Arieli-AG Ltd

Water Division

Treatment & Irrigation

Your Partner In Development

Arieli-AG Ltd Introduction

•Arieli-AG Ltd is involved in Water Treatment & Agriculture Project Development.

•Our vision is to introduce and develop sustainable economic & Ecological methods and practices suitable for the designated location environment.

•Our offering includes the design and build of turnkey projects, we bring the technical knowledge and experience of our team alongside the knowledge of our network of suppliers and research institute experience to the benefit of the end-users.

•We introduce moderns and Precise water treatment & agriculture methods maximizing the benefits and mitigating the threats.

•In any given project we consider ourselves as partners in development committed to the successful execution

Our Scope Of Service
E.P.C (Engineer Procure Construct)

- Water :
- Treatment - industry , agriculture , potable , waste , recycling , aquaculture.
- Irrigation .
- Green energy pumping station .
- Underground water detection ,mapping & extraction.
- Infrastructure and storage.

•Agriculture Project Development.

•Crop Protection & Nutrigation.

•Greenhouse ,Shade net & Hydroponic

•Processing Plants.

•Research Cooperation and development of advanced precise water & agricultural methods .

Water *is life and life is water*

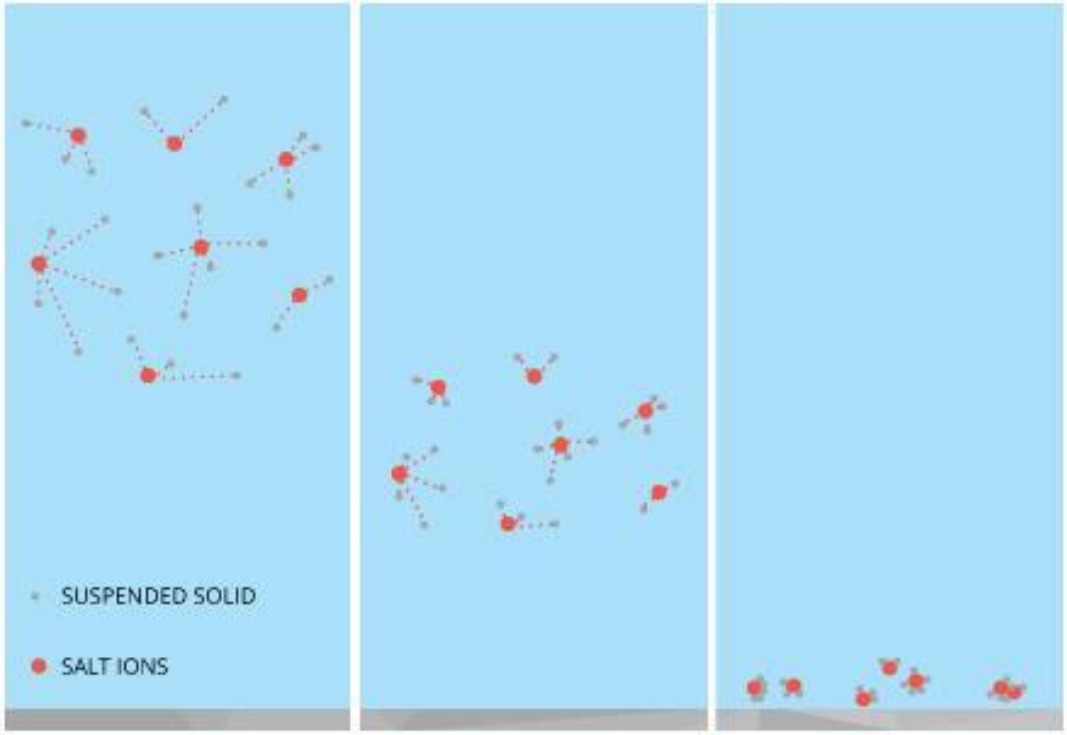
•Everything about water is a topical issue and of immense importance in our life. the existence of advanced technologies allows for faster detection of pollutants. Public health regulations exist for the purpose of determining the quality of water, in accordance with international standards. These regulations are binding on all water suppliers in the country.

•The desire to improve the quality of drinking water is at the heart of modern water treatment technologies. Water treatment engineers providing advanced water and wastewater treatment solutions which enables customers to choose from a wide range of available tools. Some of these are water filtration, adsorption, softening, disinfection, carbon filters and ventilation devices.

