Discharge Analysis 2019

H&M Group

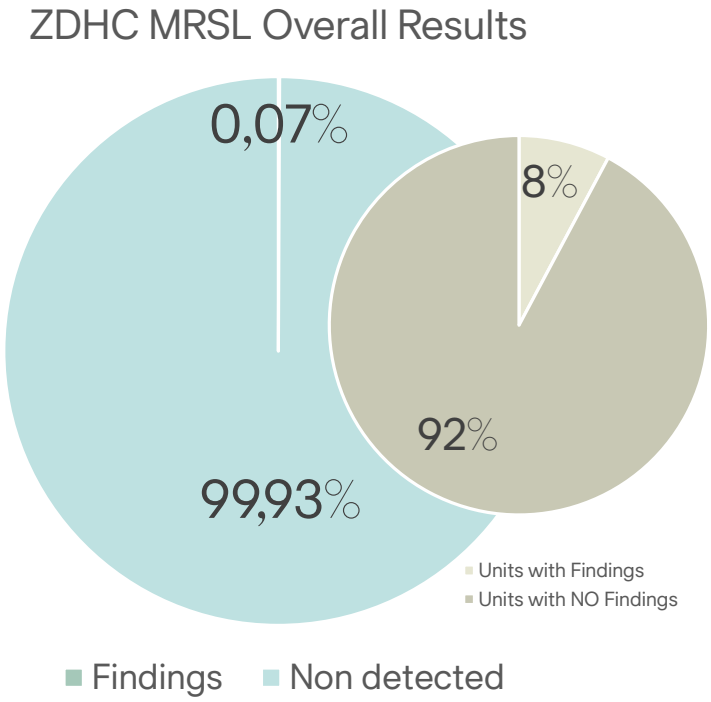
April 2020

Summary

In 2019, we have enrolled **100%** of our ZDHC scope factories (T1 with wet processing units and strategic T2 in textile and leather supply chain). This means **530** units across the globe in our production countries.

Out of **183** chemical analytes tested from **14** MRSL Chemical Groups according to ZDHC Wastewater Guidelines 2016, we have found that **99.93%** of our result had no detection of hazardous chemicals as defined by ZDHC MRSL v.1.1 and this represents **92%** of our units.

All of these results are published on ZDHC Gateway and IPE Platform.



What does it mean to be in ZDHC program?

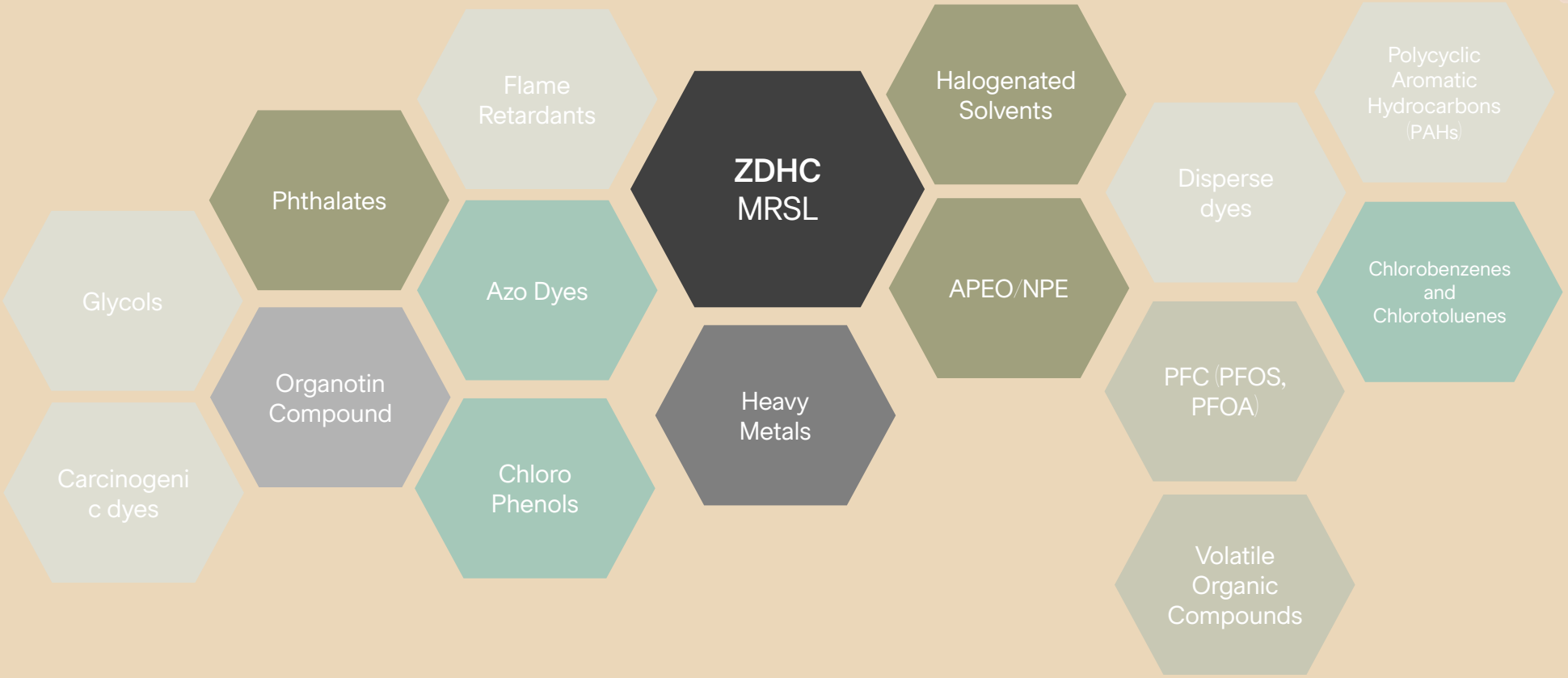
Since 2011, H&M Group has a commitment in phasing out hazardous chemicals in the supply chain.

