



GOVERNMENT OF KHYBER PAKHTUNKHWA
CLIMATE CHANGE, FORESTRY, ENVIRONMENT
AND WILDLIFE DEPARTMENT
(SECTION ENVIRONMENT)

NOTIFICATION

Peshawar Dated the 25/07/2025

No. SO(ENVT)/CCFE&WD/1-8/EPC-2025: In exercise of powers conferred under Clause xxii of Section 7 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, (Khyber Pakhtunkhwa Act No. XXX of 2022), the Khyber Pakhtunkhwa Environmental Protection Council (EPC) in its 3rd Meeting held on 13.05.2025 has been pleased to approve the following guidelines for General Environmental Approval (GEA);

GUIDELINES FOR MINERAL WATER UNITS

Introduction

The primary purpose of the *Guidelines for mineral water bottles units* is the protection of public health and the protection of surrounding environment from the hazardous impact of processing activities involved in the finalization of mineral water.

Water is essential to sustain life, and a satisfactory (adequate, safe and accessible) supply must be available to all. Improving access to safe drinking-water can result in tangible benefits to health. Every effort should be made to achieve a drinking-water quality as safe as practicable. Bottle Mineral waters is consider one of the best source for the supply of water which meets the requirements of heathy life.

Scope of guideline

These guidelines are applicable to all mineral water bottles units.

How to use these guidelines

The project proponent is obliged to use these guidelines for the preparation and submission of the GEA report.

Glossary

Act means the Khyber Pakhtunkhwa Environmental Protection Act, 2014

Contamination means introduction of impurities in the environment

Environment means (a) air, water and land; (b) all layers of the atmosphere; (c) all organic and inorganic matter and living organisms; (d) the ecosystem and ecological relationships; (e) buildings, structures, roads, facilities and works; (f) all social and economic conditions affecting community life; and (g) the inter-relationships between any of the factors in sub-clause (a) to (f).

Environmental Assessment a technique and a process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and



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Taken into account by the planning authority in forming their judgments on whether the development should go ahead.

Impact on Environment means any effect on land, water, air or any other component of the environment, as well as on wildlife harvesting, and includes any effect on the social and cultural Environment or on heritage resources.

Mitigation Measure means a measure for the control, reduction or elimination of an adverse impact of a development on the environment, including a restorative measure.

Pollution the presence in the environment or the introduction into it, of substances that have harmful or unpleasant effects

Rules means the Khyber Pakhtunkhwa Environmental Assessment Rules, 2021

GEA means Environmental Impact Assessment as per schedule III of KP Environmental Assessment Rules, 2021

Need for Mineral Water Processing Unit

Mineral Water Processing Unit is considered as a need to be located in any densely populated city of the province. These cities presents an opportunity for establishment of Mineral Water Processing Unit due to high population, less availability of clean drinking water in majority of areas and awareness of hygiene with respect to drinking water. This business can also be undertaken in all small 2nd tier towns, in addition to suburban towns of large cities. Before going to the hazardous impact of the mineral waters bottled unit we may first discuss the steps involved in the mineral water processing.

Brief Description of the Process

The process of Mineral Water processing Unit consist of the following steps.

- i. In the first step source water is stored into feed water tank and then passes through the sand filter for preliminary water filtration.
- ii. In next stage, water passes through the dosing pump-I, where chlorine is added to kill the germs in water.
- iii. After the chlorination, water passes through carbon filter. It helps in maintenance of proper odour and taste of water. It also removes chlorine from water.
- iv. Water then passes through dosing pump-II, where Sodium Meta Bisulphate is added. It helps in dechlorination of water.
- v. Water then passes through dosing pump-III, where Antiscalant is added. It prevents scaling of membrane from Calcium, Magnesium and Biological growth.



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- vi. After dosing pump III Water then passes through Reverse Osmosis module. This stage of the process makes water clear from all the contaminations and minute particles.
 - vii. In next step, water passes through dosing pump-IV, where Minerals are added for taste development. Finally water undergoes Ultra Violet treatment to avoid any contamination from bacteria and other microorganisms.
 - viii. At last stage, water passes through automatic washing, filling and capping plant. Here water is filled into bottles.
- After filling, bottles are taken into the warehouse or supplied to the retailers. [Depending upon the source of water some filtration steps may be reduced]

Environmental impact of mineral water processing unit on environment

As mineral water bottle units seems environmental friendly but still some steps like chlorination, ozonation and discharge of rejected water from RO plant generate problems for human health and environment. The detail of these steps are as under.

Normally most of the mineral water bottle units use reverse osmosis for filter process where TDS level arises from different ions, is reduce to minimum. However during the reverse osmosis process 30 to 40% water is obtained as product and 60 to 70% water is rejected. This rejected water has high concentration of the contaminants due to trapping on the membrane during osmosis. The reject water of the first cycle is again feed into the RO plant to obtain more water as product. By this repetition of the process for rejected water the percentage of rejected water is reduce to almost 40% of the total volume obtained from the main water source. However repetition of the same process for third time is not possible with productive output. Rejected water obtained after the second cycle contains contaminants and is discharged outside of the plant. Similarly uncontrolled ozonation and chlorination also cause some environmental issues like bad smell and eye and skin irritation in the surrounding.

Guidelines for environmental impacts of mineral water bottle units

Following measures/steps are necessary to be adapted for the establishment of mineral water bottle units.

1. The amount of rejected water should be minimize as much as possible and should not be discharged outside the unit. For control discharge it will be either provided to the garden plants of the unit or will use in washrooms or washing purposes.
2. The ozonation should be carried out in a control to avoid any environmental issue.



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3. Chlorination should be carried out in a control to avoid any environmental issue. They must use such source of chlorine which is nontoxic and easy in handling.
4. Treatment of water with ultra violet must be carried out in a control way without any exposer of workers to such type of radiations.
5. Land zoning policy must be obeyed during the establishment of the unit to avoid any type of environmental disturbance for surrounding.
6. The unit should not be a source of noise pollution in form of its machinery or its vehicular transport.
7. The unit must be responsible for the reuse, recycling and collection of their bottle to prevent the generation of solid waste indirectly.

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**Secretary to Govt. of Khyber Pakhtunkhwa
Climate Change, Forestry, Environment & Wildlife
Department**

No. SO(ENVT)/CCFE&WD/1-8/EPC-2025:

Copy for information to;

1. All members of Environmental Protection Council (EPC) Khyber Pakhtunkhwa
2. PS to Secretary Climate Change, Forestry, Environment & Wildlife Department, Khyber Pakhtunkhwa


Muhammad Ishaq
Section Officer (Environment)