District	Contractor	Zhejiang Jiuhe Environmental Limited Company	Fang Zhengfei
		Supervision company	Hubei Three Gorges Construction Project Management Co. , Ltd	Cheng Hongyu
Works- SX-1	Sewage and Stormwater Sewer Upgrade Project in She County-1	Contractor	China Petroleum Pipeline Engineering Co., Ltd	Fang Yongming
		Supervision company	Zhejiang Yihua Construction Supervision Co. Ltd	Xu Zhonghua
Works- SX-5	Xitou Village Environment Improvement Project in She County-2	Contractor	Xingrun Construction Co., Ltd	Wang Shenghao
		Supervision company	Jianjing Investment Consulting Co., Ltd.	Zhan Shuhua

Contract number	Main Content	Company Name		Environmental Officer
Works-SX-6	Xitou Village Environment Improvement Project in She County-1	Contractor	Tianjin Pipeline Engineering Group Co., Ltd	Wang Xiaojun
		Supervision company	Jianjing Investment Consulting Co., Ltd.	Zhan Shuhua
Works-SX-8	Xi'an River Green Agriculture Demonstration Project in She County	Contractor	Gorden Road Group & Zhejiang Jiuhe Environment Co.,Ltd	ZhangLei
		Supervision company	Construction Supervision Co. Ltd	Xu Zhonghua
Works-XN-1	Sewage and Stormwater Sewer Upgrade Project in Xiuning County - 1	Contractor	Anhui Xinda Construction and Installation Co. , Ltd	Cui Tao
		Supervision company	Anhui Hongji Construction Project Management Co. , Ltd	Yu Changzhong
Works-XN-2	Sewage and Stormwater Sewer Upgrade Project in Xiuning County - 2	Contractor	Tiangong Fangyuan Construction Group Co. Ltd	Linjunfeng
		Supervision company	Hebei Sanyuan Construction Supervision Co. Ltd	ZhangJianjun
Works-XN-3	Village Environment Improvement Project in Xiuning County-Shangshan 1	Contractor	Centennial Construction Group Co., Ltd. company	ChengJianxin
		Supervision company	Hebei Sanyuan Construction Supervision Co. Ltd	Wu Chunjiu
Works-XN-4	Village Environment Improvement Project in Xiuning County-Shangshan 2	Contractor	Centennial Construction Group Co., Ltd. company	Xie Weichen
		Supervision company	Hebei Sanyuan Construction Supervision Co. Ltd	Rui Wenhe
Works-XN-5	Village Environment	Contractor	Tianjin Pipeline Engineering Group Co., Ltd	Yangbin

Contract number	Main Content	Company Name		Environmental Officer
	Improvement Project in Xiuning County-Shangshan 3	Supervision company	Hebei Sanyuan Construction Supervision Co. Ltd	Bi Weidong
Works-XN-6	Village Environment Improvement Project in Xiuning County-Xikou	Contractor	Zhejiang Jiuhe Environment Co.,Ltd & Anhui Changcheng Construction Engineering Co., Ltd	Lv Wenbin
		Supervision company	Hebei Sanyuan Construction Supervision Co. Ltd	Hu Fabin
Works-XN-7	Village Environment Improvement Project in Xiuning County-Wucheng	Contractor	Tonglin Shizheng Construction Co., Ltd	Ye Bin
		Supervision company	Hebei Sanyuan Construction Supervision Co. Ltd	Shao Heping
Works-YX-1	Sewage and Stormwater Sewer Upgrade Project in Yi County	Contractor	Anhui Xinjian Holdings Limited	Wang Qing
		Supervision company	Jiangsu Yutian Engineering Consulting Group Co. , Ltd	Zhou Chunlong
Works-QM-1	Sewage and Stormwater Sewer Upgrade Project in Qimen County-1	Contractor	Anhui Xinjian Holdings Limited	Mr. Zhen
		Supervision company	Anhui Hengxin Construction Engineering Management Co. , Ltd	Ye Pingbo
Works-QM-2	Sewage and Stormwater Sewer Upgrade Project in Qimen County-2	Contractor	Shanhu Construction Group Co., Ltd	Zhou Biqiang
		Supervision company	Anhui Hengxin Construction Engineering Management Co. , Ltd	Chen Hui

Note: Two out of eight completed civil works contracts have completed final quality verification and transfer of ownership. Among them, the rural subprojects (HZ-2) are operated and managed by local townships, and the urban subproject (HZ-1) is operated and managed by the local Housing Construction

Bureau. The remaining six completed civil works contracts have not yet completed the transfer of ownership, and are still managed by the relevant units during the construction period.

**Table 2-2: Information of dedicated environmental management correspondents
(Subprojects completed)**

Contract number	Main Content	Environment Person/Organization
Works-HZ-1	Sewage and Stormwater Sewer Upgrade Project in Huizhou District-1	Huizhou Housing Construction Bureau
Works-HZ-2	Sewage and Stormwater Sewer Upgrade Project in Huizhou District-1	Yangcun Township Government

33. During the reporting period, the consultants paid attention to the EHS training for the personnel of PMOs, IAs, supervisors, and Contractors during on-site supervision in districts/counties. The ADB's safeguard policy and on-site safety management priorities are introduced to clarify the environmental management requirements of each responsible party and maintain regular communication among project stakeholders.

34. Conclusion. The project organization setup plan in the environmental management plan is being implemented as required, and the implementation meets the requirements of the environmental management plan.

B. Implementation of the project mitigation measures

35. Table 3 summarized the implementation status of the mitigation measures in the EMP.

Table 3-1: Project impacts, mitigation measures, and implementation status

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
Detailed design stage	Institutional strengthening for EMP Implementation and supervision	At least 1 month before construction: (i) reconfirm the full-time status of the HPMO Environmental Officer for the project; (ii) appoint at least one environment officer in each of the 7 IAs (excluding HTIC, which will separately engage an environment officer for the ESMS).	Huangshan city/district/county PMO and implementing agency have appointed at least one person in charge of environment, see Table 2-1 for details. Employees Fan Xianguang, Liu Xinyue, and Chen Junqi were appointed as environmental officers, and Cheng Shifeng, Chen Yan, and Jiang Junyu were appointed as social officers by HTIC on November 2020. Among	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
			environmental officer, Fan has a master's degree in agronomy from Northwest Agriculture and Forestry University. In addition, Liu and Chen majored in environment of South China Agricultural University, and they have received learning and training in environmental ecology	
		At least 2 months before any construction, engage LIEC.	ESD as a LIEC, including an environmental consultant, was hired in October 2020 .	Yes
		At least 2 months before any construction, provide training to all environmental staff for EMP implementation.	In the first half of 2022, the LIEC (ESD) visited district and county construction sites and introduced the ADB's environmental requirements to the IA, supervisors and construction contractors	Yes
		Confirm that at least one certified EMA has been recruited for the project at least 2 months before any construction.	Huangshan Angel Environmental Testing Co., Ltd. will continue to carry out the external environmental monitoring of the project during the implementation of the project. The company has environmental monitoring qualifications; the scope of services includes all monitoring required by the project.	Yes
		When the contractors and CSCs have been engaged, conduct training on the project EMP.	In the first half of 2022, the project management consultant (ESD) visited construction sites in districts and counties and introduced the ADB's environmental requirements to the IA,	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
			supervisors and construction contractors	
	Updating the EMP	Update the mitigation measures defined in this EMP based on final detailed design. This will include the specific designs for the use of biopesticides which have been prepared during the detailed designs (see IEE Section V.D.6 and Section X).	The design for relevant sub-project is being conducted	Yes
		Asbestos. Under ADB's List of Prohibited Investment Activities (SPS, 2009), the use of asbestos is prohibited except for the "purchase and use of bonded asbestos cement sheeting where the asbestos content is <20%" (SPS 2009: 76). However: (i) in practice it is difficult to assess whether asbestos content is <20%; and (ii) international development banks are increasingly banning the use of all asbestos from their projects. To ensure international best practice for human health and safety for this project: no asbestos of any kind will be used in any materials supported by the project.	The EMP has been distributed to the design institutes by the PMO and specifies that no asbestos of any kind shall be used in the design of the project.	Yes
		Check with the design institute and HPMO to ensure the proposed materials do not include the use of asbestos.	The construction design has been reviewed by PMOs and environmental consultants and the proposed materials do not include the use of asbestos.	Yes
		Submit the updated EMP to ADB for review;	There is no major variation in the project within this reporting period and no need to update EMP.	Yes
		In case of major changes of project location and/or additional physical components, form a DEIA team to conduct additional DEIA and public consultation.	Up to June 30, 2022, there is no major variation in the project site or content and no need to update EMP. It should be noted that	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		The revised DEIA should be submitted to Huangshan and district/county EEBs and ADB for approval and disclosure. To determine if the change is minor or major the HPMO will consult with ADB.	project adjustments in terms of / scope should be expected in August 2022.	
Construction Preparation	Environmental monitoring plan	Prior to construction, the HPMO will hire an EMA for environmental monitoring;	Huangshan Angel Environmental Monitoring Co., Ltd is responsible for the external environmental monitoring of the project. On the other hand, the third-party monitoring agency entrusted by the environmental protection department conducts daily environmental monitoring according to domestic environmental requirements	Yes
		Prepare detailed monitoring plan in accordance with the monitoring plan in this EMP.	A detailed environmental monitoring plan has been prepared based on the latest procurement plan and EMP.	Yes
	Bidding and contract documents	Mitigation measures in the EMP are incorporated in all bidding documents;	The EMP was included in all bidding document submitted to ADB.	Yes
		Bidding documents are sent to ADB for review;	The bidding documents has sent to ADB for review	Yes
		Prepare environmental contract clauses for contractors.	Environmental contract clauses have been prepared for contractors.	Yes
	EMP training	LIEC, or invited environment specialists and/or officials from EEBs provide training on construction environmental management, implementation, supervision, to contractors and CSCs, in accordance with the training plan in this EMP	In the first half of 2022, the HPMO, with the assistance of LIEC, visited construction sites in districts and counties and introduced the ADB's and domestic environmental requirements to the IAs,	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
			CSC and construction contractors	
	Establish GRM	Responsibility for GRM implementation is assigned to the HPMO and IA Environmental Officers and HPMO Social Officers, and is included in their terms of reference;	GRM has been established in the preliminary preparation stage of the project. The responsible personnel have been designated.	Yes
		HPMO and IA personnel will be aware of, and trained in, the GRM, and will help support the environmental and social officers when necessary.	In the first half of 2022, ADB's environmental requirements, including GRM, are introduced by HPMO with the assistance of LIEC to the contractors and CSCs	Yes
		Key contact details for the GRM (phone number, fax, address, email) will be provided on the HPMO, IAs and/or EEB public websites and information boards at construction sites.	HPMO has unified a dedicated environmental board, which includes the GRM	Yes
	Site EMPs	Prior to any works, prepare site-specific EMP for individual construction sites	At present, all of the 26 civil works contracts have started. Site specific EMPs have been prepared for all construction sites	Yes
		Review and ensure site EMP complies with the measures in this EMP	Environmental consultant reviewed and ensured that site EMP complies with the measures in this EMP	Yes
Wastewater management	Construction wastewater and domestic wastewater generated from construction activities	Sedimentation tanks will be installed on site and, after settling out of solids, the upper clear liquid will be recycled for spraying the construction site (dust control), and the waste residue in the tank will be cleared and transported to the construction spoil disposal sites.	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		Oil-water separators will be installed before the sedimentation tank for oily wastewater treatment.	Being implemented	Yes
		All sites for washing of construction equipment will be equipped with water collection basins and sediment traps.	Being implemented	Yes
		Domestic wastewater generated from construction camps will be disposed in three ways: (i) for project sites nearing septic tanks in surrounding villages, domestic wastewater will be treated by the septic tanks before being used for irrigation; (ii) for project sites accessible to municipal sewerage systems, domestic wastewater will be discharged into the nearest sewerage system; (iii) for project sites neither close to villages nor sewerage systems, temporary septic tanks will be constructed for the centralized treatment of domestic wastewater.	N/A. Existing houses are leased for all on-site offices and the domestic wastewater is discharged through the existing pipe. No temporary buildings involved.	Yes
		Fuel storage, machinery maintenance workshop and vehicle cleaning areas must be stationed at least 500 m away from the waterbody.	N/A. The crawler and wheel loaders used are leased from equipment vendors, who are responsible for fuel and maintenance. There is no fuel storage or maintenance workshop on site.	Yes
		Storage facilities for fuels, oil, and other hazardous materials will be within secured areas on impermeable surfaces and provided with bunds and cleanup installations.	N/A. There is no fuel storage or maintenance workshop on site.	Yes
		Contractors will develop actions for control of oil and other dangerous substances as part of their site EMPs.	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		Contractors' fuel suppliers must be properly licensed. They shall follow proper protocol for transferring fuel and the PRC standard of JT3145-91 (Transportation, Loading and Unloading of Dangerous or Harmful Goods. revised).	Being implemented	Yes
		Labor camps will be located at least 500 m from waterbody.	N/A. Existing houses are leased for all on-site offices and the domestic wastewater is discharged through the existing pipe. No temporary buildings involved.	Yes
		Portable toilets and on-site wastewater pre-treatment systems will be installed at construction camps along with proper maintenance protocols.	N/A.	Yes
Water supply	Interruption to existing water supply due to works	Ensure that existing water and wastewater services continue to be provided to communities during the civil works.	Being implemented	Yes
		Any interruptions to such services as a result of the project works are as limited as possible.	Being implemented	Yes
		Prior to any such interruptions, consultations are held with all affected communities.	Before the start of construction activities, the construction plan has been discussed with relevant communities and villages, and the construction can only be started after receiving a positive reply	Yes
Ambient Air	Dust generated by construction activities, gaseous air pollution (CO, CH and NO ₂) from construction machinery, and fugitive	Establish a series of measures for dust control in construction sites before work commencement.	Being implemented	Yes
		Install barriers at the boundary of construction sites with a height no less than 2.5m.	The barriers at the boundary of urban construction sites installed. The alleys in rural villages are narrow, only 1-2m. it is	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
	emission of odor (NH ₃ and H ₂ S) from existing sewage pipes		difficult to install fences. At present, the safety requirements can be met by setting up warning signs and reminding passers-by by safety worker	
		Spraying water daily on construction sites where fugitive dust is being generated. Before excavation, proper spraying shall be performed on the working surface to maintain a certain humidity to reduce dust generation.	Being implemented	Yes
		Cover stockpiles with dust shrouds or tarpaulin to avoid spillage or dust generation. For the earthwork management for backfill, measures will include surface press and periodical spraying and covering. Extra earth will be cleared from the project site in time to avoid long term stockpiling.	Being implemented	Yes
		Vehicles with a closed load-carrying case shall be used to transport potentially dust-producing materials.	Being implemented	Yes
		Design haulage routes and schedules to avoid transport occurring in the central areas, traffic intensive areas or residential areas.	Being implemented. If the urban civil engineering project has external soil, it will be transported to the designated spoil ground according to the requirements of the municipal authority. The original excavated soil is used for the backfilling of the pipe trench in the rural project, and no soil transportation is involved.	Yes
		Install vehicle washing equipment or conduct wheel washing manually at each exit of the work area to prevent trucks	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		carrying mud and soils onto public roads.		
		Keep construction vehicles and machinery in good working order, regularly service and turn off engines when not in use. Ensure vehicle and machinery emissions comply with PRC standards of GB18352-2005, GB17691-2005, GB11340-2005, and GB18285-2005.	Responsible by the vehicle rental vendors	Yes
		During high wind, dust-generating operations shall not be performed, and onsite construction materials shall be covered with shrouds. When wind speed exceeds PRC Levels 4 or 5, excavation, soil transportation and demolition works are not permitted. Special precautions need to be applied in the vicinity of sensitive receptors such as schools, kindergartens and hospitals.	Being implemented	Yes
		Transport the sludge from existing sewer pipes offsite timely to reduce fugitive odor emission.	Being implemented	Yes
		Use exhaust fans at welding sites to increase ventilation and promote the diffusion of organic exhaust gas onsite.	Being implemented	Yes
		Timely monitoring of air quality and inspections during construction.	Being implemented	Yes
Noise	Noise generated from construction and transportation activities	Construction activities will be planned in consultation with local authorities and communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in the least disturbance.	Being implemented.	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		Construction works will be limited to daytime and will be strictly prohibited during the nighttime (22:00 h to 06:00 h) and noon (12:00 h to 14:00 h). Exceptions will only be allowed in exceptional cases, and only after getting the approval of the surrounding residents, local environmental authority and other relevant departments. The contractor shall apply for the approval seven days before the construction works. Nearby residents will be notified of such nighttime activities well in advance.	Before construction, the construction plan has been publicized and reviewed by the local authorities and discussed with the community and villages,. and the construction can only be started after receiving a positive reply. There is no night time works involved.	Yes
		When preparing construction planning, simultaneous high-noise activities will be avoided. High noise activities will be scheduled during the day rather than evening hours. Similarly, the construction sites will be planned to avoid multiple high noise activities or equipment from operating at the same location.	Noisy activities such as earth excavation and concrete pavement drilling work are carried out only during the day	Yes
		Movable noise barriers will be adopted during construction at daytime. The barriers will be of adequate size and thickness to reduce construction noise to the required standards; and (ii) be placed to maximize noise absorption.	Being implemented	Yes
		Low-noise equipment will be selected as much as possible. Equipment and machinery will be equipped with mufflers and will be properly maintained to minimize noise.	Being implemented	Yes
		Transportation routes and delivery schedules will be planned to avoid densely populated and sensitive areas and high traffic times. Vehicles transporting construction	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		materials or waste will slow down and not use their horn when passing through or nearby sensitive locations, such as residential communities, schools and hospitals. No honking is permitted during nighttime.		
		Monitor noise at sensitive areas at regular intervals. If noise standards are exceeded, equipment and construction conditions shall be checked, and mitigation measures shall be implemented to rectify the situation.	Being implemented	Yes
		Conduct regular interviews with residents/villagers adjacent to construction sites to identify noise disturbance. Community feedback will be used to adjust work hours of noisy machinery.	Frequent communication between IAs, the Contractors, the community, and the village to be maintained	Yes
		For the households that will be within 60 m of construction works (Section V.D.3 of IEE), particular attention will be provided. This will include: (a) follow-up consultations with these households prior to the start of any works, to specify the exact planned dates and schedule of works, nature of works, equipment to be used, safety measures, and public access during construction; (b) installation of noise barriers to reduce as much of the emissions as possible, and/or installation of additional layers on the windows of the affected homes as necessary, based on the assessment of the most technically effective method and feedback from the community consultations; (c) agreement on the duration of daily works.	Before construction, the construction plan has been publicized and reviewed by the local authorities and discussed with the community and villages, and the construction can only be started after receiving a positive reply, There is no nighttime works involved. During the reporting period, the PMO conducted pre-construction visits with stakeholders for new started civil engineering projects, informed relevant construction information and announced it to the village committee	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
Soil erosion	Soil erosion caused by construction activities, earthworks	Prepare site soil erosion management plans before works begin.	Being implemented	Yes
		Level the ground for the temporary spoil storage sites with proper blocking measures.	Being implemented	Yes
		During construction phase, the earthwork will be reasonably planned and balanced to reduce the stockpiling of spoil onsite as much as possible. Spoil will be reused onsite to the maximum extent feasible as fill. The spoil sites will be away from roads and be restored after storage activities.	During the construction process, the original excavated soil has been used for backfilling as much as possible, so as to reduce the external transportation of earthwork.	Yes
		Limit construction during rainy season and high winds. Appropriate stormwater drainage systems and slope protection measures will be implemented to minimize soil erosion, such as perimeter bunds and temporary detention and settling ponds to control topsoil runoff.	Being implemented	Yes
		The construction schedule will be well designed to minimize the exposure time of bare land surface and stabilize all earthwork disturbance areas timely after the earthworks are completed.	N/A. Detailed construction plans of all urban projects have been prepared and approved by the local authorities, and publicized around the site. Temporary soil dumps shall be covered. The excavation areas for pipeline installation in rural projects is small (0.6~1m wide), the construction speed of excavation and backfilling is fast, and the exposure time is short.	Yes
		Minimize open excavation areas and slope during trenching.	The excavation areas and slope are specially designed, and if necessary, pile measures	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
			are adopted to reduce the excavation areas	
		Construction camps, storage areas and access roads will be located within the acquired land to minimize the impacts on the soil and land vegetation in surrounding area.	N/A. Existing house are leased for all on-site offices and the domestic wastewater is discharged through the existing pipe. No temporary buildings involved.	Yes
		Landscaping will only use native plant species.	Being implemented	Yes
		Construct intercepting channels and drains to prevent runoff entering construction sites and divert runoff from sites to existing drainage or open ground for watering the vegetation.	Being implemented	Yes
		Rock material for the gabion cages for river revetment will be sourced from: (i) licensed suppliers of construction materials; and (ii) the old revetment material extracted from the Caocun River as part of the project works.	The construction of the river revetment of the Zhang River in Yixian County and Caocun River in Huangshan District has been implemented according to this	Yes
Solid Waste	Solid waste generated by construction activities and from workers' camps	Provide appropriate waste collection and storage containers at locations away from surface water or sensitive spots;	Being implemented	Yes
		Arrange with municipal waste collection services for regular collection of waste;	Being implemented	Yes
		Properly remove and dispose residual materials, wastes and contaminated soils. Paving or vegetating shall be done as soon as the materials are removed to stabilize the soil;	Being implemented	Yes
		Burning of waste is strictly prohibited;	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		Provide sufficient garbage bins at strategic locations and ensure that they are protected from birds and vermin, and emptied regularly by the municipal waste collection systems.	Being implemented	Yes
		CONTRACTOR PERFORMANCE TARGET: No uncollected waste at close of construction activities each day.	Being implemented	Yes
Ecology	Protection of flora and fauna around construction sites	Minimize damage to vegetation. Minimize the damage to existing vegetation and recover the vegetation timely after the completion of construction works. Native plant species will be used for replanting and site rehabilitation.	Being implemented	Yes
		The surface soil (0-30 cm) will be stored separately for reuse for landscape greening or agriculture. The stockpiling shall have a height less than 5m and a slope less than 1:1.5 with proper compaction to avoid soil erosion.	Being implemented	Yes
		Minimize damage to aquatic habitats. For the stone debris removal from river channel in Caocun River, only debris from previous river revetment works will be removed, and all works shall be conducted manually without intervention of any mechanical equipment to prevent mechanical damage to the riverbed.	Being implemented	Yes
		All river channel related works will be carried out during dry season (October to March) to minimize potential impacts on the aquatic habitat.	Being implemented	Yes
		Landscaping and site rehabilitation. All planting activities under the project,	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		including re-vegetation, landscaping, and rehabilitation of construction sites, will only use plant species which are (i) native (i.e. naturally occurring) to the Xin'an River basin, and (ii) are sourced from local stock within Huangshan Municipality.		
		In the event that non-native seedlings are required for rapid stabilization of exposed soils and sites, HMG will and will cause the IAs to ensure that only sterile seedlings are used to prevent the spread of weeds.	Being implemented	Yes
		Training. Provide trainings to contractors and workers to increase their awareness on the need to protect the environment, wildlife and vegetation around the construction sites.	In the first half of 2022, the consulting company (ESD) visited construction sites in districts and counties and introduced the ADB's environmental requirements to the IA, supervisors and construction contractors. The details are provided in Table 6.	Yes
		Site inspection. The CSCs and the environmental officer of the HPMO will regularly inspect construction sites to ensure that habitats are well demarcated, and workers are fully informed of "no-go" areas.	Regular on-site EHS and quality supervision are carried out by consulting company organized by HPMO	Yes
		Biopesticides. Before any use of biopesticides, confirm that: (a) a complete inventory of the pest species to be addressed for each demonstration site has been prepared; (b) any "pest" species which are rare, threatened, restricted range, or protected species have be excluded from the pest management program; (c) the specific organisms or other agents to be used as biopesticides have been identified during the detailed	N/A. No use of biopesticides is involved in started project	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		engineering designs; (d) each proposed agent or method has been confirmed to be highly crop-specific and will only act on the intended pest species, and will not affect local flora and fauna (e.g. the use of water mixed with tobacco will not be used as it may impact aquatic organisms in nearby streams); (e) specific application procedures, volumes, and post-application monitoring have been detailed, to ensure safe and responsible use of the biopesticides.		
Protected Area	Damage to protected area during construction	Engineering design will be in line with the Taiping Lake Scenic Zone Master Plan (2015- 2030) and Huashan Mysterious Grottoes Scenic Zone Master Plan (2007-2025);	N/A	Yes
		All works will be conducted within the confirmed ecological red line only;	No changes or variation to the project scope within this reporting period	Yes
		Avoid setting up temporary storage sites for construction waste within scenic zones, and all waste generated will be transported out for disposal timely;	N/A	Yes
		For subprojects near riverway, proper onsite wastewater treatment facilities (e.g. sedimentation tank) will be set up to avoid direct discharge of wastewater and impairing of aquatic ecosystem along the river;	N/A	Yes
		Design the location and shape of spoil piles before construction;	N/A	Yes
		Vehicles will slow down within scenic zones and frequent water spraying in construction sites will be performed to minimize dust;	N/A	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		Recover the vegetation in construction sites timely after the completion of construction works to minimize soil erosion and visual landscape impact in scenic zones.	N/A	Yes
Physical cultural resources	Damage to known or unknown above or below-ground cultural relics	Establish chance-find procedures for physical cultural resources;	N/A	Yes
		If a new site is unearthed, work shall be stopped immediately and the IA, HPMO and local CRB promptly notified. The construction will resume only after a thorough investigation and with the permission of appropriate authority.	N/A	Yes
Community and occupational health and safety	Site and access safety	Erect signs will be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles and excavations, and raising awareness on safety issues;	Establishment of on-site safety and traffic guidance plates implemented.	Yes
		Assign personnel to direct pedestrians around dangerous work areas;	The full-time safety management personnel on site and traffic guiders for closed urban road have been arranged	Yes
		Ensure that all sites are secure, discouraging access through appropriate fencing;	Temporary barriers and reflective cones are installed on site	Yes
		Place clear signs at construction sites in view of the people at risk (including workers and nearby communities), warning people of potential dangers such as moving vehicles, hazardous materials, excavations, and raising awareness on safety issues;	Establishment of on-site safety and traffic guidance plates implemented.	Yes
		At the end of each day, all sites and equipment will be made secure (through fencing and/or	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		lock-down of equipment) to prevent public access;		
		Erect safety barricades around all excavations;	Temporary barriers and reflective cones are installed on site	Yes
		Hold a public consultation meeting prior to commencing construction to discuss issues associated with ensuring the safety of nearby communities in vicinity of the construction site.	Being implemented. During the reporting period, the PMO conducted pre-construction visits with stakeholders for new started civil engineering projects, informed relevant construction information, and published in the village committee.	Yes
	Occupational health	Provide personal protection equipment to workers as needed, e.g. safety boots, helmets, gloves, protective clothing, goggles, ear protection in accordance with health and safety regulations.	Being implemented	Yes
		An emergency response plan to take actions on accidents and emergencies, including environmental and public health emergencies associated with hazardous material spills and similar events will be prepared, and submitted to the IA for review and appraisal. A fully equipped first-aid base in each construction site will be provided.	Being implemented	Yes
		A Records Management System will be established to document occupational accidents, diseases, and incidents, that: (a) includes a tracking system to ensure that incidents are followed-up; (b) can easily retrieve records; and (c) can be used during compliance monitoring and audits. The system will be backed up on at least one external hard drive to	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		protect records against loss or damage.		
		Ensure that safety, rescue and industrial health matters are given a high degree of publicity to all persons regularly or occasionally on the Site. Posters drawing attention to site safety, rescue and industrial health regulations will be made or obtained from the appropriate sources and will be displayed prominently in relevant areas of the site.	Being implemented	Yes
		Train all workers in basic sanitation and health care issues, general health and safety matters, and on the specific hazards of their work and sites and the requirements for community safety.	Being implemented	Yes
		Asbestos. In the event that materials containing asbestos are suspected: (i) the contractor will immediately inform the IA, who will inform the HPMO; (ii) the contractor will subcontract the municipal center for hazardous waste, who will be responsible for the safe handling, transport, and disposal of the materials; (iii) such materials will only be disposed in a landfill site certified and designed to receive hazardous materials.	No asbestos use found	Yes
	Community health and safety - COVID-19 prevention and control	(a) Organization and mobilization Establish street (township) and community (village) level prevention and control work teams, with cadres, community health service centers and family doctors as the main force, supplemented by residents and volunteers, and full-time and part-time staff, so as to	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		implement grid-based management and carpet-style management, with responsibility attributable to corresponding person, so as to fully cover communities (villages), buildings (natural villages) and families, and to implement prevention and control measures.		
		<p>(b) Health education</p> <p>Make full use of a variety of methods to carry out targeted publicity on the prevention and control of pneumonia caused by novel coronavirus infection. Raise the awareness of the masses on the health knowledge, the key points of protection, the importance of healthy habits and protection in time.</p>	Being implemented	Yes
		<p>(c) Information notification</p> <p>Release the information of medical treatment to the public, and remind all kinds of patients to go to designated institutions for medical treatment by classification and levels. Release local pandemic information, information on traffic and travel risks on a daily basis .</p>	Being implemented	Yes
		<p>(d) Management of returnees from affected areas</p> <p>Issue a notice, requiring people returning from affected area to register for physical examination immediately, and take the initiative to self-isolate for 14 days. People with respiratory symptoms such as fever should seek medical treatment nearby in time, and be isolated at home or go to designated institutions for isolation as required.</p>	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		<p>(e) Environmental sanitation management</p> <p>Clean up key places and dispose of garbage and dirt. Organize and carry out comprehensive vector control and disinfection in time to effectively reduce vector density.</p>	Being implemented	Yes
		<p>(f) Material preparation;</p> <p>Provide necessary prevention and control items and materials, such as thermometers, masks, disinfection supplies, etc.</p>	Being implemented	Yes
		<p>(g) Close contact management</p> <p>The close contacts of the confirmed cases of pneumonia infected by the new coronavirus should be screened and home or centralized medical observation should be carried out. Follow up the health status of close contacts daily, instruct the observation subjects to monitor changes in their own conditions sensitively, and keep records at any time. Make preparations for the isolation and control of patients and transfer to designated hospitals.</p>	Being implemented	Yes
		<p>(h) Disinfection</p> <p>Properly carry out disinfection of pandemic spots such as the home, building units, offices and conference rooms of the employer of the confirmed case, and clean and disinfect public places.</p>	Being implemented	Yes
		<p>(i) Blockade of affected area</p> <p>For communities defined as affected areas, when necessary, measures can be taken to block the affected areas, where efforts</p>	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		should be made to restrict the access by personnel, and temporarily requisition houses and transportation tools.		
		<p>(j) Restrict the gathering of people</p> <p>In the community, fairs and gatherings shall be restricted or suspended, and public places such as public baths, hot springs, cinemas, Internet cafes, KTVs and shopping malls should be closed. Suspend work, business or classes when necessary.</p>	Being implemented	Yes
	Occupation health and safety - COVID-19 prevention and control	<p>(a) The Contractor should prepare a detailed profile of the project work force, key work activities, schedule for carrying out such activities, different durations of contract and rotations (e.g. 4 weeks on, 4 weeks off).</p>	Being implemented	Yes
		<p>This should include a breakdown of workers who reside at home (i.e. workers from the community), workers who lodge within the local community and workers in on-site accommodation. Where possible, it should also identify workers that may be more at risk from COVID-19, those with underlying health issues or who may be otherwise at risk.</p>	Being implemented	Yes
		<p>Consideration should be given to ways in which to minimize movement in and out of site. This could include lengthening the term of existing contracts, to avoid workers returning home to affected areas, or returning to site from affected areas.</p>	Being implemented	Yes
		<p>Workers accommodated on site should be required to minimize contact with people near the site,</p>	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		and in certain cases be prohibited from leaving the site for the duration of their contract, so that contact with local communities is avoided.		
		Consideration should be given to requiring workers lodging in the local community to move to site accommodation (subject to availability) where they would be subject to the same restrictions.	Being implemented	Yes
		Workers from local communities, who return home daily, weekly or monthly, will be more difficult to manage. They should be subject to health checks at entry to the site (as set out above) and at some point, circumstances may make it necessary to require them to either use accommodation on site or not to come to work.	The Personnel Health Monitoring Record Sheet has been filled regularly by staff on duty. Construction Workers are tested for nucleic acid before work	Yes
		(b) Establishing a system for controlling entry/exit to the site, securing the boundaries of the site, and establishing designating entry/exit points (if they do not already exist). Entry/exit to the site should be documented.	Being implemented	Yes
		Training security staff on the (enhanced) system that has been put in place for securing the site and controlling entry and exit, the behaviors required of them in enforcing such system and any COVID -19 specific considerations.	Being implemented Personnel responsible for COVID-19 management and monitoring has been appointed by the IAs, CSC and contractors	Yes
		Training staff who will be monitoring entry to the site, providing them with the resources they need to document entry of workers, conducting temperature checks	Being implemented The Personnel Health Monitoring Record Sheet has been filled regularly by staff on duty. Construction Workers are tested for nucleic acid before work	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		and recording details of any worker that is denied entry.		
		Confirming that workers are fit for work before they enter the site or start work. While procedures should already be in place for this, special attention should be paid to workers with underlying health issues or who may be otherwise at risk. Consideration should be given to demobilization of staff with underlying health issues.	Being implemented COVID-19 prevention and control policies and measures are informed to all project workers	Yes
		Checking and recording temperatures of workers and other people entering the site or requiring self-reporting prior to or on entering the site.	Being implemented The temperature of workers is monitored before entering the site	Yes
		Providing daily briefings to workers prior to commencing work, focusing on COVID-19 specific considerations including cough etiquette, hand hygiene and distancing measures, using demonstrations and participatory methods.	Being implemented	Yes
		During the daily briefings, reminding workers to self-monitor for possible symptoms (fever, cough) and to report to their supervisor or the COVID-19 focal point if they have symptoms or are feeling unwell.	Being implemented	Yes
		Preventing a worker from an affected area or who has been in contact with an infected person from returning to the site for 14 days or (if that is not possible) isolating such worker for 14 days.	Being implemented	Yes
		Preventing a sick worker from entering the site, referring them to local health facilities if necessary or requiring them to isolate at home for 14 days.	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		(c) Workers should wear appropriate personal protective equipment (PPE), which includes protective outerwear, gloves, boots, goggles or a face shield, and a mask; they should perform hand hygiene frequently; and they should avoid touching eyes, nose, and mouth with unwashed hands.	Being partly implemented During site visit, LIEC identified that some workers didn't wear appropriate PPEs. This issue was pointed out during on-site training to the contractors and supervision companies. Site visit conducted later found that this has issue has been addressed.	Yes
		Train field workers and staff	Being implemented COVID-19 prevention and control policies and measures are informed to all project workers	Yes
		Placing posters and signs around the site, with images and text in local languages.	Being implemented	Yes
		Ensuring handwashing facilities supplied with soap, disposable paper towels and closed waste bins exist at key places throughout site, including at entrances/exits to work areas; where there is a toilet, canteen or food distribution, or provision of drinking water; in worker accommodation; at waste stations; at stores; and in common spaces. Where handwashing facilities do not exist or are not adequate, arrangements should be made to set them up. Alcohol based sanitizer (if available, 60-95% alcohol) can also be used.	Being implemented	Yes
		Setting aside part of worker accommodation for precautionary self-quarantine as well as more formal isolation of staff who may be infected.	Being implemented	Yes
		(d) Conduct regular and thorough cleaning of all site facilities,	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		including offices, accommodation, canteens, common spaces.		
		Providing cleaning staff with adequate cleaning equipment, materials and disinfectant.	Being implemented	Yes
		Review general cleaning systems, training cleaning staff on appropriate cleaning procedures and appropriate frequency in high use or high-risk areas.	Being implemented	Yes
		Where it is anticipated that cleaners will be required to clean areas that have been or are suspected to have been contaminated with COVID-19, providing them with appropriate PPE: gowns or aprons, gloves, eye protection (masks, goggles or face screens) and boots or closed work shoes. If appropriate PPE is not available, cleaners should be provided with best available alternatives.	Being implemented	Yes
		Training cleaners in proper hygiene (including handwashing) prior to, during and after conducting cleaning activities; how to safely use PPE (where required); in waste control (including for used PPE and cleaning materials).	Being implemented	Yes
		(e) If a worker has symptoms of COVID-19 (e.g. fever, dry cough, fatigue) the worker should be removed immediately from work activities and isolated on site.	Being implemented	Yes
		If testing is available on site, the worker should be tested on site. If a test is not available at site, the worker should be transported to the local health facilities to be tested (if testing is available).	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		If the test is positive for COVID-19 or no testing is available, the worker should continue to be isolated. This will either be at the work site or at home. If at home, the worker should be transported to their home in transportation provided by the project.	Being implemented	Yes
		Extensive cleaning procedures with high-alcohol content disinfectant should be undertaken in the area where the worker was present, prior to any further work being undertaken in that area. Tools used by the worker should be cleaned using disinfectant and PPE disposed of.	Being implemented	Yes
		Co-workers (i.e. workers with whom the sick worker was in close contact) should be required to stop work, and be required to quarantine themselves for 14 days, even if they have no symptoms.	Being implemented	Yes
		Family and other close contacts of the worker should be required to quarantine themselves for 14 days, even if they have no symptoms.	Being implemented	Yes
		If a case of COVID-19 is confirmed in a worker on the site, visitors should be restricted from entering the site and worker groups should be isolated from each other as much as possible.	Being implemented	Yes
		If workers live at home and has a family member who has a confirmed or suspected case of COVID-19, the worker should quarantine themselves and not be allowed on the project site for 14 days, even if they have no symptoms.	Being implemented	Yes

