



NUTRIENT REDUCTION SUMMARY

KBI Passive Treatment Technology

BACKGROUND

Excess nitrogen and phosphorus runoff from fertilizers, sewage, and industrial and agriculture operations can adversely affect plant and animal growth, as well as human development. Thus, nutrient pollution within major watersheds has become an increasing concern of government agencies, public utilities, and private industries. High levels of nutrients in surface waters stimulate nuisance growths of plants and algae in both streams and reservoirs. To some degree, every state in the nation faces problems associated with nutrient over-enrichment caused primarily by nitrogen and phosphorus in their waters. In many cases, those problems emanate from activities within a state, as well as activities in upstream states. Nitrogen in its nitrate form and Phosphorous in its ortho-phosphorous form are readily dissolved in water and move with the water where ever it goes, thus causing the greatest immediate impact on groundwater, aquifers and surface water quality.

The highest profile examples of nutrient impairment on the national level are the Gulf of Mexico and the Chesapeake Bay. In the Gulf, hypoxia (the Dead Zone) has negatively impacted aquatic life and, subsequently the livelihood of those communities relying on the natural resources of the Gulf. In the Chesapeake Bay, similar impacts on wildlife and the seafood industry have been felt.

Congress created the Clean Water Act to restore and maintain the integrity of our nation's waters. The EPA requires states to adopt total maximum daily load and in some cases numeric nutrient standards, as the basis for water quality improvement. Thus, many U.S. municipalities will need to achieve effluent nitrogen and phosphorus concentrations that challenge their current water treatment capabilities.

SOLUTION

K.B. Industries, Inc. (KBI) initiated a one year water quality study in Dunedin, FL. in 2010. The objective of the study was to determine the reduction impact on nitrate and ortho-phosphorus concentrations resulting from the percolation of water through KBI Flexi®-Pave. Passive Treatment Technologies (PTT), such as **KBI Flexi®-Pave**, provide a cost-effective solution for the removal of nutrients from storm water, while saving energy, to reduce nutrient pollution.

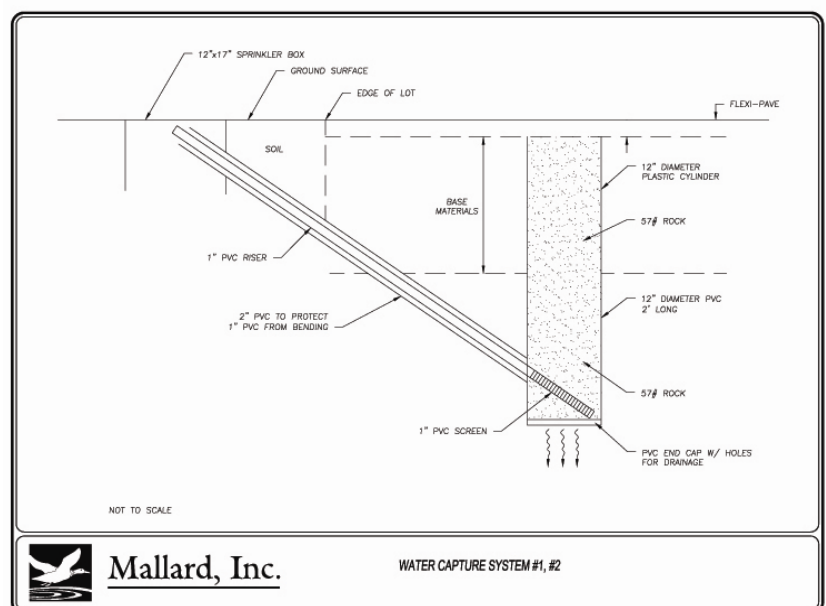
RESULTS

The study's setup, installation, testing and reporting was conducted by Mallard, Inc. a Civil Engineering and Environmental Firm.

These test results indicate the effect of each variation of the KBI Flexi®-Pave installation on nitrates and total phosphorous prior to reaching the groundwater. **A 83% reduction in nitrates and a 88% reduction in phosphorous** was observed for the standard installation of the KBI Flexi®-Pave

K. B. Industries is at the forefront in offering sustainable solutions and is the **ONLY** pervious paving solution that has been proven to significantly reduce soluble N and P.

For a detailed copy of the water study, contact KBI at 877-524-3539. www.kbius.com



Mallard, Inc.

WATER CAPTURE SYSTEM #1, #2

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