PUNJAB MUNICIPAL DEVELOPMENT FUND COMPANY

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Sub-Project

WATER SUPPLY

"Rehabilitation of Water supply Lines
&
Installation of One New Tube Well."

February 2023

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ACRONYMS

AHs	Affected Households
BOD	Biological Oxygen Demand
DPO	Deputy Program Officer
CO	Chief Officer
CPMT	Central Program Management Team
CTS	Complaints Tracking System
DPO	Deputy Program Officer
EHS	Environment Health & Safety
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
EPA	Environment Protection Agency
EPD	Environment Protection Department
ESFPs	Environmental & Social Focal Persons
ESM	Environmental & Social Management
ESMF	Environmental & Social Management Framework
ESMP	Environmental & Social Management Plan
ESMMP	Environmental & Social Management and Monitoring Plan
ESSSs	Environmental & Social Safeguards
GoP	Government of the Punjab
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immuno-Deficiency Syndrome
HSE	Health Safety & Environment
IEE	Initial Environmental Examination
ILO	International Labor Organization
LG & CDD	Local Government & Community Development Department
MoCC	Ministry of Climate Change
MO-I	Municipal Officer Infrastructure
MO-P	Municipal Officer Planning
NEQS	National Environmental Quality Standards
NOC	No Objection Certificate
OHS	Occupational Health & Safety
OPs	Operational Policies
PAPs	Project Affected Persons
PC-I	Planning Commission Form-I
PCP	Punjab Cities Program
PCRs	Physical Cultural Resources
PD	Project Director
PDO	Program Development Objectives
PEPA	Punjab Environment Protection Act
PHED	Public Health Engineering Department
PMDFC	Punjab Municipal Development Fund Company
PMU	Project Management Unit
PPEs	Personal Protective Equipment's
PO	Program Officer
RoW	Right of Way
RPF	Resettlement Policy Framework
SMP	Social Management Plan
SOPs	Standard Operating Procedures
SPOs	Senior Program Officer
STIs	Site Transmission Infections
SWM	Solid Waste Machinery
TORs	Terms of References
W/B	World Bank

EXECUTIVE SUMMARY

The government of Punjab (Govt. of Punjab) sought support from the World Bank for the economic growth of urban sectors in Punjab and launched Punjab Cities Program (PCP). The program is expected to achieve the overarching goals of ending poverty and promoting shared prosperity by delivering improved urban infrastructure inclusively and in ways that enhance economic growth and development in the participating cities. The Project has a number of financial, social, economic and environmental benefits, including institutional development, rehabilitation and improvement of municipal services, capital investments, a better quality of life and employment generation. In addition, a large number of secondary benefits are also likely to accrue in the medium to long term such as institutional reforms at the local level. Environmental and social management under the program will be largely based on the existing legal, regulatory and institutional systems in Pakistan and the Punjab province. PCP IPF Window (technical assistance component) supports the strengthening of social and environmental risk management systems in the participating cities. It will finance the strengthening of a) social and environmental focal points in each city; b) the creation of a social and environmental management system at the city level; and c) the rolling out of a training program by PMDFC for city officials.

This Environmental and Social Management Plan (ESMP) is prepared according to the World Bank Core Principles for PforR financing modality and Environmental and Social laws of the Government of Punjab (GoPb). It will be used to identify and mitigate the environmental and social impacts that may emerge during the implementation of the proposed Sub-project "Rehabilitation of Water Supply Lines & Rehabilitation of One Tube Well which will be executed by MC Kamoke from the financial grant of PCP. This ESMP follows the social and environmental appraisal and compliance as mentioned in the Environmental and Social Management Framework (ESMF) of PCP.

Sub-project Summary:

Scope of Work	Rehabilitation of Water supply lines in Rasulnagar and Mandiala Road along with the Installation of one new tube well at Mandiala road.
Location	Kamoke, Punjab
Sub-project Tentative Cost in PKR	Total 365.5 Million PKR (incl. ESMP cost)
ESMP Implementation Cost	1.24 Million PKR
Sub-project Duration	6 Months approx. 10/15 workers/labor will be engaged
Major Work Activities	Installation of one new tube well. Dismantling cement concrete, removing road pavement (105cft), brick, or flagged flooring. Excavation of trenches in all kinds of soil, except cutting rock, for water supply pipelines up to 5 ft. (1.5 m) depth from ground level. Restoration of brick pavement on edge, over-laid service line. Providing, fixing and testing consumer connections
Executing Agency	MC Kamoke
Monitoring Agency	Supervisory Consultant, MC Kamoki & Punjab Municipal Development Fund Company (PMDFC)
Sub-project Financed By	World Bank under Punjab Cities Program (PCP)
Design & Resident Supervision Consultants	JV Consultants (NESPAK, ACE, MMP)
Environmental Category	E-2
Social Category	S-2

Environment & Social Management:

This ESMP report presents the Sub-project site-specific baseline data, identification, assessment and evaluation of project impacts and preparation of environmental management and monitoring plan for mitigation of adverse impacts that may arise due to the proposed project interventions.

Screening of Impacts:

The Environment & Social Screening Checklist and Involuntary Resettlement Screening Checklists included in the ESMF to screen the Sub-projects, have been used to screen the social and environmental impacts of this Sub-project and filled as per the environmental and social survey conducted in the Sub-project area. The screening checklist suggested that the environmental and social impacts of the Sub-project are minor to moderate and temporary and can be mitigated and managed with prevailing good civil construction measures.

Impact Assessment:

Most of the Project's environmental and social impacts will be beneficial. However, during the construction phase, there will be some negative environmental and social impacts including construction waste generation during the dismantling of cement concrete, removing road pavement, brick or flagged flooring and excavation of trenches. Noise pollution and temporary disturbance in the accessibility of residents due to construction work. Temporary accessibility to the shops may be disturbed for 1/2 days only for which the contractor will be instructed to execute that part of the work at night hours after the closure of the bazar while there is already open space available outside the shops for accessibility. There will be no impact on PCRs as project interventions are outside of the PCR boundaries. There are no environmentally sensitive receptors inside RoW of the Sub-project. There are community safety and occupational safety prospects envisaged because there are some social receptors exists within 100 m of the ROW. Land acquisition is required for the installation of a new tube well in the sub-project hence the Involuntary Resettlement Checklist was also used during the field survey to assess the social impacts and new tube well will be installed at Govt. School Boys High No. 2. Land belongs to Education Department. No Objection Certificate (NOC) for installation of tube well has been issued by the Principal, Govt. High No. 2 Kamoke received from the District Education Officer (SE) Gujranwala vide No. 4657/Dev Dated 31-10-2022. Public consultation was carried out with school administration and they showed their consent on installation of tube-well in their vicinity.

Mitigation Measures:

These impacts require appropriate mitigation and management measures to curtail them. The Sub-project specific measures suggested are; a) Supervisory Consultant will conduct a regular visit to the construction sites to monitor the compliance of E & S aspects as the report to E&S team of PMDFC (b) Dismantling material will be disposed of simultaneously (c) it will be ensured to execute the work in portions to minimize the temporary disturbance in accessibility (d) public safety will be ensured (e) workforce will be provided with the PPEs as per EHS SOPs (These SOPs are designed for Punjab Cities Program and will apply to all types of labor/workers/daily wagers - including women hired for the construction activities under PCP). (f) Corona SOPs issued by Punjab Government will be followed (g) the Contractor will use efficient machinery and equipment to reduce noise and air pollution impacts (h) the Contractor will ensure public convenience during the course of the Sub-project (i) Temporary accessibility to the shops and placement of temporary vendors may be disturbed for 1/2 days only for which

contractor will be instructed to execute that part of work at night hours after the closure of the bazar while there is already open space available outside the shops for accessibility. Besides the mitigations measure elaborated in EMP, some specific efforts need to be done by the contractor during the construction phase to avoid impacts on the school environment. It is recommended that the installation of a new tube well will be done after school hours. If not possible, then the contractor has to cordon off all the working platforms with special care by well-trained skilled workers. The contractor must prepare and get approval for safe working procedures from the supervisory consultant after conducting a complete hazard analysis. The contractor must complete the task as early as possible by using best engineering practices. All the construction activities/schedule needs to be shared with the school committee. During the operation phase tube well working hours must be planned before school time i.e. before 0700hrs, during break/recess time & after school time. Furthermore, all necessary expenditures i/c electricity bills, maintenance, security, etc. would be paid by the MC-Kamoke.

Contamination of water supplies should be avoided at all times. In most small water supply systems. This creates a risk of polluted water infiltrating into the pipelines through leaks in pipe joints and service taps. To counter the health risk, 0.1 mg/L residual chlorine should be maintained throughout the distribution system. Other measures to preserve the quality of water are a) Install water mains using adequate separation from potential sources of contamination such as sewers, storm water pipes, septic tanks, etc. b) Avoid cross-connections and prevent backflow. c) Provide at least the minimum allowable pressure and adequate flow at all delivery points in the distribution system. d) Avoid situations that may give rise to negative pressures & control the pressure up to the maximum allowable while avoiding pipe breakage. e) Effective circulation of water in the pipelines should be maintained to prevent the deposition of sediments and minimize the growth of bacteria. f) Install non-return valves on source facilities to prevent backflow that might cause contamination. g) Promptly repair leaks in pipes to keep dirty water from coming in when the pressure in the pipe is reduced.

Aquifer Sustainability

The depth of the proposed new tube well is 600 feet with 16 pumping hours per day. The depth is taken as tentative considering the following;

The Rechna Doab[1] in which Kamoke city is situated has an average unconfined aquifer thickness of up to 1300 feet. The depth is taken tentative due to considering the sustainability and quality of tube well water up to 2050. Keeping view that the project area falls in Kamoke City have a shallow aquifer of underground water because of its location in the Rechna Doab area of Punjab. The recharge of the groundwater water has been done by two main sources one is the Chenab River and the other one passing nearby (around 4 to 4.5 km from the city center) the Kamoke city is Upper Chenab Canal. Recharge to the aquifer is principally seepage from the rivers and to a lesser degree precipitation. Both provided sufficient recharge to the groundwater because these are perennial sources of water. So the design criteria and strategic location of the project area concluded that drawing water of 2 cusec capacity will not affect the groundwater levels in the project areas significantly.

[1] The word doab is of Persian origin, signifying the region between two rivers, Rachna doab includes all the area between the Chenab and Ravi Rivers. It lies between 30° 35' and 32° 50' N. and 71° 50' and 75° 3' E https://www.iwmi.cgiar.org/Publications/Working_Papers/working/WOR53.pdf

[2]Furthermore, a tube-well-installed in 1981 (42 years back) inside the boundary of Girls College Kamoke[3] with the designed capacity rate of pumping 660 GPM with standard operating hours has been analyzed to determine the groundwater conditions. This well has produced a sustainable pumping rate for more than forty years with a reduced rate of 0.62 percent per year in terms of discharge. The above results are very promising and it is anticipated that the proposed wells shall produce an efficient rate of pumping up to the designed period i.e. 2050.

Grievance Redress Mechanism (GRM):

The GRM for Sub-project implementation will cater to all Sub-project beneficiaries. GRM for subproject implementation will cater to all subproject beneficiaries. The GRM mechanism is based on three-tier grievance redress committees - at the field level, MC Kamoke level and administrator level. At the construction site number of GRC members will be displayed.

Stakeholder Consultations:

Stakeholder consultations were carried out during the preparation of ESMP. Interviews were undertaken with primary stakeholders including the president of bazar and shopkeepers of the main bazar to discuss the present working conditions of the water supply and the improvements recommended. Meetings were held with MC Kamoke Officials (CO, MOI, Sub-Engineers) and with the School Committee for the availability of land as well as the suitability of the location of the proposed Tube well. During the consultation sessions, Key environmental and social issues were also discussed. Consultations revealed that the overwhelming majority of the respondents were not satisfied with the water quality due to the old water supply system. All the respondents were in favor of the rehabilitation of Water supply lines

ESMP Implementation Cost:

The total cost of the ESMP Implementation Cost - Rehabilitation of Water Supply Sub-Project - Kamoke has been estimated to be about Pak Rupees 1,247,000/-

[2] Sectoral Plan of Water Supply Scheme-Kamoke, developed by Nespak

[3] 200m away from the proposed site of new tub-well under this sub-project

Section 1
INTRODUCTION

1.1. Punjab Cities Program (PCP)

Punjab Cities Program (PCP) Program-for-Results (PforR) will support participating MC Kamoke to improve its urban management and service delivery performance. The operation will provide capacity-building and institutional support to 16 secondary cities in Punjab, with an estimated total population of 4.1 million, half of whom are female.

Program Development Objective (PDO) is to strengthen the performance of participating urban local governments in urban management and service delivery.

By achieving the Program Development Objective (PDO), the operation is expected to contribute to the overarching goals of ending extreme poverty and promoting shared prosperity by delivering improved urban infrastructure on an inclusive basis and in ways that enhance economic growth and development in the participating cities. Achievement of the PDO will also make a significant contribution to attaining Sustainable Development Goal-11 (sustainable cities and communities).

1.2. Environment & Social Management Framework (ESMF)

An environmental and Social Management Framework (ESMF) has been prepared for Punjab Cities Program (PCP). ESMF will facilitate and technically assist the MC Kamoke in better understanding and compliance with social and environmental management processes and procedures as per the World Bank Core Principles under PforR financing modality, local policies and legal framework. Under ESMF procedures, each Sub-project will be screened for the severity and extent of environmental and social impacts. All the Sub-projects will be screened through an environmental and social screening checklist and those having negligible environmental and or social impacts will require no further assessment. Sub-projects having some negative but localized environmental and or social impacts will require a generic Environmental and Social Management Plan (ESMP) or SMP, while those having environmental impacts of significant nature or they come under Schedule I or II of PEPA Review of IEE/EIA Regulation 2000 will require to conduct the detailed studies (IEE/EIA) and further submission of reports to PEPA for review and to obtain NOC/ environmental approval.

1.3. Environment & Social Assessment Categories

1.3.1. Environmental Categories:

Depending on size, cost, location and nature, the scheme will have varying impacts on the urban environment. The rigorousness of environmental assessment requires identifying and mitigating the impacts, largely dependent upon the complexities of the scheme. To facilitate effective screening, ESMF categorized schemes into three categories viz. E-1, E-2 and E-3.

E-1 schemes are those wherein major environmental impacts are foreseen;

E-2 schemes are expected to have only moderate environmental impacts; and

E-3 schemes are the schemes with negligible environmental impacts and hence, these can be termed as “environmentally benign”.

1.3.2. Social Categories

Based on the number of households that may be affected by the Sub-project, i.e. Affected Households (AHs) and the magnitude of impacts, schemes are categorized as S-1, S-2 and S-3.

S-1 schemes are those schemes that will impact more than 40 households, and are expected to have significant negative social consequences;

S-2 schemes are those which will impact less than 40 households and are expected to have significant social consequences affecting local inhabitants.

S-3 schemes are not expected to have any significant adverse social impacts

1.3.3. Environment & Social Assessment Category of the Sub-project

Sub-project has been screened to assess the environmental and social impacts anticipated as per the scope of work. As per findings of the multiple site visits conducted, discussions with officials and stakeholder consultations, the Sub-project area does not fall in any of the wildlife habitat or reserve area/environmental sensitive areas; therefore, it will not cause any harmful impact directly or indirectly during the execution of civil works. Sub-project will have no irreversible environmental and social impacts. There are some moderate environmental impacts as per the scope of work and limited during the construction stage that will be mitigated by following mitigation measures mentioned in Table 9. Sub-project categorized as E-2 and ESMP are prepared under this category.

Land acquisition is required for the installation of one new tube well. The required land belongs to the Education department. NOC for the required land has been acquired. An area of 12x12 ft is required for the installation of the tube well. While for the rehabilitation of old-live lines, there will neither be land acquisition nor the physical displacement or impacts on livelihoods envisaged. Nevertheless, the sub-project may have temporary social impacts related to community health and safety and accessibility. Therefore, the Sub-project is categorized as S-2. As there is no negative impact in terms of livelihood and means of livelihoods, business loss and any other economic loss is anticipated, Social Management Plan has been made as part of the ESMP.

1.4. Environnent & Social Management Plan (ESMP)

The Environmental and Social Management Plan (ESMP) is prepared in compliance with the guidelines provided in the Environmental and Social Management Framework (ESMF) for the following Sub-project: ´

"Replacement of water supply and old lived pipes in Mohalla Rasulnagar & Mandiala Road and installation of one new Tubewell at Mandiala Water Works."

1.5. Objectives of ESMP

The primary objectives of the ESMP are as follows:

- To facilitate the implementation of the identified mitigation measures.
- To define the responsibilities of the project proponents, Contractor, and other members of the project team.

- To define a monitoring mechanism and identify monitoring parameters in order to ensure complete implementation of all mitigation measures and ensure the effectiveness of the mitigation measures.

1.6. Sub-Project Team

The following team members participated in the preparation of ESMP.

Table 1: Composition of Sub-project Team

Sr. No	Name	Designation	Department
1.	Malik Muhammad Iftikhar	Team Leader	JV Consultant
2.	Muhammad. Ahmad Hassan	Design Engineer	JV Consultant
3.	Mr. Sameen Khokhar	Environmentalist	JV Consultant
4.	Mr. Aftab Rehman	Social Expert	JV Consultant
5.	Miss Adeera	Social Expert	JV Consultant

Section 2
SUB-PROJECT DESCRIPTION

2. Area Description

Kamoke is located on the Grand Trunk Road 21 km from Gujranwala at its south and 46 km from Lahore Kamoke is located at 31°58'31"N 74°13'23"E (31.9752600, 74.2230400). Kamoke is situated at (226 m) above sea level in central Punjab. The present condition of the site is presented in Figure – 1 Location map of the city is attached in Figure – 2:

Main Bazar Mohalla Rasulnagar

Street view of Mandiala Road

Private pumps have been common in the sub-project area due to under-demand or contaminated water supply.

Condition of the Water Supply Infrastructure at Mandiala Water Works

Figure 1: Present Condition of Sub-Project Site

2.1. Problem Statement

At Mandiala road, a tube-well[4] was installed in 1981 with the life of 10 years having design discharge capacity of 2 cusecs but serving after 42 years (32 years more than its average life capacity) is now choked and providing 0.25 cusec flow. It will become difficult to reinstate it after rehabilitation. Keeping in view, MC Kamoke has proposed a new site 200m away from this existing tube-well where a new-tube-well should be installed with design discharge capacity of 2.0 cusec and estimated age of 10 years till 2033.

At Mandiala road and Rasoolnagar, due to the damaged and outlived water supply pipelines[5], water contamination issues are found in almost all areas. The possible causes may be the

[4] inside the boundary of Girls College Kamoke, installed by PHED (Punblic Health Engineering Department)

[5] Installed in 1981 by PHED

leakages in the distribution system pipelines and leaking consumer connections underground. Due to the contamination issues, private boring and extraction of water are very common in the city. Mixing of sewage water with drinking water being supplied by the old supply pipes at several points has resulted in the production of water borne diseases and other associated problems among the masses of the city. In this scenario, existing water supply lines of both these areas will be replaced with the new ones under this subproject.

60% of the city area does not have any water supply distribution system. Rest is served with the very old water supply facility constructed by PHED in 1981[6].

[6] Sectoral planning report and identified during public consultation as well as baseline drinking water analysis

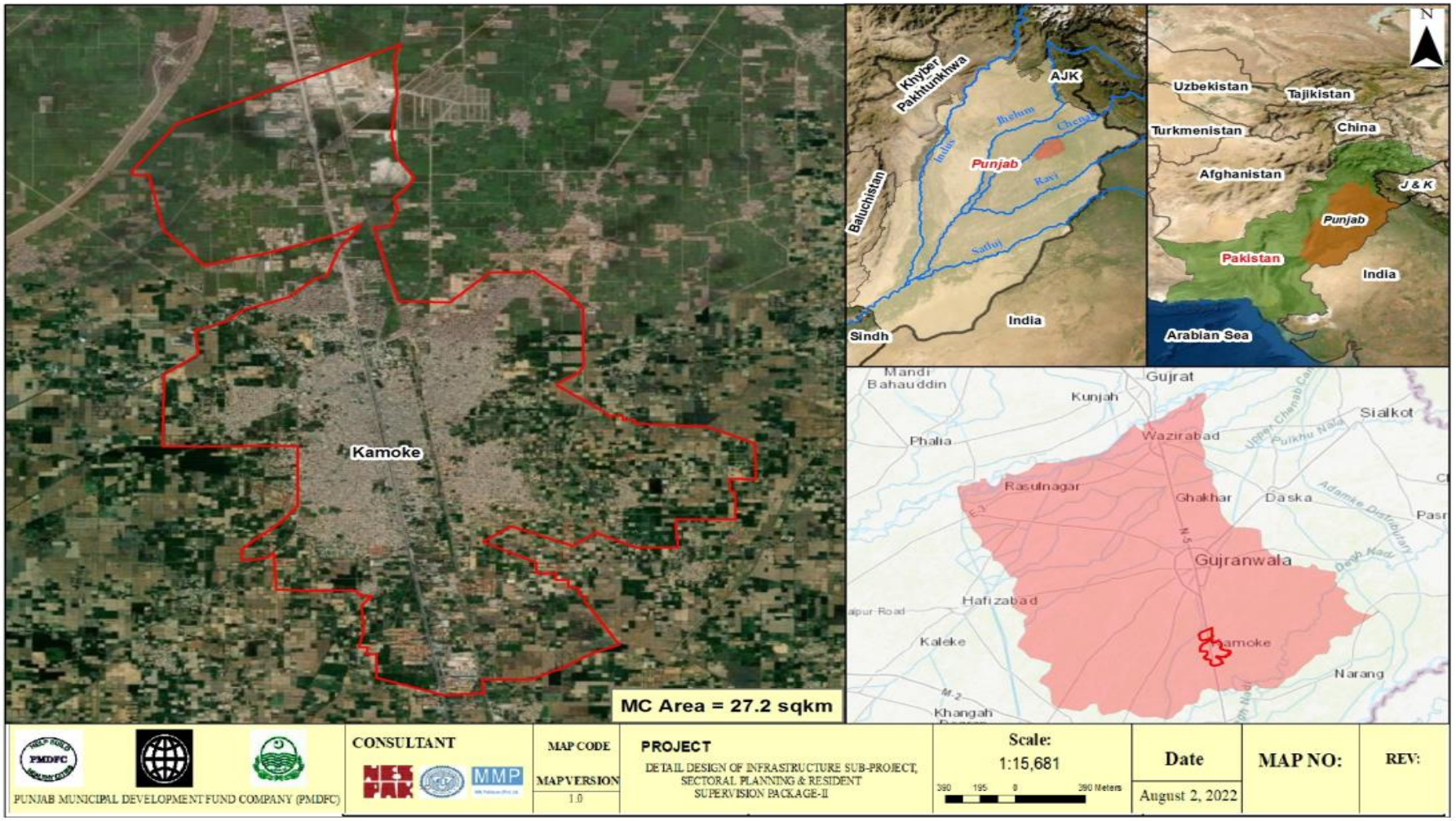


Figure 2: Location Map of Kamoke

2.2. Description of Work Activities

Sectoral Planning of the water supply sector of Kamoke MC has been conducted and depicted in Figure – 3 below. The main goal of sectoral planning is to help resolve the increasing problems resulting from the worsening conditions of the existing infrastructure, water sources, and projected developments. The sectoral plan will describe the planning of different components of the water supply system until the horizon year 2050. Sectoral planning of the Kamoke water supply distribution network is designed on the design horizon of 2050 and the tube well machinery is designed for 2033. Rasool Nagar and Mandiala road areas are identified as the priority areas for sub-project activities by the MC (based on public demand and the current worsening situation of water supply). In these two areas, rehabilitation of water supply lines will be carried out[7].

[7] Rehabilitation /Replacement of supply lines at the existing MC owned ROW

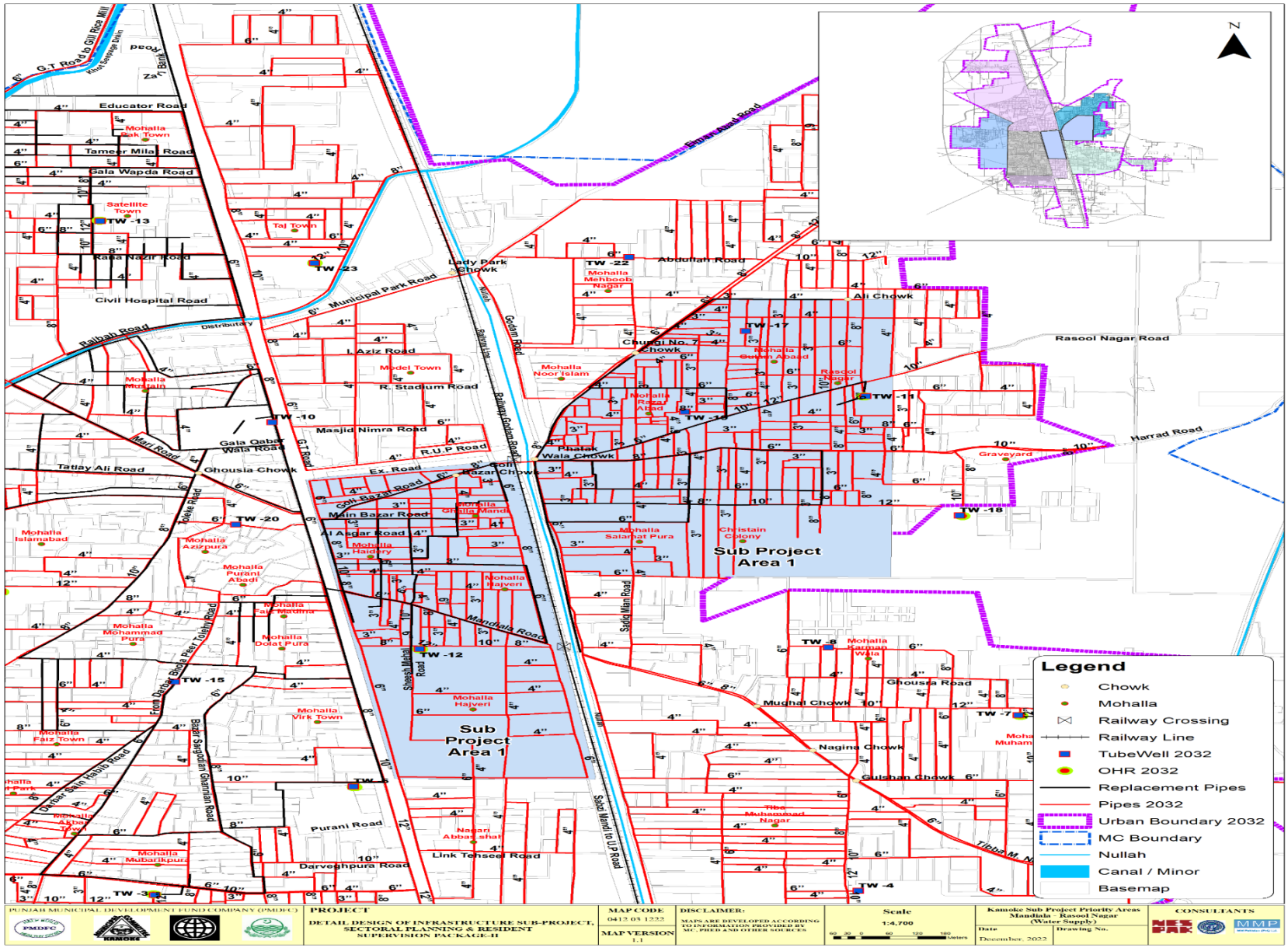


Figure 3: Proposed Water Supply Facilities for Kamoke as per Sectoral Planning

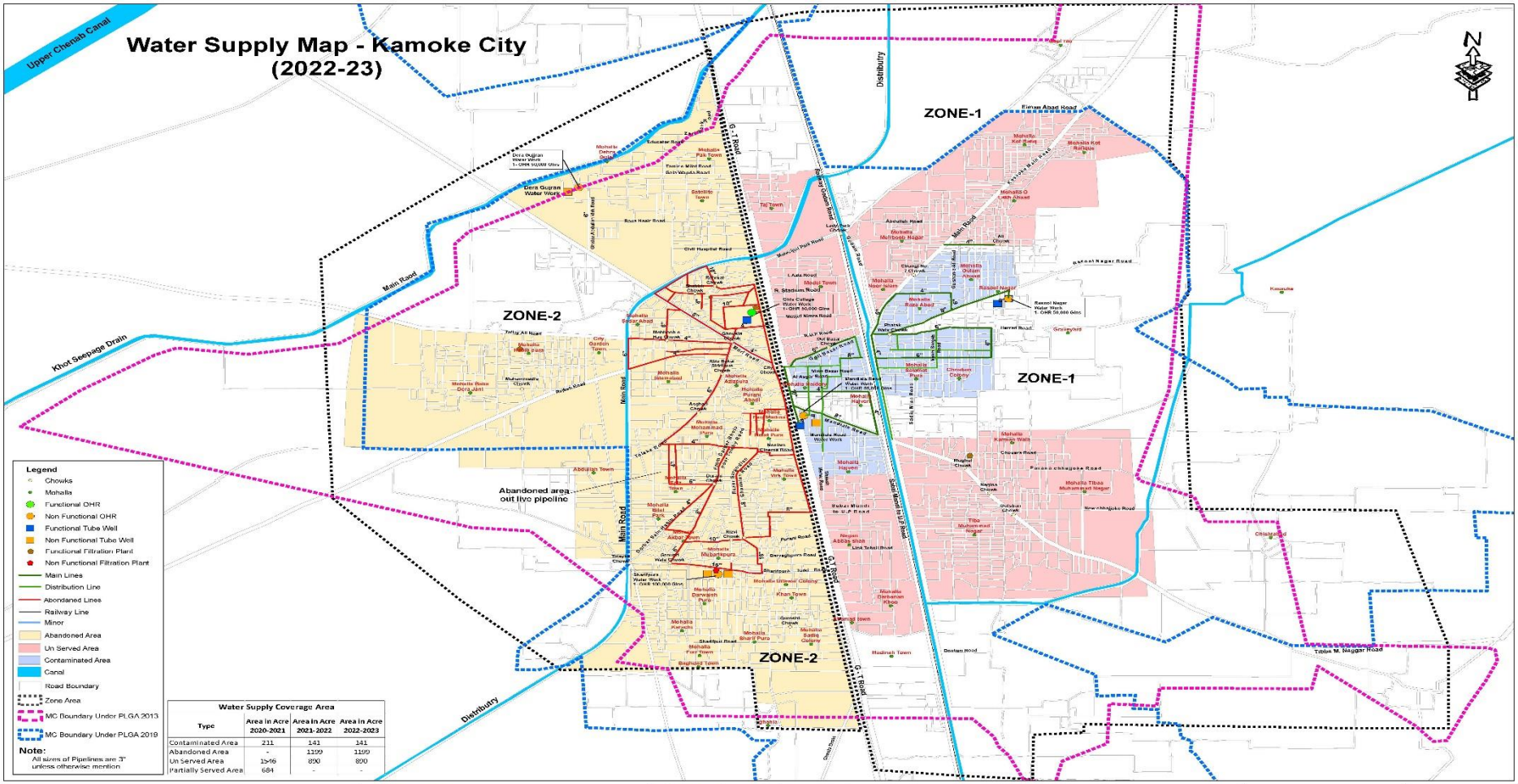


Figure 4: Map Water Supply Kamoke

Detailed Lengths and other infrastructure components along with proposed work activities are given below in all two areas:

- Dismantling cement concrete, removing road pavement, brick, or flagged flooring.
- Excavation of trenches in all kinds of soil, except cutting rock, for water supply pipelines up to 5 ft. (1.5 m) depth from ground level.
- Restoration of brick pavement on edge, over-laid service line.
- Providing, fixing and testing consumer connections.

