

Semi-Annual Environmental Monitoring Report

Project Number: 46526-007

Loan Number: 3562-PAK

Period Covered: 01 Jan 2020 to 30 Jun 2020

Punjab Intermediate Cities Improvement Investment Project

Prepared by Program Management Unit, Local Government and Community Development
Department, Government of Punjab

For the Asian Development Bank
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NOTES

- (i) The fiscal year (FY) of the Government of the Islamic Republic of Pakistan and its agencies ends on 30 June.
- (ii) In this report “\$” refer to US dollars.

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Semi-Annual Environmental Monitoring Report

Semestral Report
For the period January to June 2020

PAK: Punjab Intermediate Cities Improvement Investment Program
Financed by the Asian Development Bank

Prepared by
Program Management Unit
Local Government and Community Development Department, Government of Punjab

Endorsed by:



Kaiser Saleem
Program Director, PICIIP

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TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 Preamble.....	1
1.2 Headline Information	1
2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES	3
2.1 Project Description.....	3
2.2 Project Contracts and Management	4
2.3 Project Activities during Current Reporting Period	5
2.4 Description of Any Changes to Project Design	10
2.5 Description Of Any Changes To Agreed Construction Methods	11
3. Environmental Safeguard Activities	0
3.1 General Description of Environmental Safeguard Activities.....	0
3.2 Site Audits	0
3.3 Issues Tracking (Based on Non-Conformance Notices).....	0
3.4 Trends	0
3.5 Unanticipated Environmental Impacts or Risks	0
3.6 Grievance Redressal Mechanism.....	1
4. Results of Environmental Monitoring	0
4.1 Overview of Monitoring Conducted during Current Period.....	0
4.1.1 AIR QUALITY.....	0
4.1.2 NOISE.....	0
4.1.3 WATER QUALITY.....	1
4.2 Summary of Monitoring Outcomes	2
4.3 Material Resources Utilization.....	2
4.4 Waste Management	3
4.4.1 Current Period	4
4.4.3 Cumulative Waste Generation.....	4
4.5 Health and Safety.....	5
4.5.1 Community Health and Safety	5
4.5.2 Worker Safety and Health	5
4.5.4 Firefighting Arrangements	6
4.5.6 Safety signboards	7
4.6 Appropriate Staff Name and Contact Details	7
4.6.1 Incidents during the reporting period	7
4.6.2 Fatalities.....	7
4.6.3 Corrective Actions.....	7
4.6.4 Compensation and Insurance benefits	7

4.7	HSE Training	7
4.8	Covid-19 preventive measures	8
5.	FUNCTIONING OF THE SSEMP	13
5.1	SSEMP Review	13
6.	GOOD PRACTICES AND OPPORTUNITY FOR IMPROVEMENT ..	14
6.1	Good Practices	14
6.2	Opportunities for Improvement	15
7.	SUMMARY AND RECOMMENDATIONS	17
7.1	Summary	17
7.2	Recommendations	17

Annexes

Appendix A: Sahiwal Parks: Environmental Test Results

Appendix B: Sahiwal Parks: Environmental Test Results

Appendix C: Sialkot Parks Environmental Test Results

Appendix D: PLGA Lahore-Environmental Test Results

Appendix E: Sahiwal Parks HSE Check List

Appendix F: Sialkot Parks HSE Checklist

Appendix G: PLGA Lahore- HSE Checklist

Appendix H: Grievance Redressal Committee Notification

Appendix I: Project Photographs

Abbreviations

ADB	Asian Development Bank
HSE	Health Safety and Environment
EPA	Environmental Protection Agency
EIA	Environment Impact Assessment
EMP	Environmental Management Plan
GoP	Government of Punjab
GOP	Government of Pakistan
km	Kilometer
PEQS	Punjab Environmental Quality Standards
PICIIP	Punjab Intermediate Cities Improvement Investment Program
PIC	Project Implementation Consultant
PM	Particulate Matter
PMU	Program Management Unit
PIU	Project Implementation Unit
PMCSC	Project Management Construction Supervision Consultants
SSEMP	Site Specific Environment Management Plan
SAEMR	Semi - Annual Environmental Monitoring Report
SOP	Standard Operating Procedure

Conversion Factors

1 meter = 3.28 feet

1 hectare = 2.47 acre

1 Kanal = 505.9 m²

1. INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for Punjab Intermediate Cities Improvement Investment Program. This report is the 1st EMR for the project, consisting of the following sub-projects:

Sahiwal Parks

- Chamanzar Park
- Park and Playground Near Stop # 10, Farid Town; and
- Fateh Sher Park

Sialkot Parks

- Sialkot Fort Park
- Abdul Hakeem Park for Ladies
- Ladies and Children Park (Model Town)
- Gulshan-e-Iqbal park

Punjab Local Government Academy (PLGA), Lahore

1.2 Headline Information

2. Due to the proactive project management and strict monitoring of the EMP implementation by the Project Implementation Consultant (PIC), the overall situation with regards to implementation of environmental safeguards at the project sites has remained satisfactory with no major non-compliances reported during the current reporting period i.e. January to June 2020.
3. The PIC and Health, Safety and Environment (HSE) teams at site continued to perform strict monitoring of the EMP and Health & Safety (HS) Plan implementation by the Contractor.
4. Environmental monitoring plan has been strictly followed throughout the reporting period and both the independent and internal monitoring has been organized according to the plan.
5. On-site trainings / toolbox talks have been extensively provided to the workers by the Contractor throughout the reporting period under the PIC supervision.
6. Furthermore, all works are significantly affected due to the COVID-19 pandemic outbreak. Keeping in view the required measures being implemented, such as social distancing of project staff, the overall staff has also been reduced.

7. Also, the on-site HSE team strictly implemented the SOPs issued by Government of Punjab (GOP) for construction sites (disinfection of offices and machinery periodically, temperature screening at project entrances, provision of hand sanitizers to office and labour staff, provision of surgical face masks, instruction boards and signage at different locations for COVID-19 awareness).

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

8. The Asian Development Bank (ADB) and the Cities Development Initiative for Asia (CDIA) are partnering with the Government of Punjab Province (GoPP), to undertake the Punjab Intermediate Cities Improvement Program (PICIIP).
9. The PICIIP aims to improve the quality of urban services available in selected cities in Punjab province (city populations between 250,000 and 1,000,000). Urban infrastructure development is an important component of the PICIIP. The duration of the program will be six years. Funding will be accessed in phases. The PICIIP's overall budget is US\$250 million, to be disbursed in phases.
10. The first phase will fund investments in the intermediate cities of Sialkot and Sialkot. Major projects planned for Sialkot city are water supply improvement; sewerage and drainage improvement, sewage treatment plant, green spaces development and transport routes improvement.
11. Overall project will have following major outcomes:
 - Output 1: Water supply systems improved
 - Output 2: Sanitation systems improved
 - Output 3: Urban public spaces improved
 - Output 4: Institutional support and capacity development
12. PICIIP aims at transforming the selected urban areas into green, inclusive, resilient and competitive Smart cities with improved liveability supporting social and economic growth through improved Municipal Governance, integrated urban planning, improved services delivery, efficient local mobility and climate resilient infrastructure and introduction of IT for city services delivery improvement within the frame of Smart City.
13. The Local Government and Community Development (LG&LCD) Department of Punjab will be the executing agency of the project and the city governments of Sahiwal and Sialkot (municipal corporations) will be the O & M agencies. A Project Management Unit (PMU) and two City Implementation Units (CIUs) have been established by LG & CD Department for successful execution of the overall program.

14. PICIIP is undertaking rehabilitation of three public parks in Sahiwal and four public parks in Sialkot as already mentioned in **Section 1.1** above.
15. The major development works at parks involve landscaping, irrigation system, electrification, system, plumbing system, surveillance system, kiosks, toilet, gazebos, open gym, gardener room, cctv cameras, lake, fountain, ticketing booth, security room, jogging track, walkways, children play area etc.
16. PICIIP is also undertaking the construction of the Punjab Local Government Academy (PLGA) in Lahore city. After promulgation of PLGA Act 2019, training is mandatory for all officers and servants of local governments and undertaking of works requiring higher engineering skills. Furthermore, heads, conveners and councillors shall cover training requirements for improved performance.
17. The existing PLGA cannot cater to the quality training needs of all employees and elected representatives of the province with existing infrastructure and resources. The PLGA will be a multi-storey building meant for training of local government employees and is being constructed over an area of 10.04 kanals of land with dimensions of 70.36m x 59.70m (4200.49 Sq.m) with two basements (approximately 120 Nos. Car and 200 Nos. Motorcycles parking space.) and six floors.
18. It includes an administration block, IT & control room, library for 40 persons capacity, prayer hall for 200 persons capacity, dining hall for 200 persons capacity, hostel mess / cafeteria for 80 persons, training classrooms for training of 300 persons at a time, syndicate discussion rooms for 20 persons, seminar hall for 100 persons, screening hall for 300 persons, executive hall for 75 persons, instructor rooms, computer laboratory for 56 person, executive suits (double occupancy), double occupancy rooms, and day care center.

2.2 Project Contracts and Management

19. The environmental management teams for this project and their respective roles are as provided below as **Table 2.1**.

Table 2.1: Environmental Management Team

Organisation	Discipline/ Designation	Deployed Team	Location	Contact no	Email Id
PMU-PICIIP	Environmental Consultant	Humera Qasim	Lahore	03339219198	humera.qasim@gmail.com
	Dy. Director (M&E) / Focal Person (Env)	Asifa Khan	Lahore	03028498163	asifa.piciip@punjab.gov.pk

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

	Urban Planner	Ali Shah	Lahore	03367985017	alishahplanner@gmail.com
	Research Analyst Environment	Rifat Hayat	Sahiwal	03017483387	mrifatlodhi1122@gmail.com
	Research Analyst Environment	Jawad Shafiq	Sialkot	03225616588	Jawashafiq8@gmail.com
ADB	Senior Environment Specialist	Nurlan Djenchuraev	Islamabad	051-2087 208	ndjenchuraev@adb.org
	Environment Specialist (Consultant)	Shazia Shahid	Islamabad	0346-0281336	sshahid.consultant@adb.org
NESPAK/EPCM	Resident Engineer	Rai Bilal	Lahore	03216905129	Rai_bilal@hotmail.com
	Resident Engineer	M. Tayyab	Sahiwal	03216369549	Tayyab194@gmail.com
	Resident Engineer	Abdullah Hussain	Sialkot	03087300775	Abdullahsyed5@yahoo.com
	Environmental Engineer	Anas Ahmad Khan	Lahore	03314112481	anaskhan444@outlook.com
Contractor	Environmental Engineer	Syed Hasnain Raza	Lahore	03066045875	egrsyedhasnainraza@gmail.com
	Environmental Engineer	Sharjeel Shujat	Sahiwal	03457223534	sharjeeshujaat@gmail.com
	Environmental Engineer	Ijaz Hassan	Sialkot	03035303484	Khanijaz396@gmail.com

20. Supervision is being carried out by the Project Implementation Unit (PIU), which is comprised of Punjab local government staff, who are assisted by the PIC NESPAK Artelia JV for technical and commercial matters. The Project Management Unit (PMU), PIU and Contractor (HCS – MASTIC JV) HSE teams ensure that mitigation and management measures proposed in the IEE report are implemented.

2.3 Project Activities during Current Reporting Period

21. The status of the progress of the three parks in Sahiwal as of June 30th, 2020 is provided in **Table 2.2** below.

Table 2.1: Farid Town Park, Sahiwal

Sr. No.	Activity	Planned Physical Progress on 30-06-2020 As per updated POW	Actual Physical Progress As on 30-06-2020
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Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

		Start Date	End Date	Planned %	Start Date	Status	Actual %
HCS1	Farid Town Park	29-11-19	20-10-20	17%	09-12-19	30-06-2020	18.94%
HCS1.6	GAZEBO 1	01-02-20	14-08-20	62%	16-12-19	Columns completed	59.24%
HCS1.7	GAZEBO 2	10-02-20	16-08-20	61%	14-01-20	Columns completed	57.81%
HCS1.8	Water Lake	20-04-20	23-08-20	47%	20-02-20	RCC Work Completed	49.18%
HCS1.9	Planters	15-06-20	14-08-20	23%	08-01-20	Natural stone in progress	23.86%
HCS1.10	Paved Walkway	12-06-20	01-08-20	20%	21-06-20	Kerb Stone in progress	20.53%
HCS1.19	Electric Poles & Lights	01-09-20	28-09-20	-	29-06-20	Foundations in progress	15.50%
HCS1.20	Boundary Wall & Grill	01-05-20	30-06-20	-	20-06-20	Brick work in progress	42.60%

Table 2.2: Fateh Sher Park, Sahiwal

Sr. No.	Activity	Planned Physical Progress on 30-06-2020 As per updated POW			Actual Physical Progress As on 30-06-2020		
		Start Date	End Date	Planned %	Start Date	Status	Actual %
HCS2	Fateh Sher Park	29-12-19	19-10-20	14%	18-12-19		15.93%
HCS2.2	Ticketing Room	06-01-20	31-08-20	60%	18-12-19	Flooring and plinth	66.48%
HCS2.3	Security Room	13-01-20	02-09-20	59%	18-12-19	Flooring and plinth	69.07%
HCS2.4	Gardener Room	20-01-20	10-09-20	56%	18-12-19	Flooring and plinth	70.09%
HCS2.5	Wash Rooms	20-01-20	10-08-20	65%	28-12-19	Brick work up to roof	71.81%
HCS2.6	GAZEBO 1	01-03-20	31-08-20	54%	22-12-19	Columns Completed	63.26%
HCS2.7	GAZEBO 2	10-03-20	10-09-20	50%	23-12-19	Columns Completed	61.96%
HCS2.8	GAZEBO 3	20-03-20	15-09-20	46%	26-12-19	Columns Completed	51.64%
HCS2.9	GAZEBO 4	30-03-20	20-09-20	43%	27-12-19	Columns Completed	50.85%
HCS2.10	Central Fountain/Planters	12-05-20	11-07-20	68%	21-01-20	Natural Stone	54.40%
HCS2.21	Boundary Wall & Grill	01-05-20	30-06-20	100%	04-06-20	Brick work	50%

Table 2.3: Chaman Zar Park, Sahiwal

Sr. No.	Activity	Planned Physical Progress on 30-06-2020 As per updated POW			Actual Physical Progress As on 30-06-2020		
		Start Date	End Date	Planned %	Start Date	Status	Actual %
HCS3	Chaman Zar Park	13-01-20	20-10-20	14.2%	16-01-20		11.33%
HCS3.1	Kiosk	13-01-20	12-09-20	49%	16-01-20	Brick work up to Shelf	34.48%
HCS3.2	Ticketing Room	21-01-20	24-08-20	53%	26-02-20	Roof form work	42.26%
HCS3.3	Security Room	28-01-20	27-08-20	52%	26-02-20	Roof form work	46.36%
HCS3.4	Gardener Room	04-02-20	23-08-20	52%	16-01-20	Roof form work	36.32%
HCS3.5	Wash Rooms	04-02-20	09-08-20	56%	16-01-20	Excavation completed	44.62%
HCS3.6	GAZEBO 1	16-03-20	05-09-20	44%	16-01-20	Columns 1 st Pour	39.33%
HCS3.7	GAZEBO 2	25-03-20	12-09-20	48%	16-01-20	columns 1 st Pour	28.37%
HCS3.8	GAZEBO 3	04-04-20	19-09-20	37%	11-02-20	Footing concrete	29.67%
HCS3.9	Central Planter	17-06-20	17-07-20	35%	12-06-20	Brick work in progress	43.75%
HCS3.10	Paved Walkway	29-07-20	17-09-20	-	17-06-20	Kerb Stone in progress	21.20%
HCS3.20	Boundary Wall & Grill	01-05-20	30-06-20	100%	05-06-20	Brick work in progress	59.00%

Works status at Parks in Sialkot

22. All the existing facilities such as boating lake, fountains, horticulture, walkways etc. are in a poor condition and need proper rehabilitation and repair works. Facilities such as canteen/kiosk, children play area, rehabilitation of fountain and waterfall and car parking, administrative area, and public amenities such as toilets are critical elements that are not available or being provided in this park.

Table 2.4: Gulshan-e-Iqbal Park, Sialkot

Sr. No.	Activity	Start Date	End Date	Planned %	Start Date	Status	Actual %
	GULSHAN-E-IQBAL PARK	25-11-19	22-10-20	67%	25-11-19	30-04-20	33%
HCS1.4	Washrooms-2	10-01-20	13-07-20	92%	10-01-20	Plastering & Construction of planters in prog.	76%

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

HCS1.5	Gardener Room (1,2)	15-12-19	22-06-20	100%	15-12-19	Plastering Completed & Flooring in prog.	80%
HCS1.6	KIOSK (1,2 & 4)	03-01-20	23-09-20	69%	03-01-20	Flooring & Finishing Work in prog.	77%
HCS1.7	KIOSK (3,5 & 6)	04-02-20	23-09-20	65%	04-02-20	Kiosk 3 Finishing & Flooring in Prog, Kiosk 5 Roof Slab Completed & , 6 Brick Work completed.	68%
HCS1.9	GAZEBO (1,3,4,5,6)	10-02-20	14-09-20	66%	10-02-20	Flooring & planters in Prog.	69%
HCS1.10	GAZEBO(2,7,8 & 9)	01-03-20	14-09-20	62%	01-01-20	2, 8 & 9 Flooring planters in Prog. & 7 Select fill in Prog.	65%
HCS1.13	Planter 2	10-04-20	11-06-20	100%	25-01-20	Brick Work Up to DPC Completed.	56%
HCS 1.14	Paved Walkway	25-04-20	15-09-20	47%		Dressing & Leveling in Prog.	3%
HCS 1.15	Jogging Track	25-04-20	15-09-20	47%		Kerb Stone in Prog.	32%
HCS1.18	Plumbing Works	30-04-20	28-08-20	53%		Manholes in Prog.	12%
HCS1.21	Car Parking	10-04-20	25-08-20	58%	23-03-20	Base Preparation & Car Parking Planters in prog.	42%

Table 2.5: Abdul Hakeem Park, Sialkot

Sr. No.	Component	Status	Actual %
HCS2.1	GAZEBO (1,2)	Flooring & Wood Work in Prog.	89%

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

Sr. No.	Component	Status	Actual %
HCS2.2	Wash Rooms	Finishing Work is in Prog.	83%
HCS 2.3	Paved Walkway	PCC of Walkways in Prog.	45%
HCS2.5	Irrigation Works		15%
HCS2.6	Plumbing Works		52%
HCS2.7	Electric Poles & Lights	Foundation of Electric Poles Completed.	25%

Table 2.6: Fort Park, Sialkot

No.	Description of Work	Planned Physical Progress as per POW on 30.06.2020			Actual Physical Progress as on 30-06-2020		
		Start Date	End Date	Planned %	Start Date	Status	Actual %
HCS3	SIALKOT FORT PARK	15-02-20	23-09-20	34%	25-12-19	29-02-20	34%
HCS3.1	GAZEBO (1,2)	15-02-20	24-08-20	65%	01-01-20	Flooring Construction of Planters in Prog.	70%
HCS3.2	KIOSK	25-02-20	24-07-20	75%	15-01-20	Finishing & Flooring in Prog.	75%
HCS3.3	Washrooms	10-03-20	07-07-20	85%	10-02-20	Finishing & Flooring in Prog.	85%
HCS3.4	Octagonal Fountain	31-03-20	25-08-20	55%	25-02-20	Brick Work & RCC Work Completed.	70%
HCS 3.5	Paved Walkway	25-05-20	25-05-20	40%		PCC of Walkways Completed.	75%

Table 2.7: Ladies and Children Park, Sialkot

No.	Description of Work	Planned Physical Progress as per POW on 30.06.2020			Actual Physical Progress as on 30-06-2020		
		Start Date	End Date	Planned %	Start Date	Status	Actual %
HCS4	LADIES & CHILDREN PARK	27-03-20	18-09-20	37%	29-12-19	29-02-20	35%

No.	Description of Work	Planned Physical Progress as per POW on 30.06.2020			Actual Physical Progress as on 30-06-2020		
		Start Date	End Date	Planned %	Start Date	Status	Actual %
HCS4.1	GAZEBO (1,2)	27-03-20	22-08-20	65%	01-01-20	Flooring in Prog.	70%
HCS4.2	Wash Rooms	28-03-20	18-09-20	55%	01-02-20	Finishing & Flooring is in Prog.	82%
HCS4.3	Paved Walkway	10-05-20	05-08-20	55%	18-03-20	Fixing of Kerb Stone & PCC of Walkways Completed.	75%
HCS4.5	Irrigation Works	01-06-20	01-06-20	45%			20%
HCS4.6	Plumbing Works	01-06-20	01-06-20	55%			55%
HCS4.7	Electric Poles & Lights	16-06-20	16-06-20	25%		Foundation of Electric Poles Completed.	30%

PLGA Lahore

23. During the reporting period, the status of the construction work areas is as follows:

- Commencement date of project was December 20, 2019
- Test pile was carried out on January 22, 2020.
- The Cantilever pile retention system was started out on April 22, 2020 and completed on June 14, 2020.
- The excavation for Basement of the project started on June 28, 2020.

