



MAKING WAVES IN WATER TECHNOLOGY.



**AERATION FOR OILFIELD
PIT MAINTENANCE**



Aeration is a common practice when it comes to oilfield pit maintenance. Aeration techniques are often used by operators to reduce evaporation, preserve the water quality, and help facilitate mixing in pits. Oilfield waters are often susceptible to the worst kind of bacteria blooms. Aeration combats these problems by dissolving a trickle of low-cost oxygen into the water at the bottom of the pit. Dissolved oxygen controls the anaerobic bacteria that excrete H_2S and is helpful in preventing other problems.

THE AERATION PROCESS

With an easy installation process, only requiring half a day's work, a small coffee-maker-sized air compressor is positioned on the berm of the pit. The compressor pushes air down to an array of porous diffusers along the bottom of the pit. The bubbles rise; dissolving their oxygen into the water. This rising movement creates momentum which carries a column of water up from the bottom. This creates a "roll" of water from top to bottom above each diffuser, mixing the pit.

AERATION BENEFITS

IT LOWERS THE SURFACE TEMPERATURE OF THE WATER

The surface temperature controls the evaporation rate of the entire pit. The top quarter inch of the pit consists of the hottest water. By drawing that surface layer down to the depths with this induced "rolling" of water, the surface temperature of the pit is lowered.

IN WINTER OPERATIONS, MOVING WATER RESISTS FREEZING

Select first brought aeration on board to serve as freeze mitigation in our colder operating regions.

MORE OXYGEN

The bottom layer of the water has the most problematic biological activity with the least amount of dissolved oxygen. By drawing that water up to the surface, it creates more opportunity for oxygen from the surface to dissolve into that water and adds even more dissolved oxygen into the water than the aerators alone provide.

FINALLY AND PERHAPS MOST IMPORTANT – MIXING

A stagnant pit, even with fresh water, will stratify. When feeding a frac from a stagnant pit, the drawn water can suddenly change composition in the middle of the job. The aerators mix the contents of the pit and break that stratification. This gives the water a nice, uniform composition. For some operators, this is the single most important advantage of the aeration – more important even than the quality of the water itself.

EQUIPMENT

The aerators accomplish these benefits with a total pit power draw that is less than what it takes to run a common household appliance. Simple 120 volts of power and a few amps will run the small coffee-maker-sized compressors while having the ability to run non-stop for years and are a great option when compared to high amperage mechanical pumps.

HIGHLY RELIABLE & COST-EFFECTIVE

There are many reasons aeration systems are rapidly being installed in pits all over the country today. Select Energy Services proudly serves some of the largest operators in the industry with this solution because we believe in utilizing highly reliable and cost-effective systems.

To learn more about aeration, oilfield pit management or Select's full line of water management services, contact your Select Account Representative or visit selectenergyservices.com/contact/