SOLENO

MASTERING WATER SUSTAINABLY



CASE STUDY: AUGUST 2024

THICKSON ROAD SOUTH (REGIONAL ROAD 26) RECONSTRUCTION FROM WENTWORTH STREET TO VICTORIA STREET EAST, IN WHITBY, ON

Cost-Effective OGS Solution

Effective stormwater management is crucial for reducing the environmental impacts of urban runoff. Oil and Grit Separator (OGS) systems play a key role in stormwater treatment by capturing pollutants such as hydrocarbons, sediments, and debris before they reach waterways. These systems are essential for maintaining water quality, complying with environmental regulations, and safeguarding aquatic ecosystems. With increasing urbanization and more frequent extreme weather events, the need for innovative and efficient OGS solutions has never been greater.

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THE CONTEXT

The Regional Municipality of Durham undertook the widening and reconstruction of Thickson Road South (Regional Road 26) from 500 meters south of Wentworth Street (Regional Road 60) to south of Victoria Street East (Regional Road 22) in Whitby, Ontario. The project included asphalt paving, a new multi-use path, storm sewer improvements including Oil-Grit Separators (OGS), and watermain construction.

To achieve the project's stormwater treatment objectives, two Aqua-Swirl OGS units were sized based on-site parameters and installed to improve water quality and pollutant removal efficiency.



1.OGS-1 (AS-4 BYP): Installed at Thickson Road and Wentworth Street intersection, this unit is designed to capture and retain sediment and oil efficiently, offering a sediment storage capacity that meets with the site's requirements. It achieves an annual Total Suspended Solids (TSS) removal efficiency of over 80%.



2. OGS-2 (AS-2 BYP): Installed at Thickson Road and Tricont Avenue, this unit provides the necessary sediment and oil storage capacities as required by site specifications, providing a TSS removal efficiency exceeding 80%, ensuring dependable and effective stormwater treatment.

THE SOLUTION

Soleno was chosen as the ideal partner to address the stormwater management challenges of the Thickson Road South Reconstruction project, thanks to its expertise in sustainable water solutions and its ability to deliver high-performance, cost-effective products tailored to the project's specific needs.

To meet the project's requirements, **Aqua-Swirl Concentrators** were selected for their proven performance and reliability. These units utilize advanced vortex separation technology to efficiently remove coarse sediment, floatable debris, and free oil from stormwater runoff.

Their lightweight HDPE construction, combined with customizable inlet and outlet connections, enabled seamless integration with the existing piping system and facilitated a quick, easy and efficient installation process.

THE BENEFITS

The Aqua-Swirl system delivered several key advantages for the Thickson Road South Reconstruction project, making it an optimal choice for stormwater management.

Its lightweight HDPE construction eliminated the need for heavy lifting equipment, significantly reducing installation costs compared to traditional concrete systems. The modular design, featuring customizable inlet and outlet configurations, allowed for seamless adaptation to site-specific requirements.

To accommodate peak storm events, the system's external bypass configurations ensured compliance with water quality flow rate requirements. Furthermore, the advanced vortex separation technology—validated by third-party organizations such as NJCAT and WADOE—provided highly effective removal of total suspended solids (TSS), sediment, and oil, ensuring adherence to regulatory standards.

The Aqua-Swirl system's large sediment and oil storage capacities minimized maintenance frequency and costs, while surface-accessible components simplified routine inspections and cleanings. This combination of durability, cost-effectiveness, and reliable performance positioned the system as a sustainable long-term solution.

The successful installation of the AS-4 BYP and AS-2 BYP units in the Thickson Road South Reconstruction project effectively met the objectives for sediment and oil storage, TSS removal, and regulatory compliance. With its efficient design and long-lasting benefits, the Aqua-Swirl system will continue to support environmental and community well-being for years to come, showcasing the value of innovative hydrodynamic separation technology in modern infrastructure projects.



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OGS-2 (AS-2 BYP):











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OGS-1 (AS-4 BYP):







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