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
		Workers should continue to be paid throughout periods of illness, isolation or quarantine, or if they are required to stop work, in accordance with national law.	Being implemented	Yes
		Medical care (whether on site or in a local hospital or clinic) required by a worker should be paid for by the employer.	Being implemented	Yes
		(f) Training of workers should be conducted regularly, providing workers with a clear understanding of how they are expected to behave and carry out their work duties.	Being implemented	Yes
		Training should address issues of discrimination or prejudice if a worker becomes ill and provide an understanding of the trajectory of the virus, where workers return to work.	Being implemented	Yes
		Training should cover all issues that would normally be required on the work site, including use of safety procedures, use of construction PPE, occupational health and safety issues, and code of conduct, taking into account that work practices may have been adjusted.	Being implemented	Yes

Table 3-2 Potential impacts and mitigation measures during operations

Item	Potential impacts / issues	Mitigation measures	Implementation status	Whether in compliance (Yes/No)
Point source water pollution	Treated effluent from rural onsite wastewater treatment stations and domestic wastewater from tourism toilets	<ul style="list-style-type: none"> Establish O&M procedures for rural WWTS. This will include: (a) routine inspection of WWTS performance and condition, to reduce the risk of operational failures; (b) emergency response plan, for clear procedures to quickly address mechanical or electrical failure (e.g. clogged pipes or rural power blackouts). 	<p>Being implemented</p> <p>The completed WWTS will recruit a qualified third-party agency to be responsible for the equipment operation and maintenance according to the requirements of the local authorities</p> <p>The PMO, EEB and the external monitoring agency regularly supervise the working conditions of the WWTS</p>	Yes
Sludge disposal	Inadequate disposal of sludge from the project supported WWTS	<ul style="list-style-type: none"> In accordance with national regulations, the raw sludge will be transported by sealed truck one to two times per year to the five county and district wastewater treatment plants that are operating in each project county and district. Upon completion of the Huangshan Municipal WWTP Sludge and Kitchen Waste Treatment Plant (estimated to be in August 2020), all project sludge will be transported to this new plant. Due diligence has been conducted on these plants (Section III.D). All are operating in compliance with regulatory requirements. The treated sludge will be disposed in landfill or used as fertilizer for landscaping 	<p>Being implemented.</p> <p>During the operation period, monitored total phosphorus only comply with the Class II of the Pollutant Discharge Standard for Urban Sewage Treatment Plants (GB 18918-2002), which is slightly lower than the Class 1B requirement It is reported that Yiqi WWTS has not yet officially entrusted the operation unit, so the treatment facilities and wetlands in the station are not fully managed. The PMO of Tunxi District is currently recruiting the operation unit, which is expected to be completed in the second half of 2022</p>	Yes
Non-point source pollution	Soil and water pollution due to use of agri-chemicals	<ul style="list-style-type: none"> All use of agricultural chemicals under the project will be subject to the project training and measures to reduce the use of chemical fertilizers and pesticides 	<p>Being implemented</p> <p>There is no pesticides classified by the WHO as Class I or Class II hazard or prohibited or strictly restricted for use according to China's National Pesticide Management Regulations have been used.</p>	Yes

Ambient air	Exhaust gas from vehicles and odor from WWTS with associated septic tanks and pumping stations, tourism toilets, and garbage bins	<p>Tourist facilities (parking lots, toilets, bins)</p> <ul style="list-style-type: none"> • Design and implement strict and clear procedures for O&M of the public tourism toilets, including daily cleaning, to maintain hygiene and minimize disease risks. • Install garbage bins at each public toilet. Bins will have covers, to prevent flies and rodents accessing the litter. • Implement daily waste collection schedule for the emptying and removal of litter from the garbage bins. • Garbage bins with cover will be used for enclosed storage of waste • Layout design of the parking lots will facilitate efficient entry and exit of vehicles, to reduce traffic congestion and gas emissions from vehicle exhaust gas caused by idling. • Implement procedures for O&M of landscaping around the parking lots and toilets. • Periodical inspection on the condition and O&M of the public toilets, litter bins, parking lots, landscaping to ensure efficient operation <p>Wastewater treatment stations</p> <ul style="list-style-type: none"> • Regular O&M of facilities to ensure optimal performance • Periodical inspection on performance • Periodical sampling of air quality and odor at established distances from each station (Table EMP-5) • Consultations with nearby communities as needed to assess whether there are odor-related issues 	<p>Being implemented.</p> <p>Public tourist toilets and parking lot are managed by local authorities.</p> <p>The NH₃ and H₂S of WWTS in Yiqi Township have been monitored in the first half of 2022, and the results meet the Class I of "Discharge standard of Pollutants for Municipal Wastewater Treatment Plant" (GB 18918-2002)</p>	
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Noise	Noise from the 23 wastewater pumping stations	<ul style="list-style-type: none"> • Each station will install low-noise equipment and thick walls. • The pumps will be equipped with anti-vibration pad. • Sound insulation windows and doors will be used in the stations. • Station operators will maintain the equipment in good working condition as part of standard operating procedures. Periodical check and maintenance will be required. When malfunction of the equipment occurs, the related accessories or parts will be replaced timely to avoid noise from abnormal operation of pumps. 	<p>Being implemented</p> <p>The completed pumping station is either underground or enclosed by walls.</p> <p>The monitoring results of noise of pumping station in Tunxi and Huizhou District meet IEE requirements and Class II of "Emission Standard for Industrial Enterprises Noise at Boundary"(GB12348-2008) in the first half of 2022</p>	Yes
Solid waste	Domestic waste from tourists	<ul style="list-style-type: none"> • Arrange with municipal waste collection services for regular collection of the tourism waste. • Burning of waste is strictly prohibited. • Ensure the garbage bins in tourism area are protected from birds and vermin, and emptied daily by the municipal waste collection systems. 	<p>Being implemented</p> <p>The local sanitation department has been responsible for normalized waste collection.</p>	Yes

Health and safety of operating staff	Health and safety of operating staff	<p>The COVID-19 outbreak prevention and control measures are as following:</p> <ul style="list-style-type: none"> • Enterprises shall equip sufficient protective materials including masks, alcohol, disinfectant and thermometers, arrange employees to work and dine in different periods, and prevent employees from having activities and conferences together. The employees at work shall take temperatures twice a day and be recorded, and shall be supervised to wear masks during office time. The plant area, office area and other key areas shall be cleaned and sterilized regularly. If symptoms of acute respiratory infections such as fever, cough and shortness of breath occur to any employees, please go to the designated medical institutions in our city for test, diagnosis and treatment, and report to PMO at first time. • Enterprises hang slogans of pandemic prevention and control in plant areas and office areas, send short messages and post texts on WeChat, in order to provide employees with science knowledge about the pandemic and ease them from unnecessary panic. Employees shall be urged to protect themselves, and accept temperature testing and recording when they go into and out of the industrial park. • Further carrying out training on pandemic prevention and control. On the principles of precise resumption of work and production in different divisions and levels according to the requirements for pandemic prevention and control, a training program of medical staff against the pandemic shall be carried out in key units and industries related to the national economy and people's livelihood. The trainees will be designated by relevant district sectors and towns/sub-districts according to the status of resumption of work, production and school. Each unit/enterprise shall designate one medical staff against the pandemic to join the training. 	<p>Being implemented</p> <p>All construction workers need to pass the nucleic acid test (antigen testing) before entering the site and fill in the health monitoring form every day; the contractor on-site office is equipped with epidemic prevention supplies; this includes information dissemination of epidemic prevention and control policies and measures to all project personnel</p>	Yes
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36. During the reporting period, the implementation of some specific environmental mitigation measures is as follows:

- a) In the design stage, relevant communities and village collectives have participated in the discussion of the plan, and their opinions will be fully considered in the design.



- b) Before the start of construction activities, the PMO and the implementing unit shall publicize key construction information and layout plan through the main website, nearby communities, villages, and surrounding construction sites, and provide complaint channels and contact persons; Conduct village and community visits to inform stakeholders of upcoming construction activities.





- c) The on-site project offices are all renting existing houses, and the domestic sewage is discharged through the existing pipeline system, which does not involve the construction of temporary houses.





Xiuning County Works-XN-4&5 Contractor on-site office



Xiuning County Works-XN-6 Contractor on-site office



Yi County Works-YX-1 Contractor on-site office



Qimen County Works-QM-1 Contractor on-site office

- d) Near the entrance and exit of the construction site, "five cards and one map" are set up according to domestic requirements, as well as ADB's environmental management publicity board; the construction areas in the Urban Area are set up with fences and traffic guidance signs; Safety warning signs are set near the danger source; On-site personnel are required to wear personal protective equipment (PPE) such as safety helmets. LIEC site visit found some workers didn't wear helmets and this issue has been addressed during the on-site training.



Construction Information Notice Board



Environmental Management Notice Board



Construction workers wear helmets



Contractor is conducting construction safety training



Safety technical disclosure of pipe jacking construction



Female employees hired in the project



Information sharing on HIV/AIDS and sexual harassment among female employees



Temporary electricity distribution box settings



Site fence and traffic guidance signs



Environmental management system certification provided by suppliers of integrated sewage treatment equipment



Monitoring of toxic gases in pipelines
Noted there is no adequate railing during LIEC site visit. The contractor confirmed corrective action has been taken

- e) During the construction process, the original excavated soil should be used for backfilling as much as possible. When laying pipelines in rural branch roads, excavation, pipe embedding and backfilling can generally be completed on the same day, so there is no soil transportation. If the urban project really needs to be transported out of soil, according to the requirements of the municipal management

department, it shall be transported to the designated spoil site and handed over to a third-party unit for consolidated management. Covering measures are taken for the temporary soil pile; regular watering is carried out outside the construction site to reduce dust;



Village Project Temporary soil piles Coverage



Bare soil has been covered, and guardrails are set around the wellhead



Incoming materials are neatly stacked



Flushing vehicles on the exit



Watering is carried out around the site to reduce dust



Receipt issued by soil receiving unit



Revegetation after construction



The old trees were still well preserved when the construction was completed

- f) During this reporting period, Huangshan City once stopped all construction activities from May 14 to June 10 due to the impact of the COVID-19 epidemic. After taking effective epidemic prevention and control measures, construction resumed in June 2022. All construction workers need to pass the nucleic acid test before entering the site and fill in the health monitoring form every day; the contractor on-site office is equipped with epidemic prevention supplies; the publicity of epidemic prevention and control policies and measures involves all project personnel.



Epidemic prevention equipment

祁门县城区南、污管网完善工程 (1) 防疫登记表

序号	日期	姓名	联系电话	身份证号	性别	年龄	健康状况	核酸检测日期	核酸检测结果
415	2022.04.18	王小明	15556667777	34122119900101001	男	32	健康	4.18	阴性
416	2022.04.18	李小红	13809998888	34122119910202002	女	31	健康	4.17	阴性
417	2022.04.18	张老三	13912345678	34122119920303003	男	30	健康	4.17	阴性
418	2022.04.18	王四	13912345678	34122119930404004	男	29	健康	4.17	阴性
419	2022.04.18	陈五	13912345678	34122119940505005	男	28	健康	4.17	阴性
420	2022.04.18	林六	13912345678	34122119950606006	男	27	健康	4.17	阴性
421	2022.04.18	周七	13912345678	34122119960707007	男	26	健康	4.17	阴性
422	2022.04.18	吴八	13912345678	34122119970808008	男	25	健康	4.17	阴性
423	2022.04.18	郑九	13912345678	34122119980909009	男	24	健康	4.17	阴性
424	2022.04.18	孙十	13912345678	34122119991010010	男	23	健康	4.17	阴性
425	2022.04.18	李十一	13912345678	34122120001111011	男	22	健康	4.17	阴性

项目部 时间: 2022.04.18 未知

Health monitoring form records



PCR testing of construction workers before resumption of work

37. Conclusion. Mitigation measures in the environmental management plan are being implemented as required and the project meets the requirements of the environmental management plan.

C. Implementation of ESMS

38. During the reporting period, the first sub-project (Yixian Younong Ecological Agriculture Co., Ltd., hereinafter referred to as "Younong Company") provided 7 agricultural cooperatives and 7 family farms with full process socialized agricultural services, covering a total farmland area of 8,757 mu. All are based on the existing basic farmland within the scope of Huangshan City, and the planting varieties are all rice, with a minimum area of 115 mu and a maximum area of 1663 mu. Specifically,

- **Agricultural socialization services.** "Younong" company provided 7 agricultural cooperatives and 7 family farms with services such as seedling raising, mechanical ploughing, mechanical transplanting and transplanting, basal fertilizer application, pest control and weed control, and harvesting (*Brassica napus*, corn). Among them, i) rice seeds are purchased from non-GMO varieties certified by the state; ii) planting is controlled according to green product standards; iii) corn and *brassica napus* straws are returned to the field; iv) The agricultural products are tested in batches, and they all meet the national rice GB/T1354-2018 standard, the green food rice NY/T419-2014 standard and the national food safety standard GB14881-2013. In the process of the project, environmental mitigation measures such as rice pest control, mechanical weeding, promotional traps, straw carbonization, and timely recycling of packaging waste have been adopted.
- **Agricultural products transportation.** The agricultural products produced by the sub-project are mainly sold in Huangshan City, Anhui Province and Hefei City, Anhui Province. The sales mode is cooperation with supermarkets or online sales, and there is no self-built sales point. Products sold in supermarkets are mainly transported by logistics, and products sold online are transported by express companies, so the negative impact on the environment can be ignored. In addition, the following mitigation measures have been taken to further reduce the impact (i) Low-noise equipment and processes are used, construction time is strictly controlled, and production is prohibited at night; (ii) wastes generated from processing and procurement activities are promptly removed and centrally disposed of according to waste classification; (iii) During transportation, the goods are well packaged according to road transportation regulations.
- **Use of agricultural machinery.** The sub-projects use automatic seeders, high-speed rice transplanters, tractors, and unmanned plant protection machines to provide mechanized services. The impact is reduced through the following mitigation measures: i) transplanting rice with rice transplanters to reduce the use of herbicides; ii) use drones instead of humans to spray pesticides to reduce the usage amount of pesticides by an average of 10% to 20%; iii) agricultural machinery and equipment use agricultural machinery that meets China 5 emission standards; iv) Adopting the method of intensive land to provide services in a unified way, the agricultural machinery work efficiency is high, the low efficiency problem of small farmers in the mountains is alleviated, and the fuel consumption is reduced; v) The agricultural machinery equipment is kept by the agricultural machinery operator or stored in the existing warehouse of the sub-project enterprise, no new storage buildings were built.

39. **The second proposed investment project is under application.** During the reporting period, through preliminary visits, 2 sub-projects that meet the project selection requirements of Huangshan Green Investment Fund and ESMS requirements were screened, and due diligence and ESMS assessment of one of the sub-projects (Huangshan Tiandu) were conducted. Due diligence and ESMS assessment for another sub-project will be conducted in the second half of the year.

40. **Benefit and improvement of sub-project ESMS implementation at this stage.** The implementation of ESMS has a certain impact on the management level and the environmental protection of sub-project activities, and provides support for the sustainable development of agriculture in the project area, including, i) The sub-project has formulated mitigation measures for the possible impact of agricultural production activities on the environment. The environmental impact of agricultural activities is minimized by implementing the principles of internal governance, scientific planting, standardized production, etc; ii) The environmental protection awareness of the staff, financial personnel and agricultural producers of the implementing agency has been improved through continuous and expanded ESMS training, field research, information disclosure and other activities. During the reporting period, the first sub-project won a series of social honors. Including: 1) Demonstration Enterprise of Harmonious Labor Relations in Anhui Province awarded by Anhui Provincial Department of Human Resources and Social Security; 2) Li Yanping, Deputy General Manager of the sub-project, won the honor of Huangshan City Women's Contribution Model; 3) Deputy General Manager of the Sub-project Sales Department Zhang Guozhen was awarded County-level outstanding party member honor. The financial and ESMS governance support of the Green Investment Fund for the sub-projects has enabled the sub-projects to get better development opportunities and has achieved certain results.

41. **Lessons learned and innovation of GIF funded sub-projects.** Innovative technologies were used, and research results were applied in the implementation process. i) Younong has applied the technical achievements published by the China Rice Research Institute in the journal Nature to demonstrate intelligent and precise seedling raising, and has achieved high-yield and high-efficiency hybrid rice planting. ii) Cooperate with Nanjing Agricultural University to conduct technology research and development on "Key Technology Research and Industrial Application of Straw Biomass Carbon-Based Product Production".in Dingtian Village, Shendu Town, She County, Huangshan City, 85,000 seedlings of three varieties of chrysanthemum, "Jinggong Ju No. 1", "Wang Gong No. 1" and "Golden Silk Chrysanthemum", were transplanted. The artificial weeding method is adopted, and biological pesticides are used to control pests and diseases, and straw biomass charcoal-based organic fertilizers, compound fertilizers and foliar fertilizers are applied. At present, the chrysanthemums are growing well. About 200 acres of black corn have been planted in Bishan and Longjiang Village, Yi County, Huangshan City. The film mulching and one-time application of base fertilizer are adopted (straw biomass carbon-based compound fertilizer, 50 kg per mu). The harvest of the first corn showed that the percentage of earbearing corn tiller was high, the taste was sweet and glutinous, and the quality was good. iii) Digital terminal equipment such as weather stations, soil sensors, and high-definition cameras were installed in service areas; an APP for farmland personnel management was developed; and a visual data platform combined with land information was established.

42. **Monitoring and reporting of GIF funded subprojects.** For this reporting period, in the selection of sub-projects, the HTIC/HXIC strictly followed the ADB's environmental requirements, visited 26 project companies that applied for the Huangshan Green Investment Fund, and preliminarily assessed whether the projects met the fund investment direction and ESMS requirements. HTIC/HXIC, took regular management measures for the implementation

of the sub-projects, including checking the risk information of the sub-projects once a week, collecting the monthly financial statements of the enterprise on time, and conducting twice on-site inspections. The sub-projects are effectively supervised. The detailed activities of the GIF and implementation report of ESMS during the second period in accordance with the requirements of LA and PA has submitted by HTIC. See Appendix 4 Semi-annual Project on the Implementation of the ESMS.

