

# Calculated Info

Marlin

This package contains a couple tools to create useful views of the data not by default in the dataframe. These mostly come in the form of the default case and wastewater dataframe augment function.

## Wastewater augmeanting function

The wastewater function does three things. first it replaces Concentrations below the level of detection (LOD) with LOD / 2 which is considered best practice. Second it calculates a geometric average of the two gene concentrations. Finally it gets a flow and population normalized logged version of the data which previous work has shown the best results.

site	date	pop	N1	N2	flow	geoMean	sars_cov2_adj_load_log10	n
Algoma	2020-10-06	3171	10000	NA	0.498	NA	NA	34
Algoma	2020-10-13	3171	10000	16500	0.499	12845.23	0.3056463	34
Algoma	2020-10-20	3171	10000	16500	0.402	12845.23	0.2117718	34
Algoma	2020-10-27	3171	10000	16500	0.670	12845.23	0.4336205	34
Algoma	2020-11-03	3171	10000	16500	0.489	12845.23	0.2968546	34
Algoma	2020-11-10	3171	10000	16500	0.463	12845.23	0.2731267	34

## Case augmeanting function

The case function does two things. first it normalizes the data by population. Second it calculates a rolling sum and average of the data. This needs the population data contained in its own data frame.

```
## Warning in left_join(Case_data, pop_data): Detected an unexpected many-to-many relationship between
## i Row 26301 of 'x' matches multiple rows in 'y'.
## i Row 70 of 'y' matches multiple rows in 'x'.
## i If a many-to-many relationship is expected, set 'relationship =
## "many-to-many"' to silence this warning.
```

site	date	tests	prob_case	case	prob_death	death	population	FirstConfirmed	Per100K	cases	pastday	Per100K	cases	perday	Per100K
Algoma	2020-01-22	0	0	0	0	0	3171	0	NA	NA	NA	NA	NA	NA	NA
Algoma	2020-01-23	0	0	0	0	0	3171	0	NA	NA	NA	NA	NA	NA	NA

site	date	tests	prob_case	self_case	prob_death	self_death	population	First Confirmed	per 100K	cases past 7 days	per 100K
Algonquin	2020-01-24	0	0	0	0	0	3171	0	NA	NA	NA
Algonquin	2020-01-25	0	0	0	0	0	3171	0	NA	NA	NA
Algonquin	2020-01-26	0	0	0	0	0	3171	0	NA	NA	NA
Algonquin	2020-01-27	0	0	0	0	0	3171	0	NA	NA	NA

These functions are slightly out of date and not used in many new analysis projects