

Fully Automated Container Bag Geotextile Dewatering Systems for SBR Plants



The container bag system can be used for dewatering sludge from the wasting operation of a Sequencing Batch Reactor Waste Water Treatment Plant. These plants have an automated wasting cycle controlled by a SCADA system. This requires some additional controls and features when setting up the container bag process. A typical plant would require one or two roll offs fitted with the bags and drainage netting. The pictures show a two roll off bagging installation with a sludge feed standpipe that feeds two roll offs. The heat traced standpipes are fitted with chain operated valves to allow the operator to fill either the right hand or left hand roll off while isolating the other. The pads can include steel stop rails at the back to position the roll offs. The effluent that drains from the roll off is returned to the head works.

These roll offs are 22 feet long and the ideal concrete pad dimensions for these would be 12-14' wide X 30' inside the concrete effluent retention curbs. The roll off would be staged so the center of the roll off is under the fill tube. Typical standpipes would be 4" steel piping.



In a typical installation a fiberglass building can be installed on a concrete pad to house the polymer system and the flocculator equipment. Sludge from the SBR wasting pumps would be pumped over to this building to be treated with a polymer prior to pumping into the bags. This building is 8' wide by 10' long. This plant has a single bag system.



The flocculator is installed inside the chemical building. Sludge is pumped up thru the floor, thru the flocculator and then back out the floor and over to the sludge stand pipe and bag fill hose. In this case a flowmeter is installed on the inlet side of the flocculator.



The magnetic flow meter will record the current flow rate as well as totalize the flow that is going into the bag. The operator can record exactly how many gallons of sludge is wasted in a daily, weekly or monthly period. The polymer solution from the Polymer make down unit is pumped into the flocculator thru the check valve (upper left) from the Polymer mixer also located in the fiberglass chemical building.





This is the Blue River Technologies Series III Polymer mixing unit. It is mounted on a stainless steel tubular framework. The Peristaltic metering pump is a Blue White A2 series pump that can deliver up to 7 1/2 gallons per hour of neat polymer. The unit includes a water flow sensor and a polymer flow sensor that will put the unit into a fault condition if either of these two critical functions should fail. The control is plc based and has the capability to communicate with the plant SCADA system. The unit can be operated in either a manual or Automatic mode. When in the automatic mode the unit is turned on or off when the wasting process at the plant is initiated. When a wasting pump is turned on the SCADA system will turn on the polymer mixer. The water valve will open and water will flow thru the mixer, the polymer metering pump will turn on and neat polymer will be pumped into the water stream directly in front of the polymer hydro mixer. The water and polymer mixture will then flow over and into the flocculator to be mixed with the sludge. If for any reason water or polymer is not flowing properly the PLC control will put the unit into a fault condition. The plant control will then turn off the sludge pumps and the operator can be notified that the system needs attention. If a sensor should fail the control includes bypass switches to bypass either sensor. This unit is designed to be mounted on the wall of the chemical with a stainless steel shelf. It operates on 110VAC power and requires 15gpm water supply at 40-50psi.

A 30 Yard landfill roll off is used to hold the dewatered sludge. The container bag is installed inside the roll off and the fill hose secured to the container bag port. This installation utilizes a single roll off. Some installations may have two roll offs side by side and fed by a single standpipe with two drops. Chain operated valves are used to allow the operator to switch the bag filling from one roll off to the other.



When the roll off is filled the operator will have the roll off picked up and taken to the land fill. The full bag will be dumped out and the roll off returned. A new bag will be installed in the roll off and the process will be repeated.

