A Comprehensive Study on The Microbicidal Properties of Stabilized and Unstabilized Chlorine and The Relationships of Other Chemical and Physical Variables in Public Swimming Pools; A Report of A Study Carried Out in Pinellas County, Florida, Summer/Fall, 1992

Appendices O – EE

Appendix O

Results of the Correlation Analyses for All Variable Pairs in the ALL POOLS-486 Category

Interpretation of a Correlation Analysis Output

The following is an example of how to interpret the data generated from a correlation analysis.

	CL2FREE[a]	HPC[b]	X[b]
CL2FREE[a]	1.00000[c] 0.0[d] 486[e]	-0. 15253[c] 0.0007[d] 486[e]	
HPC[b]	-0.15253[c] 0.0007[d] 486[e]	1.00000[c] 0.0[d] 486[e]	

In this example, the first row contains the results of the correlation analysis for the variable free chlorine with the Heterotrophic bacteria variable (HPC), other variables (X) and itself (CL2FREE). The second row contains the results for the Heterotrophic bacteria variable with free chlorine, itself and other variables. The following notes indicate the meaning of each datum.

a. One of the variables that is being analyzed to determine if it has a linear relationship with any of the other variables.

b. The other variable(s).

c. The correlation coefficient (Pearson). Correlation coefficients range from -1.0 (a perfect negative linear correlation) to +1.0 (a perfect positive linear correlation).

d. The probability that the calculated correlation coefficient is actually 0 (no linear correlation). The variables will always have a perfect correlation coefficient of 1.0 to themselves and a probability of 0 that the coefficient is actually 0. The criteria used in this document is: A correlation coefficient is significant and a correlation is said to exist if the probability of the calculated coefficient being 0 is 0.05 (5%) or less. (95% confidence). In this example the probability is 0.0007 so it would be concluded that there is a negative linear correlation between free chlorine and heterotrophic plate count. As the amount of free chlorine increases, the heterotrophic plate count decreases.

e. The number of pairs of variables used to calculate the correlation coefficient.