Table 2: Kamoke Rehabilitation Water Supply Lines Design 2032[8]

Area	Pipe Dia (inch)	Length (ft)	Other Parameters		
Rasool Nagar	3	45,420	Population	30,110	habs.
	4	15,265	Avg Water Demand	1.17	MGD
	6	15,477	Max Water Demand	1.76	MGD
	8	2,551	Peak Water Demand	2.64	MGD
	10	244	Available TW's capacity	2	Cusecs
Total Length		**78,957**			
Mandiala Road	3	25,627	Population	15,368	habs.
	4	5,198	Avg Water Demand	0.6	MGD
	6	12,978	Max Water Demand	0.9	MGD
	8	1,283	Peak Water Demand	1.35	MGD
	10	621	TW Proposed capacity	2	Cusecs
Total Length		**45,707**	Proposed TW	1	No

2.3. Tentative Cost of Sub-Project

Bill No.	Description	Amount (Rs.)
1	Replacement of water supply and old lived pipes in Mohalla Rasulnagar & Mandiala Road	308,713,476
2	Installation of one new Tube well at Mandiala Water Works	31,727,458
	TOTAL AMOUNT	**340,440,934**
	Contingencies @ 2%	6,808,819
	PST @ 5%	17,022,047
	ESMP Implementation Cost	1,247,000
	GRAND TOTAL	**365,518,799**

The Break-up of ESMP implementation cost is described below in Table 11.

2.4. Duration of the Sub-project

Implementation Schedule/Duration: 6 months maximum.

No. of workers involved: 20-25 approx.

[8] PC-1 Kamoke Water Supply revised

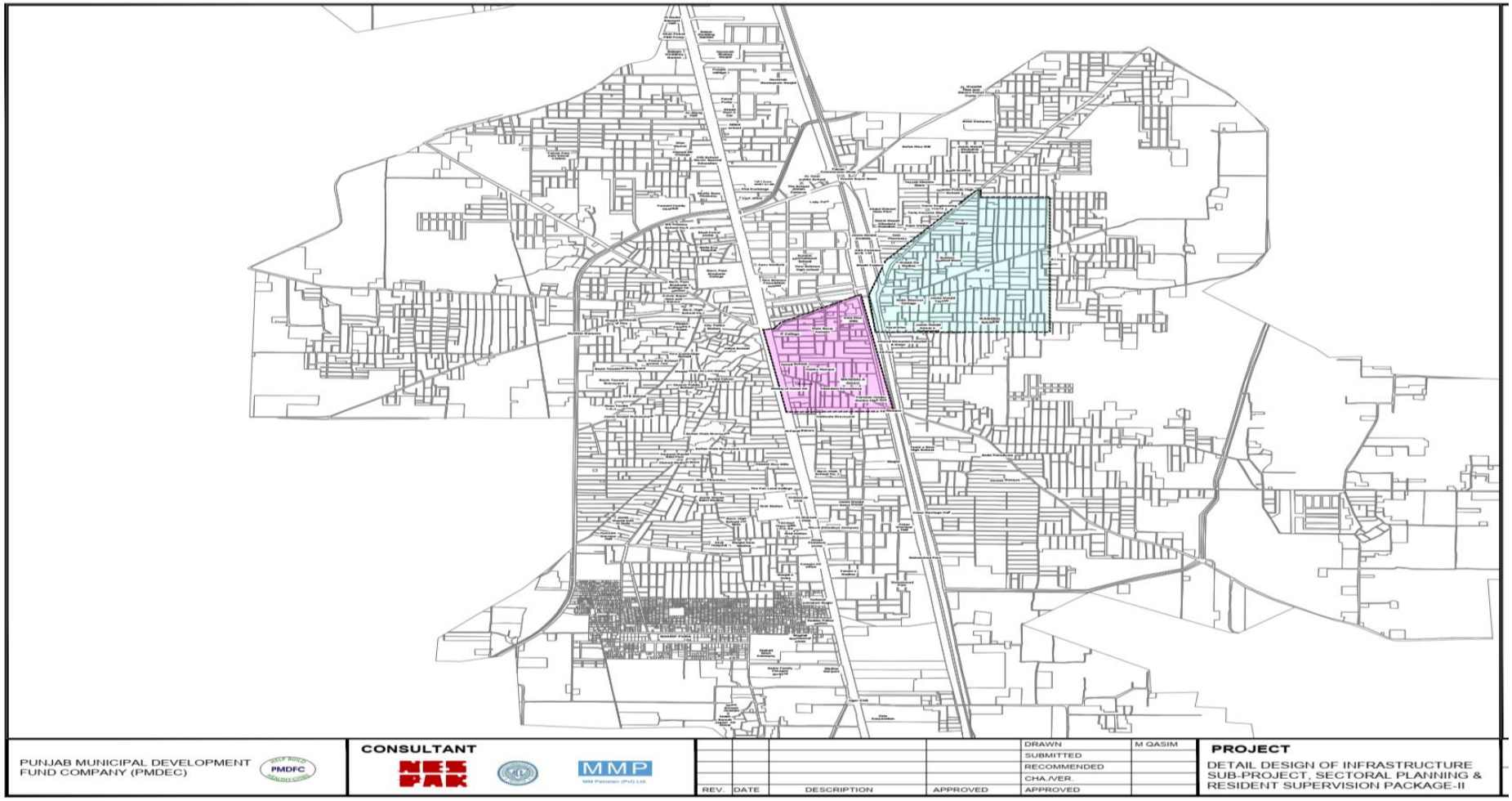


Figure 5: Plan for Proposed Tube-well at MC Kamoke

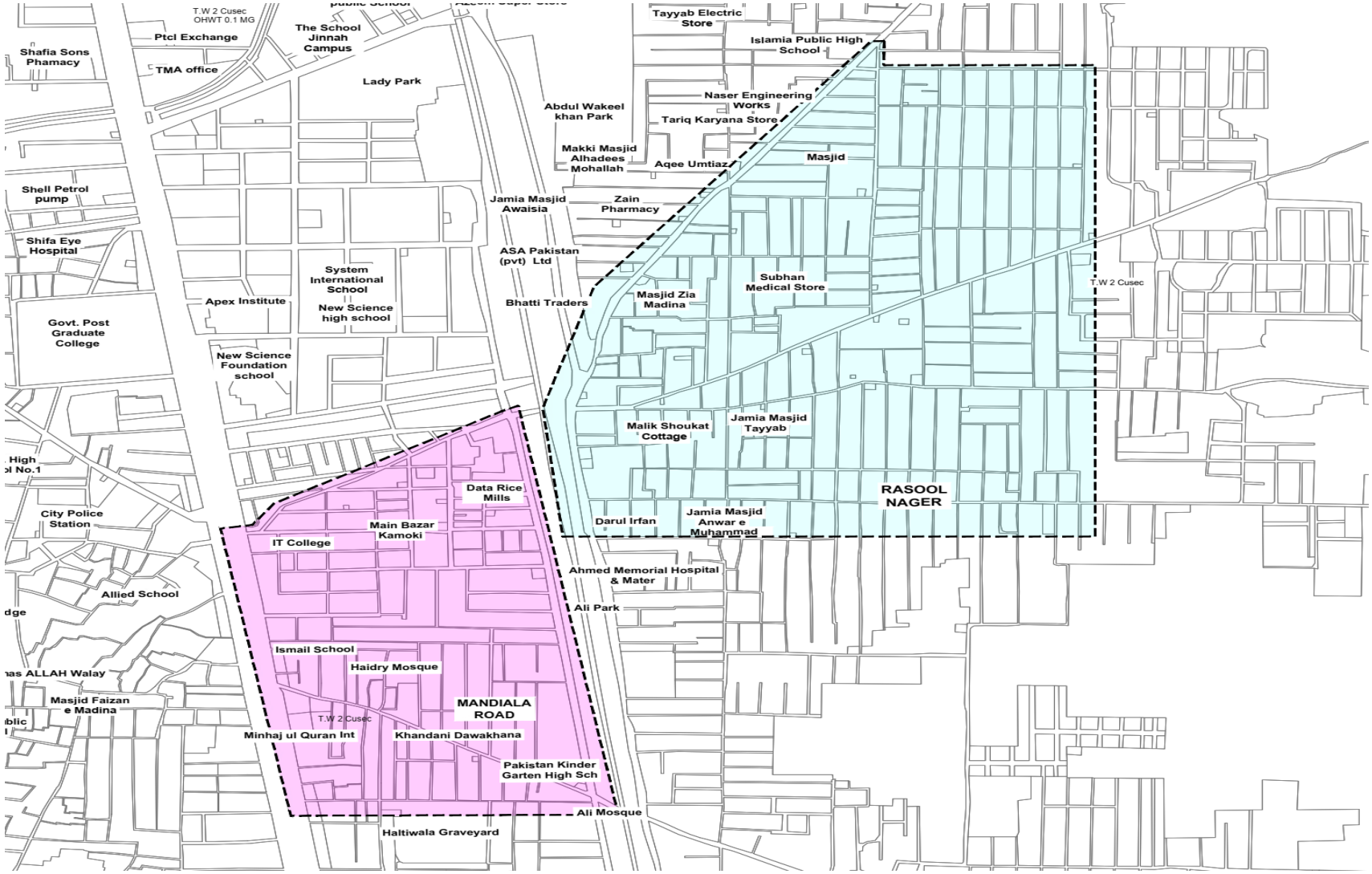


Figure 6: Proposed Area for Rehabilitation at Mandiala Road & Rasool Nagar Water Supply Lines

2.5. Sub-project Alternatives

The analysis has been carried out to justify the need for the sub-project and to select the most feasible alternative. Besides the economic viability, environmental sustainability and social acceptance of the sub-project have also been considered while analyzing different alternatives.

2.5.1. The No Project Alternative

A no-project alternative entails no changes in the existing status of the sub-project area. Adopting no project Alternative will save the World Bank finance, the efforts, time and resources that can be utilized on another project elsewhere in the province. No short-term negative impacts will occur that are envisaged during the execution of the sub-project.

This sub-project is for the betterment of the water supply systems of MC Kamoke. The people will be deprived of a clean water supply and will have to resort to alternative water sources that will incur extra charges. The pressure on the groundwater sources will increase.

2.5.2. Site Alternative

A route for the rehabilitation of water supply lines was the same as no new route has been selected this will save the efforts and cost for land acquisitions. In this route, no private property is disturbed and no resettlement is required.

Sub-project involves resurfacing of existing alignment so there is no site alternative envisaged because no other site available to serve this purpose. A New Tube well has been proposed at the SED land. NOC from the education department, Gujranwala has been obtained.

2.5.3. Design Alternative

The development will be constructed using modern, locally and internationally accepted technology and materials to achieve public health, safety, security and environmental aesthetic requirements.

Trenchless technology offers a cost-effective alternative for rehabilitating buried water supply infrastructure. There is an estimated 20% reduction in direct and indirect costs when appropriate trenchless methods specific to prevalent site conditions are used in place of open trenching. There will be no excavation for trenches so there will be less pollution due to dust and particulate emission.

However, due to limitations such as labor capacity and training in incorporating the trenchless system. The traditional trench water supply system will be implemented for the sub-project.

2.5.4. Environmental Considerations

The construction works during this sub-project will lead to momentary dust/particulate and gaseous pollution that will eventually subside. Overall, this sub-project will lead to the improvement of the environmental quality of the sub-project site.

2.5.5. Economic Considerations

Raw construction materials will be purchased from nearby areas from a local vendor so that the transportation cost of the material might be saved. Efforts will be made to save any unnecessary expenses to be taken out of the World Bank and public funds.

2.6. Temporary Storage Area

As this Sub-project is of short duration, henceforth, the land will be rented out with mutual negotiation between the owner of the land and the contractor if required. The contractor will be bound to pay the land titleholder for the temporary storage of construction materials. In case of any damage to the rented property, compensation shall be paid to the owner or damaged assets shall be restored by the contractor before leaving. The contractor will systematically layout the construction material to avoid hindrances in the movement of public and transport.

2.7. Contractor's Camp

Approximately 95% of the workforce will be from the Sub-project area while some 5% of labor (skilled) might be hired from outside the Sub-project area. The contractor's camp may not be required due to the limited scope of work/duration of the Sub-project if the camp is required then all SOPS issues by the PMDFC regarding EHS will be followed. If the Contractor will establish any labor camp, Campsite Management Plan is required to be submitted to DPO-ESSs for review and approval. The contractor will also hire the services of an Environmentalist to make compliance with E & S aspects.

2.8. Traffic Management

The contractor will disseminate information about ongoing construction activities by installing safety signage for pedestrians as well as traffic. The contractor will install diversion routes signboards on-site. Flagmen will also be deployed to direct traffic and avoid any mishaps/accidents. The contractor will submit Traffic Management Plan to DPO-ESSs for review.

2.9. Manpower Requirement

It is estimated that the Contractor for the rehabilitation of the water supply and a tube well will require a workforce of 20-25 persons. No child labor will be hired and verification will be made through CNIC. The majority of workforce shall be hired locally that will return to their homes on daily basis. A Covid vaccination certificate will be mandatory for working in the project area.

2.10. Existence of Utility services with RoW

There are no existing utilities within ROW of the sub-project. All of such utilities are outside of the ROW hence, no impact has been envisaged.

2.11. Construction Waste Management & Disposal

The main types of waste expected to be generated and requiring disposal include:

I. Dismantling Material

The expected waste generation composition is earthen material, soil, etc. The contractor will stockpile dismantled material aside to be produced and will dispose of it at the designated site of MC Kamoke. Consultation regarding the disposal of construction waste material has been carried out with the MC's waste management section.

II. Construction Material

The contractor will never stockpile huge quantities of construction material within the working limits to reduce chaos in the sub-project area. The contractor will dispose of waste material on an immediate basis. The contractor will submit the construction waste management plan to a supervisory consultant for review and approval.

2.12. Vegetation Removal/Tree Cutting

There is no tree/vegetation at the sub-project site or even within the ROW. Hence there is no tree-cutting has been involved during the sub-project construction.

2.13. Zone of Impact

The Sub-project area is urban & commercial. The zone of impact would be 1 meter from the center line of the trench in the Sub-project. The construction activities would remain to be limited to reduce the impact on the surrounding areas.

- There will be a temporary hindrance in the movement and transport during its construction phase.
- Sub-project will generate construction waste, which can generate solid waste problems temporarily until it will be disposed of on daily basis.
- Mismanagement of construction activities/materials & equipment can directly affect inhabitants along with the alignment of the Sub-project.

2.14. Aquifer Sustainability

The depth of the proposed new tube well is 600 feet with 16 pumping hours per day. The depth is taken as tentative considering the following;

The Rechna Doab[9] in which Kamoke city is situated has an average unconfined aquifer thickness of up to 1300 feet. The depth is taken tentative due to considering the sustainability and quality of tube well water up to 2050. Hence, electric logging is also recommended in BOQ for finalizing the depth. Since the relevant specialty scope of services, for the design of water supply wells in the project area, the design of proposed water supply wells are based on the standard practice & design of WASA Lahore with modifications as per the understanding of site by the PHED installed wells in Kamoke as under.

For tube wells having designed discharge 2.0 cusec

- Entrance velocity of water = 0.05ft/sec
- The internal diameter of the strainer = 10 in (250mm)
- Filter pipe length = 140 ft (42.66m)
- Slot open are in percent = 10 % of the total strainer area
- Housing pipe diameter = 18 inches (450mm)
- Housing pipe length = 300 ft (91.43m)

Moreover, pump setting depth is based on the expected dynamic water considering the following parameters:

[9] The word doab is of Persian origin, signifying the region between two rivers, Rachna doab includes all the area between the Chenab and Ravi Rivers. It lies between 30° 35' and 32° 50' N. and 71° 50' and 75° 3' E https://www.iwmi.cgiar.org/Publications/Working_Papers/working/WOR53.pdf

- Current static water level = 40 ft (12.2m)
- Assumed draw down in main well during pumping = 15 ft (4.57m)
- Deterioration of tube well @ 25% = 4ft (1.22m)
- Seasonal fluctuations = 1 ft (0.30m)

Assumed Regional Decline of water levels after 15 years @ 2.0 ft/year = 30 ft (9.14m)

Keeping view that the project area falls in Kamoke City have a shallow aquifer of underground water because of its location in the Rechna Doab area of Punjab. The recharge of the groundwater water has been done by two main sources one is the Chenab River and the other one passing nearby (around 4 to 4.5 km from the city center) the Kamoke city is Upper Chenab Canal. Recharge to the aquifer is principally seepage from the rivers and to a lesser degree precipitation. Both provided sufficient recharge to the groundwater because these are perennial sources of water.

So above mentioned design criteria and strategic location of the project area concluded that drawing water of above capacity will not affect the groundwater levels in the project areas significantly.

[10]Furthermore, a tube-well-installed in 1981 (42 years back) inside the boundary of Girls College Kamoke[11] with the designed capacity rate of pumping 660 GPM[12] with standard operating hours has been analyzed to determine the groundwater conditions. This well has produced a sustainable pumping rate for more than forty years with a reduced rate of 0.62 percent per year in terms of discharge. The above results are very promising and it is anticipated that the proposed wells shall produce an efficient rate of pumping up to the designed period i.e. 2050.

[10] Sectoral Plan of Water Supply Scheme-Kamoke, developed by Nespak
[11] 200m away from the proposed site of new tub-well under this sub-project
[12] Gallon Per Minute

Section 3
LEGAL & POLICY FRAMEWORK

3. Introduction

The Government of Pakistan and the Government of Punjab (GOP) have enacted a range of laws, regulations, policies and procedures for the management and mitigation of social and environmental impacts for infrastructure development projects. This chapter discusses the relevant and applicable laws and WB Core Principles for PforR financing modality applicable for PCP to deal with environmental and social issues.

3.1. Statutory framework dealing with the Environmental & Social Aspects

Sr#	Applicable laws, regulations, Guidelines	Relevancy/Applicability
I.	Punjab Environmental Protection Act 2012	PEPA does not require IEE or EIA of rehabilitation projects. This sub-project doesn't come under the preview of IEE/EIA
II.	PEPA Review of IEE/EIA Regulations, 2022	IEE/EIA regulations do not require IEE or EIA for rehabilitation projects.
III.	Notification No. SO (Tech)/EPD/1-26/2004 issued by Government of Punjab, Environment Protection Department "Delegation of Powers for Environmental Approvals Rules 2017	ESMP do not require review and subsequent NOC from the relevant authority
IV.	Punjab Local Government Act, 2019	Follows the environmental and social assessment procedures stated in PEPA 2012
V.	Punjab Environmental Quality standard 2016 for Drinking Water	Compliance is required during construction as well as operational activities as per PEQS.
VI.	Punjab Environmental Quality Standards 2016 for Motor Vehicle Exhaust and Noise, Ambient Air, Noise	Compliance is required during construction activities as per PEQS.
VII.	Punjab Restriction of Employment of Children Act 2016	Compliance required during construction activities as per ECA 2016
VIII.	Protection Against Harassment of Women at the Workplace Act, 2010	Compliance is required during construction activities as per the Act.

Sub-project does not fall in any schedule of IEE/EIA project categories; thus, it does not require any NOC from Punjab- EPA.

3.2. World Bank Environment and Social Core Principles for PforR

Core Principles	Applicability
Core Principle 1 Environmental and social management procedures and processes are designed to (a) avoid, minimize, or mitigate against adverse impacts; (b) promote environmental and social sustainability in program design; and (c) promote informed decision-making relating to a program's environmental and social effects.	ESMP was prepared under the light of this Principle in order to mitigate the negative impacts envisaged in this Sub-project. ESMP implementation will help in achieving environmental and social sustainability

Core Principles	Applicability
Core Principle 2 Environmental and social management procedures and processes are designed to avoid, minimize, and mitigate adverse effects on natural habitats and physical and cultural resources resulting from the program.	Tables 09 & 10 are prepared to mitigate all minor impacts anticipated during the course of the Sub-project.
Core Principle 3 Program procedures ensure adequate measures to protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the Program and (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials.	All the mitigation measures have been incorporated in Tables 09 & 10 to address risks associated with workers' and community health and safety. The contractor will ensure compliance with these attributes.
Core Principle 4 Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement, and affected people are assisted in improving, or at least restoring, their livelihoods and living standards	This core principle does not trigger in this Sub-project, as no land acquisition is required during the rehabilitation works.
Core Principle 5 Due consideration is given to cultural appropriateness of, and equitable access to, program benefits, giving special attention to the rights and interests of indigenous peoples and the needs or concerns of vulnerable groups.	No indigenous/Vulnerable groups exist in the subproject area.
Core Principle 6 Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.	This principle is not relevant to this Sub-project.

3.3. World Bank Environmental, Health and Social Guidelines

The principal World Bank publications that contain environmental and social guidelines are listed below.

- Environment, Health, and Safety (EHS) Guidelines prepared by International Finance Corporation and World Bank in 2007
- Pollution Prevention and Abatement Handbook 1998: Towards Cleaner Production
- Environmental Assessment Sourcebook, Volume I: Policies, Procedures, and Cross-Sectoral Issues.
- Social Analysis Sourcebook
- WB Group Gender Strategy

Detailed related EHSG can be found in Annex II.

3.4. PMDFC EHS SOPs for labor/workers (including Women)

EHS SOPs for labor/workers (including women workers) will be applied during the labor work and made part of the contractual agreement of the contractor

3.5. COVID-19 SOPs

During the construction and implementation of the Sub-project, the Standard Operating Procedures (SOPs) will be strictly followed during construction activities, stakeholder consultations, or applicable in any other relevant aspect. The SOPs attached as Annex-III.

Section 4
ENVIRONMENT & SOCIAL BASELINE

4. General

4.1. City Profile

Kamoke has located on the Grand Trunk Road 21 km from Gujranwala on its south and 46 km from Lahore. Kamoke is located at 31°58'31"N 74°13'23"E (31.9752600, 74.2230400). The city is situated at (226 m) above sea level in central Punjab.

4.2. Climate

The climate of the city is hot and dry during summer and cold in winter. The summer season starts in April and continues until September. June is the hottest month with mean maximum and minimum temperatures of 45 °C and 29 °C respectively. The summer season is accompanied by frequent dust storms, which provide some relief from the intense heat. The winter season begins in November and lasts until March. The variation of the temperature throughout the year in Kamoke is presented in the following. The variation in temperature and average monthly rainfall for Kamoke is shown in Figure 4[13].

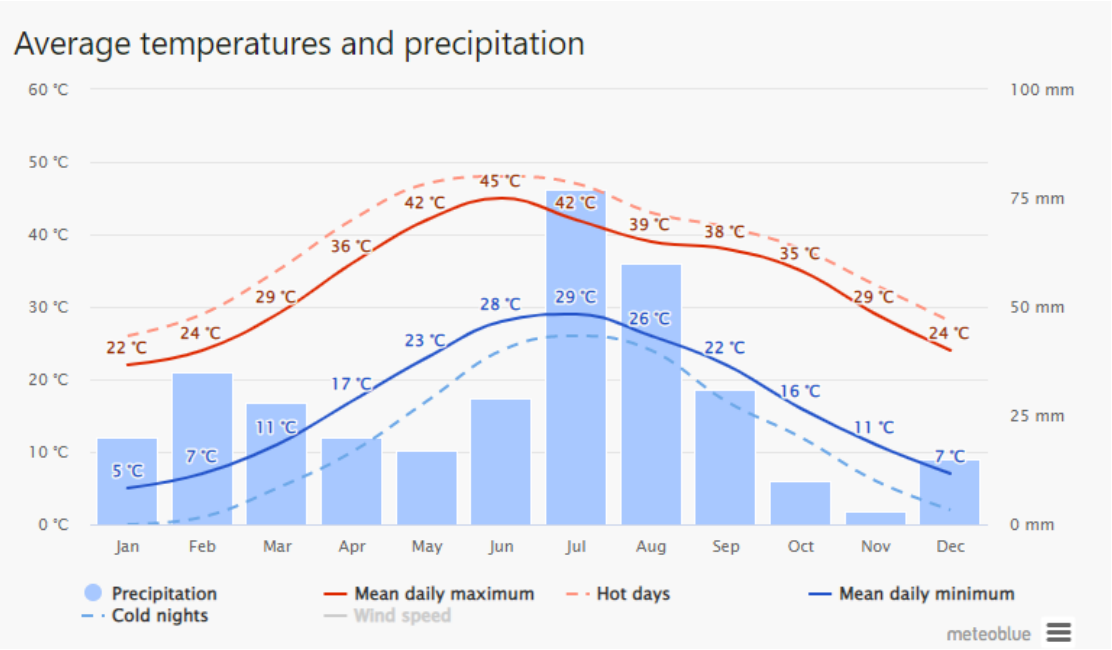


Figure 7*:* Average Temperature and Rainfall Data Kamoke

4.3. Topography

The City is located in the Rechna Doab area of Punjab. The city is a flat plain, unrelieved by hills or ravines and thus, featureless.

[13] https://www.meteoblue.com/en/weather/week/kamoke_pakistan_1175088

4.4. Demographic Status

The District Population Census Reports of the year 2017 have been published by the Government of Pakistan. [14]According to available census reports, the following Available existing data of Kamoke MC (urban and rural area of the tehsil) is provided in census reports; -

- Population in 1998= 152,288 Person
- Population in 2017= 579,690 (248,814 urban, 330,876 rural)
- The average Growth rate of Kamoke MC (1998-2017) = 2.61%
- The average household size in 2017= was 6.68

4.5. Existing Situation of Water Supply System

The city has contaminated shallow sub soil water which is unfit for human consumption. An irrigation distributary is flowing though the north western region of the city whereas Khori seepage drain is flowing on the north western periphery of the city. A new storm water drain is under construction by Irrigation Department on south eastern periphery of the city to protect the city from flooding.

In respect of water supply system the city is divided into two zones; Zone-I (Eastern Zone) & Zone-2 (Western Zone) divided by Lahore-Rawalpindi GT Road. Deep tube-wells have been installed to supply water to the citizen.

Both zones, served, un-served, contaminated and water shortage areas have been marked on the map attached with the report.

4.5.1. Water Source & Storage

Tube wells have been installed at different locations of the city to harness the deep underground fresh water. In all 8 tube-wells are installed, out of which 5 Nos tube-wells have been abandoned due to various factors. Water from the three operational tube-wells is directly fed to the distribution system. Only one overhead reservoir is operative in the entire water supply system which is used to feed water to filtration plant.

4.5.2. Installation of Tube-wells

Zone-1 (Eastern Zone):

Around 60% of the area of the Eastern Zone is unserved. Rest is served with the very old water supply facility constructed by PHED department in 1981. Three tube-wells were initially installed in this zone out of which two tube wells are functional and one has been abandoned. The two functional tube-wells are blowing sand and hence require replacement. Two overhead reservoirs constructed in this zone have been abandoned and water is being supplied through direct pumping.

Energy Audit report recommends the replacement of two tube-wells: one at Girls College Road (Mandiala Road) and another is Rasool Nagar water works. MC staff was consulted in this behalf and their contention is that the tube-well at Girls College road is supplying water to one filtration plant only and they intend to install a smaller tube-well for the filtration plant

[14] https://www.pbs.gov.pk/sites/default/files/population/2017/punjab_tehsil.pdf

out of their own sources whereas in view of the acute water shortage in the eastern zone, they want to install a new tube-well at a new place near existing tube-well of Girls College. This will improve the overall system.

Under this subproject, Zone I will be served with one-new tube-well.

Zone-2 (Western Zone):

Five tube-wells were installed initially to serve this zone out of which 4 tubewells have been closed along with closure of two overhead reservoirs out of total three Nos. Only one tube well is operational near Mohalla Muslim Ganj, which supplies water only to a water filtration through an operational OHR.

As such entire Western Zone is currently unserved. The area was equipped with distribution system in the year 1981 which is damaged because of laying of other services. In Mohalla Pak town and Mohalla Dehra Gujran, water supply system was provided in 2007-2009 by PHED Department, but these water supply pipe lines have also been damaged due to laying of the sewerage system subsequently. As such the water supply system in entire western zone (Zone-2) of the city is presently abandoned.

Total tube-wells installed in the city along with functional status and source capacity has been given in the table below

Table: Total Source Capacity

Zone	No. of Tube-wells	Capacity in cusec	Total Capacity in Cusec	No. of Tube-wells		Present working hours per day	Daily Water Production MGPD
				In working order	Abando-ned		
Zone-I	3	1.0	3.0	2	1	12	0.54
Zone-II	5	1.0	5.0	1	4	12	0.27
Grand Total	8	1	8	3	5	12	0.81

The present source capacity is too meager to fulfill the city demand.

