Our SHE goals and performance

Emissions to the Water

Our on-going efforts to reduce our planned emissions to water are reflected in the 99% reduction in total organic carbon (TOC) emissions in metric tons per CHF 1 million of sales since 1992.

Since 2014 we are tracking our water discharge destinations. The data show that more than 83% of the water that we withdraw is finally discharged to freshwater-based sources and thus reusable.

Table 1: Water Discharge (via WWTP)

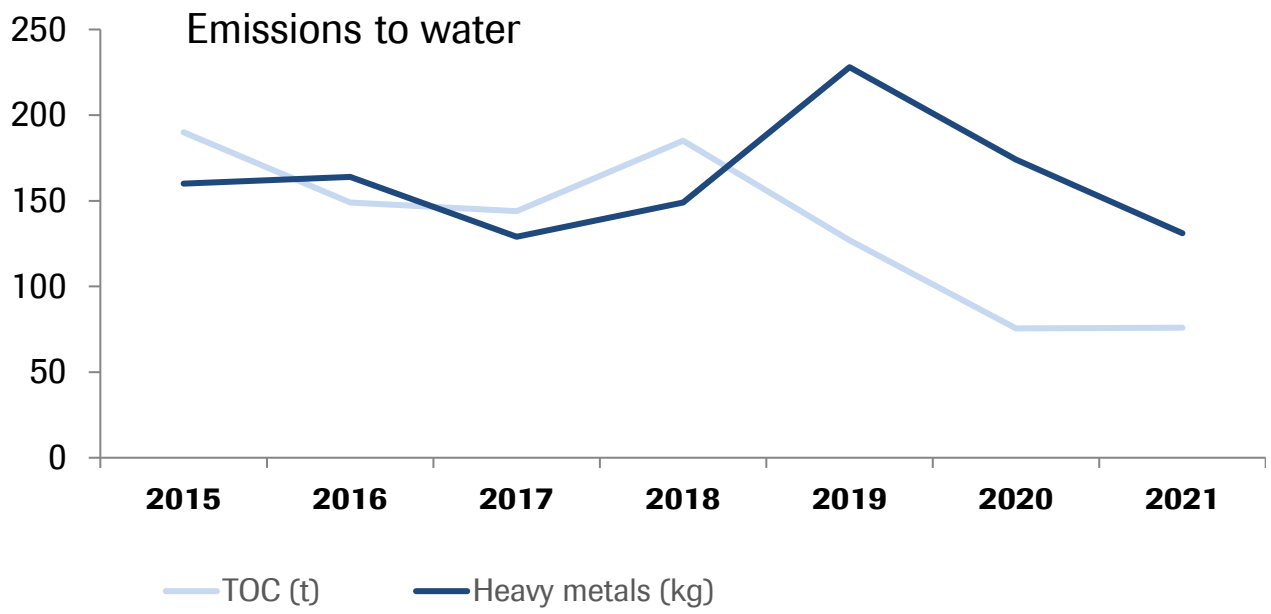
Destination	Volume of water discharged (Mio. m^3)	Percent of Total discharged
Fresh Surface Water	4.10	75.2
Sea Water	0.92	16.8
Third Party	0.44	8.0

TOC Emissions

We discharged 76 metric tons of TOC into surface waters in 2021 (75.5t in 2020, +0.6%). The elimination rates of waste water treatment plants used but not run by Roche have been reconfirmed during the past 2 years, thus providing more accurate information on the amount of TOC actually released into the environment.

Heavy metals emissions

After waste water purification, total heavy metal emissions to water were 131 kg in 2021 (174 kg in 2020), a decrease of 25% over 2020. Since 2017 these emissions started to increase again and have exceeded the emissions of 2015 in 2019. In 2020 and 2021, these emissions decreased again, in 2021 to levels below 2015 (-18%). Though depending on the number and type of chemical and biological operations run at our manufacturing sites, we will continue to carefully monitor these emissions and the corresponding performance of our waste water treatment plans.



Nutrient discharges to receiving waters

Nutrient pollution, a form of water pollution, refers to contamination by excessive inputs of nutrients. It is a primary cause of eutrophication of surface waters, in which excess nutrients, usually nitrogen or phosphorus, stimulate algal growth. The sources of Roche's nitrogen and phosphorus mainly includes nitrogen bearing buffers and phosphoric acid cleaning agents (CIP-200) used in biomanufacturing operations and diagnostic reagent manufacturing.

Roche has defined a nutrient discharge goal 2020-2025: Reduce nutrient discharges to receiving waters by

- 5% for nitrogen [tons absolute],
- 90% for phosphorus [tons absolute].

Nitrogen

Total nitrogen emissions in wastewater increased by 7.8% in the period 2020–2021 (see ***Figure***). While some sites such as South San Francisco, Singapore Tech Ops, and Shanghai saw moderate reductions in their nitrogen emissions, Chugai and Oceanside saw larger increases due to new or increased production activities (new/increased launch capabilities).

Phosphorus

Phosphorus emissions increased by 1.9% in the period 2020–2021 (see ***Figure***). Phosphorus emissions are not expected to be reduced in a stepwise fashion and therefore we can not expect a year-on-year

gradual decrease. The reduction is expected to occur in a single reduction due to a wholesale substitution of phosphorus based cleaners which will result in a sudden reduction to the emissions.