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	CL2FREE	CL2TOT	PH	ALK	CYN	TEMP	VOLUME
CL2FREE	1.00000	**0.99261** **0.0** **486**	0.07533 0.0975 485	0.01205 0.7914 484	**0.11281** **0.0128** **486**	-0.01189 0.8031 442	-0.01551 0.7331 486
CL2TOT	**0.99261** **0.0** **486**	1.00000	0.07841 0.0845 485	0.01382 0.7616 484	**0.11023** **0.0151** **486**	-0.01246 0.7940 442	-0.02612 0.5656 486
PH	0.07533 0.0975 485	0.07841 0.0845 485	1.00000	**0.55528** **0.0001** **483**	**-0.25381** **0.0001** **485**	-0.20334 0.0001 441	0.02061 0.6507 485
ALK	0.01205 0.7914 484	0.01382 0.7616 484	**0.55528** **0.0001** **483**	1.00000	0.02974 0.5139 484	-0.05203 0.2761 440	0.02538 0.5775 484
CYN	0.11281 0.0128 486	**0.11023** **0.0151** **486**	**-0.25381** **0.0001** **485**	0.02974 0.5139 484	1.00000	0.08789 0.0649 442	-0.06117 0.1782 486
TEMP	-0.01189 0.8031 442	-0.01246 0.7940 442	**-0.20534** **0.0001** **441**	-0.05203 0.2761 440	0.08789 0.0649 442	1.00000	0.03917 0.4114 442
VOLUME	-0.01551 0.7331 486	-0.02612 0.5656 486	0.02061 0.6507 485	0.02538 0.5775 484	-0.06117 0.1782 486	0.03917 0.4114 442	1.00000
SWIMRS	**-0.11658** **0.0102** **485**	**-0.11069** **0.0147** **485**	0.04645 0.3079 484	**0.09260** **0.0419** **483**	-0.03837 0.3992 485	**0.18657** **0.0001** **442**	**0.15557** **0.0006** **485**
CU	0.04748 0.3203 440	0.05218 0.2748 440	-0.07060 0.1397 439	-0.03654 0.4456 438	0.02223 0.6419 440	0.02314 0.6424 405	-0.01904 0.6903 440
NIT	-0.05596 0.2398 443	-0.05727 0.2290 443	0.04454 0.3502 442	-0.04658 0.3291 441	-0.01800 0.7056 443	-0.06962 0.1630 403	-0.03158 0.5074 443
TDS	-0.05944 0.1908 486	-0.05619 0.2162 486	0.03539 0.4368 485	0.01266 0.7811 484	**-0.18123** **0.0001** **486**	0.04480 0.3474 442	-0.04766 0.2944 486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	CL2FREE	CL2TOT	pH	ALK	CYN	TEMP	VOLUME
HARD	-0.04016 0.3969 447	-0.04101 0.3870 447	-0.06547 0.1675 446	-0.07093 0.1352 445	**-0.15905** **0.0007** **447**	-0.00933 0.8499 414	**-0.09419** **0.0466** **447**
HPC	**-0.15253** **0.0007** **486**	**-0.15018** **0.0009** **486**	-0.00206 0.9639 485	-0.06249 0.1699 484	**-0.09436** **0.0376** **486**	0.06829 0.1518 442	0.00551 0.9036 486
TCOLI	**-0.10031** **0.0270** **486**	**-0.09721** **0.0321** **486**	-0.04885 0.2829 485	-0.04313 0.3438 484	-0.01745 0.7011 486	**0.12741** **0.0073** **442**	-0.05648 0.2139 486
FCOLI	-0.03365 0.4592 486	-0.03446 0.4485 486	-0.00127 0.9777 485	0.00496 0.9133 484	0.05229 0.2499 486	0.07737 0.1043 442	-0.02830 0.5337 486
NCOLI	**-0.18395** **0.0001** **486**	**-0.17992** **0.0001** **486**	0.03944 0.3861 485	-0.00271 0.9526 484	-0.03261 0.4732 486	**0.11436** **0.0162** **442**	0.02693 0.5536 486
PSEUD	-0.25873 0.1925 27	-0.25981 0.1906 27	-0.03566 0.8598 27	-0.09520 0.6367 27	-0.17034 0.3956 27	-0.06279 0.7813 22	-0.11245 0.5765 27
TSTAPH	-0.08219 0.6836 27	-0.07053 0.7266 1.27	**0.40195** **0.0377** **27**	-0.31947 0.1043 27	-0.21576 0.2797 27	-0.03579 0.8744 22	-0.06879 0.7332 27
FSTREP	-0.12751 0.5348 26	-0.12012 0.5589 26	0.37881 0.0563 26	0.20781 0.3084 26	0.34977 0.0798 26	0.16078 0.4747 22	-0.17875 0.3823 26
DATE	**-0.13870** **0.0022** **486**	**-0-13707** **0.0025** **486**	**0.15832** **0.0005** **485**	-0.00343 0.9400 484	-0.11341 **0.0124** **486**	-0.60769 **0.0001** **442**	0.03586 0.4302 486
HOUR	**-0.15914** **0.0001** **486**	**-0.15665** **0.0005** **486**	**0.09486** **0.0368** **485**	0.01471 0.7468 484	-0.07113 0.1173 486	**-0.13996** **0.0032** **442**	0.04641 0.3072 486
MONTH	**-0.11069** **0.0146** **486**	**-0.10884** **0.0164** **486**	**0.15410** **0.0007** **485**	-0.01714 0.7068 484	**-0.12364** **0.0063** **486**	**-0.60514** **0.0001** **442**	0.00039 0.9931 486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	CL2FREE	CL2TOT	PH	ALK	CYN	TEMP	VOLUME
ION_N	-0.09622 0.7330 15	-0.11432 0.6850 15	0.27170 0.3273 15	-0.06413 0.8204 15	-0.26215 0.3452 15	0.25320 0.3625 15	**0.85152** **0.0001** **15**
RAIN_N	-0.02109 0.6620 432	-0.03126 0.5170 432	0.00784 0.8710 431	-0.07797 0.1064 430	0.03871 0.4222 432	**0.16114** **0.0011** **410**	**0.10991** **0.0223** **432**
FACILITY	-0.02076 0.6486 484	-0.01956 0.6677 484	0.08942 0.0495 483	**0.18278** **0.0001** **482**	**-0.13475** **0.0030** **484**	0.00123 0.9795 440	-0.06220 0.1719 484
SURF_N	0.00974 0.8304 486	0.00536 0.9061 486	0.02256 0.6202 485	-0.02960 0.5159 484	0.03073 0.4991 486	-0.05724 0.2298 442	**-0.09337** **0.0396** **486**
DAY_N	**0.17918** **0.0001** **486**	**0.18251** **0.0001** **486**	**-0.10437** **0.0213** **485**	-0.01304 0.7747 484	0.05308 0.2428 486	**0.18637** **0.0001** **442**	**-0.15200** **0.0008** **486**
TUR_N	**-0.09433** **0.0439** **457**	-0.08144 0.0820 457	-0.05098 0.2773 456	0.03020 0.5205 455	0.06593 0.1594 457	**0.17375** **0.0003** **422**	0.00819 0.8613 457
SANTZR	0.07183 0.1203 469	0.06591 0.1541 469	**-0.13276** **0.0040** **468**	-0.00170 0.9707 467	**0.47456** **0.0001** **469**	**0.11411** **0.0186** **425**	0.00822 0.8591 469
FCOND_N	-0.02033 0.6555 484	-0.01410 0.7571 484	**-0.13849** **0.0023** **483**	**-0.12383** **0.0065** **482**	**0.12020** **0.0081** **484**	**0.20223** **0.0001** **440**	0.07245 0.1114 484
H2ORETRN	0.02450 0.5915 482	0.02076 0.6493 482	-0.05077 0.2664 481	-0.02909 0.5250 480	**0.14090** **0.0019** **482**	0.07682 0.1076 440	**-0.14832** **0.0011** **482**
BK_N	**-0.14441** **0.0014** **486**	**-0.13870** **0.0022** **486**	-0.07339 0.1065 485	-0.02042 0.6540 484	0.04412 0.3318 486	**0.16925** **0.0004** **442**	**0.21480** **0.0001** **486**
YL_N	-0.07599 0.0943 486	-0.07607 0.0939 486	-0.03968 0.3833 485	-0.04185 0.3583 484	0.06094 0.1799 486	**0.03393** **0.4767** **442**	**0.16924** **0.0002** **486**