43. **Information disclosure and GRM.** In the last reporting period, the implementing agency disclosed the basic information of the subproject, including the location, activities, potential impacts, as well as the contact information of environmental and social officials, and the grievance resolution mechanism. The disclosure period is 10 days. During the reporting period, there was no new investment activity, so there is no information disclosure at the moment. According to the feedback from ADB experts, it is planned to extend the information disclosure period for the second investment project to half a year after the completion of the investment activity. The sub-project does not involve civil works and is classified as environmental category C. However, farmers within the scope of sub-project activities, especially women and poor people, can still submit complaints directly to the implementing agency on environmental and social issues at any time. During the reporting period, the implementing agencies and sub-projects did not receive any complaints.

44. **Training and capacity building for GIF.** On March 18, 2022, a training on ESMS implementation was mobilized by HTIC for 16 managers in charge of environmental, social and investment projects, all of whom were women. On May 20, 2022, 4 HTIC managers (3 women) participated in ADB's integrity training. In addition, during the reporting period, 7 times training and visit on agricultural technology and safety production were conducted by subproject unit for a total of 60 person-times, 19 of whom were women.

45. **Next step.** In the second half of 2022, HTIC/HXIC i) In accordance with the implementation steps of ESMS, continue to track, monitor and report all sub-projects, and urge sub-projects to continue to pay attention to and implement ESMS in activities; ii) strengthen the training of stakeholders, especially the staff of the implementing agency and the staff of sub-projects, to apply ESMS steps for screening, identification and post-investment management of sub-projects; iii) Strengthen information dissemination and training: Continue to promote the understanding of implementing agency staff and sub-project staff about the overall project, ESMS, ADB's management requirements.

46. **Conclusion.** The investment projects under GIF are being carried out in accordance with the requirements of the Environmental and Social Management System (ESMS). HTIC/HXIC found that, compared with those without implementation of ESMS, sub-projects paid more attention to environmental and social development after implementing ESMS, sub-projects were able to pay more attention to agricultural technology upgrading, and provided more training opportunities for women, which indicates the ESMS has been integrated into sub-project activities.

D. Implementation of the project monitoring program

47. Environmental protection monitoring, including internal monitoring, external monitoring, compliance monitoring, was implemented during the reporting period.

48. **Internal monitoring.** (i) Regular site inspections have been performed by the CSCs on a daily basis; (ii) Regular site inspections have been performed by the IAs Environment Officer with assistance of CSCs on a weekly basis. The internal monitoring results have been prepared by the CSCs and submitted to IAs for review on a monthly basis (iii) Random site inspections performed by HPMO and CPMOs. The consulting company assists in carrying out on-site EHS supervision in daily management, and introduces ADB's environmental management policies and EMP to the construction participants. During the reporting period, various environmental, occupational health and safety problems found in the construction were pointed out in a timely manner through the internal monitoring of the project, and the contractor was urged to make rectifications. Some environmental issues identified, and corrective measures taken are as follows.

	
Problem found - no protection around pump station	After corrective action
	
Problem found - no protection around working well	After corrective action



Problem found - bare soil not covered



After corrective action



Problems found - use the power strip when using the hand drill



After corrective action



Problem found - no fall protection with ladder



After corrective action



49. **External environmental monitoring.** The environmental monitoring work in the first half of 2022 has implemented by external environmental monitoring unit (Huangshan Angel Environmental Monitoring Co. , Ltd.) recruited by LIEC.

50. Table 4 summarizes the external monitoring plan and implementation status of EMP. On-sites monitoring for 15 civil works contracts that were fully started has been conducted. Involving 4 districts and counties of Huangshan District, Xiuning County, She County and Qimen County, the Monitoring Items include ambient air quality (total suspended particulate matter) and noise (equivalent continuous a-weighted sound pressure level) during construction; The monitoring of the operating sewage treatment stations and pumping stations in Huizhou District and Tunxi District was carried out. The Monitoring Items included the ambient air quality (hydrogen sulfide and ammonia), influent and effluent quality (pH, CODcr, SS, NH3-N, TP) of sewage treatment facilities and noise of pumping stations.

Table 4: Environmental Monitoring Program and Implementation Status

Subject	Parameter	Location	Frequency	Implement Supervise
Internal monitoring (contractors, CSCs, HPMO and IA Environment Officers)				
Ambient air quality	Dust mitigation	Visual inspection at all construction sites	1 time / week	Being implemented
Noise	<ul style="list-style-type: none"> • LAeq: measured with hand-held meter • Consultations with affected residents 	<ul style="list-style-type: none"> • At each construction site boundary • Settlements within 60 m of construction works – see Table EMP-2 and IEE Section V.3 	Daily measurements and consultations or as needed during peak construction levels at individual sites	Being implemented
Solid waste	Domestic and construction waste	Visual inspection at all construction sites and work-camps	Daily	Being implemented
Soil erosion	On-site management of soil erosion	Visual inspection at spoil sites and all construction sites	1 time / week; and immediately after heavy rainfall	Being implemented
Community health and	Measures for traffic management and	Construction sites and public roads and	Daily during construction at all	Being implemented

Subject	Parameter	Location	Frequency	Implement Supervise
safety	on-site safety described in in Table EMP-2	paths	individual sites	
Occupational health and safety	Camp hygiene, safety, availability of clean water	Inspection at all construction sites and work-camps	1 time / week	Existing house are leased for all on-site offices and the domestic wastewater is discharged through the existing pipe. No temporary buildings involved.
External monitoring (certified environment monitoring agency)				
Water quality	SS, petroleum	Onsite treated construction wastewater (by oil-water separator and/or sedimentation tank)	1 time / month during construction	Construction wastewater treated on site has not yet been involved
Ambient air quality	Dust: TSP	All construction sites (at least 1 point upwind and 1 point downwind) and the nearest sensitive receptor	1 time / month during construction	Be implemented. The monitoring results meet the requirements of the concentration limit of fugitive emission monitoring in the Integrated Emission Standard of Air Pollutants (GB16297-1996).
Noise	LAeq	Boundaries of all construction sites and the nearest sensitive receptor for each construction site	1 time / month (twice a day: once in daytime and once at nighttime, for 2 consecutive days) during construction	Be implemented. The results comply with requirements of the Emission Standard of Environment Noise for Boundary of Construction Site (GB 12523-2011)
Operation phase				
Water quality of effluent from WWTS	pH, CODcr, SS, NH3-N, TP	Influent and effluent from WWTS	4 times / year	The pH, CODcr, SS, NH3-N of the effluent of Yiqi Town Sewage Treatment Station can all meet the Class 1B or even Class 1A standard of the Pollutant Discharge Standard for Urban Sewage Treatment Plants

Subject	Parameter	Location	Frequency	Implement Supervise
				(GB 18918-2002); TP complies with Class II standard requirements.
Ambient air quality	Odor: NH ₃ and H ₂ S	At the nearest sensitive receptor from WWTS (1 point upwind and 2 points downwind)	2 times / year	Be implemented. The results can meet the Class I of "Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant" (GB 18918-2002)
Noise	LAeq	At boundary of pump stations (IEE Section V.E) and the nearest sensitive receptor	2 times / year (twice a day: once in daytime and once at nighttime)	Be implemented. The results can meet Class II of "Emission Standard for Industrial Enterprises Noise at Boundary"(GB12348-2008)

51. According to the external environmental monitoring results, the monitoring results of total suspended particulate matter during the construction period meet the requirements of the concentration limit of fugitive emission monitoring in the Integrated Emission Standard of Air Pollutants (GB16297-1996); the noise monitoring values meet the requirements of the "Construction Site Boundary Environment Noise Emission Standard (GB 12523-2011). During the operation period, the pH, CODcr, SS, NH₃-N of the effluent from the sewage treatment station in Yiqi Town, Tunxi District can all meet the Class 1B or even Class 1A of the Discharge Standard of Pollutants for Municipal Wastewater Treatment Plants (GB 18918-2002). The standard, however, the total phosphorus only reaches the Class II, which is slightly lower than the Class 1B requirement. According to the information obtained, Yiqi Sewage Treatment Station has not yet officially entrusted the operation unit, so the treatment facilities and wetlands in the station are not fully managed. The Tunxi PMO is recruiting professional third-party agency to be responsible for the operation and maintenance of the WWTS as soon as possible. In addition, the detection values of hydrogen sulfide and ammonia in the sewage treatment station can meet the class I of "Pollutant Discharge Standards for Urban Sewage Treatment Plants" (GB 18918-2002); The noise of the pumping station during the operation period meet the requirements of Class 2 standard in Table 1 of "Environmental Noise Emission Standard for Industrial Enterprises Boundary" (GB12348-2008). Tables 5-1~5 summarize the details of the external monitoring results during the reporting period. Appendix 2 lists the monitoring locations, Monitoring Items, methods and results while Appendix 3 presents photos of the external monitoring site.

Table 5-1 Ambient air quality monitoring during construction period
(Unit: mg/m³)

Location		Monitoring Item- TSP		
		Upwind of construction site	Downwind of construction site	Sensitive Point
She County	Nanping Village, Huicheng Town	0.250	0.317	0.333
	Urban Area	0.333	0.333	0.367
Xiuning County	Urban Area	0.283	0.367	0.383
	Shikeng Village, Xikou Town	0.217	0.317	0.350
	WuchengTown	0.233	0.333	0.317
	Yanli Village, Shangshan Town	0.233	0.367	0.367
Huangshan District	Cao Village, Xinhua Township	0.250	0.317	0.317
	Xinhua Township Store Street Group	0.233	0.350	0.333
Qimen County	Urban Area	0.267	0.383	0.367
	Urban Area	0.283	0.417	0.400
Grade II of the Ambient Air Quality Standards (GB 3095-2012)				0.3
PRC Integrated Emission Standard of Air Pollutants (GB16297-1996)		1.0		

Table 5-2 Noise environment monitoring during construction period
(Unit: Leq dB(A))

Location			Monitoring Item-Noise	
			Day 1	Day 2
She County	Nanping Village, Huicheng Town	Construction site	65.9	65.3
		Sensitive Point	50.6	53.4
	Urban Area	Construction site	66.6	69.8
		Sensitive Point	54.8	54.6
Xiuning County	Urban Area	Construction site	60.3	53.7
		Sensitive Point	47.4	53.9

Location			Monitoring Item-Noise	
			Day 1	Day 2
	Shikeng Village, Xikou Town	Factory Boundary	56.7	58.2
		Sensitive Point	52.9	51.7
	Wucheng Town Zhouxie Village	Construction site	62.9	60.4
		Sensitive Point	54.2	52.9
	Yanli Village, Shangshan Town	Factory Boundary	59.9	63.0
		Sensitive Point	54.2	54.8
Huangshan District	Cao Village, Xinhua Township	Construction site	54.4	55.6
		Sensitive Point	52.1	52.4
	Xinhua Township Store Street Group	Construction site	60.4	55.8
		Sensitive Point	53.4	51.9
Qimen County	Urban Area	Construction site	67.8	64.4
		Sensitive Point	55.9	53.8
	Urban Area	Construction site	67.7	66.5
		Sensitive Point	57.6	58.6

Note: For construction site, applicable limits for noise emission are 70 dB(A) (daytime) and 55 dB (A) (nighttime) as specified in Emission Standard of Environment Noise for boundary of Construction Site (GB12523-2011) For sensitive point, applicable limits for noise levels are 60 dB(A) (daytime) and 50 dB (A) (nighttime) as specified in Class II Ambient Acoustic Quality Standard of GB3096-2008 for villages and residential communities.

Table 5-3 Water quality monitoring of operating sewage treatment stations

(Unit: mg/L (pH: dimensionless; water temperature:°C)

Location	Monitoring Item					
	Water Temperature	pH	COD _{Cr}	SS	NH ₃ -N	TP
Yiqi Town Sewage Treatment Station, Tunxi District - Influent	24.5	7.8	78	42	18.3	2.54
Yiqi Town Sewage Treatment	24.2	7.5	17	8	1.93	1.28

Location	Monitoring Item					
	Water Temperature	pH	COD _{Cr}	SS	NH ₃ -N	TP
Station, Tunxi District - Effluent						
Class II of Discharge Standard of Pollutants for Municipal WWTP (GB 18918-2002),		6-9	60	20	3	1

Table 5-4 Odor monitoring of operating sewage treatment stations
(Unit: mg/m³)

Location		Monitoring Item	
		H ₂ S	NH ₃
Yiqi Town Sewage Treatment Station, Tunxi District	Upwind	0.005	0.08
	Downwind	0.004	0.06
	Sensitive Point	0.006	0.07
Limits set up in Appendix D of Technical Guidelines of EIA – Atmospheric Environment (HJ 2.2-2018)		0.01	0.2

Table 5-5 Monitoring situation of noise environment of pumping station during operation period
(Unit: Leq dB(A))

Location		Monitoring Item-noise	
		Daytime	At night
Yiqi Town Pumping Station, Tunxi District	Factory Boundary	49.5	45.5
	Sensitive Point	49.4	44.2
Shankou Village Pumping Station, Yangcun Township, Huizhou District	Factory Boundary	50.9	48.5
	Sensitive Point	50.0	47.9
Changwu Village Pumping Station, Fuxi Township, Huizhou District	Factory Boundary	50.3	49.6
	Sensitive Point	48.9	48.9

Location		Monitoring Item-noise	
		Daytime	At night
Class II of Emission Standard for Industrial Enterprise Noise at Boundary (GB 12348-2008)	Factory Boundary	60	50
Class II of Ambient Acoustic Quality Standard of GB3096-2008 for villages and residential communities	Sensitive Point	60	50

52. **Compliance Monitoring.** The loan implementation consultant team officially started work in October 2020, including an environmental expert. The loan implementation environmental consultant reviewed the project progress and the implementation of the environmental management plan based on the on-site inspection and the environmental monitoring report provided by the environmental monitoring agency.

53. The following tasks were carried out by loan implementing environmental consultant during the reporting period: (i) on-site visits, including municipal PMOs and county/district project sites; (ii) review of project documents such as research, preliminary design and bidding documents; (iii) environmental and social security training and communication for municipal/county PMOs, implementing agencies and Huangshan Trust and Investment Corporation; (iv) review of project progress and implementation of environmental management plan; and (vi) preparatory work for environmental monitoring and review for environmental monitoring reports; (vii) Assist municipal PMO environmental officers in the preparation and submission of the fourth semi-annual environmental monitoring report to ADB.

54. During the reporting period, PMOs, IAS and consultants have visited all the projects, in particular started construction site. The IAs and the contractors strictly abide by EMP and the requirements of domestic environmental protection, so as to ensure that the environment, occupational health and safety during the construction period are in good condition, and there are no adverse events related to the environment, occupational health and safety.

55. **Conclusion and next steps.** During the reporting period, all environmental monitoring work was carried out in compliance with the requirements of the environmental management plan, and the monitoring results showed that all environmental indicators met the national environmental quality standards. Monitoring activities for the next phase (July 1 to December 31, 2022) will be carried out in accordance with the EMP monitoring plan.

E. Public consultations and grievance redress mechanism

56. This section summarizes the implementation progress of public consultations and grievance redress mechanism during the current reporting period.

57. The project construction information was publicized and informed at the construction site of each subproject. Road closure information will also be issued in a timely manner to reduce travel troubles for residents during construction. Grievance redress channels have been further improved by sub-PMO and dissatisfactions and complaints of the affected population are collected and responded immediately by special personnel from each sub-PMO. The officer and his/her office address and communication information have been publicized in the project area. Smooth communication channels in townships and villages in

the project area has been established to redress grievance, and the PMOs /implementation unit also invite them to participate in the design and implementation of the project.

58. During the excavation of rain and sewage pipeline trenches in the urban area of Qimen County, many existing underground pipelines were affected, involving water supply, gas, and communications. In this regard, the Qimen County PMO has contacted all affected pipeline owners to set up a safety committee, which is responsible for coordinating work during construction and guiding subsequent construction arrangements. For example, before the start of construction activities in a certain area, the safety committee will confirm the detailed information of the underground pipelines of all the ownership units in the area, evaluate their safety and put forward security opinions, and finally give permission to the Contractor to carry out the construction. This measure significantly improves the efficiency of coordination with various stakeholders and avoids potential conflicts.

附件 1:

祁门县城区基建项目进场施工会审表

项目名称	祁门县老城区已建雨水管网工程		
拟开工时间	2020年11月16日		
会审单位	现场勘察人员	有无地下管 网图提供	会审单位意见
业主单位	祁门县住建局		
施工单位	祁门县住建局		
安委办	祁门县住建局		
发改委	祁门县住建局		
住建局	祁门县住建局		
城管执法	祁门县住建局		
新区办	祁门县住建局		
供电公司	祁门县住建局		供电公司 18955920507
自来水公司	祁门县住建局		自来水公司 1895664458
中燃公司	祁门县住建局		中燃公司 1895664458
中国广电	祁门县住建局		中国广电 1895664458
联通公司	祁门县住建局		联通公司 1895664458
移动公司	祁门县住建局		移动公司 1895664458
电信公司	祁门县住建局		电信公司 1895664458
监理单位	祁门县住建局		
监理单位意见	11月16日 13:00		

Records of the safety committee coordinating the construction assistance of various ownership units

Table 5: Public Consultation and Participation Plan

Organizer	Approach	Times /Frequency	Subjects	Participants	Implementation status
HPMO, IAs, LIEC	Site visits, informal interviews	At least once a week during peak construction	Construction impacts; adjusting mitigation measures if necessary; feedback	Affected persons Workers	Being implemented
	Site-specific basis	At least one month before the start of construction at any new site	Anticipated risks-noise, dust, etc.	Affected persons	The public consultation of EIA and EMP was implemented
	Public workshops	At least once during peak construction period	EMP implementation progress; construction impacts; adjusting mitigation measures if necessary; feedback	Affected persons	Being implemented

59. In accordance with the EMP, any grievances which arise due to project activities will be managed through a grievance redress mechanism (GRM), as follows.

- Stage 1 (5 calendar days): If a concern arises during construction or operation, the affected person may submit a written or oral complaint to the contractor. The contractor will: (i) respectfully acknowledge the issue and immediately stop the causal activity; (ii) not resume the activity until the complaint has been resolved; (iii) inform the Project Managers of IAs of the incident on the same day of the incident occurring; (iv) give a clear reply to the affected person within two calendar days; and (v) as far as possible, resolve the problem within five calendar days from receiving the complaint.
- Stage 2 (5 calendar days): If the issue cannot be resolved in Stage 1, after five calendar days, the IAs and/or HPMO will take over responsibility. Eligibility of the complaint will be assessed, and a recommended solution given to the complainant and contractors within two calendar days. If the solution is agreed by the complainant, the contractors will implement the solution.
- Stage 3 (15 calendar days): If no solution can be identified by the HPMO and/or IA, and/or the complainant is not satisfied with the proposed solution, the HPMO and/or HPMO will organize, within seven (7) calendar days, a stakeholder meeting. A solution acceptable to all shall be identified including clear steps. The contractors will immediately implement the agreed solution.

60. The HPMO will report to ADB on all complaints and solutions according to the grievance redress mechanism, and relevant documents will be included in the progress report.

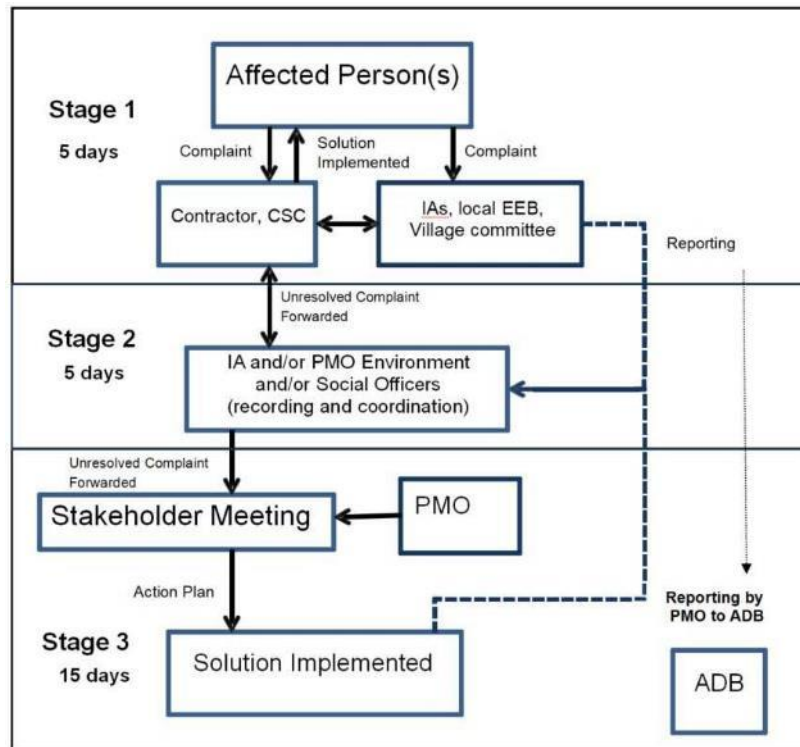


Figure 2 Operation Chart of the Grievance Redress Mechanism

ADB = Asian Development Bank, CSC = construction supervision company, EEB = ecology and environmental bureau, GRM = grievance redress mechanism, IA = implementing agency, HPMO = Huangshan Municipal project management office.

61. The grievance redress mechanism (GRM) of the project has been established as required during the reporting period, and the environmental and social officials of the Huangshan PMO and the project office of the three districts and four counties will act as the main coordinator for the implementation of the grievance redress mechanism. Prior to construction, the contact information (telephone number, address and email address) of the corresponding environmental coordinator will be made public on the information board of the construction site and the website of the local ecological environment bureau.

62. During the reporting period, the construction of 26 civil works contracts have been fully conducted/to be started, of which 8 contracts have been completed or almost completed. The project process is relatively smooth. Both of the public consultation and grievance redress mechanism in the process are implemented well. The PMO widely used various publicity measures such as the Internet and the media to achieve the purpose of informing stakeholders about construction activities. For example, Xiuning County reported the project implementation process through local TV stations many times, and interviewed stakeholders, who expressed their support for connecting to the sewage system.

<p>Xiuning County TV station reported the progress of the project</p>	
<p>Huangshan District Government held a press conference to report on the progress of ADB projects</p>	<p>The Huizhou District People's Government website announced the news that Works-HZ-2 passed the acceptance</p>

63. **Conclusions and next steps.** The public consultation and grievance redress mechanism have been conducted well at the site where construction has been started and no complaints or grievance have been received. Public consultation will be regularly organized by the county/district PMO during the remaining implementation period. If there are any petitions and/or complaints, the relevant agencies will keep records.

F. Training and capacity building

64. Project implementing agencies in the three districts and four counties of Huangshan Municipality have no previous experience with ADB-funded projects and safeguard requirements. The experience of individual staff within the district and county EEBs for environmental management varies considerably.

65. Therefore, a capacity building program will be implemented on: (i) the EMP, including the mitigation measures, monitoring, and reporting; (ii) the grievance redress mechanism, including roles, responsibilities and procedures; (iii) procurement and contract management, focusing on EMP incorporation and implementation; (iv) operation and maintenance of the WWTS; and (v) measures for improved efficiency in the use of agricultural chemicals and water resources for agriculture.

66. Over the reporting period, on-site training and introduction on ADB's environmental management for PMOs, IAs, contractors, and Supervision companies at all levels were

conducted by relevant experts and LIEC. HTIC environment and social officers conducted 1 training on ESMS implementation for company managers working on the company's environmental, social and investment issues. Table 6 shows the implementation of training and capacity-building during the reporting period.

Table 6: Training on environmental safeguards conducted during this reporting period

Topics	Trainees	Training content	Date	#		Outcomes
				Trainees		
				M	F	
Project Management Training	District and county PMOs and implementing units	The whole process management training of the project, which includes the training on Environmental safeguard, see Appendix 5 for some training courseware	11 March 2022	23	7	Participants have a comprehensive understanding of the responsibilities and EHS aspects of their respective institutions
Construction site EHS management	County PMOs, implementation unit, design, supervision and contractor	EHS management training (including EMP, GRM, ESMS implementation) at the construction site of the project already started	During 6 times on-site inspection from January to June 2022	46	18	Promoted the effective implementation of environmental management plans
ESMS Implementation	HTIC staff	Seminar on ESMS Implementation training for project managers organized by HTIC	18 March 2022	0	16	The ESMS requirements were discussed in detail by the participants, and ESMS is further recognized by all
			20 May 2022	1	3	HTIC staff underwent ADB's integrity training

67. **Conclusions and next steps.** After the training, participants had a basic understanding of the implementation of environmental management plans, monitoring and reporting requirements and the concept and implementation of grievance redress mechanism. HTIC will continue to promote the understanding of implementing agency staff and sub-project staff about the overall project, ESMS, ADB's management requirements.

G. Compliance with loan and project agreement

68. Loan agreements and project agreements between the government and ADB include 25 environmental safeguards and/or guarantees related to environmental issues (or "terms"). This involves the timely and effective implementation of environmental management plans and specific project guarantees for current projects. Compliance with these terms is a condition of the loan and project agreement. The environmental safety and security provisions

during the reporting period (including the environment, safeguards provisions, pre-construction preparation, safeguard and monitoring reports and grievance redress mechanism) and their implementation progress are described in Table 7.

Table 7 Compliance with environmental assurances

Para No.	Description	Remarks / Issues	Type
10-11	10. HMG shall, and shall cause the IAs to, ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventative actions (i) set forth in a Safeguards Monitoring Report, or (ii) subsequently agreed between ADB and HMG.	In Compliance	Safeguards
	11. HMG shall, and shall cause the IAs to, ensure that agricultural chemicals listed as hazardous under Classes I or II by the World Health Organization or listed as prohibited or strictly controlled use under the Borrower's national regulations for pesticide management are not to be used within the Project area.		
15	15. HMG shall, and shall cause the IAs to, make available necessary budgetary and human resources to fully implement the EMP and the RPs.	In Compliance	Safeguards
16	16. HMG shall ensure that all bidding documents and contracts for Works entered into by HMG contain provisions that require contractors to:	In Compliance	Safeguards
	(a) comply with the measures and requirements relevant to the contractor set forth in the IEE, EMP, the related RP (to the extent they concern impacts on the respective affected people under the Environmental Safeguards and the Involuntary Resettlement Safeguards during construction) and any corrective or preventative actions set forth in (i) a Safeguards Monitoring Report, or (ii) subsequently agreed between ADB and HMG;		
	(b) make available a budget for all such environmental and social measures;		
	(c) provide HMG with a written notice of any unanticipated environmental, resettlement or indigenous peoples/ethnic minorities risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, and the RPs;		
	(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and		

Para No.	Description	Remarks / Issues	Type
	(e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition as early as possible but no later than the completion of construction.		
17	<p>17. HMG shall ensure that each IA:</p> <p>(a) appoint at least one qualified environment officer and one social officer as full time Project management office staff to coordinate implementation of the EMP, the RP, and the GAP;</p> <p>(b) recruit a start-up loan implementation consultant to support the Project management office; and</p> <p>(c) ensure that the Project management office has engaged one external social monitoring specialist.</p>	In Compliance	Safeguards
18	Before and during the implementation of Works, HMG shall cause each IA to organize and conduct training on implementation and supervision of the EMP for construction supervision companies, and contractors, and shall ensure that the appropriate staff and officers receive such training.	In Compliance	Safeguards
19	<p>19. HMG shall do the following:</p> <p>(a) submit semiannual Safeguards Monitoring Reports to ADB until the issuance of ADB's Project completion report, unless a longer period is agreed in the EMP, and disclose relevant information from such reports to the respective affected people under the Environmental Safeguards promptly upon submission;</p> <p>(b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, or the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the RP promptly after becoming aware of the breach.</p>	In Compliance	Safeguards
20	20. HMG shall ensure that a safeguards grievance redress mechanism acceptable to ADB is established and maintained in accordance with the provisions of the IEE, the EMP, the RP and the PAM, to consider safeguards complaints	In Compliance	Safeguards

H. Actions in ADB Memorandum of Understanding

69. Asian Development Bank (ADB) and Kreditanstalt Fuer Wiederaufbau (KfW) conducted a Loan Review Mission for Anhui Huangshan Xin'an River Ecological Protection and Green Development Project from 7 to 10 December 2021 and issued a Memorandum of Understanding (MOU). The MOU records identified issues and follow-up actions. Table 8 summarizes the environmental issues raised in the Mission, the corrective actions need to be taken and the current status of them.