4.6. Water Resources

Kamoke city has a shallow groundwater aquifer. The groundwater is extracted through wells by both the city water supply systems (operated by MC) and residents. The coverage of the water supply system in Kamoke is about 40 percent only for the existing population. The city has been divided into two operational zones (eastern and western). The boundaries of the operational zones (Separated by G.T road). The main water supply network consists of tube wells, OHRs, Filtration plants, a Transmission main and a distribution network.

The city relies on its groundwater source for drinking water. 8 tube wells are installed in the city, out of which 5 are abandoned due to sand-blowing issues. 3 Tube wells are operational at different locations to harness the deep underground water. Water from these tube wells is directly fed to the distribution system. One overhead storage reservoir is operational in the city. 60% of the city area does not have any water supply distribution system. Rest is served

with the very old water supply facility constructed by the PHED department in 1981. In served areas of the city, the estimated total length of the network is about 23.76 km.[15]

4.7. Water Quality

No specific primary and secondary data are available in the context of Kamoke City. Unit Kamoke has not analyzed/sampled any drinking water since PHED handed over the whole water supply infrastructure to Unit Kamoke as per PEQS 2016.

Pak Green Laboratories (Punjab-EPA Approved & PNAC certified) was hired to carry out sampling from different locations in the sub-project area as per PEQS 2016. The selection of locations for monitoring was done with due consideration to water supply head middle and tail users. The identification of appropriate monitoring locations was finalized during the baseline survey, site walkover, and visit to the surrounding areas as well as getting consent from PMDFC's E & S team. Table – 3 depicted the rationale for the sampling locations. These results are given in Table – 4, Drinking Water analysis results respectively.

Table 3: Locations for Water Sampling at Mohalla Rasulnagar & Mandiala Road

Sr.no	Sample ID	Location	Coordinates	Remarks
1	R-S-01-GW-1495	Rasulnagar Existing TW Source	31°58'49.84"N 74°13'54.24"E	Morning time
2	R-M-03 GW-1631	Jamia Masjid Taaj-e-Madina or nearby House	31°58'57.41"N 74°13'52.82"E	200 m North side from source
3	R-S-04 DW-1492	Ismail Public High School or a nearby house	31°59'6.77"N 74°13'53.25"E	550 m from Source west side low-pressure areas, ends of the system
4	R-M-05 GW-1633	House	31°58'45.33"N 74°13'55.51"E	200 m from Source west Side
5	R-H-06 GW-1501	House near Data Rice Mill	31°58'40.96"N 74°13'38.08"E	500 m southwest side from source low-pressure areas,
6	R-M-02 GW 1632	Main Bazar Kamoke	31°58'35.68"N 74°13'28.97"E	From Bazar Tab
7	M-T-07 GW-1499	Pani wali Tanki MC (Mandiala Road Girls College TW)	31°58'23.31"N 74°13'24.69"E	Existing TW
8	M-H-08 DW-1494	Haltiwla Graveyard or nearby house	31°58'18.17"N 74°13'33.30"E	low-pressure areas, ends of the system
9	M-G-09 GW-1634	RO plant at School	31°58'33.28"N 74°13'35.96"E	Proposed Location of TW
10	M-H-10 GW-1500	Water Supply Connection at House	31°58'2.96"N 74°13'35.30"E	low-pressure areas, ends of the system

The detail results have been appended as Annexure – IV.

4.7.1. Findings of Water Quality Analysis

The water sample from the existing TW (ID: GW-1495) at Rasulagar and the other one from RO Plant at School (ID: GW-1634) comply with PEQS having no contaminations. While rest of the sample, collected from the sub-project area and Girls College road TW shows bacteriological contaminations[16]. This is due to the damaged and outlived water supply

[15] Field survey consultation with MC officials and from sectoral planning report

[16] Drinking water quality analysis as per PEQSs/WHO will be ensured at the time of boring before the installation of new tube-well and after installation to provide safe drinking water.

pipelines irrespective of near the source (high-pressure area) or away from the source (low-pressure area)., water contamination issues are found in almost all sampling areas. The possible causes may be the leakages in the distribution system pipelines and leaking consumers' underground connections.

Due to the contamination issues, private boring and extraction of water are very common in the MC as the public is relying on private pumping at the household level

Figure 8: Leakage and Repairing at Water Supply lines MC Kamoke

Hence, the existing infrastructure in the partially or fully served areas needs rehabilitation and replacement work. The provision of the water supply in unserved and partially served areas, rehabilitation and replacement of the components of abandoned water supply systems are conceived as early potential projects in the water supply sector.

Figure 9: Water Sampling Location for Sub-Project Area

Table 4: Water Quality Analysis for Rehabilitation of Water Supply Lines and Installation on one Tube-well in Kamoke

No.	Parameters	Unit	WHO	PEQS	Method / Technique	GW-1495 Rasulnagar Existing TW Source	Masjid GW-1631	50m away from School DW-1492	Ali Park GW-1633	RH06 House Near Data Rice Mills GW-1501	from bazar water tap Mandiala Road 1632	RS 2 Tubewell-02 GW-1499	MG09 Haltiwala Graveyard DW-1494	Water color RO Plant - GW-1634	RS01Near Zanith Model School GW-1500
1	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	Nil	42.6	30.2	16.4	27.4	40.4	Nil	25	Nil	40.2
2	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	Nil	103.4	80.7	36.7	55.6	103.8	36.7	45	Nil	85
3	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	Nil	80.9	65.9	25.9	38.4	85.7	10.4	35	Nil	79
4	Color	TCU	≤ 15	≤ 15	APHA-2120 C	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5	Taste	-	Non Objectionable / Acceptable	Non Objectionable / Acceptable	APHA-2160 C	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable
6	Odor	-	Non Objectionable / Acceptable	Non Objectionable / Acceptable	APHA-2150 B	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable	Non Objectionable
7	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.5	0.4	0.35	0.2	0.4	0.15	0.41	0.45	1	0.45
8	Total Hardness ^	mg/L	-	<500	APHA-2340 C	200	170	420	180	80	180	190	90	300	160
9	Total Dissolved Solids	mg/L	< 1000	< 1000	APHA-2540 C	247	287	588	557	180	560	250	200	600	233
10	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H+ B	7.893 at 21.1°C	8.638 at 21.9°C	7.776 at 21.9°C	8.477 at 21.4°C	8.077 at 21.5°C	7.841 at 21.5°C	8.028 at 21.6°C	7.960 at 20.9°C	8.088 at 21.9°C	8.007 at 21.4°C
11	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	BDL	0.0003	BDL	0.0029	BDL	0.0031	BDL	BDL	BDL	BDL
14	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17	Chloride (Cl-1) ^	mg/L	250	< 250	APHA-4500-Cl B	5	5	59	10	5	15	5	10	25	5
18	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	BDL	BDL	BDL	BDL	BDL	0.0661	BDL	BDL	BDL	BDL
19	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.019	0.014	0.0022	0.0133	0.013	0.0133	0.0147	0.019	0.0187	0.0144
20	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.3	0.3	0.5	0.7	0.3	0.6	0.4	BDL	0.8	0.3
21	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL	0.0189	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0149	0.042	0.018	0.0436	0.0155	0.045	0.014	0.0165	0.0168	0.019
23	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO3-1-E	0.075	0.036	0.024	0.085	0.075	0.994	0.0209	0.015	0.019	BDL
26	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO2-1-B	BDL	0.013	0.019	0.015	BDL	0.019	0.0105	0.012	0.011	BDL
27	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28	Residual Chlorine (Cl2)	mg/L	0.2-0.5 at consumer end 0.5-1.5 at source		APHA-Cl-B	BDL	BDL	BDL	BDL	BDL	0.19	BDL	BDL	0.24	BDL
29	Zinc (Zn)^	mg/L	3	5	APHA-3111 B	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31	Sodium (Na)^	mg/L	200	-	APHA-3111 B	18.4431	81.3	62.8	165	14.8453	165	18.6645	42.9	156	19.948
32	Potassium (K)^	mg/L	200	-	APHA-3111 B	6.9566	12.7	7.6	8.8	6.0596	9	6.9802	2.3	9.6	9.5506
33	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
34	Cyanide (as CN1-) Total	mg/L	-	1	APHA-4500-CN F	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

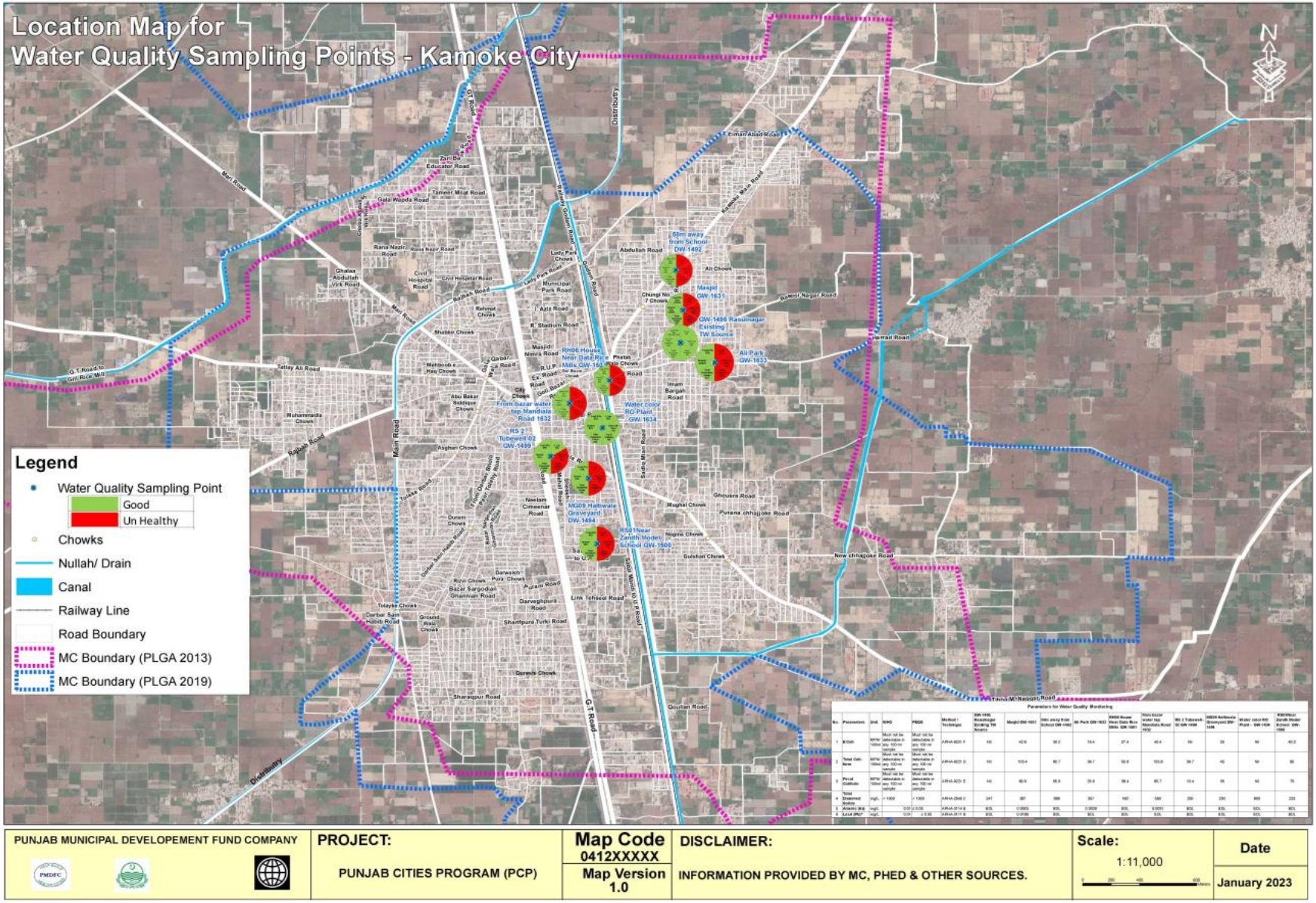
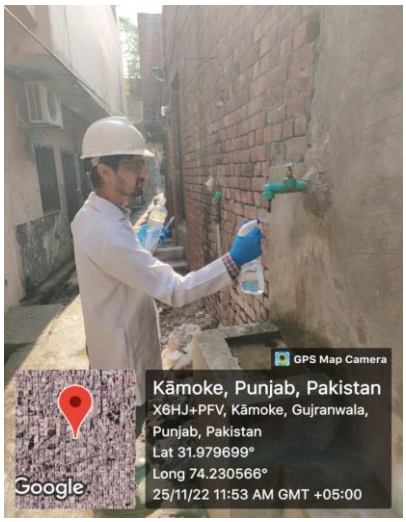
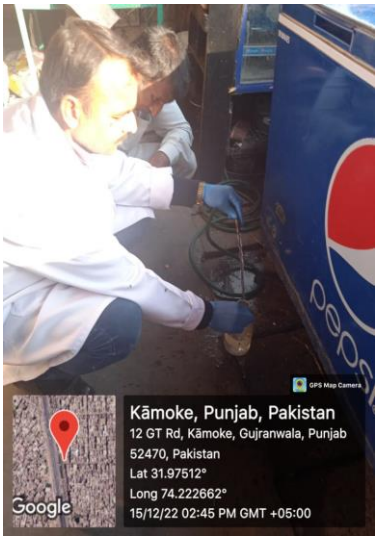


Figure 10: Water Quality Analysis of Sub-Project Area

Photo Log for Water Sampling





4.7.2. Protecting Water Quality in the Distribution System

Contamination of water supplies should be avoided at all times. In most small water supply systems, however, economic reasons prevent 24-hour daily water service. This creates a risk of polluted water infiltrating into the pipelines through leaks in pipe joints and service taps. To

counter the health risk, 0.1 mg/L residual chlorine should be maintained throughout the distribution system. Other measures to preserve the quality of water are elaborated on in the mitigation section.

4.8. Solid Waste Management

The entire city is underserved with solid waste collection and disposal. Most of the areas of the city remain either un-served or these are partially served. To overcome this issue additional machinery which includes 17 pickups, 06 trucks, and 02 tractors have been provided to the MC in November 2022. All these efforts will increase the efficiency of collection and transportation for improving the sanitary conditions in the city and lowering the operational and maintenance costs Solid waste management is necessary because Drain lines often are choked with the filling of unattended solid waste on the roads and streets.

4.9. Environmentally Sensitive Receptors

Environmental sensitive areas are more prone to development impact. No legally protected area has been reported in sub-project areas. No special area for protecting biodiversity, no estuarine, no man-made forest /game reserve, orchid /crops, or any other area of environmental importance has been reported because the sub-project area falls in an urban depiction of Kamoke city.

4.10. Flora & Fauna

No wild animals/endangered species are found in the sub-project area.

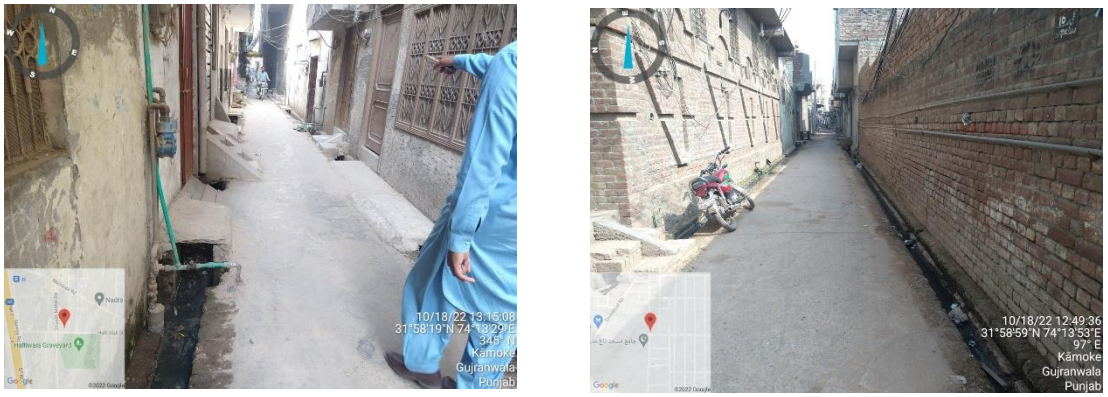


Figure 11: Glimpse of Sub-project area

4.11. Socially Sensitive Receptors

No public infrastructural damage is envisaged as per the scope of work under this scheme. No notified PCRs have been observed in sub-project area. Sites of religious importance like mosques have been found within 100 m of the proposed subproject. All socially sensitive receptors will be impacted indirectly and only for during construction period which is very short and limited in spatial extent. In Rasulnagr area 3 mosques, 1 church 1 shrine and 1 graveyard exist in 100 m. At Mandiala road 4 mosques and 1 graveyard exist within 100 m. During construction, mobility will be impacted along with site-specific EHS issues which will be mitigated by adopting good engineering practices. Sensitive receptors (Schools, colleges, hospitals and clinics) are observed within 100 meters of the proposed sub-project area. 2 Schools and 3 clinics exist at Rasulnagar area while 3 schools and 4 clinics exist in Mandiala

road sub-project area. Indirect, Temporary & Site-specific impacts have been envisaged which will be mitigated accordingly. Alternate access routes are available to facilitate commuting during the implementation of the Sub-project. Anticipated impacts of the Sub-project are presented in Tables 09 & 10. To overcome localized social & environmental impacts; a mitigation plan has been prepared.

4.12. Land Use

The land along the alignment of the sub-project is densely populated. The land of the Sub-project is under the possession of executing body and used for rehabilitation purposes. The major land use of the area is residential followed by commercial. Sub-project involves rehabilitation of the water supply therefore; no land acquisition is required for the water supply lines. Whereas land will only be required for the installation of a new tube well. MC identified the available land at Govt. Boys High School no 2, which belongs to Education Department. NOC for the said purpose has been obtained from the Education department.

The land along the alignment of the sub-project is densely populated. Major land use of the area is commercial however sub-project activities will be executed in the existing Row where no public/private structure, public amenities, shopkeepers, kiosks, or permanent vendors were observed during the survey.

It was confirmed during the public consultation that no Anti-Encroachment Drive has taken place at the sub-project area.

Section 5
STAKEHOLDER CONSULTATION

5. General

This section describes the consultations undertaken with the stakeholders in the subprojects areas to explain to them the project components and activities and to seek their views and opinions on the subproject. The consultations were held with households being affected by the subprojects interventions or the beneficiary of the subprojects. They include households and owners of commercial entities bearing positive and negative impacts of the subproject. Institutional consultation with the relevant government agencies is also made part of this section besides, delineating information disclosure of environmental social safeguards measures.

5.6. Need of Consultation

ESMF for PCP necessities that an Environmental and Social Management Plan (ESMP) is prepared through a process of consultation with all concerned stakeholders and publicly disclosed. The process helps to minimize adverse environmental and social impacts and reduces the expected conflicts at the design and implementation stages, minimizes the risk of sub-project delays at the construction stage, and enables making the subproject more economical and socially acceptable. Moreover, public consultations create a sense of ownership among the stakeholders regarding the subproject and disclosure further ensures transparency in subproject activities.

5.7. Identification of Stakeholders

There are two types of stakeholders, i.e. primary and secondary stakeholders. In accordance with the World Bank guidelines, the primary stakeholders are the initial stakeholders, such as households being affected by the sub-project construction phase for a short duration with reversible & temporary impacts and local people including women located in and around the subproject area. Most of the impact associated with the construction phase is related to dust noise and temporary hindrances for pedestrians. All these minor impacts have been mitigated in this report. Since there are certain commercial centers in the sub-projects areas, shopkeepers and other business holders, local vendors, pushcart runners and regular/frequent street users are also the primary stakeholders. The secondary stakeholders for the sub-project are the representatives of Government Departments/agencies involved in the planning, design, implementation and operation of the sub-project, including various provincial government departments such as City/District Administration, Environment Protection Department District Office, Labor and Human Resource Department, Health Department, Revenue Department, Irrigation Department, Public Health Engineering, Population Welfare Department, Solid Waste Management, and Rescue 1122.

5.8. Objectives of Consultation

Public consultations were carried out with the stakeholders keeping in view the overall objective of evolving their participation in designing and planning the subproject. Public consultation aimed to achieve the following specific objectives.

- Disclosure of Information to the stakeholders with the objective to create awareness about the development objectives of the subproject Punjab Cities Program information and objectives and proposed interventions.

- Start the interaction process with affected households and other stakeholders.
- Elaborate environmental and social impacts of stakeholders.
- Information on perceived benefits from the proposed sub-project.
- Information regarding site-specific GRM
- Any risk to historic or cultural monuments due to the project.
- Establish communication channels to evolve a mechanism to resolve social and environmental issues at the local and subproject levels.
- Inclusively involve subproject stakeholders at every stage of subproject implementation.
- Receive feedback from all types of stakeholders on adopting mitigation and enhancement measures for environmental and social impacts.

5.9. Public Consultation

The social and environmental staff of consultants held consultation meetings with the local community residents of the project area and business holders, local vendors, pushcart runners and regular/frequent street users of the subproject areas from July to October 2022. Public consultation sessions were held with both men and women residing in the sub-projects areas and with the households having impacts on their assets and livelihood. 20 men and 05 women were consulted. The Performa's filled for Public Consultation has been attached as Annexure. Consultation Record. Participants have briefed about the project and sub-projects details as well as the positive and negative impacts of subprojects along with mitigation measures. In general, participants appreciated the sub-project and offered comments and suggestions for getting social benefits from the sub-project. Details of consultation sessions including place, date, participants' count and outcome of each consultation session are given in Table 5 below:

Table 5: Details of Community Consultations

Sr. No.	Place	Date	Number of Participants	Concerns	Suggestions	Responses
A. Consultation With Male Members of Local Community						
1	Mohallah Rasool Nagar and Mandiala Road	27-07-2022	5	Participants raised a concern that temporary restrictions to access by-passers may occur due to the construction activities of the sub-project. Participants also apprehended that construction activities would lead to dust and noise generation.	They suggested undertaking construction activities at a quicker pace. They suggested reducing noise and dust pollution for locals.	The field team briefed that the contract will be bound to provide a schedule of work that will be communicated to local people. The contract will also work in patches to reduce the risk of restrictions on access. The field team briefed that the contractor will do water sprinkling to reduce dust and undertake proper tuning of vehicles for noise control. These measures will be ensured in true letter and spirit.
2	Mohallah Rasool Nagar	07-09-2022	10	Participants raised concerns that temporary access in mobility may	They demanded foolproof measures to	It was replied that to avoid access in mobility, contractor will be

Sr. No.	Place	Date	Number of Participants	Concerns	Suggestions	Responses
	and Mandiala Road			occur due to proposed activities.	secure community health and safety.	instructed to execute work in portions and at the time when least mobility of the local community is expected and shops are closed
3	Mohallah Rasool Nagar and Mandiala Road	18-10-2022	5	Participants apprehend about the women privacy issues as during the day time, only women are at home. .	Participants suggested that the measures contractor will take for environmental protection should be disseminated to them prior to the constriction.	The field team briefed that the contractor will be briefed on it to sensitize the labor/workers to avoid any interference with the local communities particularly women households .These aspects are also covered in the EHS SOPs of Labor and communities which shall be made part of the bid documents Regular awareness/training sessions of labor/workers will also be conducted to sensitize them on it.In case of any complaint, an effective GRM is also in place
Sub-Total (Male Participants)			**20**			
B. Consultation With Females						
5	Mohallah Rasool Nagar and Mandiala Road	18-10-2022	5	Participants complained that the water supply system is not available yet; the provided water is contaminated and not safe for drinking purposes. Almost all females use filtered water for drinking purposes. Many houses also rely on water bores for household use.	Females demanded to have safe water supply systems for drinking purposes and household use.	The field team replied that their concern will be shared with the relevant government department and through this project, such issues will be resolved
Sub-Total (Female Participants)			**5**			
Total			**25**			

Table 6: Detail of Consultation with Government Departments

Sr. No.	Date	Department	Representatives	Concerns / Responses/ Suggestions	Response by Survey Team
1	07-09-2022	MC Kamoke	**Mr. Asif Farzand** MOI Kamoke	Mr. Asif shared his concern that Water pipelines in the sub-project area are old and rusted. Working conditions of some tube wells are also worse. He extended his full support to the project. He suggested that proper investigations should take place of old rusted water pipelines to develop a viable plan for their replacement. He further suggested that some tube wells also need rehabilitation which should be taken up under the project.	Suggestions well taken and communicated to PMDFC and design team
2	18-10-2022	MC Kamoke	**Ms. Sofia Ashiq** Chief Officer	Water pipelines are damaged which causes water contamination. Ms. Sofia welcomed the project and showed her full support in the execution of the project. She suggested that old water pipelines should be replaced as they are damaged and cause water contamination.	Suggestions well taken and communicated to PMDFC and design team
3	18-10-2022	Govt High School No 2	Principal	A new Tube well is proposed to install at Govt High School No 2. But no land was available to MC. The land has to be acquired from SED for the installation of a new Tube well inside the school. A meeting was held with School Committee for the provision of land (school area). They responded well. Anyhow, apprehended following observations: • Issue of noise due to tube-well operation hours at school working hours • Electricity meter must be installed by the MC • The electricity bill must be paid by the MC • MC should take the responsibility of O&M of the tube-well • MC should provide water supply to the school throughout the time • MC should be bound to take responsibility of security and operating the tube-well School Committee showed their consent upon fulfilling these concerns	To mitigate the issue of tube-well operation, MC is instructed through ESMMP of this project to maximum possibly avoid the generator running during school working hours. Anyhow, tube-well will be installed in an enclosed small room and which is away from the main building of the school, noise generation probability will be minimum Other remaining observations were noted well and presented to the MC Kamoke and they expressed that all these observations will be considered very well, upon which an NOC was issued to the MC for installation of tube-well (copy attached)

Sr. No.	Date	Department	Representatives	Concerns / Responses/ Suggestions	Response by Survey Team
4	29-11-2022	Health Department (THQ Kamoke)	**Dr. Samra** (Medical Officer) **Dr. Muhammad Junaid** (Medical Officer)	Dr. Samra shared that water-borne diseases are common in this area, diarrhea, cholera, dysentery, and hepatitis are more prevalent, especially in infants and old age people. Frequency of cases increases during monsoon season.	By execution of this project, most of the issues related to quality and availability of safe drinking water will be resolved
5	29-11-2022	Revenue Department Kamoke	**Mr. Salim Musharif** (Revenue Officer)	There are no issues regarding land acquisition. If the issues occur, then these matters will be dealt with Revenue Department. He also highlighted the sewerage and solid waste problem in the area. The project is overall very good no land acquisition will take place. The survey team explained the project.	At current, priority for Kamoke MC was water supply then other sectors (sewerage, parks and street lights),but other priority projects are also under process.
6	29-11-2022	Irrigation Department, Kamoke	**Mr. Muhammad Zahid** (Sub-engineer)	Waste construction material or other waste material is disposed of in a water channel passing near the subproject area. The Consultant assured that the contractor will be bound to dispose of waste material at dumping sites. Similarly, he will also be bound to arrange water for construction purposes on his resources. Mr. Zahid stressed that waste construction material or other waste material should not be thrown into the water passing near the subproject area i.e. Mian Bangla (head) and Quma Village (Qoma Harjoki) (tail). Similarly, this water channel should not be sued for construction purposes as this 50 km water channel is used also for irrigation purposes in many villages.	He was briefed that all these provisions are made in the ESMMP of this subproject and it will be made part of bid documents of the contractor.
7	29-11-2022	Public Health Engineering (PHE) Department, Kamoke	**Ms. Samavya Tariq** (SDO)	Ms. Samvya stated the main issue of the rural water supply schemes is their sustainability. She further added that the water quality of the rural area is good but in an urban area, water is contaminated due to an old distribution network. Ms. Samvya shared a positive view of this water supply project. She also shared her working experiences with rural water supply schemes. She suggested that the operation and maintenance of the project should be addressed and maintained.	The survey team appreciated her views and shared that through this project, old pipelines are getting replaced and will also focus on devising sustainable Operation and Maintenance (O&M) of the water sources and distribution system of the water supply lines
8	29-11-2022	Solid Waste Management (SWM)	**Mr. Ghulam Murtaza** (Sub In-charge)	Mr. Murtaza, intimated that the dumping sites are enough for the dumping of all city solid waste. There is no access issue towards these	The survey team appreciated all these efforts and incorporated in the ESMMP

Sr. No.	Date	Department	Representatives	Concerns / Responses/ Suggestions	Response by Survey Team
		Department, Kamoke		solid waste dumping sites. Committee vehicles are regularly collecting the waste and then dump it into these sites. Mr. Murtaza suggested that Solid waste produced during construction should be disposed of timely.	
9	29-11-2022	Rescue 1122, Kamoke	**Mr. Ishtiaq Sb** (Sub In-charge)	Mr. Ishtiaq stated that this area is facing water shortage and water contamination. He added that It's very important to change the water supply pipelines. He also pointed out that during construction dust and noise will also be generated. He showed concern about the security and safety of the laborers and the public during the construction phase. He suggested that this project would be helpful for this area as we are facing water shortage and water contamination. He also suggested that dust and noise generated should be properly managed during the construction phase. He aimed that Emergency Preparedness and Response training should be given to labor staff. The duration of this training will be 3 days and free of cost. The training will guide the labor and other staff in emergency preparedness and emergency response at construction sites.	Social and environmental teams also briefed about the mitigation measures that will be adopted to control dust, noise, health, and safety issues. Moreover, it was appreciated to include the Emergency Preparedness and Response training labor/workers by Rescue 1122

5.10. Information Disclosure

The social and environmental team carried out a public consultation with the affected households and local people. Participants of public consultation meetings were briefed on salient features of the draft Environmental and Social Management Plan (ESMP) prepared for the subproject. The team assured affected households that all the concerns raised by them will be addressed. Measures have been made part of ESMP to minimize the impacts during construction. Mitigation measures will be adopted to control noise and air pollution. Participants were apprised that their concerns and suggestions have been incorporated into the ESMP. In case of any complaint/grievance from the households, a well-defined Grievance Redress Mechanism (GRM) is devised in ESMP. Participants were also briefed over GRM.