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	CL2FREE	CL2TOT	PH	ALK	CYN	TEMP	VOLUME
GN_N	-0.05902	-0.05074	-0.03896	0.03138	**0.10135**	0.07105	0.00089
	0.1940	0.2643	0.3920	0.4910	**0.0255**	0.1359	0.9843
	486	486	485	484	**486**	442	486
PK_N	-0.01237	-0.01330	-0.03192	-0.02685	0.00327	-0.02497	-0.01436
	0.7856	0.7699	0.4830	0.5557	0.9426	0.6006	0.7522
	486	486	485	484	486	442	486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SWIMRS	CU	NIT	TDS	HARD	HPC	TCOLI
CL2FREE	**-0.11658** **0.0102** **485**	0.04748 0.3203 440	-0.05596 0.2398 443	-0.05944 0.1908 486	-0.04016 0.3969 447	**-0.15253** **0.0007** **486**	**-0.10031** **0.0270** **486**
CL2TOT	**-0.11069** **0.0147** **485**	0.05218 0.2748 440	-0.05727 0.2290 443	-0.05619 0.2162 486	-0.04101 0.3870 447	**-0.15018** **0.0009** **486**	**-0.09721** **0.0321** **486**
PH	0.04645 0.3079 484	-0.07060 0.1397 439	0.04454 0.3502 442	0.03539 0.4368 485	-0.06547 0.1675 446	-0.00206 0.9639 485	-0.04885 0.2829 485
ALK	**0.09260** **0.0419** **483**	-0.03654 0.4456 438	-0.04658 0.3291 441	0.01266 0.7811 484	-0.07093 0.1352 445	-0.06249 0.1699 484	-0.04313 0.3438 484
CYN	-0.03837 0.3992 485	0.02223 0.6419 440	-0.01800 0.7056 443	**-0.18123** **0.0001** **486**	**-0.15905** **0.0007** **447**	**-0.09436** **0.0376** **486**	-0.01745 0.7011 486
TEMP	**0.18657** **0.0001** **442**	0.02314 0.6424 405	-0.06962 0.1630 403	0.04480 0.3474 442	-0.00933 0.8499 414	0.06829 0.1518 442	**0.12741** **0.0073** **442**
VOLUME	**0.15557** **0.0006** **485**	-0.01904 0.6903 440	-0.03158 0.5074 443	-0.04766 0.2944 486	**-0.09419** **0.0466** **447**	0.00551 0.9036 486	-0.05648 0.2139 486
SWIMRS	1.00000	-0.00629 0.8955 439.	0.05067 0.2878 442	0.06347 0.1628 485	**-0.09329** **0.0487** **447**	0.06793 0.1352 485	**0.17336** **0.0001** **485**
CU	-0.00629 0.8955 439	1.00000	**0.17392** **0.0003** **431**	0.03145 0.5105 440	0.04348 0.3718 424	-0.08521 0.0742 440	-0.05437 0.2551 440
NIT	0.05067 0.2878 442	**0.17392** **0.0003** **431**	1.00000	**0.26367** **0.0001** **443**	**0.12367** **0.0109** **423**	0.01893 0.6911 443	-0.01371 0.7735 443
TDS	0.06347 0.1628 485	0.03145 0.5105 440	**0.26367** **0.0001** **443**	1.00000	**0.26687** **0.0001** **447**	**0.09753** **0.0316** **486**	**0.11096** **0.0144** **486**

