



**GUOAO (CAMBODIA)
ENVIRONMENT PROTECTION
ENGINEERING CO.,LTD.**

国敖（柬埔寨）环保工程有限公司



PPT
扫一扫电子版画册

PROFESSIONAL ENVIRONMENTAL
GOVERNANCE MONITORING
SOLUTION PROVIDER

专业环境治理监测解决方案供应商



Website
手机
—官网—



微信
郭生
—中文—



WeChat
Mr Choon
—EN英文—



WeChat
Mr Jiang
—KH柬文—



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ABOUT GUOAO ENVIRONMENT PROTECTION

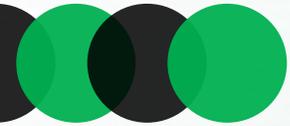
关于国敖环保

GUOAO (CAMBODIA) ENVIRONMENT PROTECTION
ENGINEERING CO.,LTD.

国敖（柬埔寨）环保工程有限公司于2018年在柬埔寨注册成立

01





COMPANY QUALIFICATION 公司资质

MINISTRY OF
COMMERCE

CERTIFICATE OF INCORPORATION

商务部公司注册证

GENERAL DEPARTMENT OF TAXATION

VALUE ADDED TAX-VAT

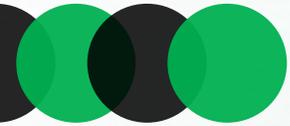
PATENT TAX

VAT税务证

治理（废水、废气、固废）
营业执照

进出口营业执照





COMPANY QUALIFICATION 公司资质

MINISTRY OF ENVIRONMENT

EXHAUST GAS TREATMENT
ENGINEERING QUALIFICATION LICENSE

获得环境部
废气处理工程资质
许可证



ក្រសួងបរិស្ថាន
លេខ: ៧៧៧ ច. អនក. ប. ប. ៧

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

ថ្ងៃ ១៣ ធ្នូ ឆ្នាំ ២០១១ ខែ អស្សុជ ឆ្នាំ ២០១១ ព.ស. ២៥៦៤
រាជធានីភ្នំពេញ ថ្ងៃទី ១៣ ខែ កក្កដា ឆ្នាំ ២០១០

ជម្រកសមុទ្រ
លោកប្រធានក្រុមប្រឹក្សាគុណវិបាកសមុទ្រ
Guoao (Cambodia) Environmental Protection Engineering Co., Ltd.

អង្គប្រឹក្សា ៖ ករណីសំណើស្នើសុំលិខិតទទួលស្គាល់សមត្ថភាពការងារវិស្វកម្មបរិស្ថានលើការដំឡើងដំណើរការ និងថែទាំប្រព័ន្ធសម្រាមផ្សេងៗ

យោប ៖

- អនុក្រឹត្យលេខ ៨២ អនក្របក ចុះថ្ងៃទី១០ ខែកក្កដា ឆ្នាំ២០០០ ស្តីពីការត្រួតពិនិត្យការបញ្ជូនខ្យល់ និងការវិនិយោគដោយសំខ្យល់
- លិខិតស្នើសុំចុះថ្ងៃទី១១ ខែមិថុនា ឆ្នាំ២០១០ របស់ក្រុមហ៊ុន Guoao (Cambodia) Environmental Protection Engineering Co., Ltd.
- លិខិតលេខ ៦០១៧០២០ ចុះថ្ងៃទី១៦ ខែមិថុនា ឆ្នាំ២០១០ របស់ក្រុមហ៊ុន Guoao (Cambodia) Environmental Protection Engineering Co., Ltd.
- របាយការណ៍ត្រួតពិនិត្យចុះថ្ងៃទី១១ ខែកក្កដា ឆ្នាំ២០១០ របស់មន្ត្រីជំនាញ

សេចក្តីដូចមានចែងក្នុងកម្មវត្ថុ និងឃោងខាងលើ ខ្ញុំសូមជម្រាបជូន លោកប្រធាន ជ្រាបថា ក្រសួងបរិស្ថានទទួលស្គាល់សមត្ថភាព និងឯកភាពជាគោលការណ៍អនុញ្ញាតឱ្យក្រុមហ៊ុន Guoao (Cambodia) Environmental Engineering Co., Ltd. ដែលមានអាសយដ្ឋានផ្ទះលេខ ២៦៩ ផ្លូវ Bodajju មហាវិថីសហព័ទ្ធស្រី សង្កាត់កាកបាទ ខណ្ឌពោធិ៍សែនជ័យ រាជធានីភ្នំពេញ លើការងារវិស្វកម្មបរិស្ថាន ក្នុងការដំឡើង ដំណើរការ និងថែទាំប្រព័ន្ធសម្រាមផ្សេងៗទាំងឡាយ ដូចខាងក្រោម៖

- ធូលី និងឧស្ម័នដែលបញ្ចេញដោយរោងចក្រថាមពលអគ្គិសនី រោងចក្រដែកថែប រោងចក្រស្រូវលោហៈ រោងចក្រឧស្សាហកម្មគីមី រោងចក្រស៊ីម៉ង់ត៍ ខ្យល់ហាយ
- ឧស្ម័នដែលមានផ្ទុកសារធាតុស្ករធំធេង ដែលបញ្ចេញដោយខ្យល់ហាយ និងរោងចក្រ ផលិតអគ្គិសនីដើម្បីដោយផ្ទះផ្ទះ
- ឧស្ម័នដែលមានផ្ទុកកាស៊ីត ដែលបញ្ចេញដោយការដុតដុស្សិលតំន្រះ រោងចក្រផលិតដី អង្កាញ៉ាក់ រោងចក្រផលិតគ្រឿងផ្ទះ រោងចក្រស្រូវលោហៈ និងអលោហៈ រោងចក្រគ្រឿងសន្លឹក
- ឧស្ម័នដែលមានផ្ទុកកាបូនអុកស៊ីត (កាបូនម៉ូណូអុកស៊ីត និងកាបូនឌីអុកស៊ីត) ដែល បញ្ចេញពីការដុតដុស្សិលតំន្រះ រោងចក្រលំដាប់លោហៈធាតុ រោងចក្រផលិត កំបោរ ខ្យល់ផ្ទះ រោងចក្រ និងរោងចក្រផលិតដី

- ឧស្ម័នដែលមានផ្ទុកសារធាតុសរីរក្រដាប្រហើរ (VOC) ដែលបំបាយពីឧស្សាហកម្ម គំនូន ឧស្សាហកម្មផលិតឱសថ ឧស្សាហកម្មគីមី ឧស្សាហកម្មធុរិណ ឧស្សាហកម្ម គ្រឿងអេឡិចត្រូនិក និងឧស្សាហកម្មសំណេតសរីរក្រដាប
- ឧស្ម័នដែលមានផ្ទុកកាស៊ីត ដែលបំបាយចេញពីសារធាតុគីមី គ្រឿងអេឡិចត្រូនិក កាស៊ីត ឧស្ម័នសារធាតុ វាយតម្លៃ ផលិតកម្មគ្រឿងយន្ត និងសីលឧស្សាហកម្មផ្សេងៗ
- ផ្សែងចេញពីដំណើរការចម្អិនម្ហូបអាហារ

ដោយក្រុមហ៊ុនត្រូវអនុវត្តតាមលក្ខខណ្ឌដូចខាងក្រោម៖

១. ក្រុមហ៊ុនត្រូវយកការណែនាំជាលម្អិតពីអ្នកប្រឹក្សាស្រាវជ្រាវបរិស្ថានជាប្រចាំ នៅពេលដែលបាន ផ្តល់សេវាកម្មដំឡើង ដំណើរការ និងថែទាំប្រព័ន្ធសម្រាមផ្សេងៗប្រកបដោយ ណាមួយនូវ៖
 - ឈ្មោះ អាសយដ្ឋាន និងប្រភេទរោងចក្រ ឬ ប្រភពបំពុល
 - ប្រភេទឧបករណ៍ ឬ ចំរាញ់ដែលក្រុមហ៊ុនបានផ្តល់សេវាកម្មដំឡើង ដំណើរការ ឬថែទាំ
២. តម្លៃសេវាលើការដំឡើង ដំណើរការ និងថែទាំប្រព័ន្ធសម្រាមផ្សេងៗតាមប្រភពបំពុល ត្រូវផ្អែកលើការបញ្ជាក់ឯកភាពជាឯកភាពជាឯកភាពក្រុមហ៊ុនផ្តល់សេវា និងភាគីទទួលសេវា
៣. លិខិតទទួលស្គាល់សមត្ថភាព និងគោលការណ៍អនុញ្ញាតនេះមានសុពលភាពរយៈពេល ០៤ (បួន) ឆ្នាំ គិតចាប់ពីថ្ងៃចុះហត្ថលេខា
៤. លិខិតទទួលស្គាល់សមត្ថភាព និងគោលការណ៍អនុញ្ញាតនេះ និងត្រូវផ្តល់ជា បណ្តោះអាសន្នប្រសិនបើមានការប្តូរឈ្មោះក្រុមហ៊ុនមិនបានអនុវត្តតាមលក្ខខណ្ឌណាមួយដូច បានកំណត់ខាងលើ។

អាស្រ័យដូចមានជម្រាបជូនខាងលើ សូម លោកប្រធានអនុវត្ត និងចាត់ចែងតាមការស្នើ។

សូម លោកប្រធានទទួលនូវការរាប់អានដ៏ឆ្មោះពីខ្ញុំ។



ជម្រកសមុទ្រ
លោកប្រធានក្រុមប្រឹក្សាគុណវិបាកសមុទ្រ
លេខ: ៧៧៧ ច. អនក. ប. ប. ៧

ថ្ងៃ ១៣ ធ្នូ ឆ្នាំ ២០១១

អាសយដ្ឋាន: ផ្ទះលេខ ២៦៩ ផ្លូវ Bodajju មហាវិថីសហព័ទ្ធស្រី សង្កាត់កាកបាទ ខណ្ឌពោធិ៍សែនជ័យ រាជធានីភ្នំពេញ ទូរស័ព្ទ: ០២៣ ២៣៥ ០០៤ / ០២៣ ២៣៥ ០០៦



ONLINE MONITORING OF POLLUTION SOURCES IN CAMBODIA

柬埔寨污染源在线监测

Joint research and development by the Cambodian Ministry of Environment and Guoao Environment Protection.

柬埔寨环境部与国敖环保联合研发。

It was handed over to the Ministry of Environment on May 19, 2020 and officially launched.

