

R2 Reasonable Potential Tool Parameter Report

PR0020486 - 001 : pH

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

FACILITY INFORMATION:

PRASA GUANICA WWTP

YAGUER STREET

GUANICA, PR

WQS Import File: PR2022Standards-RPTool_from_for_binder.xlsx

SUMMARY STATISTICS:

Number of Samples: 57

Min: 7.32 SU

Mean: SU

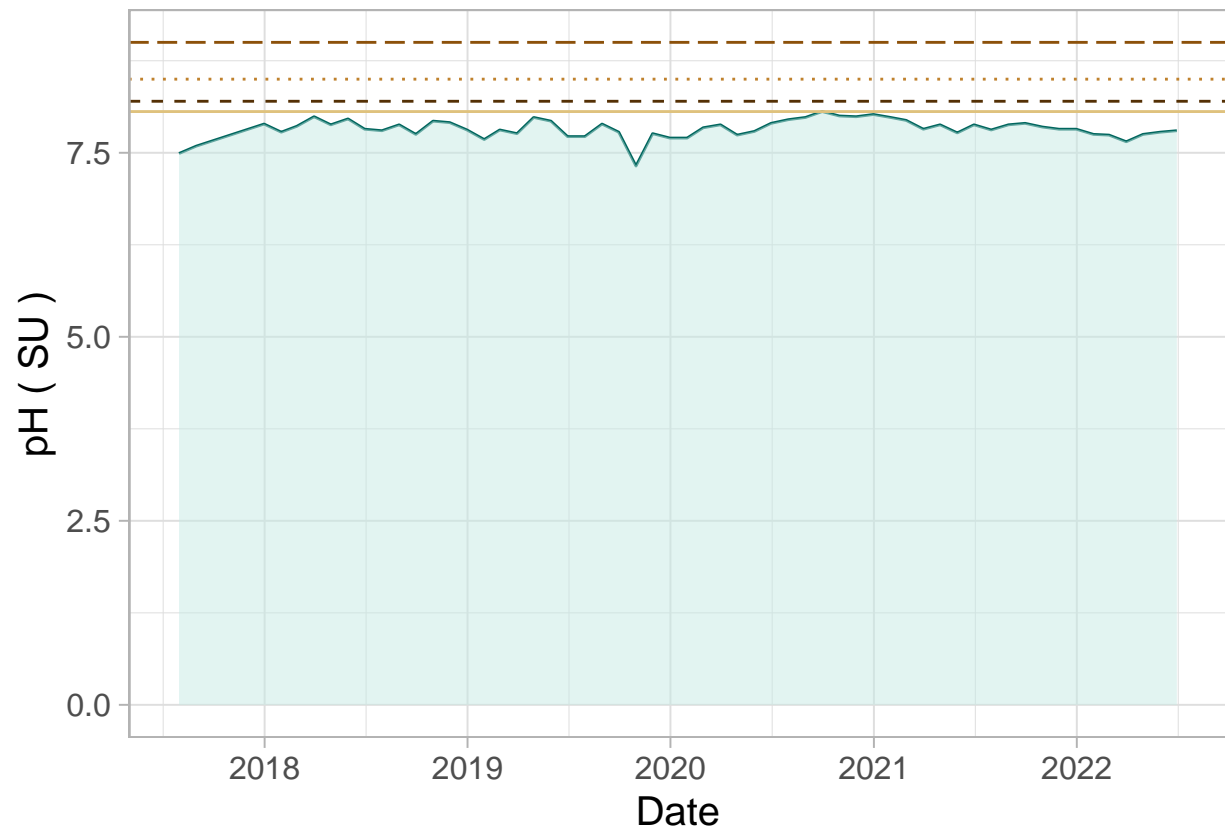
WQS - SB: 8.5 SU

Max: 8.06 SU

WQS - SD: 9 SU

RWC: 8.2 SU

TIME SERIES



—Max: 8.06 SU

...WQS - SB: 8.5 SU

- - WQS - SD: 9 SU

—RWC: 8.2 SU

RECEIVING WATER CONCENTRATION CALCULATIONS

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

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

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

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

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

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

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

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

$$n = 57$$

$$\text{max} = 8.06$$

$$DR = 1$$

$$CV = 0.02$$

$$Z_{95} = 1.645$$

$$Z_x = 1.054$$

$$\begin{aligned} RPM &= \frac{\exp(1.645 \ln(1 + 0.02^2)^{0.5} - 0.5 \ln(1 + 0.02^2))}{\exp(1.054 \ln(1 + 0.02^2)^{0.5} - 0.5 \ln(1 + 0.02^2))} \\ &= 1.01 \end{aligned}$$