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SWIMRS	CU	NIT	TDS	HARD	HPC	TCOLI
HARD	**-0.09329** **0.0487** 447	0.04348 0.3718 424	**0.12367** **0.0109** **423**	**0.26687** **0.0001** **447**	1.00000	0.02746 0.5626 447	0.07286 0.1240 447
HPC	0.06793 0.1352 485	-0.08521 0.0742 440	0.01893 0.6911 443	**0.09753** **0.0316** **486**	0.02746 0.5626 447	1.00000	**0.57227** **0.0001** **486**
TCOLI	**0.17336** **0.0001** **485**	-0.05437 0.2551 440	-0.01371 0.7735 443	**0.11096** **0.0144** **486**	0.07286 0.1240 447	**0.57227** **0.0001** **486**	1.00000
FCOLI	0.04135 0.3635 485	-0.00618 0.8971 440	-0.05290 0.2665 443	-0.04461 0.3263 486	-0.01541 0.7453 447	**0.31566** **0.0001** **486**	**0.49083** **0.0001** **486**
NCOLI	0.08158 0.0727 485	-0.05706 0.2323 440	0.06898 0.1472 443	0.00373 0.9346 486	-0.03595 0.4484 447	**0.42455** **0.0001** **486**	**0.20288** **0.0001** **486**
PSEUD	-0.08645 0.6681 27	-0.19184 0.3378 27	0.01420 0.9440 27	0.01247 0.9508 27	-0.22545 0.2582 27	-0.06805 0.7359 27	-0.03274 0.8712 27
TSTAPH	0.00133 0.9948 27	0.00870 0.9656 27	0.18512 0.3553 27	**0.54677** **0.0032** **27**	-0.06807 0.7359 27	-0.07820 0.6983 27	-0.04640 0.8182 27
FSTREP	**0.54427** **0.0040** **26**	-0.26355 0.1933 26	-0.28562 0.1572 26	0.00568 0.9780 26	-0.17890 0.3819 26	-0.06774 0.7423 26	**0.89077** **0.0001** **26**
DATE	0.02529 0.5785 485	0.08808 0.0649 440	**0.15270** **0.0013** **443**	-0.07687 0.0905 486	-0.01652 0.7275 447	-0.05227 0.2501 486	-0.01575 0.7291 486
HOUR	**0.19232** **0.0001** **495**	0.07762 0.1040 440	**0.10619** **0.0254** **443**	0.01633 0.7196 486	**-0.09442** **0.0460** **447**	-0.00270 0.9526 486	0.05327 0.2411 486
MONTH	-0.00151 0.9736 485	**0.11649** **0.0145** **440**	**0.16856** **0.0004** **443**	-0.08408 0.0640 486	-0.01716 0.7175 447	-0.04736 0.2974 486	-0.02854 0.5303 486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SWIMRS	CU	NIT	TDS	HARD	HPC	TCOLI
ION_N	0.28957 0.2952 15	-0.29876 0.2794 15	0.48155 0.0691 15	-0.15256 0.5873 15	-0.10806 0.7131 14	-0.14599 0.6037 15	-0.07143 0.8003 15
RAIN_N	0.00701 0.8844 432	-0.03797 0.4506 397	0.03480 0.4910 394	0.06005 0.2129 432	0.06842 0.1699 404	-0.04844 0.3151 432	-0.03410 0.4796 432
FACILITY	**0.13891** **0.0022** **483**	**0.12040** **0.0117** **438**	0.06844 0.1513 441	**0.18001** **0.0001** **484**	**0.11907** **0.0120** **445**	**0.10694** **0.0186** **484**	**0.11917** **0.0087** **484**
SURF_N	-0.06129 0.1778 485	**-0.09525** **0.0459** **440**	0.01766 0.7109 443	**0.10187** **0.0247** **486**	0.02918 0.5384 447	0.05316 0.2421 486	0.03960 0.3838 486
DAY_N	**-0.15384** **0.0007** **485**	-0.00134 0.9776 440	-0.06705 0.1589 443	**0.08184** **0.0715** **486**	0.04733 0.3181 447	-0.00355 0.9379 486	0.03220 0.4788 486
TUR_N	**0.32573** **0.0001** **457**	-0.01668 0.7360 411	-0.04872 0.3221 415	-0.04115 0.3801 457	-0.04453 0.3598 425	**0.23309** **0.0001** **457**	**0.29250** **0.0001** **457**
SANTZR	0.05657 0.2219 468	-0.03547 0.4669 423	-0.04617 0.3418 426	**-0.22587** **0.0001** **469**	**-0.34922** **0.0001** **430**	-0.02127 0.6460 469	-0.00377 0.9351 469
FCOND_N	0.05966 0.1906 483	-0.00929 0.8462 438	0.02289 0.6316 441	0.05838 0.1998 484	**-0.14431** **0.0023** **445**	0.01686 0.7115 484	0.00676 0.8821 484
H2ORETRN	-0.04936 0.2800 481	-0.08195 0.0867 438	**-0.13014** **0.0063** **439**	-0.05620 0.2181 482	-0.03121 0.5114 445	0.04435 0.3313 482	0.08044 0.0777 482
BK_N	0.08634 0.0574 485	0.02102 0.6601 440	-0.02415 0.6121 443	-0.06009 0.1860 486	**-0.10181** **0.0314** **447**	0.00918 0.8400 486	0.07942 0.0803 486
YL_N	0.08526 0.0606 485	-0.00953 0.8420 440	-0.00287 0.9520 443	-0.07701 0.0899 486	**-0.13431** **0.0044** **447**	-0.02543 0.5760 486	0.05127 0.2593 486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SWIMRS	CU	NIT	TDS	HARD	HPC	TCOLI
GN_N	-0.04272	0.04386	-0.01927	-0.03473	-0.03054	-0.01884	-0.01472
	0.3479	0.3587	0.6858	0.4449	0.5196	0.6787	0.7461
	485	440	443	486	447	486	486
PK_N	-0.02259	-0.03054	-0.04531	-0.02738	-0.02084	-0.01062	-0.00779
	0.6196	0.5229	0.3413	0.5471	0.6603	0.8154	0.8640
	485	440	443	486	447	486	486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	FCOLI	NCOLI	PSEUD	TSTAPH	FSTREP	DATE	HOUR
CL2FREE	-0.03365	**-0.18395**	-0.25873	-0.08219	-0.12751	**-0.13870**	**-0.15914**
	0.4592	**0.0001**	0.1925	0.6836	0.5348	**0.0022**	**0.0004**
	486	**486**	27	27	26	**486**	**486**
CL2TOT	-0.03446	**-0.17992**	-0.25981	-0.07053	-0.12012	**-0.13707**	**-0.15665**
	0.4485	**0.0001**	0.1906	0.7266	0.5589	**0.0025**	**0.0005**
	486	**486**	27	27	26	**486**	**486**
PH	-0.00127	0.03944	-0.03566	**0.40195**	0.37881	**0.15832**	**0.09486**
	0.9777	0.3861	0.8598	**0.0377**	0.0563	**0.0005**	**0.0368**
	485	485	27	**27**	26	**485**	**485**
ALK	0.00496	-0.00271	-0.09520	-0.31947	0.20781	-0.00343	0.01471
	0.9133	0.9526	0.6367	0.1043	0.3084	0.9400	0.7468
	484	484	27	27	26	484	484
CYN	0.05229	-0.03261	-0.17034	-0.21576	0.34977	**-0.11341**	-0.07113
	0.2499	0.4732	0.3956	0.2797	0.0798	**0.0124**	0.1173
	486	486	27	27	26	**486**	486
TEMP	0.07737	**0.11436**	-0.06279	-0.03579	0.16078	**-0.60769**	**-0.13996**
	0.1043	**0.0162**	0.7813	0.8744	0.4747	**0.0001**	**0.0032**
	442	**442**	22	22	22	**442**	**442**
VOLUME	-0.02830	0.02693	-0.11245	-0.06879	-0.17875	0.03586	0.04641
	0.5337	0.5536	0.5765	0.7332	0.3823	0.4302	0.3072
	486	486	27	27	26	486	486
SWIMRS	0.04135	0.08158	-0.08645	0.00133	**0.54427**	0.02529	**0.19232**
	0.3635	0.0727	0.6681	0.9948	**0.0040**	0.5785	**0.0001**
	485	485	27	27	**26**	485	**485**
CU	-0.00618	-0.05706	-0.19184	0.00870	-0.26355	0.08808	0.07762
	0.8971	0.2323	0.3378	0.9656	0.1933	0.0649	0.1040
	440	440	27	27	26	440	440
NIT	-0.05290	0.06898	0.01420	0.18512	-0.28562	**0.15270**	**0.10619**
	0.2665	0.1472	0.9440	0.3553	0.1572	**0.0013**	**0.0254**
	443	443	27	27	26	**443**	**443**
TDS	-0.04461	0.00373	0.01247	**0.54677**	0.00568	-0.07687	0.01633
	0.3263	0.9346	0.9508	**0.0032**	0.9780	0.0905	0.7196
	486	486	27	**27**	26	486	486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	FCOLI	NCOLI	PSEUD	TSTAPH	FSTREP	DATE	HOUR
HARD	-0.01541 0.7453 447	-0.03595 0.4484 447	-0.22545 0.2582 27	-0.06807 0.7359 27	-0.17890 0.3819 26	-0.01652 0.7275 447	**-0.09442** **0.0460** **447**
HPC	**0.31566** **0.0001** **486**	**0.42455** **0.0001** **486**	-0.06805 0.7359 27	-0.07820 0.6983 27	-0.06774 0.7423 26	-0.05227 0.2501 486	-0.00270 0.9526 486
TCOLI	**0.49083** **0.0001** **486**	**0.20288** **0.0001** **486**	-0.03274 0.8712 27	-0.04640 0.8182 27	**0.89077** **0.0001** 26	-0.01575 0.7291 486	0.05327 0.2411 486
FCOLI	1.00000	**0.12707** **0.0050** **486**	-0.03241 0.8725 27	-0.04581 0.8205 27	**0.89091** **0.0001** **26**	-0.02576 0.5710 486	0.02402 0.5974 486
NCOLI	**0.12707** **0.0050** **486**	1.00000	-0.10969 0.5860 27	0.26387 0.1835 27	**0.49001** **0.0111** **26**	**-0.11872** **0.0088** **486**	-0.03961 0.3835 486
PSEUD	-0.03241 0.8725 27	-0.10969 0.5860 27	1.00000	-0.04839 0.8106 27	-0.05324 0.7962 26	-0.03534 0.8611 27	-0.16743 0.4039 27
TSTAPH	-0.04581 0.8205 27	0.26387 0.1835 27	-0.04839 0.8106 27	1.00000	-0.06498 0.7525 26	-0.16254 0.4179 27	0.19908 0.3195 27
FSTREP	**0.89091** **0.0001** **26**	**0.49001** **0.0111** **26**	-0.05324 0.7962 26	-0.06498 0.7525 26	1.00000	-0.24310 0.2314 26	**0.41759** **0.0338** **26**
DATE	-0.02576 0.5710 486	**-0.11871** **0.0088** **486**	-0.03534 0.8611 27	-0.16254 0.4179 27	-0.24310 0.2314 26	1.00000	**0.61806** **0.0001** **486**
HOUR	0.02402 0.5974 486	-0.03961 0.3835 486	-0.16743 0.4039 27	0.19908 0.3195 27	**0.41759** **0.0338** **26**	**0.61806** **0.0001** **486**	1.00000
MONTH	-0.02499 0.5826 486	**-0.11320** **0.0125** **486**	-0.08306 0.6804 27	-0.02258 0.9110 27	-0.25351 0.2114 26	**0.96423** **0.0001** **486**	**0.58913** **0.0001** **486**