于2020年5月19日移交环境部，正式上线运行。

<https://www.moe.gov.kh/index/21803>



02



CAMBODIAN POLLUTION SOURCE ONLINE MONITORING SYSTEM

柬埔寨污染源在线监控系统

CHINESE AND ENGLISH BILINGUAL INTERFACE

中英文双语界面

WATER AND GAS POLLUTION SOURCE MONITORING

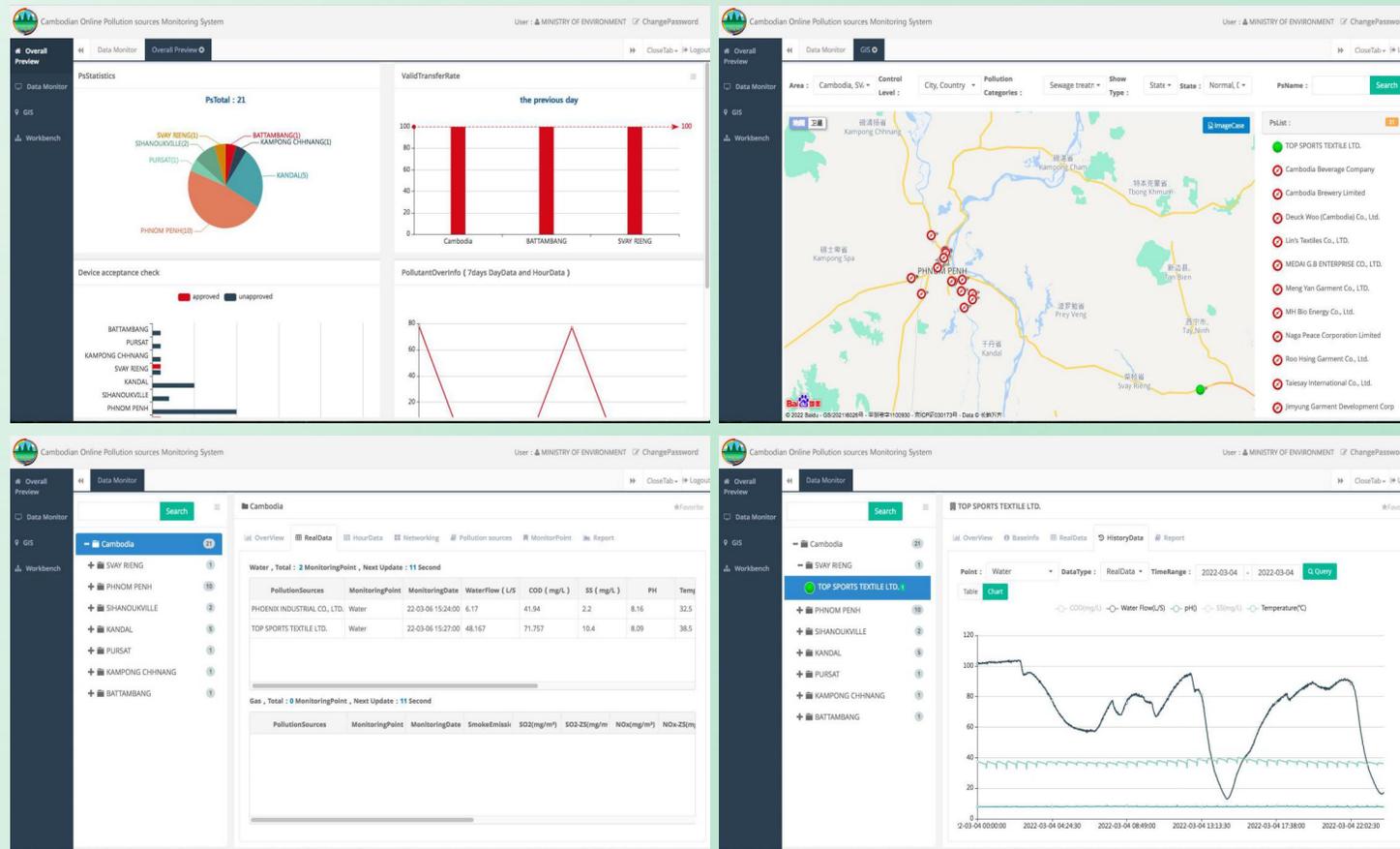
水、气污染源监控

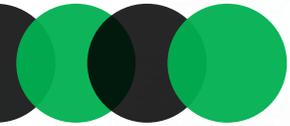
SCOPE OF APPLICATION

应用范围

Government, enterprises, industrial parks, third-party testing, etc.

政府、企业、工业园区、第三方化验等。





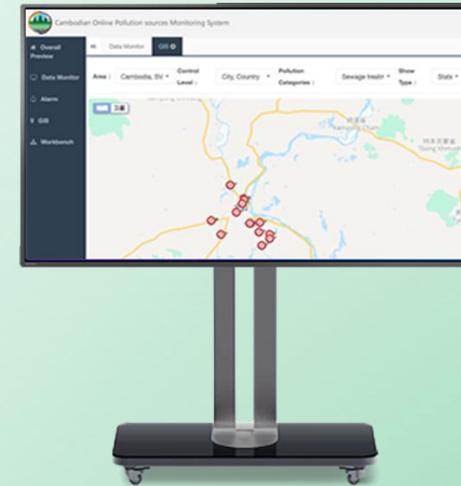
WORKING PRINCIPLE 工作原理



CAMBODIAN MINISTRY OF ENVIRONMENT
柬埔寨环境部



ENTERPRISE MONITORING CENTER
企业监控中心



MINISTRY OF ENVIRONMENT
MONITORING CENTER
环境部监控中心



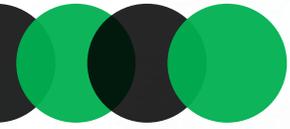
DATA MONITORING
OPERATION CENTER
数据监控运营中心



WATER POLLUTION SOURCE
水污染源



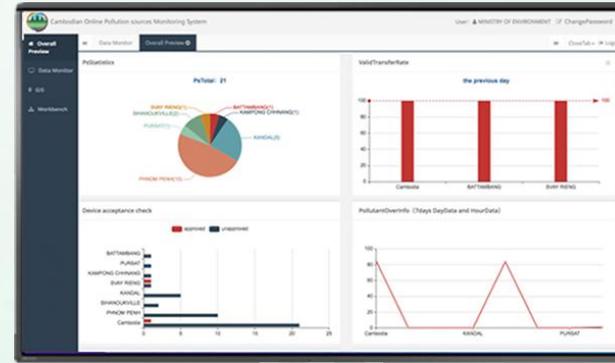
GAS POLLUTION SOURCE
烟气污染源



WORKING PRINCIPLE 工作原理

1

Cambodian Pollution Source
Online Monitoring System
柬埔寨污染源在线监控系统



4G / Internet

2

Water quality online
monitoring equipment
水质在线监测设备



Data acquisition instrument
数据采集传输仪



Ultrasonic flowmeter
超声波流量计



pH/Temperature
On-line analyzer
pH/温度在线分析仪



Suspended Solids /
Sludge Concentration
On-line analyzer
悬浮物/污泥浓度在线分析仪



(CODcr) On-line analyzer
COD在线分析仪



EQUIPMENT INTRODUCTION

水质在线监测设备

◆ MONITORING DATA 监测数据

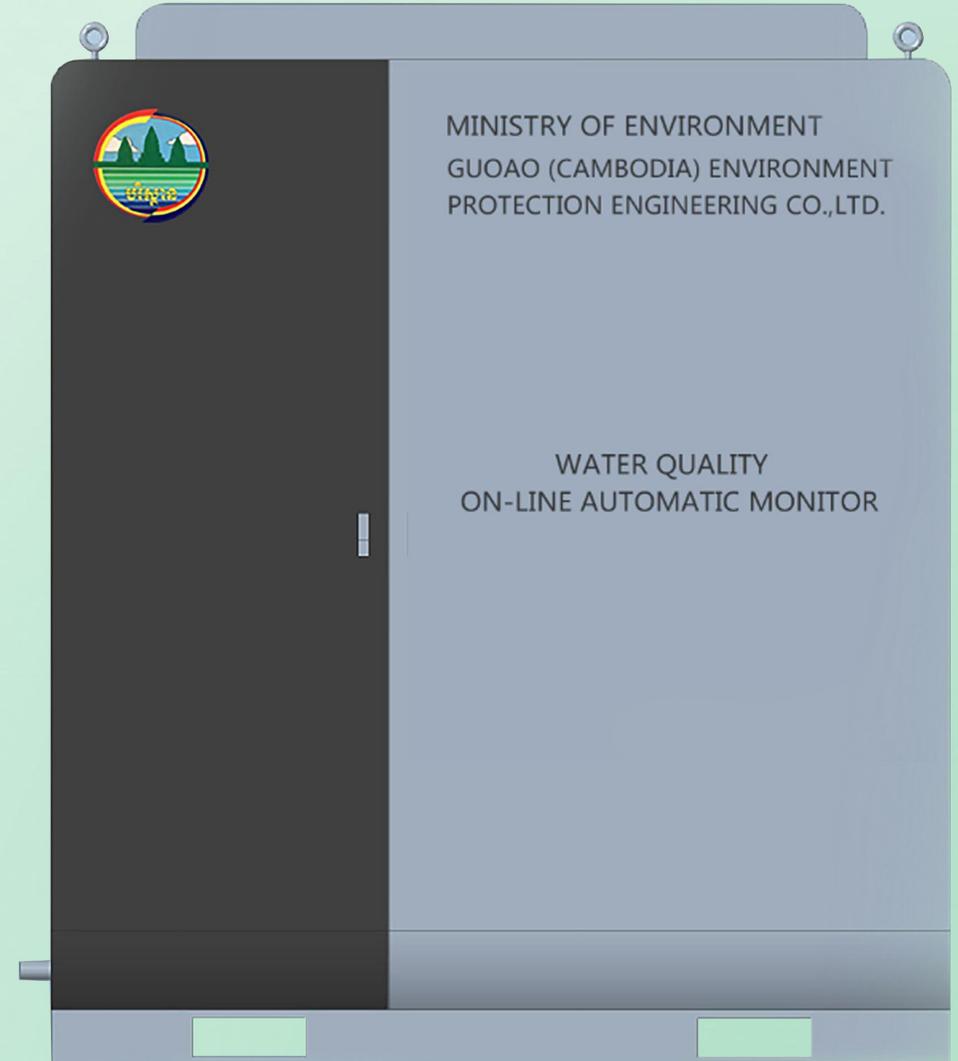
COD、SS、Water Flow、PH、Temperature
化学需要量、悬浮物、水流量、PH、水温

◆ CONFIGURATION CAN BE ADDED 可根据工况配置

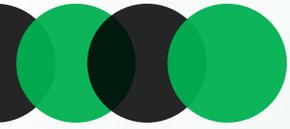
DO、NH₃-N、TP、TN、Zn、Cu、Ni、Cr、Cr₆₊
溶解氧、氨氮、总磷、总氮、总锌、总铜、总镍、总铬、
六价铬等组分。

◆ APPLICATION FIELD 应用领域

Surface water, municipal sewage, agricultural sewage, industrial
wastewater, waterworks and other fields.
地表水、市政污水、农业污水、工业废水、自来水厂等领域。