2.4 Description of Any Changes to Project Design

24. There was no change in the design of the construction of PLGA, Lahore. Few changes were made in the project design in Sahiwal parks that are mentioned below:

- At Fareed town park, the location of a security room and gardener room was adjusted by the Architect to save the cutting of the trees.

- The ground works of Parks were levelled and finalised to avoid ponding of rainwater for safeguard against Dengue.
- The boundary wall changed to an iron gated fence.

25. In Gulshan-e-Iqbal Park, Sialkot, as per previous layout plan, the Contractor had to construct structures such as toilet block, prayer deck & kiosk. But prior to the commencement of execution, the Contractor found out that there are two mounds (H1, H2) with a considerable number of old trees of different species, such as sheshum, sukhchain etc. Also, birds of various types have been observed to have made their nests on these trees. So the Contractor recommended to revise the plan to conserve the natural landscape. The details of mounds with respective number of trees are provided in the **Table 2.9** below.

Table 2.8: Details of mounds with number of trees

	Old Trees	Small trees	Birds Nest
H1	15	04	04
	Old Trees	Small trees	Birds Nest
H2	06	02	01

2.5 Description Of Any Changes To Agreed Construction Methods

26. No change in the construction methodology has taken place during the reporting period of this report with the initially developed method statements still applicable.

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

27. The key monitoring activities conducted within the reporting period are as follows:

- Quarterly EMP compliance monitoring was carried out by the PIC environment teams to identify any environmental non-compliance issues requiring attention;
- Following the EMP guidelines, instrumental environmental monitoring through an independent environmental laboratory was arranged by the Contractor's environment team, which was initiated in January and June 2020;
- Supervision for trainings being conducted by Contractor for its staff were provided by the PIU & PIC environment teams;
- Trainings on HS Plan implementation for Contractor staff were organized by the HS team;
- The PIC environment team held follow-up meetings with the Contractor for checking the compliance status of previously highlighted issues.

3.2 Site Audits

28. No formal audits have been conducted yet. Site inspections of the sub-projects are being performed in order to comply to the EMP provisions requirements with the Contractor being immediately directed to resolve any non-compliances identified during the site inspections.

3.3 Issues Tracking (Based on Non-Conformance Notices)

29. During the reporting period, no non-conformance notices were issued.

3.4 Trends

30. As no site audits were conducted and no non-conformance notices were issued, so the development of trends is not applicable for this particular SAEMR.

3.5 Unanticipated Environmental Impacts or Risks

31. In order for the sub-projects to be implemented under PICIIP, there are no unanticipated environmental impacts and risks that have been identified during the current reporting period. Details of any such impacts have been identified during the reporting period and documented.

3.6 Grievance Redressal Mechanism

32. Grievance Redressal Committee is notified and is attached as Appendix H of this report. No grievance is received up till the reporting period at all project site because each project site is in closed vicinity and have no direct public interaction.

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

33. In order to conduct ambient air quality and noise monitoring during the construction phase, the different Contractors have engaged EPA certified third-party laboratories with the monitoring being conducted on a quarterly basis, as committed in their respective Contract Agreements, based on the EMP for each sub-project. The details are provided in **Table 4.1** below.

Table 4.1: Third-Party Lab for quarterly monitoring

Project name	1 st Quarter		2 nd Quarter	
	Lab Name	Date of Analysis	Lab Name	Date of Analysis
Parks, Sahiwal	WELCOS	Feb 2020	ASIAN	June 2020
Parks, Sialkot	ASIAN	Jan 2020	ASIAN	June 2020
PLGA	-	-	ESPAK	May 2020

4.1.1 AIR QUALITY

34. Monitoring of ambient air quality parameters i.e. SO₂, NO_x, SO_x, CO & PM_{2.5} & PM₁₀ was conducted on a twenty-four hourly basis at the 3 public parks in Sahiwal and Gulshan-e-Iqbal parks in Sialkot and at PLGA construction site at Lahore.
35. All the environmental parameters were analyzed during the environmental testing to assess the level of compliance with the most stringent standards/guidelines between the PEQS and IFC standards. As can be observed in the **Table 4.1** below, the SO₂ concentrations are being exceeded at two parks of Sahiwal with the remaining pollutant parameters lying within the applicable standards/guidelines. The **Table 4.2** below shows that in the case of Gulshan-e-Iqbal Park in Sialkot, the concentrations of the pollutant parameters PM_{2.5} and PM₁₀ are exceeding the applicable standards/guidelines with the remaining parameters within the applicable limits. In the case of the PLGA building in Lahore, the ambient concentrations during the construction phase are shown in **Table 4.3** below. As can be observed, the SO₂, PM_{2.5} and PM₁₀ are exceeding the applicable standards/guidelines with the remaining parameters within the applicable limits.

36. The main reason for the exceedances of PM₁₀ and PM_{2.5} is overall poor air quality in Sialkot and Lahore cities. However, it shall be ensured that more stringent measures are implemented in order to ensure that these exceedances are brought within the applicable limits when the monitoring is conducted in the next quarter. In particular, the following measures shall be implemented:

- An increased volume of sprinkling of water shall be conducted to ensure that the airborne dust emissions are brought down to within the applicable standards/guidelines.
- Excavated material will be covered and will not be stored for long intervals at site; All vehicles, machinery, equipment and generators used during construction activities will be kept in good working condition and be properly tuned and maintained in order to minimize the exhaust emissions.
- Preventive measures against dust will be adopted for on-site mixing and unloading operations.

Furthermore, while the SO₂ exceedances are mostly only marginal, however, the required measures shall be taken as per EMP to ensure they are also reduced and brought to within acceptable limits.

The detailed laboratory test results are attached as **Appendices A to D**.

Table 4.1: Ambient Air Quality Monitoring Results (24 hrs) 1st Quarter at Three Locations at Sahiwal Parks

Monitoring Location	Parameter	NO (ug/m ³)	NO ₂ (ug/m ³)	CO (mg/m ³)	SO ₂ (ug/m ³)	PM _{2.5} (ug/m ³)	PM ₁₀ (ug/m ³)	TSP (ug/m ³)
Fareed Town		7.4	1.1	0.84	18.29	21	24	48
Fateh Sher		10.4	2.1	0.69	25.3	17	19	41
Chaman Zar		9.0	3.3	0.76	20.3	15	19	38
Applicable Most Stringent Standard for 24 hours of IFC		-	80	-	20	25	50	500
PEQS for 24 hours		-	80	-	80	35	150	500

Source: WELCOS, Feb 2020.



‘Exceeding’ applicable guidelines for acceptable pollutant levels



‘Within’ applicable guidelines for acceptable pollutant levels

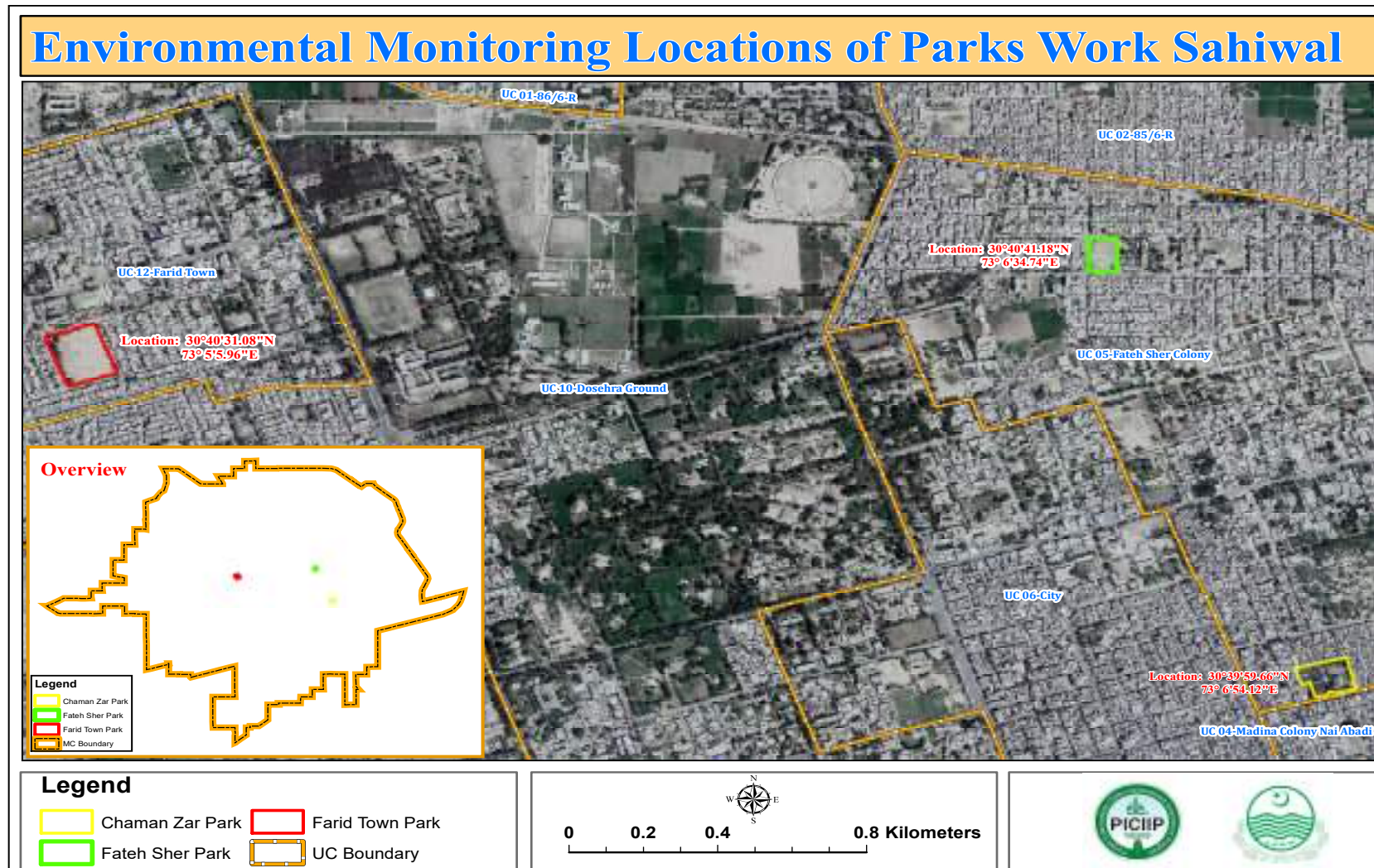


Figure 1: Sahiwal Parks Environmental Monitoring Location

Table 4.2: Ambient Air Quality Monitoring Results (24 hrs) 1st & 2nd Quarter at Three Locations at Sialkot Parks

Monitoring Location	Parameter	NO (ug/m ³)	NO ₂ (ug/m ³)	CO (mg/m ³)	SO ₂ (ug/m ³)	PM _{2.5} (ug/m ³)	PM ₁₀ (ug/m ³)	TSP (ug/m ³)
Gulshan-e-Iqbal Park 1 st Quarter	Average	8.06	13.27	0.69	15.43	41.2	137.5	41.2
Gulshan-e-Iqbal Park 2 nd Quarter		10.49	18.46	0.71	17.95	27.5	129.2	290
Applicable Most Stringent Standard for 24 hours of IFC		-	80	-	20	25	50	500
PEQS for 24 hours		-	80	-	80	35	150	500

Source: ASIAN, Feb 2020.



'Exceeding' applicable guidelines for acceptable pollutant levels



'Within' applicable guidelines for acceptable pollutant levels

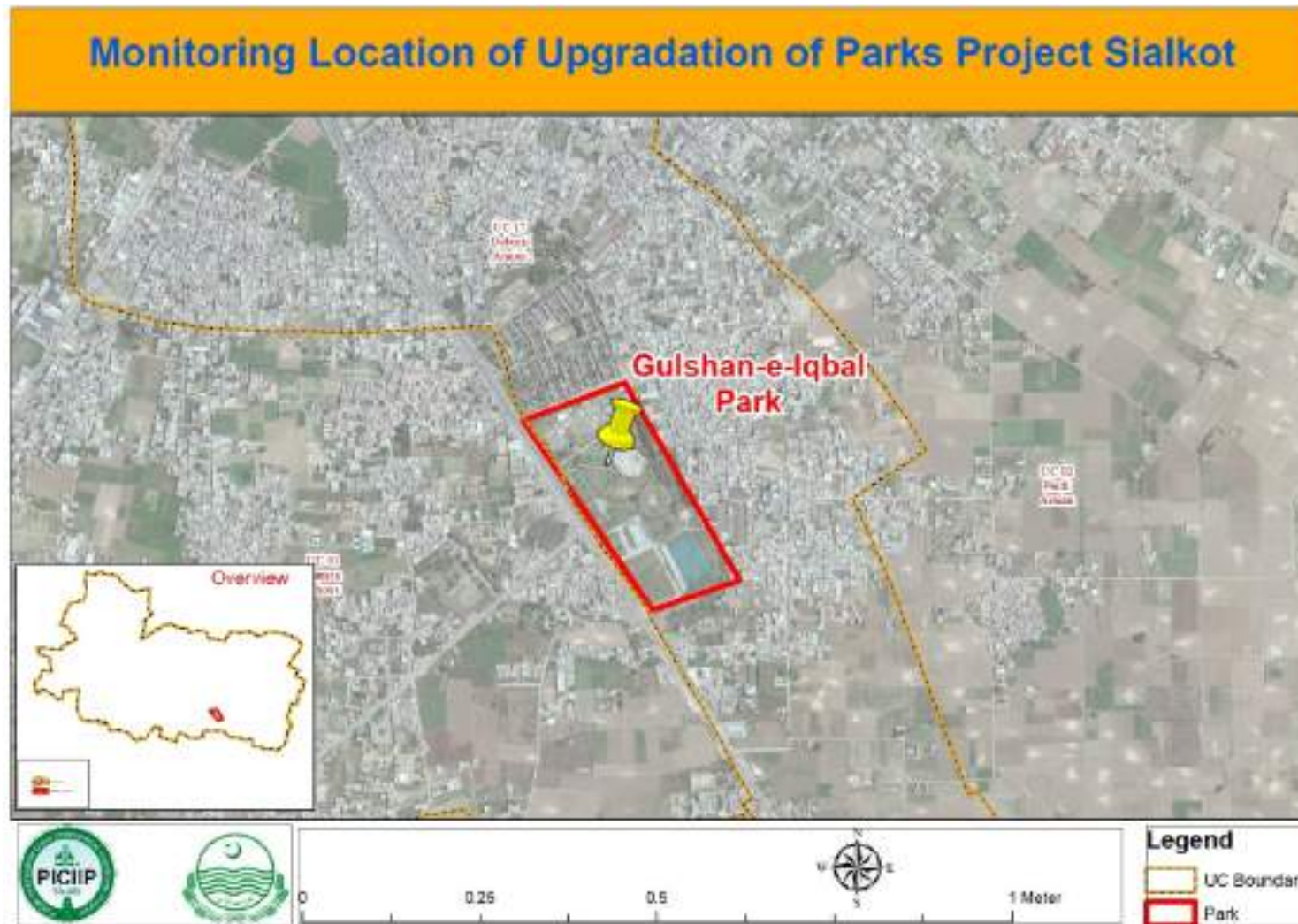


Table 4.3:
Ambient Air

Figure 2: Sialkot Parks Environmental Monitoring Location

Quality Monitoring Results (24 hrs) at PLGA

Monitoring Location	Parameter	NO (ug/m ³)	NO ₂ (ug/m ³)	CO (mg/m ³)	SO ₂ (ug/m ³)	PM _{2.5} (ug/m ³)	PM ₁₀ (ug/m ³)	TSP (ug/m ³)
PLGA	Average	12.2	33	1.4	20.5	27.8	117	-
Applicable Most Stringent Standard for 24 hours of IFC		-	80	-	20	25	50	500
PEQS for 24 hours		-	80	-	80	35	150	500

Source: ESPAK, May 2020.



Figure 3: PLGA Environmental Monitoring Location

4.1.2 NOISE

37. The noise monitoring was done at all 3 public parks in Sahiwal and at the public parks in Sialkot and at PLGA construction site at Lahore. There was no use of heavy machinery at site and no use of batching plant and generator at the work sites during the reporting period. Quarterly noise monitoring is also being performed at site, which reflects that noise levels being generated are within the permissible noise standards/guidelines. The ambient noise level monitoring reports from the laboratories are provided as **Appendices A to D**.
38. The results of the noise monitoring are provided in **Tables 4.4 to 4.6** below. As can be observed, the averaged noise levels for all the locations resulted in daytime noise within the applicable day time standard of 65 dB. In comparison, the nighttime noise limit is also not being exceeded with average nighttime noise levels. Only at the Sialkot Park, the nighttime noise level is exceeding the permissible limit because of very busy road and traffic noise outside the boundary wall of the park. However, additional efforts will still be made to try and bring this exceedance to within the applicable standard/guidelines

Table 4.4: Noise Monitoring Results at Sahiwal Parks

Monitoring Location	Parameter	Noise Reading Results	Noise Guideline (Commercial Area)	Compliance Status for Commercial Areas
Day Time Readings (0600 to 2200)			Day time	
Average of three locations in project area	dB(A) Leq	55.8	65	
Night Time Readings (2200 to 0600)			Night time	
Average of three locations in project area	dB(A) Leq	48.1	55	
Average Noise Levels (24 hour average)	dB(A) Leq	51.95		

Source: ASIAN, Feb 2020.

Table 4.5: Noise Monitoring Results at Sialkot Park

Monitoring Location	Parameter	Noise Reading Results	Noise Guideline (Commercial Area)	Compliance Status for Commercial Areas
Day Time Readings (0600 to 2200)			Day time	
Average of two locations in project area (Gulshan-e-Iqbal)	dB(A) Leq	63.05	65	
Nighttime Readings (2200 to 0600)			Nighttime	
Average of two locations in project area (Gulshan-e-Iqbal)	dB(A) Leq	60.1	55	
Average Noise Levels (24 hour average)	dB(A) Leq	61.57		

Source: ASIAN, Feb 2020.

Monitoring Location	Parameter	Noise Reading Results	Noise Guideline (Commercial Area)	Compliance Status for Commercial Areas
Day Time Readings (0600 to 2200)			Day time	
Average of four locations in project area	dB(A) Leq	52.25	65	
Nighttime Readings (2200 to 0600)			Nighttime	
Average of two locations in project area	dB(A) Leq	-	55	
Average Noise Levels	dB(A) Leq	52.25		

Table 4.6: Noise Monitoring Results at PLGA Lahore

Source: NESPAK, May 2020.

4.1.3 WATER QUALITY

39. It is the prime responsibility of the Contractor not to pollute the surface water due to construction activities. The Engineer also plans to ensure that no sewage/wastewater or any construction waste is disposed-off into the open

space, nearby water stream which may cause adverse impact on the water quality.

40. In the case of drinking water analysis, the water samples were taken from Fateh Sher Park, Farid Town Park and Chaman Zar Park in Sahiwal. The results indicate that the ground water samples were overall found to be in compliance with the PEQS. Water resources are not affected by the construction activities of the project. Quarterly drinking water and wastewater monitoring analysis conducted by Contactor. Sampling of the drinking water has been carried out at all sites at Sahiwal, Sialkot, and Lahore throughout the reporting period. All the sampled drinking water sources have been found meeting the PEQS limits. Report are attached as an Appendix. A to D.

4.2 Summary of Monitoring Outcomes

41. During the reporting period, environmental compliance remained satisfactory as major issues were not reported. However, in the case of the PLGA building, the disposal of excavated material was a challenge due to shortage of space. However, this was effectively managed through implementation of the following specific measures stated in the EMP:
42. At Sialkot and Shaiwal sites type of construction waste generated is excavated material and dismantled material. Excavated material is reused in backfilling while the dismantled material i.e paver, fence, electric poles and children playing swings are handed over to the Parks and Horticultural Authority (PHA) of respective cities for reuse. While at PLGA site construction waste generated is excavated material that is being reused in backfilling. The only waste from all these three sites that is transported to dumping site is domestic in nature that is generated from the camp site offices. This domestic waste is very minor in quantity that is collected by the Metropolitan Corporation Sahiwal in Shaiwal, Solid Waste Management Company (SWMC) Sialkot in Sialkot and Lahore Waste Management Company (LWMC) in Lahore and transported to their designated dumping site of receptive cities. Location maps of the respective dumping site and their distance are showed in Figure 4 to Figure 9.

4.3 Material Resources Utilization

43. Material resources utilization is necessary to meet the objectives of the project and to satisfy the client's requirements. During reporting period, the Contractor

faced financial problems which affected the project progress. The contractor's construction resources include:

- Materials
- Construction plant, tools and equipment
- Human Resources
- Space and facilities
- Subcontractor
- Finance

4.4 Waste Management

Sialkot parks

- Waste yard area (1100 Sqft) is built on park sites.
- Arrangements with Sialkot Waste Management Company/Municipal Corporation for safe disposal of domestic, construction and hazardous waste from work sites was made.
- Solid waste is being removed from park site waste yard at least once a week.
- Designated portable containers/waste bins for disposal of garbage at all work sites in the park were provided with all the waste being disposed off by SWMC Sialkot at their temporary dumping site situated at Sahowala road, near Sahowala Canal Sialkot, Location is provided in Figure 6.
- Waste material is disposed in waste yard in a safe condition, without blocking access for other users and people.
- Solid Waste burning at work and park site is prohibited.
- Training of labor on Solid waste management at site was conducted in second quarter.