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	FCOLI	NCOLI	PSEUD	TSTAPH	FSTREP	DATE	HOUR
ION_N		-0.16763				-0.02459	0.12939
		0.5504				0.9307	0.6458
	15	15	0	0	0	15	15
RAIN_N	-0.04198	0.02836	-0.16596	0.37520	0.27435	**-0.21025**	-0.07601
	0.3841	0.5566	0.4605	0.0853	0.2166	**0.0001**	0.1147
	432	432	22	22	22	**432**	432
FACILITY	0.00977	0.05193	-0.16798	0.12842	-0.13331	-0.06427	-0.01196
	0.8303	0.2542	0.4023	0.5232	0.5162	0.1580	0.7930
	484	484	27	27	26	484	484
SURF_N	0.01620	0.02532				-0.00954	0.05071
	0.7216	0.5777				0.8339	0.2645
	486	486	27	27	26	486	486
DAY_N	0.01460	-0.00180	-0.05185	-0.09337	-0.05455	**-0.37879**	**-0.25336**
	0.7481	0.9684	0.7973	0.6432	0.7913	**0.0001**	**0.0001**
	486	486	27	27	26	**486**	**486**
TUR_N	**0.20050**	0.04814	-0.02984	-0.06438	**0.41989**	-0.02960	**0.11011**
	0.0001	0.3045	0.8825	0.7497	**0.0327**	0.5279	**0.0185**
	457	457	27	27	**26**	457	**457**
SANTZR	0.01850	0.06979	0.21725	0.09905	0.18054	-0.07967	0.01120
	0.6895	0.1313	0.2864	0.6302	0.3878	0.0848	0.8089
	469	469	26	26	25	469	469
FCOND_N	-0.01358	0.04659	-0.10602	0.18986	0.05051	-0.07489	0.01429
	0.7657	0.3064	0.5987	0.3429	0.8064	0.0999	0.7539
	484	484	27	27	26	484	484
H2ORETRN	0.09610	-0.00505	**0.43240**	-0.09740	-0.11629	-0.02954	0.00169
	0.0349	0.9120	**0.0243**	0.6289	0.5716	0.5176	0.9704
	482	482	**27**	27	26	482	482
BK_N	0.03992	0.01701	-0.14352	0.04201	0.24478	-0.04059	0.05590
	0.3799	0.7084	0.4751	0.8352	0.2281	0.3720	0.2186
	486	486	27	27	26	486	486
YL_N	0.03691	0.03085	-0.03620	-0.03936	**0.58409**	0.04828	0.04446
	0.4168	0.4974	0.8577	0.8454	**0.0017**	0.2882	0.3280
	486	486	27	27	**26**	486	486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	FCOLI	NCOLI	PSEUD	TSTAPH	FSTREP	DATE	HOUR
GN_N	-0.00974	-0.01184				-0.02756	0.00071
	0.8304	0.7946				0.5445	0.9875
	486	486	27	27	26	486	486
PK_N	-0.00515	-0.01839				-0.04613	-0.07295
	0.9098	0.6859				0.3102	0.1082
	486	486	27	27	26	486	486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	MONTH	ION_N	RAIN_N	FACILITY	SURF_N	DAY_N	TUR_N
CL2FREE	**-0.11069**	-0.09622	-0.02109	-0.02076	0.00974	**0.17918**	**-0.09433**
	0.0146	0.7330	0.6620	0.6486	0.8304	**0.0001**	**0.0439**
	486	15	432	484	486	**486**	**457**
CL2TOT	**-0.10884**	-0.11432	-0.03126	-0.01956	0.00536	**0.18251**	-0.08144
	0.0164	0.6950	0.5170	0.6677	0.9061	**0.0001**	0.0820
	486	15	432	484	486	**486**	457
PH	**0.15410**	0.27170	0.00784	**0.08942**	0.02256	**-0.10437**	-0.05098
	0.0007	0.3273	0.8710	**0.0495**	0.6202	**0.0215**	0.2773
	485	15	431	**483**	485	**485**	456
ALK	-0.01714	-0.06413	-0.07797	**0.18278**	-0.02960	-0.01304	0.03020
	0.7068	0.8204	0.1064	**0.0001**	0.5159	0.7747	0.5205
	484	15	430	**482**	484	484	455
CYN	**-0.12364**	-0.26215	0.03871	**-0.13475**	0.03073	0.05308	0.06593
	0.0063	0.3452	0.4222	**0.0030**	0.4991	0.2428	0.1594
	486	15	432	**484**	486	486	457
TEMP	**-0.60514**	0.25320	**0.16114**	0.00123	-0.05724	**0.18637**	**0.17375**
	0.0001	0.3625	**0.0011**	0.9795	0.2298	**0.0001**	**0.0003**
	442	15	**410**	440	442	**442**	**422**
VOLUME	0.00039	**0.85152**	**0.10991**	-0.06220	**-0.09337**	**-0.15200**	0.00819
	0.9931	**0.0001**	**0.0223**	0.1719	**0.0396**	**0.0008**	0.8613
	486	**15**	**432**	484	**486**	**486**	457
SWIMRS	-0.00151	0.28957	0.00701	**0.13891**	-0.06129	**-0.15384**	**0.32573**
	0.9736	0.2952	0.8844	**0.0022**	0.1778	**0.0007**	**0.0001**
	485	15	432	**483**	485	**485**	**457**
CU	**0.11649**	-0.29876	-0.03797	**0.12040**	**-0.09525**	-0.00134	-0.01668
	0.0145	0.2794	0.4506	**0.0117**	**0.0459**	0.9776	0.7360
	440	15	397	**438**	**440**	440	411
NIT	**0.16856**	0.48155	0.03480	0.06844	0.01766	-0.06705	-0.04872
	0.0004	0.0691	0.4910	0.1513	0.7109	0.1589	0.3221
	443	15	394	441	443	443	415
TDS	-0.08408	-0.15256	0.06005	**0.18001**	**0.10187**	0.08184	-0.04115
	0.0640	0.5873	0.2129	**0.0001**	**0.0247**	0.0715	0.3801
	486	15	432	**484**	**486**	486	457