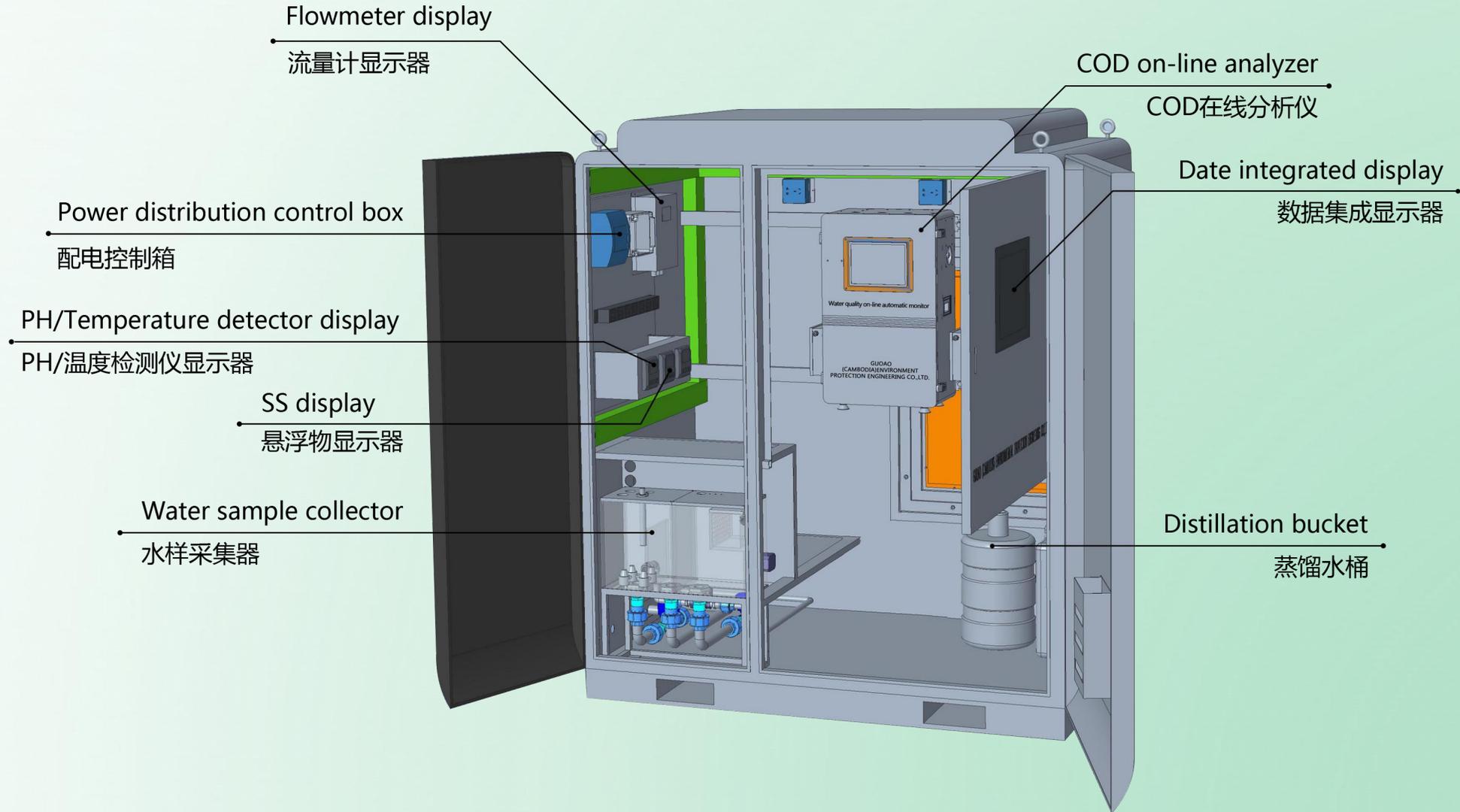


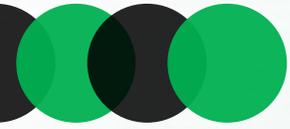
Size: W:1.6m × D:1.2m × H:1.9m



WATER QUALITY ONLINE MONITORING EQUIPMENT

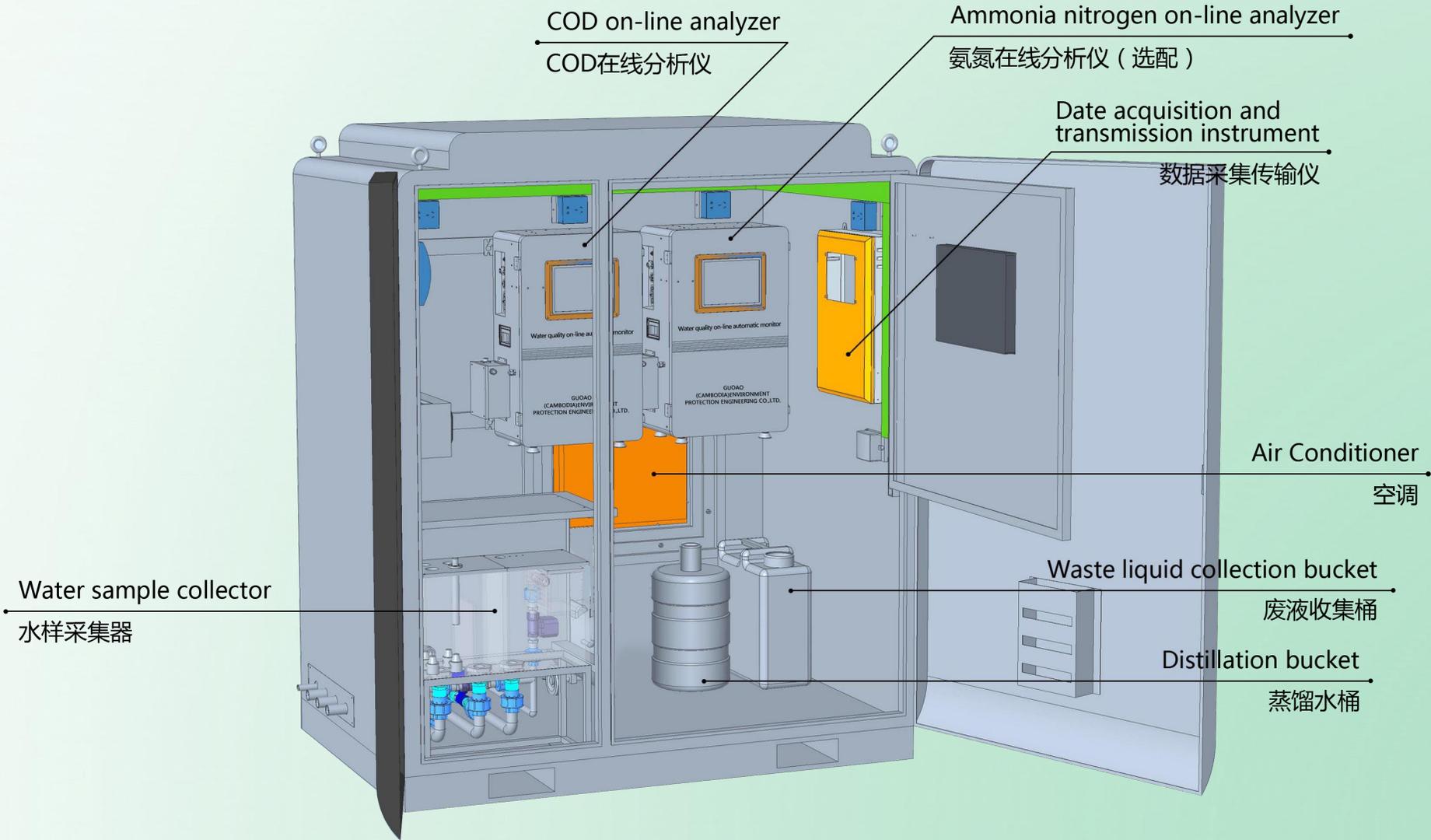
水质在线监测设备





WATER QUALITY ONLINE MONITORING EQUIPMENT

水质在线监测设备



FLUE GAS ONLINE MONITORING EQUIPMENT

烟气在线监测设备

◆ MONITORING DATA 监测数据

Dust、SO₂、NO_x、O₂、CO、CO₂。

Dust, sulfur dioxide, nitrogen oxides, oxygen, carbon monoxide, carbon dioxide.

(The device can simultaneously monitor: temperature, pressure, flow rate / flow, humidity)

粉尘、二氧化硫、氮氧化物、氧气、一氧化碳、二氧化碳。

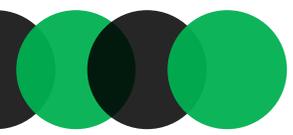
(设备同时能监测：温度、压力、流速/流量、湿度)

◆ SCOPE OF APPLICATION 应用范围

Government, enterprises, industrial parks, third-party testing, etc.

