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## **The Aquacleaner Diver Assisted Suction Dredge**



**Aquacleaner Diver Dredge:** – Aquacleaner Environmental has created a diverse, multi-functional sediment removal machine: the “Diver-Dredge” - The Ultimate Waterfront Restoration machine that is capable of efficiently working through the types of material that is usually found along a shoreline perimeter of lakes and ponds. Aquatic plants, leaves, sticks, and assorted debris are always mixed with the sediment and will bog down most types of dredging systems because the consistency is such that pumps and intakes are continuously getting clogged. Our dredge is the most versatile pumping system manufactured today and can be used with 2 divers each holding (4”) nozzles, or the intakes can be mounted to a pole, either way you are creating a slurry mixture over 30% solids. It can also be operated on the surface with the use of a modular head mounted on a small 6’ x 8’ barge that is tethered by cables and runs across a work zone.

**Introduction:** A.E.is the leader in spot/suction dredging technology with over 12 years of experience manufacturing and performing service work with our unique form of dredging equipment and the methodology for its use. We pump thousands of yards a season and offer you a variety of choices in size, configuration and options of our machines that will work best for your individual needs as well as a comprehensive training program that teaches you the “art of dredging” to maximize your productivity. Suction Dredging offers a true form of remediation of your waterfront problems by removing the “AOS” (accumulated organic sediment) with low/short term disruption both in the water and on land.

**Science & Dynamics:** Dredging is no longer a nasty eight letter word but rather the natural progression in the remediation of your water way because you are removing the biomass and nutrients that have accumulated over the years in an environmentally sound manner. Firming up the bottom and removing the layers of fragments of invasive plants along with the organic silt has been shown to reduce the growth of invasive plants and prevent algae blooms. Our machines are designed to only extract the soft organic material and not change the natural hardpan contours of your bottom. Natural bottoms can be deepened as well depending on their consistency.

**How It Works:** The traditional method for removing soil entailed having a large construction excavator operate either from your dock or out on a barge. This process is imprecise and not very effective.

Scooping large volumes of soil from a water way is intrusive, disrupting the ecosystem in the water and up-land nor does it afford a close tight cleaning. Pumps are the preferred method of dredging but the norm in the industry is very large, aggressive machines, which move huge amounts of water (1500gpm and up) and lower slurry mixtures along with sediment and is very hard to manage in a small-contained area like the backyard of your lakefront property.

Suction Dredging operates by sucking up silt and water together (slurry) and pumping it to a desired location. The most cost effective method involves pumping the material into a field and letting the water and sediment dissipate and be absorbed into the ground. Our second option is to pump the silt and water into a dewatering bag that sits on your property. Because we pump a low volume of water, and a high concentration of solids, we are able to contain, separate and manage the spoils and return water with ease. Return water filters out with good clarity but then passes through a permeation berm where it's filtered to an even cleaner level and allowed to return to the source. The remaining water slowly leaches out and over a short period of time, the silt contained in the bag will harden and can then be removed.

### **STATS AND FACTS ABOUT THE AQUACLEANERS**

**Operating the Nozzle** – Over our years of experience we believe that the most efficient way of pumping sediment in debris filled areas is by operating a nozzle in the water, this way you can work through the material and manage your slurry. This barely disturbs the lakes bottom but it is an effective methodology that allows us to remove at least 15cyds and as much as 30cyds per hour, while creating a minimal turbidity cloud. When dredging areas that are in water over 6', you can use the Hookah air system that is part of your work barge and supplies air to the diver so that they can operate the nozzle with ease.

#### **Components:**

**Dredge Pump** – The strength of our dredging system starts with our unique pump that weighs over 350lbs. With its 4" input and discharge ports it can pass spheres larger than 3" and discharge distances over 1500' (with minimal grade). It's so powerful that it needs to have a "V" pipe installed that allows the intake to be split into 2-4" Nozzles for maximum productivity and slurry mixture.

**Engine** – Our pump's standard configuration comes with a 60Hp Deutz Diesel Engine with full support gauges, NACD PTO, which is connected to the pump through a series of belts and pulleys. The entire system is mounted on a steel frame that allows it to be placed on a low profile trailer or directly onto our custom 24' (4) section Marlex Plastic pontoon boat with 5000lbs of buoyancy.

**Trailer Configuration** – When used on a trailer at the lake or ponds edge you will need to use our secondary work barge which includes a Primer Pump (23hp Engine powering our high Pressure Water Pump) with a commercial grade surface air compressor, injection tube and "Y" Pipe.

**Options** – We offer a variety of options that can aid in the use and add productivity to your daily dredging operations, and will be happy to custom build your accessories based on a better understanding of your individual project requirements and goals.

**Surface Operation** – We can configure your machine with a large capacity dredge head with water agitation built on a small 8'x12' barge that can be tethered and maneuvered with the use of winches.

**Larger Engine** – For those that may need additional discharge capacity we can increase our engine size.

**Larger Pump** – We offer this same set up with a 6" pump for those that require greater capacity.

**Refuge barge**- Available in several sizes and gives you a place to store the assorted debris you will encounter.

**Turbidity curtain**- Contains turbid water & potential fragments while being compliant with states requirements

**Training** – A.E. offers a comprehensive training program with delivery of your machine as well as options for long-term use. We will assist in all aspects of your program including manpower, supplies, and insurance