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	MONTH	ION_N	RAIN_N	FACILITY	SURF_N	DAY_N	TUR_N
HARD	-0.01716 0.7175 447	-0.10806 0.7131 14	0.06842 0.1699 404	**0.11907** **0.0120** **445**	0.02918 0.5384 447	0.04733 0.3181 447	-0.04453 0.3598 425
HPC	-0.04136 0.2974 486	-0.14599 0.6037 15	-0.04844 0.3151 432	**0.10694** **0.0186** **484**	0.05316 0.2421 486	-0.00355 0.9379 486	**0.23309** **0.0001** **457**
TCOLI	-0.02854 0.5303 486	-0.07143 0.8003 15	-0.03410 0.4796 432	**0.11917** **0.0087** **484**	0.03960 0.3838 486	0.03220 0.4788 486	**0.29250** **0.0001** **457**
FCOLI	-0.02499 0.5826 486	 15	-0.04198 0.3841 432	0.00977 0.8303 484	0.01620 0.7216 486	0.01460 0.7481 486	**0.20050** **0.0001** **457**
NCOLI	**-0.11320** **0.0125** **486**	-0.16763 0.5504 15	0.02836 0.5566 432	0.05193 0.2542 484	0.02532 0.5777 486	-0.00180 0.9684 486	0.04814 0.3045 457
PSEUD	-0.08306 0.6804 27	 0	-0.16596 0.4605 22	-0.16798 0.4023 27	 27	-0.05185 0.7973 27	-0.02984 0.8825 27
TSTAPH	-0.02258 0.9110 27	 0	0.37520 0.0853 22	0.12842 0.5232 27	 27	-0.09337 0.6432 27	-0.06438 0.7497 27
FSTREP	-0.25351 0.2114 26	 0	0.27435 0.2166 22	-0.13331 0.5162 26	 26	-0.05455 0.7913 26	**0.41989** **0.0327** **26**
DATE	**0.96423** **0.0001** **486**	-0.02459 0.9307 15	**-0.21025** **0.0001** **432**	-0.06427 0.1580 484	-0.00954 0.8339 486	**-0.37879** **0.0001** **486**	-0.02960 0.5279 457
HOUR	**0.58913** **0.0001** **486**	0.12939 0.6458 15	-0.07601 0.1147 432	-0.01196 0.7930 484	0.05071 0.2645 486	**-0.25336** **0.0001** **486**	**0.11011** **0.0185** **457**
MONTH	1.00000	0.02621 0.9261 15	**-0.18146** **0.0001** **432**	-0.06080 0.1817 484	-0.00143 0.9750 486	**-0.37050** **0.0001** **486**	-0.02707 0.5638 457

