Westfalia
Where Innovation Meets Reliability ™

Case Study:
PREMIUM WATERS, INC.
Douglas, GA

Premium Waters, Inc. of Minneapolis, MN, a leader in the private label bottled water industry, has installed an Automated Storage and Retrieval System (AS/RS) and *Savanna*.NET® Warehouse Management System (WMS) from Westfalia Technologies, Inc. at their Douglas, Georgia plant. They chose Westfalia's AS/RS for its technological efficiency and cost benefits, after initially considering a pallet flow system.

Premium Waters is solely owned by the Chesterman Company who has been in the bottling business for over 130 years. They bottle water for commercial, residential and retail clients in multiple sizes ranging from single servings to five gallon bottles. The company is known for bottling public brands, including Chippewa Spring and Premium Kandiyhoi, plus private labels for store and custom label bottled water.

Westfalia designed this high density AS/RS to meet Premium Waters high throughput rates and to provide the most efficient storage configuration. At the new Douglas, GA facility the automated system conveys products from palletizing, through the high density storage area, to outbound staging lanes on the shipping dock.

To meet the demand for high throughput, the AS/RS includes two Storage/Retrieval Machines (S/RMs) operating in one aisle, each capable of handling two pallets at a time. As an industry leader, this ability to place multiple

- AS/RS
- *Savanna*.NET® WMS

The Challenge:
Meeting Increasing Demand & Throughput

cranes in an aisle is a key advantage of Westfalia's flexible high density warehouse designs. Westfalia's patented Satellite® rack entry vehicle, quickly and smoothly stores and retrieves pallets from the racks. The four-level rack system holds over 6,500 pallet positions in 10 pallet deep storage lanes.

To handle the peak production and order selection times, Air Chain Accumulation Conveyors are at both the infeed and discharge of the AS/RS. These long lanes of low energy use conveyors provide a buffer for smoothing peak operations, and cut the average S/RM travel distance, especially when compared to end of aisle infeed systems.

Pallets of bottled water are sent from production either into the AS/RS or

directly to the shipping dock via Westfalia's unique Drawbridge Conveyor, which was designed specifically for this project. The Drawbridge Conveyor either lays across the crane aisle for pallets to travel directly to the shipping dock, or it lifts straight up for the S/RM to move through the aisle. The lifting operation takes only seconds.

Once pallets are stretch-wrapped and labelled, they enter the automated system. Each pallet is conveyed to a squaring station, where it is centered on the conveyor, profile checked, and scanned for identification. If a pallet load is outside the predefined load envelope or can't be scanned, the pallet will be rejected. Rejected pallets will require forklift removal and correction prior to being placed by forklift on the manual input station.

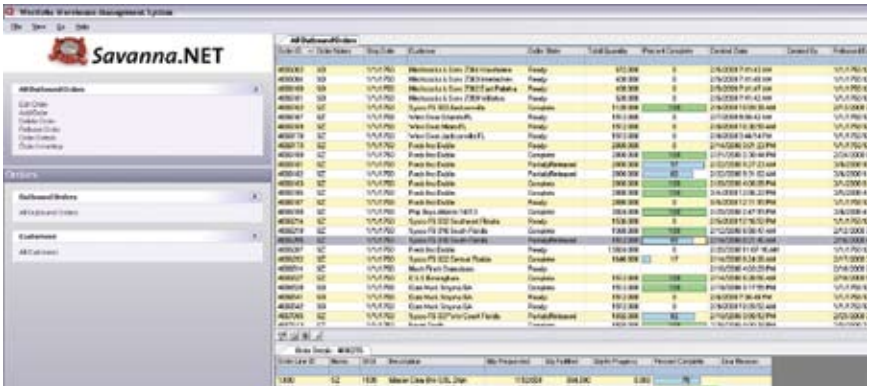
Pallets that pass the profile check and scanning station are conveyed to the infeed of either S/RM 1 or S/RM 2, and are placed in the storage rack as directed by Westfalia's *Savanna*.NET® Warehouse Management System. When selected for shipping, *Savanna*.

