KRIA Water Purifier

The **EcoUSA Industrial Water Purifier** – addressing biological aspects and engineering staff support.

The KRIA Ionizer is designed to eliminate all organic pollutants in a body of water by injection of negative ionization. It effectively breaks up pollutants at the molecular level. Organic pollutants (hydrocarbons, ammonia, nitrates, nitrites, phosphates, and oil dispersants) are statistically eliminated. Elimination of pollutants by itself will increase dissolved oxygen (DO) readings.

Additionally, the ionizer injects oxygen into the water which improves the cleaning aspects of the system. A standard model will raise DO in the immediate area to as high as 25 parts-per-million (PPM) and in the area of 18-20 PPM at a distance of a quarter mile. DO readings around 7 PPM are considered the benchmark. High levels of DO allow aerobic bacteria in the sand to thrive, enabling it to deal with any organic or inorganic pollutants.

In testing at Orange Beach, AL (April, 2011) the sand was colored brown with oil. After several weeks of operation, the sand was once again white, as the oil was broken up and aerobic bacteria returned to life and was able to resume its work. Fish returned within 24 hours and this included killifish all the way up to dolphins.

The ionizer is designed to bolster marine ecology by getting rid of the elements that inhibit a healthy water-body and not further degrade it by the introduction of chemicals. This technology will encourage the growth of appropriate life within the waterway. If you have endangered species, this will be a great boost for them. In Orange Beach, we actually had sea squirts growing in the intake and outflow tubes. Sea squirts had been absent for many months prior to the ionizer's introduction.

The ionizer is designed to be an off-the-shelf technology for ease of installation, but can be modified to fit a specific location. An example is our Orange Beach installation where we installed bigger air filters and increased the oxygen feed into the water. We can also increase the size of the unit to a capacity of 1,000,000 gallons per day. Also, please consider that ionization lasts for about a week. The standard unit reaches a depth of about 100 meters. If the waterbody is 1000 feet wide, then DO on the opposing side should reach 18-20 PPM. It is our expectation that DO levels can be maintained to a distance of a half mile in either direction from an ionizer. These calculations are based on our experience in Orange Beach. That bay has a total water turnover of 7 days and had a continuous inflow of oil and Corexit. We were able to reduce hydrocarbon readings to zero as measured by ACT Labs of Mobile,AL (www.ecousa.us/Equipment).

EcoUSA is an importer of Japanese technology. The technology is focused toward environmental compliance and waterfront improvement markets. Our parent company in Tokyo is S-Mach Engineering and has customers such as Honda, Toyota, Tokyo Electric, and a number of railroads. Projects include the coating of the Tokyo Rainbow Bridge (800 meters), expansion of their fuel emulsification project in Russia, and the building of oil sludge treatment plants in Indonesia and Southern Sudan.

Mike Mangham
EcoUSA, Inc.
720-352-4749

EcoUSA
Bluewater Technologies

EcoUSA
Bluewater Technologies

KRIA Water Purifier - Performance

Quantity of negative ion:
1,960 per 1c.c. of water before operating the system

Quantity of negative ion:
1,145,000 per 1c.c. of water during operating the system

Dissolved Oxygen Concentration (DOC) of the groundwater is 5.0% before operation of the system

Dissolved Oxygen Concentration (DOC) of the groundwater is 12.8% during operation of the system