All facilities in Textile and Leather supply chain in Tier 1 and Tier 2 with wet processing are in scope of the ZDHC program.

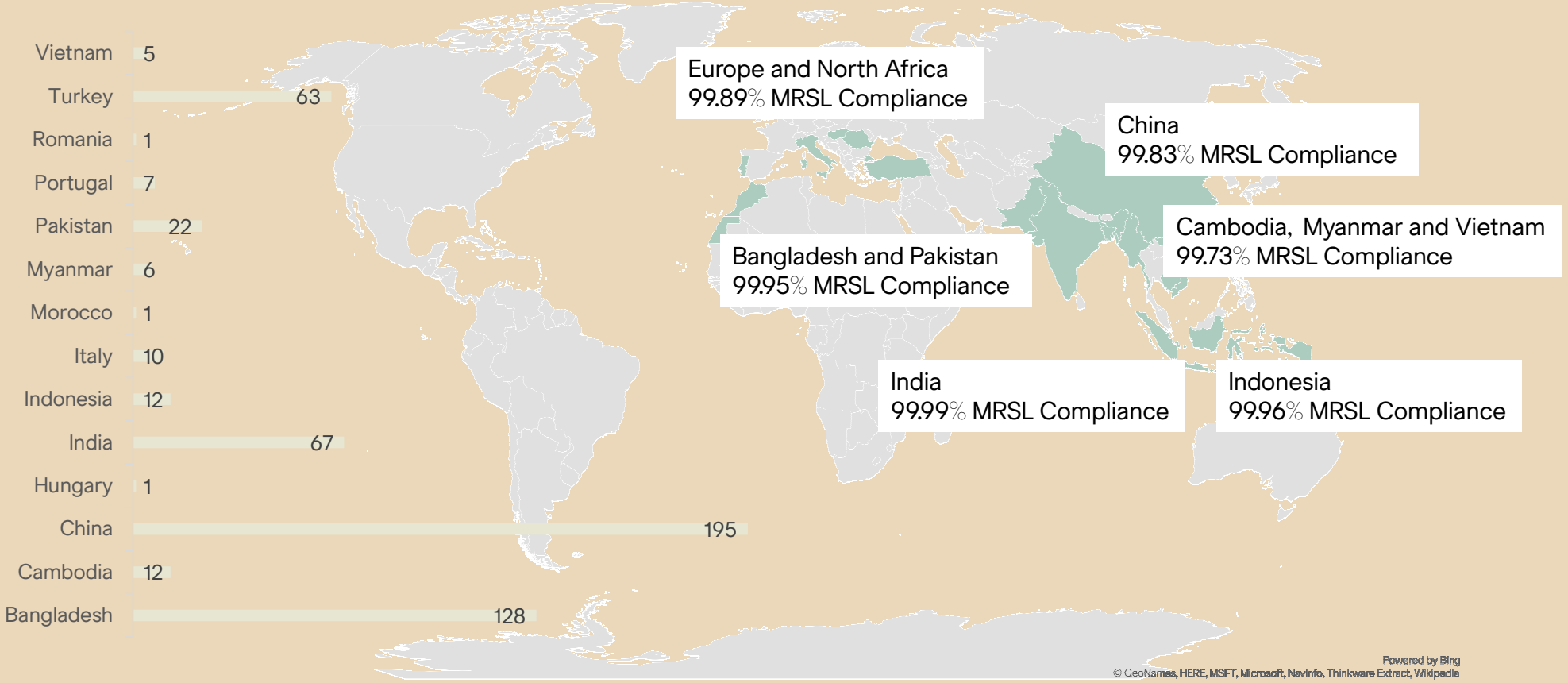
ZDHC Program means that the facility needs to:

- Conduct waste water test as per ZDHC Wastewater Guideline annually
- Publicly disclose the waste water test result in the IPE platform and in ZDHC Gateway.
- Input all production chemicals into a input chemical management tool
- Take corrective action in order to reach ZDHC MRSL compliance
- Have the right competencies in place