As part of the disclosure requirement, the English version of ESMP will be uploaded on the website of PMDFC and World Bank. Hard copies of ESMP will be placed at the site office for information disclosure purposes. The pamphlets have Grievances.

5.6 Future Consultation Plan

The stakeholder consultation is a continuous process and should be carried out throughout the life of the sub-project. The consultations carried out during the present ESMP stage and reported are essentially among the initial steps in this process. During the subsequent project phases as well, the participation of the project stakeholders needs to be ensured. Unit Kamoke Supervision staff will ensure time-to-time consultation with locals to get their feedback on project activities and their related complaints.

Photo Log

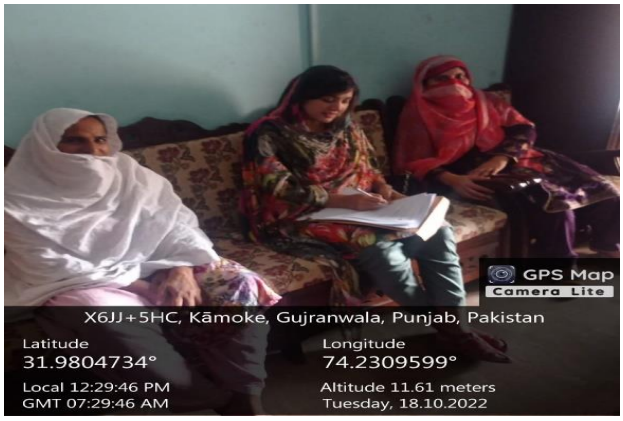
A: Public Consultation with the Community

Consultation with locals at Mandiala Road

Consultation with locals at Mohallah Rasool Nagar

Consultation Meeting with locals at Mandiala Road

Consultation with locals at Mohallah Rasool Nagar



Consultation with Females at Mohallah Rasool Nagar

Consultation Meeting with Females at Mandiala Road

B: Consultation with Line Departments

Stakeholder Consultation with MOI, MC Kamoke

Consultation with Govt School Management

Stakeholder Consultation with CO MC Kamoke

Consultation Meeting with Director / Principal at Zenith Model School of Mohallah Rasool Nagar

General Discussion with Govt High School No 2 Staff members

Consultation with Principal at Govt High School No 2

Consultation with Sub In-charge at Rescue 1122

Consultation with Medical Officer THQ, Kamoke

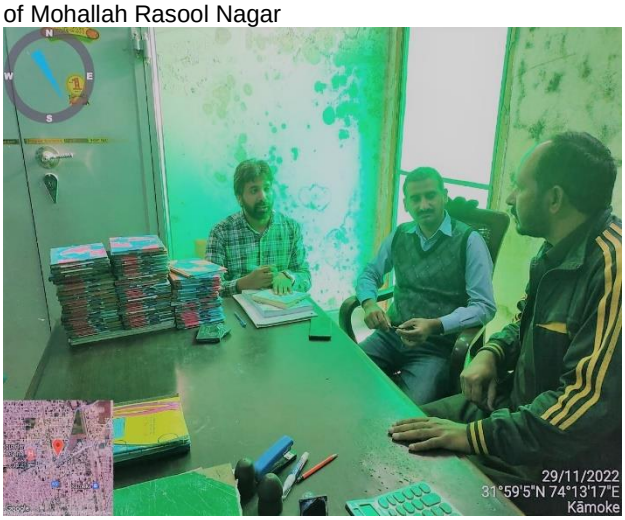
Consultation with SDO PHE Department, Kamoke

Meeting with Tehsildar, Kamoke

Stakeholder Consultation with CO MC Kamoke alongwith PMDFC E & S Staff

Consultation with Director/ Principal at Zenith Model School of Mohallah Rasool Nagar

Meeting with Sub-engineer Irrigation Department, Kamoke



Meeting with Sub-In charge **of** Solid Waste Management (SWM) Department,, Kamoke

Section 6

GRIEVANCE REDRESS MECHANISM

6. General

In order to receive and facilitate the resolution of affected people's concerns, compliments, and grievances about the project's environmental and social performance an Environmental Grievance Redress Mechanism (GRM) has been established. The GRM will address affected people's concerns and complaints proactively and promptly, using an understandable and transparent process that is gender-responsive, culturally appropriate and readily accessible to all segments of the affected people at no costs and without retribution.

The GRM will be accessible to diverse members of the communities, including women, senior citizens, and people with disabilities, laborers/workers, and other vulnerable groups. Culturally appropriate communication mechanisms will be used at all Sub-project sites both to spread awareness regarding the GRM process as well as complaints management. ESMF GRM will be integrated with the PCP's overall program GRM hotline to be developed by the Consultants under the scope of PCP.

6.6. GRM for Sub-Project

The grievance Redress Mechanism (GRM) is to provide a robust system of procedures and processes that provides for transparent and rapid resolution of concerns and complaints identified at the local level. In case of any complaint, the focal person of GRC may contact and his contact details will be provided at the sub-project site.

6.6.1. The first tier of GRM.

The PMU is the first tier of GRM which offers the fastest and most accessible mechanism for the resolution of grievances. The PMU staff for the environment and social safeguards will be designated as the key officers for grievance redressal. Resolution of complaints will be completed within seven (7) working days. Investigation of grievances will involve site visits and consultations with relevant parties (e.g., affected persons, contractors, the public, etc.). Grievances will be documented and personal details (name, address, date of the complaint, etc.) will be included unless anonymity is requested. A tracking number will be assigned for each grievance, including the following elements:

- Initial grievance sheet (including the description of the grievance), with an acknowledgment of receipt handed back to the complainant when the complaint is registered;
- Grievance monitoring sheet, mentioning actions taken (investigation, corrective measures);
- Closure sheet, one copy of which will be handed to the complainant after he/she has agreed to the resolution and signed off.
- The updated register of grievances and complaints will be available to the public at the PMU office, construction site and MC in the project area. if the grievance remains unresolved, it will be escalated to the second tier.

6.6.2. 2nd Tire of GRC

GRC has been notified under the umbrella of the Punjab Cities Program (PCP) comprising of the following members and TORs.

Chief Officer Unit Kamoke	Chairperson
Municipal Officer (Infrastructure Development)	Convener
Municipal Officer (Planning)	Member
Municipal Officer (Regulation)	Member

TORs of GRC- Unit Kamoke are as followed:

- The ESFPs with the support of DPO-ESM will play an instrumental role in steering the GRC functions both at the city and regional levels.
- CO Unit Kamoke will be responsible to share monthly recorded grievances data with regional GRC.
- The contractor will have observer status on the committee.
- If unsatisfied with the decision, the existence of the GRC will not impede the complainant's access to the 3rd Tire of GRC before going to Government's judicial remedies.

6.6.3. 3rd Tire of GRC at Administration/PMDFC Level

A Grievance Redress Committee (GRC- PMDFC/LG&CDD) will be responsible to oversee the overall functions of the GRM at a strategic level including monthly reviews. It will be headed by the DS/AS LG &CDD.

- The committee will be responsible to oversee the overall functions of the GRM at a strategic level including monthly reviews.
- The committee will maintain an electronic database at the PMDFC that will provide a summary of complaints received and mitigations.
- The committee will also provide an analysis of the grievances at each sub-project location using a pre-designed M&E template that will give insight into the type of complaints received and a qualitative and quantitative review of grievance redressal.
- The committee will also be responsible for uploading the actions and results for each grievance for each Sub-project location on a periodic basis to the PMDFC/PCP website.

6.7. Types of Grievances

The following are some of the environmental and social issues that could be subject to the grievance from the affected people.

Environmental	Social	Health & Safety
• Noise Pollution • Air Pollution • Fugitive Dust • Water Pollution • Solid Waste Management • House Keeping • Cutting of Trees • Borrow Areas Management • Protection of Wildlife • Campsite Management	• Accidental Insurance for labor • Non-Provision of PPEs to labor as per the nature of their jobs • Loss of any public infrastructure • Protection of sensitive receptors • Compensation for any economic losses • Traffic Management	• First Aid • Fire Safety • Workplace Safety • Tools Box Talks • Provision of PPEs • Work at Height Safety • Excavation Safety • Heavy Machinery Issues • Health Concerns • Hindrance and obstructions due to traffic • Labor influx issues

	• Labor grievance redressal • Gender discrimination • Security Arrangements • Impacts on livelihood • Irregular Traffic Movement • Obstruction in access • An intensive schedule of construction activities • Child Labor	• Damage to the assets

Section 7
CAPACITY BUILDING

7. General

A comprehensive program will be followed to strengthen the technical and institutional capacities of the executing agency (MC Kamoke), contractors, and laborers.

Components	Audience	Level	Modality	Frequency	Responsibility
ESMF Site-Specific requirements and E&S Management and Mitigation Plan	MO-I MO-P and MC field staff[17]	Training	Briefing Presentations Mock Activities	Before execution of sub-project and time-to-time instructions	PMDFC ESM team
ESMP Implementation and Monitoring Plan	MO-1 MO-P MC field staff	Training	Briefing Presentations Mock Activities		
	Contractor	Awareness and sensitization	Briefing	At the time of Contract signing and before execution	DPO-ESM ESFPs
	Labor	Awareness and sensitization	Briefing	Before execution and time to time during execution	DPO-ESM ESFPs
EHS SOPs for Labor/Workers (including women workers)	Contractor	Awareness and sensitization	Briefing and Illustrations	Before execution and time to time during execution	DPO-ESM ESFPs
	Labor/ workers	Awareness and sensitization on SOPs Training on the Use of PPEs	Presentations Illustrations Mock activities Resource material	Before execution and time to time during execution	DPO-ESM ESFPs
GRM	Contractor	Awareness and sensitization	Briefing	Before execution and time to time during execution	DPO-ESM ESFPs
	Labor/ workers	Awareness and sensitization	Briefing and resource material	Before execution and time to time during execution	DPO-ESM ESFPs
	Public/ communities	Awareness	Briefing during the public consultation Resource material	Before and during the execution	DPO-ESM ESFPs

[17] For ESFPs and MC field staff, PMDFC will organize time to time trainings and a training/ capacity building program has been designed in this regard

Section 8
IMPACTS AND MITIGATION

8. General

The reconnaissance field visit was carried out to assess the socio-environmental impacts of the proposed construction activities. A screening checklist (Annex-I) shows an assessment of potential environmental and social impacts and reveals that the project activities will not cause significant disturbance and inconvenience to local communities and the natural environment of the area. All the impacts, which have been identified during the survey and consultations, are associated with the construction phase and minor to moderate in severity; reversible as well as short duration, which can easily be mitigated through planning or adopting appropriate management measures that are included in this ESMP. The minor impacts can be resolved through best management practices. The project implementation will positively improve the socio-economic conditions of the Sub-project area. The Sub-project will be highly beneficial for the residents of Kamoke as the replacement of the water supply old live lines and installation of new tubewell are involved as per the scope of work. The proposed project will ensure 24/7 sustainable water supply to the residents of the sub-project area. Reduced wastewater infiltration into the pipelines, which limits contamination in water supply mains. A large number of un-regularized private water boreholes will shut down due to the regular availability of water for consumptive purposes. The water supply system of Kamoke MC is relying on the groundwater source and it comes in a sweet zone and is present abundantly. Excessive abstraction of this precious source through private pumping would be controlled by installing tubewell at the government level with controlled pumping hours of the tube well.

The nature and scope of the construction activities would bring several associated potential environmental and social impacts. The social impacts associated with the hiring of laborers are expected to be recruited largely from the local area, which will enhance economic opportunities for them. Potential impacts include the location and management of the work camp and disturbance issues relating to traffic, dust, noise and vibration, construction materials, liquid discharges, solid waste collection and disposal, and potential hindrance in the movement of inhabitants temporarily. Construction-related impacts are heavily dependent on the Contractor's work. The contractor is liable to ensure the Contractor's social obligation. These impacts are routine and easily manageable.

The environmental and social safeguards screening checklist depicts that:

(i) the Sub-project will require land only for the installation of a new tube for which NOC from the relevant department has been obtained.;
(ii) There is no physical and economic displacement or involuntary resettlement of the people. No existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means exists in the sub-project area.
(iii) The Sub-project does not fall in any protected area, such as a wildlife sanctuary, game reserve, or national park.
(iv) No notified PCRs have been observed in the sub-project area.
(v) No tree cutting involves in the sub-project implementation.
(vi) No surface water body is present near the sub-project area which may impact during construction.

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Section 9
ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

9. Objective

The purpose of the Environmental and Social Management and Monitoring Plan (ESMMP) for the rehabilitation of the water supply and tube well is to ensure that all necessary identified measures have been adopted to protect the environment and social situations and to comply with the country's environmental legislation and applicable World Bank Core Principles. After the preparation of ESMF, PMDFC ESM Wing outlined site-specific ESMMP for the Contractors and executing agency. The environmental and social checklist was prepared by PMDFC ESM Wing with the help of the field teams and was used to assess the potential impacts of the Sub-project based on its scale/size, nature and significant negative impacts.

9.6. Institutional Arrangements

9.6.1. MC Kamoke

Overall responsibility for Environmental Management and Monitoring will rest with the MC Kamoke. The MC will be responsible for the implementation, monitoring and reporting of ESMP with the technical assistance of ESM Wing PMDFC throughout the project period.

Notification of ESFPs in MC Kamoke under PCP has been done.

MOI has been nominated for Environment focal person; The MOI is responsible for the implementation & Monitoring of Environmental Aspects. MOP has been nominated as the Social focal person & responsible for the implementation & Monitoring of Social Aspects:

9.6.2. PMDFC ESM Wing

ESM Wing will provide support to ESFPs (MOI for Environment focal person and MOP for Social focal person) for managing the environmental and social aspects of the sub-project and implementation of the present ESMP. ESM Wing would also support communities' participation, consultations and other social activities from the Sub-project identification to the completion stage. PMDFC - ESM wing will also monitor the subproject activities to ensure the project remains compliant with World Bank and national/provincial policies and regulations. Therefore, regular reports will be submitted to the Word Bank accordingly.

9.6.3. The Contractor

The Contractor will be responsible for the on-field implementation of the ESMP and environmental protection liabilities under the Punjab Environmental Protection Act (Amendment 2012) and the World Bank's Environmental and Social Core Principles for PforR financing. The contractor will also be responsible for compliance with ESMP provisions keeping in view his contract with the MC Kamoke. The Contractor will train his crews in all aspects of the implementation of the ESMP.

Contractors have to comply with the following responsibilities:

- Observation of timings and making a schedule so that the surrounding communities should not affect by noise pollution, air emissions and disturbances in their routine work
- Usage of machinery/equipment producing negligible/low noise.
- Ensure health, safety and protective measures including safety equipment, safe drinking water, first aid boxes, etc. to the workforce as per the nature of their jobs.
- Water sprinkling to avoid air pollution.
- Indicate alternate routes and provide indicators on suitable places during work timings.
- Local labor should be preferred work.
- Child labor is strictly prohibited as per labor law. All laborers should be more than 14 years of age individually.
- Minimize livelihood disturbance of hawkers and shopkeepers.
- Proper disposal of wastes and garbage.
- Health, safety and protective measures for the labor.
- Notice board of emergency numbers should be placed in the proper place.
- Contractors shall also provide safety equipment i.e., PPEs, safe drinking water, first aid boxes, etc. to the workforce as per the nature of their jobs.

By ensuring all these mitigation measures; not only their company profile shall boost but also enable them to qualify and win future Sub-projects.

9.6.4. Supervisory Consultant

The resident Supervision Consultant will ensure compliance with ESMP's all attributes.

9.7. Monitoring Mechanism

The ESFPs will carry out the monitoring at the field level on a continuous basis. The DPO ESSs will perform periodic monitoring during their site visits. Two complementary methodology approaches are being applied to monitor the proposed actions under the ESMP:

- **Compliance monitoring;** which checks whether the actions proposed by the ESMP have been carried out by visual observation, photographic documentation and the use of checklists prepared for the ESMP;
- **Effects monitoring;** which records the consequences of program activities on the biophysical and social environment; as applicable, these effects are repeatedly measured by applying selected indicators.

The plan also defines the monitoring mechanism and identifies a set of verifiable monitoring parameters to ensure that all proposed mitigation measures laid down in the ESMP are completely and effectively implemented.

Monitoring will be carried out to ensure that the mitigation plans are regularly and effectively implemented. It will be performed at two levels. At the PMDFC, the environmental team will do ESMP compliance monitoring to ensure that the mitigation plans are being effectively implemented. At the Contractor's level, their Environmental Manager will fill out the Environmental & Social monitoring checklist (Annex-I) on a weekly basis

9.8. Reports

The Contractor will submit a weekly compliance monitoring checklist and PMDFC ESM Wing will submit quarterly and annual monitoring reports as well as a final report of the Sub-project based on safeguard implementation status. The monitoring reports will also include the process and outcome of consultations with the Project Affected Persons if any. The distribution of periodic reports is given below:

Table 7: Distribution of Periodic Reports

Distribution of Periodic Reports	Prepared by	Reviewed by	Distribution
Weekly	Contractor	PMDFC DPO ESSs	PD, The Engineer
Quarterly	Supervisory consultant	PMDFC SPO ESSs	PD, The Engineer, The World Bank
Annual	Supervisory consultant	PMDFC SPO ESSs	PD, The Engineer, The World Bank
Final	Supervisory consultant	PMDFC SPO ESSs	PD, The Engineer, The World Bank

9.9. Inclusion of ESMP in Bidding/ Contract Documents

The present ESMP has been included in the bidding/ contract documents and their implementation will be contractual binding for the Contractors. In addition, the Contractor's guidelines prepared by PMDFC/ safeguards procedures will also be made part of the contracts.

9.9.1. Monitoring of Environmental and Social Non-Compliance

Any environmental and social non-compliance during the first half of the reporting month will be considered a "minor deviation". In case the non-compliance attains the status of "non-mitigation" during the second half of the reporting month, it would be considered a "moderate non-compliance". In case non-compliance continues in the second month, it will fall in the category of "undone" and as such would be considered as a major non-compliance and eventually lead to serious action including the suspension of the Contractor's payment or any other penalty as may be considered appropriate with the recommendation of the DPO ESSs/Engineer. No payment will be made to the Contractor for non-compliance and no arrears will be paid thereof.

9.10. Environmental Management and Monitoring Plan

The impacts, mitigation measures, monitoring indicators, frequency and responsibility have been discussed in the Environmental and Social Management and Monitoring Plan (EMMP).

Sub-project: Rehabilitation of Old Lived Pipes & installation of one new Tube well

Table 8: Environmental and Social Management & Monitoring Plan (ESMMP)

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
Design Phase									
	Conflict on design				○ To avoid conflicts during the design phase public consultations were conducted, in this sub-project, no conflict was raised during the public consultation	Minutes of meeting records, attendance sheets and pictures	Monthly	Design E&S Consultants	ESFPs of MC DPO ESM
Installation of New Tube-well	Water Contamination				○ To provide safe quality of drinking, water quality analysis shall be ensured at the time of boring before installation of tube-well and during installation	Water Quality Analysis Reports	At the time of installation	Contractor	MC Kamoke Supervision Consultants DPO-ESM and PMDFC regional office team
Physical Cultural Resources	Conserve physical and cultural resources in the project area				○ There are not any PCRs found and no impact on the physical and cultural resources in the project area is envisaged. ○ Anyhow, chance find procedures will be followed in case of finding any such evidence.	Visual/ Pictures	Monthly	Design E&S Consultants	ESFPs of MC DPO ESM
Socio-economic Environment	Resolve the issues raised in consultation with stakeholders				○ All the project stakeholders should have been taken on board through effective consultation process and their issues have been addressed in the project design. ○ In this sub-project rehabilitation works will be done at existing ROW and land for new tube well is government land which eliminates the socioeconomic issues regarding land acquisition.& resettlement.	Visual/ Photographic record, Public consultation,	Monthly	Design E&S Consultants	ESFPs of MC DPO ESM
Construction Phase									

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
Dismantling, Excavation	**a) Environmental Issues:** • Dust which may affect visibility, community and labor health • Noise from types of machinery/ equipment • Waste may be generated due to these activities • Safety hazards to labor and nearby resident population. • Worse House Keeping **b) Social Issues:** • Excavated material may cause disturbance in mobility. • Temporary blockage of route/street may restrict mobility • Conflict with public and public complaints • Economic loss of permanent and mobile vendors due to obstruction of passage • Presence of Physical Cultural Resources (PCRs) of Archeological importance • Air and dust pollution • Noise pollution				○ Excavated material will be disposed of within 24 hours at the designated place of MC Kamoke. ○ Updated and tuned machinery will be used to control noise. ○ Water sprinkling will be carried out at consecutive intervals as per instructions ○ Avoiding construction activities during the night. ○ Removal of excess matter/ debris from the site within 24 hours. ○ Provide PPEs (See Annex-VI). ○ Provide appropriate signage near the construction activities to sensitize the communities and minimize accidents. ○ The public must be informed about the project's major activities, duration of the scheme, time and schedule, anticipated impacts and their proposed Mitigation Measures. The contact Nos. of the focal person of the Grievance Redress Committee will be displayed at different locations and residents will also be informed about it. ○ Construction work will be scheduled in such a way that the business of the shopkeepers will not be affected. ○ Temporary accessibility to the shops may be disturbed for a few hours only for which the contractor will be instructed to execute that part of the work at night hours after closure of the bazar while there is already open space available outside the shops for accessibility ○ Contractor will ensure that work should be executed in portions to avoid temporary	Visual/ Photographic record, Public consultation, Environment Quality Analysis reports, GRM Complaints record	• Daily site visits during the construction phase • Fortnightly/Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM Supervision Consultants E&S team

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
					○ disturbances in the accessibility and placement of the temporary vendors ○ Contractor will make sure that labor must not damage the property and structures of the communities (although no such structure was observed during the screening survey) and in case of damage compensation will be provided as per entitlements. ○ If there will be any PCR found during excavation; Contractor will follow guidelines (Annex-VII) of chance find procedure. ○ Air quality will be analyzed by the contractor from Punjab EPA certified Lab at pre, during and after execution stage of the work. ○ Noise quality will be analyzed by the contractor at pre, during and after execution of the work.				
Construction material storage, handling and use	**Environmental Issues:** • Groundwater may also be contaminated due to any oil spillages from machinery. • Health risk to workers and local inhabitants. • Poor Housekeeping **Social Issues:** • Land acquisition for storage of construction material • Accidents/Injuries expected if neglected • Blockage of passage for pedestrians				○ The material will be appropriately secured to ensure safe passage between the destinations during transportation. ○ Loads/heaps will have appropriate cover to prevent spillage and the contractor should be responsible for any clean-up resulting from any failure. ○ Materials will not be loaded to a higher level than the side and tail boards and shall be covered with a good quality tarpaulin; ○ If the land is acquired for storage of machinery & materials on a temporary basis: The contractor is liable to compensate the land owner according to the agreement/negotiations/voluntarily	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
	• The haphazard arrangement of construction material				○ The contractor will lay/utilize construction materials as per work requirements from his storage site. ○ The contractor will use night vision reflective signboards/ reflective tapes to cordon off the area during construction/demolition activities.				
Labor Camp (if established by Contractor)	• Health impacts due to the absence of housing and sanitation facilities in labor camps. • Security of labor • Unhygienic conditions.				For the execution of this sub-project, 20/25 number of workers/laborers will be required to work and contractor will be instructed (will be included in his term of reference and in the form of EHS SOPs implementation), to prefer the local labor to be engaged, for which labor camp will not be required to be established. Anyhow, for temporary labor site, following mitigation measures will be provided ○ Contractor will ensure provision of appropriate housing, water supply, and sanitation facilities to construction labor. ○ Good housekeeping will be ensured inside campsite ○ Labor will be provided with quality food. ○ During winter hot water will be provided for bathing and likewise as per the weather condition. ○ Accommodation will be ensured by the Contractor. ○ It's better to accommodate labor in Containers Camps/houses with all amenities. ○ Contractor will submit Campsite Management Plan and approve from DPO-ESSs before the execution of work.	Visual/ Pictures	• Daily site visits during the construction phase. • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team
Vehicle Movements	• Traffic congestion • Conflicts				○ Alternative routes will be provided. ○ Signboards and posters will also be displayed at the project site and adjacent	Visual/ Pictures, Vehicle	• Daily site visits during the construction phase	• Contractor	ESFPs DPO ESM

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
					areas as well. Inform the residents about the timing, schedule and construction work duration. ○ Work will be done in portions so that the alternate route may be used safely and vehicle movement will not be disturbed. ○ The contractor will submit Traffic Management Plan and approval from DPO-ESSs before the execution of work. ○ Vehicle emissions testing will be ensured (Hand plater, Compactor) once during execution of work	emission tests reports, GRM Complaints record	• Fortnightly/ Weekly • Once during the construction phase		• Supervision Consultants E&S team
Site Safety Issues	• Accidents				○ The contractor will ensure site safety using safety cautions (night vision), boards, flagmen, cordon tapes, etc. for smooth flow of traffic during the construction phase of the Sub-Project.	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team
Public access	• Problems for pedestrians. The normal mode of transport may be disturbed during Sub-project execution.				○ If it required to provide an alternated access route, contractor will ensure that the alternate access route must consider the safety aspects for all kind of pedestrian i.e. women, children, disabled. ○ Cordon off the construction zone. ○ Ensure to work at night after bazar closure for major part of work in which machinery/vehicles may hinder the public accessibility.	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team
Occupational Health & Safety	• Injuries to workers/LTI				○ Contractor will follow PMDFC designed Environment, Health and Safety SOPs for Labor/Workers for all activities on the site and these SOPs will be the part of his term of reference and contractual agreement. ○ Workers will be trained by the PMDFC ESM team and guided to follow SOPs and will be provided with necessary PPEs	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
					(Safety Helmets, Safety Shoes, Gloves, Chemical Masks etc.) wherever required. ○ First aid will be provided onsite ○ Careful monitoring will also be carried out.				
Community Health and Safety	• Minimize health risks to the public due to project activities.				○ There shall be proper control of construction activities and oil spillage leakage of vehicles; ○ The laborers with different transmittable diseases shall be restricted within the construction site; ○ Ensure that the site is restricted from the entry of irrelevant people particularly children; ○ Timely public notification on planned construction works; ○ Seeking cooperation with local educational facilities (school teachers) for road safety campaigns; ○ Provision of proper safety and diversion signage, particularly at sensitive/accident-prone spots; ○ Setting up speed limits in close consultation with the traffic police; and ○ During construction work, pedestrian and vehicular passages shall be provided for crossing near the settlement; ○ COVID-19 SOPs must be followed at the work site and construction camps; and ○ Open trenches and deeply excavated manholes shall be protected by a fence/barricade to avoid any accident.	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM Supervision Consultants E&S team
Damage to Public Infrastructure/ Utilities	• Accidents/Incidents/Injuries • Structural loss • Social Conflicts				○ The contractor will ensure no damage to public utilities or structures. ○ The contractor will provide compensation for the damages to entitle accordingly if any happened.	Visual/ Pictures	• Daily site visits during the construction phase	• Contractor	ESFPs DPO ESM

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
							• Fortnightly/ Weekly • Once during the construction phase		• Supervision Consultants E&S team
Protect sensitive areas from the adverse effects of construction activities	• Nuisance/ Disturbance to Social Sensitive Areas (educational, health, and religious places)				○ No material shall be stocked in this area; material shall be brought to the site as and when required; ○ No work shall be conducted near the religious places during religious congregations; ○ Material transport to the site shall be scheduled considering school timings; ○ Notify concerned schools, hospitals, etc. 2 weeks prior to the work; conduct a 30 minutes' awareness program on the nature of work, likely disturbances and risks and construction work, mitigation measures in place, entry restrictions, and dos and don'ts; and ○ Implement all measures suggested elsewhere in this report.	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team
Reduce social Issues	• Social/ Cultural Conflicts				○ Public notification through media during the entire construction phase to avoid any inconvenience in accessibility to the locals; ○ Establishment of formal links with affected communities; ○ Plan for social grievance redress mechanisms including the local leaders and community representatives; ○ Local labor shall preferably be employed for construction works; ○ Careful planning and training of a workforce to minimize disturbance to the local people; and	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM Supervision Consultants E&S team

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
					○ Contractor shall preferably arrange their own sources of water.				
Sexual Harassment-Labor Influx-Child Labor	• Social Conflicts • Gender-Based Violence				○ Contractor will give behavioral training to the workforce. ○ The contractor will hire local labor for unskilled works. ○ No child labor is allowed onsite below 14 years. ○ GRM at the site level will be ensured to report in case of any such incident.	Visual/ Pictures/ Reported/ Complains by the public during the visit	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team
COVID-19 SOPs implementation .	• Spread of Corona among the labor				○ The contractor will provide face masks to the labor on daily basis to reduce Corona's impact. ○ The contractor will follow CoViD-19 guidelines during construction works (Annexure-II)	Visual/ Pictures	• Daily site visits during the construction phase • Fortnightly/ Weekly • Once during the construction phase	• Contractor	ESFPs DPO ESM • Supervision Consultants E&S team
Operational Phase									
Maintenance/repair of Water supply lines	• Complains				○ MC Kamoke will maintain through effective GRM	Visual/ Pictures		MC Officials	• MC Officials
Assurance of contamination-free supply of water	• Protecting Water Quality in The Distribution System				○ Supply of water with adequate quantities and quality as per PEQS drinking water standards. Contamination of water supplies should be avoided at all times. In most small water supply systems, however, economic reasons prevent 24-hour daily water service. This creates a risk of polluted water infiltrating into the pipelines through leaks in pipe joints and service taps. To counter the health risk, 0.1 mg/L residual chlorine should be maintained throughout the distribution system. Other measures to preserve the quality of water are the following:		Quarterly monitoring of water supply from source and end-user through PEPA Approved lab as per PEQS	MC Officials	• MC Officials

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
					○ Install water mains using adequate separation from potential sources of contamination such as sewers, stormwater pipes, septic tanks, etc. ○ Avoid cross-connections and prevent backflow. ○ Provide at least the minimum allowable pressure and adequate flow at all delivery points in the distribution system. ○ Avoid situations that may give rise to negative pressures. ○ Control the pressure up to the maximum allowable while avoiding pipe breakage. ○ Minimize low-flow dead-ends to avoid stagnant water. Effective circulation of water in the pipelines should be maintained to prevent the deposition of sediments and minimize the growth of bacteria. ○ Install non-return valves on source facilities to prevent backflow that might cause contamination. ○ Promptly repair leaks in pipes to keep dirty water from coming in when the pressure in the pipe is reduced. ○ Cover reservoirs to prevent contamination. Ensure that all hatches and structures of the reservoir are secured and vermin-proof.				
Repair & maintenance of a tube well which will be installed in the	•				○ It is recommended that the services/repair/maintenance of the tube well will be done after school hours. ○ If not possible, then cordon off all the working platforms with special care by well-trained skilled workers.		Daily	MC Officials	• MC Officials/School committee

Proposed Sub-project activities	Potential Env/Soc Impacts	Magnitude of Impact			Mitigation Measures	Monitoring Indicators	Monitoring Frequency	Mitigation Responsibility	Monitoring Responsibility
		Low	Medium	High					
vicinity of a Govt. School					○ All the repair & maintenance activities/schedules need to be shared with the school committee. ○ During the operation phase tube well working hours must be planned before school time i.e. before 0700hrs, during break/recess time & after school time. Furthermore, all necessary expenditures i/c electricity bills, maintenance, security, etc. would be paid by the MC-Kamoke				

9.11. ESMP Implementation Budget

Sub-Project: Rehabilitation of Old Lived Pipes & installation of one new Tube well

Table 9: ESMP Implementation Cost

Item	Quantity	Tentative Cost/Item-PKR	Total Cost in PKR.
A-PPEs			
Face Masks (3 PLY) - box	50	300	15,000
Safety Hard Helmets	25	3,000	75,000
Safety Shoes	25	3,000	75,000
Hand Gloves	25	1,000	25,000
Ear Plugs	25	500	12,500
Reflective Safety Vest	25	1,000	25,000
Safety Goggles	25	500	12,500
B-Community Health and Safety			
First Aid Box Complete	1	10,000	10,000
Infrared Thermometer (Benetech GM-2200 or equivalent)	1	40,000	40,000
Safety Signs	10	15,000	150,000
Safety Cones	24	1,000	24,000
Safety Tapes	50	1,500	75,000
Emergency Portable Lights	4	3,000	12,000
Fire Fighting Equipment Purchase and refilling	2	10,000	20,000
Hiring of Environmental Specialist (for 03 months)	3	70,000	210,000
Labor Campsite Management	Lump sum		400,000
C- Environment Quality Testing			
Water Quality-at the time of installation of new tube-well, during installation and after installation. It should be ensured to install the tube-well only in case quality of water is meeting all the requirements as per WHO/PEQSs	3	22000	66,000
Total (PKR)-A+B+C			**1,247,000**

Annexure I: Environment & Social and IR Screening Checklist

Environmental & Social Screening Checklist

Instructions:

Environmental and Social Focal Persons (ESFPs)[18] nominated by the MCs for PCP environmental and social management, will use this checklist in the field for environmental and social screening and categorization of every sub-project proposed to be executed under the Program.
Deputy Program Officers-Environmental and Social Management deputed by PMDFC in regional offices will technically assist and support the ESFPs/MCs in filling in this Checklist
It is to be attached with the main document[19] of sub-projects at the planning stage and will be duly signed by the relevant ESFP and endorsed by the respective DPO-ESM
This checklist focuses on environmental issues and social concerns. To ensure that social dimensions are adequately considered, Involuntary Resettlement Screening Checklist will also be used
(iii) The purpose of this E&S Screening Checklist is to identify potential "Negative" impacts of environmental and social attributes or to enhance the existing environmental & social benefits. Use the "remarks" section to discuss any anticipated mitigation measures.