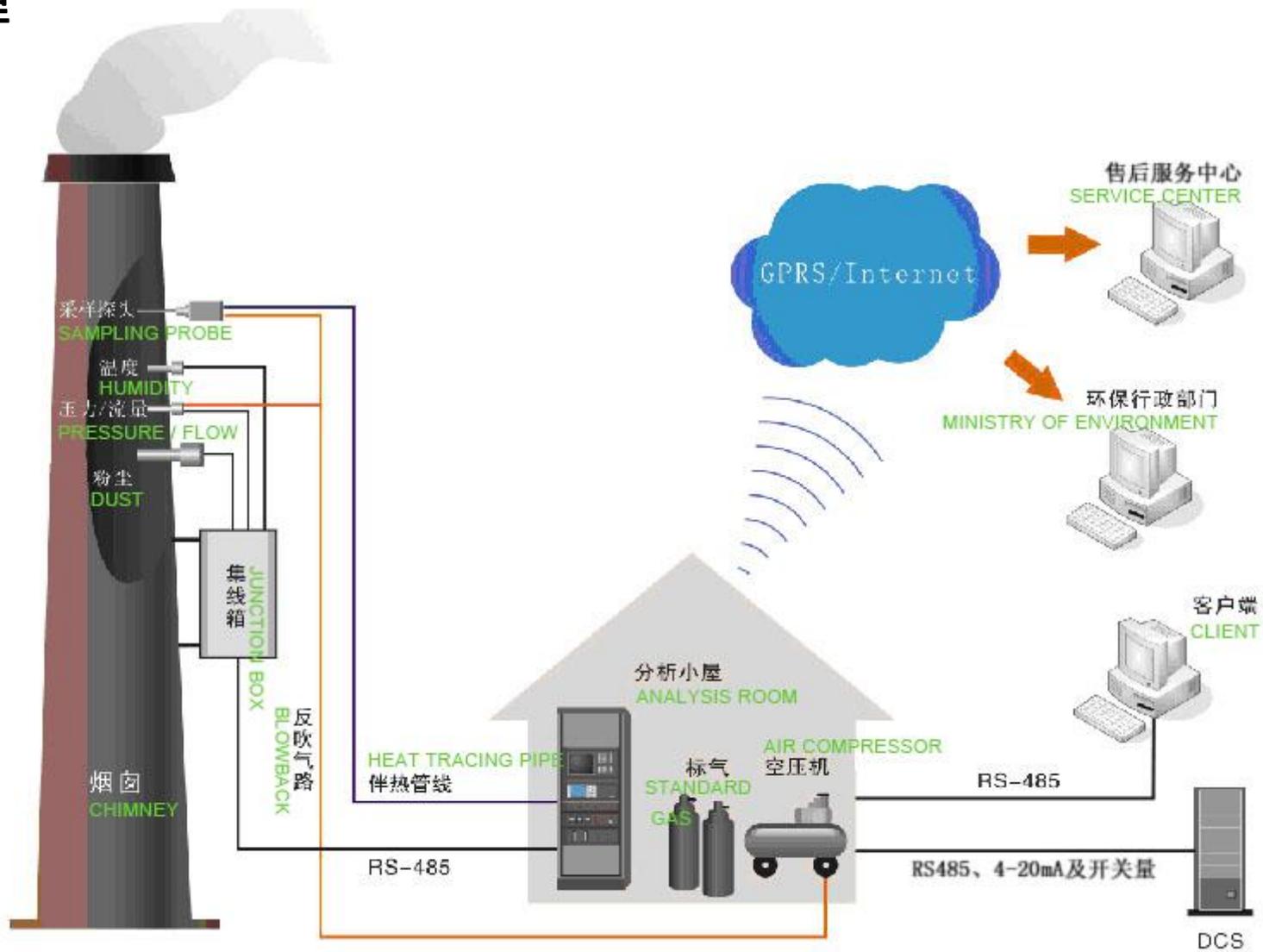
政府、企业、工业园区、第三方化验等。

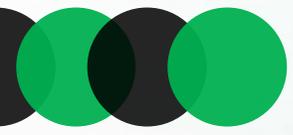




WORKING PRINCIPLE

工作原理

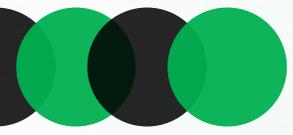




FLUE GAS ONLINE MONITORING EQUIPMENT

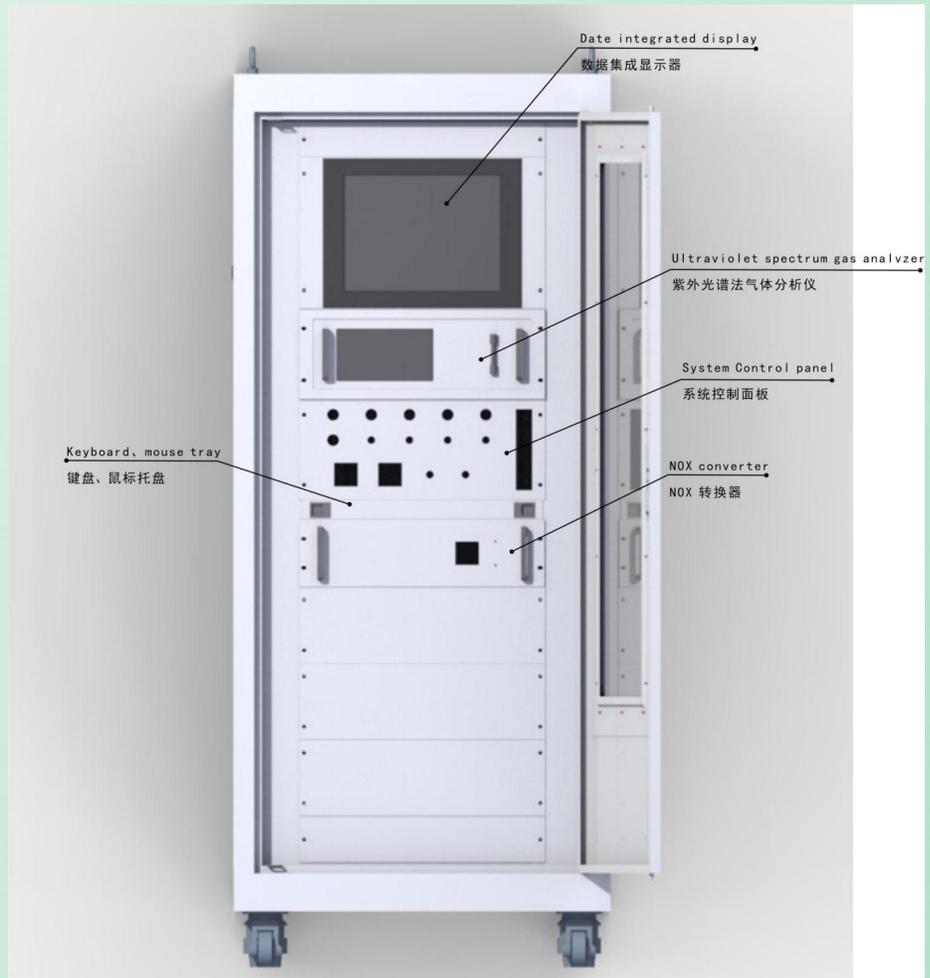
烟气在线监测设备

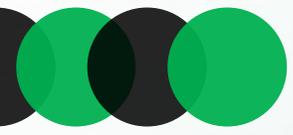




FLUE GAS ONLINE MONITORING EQUIPMENT

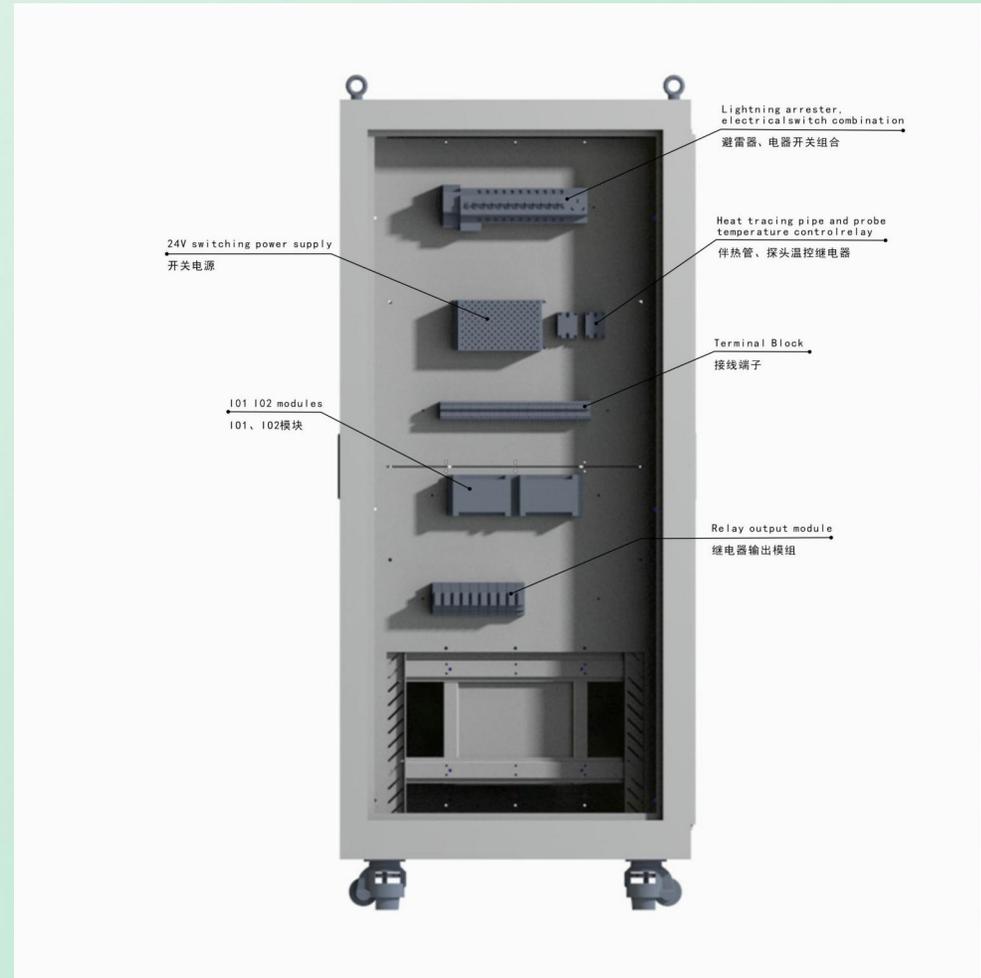
烟气在线监测设备





FLUE GAS ONLINE MONITORING EQUIPMENT

烟气在线监测设备



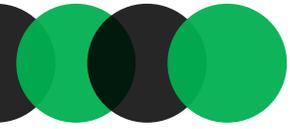


INSTALLATION PROCESS OPERATION AND MAINTENANCE 安装流程及运维

Installation process of water quality online monitoring system,
Monthly operation and maintenance service content.
安装水质在线监控系统流程、每月运行维护服务内容。

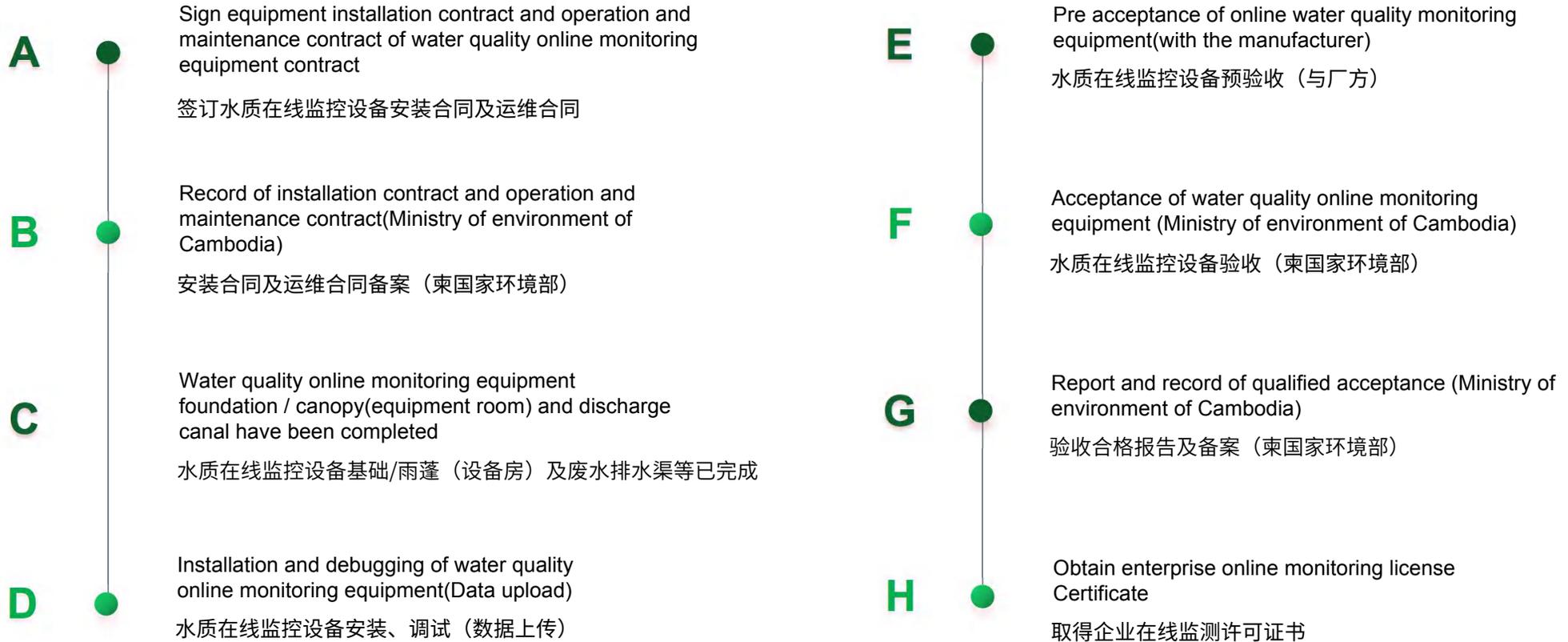
03

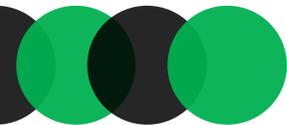




INSTALLATION PROCESS OF WATER QUALITY ONLINE MONITORING SYSTEM

安装水质在线监控系统流程





MONTHLY OPERATION AND MAINTENANCE SERVICE CONTENT

每月运行维护服务内容

S/N 序号	Name 名称	Monthly operation and maintenance service content 每月运行维护服务内容
I / —	Monitoring instruments and equipment 监测仪器设备	
1	超声波流量计 Ultrasonic flowmeter	Hardware cleaning and maintenance, instrument operation inspection and correction 硬件清洁保养、仪表运行巡检、校正
2	pH/温度在线自动监测仪 pH/Temperature Online Automatic Monitor instrument	Hardware cleaning and maintenance, instrument operation inspection and correction 硬件清洁保养、仪表运行巡检、校正
3	悬浮物/污泥浓度在线监测仪 Online automatic monitor for suspended solids (SS) / sludge concentration	Hardware cleaning and maintenance, instrument operation inspection and correction 硬件清洁保养、仪表运行巡检、校正



MONTHLY OPERATION AND MAINTENANCE SERVICE CONTENT

每月运行维护服务内容

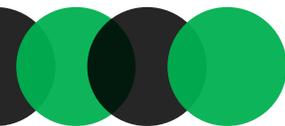
4	Chemical Oxygen Demand (CODcr) water quality on-line analyzer COD在线分析仪	Hardware cleaning and maintenance, instrument operation inspection and correction 硬件清洁保养、仪表运行巡检、校正
		Maintenance and update of operation system software 运行系统软件维护更新
		Replacement of analytical and calibration solution 分析液及标定液的更换
5	UPS power supply, voltage regulator UPS电源、稳压器	Hardware cleaning and maintenance, instrument operation inspection and correction 硬件清洁保养、仪表运行巡检、校正
6	Data acquisition instrument 数据采集仪	Hardware cleaning and maintenance, instrument operation inspection and correction 硬件清洁保养、仪表运行巡检、校正
		Maintenance and update of operation system software 运行系统软件维护更新
7	Water sample collection system 水样采集系统	Hardware cleaning and maintenance, instrument operation inspection and correction 硬件清洁保养、仪表运行巡检、校正



MONTHLY OPERATION AND MAINTENANCE SERVICE CONTENT

每月运行维护服务内容

II/ 二	Outdoor integrated cabinet 室外集成机柜	
1	Central control panel 中控屏系统	Hardware cleaning and maintenance, instrument operation inspection and correction; maintenance and update of operation system software 硬件清洁保养、巡检、校正、运行系统软件维护更新
2	CPU (main cabinet) (Air conditioner) 主机柜体 (空调机柜)	Cleaning and maintenance of air conditioner 空调机柜的清洁保养
III/ 三	Technical service of system data transmission and maintenance 系统数据传输维护技术服务	
1	Data management of connecting line between field machine and monitoring information platform system of Ministry of environment 现场机与环境部监测信息平台系统连线数据管理	
2	Maintenance and management of platform system (collection, transmission, and operation etc. of system data) 平台系统(采集、数据传输、运行等)维护管理	



ON-SITE MAINTENANCE SHEET

现场维护单



GUOAO (CAMBODIA) ENVIRONMENT PROTECTION ENGINEERING CO., LTD.

国敖（柬埔寨）环保工程有限公司

On-Site Maintenance Sheet 现场维护单

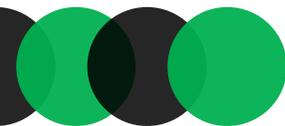
Company's name 客户名称:

Service start time 服务开始时间: 2022-____ - ____ ____:____		Service end time 服务结束时间: 2022-____ - ____ ____:____	
Service type 服务类型	(1) Early stage of installation 安装前期: <input type="checkbox"/> Test 测试 <input type="checkbox"/> Presales support 售前支持 <input type="checkbox"/> Exploration exchange 勘查交流		
	(2) Service 服务: <input type="checkbox"/> Installation 安装 <input type="checkbox"/> Maintenance 维护 <input type="checkbox"/> Inspection 巡检 <input type="checkbox"/> Installation acceptance 安装验收 <input type="checkbox"/> Put into operation 投运 <input type="checkbox"/> Customer training 客户培训 <input type="checkbox"/> Networking 联网 <input type="checkbox"/> Cooperate with the acceptance of environmental protection 配合环保验收		
Service Content 服务内容:			
Parts replacement & software upgrade records 部件更换、软件升级记录:		Remaining problems and treatment measures 遗留问题和处理措施:	
User opinion 用户意见: Whether or not to recognize the above services 对以上服务是否认可: <input type="checkbox"/> YES 是 <input type="checkbox"/> NO 否		User evaluation 用户评价:	
Customer signature 客户签字:		Signature of the maintainer 维护方签字:	

第一联维护单位档联

第二联客户档联

第三联环保局档联



ON-SITE MAINTENANCE SHEET

现场维护单

**GUOAO (CAMBODIA) ENVIRONMENT PROTECTION
ENGINEERING CO., LTD.**

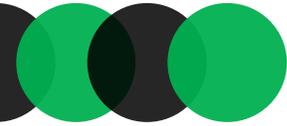
**Inspection and maintenance record sheet of automatic monitoring
equipment for water pollution sources**
水污染源自动监测设备巡检维护记录表