Hazardous Chemicals: ZDHC MRSL v.1.1



Global Distribution



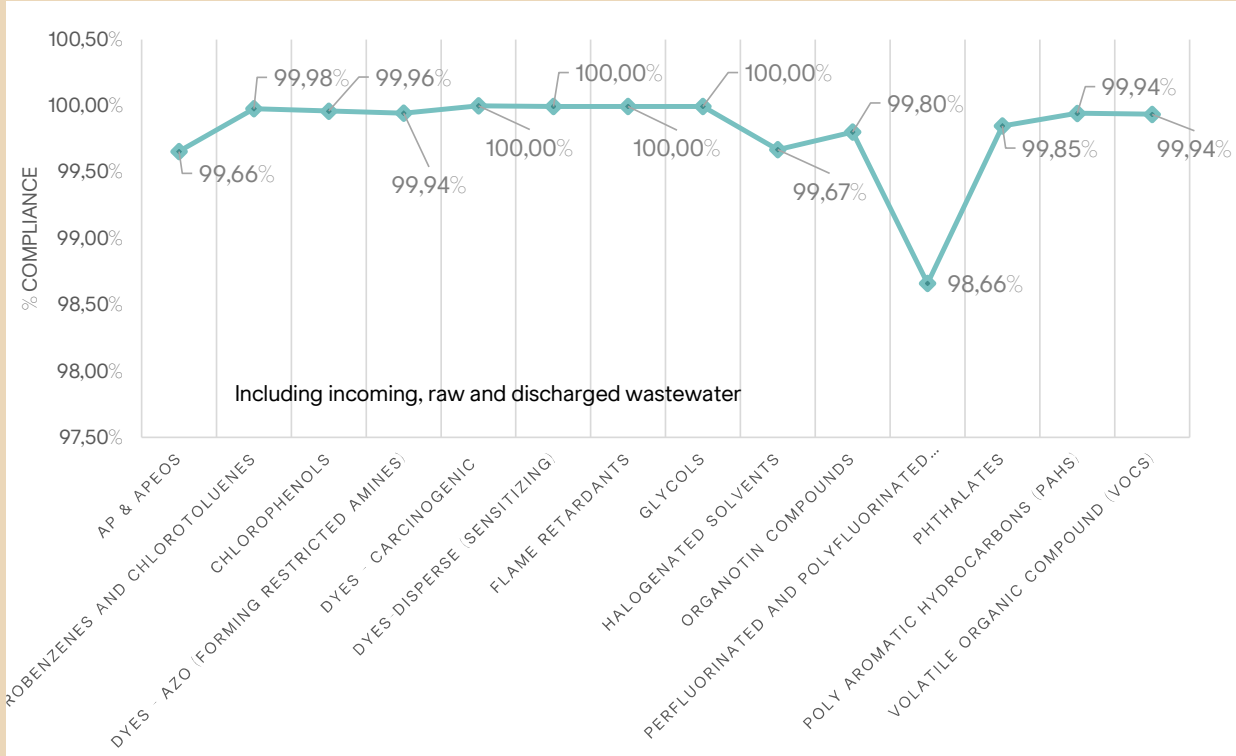
Result Overview

INCOMING WATERS	RAW WASTEWATERS	DISCHARGED WASTEWATERS
4 analytes found out of 183 tested analytes of ZDHC MRSL.	44 analytes found out of 183 tested analytes of ZDHC MRSL.	27 analytes found out of 183 tested analytes of ZDHC MRSL.

All analytes within Heavy Metal Parameters were observed to exceed foundational limits.

1 analyte has results that exceeded foundational limit out of 16 analytes for Conventional Parameter.	13 analytes have results that exceeded foundational limit out of 16 analytes for Conventional Parameter.	All 16 analytes have results that exceeded foundational limit for Conventional Parameter.

ZDHC MRSL Compliance

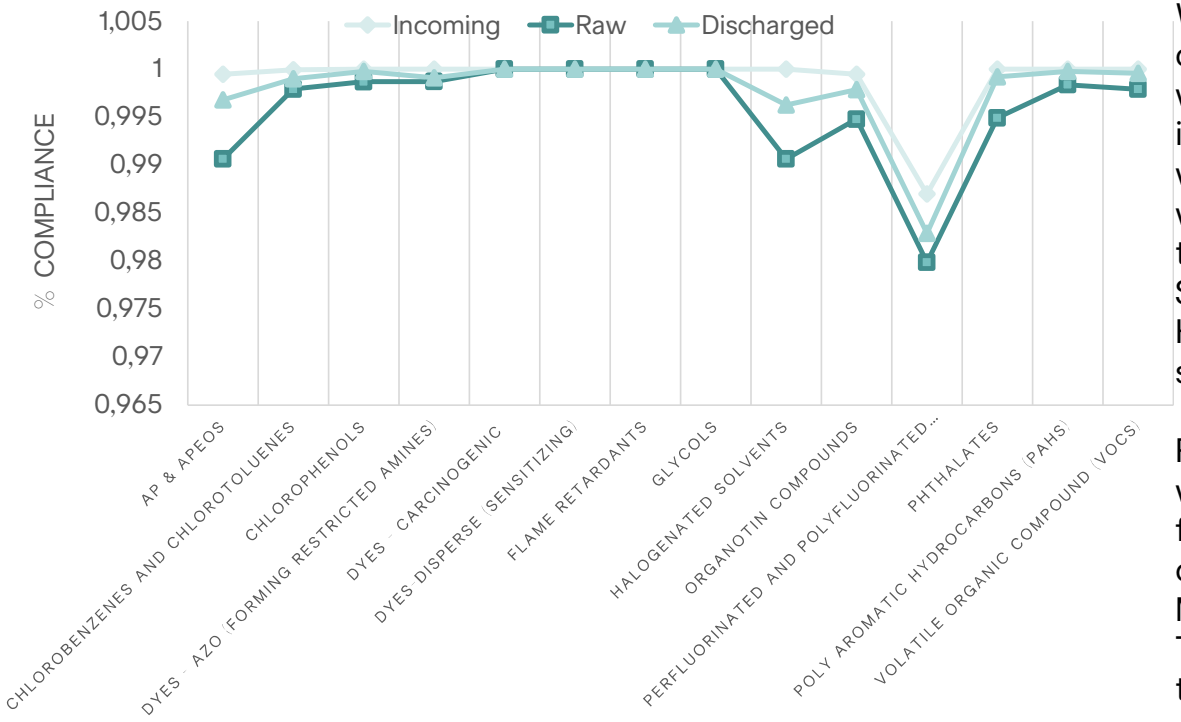


All the highest findings came from substances that we have fully banned in our supply chain, suggesting that better implementation and shift from the entire industry are crucial to reach our goal.

NPEO (from AP&APEOs Group), Methylene Chloride and Tetrachloroethylene (from Halogenated Solvents Group) and PFOA (from PFCs) are most commonly detected.

NPEO may be found in various types of chemicals used in the fabric manufacturing process and therefore it is difficult to pinpoint its source. Methylene chloride may come from degreasing process in pre-treatment and tetrachloroethylene from the finishing process. PFOA is widely used for finishing process.