Sahiwal Parks

44. All the solid waste generated in both the construction sites is being collected into waste bins. Regarding disposal of solid waste during the reporting period, rebar end cuttings and scrap cables were delivered to the scrap yard. Continuous housekeeping and waste segregation at all work sites increases the general and construction waste. Mesh wires, timber pieces, iron bars were collected by the

Contractor. All this solid waste is either sold to local vendors or delivered to the scrapyards.

PLGA Lahore

45. Contractor installed waste bins at office camp and kitchen mess area. The excavated material and all solid waste have been collected and disposed by LWMC at Lokhadair landfill site.

4.4.1 CURRENT PERIOD

Sialkot Parks

46. The solid waste produced at all project sites was being collected into waste bins. As already discussed, construction is at minor scale and there is no workshop area, steel yard, washing yard, workshop area and batching plant area at project site. So, no bulk waste produced from these sites. Anti-termite solution bottles produced during anti-termite activity at all three parks.

Sahiwal Parks

47. The solid waste produced at all project sites was being collected into waste bins. As already discussed, construction is at minor scale and there is no workshop area, steel yard, washing yard, workshop area and batching plant area at project site. So, no bulk waste produced from these sites. All the waste was collected at sites through waste bins which ultimately disposed-off at designated site of municipality of Sahiwal.

PLGA Lahore

48. The excavated material and all solid waste have been collected and disposed by LWMC at Lokhadair landfill site.

4.4.3 CUMULATIVE WASTE GENERATION

49. For all three project sites i.e. Sahiwal Parks, Sialkot Parks and PLGA Lahore, the Contractor was advised that organic waste should be disposed-off into waste pit. Construction waste should be removed immediately from site as it creates nuisance. It was observed during the report period that the waste generated from construction was discarded outside openly and not disposed in the designated place. It was ensured that the Contractor's housekeeping staff is mobilized for the removal of solid waste.

4.5 Health and Safety

4.5.1 COMMUNITY HEALTH AND SAFETY

Sialkot Parks

50. During reporting period Contractor took utmost care for community health and safety. No incidents related to the community health and safety have been occurred during the current reporting period. The following measures were taken to ensure the safety of community:

- The project site was cordoned off, especially the areas where machinery is involved were barricaded and constantly monitored to ensure that local residents, particularly children stay away from construction area. Also, no machinery was left unattended, particularly in running condition.
- Drivers were provided orientation on safe driving practices to minimize accidents and to prevent spill of hazardous substances and other construction materials during transport.

Sahiwal Parks

51. During reporting period Contractor took utmost care for community health and safety. Within this duration of the project no massive traffic activity has been initiated. Only material supply vehicles are being used at site for shifting of material. The project site was cordoned off, especially where machinery is involved, was barricaded and constantly monitored to ensure that local residents, particularly children stay away from construction area. No incidents related to the community health and safety have been occurred during the current reporting period.

PLGA Lahore

52. No incidents related to the community health and safety have been occurred during the current reporting period.

4.5.2 WORKER SAFETY AND HEALTH

Sialkot Parks

53. Proper Emergency Response & Awareness System Regular supervision and monitoring of demolition and construction phase is carried out in compliance with the Health and Safety requirements as per standard specifications outlined in EMP and in the Contract. No incidents related to the workers' health and safety have been occurred during the current reporting period.

Sahiwal Parks

54. First aid medical facility was provided by contractor for each project site. Construction activities have minor impacts on safety and health of workers. Prior to starting the project engineering and administrative control measures were taken by the contractor. For example, provision of Personal Protective Equipment (PPE) to the work force is considered the mandatory step in health and safety management system. No incidents related to the workers' health and safety have been occurred during the current reporting period.

PLGA Lahore

55. In order to comply the Environmental management plan (EMP) and HSE of project area contractor strictly complied with the health safety and environment rules and regulations. Basic first aid medical facility was provided by contractor for each project site. Layout plan for camp site, indicating safety measures taken by the contractor, e.g. firefighting equipment, safe storage of construction material, security, fencing, and contingency measures in case of accidents.

4.5.4 FIREFIGHTING ARRANGEMENTS

Sialkot Parks

56. Fire Extinguishers are inspected on regular basis and kept in good condition. "Smoking is prohibited" signs are displayed at project site. The Contractor has provided the fire extinguishers at site. Furthermore, the trainings and TBTs are delivered at site to the concerned workers how to use the fire extinguishers at the time of any fire hazards. Since the project started at site, no fire accident has occurred at site.

Sahiwal Parks

57. The fire extinguishers have been placed across the work sites with no major incident/accident or casualty reported.

PLGA, Lahore

58. The overall working environment in the project area is considered safe as no major incident/accident or casualty has been reported.

4.5.5 Use of PPEs

59. As per Health Safety and Environment (HSE) Plan, the Contractor is responsible for provision of full PPEs for the labour and staff deployed at work. For safe

execution of the work, the Contractor has deputed an HSE officer and for adequate supervision of the HSE issues at site. At all three subprojects i.e. Sahiwal Parks, Sialkot Parks and PLGA Lahore overall status of use of PPEs is satisfactory. The PPEs issued to worker are Dust Mask, Ear Plugs, Safety Gloves, Safety Boots, Safety Jacket, Safety Helmet and Safety Goggles.

4.5.6 SAFETY SIGNBOARDS

60. Safety sign posters are considered one of the tools of creating awareness among the workers. The Civil Contractor has arranged satisfactory work in this regard at all site of Sialkot Parks, Sahiwal Parks and PLGA Lahore.

4.6 Appropriate Staff Name and Contact Details

61. Details mentioned in **Table 1.1**.

4.6.1 INCIDENTS DURING THE REPORTING PERIOD

62. No such incident has taken place at Sahiwal parks, Sialkot Parks and PLGA Lahore

4.6.2 FATALITIES

63. The overall working environment at the project areas has been safe and no major incident/accident or casualty has been reported on any the sub projects till now.

4.6.3 CORRECTIVE ACTIONS

64. The Overall Health Safety & Environment (HSE) implementation was satisfactory due to continuous efforts by the supervisory staff at site as the Contractor was pressed hard to follow the HSE guidelines in true letter and spirit.

4.6.4 COMPENSATION AND INSURANCE BENEFITS

65. Not applicable for this SAEMR period.

4.7 HSE Training

66. The contractor conducted the HSE training for their workers and administrative staff. The trainer was well qualified and having broad knowledge of handling HSE issues during construction. The training was arranged by the Contractor for safety awareness regarding execution of works with the summary of trainings conducted provided as **Table 4.7** below. The laborers were encouraged to participate in this training and advised that safety should be ensured. HSE training was delivered on following topics:

- Use of PPEs
- Slip, Trip and fall Hazards
- Access Paths
- Safety of Scaffolding
- Oil Spillage
- Electrical Wires Hazards
- Noise Hazards
- Welding, Cutting and Grinding
- Excavations

Table 4.7: No. of Trainings

Sr. No	No. of HSE Onsite Trainings
Sialkot Parks	1
Sahiwal Parks	2
PLGA Lahore	55

67. The training events at Sahiwal and Sialkot Parks was delayed because of the COVID -19 situation and it will be resumed in the next quarter.

Note: Check List for HSE is at Appendix-E

4.8 Covid-19 preventive measures

68. The world has experienced a new potent challenge in the shape of Corona virus disease 2019 (COVID-2019). To intercept its local transmission Government of Punjab has issued Standard Operating Procedures for construction site. To ensure safety and prevention from covid-19 at worksite following measures are taken by HSE team at Sialkot Parks, Sahiwal Parks and PLGA Lahore and was been strictly monitored:

- Temperature checking before entering to site and anyone who has high temperature or a new persistent cough and difficulty in breathing are not allowed to enter the construction site.
- Disinfection of working place and equipment periodically through Chlorine spray tanks

- Maintaining worker minimum 1-meter distance during work or at mess and sanitization before entering or leaving site,
- Visitors / meetings in closed room are not allowed or cancelled and safety sign regarding Covid-19 displayed.
- Ensure use of Personal Protective Equipment's (PPE) on site without PPEs workers / staff is not allowed to enter the site.
- Awareness training of workers to control the spread of epidemic and safety on construction site.



Figure 4: Dumping Site Location Sahiwal



Figure 5: Distance of Dumping site from Parks Sahiwal



Figure 6: Dumping Site Location Sialkot

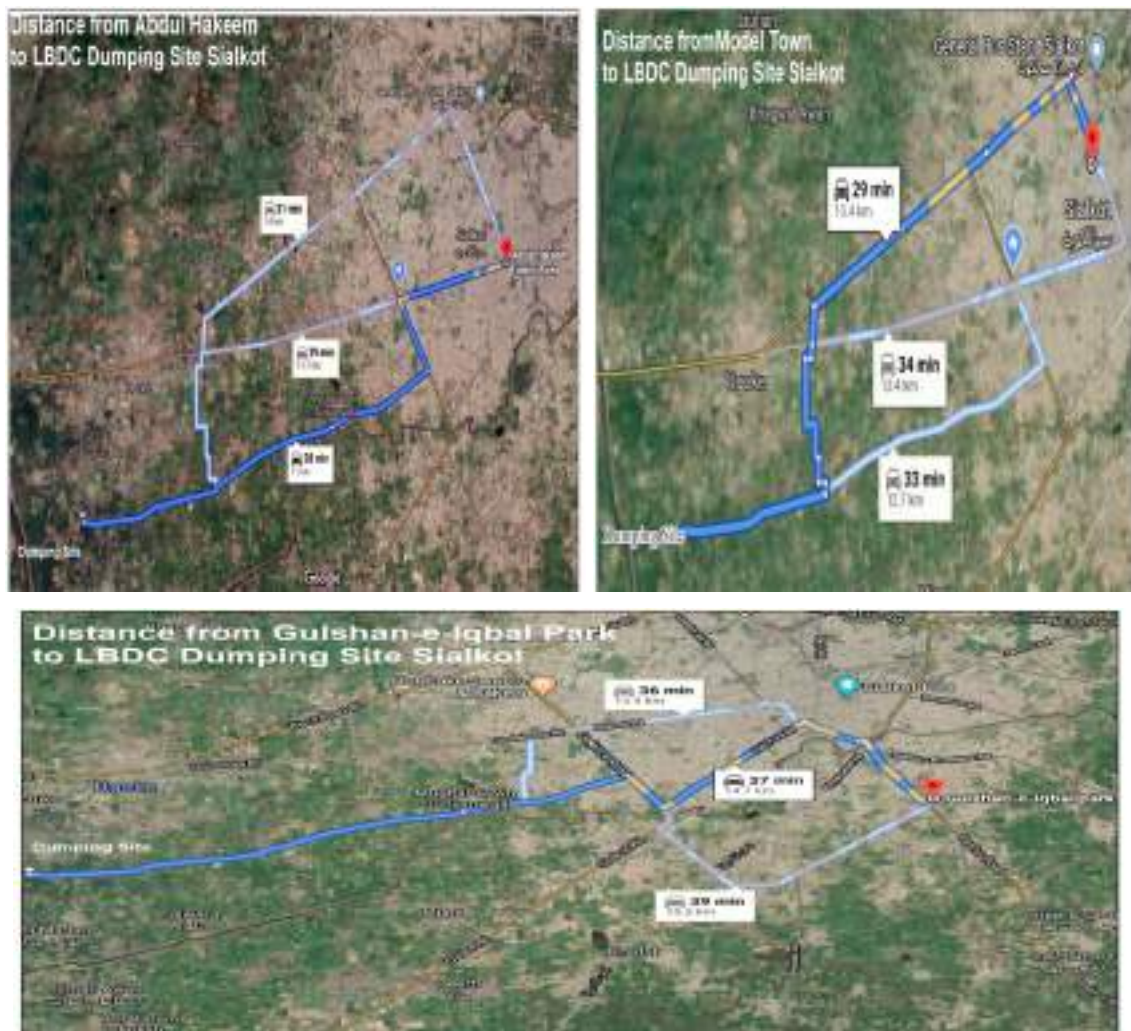


Figure 7: Distance of Dumping site from Parks Sialkot



Figure 8: Dumping Site Location Lahore

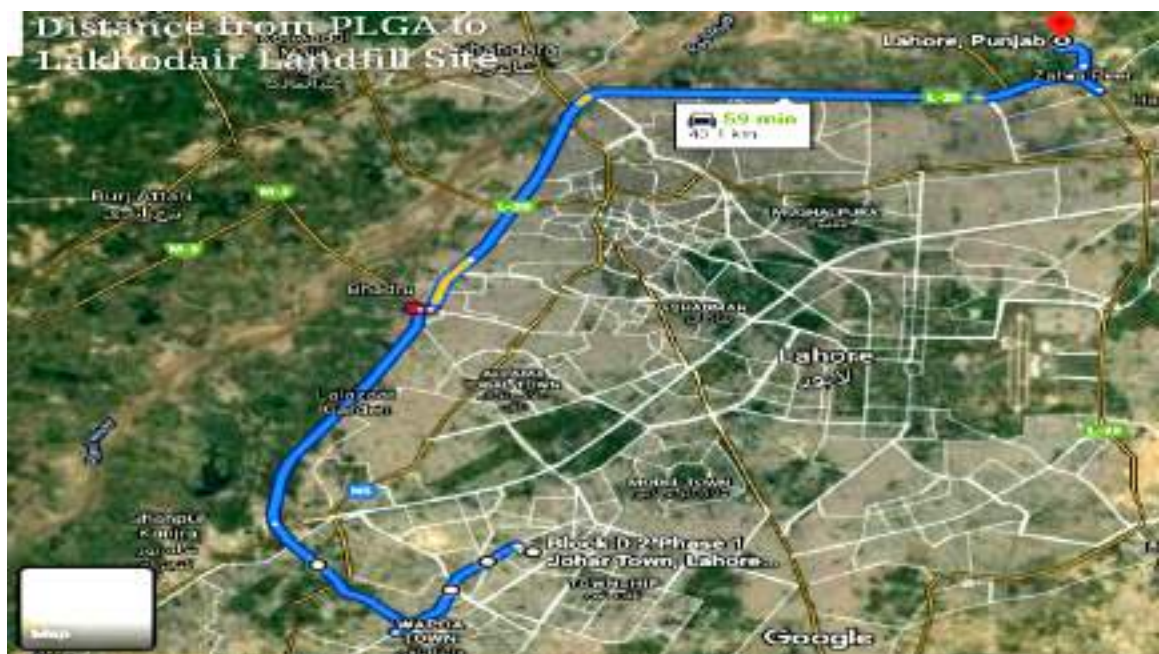


Figure 9: Distance of Dumping Site from PLGA Construction Site Location Lahore

5. FUNCTIONING OF THE SSEMP

5.1 SSEMP Review

69. The Environmental Screening and Categorization Forms (ESCF) were prepared for Upgradation of Existing Parks of Sahiwal and Sialkot cities which lie in **Category C** under ADB SPS 2009. So, the SSEMP was not prepared for these sub-projects.
70. The environmental safeguard screening and categorization was conducted for the construction of PLGA Lahore and the project was classified as **Category B**. The SSEMP was not prepared at that time and is presently under development.
71. So far, the generic EMP prepared as part of the IEE study has been used for implementation of the required mitigation measures and for conducting the required monitoring to ensure compliance with the national and ADB safeguard requirements.
72. As soon as the SSEMP has been submitted to ADB and its approval has been obtained, it shall be used for implementation of required mitigation measures and their monitoring.

6. GOOD PRACTICES AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practices

73. As there are no major environmental impacts on any of the parks of Sahiwal and Sialkot cities, the project falls under Category “C” in accordance with ADBs’ Safeguard Policy Statement, 2009. The project has very minimal environmental impacts for which suitable mitigation measure will be sufficient to counter the impacts. The good practices are mentioned as:

Sialkot Parks

- Noise and Vibrations are found within PEQS limits
- Air Quality has been monitored and within safe limits
- Drinking water Quality has been monitored and within safe limits
- Flora and Fauna are not unnecessarily damaged
- Health Safety standards are compliant
- Complaint register is in place of project site and No complaint/conflict observed
- A good liaison is established between CIU, Supervisory consultant and contractor to follow the environmental safeguard guidelines

Sahiwal Parks

- Establishment of Contractor’s camp is within the permissible standards and parameters
- Site Specific Environmental Management Plan is in place with true letter and spirit
- Sanitation and wastewater disposal at camp site has been monitored
- Job opportunities are preferably provided to the locals
- A good liaison is established between CIU, Supervisory consultant and contractor to follow the environmental safeguard guidelines
- All workers and machinery have been got insured by the contractor.

- Noise and Vibrations are found within PEQS limits
- Air Quality has been monitored and within safe limits

PLGA Lahore

- Contractor has taken very strict action to avoid the corona virus contract.
- Frequent water sprinkling was observed to avoid dust pollution.
- Disinfection of working place and equipment periodically through Chlorine spray tanks.

6.2 Opportunities for Improvement

74. Overall quality of work and environment is satisfactory at site. However, Improvement are required;

Sahiwal Parks

- All the concerned staff has been instructed to improve OHS performance levels including use of PPEs, implementation of working hours etc.
- Training sessions must be conducted more frequently
- Reporting period and quarterly environmental monitoring timeline should be followed strictly.

Sialkot Parks

- Reporting period and quarterly environmental monitoring timeline should be followed strictly.
- Material transportation should be in the night time to avoid traffic issues
- Entrance of public within project vicinity must be prohibited and more vigilance needed.

PLGA, Lahore

- Reporting period and quarterly environmental monitoring timeline should be followed strictly.
- The PIC should continue to provide both off and onsite HSE training to the Contractor's top/middle management, supervisory staff and workers for the capacity building and providing them necessary awareness on how to deal with HSE issues that arises on day to day basis.

- The trucks carrying construction material should be covered with trauplin sheet to avoid dust pollution.

7. SUMMARY AND RECOMMENDATIONS

7.1 Summary

Sialkot Parks

75. The overall Health Safety & Environment (HSE) implementation is satisfactory due to continuous efforts by the supervisory staff at site as the Contractor was pressed hard to follow the HSE guidelines in true letter and spirit. The CIU staff with Research Analyst Environment and the Supervisory Consultant visit construction sites on regular basis and provide the needed feedback to the supervisory staff at site. There is no major adverse impact on ground water quality due to minor construction activities.

Sahiwal Parks

76. The Third Party External Environmental Monitoring was carried out twice during the reporting period. All the parameters tested were found to be within PEQS limits. The overall working environment at the Project Area has been safe as no major incident/accident or casualty was reported.

PLGA Lahore

77. The Third Party External Environmental Monitoring was carried out once during the reporting period. All the parameters tested were found to be within PEQS limits. The impact of dust was reduced by regular water sprinkling. Uses of PPEs was satisfactory during construction. The CIU staff with Research Analyst Environment and the Supervisory Consultant visit construction sites on regular basis and provide the needed feedback to the supervisory staff at site.

7.2 Recommendations

78. The following recommendation should be applied to all the subprojects i.e. Sialkot Parks, Sahiwal Parks and PLGA, Lahore
- Contract clause regarding health safety and environment issues should be strictly followed.
 - Strict compliance of EMP at project site.
 - Use of PPEs during masonry work and working at height be enforced strictly.

- Presence of trained medical person and contractor's environmental officer should be ensuring during working hours.
- Stacking of construction materials at site should be according to EMP.

APPENDICES

Appendix A: Sahiwal Parks: Environmental Test Results 1st Quarterly Report

Water, Environment Laboratories & Consultancy Services (WELCOS)



Noise Monitoring Test Report

Reference No. WELCOS/2020/EN/218

Date: 1st February, 2020

Name of Industry/ Proponent: HCS-MASTIC JV
Address: 15 A Main Canal Road near doctors hospital
Johar town lahore
Nature of Monitoring: Noise
Monitoring date: 23rd January, 2020
Monitoring By: Mr. Hamam Yousaf
Completion Date of Monitoring: 24th January, 2020

Analysis Parameters

Location Point	Min. dB(A)	Max. dB(A)
Fareed Town Park	48.6	57.8
Punjab Environmental Quality Standards (PEQS) Day Time Commercial Area 65dB		

Remarks: Noise Level at all Monitoring Points is in compliance.

Terms and Conditions:

- Analysis was conducted on the request of proponent for his own PEQS compliance
- This report should be produced as a whole and not in parts.



Prepared By:



Reviewed By



Approved By

Report End



No: 07622



Water, Environment Laboratories & Consultancy Services (WELCOS)



Noise Monitoring Test Report

Reference No. WELCOS/2020/EN/218

Date: 1st February, 2020

Name of Industry/ Proponent: HCS-MASTIC JV
Address: 15 A Main Canal Road near doctors hospital
Johar town Lahore.
Nature of Monitoring: Noise
Monitoring date: 24th January, 2020
Monitoring By: Mr. Hannan Yousaf
Completion Date of Monitoring: 25th January, 2020

Analysis Parameters

Location Point	Min. dB(A)	Max. dB(A)
Fateeh Shahr Colony Park	49.4	56.4
Punjab Environmental Quality Standards (PEQS) Day Time Commercial Area 65dB		

Remarks: Noise Level at all Monitoring Points is in compliance.