Table 8: Implementation progress of environmental measures in the MOU of Loan Review Mission

Actions agreed	Responsible Unit	Completion Date	Completion status
Submission of revised second semi-annual EMR	PMO, external monitor	30-Dec-21	Completed in 30-Dec-21
Submission of third semi-annual EMR covering 1 July to 30 December 2021	PMO, external monitor	30-Jan-22	Completed in 30-Jan-22

I. Reporting

70. Table 9 summarizes the project environmental safeguard reporting requirements and implementation status during the reporting period, including: i) progress reports submitted by construction supervision companies to implementing agencies;(ii) external monitoring reports submitted by environmental monitoring agencies to implementing agencies and HPMO; and (iii) environmental monitoring progress reports submitted by PMOs to ADB.

Table 9: Environmental reporting requirements and status of implementation during the reporting period

Report	From	To	Reporting frequency	Implementation status
Internal progress reports	Construction Supervision Company	IAs	Monthly	Completed
Implementation report of ESMS	HTIC	EA, HPMO	Half a year	Completed in January, 2022
External monitoring reports	Environmental monitoring agency	EA, HPMO	Half a year	Monitoring activities were carried out in the first half of 2022 and reports were issued. (See Appendix 2).
Compliance monitoring and EMP progress reports	Huangshan PMO/ Loan Implementation Environmental Specialist	ADB	Half a year	Refer to this semi-annual progress report on environmental monitoring

71. **Conclusions and next steps.** The reporting system for the environmental management plan is being implemented as required, and the next semi-annual report on environmental monitoring will report on the implementation for the period from 1 July 2022 to 31 December 2022.

IV. LESSONS LEARNED

72. Lessons learned during reporting period include: Provide green finance assessment and supervision. Using the international green financial system standard (ESMS system) to evaluate the ecological agriculture technology and social influence of the sub-projects helps to further understand the agricultural technology level of the sub-project, on the other hand, it provides governance services in compliance with green financial standards for the sub-projects and urge the sub-projects to continuously do a good job in internal control and to achieve green and sustainable development.

V. NEXT STEPS

73. Based on the findings of this EMR, next steps are required are listed below:
- updating domestic EIA on 30 September 2022 and update IEE and EMP on 15 November 2022 covering Project adjustments as discussed during the August 2022 ADB mission;
 - carry out the required public consultation during preparation of the updated EIA/EMP;
 - carry out information disclosure and dissemination;
 - update ESMS and prepare subproject / activity specific REA / worksheets for new type of subproject using GIF fund by August 2022. This includes strengthening through training of staff of the implementing agency and the staff of sub-projects, to apply ESMS steps for screening, identification, and post-investment management of subsequent sub-projects.
 - submit next EMR covering the period of July 2022 to December 2022 by 31 January 2023.

APPENDIX 1 PHOTOS OF ON-SITE CONSTRUCTION ACTIVITIES



Works-TX-3 built pumping station



Works-XN-7 Pipe trench excavation



Works-XN-4 Pipe trench excavation



Works-YX-1 Completed river revetment



Works-QM-1 road excavation



Works-QM-2 road excavation



Works-XN-1 Pipe Jacking Construction of East Binjiang Road



Works-XN-2 Laying of road water stabilization layer

APPENDIX 2 EXTERNAL ENVIRONMENTAL MONITORING REPORT

1. Yangcun Township and Fuxi Township, Huizhou District



安环检（2022）第 1016 号

检测报告

Test Report

项目名称:	亚行贷款安徽黄山新安江流域生态 保护与绿色发展项目（徽州区）
委托单位:	上海伊世特科技管理有限公司
报告日期:	2022 年 06 月 28 日



黄山安琪尔环境检测有限公司
Huangshan AnQier Environmental Detection CO,LTD



说 明

一、报告及复印件必须加盖“CMA”印章和检测报告专用章，否则无效。任何对于检测报告的涂改、增删、骑缝章不完整及无批准人签字均视作无效。

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五、本单位保证工作的客观公正性、对委托单位的商业信息、技术文件等商业秘密进行保密义务。

六、本报告打印的检测员姓名与对应的检测原始记录表格中检测员签署姓名不一致的无效。

七、若委托单位对本次检测报告有异议，可在收到报告之日起十五日内，书面向我公司提出复检或仲裁申请，逾期不予受理。

八、除客户特别申明并支付档案管理费，本次检测的所有记录档案保存期限为六年。

九、除客户特别申明并支付样品管理费，所有样品超过标准规定的时效期均不再做留样。

检测机构地址：黄山市屯溪区社屋前路 30 号商业楼 101 室 3 楼

电话：0559-2531668

传真：0559-2531668

邮政编码：245000

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1016号
共2页 第1页

表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	采样日期	2022.06.14	
样品类别	噪声	分析日期	2022.06.14	
检测地点	徽州区杨村乡山口村、 徽州区富溪乡长坞村	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/ 规格、编号	仪器设备检定/ 校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232(2022116)	2023.06.05	/
厂界噪声	工业企业厂界噪声排放标准 GB 12348-2008	多功能声级计 AWA5688(2020058)	2022.08.08	/
	环境噪声监测技术规范噪声测量值 修正 HJ706-2014			

表 2-2 噪声检测结果

类别: 噪声						
检测点位	检测结果 dB(A)					
	起止时间	昼间 Leq	主要声源	起止时间	夜间 Leq	主要声源
杨村乡山口村东侧厂界外 1m 处	15:38-15:39	50.9	生产噪声	22:39-22:40	48.5	生产噪声
杨村乡山口村居民敏感点	15:40-15:41	50.0	生产噪声	22:45-22:46	47.9	生产噪声
检测点位示意图:				备注:		
				1、监测当天气象参数: 日期: 2022.06.14; 天气: 多云; 风向: 东北风; 风速: 2.2m/s.		

黄山安琪尔环境检测有限公司检测报告

编号：CW27-04/A3

安环检（2022）第 1016 号

共 2 页 第 2 页

续表 2-2 噪声检测结果

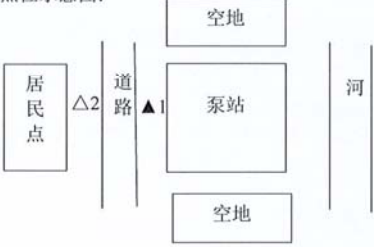
类别：噪声						
检测点位	检测结果 dB(A)					
	起止时间	昼间 Leq	主要声源	起止时间	夜间 Leq	主要声源
富溪乡长坞村 西侧厂界外 1m 处	14:46-14:47	50.3	生产噪声	22:01-22:02	49.6	生产噪声
富溪乡长坞村 居民敏感点	14:49-14:50	48.9	生产噪声	22:04-22:05	48.9	生产噪声
检测点位示意图： 				备注： 1、监测当天气象参数： 日期：2022.06.14； 天气：多云； 风向：东北风； 风速：2.2m/s。		

表 2-3 声级校准器校准

仪器名称	仪器型号/ 仪器编号	仪器设备 检定/校准 有效期	单位	标准值	校准日期	时间	仪器 显示	示值 误差	是否 合格
声级校 准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.14	08:31	94.1	+0.1	合格
						23:32	94.1	-0.1	合格

****报告结束****

编制：张皓亮 审核：王明 签发：张皓亮 签发日期：2022.6.17



2. She County urban area, Nanping village, Huicheng town

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

安环检(2022)第 1017 号

共 4 页 第 1 页

表 1-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	<input type="checkbox"/> 送样/ <input checked="" type="checkbox"/> 采样日期	2022.06.15、2022.06.16	
样品类别	气	接样日期	2022.06.15、2022.06.16	
分析日期	2022.06.18-2022.06.20	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022116)	2023.06.05	/
颗粒物	环境空气 总悬浮颗粒物的测定重量法 GB/T 15432-1995 及修改单	万分之一天平 AUW220 (2018014)	2023.01.05	0.001mg/m ³

表 1-2 无组织废气检测结果

单位: mg/m³

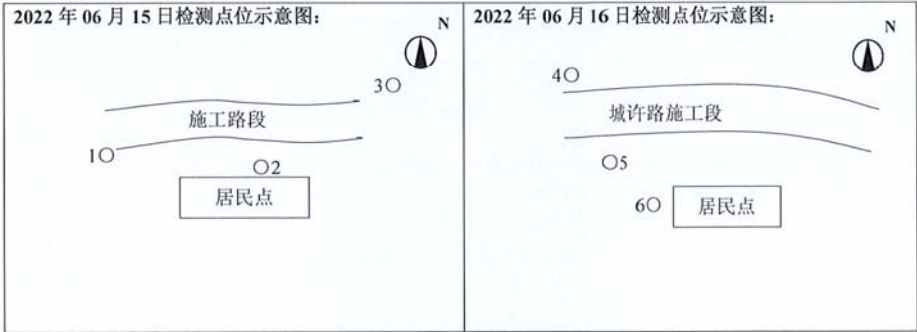
采样点位	采样起止时间	检测项目
		颗粒物
南屏村施工段 3#上风向	14:00-15:00	0.250
南屏村施工段 1#下风向	14:00-15:00	0.317
南屏村施工段 2#居民敏感点	14:00-15:00	0.333
城许路施工段 4#上风向	10:30-11:30	0.333
城许路施工段 5#下风向	10:30-11:30	0.333
城许路施工段 6#居民敏感点	10:30-11:30	0.367



表 1-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速 (m/s)	气温 (℃)	气压 (Kpa)
14:00-15:00	晴	东风	2.0	30	99.3
10:30-11:30	晴	西北风	1.8	28	99.2

表 1-4 无组织废气检测点位图



废气质控信息

表 1-5 废气精密度控制情况统计表

项目 \ 内容	样品个数(个)	全程序空白(个)	实验室平行数(个)	合格数(个)	合格率(%)
颗粒物	6	0	0	/	/

表 1-6 废气准确度控制情况统计表

项目 \ 内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
颗粒物	0	2	2	100

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1017号
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表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	采样日期	2022.06.15、2022.06.16	
样品类别	噪声	分析日期	2022.06.15、2022.06.16	
检测地点	歙县徽城镇南屏路施工段、歙县城许路施工段	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022116)	2023.06.05	/
施工噪声	建筑施工厂界环境噪声排放标准 GB 12523-2011	噪声仪 AWA6228+ (2020080)、多功能声级计 AWA5688 (2020058)	2022.10.26、2022.08.08	/
	环境噪声监测技术规范噪声测量值修正 HJ706-2014			

表 2-2 噪声检测结果

类别: 噪声				
采样日期	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.15	南屏村施工边界外 1m 处	15:11-15:30	65.9	施工噪声
	南屏村施工居民敏感点处	14:44-14:53	50.6	施工噪声
2022.06.16	南屏村施工边界外 1m 处	09:08-09:27	65.3	施工噪声
	南屏村施工居民敏感点处	09:31-09:40	53.4	施工噪声
检测点位示意图:		备注: 1、监测当天气象参数: 日期: 2022.06.15; 天气: 晴; 风向: 东风; 风速: 2.0m/s; 2、监测当天气象参数: 日期: 2022.06.16; 天气: 晴; 风向: 西北风; 风速: 1.9m/s; 3、只检测昼间噪声。		



黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

安环检(2022)第1017号

共4页 第4页

续表 2-2 噪声检测结果

类别: 噪声				
采样日期	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.15	城许路施工边界外 1m 处	16:02-16:21	66.6	施工噪声
	城许路施工居民敏感点处	16:15-16:24	54.8	施工噪声
2022.06.16	城许路施工边界外 1m 处	10:38-10:57	69.8	施工噪声
	城许路施工居民敏感点处	11:02-11:11	54.6	施工噪声
检测点位示意图:				
		备注: 1、监测当天气象参数: 日期: 2022.06.15; 天气: 晴; 风向: 东风; 风速: 2.1m/s; 2、监测当天气象参数: 日期: 2022.06.16; 天气: 晴; 风向: 西北风; 风速: 1.8m/s; 3、只检测昼间噪声。		

表 2-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.15	08:09	93.8	-0.2	合格
						18:09	93.8	-0.2	合格
						08:04	93.7	-0.3	合格
						18:04	93.7	-0.3	合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.16	08:06	93.8	-0.2	合格
						18:07	93.8	-0.2	合格
						08:14	93.7	-0.3	合格
						18:15	93.7	-0.3	合格

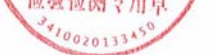
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编制: 安琪尔

审核: 安琪尔

签发: 安琪尔

签发日期: 2022.6.18



3. Xikou Town, Xikou Town, Xiuning County

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1018号
共4页 第1页

表 1-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	<input type="checkbox"/> 送样/ <input checked="" type="checkbox"/> 采样日期	2022.06.16	
样品类别	气	接样日期	2022.06.16	
分析日期	2022.06.16-2022.06.20	报告日期	2022.06.29	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (20221116)	2023.06.05	/
颗粒物	环境空气 总悬浮颗粒物的测定重量法 GB/T 15432-1995 及修改单	万分之一天平 AUW220 (2018014)	2023.01.05	0.001mg/m ³

表 1-2 无组织废气检测结果

单位: mg/m³

采样点位	采样起止时间	检测项目
		颗粒物
1#上风向	13:40-14:40	0.217
2#敏感点(局民区)	13:40-14:40	0.317
3#下风向	13:40-14:40	0.350
4#上风向	15:30-16:30	0.283
5#下风向	15:30-16:30	0.367
6#敏感点(局民区)	15:30-16:30	0.383



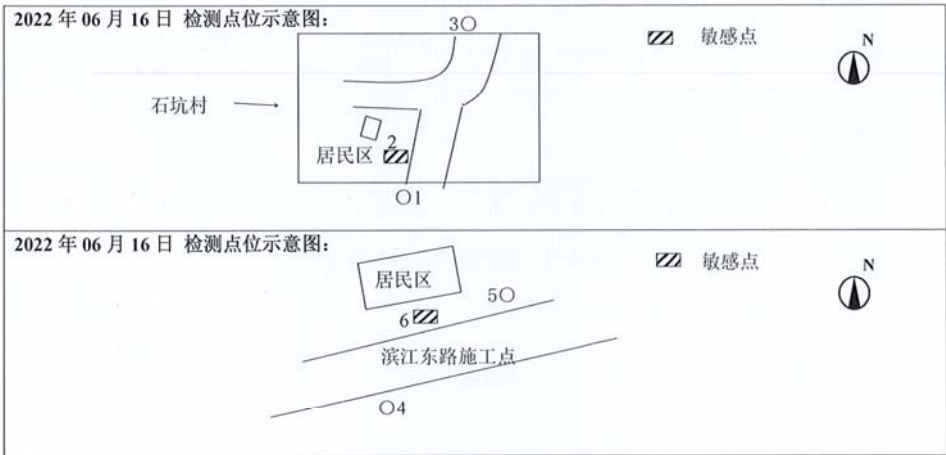
黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
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共4页 第2页

表 1-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速 (m/s)	气温 (°C)	气压 (Kpa)
13:40-14:40	晴	南风	2.0	31	99.5
15:30-16:30	晴	西南	2.1	31	99.4

表 1-4 无组织废气检测点位图



废气质控信息

表 1-3 废气精密度控制情况统计表

项目	内容	样品个数 (个)	全程序空白 (个)	实验室平行数 (个)	合格数 (个)	合格率 (%)
颗粒物		6	0	0	/	/

表 1-4 废气准确度控制情况统计表

项目	内容	实验室加标数 (个)	质控样数 (个)	合格数 (个)	合格率 (%)
颗粒物		0	2	2	100

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第 1018 号
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表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	□送样/☑采样日期	2022.06.16-2022.06.17	
样品类别	噪声	接样日期	2022.06.16-2022.06.17	
检测地点	休宁县城滨江东路、 溪口镇石坑村	报告日期	2022.06.29	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/ 规格、编号	仪器设备检定 /校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022116)	2023.06.05	/
厂界噪声	施工噪声排放标准 GB 12523-2011	噪声仪 AWA6228+ (2010059)	2022.08.08	/
	环境噪声监测技术规范噪声测量值 修正 HJ 706-2014	多功能声级计 AWA5688 (2020058)		

表 2-2 噪声检测结果

类别: 噪声				
检测时间	检测点位	检测结果 dB(A)		
	休宁县城滨江东路	起止时间	昼间 Leq	主要声源
2022.06.16	施工场界外 1m 处	14:49-15:08	60.3	施工噪声
	北侧居民点	15:10-15:19	47.4	施工噪声
2022.06.17	施工场界外 1m 处	10:33-10:52	53.7	施工噪声
	北侧居民点	10:17-10:26	53.9	施工噪声
检测点位示意图:				
		备注: 1、监测当天气象参数: 日期: 2022.06.16; 天气: 晴; 风向: 西南风; 风速: 2.1m/s; 2、监测当天气象参数: 日期: 2022.06.17; 天气: 晴; 风向: 南风; 风速: 2.0m/s; 3.人工施工, 受交通车辆的影响		

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

安环检(2022)第 1018 号

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续表 2-2 噪声检测结果

类别: 噪声				
检测时间	检测点位	检测结果 dB(A)		
	溪口镇石坑村	起止时间	昼间 Leq	主要声源
2022.06.16	施工边界外 1m 处	13:51-14:10	56.7	施工噪声
	石坑村景区敏感点	13:34-13:43	52.9	施工噪声
2022.06.17	施工边界外 1m 处	09:01-09:20	58.2	施工噪声
	石坑村景区敏感点	09:22-09:31	51.7	施工噪声
检测点位示意图:			备注: 3、监测当天气象参数: 日期: 2022.06.16; 天气: 晴; 风向: 西南风; 风速: 1.8m/s; 4、监测当天气象参数: 日期: 2022.06.17; 天气: 晴; 风向: 南风; 风速: 2.0m/s; 3.人工施工	
				

表 2-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.16	08:06	93.8	-0.2	合格
						18:07	93.8	-0.2	合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.17	08:09	93.9	-0.1	合格
						17:27	94.0	0.0	合格

****报告结束****

编制: 程旭冲

审核: 李二

签发: 孙江

签发日期: 2022.06.17



4. Qimen County Urban Area-1

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1019号
共3页 第1页

表 1-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	□送样/☑采样日期	2022.06.18	
样品类别	气	接样日期	2022.06.18	
分析日期	2022.06.18-2022.06.20	报告日期	2022.06.29	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	便携式风向风速仪 JY-FS-04 (2020072)	2023.01.05	/
颗粒物	环境空气 总悬浮颗粒物的测定重量法 GB/T 15432-1995 及修改单	万分之一天平 AUW220 (2018014)	2023.01.05	0.001mg/m ³

表 1-2 无组织废气检测结果

单位: mg/m³

采样点位	采样起止时间	检测项目
		颗粒物
2#上风向	10:00-11:00	0.267
1#下风向	10:00-11:00	0.383
3#敏感点	10:00-11:00	0.367

表 1-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速(m/s)	气温(℃)	气压(Kpa)
10:00-11:00	多云	西南	2.3	28	99.0



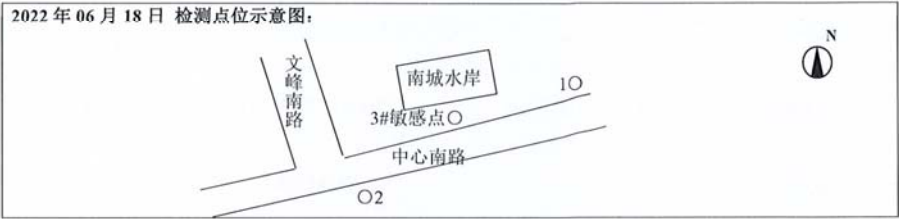
黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

安环检(2022)第1019号

共3页 第2页

表 1-4 无组织废气检测点位图



废气质控信息

表 1-5 废气精密度控制情况统计表

项目	内容	样品个数(个)	全程序空白(个)	实验室平行数(个)	合格数(个)	合格率(%)
颗粒物		3	1	0	1	100

表 1-6 废气准确度控制情况统计表

项目	内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
颗粒物		0	2	2	100

表 1-7 全程序空白样分析值表

单位: mg/m³

项目	内容	全程序空白样分析值
颗粒物		ND

表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	□送样/☑采样日期	2022.06.17-2022.06.18	
样品类别	噪声	接样日期	2022.06.17-2022.06.18	
检测地点	祁门县中心南路段	报告日期	2022.06.29	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	便携式风向风速仪 JY-FS-04(2020072)	2023.01.05	/
厂界噪声	施工噪声排放标准 GB 12523-2011	多功能声级计 AWA6228+(2021081)	2022.10.26	/
	环境噪声监测技术规范噪声测量值修正 HJ 706-2014			

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1019号
共3页 第3页

表 2-2 噪声检测结果

类别：噪声				
检测时间	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.17	中心南路，施工边界外 1m 处	14:58-15:18	67.8	施工噪声
	南城水岸 1 幢 1 单元	15:32-15:42	55.9	施工噪声
2022.06.18	中心南路，施工边界外 1m 处	10:14-10:34	64.4	施工噪声
	南城水岸 1 幢 1 单元	10:47-10:57	53.8	施工噪声
检测点位示意图：		<div>备注： 1、监测当天气象参数： 日期：2022.06.17； 天气：晴； 风向：西风； 风速：2.9m/s； 2、监测当天气象参数： 日期：2022.06.18； 天气：多云； 风向：西南风； 风速：2.3m/s。</div>		

表 2-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.17	08:38	93.8	-0.2	合格
						17:00	93.9	-0.1	合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.18	09:01	93.9	-0.1	合格
						17:01	93.8	-0.1	合格

****报告结束****

编制: 程旭沛

审核: 李江

签发: 王

签发日期: 2022.06.19

5. Qimen County Urban Area-2

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

安环检(2022)第1020号

共3页 第1页

表 1-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	□送样/☑采样日期	2022.06.18	
样品类别	气	接样日期	2022.06.18	
分析日期	2022.06.18-2022.06.20	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	便携式风速风向仪 JY-FS-04 (2020072)	2023.01.05	/
颗粒物	环境空气 总悬浮颗粒物的测定重量法 GB/T 15432-1995 及修改单	万分之一天平 AUW220 (2018014)	2023.01.05	0.001mg/m ³

表 1-2 无组织废气检测结果

单位: mg/m³

采样点位	采样起止时间	检测项目
		颗粒物
文峰南路施工段 2#上风向	11:20-12:20	0.283
文峰南路施工段 1#下风向	11:20-12:20	0.417
文峰南路施工段 3#居民敏感点	11:20-12:20	0.400

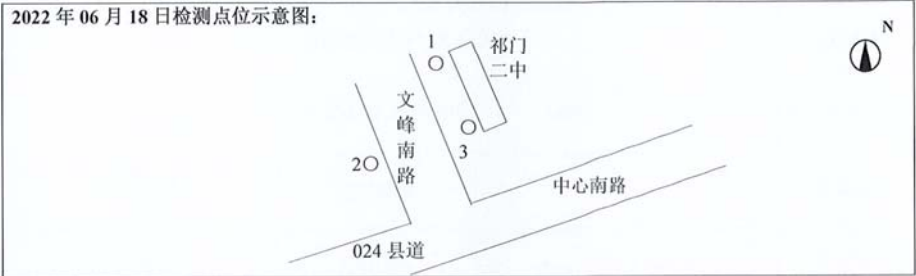
表 1-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速 (m/s)	气温 (℃)	气压 (Kpa)
11:20-12:20	多云	西南风	2.3	30	98.9

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1020号
共3页 第2页

表 1-4 无组织废气检测点位图



废气质控信息

表 1-5 废气精密度控制情况统计表

项目\内容	样品个数(个)	全程序空白(个)	实验室平行数(个)	合格数(个)	合格率(%)
颗粒物	3	0	0	/	/

表 1-6 废气准确度控制情况统计表

项目\内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
颗粒物	0	2	2	100

表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	采样日期	2022.06.17、2022.06.18	
样品类别	噪声	分析日期	2022.06.17、2022.06.18	
检测地点	祁门县文峰南路段	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	便携式风速风向仪 JY-FS-04 (2020072)	2023.01.05	/
施工噪声	建筑施工现场环境噪声排放标准 GB 12523-2011	噪声仪 AWA6228+ (2021081)	2022.10.26	/
	环境噪声监测技术规范噪声测量值修正 HJ706-2014			

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

安环检(2022)第1020号

共3页 第3页

表 2-2 噪声检测结果

类别: 噪声				
采样日期	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.17	祁门二中门口	15:52-16:02	57.6	施工噪声
	文峰南路施工边界外 1m 处	16:23-16:43	67.7	施工噪声
2022.06.18	祁门二中门口	11:13-11:23	58.6	施工噪声
	文峰南路施工边界外 1m 处	11:39-11:59	66.5	施工噪声

检测点位示意图:



备注:
1、监测当天气象参数:
日期: 2022.06.17;
天气: 晴;
风向: 西风;
风速: 2.9m/s;
2、监测当天气象参数:
日期: 2022.06.18;
天气: 多云;
风向: 西南风;
风速: 2.3m/s;
3、只检测昼间噪声。

表 2-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.17	08:38	93.8	-0.2	合格
						17:00	93.9	-0.1	合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.18	09:01	93.9	-0.1	合格
						18:01	93.9	-0.1	合格

报告结束

编制: 林贺

审核:

签发:

签发日期

检测专用章

3410020133450

6. Shangshan Town, Xiuning County

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1021号
共3页 第1页

表 1-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	□送样/☑采样日期	2022.06.20	
样品类别	气	接样日期	2022.06.20	
分析日期	2022.06.20-2022.06.24	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022115)	2023.06.05	/
颗粒物	环境空气 总悬浮颗粒物的测定重量法 GB/T 15432-1995 及修改单	万分之一天平 AUW220 (2018014)	2023.01.05	0.001mg/m ³

表 1-2 无组织废气检测结果

单位: mg/m³

采样点位	采样起止时间	检测项目
		颗粒物
商山镇雁里中心村施工段 3#上风向	14:20-15:20	0.233
商山镇雁里中心村施工段 1#下风向	14:20-15:20	0.367
商山镇雁里中心村施工段 2#居民敏感点	14:20-15:20	0.367



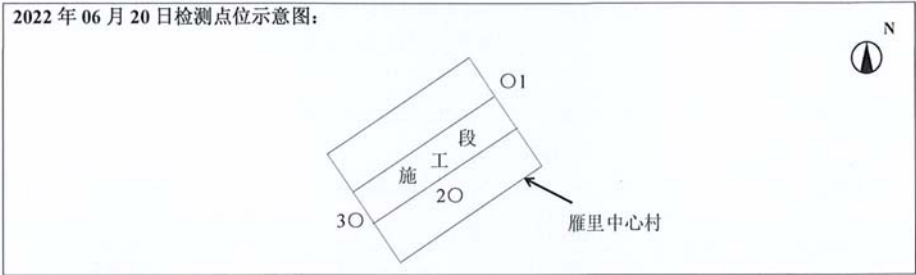
表 1-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速 (m/s)	气温 (℃)	气压 (Kpa)
14:20-15:20	晴	西南风	1.9	30	99.2