The Solution:
High Density AS/RS and *Savanna*.NET® WMS

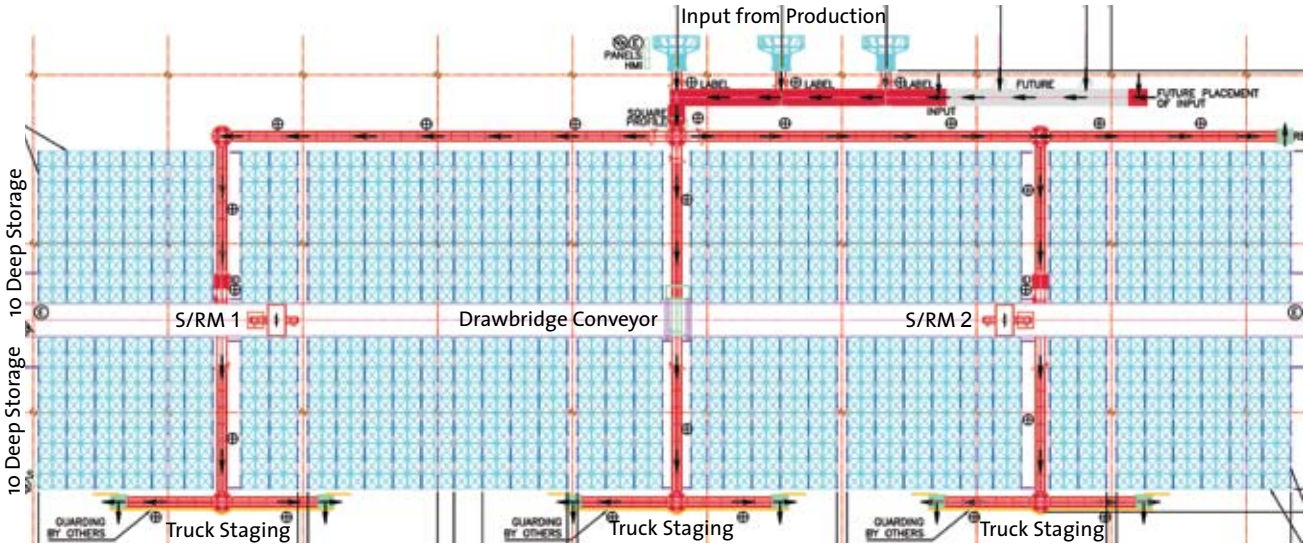
NET directs the movement of the pallet out of the racks via the Satellite and S/RM, and onto discharge Air Chain Accumulation Conveyors. The pallets discharge position is such that fork lift trucks may pick them up by either the 48" or 40" pallet face, as they wish. Westfalia's *Savanna*.NET accurately tracks the inventory and FIFO product shipments.

System Features	
Size	394' long, 100' wide, 26' high
Capacity	■ 6,500 pallet storage positions ■ 4 levels - 10 deep lane storage
Technology	■ 2 Storage/Retrieval Machines in one aisle ■ 2 pallets at a time on each S/RM ■ Conveyor System: Air Chain Accumulation Conveyors at both infeed and outfeed of system, plus Drawbridge Conveyor to cross crane aisle
WMS	*Savanna*.NET® with Order Picking Module

Premium Waters selected *Savanna*.NET's basic functions including the management of all SKUs, pallets and storage lanes in the system, as well as the Warehouse Control System component which controls all the automation devices. Also included in the basic functions is the user management grouping and the scheduling of periodic tasks, such as re-warehousing pallets, pick lane replenishment and data clean-up. Expansions to the basic *Savanna*.NET for Premium Waters include an extension to track and control outbound orders, even linking manual movements within the facility. This means all goods moved manually throughout the facility -- including via fork-lift trucks and pallet jacks -- are tracked in *Savanna*.NET.



Savanna.NET is a modular WMS software system, and can be adapted to existing or new systems. Its modular structure centers around a core of basic functions, which can be added onto as needed. The tabbed data grid view eliminates the need for complicated menus or layers, and is based on actual objects rather than actions, making the user interface experience much simpler and more rewarding. Reporting is another key feature of *Savanna*.NET's basic functions. Via Crystal Reports all log files for the actions initiated by the WMS are immediately available in various



managment reports. *Savanna*.NET was designed using Microsoft SQL Server 2000 and Version 2.0 of the Microsoft .NET Framework. It can be readily adapted to all ERP (Enterprise Resource Planning) and PLC (Programmable Logic Controller) systems so that all existing technology/hardware and hardware/software interfaces can be fully networked.

Very soon after installation, Premium Waters began reaping the benefits of the AS/RS. As Dave Bauereis, Plant Manager, explains, "Even though we have only been using the system for a few short months, we have already noticed a marked improvement in safety due to significantly fewer forklifts being used for warehousing. Also, with the push of a button we can obtain an updated accurate full inventory. The system also makes the use of FIFO automatic. It would be very difficult to go back to a manual warehousing system."

"With this AS/RS Premium Waters will experience 100% inventory accuracy, in addition to significant labor and energy savings. Pallets are automatically conveyed from production to storage, and from storage to the dock, so the only time humans touch the product is when pallets are loaded onto trucks," explains John Hinchey, Westfalia's Vice President of Sales.

Benefits

- **40% increase in storage density with a Multiple-Deep AS/RS**
- **30% reduction in energy costs, 30% due to efficiencies of AS/RS systems**
- **Go Green with High Density design protects the environment – taller building design utilizes less land, less environmental impact**
- **Efficient movement of all products within facility controlled and tracked by *Savanna*.NET® WMS = less waste and product loss**
- **Triple rail support of pallets throughout entire automation system ensures more reliable and safer pallet handling**
- **Increase in employee productivity and safety**
- **Handles current storage needs, and leaves more space to accommodate projected growth**

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