Terms and Conditions:

- Analysis was conducted on the request of proponent for his own PEQS compliance.
- This report should be produced as a whole and not in parts.

Prepared By

Reviewed By

Approved By

Report End



No: 07623



Water, Environment Laboratories & Consultancy Services (WELCOS)



Noise Monitoring Test Report

Reference No. WELCOS/2020/EN/218

Date: 1st February, 2020

Name of Industry/ Proponent: HCS-MASTIC JV
Address: 15 A Main Canal Road near doctors Hospital
Johar town, Lahore
Nature of Monitoring: Noise
Monitoring date: 25th January, 2020
Monitoring By: Mr. Harman Yousaf
Completion Date of Monitoring: 26th January, 2020

Analysis Parameters

Location Point	Min. dB(A)	Max. dB(A)
Point No 3, Chaman Zar	46.3	53.2
Punjab Environmental Quality Standards (PEQS) Day Time Commercial Area 65dB		

Remarks: Noise Level at all Monitoring Points is in compliance.

Terms and Conditions:

- Analysis was conducted on the request of proponent for his own PEQS compliance.
- This report should be produced as a whole and not in parts.

Prepared By

Reviewed By

Approved By

Report End



No: 07621



Water, Environment Laboratories & Consultancy Services (WELCOS)



Ambient Air Quality Test Report

Reference No. WELCOS/2020/AA/218

Date: 1st, February, 2020

Name of Industry/ Client:	HCS-MASTIC IV
Address:	15-A Main Canal Road Near Doctors Hospital Johar Town, Lahore
Nature of Monitoring:	Ambient Air
Point	Farood Town Park
Analysis Date:	23 rd , January, 2020
Analysis Completion date	24 th , January, 2020

Analysis Parameters

S. No.	Parameters	PEQS Limits		Concentration	Remarks
		Time-weighted Average	Concentration in Ambient Air		
1	Sulphur Dioxide (SO ₂)	24 hours	120 µg/m ³	23.9 µg/m ³	Complies
2	Oxides Of Nitrogen as (NO)	24 hours	40 µg/m ³	7.4 µg/m ³	Complies
3	Oxides Of Nitrogen as (NO ₂)	24 hours	80 µg/m ³	1.1 µg/m ³	Complies
4	Ozone (O ₃)	1 Hour	130 µg/m ³	34 µg/m ³	Complies
5	Suspended Particulate Matter (SPM)	24 hours	500 µg/m ³	48 µg/m ³	Complies
6	Respirable Particulate Matter PM ₁₀	24 hours	150 µg/m ³	24 µg/m ³	Complies
7	Respirable Particulate Matter PM _{2.5}	24 hours	35 µg/m ³	21 µg/m ³	Complies
8	Carbon Monoxide (CO)	8 hours	5 mg/m ³	0.84 µg/m ³	Complies

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Report End

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Water, Environment Laboratories & Consultancy Services (WELCOS)



Ambient Air Quality Test Report

Reference No. WELCOS/2020/SE/218

Date: 1st, February, 2020

Name of Industry/ Client:	HCS-MASTIC JV
Address:	15 A Main Canal Road Near Doctors Hospital Jinnah Town, Lahore
Nature of Monitoring:	Ambient Air
Point:	Fateh Shair Colony Park
Analysis Date:	24 th , January, 2020
Analysis Completion date:	25 th , January, 2020

Analysis Parameters

S. No.	Parameters	PEQS Limits		Concentration	Remarks
		Time-weighted Average	Concentration in Ambient Air		
1	Sulphur Dioxide (SO ₂)	24 hours	120 µg/m ³	25.3 µg/m ³	Complies
2	Oxides Of Nitrogen-as (NO)	24 hours	40 µg/m ³	10.4 µg/m ³	Complies
3	Oxides Of Nitrogen-as (NO ₂)	24 hours	80 µg/m ³	2.1 µg/m ³	Complies
4	Ozone (O ₃)	1 Hour	130 µg/m ³	33 µg/m ³	Complies
5	Suspended Particulate Matter (SPM)	24 hours	500 µg/m ³	41 µg/m ³	Complies
6	Respirable Particulate Matter PM ₁₀	24 hours	130 µg/m ³	19 µg/m ³	Complies
7	Respirable Particulate Matter PM _{2.5}	24 hours	35 µg/m ³	17 µg/m ³	Complies
8	Carbon Monoxide (CO)	8 hours	5 mg/m ³	0.69	Complies

Terms and Conditions:

- Report cannot be used regarding compliance of any complaint, EPO or any other court case.
- This report should be reproduced as a whole and not in parts.
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Water, Environment Laboratories & Consultancy Services (WELCOS)



Ambient Air Quality Test Report

Reference No. WELCOS/2020/SE/218

Date: 1st, February, 2020

Name of Industry/ Client:	HCS-MASTIC JV
Address:	15 A Main Canal Road Near Doctors Hospital Johar Town, Lahore
Nature of Monitoring:	Ambient Air
Point:	Point No. 3, Chaman Zar
Analysis Date:	25 th , January, 2020
Analysis Completion date:	26 th , January, 2020

Analysis Parameters

S. No.	Parameters	PEQS Limits		Concentration	Remarks
		Time-weighted average	Concentration in Ambient Air		
1	Sulphur Dioxide (SO ₂)	24 hours	120 µg/m ³	20.3 µg/m ³	Complies
2	Oxides Of Nitrogen as (NO)	24 hours	40 µg/m ³	0.0 µg/m ³	Complies
3	Oxides Of Nitrogen as (NO ₂)	24 hours	80 µg/m ³	3.3 µg/m ³	Complies
4	Ozone (O ₃)	1 Hour	130 µg/m ³	31 µg/m ³	Complies
5	Suspended Particulate Matter (SPM)	24 hours	500 µg/m ³	38 µg/m ³	Complies
4	Respirable Particulate Matter PM ₁₀	24 hours	150 µg/m ³	19 µg/m ³	Complies
3	Respirable Particulate Matter PM _{2.5}	24 hours	35 µg/m ³	15 µg/m ³	Complies
6	Carbon Monoxide (CO)	8 hours	5 mg/m ³	0.76	Complies

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Water, Environment Laboratories & Consultancy Services (WELCOS)



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Test Report of Drinking Water Sample

Reference No. WELCOS/2020/19/718

Date: 1st, Feb. 2020

Client Name	HCS-MASTIC JV			
Address	15 A Main Canal Road Near Doctors Hospital Jinnah Town, Lahore			
Sample Identification	Fateh Shah Colony Park			
Sample Collected/Provided	WELCOS Representative			
Date of Sample Received	21 st , Jan. 2020	Date of starting of Analysis	23 rd , Jan. 2020	
Date of Completion of Analysis	30 th , Jan. 2020	Grab/Composite	Grab	
Environmental Conditions of lab	Temperature	23-26 °C	Humidity	41.47% RH

Analysis Parameters

Sr.#	Parameters	Units	PEQS	Result	Test Method Used	Remarks
1.	pH	-	6.5-8.5	6.68	APHA 4500H ⁺ B	Complies
2.	Total Dissolved Solids (TDS)	mg/l	< 1000	730	APHA 2140 C	Complies
3.	Bicarbonate	mg/l	NGVS	231	APHA 2320 B	Complies
4.	Conductivity	µS/cm	NGVS	1238	APHA 2510 B	Complies
5.	Chloride	mg/l	< 250	119.6	APHA 4500 Cl-B	Complies
6.	Hardness	mg/l	< 500	210	APHA 2340 C	Complies
7.	Calcium	mg/l	200	56	APHA 3500 Ca-B	Complies
8.	Magnesium	mg/l	130	16.8	APHA 3500 Mg-B	Complies
9.	Turbidity	NTU	< 5 NTU	0.17	APHA 2130 B	Complies
10.	Fluoride	mg/l	≤ 1.5	0.69	APHA 4500 F-D	Complies
11.	Iron	mg/l	0.3	0.07	APHA 3500 Fe-B	Complies
12.	Sodium	mg/l	NGVS	184	APHA 4500 Na-B	Complies
13.	Nitrate (NO ₃)	mg/l	50	0.287	APHA 4500 NO ₃ -B	Complies
14.	Nitrite (NO ₂)	mg/l	≤ 3	0.0091	APHA 4500 NO ₂ -B	Complies
15.	Cyanide (CN)	mg/l	≤ 0.05	BDL	APHA-4500-CN B & E	Complies
16.	Cadmium	mg/l	0.01	BDL	APHA-3113 B	Complies
17.	Manganese	mg/l	≤ 0.3	BDL	APHA-3113 B	Complies
18.	Zinc	mg/l	5	BDL	APHA 3113 B	Complies
19.	Arsenic	mg/l	≤ 0.05	0.002	APHA 3114 B	Complies

Page 1 of 2

No: 07141



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Sr.#	Parameters	Units	PEQS	Result	Test Method Used	Remarks
20.	Copper	mg/l	2	BDL	APHA 3113-B	Complies
21.	Lead	mg/l	≤ 0.05	BDL	APHA 3113-B	Complies
22.	Nickel	mg/l	≤ 0.02	BDL	APHA 3113-B	Complies
23.	Chromium	mg/l	≤ 0.05	BDL	APHA 3113-B	Complies
24.	Sulphate (SO ₄ ²⁻)	mg/l	N.S	176	APHA-4500 SO ₄ ²⁻ E	Complies
25.	Mercury	mg/l	≤ 0.001	BDL	APHA 3112-B	Complies
26.	Selenium	mg/l	0.01	BDL	APHA 3114-B	Complies
27.	Barium	mg/l	0.7	BDL	APHA 3113-B	Complies
28.	Boron	mg/l	0.1	BDL	APHA 3113-B	Complies
29.	Residual Chlorine	mg/l	0.5	BDL	APHA 4500 Cl ₂ B & G	Complies
30.	Total Coliform	CFU	0	0	APHA 9222-B	Complies
31.	Focal Coliform	CFU	0	0	APHA 9222-D	Complies
32.	E.Coli	CFU	0	0	APHA 9222-D	Complies

Abbreviations:

WHO - World Health Organization BDL - Below Detectable Limit APHA - American Public Health Association
TNTC - Too Numerous to Count CFU - Colony Forming Unit NTU - Nephelometric Turbidity Unit

Terms and Conditions:

- Analysis was conducted on the request of proponent for his own PEQS-compliance.
- This report should be produced as a whole and not in parts.
- Grab Sampling is performed from the waste water line before discharge after washing processing unit of industry.
- The sample is retained for 15 days after the issuance date of report from the laboratory.


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Test Report of Drinking Water Sample

Reference No. WELCOS/2020/DW/218

Date: 17, February, 2020

Client Name	HCS-MASTIC JV			
Address	15 A Main Canal Road Near Doctors Hospital Johar Town, Lahore			
Sample Identification	Farid Town Park			
Sample Collected/Provided	WELCOS Representative			
Date of Sample Received	23 rd , Jan, 2020	Date of starting of Analysis	23 rd , Jan, 2020	
Date of Completion of Analysis	30 th , Jan, 2020	Grab/Composite	Grab	
Environmental Conditions of lab	Temperature	23-26 °C	Humidity	41-47% RH

Analysis Parameters

Sl.#	Parameters	Units	PEQS	Result	Test Method Used	Remarks
1.	pH	-	6.5-8.5	6.80	APHA 4500H ⁺ B	Complies
2.	Total Dissolved Solids (TDS)	mg/l	< 1000	150	APHA 2140 C	Complies
3.	Bicarbonate	mg/l	NGVS	175	APHA 2320 B	Complies
4.	Conductivity	µS/cm	NGVS	283	APHA 2510 B	Complies
5.	Chloride	mg/l	< 250	18.9	APHA 4500 Cl-B	Complies
6.	Hardness	mg/l	< 500	102	APHA 2340 C	Complies
7.	Calcium	mg/l	200	65	APHA 3500 Ca-B	Complies
8.	Magnesium	mg/l	150	2.88	APHA 3300 Mg B	Complies
9.	Turbidity	NTU	<5 NTU	0.17	APHA 2130 B	Complies
10.	Fluoride	mg/l	≤ 1.5	0.27	APHA 4500 F D	Complies
11.	Iron	mg/l	0.3	BDL	APHA 3500 Fe-B	Complies
12.	Sodium	mg/l	NGVS	24	APHA 4500 Na-B	Complies
13.	Nitrate (NO ₃)	mg/l	≤50	0.148	APHA 4500 NO ₃ -B	Complies
14.	Nitrite (NO ₂)	mg/l	≤ 3	0.0097	APHA 4500 NO ₂ B	Complies
15.	Cyanide (CN)	mg/l	≤ 0.05	BDL	APHA-4500-CN B & E	Complies
16.	Cadmium	mg/l	0.01	BDL	APHA-3113 B	Complies
17.	Manganese	mg/l	<0.5	BDL	APHA-3113 B	Complies
18.	Zinc	mg/l	5	BDL	APHA 3113 B	Complies

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Sr.#	Parameters	Units	PEQS	Result	Test Method Used	EPA CERTIFIED Remarks
18	Arsenic	mg/l	≤ 0.05	0.003	APHA 3114-B	Complies
20	Copper	mg/l	2	BDL	APHA 3113-B	Complies
21	Lead	mg/l	≤ 0.05	BDL	APHA 3113-B	Complies
22	Nickel	mg/l	≤ 0.02	BDL	APHA 3113-B	Complies
23	Chromium	mg/l	≤ 0.05	BDL	APHA 3113-B	Complies
24	Sulphate (SO ₄ ²⁻)	mg/l	N/S	7	APHA-4500 SO ₄ ²⁻ E	Complies
25	Mercury	mg/l	≤ 0.001	BDL	APHA 3112-B	Complies
26	Selenium	mg/l	0.01	BDL	APHA 3114-B	Complies
27	Barium	mg/l	0.7	BDL	APHA 3113-B	Complies
28	Boron	mg/l	0.3	BDL	APHA 3113-B	Complies
29	Residual Chlorine	mg/l	0.5	BDL	APHA 4500 CT B & G	Complies
30	Total Coliform	CFU	0	0	APHA 9222-B	Complies
31	Fecal Coliform	CFU	0	0	APHA 9222-D	Complies
32	E.Coli	CFU	0	0	APHA 9222-D	Complies

Abbreviations:

WHO: World Health Organization BDL: Below Detectable Limit APHA: American Public Health Association
TNTC: Too Numerous to Count CFU: Colony Forming Unit NTU: Nephelometric Turbidity Unit

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- Grab Sampling is performed from the waste water line before discharge after washing processing unit of industry.
- The sample is retained for 15 days after the issuance date of report from the laboratory.



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Water, Environment Laboratories & Consultancy Services (WELCOS)



Test Report of Drinking Water Sample

Reference No. WELCOS/2020/DW/218

Date: 1st, Feb. 2020

Client Name	HCS-MASTIC IV			
Address	13 A Main Canal Road Near Doctors Hospital Johar Town, Lahore			
Sample Identification	Chaman Zar Park			
Sample Collected/Provided	WELCOS Representative			
Date of Sample Received	21 st , Jan. 2020	Date of starting of Analysis	23 rd , Jan. 2020	
Date of Completion of Analysis	30 th , Jan. 2020	Grab/Composite	Grab	
Environmental Conditions of lab	Temperature	23-26 °C	Humidity	43-47% RH

Analysis Parameters

Sr. #	Parameters	Units	FLQS	Result	Test Method Used	Remarks
1	pH	-	6.5-8.5	6.79	APHA 4500H B	Complies
2	Total Dissolved Solids (TDS)	mg/l	< 1000	479.9	APHA 2140 C	Complies
3	Bicarbonate	mg/l	NGVS	288	APHA 2320 B	Complies
4	Conductivity	µS/cm	NGVS	826	APHA 2510 B	Complies
5	Chloride	mg/l	< 250	40.2	APHA 4500 Cl-B	Complies
6	Hardness	mg/l	< 500	144	APHA 2340 C	Complies
7	Calcium	mg/l	200	46.4	APHA 3500 Ca-B	Complies
8	Magnesium	mg/l	150	6.72	APHA 3500 Mg B	Complies
9	Turbidity	NTU	<5 NTU	0.32	APHA 2130 B	Complies
10	Fluoride	mg/l	< 1.5	0.23	APHA 4500 F D	Complies
11	Iron	mg/l	0.3	0.13	APHA 3500 FeB	Complies
12	Sodium	mg/l	NGVS	140	APHA 4500 Na-B	Complies
13	Nitrate (NO ₃)	mg/l	≤50	0.062	APHA 4500 NO ₃ -B	Complies
14	Nitrite (NO ₂)	mg/l	≤3	0.0093	APHA 4500 NO ₂ -B	Complies
15	Cyanide (CN)	mg/l	≤ 0.05	BDL	APHA-4500-CN B & E	Complies
16	Cadmium	mg/l	0.01	BDL	APHA-3113 B	Complies
17	Manganese	mg/l	≤0.5	BDL	APHA-3113 B	Complies
18	Zinc	mg/l	5	BDL	APHA 3113 B	Complies

Page 1 of 2



No: 07143



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Sr. #	Parameters	Units	PEQS	Result	Test Method Used	Remarks
19	Arsenic	mg/l	≤ 0.05	0.003	APHA 3114-B	Complies
20	Copper	mg/l	2	BDL	APHA 3113-B	Complies
21	Lead	mg/l	≤ 0.05	BDL	APHA 3113-B	Complies
22	Nickel	mg/l	≤ 0.02	BDL	APHA 3113-B	Complies
23	Chromium	mg/l	≤ 0.05	BDL	APHA 3113-B	Complies
24	Sulphate (SO ₄ ²⁻)	mg/l	N.S	68	APHA-4500 SO ₄ ²⁻ E	Complies
25	Mercury	mg/l	≤ 0.001	BDL	APHA 3112-B	Complies
26	Selenium	mg/l	0.01	BDL	APHA 3114-B	Complies
27	Barium	mg/l	0.7	BDL	APHA 3113-B	Complies
28	Boron	mg/l	0.3	BDL	APHA 3113-B	Complies
29	Residual Chlorine	mg/l	0.5	BDL	APHA 4500 Cl ₂ B & G	Complies
30	Total Coliform	CFU	0	0	APHA 9222-B	Complies
31	Fecal Coliform	CFU	0	0	APHA 9222-D	Complies
32	E.Coli	CFU	0	0	APHA 9222-D	Complies

Abbreviations:

WHO: World Health Organization BDL: Below Detectable Limit APHA: American Public Health Association
FNTC: Too Numerous to Count CFU: Colony Forming Unit NTU: Nephelometric Turbidity Unit

Terms and Conditions:

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**Appendix B: Sahiwal Parks: ENVIRONMENTAL TEST RESULTS 2ND
QUARTERLY Report**

DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25 °C & 55 %
Sample ID	AES-DW-72/2020	Sampling Location	Farid Town Park
Client Detail	M/S HCS-MASTIC-JV		

Drinking Water Analysis Results				
Parameters	Analysis Method	PEQS	Result	Remarks
Lab Analysis				
Color	APHA 2120 C	≤ 15 TCU	0.0	Optimal
Taste	APHA 2160 C	Non- Objectionable	Non- Objectionable	Optimal
Odor	APHA 2150 B	Non- Objectionable	Non- Objectionable	Optimal
Turbidity	APHA 2130 B	< 5 NTU	0.0	Optimal
Total Hardness (as CaCO ₃)	APHA 2340 C	< 500 mg/L	180	Optimal
Total Dissolved Solids (TDS)	APHA 2540 C	< 1000 mg/L	163	Optimal
pH	APHA 4500 H ⁺ B	6.5- 8.5	7.68	Optimal
Aluminum (Al)	APHA 3113 B	≤ 0.2 mg/L	<0.001	Optimal
Antimony (Sb)	APHA 3113 B	≤ 0.005 mg/L	<0.005	Optimal
Arsenic (As)	APHA 3114 B	≤ 0.05 mg/L	0.005	Optimal
Barium (Ba)	APHA 3113 B	0.7 mg/L	0.1	Optimal
Boron (B)	APHA 3113 B	0.3 mg/L	0.26	Optimal
Cadmium (Cd)	APHA 3113 B	0.01 mg/L	<0.006	Optimal
Chloride (Cl ⁻)	APHA 4500 Cl ⁻ B	< 250 mg/L	42.4	Optimal
Chromium (Cr)	APHA 3113 B	≤ 0.05 mg/L	<0.004	Optimal
Copper (Cu)	APHA 3111 B	2.0 mg/L	0.0165	Optimal
Cyanide (CN ⁻)	APHA 4500 CN ⁻ F	≤ 0.05 mg/L	0.0	Optimal
Fluoride (F ⁻)	APHA 4500 F ⁻ C	≤ 1.5 mg/L	0.0	Optimal
Lead (Pb)	APHA 3113 B	≤ 0.05 mg/L	<0.005	Optimal
Manganese (Mn)	APHA 3113 B	≤ 0.5 mg/L	<0.015	Optimal
Mercury (Hg)	APHA 3114 B	≤ 0.001 mg/L	<0.001	Optimal
Nickel (Ni)	APHA 3113 B	≤ 0.02 mg/L	<0.02	Optimal
Nitrate (NO ₃ ⁻)	APHA 4500 NO ₃ ⁻ B	≤ 50 mg/L	0.0	Optimal
Nitrite (NO ₂ ⁻)	APHA 4500 NO ₂ ⁻ B	≤ 3.0 mg/L	0.0	Optimal
Selenium (Se)	APHA 3114 B	0.01 mg/L	0.0	Optimal
Residual Chlorine	APHA 4500 Cl ⁻ B	0.5 – 1.5 mg/L	0.0	Optimal
Phenolic Compounds (as Phenols)	APHA 5530 D	NGVS	0.0	Optimal