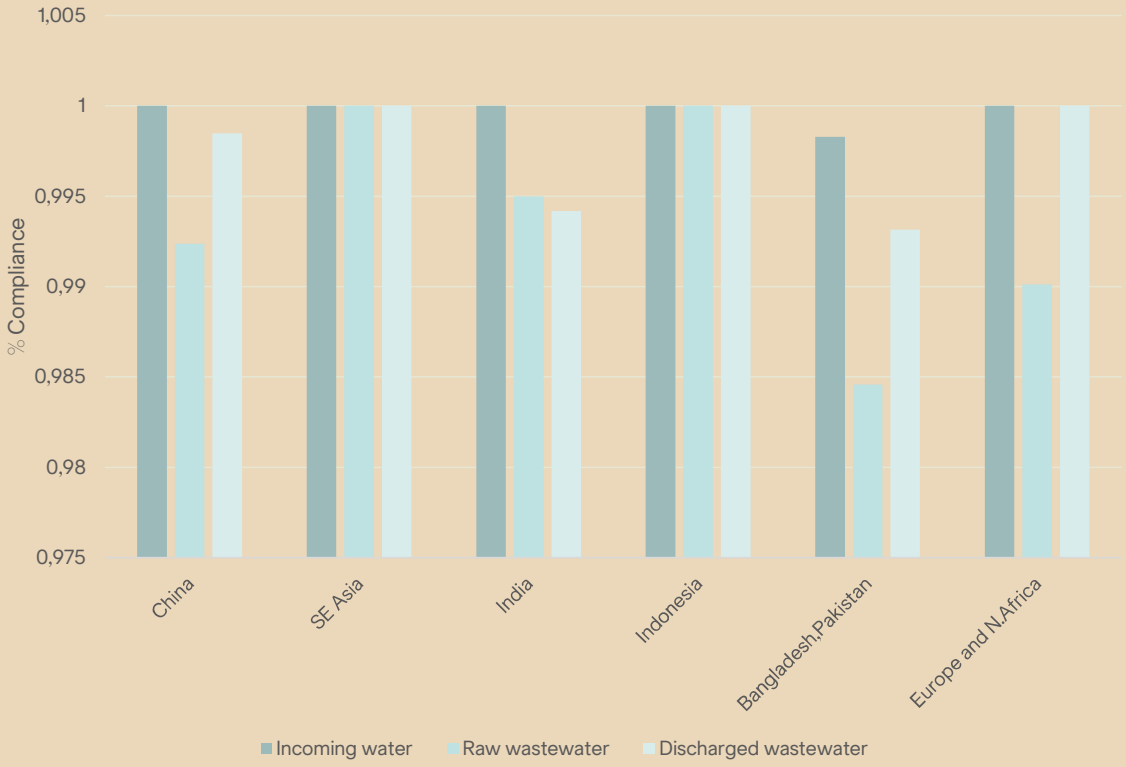
ZDHC MRSL Findings in Detail



Within the lowest compliance levels group of AP & APEOs and PFCs, the incoming water already had findings which increases the likelihood of findings in the wastewater. This pollution in the incoming water indicates further need to clean up the industry as a whole.
Such case was not observed for Halogenated Solvents, which heavily suggested the use of it during production.

For all the findings in the discharged wastewater, they were preceded by findings in the raw wastewater which confirm the inability of ETP to reduce MRSL pollution load to the environment. Thus, zero discharge can only be achieved through better management of input chemicals.

AP & APEOs

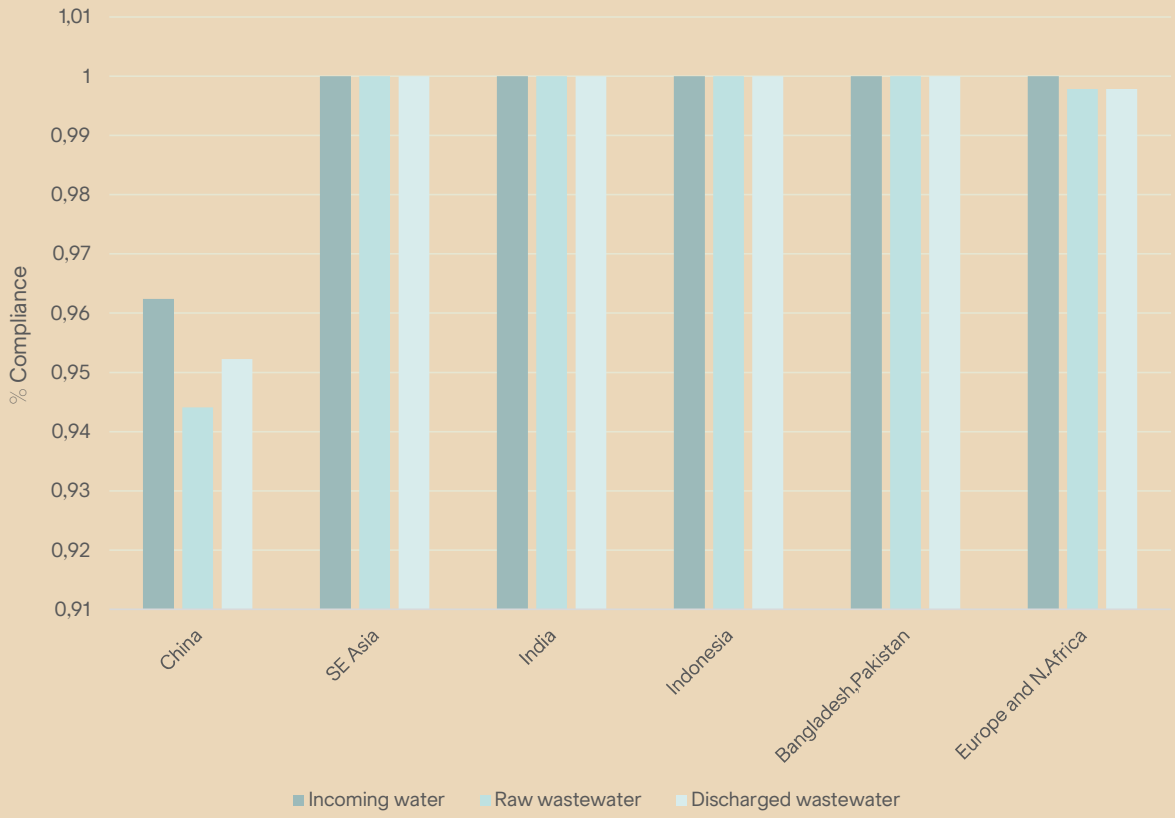


NPEO is the most found among AP & APEOs family.

