2021 ARCHROMA SUSTAINABILITY AWARDS
Application Form

3. Title of the application: (for ease of reference by the Jury and voters)

Martin Site Production Water Usage Savings

4. Award category
Please chose one of the following award categories. If you wish to apply for several categories, please complete one application form per category.

I/we apply for the following category (select only one per form, 2 forms maximum):

☐ Business Win
☐ Diversity & inclusion
☒ Environment
☐ Excellence
☐ Innovation
☐ Safety First
☐ Sustainable partnership

5. Elevator pitch

Three sustainability projects in Martin, SC were conducted to reduce time and water in the production facility. Overall, the projects resulted in a yearly water savings of 1,946,000 L (0.47% of the total Martin site influent water usage) and cost savings of $144,000 USD/yr.

6. Describe how your project and its impact help achieving the category-specific criteria
(Max. 1000 words)

Several production processess were evaluated to determine if there was potential for water usage savings. Three unique opportunities were identified that not only would save the plant water but also create a cost savings due to a shortening of occupation time in the process. The three projects are outlined in more detail in the following paragraphs.

One batch of Cartasol Yellow BGFN uses two DTSS diazo presscakes that are washed to a low sodium specification of <150ppm. This project was started to determine the amount of water needed to reach the required specification. The original batch process would use three large washes in which lab testing showed the presscakes were in specification after the second wash so the third wash did not remove any more sodium. Removing the third wash from each part saved production occupation time and a total of 960,000L of water a year.

A throughput improvement project was started to create additional capacity for Cartasol Brown M-2RN. Stabilty testing was completed on samples with different conductivity readings from the ultrafiltration steps. The original process called for a specification of <30mS/cm but stabilty results showed this specification could be changed to <50mS/cm. This lowered ultrafiltration time by four hours and results in 24,000L of water savings per batch (960,000L/year).

Finally, a production improvement project to determine the optimal salt content for Carta Orange WS conc. Long term stability studies showed that the current salt specification of <0.3% was unneccesarily low and a salt specification of <1.0% was sufficient. This resulted in a time and water savings during the ultrafiltration process (26,000L/year).

The three projects resulted in a total water savings per year of 1,946,000L which is 0.47% of the total Martin site influent water usage. The occupation time cost savings for the three projects totalled to $144,000 USD.

7. **Describe how your project supports "The Archroma Way to a Sustainable World: Safe, efficient, enhanced, it's our nature"** (Max. 1000 words)

In Martin, the reduction of water usage is the most difficult sustainability metric due to the design of the water system of the site. This makes it one of the more important metrics to try and reduce. Innovative solutions should come from all areas of the facility without compromising the quality products that we provide our customers. In production, we can limit water usage by reducing the amount that needs to be pulled from the ground. These three projects reduced the water amounts required to produce three high volume products at the Martin site while also reducing the production operators time and effort.

Reducing our impact on the surrounding community's water supply is an important way we can support a sustainable world. The Martin site is located in a very rural area in South Carolina, USA. Surrounding the site is a variety of agricultural and livestock farming along with several towns. In the US, 99% of rural populations get drinking water from groundwater, and 64% of all groundwater is used for irrigation. At the Martin site, all of the production water is also obtained from groundwater. If we can reduce the amount of water pulled from the ground, we can positively impact the community around us – every reduction is a positive change.

These production changes resulted in a yearly reduction in influent water usage of 0.47% and a yearly reduction in total water usage of 0.17%. Based on yearly production volumes this means that's 1,946,000L of water will not be required to be pulled from the local groundwater.

8. **Describe how your project demonstrates the company mindset "Everybody sells!" supported by our ACTS** (Max. 1000 words)

These three projects all provide some benefit for the production operators and for the sales teams in addition to the sustainability improvements. The three targeted improvements all relate to time consuming production processes for the production operators. By decreasing the presscake wash amounts for Yellow BGFN we have also decreased the wash time by 10-12 hours. This is less time spent using the equipment and less labor for the operators. For the ultrafiltration steps in Brown M-2RN and Orange WS conc, we are able to move on to the concentration steps quicker due to the adjustment of the specification on conductivity and salt. This saves the production operators and production equipment 4 hours on the desalting steps for each process. As the ultrafiltration steps are the restrictive steps for throughput these small changes also allow for a faster and more efficient process. All the changes that were made were able to make the process more efficient, quicker, and more sustainable without changing the quality of the finished good.

I declare to have read and accepted the privacy policy: https://www.archroma.com/archroma-sustainability-awards-policy

In case the submitted project belongs to a team, I declare that I have the authorization of all of them and that they have read and agreed with the privacy policy (attach to the submission!!!).