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第 1021 号
共 3 页 第 2 页

表 1-4 无组织废气检测点位图



废气质控信息

表 1-5 废气精密度控制情况统计表

项目	内容	样品个数(个)	全程序空白(个)	实验室平行数(个)	合格数(个)	合格率(%)
颗粒物		3	0	0	/	/

表 1-6 废气准确度控制情况统计表

项目	内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
颗粒物		0	1	1	100

表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	采样日期	2022.06.20、2022.06.21	
样品类别	噪声	分析日期	2022.06.20、2022.06.21	
检测地点	休宁县商山镇雁里中心村	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022115)	2023.06.05	/
施工噪声	建筑施工场界环境噪声排放标准 GB 12523-2011	噪声仪 AWA6228+ (2021080)	2022.10.26	/
	环境噪声监测技术规范噪声测量值修正 HJ706-2014			

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

安环检(2022)第 1021 号

共 3 页 第 3 页

表 2-2 噪声检测结果

类别: 噪声				
采样日期	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.20	雁里中心村施工场界外 1m 处	14:43-15:02	59.9	施工噪声
	雁里中心村施工最近居民敏感点处	14:32-14:41	54.2	施工噪声
2022.06.21	雁里中心村施工场界外 1m 处	15:58-16:17	63.0	施工噪声
	雁里中心村施工最近居民敏感点处	16:25-16:34	54.8	施工噪声
检测点位示意图:		<p>备注:</p> <p>1、监测当天气象参数: 日期: 2022.06.20; 天气: 晴; 风向: 西南风; 风速: 2.0m/s;</p> <p>2、监测当天气象参数: 日期: 2022.06.21; 天气: 晴; 风向: 西南风; 风速: 2.2m/s;</p> <p>3、只检测昼间噪声。</p>		

表 2-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.20	08:05	93.9	-0.1	合格
						17:23	94.0	0.0	合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.21	08:02	93.9	-0.1	合格
						18:02	93.9	-0.1	合格

****报告结束****

编制: 孙俊

审核:

签发: 孙俊

签发日期: 2022.06.21

检测专用章

安徽安琪尔环境检测有限公司
用章
450



7. Five towns in Xiuning County

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1022号
共3页 第1页

表 1-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	<input type="checkbox"/> 送样/ <input checked="" type="checkbox"/> 采样日期	2022.06.20	
样品类别	气	接样日期	2022.06.20	
分析日期	2022.06.20-2022.06.24	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022115)	2023.06.05	/
颗粒物	环境空气 总悬浮颗粒物的测定重量法 GB/T 15432-1995 及修改单	万分之一天平 AUW220 (2018014)	2023.01.05	0.001mg/m ³

表 1-2 无组织废气检测结果

单位: mg/m³

采样点位	采样起止时间	检测项目
		颗粒物
五城镇舟斜村施工段 1#上风向	15:55-16:55	0.233
五城镇舟斜村施工段 3#下风向	15:55-16:55	0.333
五城镇舟斜村施工段 2#居民敏感点	15:55-16:55	0.317

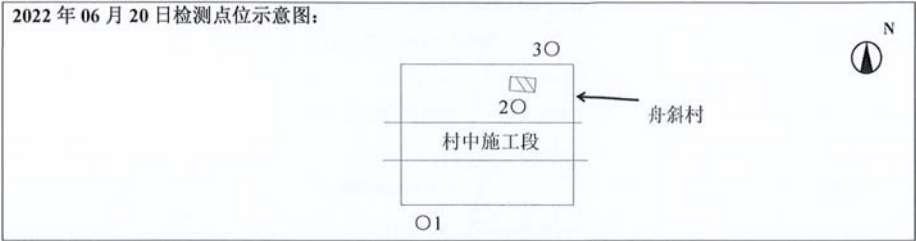
表 1-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速 (m/s)	气温 (℃)	气压 (Kpa)
15:55-16:55	晴	西南风	2.0	29	99.2

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表 1-4 无组织废气检测点位图



废气质控信息

表 1-5 废气精密度控制情况统计表

项目	内容	样品个数(个)	全程序空白(个)	实验室平行数(个)	合格数(个)	合格率(%)
颗粒物		3	1	0	1	100

表 1-6 废气准确度控制情况统计表

项目	内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
颗粒物		0	1	1	100

表 1-7 全程序空白样分析值表

单位: mg/m³

项目	内容	全程序空白样分析值
颗粒物		ND

表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	采样日期	2022.06.20、2022.06.21	
样品类别	噪声	分析日期	2022.06.20、2022.06.21	
检测地点	休宁县五城镇舟斜村	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232(2022115)	2023.06.05	/
施工噪声	建筑施工场界环境噪声排放标准 GB 12523-2011	噪声仪 AWA6228+ (2021081)	2022.10.26	/
	环境噪声监测技术规范噪声测量值 修正 HJ706-2014			

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表 2-2 噪声检测结果

类别: 噪声				
采样日期	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.20	舟斜村施工场界外 1m 处	15:49-16:08	62.9	施工噪声
	舟斜村施工最近居民敏感点处	16:22-16:31	54.2	施工噪声
2022.06.21	舟斜村施工场界外 1m 处	14:26-14:45	60.4	施工噪声
	舟斜村施工最近居民敏感点处	15:01-15:10	52.9	施工噪声
检测点位示意图:		<p>备注:</p> <p>1、监测当天气象参数: 日期: 2022.06.20; 天气: 晴; 风向: 西南风; 风速: 2.1m/s;</p> <p>2、监测当天气象参数: 日期: 2022.06.20; 天气: 晴; 风向: 西南风; 风速: 2.2m/s;</p> <p>3、只检测昼间噪声。</p>		

表 2-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.20	08:05	93.9	-0.1	合格
						17:23	94.0	0.0	合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.21	08:02	93.9	-0.1	合格
						18:02	93.9	-0.1	合格

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签发日期: 2022.06.21



8. Xinhua Township, Huangshan District

黄山安琪尔环境检测有限公司检测报告

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安环检(2022)第1023号
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表 1-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	<input type="checkbox"/> 送样/ <input checked="" type="checkbox"/> 采样日期	2022.06.23	
样品类别	气	接样日期	2022.06.23	
分析日期	2022.06.23-2022.06.25	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022116)	2023.06.05	/
颗粒物	环境空气 总悬浮颗粒物的测定重量法 GB/T 15432-1995 及修改单	万分之一天平 AUW220 (2018014)	2023.01.05	0.001mg/m ³

表 1-2 无组织废气检测结果

单位: mg/m³

采样点位	采样起止时间	检测项目
		颗粒物
新华乡曹村施工段 1#上风向	10:30-11:30	0.250
新华乡曹村施工段 2#下风向	10:30-11:30	0.317
新华乡曹村施工段 3#居民敏感点	10:30-11:30	0.317
新华乡沧溪村店街组 6#上风向	13:00-14:00	0.233
新华乡沧溪村店街组 5#下风向	13:00-14:00	0.350
新华乡沧溪村店街组 4#居民敏感点	13:00-14:00	0.333



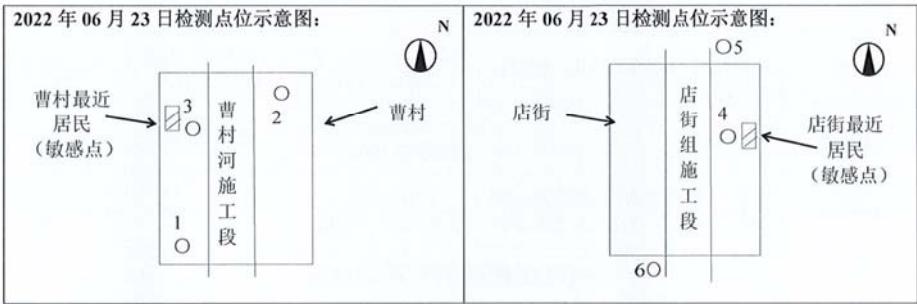
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表 1-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速 (m/s)	气温 (℃)	气压 (Kpa)
10:30-11:30	晴	西南风	3.1	30	99.0
13:00-14:00	晴	西南风	3.5	32	98.9

表 1-4 无组织废气检测点位图



废气质控信息

表 1-5 废气精密度控制情况统计表

项目	内容	样品个数(个)	全程序空白(个)	实验室平行数(个)	合格数(个)	合格率(%)
颗粒物		6	1	0	1	100

表 1-6 废气准确度控制情况统计表

项目	内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
颗粒物		0	1	1	100

表 1-7 全程序空白样分析值表

单位: mg/m³

项目	内容	全程序空白样分析值
颗粒物		ND

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表 2-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	采样日期	2022.06.23、2022.06.24	
样品类别	噪声	分析日期	2022.06.23、2022.06.24	
检测地点	黄山区新华乡曹村河施工段、 黄山区新华乡店街组施工段	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/ 规格、编号	仪器设备检定 /校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022116)	2023.06.05	/
施工噪声	建筑施工厂界环境噪声排放标准 GB 12523-2011	噪声仪 AWA6228+ (2020080、2021081)	2022.10.26、 202210.26	/
	环境噪声监测技术规范噪声测量值 修正 HJ706-2014			

表 2-2 噪声检测结果

类别: 噪声				
采样日期	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.23	曹村河施工边界外 1m 处	10:45-11:04	54.4	施工噪声
	曹村河施工最近居民敏感点处	11:10-11:19	52.1	施工噪声
2022.06.24	曹村河施工边界外 1m 处	10:30-10:49	55.6	施工噪声
	曹村河施工最近居民敏感点处	10:56-11:05	52.4	施工噪声
检测点位示意图:		备注:		
		1、监测当天气象参数: 日期: 2022.06.23; 天气: 晴; 风向: 西南风; 风速: 2.2m/s; 2、监测当天气象参数: 日期: 2022.06.24; 天气: 晴; 风向: 西南风; 风速: 2.5m/s; 3、只检测昼间噪声。		

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续表 2-2 噪声检测结果

类别: 噪声				
采样日期	检测点位	检测结果 dB(A)		
		起止时间	昼间 Leq	主要声源
2022.06.23	沧溪村店街组施工边界外 1m 处	13:06-13:25	60.4	施工噪声
	沧溪村店街组施工最近居民敏感点处	13:32-13:41	53.4	施工噪声
2022.06.24	沧溪村店街组施工边界外 1m 处	13:09-13:28	55.8	施工噪声
	沧溪村店街组施工最近居民敏感点处	13:35-13:44	51.9	施工噪声
检测点位示意图:				
		备注: 1、监测当天气象参数: 日期: 2022.06.23: 天气: 晴; 风向: 西南风; 风速: 2.3m/s; 2、监测当天气象参数: 日期: 2022.06.24: 天气: 晴; 风向: 西南风; 风速: 2.5m/s; 3、只检测昼间噪声。		

表 2-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.23	08:09	94.0	0.0	合格
						19:15	94.0	0.0	合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.24	08:01	93.7	-0.3	合格
						19:06	93.7	-0.3	合格

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9. Yiqi Town Sewage Treatment Station, Tunxi District

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1024号
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表 1-1 水质采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	□送样/☑采样日期	2022.06.24	
样品类别	水	接样日期	2022.06.24	
分析日期	2022.06.24-2022.06.27	报告日期	2022.06.30	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器检定/校准有效期	方法检测限
pH 值	水质 pH 值的测定 电极法 HJ 1147-2020	便携式 pH 计 PHBJ-260F (2022114)	2023.06.05	/
化学需氧量	水质 化学需氧量的测定 重铬酸盐法 HJ 828-2017	滴定管 50mL	2023.01.05	4mg/L
氨氮	水质 氨氮的测定 纳氏试剂分光光度法 HJ 535-2009	紫外可见分光光度计 UVmini-1280 (2018025)	2023.01.05	0.025mg/L
悬浮物	水质 悬浮物的测定 重量法 GB/T11901-1989	万分之一天平 AUW220 (2018014)	2023.01.05	/
总磷	水质 总磷的测定 钼酸铵分光光度法 GB/T 11893-1989	紫外可见分光光度计 UVmini-1280 (2018025)	2023.01.05	0.01mg/L

表 1-2 水质检测结果

单位: mg/L (pH 值: 无量纲; 水温: °C)

采样 点位	采样起 止时间	样品状态及 描述	检测项目					
			pH 值		化学需 氧量	氨氮	总磷	悬浮物
			水温	浓度				
进水口	09:45-09:51	黄、浑浊、有异味	24.5	7.8	78	18.3	2.54	42
总排口	09:40-09:45	无色、透明、有异味	24.2	7.5	17	1.93	1.28	8
标准限值			/	6-9	50	5	0.5	10
执行标准			《城镇污水处理厂污染物排放标准》(GB 18918-2002)表 1 中一级 A 标准					

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水质质控信息

表 1-3 水样精密度控制情况统计表

项目\内容	样品个数(个)	密码平行数(个)	实验室平行数(个)	合格数(个)	合格率(%)
pH 值	2	1	0	1	100
化学需氧量	2	1	2	2	100
氨氮	2	1	4	5	100
悬浮物	2	0	0	/	/
总磷	2	1	1	2	100

表 1-4 水样准确度控制情况统计表

项目\内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
pH 值	0	1	1	100
化学需氧量	0	6	6	100
氨氮	4	4	8	100
悬浮物	0	2	2	100
总磷	2	0	2	/

表 1-5 pH 计校准表

仪器名称	仪器型号	仪器编号	单位	校准日期	标准缓冲液理论值	仪器显示	示值误差	允许误差	是否合格
便携式 pH 计	PHBJ-260F	2022114	无量纲	2022.06.24	4.00	4.00	0.00	±0.05	合格
					6.85	6.85	0.00	±0.05	合格

黄山安琪尔环境检测有限公司检测报告

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表 2-1 废气采样概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	<input type="checkbox"/> 送样/ <input checked="" type="checkbox"/> 采样日期	2022.06.24	
样品类别	气	接样日期	2022.06.24	
分析日期	2022.06.24-2022.06.28	报告日期	2022.06.30	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	便携式风速风向仪 JY-FS-04 (2018034)	2023.01.05	/
硫化氢	亚甲基蓝分光光度法《空气和废气监测分析方法》(第四版) 国家环境保护总局(2003 年)	紫外可见分光光度 UVmini-1280 (2021107)	2023.01.05	0.001mg/m ³
氨	环境空气和废气 氨的测定 纳氏试剂分光光度法 HJ533-2009	紫外可见分光光度计 UVmini-1280 (2018025)	2023.01.05	0.01mg/m ³

表 2-2 无组织废气检测结果

单位: mg/m³

采样点位	采样起止时间	检测项目	
		硫化氢	氨
1#上风向敏感点	09:30-10:30	0.005	0.08
2#下风向敏感点	09:30-10:30	0.004	0.06
3#下风向敏感点	09:30-10:30	0.006	0.07

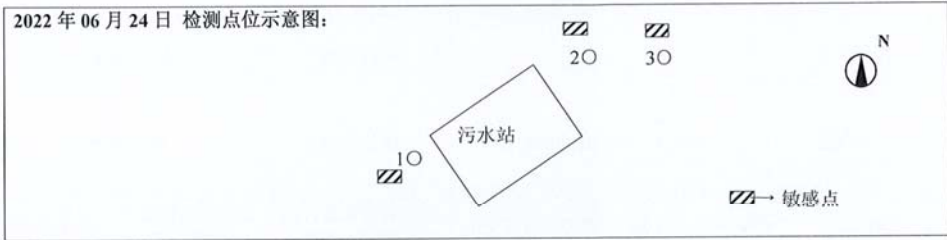
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表 2-3 无组织废气检测采样天气条件

采样起止时间	天气	风向	风速 (m/s)	气温 (℃)	气压 (Kpa)
09:30-10:30	多云	西南	2.1	29	99.2

表 2-4 无组织废气检测点位图



废气质控信息

表 2-5 废气精密度控制情况统计表

项目	内容	样品个数(个)	全程序空白(个)	实验室平行数(个)	合格数(个)	合格率(%)
硫化氢		3	1	0	1	100
氨		3	1	0	1	100

表 2-6 废气准确度控制情况统计表

项目	内容	实验室加标数(个)	质控样数(个)	合格数(个)	合格率(%)
硫化氢		4	0	4	100
氨		2	0	2	100

表 2-7 全程序空白样分析值表

单位: mg/m³

项目	内容	全程序空白样分析值
硫化氢		ND
氨		ND

****报告结束****

编制: 汪明 审核: 李 签发: 汪明 签发日期: 2022.6.24

安琪尔环境检测有限公司 检验检测专用章 3410020133450

黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3

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表 1-3 声级校准器校准

仪器名称	仪器型号/仪器编号	仪器设备检定/校准有效期	单位	标准值	校准日期	时间	仪器显示	示值误差	是否合格
声级校准器	AWA6021A (2020057)	2022.08.09	dB(A)	94.0±0.5	2022.06.24	08:07	93.9	-0.1	合格
						23:53	93.9	-0.1	合格

****报告结束****

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签发: 王



10. Yiqi Town Pumping Station, Tunxi District


黄山安琪尔环境检测有限公司检测报告

编号: CW27-04/A3
安环检(2022)第1025号
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表 1-1 噪声检测概况和分析方法

委托单位	上海伊世特科技管理有限公司			
联系人及电话	李华 13818855792	采样日期	2022.06.24	
样品类别	噪声	分析日期	2022.06.24	
检测地点	奕棋镇泵站	报告日期	2022.06.28	
检测项目	检测标准(方法)及编号(含年号)	仪器设备名称、型号/规格、编号	仪器设备检定/校准有效期	方法检测限
气象参数	/	风速风向仪 ZH-8232 (2022115)	2023.06.05	/
厂界噪声	工业企业厂界环境噪声排放标准 GB12348—2008	噪声仪 AWA6228+ (2020080)	2022.10.26	/
	环境噪声监测技术规范噪声测量值 修正 HJ 706-2014			

表 1-2 噪声检测结果

类别: 噪声						
检测点位	检测结果 dB(A)					
	起止时间	昼间 Leq	主要声源	起止时间	夜间 Leq	主要声源
泵站西侧厂界外 1m 处	10:49-10:50	49.5	生产	22:03-22:04	45.5	生产
泵站对面居民敏感点处	10:52-10:53	49.4	生产	22:07-22:08	44.2	生产
检测点位示意图:				备注: 1、监测当天气象参数: 日期: 2022.06.24; 天气: 多云; 风向: 西南风; 风速: 1.9m/s;		
						

APPENDIX 3 PHOTOS OF ON-SITE EXTERNAL ENVIRONMENTAL MONITORING



Noise Detection of Pumping Station in Changwu Village, Huizhou District



Noise Monitoring of Sensitive Sites in Nanping Village, She County



Monitoring at the Plant Boundary in Xikou Town, Xiuning County



Monitoring of TSP at the Boundary of Binjiang East Road, Xiuning County



Monitoring of TSP at the Factory Boundary of South Central Road, Qimen County



Monitoring of TSP at the Factory Boundary of Wenfeng Road, Qimen County



Noise Monitoring of Sensitive Sites in Shangshan Town, Xiuning County



Monitoring of TSP at Factory Boundary in Wucheng Town, Xiuning County



Noise Monitoring of Sensitive Sites in Caocun, Huangshan District



Noise Monitoring of Pumping Station in Yiqi Town, Tunxi District



Hydrogen Sulfide and Ammonia Monitoring at Sensitive Points of Yiqi Sewage Treatment Station



Take water samples from the outlet of Yiqi Sewage Treatment Station

安徽黄山新安江流域生态保护和绿色发展项目

Anhui Huangshan Xin'an River Ecological Protection and Green Development Project

贷款编号：3888-PRC

Loan Numbers: 3888-PRC

黄山市绿色投资基金 ESMS 实施报告

Huangshan Green Investment Fund ESMS Implementation Report

报告期

reporting period

2022 年 1 月 1 日至 6 月 30 日

January 1 to June 30, 2022

由黄山信投集团编制
Prepared by Huangshan Trust Investment Group
(HTIC)

日期：2022年7月 Date: July 2022

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一、概况 Overview

亚洲开发银行（以下简称亚行）于 2019 年 12 月 1 日批准了安徽黄山新安江流域生态保护和绿色发展项目。亚行与中国政府于 2020 年 6 月 17 日签署了该贷款协议，该项目于 2020 年 9 月 25 日生效。其中绿色投资基金（以下简称本项目）作为安徽黄山新安江流域生态保护和绿色发展项目的绿色融资机制试点子项目，计划总投资 2 亿元人民币，其中亚行贷款 1 亿元人民币，KfW5000 万元人民币，政府配套资金 5000 万元人民币。亚行贷款期限为 25 年，其中有 6 年的宽限期。贷款到期日为 2044 年 12 月 1 日。

On December 1, 2019, the Asian Development Bank (hereinafter, ADB) approved the ecological protection and green development project of the Xin'an River Basin in Huangshan, Anhui Province. ADB and the Chinese government signed the loan agreement on June 17, 2020, and the project took effect on September 25, 2020. Among them, the Green Investment Fund (hereinafter, the project) is a pilot sub-project of the green financing mechanism for the Anhui Huangshan Xin'an River Ecological Protection and Green Development Project, with a planned total investment of 200 million RMB, of which ADB loan 100 million RMB, KfW 50 million RMB, and government counterpart funds of 50 million RMB. The ADB loan has a 25-year term, with a 6-year grace period. The loan maturity date is December 1, 2044.

安徽黄山新安江流域生态保护和绿色发展项目资源将用于支持实现四项产出。产出 1：城市点源污染治理设施升级。产出 2：加强农村点源和非点源污染防治设施和体系建设。产出 3：绿色融资机制试点。包括机构设置，项目推动和实践（1）设立绿色补偿资金鼓励农民解决农业面源污染的可持续农业管理实践；以及（2）绿色投资基金，投资于从事绿色业务的中小企业。产出 4：加强生态系统和项目管理能力。这将提高黄山市政府在新安江流域水资源和洪水预报管理方面的能力。

The loan of Anhui Huangshan Xin'an River Ecological Protection and Green Development Project will be used to support the completion of four outputs. Output 1: Urban point source pollution management facilities upgraded. Output 2: Enhancement of rural point and non-point source pollution control facilities and systems. Output 3: Piloting of Green financing mechanisms. This includes the establishment, piloting and operation of a (i) Green Incentive Fund to encourage farmers to adopt sustainable farm management practices to address agricultural non-point source pollution in Huangshan; and (ii) green investment fund to invest in SMEs involved in green business. Output 4: Strengthen the capacity for ecological system and project management. This will enhance Huangshan Municipal Government's (HMGs) capacity in water resources and flood forecasting management in the Xin'an River Basin.

作为绿色融资机制试点的一个创新子项目，本项目与其他采用传统模式运营的项目相比，最显著的区别是通过市场化运作将本项目资源用于支持地方特色农业的发展。本项目将为参与绿色商业发展的中小企业提供资金支持，将进一步推动其涉足和拓展生态农业、生态旅游和污染控制领域。与中国传统的以投入为基础和以基础设施为导向的公共干预措施相比，新的融资机制将预计有效和创新的干预措施将在项目范围之

外产生更广泛的影响。

As an innovative sub-project of the green financing mechanism pilot, the most significant difference between this project and other projects that operating in the traditional mode is that the project resources of this project are used to support the development of local characteristic agriculture through market-based operation. This project will provide financial support for small and medium-sized enterprises participating in green business development, and will further promote their involvement and expansion in the fields of eco-agriculture, eco-tourism and pollution control. Compared to China's traditional input-based and infrastructure-oriented public interventions, the new financing mechanism is expected to be effective, and the innovative interventions will have a wider impact beyond the project.

根据财政部与亚行签订的《贷款协定》约定，本项目的实施机构由黄山市信投集团的全资子公司黄山信投投资有限公司作为普通合伙人和基金管理人管理绿色投资基金，并采纳经亚行事先批准的“环境和社会管理体系”（以下简称 ESMS），按照 ESMS 体系规范履行在环境和社会管理体系中的职责。

According to the Loan Agreement signed between the Ministry of Finance and ADB, the implementing agency of this project is Huangshan Xintou Investment Co., Ltd. (HXIC), a wholly-owned subsidiary of Huangshan Trust Investment Group (HTIC), as the general partner and fund manager to manage the green investment fund, and adopt the "Environmental and Social Management System" (hereinafter referred to as ESMS) approved by ADB, and perform responsibilities in the environmental and social management system in accordance with the ESMS specifications.

报告期内，本项目共按时支付息费 118976.78 元人民币，其中亚行贷款部分支付承诺费 32764.19 元人民币，支付利息 20056.59 元人民币。本项目实施机构严格按照转贷协议约定，按时及时履约。（截止 2021 年 6 月 30 日，共计支付相关息费 552679.7 元人民币。）

Since Project effectiveness in September 2020 to date, the project has paid a total of 118,976.78 RMB of interest and fees, of which the ADB loan part paid a commitment fee of 32,764.19 RMB and an interest fee of 20,056.59 RMB. The project implementing agency has strictly followed the on-lending agreement and performed the contract in a timely manner. (As of June 30, 2021, a total of 552,679.7 RMB of related interests and fees have been paid.)

自 2020 年 9 月项目生效至今，本项目顺利推进项目的投资。包括：1）完成首个子项目（黟县有农生态农业有限公司社会化服务提升项目）的全部资金投放。该子项目参考 ESMS 完成筛选和环境社会评估，相关评估和报告均提交亚行审查，并获得亚行不反对意见。2）完成第二个项目（黄山天之都环境科技发展有限公司技术研发和产业化项目）的尽职调查。

During the reporting period, the investment of the project has been implemented smoothly. Including: 1) The full capital investment of the first sub-project (Yixian Younong Ecological Agriculture Co., Ltd. - Social service improvement project) has been completed. The screening,

environmental and social assessment for this sub-project had been completed with reference to ESMS, and had received no objection opinion from ADB. 2) The due diligence of the second project (Huangshan Tianzhidu Environmental Technology Development Co., Ltd. - Technology R&D and industrialization project) has been completed.

截至当前,随着首个子项目的顺利推进,实施机构除了按亚行要求实施 ESMS 外,还重点关注: 1) 加强对 ESMS 实施效果的监测(包括管理层和子项目); 2) 持续优化和改进 ESMS 实践; 3) 获取经验,加强 ESMS 的可持续发展。

Up to date, with the smooth progress of the first sub-project, the implementing agency, in addition to implementing ESMS as required by ADB, also focuses on: 1) Strengthening the monitoring of the implementation effect of ESMS (including management and sub-projects); 2) Continuously optimizing and improving ESMS practices; 3) Gaining experience to strengthen ESMS sustainability.

截至 2022 年 6 月, Covid-19 对本项目影响较小。因 5 月黄山市徽州区、休宁县出现 Covid-19 病例 60 例(无症状感染者),因此实施结构减少了子项目现场监督调查次数,增加了在线跟踪监督管理的频率。5 月份与企业电话会议沟通 4 次,微信讨论 5 次。尽管实地检查有所减少,但通过专门针对有农项目制定的投资管理方案,比如每月提供上月财务报表、每年 6 月底前提供上年经审计的财务报表、每季度提供采取的环境减缓措施、定期的农产品技术检测报告等措施,项目实施未受到较大影响。

As of June 2022, Covid-19 had small impact on this project. Due to the occurrence of 60 Covid-19 cases (asymptomatic infected persons) in Huizhou District and Xiuning County in May, the implementing agency reduced the frequency of on-site supervision and investigation of sub-projects and increased the frequency of online tracking for supervision and management. The work meetings and communication with the Younong Company were conducted 4 times by telephone calls and 5 times by WeChat in May. Although on-site inspections have been reduced, the sub-project implementation has not been much affected by applying the specific investment management plan for Younong Company, such as submission of the monthly financial statements; submission of the audited financial statements of the previous year by the end of June each year; quarterly report on environmental mitigation measures taken; and regularly used technical testing of agricultural products, etc.