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DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25 °C & 55 %
Sample ID	AES-DW-72/2020	Sampling Location	Farid Town Park
Client Detail	M/S HCS-MASTIC-JV		

Zinc (Zn)	APHA 3113 B	5.0 mg/L	0.47	Optimal
Microbiological Analysis				
Total Coliforms	APHA 9222 B	0/ 100 mL CFU	0	Optimal
Fecal Coliform	APHA 9222 D	0/ 100 mL CFU	0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards
 TCU = True Color Unit
 NTU = Nephelometric Turbidity Unit

APHA = American Public Health Association
 NGVS = No Guideline Value Set

BDL = Below Detection Limit
 CFU = Colony forming Unit

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The remaining portion of the sample (s) will be disposed off after 15 days after the issuance date of report from the laboratory unless otherwise instructed (Condition Apply)

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 Fax: +92 42 35450916



DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25 °C & 55 %
Sample ID	AES-DW-73/2020	Sampling Location	Fatch Sher Park
Client Detail	M/S HCS-MASTIC-JV		

Drinking Water Analysis Results				
Parameters	Analysis Method	PEQS	Result	Remarks
Lab Analysis				
Color	APHA 2120 C	≤ 15 TCU	0.0	Optimal
Taste	APHA 2160 C	Non- Objectionable	Non- Objectionable	Optimal
Odor	APHA 2150 B	Non- Objectionable	Non- Objectionable	Optimal
Turbidity	APHA 2130 B	< 5 NTU	0.0	Optimal
Total Hardness (as CaCO ₃)	APHA 2340 C	< 500 mg/L	192	Optimal
Total Dissolved Solids (TDS)	APHA 2540 C	< 1000 mg/L	368	Optimal
pH	APHA 4500 H ⁺ B	6.5- 8.5	7.98	Optimal
Aluminum (Al)	APHA 3113 B	≤ 0.2 mg/L	<0.001	Optimal
Antimony (Sb)	APHA 3113 B	≤ 0.005 mg/L	<0.004	Optimal
Arsenic (As)	APHA 3114 B	≤ 0.05 mg/L	0.01	Optimal
Barium (Ba)	APHA 3113 B	0.7 mg/L	0.06	Optimal
Boron (B)	APHA 3113 B	0.3 mg/L	<0.02	Optimal
Cadmium (Cd)	APHA 3113 B	0.01 mg/L	<0.006	Optimal
Chloride (Cl ⁻)	APHA 4500 Cl ⁻ B	< 250 mg/L	39.9	Optimal
Chromium (Cr)	APHA 3113 B	≤ 0.05 mg/L	<0.004	Optimal
Copper (Cu)	APHA 3111 B	2.0 mg/L	0.164	Optimal
Cyanide (CN ⁻)	APHA 4500 CN ⁻ F	≤ 0.05 mg/L	0.0	Optimal
Fluoride (F ⁻)	APHA 4500 F ⁻ C	≤ 1.5 mg/L	0.0	Optimal
Lead (Pb)	APHA 3113 B	≤ 0.05 mg/L	0.004	Optimal
Manganese (Mn)	APHA 3113 B	≤ 0.5 mg/L	0.015	Optimal
Mercury (Hg)	APHA 3114 B	≤ 0.001 mg/L	<0.001	Optimal
Nickel (Ni)	APHA 3113 B	≤ 0.02 mg/L	<0.02	Optimal
Nitrate (NO ₃ ⁻)	APHA 4500 NO ₃ ⁻ B	≤ 50 mg/L	0.0	Optimal
Nitrite (NO ₂ ⁻)	APHA 4500 NO ₂ ⁻ B	≤ 3.0 mg/L	0.0	Optimal
Selenium (Se)	APHA 3114 B	0.01 mg/L	0.0	Optimal
Residual Chlorine	APHA 4500 Cl ⁻ B	0.5 – 1.5 mg/L	0.0	Optimal

Head Office:

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DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25 °C & 55 %
Sample ID	AES-DW-73/2020	Sampling Location	Faich Sher Park
Client Detail	M/S HCS-MASTIC-JV		

Phenolic Compounds (as Phenols)	APHA 5530 D	NGVS	0.0	Optimal
Zinc (Zn)	APHA 3113 B	5.0 mg/L	0.05	Optimal
Microbiological Analysis				
Total Coliforms	APHA 9222 B	0/ 100 mL CFU	0	Optimal
Fecal Coliform	APHA 9222 D	0/ 100 mL CFU	0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards
 TCU = True Color Unit
 NTU = Nephelometric Turbidity Unit

APHA = American Public Health Association
 NGVS = No Guideline Value Set

BDL = Below Detection Limit
 CFU = Colony forming Unit

Report Disclaimer

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DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25 °C & 55 %
Sample ID	AES-DW-74/2020	Sampling Location	Chamanzar Park
Client Detail	M/S HCS-MASTIC-JV		

Zinc (Zn)	APHA 3113 B	5.0 mg/L	0.051	Optimal
Microbiological Analysis				
Total Coliforms	APHA 9222 B	0/ 100 mL CFU	0	Optimal
Fecal Coliform	APHA 9222 D	0/ 100 mL CFU	0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards
TCU = True Color Unit
NTU = Nephelometric Turbidity Unit


APHA = American Public Health Association
NGVS = No Guideline Value Set

BDL = Below Detection Limit
CFU = Colony forming Unit

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WASTEWATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Wastewater	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25°C & 55%
Sample ID	AES-WW-60/2020	Sampling Location	Farid Town Park
Client Detail	M/S HCS-MASTIC-JV		

Wastewater Analysis Results

Parameter	Analysis Method	PEQS	Result	Remarks
Lab Analysis				
pH	APHA 4500 H ⁺ B	6 - 9	7.84	Optimal
Biochemical Oxygen Demand (BOD ₅)	APHA 5210-B	80 mg/L	48	Optimal
Chemical Oxygen Demand (COD)	APHA 5220 B	150 mg/L	118	Optimal
Total Suspended Solids (TSS)	APHA 2540 D	200 mg/L	12	Optimal
Total Dissolved Solids (TDS)	APHA 2540 C	3500 mg/L	238	Optimal
Phenolic Compounds (as Phenols)	APHA 5530 D	0.1 mg/L	0.0	Optimal
Grease and Oil	USEPA 1664 B	10 mg/L	0.0	Optimal
Chloride (Cl ⁻)	APHA 4500 Cl ⁻ B	1000 mg/L	10.9	Optimal
Fluoride (F ⁻)	APHA 4500 F ⁻ C	10 mg/L	0.0	Optimal
Cyanide (CN ⁻)	APHA 4500 CN ⁻ F	1.0 mg/L	0.0	Optimal
An-ionic Detergents (as MBAs)	APHA 5540-C	20.0 mg/L		Optimal
Sulfate (SO ₄ ²⁻)	APHA 4500 SO ₄ ²⁻ C	600 mg/L	14	Optimal
Sulfide (S ²⁻)	APHA 4500 S ²⁻ F	1.0 mg/L	0.0	Optimal
Ammonia (NH ₃)	APHA 4500-NH ₃ D	40 mg/L	0.0	Optimal
Cadmium (Cd)	APHA 3113 B	0.1 mg/L	0.006	Optimal
Chromium (Cr)	APHA 3113 B	1.0 mg/L	0.116	Optimal
Copper (Cu)	APHA 3113 B	1.0 mg/L	0.165	Optimal
Lead (Pb)	APHA 3113 B	0.5 mg/L	0.005	Optimal
Mercury (Hg)	APHA 3112 B	0.01 mg/L	0.001	Optimal
Selenium (Se)	APHA 3114 B	0.5 mg/L	<0.01	Optimal
Nickel (Ni)	APHA 3113 B	1.0 mg/L	0.014	Optimal
Silver (Ag)	APHA 3113 B	1.0 mg/L	0.080	Optimal
Total Toxic Metals	Calculated Value	2.0 mg/L	0.735	Optimal
Zinc (Zn)	APHA 3111 B	5.0 mg/L	0.124	Optimal
Arsenic (As)	APHA 3114 B	1.0 mg/L	0.08	Optimal

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WASTEWATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Wastewater	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25°C & 55%
Sample ID	AES-WW-60/2020	Sampling Location	Farid Town Park
Client Detail	M/S HCS-MASTIC-JV		

Barium (Ba)	APHA 3113 B	1.5 mg/L	0.136	Optimal
Iron (Fe)	APHA 3113 B	8.0 mg/L	2.49	Optimal
Manganese (Mn)	APHA 3111 B	1.5 mg/L	0.019	Optimal
Boron (B)	APHA 3113 B	6.0 mg/L	0.122	Optimal
Residual Chlorine (Cl ₂)	APHA 4500 Cl- B	1.0 mg/L	0.0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards

USEPA = United States Environment Protection Agency

APHA = American Public Health Association

BDL = Below Detection Limit

Report Disclaimer

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WASTEWATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-14C/2020	Reporting Date	29-06-2020
Nature of Sample	Wastewater	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25°C & 55%
Sample ID	AES-WW-61/2020	Sampling Location	Fateh Sher park
Client Detail	M/S HCS-MASTIC-TV		

Arsenic (As)	APHA 3114 B	1.0 mg/L	0.07	Optimal
Barium (Ba)	APHA 3113 B	1.5 mg/L	0.132	Optimal
Iron (Fe)	APHA 3113 B	8.0 mg/L	2.1	Optimal
Manganese (Mn)	APHA 3111 B	1.5 mg/L	0.018	Optimal
Boron (B)	APHA 3113 B	6.0 mg/L	0.113	Optimal
Residual Chlorine (Cl ₂)	APHA 4500 Cl- B	1.0 mg/L	0.0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards

APHA = American Public Health Association

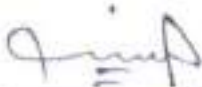
BDL = Below Detection Limit

USEPA = United States Environment Protection Agency

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WASTEWATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-093-HC/2020	Reporting Date	29-06-2020
Nature of Sample	Wastewater	Grab/Composite	Grab
Date of Sample Collection	23-06-2020	Date of Sample Receipt	23-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25°C & 55%
Sample ID	AES-WW-62/2020	Sampling Location	Chamanzar Park
Client Detail	M/S HCS-MASTIC-JV		

Wastewater Analysis Results

Parameter	Analysis Method	PEQS	Result	Remarks
Lab Analysis				
pH	APHA 4500 H ⁺ B	6 - 9	7.78	Optimal
Biochemical Oxygen Demand (BOD ₅)	APHA 5210-B	80 mg/L	52	Optimal
Chemical Oxygen Demand (COD)	APHA 5220 B	150 mg/L	123	Optimal
Total Suspended Solids (TSS)	APHA 2540 D	200 mg/L	11	Optimal
Total Dissolved Solids (TDS)	APHA 2540 C	3500 mg/L	248	Optimal
Phenolic Compounds (as Phenols)	APHA 5530 D	0.1 mg/L	0.0	Optimal
Grease and Oil	USEPA 1664 B	10 mg/L	0.0	Optimal
Chloride (Cl ⁻)	APHA 4500 Cl ⁻ B	1000 mg/L	9.9	Optimal
Fluoride (F ⁻)	APHA 4500 F ⁻ C	10 mg/L	0.0	Optimal
Cyanide (CN ⁻)	APHA 4500 CN ⁻ F	1.0 mg/L	0.0	Optimal
An-ionic Detergents (as MBAs)	APHA 5540-C	20.0 mg/L	0.0	Optimal
Sulfate (SO ₄ ²⁻)	APHA 4500 SO ₄ ²⁻ C	600 mg/L	16.6	Optimal
Sulfide (S ²⁻)	APHA 4500 S ²⁻ F	1.0 mg/L	0.0	Optimal
Ammonia (NH ₃)	APHA 4500-NH ₃ D	40 mg/L	0.0	Optimal
Cadmium (Cd)	APHA 3113 B	0.1 mg/L	0.007	Optimal
Chromium (Cr)	APHA 3113 B	1.0 mg/L	0.10	Optimal
Copper (Cu)	APHA 3113 B	1.0 mg/L	<0.164	Optimal
Lead (Pb)	APHA 3113 B	0.5 mg/L	0.005	Optimal
Mercury (Hg)	APHA 3112 B	0.01 mg/L	<0.001	Optimal
Selenium (Se)	APHA 3114 B	0.5 mg/L	0.01	Optimal
Nickel (Ni)	APHA 3113 B	1.0 mg/L	0.053	Optimal
Silver (Ag)	APHA 3113 B	1.0 mg/L	0.078	Optimal
Total Toxic Metals	Calculated Value	2.0 mg/L	0.7	Optimal
Zinc (Zn)	APHA 3111 B	5.0 mg/L	0.011	Optimal
Arsenic (As)	APHA 3114 B	1.0 mg/L	0.06	Optimal

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Appendix C: Sialkot Parks-Environmental Test Results 1st Quarterly Report

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program



Ambient Air Monitoring Report

Monitoring Details

Reference Number: AES-012-HC/2020
Date of Monitoring: 17 & 18 January, 2020
Monitoring Point: Gulshan-E-Iqbal Park

Sr. No.	Time	CO (mg/m ³)	NO (µg/m ³)	NO ₂ (µg/m ³)	NO _x (µg/m ³)	SO ₂ (µg/m ³)
1	15:00	0.62	8.7	11.5	20.2	14.2
2	16:00	0.63	8.5	11.6	20.1	14.5
3	17:00	0.67	8.3	11.8	20.1	16.3
4	18:00	0.68	8.7	12.5	21.2	16.5
5	19:00	0.69	8.9	12.4	21.3	16.2
6	20:00	0.73	8.4	12.8	21.2	16.8
7	21:00	0.78	8.2	13.6	21.8	16.3
8	22:00	0.71	8.4	12.8	21.2	16.7
9	23:00	0.75	7.6	14.5	22.1	15.2
10	00:00	0.74	7.5	14.3	21.8	15.8
11	01:00	0.72	8.2	13.4	21.6	15.3
12	02:00	0.69	8.3	13.9	22.2	15.4
13	03:00	0.67	7.3	14.1	21.4	15.9
14	04:00	0.63	7.1	14.5	21.6	15.4
15	05:00	0.67	7.3	14.3	21.6	14.2
16	06:00	0.69	7.5	14.2	21.7	14.3
17	07:00	0.71	7.7	13.7	21.4	16.2
18	08:00	0.73	8.2	13.6	21.8	15.3
19	09:00	0.73	8.3	13.5	21.8	15.8
20	10:00	0.68	7.5	12.6	20.1	14.7
21	11:00	0.69	7.8	12.8	20.6	14.9
22	12:00	0.63	8.1	12.8	20.9	14.3
23	13:00	0.67	8.3	13.8	22.1	14.7
24	14:00	0.61	8.7	13.4	22.1	15.3
Average Concentration		0.69	8.06	13.27	21.33	15.43

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1st Quarter Ambient Air Monitoring Report of Gulshan-E-Iqbal Park

Ambient Air Monitoring Report

Monitoring Details

Reference Number: AES-012-HC/2020
Date of Monitoring: 17 & 18 January, 2020
Monitoring Point: Gulshan-E-Iqbal Park

Parameters	Units	Monitoring Duration	LDL	Average Obtained Concentration	PEQS
Nitrogen Dioxide (NO ₂)	µg/m ³	24Hours	1.00	13.27	80.0
Nitrogen Oxide (NO)	µg/m ³	24Hours	1.00	8.06	40.0
NO _x	µg/m ³	24Hours	1.00	21.33	120.0
Sulphur Dioxide (SO ₂)	µg/m ³	24Hours	1.00	15.43	120.0
Carbon Monoxide (CO)	mg/m ³	24Hours	0.01	0.69	05.0
Particulate Matter (PM ₁₀)	µg/m ³	24Hours	1.00	137.5	150
Particulate Matter (PM _{2.5})	µg/m ³	24Hours	1.00	41.2	35

LDL = Lower Detection Limit

PEQS = Punjab Environmental Quality Standard

µg/m³ = Micro Gram per Meter Cube

mg/m³ = Mill Gram per Meter Cube

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Ambient Air Monitoring Report

Monitoring Details

Reference Number: AES-082-HC/2020
Date of Monitoring: 17 & 18 June, 2020
Monitoring Coordinates: 32°28'35.8" N 74°33'11.9" E

Sr. No.	Time	CO (µg/m ³)	NO (µg/m ³)	NO ₂ (µg/m ³)	NO _x (µg/m ³)	SO ₂ (µg/m ³)
1	10:00	0.80	11.44	16.38	28.02	13.92
2	11:00	0.76	11.46	17.04	28.50	15.62
3	12:00	0.72	11.34	17.27	28.61	15.70
4	13:00	0.70	11.51	17.86	29.38	15.99
5	14:00	0.73	11.63	18.46	30.08	16.60
6	15:00	0.76	12.51	18.93	31.44	17.46
7	16:00	0.76	11.72	21.00	32.72	18.41
8	17:00	0.73	11.93	20.41	32.34	18.68
9	18:00	0.75	11.23	19.53	30.75	19.25
10	19:00	0.71	10.86	18.70	29.56	19.37
11	20:00	0.66	10.02	18.28	28.31	21.23
12	21:00	0.80	9.58	17.67	27.25	19.74
13	22:00	0.65	10.75	18.02	28.76	18.89
14	23:00	0.64	10.21	17.19	27.41	16.65
15	00:00	0.76	9.52	16.62	26.14	18.57
16	01:00	0.63	9.10	17.06	26.16	17.16
17	02:00	0.59	9.20	17.65	26.85	16.52
18	03:00	0.65	8.68	18.67	27.35	16.23
19	04:00	0.69	8.30	18.93	27.23	15.78
20	05:00	0.73	8.93	18.70	27.64	14.00
21	06:00	0.54	9.37	19.74	29.11	16.90
22	07:00	0.64	10.54	18.99	29.20	20.94
23	08:00	0.77	10.65	20.20	31.04	22.48
24	09:00	0.78	11.30	19.56	30.87	24.64
Average Concentration		0.71	10.49	18.46	28.95	17.95


Lead Field Operations

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2nd Quarter Ambient Air Monitoring Report of Gulshan-E-Iqbal Park

Ambient Air Monitoring Report

Monitoring Details

Reference Number	AES-082-HC/2020
Date of Monitoring	17 & 18 June, 2020
Monitoring Coordinates	32°28'35.8" N 74°33'11.9" E

Parameters	Units	Monitoring Duration	LDL	Average Obtained Concentration	PEQS
Nitrogen Dioxide (NO ₂)	µg/m ³	24Hours	1.00	18.46	80.0
Nitrogen Oxide (NO)	µg/m ³	24Hours	1.00	10.49	40.0
NO _x	µg/m ³	24Hours	1.00	28.95	120.0
Sulphur Dioxide (SO ₂)	µg/m ³	24Hours	1.00	17.95	120.0
Carbon Monoxide (CO)	mg/m ³	24Hours	0.01	0.71	05.0
Particulate Matter (PM ₁₀)	µg/m ³	24Hours	1.00	129.2	150
Particulate Matter (PM _{2.5})	µg/m ³	24Hours	1.00	27.5	35
Total Suspended Particulate Matter (TSP)	µg/m ³	24Hours	1.00	290	500

LDL= Lower Detection Limit

PEQS= Punjab Environmental Quality Standard

µg/m³ = Micro-Grain per Meter Cube

mg/m³ = Milli-Grain per Meter Cube


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Meteorological Data

Monitoring Details

Reference Number: AES-012-HC/2020
Date of Monitoring: 17 & 18 January, 2020
Monitoring Point: Gulshan-E-Iqbal Park

Sr. No.	Time	Ambient Temperature °C	Wind Direction	Wind Velocity m/s	Humidity %	Pressure (mm of Hg)
1	15:00	15	S	7.1	45	992.1
2	16:00	15	S	8.7	45	992.7
3	17:00	14	S	7.5	47	992.5
4	18:00	14	SW	7.3	47	992.3
5	19:00	14	SW	6.4	49	993.8
6	20:00	12	SW	6.1	53	993.7
7	21:00	12	SW	9.9	55	993.1
8	22:00	12	SE	9.8	55	993.4
9	23:00	11	SE	10.5	59	992.3
10	00:00	11	SE	11.2	63	992.2
11	01:00	11	SE	11.7	65	992.5
12	02:00	11	SE	11.6	69	992.7
13	03:00	10	N	10.1	71	993.1
14	04:00	10	N	10.7	72	993.7
15	05:00	10	N	10.5	70	993.5
16	06:00	11	NW	9.2	67	993.3
17	07:00	11	NW	9.1	65	992.4
18	08:00	12	NW	8.8	62	992.3
19	09:00	13	E	8.7	59	992.2
20	10:00	13	E	10.5	53	992.1
21	11:00	14	E	10.4	51	993.4
22	12:00	14	E	7.2	52	993.3
23	13:00	16	E	7.7	48	993.2
24	14:00	16	E	7.9	48	993.7


