



Rainwater Collection Tank

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RETHINKING STORMWATER

Who would have thought that storm water could be a municipality's biggest asset besides its potable water system? Over the last decade, rethinking how we manage water has been essential in contributing to sustainable storm water management policies and solutions.

Pollution from storm events poses the largest threat to quality and quantity problems to public health, surface water, and the environment.

Sanitation infrastructures, in most urban areas, have not kept up with community growth and the commercial and industrial facilities they service. Water and wastewater projects have been shelved due to lack of funding and the economy. In these developed areas, impervious surfaces, pavement, and roofs prevent soil absorption which interferes with the natural hydrologic process of filtration and collection to our aquifers. Instead, storm water runs unimpeded into storm drains, sewer systems and drainage areas causing flooding, erosion, SSO's/CSO's, etc.

Ultimately, the municipality is responsible for discharges and effluent requirements per the storm water permit. Green building programs such as Leadership in Energy and Environmental Design (LEED™) and sustainable development programs such as LID have gained traction and established a blue print for storm water management. Both LEED and LID create frameworks for protecting streams and waterways from degradation caused by unmitigated storm water runoff.

How does this affect you? As part of the Environmental Protection Agency (EPA) Phase 1 Storm Requirements, all states, counties, cities, etc., are responsible for developing solutions to control pollutants from runoff from industrial facilities to municipal separate storm sewer system (MS4). This is also covered under the National Pollutant Discharge Elimination System (NPDES).

The problem is that the EPA and/or state agencies may not have the resources to adequately develop and implement programs, leaving the municipality in potential violation of the Clean Water Act. Even the most conservative and traditional design principles to meet storm water management requirements put a tremendous burden of operation and maintenance on the entities.

The introduction of “Green Technology” embraces the use of BMP’s in mitigating the negative impacts associated with urbanization.

This new approach has introduced dynamic storm water management tools that mimic the natural hydrology of a site without the dependence on structural practices. Tools such as riparian buffers, green roofs, bio filtration swales, retention/detention systems and rainwater harvesting address multiple objectives like water and energy conservation.



Highland Tank Stormwater Detention Tank

Many municipalities around the country face financial struggles. Investment in storm water infrastructure is necessary to protect residents property and possibly save lives in flood conditions.

Highland Tank can provide solutions in technology that infiltrate, evapotranspire, capture, and reuse stormwater to maintain or restore natural hydrologys.

In its simplest form, the concept of storm water management can be broken down into three areas of impact:

- Quantity Control (flooding)
- Quality Control (pollution)
- Stream Channel Protection (erosion)

Highland Tank understands the principles of flow reduction, treatment, storage and reuse as they relate to modern storm water management plans. The Highland Tank Solids Control Unit (HT-SCU) is designed to protect the downstream storage components for storm/rainwater management systems. The HT-SCU technology removes sediment and other contaminants from parking lots, roof decks and most hard surfaces. The HT-SCU is engineered for site specific removal applications to meet the water quality needs of the associated cistern storage system.

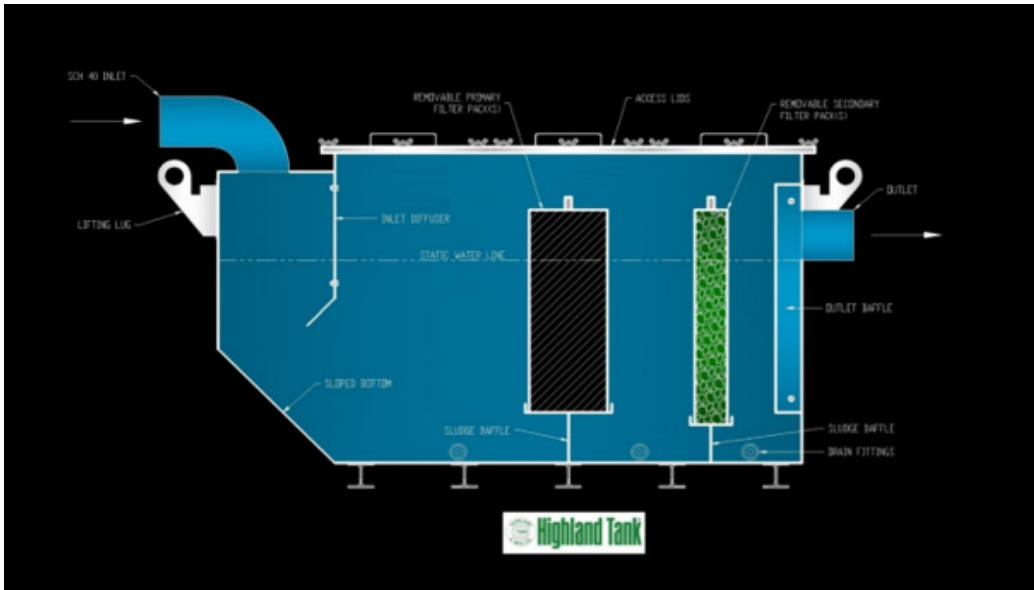


Figure 1 - HT-SCU

Key benefits of the HT-SCU are:

- 100% treatment, with no bypass function, during all types of rainfall events
- Treatment technology provides downstream protection and reduces maintenance costs
- Designed to remove a broad range of particles and organics
- Designed to remove a specific size particle when using both primary and secondary media
- Minimal elevation between inlet and outlet minimizing head loss to near 0 psi
- Above/Below grade and/or integral to storm water retention/detention systems (see Figure 1).

Highland Tank's stormwater detention/retention protected steel tanks provide onsite storage to avoid hydraulic overload of the storm/sewer infrastructure. These storm tanks play a critical role in maintaining the hydrology of the sewer system while reducing the potential for flooding and worse sanitary sewer overflows (SSO's).

Whether used to store and slowly release storm water to the sewer system (detention) or dispose of the storm event onsite (retention) through infiltration/recharge the tank provides a sustainable solution to storm water management.

Highland Tank's stormwater detention/retention tanks are constructed of high-strength carbon or stainless steel and protected with your choice of high-solids polyurethane, epoxy and other tough internal linings and external coatings.

One of the most dynamic stormwater management tools Highland Tank can offer is Rainwater Harvesting Systems. Harvest is a holistic, two-prong approach to quantity and quality control.

In operation, the stormwater is diverted from the sewer system through the use of underground cisterns coupled with prefabricated water treatment packages that recycle the storm water onsite.

Rainwater recycling systems (also known as rainwater harvesting systems, see photo) can reduce the demand on the city's water supply, as runoff is captured, stored, and repurposed to irrigate planted areas, gardens, or green roofs during periods of low rainfall. Rainwater can also be used in place of potable water for supplying water closets and urinals, cooling tower makeup, washing of sidewalks, streets, or buildings, and laundry systems.

Highland Tank's HighDRO®-Pure Rainwater Harvesting System is designed to collect, store, process, and treat rainwater from a storm event for future reuse. It helps reduce storm water runoff and provides an alternative to using municipal water supplies.



Rainwater Recycling System

With the "GREEN" movement, the use of retention/detention, SCU technology and rainwater harvesting has become more wide-spread to reduce the environmental impact of development and population growth, especially in municipalities with finite water resources.

LEED architects, engineers and builders have long recognized Highland Tank's protected steel water tanks for their strength, durability, and functionality. Our HighDRO®-Pure systems allow us to continue our commitment to protect the environment and conserve our precious natural resources to benefit our world today and tomorrow.

Call 814-893-5701 today or visit us at www.highlandtank.com for more information.

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