

Parking lot runoff + peat = unpolluted

Three companies are teaming in Aitkin to prove that stormwater polluting lakes, streams and waterways can be made safe through the power of peat.

American Peat Technology, KBI Industries, Largo, Fla., and Paulbeck's County Market are partnering to treat stormwater runoff from impervious surfaces to reduce the heavy metals and other pollutants getting into the environment. These companies have teamed to treat the stormwater run-off emanating from the Paulbeck's County Market parking lot adjacent to State Hwy. 169 south of Aitkin.

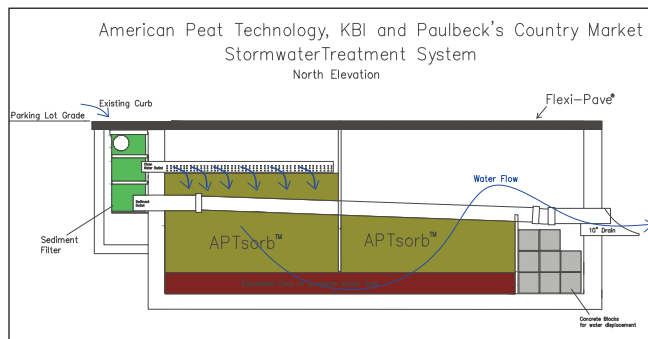
Since 1972's Federal Clean Water Act (CWA) was first instituted, there has been discussion and study, debate and compromise about how, when and where the CWA would and should be implemented in regard to stormwater.

Much of the problem has centered on the difficulty which the private sector and Environmental Protection Agency or EPA have had trying to figure out how best to treat America's growing stormwater problem. APT has developed an ion exchange media that can effectively remove heavy metals from stormwater efficiently and economically. APT has the resources and ability to mitigate the heavy metal pollution that plagues stormwater and threatens the environment.

This effort starts with American Peat Technology (APT) and its new ion exchange media APTsorbTM. APT teamed with the Natural Resources Research Institute (NRRI) at the University of Minnesota to harness the natural affinity reed sedge peat has to capture and hold heavy metals from water. For many decades, the attraction that peat has for heavy metals has been widely known. Early mining efforts worldwide already had discovered that contaminated mine water would enter a natural peat bog contaminated with heavy metals from the mining process and leave the bog clean and free from the heavy metal contamination on the



Site near Paulbecks where treatment will take place.



Plan for the treatment of stormwater.

other side.

Another company in this effort is KBI Industries, which is bringing to the table a water permeable paving material known as Flexi-Pave. Flexi-Pave is a water permeable pavement that is made from recycled tires with a patented binder that allows water to flow through at up to 150 gallons per minute. APT and KBI have been working on the concept of using APTsorbTM and Flexi-Pave to treat stormwater pollution for the past six months, and Paulbeck's is the first pilot demonstration to test the concept.

The real problem with harnessing the adsorption powers of peat lay in the properties of natural peat when it is removed from the bog. When natural peat is removed from the ground and mixed with water, it makes impermeable mud. Mud is not a good filter. Water does not flow through it evenly. Water tends to find the paths of least resistance and by-pass the peat all together. Dr. Igor Kolomitsyn, NRRI and APT teamed to develop a way to keep and enhance the peat's natural affinity

to attract and hold heavy metals in water by producing a hardened peat granule, with the ability to filter the water passing over its surface area. They brought APTsorbTM ion exchange media to the market.

APT has tested APTsorbTM on a number of different applications that required solutions to heavy metal pollution issues. Mine dewatering, active stormwater treatment and lab testing have all proven that APTsorbTM does remove a variety of heavy metals from water and binds them securely enough as to be labeled "non-leaching" according to all TCLP testing applied to it. APT and APTsorbTM are currently removing cadmium, chromium and zinc from stormwater at Diamond Chrome Plating, in Howell, Mich., and copper at the Soudan Mine in Tower. Both sites have achieved their permitting limits and the use of APTsorbTM has proved cost effective and easy to maintain.

APT and KBI recently approached Paulbeck's and one of its principle owners, Mike Paulbeck, with the idea that a pas-

sive stormwater treatment system using APTsorbTM would mitigate the elevated levels of copper APT found in the water running off the parking lot currently. The passive system will use gravity only to direct the water from the parking lot, through the APTsorbTM and into the existing stormwater holding pond to the east of the Paulbeck's parking lot.

The Paulbeck's parking lot was a natural choice for APT when looking at the Aitkin area for a site to test the passive system for treating stormwater. It is the largest and busiest parking lot in the city of Aitkin. APT tested the stormwater after several rain events and test showed the run-off contained elevated levels of copper and other contaminants. Doug Green and his team from APT sat down with Mike Paulbeck and explained the pilot project to him. Paulbeck agreed to the project and Green and his team put their plan together.

The plan starts with a system vessel that collects the stormwater from the Paulbeck's parking lot and funnels it over and under a series of baffles that put and keep the water in contact with the APTsorbTM media in the system. After the water has run through the system and remained in contact with the APTsorbTM throughout, the clean water is then, as before, allowed to drain into the already existing stormwater holding pond. There are no pumps or other mechanical measures to get the water through the system. With no moving parts or power required to make the system work, the only maintenance required is a yearly cleaning and replacing of the APTsorbTM media as needed.

APT will be paying the cost of installing and maintaining the system for the five year duration of the pilot project. During that time, APT will be collecting data, making adjustments to the system and monitoring its performance as it works to produce products that will provide ways to keep the environment clean.