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	MONTH	ION_N	RAIN_N	FACILITY	SURF_N	DAY_N	TUR_N
ION_N	0.02621 0.9261 15	1.00000	0.34247 0.2115 15	-0.09197 0.7444 15	15	-0.34175 0.2125 15	-0.08333 0.7867 13
RAIN_N	**-0.18146** **0.0001** **432**	0.34247 0.2115 15	1.00000	-0.06345 0.1891 430	0.06602 0.1708 432	-0.07424 0.1234 432	-0.08034 0.1065 405
FACILITY	-0.06080 0.1817 484	-0.09197 0.7444 15	-0.06345 0.1891 430	1.00000	0.00672 0.8828 484	-0.00777 0.8647 484	0.07095 0.1308 455
SURF_N	-0.00143 0.9750 486	15	0.06602 0.1708 432	0.00672 0.8828 484	1.00000	0.07170 0.1144 486	0.03137 0.5036 457
DAY_N	**-0.37050** **0.0001** **486**	-0.34175 0.2125 15	-0.07424 0.1234 432	-0.00777 0.8647 484	0.07170 0.1144 486	1.00000	-0.04350 0.3535 457
TUR_N	-0.02707 0.5638 457	-0.08333 0.7867 13	-0.08034 0.1065 405	0.07095 0.1308 455	0.03137 0.5036 457	-0.04350 0.3535 457	1.00000
SANTZR	-0.08264 0.0738 469	-0.52451 0.0542 14	-0.00068 0.9889 418	**-0.12762** **0.0057** **467**	**0.10263** **0.0262** **469**	-0.01636 0.7239 469	**0.10593** **0.0263** **440**
FCOND_N	-0.06008 0.1870 484	-0-23056 0.4084 15	0.03576 0.4585 432	-0.04455 0.3291 482	**0.16538** **0.0003** **484**	0.05011 0.2712 484	**0.18971** **0.0001** **455**
H2ORETRN	-0.03576 0.4334 482	-0.10483 0.7100 15	-0.08331 0.0841 431	0.03953 0.3876 480	0.05792 0.2043 482	-0.02700 0.5543 482	0.04236 0.3684 453
BK_N	-0.00644 0.8874 486	-0.22588 0.4182 15	0.03132 0.5161 432	-0.01634 0.7199 484	**0.10537** **0.0202** **486**	-0.06714 0.1394 486	**0.18278** **0.0001** **457**
YL_N	0.04316 0.3424 486	-0.09869 0.7264 15	-0.01264 0.7933 432	-0.04321 0.3429 484	0.05710 0.2089 486	**-0.19127** **0.0001** **486**	**0.14848** **0.0015** **457**