Name of ESFP:	**MOI - Mr Farzand**
Name of MC:	**Kamoke**
Sub-Project Sector:	***Water Supply Sector***
Sub-Project Title:	***PCP-Package-II***

E-1	**S-1**
√E-2	**√S-2**
E-3	**S-3**

Date of Screening:	October 18, 2022
Anticipated Project Activities	It is the subproject water supply for the rehabilitation of Water supply lines in Rasulnagar and Mandiala Road along with the installation of one new tube well at Mandiala road.
Estimated Cost of Subprojects	Project capital cost - PKR 365.5 million
Completion Time/Duration	10 months
Estimated Labor for Subproject	10-15 persons

[18] In all MCs, ESFPs are notified by Local government; MO (I&S) are focal persons for environmental sector and MO(P) are focal persons for social sectors.

[19] It is meant as PC-I and/or engineering estimates of sub-project

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Sub-Project area adjacent to or within any of the following:			
Environmentally sensitive areas?			
Legally protected Area		√	No legally protected area has been reported within the sub project area.
Any surface water body (river, canal, stream, lake, wetland) within 250 meters of the proposed sub project[20]		√	Rajbha Canal exists about 2000m away from sub project area.
Estuarine		√	No estuarine has been reported within the sub project area. Sub project area falls in an urban area of Kamoke city.
Special area for protecting biodiversity		√	No special area for protecting biodiversity has been reported within the sub project area. Sub project area falls in urban area of Kamoke city.
Buffer zone of protected area		√	No buffer zone of the protected area has been reported within the sub-project area. Sub project area falls in an urban area of Kamoke city.
Mangroves Forest		√	No mangrove forest has been reported within the sub project area. Sub project area falls in urban area of Kamoke city.
Man-made forest /game reserve, orchid /crops or any other area of environmental importance		√	No manufactured forest/game reserve, orchid/crops, or any other area of environmental importance has been reported within the sub-project area. Subproject area falls in an urban area of Kamoke city.
Socially sensitive /important areas/communities/ people?			
PCRs and or any site of cultural/religious importance (Graveyard, Shrine, Mosque, Church, *Gordwarah*, Temple, Fort, archeological/historical site) within 100 m of the proposed subproject[21]	√		No notified PCRs have been observed in sub-project area. Sites of religious importance like mosques have been found within 100 m of the proposed subproject. In Rasulnagr area 3 mosques, 1 church 1 shrine and 1 graveyard exist in 100 m. At Mandiala road 4 mosques and 1 graveyard exist within 100 m. During construction, mobility may be restricted for which contractor will be instructed to avoid work in prayers time and performance of other religious practices.
Sensitive receptors (Schools, colleges, hospitals and clinics) within 100 meters of the proposed sub-project[22]	√		Sensitive receptors (Schools, colleges, hospitals and clinics) are observed within 100 meters of the proposed sub-project area. 2 Schools and 3 clinics exist at Rasulnagar area while 3 schools and 4 clinics exist in Mandiala road sub-project area. Indirect, Temporary & Site-specific impacts have been envisaged which will be mitigated accordingly by avoiding work during school hours.
Any graveyard of the local community (Muslims or Christians)	√		1 graveyard which will not impacted by project activities
Any demographic or socio-economic aspects of the sub-project area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, squatters, ethnic minorities, people with disabilities, people in old age, socially isolated segments[23] of the society and women or children)?		√	No demographic and social economic impacts of sub-project area are anticipated over vulnerable.

[20] Ibid.

Screening Questions	Yes	No	Remarks
Already existing infrastructure [24](including public amenities) which may be required to dismantle or may be affected temporarily by any means?		√	No existing infrastructure (including public amenities) which may be required to dismantle or may be affected temporarily by any means exists in the sub-project area.
B. Potential Environmental Impacts Will the Sub-Project cause…			
1. Disturbance to habitats/biodiversity of environmentally sensitive or protected areas?		√	Sub-project area exists in urban areas of the Kamoke City.
2. Cutting of trees?		√	No tree cutting involves in the sub-project implementation as depicted in photo logs.
3. Disruption to habitats/biodiversity of surrounding ecosystem/environment?		√	There will not be any disruption to habitats/biodiversity of the surrounding ecosystem/environment due to the urban nature of the sub-project area.
4. Generation of wastewater during construction or operation?		√	The wastewater will be generated from the contractor campsite during the construction phase, which will be mitigated by providing a septic tank before final disposal to the nearest drain. However, no wastewater generation is anticipated during project operation.
5. Pollution of surface water/groundwater due to wastewater discharge from the construction site or due to direct/indirect disposal of wastewater?	√		No groundwater contamination is anticipated, if the septic tank is built this will be properly lined to avoid percolation and contamination of groundwater.
6. Alteration of surface water hydrology of waterways resulting in increased sediment in streams/rivers or due to increased soil erosion at the construction site?		√	No surface water body is present near the sub-project area. However, small sewerage drains are present which may be contaminated or blocked during construction activities. Adequate measures like drain covers have been proposed to avoid/reduce siltation and blockage in the sewerage drain.
7. Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?		√	This will be a temporary impact during the construction phase. If the rented house will be used as a camp, then all SOPs of EHS will adhere. No large-scale labor will require for rehabilitation work local labor will prefer.
8. Over pumping of groundwater, leading to salinization and ground subsidence?		√	Over-pumping of the GW will not be envisaged as existing tube-wells in the area are working more than their average capacity.
9. Serious contamination of soil due to construction works?		√	This normally happens when these materials are transported in open or loosely capped containers. As pre-fabricated pipes will be used, hence this impact will not be envisaged for rehabilitation work. Furthermore, the contractor is required to adopt the proper mitigation that includes good housekeeping, training of his staff, and disposal of waste and implementation of waste management plans.

[21] According to Environmental Assessment Guidelines adopted by Punjab EPA

[22] Ibid.

[23] due to caste, creed, religion or gender e.g. transgender

[24] Sewerage /Drainage system, Water supply lines, tube-wells, WAPDA/Telephone transmission lines/electric poles, Railway tracks, Gas pipelines, Roads, Shops/Plazas, Banks, Industry, Disposal stations etc.

Screening Questions	Yes	No	Remarks
10. Aggravation of solid waste problems in the area?	√		The solid waste problem during construction activities will be mitigated by adopting the proper solid waste management plan. Only during the construction, period and having reversible impacts, monitoring will be done regularly.
11. Generation of hazardous waste?		√	PVC prefabricated pipes will be used hence no impact will foresee anyhow if generated the hazardous waste will be disposed of through EPA-approved contractors.
12. Increased air pollution due to sub-project construction and operation?	√		Adaptation of speed limits for construction vehicles and timely servicing and maintaining them up to the given standards will reduce the volume of air emissions to the surrounding. Frequent monitoring of air quality will support to review of the effectiveness of the mitigation measures. Limit the air emissions within PEQS.
13. Noise and vibration due to sub-project construction or operation?	√		All stationary noise-making equipment will be installed with acoustic enclosures. Timings of noise construction activities will be regulated near sensitive receptors. Further regular monitoring of noise levels will be adopted and continuous monitoring is proposed during the construction stage as a migratory measure.
14. Creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents due to solid/liquid?	√		Stagnant water will be removed immediately and this impact will anticipate during the construction phase. Temporary excavated areas may provide breeding grounds for mosquitoes including dengue. Mitigation will be proposed like filled top soil which will naturally restrict mosquito breeding.
15. Use of chemicals during construction?	√		The workers using the chemicals should have the training and should wear the PPEs.
C: Potential Social Impacts Will the Sub-Project cause…			
1. Impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs)?	There will be no impairment of historical/cultural areas and there will be no disfiguration of landscape or potential loss/damage to Physical Cultural Resources (PCRs).		
2. Displacement or involuntary resettlement of people? (physical displacement and/or economic displacement) (If "Yes", please also fill Involuntary Resettlement Screening Checklist)		√	There is no physical and economic displacement or involuntary resettlement of the people.
3. Disproportionate impacts on the poor, women and children and or other vulnerable groups [25](mentioned above)?		√	There is no impact on the poor, women and children, or other vulnerable groups.
4. Temporary impediments in movements of people/transport and animals?	√		The movement will be restricted for a few hours only, and the residents/people will be informed before the construction activities.

[25] Women, Children, Women headed households, People in old age, people having disabilities, socially isolated community groups and or people living below the poverty line

Screening Questions	Yes	No	Remarks
5. Large population influx during sub-project construction and operation that causes an increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	It's a small-scale project and therefore, there will be no large population influx among the locals. However, during construction activities, separate sanitary facilities and water will be adequately supplied to the labor force by the contractor to avoid and conflict with the local community on the use of their water resources.
6. Social conflicts if workers from other areas are hired?	√		The contractor will hire the locals for unskilled work during construction and hence such conflict is not anticipated however, awareness programs will be conducted for both labor force and the local community in order to minimize possible conflicts.
7. Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	√		Workers may get exposed to dust and noise during construction activities. However, the exposure levels are likely for a short time. Workers will be provided with requisite PPEs to minimize such exposure and associated harmful occupational health effects. Also, a regular monitoring schedule is to be proposed under close supervision and coordination of a professional Occupational Health & Safety Officer of the Project Implementation Consultant through EHS SOPs.
8. Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?	√		Occupational health and safety impacts are anticipated and mitigated through EHS SOPs.
9. Community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?	√		A regular monitoring schedule to be proposed under close management of a professional Occupational Health & Safety officer as per EHS SOPs.
10. Any impact on sensitive receptors (mentioned above)	√		The sensitive receptors may be subject to the impact like vibration, noise and emission which will be mitigated by installing acoustic equipment, silencers, maintenance of machinery, limiting the time specific construction activity near the receptors and with regular monitoring of construction activities near the sensitive receptors.
11. Any impact of negative nature on already existing infrastructure including public amenities		√	No impact is foreseen on existing infrastructures.

Prepared By:	**Reviewed By:**	**Endorsed By:**
Name: Sameen Khokhar	**Name: Tehmina Kiran**	**Name: Asif Farzand**
Consultant -Nespak	**PO-ESM**	**(MOI)-MC Kamoke**
Signature:	**Signature:**	**Signature:**
Date: 18 October 2022	**Date:18-10-2022**	**Date:18-10-2022**

Appendix A-Environmental and Social Categorization of Sub-Projects

Using the Environmental and Social Screening Checklist, E & S Categorization of sub-projects of PCP is and will be carried out as following:

For Environmental Category:

E-1 = All those sub-projects having adverse environmental impacts and or those sub-projects that come under Schedule I and II of Pakistan Environment Protection Agency Review of IEE and EIA Regulations 2000 will need to submit **Initial Environmental Examination (IEE)** or **Environmental Impact Assessment (EIA)**[26] report

E-2 = All those sub-projects which will have moderate negative environmental impacts will need to submit **Environmental and Social Management Plans (ESMP)**[27]

E-3 = All those sub-projects which will have no negative environmental impacts will be categorized as E3 and for those, no further process will be required[28] after E &S Screening

For Social Category:

S-1= All those sub-projects having negative social impacts of significant nature on > 40 households and or it require displacement/resettlement of > 40 households for land acquisition, will need to submit Social Assessment (SAR), Social Management Plan (SMP) and Resettlement Action Plan (RAP)

S-2= All those sub-projects having negative social impacts of significant nature on 1 – 40 households and or it require displacement/resettlement of 1- 40 households for land acquisition, will need to submit Social Assessment (SAR), Social Management Plan (SMP) and Abbreviated Resettlement Action Plan (ARAP)

S-3= All those sub-projects having no negative social impacts and or they are not involved in displacement/resettlement of any nature, will be categorized as S3 and No further process will be required after E &S Screening

Appendix B-Important Definitions

1. Environmentally sensitive areas [29]
   Environmentally sensitive areas are landscape elements or places which are vital to the long-term maintenance of biological diversity, soil, water or other natural resources both on the site and in a regional context.
2. Cultural heritage[30]
   - Tangible cultural heritage:
     - movable cultural heritage (paintings, sculptures, coins, manuscripts)
     - immovable cultural heritage (monuments, archaeological sites, and so on)
     - underwater cultural heritage (shipwrecks, underwater ruins and cities)
   - Intangible cultural heritage: oral traditions, performing arts, rituals
3. Wetlands
   - Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season.[31]

[26] .All the social impacts (except those that come under S1 and S2 Category of land acquisition) of E1 Category sub-projects will be covered in IEE/EIA report

[27] .All the social impacts (except those that come under S1 and S2 Category of land acquisition) of E2 Category sub-projects will be covered in the ESMP

[28] .For all those sub-projects which will have no negative environmental impacts and are categorized as E3 but they require construction labor/workers for the execution ,will follow the Environment, Health and Safety SOPs prepared for PCP and they will follow the instructions given by ESM team of PCP

[29] https://www.sciencedirect.com/science/article/abs/pii/0169204694020169

[30] http://www.unesco.org/new/en/culture/themes/illicit-trafficking-of-cultural-property/unesco-database-of-national-cultural-heritage-laws/frequently-asked-questions/definition-of-the-cultural-heritage/

[31] https://www.epa.gov/wetlands/what-wetland

- areas of marsh, fen, petal and or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters".[32]

4. Buffer zone of protected area

Areas peripheral to a specific protected area, where restrictions on resource use and special development measures are undertaken in order to enhance the conservation value of the protected area.[33]

5. Special area for protecting biodiversity/ Key Biodiversity Areas (KBA)

Sites that contribute significantly to the global persistence of biodiversity, in terrestrial, freshwater and marine ecosystems [34]

6. Estuarine

Area of the mouth of a river where it broadens into the sea, and where fresh and seawater intermingle to produce brackish water. The estuarine environment is very rich in wildlife, particularly aquatic, but it is very vulnerable to damage as a result of human activities.[35]

7. Hazardous substance means-

(a) A substance or mixture of substance, other than a pesticide as defined in the Agricultural Pesticide Ordinance, 1971 (II of 1971), which, by reason of its chemical activity is toxic, explosive, flammable, corrosive, radioactive or other characteristics causes, or is likely to cause, directly or in combination with other matters, an adverse environmental effect; and

(b) Any substance which may be prescribed as a hazardous substance;

Hazardous waste means waste which is or which contains a hazardous substance or which may be prescribed as hazardous waste, and includes hospital waste and nuclear waste; [36]

8. Waste

Waste means any substance or object which has been, is being or is intended to be, discarded or disposed of, and includes liquid waste, solid waste, waste gases, suspended waste, industrial waste, agricultural waste, nuclear waste, municipal waste, hospital waste, used polyethylene bags and residues from the incineration of all types of waste. [37]

[32] https://www.ramsar.org/sites/default/files/documents/library/info2007-01-e.pdf
[33] https://www.biodiversitya-z.org/content/buffer-zones.pdf
[34] https://biodiversitya-z.org/content/key-biodiversity-areas-kba
[35] https://biodiversitya-z.org/content/estuary
[36] Punjab Environmental Protection Act 2012
[37] ibid

Pictures of Project Siting

Replacement of water supply old lived pipes in Mohalla Rasulnagar & Mandiala road etc.

Rehabilitation of Tubewell at Mandiala Water Works

View of Prohjce Area at Mohalla Rasulnagar and Mandiala

INVOLUNTARY RESETTLEMENT SCREENING CHECKLIST

Name of City/MC/LG : Kamoke
Sub-Project Sector: Water Supply Scheme
Sub-Project Title: Rehabilitation Water Supply Lines & Installation of one new TW
Sub- Project Categorization: S-1 √ S-2
Date of Screening:18-10-2022

SECTION 1	Yes	No	Expected	Remarks
Does the project require land acquisition? Yes/No	√			Land acquisition is required for the installation of a new tube well in the sub-project hence the Involuntary Resettlement Checklist was also used during the field survey to assess the social impacts.
If yes, then describe the type of land being acquired from the categories below:		-		A new tube well will be installed at Govt. School Boys High No.2. Land belongs to Education Department. No Objection Certificate (NOC) for installation of tube well has been issued by the Principal, Govt. High No.2 Kamoke received from the District Education Officer (SE) Gujranwala vide No. 4657/Dev Dated 31-10-2022.
Has any AED been conducted at the proposed location by the government[1]? Yes/No		√		No AED[38] has been conducted in any part of the sub project area
Land (Quantify and describe types of land being acquired in "Remarks column".				No land has been acquired for the Rehabilitation of Water Supply Lines but for installation of new tube-well Government owned land of a School will be used.
Government and LG owned land free of occupation (agriculture or settlement)	√			A new tube well will be installed at Govt. School Boys High No.2. Land belongs to Education Department.
Government or state-owned land (other than LG) free of occupation (agriculture or settlement)		√		
Private land		√		
Residential		√		
Commercial		√		
Agricultural		√		
Communal		√		
Others (specify in "remarks").	√			No Objection Certificate (NOC) for installation of tube well has been issued by the Principal, Govt. High No.2 Kamoke received from the District Education Officer (SE) Gujranwala vide No. 4657/Dev Dated 31-10-2022.
Name of owner/owners and type of ownership document if available.		√		Land belongs to education department No Objection Certificate (NOC) for installation of tube well has been issued
If land is being acquired, describe any structures constructed		√		No structure constructed on it
Land-based assets:		√		

[38] Anti Encroachment Drive

Residential structures		√		
Commercial structures (specify in “remarks”)		√		
Community structures (specify in “remarks”)		√		
Agriculture structures (specify in “remarks”)		√		
Public utilities (specify in “remarks”)		√		
Others (specify in “remarks”)		√		
If agricultural land is being acquired, specify the following:		√		No agricultural land has been acquired as the sub project area falls in residential area
Agriculture related impacts		√		
Crops and vegetables (specify types and cropping area in (“Remarks).		√		
Trees (specify number and types in		√		
Others (specify in “remarks”).		√		
Affected Persons (APs)		√		
Will any people be displaced from the land when acquired? Yes/No		√		No displacement / relocation occurred because land acquisitions is not involved in the sub project area
Number of APs		√		No APs has been identified because of no land acquisition
Males		√		
Females		√		
Titled landowners		√		
Tenants and sharecroppers		√		
Leaseholders		√		
Agriculture wage laborers		√		
Encroachers and squatters (specify in		√		
Vulnerable APs (e.g. women headed households, minors and aged, orphans, disabled persons, and those below the poverty Line). Specify the number and vulnerability in “remarks”.		√		No Vulnerable APs has been identified in the sub project area
Others (specify in “remarks”)		√		
How will people be affected?		√		

Prepared By:	**Reviewed By:**	**Endorsed By:**
Name: Adeera Nisar & Aftab Rehman	**Name: Tehmina Kiran**	**Name: Qamar-ul Islam**
SSSs -Nespak	**PO-ESM**	**(MOP)-MC Kamoke**
Signature:	**Signature:**	**Signature:**
Date: 18 October 2022	**Date:18-10-2022**	**Date:18-10-2022**

Annexure II- NOC FROM SCHOOL EDUCATION DEPARTMENT

CHIEF EXECUTIVE OFFICE
(DEA) GUJRANWALA.
No. 4823 /Dev
Dated 2/11 /2022.

Contact # 0559230105
Email edoedu.gujranwala@gmail.com

To

The Administrator
Municipal Committee
Kamoke

Subject: **REQUEST FOR ISSUANCE OF NOC WITH REGARD TO INSTALLATION OF TUBEWELL AT GOVT BOYS HIGH SCHOOL NO.2 SHEESH MAHAL ROAD KAMOKE.**

Please refer to your office letter No. MC(KMK)/ 339 dated 17-10-2022 on the subject cited above.

No Objection Certificate for Installation of Tube well for Water Supply issued by the Principal, Govt. High No.2 kamoke received from the District Education Officer (SE) Gujranwala vide No. 4657/Dev dated 31-10-2022, is hereby endorsed. with ToRs mentioned in the NOC.

CHIEF EXECUTIVE OFFICER
(DEA) GUJRANWALA.

NO & DATE EVEN

Copy is forwarded for information & necessary action to:

1. The District Education Officer (SE) Gujranwala.
2. Principal, Govt. High No.2 kamoke

CHIEF EXECUTIVE OFFICER
(DEA) GUJRANWALA.

Engr Hamza
Mrs Adeeba
07/11

OFFICE OF THE SENIOR HEADMASTER

GOVERNMENT HIGH SCHOOL NO.2

SHEESH MAHAL ROAD KAMOKE DISTT. GRW.
Ph: 055-6811759

Ref. No. KMK/21 89 Date 28-10-2022

To

The District Education Officer (SE),
District Gujranwala.

Subject: Issuance of NOC regarding installation of New Tubewell at Govt. Boys High School No.02 Sheesh Mehal Road Kamoke

Respected Sir,

With reference to your letter No. 4612 Dated 26-10-22, it is stated that after a meeting with school council regarding the above said matter, some suggestions and reservations are presented here:

1. **Available Facility of School:**

The school already has 400 feet bore and the latest filtration plant is also working very well.

2. **Shortcoming of School:**

The surface level of school is 3 feet lower than that of the locality of the school and the sewerage system issue already exists.

3. **Demands for issuance of NOC:**

a. The electricity meter must be installed by the Municipal Corporation Kamoke.
b. The electricity bill must be paid by the Municipal Corporation.
c. Above said corporation will take the responsibility of maintenance after installation.
d. The corporation should be bound to supply water to the host school.
e. Above said corporation will also be bound to take the responsibility of security and operating the tubewell.

4. **Conclusion:**

If MC Kamoke fulfills our above mentioned demands, we have no objection against the installation of tubewell, otherwise your highness may take any kind of decision in this regard.

Principal
Govt. High School No:2
Kamoke, Distt. Gujranwala

Annexure II: COVID-19 Pandemic and Health Safety Measures

Given the unprecedented nature of the COVID-19 pandemic, contractors are bound to take all necessary precautions to maintain the health and safety-related measures at the site and to ensure suitable arrangements regarding hygiene requirements for the prevention of the pandemic.

The following are the measures that should be implemented at the construction site to avoid the spread of Covid-19:

Activities	Adaptive Measures
Pre-Execution Phase	
A. Profile preparation	• Detailed profile of the project workforce • Enlist the names, addresses and contact # • Breakdown of the workforce (workers from local communities and those who have on-site accommodation) • Assigning the task to each person • Schedule the key activities and their duration at the site
B. Initial Screening	• All enlisted workforce should go through the initial screening process • Ensuring the availability of Thermogun at the site • Record keeping against initial screening • Identifying all workers who are initially at more risk of contracting Covid-19
During Execution Phase	
A. Preliminary Screening	**Regular Screening:** • Regular screening by using Thermogun on daily basis before starting civil work at the site • Checking and recording temperatures of workers and other people entering the site or requiring self-reporting prior to or on entering the site. • If a worker has symptoms of COVID-19 (e.g. fever, dry cough, fatigue) the worker should be removed immediately from work activities and isolated on the designated site. • Co-workers (i.e. workers with whom the sick worker was in close contact) should be required to stop work, and quarantine themselves for 14 days, even if they have no symptoms. **Sequential Screening:** Concerned DHQ medical staff is requested for screening at regular intervals. The list should also be shared with DHQ for avoiding future inconvenience **or hire health safety officers on weekly basis.**
B. Special Arrangements regarding PPEs	• Ensuring availability of handwashing facilities (sanitizers/soaps) at the site • Presence of closed waste bins at key places throughout the site, including at entrances/exits to work areas (toilet, canteen or food distribution, or provision of drinking water; in worker accommodation; at waste stations; at stores; and in common spaces). • Special arrangements regarding PPEs and sanitation at the site • Record keeping of stock availability on a daily basis
C. Restricted Movement/	• Encourage employees to wash their hands at least for 20 seconds with soap and stay at least one meter away from people who are coughing or sneezing

Demobilization of staff	• Breakdown of workers who reside at home (i.e. workers from the communities), workers who lodge within the local communities and workers in on-site accommodation. Workers accommodated on site should be required to minimize contact with people near the site, and in certain cases be prohibited from leaving the site for the duration of their contract, so that contact with local communities is avoided. • Workers from local communities, who return home daily, weekly, or monthly, will be more difficult to manage. They should be subject to health checks at the entry to the site (as set out above) and at some point, circumstances may make it necessary to require them to either use accommodation on site or not to come to work. • All workers should be provided with separate accommodation.
D. Training sessions	• Health and safety training for Contractor's Personnel (which includes project workers and all personnel that the Contractor uses on-site, including staff and other employees of the Contractor and Subcontractors and any other personnel assisting the Contractor in carrying out project activities. • Sessions related to safety procedures, use of construction PPEs, occupational health and safety issues, and code of conduct especially privacy issues including social distancing. • Arranging daily briefings with the workforce, reminding workers to self-monitor for possible symptoms (fever, cough) and to report to their supervisor or the COVID-19 focal point if they have symptoms or are feeling unwell. • Placing posters and sign boards around the site in local languages. • Appointing one person on daily basis among the workforce who will serve as a trainer for conducting awareness sessions and encouraging the rest to take preventive measures.
E. Operationalization of Grievance Redress Mechanism	• Effective implementation of GRM at the site • Encouraging to report any COVID-19-related health issues and concerns about the health of their co-workers and other staff as well. • In case of the unavailability of the PPEs at the site, a grievance would be lodged directly to PMU.
F. Role of PMU	• PMU is required to arrange regular meetings with Contractors and the workforce to monitor all procedural implementation of COVID-19 prevention-related mechanisms. • Arrange a meeting with concerned DHQs for immediate support and guidance in case of emergency. During the inspection visit by PMU Staff, if a worker is found to have symptoms of COVID-19, the worker should be removed immediately from work activities and isolated on the designated site.
Post Execution Phase	
A. Post Screening	• Screening should be done at the end of the day on daily basis, if a worker is found to have any symptoms of COVOD-19, he should be immediately reported to the concerned health department.
B. Cleaning and waste disposal	• All waste (PPEs and sanitation related) shall be disposed of properly at designated sites.

Annexure III: Scan Reports for Baseline Water Sampling

PAK GREEN ENVIRO-ENGINEERING (Pvt.) Ltd.