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Noise Level Monitoring Report

Monitoring Details

Reference Number: AES-012-IC/2020
Date of Monitoring: 17 & 18 January, 2020
Monitoring Point: Gulshan-E-Iqbal Park

Sr. No.	Time	Noise (dBA)	PEQS
1	15:00	59.1	Day Time
2	16:00	58.7	
3	17:00	57.5	
4	18:00	59.9	
5	19:00	65.3	
6	20:00	64.4	
7	21:00	53.7	
8	22:00	59.2	Night Time
9	23:00	58.8	
10	00:00	58.4	
11	01:00	68.9	
12	02:00	61.3	
13	03:00	59.7	
14	04:00	57.7	
15	05:00	55.5	Day Time
16	06:00	54.3	
17	07:00	57.4	
18	08:00	58.2	
19	09:00	51.8	
20	10:00	57.7	
21	11:00	61.5	
22	12:00	63.2	Day Time
23	13:00	61.4	
24	14:00	62.3	

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Meteorological Data

Monitoring Details

Reference Number AES-082-HC/2020
Date of Monitoring 17 & 18 June, 2020
Monitoring Coordinates 32°28'35.8" N 74°33'11.9" E

Sr. No.	Time	Ambient Temperature °C	Wind Direction	Wind Velocity m/s	Humidity %	Pressure (mm of Hg)
1	10:00	34	SW	4.2	37	997.5
2	11:00	35	SW	2.1	32	997.4
3	12:00	37	SW	1.4	30	997.4
4	13:00	39	N	1.7	29	997.6
5	14:00	40	N	2.2	28	997.9
6	15:00	42	E	3.1	25	998.1
7	16:00	42	SE	1.5	25	998.0
8	17:00	42	SW	1.3	22	998.3
9	18:00	41	N	2.2	22	998.1
10	19:00	40	E	4.1	23	998.1
11	20:00	38	W	3.4	26	997.9
12	21:00	37	S	3.2	29	997.6
13	22:00	36	S	1.1	30	997.2
14	23:00	36	E	4.2	30	997.3
15	00:00	35	S	2.4	31	997.5
16	01:00	34	SW	1.3	34	997.4
17	02:00	34	N	1.5	34	997.7
18	03:00	33	E	2.1	36	997.3
19	04:00	32	S	4.2	36	997.0
20	05:00	32	S	3.1	36	997.2
21	06:00	33	SW	2.4	39	997.2
22	07:00	34	N	1.3	40	997.5
23	08:00	35	SW	4.2	37	997.7
24	09:00	35	SE	1.7	37	997.8


Lead Field Operations

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Noise Level Monitoring Report

Monitoring Details

Reference Number AES-082-HC/2020
Date of Monitoring 17 & 18 June, 2020
Monitoring Coordinates 32°28'35.8" N 74°33'11.9" E

Sr. No.	Time	Noise dBA	PEQS
1	10:00	53.4	
2	11:00	55.8	
3	12:00	57.1	
4	13:00	53.0	
5	14:00	59.9	
6	15:00	60.8	Day Time 65
7	16:00	57.3	
8	17:00	55.3	
9	18:00	57.0	
10	19:00	53.0	
11	20:00	51.8	
12	21:00	50.6	
13	22:00	52.1	
14	23:00	49.5	
15	00:00	48.3	
16	01:00	42.0	Night Time 55
17	02:00	44.9	
18	03:00	46.7	
19	04:00	49.5	
20	05:00	44.0	
21	06:00	44.9	
22	07:00	46.6	
23	08:00	52.9	Day Time 65
24	09:00	57.1	


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Meteorological Data

Monitoring Details

Reference Number AES-082-HC/2020
Date of Monitoring 16 & 17 June, 2020
Monitoring Coordinates 32°29'36.7" N 74°32'29.0" E

Sr. No.	Time	Ambient Temperature °C	Wind Direction	Wind Velocity m/s	Humidity %	Pressure (mm of Hg)
1	10:00	32	E	1.2	40	997.1
2	11:00	33	E	1.2	38	997.2
3	12:00	35	N	2.4	35	997.4
4	13:00	37	S	3.3	35	997.6
5	14:00	40	W	1.2	36	997.3
6	15:00	42	SW	2.1	34	997.4
7	16:00	42	E	1.5	31	997.7
8	17:00	42	N	4.2	31	997.2
9	18:00	41	E	1.1	30	998.1
10	19:00	40	S	2.7	30	998.8
11	20:00	37	SW	3.2	33	998.3
12	21:00	36	N	1.1	35	997.9
13	22:00	35	E	2.8	37	997.4
14	23:00	33	W	4.2	39	997.5
15	00:00	32	SW	5.1	39	998.2
16	01:00	32	N	2.4	38	998.1
17	02:00	32	S	1.5	37	998.7
18	03:00	31	W	3.3	41	997.5
19	04:00	30	E	4.7	43	997.3
20	05:00	29	N	2.4	44	997.4
21	06:00	29	N	1.2	46	997.2
22	07:00	31	S	3.6	43	997.1
23	08:00	32	S	2.3	40	997.3
24	09:00	33	S	4.2	38	997.8

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Noise Level Monitoring Report

Monitoring Details

Reference Number AES-082-HC/2020
Date of Monitoring 16 & 17 June, 2020
Monitoring Coordinates 32°29'36.7" N 74°32'29.0" E

Sr. No.	Time	Noise dB(A)	PEQS
1	10:00	56.1	Day Time 65
2	11:00	58.4	
3	12:00	59.2	
4	13:00	63.4	
5	14:00	64.0	
6	15:00	60.3	
7	16:00	57.8	
8	17:00	56.2	
9	18:00	53.7	
10	19:00	50.1	
11	20:00	53.5	
12	21:00	56.9	
13	22:00	53.8	Night Time 55
14	23:00	50.1	
15	00:00	48.7	
16	01:00	47.3	
17	02:00	45.2	
18	03:00	48.7	
19	04:00	45.3	
20	05:00	42.9	
21	06:00	44.6	
22	07:00	47.4	Day Time 65
23	08:00	50.5	
24	09:00	54.8	

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GROUND WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-012-11C/2020	Reporting Date	23-01-2020
Nature of Sample	Ground Water	Grab/Composite	Grab
Date of Sample Collection	17-01-2020	Date of Sample Receipt	20-01-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	23.5°C & 51 %
Sample ID	AES-GW-06/2020	Sampling Location	Site Tap Water
Client Detail	M/S Habib Construction Services (Pvt) LTD, Gulshan-E-Iqbal Park, Sialkot		



Ground Water Analysis Results				
Parameters	Analysis Method	PEQS	Result	Remarks
Lab Analysis				
Color	APHA 2120 C	≤ 15 TCU	0.00	Optimal
Taste	APHA 2160 C	Non-Objectionable	Non-Objectionable	Optimal
Odor	APHA 2150 B	Non-Objectionable	Non-Objectionable	Optimal
Turbidity	APHA 2130 B	≤ 5 NTU	1.2	Optimal
Total Hardness (as CaCO ₃)	APHA 2340 C	≤ 500 mg/L	87	Optimal
Total Dissolved Solids (TDS)	APHA 2540 C	≤ 1000 mg/L	230	Optimal
pH	APHA 4500 H ⁺ B	6.5 - 8.5	7.85	Optimal
Aluminum (Al)	APHA 3113 B	≤ 0.2 mg/L	0.013	Optimal
Antimony (Sb)	APHA 3113 B	≤ 0.005 mg/L	0.00	Optimal
Arsenic (As)	APHA 3114 B	≤ 0.05 mg/L	0.01	Optimal
Barium (Ba)	APHA 3113 B	0.7 mg/L	0.00	Optimal
Boron (B)	APHA 3113 B	0.3 mg/L	0.078	Optimal
Cadmium (Cd)	APHA 3113 B	0.01 mg/L	< 0.006	Optimal
Chloride (Cl)	APHA 4500 Cl ⁻ B	≤ 250 mg/L	15.7	Optimal
Chromium (Cr)	APHA 3113 B	≤ 0.05 mg/L	0.008	Optimal
Copper (Cu)	APHA 3111 B	2.0 mg/L	< 0.164	Optimal
Cyanide (CN)	APHA 4500 CN ⁻ F	≤ 0.05 mg/L	0.0	Optimal
Fluoride (F)	APHA 4500 F ⁻ C	≤ 1.5 mg/L	0.0	Optimal
Lead (Pb)	APHA 3113 B	≤ 0.05 mg/L	0.00	Optimal
Manganese (Mn)	APHA 3113 B	≤ 0.5 mg/L	0.058	Optimal
Mercury (Hg)	APHA 3114 B	≤ 0.001 mg/L	< 0.001	Optimal
Nickel (Ni)	APHA 3113 B	≤ 0.02 mg/L	0.012	Optimal
Nitrate (NO ₃ ⁻)	APHA 4500 NO ₃ ⁻ B	≤ 50 mg/L	0.0	Optimal
Nitrite (NO ₂ ⁻)	APHA 4500 NO ₂ ⁻ B	≤ 3.0 mg/L	0.0	Optimal
Selenium (Se)	APHA 3114 B	0.01 mg/L	0.00	Optimal
Residual Chlorine	APHA 4500 Cl ⁻ B	0.5 - 1.5 mg/L	0.0	Optimal

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GROUND WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-012-HC/2020	Reporting Date	23-01-2020
Nature of Sample	Ground Water	Grab/Composite	Grab
Date of Sample Collection	17-01-2020	Date of Sample Receipt	20-01-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25.5°C & 51%
Sample ID	AES-GW-06/2020	Sampling Location	Site Tap Water
Client Detail	M/S Habib Construction Services (Pvt) LTD, Gulshan-E-Iqbal Park, Sialkot		



Phenolic Compounds (as Phenols)	APHA 3530 D	NCYS	0.176	Optimal
Zinc (Zn)	APHA 3113 B	5.0 mg/L	0.063	Optimal
Microbiological Analysis				
Total Coliforms	APHA 9222 B	0/100 mL CFU	0	Optimal
Fecal Coliform	APHA 9222 D	0/100 mL CFU	0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards
TCU = True Color Unit
NTU = Nephelometric Turbidity Unit

APHA = American Public Health Association
NCYS = No. Classification Value Set

BDL = Below Detection Limit
CFU = Colony Forming Unit

Report Disclaimer

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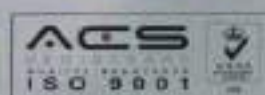
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DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-062-HC /2020	Reporting Date	24-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	17-06-2020	Date of Sample Receipt	18-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25°C & 55%
Sample ID	AES-DW-68/2020	Sampling Location	Gulshan-E-Iqbal
Client Detail	M/S Habib Construction, Sialkot		



Drinking Water Analysis Results				
Parameters	Analysis Method	PEQS	Result	Remarks
Lab Analysis				
Color	APHA 2120 C	≤ 15 TCU	0.0	Optimal
Taste	APHA 2160 C	Non- Objectionable	Non- Objectionable	Optimal
Odor	APHA 2150 B	Non- Objectionable	Non- Objectionable	Optimal
Turbidity	APHA 2130 B	< 5 NTU	0.0	Optimal
Total Hardness (as CaCO ₃)	APHA 2340 C	< 500 mg/L	76	Optimal
Total Dissolved Solids (TDS)	APHA 2540 C	< 1000 mg/L	245	Optimal
pH	APHA 4500 H ⁺ B	6.5 - 8.5	7.90	Optimal
Aluminum (Al)	APHA 3113 B	≤ 0.2 mg/L	0.015	Optimal
Antimony (Sb)	APHA 3113 B	≤ 0.005 mg/L	0.005	Optimal
Arsenic (As)	APHA 3114 B	≤ 0.05 mg/L	<0.005	Optimal
Barium (Ba)	APHA 3113 B	0.7 mg/L	0.006	Optimal
Boron (B)	APHA 3113 B	0.3 mg/L	0.074	Optimal
Cadmium (Cd)	APHA 3113 B	0.01 mg/L	<0.006	Optimal
Chloride (Cl)	APHA 4500 Cl ⁻ B	< 250 mg/L	18.9	Optimal
Chromium (Cr)	APHA 3113 B	≤ 0.05 mg/L	0.007	Optimal
Copper (Cu)	APHA 3111 B	2.0 mg/L	0.164	Optimal
Cyanide (CN ⁻)	APHA 4500 CN ⁻ F	≤ 0.05 mg/L	0.0	Optimal
Fluoride (F)	APHA 4500 F ⁻ C	≤ 1.5 mg/L	0.0	Optimal
Lead (Pb)	APHA 3113 B	≤ 0.05 mg/L	0.006	Optimal
Manganese (Mn)	APHA 3113 B	≤ 0.5 mg/L	0.051	Optimal
Mercury (Hg)	APHA 3114 B	≤ 0.001 mg/L	<0.001	Optimal
Nickel (Ni)	APHA 3113 B	≤ 0.02 mg/L	0.01	Optimal
Nitrate (NO ₃ ⁻)	APHA 4500 NO ₃ ⁻ B	≤ 50 mg/L	0.0	Optimal
Nitrite (NO ₂ ⁻)	APHA 4500 NO ₂ ⁻ B	≤ 3.0 mg/L	0.0	Optimal
Selenium (Se)	APHA 3114 B	0.01 mg/L	<0.01	Optimal
Residual Chlorine	APHA 4500 Cl ⁻ B	0.5 - 1.5 mg/L	0.0	Optimal

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DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-087-HC/2020	Reporting Date	24-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	17-06-2020	Date of Sample Receipt	18-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25°C & 55%
Sample ID	AES-DW-48/2020	Sampling Location	Gulshan-E-Iqbal
Client Detail	M/S Habib Construction, Sialkot		



Phenolic Compounds (as Phenols)	APHA 5530 D	NGVS	0.068	Optimal
Zinc (Zn)	APHA 3113 B	5.0 mg/L	0.062	Optimal
Microbiological Analysis				
Total Coliforms	APHA 9222 B	0/ 100 mL CFU	0	Optimal
Fecal Coliform	APHA 9222 D	0/ 100 mL CFU	0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards
TCU = True Color Unit
NTU = Nephelometric Turbidity Unit

APHA = American Public Health Association
NGVS = No Guideline Value Set

BDE = Below Detection Limit
CFU = Colony Forming Unit

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DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-082-IHC /2020	Reporting Date	24-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	16-06-2020	Date of Sample Receipt	18-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25 °C & 35%
Sample ID	AES-DW-67/2020	Sampling Location	Sialkot Fort Park
Client Detail	M/S Habib Construction, Sialkot		



Drinking Water Analysis Results				
Parameters	Analysis Method	PEQS	Result	Remarks
Lab Analysis				
Color	APHA 2120 C	≤ 15 TCU	0.0	Optimal
Taste	APHA 2160 C	Non- Objectionable	Non- Objectionable	Optimal
Odor	APHA 2150 B	Non- Objectionable	Non- Objectionable	Optimal
Turbidity	APHA 2130 B	≤ 5 NTU	0.0	Optimal
Total Hardness (as CaCO ₃)	APHA 2340 C	≤ 500 mg/L	72	Optimal
Total Dissolved Solids (TDS)	APHA 2540 C	≤ 1000 mg/L	273	Optimal
pH	APHA 4500 H ⁺ B	6.5- 8.5	7.50	Optimal
Aluminum (Al)	APHA 3113 B	≤ 0.2 mg/L	0.014	Optimal
Antimony (Sb)	APHA 3113 B	≤ 0.005 mg/L	<0.005	Optimal
Arsenic (As)	APHA 3114 B	≤ 0.05 mg/L	0.005	Optimal
Barium (Ba)	APHA 3113 B	0.7 mg/L	<0.005	Optimal
Boron (B)	APHA 3113 B	0.3 mg/L	0.076	Optimal
Cadmium (Cd)	APHA 3113 B	0.01 mg/L	<0.006	Optimal
Chloride (Cl)	APHA 4500 Cl ⁻ B	≤ 250 mg/L	18	Optimal
Chromium (Cr)	APHA 3113 B	≤ 0.05 mg/L	0.007	Optimal
Copper (Cu)	APHA 3113 B	2.0 mg/L	<0.164	Optimal
Cyanide (CN ⁻)	APHA 4500 CN ⁻ F	≤ 0.05 mg/L	0.0	Optimal
Fluoride (F)	APHA 4500 F ⁻ C	≤ 1.5 mg/L	0.0	Optimal
Lead (Pb)	APHA 3113 B	≤ 0.05 mg/L	0.005	Optimal
Manganese (Mn)	APHA 3113 B	≤ 0.5 mg/L	0.052	Optimal
Mercury (Hg)	APHA 3114 B	≤ 0.001 mg/L	<0.001	Optimal
Nickel (Ni)	APHA 3113 B	≤ 0.02 mg/L	0.01	Optimal
Nitrate (NO ₃ ⁻)	APHA 4500 NO ₃ ⁻ B	≤ 50 mg/L	0.0	Optimal
Nitrite (NO ₂ ⁻)	APHA 4500 NO ₂ ⁻ B	≤ 3.0 mg/L	0.0	Optimal
Selenium (Se)	APHA 3114 B	0.01 mg/L	<0.01	Optimal
Residual Chlorine	APHA 4500 Cl ⁻ B	0.5 – 1.5 mg/L	0.0	Optimal

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DRINKING WATER ANALYSIS REPORT

Sample Detail

Reference No.	AES-082-HC/2020	Reporting Date	24-06-2020
Nature of Sample	Drinking Water	Grab/Composite	Grab
Date of Sample Collection	16-06-2020	Date of Sample Receipt	18-06-2020
Sample Collected by/Sent By	AES	Temperature & Humidity	25°C & 55%
Sample ID	AES-DW-67/2020	Sampling Location	Sialkot Fort Park
Client Detail	M/S Habib Construction, Sialkot		



Phenolic Compounds (as Phenols)	APHA 5530 D	NGVS	0.08	Optimal
Zinc (Zn)	APHA 3113 B	5.0 mg/L	0.061	Optimal
Microbiological Analysis				
Total Coliforms	APHA 9222 B	0/ 100 mL CFU	0	Optimal
Focal Coliforms	APHA 9222 D	0/ 100 mL CFU	0	Optimal

Abbreviations:

PEQS = Punjab Environment Quality Standards
TCU = True Color Unit
NTU = Nephelometric Turbidity Unit

APHA = American Public Health Association
NGVS = No-Guideline Value Set

BDL = Below Detection Limit
CFU = Colony Forming Unit

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Appendix D: PLGA-Environmental Test Results Quarterly Report



Environmental Services Pakistan

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CHEMICAL ANALYSIS TEST REPORT (AMBIENT AIR)



Reference Number: ESPAK/120/20/AA/0789/00065 Date: 22/05/2020
Name of Industry/Client: Habib Construction Services
Address: 15-A, Block G-1, Canal Bank Road, Near Doctors Hospital, Johar Town, Lahore.
Telephone No.: ----
Nature of Sample: Ambient Air Monitoring Location: Punjab Local Government Academy
Date of Sample Collection: 18/05/2020 Grab / Composite: Continuous - 24 Hours
Sample Collected/Sent By: Waleed Farooq, Field Officer, ESPAK
Date of Completion of Analysis: 19/05/2020

S. No	Parameters	Limit Values (PQS-24 Hours)	Concentration	Method / Equipment Used	Remarks
1	Carbon Monoxide (CO)	10 mg/m ³ (1 Hour)	0.4-1.8 mg/m ³	Non Dispersive Infrared Absorption (NDIR)	Within Prescribed Limits
2	Carbon Monoxide (CO)	5 mg/m ³ (8 Hours)	0.7-1.4 mg/m ³	Non Dispersive Infrared Absorption (NDIR)	Within Prescribed Limits
3	Sulfur Dioxide (SO ₂)	120 µg/m ³	10.5 µg/m ³	UV Fluorescence (UVF)	Within Prescribed Limits
4	Ozone (O ₃)	130 µg/m ³ (1 Hour)	0.2-19.9 µg/m ³	Non Dispersive UV Absorption	Within Prescribed Limits
5	Oxides of Nitrogen as NO	40 µg/m ³	12.3 µg/m ³	Chemiluminescence Detection	Within Prescribed Limits
6	Oxides of Nitrogen as NO ₂	80 µg/m ³	33.0 µg/m ³	Chemiluminescence Detection	Within Prescribed Limits
7	Particulate Matter PM ₁₀	35 µg/m ³	27.8 µg/m ³	Particulate Sensor	Within Prescribed Limits
8	Particulate Matter PM _{2.5}	150 µg/m ³	11.7 µg/m ³	Particulate Sensor	Within Prescribed Limits

PQS Punjab Environmental Quality Standards for Ambient Air, 2016

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- The values represent sample conditions when monitoring/testing was carried out.
- The report data is not intended to be used legally by the client.