NPEO is still detected, even though in less regions compared to previous years. This decrease and also the absence in most incoming water suggests improvement in the industry, although it should already disappear from our supply chain.

From our assessment, NPEO has never shown up in the incoming chemical data. However, the raw wastewater data clearly shows that NPEO is present during production. This suggests that NPEO comes as impurity contamination or result of non-transparency in chemical industry especially in regions where non-compliance occurs.

PFCs

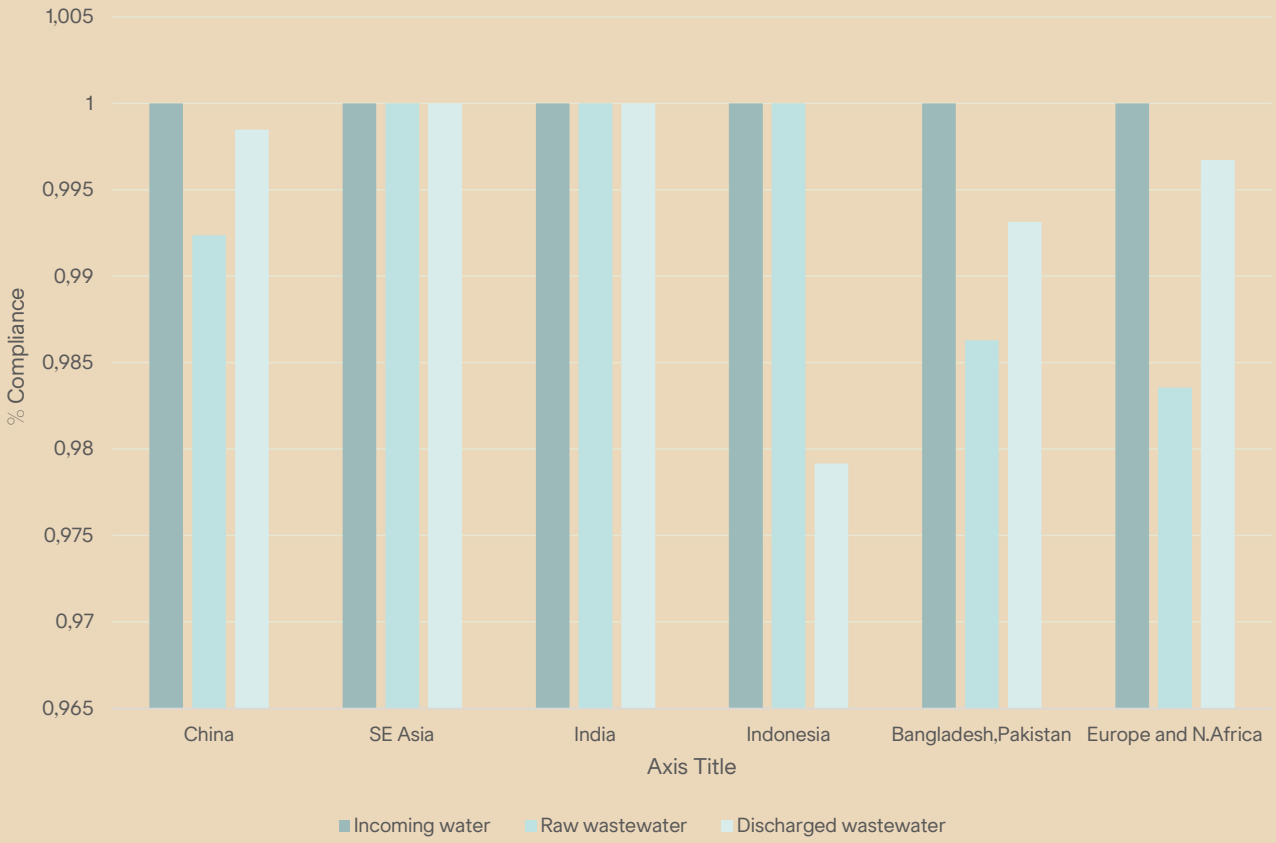


From the data shown here, it is clear that the dip in compliance in PFC originates from one isolated region—and the PFC being used is PFOA.

In China region, PFOA is found in many of the incoming waters suggesting a pollution problem that affects most of the region.
This incompliance is again worsening in raw wastewater suggesting further use of PFOA in production. In the discharged wastewater, PFOA is still present suggesting the inability of the ETP to eliminate it.

Looking at the Chinese factories' incoming chemical data and our long-standing ban on PFCs, this substance should not be here (and the data is worse compared to last year's). This suggests a shift in Chinese industry to a more substantial use of PFOA in the entire industry areas.

