

**PICKLE COMPANY MODERNIZES & OPTIMIZES
INTERNAL WASTEWATER TREATMENT –
MT. OLIVE PICKLE COMPANY**



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Abstract

Mt. Olive Pickle Company (Mt. Olive) is a food processing facility that treats all of its own industrial wastewater. With the recently installed Hach Water Information Management Solution™ (Hach WIMS™), identifying data and correlating variables to improve the wastewater and production process has been greatly enhanced. Mt. Olive's Wastewater Group recently implemented Hach WIMS and now realizes an annual savings of more than 200 task hours to complete their Discharge Monitoring Report (DMR) and other internal and external reports. The advantages that Hach WIMS creates have spread across the company and Mt. Olive intends to further improve efficiencies and process management by continuing to correlate wastewater data with plant inputs, manufacturing operations and other performance factors.

Business Profile

Mt. Olive is a food processing company and has been in operation since 1926 in Mount Olive, North Carolina. The company is one of the best-selling pickle brands in the United States and ships more than 12 million cases per year. The company has more than 800,000 square feet of production and warehouse space covering 110 acres. The wastewater facility at Mt. Olive is rated for up to 0.4 MGD. Mt. Olive is required to capture all rainwater that falls onto its facility; therefore, they are permitted based on water usage instead of effluent flow.

Business Situation:

Mt. Olive packages pickles on two (2) shifts year round at its facility in North Carolina. During the summer season, the company packages predominantly fresh pack product. In the winter season, they package mostly fermented stock from their tank yard. An added challenge is that stock from different locations has different brine composites. All products generate a challenge as the wastewater stream contains large quantities of both organic acids and salt. When Mt. Olive incorporated more process automation technology (including robotics) and data sharing into its operations, the wastewater team sought a solution to help it optimize its processes, make better use of its data, minimize chlorides and pollutants, and be a good steward of the environment and surrounding communities.

Mt. Olive wanted to move away from paper-based data collection which was time consuming and error prone. The company was interested in tracking and creating their various wastewater reports more efficiently. The ultimate goal was to transition from traditional and time-consuming paper reporting to the new state eDMR process. In addition, it desired a way to easily share data internally and graphically represent trends in process information to identify potential problems much earlier.

Solution

After visiting with several Hach WIMS customers and confirming the product was able to deliver the benefits they required, Mt. Olive's executive team quickly pushed forward with an implementation. The solution needed to provide four (4) key features:

1. Enable state reports to be filed electronically
2. Provide better communication and data sharing
3. View data graphically
4. Enter data only once to increase accuracy

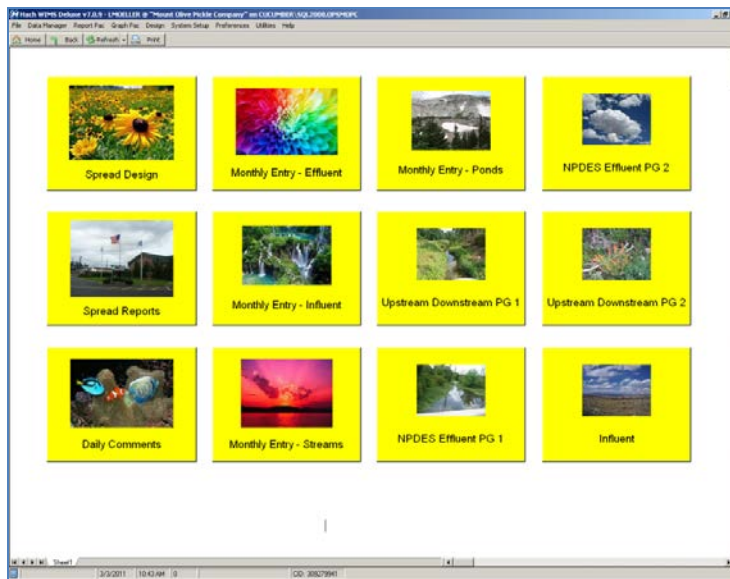


Benefits

New Ways to Look at Data

Since 1995, Mt. Olive has tracked all its wastewater metrics and data through a number of Excel spreadsheets. For Lisa Moeller, R&D Environmental Supervisor, each day's routine was centered on completing each sheet and archiving the report in folders containing monthly spreadsheets. The data was collected and stored, but not always analyzed as it was too time consuming and difficult. If anyone had a request for information, data was exported and sent in raw form. If they wanted a graph, Moeller would have to manually populate a spreadsheet with data to generate the graph. "I had a lot of different ways of gathering the information, but no easy way to present it," recounts Moeller.

Other areas of the plant were being updated with new technology and the Wastewater Group felt it



Quick access to data through dashboards provide data as needed

needed something more advanced as well. The Wastewater Group, along with key decision makers within the company, visited other facilities that were implementing Hach WIMS and decided that the cost of the solution, as well as the easy graphing and data communication capabilities, best suited their needs. "We haven't had Hach WIMS long, but I can already point to how it saves me time. The fact that I can input data unique to our applications is great. And, I can now quickly make comparisons that I otherwise might not have made because of the effort it would have required," explains Moeller.

Using Hach WIMS, Mt Olive can now track the production seasons and display annual trends. A goal at Mt. Olive is to make sure that chlorides are declining and stabilizing. While monitoring chloride levels, Mt. Olive noticed that long-term trends showed that in the last twelve (12) months the chloride levels have been leveling out and at times rising. The Hach WIMS graphs provided quick visualization and identification of the situation in time to make process changes. Key decision makers are able to easily monitor critical factors such as these from their personalized dashboards.