Company's Name 企业名称: _____ Date 日期: 2022-____ - ____

Fault information 故障信息:	
On-the-spot situation 现场情况了解:	
Maintenance preparation 维护预备	Query log 查询日志 <input type="checkbox"/> YES 是 <input type="checkbox"/> NO 否
	Check consumables 检查耗材 <input type="checkbox"/> YES 是 <input type="checkbox"/> NO 否
Auxiliary equipment inspection 辅助设备检查	Inspection of tightness of station building 站房密封性检查 <input type="checkbox"/> Normal 正常 <input type="checkbox"/> Abnormal 异常
	Power supply system (stabilized power supply, UPS, etc.) 供电系统 (稳压电源、UPS 等) <input type="checkbox"/> Normal 正常 <input type="checkbox"/> Abnormal 异常
Water sample collection system 水样采集系统	Whether the sampling pump is normal or not? 采样泵采水情况是否正常 <input type="checkbox"/> YES 是 <input type="checkbox"/> NO 否
	Whether the sampling pipe is unobstructed or not? 采样管路是否通畅 <input type="checkbox"/> YES 是 <input type="checkbox"/> NO 否
	Whether the drainage pipe is unobstructed or not? 排水管路是否通畅 <input type="checkbox"/> YES 是 <input type="checkbox"/> NO 否

COD on-line analyzer COD在线分析仪	Instrument alarm state 仪器报警状态	/	
	Whether the internal pipeline of the instrument is unobstructed or not 仪器内部管路是否通畅	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Cleaning and inspection of instrument sampling and discharge lines 仪器进样、排液管路清洁检查	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Replace standard solutions and reagents 更换标准溶液、试剂	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Check pumps, pipes, Digestion room 检查泵、管、消解室	<input type="checkbox"/> Normal 正常	<input type="checkbox"/> Abnormal 异常
	Check the work of sampling part, metering unit, reaction unit, heating unit and testing unit 检查采样部分、计量单元、反应单元、加热单元、检测单元的工作情况	<input type="checkbox"/> Normal 正常	<input type="checkbox"/> Abnormal 异常
Ultrasonic flowmeter 超声波流量计	Whether to calibrate or not 是否标定	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Test concentration 检验浓度	50mg/L	Test results 检验结果
			mg/L
PH / temperature and water quality automatic monitor pH / 温度水质自动监测仪	Clean the probe 清理探头遮挡物	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Whether the instrument acquisition probe is normal or not? 仪表采集探头是否正常	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Whether the instrument is normal or not? 仪器是否正常	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Clean the electrode 清洗电极	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
Test results 检验结果	Whether to calibrate or not? 是否标定	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Test results 检验结果	<input type="checkbox"/> Normal 正常	<input type="checkbox"/> Abnormal 异常

TSS Suspended matter on-line monitor TSS 悬浮物在线监测仪	Whether the instrument is normal or not? 仪器是否正常	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Whether the instrument acquisition probe is normal or not? 仪表采集探头是否正常	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Clean the probe 清理探头	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
Data acquisition and transmission instrument 数据采集传输仪	Whether the network is connected or not? 网络是否联通	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Whether the instrument link condition is normal or not? 仪器链接情况是否正常	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
	Check the consistency of uploaded data and on-site data 检查上传数据和现场数据的一致性	<input type="checkbox"/> YES 是	<input type="checkbox"/> NO 否
Exception handling record 异常情况处理记录			
Arrival time 进站时间	2022-____ - ____ : ____	Departure time 离站时间	2022-____ - ____ : ____
Maintenance staff 维护人员	Owner's representative 业主代表		



ON-SITE MAINTENANCE SHEET

现场维护单



GUOAO (CAMBODIA) ENVIRONMENT PROTECTION
ENGINEERING CO., LTD.

Equipment failure maintenance record sheet

设备故障维修记录表

Company's Name 企业名称 : _____ Date 日期 : ____-____-____

Device name 设备名称	Specification 规格型号	Device ID 设备编号
Fault situation and the time of occurrence 故障情况 及发生时间	Date 日期: ____-____-____ Maintainer 维修人: _____	
After repair, The verification time and the verification result indicate before use 修复后 使用前 校验时间、 校验结果说明	Date 日期: ____-____-____ Verifier 校验人: _____	
Normal operating time 正常投入 使用时间	Date 日期: ____-____-____ Inspector 核查人: _____	



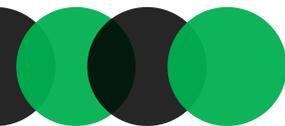
GUOAO (CAMBODIA) ENVIRONMENT PROTECTION
ENGINEERING CO., LTD.

System maintenance record sheet 系统检修记录表

Company's Name 企业名称 : _____ Date 日期 : ____-____-____

Water sample collection system 水样采集系统	Description of maintenance condition 检修情况描述	
	Replacement part 1 更换部件 1	
	Replacement part 2 更换部件 2	
(CODer) on-line analyzer COD 在线分析仪	Equipment model and number 设备型号及编号	
	Description of maintenance condition 检修情况描述	
	Replacement part 1 更换部件 1	
SS Suspended matter on-line monitor SS 悬浮物在线监测仪	Equipment model and number 设备型号及编号	
	Description of maintenance condition 检修情况描述	
	Replacement part 更换部件	
Ultrasonic flowmeter 超声波流量计	Equipment model and number 设备型号及编号	
	Description of maintenance condition 检修情况描述	
	Replacement part 更换部件	

Data acquisition instrument 数据采集传输仪	Equipment model and number 设备型号及编号	
	Description of maintenance condition 检修情况描述	
	Replacement part 更换部件	
Automatic PH temperature and water quality monitor pH / 温度 水质自动监测仪	Equipment model and number 设备型号及编号	
	Description of maintenance condition 检修情况描述	
	Replacement part 更换部件	
Other equipment 其它设备	Equipment model and number 设备型号及编号	
	Description of maintenance condition 检修情况描述	
	Replacement part 更换部件	
Summary of downtime maintenance 停机检修情况总结		
Downtime 停机时间	____-____-____ ____:____	Boot time 开机时间 ____-____-____ ____:____
Repairman 检修人		Owner's representative 业主代表



ON-SITE MAINTENANCE SHEET

现场维护单



GUOAO (CAMBODIA) ENVIRONMENT PROTECTION
ENGINEERING CO., LTD.

Consumables Replacement Record Sheet

易耗品更换记录表

Company's Name 企业名称: _____ Date 日期: ____-____-____

Device name 设备名称	CODcr Analyzer CODcr分析仪	Specification 规格型号	Quantity 数量	Unit 单位	Device ID 设备编号	Remarks 备注
NO. 序号	Consumables' name 易耗品名称	Specification 规格型号	Quantity 数量	Unit 单位	Device ID 设备编号	Remarks 备注
1	Potassium dichromate solution	A Reagent 试剂	500	ML		
2	Mercury sulfate solution	B Reagent 试剂	500	ML		
3	Silver sulfate solution	C Reagent 试剂	1500	ML		
4	Distilled water	蒸馏水	20	L		
Maintainer 维护保养人:			Inspector 核查人:			

Reference material replacement record sheet

标准物质更换记录表

企业名称 Company name: _____ 日期 Date: ____-____-____

Device name 设备名称	CODcr Analyzer CODcr分析仪	Specification 规格型号	Quantity 数量	Unit 单位	Device ID 设备编号	Remarks 备注
NO. 序号	Consumables' name 易耗品名称	Specification 规格型号	Quantity 数量	Unit 单位	Device ID 设备编号	Remarks 备注
1	标样1	CODcr50mg/L	250	ML		
2	标样2	CODcr160mg/L	250	ML		
Maintainer 维护保养人:			Inspector 核查人:			



GUOAO (CAMBODIA) ENVIRONMENT PROTECTION
ENGINEERING CO., LTD.

Automatic Detector for Water Pollution Source Calibration Record Sheet

水污染源自动检测仪校准记录表

Company's Name 企业名称: _____ Date 日期: ____-____-____

Instrument category 仪器类别	CODcr Analyzer CODcr分析仪				Model 型号	Normal /Abnormal 是否正常	Abnormal parameter 异常参数
	Pre-calibration parameter 校准前参数	Normal /Abnormal 是否正常	Abnormal parameter 异常参数	Parameters after calibration 校准后参数			
General items 常规项	标一:	<input type="checkbox"/> Normal正常 <input type="checkbox"/> Abnormal异常		标一:	<input type="checkbox"/> Normal正常 <input type="checkbox"/> Abnormal异常		
	标二:	<input type="checkbox"/> Normal正常 <input type="checkbox"/> Abnormal异常		标二:	<input type="checkbox"/> Normal正常 <input type="checkbox"/> Abnormal异常		
Abnormal situation description 异常情况描述:							
Cause Analysis and measures taken 原因分析与采取措施:							
Processing results and device replacement 处理结果及器件更换:							
Linear change record 线性变动记录:							
Before verification 校验前: 标一: _____ 标二: _____							
After verification 校验后: 标一: _____ 标二: _____							
Maintainer 维护保养人: _____							
Signature 签字: _____							
Inspector 核查人							Date 日期: 2022-____-____



GUOAO (CAMBODIA) ENVIRONMENT PROTECTION
ENGINEERING CO., LTD.

Calibration record of automatic monitor for water pollution source

水污染源自动监测仪校验记录

Company's Name 企业名称: _____ Date 日期: ____-____-____

Device name 设备名称	CODcr Analyzer CODcr分析仪		Specification 规格型号	Water 水样1	Water 水样2	Water 水样3	Device ID 设备编号
	First time 第一次	Quality control 质控样1					
Check 校验	Standard value 标准值	50 mg/L					
	Instrument Value 仪器值	mg/L					
	Error ±10% 误差						
	Conclusion 结论	<input type="checkbox"/> Normal 正常 <input type="checkbox"/> Abnormal 异常					
	Linear change process record 线性变动过程记录: <input type="checkbox"/> Normal 正常 <input type="checkbox"/> Abnormal 异常						
	Second time 第二次	Quality control 质控样1	Quality control 质控样2	Water 水样1	Water 水样2	Water 水样3	
	Standard value 标准值	50 mg/L					
	Instrument Value 仪器值	mg/L					
	Error ±10% 误差						
	Conclusion 结论	<input type="checkbox"/> Normal 正常 <input type="checkbox"/> Abnormal 异常					
Maintainer 维护保养人: _____							
Inspect 核查人	Signature 签字: _____						Date 日期: 2022-____-____



ACCEPTANCE REPORT

验收报告

Online Monitoring System of Water Pollution Sources

The acceptance report

Report number: Environmental monitoring--Water--02

Name of Enterprise (Company Stamp):	Equipment installation unit (Company Stamp):
PHOENIX INDUSTRIAL CO., LTD.	GUOAO (CAMBODIA) ENVIRONMENT PROTECTION ENGINEERING CO.,LTD.

MN code of water quality data acquisition instrument: 96273880020002

Name of discharge outlet: PHOENIX INDUSTRIAL CO., LTD.

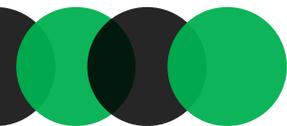
Sewage treatment standard discharge port

Operation and maintenance unit: GUOAO (CAMBODIA) ENVIRONMENT PROTECTION ENGINEERING CO.,LTD.

Date:

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ACCEPTANCE REPORT

验收报告

水污染源在线监测系统验收

报告

报告编号：环境监测--水--02

污染源企业名称 (加盖公章):

PHOENIX INDUSTRIAL CO., LTD.

设备安装单位 (加盖公章):

GUOAO (CAMBODIA) ENVIRONMENT
PROTECTION ENGINEERING CO.,LTD.

水质数据采集仪MN编码：96273880020002

排放口名称：PHOENIX INDUSTRIAL CO., LTD.

Sewage treatment standard discharge port

运行维护单位：GUOAO (CAMBODIA) ENVIRONMENTPROTECTION ENGINEERING CO.,LTD.

日期：

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MONTHLY REPORT

月度报告

Online Monitoring System of Water Pollution Sources

水污染源在线监测系统

January 2022 report

2022年01月度报告

Name of Enterprise:

污染源企业名称:

Operation and maintenance unit:

运行维护单位:

GUOAO (CAMBODIA) ENVIRONMENT
PROTECTION ENGINEERING CO.,LTD.