2022 年上半年,黄山市政府一如既往地抓好常态化疫情防控工作,并由黄山市疫情防控应急指挥部及时发布各种疫情防控措施。实施机构作为国有企业,严格遵守市政府相关疫情防控要求,并且拥有严格的企业内部疫情防控措施。如: 1) 发布每日疫情防控通报; 2) 制定办公区域消毒清洁工作计划; 3) 要求业务人员工作期间佩戴口罩; 4) 定时追踪业务人员和客户的健康码信息。

In the first half of 2022, the HMG has constantly carried out Covid-19 prevention and control, and the Emergency Headquarters of Huangshan Epidemic Prevention and Control issued various epidemic prevention and control measures in a timely manner. Since the implementing agency is a state-owned enterprise, it strictly abides by the relevant Covid-19 prevention and control requirements of the municipal government, and has strict internal

prevention and control measures, such as 1) publish daily epidemic prevention and control reports; 2) formulate a work plan for disinfection and cleaning of office areas; 3) require staffs to wear masks during work; 4) regularly track the health code information of staffs and customers.

2022 年上半年，实施机构要求子项目结合国家防治规定和 Covid-19 防控措施，及时了解 Covid-19 当地情况，详细掌握当地防治措施，并制定相应疫情防控计划。如：1) 门禁管理；2) 防疫物资配备；3) 防护知识宣传及消毒管理。

In the first half of 2022, the implementing agency requires the sub-project agencies to 1) keep abreast of the local situation of Covid-19, 2) have a detailed understanding of local prevention and control measures, and 3) formulate corresponding epidemic prevention and control plans in combination with national prevention and control regulations and guidance, such as: 1) access management; 2) provision of epidemic prevention materials; 3) publicity of protection knowledge and disinfection management.

报告期内，首个子项目主要活动：对原有的黄山市范围内的 8757 亩水稻育秧、播种、病虫害防治、收割、烘干、秸秆利用、加工的全程社会化服务，智能化精准播种集中育秧应用、秸秆生物质炭基肥的应用和数字技术农业生产的应用。活动地点在黄山市农田范围内，活动对象为黄山市黟县土地和农民，因此，Covid-19 对这些活动的实施进展没有很大影响。

During this period, the main activities of the first sub-project: full process socialized agricultural services for seedling raising, sowing, pest control, harvesting, drying, straw utilization and processing of the 8,757 mu of original rice farmland, including the application of intelligent precision seeding and concentrated seedling raising technology, the application of straw biomass charcoal base fertilizer and digital technology applications in agricultural production. The location of the activities is within the farmland of Huangshan City, and the objects of the activities are land and farmers in Yi County, Huangshan City. Therefore, Covid-19 has had little impact on the progress of the implementation of these activities.

二、主要工作和措施 Main activities and measures

(一) 主要工作 Main activities

在项目办、顾问团队和实施机构的共同努力下，报告期内实施的与环境和社会有关的重要活动如下：

With the joint efforts of the project office, the consultant team and the implementing agency, the important activities related to the environmental and social aspects during the reporting period are as follows:

走访项目库企业。根据《黄山市绿色投资基金方案》的要求，黄山市项目办联合黄山市新保中心、黄山信投集团在全市范围内征集了 26 家从事绿色农业、生态旅游、生态环保、健康等产业企业组成项目库。实施机构严格遵循亚行 ESMS 的 A-F 步骤的规定，用于子项目的筛选，对申报黄山市绿色投资基金的 26 个项目进行走访，并初步评估项

目是否符合基金投向和 ESMS 要求。对于子项目的筛选，既要符合黄山市政府批准的本项目的投资要求，也要符合 ESMS 支持的活动要求，两者保持了相同的准则。因此，本项目在实施 ESMS 时要同时接受亚行和黄山市政府的监督与指导，能够确保 ESMS 实施得到有效的质量控制。

Visiting project database companies. According to the requirements of “Huangshan Green Investment Fund Program”, a project database has been developed with collective efforts of Huangshan PMO, Huangshan Xin'an River Basin Ecological Construction and Protection Center and HTIC. The database is composed of 26 enterprises engaged in green agriculture, eco-tourism, environmental protection, health collected in Huangshan city. In the selection of sub-projects, the implementing agency strictly followed the ADB's Steps A-F of ESMS, visited 26 project companies that applied for the Huangshan Green Investment Fund, and preliminarily assessed whether the projects met the fund investment direction and ESMS requirements. In the selection of sub-projects, it is required that the companies should be complied with both the investment requirements of this project approved by the HMG and the activities requirements of ESMS, both of which maintain the same criteria. Therefore, the project should be under the supervision and guidance by ADB and the HMG when implementing ESMS, so as to ensure effective quality control of ESMS implementation.

对第二个投资项目进行评估。2022 年上半年，通过初步走访筛选 2 个符合黄山市绿色投资基金项目选择及 ESMS 要求的子项目，并对 1 个子项目（黄山天之都）进行了尽职调查和 ESMS 评估。

Evaluating the second investment project. In the first half of 2022, through preliminary visits, 2 sub-projects that meet the project selection requirements of Huangshan Green Investment Fund and ESMS requirements were screened, and due diligence and ESMS assessment of one of the sub-projects (Huangshan Tianzhidu) were conducted.

对原建立的 ESMS 持续监测。报告期内，实施机构对首个投资子项目继续加强 ESMS 实施效果的监控。实施机构发现，与那些没有实施 ESMS 项目的相比，子项目在实施 ESMS 后更关注环境和社会方面的发展，子项目能够更加注意农业技术升级，并为妇女提供更多培训机会，表明亚行环境和社会好的做法已经融入子项目活动。

Continuously monitoring the established ESMS. During the reporting period, the implementing agency continued to strengthen the monitoring of the implementation effect of ESMS for the first sub-project invested. Implementing agencies found that, compared with those without implementation of ESMS, sub-projects paid more attention to environmental and social development after implementing ESMS, sub-projects were able to pay more attention to agricultural technology upgrading, and provided more training opportunities for women, which indicates ADB's environmental and social good practices has been integrated into sub-project activities.

扩大培训和信息传播的范围。报告期内，实施机构进行了 1 次 ESMS 专题培训（附件一），主要针对实施机构的 16 名女性员工，介绍了 ESMS 的主要要求和第一个投资项目的进展。通过培训，参与者们了解了 GIF 下具体支持的活动、环境和社会评估的

关键信息和工作表填报、以及针对子项目的尽调报告的关键要求。实施机构原有的国内投资业务主要对项目进行财务、业务和法务合规性的尽调，通过将亚行 ESMS 纳入投资业务流程以及相应的人员培训之后，在新的国内投资活动中也会优先考虑对照 ESMS 标准进行项目筛选，这提高了投资活动中应对环境和社会风险的能力。同时参加了 1 次亚行组织的廉政培训。

Expand training and information dissemination. During the reporting period, the implementing agency conducted one ESMS special training (Appendix 1), mainly introducing the main requirements of ESMS and the progress of the first investment project to 16 female employees of the implementing agency. The training provided participants with an understanding of the specific supported activities under the GIF, key information and worksheet completion for environmental and social assessments, and key requirements for due diligence report for sub-projects. The original domestic investment activities of the implementing agency mainly conduct due diligence on the financial, business and legal compliance of the sub-projects. By incorporating ESMS into investment business procedures and corresponding personnel training, priority in new domestic investment activities will also be given to project screening with ESMS, which raises the capacity to deal with environmental and social risks in investment activities. In addition, the implementing agency has participated in an integrity training organized by ADB.

获取经验，加强 ESMS 的可持续发展。建立并按照 ESMS 筛选子项目的初衷是评估和管理实施机构活动可能产生的环境和社会影响。根据 ESMS 的建立与实施和实施机构绿色金融发展理念具有一致性，下一步将继续引导子项目基于 GIF 允许的投资活动实施，不断调整和优化自身和客户群体的环境和社会风险管理和控制标准，成功构建绿色金融体系，通过规范子项目内部管理、加强财务指导、做好绿色金融培训等方式加强价值传导，引导子项目不断可持续发展。

Gaining experience and enhancing the sustainability of ESMS. The purpose of establishing and screening sub-projects against ESMS is to assess and manage the possible environmental and social impacts of implementation activities. The establishment of ESMS is consistent with the green finance development concept of implementing and implementing agencies. The next step is to continue to supervise the implementation of sub-projects in accordance with the investment activities permitted under the GIF, to continuously adjust the management and control standards for environmental and social risks of themselves and their client groups, and to strengthen value dissemination and guide the continuous sustainable development of sub-projects through standardizing the internal management of sub-projects, strengthening financial guidance, and organizing green finance training.

（二）环境保护措施 Environmental Protection Measures

在报告期间，实施机构共完成对 1 个子项目的投资，并在子项目企业内部、服务的农田范围内实施了 ESMS。

During the reporting period, the implementing agency completed the investment of 1 sub-project, and implemented ESMS within the sub-project enterprise and the farmland that under

its responsibility

在报告期内，实施机构对子项目实施采取定期管理的措施，每周对子项目进行风险信息排查 1 次，按时收集企业每月财务报表，共赴企业检查 GIF 下投资活动的实施情况 2 次（附件二），对子项目起到切实有效的监管。

During the reporting period, the implementing agency took regular management measures for the implementation of the sub-projects, including checking the risk information of the sub-projects once a week, collecting the monthly financial statements of the enterprise on time, and conducting on-site inspections twice on the implementation of investment activities under GIF (Annex II). The sub-projects are effectively supervised.

报告期内，子项目共进行 2 次产品质量检测（附件三），分别为绿色食品稻米 NY/T419-2021 标准、国家大米 GB/T1354-2018 标准，结果均为合格。并通过 ISO91001 质量管理体系年审。

During the reporting period, the sub-projects conducted a total of 2 product quality inspections (Appendix 3), which were respectively assessed according to the green food rice standard NY/T419-2021 and the national rice standard GB/T1354-2018, and the results were all satisfied. The sub-project also passed the annual audit of quality management system of ISO91001.

在子项目活动的农田范围内，具体活动内容描述如下：

The specific activities within the farmland scope of the sub-project are described as follows:

1、农业社会化服务

1、Agricultural Socialization Service

报告期内，子项目为 7 个农业合作社、7 个家庭农场提供农业全程社会化服务，涉及农田面积 8757 亩，均基于黄山市范围内的现有基本农田，种植品种均为水稻，最小面积 115 亩，最大面积 1663 亩。

During the reporting period, the sub-project provided 7 agricultural cooperatives and 7 family farms with full-process socialized agricultural services, covering a total of 8,757 mu of farmland, all of which were based on the existing normal farmland within Huangshan City. The smallest area of farmland is 115 mu, while the largest area is 1663 mu.

子项目在农田范围内提供育秧、机械耕田、机插移栽、施用基肥、病虫草害防治、收割（油菜、玉米）服务。

The sub-project provides seedling raising, mechanical tillage, mechanical transplanting and transplanting, application of basal fertilizer, control of pests and weeds, and harvesting (rapeseed, corn) services within the scope of farmland.

主要的做法：1）水稻种子采购自由国家审定认证的非转基因品种；2）种植均按照

绿色产品标准进行管控；3）玉米和油菜秸秆还田；4）农产品批批进行检测，均符合国家大米 GB/T1354-2018 标准、绿色食品稻米 NY/T419-2014 标准和食品安全国家标准 GB14881—2013。

Main practices: 1) non-GMO rice varieties certified by the state are selected for the purchase of rice seeds; 2) Planting is in accordance with the requirements of green product standards; 3) Corn and rapeseed straws are returned to the field; 4) Agricultural products are tested in batches, all met the national rice standard GB/T1354-2018, the green food rice standard NY/T419-2014 and the national food safety standard GB14881-2013.

采取的缓解措施：1）通过采用药剂浸种催芽（杀灭种子自身携带病菌,避免往年病害）、带药移栽技术，控制水稻早期病虫害蔓延危害，水稻育秧防治 1 亩，机插秧相当于本田防治 100 亩。同时农药利用率高，防治效果好，劳动强度低，省工省药；2）通过移栽前采用机械整地绿色除草方式，降低杂草基数，减少使用除草剂次数和用量。3）部分区域推广性诱捕器生物方式。该技术利用利用二化螟、卷叶螟等鳞翅类害虫求偶的原理，对雄性害虫进行诱捕，从而大量减少幼虫的繁殖率。一个诱捕器可以成功防护 1 亩水稻。该技术不但可以减少农药的施用量，每亩还可以降低成本 10%以上。4）废弃物处理及环境保护措施，秸秆全部炭化，杜绝焚烧、生物农药和肥料等包装废弃物及时回收，不得留在田间、田间作业人员的个人垃圾及时带走，不得留在田间、田间不得随意丢弃烟头饭盒等杂物。

Mitigation measures of EMP taken: 1) Control the early spread of rice diseases and insect pests by using seed soaking with agricultural chemicals and germination (kill the germs carried by the seeds and avoid previous diseases) and transplanting-with-chemicals technology. 1 mu of rice seedling control is equivalent to 100 mu of machine-transplanted rice. Due to the improvement of the utilization rate, the improvement of the control effect and the reduction of labor intensity, it realizes the saving of labor and reduction of pesticides; 2) By adopting the green-weeding method of mechanical soil preparation before transplanting, the base number of weeds is reduced, and the frequency and dosage of herbicides are reduced. 3) Promote the use of sexually attractive biological capture tools in some areas. This technology utilizes the principle of courtship of lepidopteran pests such as Diploid and leaf roller to trap male pests, thereby greatly reducing the reproduction rate of larvae. A trap can successfully protect 1 mu of rice. This technology can not only reduce the use of pesticides, but also reduce the cost per mu by more than 10%. 4) Waste treatment and environmental protection measures include: carbonization of all straws, elimination of incineration, timely recovery of packaging wastes such as biological pesticides and fertilizers, timely removal of personal waste from field workers, and cigarette butts, lunch boxes and other sundries are not allowed to be discarded in the field.

2、智能化精准播种集中育秧应用

2、Application of intelligent precision seeding and concentrated seedling raising

报告期内，依托中国水稻所科技力量，开展智能化精准育秧工作，可提供 20000 亩育秧服务，实现水稻育秧标准化，规模化。该水稻秧苗培育中心由浸种池、离心机、播

种流水线、基质提升机、供盘机、叠盘机、出苗室、温湿度控制器，叉车等几部分组成。

During the reporting period, relying on the scientific and technological support of the China Rice Research Institute, the implementing agency carried out intelligent and precise seedling raising services, which can provide 20,000 mu of seedling raising services, making rice seedling raising standardized and large-scale. The Rice seedling nursery center is composed of seed soaking tank, centrifuge, seeding line, substrate elevator, tray supply machine, tray stacker, seedling room, temperature and humidity controller, forklift and so on.

报告期内，经试验示范，该技术与传统方法比较，9 寸秧盘播种量从 70-80 克下降到 35-50 克，每亩播种量下降 25%-40%，一般每亩用种量单季稻在 0.8~1.0kg，连作晚稻用种量 0.9~1.1kg。秧盘播种匀度提高 80%-90%，秧苗质量提高，实现低播量下有效长毯，同时可以实现长秧龄带蘖机插。机插取秧量从取秧秧块 2.0 厘米提高到 3.4-4.0 厘米，提高 50%-100%，机插漏秧率下降 50%-80%，精准播种机插漏秧率降到 5%以下，机插秧苗均匀度提高 90%，返青提早 3-7 天，成穗率提高 10%，产量提高 5%-10%，实现杂交稻生产高产高效。简而言之，智能化精准播种集中育秧省工省时省种省肥、育壮秧，便于水、肥管理及病虫害防治，节约成本。（该技术来源于中国水稻研究所，技术成果已发表在 Nature 等期刊杂志，附件五）

During the reporting period, experiments showed that compared with the traditional method, the seeding amount of 9-inch seedling trays decreased from 70-80 grams to 35-50 grams, and the seeding amount per mu decreased by 25%-40%. The seed amount is 0.8~1.0kg for single-season rice, and 0.9~1.1kg for continuous cropping late rice. The evenness of the seedling tray sowing is increased by 80%-90%, the quality of the seedlings is improved, the effective long blanket is achieved under the low seeding rate, and at the same time, the long age seedling machine seeding with tiller can be achieved. The number of seedlings taken by machine transplanting is increased from 2.0 cm of the seedling block to 3.4-4.0 cm, equivalently an increase of 50%-100%. The leakage rate of machine-transplanted seedlings is reduced by 50%-80%, the leakage rate of precision planters is reduced to less than 5%, the evenness of machine-transplanted seedlings is increased by 90%, the greening is 3-7 days earlier, and the percentage of earbearing tiller is increased by 10%. Yield is increased by 5%-10%, achieving a high-yield and high-efficiency hybrid rice production. In short, adopting the technology of intelligent precision seeding and centralized seedling raising can save labor, time, seed and fertilizer, grow strong seedlings, help the management of water and fertilizer, help prevent and control diseases and insect pests, and save costs. (The technology comes from the China Rice Research Institute, and the technical results have been published in journals such as Nature, Appendix 5)

3、秸秆生物质炭基肥的应用

3、Application of straw biomass charcoal fertilizer

报告期内，子项目与南京农业大学合作就“秸秆生物质炭基产品生产关键技术研究及产业化应用”进行技术研发。南京农业大学农业资源与生态环境研究所潘根兴教授团队安排 1 名研究生驻点黟县开展生物质炭土壤应用试验、育秧基质研发。

During the reporting period, the sub-project cooperated with Nanjing Agricultural University to conduct technology research and development on "Key Technology Research and Industrial Application of Straw Biomass Carbon-Based Product Production". The team of Professor Pan Genxing from the Institute of Agricultural Resources and Ecological Environment of Nanjing Agricultural University arranged a postgraduate student to carry out the experiment of application of biomass charcoal soil and the research and development of seedling substrate in Yi County.

报告期内，针对公司对育秧基质的量大需求，南京农业大学研究生结合秸秆炭化产品对公司已有育秧基质进行改进试验，选择适合机插育秧的基质，目前已取得试验数据。

During the reporting period, with regard to the sub-project companies' large demand for seedling cultivation substrates, the postgraduates from Nanjing Agricultural University conducted an improvement test on the combination of the company's existing seedling cultivation substrates with straw carbonization products, and selected suitable substrates for machine transplanting seedlings. The test data has been obtained.

报告期内，在黄山市歙县深渡镇定潭村完成菊花“金贡菊 1 号”、“皖贡 1 号”、“金丝皇菊”3 个品种种苗 8.5 万株移栽，采用人工除草、生物农药防治病虫害，使用秸秆生物质炭基有机肥、复合肥和叶面肥，目前菊花长势良好。在黄山市黟县碧山和龙疆村完成约 200 亩黑玉米种植。采用覆膜栽培、一次施基肥（秸秆生物质炭基复合肥，每亩用量 50Kg）。初步玉米采收显示玉米结穗率高，口感甜糯、品质优良。

Since the project effectiveness, in Dingtian Village, Shendu Town, She County, Huangshan City, 85,000 seedlings of three varieties of chrysanthemum, "Jinggong Ju No. 1", "Wang Gong No. 1" and "Golden Silk Chrysanthemum", were transplanted. The artificial weeding method is adopted; biological pesticides are used to control pests and diseases; and straw biomass charcoal-based organic fertilizers, compound fertilizers and foliar fertilizers are applied. At present, the chrysanthemums are growing well. About 200 acres of black corn have been planted in Bishan and Longjiang Village, Yi County, Huangshan City. The film mulching and one-time application of base fertilizer are adopted (straw biomass carbon-based compound fertilizer, 50 kg per mu). The harvest of the first corn showed that the percentage of earbearing corn tiller was high, the taste was sweet and glutinous, and the quality was good.

4、数字技术农业生产的应用

4、Application of digital technology in agricultural production

报告期内，成立有农数字农业中心，通过建立技术服务中心和数字平台，为公司所在地合作社、家庭农场提供水稻生产的技术方案和便利化、低成本、全方位的社会化服务。在农业生产、加工、包装、仓储、运输、销售等全产业链环节中，数字农业利用智能感知、分析和控制等数字技术，精准服务农业价值链上生产经营主体的决策行为，减少化学品投入、降低能耗、减少土地资源浪费等，最终起到增加农业碳汇、减少农业碳源的效果。

During the reporting period, the Younong Digital Agriculture Center was established, providing the local cooperatives and family farms where the sub-projects are located with technical solutions for rice production and facilitated, low-cost, and comprehensive social services by the technical service centers and digital platforms. The online data platform for cooperatives and farms can obtain real-time specific data on rice planting in mountainous areas, photos, and local weather information, etc. In the entire industrial chain of agricultural production, processing, packaging, warehousing, transportation, and sales, digital agriculture uses digital technologies such as intelligent perception, analysis, and control to accurately serve the decision-making behavior of production and operation entities in the agricultural value chain to reduce chemical reduce energy consumption and reduce waste of land resources, etc. Ultimately, it increased agricultural carbon sinks and reduced agricultural carbon sources.

报告期内，在服务区域布点安装气象站、土壤传感器、高清摄像头等数字终端设备；开发农田人员管理 APP；建立起结合土地信息的可视化数据平台。初步具备耕地识别、环境监测、农机作业监测功能。

During the reporting period, digital terminal equipment such as weather stations, soil sensors, and high-definition cameras were installed in service areas; an APP for farmland personnel management was developed; and a visual data platform combined with land information was established. The project initially realized the functions of arable land identification, environmental monitoring, and monitoring of agricultural machinery operations.

报告期内，数字农业中心致力于运用数字技术助力提升水稻生产管理能力，使粮食种植更高效、精确，最终直接或间接起到减少温室气体排放的效果。预期可通过以下路径实施：一是粮食种植过程中生产要素精准投入减排。通过遥感技术以及地面地下数据采集系统，精准监测土壤肥力，指导农民按照测土配方技术精准施肥，避免化肥滥用；通过田间传感装置全天候监测分析病虫害等情况，合理安排利用无人机管理病虫害，及时精准施放农药，避免过量施药。二是粮食种植过程中农机能耗节省减排。通过数字技术科学规划农机作业最佳路线，并结合北斗等工具引导农业机械在田间精准高效作业，减少油耗。

During the reporting period, the Digital Agriculture Center was committed to using digital technology to help improving rice production management capabilities, making grain planting more efficient and accurate, and ultimately reducing greenhouse gas emissions directly or indirectly. It is expected to be implemented through the following paths: First, conduct precise inputs of production factors in the process of grain planting to reduce emissions. Through remote sensing technology and ground and underground data collection system, soil fertility are accurately monitored, thus to guide farmers to apply fertilizer accurately according to the soil testing formula and avoid the abuse of chemical fertilizer; Around-the-clock monitoring and analysis of pests and diseases through field sensing devices are carried out , so as to reasonably arrange the use of UAV to manage pests and diseases, timely and accurately apply pesticides, and avoid excessive application of pesticides. Second, save the energy and reduce emissions of agricultural machinery in the process of grain planting. Scientifically plan the best route for agricultural machinery operations through digital

technology, and use tools such as Beidou to guide agricultural machinery to operate accurately and efficiently in the field to reduce fuel consumption.

5、农产品运输

5、Agricultural products transportation

报告期内，子项目生产的农产品主要销售范围为安徽省黄山市和安徽省合肥市，销售模式为商超合作或网上销售，没有自建销售点。商超销售主要采用物流运输，网上销售采用快递公司运输。

During the reporting period, the agricultural products produced by the sub-projects were mainly sold in Huangshan City and Hefei City, Anhui Province. The sales model is cooperation with supermarkets or online sales, and there is no self-built point of sale. The sales in the store are mainly transported by logistics, and the online sales are transported by express companies.

活动主要是生产和运输袋装大米，对环境的影响主要是噪音和一些废物，它们对环境的负面影响可以忽略不计。因此，它们在环境影响评估中属于 C 类。

The main activities are the production and transportation of bagged rice. The impact on the environment is mainly noise and some waste, and the negative impact on the environment is negligible. Therefore, they fall under category C in the environmental impact assessment.

缓解措施：(i)采用低噪声设备和工艺，严格控制施工时间，夜间禁止生产；(ii)加工采购活动产生的废弃物按废弃物分类及时清除、集中处理；(iii)运输过程中按道路运输规定要求包装良好。

Mitigation measures: (i) adopt low-noise equipment and processes, strictly control production time, and prohibit production at night; (ii) classify and promptly remove and centrally dispose of waste generated from processing activities and procurement; (iii) Pack the product well in accordance with road transportation regulations during transportation.

6、农机设备的使用

6、Use of agricultural machinery and equipment

报告期内，子项目在提供社会化服务时分别使用自动播种机、高速插秧机、拖拉机、无人植保机，提供机械化服务。

During the reporting period, the sub-projects used automatic seeders, high-speed rice transplanters, tractors, and unmanned plant protection machines to provide mechanized services.

减缓措施：报告期内，1) 通过插秧机进行插秧，减少除草剂的使用；2) 利用无人机代替人工喷洒，平均减少 10%~20%农药用量；3) 农机设备均使用国 5 排放标准的农机；4) 通过集约化土地统一提供服务，农机工作效率高，减缓避免山地小农作业的低效率问题，减少油耗；5) 农机设备由农机手自行保管或存放于子项目企业现有的仓库中，无新建库房。

Mitigation measures: During the reporting period, 1) transplant rice with rice transplanters to reduce the use of herbicides; 2) use drones instead of humans to spray pesticides to reduce the usage amount of pesticides by an average of 10% to 20%; 3) agricultural machinery and equipment should meet China National V emission standard; 4) By intensifying the land to provide services in a unified way, the agricultural machinery work efficiency is high, and the inefficiency problem of small farming operations in the mountains is alleviated and avoided, and the fuel consumption is reduced; 5) Agricultural machinery and equipment are kept by the agricultural machinery operator or stored in the existing warehouse of the sub-project enterprise, and there is no new warehouse built.

7、子项目企业的内部管理

7、 Internal Management of sub-project Enterprises

报告期内，子项目进行了频率更多的内部巡查，对生产车间、仓库、包装车间等日常作业进行检查（附件四），通过巡查，规范子项目工作人员操作规范，保障安全生产意识。

During the reporting period, the sub-projects conducted more frequent internal inspections, and inspected the daily operations of production workshops, warehouses, packaging workshops, etc. (Appendix 4), to ensure that the sub-project staff can operate in a standardized manner and have safety production awareness.

巡查的内容包括以下措施：1）对生产环境、空气净化条件、以及设施安全性进行定期检查；2）对农机操作者、员工有破坏环境的行为和违反环保政策的行为进行检查。

The inspection contents include the following measures: 1) Regular inspection of the production environment, air purification conditions, and facility safety; 2) Check whether agricultural machinery operators and employees have behaviors that damage the environment and violate environmental protection policies.

（三）社会保障措施 Social Mitigation Measures

根据 ESMS 的要求，实施机构对子项目进行评估和检查，了解周边社区和公众的社会影响，包括征地、非自愿安置、少数民族和土地使用权转让等。

According to the requirements of ESMS, the implementing agency evaluated and inspected the sub-projects to understand the social impacts of surrounding communities and the public, including land acquisition, involuntary resettlement, ethnic minorities and land-use right transfer.

1、征地和移民

1、 Land Acquisition and Resettlement

在报告期内，子项目不涉及亚行保障政策声明和项目 ESMS 中定义的征地和非自愿安置问题；没有因征地或非自愿安置造成的住宅搬迁和经济损失。因此，征地和移民问题属于 C 类。

During the reporting period, the content of the sub-project does not involve land acquisition and involuntary resettlement as defined in the ADB safeguard policy statement and the project ESMS; There is no residential relocation and economic loss due to land acquisition or involuntary resettlement. Therefore, the land acquisition and resettlement issues belong to Category C.