Pure Water settings and Water treatment

•Water is a chemical compound of two elements: oxygen and hydrogen. The water molecule consists of two atoms of hydrogen attached to one oxygen atom, each compound has unique chemical and physical properties. Natural water can be defined as a mixture of pure water and other substances that vary from one water source to another. Pollutants in water are classified into several main groups

- Floating solids
- Dissolved solids
- Dissolved gases
- Bacteria and other microorganisms
- Radioactive materials



water treatment activity expertise.

•Water treatment activity covers the following areas :

- Chemical
- Biological
- Electro & Mechanical
- Thermal

•our solution always integrate the elements allowing for the optimal solution .

•Our team cover all the above areas and with strong cooperation with research institutes tailor the OPTIMAL solutions .

Floating Solids In Water

Description

- These are substances that are floating in water and can be removed by filtration and/or sedimentation.
- Substances in solution can be refined to remove them.
- The main source of suspended solids in water is soil. Large amounts of soil are found in rivers and lakes because of vegetation and atmospheric dust settling in open water bodies.
- Under Ground water is usually clearer because of natural soil filtration.

Treatment

- These are relatively simple and inexpensive mechanical operations compared to chemical and other physical processes such as ion exchange, membrane process.
- Each solution is been tailored to the meet end users needs .
- Additional option is to inject nano bubals creating floatation of the soiled and cleaning the water

Dissolved Solids In Water

Description

- Dissolved salts form the bulk of solids in water. They are important in physiological processes in plants and animals but in almost all industrial uses of water, they are undesirable. Salts consist of two main parts:

1. A cation, a molecule with a positive electric charge
2. An anion, the part that contains the non-metallic elements of the salt and carries a negative electrical charge.

- A salt solution differs from a normal solution based on the proportions of these two particles. Dissolved solids in water are classified as salts or acids based on these proportions.
- **Main Cations**
- Sodium, potassium, calcium, magnesium, iron
- **Main Anions**
- Chloride, sulfate, bicarbonate, carbonate, nitrate

Treatment

- Many water treatments are available, including flocculation, filtration, biological treatment, reverse osmosis (RO), desalination, and aeration.

Dissolved Gases in Water

Description

- Similar to salts, gases also dissolve in water on contact. The contact between water and gas is created through the passage of water in different channels.
- The presence of plant and animal matter would cause decay and fermentation which releases gases that dissolve in the water.
- Rivers and streams that pass through different soil layers undergo chemical processes that dissolves gases into the water. **Carbon dioxide, hydrogen sulfide and ammonia are gases found in water** that are measured by chemical and physical tests.
- The results of these tests are summarized in a general water analysis from samples extracted from various water sources. the different components in the chemical composition of the water sample.
- The microbial quality of the water due to differences in the source of water causes pollution in drinking water.

Treatment

- Treatment of water to remove these pollutants is done by addition of chlorine, mechanical filtration and flocculation agents
- Carbon filtration
- Uzon and nano filtration

Bacteria and other microorganisms

Description

- Bacteria are everywhere in our environment, including Minnesota's surface waters and groundwater. Some of these bacteria can be harmful to human health. Drinking water with disease-causing bacteria, viruses, or parasites (collectively called pathogens) can make you sick. It is not practical to test drinking water for every type of pathogen, but it is simple to test drinking water for coliform bacteria. The presence of coliform bacteria can indicate there may be harmful pathogens in the water.
- In recycled irrigation water the threats of bacteria and other dresses needs to be address in order not to transmit them and destroy the crop

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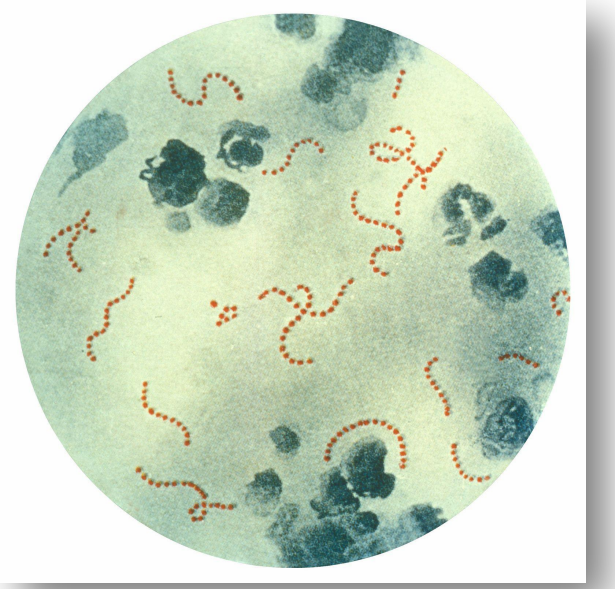


Advanced Water treatment Technologies

•Studies and experiments conducted around the world suggests that the most effective way to remove suspended particles in turbid water is sedimentation, filtration, catalytic oxidation, electro chlorination.