Name of discharge outlet

排放口名称:

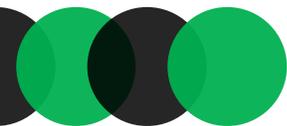
MN code of water quality data acquisition instrument :

水质数据采集仪MN编码:

CATALOG

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- 1、Cambodian Pollution Source Enterprise Information Registration Form
柬埔寨污染源企业信息登记表
- 2、TOP SPORTS TEXTILE LIMITED Water Monitoring Data Month 2022-01
TOP SPORTS TEXTILE LIMITED 水监测数据2022-01月报
- 3、On-Site Maintenance Sheet
现场维护单
- 4、Inspection and maintenance record sheet of automatic monitoring equipment for
water pollution sources
水污染源自动监测设备巡检维护记录表
- 5、Consumables Replacement Record Sheet 易耗品更换记录
Reference material replacement record sheet 标准物质更换记录
- 6、Automatic Detector for Water Pollution Source Calibration Record Sheet
水污染源自动检测仪校准记录表
- 7、Calibration record of automatic monitor for water pollution source
水污染源自动监测仪校验记录



ANNUAL REPORT

年度报告

Online Monitoring System of Water Pollution Sources

水污染源在线监测系统

2020 report

2020年度报告

Name of Enterprise:

污染源企业名称:

TOP SPORTS TEXTILE LTD.

Name of discharge outlet

排放口名称:

TSP Sewage treatment standard discharge

MN code of water quality data acquisition instrument :

水质数据采集仪MN编码: 96273880020001

Operation and maintenance unit:

运行维护单位:

GUOAO (CAMBODIA) ENVIRONMENTAL
PROTECTION ENGINEERING CO.,LTD.

CATALOG

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- 1、Cambodian Pollution Source Enterprise Information Registration Form
柬埔寨污染源企业信息登记表
- 2、TOP SPORTS TEXTILE LIMITED Water Monitoring Data Year 2021
TOP SPORTS TEXTILE LIMITED 水监测数据2021年报
- 3、TOP SPORTS TEXTILE LTD.Water Monitoring Data Season 2021-01
TOP SPORTS TEXTILE LIMITED 水监测数据2021-01季报
- 4、TOP SPORTS TEXTILE LTD.Water Monitoring Data Season 2021-02
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- 5、TOP SPORTS TEXTILE LTD.Water Monitoring Data Season 2021-03
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- 6、TOP SPORTS TEXTILE LTD.Water Monitoring Data Season 2021-04
TOP SPORTS TEXTILE LIMITED 水监测数据2021-04季报



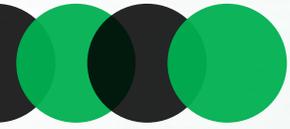
INSTALLATION SITE CONSTRUCTION DRAWINGS 安装现场、施工图纸

Factory installation and commissioning, on-site installation live;
Introduction of standardized discharge open channels and
conventional Parshall troughs.

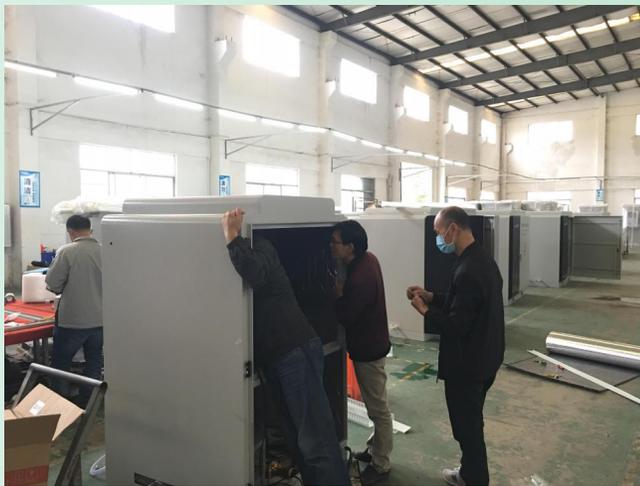
出厂安装调试、现场安装实况；
标准化排放口明渠、常规巴歇尔槽介绍。

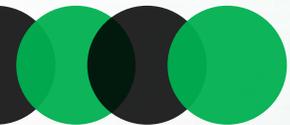
04





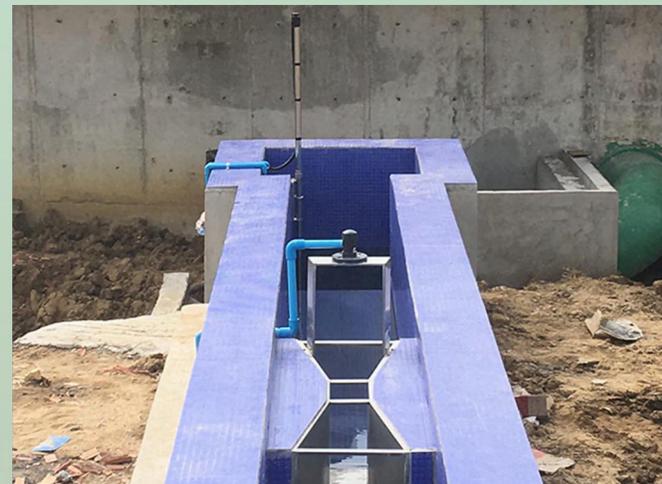
FACTORY INSTALLATION AND DEBUGGING 出厂安装调试

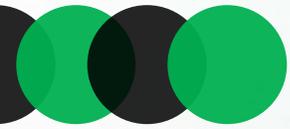




LIVE INSTALLATION ON SITE

现场安装实况

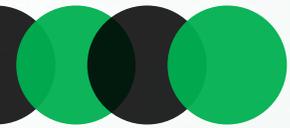




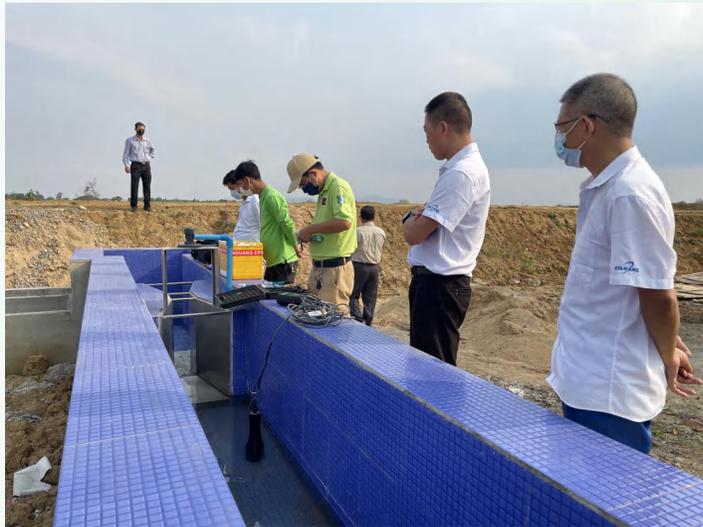
LIVE INSTALLATION ON SITE

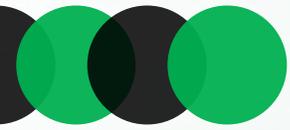
现场安装实况





ACCEPTANCE BY THE MINISTRY OF ENVIRONMENT 环境部验收





ACCEPTANCE BY THE MINISTRY OF ENVIRONMENT

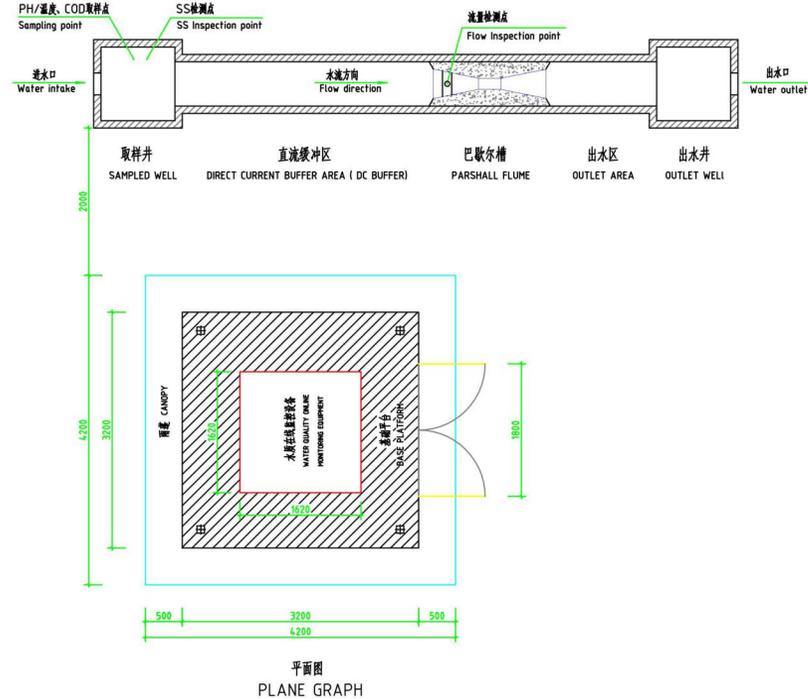
环境部验收



DRAWINGS 图纸

◆ LAYOUT PLAN

平面布置图



说明:

- 1、本图为水质在线监测设备平面布置图。
- 2、本图标注尺寸单位为毫米 (mm)。
- 3、甲方需自行建设完成游浆渠、设备房及地面硬化等土建工程，同时完成设备所需的防风、防雨、防晒、防曝等设施。
- 4、与在线监测系统设备连接的电源、网络等，由甲方完成。
- 5、设备公司提供在线监测系统设备、巴歇尔流量槽及其系统的安装、调试工作。

Remark:

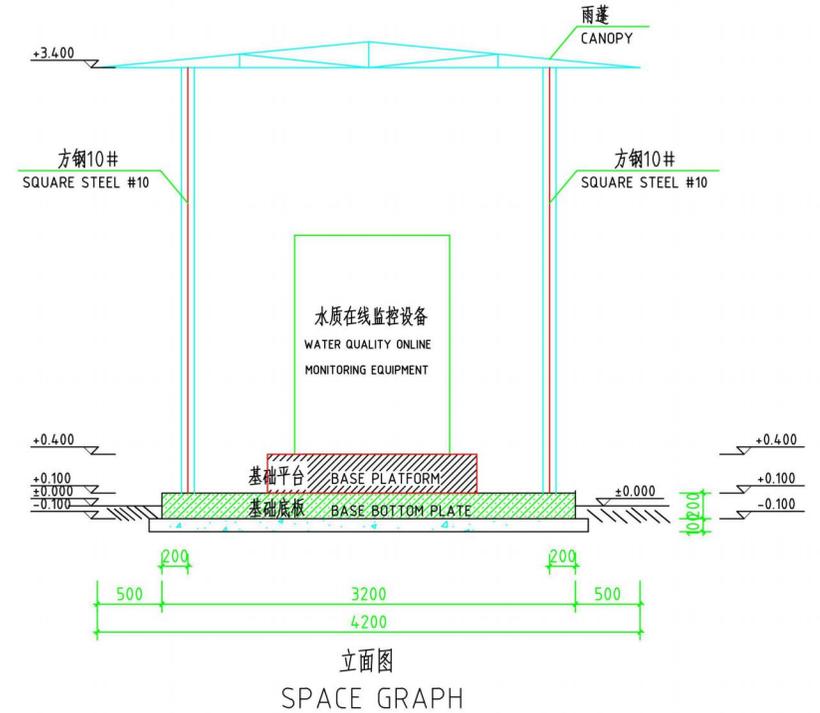
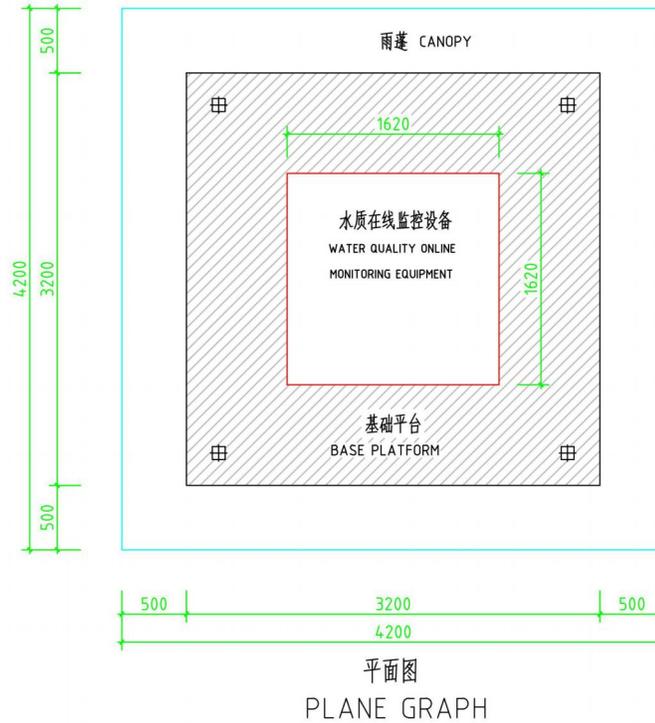
1. This drawing is the layout plan of water quality online monitoring equipment.
2. Dimensions indicated in this drawing are in mm.
3. Party A shall construct and complete civil works such as discharge canal, equipment room and ground hardening by itself, and improve the wind, rain, sun protection and other facilities required by the equipment.
4. The power supply and network etc. connected to the online monitoring system equipment shall be completed by party A.
5. The equipment company provides the installation and commissioning of on-line monitoring system equipment and Parshall Flume.