ISO/IEC 17025:2017 Accreditated Testing Lab, ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

Doc.#: PGG/IMS/FF/063 | Rev. Date: 27-Jan-22 | Rev. # 01

EPA Certified

Head Office: 46-M, Gulberg III, Lahore-Pakistan. Ph: +9242-35441444 Cell: 0303-4442334

TEST REPORT

Ref #: PGG/LAB/2022-5251/GW **Issue Date:** 30-Nov-22

Name of Industry/Client:	NESPAK
Name of Project:	Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016
Site Location:	Kamoki
Nature of sample:	Ground Water
Sample Source:	Tubewell-02
Bore Depth:	500 Feet
Sample Code:	GW-1499
Sampling by:	Pak Green Laboratories
Date of sampling:	25-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	Nil
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	36.7*
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	10.4*
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	BDL
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.41
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	190
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	250
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H+ B	8.028 at 21.6°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	BDL
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	05
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	BDL
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0147
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.4

PAK-EPA

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

info@pakgreen.pk pakgreen@hotmail.com www.pakgreen.pk

Ref #: PGG/LAB/2022-5251/GW

Issue Date: 30-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0140
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.0209
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	0.0105
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	BDL
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	18.6645
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	6.9802
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

PEQS: Punjab Environmental Quality Standards
WHO: World Health Organization
^ PNAC Accreditated
BDL: Below Detection Limits
Remarks: Parameters with * are not in compliance with PEQS Limits.

Terms & Conditions:

- Analysis was conducted on the request of project proponent for IEE/EIA Baseline study.
- Report cannot be used regarding compliance of any complaint, EPO or any other court case.
- This report should be reproduced pas a whole and not in parts.
- The responsibility of the ethical use of the results reported in this report lies with the client. Consequently, the laboratory is absolved of its responsibility for any claim that may result through the use by the client or others of the results appearing in this report.
- The left-over sample (if so available) shall be retained for fifteen days after the issuance of the report unless otherwise negotiated between the client and the laboratory.

The report is not valid for any negotiations

Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

TEST REPORT

Ref #: PGG/LAB/2022-5252/GW

Issue Date: 30-Nov-22

Name of Industry/Client: NESPAK

Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016

Site Location: Kamoki

Nature of sample: Ground Water

Sample Source: Near Zanith Model School

Bore Depth: 550 Feet

Sample Code: GW-1500

Sampling by: Pak Green Laboratories

Date of sampling: 25-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	40.2*
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	85.0*
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	79.0*
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	BDL
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.45
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	160
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	233
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H^+ B	8.007 at 21.4°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	BDL
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	05
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	BDL
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0144
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.3

Ref #: PGG/LAB/2022-5252/GW

Issue Date: 30-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0190
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	BDL
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	BDL
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	BDL
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	19.9480
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	9.5506
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

PEQS: Punjab Environmental Quality Standards **^ PNAC Accreditated**
WHO: World Health Organization **BDL: Below Detection Limits**
Remarks: Parameters with * are not in compliance with PEQS Limits.
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The report is not valid for any negotiations

Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore, Lahore Pakistan

TEST REPORT

Ref #: PGG/LAB/2022-5253/GW

Issue Date: 30-Nov-22

Name of Industry/Client: NESPAK
Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016
Site Location: Kamoki
Nature of sample: Ground Water
Sample Source: House Near Data Rice Mills
Bore Depth: 450 Feet
Sample Code: GW-1501
Sampling by: Pak Green Laboratories
Date of sampling: 25-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	27.4*
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	55.6*
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	38.4*
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	BDL
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.40
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	80
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	180
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H^+ B	8.077 at 21.5°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	BDL
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	05
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	BDL
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0130
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.3

PAK-EPA

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

Ref #: PGG/LAB/2022-5253/GW

Issue Date: 30-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0155
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.075
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	BDL
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	BDL
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	14.8453
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	6.0596
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

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Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt.) Ltd. 46-M Gulberg-III Lahore Pakistan

Head Office: 46-M, Gulberg III, Lahore-Pakistan. Ph: +9242-35441444 Cell: 0303-4442334

TEST REPORT

Ref #: PGG/LAB/2022-5244/DW

Issue Date: 30-Nov-22

Name of Industry/Client: NESPAK
Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016
Site Location: Kamoki
Nature of sample: Drinking water
Sample Source: Ahmad H & Maternity Almost 50m away from School
Sample Code: DW-1492
Sampling by: Pak Green Laboratories
Date of sampling: 25-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	30.2*
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	80.7*
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	65.9*
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	BDL
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.35
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	420
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	588
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H^+ B	7.776 at 21.9°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	BDL
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	59
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	BDL
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0022
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.5

Ref #: PGG/LAB/2022-5244/DW

Issue Date: 30-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0180
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.024
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	0.019
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	BDL
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	62.8946
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	7.6018
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

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Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

TEST REPORT

Ref #: PGG/LAB/2022-5246/DW **Issue Date:** 30-Nov-22

Name of Industry/Client: NESPAK
Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016
Site Location: Kamoki
Nature of sample: Drinking water
Sample Source: Haltiwala Graveyard
Sample Code: DW-1494
Sampling by: Pak Green Laboratories
Date of sampling: 25-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	25.0*
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	45.0*
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	35.0*
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	BDL
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.45
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	90
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	200
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H+ B	7.960 at 20.9°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	BDL
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	10
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	BDL
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0190
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	BDL

Ref #: PGG/LAB/2022-5246/DW

Issue Date: 30-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0165
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.015
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	0.012
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	BDL
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	42.9340
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	2.3491
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

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WHO: World Health Organization **BDL: Below Detection Limits**

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Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt.) Ltd. 46-M, Gulberg III, Lahore Pakistan

TEST REPORT

Ref #: PGG/LAB/2022-5247/GW **Issue Date:** 30-Nov-22

Name of Industry/Client: NESPAK
Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016
Site Location: Kamoki
Nature of sample: Ground Water
Sample Source: Ali Public School
Sample Code: GW-1495
Bore Depth: 450 Feet
Sampling by: Pak Green Laboratories
Date of sampling: 25-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	Nil
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	Nil
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	Nil
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	BDL
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.50
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	200
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	247
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H^+ B	7.893 at 21.1°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	BDL
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	05
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	BDL
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0190
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.3

PNAC LAB 180 17025

Pak Green Enviro-Engineering (Pvt.) Ltd. 46-M, Gulberg-III, Lahore Pakistan

Ref #: PGG/LAB/2022-5247/GW

Issue Date: 30-Nov-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0149
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.075
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	BDL
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	BDL
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	18.4431
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	6.9566
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

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Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

TEST REPORT

Ref #: PGG/LAB/2022-5672/DW

Issue Date: 23-Dec-22

Name of Industry/Client: NESPAK

Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016

Site Location: Kamoki

Nature of sample: Drinking water

Sample Source: Water Cooler RO Plant School 2

Sample Code: DW-1634

Sampling by: Pak Green Laboratories

Date of sampling: 15-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	Nil
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	Nil
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	Nil
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	0.000
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	1.00
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	300
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	600
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H^+ B	8.083 at 21.6°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	0.0041
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	25
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	0.0568
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0143
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.8

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore, Lahore Pakistan

Ref #: PGG/LAB/2022-5672/DW **Issue Date:** 23-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.1984
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.109
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	BDL
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	0.24
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	156.7571
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	9.6779
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

PEQS: Punjab Environmental Quality Standards **^ PNAC Accreditated**
WHO: World Health Organization **BDL: Below Detection Limits**
Remarks: All Parameters are in Compliance with the PEQS Limits.
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Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

TEST REPORT

Ref #: PGG/LAB/2022-5673/GW

Issue Date: 23-Dec-22

Name of Industry/Client: NESPAK

Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016

Site Location: Kamoki

Nature of sample: Ground Water

Sample Source: Water Tank

Sample Code: GW-1633

Sampling by: Pak Green Laboratories

Date of sampling: 15-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	16.4*
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	36.7*
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	25.9*
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	0.00
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.20
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	180
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	557
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H^+ B	8.412 at 19.5°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	0.0029
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	10
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	0.0440
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0133
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.7

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Ref #: PGG/LAB/2022-5673/GW

Issue Date: 23-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0436
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.085
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	0.015
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	0.14
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	165.8248
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	8.8852
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

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WHO: World Health Organization
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BDL: Below Detection Limits
Remarks: Parameters with * are not in compliance with PEQS Limits.

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Lab Analyst	Chief Analyst	Laboratory Incharge

Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

Head Office: 46-M, Gulberg III, Lahore-Pakistan. Ph: +9242-35441444 Cell: 0303-4442334

TEST REPORT

Ref #: PGG/LAB/2022-5574/GW

Issue Date: 23-Dec-22

Name of Industry/Client: NESPAK

Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016

Site Location: Kamoki
Nature of sample: Ground Water
Sample Source: Jamia Masjid Taj Madina
Sample Code: GW-1631
Sampling by: Pak Green Laboratories
Date of sampling: 15-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
35.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	42.6*
36.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	103.4*
37.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	80.9*
38.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	0.00
39.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
40.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
41.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.40
42.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	170
43.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	287
44.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H^+ B	8.643* at 18.9°C
45.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
46.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
47.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	0.0003
48.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
49.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
50.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
51.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	05
52.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	0.0344
53.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0149
54.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.3

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Ref #: PGG/LAB/2022-5674/GW

Issue Date: 23-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
55.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
56.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0421
57.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
58.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
59.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0.036
60.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	BDL
61.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
62.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	BDL
63.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
64.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
65.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	81.3969
66.	Potassium (K)^	mg/L	200	-	APHA-3111 B	12.7804
67.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
68.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

.....End of Report.....

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WHO: World Health Organization **BDL: Below Detection Limits**
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Lab Analyst	Chief Analyst	Laboratory Incharge

TEST REPORT

Ref #: PGG/LAB/2022-5675/GW

Issue Date: 23-Dec-22

Name of Industry/Client: NESPAK

Name of Project: Baseline monitoring of the Drinking Water Supply at Kamoke MC for the proposed project (Replacement of Water Supply and Old Lived Pipes at Mohallah Rasulnagar & Mandiala road and Rehabilitation of Tube well at Mandiala Water Works) as per PEQS 2016

Site Location: Kamoki

Nature of sample: Ground Water

Sample Source: Main Bazar Masjid

Sample Code: GW-1632

Sampling by: Pak Green Laboratories

Date of sampling: 15-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
1.	E Coli	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 F	40.4*
2.	Total Coli-form	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 D	103.8*
3.	Fecal Coliform	MPN/ 100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	APHA-9221 E	85.7*
4.	Color	TCU	≤ 15	≤ 15	APHA-2120 C	0.000
5.	Taste	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2160 C	Non-Objectionable
6.	Odor	-	Non-Objectionable / Acceptable	Non-Objectionable / Acceptable	APHA-2150 B	Non-Objectionable
7.	Turbidity	NTU	< 5	< 5	APHA-2130 B	0.15
8.	Total Hardness ^	mg/L	-	<500	APHA-2340 C	180
9.	Total Dissolved Solids ^	mg/L	< 1000	< 1000	APHA-2540 C	560
10.	pH ^	-	6.5-8.5	6.5-8.5	APHA-4500-H+ B	7.874 at 19.1°C
11.	Aluminum (Al)	mg/L	0.2	≤ 0.2	APHA-3111 D	BDL
12.	Antimony (Sb)	mg/L	0.02	≤0.005	APHA-3111 B	BDL
13.	Arsenic (As)	mg/L	0.01	≤ 0.05	APHA-3114 B	0.0031
14.	Barium (Ba)	mg/L	0.7	0.7	APHA-3111 D	BDL
15.	Boron (B)	mg/L	0.3	0.3	APHA-3111 D	BDL
16.	Cadmium (Cd)^	mg/L	0.003	0.01	APHA-3111 B	BDL
17.	Chloride (Cl^{-1}) ^	mg/L	250	< 250	APHA-4500-Cl B	15
18.	Chromium (Cr)^	mg/L	0.05	≤ 0.05	APHA-3111 B	0.0661
19.	Copper (Cu)^	mg/L	2	2	APHA-3111 B	0.0133
20.	Fluoride (F)	mg/L	1.5	≤ 1.5	APHA-4500-F-D	0.6

Pak Green Enviro-Engineering (Pvt.) Ltd. 46-M, Gulberg-III, Lahore Pakistan

Ref #: PGG/LAB/2022-5675/GW

Issue Date: 23-Dec-22

Results:

Sr. No.	Parameters	Unit	WHO	PEQS	Method / Technique	Results
21.	Lead (Pb)^	mg/L	0.01	≤ 0.05	APHA-3111 B	BDL
22.	Manganese (Mn)^	mg/L	0.5	≤ 0.5	APHA-3111 B	0.0450
23.	Mercury (Hg)	mg/L	0.001	≤ 0.001	APHA-3112 B	BDL
24.	Nickel (Ni)	mg/L	0.02	≤ 0.02	APHA-3111 B	BDL
25.	Nitrate^	mg/L	50	≤ 50	APHA-4500-NO_3^{-1}-E	0994
26.	Nitrite^	mg/L	3	≤ 3	APHA-4500-NO_2^{-1}-B	BDL
27.	Selenium (Se)	mg/L	0.01	0.01	APHA-3114 C	BDL
28.	Residual Chlorine (Cl_2)	mg/L	-	0.2-0.5 at consumer end 0.5-1.5 at source	APHA-Cl-B	0.19
29.	Zinc (Zn)^	mg/L	3	5.0	APHA-3111 B	BDL
30.	Phenolic Compound (As Phenol)	mg/L	0.002	-	APHA-5530 D	BDL
31.	Sodium (Na)^	mg/L	200	-	APHA-3111 B	165.0520
32.	Potassium (K)^	mg/L	200	-	APHA-3111 B	9.0805
33.	Pesticide, herbicides, fungicides and insecticides	mg/L	-	0.15	ASTM-D5175	BDL
34.	Cyanide (as CN^{1-}) Total	mg/L	-	1.0	APHA-4500-CN F	BDL

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Pak Green Enviro-Engineering (Pvt) Ltd. 46-M, Gulberg-III, Lahore Pakistan

Annexure IV: Personal Protective Equipment According to Hazard[39]

Objective	Workplace Hazards	Suggested PPE
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, and light radiation.	Safety Glasses with side shields, protective shades, etc.
Head protection	Falling objects, inadequate height clearance, and overhead power cords.	Plastic Helmets with top and side impact protection.
Hearing protection	Noise, ultra-sound.	Hearing protectors (ear plugs or ear muffs).
Foot protection	Falling or rolling objects pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving & falling objects, liquids and chemicals.
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures.	Gloves are made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.
Respiratory protection	Dust, fogs, fumes, mists, gases, smoke, vapors.	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi-gas personal monitors, if available.
	Oxygen deficiency	Portable or supplied air (fixed lines). On-site rescue equipment.
Body/leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration.	Insulating clothing, body suits, aprons, etc. of appropriate materials.

[39] Source: IFC Environmental, Health, and Safety (EHS) Guidelines

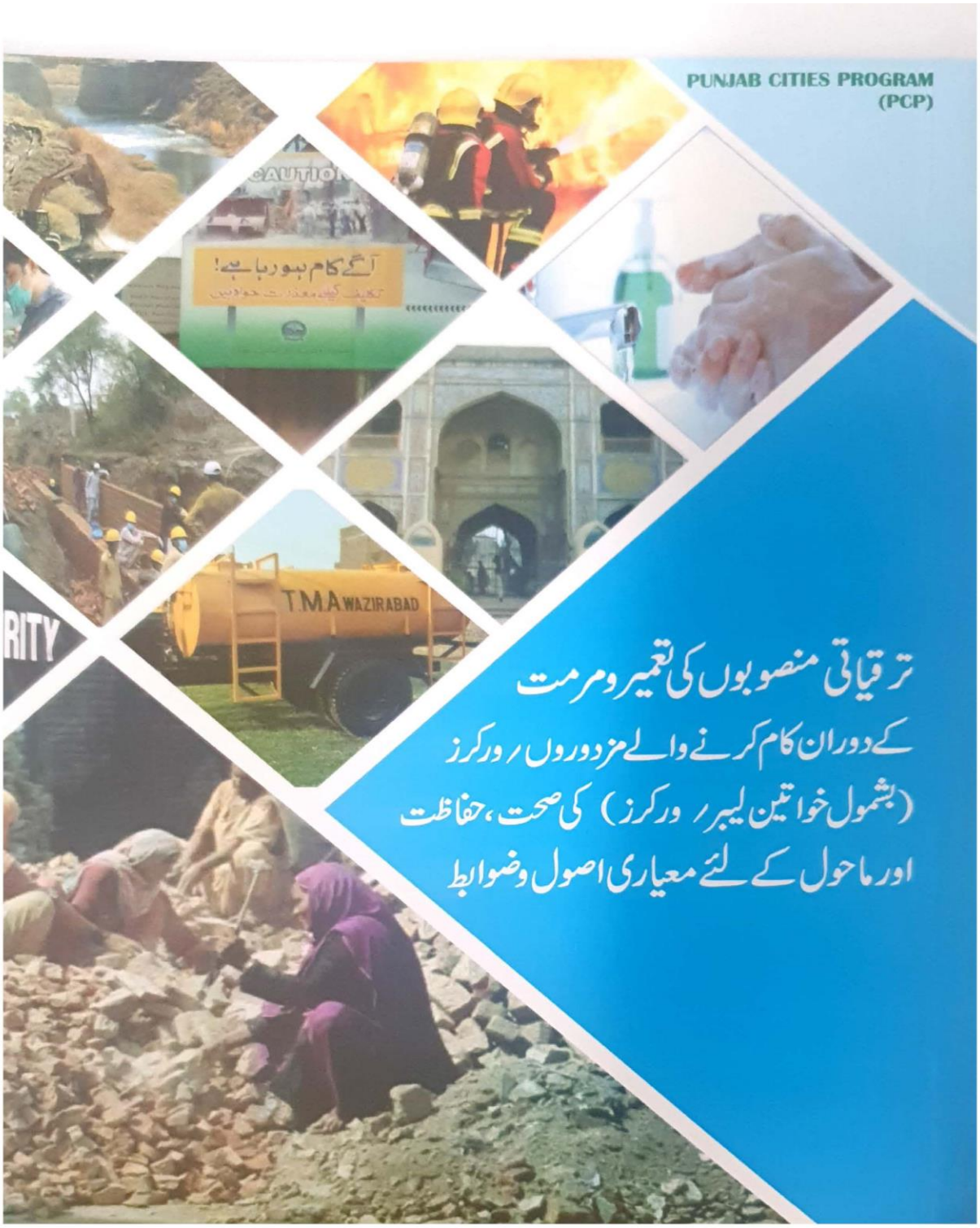
Annexure V: Chance Find Procedures

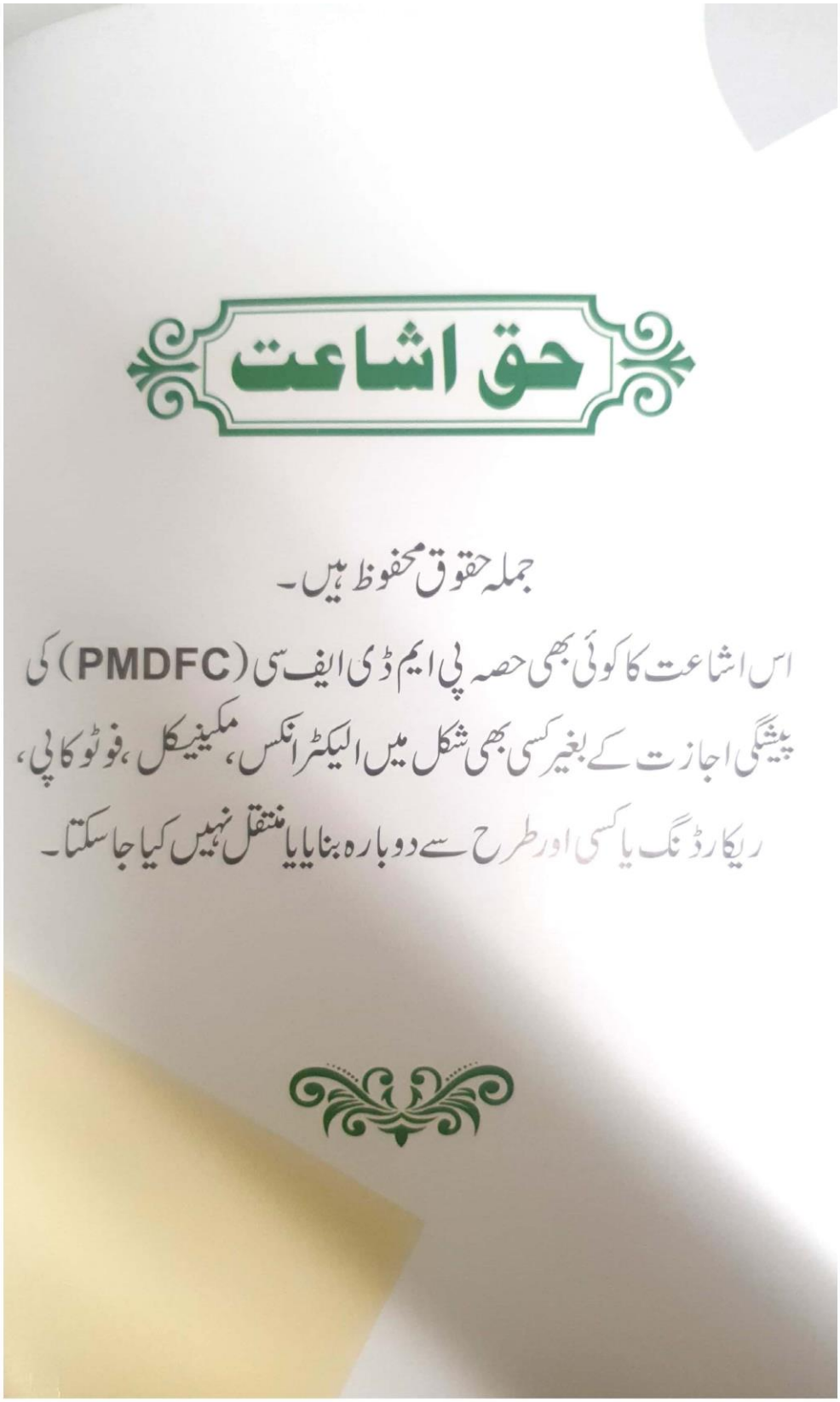
The Chance Find Procedures that will be used during this Project are as follows:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry in charge of the Department of Archaeology takes over;
- Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry immediately (within 24 hours or less);
- Responsible local authorities and the Ministry in charge of the Department of Archaeology would oversee protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the Department of Archaeology and Museums (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the responsible authorities and the Ministry in charge of the Department of Archaeology. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
- Implementation of the authority decision concerning the management of the finding shall be communicated in writing by the Ministry in charge of Department of Archaeology; and
- Construction work could resume only after permission is given from the responsible local authorities and the Ministry in charge of Department of Archaeology concerning the safeguarding of the heritage.

These procedures will be referred to as standard provisions in construction contracts, when applicable. During project supervision, the Site Engineer will monitor the above regulations relating to the treatment of any chance find encountered are observed.

Annexure VI: EHS SOPS for Labors/Workers (Including Women Labor/worker) for Construction of Development Project, (URDU)





پیش لفظ

لوکل گورنمنٹ اینڈ کمیونٹی ڈویلپمنٹ ڈیپارٹمنٹ اور پنجاب میونسپل ڈویلپمنٹ فنڈ کمپنی (PMDFC) نے ورلڈ بینک کے اشتراک سے پنجاب سیٹیز پروگرام (PCP) کا کامیابی سے اجرا کر دیا ہے. اس منصوبے کے تحت صوبہ پنجاب کے 16 چھوٹے شہروں (MCs) بشمول بہاولنگر، بوریوالا، خانیوال، کوٹ ادو، وہاڑی، گوجرہ، جھنگ، کمالیہ، اوکاڑا، ڈسکہ، حافظ آباد، جہلم، کاموکی، مریدکے اور ترقیاتی کاموں پر کامیابی سے کام جاری ہے۔ ان ترقیاتی منصوبوں میں ویسٹ مینجمنٹ، پانی کی فراہمی، نکاسی آب، سڑکوں کی مرمت، کمیونٹی پارکس کی بحالی اور قدرتی آفات کی روک تھام کے منصوبہ جات شامل ہیں۔

پنجاب سیٹیز پروگرام (PCP) کے منصوبہ جات کی تکمیل کے دوران سماجی اور ماحولیاتی مسائل کی جانچ پڑتال اور اس کے حل کے لئے انوائرنمنٹل اینڈ سوشل سیف گارڈز (ESSs) ٹیم نے انوائرنمنٹل اینڈ سوشل مینجمنٹ فریم ورک (ESMF) بنایا ہے. مختلف منصوبہ جات اسی فریم ورک کی رو سے پایہ تکمیل تک پہنچ رہے ہیں۔

تعمیراتی اور ترقیاتی کاموں کی تکمیل میں تعمیراتی جگہوں پر کام کرنے والے مزدوروں/لیبر (بشمول خواتین) کی صحت اور کام کرنے کے دوران حفاظت بہت اہمیت رکھتی ہے۔ اس اہم مسئلہ کو ملحوظِ خاطر رکھتے ہوئے، پی ایم ڈی ایف سی کے زیر اہتمام پنجاب سٹیز پروگرام کی انوائرنمنٹ اینڈ سوشل مینجمنٹ ٹیم نے **" ترقیاتی منصوبوں کی تعمیر و مرمت کے دوران کام کرنے والے مزدوروں، ورکرز (بشمول خواتین لیبر/ورکرز) کی صحت، حفاظت اور ماحول کیلئے بنیادی اصول وضوابط"** مرتب کے ہیں تا کہ متعلقہ میونسپل کمیٹیز/کارپوریشنز (MCs) کے عہدیداران اور ٹھیکیداران کو آگاہی فراہم کی جائے۔

اغراض و مقاصد

۱۔ مجوزہ معیاری اصول وضوابط پنجاب سیٹیز پروگرام (PCP) کے تحت پنجاب میونسپل ڈویلپمنٹ فنڈ کمپنی (PMDFC) کے ماہرین ماحولیات نے پروگرام ڈائریکٹر (PCP) اور ڈپٹی پروگرام ڈائریکٹر (PCP) کی زیرنگرانی تشکیل دیئے ہیں۔

۲۔ شہری ترقی کے ترقیاتی منصوبہ جات کی تعمیر ومرمت میں مزدور/ورکرز بنیادی کردار ادا کرتے ہیں۔ ان (SOPs) کا بنیادی مقصد مزدور/ورکرز (بشمول خواتین لیبر / ورکرز) کو تعمیراتی جگہوں (Constrcution sites) اور لیبر کیمپس میں ماحولیاتی اور سماجی تحفظ فراہم کرنا اور صحت، ماحولیات اور کسی خطرناک صورتحال سے بچنے کے لئے حفاظت فراہم کرنا ہے۔

۳۔ یہ SOPs (PCP) پنجاب سیٹیز پروگرام کے تحت 16 شہروں کی میونسپل کمیٹیز/کارپوریشنز میں تعمیر ومرمت کے تمام پراجیکٹس پر لاگو ہوں گے۔

۴۔ یہ SOPs مزدوروں/کام کرنے والوں/دیہاڑی دار (بشمول خواتین) پر بلاتخصیص لاگو ہوں گے۔

۵۔ ان SOPs کو موثر اور یقینی بنانے کے لیئے انھیں ٹھیکیداروں کے کنٹریکٹ کا حصہ بنانا اور ان پر عمل درآمد کرانا میونسپل کمیٹیز/کارپوریشنز کی ذمہ داری ہے۔ جسے پی ایم ڈی ایف سی کی متعلقہ پروگرام ٹیم یقینی بنائے گی۔

پیغام

پاکستان کی ترقی میں تعمیراتی کاموں کے دوران کام کرنے والا مزدور طبقہ نہایت اہمیت کا حامل ہے اور انکے صحت وتندرستی سے متعلق مسائل کا مؤثر حل انتہائی ضروری ہے۔ " ترقیاتی منصوبوں کی تعمیر و مرمت کے دوران کام کرنے والے مزدوروں / ورکرز (بشمول خواتین لیبر/ورکرز) کی صحت، حفاظت اور ماحول کیلئے بنیادی اصول وضوابط " کی اشاعت و ترویج اوران پر بروقت عمل درآمد بے حد ضروری ہے جس سے اس طبقے کے بنیادی حقوق کا تحفظ یقینی بنایا جا سکے گا اور اس طرح اس طبقے کی کارکردگی میں بھی بہتری نظر آئے گی۔ ان اصولوں کے تحت ہر ٹھیکیدار کو ورکرز کی صحت اور حفاظت کی ذمہ داری دی گئی ہے۔ مزدور تعمیراتی کاموں کے دوران خطرات کے مطابق ذاتی حفاظتی سامان بھی استعمال کریں گے جس سے دوران کام حادثات میں بھی نمایاں کمی نظر آئے گی۔ ماحولیات اور صحت کے اصولوں کو مدنظر رکھتے ہوئے ہر سطح پر ہم اس بات کو یقینی بنانے کی کوشش کریں گے کہ ہماری پالیسیاں اور طرز عمل فعال ہوں۔ ماحولیات، صحت اور حفاظت (EHS) کے اصولوں کو اپنانے میں کسی بھی قسم کا سمجھوتہ نہیں کیا جائے گا۔ میں امید کرتا ہوں کہ ان اصول وضوابط کی روشنی میں مزدور/ورکرز (بشمول خواتین لیبر) کے حقوق کی پاسداری کو ایک نیا رخ ملے گا اور حکومتی عہدیداران اور ٹھیکیداران بھی اپنی ذمہ داریوں کا احساس کریں گے۔ اور اس سلسلے میں پی ایم ڈی ایف سی اور پنجاب سیٹیز پروگرام کی انوائرنمنٹ اینڈ سوشل سیف گارڈز (ESSs) ٹیم بلاشبہ مبارکباد کی مستحق ہے اور یہ توقع کی جا سکتی ہے کہ وہ مستقبل میں ان قواعد وضوابط کی نگرانی کے لئے بھرپور اقدامات کریں گے۔

محمد عامر نذیر
پروگرام ڈائریکٹر
پنجاب سیٹیز پروگرام (PCP)

(۱) لیبر کیمپس کے لئے معیاری اصول و ضوابط

سرگرمیاں

۱. مزدور / لیبر کیلئے عارضی کیمپ / رہائش گاہ کے انتظام و قیام کے لئے جگہ کا انتخاب

