

WATERPURE-DAF

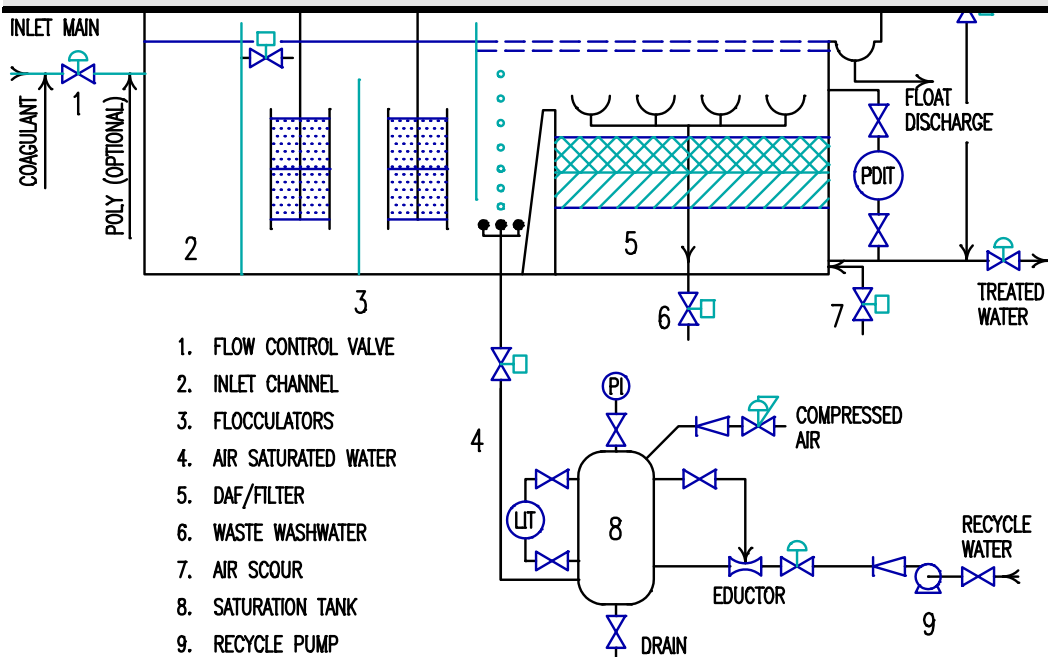
Water Treatment Plants

Economic Water Supply for Medium to Larger Communities

The Aquatec-Maxcon **WaterPure-DAF** (DAF being dissolved air flotation) offers an efficient and economic solution for treatment of low to moderately turbid raw

water to Australian and WHO potable water standards. The process is ideally suited for source waters with algae content which would otherwise be difficult to settle.

The WaterPure-DAF Offers Dramatically Reduced Site Area Requirements Over Conventional Systems



1. FLOW CONTROL VALVE
2. INLET CHANNEL
3. FLOCCULATORS
4. AIR SATURATED WATER
5. DAF/FILTER
6. WASTE WASHWATER
7. AIR SCOUR
8. SATURATION TANK
9. RECYCLE PUMP

Design Advantages

- The **WaterPure-DAF's** compact design locates the DAF treatment zone above the media filter bed with a typical minimum DAF design rise rate of 10m/h
- **WaterPure-DAF** plants are available in modular form, either in steel tank construction or installed in parallel concrete structures
- The construction of the **WaterPure-DAF** affords ease of site installation and minimum overall completion time to achieve reliable potable water output
- **WaterPure-DAF** is provided with dual media or multi-media filter beds to provide necessary floc storage volume and economic filter run time
- The DAF float removal and media filter backwashing processes can be manually operated or fully automated
- The **WaterPure-DAF** line can be made to be transportable by way of truck or rail
- Media filtration ensures the physical removal of protozoan cysts such as **Giardia** and **Cryptosporidium**, (species which cause gastrointestinal disorders) which are unaffected by conventional use of chlorine only

- A variety of disinfection systems are offered, including chlorine, hypochlorite, ozone or UV. Ozone and UV are superior viral disinfectants but require a supplementary disinfectant to give a residual such as chloramines
- Optional unit operations to remove special contaminants can easily be added to the **WaterPure-DAF** line of water treatment plants

A Majority of the Chemical Floc and Algae is Separated from the Raw Water Prior to Filtration Using DAF

Design Features

- Pretreatment chemicals such as coagulants and flocculants are injected upstream of the plant inlet and rapidly mixed with the raw water
- The chemically dosed water enters the flocculation chamber, where floc establishment and growth is promoted by gentle paddle mixing.
- Flocculated water passes under a partition baffle where recycled water from the DAF, saturated with air under pressure, is reduced in pressure and injected into the flocculated water's flow path
- The pressure reduction induces effervescence or the formation of 20 to 50 µm dia air bubbles from the DAF recycle. These bubbles affiliate with floc and algae particles, causing same to rise to the liquid surface as 'float'
- The DAF recycle (5 to 15% of inlet flow) is derived from a clear water source. Air is dissolved into this water under pressure in the saturation tank

The manufacturer reserves the right to alter performance, specification or design without notice.

- Float is accumulated at the liquid surface, until which time the activation of the float removal cycle (where the operating liquid level is raised) causes the float to be discharged over a weir into a collection channel
- Water sprays at the edge of the flotation cell assist in breaking the float layer away from the walls during the float removal cycle
- The water from the flotation zone then passes through a conventional gravity media filter for final polishing, followed by water collection and reticulation to storage
- Before final use, the treated water should be subjected to disinfection to destroy pathogenic bacteria, viruses and protozoan cysts

Options

Air Scour and Water Backwash Ensure Efficient Operation of the Media Filter Bed

- Automatic operation
- Multi-media filtration
- Pre ozonation module
- Granular activated carbon for colour and specific organic removal
- Polymer/pH correction dosing equipment
- Raw water delivery pump
- Laboratory equipment
- Variety of disinfection scenarios
- Wastewater and sludge handling and supernatant return

Applications

- Raw waters from bores, rivers, lakes, dams, and other fresh water sources with low turbidity and low to moderate colour



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