

## Compact Drinking Water Filtration Plant



شركة منور الهندسية المحدودة

Mob. +249 901231606 +249 901232327

E-mail: monawir\_eng@yahoo.com



- Package plant for Rural water supplies.
- Designed to treat river, lake or well waters.
- The best solution for villages, farms est.
- Easy permanent or temporary installation.
- Transportable.
- Simple operation requiring no electric power.
- Minimum maintenance.
- Clean water at low costs.

General description of compact drinking water filtration plan  
2\*5m<sup>3</sup>/h

#### General remark

The following includes the description of the process and the scope of supply of a water from the river bank and open canals which shall be used as potable water and utility water.

The out put of the plant is 2\*5m<sup>3</sup>/h.

The treatment shall comprise of dosing coagulant to accelerate repaid filtration and dosing of chlorine to effect disinfection and shall be effective over the whole range of the raw water conditions. The treated water shall be clean, agreeable to taste and sterile.

All installations can be used and operated with out electrical power.

#### Process Design Basis

Our process design is based on the analysis, temperature and solid content figures obtained from" Results of Examination of sample of water location=Burris Raw 1971\_72+72\_73" and possibility of a stronger contamination.

The chemical feed rates indicated are considered as definite. However, in case of occurrence of very strong algae the rate of feed of aluminum soleplate shall have to be relatively increased over a short period.

#### Components Scope of plant

The compact drinking water filtration plant comprises the following components:-

- Raw Water supply pumps
- Filtration package unit consisting of :-
  - Pipe work
  - Two chemical dozers
  - Two filters

These components are available as a whole or separately as required. In general the purpose of plant and components can be described as follows.

#### Raw water supply pumps

Raw water will be taken from available sources by means of raw water supply pumps. Flow rate suction lift and discharge pressure are suitable for the local situation.

The pumps have to be installed near the raw water source and therefore have to be installed out side the water treatment plant.

Several type of pumps diesel or electrically driven can be used which are mainly.

- Horizontal centrifugal pumps
- Turbine pumps.
- Submersible pumps (only electrically driven)

#### Water treatment

The treatment plant is skid mounted and the water treated in three steps:

- Coagulation.
- Flocculation and filtration.
- Disinfection.



#### Disinfection

Disinfection is added in outgoing treated water for sterilization of water. The equipment used is similar to the equipment used for coagulant.

Capacity of dozer : 100cm<sup>3</sup>/m<sup>3</sup>

Capacity of container :60

Skid

All equipment described under.

Water treatment is mounted on a rigid skid type base frame for free standing of unit.

#### Pipe work

Pipe and valves of skid mounted treatment plant are an integrated part of skid. All other pipes and valves are depending on individual local situation and will be offered separately on request.

#### Condition of Equipment

All installation and equipment to be delivered will be sand blasted and painted ready for operation.

#### Standard

All equipment will be designed according to relevant DIN (German Industrial Normalization).

#### Coagulant

Coagulation agent is added in incoming raw water for later flocculation of colloids.

Coagulant is added by means of mechanical driven dosing pumps with raw water flow rate proportional dosing . the dosing rate can be varied by variation of solution concentration and so adapted to the water quality.

The dosing equipment consist of:

- Mechanical drive using water flow
- Piston dosing pump
- Solution container
- Injection nozzle and small interconnection hoses between container, pump and injection nozzle.

capacity of dozer 100cm<sup>3</sup>/m<sup>3</sup> □ capacity of container 60

other electric driven pump are also available on request.

#### Flocculation and filtration

For flocculation and filtration steel made rapid closed pressure filtration which fulfill both condition, flocculation and filtration, have to be provided.

Two filters filled with suitable filter media work in parallel. Colloids and rough particles are adsorbed in filter media causing steady flow rise of pressure loss in filter and consequently the filter media has to be backwashed occasionally. Backwashed will be done by reverse flow of water during special short operation of plant. For this operation only the valves have to brought in to backwash position and the backwash water will be released via sludge lines. The filters are dimensioned for 2\*5m<sup>3</sup>/h & other size are available upon request.