مسائل

- مقامی آبادی کے وسائل پر اضافی بوجھ
- مقامی آبادی سے تنازعات کا خدشہ
- سماجی، مذہبی، اور سکیورٹی کے مسائل۔

حفاظتی اقدامات

ٹھیکیدار لیبر کیمپس کے قیام کے وقت مندرجہ ذیل باتوں کا خیال رکھے گا:

- کیمپس ایسی جگہوں پر لگائے جائیں جو ماحولیاتی، مذہبی، سماجی اور ثقافتی نقطہ نظر سے قابل قبول ہوں۔
- مقامی آبادی کے ساتھ کسی تنازعہ سے بچنے کے لیئے آبادی سے دور جگہ کا انتخاب کیا جائے
- لیبر کیمپ کی جگہ اور سہولیات سے متعلق ایک تفصیلی نقشہ تیار کر کے متعلقہ میونسپل کمیٹی / کارپوریشن میں جمع کرایا جائے۔
- دیگر مقامی ادارے جیسے صحت، سکیورٹی وغیرہ کو لیبر کیمپ کے مقام اور مدت کے بارے مطلع کیا جائے تا کہ کسی ناگہانی صورتحال سے بچا جا سکے۔
- لیبر کیمپس کے قیام کیلیئے عارضی جگہ / زمین کا حصول زمین کے مالک کی مرضی، طے کردہ کرایہ اور باقاعدہ تحریری معاہدے کی صورت میں کیا جائے۔
- لیبر کیمپس سے ملحقہ بنیادی سہولتوں جیسے پینے کا پانی اور نکاسی آب کے انتظامات سے ماحولیاتی آلودگی میں اضافہ نہ ہو

سرگرمیاں

۲۔لیبر کیمپ میں مہیا کی جانے والی سہولیات

مسائل

- مناسب انفراسٹرکچر کی کمی
- بنیادی ضروریات اور سہولیات جیسے پانی اور بجلی کی فراہمی، صفائی ستھرائی کی سہولیات اور نکاسی آب کی فراہمی

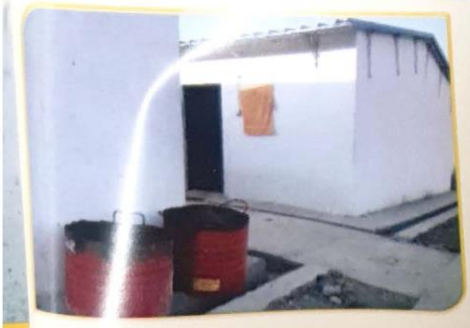
حفاظتی اقدامات

ٹھیکیدار کیمپ سائٹس پر درج ذیل باتوں کا خیال رکھے گا:

- ہوادار اور صاف ستھری رہائش گاہ
- عارضی کمروں کیلئے ایسے میٹریل کا استعمال جو جلد آگ نہ پکڑیں۔
- نہانے، دھونے اور پانی پینے کیلئے صاف اور مناسب پانی کی فراہمی۔
- تمام مزدوروں کیلئے مناسب جگہ کی موجودگی اور محفوظ ماحولیاتی معیار۔
- صاف ستھرے واش رومز اور نکاسی آب کا مناسب انتظام۔
- خواتین لیبر کیلئے پردے اور پرائیویسی کا انتظام اور الگ کمروں کا قیام مزید براں خواتین لیبر کی موجودگی کی صورت میں اُنکے لیے علیحدہ ٹوائلٹس رواش رومز کا انتظام۔
- بین الاقوامی معیار کے مطابق ہر دس افراد کیلئے مطلوبہ ٹوائلٹ کی سہولت کی تعداد ایک ہے۔
- اگر لیبر کیمپ طویل مدت کیلئے لگایا جانا ہو تو بارشوں/سیلاب کے پانی سے بچنے کیلئے مناسب انتظامات کا ہونا اور نکاسی آب کی فراہمی بے حد ضروری ہے۔
- ٹوائلٹس اور عارضی رہائش گاہوں میں بجلی کی فراہمی کو یقینی بنایا جائے۔

سرگرمیاں

۳۔ لیبر کیمپ سے پیدا ہونے والا سالڈ اور لیکوئڈ ویسٹ



مسائل

- تعفن اور بدبو
- صحت کے لئے نقصان
- ماحولیات کے لئے نقصان
- مقامی آبادی کے لئے نقصان
- بیماریاں پیدا کرنے والے بیکٹیریا اور مچھروں کا ذریعہ

حفاظتی اقدامات

- روزمرہ پیدا ہونے والے کوڑا کرکٹ اور کچن کے کوڑا کرکٹ کے لیے الگ الگ کوڑا دانوں کا انتظام
- میونسپل کمیٹی رکارپوریشن کی جانب سے منتخب کردہ جگہ پر روزانہ کی بنیاد پر کوڑے کو اٹھانے اور تلف کرنے کا مناسب انتظام۔
- عارضی ٹوائلٹس سے پیدا شدہ فضلے اور لیکوئیڈ ویسٹ کو حفظان صحت کے اصولوں کے مطابق ٹھکانے لگانے کا انتظام۔
- فضلے کو ٹھکانے لگانے کے لیے رہائش گاہ سے کم از کم 500 میٹر دور جگہ کا انتخاب کیا جائے جس کے اردگرد لوگوں کی رہائش نہ ہو۔
- عارضی ٹوائلٹس سے پیدا شدہ فضلے کو ٹھکانے لگانے کے لیئے منتخب کردہ جگہ کے اردگرد باڑ لگائی جائے یا درخت لگا دیے جائیں تا کہ بچے اور دیگر
- رہائشی داخل نہ ہوں اور مچھر اور بدبو بھی پیدا نہ ہو۔

سرگرمیاں

٤۔ کھانا پکانے کے لئے ایندھن کی فراہمی

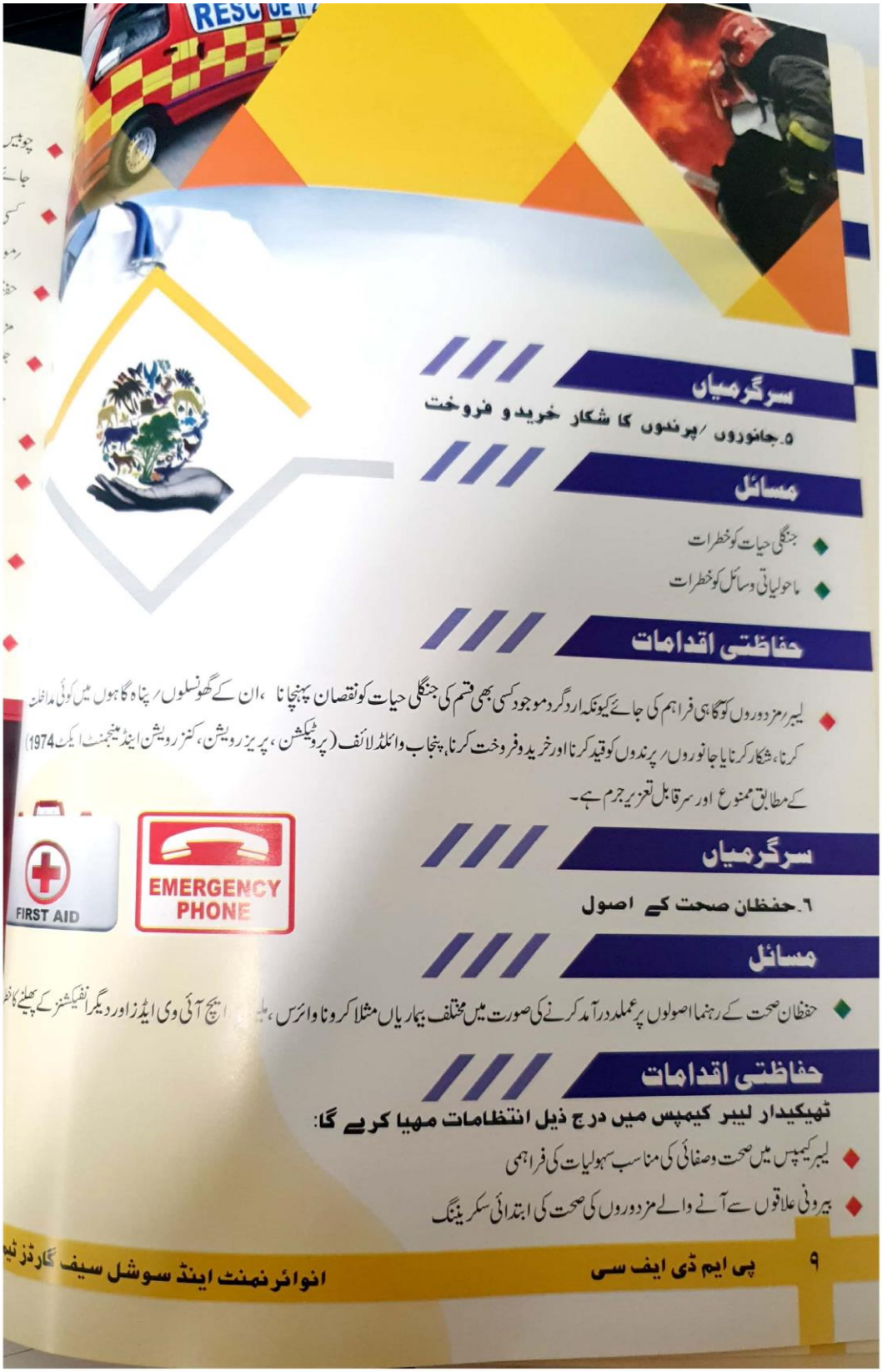
مسائل

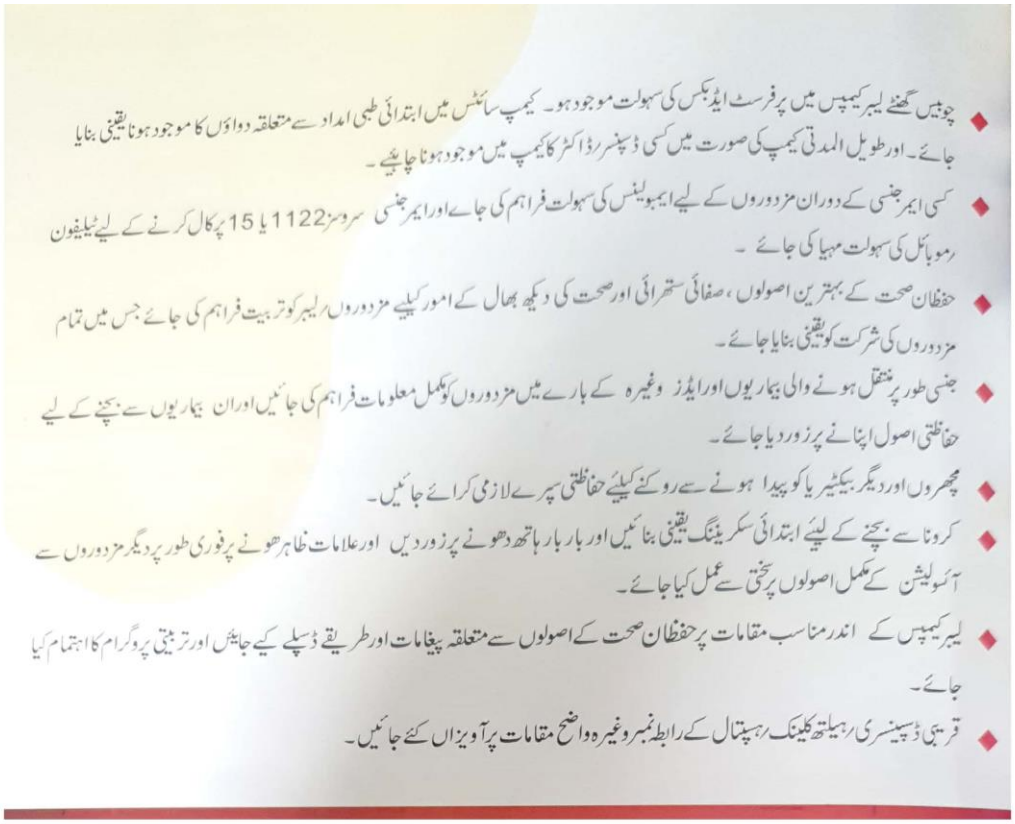
- گیس اور دیگر ایندھن سے چلنے والے چولہوں کے پھٹنے کا اندیشہ
- ایندھن کے لیئے لکڑی کے حصول کے لیے درختوں کی کٹائی

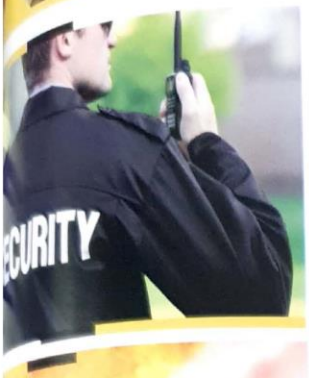
حفاظتی اقدامات

ٹھیکیدار کیمپ سائٹس پر درج ذیل سہولیات مہیا کرے گا۔

- لیبر کیمپس میں کھانا پکانے، کمروں کو گرم رکھنے نیز سردیوں میں نہانے اور دھونے کے لیے گرم پانی کے لیے ایندھن کی لکڑی یا دیگر بائیو گیس استعمال کرنے کی حوصلہ شکنی کریں اور ایندھن کیلیے درختوں کی کٹائی نہ کریں۔
- درختوں اور اردگرد جنگلات کی حفاظت کیلیے مزدوروں/لیبر کو آگاہی دی جائے۔
- کھانا پکانے کے لیئے قدرتی گیس یا مٹی کے تیل کے محفوظ چولہے استعمال کیے جائیں۔







سرگرمیاں

۷۔ سکیورٹی اور حفاظت کی سہولیات

مسائل

- سکیورٹی کے مسائل
- چوری کا خطرہ
- دہشت گردی کا خطرہ
- آگ لگنے کے خطرات

حفاظتی اقدامات

- کیمپ کے گرد حفاظتی باڑ کی فراہمی
- حفاظتی اہلکار (پولیس یا نجی سکیورٹی گارڈز/ہوم گارڈز وغیرہ) کی تعیناتی
- کیمپ میں موجود افراد کی صحیح تعداد اور آمد و رفت کا حساب کتاب رکھنے کے لیے رجسٹر میں اندراج۔
- آگ سے بچاؤ کے لیئے لیبر کیمپ بنانے میں ایسا کوئی میٹیریل استعمال نہ کیا جائے جس سے آگ لگنے کا اندیشہ ہو۔
- بارش، طوفان، سیلاب وغیرہ سے بچنے کیلئے اس بات کو یقینی بنایا جائے کہ کیمپ سائٹ اور عارضی کمرے/رہائش گاہیں محفوظ رہیں۔
- لیبر کیمپس میں آگ بجھانے والا آلات موجود ہوں جن پر انکی آخری معیاد کی تاریخ درج ہو۔ اور سکیورٹی گارڈ یا لیبر وغیرہ میں سے تمام افراد کو آگ بجھانے والے آلہ استعمال کرنے کی تربیت دی جائے۔
- لیبر کیمپ میں واضح مقامات پر ہنگامی/ایمرجنسی رابطہ نمبر نمایاں درج ہوں۔
- ٹھیکیدار، لیبر کے ساتھ ماہانہ میٹنگز میں ایمرجنسی کی صورت میں ہر ایک مزدور کو اسکی ذمہ داریوں اور تربیت سے آگاہ کرے اور اسکی تفصیل کنسلٹنٹ اور میونسپل کمیٹی/کارپوریشن کو فراہم کرے۔ اور کسی بھی قسم کی شکایات ایک رجسٹر میں درج کرے۔

سرگرمیاں

۸۔ حفظان صحت کے اصولوں پر مبنی خوراک (Food Safety)

مسائل

- فوڈ پوائزننگ کا خدشہ
- بیماری کا ڈر

حفاظتی اقدامات

- مزدوروں کو صاف ستھرے اور تازہ کھانے کی فراہمی کو یقینی بنایا جائے۔

سرگرمیاں

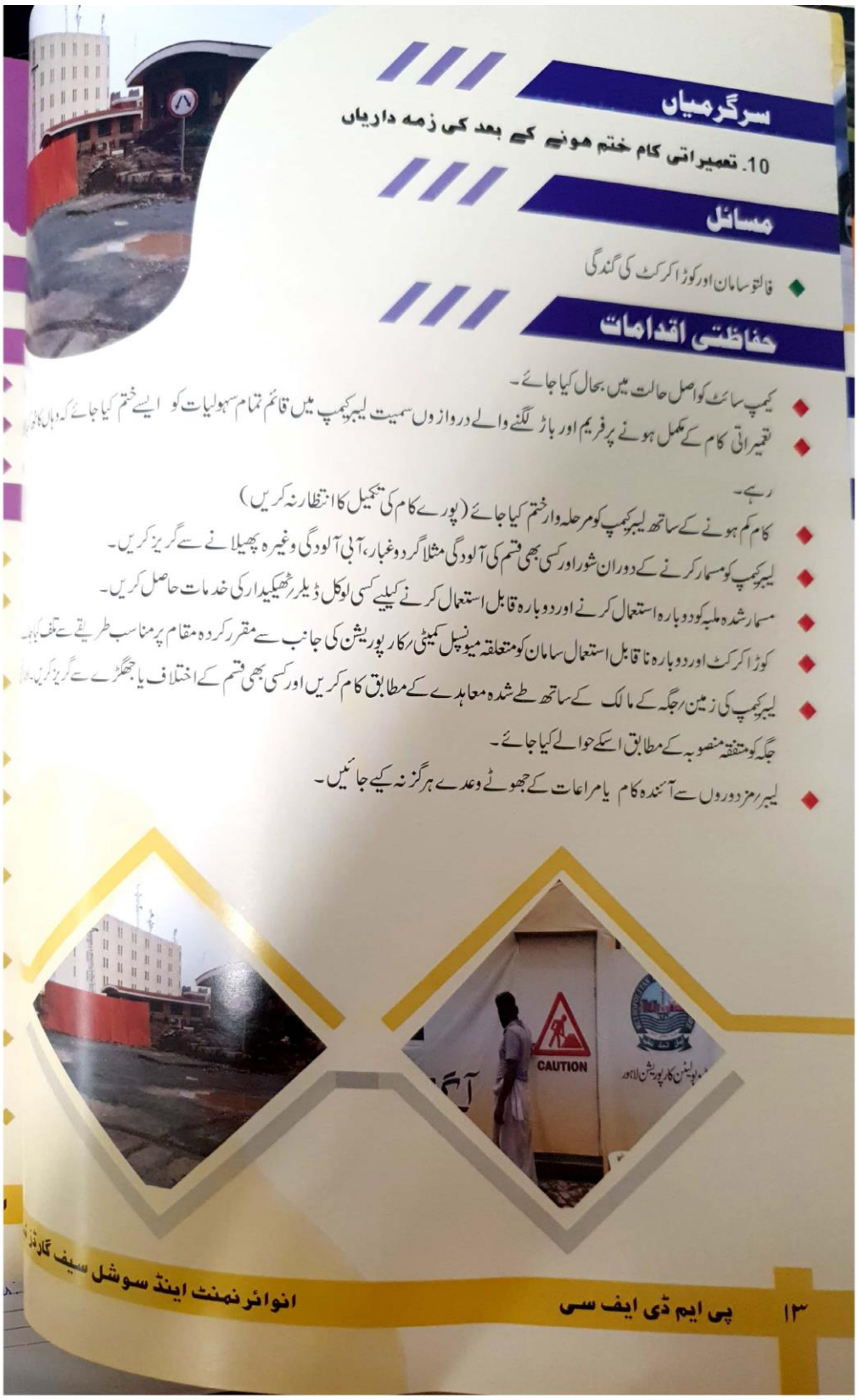
۹۔ مذہبی و سماجی میل جول

مسائل

- مذہبی عبادات میں رکاوٹ
- سماجی تعلقات میں دشواری
- سماجی، ثقافتی اور مذہبی خیالات میں شدت پسندی یا لڑائی جھگڑا وغیرہ

حفاظتی اقدامات

- مزدوروں/لیبر کو ان کے مذہب اور فرقے کے مطابق مذہبی عبادات کی سہولیات فراہم کرنا۔
- خواتین لیبر کی موجودگی کی صورت میں ان کے لیے علیحدہ وضو، نماز اور پردے کا اہتمام کیا جائے۔
- تمام مزدوروں کی مذہبی، ثقافتی یا فرقے کی وابستگی سے قطع نظر غیر متعصّبانہ اور برابری کا سلوک کیا جائے۔
- مزدوروں کو تعمیراتی کام کے دوران نماز میں شرکت کرنے یا دیگر عبادات کی اجازت دی جائے اور اس سلسلے میں مذہبی اور سکیورٹی امور کے ذمہ دار مقامی حکام کو تعمیراتی کاموں کے آغاز سے پہلے باضابطہ طور پر آگاہ کیا جائے تاکہ صحت عامہ، معاشرتی اور حفاظتی امور پر موثر نگرانی برقرار رہ سکے۔



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سرگرمیاں

۱۔تمام قسم کے تعمیراتی سرگرمیاں اور کام

مسائل

- انجریز اور چوٹیں وغیرہ
- نامناسب دیکھ بھال اور بروقت امداد نہ ملنے کے باعث ہلاکت
- دہشت گردی اور سکیورٹی سے متعلق خطرات

حفاظتی اقدامات

- تمام مزدوروں/لیبر سے مقامی/بین الاقوامی معیار کے مطابق مناسب حفاظتی اور قانونی ضوابط کی پیروی کروائی جائے۔
- کام کی جگہ پر اردگرد کے علاقوں میں موجود دہشت گردی اور سکیورٹی کے خطرات کے مطابق حکمت عملی کی بروقت تیاری اور ایک محفوظ وصحت مند ماحول مہیا کیا جائے۔
- مزدوروں/لیبر کیلیے ذاتی حفاظت کے سامان (PPEs) کی فراہمی مثلاً حفاظتی جوتے، ہیلمٹ، ماسک، دستانے، حفاظتی لباس، چشمے، چہرے اور کان کی حفاظت کے سامان وغیرہ کی فراہمی
- تمام مزدوروں/لیبر کو ذاتی حفاظت کے ساز وسامان کے بارے میں مکمل آگاہی اور استعمال کے طریقے کار کے بارے تربیت کا انتظام۔
- اگر تعمیراتی کام ایک ماہ سے زائد عرصہ کیلئے جاری رہنا ہو تو تمام مدت کے لیئے صحت، صفائی اور تربیت یافتہ ماحولیات کی تعیناتی کی جائے جو مزدوروں کی صحت، صفائی اور ماحولیات کے امور کی نگرانی کرے اور انھیں تربیت وآگاہی فراہم کرے۔
- تعمیراتی کاموں کے دوران کسی چوٹ لگنے/انجریز کی صورت میں مزدور/لیبر کے علاج معالجے کی سہولت مہیا کرنا اور بروقت ہسپتال/ڈسپنسری وغیرہ پہنچانا ٹھیکیدار کی ذمہ داری ہے۔
- مزید برآں دوران تعمیر تعمیراتی کام کی وجہ سے لگنے والی چوٹ/انجریز کے نتیجے میں ہلاکت ہو جانے کی وجہ سے مزدور/لیبر کی انشورنس اور اس کی بروقت ادائیگی کو یقینی بنایا جائے۔
- ایمرجنسی رابطہ نمبر مثلاً ریسکیو 1122 یا 15 اور دیگر قریبی ہسپتالوں/ڈسپنسری وغیرہ کے نمبر تعمیراتی جگہوں پر واضح درج ہونے چاہیں اور کال کی سہولت فراہم کی جائے۔
- شہری ترقی کے تعمیراتی منصوبہ جات کے اغاز سے قبل صحت، مذہبی امور اور شہری تحفظ/سکیورٹی فراہم کرنے والے مقامی اداروں کو آگاہ رکھا جائے اور اس سلسلے میں متعلقہ میونسپل کمیٹی/کارپوریشن کے تعاون سے موثر حکمت عملی تشکیل دی جائے۔

سرگرمیاں

۲۔تمام قسم کی تعمیراتی سرگرمیاں اور کنسٹرکشن کے کام

مسائل

- 15 سال سے کم عمر بچوں کی صحت اور تعلیم کا نقصان
- 18 سال اور اس سے کم عمر بچوں کی صحت کا نقصان
- حاملہ مزدور عورتوں کی صحت سے متعلقہ خطرات

حفاظتی اقدامات

- دی پنجاب رسٹرکشن آن ایمپلائمنٹ آف چلڈرن ایکٹ 2016 کے مطابق 15 سال سے کم عمر بچوں کو مزدوری یا کسی سرگرمی کے لیئے کام پر نہیں رکھا جا سکتا۔
- ویسٹ پاکستان میٹرنٹی بینیفٹ آرڈیننس 1958 کے مطابق حاملہ خواتین یا ایسی خواتین جنہوں نے چھ ہفتے قبل بچے کو جنم دیا ہو، کو مزدوری یا کسی سرگرمی کے لیئے کام پر نہیں رکھا جا سکتا۔
- دی پنجاب رسٹرکشن آن ایمپلائمنٹ آف چلڈرن ایکٹ 2016 کے مطابق 18 سال اور اس سے کم عمر کے بچوں کہ محنت مزدوری کے ایسے کام کے لیے نہیں رکھا جا سکتا جن میں صحت کو نقصان پہنچنے یا چوٹ لگنے یا کسی کیمیائی زہریلے مادے سے نقصان پہنچنے یا جہاں ہڈی ٹوٹنے کا اندیشہ ہو۔



سرگرمیاں

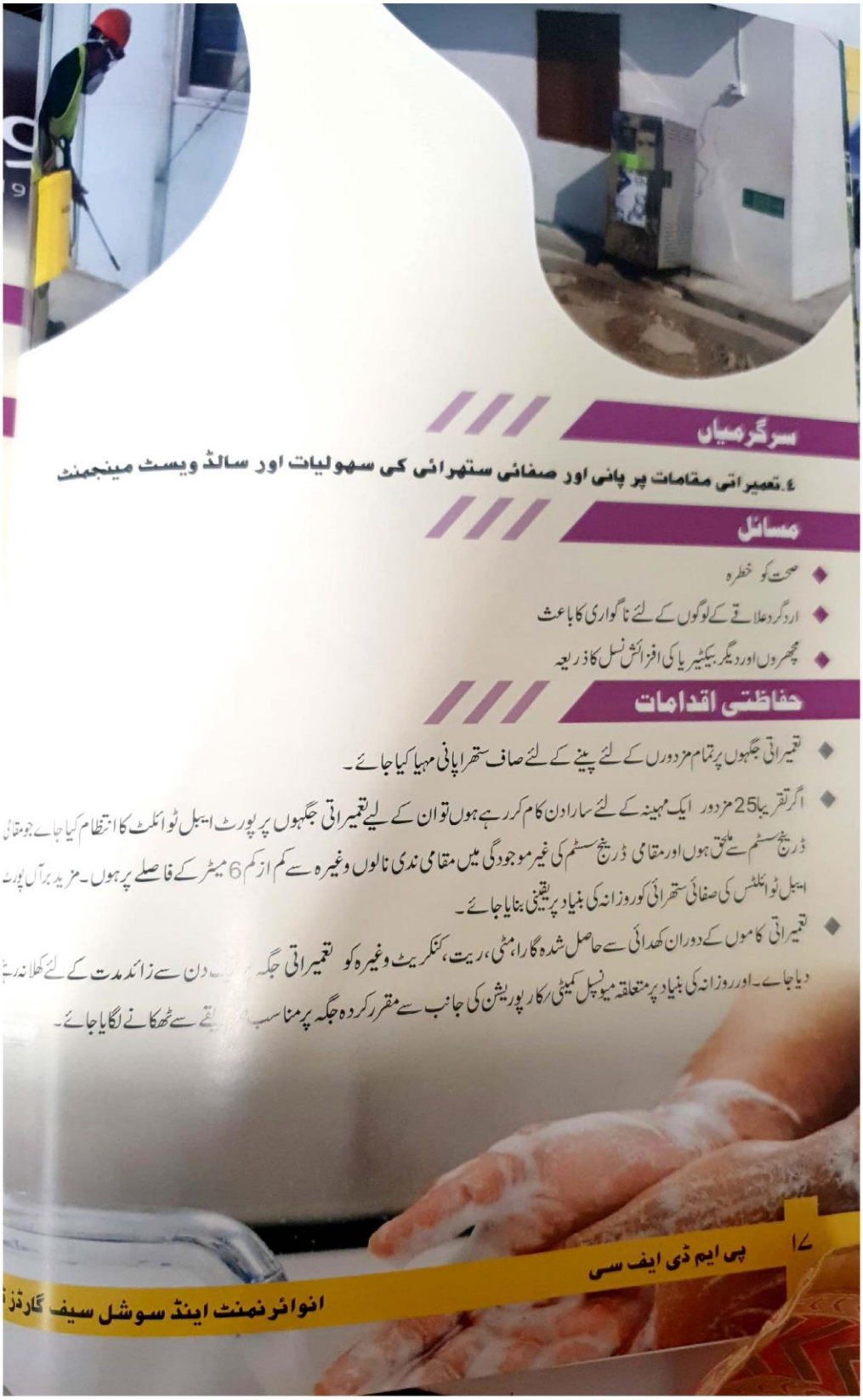
۳۔دوران تعمیر حادثات کا پیش آنا

مسائل

- فوری طبی امداد کی کمی
- اردگرد کے علاقوں میں ابتدائی طبی سہولیات اور صحت عامہ کا فقدان

حفاظتی اقدامات

- تعمیراتی جگہ پر فرسٹ ایڈ باکس کی موجودگی کہ یقینی بنایا جائے اور فرسٹ ایڈ باکس میں تمام ضروری ادویات اور طبی امداد کا ضروری سامان موجود ہو۔
- تعمیراتی کاموں کے دوران پیش آنے والے حادثات بیماریوں اور واقعات کا مکمل ریکارڈ رکھا جائے۔اسی طرح حادثات کی نوعیت و وجوہات کا مکمل ریکارڈ موجود ہو۔
- مزدوروں کی صحت و سکیورٹی سے متعلق ممکنہ خطرات کی بروقت نشاندہی کی جائے خاص کر وہ خطرات جو جان لیوا ثابت ہو سکتے ہیں۔اور ضروری حفاظتی اقدامات بروقت کئے جائیں۔
- تعمیراتی کاموں سے متعلق مشینری چلانے والے ڈرائیوروں کو دوران ڈرائیونگ قواعد وضوابط پر سختی سے عملدرآمد کرانے کے لئے آگاہی فراہم کی جائے۔
- تعمیراتی علاقوں اور سڑکوں کے ساتھ ساتھ روشنی کا معقول انتظام ہو۔