国发(柬埔寨)环保工程有限公司 <small>GUOFA (CAMBODIA) ENVIRONMENTAL PROTECTION ENGINEERING CO., LTD.</small>		图样单位 CLIENT	
项目名称 PROJECT NAME		水质在线监测系统 WATER QUALITY ONLINE MONITORING SYSTEM	
项目主管 PROJECT CHIEF	检查人 CHECKED BY	图名 DRAWING TITLE	图号 DRAWING NO.
设计人 DESIGNED BY	审核人 REVIEWED BY	平面图 Layout plan	比例 SCALE 1:50
日期 DATE	日期 DATE	图例 DRAWING TYPE	图号 DRAWING NO.
	2020.03		02

DRAWINGS 图纸

◆ BASE PLATFORM

基础平台



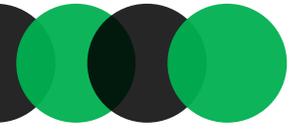
Remark:

1. This drawing is the civil engineering dimension drawing of the base platform of Water quality online monitoring equipment.
2. Dimensions indicated in this drawing are in mm.
3. Base bottom plate: Thickness 200mm; Steel reinforced concrete structure, $\phi 12@200$, double-layer and two-way. Base platform: Thickness:300mm, concrete structure.
4. The basic platform of water quality online monitoring equipment shall be set in the nearby open channel for standardized discharge.

说明:

1. 本图为水质在线监控设备基础平台土建尺寸图。
2. 本图标注尺寸单位为毫米 (mm)。
3. 基础底板:厚度200mm,采用钢筋混凝土结构,配筋 $\phi 12@200$,双层双向; 基础平台:厚度300mm,采用混凝土结构。
4. 水质在线监控设备基础平台应就近标准化排放口明渠设置。

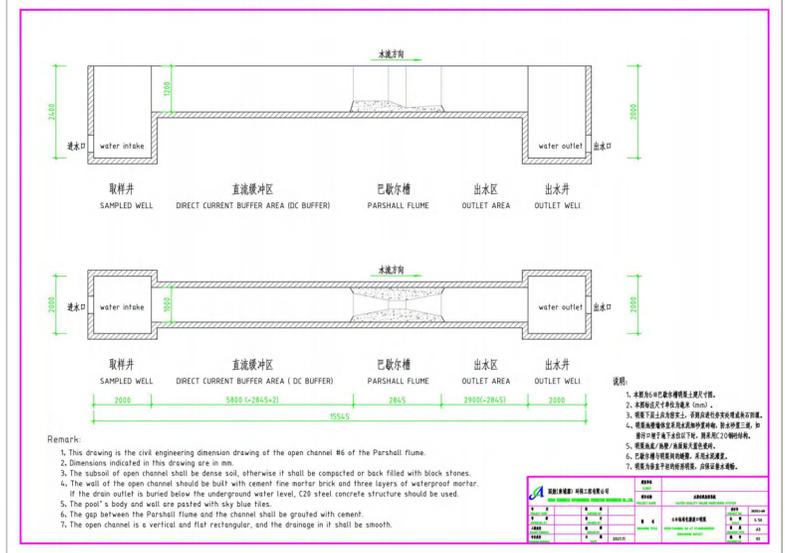
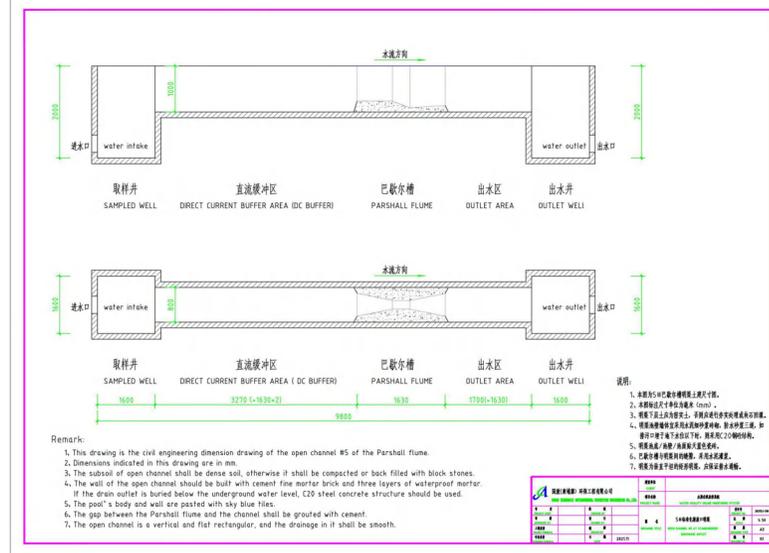
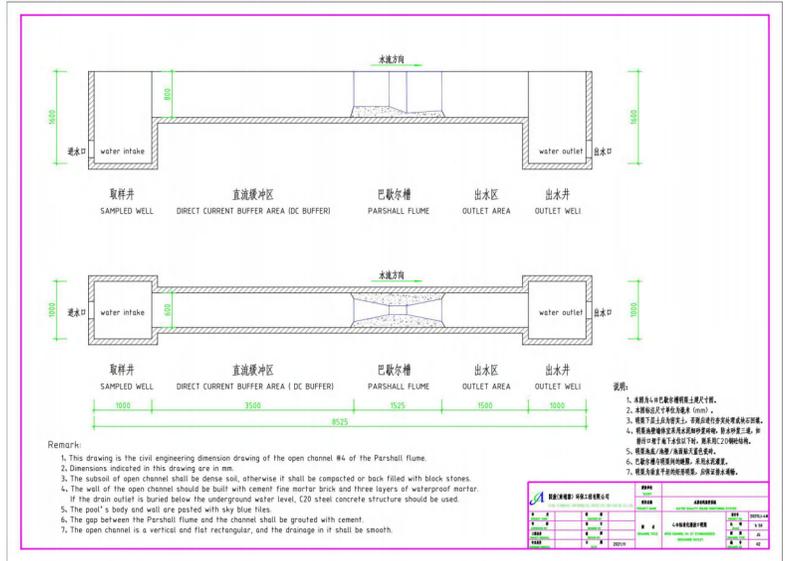
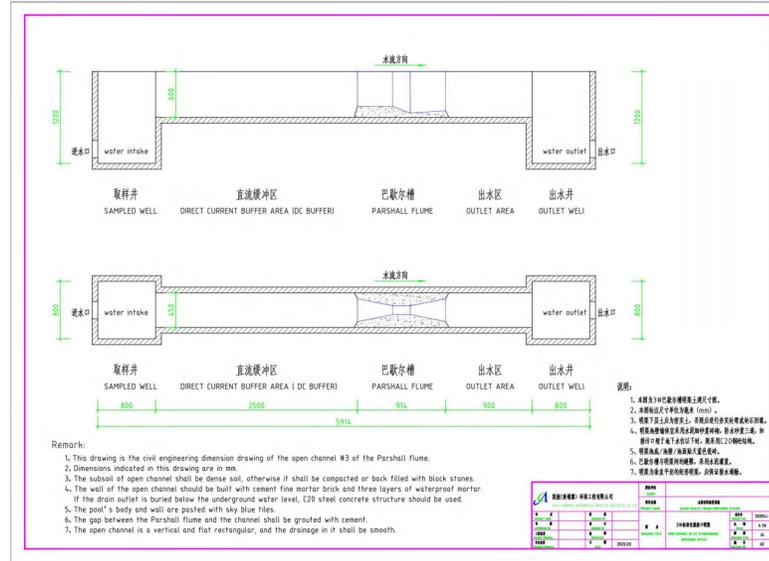
国致(柬埔寨)环保工程有限公司 <small>GUOJIA (KAMBODIA) ENVIRONMENTAL PROTECTION ENGINEERING CO.,LTD.</small>		图号/单号 CLIENT	
项目名称 PROJECT NAME		水质在线监控系统 WATER QUALITY ONLINE MONITORING SYSTEM	
设计/制图 PROJECT CHIEF / DRAWN BY	审核/校对 CHECKED BY / CORRECTED BY	图名 DRAWING TITLE	图号 DRAWING NO.
工程名称 PROJECT NAME	日期 DATE	基础平台 BASE PLATFORM	比例 SCALE 1:50
专业名称 SPECIALTY	日期 DATE	图名 DRAWING TITLE	图号 DRAWING NO.
	2021.11		03

