

R2 Reasonable Potential Tool Parameter Report

PR0024163 - 001 : Ammonia & ammonium- total

Evaluated from 07/29/2017 to 07/29/2022

FACILITY INFORMATION:

PRASA HATILLO WTP

STATE ROAD 2, KM 88.9

HATILLO, PR

WQS Import File: PR2022Standards-RPTool_from_for_binder.xlsx

SUMMARY STATISTICS:

Number of Samples: 30

Min: 60 ug/L

Mean: ug/L

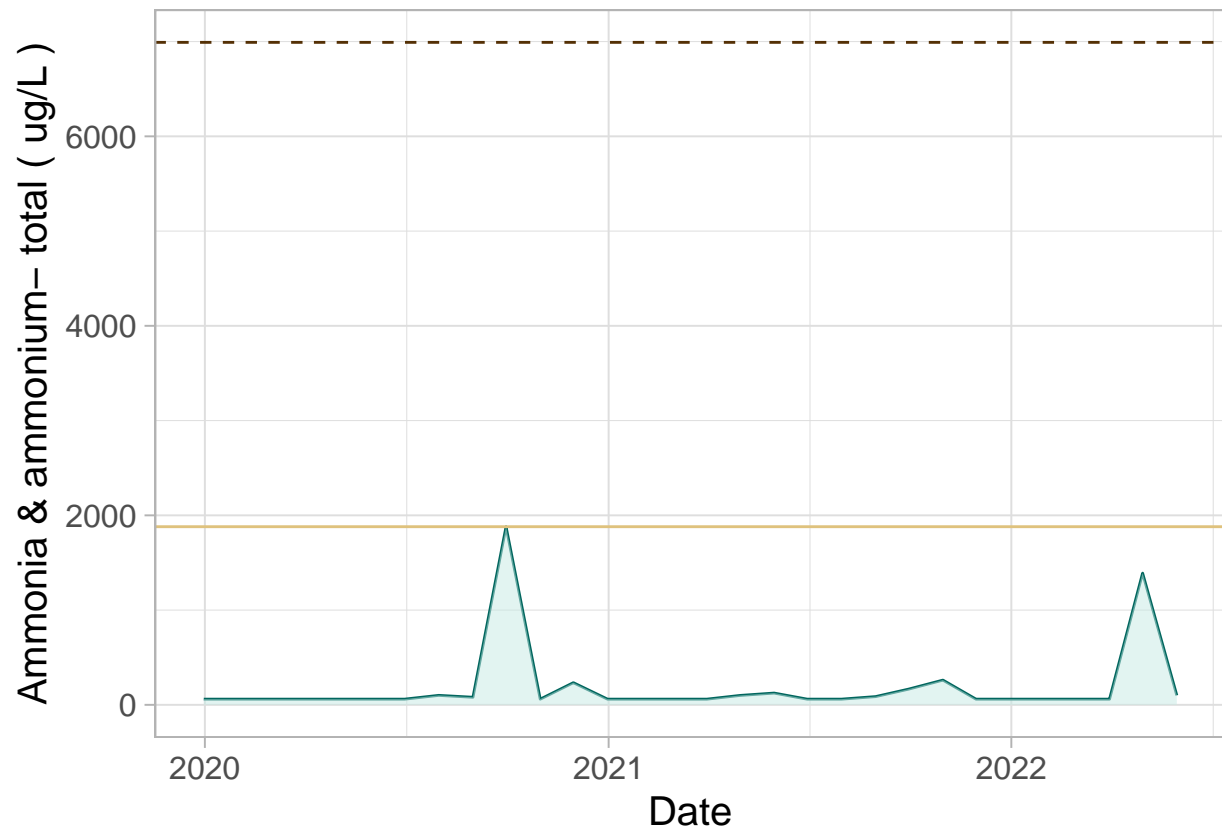
Max: 1880 ug/L

WQS - SB: NA ug/L

WQS - SD: NA ug/L

RWC: 6991.7 ug/L

TIME SERIES



RECEIVING WATER CONCENTRATION CALCULATIONS

*assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55*

$$\text{Number of samples} = n$$

$$\text{Maximum effluent concentration} = \text{max}$$

$$\text{Dilution Ratio} = DR$$

$$\text{Coefficient of Variation (CV)} = S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10$$

$$Z - \text{statistic} = Z_x$$

$$RPM = \frac{\exp(Z_{95} \ln(1 + CV^2)^{0.5} - 0.5 \ln(1 + CV^2))}{\exp(Z_x \ln(1 + CV^2)^{0.5} - 0.5 \ln(1 + CV^2))}$$

$$RWC = \text{maximum effluent concentration} * RPM * \text{Dilution Ratio}$$

$$n = 30$$

$$\text{max} = 1880$$

$$DR = 1$$

$$CV = 2.13$$

$$Z_{95} = 1.645$$

$$Z_x = 0.641$$

$$\begin{aligned} RPM &= \frac{\exp(1.645 \ln(1 + 2.13^2)^{0.5} - 0.5 \ln(1 + 2.13^2))}{\exp(0.641 \ln(1 + 2.13^2)^{0.5} - 0.5 \ln(1 + 2.13^2))} \\ &= 3.72 \end{aligned}$$

$$\begin{aligned} RWC &= 1880 * 3.72 * 1 \\ &= 6991.7 \end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit	NODI Code
PR0024163	001	Ammonia & ammonium- total	2019-12-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-01-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-02-29	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-03-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-04-30	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-05-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-06-30	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-07-31	100	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-08-31	80	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-09-30	1880	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-10-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-11-30	234	ug/L	
PR0024163	001	Ammonia & ammonium- total	2020-12-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-01-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-02-28	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-03-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-04-30	99	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-05-31	124	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-06-30	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-07-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-08-31	87	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-09-30	166	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-10-31	261	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-11-30	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2021-12-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2022-01-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2022-02-28	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2022-03-31	60	ug/L	
PR0024163	001	Ammonia & ammonium- total	2022-04-30	1390	ug/L	
PR0024163	001	Ammonia & ammonium- total	2022-05-31	100	ug/L	