- Sample Analyzed By: Waleed Farooq
Field Officer
- Name of Chief Analyst with Seal: Muhammad Arfan
- Signature of Incharge of the Environmental Laboratory:

Name: Iyyan Malik
General Manager
Date: 22/05/2020

End of Report



Page 1 of 1

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Environmental Services Pakistan

PAK EPA & PUNJAB EPD CERTIFIED

NOISE MONITORING REPORT



Reference Number: ESPAK/120/20/N/0790/00071 Date: 22/05/2020
Name of Industry/Client: Habib Construction Services
Address: 15-A, Block G-1, Canal Bank Road, Near Doctors Hospital, Johar Town, Lahore.
Telephone No.: —
Nature of Sample: Noise at Punjab Local Government Academy Johar Town, Lahore
Date of Sample Collection: 18/05/2020 Grab / Composite: Spot Sample
Sample Collected/Sent By: Waleed Farooq, Field Officer, ESPAK
Date of Completion of Analysis: 18/05/2020
Method/Equipment Used: Sound Level Meter

S. No	Measurement Point	Limit Values (PEQS)	Noise Level in dB(A)	Remarks
1	East Boundary Wall	65 dB(A)	53 dB(A)	Within Limits
2	West Boundary Wall	65 dB(A)	52 dB(A)	Within Limits
3	South Boundary Wall	65 dB(A)	53 dB(A)	Within Limits
4	North Boundary Wall	65 dB(A)	51 dB(A)	Within Limits

PEQS: Punjab Environmental Quality Standards for Noise in Commercial Area, 2016 Day Time Hours (6:00 am to 10:00 pm)

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1. Sample Analyzed By: Waleed Farooq
Field Officer
2. Name of Chief Analyst with Seal: Muhammad Arfan
3. Signature of Incharge of the Environmental Laboratory:

Name: Imran Malik
General Manager
Date: 22/05/2020



End of Report



Environmental Services Pakistan

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CHEMICAL ANALYSIS TEST REPORT (GROUND WATER)



Reference Number: ESPAK/120/20/GW/0755/00094 Date: 22/05/2020
Name of Industry / Client: Habib Construction Services
Address: 35-A, Block G-1, Canal Bank Road, Near Doctors Hospital, Johar Town, Lahore.
Telephone No.: ---
Nature of Sample: Ground Water at Punjab Local Government Academy Johar Town, Lahore
Date Sample Received: 18/05/2020 Grab / Composite: Grab
Date of Sample Collection: 18/05/2020
Sample Collected / Sent By: Waleed Farooq, Field Officer, ESPAK
Date of Completion of Analysis: 22/05/2020

S. No	Parameters	Limit Values (PEQS)	Concentration	Method / Equipment Used	Remarks
1	pH	6.5-8.5	7.8	SMWW 4500HCB	Within Prescribed Limits
2	Total Dissolved Solids (TDS)	<1000 mg/L	362 mg/L	SMWW 2540C	Within Prescribed Limits
3	Chloride (as Cl ⁻)	<250 mg/L	7.6 mg/L	SMWW 4500CB	Within Prescribed Limits
4	Cadmium (Cd)	0.01 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
5	Chromium (Cr)	≤0.05 mg/L	0.001 mg/L	U.S. EPA-200.7	Within Prescribed Limits
6	Copper (Cu)	2.0 mg/L	0.05 mg/L	U.S. EPA-200.7	Within Prescribed Limits
7	Lead (Pb)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
8	Manganese (Mn)	≤0.5 mg/L	0.086 mg/L	U.S. EPA-200.7	Within Prescribed Limits
9	Nickel (Ni)	≤0.02 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
10	Zinc (Zn)	5.0 mg/L	0.035 mg/L	U.S. EPA-200.7	Within Prescribed Limits
11	Aluminum (Al)	≤0.2 mg/L	0.010 mg/L	U.S. EPA-200.7	Within Prescribed Limits
12	Arsenic (As)	≤0.05 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
13	Boron (B)	0.3 mg/L	0.376 mg/L	U.S. EPA-200.7	Within Prescribed Limits
14	Barium (Ba)	0.7 mg/L	0.001 mg/L	U.S. EPA-200.7	Within Prescribed Limits
15	Mercury (Hg)	≤0.001 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
16	Selenium (Se)	0.01 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
17	E. Coli	Must not be detectable in any 100ml Sample	Not Detected	SMWW 9221 F	Within Prescribed Limits
18	Total Coliforms	---	Not Detected	SMWW 9221 B	---
19	Color	≤15 TCU	NI	SMWW 2120 C	Within Prescribed Limits
20	Odor	Non Objectionable / Acceptable	Acceptable	Organoleptic	Within Prescribed Limits
21	Turbidity	<5 NTU	2.67 NTU	SMWW 2130B	Within Prescribed Limits
22	Total Hardness as CaCO ₃	<500 mg/L	116 mg/L	SMWW 2340C	Within Prescribed Limits
23	Cyanide (CN ⁻)	≤0.05 mg/L	ND	SMWW 4500 CN F	Within Prescribed Limits
24	Fluoride (F ⁻)	≤1.5 mg/L	1.44 mg/L	U.S. EPA 9214	Within Prescribed Limits
25	Nitrate (NO ₃ ⁻)	≤50 mg/L	0.15 mg/L	SMWW 4500NO ₃ B	Within Prescribed Limits

Page 1 of 2

Officer

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Environmental Services Pakistan

PAK EPA & PUNJAB EPD CERTIFIED

CHEMICAL ANALYSIS TEST REPORT (GROUND WATER)

Reference Number: **ESPAK/120/20/GW/0755/00094** Date: **22/05/2020**
Name of Industry / Client: **Habib Construction Services**



S. No	Parameters	Limit Values (PEQS)	Concentration	Method / Equipment Used	Remarks
26	Nitrite (NO ₂ ⁻)	63 mg/L	ND	SMWW 4500-NO ₂ -B	Within Prescribed Limits
27	Residual Chlorine	0.2-0.5 mg/L	ND	SMWW 4500-Cl-B	---
28	Phenolic Compounds (as Phenols)	NS	ND	SMWW 5530 C	---

PEQS: Punjab Environmental Quality Standards for Drinking Water, 2016

SMWW: Standard Methods for the Examination of Water and Wastewater 23rd Edition, American Public Health Association, American Water Works Association, Water Environment Federation USA (2017)

USEPA: United States Environmental Protection Agency

NS: None Specified

ND: Not Detected

Notes:

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The responsibility of the ethical use of this report lies with the client.

The values represent sample conditions when monitoring/testing was carried out.

The report data is not intended to be used legally by the client.

1. Sample Analyzed By: **Waqas Ahmad** (Analyst), **Mushraf Jabeen** (Analyst), **Muhammad Arfan** (Deputy Analyst), **Ameer Uzama** (Assistant Microbiologist), **Hamza Khan** (Assistant Analyst)
2. Name of Chief Analyst with Seal: **Muhammad Arfan** (Signature)
3. Signature of Incharge of the Environmental Laboratory:

Name: **Imran Malik**

General Manager

Date: **22/05/2020**

End of Report





Environmental Services Pakistan

PAK EPA & PUNJAB EPD CERTIFIED

CHEMICAL ANALYSIS TEST REPORT (WASTE WATER)



Reference Number: ESPAK/120/20/WW/0754/00134 Date: 23/05/2020
Name of Industry / Client: Habib Construction Services
Address: 15-A, Block G-1, Canal Bank Road, Near Doctors Hospital, Johar Town, Lahore.
Telephone No.: ---
Nature of Sample: Camp Site Final Discharge Waste Water at Punjab Local Government Academy Johar Town, Lahore.
Date Sample Received: 18/05/2020 Grab / Composite: Grab
Date of Sample Collection: 18/05/2020
Sample Collected / Sent By: Wakeed Farooq, Field Officer, ESPAK
Date of Completion of Analysis: 23/05/2020

S. No	Parameters	Limit Values (PEQS)	Concentration	Method / Equipment Used	Remarks
1	pH value (H ⁺)	6-9	7.6	SMWW 4500H ⁺ B	Within Prescribed Limits
2	Chemical Oxygen Demand (COD)	150 mg/L	139 mg/L	SMWW 5220 D	Within Prescribed Limits
3	Total Dissolved Solids (TDS)	3500 mg/L	804 mg/L	SMWW 2540 C	Within Prescribed Limits
4	Chloride (as Cl ⁻)	1000 mg/L	61 mg/L	SMWW 4500Cl ⁻ B	Within Prescribed Limits
5	Cadmium (Cd)	0.1 mg/L	0.002 mg/L	U.S. EPA-200.7	Within Prescribed Limits
6	Chromium (Trivalent and Hexavalent)	1.0 mg/L	0.020 mg/L	U.S. EPA-200.7	Within Prescribed Limits
7	Copper (Cu)	1.0 mg/L	0.077 mg/L	U.S. EPA-200.7	Within Prescribed Limits
8	Iron (Fe)	3.0 mg/L	0.113 mg/L	U.S. EPA-200.7	Within Prescribed Limits
9	Lead (Pb)	0.5 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
10	Manganese (Mn)	1.5 mg/L	0.302 mg/L	U.S. EPA-200.7	Within Prescribed Limits
11	Mercury (Hg)	0.01 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
12	Selenium (Se)	0.5 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
13	Nickel (Ni)	1.0 mg/L	0.018 mg/L	U.S. EPA-200.7	Within Prescribed Limits
14	Silver (Ag)	1.0 mg/L	0.025 mg/L	U.S. EPA-200.7	Within Prescribed Limits
15	Zinc (Zn)	5.0 mg/L	0.380 mg/L	U.S. EPA-200.7	Within Prescribed Limits
16	Arsenic (As)	1.0 mg/L	ND	U.S. EPA-200.7	Within Prescribed Limits
17	Barium (Ba)	1.5 mg/L	0.141 mg/L	U.S. EPA-200.7	Within Prescribed Limits
18	Boron (B)	6.0 mg/L	0.409 mg/L	U.S. EPA-200.7	Within Prescribed Limits
19	Total Toxic Metals	2.0 mg/L	0.692 mg/L	Calculated Value	Within Prescribed Limits
20	Biochemical Oxygen Demand (BOD ₅) at 20 °C	60 mg/L	73 mg/L	SMWW 5210 B	Within Prescribed Limits
21	Total Suspended Solids (TSS)	200 mg/L	184 mg/L	SMWW 2540 D	Within Prescribed Limits
22	Phenolic Compounds (as Phenol)	0.1 mg/L	0.1 mg/L	SMWW 5530 C	Within Prescribed Limits
23	Grease and Oil	10 mg/L	2.4 mg/L	U.S. EPA 3664 B	Within Prescribed Limits
24	Fluoride (as F ⁻)	10 mg/L	1.23 mg/L	U.S. EPA 9214	Within Prescribed Limits
25	Cyanide (as CN ⁻)	1.0 mg/L	0.3 mg/L	SMWW 4500 CN ⁻ F	Within Prescribed Limits
26	An-ionic detergents (as MBAS)	20 mg/L	0.04 mg/L	SMWW 5540 C	Within Prescribed Limits

Page 1 of 2

Signature

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Environmental Services Pakistan

PAK EPA & PUNJAB EPD CERTIFIED

CHEMICAL ANALYSIS TEST REPORT (WASTE WATER)

Reference Number: **ESPAK/120/20/WW/0754/00134** Date: **23/05/2020**
Name of Industry / Client: **Habib Construction Services**



S. No	Parameters	Limit Values (PEQS)	Concentration	Method / Equipment Used	Remarks
27	Sulfate (SO_4^{2-})	600 mg/L	70 mg/L	SMWW 4500 - SO_4^{2-} C	Within Prescribed Limits
28	Sulfide (S^{2-})	1.0 mg/L	0.7 mg/L	SMWW 4500 - S^{2-} F	Within Prescribed Limits
29	Ammonia (NH_3)	40 mg/L	10.8 mg/L	SMWW 4500 - NH_3 D	Within Prescribed Limits
30	Chlorine (Cl)	1.0 mg/L	ND	SMWW 4500 - Cl B	Within Prescribed Limits
31	Temperature	NS	29 °C	Thermometer	---

PEQS: Punjab Environmental Quality Standards for Municipal & Liquid Industrial Effluents, 2016

SMWW: Standard Methods for the Examination of Water and Wastewater 23rd Edition, American Public Health Association, American Water Works Association, Water Environment Federation USA (2017)

USEPA: United States Environmental Protection Agency

NS: None Specified

ND: Not Detected

Note:

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- The values represent sample conditions when monitoring/testing was carried out.
- The report data is not intended to be used legally by the client.

1. Sample Analyzed By: **Waqas Ahmad** Analyst **Musharaf Jabeen** Analyst **Muhammad Inan** Deputy Analyst **Hamza Khan** Assistant Analyst

2. Name of Chief Analyst with Seal: **Muhammad Arfan**

3. Signature of Incharge of the Environmental Laboratory:

Name: **Innan Malik**
General Manager
Date: **23/05/2020**

End of Report



Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

Appendix E: SAHIWAL PARKS HSE CHECK LIST

RESIDENT ENGINEER: MUHAMMAD TAYYAB
CELL NO.: 0321-6369549
LOCATION: SAHIWAL
NAME OF PROJECT: Upgradation of 3 Existing Parks in Sahiwal under PICIIP
Date: 30-06-2020

SOP No.	Monitoring Parameters for Safe System of Work	Triggered Yes/No	Compliance Status		
			Yes	No	Remarks
1	PERSONAL PROTECTIVE EQUIPMENT'S				
		Steel Toe Shoes	√		Ref: Appendix D
		Helmets	√		Pictures showing the labor using protective equipment's at work activities.
		Coveralls/ Uniforms		√	
		Gloves	√		
		Jacket	√		
		Goggles	√		
		Face Shields		√	
		Ear Muffs	√		
		Face Masks	√		
		Disposable PPE		√	
2	FIRST AID EQUIPMENT		√		Ref: Pictures Sahiwal Parks Appendix: A
3	ROAD SAFETY & TRAFFIC MANAGEMENT			√	Not Applicable
		Diversion Sign Boards			
		Removal of Waste Material			
		Fencing			
		Movement of Heavy Equipment at Night			
		Speed Limits			
		Lightening			

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work	Triggered Yes/No	Compliance Status		
			Yes	No	Remarks
4	WORKERS WELFARE				
		Drinking Water	√		
		Changing Room	√		
		Smoking Area		√	
		Insurance of Workers	√		
		First Aid Facility	√		
		Toilets Available on Site	√		
5	FIRE FIGHTING EQUIPMENT				Ref: Appendix A
		Fire Alarm		√	
		Fire Buckets/ Fire Extinguisher	√		
		Training		√	No workers camp
		Fire Fighting System at Camp Office		√	
		Emergency Drills		√	
6	LIGHTING ALONG THE RIGHT OF WAY				Not Applicable
7	TRAINING REQUIREMENTS				
		Training Records	√		
		Attendance of Workers	√		
8	GENERAL HOUSEKEEPING			√	
9	EMERGENCY RESPONSE PLAN		√		
10	SOPS FOR ACCIDENTS			√	
11	SOPs FOR SKILLED AND UNSKILLED LABOUR		√		
		Child Labour	√		
12	WORK AT HEIGHT				Work at ground level
		Safety Harness			
		Fixed Working Platform			
		Proper Access			
		Toe Boards on Platforms			
		Fencing Around			


Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work	Triggered Yes/No	Compliance Status		
			Yes	No	Remarks
		Active Site			
		Training of Workers			
		Weather Conditions			
		Signboards			
		Proper Supervision			
13	DRILLING OPERATION				Not Applicable
		Training			
		PPEs			
		Communication			
		Proper Access i.e. ladder			
		Covering of bore holes			
		Cordon off with steel sheets			
14	PITS & EXCAVATION	Emergency Response Plan			
		Proper Lighting	√		
		Sign Boards	√		
		Proper Access	√		
		Underground Facilities			Not Applicable
		Falling Objects Near Excavation			Not Applicable
		Noise & Dust	√		
15	ELECTRICS ON SITE & YARD	Excavated Material	√		
					No electrical work started yet
		Use Proper Insulated Wires			
		Wear Suitable PPEs			
		Working Place Must be Dry			
		Check Overhead Electric Power Lines			

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work	Triggered Yes/No	Compliance Status		
			Yes	No	Remarks
16	LIFTING ERECTION				No lift at Site
		Area Must be Barricaded			
		Wind Speed & Direction			
		Overhead Lines			
		Safe Working Load			
		Sign Boards			
		Driver License			
		PPEs			
17	CHEMICAL HANDLING & STORAGE				Not Applicable
		Stored in Proper Shade/ Dry Place			
		Store Kept Clean/ Not Use for Other Activity			
		Proper Ventilation			
		PPEs			
		First Aid Facility			
		Fire Extinguisher			
		Warning Signs			
18	HEAVY EQUIPMENT				Not yet used
		Well Trained & Licensed Driver			
		Warning Light			
		Area Must be Barricaded			
		Correctly Positioned & Installed			
		Noise Monitoring			
		PPEs			
19	WELDING EQUIPMENT & OXYGEN CYLINDERS				No welding work started yet
		Fire Extinguisher			
		Cylinder Stored in Enclosed Room			
		Warning Signs			
		Proper Ventilation			

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work		Triggered Yes/No	Compliance Status		
				Yes	No	Remarks
20	REPORTING OF ACCIDENT					
		Emergency Response Plan		√		
21	CONSTRUCTION ACTIVITIES NEAR HIGH VOLTAGE LINES					Not applicable
		Total no. of Incident				
		Incident Investigation Reports				
	General Observations	Satisfactory HSE Arrangements				
	Recommendations				
	Name: MUHAMMAD TAYYAB		 Signatures: -----			
	RE NESPAK SAHIWAL					

Appendix F: SIALKOT PARKS HSE CHECKLIST

The Project Management Construction Supervision Consultants (PMCSC) has developed and completed the following Environmental Monitoring Checklist for assessing the effectiveness of ESMP implementation at the project sites during the reporting period:

DATE: 31-05-2020

RESIDENT ENGINEER: SYED ABDULLAH HUSSAIN

CELL NO.: 0308-7300775

LOCATION: SIALKOT

NAME OF PROJECT: Upgradation of 4 Existing Parks in Sialkot under PICIIP

SOP No.	Monitoring Parameters for Safe System of Work	Triggered Yes/No	Compliance Status		
			Yes	No	Remarks
1	PERSONAL PROTECTIVE EQUIPMENT'S				
		Steel Toe Shoes	√		
		Helmets	√		
		Coveralls/ Uniforms		√	Uniform will be provided till 15 June, 2020
		Gloves	√		Provided by the contractor but labour is rarely using at site. We are asking contractor's site supervisors on daily basis to implement the use of PPEs among workers.
		Jacket	√		
		Goggles	√		
		Face Shields		√	
		Ear Muffs	√		Noise is in permissible limits (Test results attached)
		Face Masks	√		
		Disposable PPE		√	
2	FIRST AID EQUIPMENT		√		Available at site
3	ROAD SAFETY & TRAFFIC MANAGEMENT			√	
		Diversion Sign Boards			Work is under confined space
		Removal of Waste			

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Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work		Triggered Yes/No	Compliance Status		
				Yes	No	Remarks
		Material				
		Fencing				
		Movement of Heavy Equipment at Night				
		Speed Limits				
		Lightening				
4	WORKERS WELFARE					
		Drinking Water		√		
		Changing Room			√	Will be Provided till 15 June, 2020.
		Smoking Area			√	Will be Provided till 15 June, 2020.
		Insurance of Workers		√		
		First Aid Facility		√		
		Toilets Available on Site		√		
5	FIRE FIGHTING EQUIPMENT					
		Fire Alarm			√	
		Fire Buckets/ Fire Extinguisher		√		Only fire buckets are available at site. Extinguishers are expired. Extinguisher will be refilled till 10 June, 2020.
		Training			√	
		Fire Fighting System at Camp Office			√	Only fire buckets are available at site. Extinguisher will be refilled till 15 June, 2020.
		Emergency Drills			√	
6	LIGHTING ALONG THE RIGHT OF WAY					
7	TRAINING REQUIREMENTS					
		Training Records		√		Available at site office.
		Attendance of Workers		√		Available at site office.
8	GENERAL HOUSEKEEPING				√	Practice to keep the site clean exists but needs improvement.
9	EMERGENCY RESPONSE PLAN				-	

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work		Triggered Yes/No	Compliance Status		
				Yes	No	Remarks
10	SOPS FOR ACCIDENTS			√		Emergency response team is established (Copy attached) and all staff is advised to contact emergency response team member in case of any accident occurs at site.
11	SOPs FOR SKILLED AND UNSKILLED LABOUR			√		SOP's of Govt. Of the Punjab Covid-19
		Child Labour		√		Prohibited
12	WORK AT HEIGHT					Work at ground level
		Safety Harness				Work at ground level
		Fixed Working Platform		√		
		Proper Access		√		
		Toe Boards on Platforms		√		
		Fencing Around Active Site		√		Work is under confined space.
		Training of Workers		√		Daily toolbox talk is being conducted at site.
		Weather Conditions				No work carried under extreme weather conditions.
		Signboards		√		
		Proper Supervision		√		On every daily visit, asking the site team to implement and improve the safety measures at site.
13	DRILLING OPERATION					Not Applicable
		Training		N/A		
		PPEs		N/A		
		Communication		N/A		
		Proper Access i.e. ladder		N/A		
		Covering of bore		N/A		


Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work	Triggered Yes/No	Compliance Status		
			Yes	No	Remarks
		holes			
		Cordon off with steel sheets	N/A		
		Emergency Response Plan			
14	PITS & EXCAVATION				
		Proper Lighting	√		Work is during day time and all parks are closed for public.
		Sign Boards	√		Fig. 01-04
		Proper Access	√		Ladders are provided at site.
		Underground Facilities	√		No live utility encounter so far at site.
		Falling Objects Near Excavation	√		Excavated material is kept at least 2 feet away from trench side to avoid falling of material inside the trench.
		Noise & Dust	√		Dust is being controlled by sprinkling water while noise is under permissible limits.
		Excavated Material	√		
15	ELECTRICS ON SITE & YARD				
		Use Proper Insulated Wires	√		
		Wear Suitable PPEs	√		
		Working Place Must be Dry	√		
		Check Overhead Electric Power Lines	√		
16	LIFTING ERECTION				Work is not yet started.
		Area Must be Barricaded	N/A		
		Wind Speed &	N/A		

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Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work	Triggered Yes/No	Compliance Status		
			Yes	No	Remarks
		Direction			
		Overhead Lines	N/A		
		Safe Working Load	N/A		
		Sign Boards	N/A		
		Driver License	N/A		
		PPEs	N/A		
17	CHEMICAL HANDLING & STORAGE				Anti-Termite liquid, Diesel, Water Proofing Chemical etc.
		Stored in Proper Shade/ Dry Place	√		
		Store Kept Clean/ Not Use for Other Activity	√		
		Proper Ventilation	√		
		PPEs	√		
		First Aid Facility	√		
		Fire Extinguisher	√		
		Warning Signs	√		
18	HEAVY EQUIPMENT				Only material delivery vehicles inside the confined working space.
		Well Trained & Licensed Driver	√		
		Warning Light	√		
		Area Must be Barricaded	√		
		Correctly Positioned & Installed	-		
		Noise Monitoring	-		
		PPEs			
19	WELDING EQUIPMENT & OXYGEN CYLINDERS				
		Fire Extinguisher		√	Will be refilled till 15 June, 2020
		Cylinder Stored in Enclosed Room	√		
		Warning Signs	√		
		Proper Ventilation	--		Welding is being done under open sky.