•We offer a wide range of water treatment facilities such as granular filtration, advanced ultra-filtration, to ensure optimal quality of water for each application.

•Additional technologies for water treatment are adsorption of pollutants on passage through an activated carbon filter to remove flavor and odor in water supplied from local stock.

•Removal of heavy metal in metal coating baths. Sulphide removal through catalytic oxidation facilities that combine oxygen dosing and ultraviolet light treatment.

•Chemicals to feed hyper steam boilers, smoke and water pipes for high and low working pressure, water treatment in cooling towers, water recycling, iron and manganese removal and saline purification.

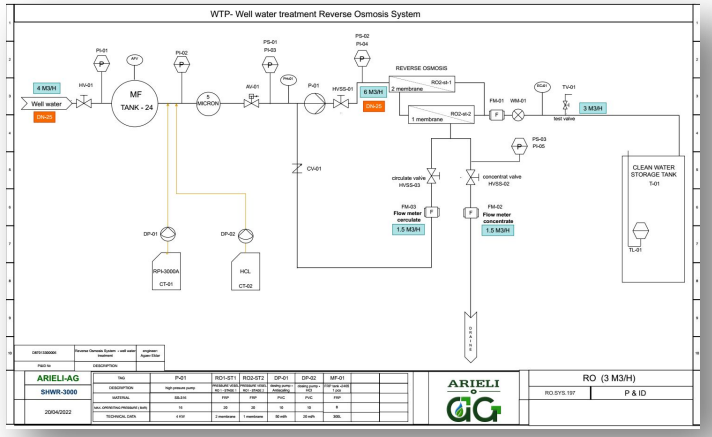
•Our engineering also uses new and environmentally friendly water treatment technologies such as water disinfection with ozone & nano oxygen injection and ultraviolet technologies.

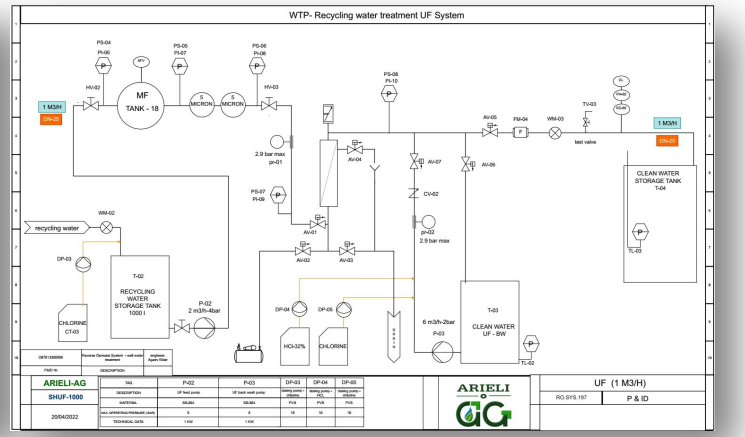
Saving of irrigation water and fertilizers

- Water availability and quality fast becoming the biggest problem to modern comical agriculture .
- Fertilisers are the highest cost element contributor to most of the commercial export crops
- Fertilizers are the highest contributor to the carbon omission in the production process
- Saving water and fertilizer is urgent necessity .

- ARIELI-AG team is leading in recycling technologies and management system Maximizing Fertilizer Saving (M.F.S)

- We are stating pilot project for one of the largest exporter of tomato ex Morocco recycling of irrigation water and treating high salinity levels .
- Our target is to save over 35% of the water and fertilizer usage





Tomato greenhouse in Dakhla
Saving 35% of water and fertilizer use

Ultra Filtration for treatment of recycled irrigation water

RO system to treat underground water

ARIELI-AG's partners in Development

Netafim

ICL

METABOLIC INSIGHTS

Volcani Institute, ARO, Israel / Cocoa Cure Center, Israel.

FOB Engineering Ghana Ltd

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