سرگرمیاں

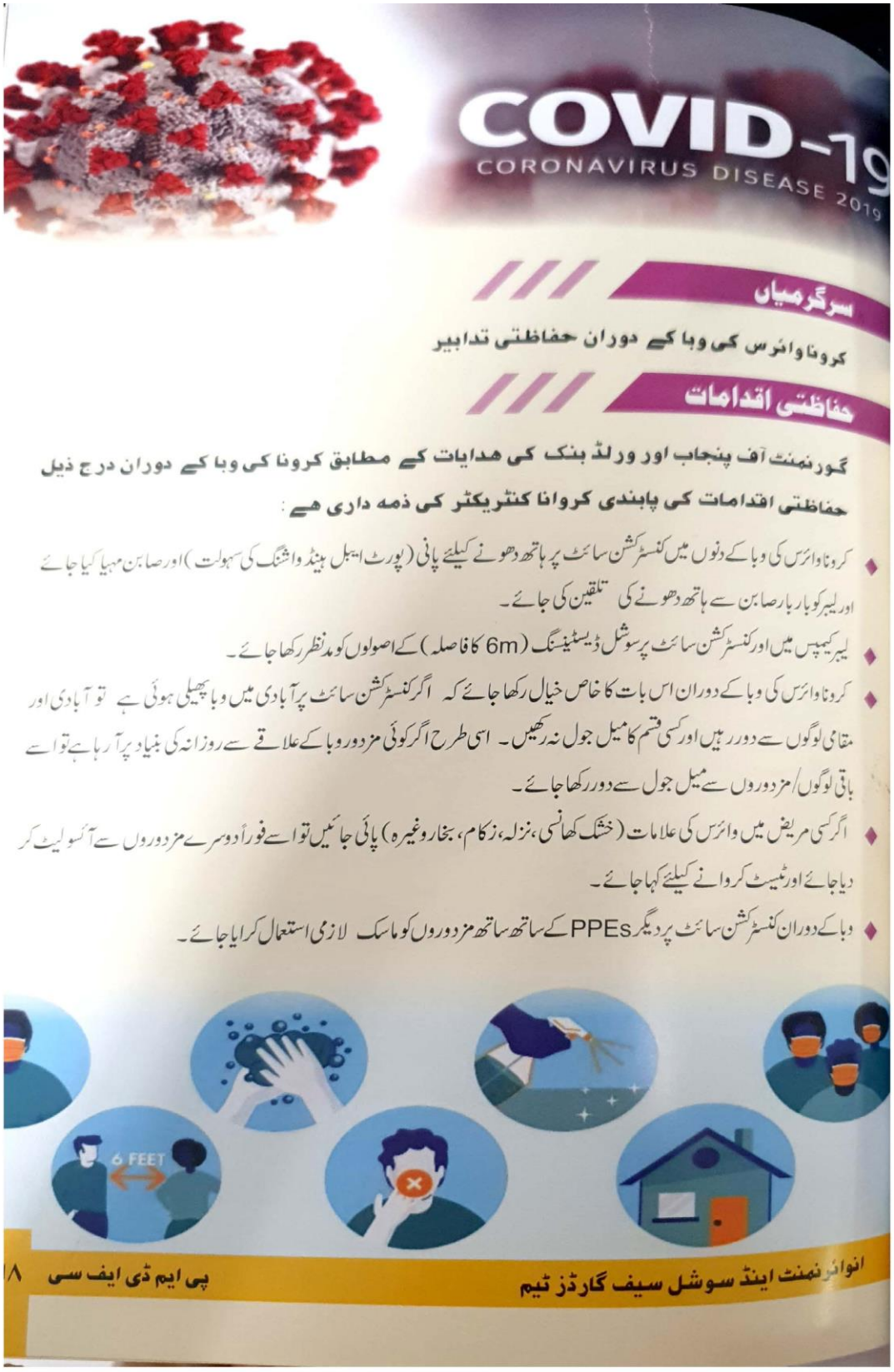
٤.تعمیراتی مقامات پر پانی اور صفائی ستھرائی کی سہولیات اور سالڈ ویسٹ مینجمنٹ

مسائل

- صحت کو خطرہ
- اردگرد علاقے کے لوگوں کے لئے ناگواری کا باعث
- مچھروں اور دیگر بیکٹیریا کی افزائش نسل کا ذریعہ

حفاظتی اقدامات

- تعمیراتی جگہوں پر تمام مزدوروں کے لئے پینے کے لئے صاف ستھرا پانی مہیا کیا جائے۔
- اگر تقریباً 25 مزدور ایک مہینہ کے لئے سارا دن کام کر رہے ہوں تو ان کے لیے تعمیراتی جگہوں پر پورٹ ایبل ٹوائلٹ کا انتظام کیا جائے جو مقامی ڈرینج سسٹم سے ملحق ہوں اور مقامی ڈرینج سسٹم کی غیر موجودگی میں مقامی ندی نالوں وغیرہ سے کم از کم 6 میٹر کے فاصلے پر ہوں۔ مزید برآں پورٹ ایبل ٹوائلٹس کی صفائی ستھرائی کو روزانہ کی بنیاد پر یقینی بنایا جائے۔
- تعمیراتی کاموں کے دوران کھدائی سے حاصل شدہ گارا، مٹی، ریت، کنکریٹ وغیرہ کو تعمیراتی جگہ [illegible] دن سے زائد مدت کے لئے کھلا نہ رہنے دیا جائے۔ اور روزانہ کی بنیاد پر متعلقہ میونسپل کمیٹی/کارپوریشن کی جانب سے مقرر کردہ جگہ پر مناسب [illegible] ٹھکانے لگایا جائے۔



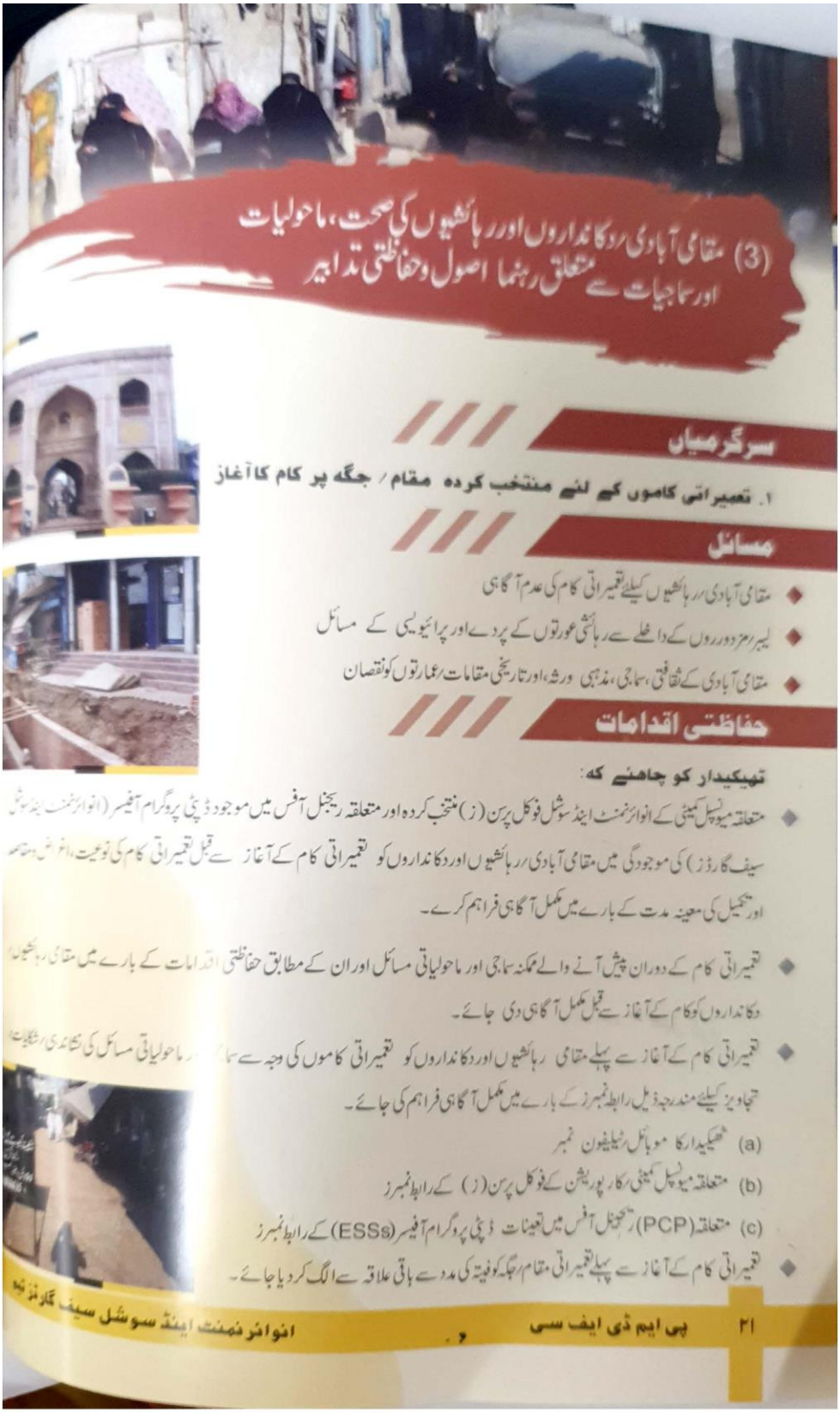
تعمیراتی کاموں کے دوران خطرات/حادثات سے بچنے کیلئے سامان برائے ذاتی حفاظت کا خلاصہ

مقصد	تعمیراتی کام	تجویز کردہ سامان برائے ذاتی حفاظت	تصویریں
آنکھوں اور چہرے کی حفاظت/ تحفظ	اڑنے والے ذرات کا استعمال جیسے پگھلی ہوئی دھات مائع کیمیکل، گیسیں، اور بخارات، روشنی کی شعاعیں۔	حفاظتی عینکیں	
سر کی حفاظت/ تحفظ	ایسے تمام کام جن میں گرنے کا خطرہ ہو، بلندی پر کام کرنا، تعمیراتی کام کو سنبھالنے اور دوسری جگہ پر منتقل کرنے والے کام۔	اوپر اور اطراف سے نقصان سے بچاؤ کیلئے پلاسٹک کے ہیلمٹ	
سماعت کی حفاظت/ تحفظ	کھدائی/شور پیدا کرنے والے کام یا بھاری مشینری استعمال کرنے کی وجہ سے شور۔	سماعت کی حفاظت کے آلہ جات جیسے کن پوش یا ایئر پلگ	
پاؤں کی حفاظت/ تحفظ	تمام تعمیراتی کام جن میں چیزوں کا گرنا یا گھمانا، نوکیلی اشیا شامل ہوں۔ گلانے والا یا گرم مائع، کچرے کے ڈھیر سے کچرا اٹھانا۔	ہلنے اور گرنے والی اشیاء، مائعات اور کیمیائی مواد سے بچاؤ کیلئے حفاظتی جوتے یا بوٹ	
ہاتھوں کی حفاظت/ تحفظ	جسمانی صحت کیلئے نقصان دہ سامان جیسے کچرے کو سنبھالنا، ایسے کام جس میں کاٹ یا گہرے زخم لگنے کا اندیشہ ہو، ارتعاش، بہت زیادہ درجہ حرارت۔	ربڑ یا مصنوعی مواد (نیوروپین)، چمڑا، سٹیل، غیر موصل مواد سے بنے گلوز	
تحفظ تنفس	دھول، دھند، شعلے، گیسیں، دھواں، بخارات آکسیجن کی کمی	ایک جگہ سے دوسری جگہ لے جانے والے یا ایک ہی جگہ پڑے مواد کی فراہمی تعمیراتی جگہ پر بچاؤ کا سامان چہرے کے ماسک جن میں دھول ہٹانے اور ہوا کو صاف رکھنے کیلئے (کیمیائی مواد، دھند، بخارات اور گیسوں سے) مناسب فلٹر لگے ہوں	 
جسم / ٹانگوں کی حفاظت/ تحفظ	تمام کام جن میں شدید درجہ حرارت، نقصان دہ مواد، حیاتیاتی ایجنٹ، چھوٹے یا گہرے زخم لگنے کا اندیشہ ہو	مناسب میٹریل سے بنے غیر موصل کپڑے، ایپرن وغیرہ	
اونچائی پر کام کرتے ہوئے حفاظت	تمام تعمیراتی کام جو 4 فٹ یا اس سے زیادہ کی اونچائی پر کے جانے ہوں بشمول سٹریٹ لائٹس وغیرہ	ہیلمٹ، حفاظتی عینکیں، کے گلوز اور ربڑ کے بوٹ	
اونچائی پر کام کرتے ہوئے حفاظت	تمام تعمیراتی کام جو 4 فٹ یا اس سے زائد اونچائی پر مسلسل ایک دن کیلئے کیے جانے ہوں	اینکر، بیلٹ، رسی، کنیکٹر، ہ جگہ اور ایک ساتھی فرد	

Summary of Recommended Personal Protective Equipment According to Hazard

Objective	Workplace Hazards	Suggested PPE	Pictures
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation.	Safety Glasses with side-shields, protective shades, etc.	
Head protection	Falling objects, inadequate height clearance, and overhead power cords.	Plastic Helmets with top and side impact protection.	
Hearing protection	Noise, ultra-sound.	Hearing protectors (ear plugs or ear muffs).	
Foot protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving & falling objects, liquids and chemicals.	
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures.	Gloves made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.	
Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors.	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi-gas personal monitors, if available.	
	Oxygen deficiency	Portable or supplied air (fixed	
Body/leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and	Insulating clothing, body suits, aprons etc.	
Working at *height	Rehabilitation Projects	Helmet, Safety glasses,	
	New Construction Projects	Anchor, belt, lanyard,	

*In general, use of PPEs is required for any height of 4 ft or more. *Ref: OSHA standards*



(3) مقامی آبادی/دکانداروں اور رہائشیوں کی صحت، ماحولیات اور سماجیات سے متعلق رہنما اصول وحفاظتی تدابیر

سرگرمیاں

۱. تعمیراتی کاموں کے لئے منتخب کردہ مقام/ جگہ پر کام کا آغاز

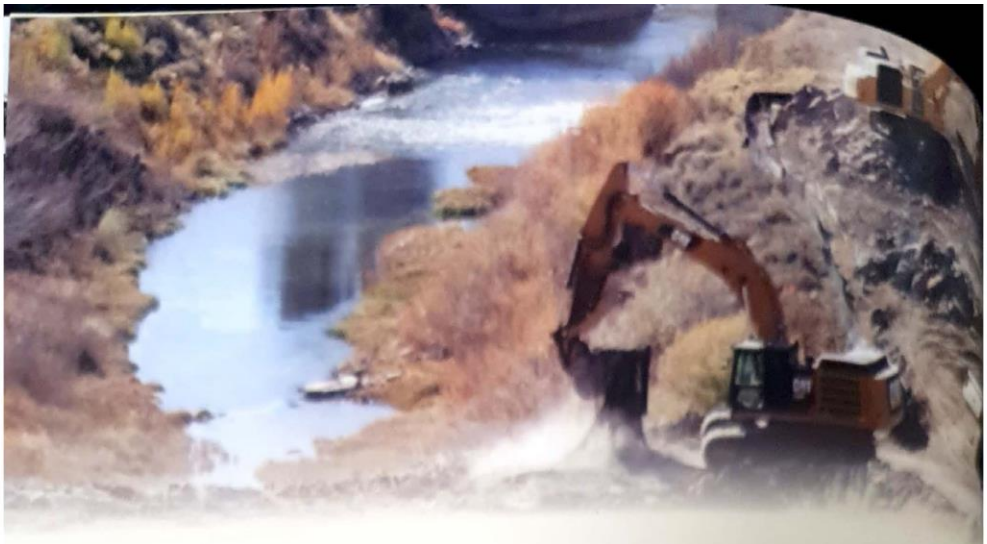
مسائل

- مقامی آبادی/رہائشیوں کیلئے تعمیراتی کام کی عدم آگاہی
- لیبر/مزدوروں کے داخلے سے رہائشی عورتوں کے پردے اور پرائیویسی کے مسائل
- مقامی آبادی کے ثقافتی، سماجی، مذہبی ورثہ، اور تاریخی مقامات/عمارتوں کو نقصان

حفاظتی اقدامات

ٹھیکیدار کو چاہئے کہ:

- متعلقہ میونسپل کمیٹی کے انوائرنمنٹ اینڈ سوشل فوکل پرسن (ز) منتخب کردہ اور متعلقہ ریجنل آفس میں موجود ڈپٹی پروگرام آفیسر (انوائرنمنٹ اینڈ سوشل سیف گارڈز) کی موجودگی میں مقامی آبادی/رہائشیوں اور دکانداروں کو تعمیراتی کام کے آغاز سے قبل تعمیراتی کام کی نوعیت، اخراجات، مقاصد اور تکمیل کی معینہ مدت کے بارے میں مکمل آگاہی فراہم کرے۔
- تعمیراتی کام کے دوران پیش آنے والے ممکنہ سماجی اور ماحولیاتی مسائل اور ان کے مطابق حفاظتی اقدامات کے بارے میں مقامی رہائشیوں/ دکانداروں کو کام کے آغاز سے قبل مکمل آگاہی دی جائے۔
- تعمیراتی کام کے آغاز سے پہلے مقامی رہائشیوں اور دکانداروں کو تعمیراتی کاموں کی وجہ سے سماجی/ماحولیاتی مسائل کی نشاندہی/شکایات/ تجاویز کیلئے مندرجہ ذیل رابطہ نمبرز کے بارے میں مکمل آگاہی فراہم کی جائے۔
  - (a) ٹھیکیدار کا موبائل/ٹیلیفون نمبر
  - (b) متعلقہ میونسپل کمیٹی/کارپوریشن کے فوکل پرسن (ز) کے رابطہ نمبرز
  - (c) متعلقہ (PCP) ریجنل آفس میں تعینات ڈپٹی پروگرام آفیسر (ESSs) کے رابطہ نمبرز
- تعمیراتی کام کے آغاز سے پہلے تعمیراتی مقام/جگہ کو فیتہ کی مدد سے باقی علاقہ سے الگ کر دیا جائے۔



تعمیراتی جگہ/مقام پر واضح بورڈ نصب کر دیئے جائیں، جن پر درج ذیل پیغامات/احکامات لکھے ہوں:

(a) تعمیراتی کام کی نوعیت

(b) ٹریفک میں رکاوٹ کی صورت میں متبادل راستے کا نشان اور عارضی رکاوٹ کا پیغام

(c) ایمرجنسی اور شکایت کیلئے رابطہ نمبرز

(d) (PMDFC) کی جانب سے جاری کردہ سماجی و ماحولیاتی پیغامات پر مبنی پوسٹرز۔

تعمیراتی کام کی جگہ کے ارد گرد 100 میٹر تک کی حدود میں موجود ثقافتی، سماجی، مذہبی ورثہ، تاریخی عمارتوں اور مذہبی مقامات جیسے قبرستان، مساجد، مندر، گرجا گھروں وغیرہ کو کسی قسم کا نقصان نہ پہنچایا جائے اور ان کی حدود میں کوڑا کرکٹ ڈالنے یا فالتو پانی چھوڑنے سے گریز کیا جائے۔ مزید برآں کھدائی کے دوران کسی نئے آثارِ قدیمہ ملنے کی صورت میں متعلقہ مقامی محکمے سے رجوع کیا جائے اور کھدائی کا کام بند کر کے تعمیراتی کام روک دیا جائے۔

سرگرمیاں

2- کھدائی کی جگہ اور اس سے متعلقہ کام اور نالوں کی صفائی اور اس سے حاصل شدہ بھل وغیرہ

مسائل

- کھدائی سے حاصل شدہ مٹی/کنکر کے ڈھیر (Debris) سے رہائشیوں کی آمد و رفت اور ٹریفک میں رکاوٹ
- مقامی رہائشیوں کیلئے ناگواری کا باعث
- مچھروں اور دیگر بیماری پھیلانے والے جراثیم کی افزائش کا ذریعہ
- کھدائی کی جگہ پر گرنے اور حادثات کے خطرات

حفاظتی اقدامات

- تعمیر کے دوران کھدائی کے تمام مقامات کے اردگرد حفاظتی ٹیپ / پٹی لگائی جائے اور کھدائی کی جگہ کو عارضی طور پر بند کر دیا جائے جس کے باہر اس جگہ سے دور رہنے کیلئے واضح پیغامات لکھے ہوں۔
- کھدائی سے حاصل شدہ مٹی / کنکر / پتھر وغیرہ کو ایک دن سے زیادہ اس جگہ پر موجود نہ رہنے دیا جائے بلکہ روزانہ کی بنیاد پر متعلقہ میونسپل کمیٹی / کارپوریشن کی منتخب کردہ جگہ پر محفوظ طریقے سے ٹھکانے لگایا جائے۔
- نالوں کی صفائی سے حاصل شدہ بھل / ریت وغیرہ کو ایک دن سے زیادہ اس جگہ پر موجود نہ رہنے دیا جائے بلکہ روزانہ کی بنیاد پر اٹھوایا جائے اور بھل کو ایک جگہ سے دوسری جگہ منتقلی کے دوران ٹریکٹر / ٹرالی کو ترپال کی مدد سے ڈھانپ کر لے جایا جائے۔

سرگرمیاں

3-تعمیراتی مشینری / تعمیراتی مٹیریل اور تعمیراتی کاموں کی وجہ سے عارضی بندش

مسائل

- ٹریفک میں رکاوٹ۔

حفاظتی اقدامات

- ٹریفک میں ممکنہ رکاوٹ کے پیش نظر متبادل راستے کا انتخاب اور اس کی نشاندہی کیلئے پیغامات واضح درج کیے جائیں۔
- ٹریفک کونز (cones) کی مدد سے رکاوٹ والی جگہ کو الگ کر دیا جائے تاکہ حادثات سے بچا جا سکے۔
- ٹریفک میں زیادہ دنوں تک مسلسل رکاوٹ کی صورت میں مقامی ٹریفک پولیس کو آگاہ کیا جائے اور ان کے ساتھ مل کر ٹریفک مینجمنٹ پلان و تشکیل دیا جائے جس کو واضح مقام پر نصب کیا جائے اور مقامی آبادی / رہائشیوں کو اس کے بارے میں مکمل آگاہی دی جائے۔

سرگرمیاں

4-تعمیراتی کاموں کی وجہ سے راستوں میں عارضی رکاوٹ اور زمین کا عارضی حصول

مسائل

- روزمرہ معمولات اور کاموں میں رکاوٹ
- رہائشی خواتین کیلئے آنے جانے میں رکاوٹ
- دکانداروں کے دکانوں کے آگے رکاوٹیں اور گاہکوں کیلئے مشکلات
- مستقل وعارضی سٹالز لگا کر بیچنے والے چھوٹے بڑے مستقل دکانداروں کا گاہک کم ہو جانے کی وجہ سے مالی نقصان

حفاظتی اقدامات

- تعمیراتی علاقے میں اردگرد موجود تمام چھوٹی بڑی دکانوں، ٹھیلوں، عارضی خوانچہ فروشوں اور گھروں کا مکمل سروے (تعداد اور مالی حیثیت وغیرہ) او
ان پر ممکنہ سماجی اور ماحولیاتی اثرات کا جائزہ لے کر ایک تفصیلی رپورٹ اور متعلقہ پلان میونسپل کمیٹی/کارپوریشن کے دفتر میں موجود ہونی چاہئے
جو کہ فوکل پرسنز، متعلقہ علاقائی آفس میں موجود ڈپٹی پروگرام آفیسر (ESSs) کے ساتھ تعمیراتی کاموں کی مالیت کا اندازہ لگائے وقت تیار
جائیگی۔ اس رپورٹ اور پلان میں موجود سماجی اور ماحولیاتی مسائل کے حل کیلئے مختص رقم اور ان کا صحیح طریقے سے استعمال ٹھیکیدار کے کنٹریکٹ
حصہ ہوگا۔
- رہائشیوں کیلئے آنے جانے اور دکانوں/گھروں تک رسائی کے لیے متبادل راستے مہیا کرنا ٹھیکیدار کی ذمہ داری ہے۔
- دکانوں/تھڑوں/ٹھیلوں وغیرہ کے باہر کسی بھی قسم کے نقصان یا توڑ پھوڑ کی صورت میں ٹھیکیدار طے شدہ ضوابط کے مطابق اس کی قیمت متاثرہ لوگوں
ادا کرے گا۔
- لیبر/مزدور کو تربیت دی جائے کہ وہ اردگرد رہائشی عورتوں اور بچوں کے آنے جانے میں کوئی رکاوٹ نہ بنیں اور رہائشیوں کے ساتھ بلاضرورت کو
میل جول نہ رکھیں۔
- تعمیراتی کیمپ لگانے، تعمیراتی کام کرنے، مشینری اور تعمیراتی سامان رکھنے کے لیئے عارضی طور پر حاصل کی گئی زمین کا کرایہ مالک مکان کو وقت
پر ادا کی جائے گا۔ اور تحریری معاہدے کی صورت میں ٹھیکیدار تمام تر اعدوضوابط کا پابند ہوگا۔
- تعمیراتی کاموں/کیمپ وغیرہ لگانے کے لیئے عارضی زمین حاصل کرنے کے لئے مقامی رہائشیوں سے مشاورت اور دنوں کے حساب سے کرایہ اور
اس کا مکمل طریقہ کار وضع کر کے باقاعدہ لکھا جائے گا۔ اور خلاف ورزی کی صورت میں ٹھیکیدار ذمہ دار ہوگا۔

سرگرمیاں

۵۔تعمیراتی کام اور ہیوی مشیری کا استعمال

مسائل

- شور غل
- پانی کی آلودگی
- ہوائی آلودگی
- دیگر ماحولیاتی مسائل

حفاظتی اقدامات

- تعمیراتی علاقے میں موجود ہسپتالوں، سکولوں، کالجوں وغیرہ اور رہائشی گھروں، دکانوں کی تمام تفصیلات کی رپورٹ متعلقہ میونسپل کمیٹی کے دفتر میں موجود ہونی چاہیے جو کہ ٹھیکیدار کے کنٹریکٹ کا حصہ ہوگی۔ اور ٹھیکیدار ان تفصیلات کے مطابق ایسا پلان ترتیب دے گا جس سے ارد گرد عمارتوں، رہائشیوں اور دکانداروں کو کم سے کم پریشانی کا سامنا کرنا پڑے مثلاً زیادہ شور پیدا کرنے والے کام دن کے اس حصے میں کئے جائیں جب ہسپتالوں، اور سکولوں، کالجوں وغیرہ کے مصروف اوقات کار نہ ہوں اور ایسے کام جن کی وجہ سے راستوں کی عارضی بندش ضروری ہوں وہ رات کو کیئے جائیں جب رہائشیوں کی آمد و رفت نہ ہو۔
- تعمیراتی کاموں کے دوران پیدا شدہ فاضل پانی یا پورٹیبل ٹوائلٹس کا پانی، فضلہ وغیرہ کا محفوظ اور مناسب طریقے سے ٹھکانے لگانے کا بندوبست کیا جائے اور فاضل پانی کو پینے کے صاف پانی کے ساتھ شامل ہونے سے بچانے کا ہر ممکن قدم اٹھایا جائے۔
- واٹر سپلائی کی سکیموں یا ایسی تمام کام جن کی وجہ سے رہائشیوں کو پانی یا سیوریج وغیرہ میں عارضی بندش کا سامنا کرنا پڑ سکتا ہو۔ ایسے تمام کاموں کے آغاز سے پہلے رہائشیوں کو پیشگی اطلاع دی جائے اور متبادل انتظامات کا خاطر خواہ انتظام کیا جائے۔
- تعمیراتی کاموں کی وجہ سے درختوں کی کٹائی سے ہر حال میں گریز کیا جائے اور ناگزیر صورت حال میں ایک درخت کی کٹائی کے متبادل کے طور پر چار درخت لگانا ضروری ہیں۔
- تعمیراتی جگہ پر پیدا ہونے والے کوڑا کرکٹ کو ٹھکانے لگانے کیلئے ڈسٹ بن لگائے جائیں اور ان کو روزانہ کی بنیاد پر متعلقہ میونسپل کمیٹی کی طرف سے مقرر کردہ مقام پر ٹھکانے لگایا جائے۔
- کوڑا کرکٹ اور فاضل پانی ارد گرد موجود فصلوں اور ندی نالوں میں پھینکنے سے گریز کریں۔
- گرد و غبار اور ہوائی آلودگی کی صورت میں پانی کا باقاعدہ چھڑکاؤ کریں۔
- تعمیراتی کام کی مدت اور نوعیت کے مطابق کام کے آغاز سے پہلے، کام کے دوران اور کام کے بعد شور کی آلودگی، ہوائی آلودگی اور آبی آلودگی کے نمونہ جات حاصل کر کے ان کی جانچ پڑتال کرانا ٹھیکیدار کی ذمہ داری ہے۔ اس سلسلے میں ریجنل آفس میں موجود ڈپٹی پروگرام آفیسر (ESSs) سے مزید رہنمائی حاصل کریں۔
- تعمیراتی کام مکمل ہو جانے کے بعد علاقے کی صفائی ستھرائی اور ماحولیاتی خوبصورتی کا خاص خیال رکھیں اور پہلے سے بہتر حالت میں چھوڑیں۔

★ سپریم کورٹ آف پاکستان کے سوموٹو کیس نمبر 25 بمطابق 2009 حوالہ نمبر "کٹنگ آف ٹریز فار کینال وائیڈننگ پراجیکٹ لاہور" تعمیراتی کاموں کے دوران ہر ایک درخت کی کٹائی کے متبادل چار درخت لگائے جائیں گے۔