2、土地使用权转让

2、Transfer of Land Use Rights

子项目与农民之间不发生直接的土地使用权转让行为，农民与以其承包土地作为股份成立合作社，签订《经营权入股合同》，而后子项目与合作社签订提供全程农作物种植社会化服务的合同，在报告期间内，子项目新签约 1 项服务合同，为上个报告期提到的歙县定潭有农种植专业合作社。

There is no direct transfer of land use rights between the sub-project and the farmers. The farmers use the contracted land as shares to establish a cooperative, and sign the "Management Rights Investment Contract", and then the sub-project and the cooperative sign a contract for providing socialized services for the whole process of crop planting. During the reporting period, the sub-project signed a new service contract, which is Dingtang Agricultural Plantation Professional Cooperative in Shexian County mentioned in the previous reporting period.

报告期内，为歙县定潭有农种植专业合作社提供社会化服务，子项目主要负责对相关肥料、农药投入品和栽培方式进行技术优化、改进和技术指导，并要求不得用除草剂，不得使用化学农药。

During the reporting period, the project provided social services for She County Dingtang Younong Planting Professional Cooperative. The sub-project was mainly responsible for the technical optimization, improvement and technical guidance of relevant fertilizers, pesticide inputs and cultivation methods, and it was required that no herbicides or chemical pesticides be used.

3、少数民族

3、Minority

根据政策要求，对少数民族影响的评估需要考虑该项目对他们带来的影响和少数民族社区的脆弱性。根据亚行的保障政策声明和 ESMS 的规定，子项目活动不涉及任何少数民族问题，对少数民族影响的影响都属于 C 类（不需要监测）。

As required by the policy, the assessment of minority impacts should include consideration of the project's impact on the minority and the vulnerability of their communities. According to ADB's Safeguard Policy Statement and ESMS, the sub-project activities do not involve any ethnic minority issues, so the impacts on ethnic minorities are all in Category C (no monitoring required).

在报告期内，子项目服务的农田都不在少数民族地区，不涉及少数民族问题。

During the reporting period, none of the farmlands served by the sub-projects are located in ethnic minority areas, so there is no ethnic minority issue involved.

4、社会和性别

4、Society and Gender

在报告期内，子项目针对企业管理人员和基层工作人员开展了 4 次培训。培训内容包括安全生产、数字农业、种植管理。此外，为了拓宽子项目实施者的视野，更好开展与高校的合作，丰富农业专业知识，子项目组织人员考察，了解其他城市农业发展的新技术，共计 3 次。

During the reporting period, the sub-project carried out 4 trainings for enterprise managers and grass-roots staff. The training content included production safety, digital agriculture, and planting management. In addition, in order to broaden the vision of the sub-project implementers, to better develop cooperation with universities, and to enrich agricultural expertise, the sub-project organized personnel visits to learn about new technologies for agricultural development in other cities, a total of 3 times.

按照“ESMS”的实施目标，子项目对 52 人次员工进行培训，妇女 19 人次，占 36%。在培训过程中，子项目为女性提供了更多的培训机会。经过培训的技术人员包括作物技术人员、农业机械技术人员、贫困农民。

According to the implementation target of ESMS, the sub-project trained 52 employees, of whom 19 were women, accounting for 36%. During the training process, the sub-project provided more training opportunities for women. The trained technicians include crop technicians, agricultural machinery technicians, and poor farmers.

培训帮助妇女建立她们自己的发展和抵抗风险的能力，并动员她们不断提升自我，积极减贫和提高，促进她们参与社会和经济活动。

These trainings helped women build their capacity for self-development and risk resistance, and mobilized them to continuously improve themselves, actively reduced poverty and progress, and fostered their participation in social and economic activities.

子项目在人员配备方面也注意性别，并增加了妇女工作人员的人数。

例如，子项目有 56 名员工，女性占比 40%；中层管理员工总数为 14 人，其中女性占比 50%。

The sub-project also considered gender in staffing and has increased the number of women staffs. For example, the sub-project has 56 employees, of which 40% are women; the total number of middle management employees is 14, of which 50% are women.

通过在该项目中实施社会包容性发展，它将为少数民族、妇女和穷人带来利益。

By implementing socially inclusive development in this project, it will benefit minorities, women and the poor.

（四）其他监测 Other monitoring

1、禁止投资活动

1、Prohibited Investment Activities

在报告期内，所有资金，均未用于支持亚行保障政策声明附件 5 中所列的任何禁止活动。

During the reporting period, no funds were used to support any of the prohibited activities listed in Appendix 5 of ADB's Safeguard Policy Statement.

2、信息披露

2、Information Disclosure

实施机构于上个报告期内，披露了子项目的基本信息，包括地点、活动、潜在影响，以及环境和社会官员的联系方式、申诉解决机制。披露期限为 10 天。本报告期内，无新的投资活动，因此暂无信息披露。

根据亚行专家的反馈意见，计划将第二个投资项目的信息披露期限延长至投资活动完成后的半年。

In the last reporting period, the implementing agency disclosed the basic information of the sub-project, including the location, activities, potential impacts, as well as the contact information of environmental and social officials, and the grievance resolution mechanism. The disclosure period is 10 days. During the reporting period, there was no new investment activity, so there is no information disclosure at the moment.

Based on feedback from ADB experts, it is planned to extend the information disclosure period for the second investment project to half a year after the completion of the investment activity.

（五）项目环境监测取得的效果 The Effect of Environmental Monitoring

通过在实施机构和在子项目中建立和实施 ESMS，在管理层面以及子项目活动的环境保护方面都产生了一定的影响，为项目区域内农业可持续发展提供了理论依据。具体内容如下：

The establishment and implementation of ESMS in implementing agencies and sub-projects has a certain impact on the management level and the environmental protection of sub-project activities, bring practical benefits to sustainable agricultural development in the project area. The details are as follows:

1、制定缓解措施，减少对环境的影响。子项目针对农业生产活动对环境可能产生的影响，已制定了缓解措施。通过内部治理、科学种植、标准化生产等原则，尽量减少农业活动对环境的影响。

1. Develop mitigation measures to reduce environmental impact. The sub-project has formulated mitigation measures for the possible impact of agricultural production activities on the environment. The environmental impact of agricultural activities is minimized by implementing the principles of internal governance, scientific planting, standardized production, etc.

2、扩大覆盖率，提高影响的水平。作为亚行黄山项目的创新项目，在项目中采用基金形式来支持农业活动，保护环境的新概念得到各级政府的认可。可持续农业管理和农业过程的应用以及EMP的实施与黄山市绿色发展战略相一致。在项目实施过程中，通过持续的 ESMS 培训、实地研究、信息披露等活动，提高了实施机构工作人员、财务人员和农业生产者的环境保护意识。

2. Expand coverage to increase the level of impact. As an innovative project of ADB's Huangshan Project, the project adopts the form of funds to support agricultural activities, and the new concept of environmental protection has been approved by governments at all levels. Application of sustainable farm management and agricultural processes and EMP implementation aligned with Huangshan city green development strategy. During the implementation of the project, through continuous ESMS training, field research, information disclosure and other activities, the environmental protection awareness of the implementing agency staff, financial personnel and agricultural producers has been improved.

3、提升社会效益，子项目取得社会荣誉。报告期内，首个子项目获得一系列社会荣誉。包括：1)由安徽省人力资源和社会保障厅授予的安徽省和谐劳动关系示范企业；2)子项目副总经理李燕萍获得黄山市巾帼建功标兵荣誉；3)子项目销售部副总经理张国珍获得县级优秀党员荣誉。通过绿色投资基金对子项目的金融和 ESMS 治理支撑，子项目得到更好的发展机会，并取得一定成效。

3. The social benefits have been improved, and the sub-project has achieved social honors. During the reporting period, the first sub-project won a series of social honors. Including: 1) Model Enterprise of Harmonious Labor Relations awarded by Anhui Provincial Department of Human Resources and Social Security; 2) Li Yanping, Deputy General Manager of the sub-project, received the honor of Huangshan City Women's Contribution Role Model; 3) Deputy General Manager of the Sub-project Sales Department Zhang Guozhen was awarded County-level outstanding party member honor. Details see Appendix 6. The financial and ESMS governance support of the Green Investment Fund for the sub-projects has enabled the sub-projects to get better development opportunities and has achieved certain results.

三、在 ESMS 实现中遇到的问题和解决方案 Problems and Solutions Encountered in ESMS Implementation

(一) 存在的问题 Existing Problems

1、实施机构认为，将 ESMS 整合到投资业务中，可以有效降低环境风险,促进绿色金融发展。报告期内，在实施 ESMS 过程中遇到的主要问题包括：（1）ESMS 专业性

较强，实施机构项目人员在翻译、环境和社会评估上的能力需要进一步提高；（2）财务、环境和社会方面专业术语较多，普通翻译难以满足报告要求；

The implementing agency believes that integrating ESMS into investment business can effectively reduce environmental risks, which is consistent with the of green financing development.. During the reporting period, the main problems encountered in the process of implementing ESMS include: (1) ESMS is highly specialized, and the ability of project personnel of implementing agencies in translation, environmental and social assessment needs to be further improved; (2) As the large number of financial, environmental and social terms, general translation cannot meet the reporting requirements;

对于子项目，遇到的主要问题：（1）子项目的成果转换需通过第三方机构检测，成本较高；（2）子项目受制于中国农村现状，基础资料的收集有难度，因此评估时需要反复确认，沟通时间较长。

For the sub-projects, the main problems encountered: (1) The conversion of the results of the sub-projects needs to be tested by a third-party organization, and the cost is relatively high; (2) As the sub-project is subject to the current situation of rural areas in China, it is difficult to collect basic data. It needs to be repeatedly confirmed during the evaluation, and the communication time is long.

（二）解决方案 Solution

1、鉴于上述问题，实施机构采取了以下行动：（1）加强与市项目办及咨询管理团队的沟通，寻求技术支撑。（2）加强能力建设活动。在报告期内，组织了 2 次培训，并督促业务人员在投资活动中理解、接受和采用 ESMS，这将有助于今后实现金融机构的绿色融资。

For the above problems, the implementing agency has taken the following actions: (1) Strengthen communication with the municipal project office and consulting management team, and seek technical support. (2) Increase capacity building activities. During the reporting period, two training activities were organized, and business personnel were supervised and urged to understand, accept and adopt ESMS in investment activities, which will help financial institutions implement green financing in the future.

鉴于实施机构在实施 ESMS 相关活动方面面临的挑战，应考虑以下措施：（1）亚行应及时组织项目实操、专业术语翻译上的培训；（2）亚行、项目办应该为子项目积极寻求其他政策、资金、资源等支持，包括已投资和拟投资的子项目，有效促进可持续发展；（3）持续要求子项目提供对环境影响的全面缓解措施，实施机构的环境和社会专员进行管理和指导。

Regarding the challenges faced by implementing agencies in implementing ESMS-related activities, the following measures should be considered: (1) ADB should timely organize training on project practice and translation of professional terms; (2) ADB and PMO should actively seek other policies, funds, resources and other support for sub-projects, including sub-projects that have already been invested and those to be invested in, so as to

effectively promote sustainable development; (3) Continue to require sub-projects to provide adequate mitigation measures of environmental impacts, under the management and guidance of the environmental and social commissioner of the implementing agency.

实施机构通过定期报告和监督来加强和增加监督频率，以确保各种环境和社会保障措施和政策得到实施，ESMS 发挥应有作用。

Implementing agencies strengthen monitoring through regular reporting and increased monitoring frequency to ensure that various environmental and social safeguards and policies are implemented and ESMS can play its role.

四、经验总结和下一步计划 Lesson Learned and Next Steps

（一）经验总结 Lesson Learned

在本项目实施过程中，实施机构学习和接受亚行项目 ESMS 的系统原理，有利于加强处理实施机构投资业务对环境和社会方面的关注，加强关注性别平等，支持农业发展，为推进农业、农村和农民的发展创造动力。主要经验总结如下：

During the implementation of this project, the implementing agencies learn and accept the system principles of ADB's ESMS project, which is conducive to strengthening the handling of environmental and social concerns in the investment operations of the implementing agencies, paying more attention to gender equality, supporting agricultural development and bringing impetus to the development of agriculture, rural areas and farmers. The main experiences are summarized as follows:

1、提供资金支持。通过前期尽调，经亚行审批，对子项目给予 5500 万股权投资支持。

1、 Provide financial support. After due diligence in the early stage, upon approval by ADB, 55 million equity investment support has been provided to the sub-project.

2、提供绿色金融评估和督导。运用国际绿色金融体系标准（ESMS 体系）对子项目的生态农业技术、社会影响力等方面进行评估，一方面进一步了解子项目农业技术水平，另一方面也对子项目进行了绿色金融标准的治理服务，督促子项目不断做好内控，做到绿色、可持续发展。

2、 Provide green finance assessment and supervision. Using the international green financial system standard (ESMS system) to evaluate the ecological agriculture technology and social influence of the sub-projects helps to further understand the agricultural technology level of the sub-project, on the other hand, it provides governance services in compliance with green financial standards for the sub-projects and urge the sub-projects to continuously do a good job in internal control and to achieve green and sustainable development.

3、提供科学的发展规划辅导。基于子项目以往的主要产品为水稻、黑玉米等粮食作物，在给予子项目发展规划指导时，明确提出要逐渐从主粮农产品向特色经济农产品延伸，发挥子项目现有较为完善的农业生产服务体系、销售体系、技术体系、人才体

系、信任体系优势和熟练的农村农业生产经验优势，因地制宜规划发展特色经济作物。

3、 Provide scientific development planning guidance. Since the main products of the sub-project in the past were grain crops such as rice and black corn, when giving the sub-project development planning guidance, it was clearly proposed to gradually extend from the main grain products to the characteristic economic agricultural products, and give full play to the advantages of the sub-project's existing relatively complete agricultural production service system, sales system, technical system, personnel system, trust system and mature rural agricultural production experience, and plan and develop characteristic cash crops according to local conditions.

4、提供人才支持。实施机构发挥自身资源及合作伙伴优势，给予子项目人才支持，派驻专业农业人才赋能子项目的技术升级。

ESMS 非常实用，本项目从绿色融资体系安排、创新的绿色融资产品和商业模式到绿色融资的可持续发展等方面积累的经验，可以在更广泛的领域得到复制和扩大。

4、 Provide personnel support. The implementing agency (using the advantages of its own resources and partners) dispatched professional agricultural personnel to participate in the technical upgrading of the sub-project, thus giving the sub-project personnel support.

ESMS is very practical, and the experience accumulated in this project from green financing system arrangement, innovative green financing products and business models to sustainable development of green financing can be replicated and expanded in wider fields.

(二) 下一步计划 Next Steps

1、持续跟踪 ESMS 的实施情况，促进子项目的进展：实施机构将继续根据基金方案向符合条件的农业企业继续给与支持。并按照 ESMS 的实施步骤，继续跟踪、监控和报告所有子项目，并敦促子项目在活动中始终关注并实施 ESMS，使项目活动可持续。

1.Continue to track the implementation of ESMS and promote the progress of sub-projects: The implementing agency will continue to provide support to eligible agricultural enterprises according to the fund scheme. And in accordance with the implementation steps of ESMS, continue to track, monitor and report all sub-projects, and urge sub-projects to continue to pay attention to and implement ESMS in activities to make project activities sustainable.

2、加强能力建设，特别是环境和社会专员，在未来的项目实施中，应加强对利益相关者的培训，特别是实施机构的员工、子项目的员工，以应用 ESMS 步骤来筛选、识别和子项目的投后管理，并确保 ESMS 在实施业务运作中的整合。这些努力将提高他们的业务执行能力，以及他们对 ESMS 的理解和管理能力。

2. Strengthen capacity building, especially for environmental and social commissioners. In the future project implementation, the training of stakeholders, especially the staff of the implementing agency and the staff of sub-projects, should be strengthened to apply ESMS

steps for screening, identification and post-investment management of sub-projects, and ensure the integration of ESMS in implementing business operations. These efforts will improve their business execution capabilities, as well as their understanding and management of ESMS.

3、加强信息传播和培训：将继续努力使实施机构的员工、子项目的员工了解整个项目、ESMS、亚行的管理要求和年度计划。

3. Strengthen information dissemination and training: Continue to promote the understanding of implementing agency staff and sub-project staff about the overall project, ESMS, ADB's management requirements, and annual plans.

4. 第3个子项目的尽职调查和ESMS评估计划于2022年下半年实行。

4. Due diligence and ESMS assessment for 3rd sub-project will be conducted in the second half of the year.

附件一：能力建设活动

APPENDIX 1: CAPACITY BUILDING ACTIVITIES

报告期：2022 年 1 月 1 日至 6 月 30 日

Reporting period: January 1 to June 30, 2022

序号 No.	类型 Type	地点 Location	时间 Date	次数 Times	主题 Theme	主要内容 Main content	参与人数 Number of participants	女性参与者 人数 Number of female participants	参与者 Participant
1	培训 Training	信投集团 HTIC	2022-3-8	1	ESMS 操作知识 Knowledge of ESMS operation	ESMS 的主要要求、以及第一个投资项目的进展 The main requirements of ESMS, and the related progress of the first investment project	16	16	信投集团女性员工 Female employees of HTIC Group
2		线上 on-line	2022-5-20	1	亚行廉政培训 ADB Integrity Training	廉政尽职调查、亚行 2030 战略等。 Integrity Due Diligence, ADB Strategy 2030, etc.	4	3	信投集团部分项目经理、环境专员、社会专员 Some project managers, environmental specialists and social specialists of HTIC Group

3	子项目 sub-project	2022-1-8	1	农业企业运营发展 Agribusiness development	《数字农业》、《项目申报汇解》等。 "Digital Agriculture", "Project Application Interpretation", etc.	19	4	子项目部分中层管理人员 Part of the sub-project mid-level managers
4	子项目 sub-project	2022-3-15	1	农业种植规划 Agricultural Planting Planning	制定 2022 年种植计划、任务及目标，落实各项工作的责任人和具体完成时间。The planting plan, tasks and goals in 2022, the responsibilities for the implementation of various tasks and the specific completion time.	15	4	子项目总经办、销售部、种植部工作人员 Staffs of sub-project general manager office, sales department and planting department
5	子项目 sub-project	2022-3-21	1	食品安全法 Food Safety Law	针对当前疫情形式，如何做好食品安全、配送工作，对相关人员进行食品安全法培训。How to ensure food safety and carry out distribution work in the current epidemic situation, train relevant personnel on food safety laws.	14	8	子项目总经办、质检部、供应部、销售部、生产保障部、生产车间 Sub-project general manager office, quality inspection department, supply department, sales department, production security department, production workshop
6	子项目 sub-project	2022-5-6	1	实操培训 Practical training	仓库、统计、协调等各方面管理知识。Knowledge of management in all aspects of warehouses, statistics, coordination, etc.	4	3	子项目供应部、总经办 sub-project Supply Department and General Manager's

									Office
1	考察	南京 Nanjing	2022-2-12	1	秸秆机械化收集运输利用 Mechanized collection, transportation and utilization of straw	与农业农村部南京农业机械研究所围绕秸秆机械化收集运输利用装备研发进行交流。 Discuss on the research and development of equipment for mechanized collection, transportation and utilization of straw with Nanjing Agricultural Machinery Research Institute of Ministry of Agriculture and Rural Affairs.	1	0	子项目企业负责人 Sub-project company leader
2		淮安 Huaian	2022-2-27	1	基质生产企业考察 Enterprise inspection of substrate production	考察江苏淮安佳禾兴农业公司农业基质生产。 Investigate the production of agricultural substrates in Jiangsu Huaian Jiahexing Agricultural Company	4	0	子项目企业负责人、技术人员 Sub-project business leaders and technical staff
3		黄山风景区 Huangshan Scenic Area	2022-6-23	1	无人机暨松材线虫病防控 UAV and Pine Wood Nematode Prevention and Control	考察林业防治精准化管理、精细化实施、专业化防治 Investigate the precise management, refined implementation and specialized prevention and control of forestry prevention and control	3	0	子项目部分中层管理人员、技术人员 Part of mid-level managers and technicians of the sub-project

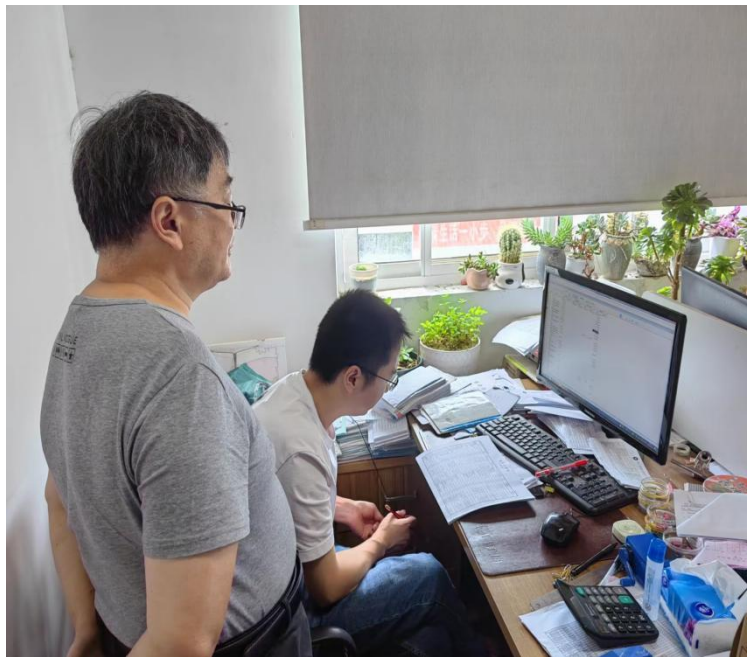


培训和考察的照片（部分） Photos of training and study tours (partial)

附件二：ESMS 实施活动检查统计表 APPENDIX 2: ESMS IMPLEMENTATION ACTIVITIES CHECK STATISTICS

报告期：2022 年 1 月 1 日至 6 月 30 日 reporting period: January 1 to June 30, 2022

序号 No.	地点 Location	时间 Date	主题 Theme	检察人员 Prosecutor
1	黟县屏山村 Pingshan Village, Yi County	2022-6-2	检查 2022 年水稻育秧、插秧情况，了解土壤改良技术实施情况。Inspect the situation of rice seedling raising and transplanting in 2022, and learn about the implementation of soil improvement technology.	信投集团王旭副总裁、社会专员江君瑜 Wang Xu, Vice President of HTIC; Jiang Junyu, Social Commissioner
2	有农公司 Younong Company	2022-6-28	检查子项目新设备使用、内控管理和财务情况。Inspect the use of new equipment, internal control management and financial situation of sub-projects.	信投集团项目经理张纯、社会专员江君瑜 Zhang Chun, Project Manager of HTIC; Jiang Junyu, Social Commissioner



现场检查的照片 Photos of onsite inspection

附件三：子项目检测报告 APPENDIX 3: SUB-PROJECT TEST REPORT




Anhui Public Inspection Research Institute Co., Ltd.

安徽省公众检验研究院有限公司

检验报告 Test Report

No:FS2022020021

共 4 页 第 1 页

样品名称	胚芽米		规格型号	5kg/袋
生产日期	2021-12-24		商标	有农
生产批号	/		质量等级或加工工艺	/
样品数量	2袋		检验类别	委托检验
委托单位名称	黟县有农生态农业有限公司			
委托单位地址	安徽省黄山市黟县五东殿工业园			
标称生产者名称	黟县有农生态农业有限公司			
标称生产者地址	安徽省黄山市黟县五东殿工业园			
执行标准	NY/T 419		样品状态	固体
样品接收日期	2022-02-14	样品检测日期	2022-02-14 - 2022-03-04	
检验依据	见附页	检验项目	共 40 项(见附页)	
检验结论	该样品按照NY/T 419-2021标准检验，所检项目均合格。 			
备 注	1. 样品和信息均由客户提供。 2. 其他规格：2kg/袋。			

主检：李兆迎

审核：喻青云

批准：黄琴

附件四：子项目内部抽查记录APPENDIX 4: RECORDS OF INTERNAL SPOT CHECKS OF SUB-PROJECTS

巡查记录 Inspection record

Inspection record

2022.4.28

[illegible]

异常情况处理汇报:

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OPEN

The nitrogen topdressing mode of *indica-japonica* and *indica* hybrid rice are different after side-deep fertilization with machine transplanting

机器移栽侧深施肥后 籼粳和籼杂交稻的施 氮追肥方式不同

Determination of the optimal fertilization method is crucial to maximize nitrogen use efficiency and yield of different rice cultivars. Side-deep fertilization with controlled-release nitrogen, in conjunction with machine transplanting and subsequent topdressing, was applied to *Indica-japonica* hybrid rice 'Yongyou1540' (YY1540) and *indica* hybrid rice 'Tianyouhuazhan' (TYHZ). Four nitrogen treatments were applied in 2018 and 2019: traditional nitrogen application with quick-release nitrogen (T_1), single-dose deep fertilization at transplanting with 100% controlled-release nitrogen (T_2), and deep fertilization of 70% controlled-release nitrogen and topdressing of 30% quick nitrogen at tillering (T_3), or at panicle initiation (T_4). Side-deep fertilization reduced the fertilizer application frequency without causing yield loss, T_4 enhanced the yield of YY1540 by increasing the number of productive tillers and number of spikelets per panicle compared with T_1 , T_2 and T_3 . The yield of TYHZ showed no significant difference among treatments. The T_4 treatment decreased the number of tillers at the tillering peak stage and increased the percentage productive tillers and number of differentiated spikelets. Compared with the other treatments, T_4 increased dry matter accumulation and leaf area index during panicle initiation and grain ripening, and contributed to enhanced nitrogen uptake and nitrogen utilization in YY1540. On average, nitrogen uptake and utilization in YY1540 were highest in T_4 , but no significant differences among treatments were observed in TYHZ. Dry matter accumulation and nitrogen uptake from panicle initiation to heading of YY1540 were correlated with number of spikelets per panicle, but no significant correlations were observed for TYHZ. Supplementary topdressing with quick-release nitrogen at the panicle initiation stage was required to increase yield of *indica-japonica* hybrid rice, whereas single-dose deep fertilization with controlled-release nitrogen is satisfactory for the *indica* hybrid cultivar.

TNT	Nitrogen amount transport from stem, sheaths and leaves to panicles
NTE	Apparent nitrogen translocation efficiency of stem, sheaths, and leaves
NCR	Rate of contribution of transferred nitrogen into grains
NMP	Nitrogen dry matter production efficiency
NU _E	Nitrogen utilization efficiency
NRF	Apparent nitrogen recovery fraction
NAE	Nitrogen agronomic efficiency

Rice is the dominant food crop in China. Generally, more than 50% of the population consumes rice as a staple food. In traditional rice production in China, the amount of nitrogen fertilizer applied is relatively high and the nitrogen use efficiency is low¹. Traditional fertilization methods typically apply nitrogen fertilizer at three stages: as a basal fertilizer, at the tiller stage, and during panicle initiation. Excessive application of nitrogen fertilizer

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causes ecological problems, such as soil degradation and pollution², which also influence rice quality by increasing the protein content of grains³. In the 1990s, deep placement of nitrogen was reported to enhance nitrogen use efficiency⁴. More recent studies show that deep placement of nitrogen stimulates root growth to increase nutrient uptake, and thereby enhance the early stages of crop growth^{5,6}. Under machine transplanting, deep placement of nitrogen fertilizer enhances rice seedling growth and development of more highly productive tillers⁷. In addition, deep application of nitrogen fertilizer has ecological benefits, by reducing emission of greenhouse gases in the paddy field^{8,9}, improving soil nitrogen function and the community structure of microorganisms¹⁰, and maintaining the ecological sustainability of the rice paddy environment.