Halogenated Solvents

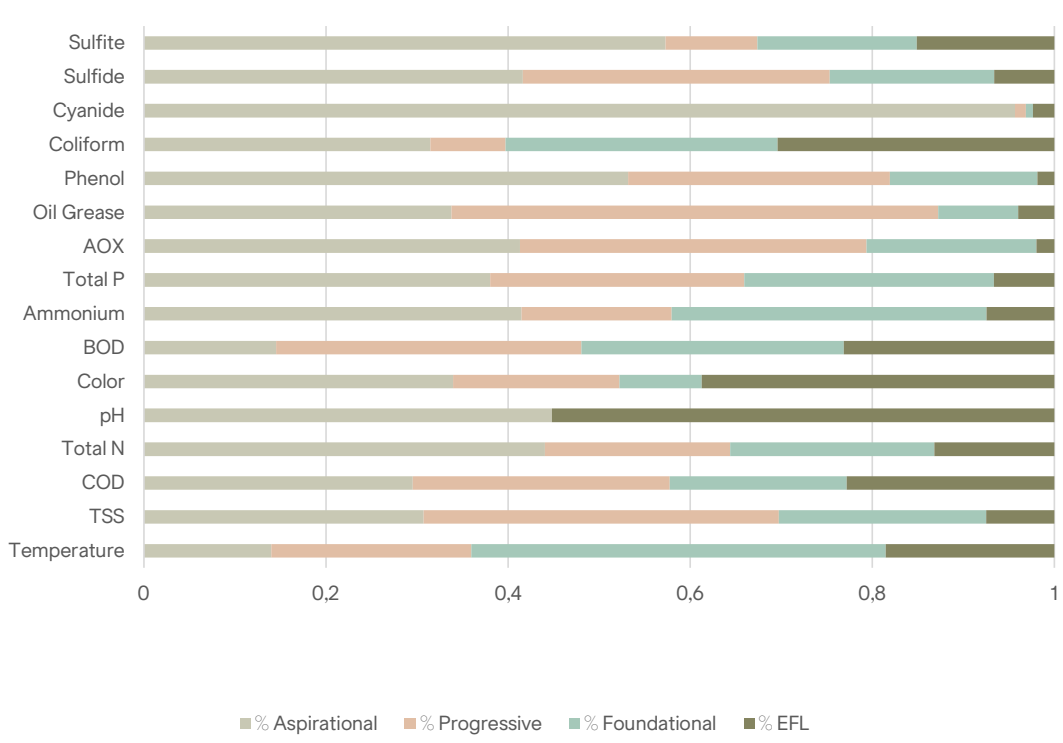


Methylene chloride and tetrachloroethylene are the most commonly found analytes in halogenated solvents. Both of these substances are among our minimum requirement—which is our strictest restrictions in sustainability, meaning that suppliers should not be using this knowingly in their production.

For the cases where they are found, it is clear that they were utilized in production since it was absent in incoming water, most likely from degreasing in pretreatment. Our incoming chemical data shows that they are not being used, therefore their present must be due to impurities or non-transparency in the chemicals.

In the single case for Indonesia, Methylene chloride was found only in discharged wastewater in high amount—suggesting a probable error in sampling, or accumulation of the use making it only detectable in discharged wastewater.

Conventional Parameters

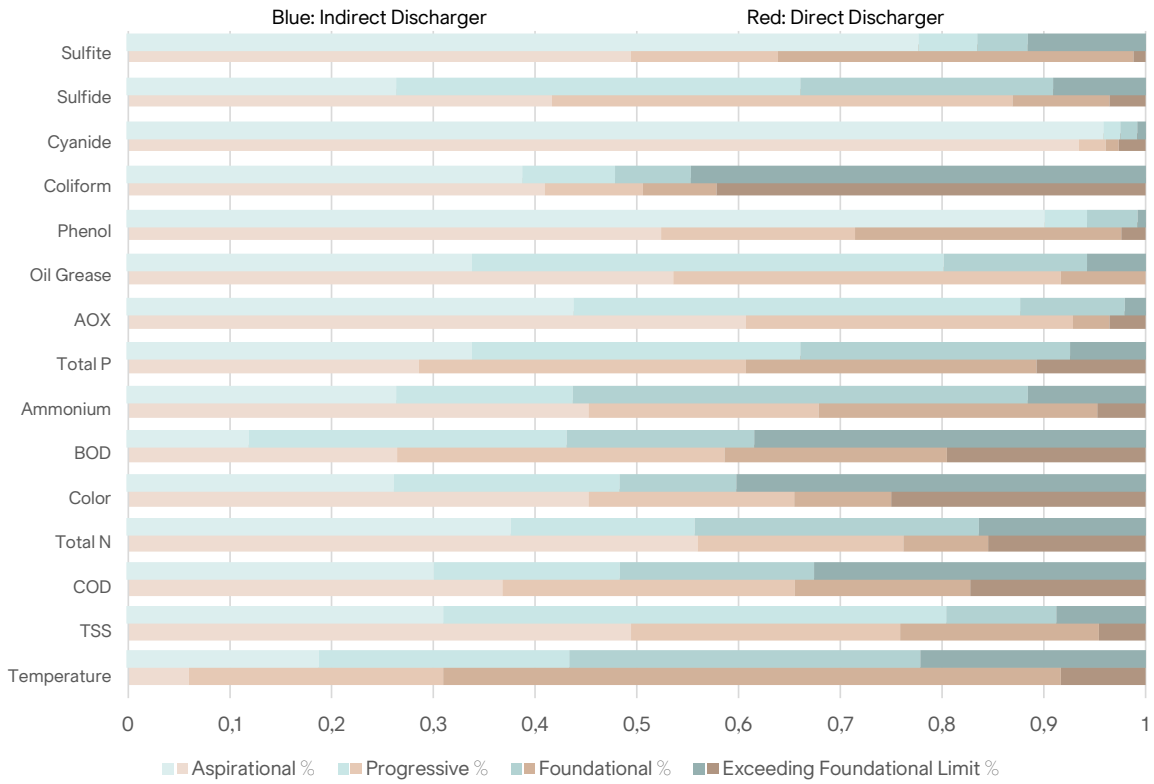


Color, coliform, BOD and COD are among those with the highest occurrences of exceeding foundational limits. pH is the highest, but was only tested rarely that it is not comparable with the rest.

High incompliance in coliform might be caused by sampling error in which it exceeds the advised samples holding time.

Poor performance in BOD and COD are due to indirect dischargers who are only meeting the CETP's requirement. On the other hand, color must be improved by using best available chemicals as most of our supply chain are using many colors in normal operation.