As all of the data is now archived in a centralized database, the operators have been able to make new comparisons and review wastewater in relation to production. For example, they can evaluate effluent chloride discharge for the last ten (10) years versus the volume of 32 oz. equivalent cases packed during that period of time, or any portion of that time period. This comparison allows the Operations Team to identify and track how production may affect wastewater composition in the plant making both the manufacturing plant and the wastewater plant more efficient.

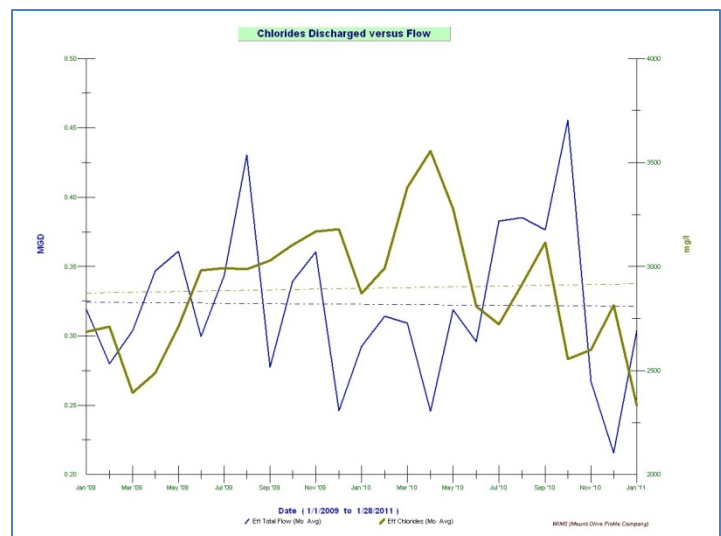
Maintain Compliance and Permitting

It was not uncommon for the Wastewater Group to spend four (4) to five (5) hours verifying all the data to complete the Discharge Monitoring Report (DMR). When they worked through it manually, the team would complete spreadsheets and then go through a rigorous verification process. Now that they have Hach WIMS, they spend only minutes generating and printing an error-free DMR report. But, it is not just the ease of creating reports that helps Moeller; she points to one of the greatest benefits: "I enter data into one place, one time, and Hach WIMS automatically generates several internal reports and even the state report."

Regulatory and business reports are easy

In addition, error checking is much easier. After reports are completed, Moeller can quickly graph the items and identify any outliers. If any items are obvious, she can move the cursor over the data point to identify the corresponding data. This allows a very quick quality check. Previously, outliers would simply throw off the average and require a time-intensive data review.

The pickling process requires a great amount of salt (NaCl), which does not decompose during the pickling process. The plant has been under a variance for chlorides and Mt. Olive is required to create annual chloride reports. These reports are time consuming and, in the past, involved many calculations and substantial time to record data. The online reports generated in Hach WIMS now look exactly like the sheets they previously completed manually, enabling a smooth transition from paper to the Hach WIMS forms. In addition, operators can quickly access other sheets if they want to log data relevant to other processes. The built-in calculations and math toolbox assure that the calculated data is correct. Tracking data changes is easy as comment fields allow further documentation and the audit trail capability shows who has interacted with the data.



Analysis using accurate data becomes fast and easy

Optimizing Process

The systems within the plant have been implemented, the assembly line is automated, and plant decision makers are now looking at the efficiencies they are realizing. Hach WIMS provides the capabilities to introduce specific information to help Mt. Olive make data-driven decisions about updates to its wastewater treatment capabilities.

The old monitoring process entailed walking through the forms, entering data from a number of points on and off the plant, and then putting the forms in a binder. At that point, the data simply was archived and not analyzed. As a result, the wastewater team was up to date, but none of the plant personnel or plant management was privy to the information.

Communicating Within the Organization

Mt. Olive's business is growing quickly and its staff is changing frequently. The core group responsible for chemistry and wastewater has significant experience in the industry and a long history at Mt. Olive. As retirees transition out of the company and new team members come on board, Hach WIMS ensures that the knowledge accumulated through years of work is not lost. The historical data offers a powerful view of the wastewater process that new operators and managers can use and study.

Additionally, there are new people being brought into supervisory capacities. Because of the information found in Hach WIMS, they can come up-to-speed very quickly. For example, they can provide an analysis of the impact each type of pickle has on the overall process and determine the true costs of production. Because they can track the chemicals in each cucumber shipment, they can determine whether the problem lies within the wastewater or the products.

The cost of the wastewater/sludge treatment constitutes less than two (2) percent of the organizational budget; while wastewater is important, it is not the most critical business factor. However, when something does go wrong, wastewater often is the first place the problems manifests. Recently, Mt. Olive experienced an undesirable odor coming off of its wastewater ponds. By drilling into the data with Hach WIMS, the wastewater and manufacturing team were able to rapidly study large volumes of data and formulate a plan of action to quickly remedy the situation.

"The Town Managers and City Council noticed the problem," Moeller recalls. "Hach WIMS helped us use graphs to explain to them what was wrong and show how we intended to solve the problem. Understandably, if you cannot do this, they start to have serious concerns about the sustainability of the business. This is huge for communicating with people who aren't knowledgeable about the industry. You can try to do it in words, but it is best communicated with pictures," explains Moeller.

"We make pickles and nobody wants to think about the wastewater involved in that process. You don't want there to be a problem, so you try to make the process efficient to prevent environmental, public, or regulatory concerns," Moeller noted.

Results

- Reduced task hours to generate DMR and other reports by more than 200 hours a year
- Provides effective and timely communication within the company and community



- Streamlines data entry
- Utilizes centralized database for ease in compiling, reporting, visualizing and analyzing data
- Enables electronic reporting



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