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program

SOP No.	Monitoring Parameters for Safe System of Work		Triggered Yes/No	Compliance Status		
				Yes	No	Remarks
20	REPORTING OF ACCIDENT					
		Emergency Response Plan		√		No accident occurs so far
21	CONSTRUCTION ACTIVITIES NEAR HIGH VOLTAGE LINES					Not applicable
		Total no. of Incident			-	
		Incident Investigation Reports			-	
	General Observations	Satisfactory HSE Arrangements				
	Recommendations	<p style="text-align: center;">.....</p> <p style="text-align: center;"></p>				
	Name: Abdullah Hussain		Signatures:			
	RE NESPAK SIALKOT					

Appendix G: PLGA- HSE CHECKLIST



Check List for HSE Compliance

Date: 25.05.2020

Resident Engineer: Muhammad Hanif Khokar

Location: Lahore

Name of Project: Punjab Local Government Academy

SOP No.	Monitoring Parameter for safe system of work		Triggered	Compliance Status		
			Yes/No	Yes	No	Remarks
1	Personal Protective Equipment					
		Safety shoes		Yes		
		Helmets		Yes		
		Safety Jacket		Yes		
		Gloves		Yes		
		Goggles		Yes		
		Ear Plugs		Yes		
		Face Mask		Yes		
2	First Aid Equipment			Yes		Available at site
3	Road safety & Traffic management					
		Diversion sign boards		N/A		Work is under confined space
		Removal of waste material		Yes		
		Fencing		Yes		
		Movement of heavy vehicles at night		N/A		
		Speed limits		N/A		
		Lighting		Yes		During Night Works
4	Workers Welfare					
		Drinking water		Yes		
		Smoking area		Yes		Smoking is prohibited on-site or inside the containers.
		First aid facility		Yes		
		Toilets available on site		Yes		8 Nos. for Labour workers.
5	Fire Fighting Equipment					
		Fire Alarm		N/A		

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program



		Fire buckets / extinguishers		Yes		
		Training		Yes		Pictures are attached
6	Lightening along the right of way			N/A		
7	Training Requirements			Yes		Training conducted by contractor HSE, pictures are attached
8	Attendance of workers			Yes		Available at site office.
9	General house keeping			Yes		Practice to keep the site clean exists, although has been encouraged improvement.
10	Emergency response Plan			N/A		
11	Training for skilled and unskilled labour			Yes		
		Child labour		Yes		Child Labour is Prohibited.
12	Work at Height			N/A		Related activity not yet started
		Safety harness		N/A		
		Fixed working platform		N/A		
		Proper access		N/A		
		Toe boards along platforms		N/A		
		Fencing around work site		Yes		Work is under confined space.
		Training of workers		Yes		Toolbox talk is being conducted at site.
		Weather conditions				No work carried under extreme weather conditions.
		Sign boards		Yes		Pictures are attached



						implement and improve the safety measures at site.
13	Drilling Operation					
		Training		Yes		
		PPEs		Yes		
		Communication		Yes		
		Proper access		Yes		
		Covering of bore holes		Yes		
		Cordon off with steel sheets		Yes		
14	Pits and excavation			N/A		Excavation not yet started at site.
		Proper lighting		Yes		
		Sign boards		Yes		
		Proper access		Yes		
		Underground facilities		N/A		
		Falling objects near excavation		N/A		
		Noise & dust		Yes		Dust is being controlled by sprinkling water while noise is under permissible limits.
15	Electrics on site & yard					
		Use proper insulated wires		Yes		
		Use proper PPEs		Yes		
		Working place must be dry		Yes		
		Check overhead electric power lines		Yes		Shifted for smooth drilling operation.
16	Lighting erecting					Lighting erecting are installed on site.
		Area must be		Yes		

□



		barricaded				
		Wind speed and direction		Yes		
		Overhead lines		Yes		
		Safe working load		Yes		
		Sign board		Yes		
		Driver's license		Yes		
		PPEs		Yes		
17	Chemical handling & storage					Anti-Termite liquid, Diesel, Water Proofing Chemical etc.
		Stored in proper shade/dry place		Yes		
		Store kept clean / not used for other activity		Yes		
		Proper ventilation		Yes		
		PPEs		Yes		
		First aid facility		Yes		
		Fire extinguishers		Yes		
		Warning signs		Yes		
18	Heavy equipment					Only material delivery vehicles inside the confined working space.
		Warning light		Yes		
		Area must be barricaded		Yes		
		Correctly positioned & installed		Yes		
		Noise monitoring		Yes		Test performed (Results attached)
		PPEs		Yes		
19	Welding equipment & oxygen cylinders					
		Cylinders stored in enclosed room		yes		

Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program



		Warning signs		Yes		
		Proper ventilation		N/A		
20	Reporting of accident					No accident reported so far.
21	Construction activities near high voltage lines			N/A		
		Total no of incidents			N/A	
		Incident investigation reports			N/A	
	General observation					
	Recommendations					

□

Appendix H: Grievance Redressal Committee



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIP)



COMMITTEE NOTIFICATION

Grievances Redressal Committee at Field Level, Sewage Treatment Plant (North zone) Sahiwal (1st Tier)

The composition of the GRC at Field level is as follows:

Sr. No.	OFFICIAL DESIGNATION	COMMITTEE DESIGNATION
1	Chief Corporation Officer, (MC), Sahiwal	Chairman
2	City Head (CIU) / Infrastructure Engineer Sahiwal	Secretary
3	Research Analyst (Social Safeguard CIU)	Member
4	Research Analyst (Gender CIU)	Member
5	Research Analyst (Environment)	Member
6	Rep of AC office (Concerned Patwari)	Member
7	Public Representative	Member
8	Lamberdar of Muhammad Pur	Member
9	Lamberdar of Chak#66 GD	Member

TOR Grievances Redressal Committee:

- i. This GRC will work closely with the Communities and CIU at field level
- ii. To receive and facilitate the application and grievances of Affected/ displaced persons.
- iii. To explain how the procedures are accessible to DPs.
- iv. The committee will give resolution of the dispute within 10 days of complaint registration.
- v. To inform the displaced persons of their rights and of the procedures for addressing complaints whether verbally or in writing during consultation, survey, and time of compensation.
- vi. To inform the DPs, that they can register their complaints in the register placed at CIU office, Sahiwal and Contractor Office at site.
- vii. To enter the complaint on community complaint register (CCR) consisting the minimum information of name and address of complainer, description of complaint, action taken, status of resolution of complaints and other necessary information/ record and reasons in case the issue is not satisfactorily resolved.

(N)



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



- viii. Proper consideration will be given to avoid the grievances rather than going through a redress process.
- ix. To ensuring full participation and consultation with the DPs and by establishing extensive communication and coordination between the community and PMU.
- x. To inform the displaced persons about GRC and mechanism by pasting the information at prominent places. Names and contact numbers of the members of the GRC members and will be disseminated to DPs through information brochures.
- xi. The issues/ community concerns relating to the land will be addressed by the revenue department (LAC)/ and or can be referred to GRC, while issues other than land will be directly addressed by the CIU/PMU and can be placed with GRC at project level to resolve the community issues.
- xii. Inform the DPs on the status of resolution of their complaints and the way forward.
- xiii. Documentation and collection of all investigations including field visits, consultation with the DPs and audio-visual evidence.
- xiv. Preparation of a final report with recommendations and solutions and submission of the same to PD PMU.

Note: The Chair may co-opt any other member(s) if it considers appropriate.

PROGRAM DIRECTOR (PICIIP)
LG&CD DEPARTMENT

C.C:-

A copy is forwarded for information and further necessary action to:-

1. PSO to Secretary LG&CD Department
2. PA to Commissioner, Sahiwal
3. PA to Deputy Commissioner, Sahiwal
4. PA to Assistant Commissioner, Sahiwal
5. All Members of the Committee
6. Office file



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



COMMITTEE NOTIFICATION

**Grievances Redressal Committee at Field Level, Sewage Treatment Plant Sialkot
(1st Tier)**

The composition of the GRC at Field level is as follows:

Sr. No.	OFFICIAL DESIGNATION	COMMITTEE DESIGNATION
1	Chief Officer, (MC), Sialkot	Chairman
2	City Head (CIU)/ Infrastructure Engineer Sialkot	Secretary
3	Research Analyst (Social Safeguard CIU)	Member
4	Research Analyst (Gender CIU)	Member
5	Research Analyst (Environment)	Member
6	Rep of AC office (Concerned Patwari)	Member
7	Public Representative	Member
8	Lamberdar of Chak# Kala	Member
9	Lamberdar of TonkanWali	Member
10	Lamberdar of Chitti Sheikhan	Member

TOR Grievances Redressal Committee:

1. This GRC will work closely with the Communities and CIU at Field level
2. To receive and facilitate the application and grievances of Affected/ displaced persons.
3. To explain how the procedures are accessible to DPs.
4. The committee will give resolution of the dispute within 10 days of complaint registration.
5. To inform the displaced persons of their rights and of the procedures for addressing complaints whether verbally or in writing during consultation, survey, and time of compensation.
6. To enter the complaint on community complaint register (CCR) consisting the minimum information of name and address of complainer, description of complaint, action taken, status of resolution of complaints and other necessary information/ record and reasons in case the issue is not satisfactorily resolved.
7. To inform the DPs, that they can register their complaints in the register placed at CIU office, Sahiwal and Contractor Office at site.

(N)



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



8. Proper consideration will be given to avoid the grievances rather than going through a redress process.
9. To ensuring full participation and consultation with the DPs and by establishing extensive communication and coordination between the community and PMU.
10. To inform the displaced persons about GRC and mechanism by pasting the information at prominent places. Names and contact numbers of the members of the GRC members and will be disseminated to DPs through information brochures.
11. The issues/ community concerns relating to the land will be addressed by the revenue department (LAC)/ and or can be referred to GRC, while issues other than land will be directly addressed by the CIU/PMU and can be placed with GRC at project level to resolve the community issues.
12. Inform the DPs on the status of resolution of their complaints and the way forward.
13. Documentation and collection of all investigations including field visits, consultation with the DPs and audio-visual evidence.
14. Preparation of a final report with recommendations and solutions and submission of the same to PD PMU.

Note: The Chair may co-opt any other member(s) if it considers appropriate.

PROGRAM DIRECTOR (PICIIP)
LG&CD DEPARTMENT

C.C:-

A copy is forwarded for information and further necessary action to:-

1. PSO to Secretary LG&CD Department
2. PA to Commissioner, Gujranwala
3. PA to Deputy Commissioner, Sialkot
4. PA to Assistant Commissioner, Sialkot
5. All Members of the Committee
6. Office file



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



COMMITTEE NOTIFICATION

Grievances Redressal Committee at Worthy Commissioner Office Level, Sahiwal (2nd Tier)

In case of dissatisfaction of the DP, his complaint will be referred by GRC to second level of GRC within 07 days after communication of decision by the GRC.

The composition of the GRC at Division level is as follows;

Sr. No.	OFFICIAL DESIGNATION	COMMITTEE DESIGNATION
1.	Director LG&CD Department, Sahiwal	Chairman
2.	Assistant Commissioner/LAC, Sahiwal	Secretary
3.	Infrastructure Engineer (PMU)	Member
4.	Resettlement Specialist (PMU)	Member
5.	Social Safeguard Specialist (CIU)	Member
6.	Gender Specialist	Member
7.	Environment Specialist	Member
8.	Concerned Tehsildar District/Tehsil	Member
9.	Others (Concerned Department Rep of District Administration)	Member
10.	Rep of the Contractor and Implementation Consultants	Member

TORs of Grievances Redressal Committee:

- i. The PMU will acknowledge the complainant,
- ii. Will scrutinize the record of the GRC,
- iii. Work closely with Municipality and GRC at field level.
- iv. Investigate the remedies available and request the complainant to produce any record in favour of the claim. After thorough review and scrutiny of the available record on complaint,
- v. Visit the field and collect additional information and hear the complainant if required.
- vi. Once the investigations are completed the PMU shall forward recommendations through Project Director (PD) PMU to the CIU headed by City manager for implementation and
- vii. Communicate to the complainant accordingly within 21 days of receipt of the complaint regarding the status and the proposed solutions to address the complaints.



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



- viii. To facilitate the Affected/ displaced persons to appeal against any decision, practice or activity arising from land or other assets compensation.
- ix. Closure of the complaint process: upon implementation of GRC decision, the GRC with consultation of complainant recorded and signed-off by the complainant and Project GRC will close the complaint in register after approval by the PD PMU.

Note: The Chair may co-opt any other member(s) if it considers appropriate.

PROGRAM DIRECTOR (PICIIP)
LG&CD DEPARTMENT

C.C:-

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2. PA to Commissioner, Sahiwal
3. PA to Deputy Commissioner, Sahiwal
4. PA to Assistant Commissioner, Sahiwal
5. All Members of the Committee
6. Office file



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIP)



COMMITTEE NOTIFICATION

Grievances Redressal Committee at Worthy Commissioner office Level, Gujranwala (2nd Tier)

In case of dissatisfaction of the DP, his complaint will be referred by GRC to second level of GRC within 07 days after communication of decision by the GRC.

Proposed composition of the GRC at Division level is as follows:

Sr. No.	OFFICIAL DESIGNATION	COMMITTEE DESIGNATION
1.	Director LG&CD Department, Gujranwala	Chairman
2.	Assistant Commissioner/LAC, Sialkot	Secretary
3.	Infrastructure Engineer (PMU)	Member
4.	Resettlement Specialist (PMU)	Member
5.	Social Safeguard Specialist (CIU)	Member
6.	Gender Specialist	Member
7.	Environment Specialist	Member
8.	Concerned Tehsildar District/Tehsil	Member
9.	Others (Concerned Department Rep of District Administration)	Member
10.	Rep of the Contractor and Implementation Consultants	Member

TORs of Grievances Redressal Committee:

1. The PMU will acknowledge the complainant,
2. Will scrutinize the record of the GRC,
3. Work closely with Municipality/PID and GRC at field level.
4. To enter the complaint on community complaint register (CCR) consisting the minimum information of name and address of complainer, description of complaint, action taken, status of resolution of complaints and other necessary information/record and reasons in case the issue is not satisfactorily resolved.
5. At Project level, CIU staff will inform the displaced persons about GRC and mechanism by pasting the information at prominent places. Names and contact numbers of the members of the GRC and PMO staff will be disseminated to DPs through information brochures once these have been notified.

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PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



6. Investigate the remedies available and request the complainant to produce any record in favour of the claim. After thorough review and scrutiny of the available record on complaint,
7. Visit the field and collect additional information and hear the complainant if required.
8. Closure of the complaint process: upon implementation of GRC decision, the GRC with consultation of complainant recorded and signed-off by the complainant and Project GRC will close the complaint in register after approval by the PD PMU.

Note: The Chair may co-opt any other member(s) if it considers appropriate.

PROGRAM DIRECTOR (PICIIP)
LG&CD DEPARTMENT

C.C:-

A copy is forwarded for information and further necessary action to:-

1. PSO to Secretary LG&CD Department
2. PA to Commissioner, Gujranwala
3. PA to Deputy Commissioner, Sialkot
4. PA to Assistant Commissioner, Sialkot
5. All Members of the Committee
6. Office file



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



COMMITTEE NOTIFICATION

Grievances Redressal Committee at Local Government and Community Development Department (LG&CD) Level (3rd Tier)

Proposed composition of the GRC at Local Government and Community Development Department Level as follows:

Sr. No.	OFFICIAL DESIGNATION	COMMITTEE DESIGNATION
1	Additional Secretary Development	Chairman
2	PD, PICIIP	Secretary
3	Chief Engineer, PICIIP	Member
4	Director M&E, PICIIP	Member
5	Resettlement Specialist, PICIIP	Member
6	Social Safeguard Specialist, PICIIP	Member
7	Gender Specialist	Member
8	Environment Specialist	Member

TORs of Grievances Redressal Committee:

This GRC-3rd tier, through authorized representative, will acknowledge the complainant about his complaint, scrutinize the record of the GRC-P, investigate the remedies available and request the complainant to produce any record in favour of his claim. Once the investigations are completed, the GRC-HQ shall give decision within 21 days of receipt of the complaint. If the complainant is still dissatisfied with the decision, he can go to the court of law, if he/she wishes so

- i. This GRC, through authorized representative, will acknowledge the complainant about his complaint,
- ii. PMU to facilitate the DP in resolving the grievance to the extent possible.
- iii. Project Director who will then organize a special meeting to address the problem and identify a solution
- iv. Scrutinize the records, investigate the remedies available and request the complainant to produce any record in favour of his claim (if required).
- v. The GRC may plan the field visit and collect additional information, (if required).The committee after thorough review and based on the field visit identify responsibilities and an action plan.
- vi. Once the investigations are completed the PMU shall forward recommendations through Project Director (PD) PMU to the CIU headed by City manager for implementation and

(N)



PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROJECT (PICIIP)



- vii. Communicate to the complainant accordingly regarding the status and the proposed solutions to address the complaints. The agreed action thus determined should be implemented within seven working days (if additional time is needed to implement the corrective action, it should be discussed and decided during the meeting).
- viii. In case, the grievance redressal system does not satisfy the Affected/ displaced persons, then they can pursue further by submitting their case to the appropriate court of law as per the process set out in Section 18 to 22 of the LAA 1894.
- ix. In such cases, the PMU will also inform the Bank Team of persistent problems and/or where solutions need to be found at higher levels of government.
- x. To facilitate the Affected/ displaced persons to appeal against any decision, practice or activity arising from land or other assets compensation.

Note: The Chair may co-opt any other member(s) if it considers appropriate.

PROGRAM DIRECTOR (PICIIP)
LG&CD DEPARTMENT

C.c:-

1. Worthy Secretary, LG&CD Department
2. Section Officer (Projects), LG&CD Department
3. All Members of the Committee

Appendix I: PROJECT PHOTOGRAPHS

	
 <p>Fire Extinguisher Sahiwal Park</p>	 <p>Sign Board, Sahiwal Park</p>



Plaster work of Boundary wall in Fateh
Sher Park



Semi Annual Environmental Monitoring Report No.1
Punjab Intermediate Cities Improvement Investment Program





Site Meeting by Deputy Commissioner Sahiwal
at Farid Town Park on 13-06-2020



Meeting in contractor's office by Senior
Resident Engineer NESPAK in Farid Town
Park on 09-06-2020



Collection of water samples for 2nd quarter
quality testing



Plaster work for Boundary wall in Fateh sher
Park



Concrete work for Lake in Farid Town Park



HSE Officer Conducted Training



Use of Personal Protective At PLGA Site







Lighting & barricade tape fixation on



Use of Gloves, Mask and headgears at



Noise Monitoring



Waste water Collection for Testing



Air Quality monitoring instrument

HSE Trainings (Pictorial Evidence)



HSE Training to Site staff



HSE Training to Site staff



HSE Training to Site staff



Display of Emergency contact Information



Sign Boards, Sialkot Parks



Sign Board, Sahiwal Parks



Sign Board, Sahiwal Parks



Fire Extinguisher Sahiwal Park



Sign Board, Sahiwal Parks



Sprinkling of water at Site at PLGA Site



Solid Waste Management at PLGA Site



Disinfection of workplace at PLGA, Temperature Checking at Entrance Sialkot
Lahore Parks