Conventional Parameter: Direct vs. Indirect Discharger (Discharged Wastewater)

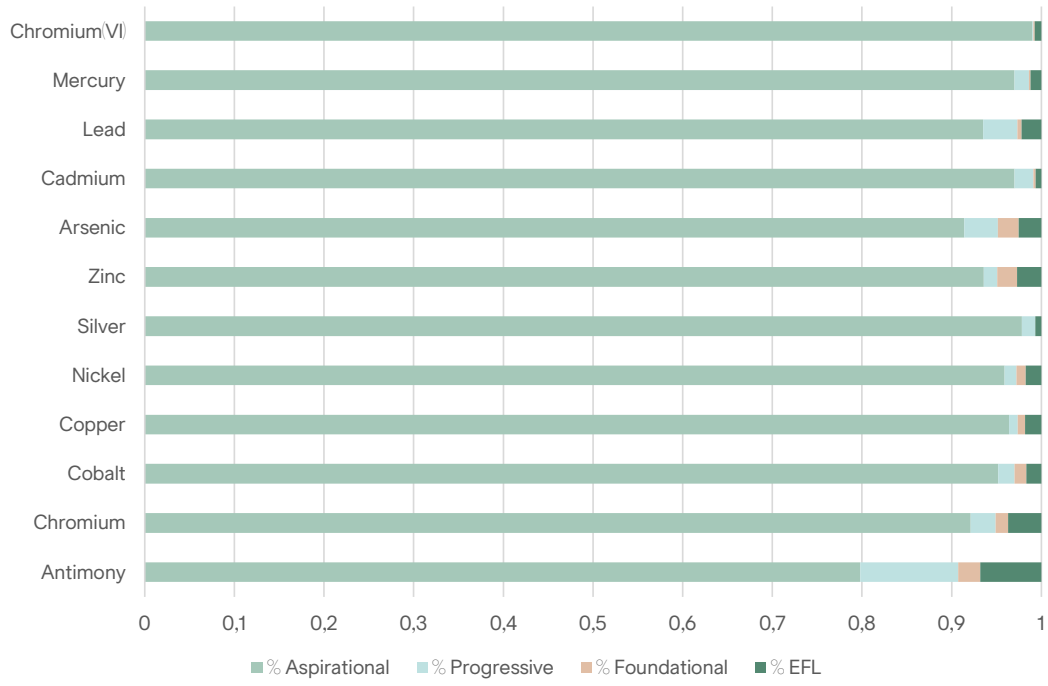


From this graphs, we can see that the indirect discharger has more results that are exceeding foundational limit. This is expected since they are only meeting the requirement of their receiver Central ETP.

More compliant results especially for parameters that can be secured through ETP treatment (such as BOD, COD and TSS) indicates good functionality of the ETPs within the supply chain.

Area of improvement for ETP functionality remains in color, where it can be also addressed through better selection of chemicals used in production.

Heavy Metals Parameters

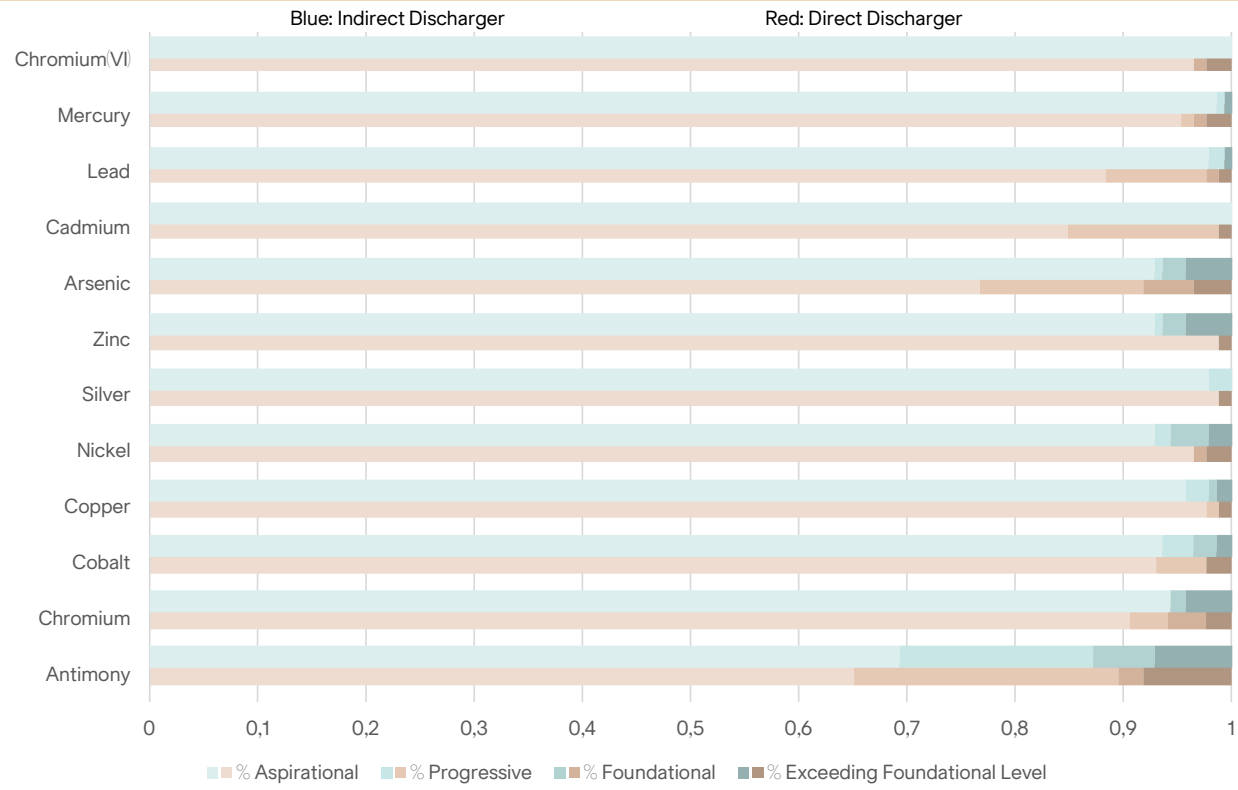


Similar to previous years, antimony, chromium and arsenic continue to be the heavy metals that exceeded foundational levels the most.

Antimony is mostly found in facilities with polyester products, due to the fact that antimony is used as one of polyester's raw materials.