$$\begin{aligned} RWC &= 8.06 * 1.01 * 1 \\ &= 8.2 \end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit	NODI Code
PR0020486	001	pH	2017-07-31	7.49	SU	
PR0020486	001	pH	2017-08-31	7.59	SU	
PR0020486	001	pH	2017-12-31	7.89	SU	
PR0020486	001	pH	2018-01-31	7.78	SU	
PR0020486	001	pH	2018-02-28	7.86	SU	
PR0020486	001	pH	2018-03-31	7.99	SU	
PR0020486	001	pH	2018-04-30	7.88	SU	
PR0020486	001	pH	2018-05-31	7.96	SU	
PR0020486	001	pH	2018-06-30	7.82	SU	
PR0020486	001	pH	2018-07-31	7.80	SU	
PR0020486	001	pH	2018-08-31	7.88	SU	
PR0020486	001	pH	2018-09-30	7.75	SU	
PR0020486	001	pH	2018-10-31	7.93	SU	
PR0020486	001	pH	2018-11-30	7.91	SU	
PR0020486	001	pH	2018-12-31	7.81	SU	
PR0020486	001	pH	2019-01-31	7.68	SU	
PR0020486	001	pH	2019-02-28	7.81	SU	
PR0020486	001	pH	2019-03-31	7.76	SU	
PR0020486	001	pH	2019-04-30	7.98	SU	
PR0020486	001	pH	2019-05-31	7.93	SU	
PR0020486	001	pH	2019-06-30	7.72	SU	
PR0020486	001	pH	2019-07-31	7.72	SU	
PR0020486	001	pH	2019-08-31	7.89	SU	
PR0020486	001	pH	2019-09-30	7.78	SU	
PR0020486	001	pH	2019-10-31	7.32	SU	
PR0020486	001	pH	2019-11-30	7.76	SU	
PR0020486	001	pH	2019-12-31	7.70	SU	
PR0020486	001	pH	2020-01-31	7.70	SU	
PR0020486	001	pH	2020-02-29	7.84	SU	
PR0020486	001	pH	2020-03-31	7.88	SU	
PR0020486	001	pH	2020-04-30	7.74	SU	
PR0020486	001	pH	2020-05-31	7.79	SU	
PR0020486	001	pH	2020-06-30	7.90	SU	
PR0020486	001	pH	2020-07-31	7.95	SU	
PR0020486	001	pH	2020-08-31	7.98	SU	
PR0020486	001	pH	2020-09-30	8.06	SU	
PR0020486	001	pH	2020-10-31	8.00	SU	
PR0020486	001	pH	2020-11-30	7.99	SU	
PR0020486	001	pH	2020-12-31	8.02	SU	
PR0020486	001	pH	2021-01-31	7.98	SU	
PR0020486	001	pH	2021-02-28	7.94	SU	
PR0020486	001	pH	2021-03-31	7.82	SU	
PR0020486	001	pH	2021-04-30	7.88	SU	
PR0020486	001	pH	2021-05-31	7.77	SU	
PR0020486	001	pH	2021-06-30	7.88	SU	
PR0020486	001	pH	2021-07-31	7.81	SU	
PR0020486	001	pH	2021-08-31	7.88	SU	
PR0020486	001	pH	2021-09-30	7.90	SU	
PR0020486	001	pH	2021-10-31	7.85	SU	
PR0020486	001	pH	2021-11-30	7.82	SU	

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit	NODI Code
PR0020486	001	pH	2021-12-31	7.82	SU	
PR0020486	001	pH	2022-01-31	7.75	SU	
PR0020486	001	pH	2022-02-28	7.74	SU	
PR0020486	001	pH	2022-03-31	7.65	SU	
PR0020486	001	pH	2022-04-30	7.75	SU	
PR0020486	001	pH	2022-05-31	7.78	SU	
PR0020486	001	pH	2022-06-30	7.80	SU	