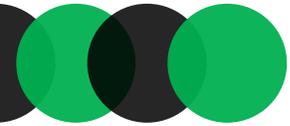


DRAWINGS 图纸

◆ 3#、4#、5#、6# OPEN CHANNEL AT STANDARDIZED DISCHARGE OUTLET

3#、4#、5#、6# 标准化排放口明渠





DRAWINGS 图纸

◆ 3#、4#、5#、6# PARSHALL FLUME

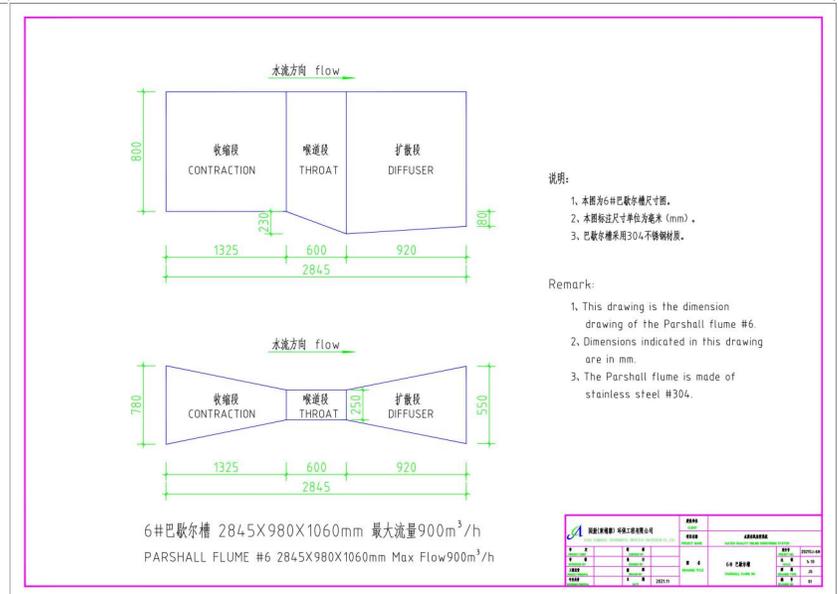
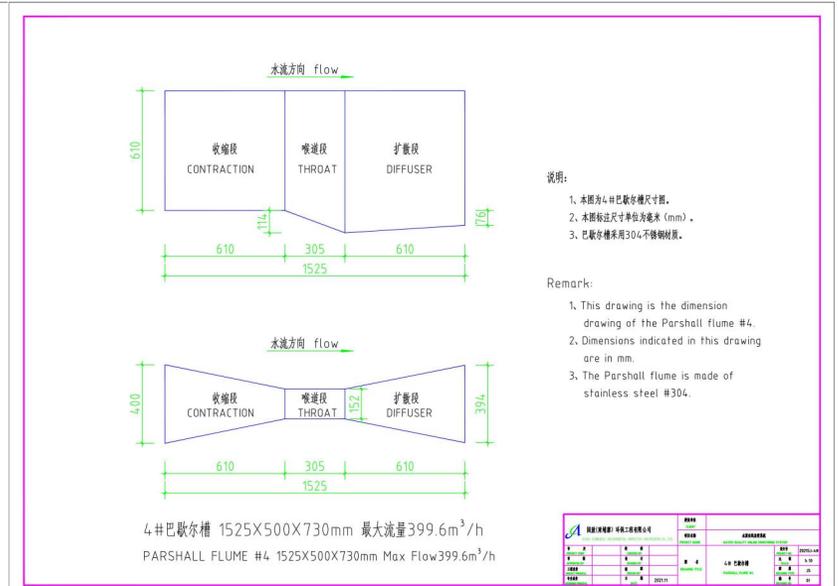
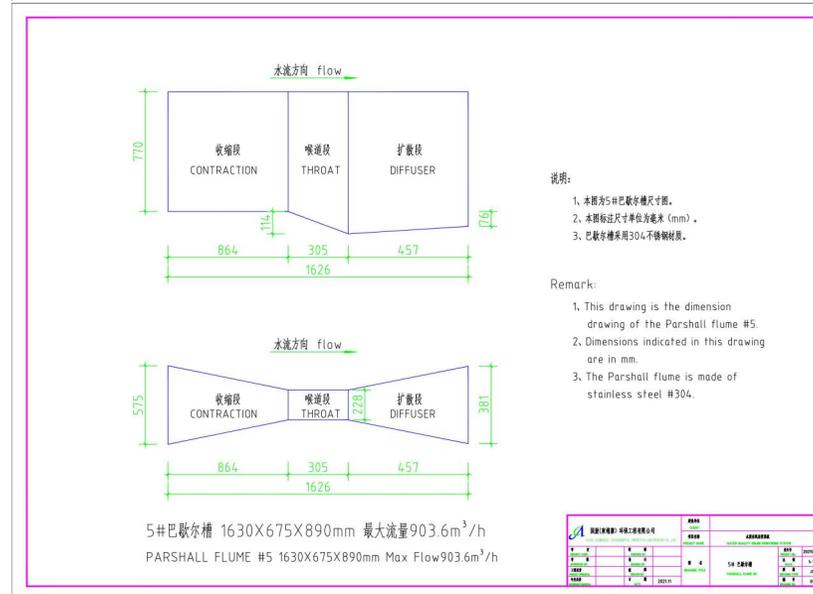
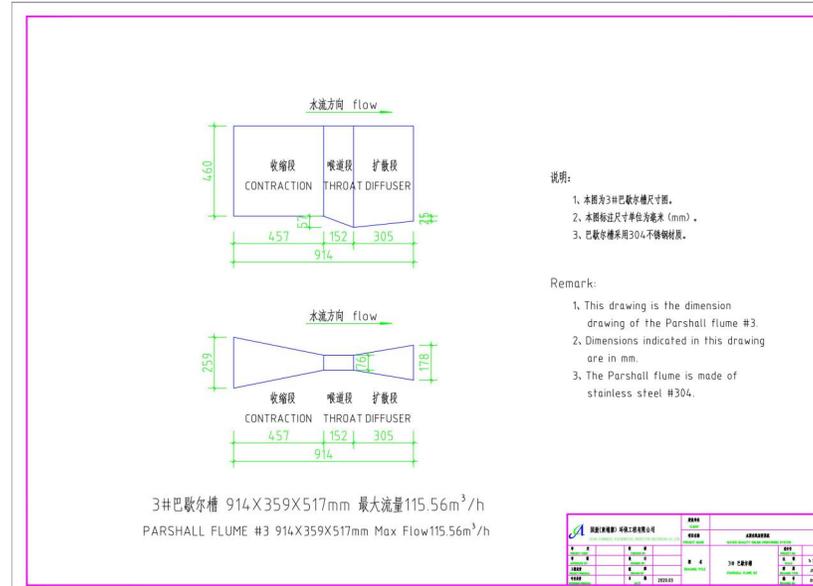
巴歇尔槽

◆ Size 尺寸

3# 914 × 359 × 517 mm
4# 1525 × 500 × 730 mm
5# 1630 × 675 × 890 mm
6# 2845 × 980 × 1060 mm

◆ Flow 流量

3# Max flow 2773 m³/d
4# Max flow 9590 m³/d
5# Max flow 21686 m³/d
6# Max flow 21600 m³/d



说明:
1. 本图为3#巴歇尔槽尺寸图。
2. 本图标注尺寸单位为毫米 (mm)。
3. 巴歇尔槽采用304不锈钢材质。

Remark:
1. This drawing is the dimension drawing of the Parshall flume #3.
2. Dimensions indicated in this drawing are in mm.
3. The Parshall flume is made of stainless steel #304.

说明:
1. 本图为4#巴歇尔槽尺寸图。
2. 本图标注尺寸单位为毫米 (mm)。
3. 巴歇尔槽采用304不锈钢材质。

Remark:
1. This drawing is the dimension drawing of the Parshall flume #4.
2. Dimensions indicated in this drawing are in mm.
3. The Parshall flume is made of stainless steel #304.

说明:
1. 本图为5#巴歇尔槽尺寸图。
2. 本图标注尺寸单位为毫米 (mm)。
3. 巴歇尔槽采用304不锈钢材质。

Remark:
1. This drawing is the dimension drawing of the Parshall flume #5.
2. Dimensions indicated in this drawing are in mm.
3. The Parshall flume is made of stainless steel #304.

说明:
1. 本图为6#巴歇尔槽尺寸图。
2. 本图标注尺寸单位为毫米 (mm)。
3. 巴歇尔槽采用304不锈钢材质。

Remark:
1. This drawing is the dimension drawing of the Parshall flume #6.
2. Dimensions indicated in this drawing are in mm.
3. The Parshall flume is made of stainless steel #304.



THIRD PARTY ASSAY

第三方化验

Guoao Environment Protection and Environmental Protection Industry Association of Cambodia (EPIAC) established a third-party laboratory.
国敖环保与柬埔寨环保产业协会 (EPIAC) 成立第三方化验室。

At the same time, it provides integrated environmental services and solutions for various industries, and promotes the application of circular economy industrial chain technologies in industrial parks, including centralized water supply, sewage treatment, reclaimed water utilization, centralized heating, clean energy power generation (solar energy, water vapor, etc.), hazardous solids waste treatment, etc.

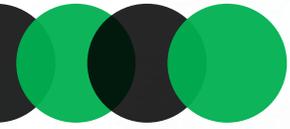
同时为各行业提供集成的环境服务和解决方案，推动工业园区循环经济产业链技术应用，包括集中供水、污水处理、再生水利用、集中供热、清洁能源发电（太阳能、水蒸气等）、危险固废处理等。

05



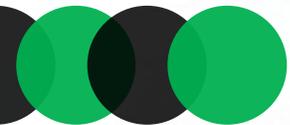
Website
—EPIAC官网—





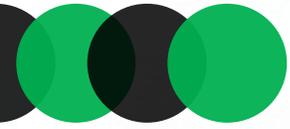
WATER AND WASTEWATER 水和废水

- ◆ TEST ITEMS: THERE ARE 839 ITEMS IN TOTAL, INCLUDING 262 ITEMS IN WATER AND WASTEWATER.
- ◆ THE TEST DATA AND RESULTS ARE TRUE, OBJECTIVE AND ACCURATE.
- ◆ Redox potential, conductivity, dissolved oxygen, color, transparency, total alkalinity, total acidity, sulfide, sulfate, total salt, leachable residue, total residue, salinity, suspended solids, total calcium and magnesium amount (total hardness), chlorine dioxide, free chlorine and total chlorine, free chlorine (residual chlorine), chloride, total chlorine, permanganate index, chemical oxygen demand, five-day biological oxygen demand (BOD5), Biochemical oxygen demand (CODcr), ammonia nitrogen, nitrate nitrogen, total nitrogen, elemental phosphorus, elemental phosphorus, phosphate, total phosphorus, nitrite nitrogen, boron, chlorophyll, chlorophyll a, fluoride, cyanide, anionic surface activity Agents, butylxanthogen, benzene series (6 items), acrylonitrile, volatile organic compounds (54 items), volatile phenols, phenolic compounds (14 items), nitrobenzene compounds (9 items), nitro Benzene compounds (23 items), aniline compounds (20 items), volatile petroleum hydrocarbons (C6-C9), turpentine, formaldehyde, petroleum, animal and vegetable oils, hexavalent chromium, total mercury, total chromium, barium, arsenic, Selenium, calcium, sodium, potassium, iron, lead, bismuth, beryllium, copper, aluminum, chromium, silver, zinc, antimony, manganese, magnesium, cadmium, nickel, fecal coliforms, total coliforms, total cobalt, silicon , sulfur, phosphorus, vanadium, titanium, cobalt, molybdenum, lithium, zirconium, tin, strontium.



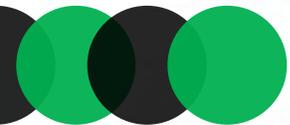
WATER AND WASTEWATER 水和废水

- ◆ 检测项目：项目共839项，其中水和废水共262项。
- ◆ 检测数据、结果真实、客观、准确。
- ◆ 氧化还原电位、电导率、溶解氧、色度、透明度、总碱度、总酸度、硫化物、硫酸盐、全盐量、可滤残渣、总残渣、矿化度、悬浮物、钙和镁总量（总硬度）、二氧化氯、游离氯和总氯、游离氯（余氯）、氯化物、总氯、高锰酸盐指数、化学需氧量、五日生化需氧量（BOD5）、生化需氧量（COD_{Cr}）、氨氮、硝酸盐氮、总氮、元素磷、单质磷、磷酸盐、总磷、亚硝酸盐氮、硼、叶绿素、叶绿素a、氟化物、氰化物、阴离子表面活性剂、丁基黄原酸、苯系物(6项)、丙烯腈、挥发性有机物（54项）、挥发酚、酚类化合物（14项）、硝基苯类化合物(9项)、硝基苯类化合物（23项）、苯胺类化合物（20项）、挥发性石油烃（C6-C9）、松节油、甲醛、石油类、动植物油、六价铬、总汞、总铬、钡、砷、硒、钙、钠、钾、铁、铅、铋、铍、铜、铝、铬、银、锌、锑、锰、镁、镉、镍、粪大肠菌群、总大肠菌群、总钴、硅、硫、磷、钒、钛、钽、钼、锂、锆、锡、锑。



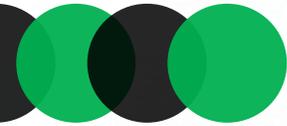
AMBIENT AIR AND EXHAUST 环境空气和废气

- ◆ TEST ITEMS: TEST ITEMS: THERE ARE 896 ITEMS IN TOTAL, INCLUDING 182 ITEMS OF AMBIENT AIR AND WASTE GAS.
- ◆ THE TEST DATA AND RESULTS ARE TRUE, OBJECTIVE AND ACCURATE.
- ◆ Total suspended particulate matter, PM10, PM2.5, dust fall, sulfur dioxide, nitrogen dioxide, ammonia, ozone, volatile organic compounds (60 items), nitrobenzene, fluoride, total hydrocarbons, non-methane total hydrocarbons, odor concentration, trimethylamine Amines, carbon disulfide, formaldehyde, sulfur dioxide, soot, smoke blackness, cooking fume, nitrogen oxides, carbon monoxide, hydrogen sulfide, sulfuric acid mist, hydrogen chloride, chlorine, hydrogen cyanide, chromic acid mist, anilines, phenolic compounds, phenol compounds, benzene series (13 items), chlorobenzene compounds (3 items), VOCs, acrylonitrile, acetone, acetaldehyde, phosgene, fluoride, vinyl chloride total hydrocarbons, methane, non-methane total hydrocarbons, mercury, Lead, copper, chromium, zinc, manganese, cadmium, nickel, carbon monoxide, chlorine, particulate matter, chlorobenzene compounds (9 items), oil fume, oil mist, arsenic, hydrogen sulfide, alkali mist, metal elements in particulate matter (23 items)



AMBIENT AIR AND EXHAUST 环境空气和废气

- ◆ 检测项目：项目共896项，其中环境空气和废气共182项。
- ◆ 检测数据、结果真实、客观、准确。
- ◆ 总悬浮颗粒物、PM10、PM2.5、降尘、二氧化硫、二氧化氮、氨、臭氧、挥发性有机物（60项）、硝基苯、氟化物、总烃、非甲烷总烃、臭气浓度、三甲胺、二硫化碳、甲醛、二氧化硫、烟尘、烟气黑度、饮食业油烟、氮氧化物、一氧化碳、硫化氢、硫酸雾、氯化氢、氯气、氰化氢、铬酸雾、苯胺类、酚类化合物、苯酚类化合物、苯系物（13项）、氯苯类化合物（3项）、VOCS、丙烯腈、丙酮、乙醛、光气、氟化物、氯乙烯总烃、甲烷、非甲烷总烃、汞、铅、铜、铬、锌、锰、镉、镍、一氧化碳、氯气、颗粒物、氯苯类化合物（9项）、油烟、油雾、砷、硫化氢、碱雾、颗粒物中金属元素（23项）



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Thanks

谢谢观看

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