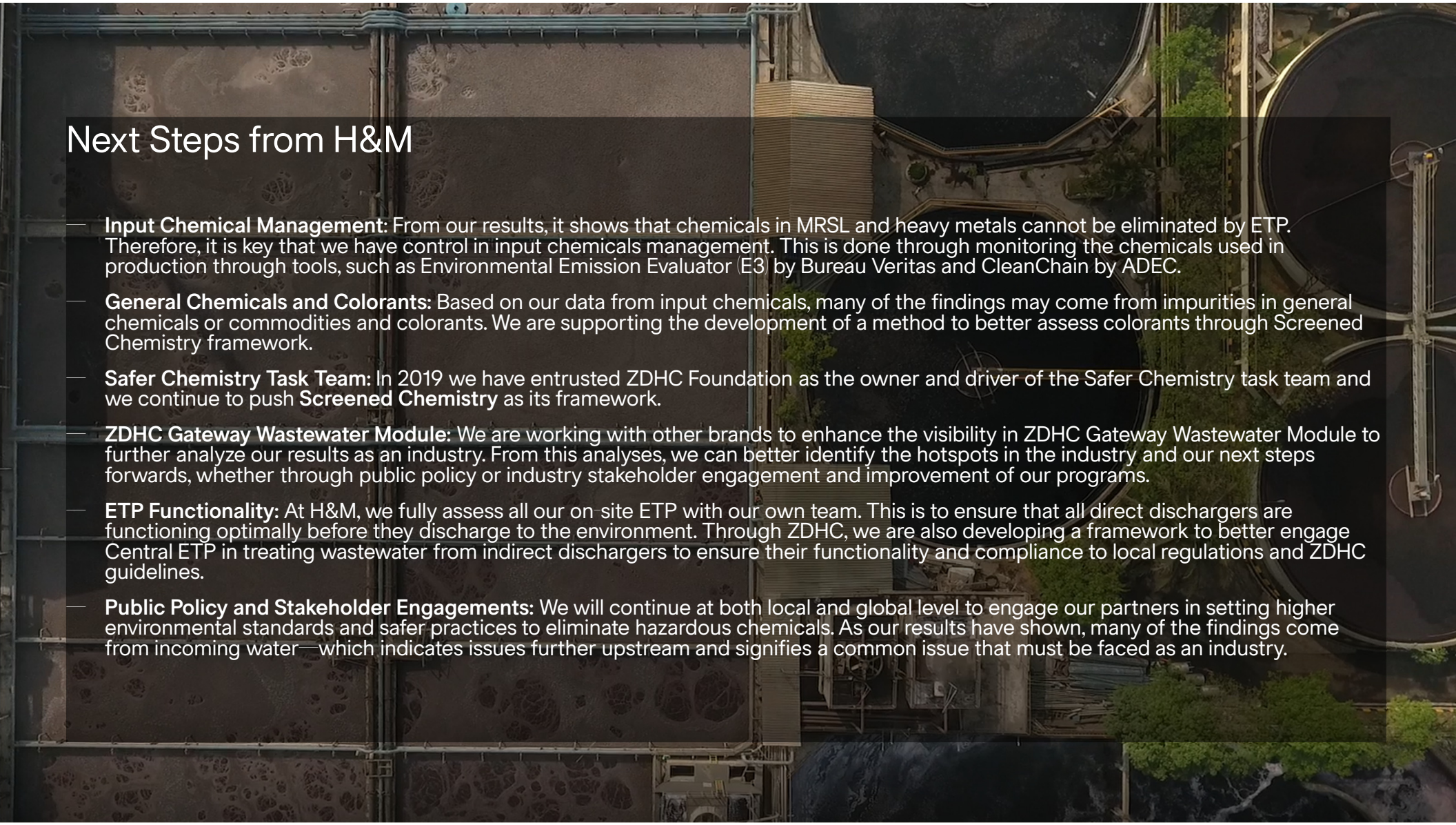
Other heavy metals such as chromium and arsenic might be found due to the dyes being used in the industry, in which they can be also found as impurities.

Heavy Metal Parameters: Direct vs. Indirect (Discharged Wastewater)



This results suggest that there are no significant difference between direct vs. indirect discharged which confirms that ETP does not have the capability to eliminate heavy metal from the wastewater.

Thus, the only way to secure heavy metal is through input chemicals. Looking at the high percentage of the aspirational results, our supply chain is already on its way for eliminating hazardous heavy metal. Remaining challenges is on antimony based on polyester production.



Next Steps from H&M

- **Input Chemical Management:** From our results, it shows that chemicals in MRSL and heavy metals cannot be eliminated by ETP. Therefore, it is key that we have control in input chemicals management. This is done through monitoring the chemicals used in production through tools, such as Environmental Emission Evaluator (E3) by Bureau Veritas and CleanChain by ADEC.
- **General Chemicals and Colorants:** Based on our data from input chemicals, many of the findings may come from impurities in general chemicals or commodities and colorants. We are supporting the development of a method to better assess colorants through Screened Chemistry framework.
- **Safer Chemistry Task Team:** In 2019 we have entrusted ZDHC Foundation as the owner and driver of the Safer Chemistry task team and we continue to push **Screened Chemistry** as its framework.
- **ZDHC Gateway Wastewater Module:** We are working with other brands to enhance the visibility in ZDHC Gateway Wastewater Module to further analyze our results as an industry. From this analyses, we can better identify the hotspots in the industry and our next steps forwards, whether through public policy or industry stakeholder engagement and improvement of our programs.
- **ETP Functionality:** At H&M, we fully assess all our on-site ETP with our own team. This is to ensure that all direct dischargers are functioning optimally before they discharge to the environment. Through ZDHC, we are also developing a framework to better engage Central ETP in treating wastewater from indirect dischargers to ensure their functionality and compliance to local regulations and ZDHC guidelines.
- **Public Policy and Stakeholder Engagements:** We will continue at both local and global level to engage our partners in setting higher environmental standards and safer practices to eliminate hazardous chemicals. As our results have shown, many of the findings come from incoming water—which indicates issues further upstream and signifies a common issue that must be faced as an industry.