With the acceleration of urbanization, the rural population is gradually transitioning to cities, therefore rice machine transplanting technology has developed rapidly to overcome the problem of resulting labor shortage¹¹. Furthermore, side-deep fertilization simultaneous with machine transplanting was developed, which resulted in large-scale alleviation of the labor shortage, improvement in rice production efficiency, and increase in nitrogen use efficiency^{12,13}. With the development of controlled-release fertilizers, side-deep fertilization with machine transplanting has replaced traditional fertilization practices in China in which the quick-release nitrogen fertilizer was used widely.

In China, single season crops accounts for approximately 70% of the rice grown. Hybrid rice comprises 50% of rice production in China, which produces higher yields owing to the strong tillering ability and large spikelets¹⁴. In recent years, *indica-japonica* hybrid rice has been widely grown in the middle and lower reaches of the Yangtze River of China. These cultivars produce significantly improved yields on account of the larger panicles and longer growth season compared with typical *indica* hybrid rice^{15,16}. The nitrogen fertilizer application rate is important for dry matter accumulation, a high application rate is necessary in *indica-japonica* hybrid rice to obtain a higher yield than that attained with inbred hybrid rice^{17,18}. In particular, nitrogen application must be sufficient to meet the demand for spikelet differentiation and the longer grain-ripening period¹⁹.

Controlled-release fertilizer reduces nitrogen loss. Single-dose deep fertilization with controlled-release nitrogen fertilizer and machine transplantation improves rice yield and nitrogen use efficiency in double-season rice production²⁰. Owing to differences in cultivar characteristics, a single application of slow-release fertilizer seems inadequate to fulfill the nitrogen needs of some high-yielding cultivars¹², which is caused by mismatch between the growth period and fertilizer release. However, differences in the response to side-deep fertilization with machine transplanting between *indica-japonica* hybrid and *indica* hybrid rice are unclear.

In 2018, the *indica-japonica* hybrid rice 'Yongyou1540' (YY1540) and *indica* hybrid rice 'Tianyouhuazhan' (TYHZ) were subjected to ten treatments to study differences in the response of *indica-japonica* hybrid rice and *indica* hybrid rice to controlled-release nitrogen application. Nitrogen topdressing at panicle initiation was beneficial for yield formation in YY1540, whereas a single-dose nitrogen application satisfied the nitrogen needs of TYHZ. The nitrogen application ratio of 70% controlled-release nitrogen applied as side-deep fertilization with machine transplanting to 30% quick-release nitrogen applied as a topdressing at panicle initiation induced the highest yield-increasing effects in YY1540 (Table S1.). Therefore, in 2019, we repeated the experiment with four nitrogen application treatments, consisting of traditional nitrogen application (T_1), a single-dose controlled-release nitrogen application (T_2), and 70% controlled-release nitrogen as side-deep fertilization with machine transplanting and 30% as topdressing applied at the tillering stage (T_3) or the panicle initiation stage (T_4). The aim was to ascertain the difference in response to nitrogen fertilization mode between the large-panicle *indica-japonica* hybrid rice and medium-panicle *indica* hybrid rice, elucidate the factors that contributed to the response, and propose an appropriate controlled-release nitrogen application mode to accompany machine transplanting for *indica-japonica* hybrid rice and *indica* hybrid rice.

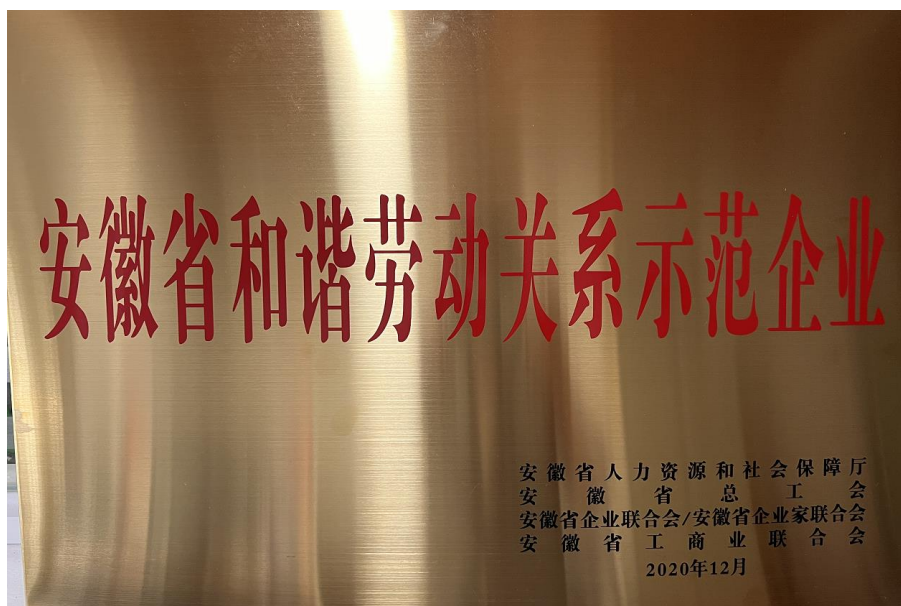
Results

Yield and yield components. The change in grain yield of the two the cultivars differed in response to controlled-release nitrogen application (Table 1). In contrast to the traditional fertilization mode (T_1), single-dose fertilization (T_2) decreased the yield of YY1540 by 9.5% ($p > 0.05$) in 2018 and slightly increased the yield in 2019, whereas T_2 slightly increased the yield of TYHZ in 2018 and 2019. The T_4 treatment increased YY1540 yield by 10.5%, 22.1%, and 17.2% compared with the T_1 , T_2 , and T_3 treatments in 2018, and by 8.0%, 8.0%, and 18.4% in 2019, respectively, which reflected an increase in spikelet number. The T_3 treatment caused a reduction in YY1540 yield in 2019. Regarding TYHZ, a slight decrease ($p > 0.05$) in yield was observed under the T_3 treatment compared with T_1 , T_2 and T_4 , whereas no significant difference in yield was observed between T_1 , T_2 , and T_4 .

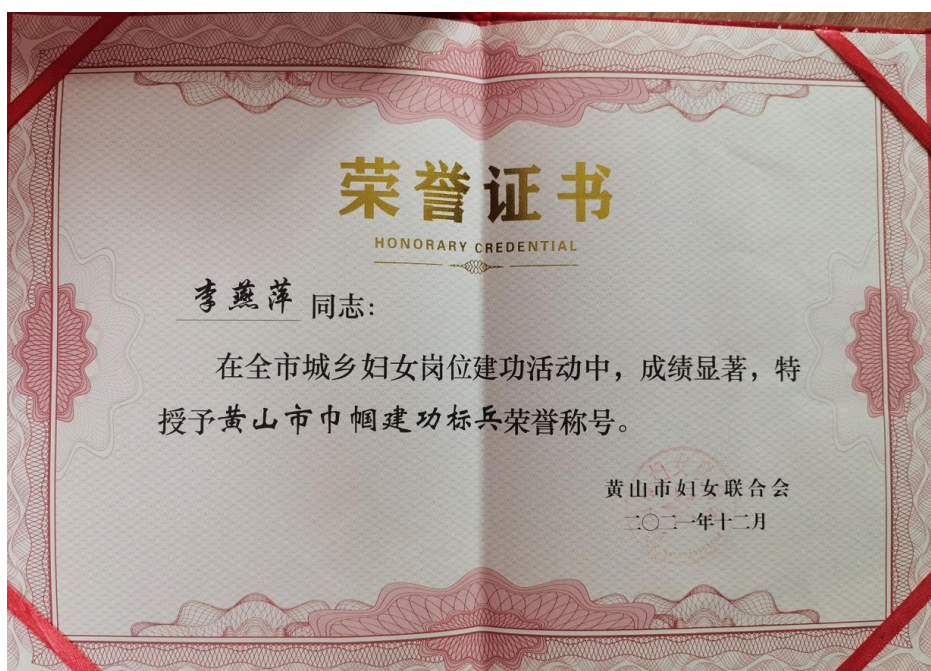
Among the different treatments, yield changes depended on the number of productive tillers and number of spikelets per panicle. The highest number of tillers at the tillering peak stage was observed in the T_3 treatment for YY1540 and T_2 treatment for TYHZ both in 2018 and 2019 (Fig. 1). However, the highest percentage productive tillers was achieved in the T_4 treatment in YY1540 and TYHZ except for the no-nitrogen application control (T_0) in 2019 (Fig. 2). The T_3 treatment resulted in the lowest productive tillers percentage for YY1540 in 2018 and 2019, whereas no significant difference in productive tillers percentage was observed between T_1 , T_2 , and T_3 for TYHZ.

With regard to spikelet formation, the main stem was sampled to determine spikelet differentiation and degeneration. The number of spikelets that survived depended primarily on the number of differentiated spikelets. The T_3 treatment resulted in the minimum number of differentiated spikelets for YY1540 both in 2018 and 2019. The number of differentiated spikelets for YY1540 was highest in the T_4 treatment, which was 8.6% and 9.8% higher than those of T_1 in 2018 and 2019, respectively, 18.6% and 20.0% higher than those of T_2 , and 24.3% and 18.7% higher than those of T_3 in 2018 and 2019, respectively. The T_4 treatment significantly promoted spikelet degeneration in 2018, but the highest number of spikelets was observed in T_4 for YY1540. The highest number

附件六：所获荣誉 PHOTOS OF AWARDED HONORS



Model Enterprise of Harmonious Labor Relations awarded by Anhui Provincial Department of Human Resources and Social Security.



Ms. Li Yanping, Deputy General Manager of the sub-project, recieved the honor of Huangshan City Women's Contribution Role Model from Huangshan Women's Federation.

环境与社会保障

(项目协议要求)

- 环境管理计划 EMP - 环境、健康、安全
- 移民安置计划 RP
- 社会和性别 SAP & GAP
- (信投) - 环境社会管理系统 ESMS



环境保护

- 承包商在施工中应该遵守有关大气污染和水污染控制的现行法律和法规。
- 本合同中承包商还必须遵守并实施满足本地区建筑工程项目的有关减少施工环境影响的要求和措施，相关费用含在报价中。
- 编制环境保护专项方案。



环境管理计划内容



市项目办职责



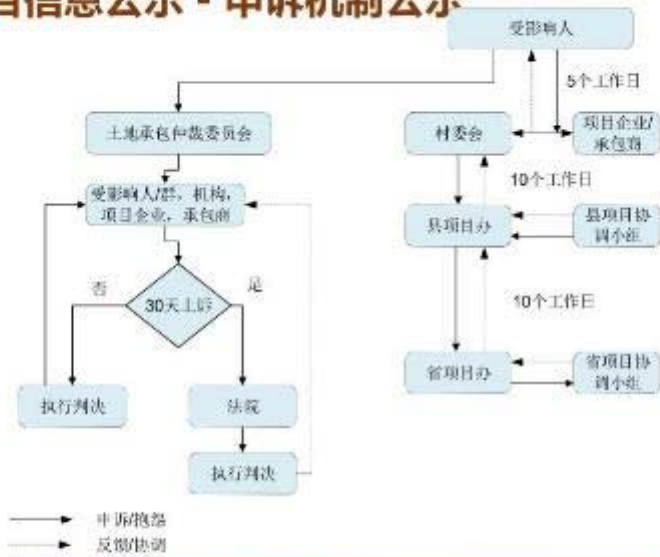
实施机构职责



施工单位和施工监理职责



项目信息公示 - 申诉机制公示



环境公示 - 施工工地监督公示

项目名称	开工日期	计划竣工日期
主要建设内容		
市项目办	环保负责人 联系电话	
县区项目办	环保负责人 联系电话	
建设单位	环保负责人 联系电话	
施工单位	环保负责人 联系电话	
监理单位	环保负责人 联系电话	
环境保护部门	XX市/县环保局 环保热线	12369



整改前后 - 公示牌



发现问题 - 无申诉机制公示牌



整改结果

整改前后 - 公示牌



发现问题 - 无申诉机制公示牌、围挡



整改结果

整改前后 - 扬尘



发现问题 - 扬尘污染



整改结果

整改前后 - 溢油

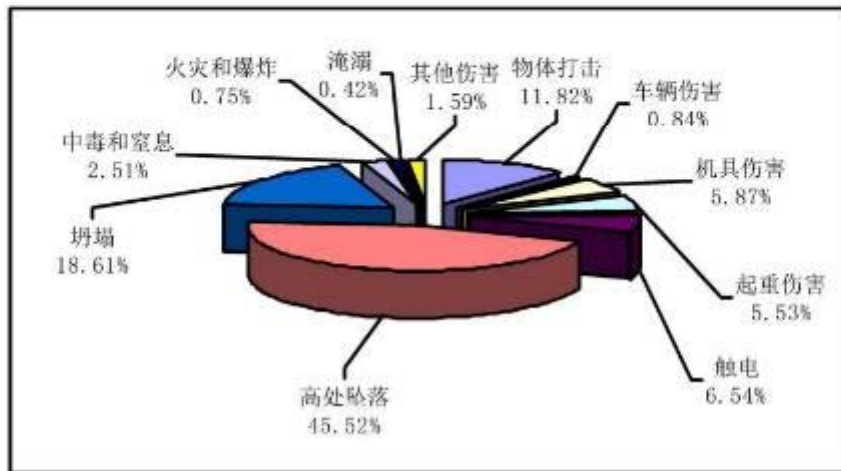


发现问题 - 施工现场溢油



加强对施工安全的管理

- **安全生产的定义** - - 安全生产是指企事业单位在劳动生产过程中的人身安全、设备和产品安全，以及交通运输安全等。
- **安全第一，安全生产人人有责，管生产必须管安全。**
- **员工自身安全管理。个人防护用品（PPE）**
- **项目实施过程中的施工安全管理。**
- **安全会产生连带责任。**





基坑放坡不够、台阶宽度太窄



该处边坡无防护、上人步道不规范、未设脚手架，边坡局部出现塌陷（箭头）



泵站旁新建一处公厕



社会安全保障

- 征地补偿合规性;
- 关注和为当地农民, 特别是妇女创造就业机会;
- 申诉机制



项目信息和申诉机制公示



工程资料的收集和整理

- 承包商施工用表应满足《建筑工程施工质量验收规范实施指南》的要求。
- 监理用表应满足《建筑工程施工质量验收规范实施指南》的要求。
- 中间计量报告采用规定的表式。
- 竣工图：未变更的的图纸仅在新施工图上加印竣工图章即可；变更超过图面1/3的，应以设计单位重新绘制的变更图纸为准绘制竣工图。
- 竣工资料的整理按《建设工程文件归档整理规范》(GB/T50328-2014)执行。



监理的责任

- **监理日志 旁站监理**
- **严格按照监理规范要求执行**
- **定期提交监理月报**



监理月报注意事项：

作为**亚行项目**的要求，需要在监理报告中注意：

1. 增加ESMP的执行情况的介绍，即增加环境、社会、健康、安全方面的独立章节。ESMP是施工合同的一部分，监理和施工单位都需要了解执行。
2. 建议增加现场用工情况（特别是当地农民、妇女人数）的统计；
3. 包含现场施工照片（照片请压缩，以免文件过大）
4. 如有变更和签证请介绍，并另行准备相应文件。



问题和回答



感谢各位光临!

如有问题, 请联系伊世特 (ESD)

咨询团队

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Appendix 6: List of Proposed Sub-project

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
Total				499.19	598.96
Tunxi District	1	Tunxi District Ecological Village Construction Project (Phase II)	1. Tunguang Town: Build 673m of DN300 sewage pipes, 600m of DN200 sewage pipes, 400m of DN110 sewage pipes, 2000m of DN90 sewage pipes, 9880m of De63~De110 sewage vacuum pipes, 760m of De75 sewage pipes, 3,260m of De110 sewage pipes, 1 sewage treatment terminal, 1 soybean product sewage treatment station, and repair 17079m ² of road surface. Build parking lots, streetlights, greening, etc.	21.11	76.49
			2. Yanghu Town: Build 1,722m of DN300 sewage pipes, 720m of DN200 sewage pipes, 250m of De75 sewage pipes, 2,420m of De110 sewage pipes, and repair 6,606m ² of road surface. Build parking lots, streetlights, greening, etc.	8.76	
			3. Yiqi Town: Build 6089m of DN300 sewage pipe, 1964m of DN200 sewage pipe, 6460m of De110 sewage outlet pipe, 3 domestic sewage treatment terminals, repair 21655m ² of road surface. Build parking lots, streetlights, greening, etc.	17.22	
			4. Liyang Town: Build DN300 sewage pipe 3330m, DN200 sewage pipe 4025m, De75 sewage pipe 1610m, De110 sewage outlet pipe 11860m, 1 domestic sewage treatment terminal, repair 18040m ² road. Build parking lots, streetlights, greening, etc.	16.50	
		Subtotal		63.59	76.49

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
Huizhou District	2	Huizhou Urban Rainwater and Sewage Pipe Network Improvement Project (Phase II)	Renovate the pipe network of 8 districts in the urban area, build 8102m of DN300~DN400 sewage pipes, 23040m of De110 sewage outlet pipes; 6694m of DN400~DN800 rainwater pipes, 2636m of DN200 rainwater outlet connection pipes, and newly built De32~De160 water supply pipes of 9981m, all integrated There are 2 sets of non-negative pressure water supply equipment, 1,337 damaged pipelines, 29,065m ² of asphalt pavement, and 22,850m ² of cement pavement.	39.68	47.83
	3	Huizhou District Ecological Village Construction Project (Phase II)	1. Qiankou Town: Build DN300 sewage pipes of 1550m, DN200 sewage pipes of 4480m, De75 sewage pipes of 2590m, De110 sewage pipes of 5180m, 6 domestic sewage treatment terminals, 19 three pools and one site, and 1 sewage lifting pump station, repair Asphalt road 2722m ² , cement road 10888m ² , water supply pipeline 3584m, and construct ditches and revetments.	11.19	47.38
			2. Yangcun Township: Build DN300 sewage pipes of 2165m, DN200 sewage pipes of 4650m, De75 sewage pipes of 4050m, De110 sewage pipes of 8100m, 3 domestic sewage treatment terminals, 25 three pools and one site, repair 3720m of water supply pipes, asphalt Pavement 3159m ² , cement pavement 12636m ² , construct parking lot, street lights, greening, cultural wall, etc.	13.27	

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
			3. Fuxi Township: Build DN300 sewage pipes of 1360m, DN200 sewage pipes of 4100m, De75 sewage pipes of 3220m, De110 sewage pipes of 6440m, 6 domestic sewage treatment terminals, 18 three pools and one place, repair 3280m of water supply pipes, asphalt Pavement 2456m ² , cement pavement 9824m ² , construct protective railings, etc.	11.52	
			4. QEI's Township: Build DN300 sewage pipes of 200m, DN200 sewage pipes of 1200m, De75 sewage pipes of 1000m, De110 sewage pipes of 1200m, 2 domestic sewage treatment terminals, 27 three pools and one site, repair 960m of water supply pipes, asphalt Pavement 600m ² , cement pavement 2800m ² .	3.31	
		Subtotal		78.98	95.21

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
Shexian County	4	Shexian County Urban Rainwater and Sewage Pipe Network Improvement Project	3 schools in the urban area: carry out rainwater and sewage diversion regulation, build a DN300 sewage pipe network of 4111m, DN300-DN800 rainwater pipe network of 3756.8m, and repair 14597m ² of asphalt pavement. Huicheng Town: 1600m of DN300 sewage pipe, 5800m of DN200 sewage pipe, 6500m of De75 sewage pipe, 13000m of De110 sewage outlet pipe, 1200m of De160 water supply pipe, 3400m of De50 water supply pipe, asphalt pavement, etc. Newly built DN500 rainwater pipes of 370m, DN400 rainwater pipes of 360m, DN300 rainwater pipes of 2490m, DN200 rainwater inlet pipes of 644m, and 129 single grate rainwater inlets. Guilin Town: 2100m of DN300 sewage pipe, 4200m of DN200 sewage pipe, 4100m of De75 sewage pipe, 8200m of De110 sewage outlet pipe, 1000m of De110 water supply pipe, 2500m of De50 water supply pipe, asphalt pavement, etc. Newly built 700m DN500 rainwater pipes, 1510m DN400 rainwater pipes, 4100m DN300 rainwater pipes, 1262m DN200 rainwater gully connecting pipes, and 252 single grate rainwater inlets. Extend the water supply pipe network to 8 villages including Meichuan and Dacheng in Longkou Village, build a new De63~De110 water supply main network of 14,300m, a pressurized pump station, and repair the asphalt pavement. Fuyu Industrial Park: Build 2205m of DN400~DN500 sewage pipes, repair cement pavement, etc. Fuji Shaxi Village: New DN200~DN300	77.94	92.74

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
			sewage pipe network of about 2500m, De75 sewage pipe 2800m, De110 sewage outlet pipe 5600m, road restoration, etc. Zhengcun Town (Phase II): 6,400m of DN200-DN300 sewage pipe network, 4,500m of De75 sewage pipe, 6,750m of De110 sewage outlet pipe, 137 septic tanks renovated, road surface and hidden pipe network repaired and broken, and integrated oil separator built 1 pool, 1 integrated pump station, etc.		
	5	Shexian County Ecological Village Construction Project	1. Shendu Town: Add pipeline network and supporting facilities to extend water supply to 7 villages in Dingtian, Huaiyuan and Yueyuan, build De63~De160 water supply main network 24600m, 3 booster pump stations, 5020m2 asphalt pavement repair, cement Pavement repair 20080m2.	16.61	70.72

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
			2. Wangcun Town: For Henglian Village and Shengzhuang Village (total of 20 villages), build 27,800m of water supply mains from De63 to De110, 2 pressurized pump stations, repair 7,100m ² of asphalt pavement, 28,400m ² of cement pavement.	18.48	
			3. Bei'an Town: The newly built 4-7m high revetment is about 4350m, the reinforced bank is about 200m, the new 420m stone slab walkway up the mountain, and 4540m of river barriers.	16.12	
			4. Wuyang Township: build 5m high revetment about 500m, 200m of protective railings, 200m of walks along the river, 2 piers under the river; 2500m of tea garden production access road, 300m of DN300 sewage pipe, 1 sewage treatment terminal, repair 750m ² Cement pavement.	4.41	
			5. Jiekou Town: Ecological restoration and greening of 585m ² , retaining wall 1616m ³ and surrounding environment improvement, new ecological parking about 698m ² .	4.35	
	6	Agricultural Non-point Source Pollution Control Project in Changxi and Xiongcun of Shexian County	1. Changxi Township: The green tea gardens of Waner and Shuangyuan Villages will be constructed with a 1.5m wide production road of 30000m, the slope of the tea garden will be changed to a ladder of about 33.3ha, Build BxH=0.3x0.4m irrigation channel 20000m, BxH=0.4x0.6m drainage channel 10000m, 30 reservoirs, 33.3ha characteristic boutique orchards.	16.50	23.66

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
			2. Xiongcun Town: 1.7ha white jade loquat orchard will be built in Yuanxiaowu Mountain of Baozhuang Village, 3,000m of production access road with a width of 1.2m, and 4,000m of ecological bamboo fence fence; 1,200 loquat seedlings have been improved; 10 new reservoirs have been built, supporting There are 5 small watering pumps, 1000m watering belt, 5 watering nozzles, and 15 new solar insecticidal lamps.	1.54	
			3. Huicheng Town: 1.3ha of Taoyuan will be built in Tian Village, 2,500m of new orchard production roads with a width of 1.2m, and 2,000m of ecological bamboo fence fences; 1,100 saplings have been improved; There are 5 small watering pumps, 400m watering belt, 5 watering nozzles, 11 new solar insecticidal lamps, and a 140m2 management warehouse. There is a rest pavilion, and the site is 12,000 square meters.	1.50	
		Subtotal		157.45	187.12
Xiuning County	7	Upgrading and Reconstruction Project of Urban Rainwater and Sewage Pipe Network in Xiuning County (Phase II)	Build rainwater pipes on Baiyue Road: 180m of DN600 rainwater pipes will be built, and 2160m2 of asphalt pavement will be restored. Baiyue Road, Fusi Road, Tianbao Road, Longyue Road rain and sewage drainage pipeline excavation update: DN200 ~ DN1200 concrete pipe excavation update 5180m, asphalt pavement restoration 34840m2.	35.75	43.03

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
	8	Xiuning County Ecological Village Construction Project (Phase II)	1. Donglinxi Town: Build 10,330m of DN300~DN600 sewage pipes, 9,500m of DN200 sewage pipes, 10,000m of De75 household pipes, 20,000m of De110 household pipes, repair 15,750m ² of road, 19,200m of De50~De160 water supply pipes, B×H=0.2×0.3m concrete drainage ditch of 1200m , and overhead weak electricity pole line of 4000m is moved.	36.53	51.08
			2. Baiji Township: Build DN300 sewage pipes of 500m, DN200 sewage pipes of 1532m, De75 sewage pipes of 650m, De110 sewage pipes of 1300m, 10 septic tanks, 5 sewage treatment terminals, restore asphalt pavement 812m ² , cement road surface 3251m ² . 300m of ecological revetment construction, 1,500m of production access roads, 2,000m of roadbed hardening, and 1,000m of machine farming roads.	5.99	
		Subtotal		78.27	94.11
Yixian County	9	Ecological Village Construction Project in Biyang Town, Yi County	build DN300 sewage pipe 3440m, DN200 sewage pipe 9610m, De75 household pipe 7290m, De110 household pipe 14580m, 6 sewage treatment stations, 37 decentralized treatment stations, repair 5908m ² asphalt pavement, 23632m ² cement pavement, De25~De100 water supply pipeline 7700m. Construc landscape greening, solar streetlights, ditches, and revetments, etc.	25.74	31.06
		Subtotal		25.74	31.06

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
Qimen County	10	Qimen City Pipeline Network Reconstruction Project (Phase II)	1540m of new DN400 sewage pipes, 1460m of new DN300 rainwater pipes, 510m of new DN400 rainwater pipes, 300m of new DN600 rainwater pipes, 300m of new DN800 rainwater pipes, 150m of new DN1000 rainwater pipes, 140 double grate rainwater outlets, 99 single grate rainwater outlets, and 4400m of new DN300 sewage pipes , De110 household pipe 9000m, DN700 water supply main pipe 750m, asphalt pavement restoration 22520m ² , cement pavement restoration 16820m ² , sidewalk restoration 7000m ² . 116 new streetlamps (including 3,500m of supporting cables) were built, and 4,500m of low-current underground reconstruction was carried out.	36.48	43.99
	11	Fufeng Town Fukeng Village revetment restoration project	The newly built 5m high revetment is 1450m, the 1.5m wide ecological trail along the river is 1400m, and the 1.5m wide production access road is 500m.	6.54	8.04
		Subtotal		43.02	52.03
Municipal	12	Data integrated management platform project	Through data standard formulation, application development, data modeling and other aspects of construction, the overall planning and development and application of data are carried out. Including infrastructure configuration, technical support platform construction, application development and IoT perception platform construction, ecological data application model construction, ecological big data standard specification system, data security guarantee system	22.90	27.80

Project report unit	No.	Project name	Project construction content	Investment Estimate (million CNY)	
				Construction and installation fee	Total investment
			construction, data operation and maintenance services, etc.		
	14	Xin'anjiang water safety video monitoring system project	1. Add 80 sets of fixed-point monitoring equipment on the water surface of the Shexian section and Tunxi section of the Xin'an River Basin to intelligently identify and warn of events that float on the water surface, damage the water coastline, and affect the water environment; 2. Build a back-end comprehensive security management platform, including platform servers, network storage devices, central data core switches, video decoders and digital large screens.	3.02	3.79
	15	The recent flood control project in the Tunxi reach of Xin'an River in Huangshan City	Build a new 4-meter-high ecological block bank protection of 895m, build ecological soil and water conservation slope protection (including trees and shrubs) 17412.77m ² , turf slope protection 10447.66m ² , build streetlights, greening, etc.	26.23	31.35
		Subtotal		52.15	62.94