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	MONTH	ION_N	RAIN_N	FACILITY	SURF_N	DAY_N	TUR_N
GN_N	-0.00871	-0.07143	-0.07997	-0.07030	0.01999	0.00754	**0.32558**
	0.8481	0.8003	0.0969	0.1225	0.6602	0.8683	**0.0001**
	486	15	432	484	486	486	**457**
PK_N	-0.04531		0.00604	-0.00729	0.01057	0.02764	
	0.3188		0.9004	0.8729	0.8161	0.5433	
	486	15	432	484	486	486	457

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SANTZR	FCOND_N	H2ORETRN	BK_N	YL_N	GN_N	PK_N
CL2FREE	0.07183 0.1203 469	-0.02033 0.6555 484	0.02450 0.5915 482	**-0.14441** **0.0014** **486**	-0.07599 0.0943 486	-0.05902 0.1940 486	-0.01237 0.7856 486
CL2TOT	0.06591 0.1541 469	-0.01410 0.7571 484	0.02076 0.6493 482	**-0.13870** **0.0022** **486**	-0.07607 0.0939 486	-0.05074 0.2643 486	-0.01330 0.7699 486
PH	**-0.13276** **0.0040** **468**	**-0.13849** **0.0023** **483**	-0.05077 0.2664 481	-0.073j9 0.1065 485	-6.03968 0.3833 485	-0.03896 0.3920 485	-0.03192 0.4830 485
ALK	-0.00170 0.9707 467	**-0.12383** **0.0065** **482**	-0.02909 0.5250 480	-0.02042 0.6540 484	-0.04185 0.3583 484	0.03138 0.4910 484	-0.02685 0.5557 484
CYN	**0.47456** **0.0001** **469**	**0.12020** **0.0081** **484**	**0.14090** **0.0019** **482**	0.04412 0.3318 486	0.06094 0.1799 486	**0.10135** **0.0255** **486**	0.00327 0.9426 486
TEMP	**0.11411** **0.0186** **425**	**0.20223** **0.0001** **440**	0.07682 0.1076 440	**0.16925** **0.0004** **442**	0.03393 0.4767 442	0.07105 0.1359 442	-0.02497 0.6006 442
VOLUME	0.00822 0.8591 469	0.07245 0.1114 484	**-0.14832** **0.0011** **482**	**0.22480** **0.0001** **486**	**0.16924** **0.0002** **486**	0.00089 0.9843 486	-0.01436 0.7522 486
SWIMRS	0.05657 0.2219 468	0.05966 0.1906 483	-0.04936 0.2800 481	0.08634 0.0574 485	0.08526 0.0606 485	-0.04272 0.3479 485	-0.02259 0.6196 485
CU	-0.03547 0.4669 423	-0.00929 0.8462 438	-0.08195 0.0867 438	0.02102 0.6601 440	-0.00953 0.8420 440	0.04386 0.3587 440	-0.03054 0.5229 440
NIT	-0.04617 0.3418 426	0.02289 0.6316 441	**-0.13014** **0.0063** **439**	-0.02415 0.6121 443	-0.00287 0.9520 443	-0.01927 0.6858 443	-0.04531 0.3413 443
TDS	**-0.22587** **0.0001** **469**	0.05838 0.1998 484	-0.05620 0.2181 482	-0.06009 0.1860 486	-0.07701 0.0899 486	-0.03473 0.4449 486	-0.02738 0.5471 486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SANTZR	FCOND_N	H2ORETRN	BK_N	YL_N	GN_N	PK_N
HARD	**-0.34922**	**-0.14431**	-0.03121	**-0.10181**	**-0.13431**	-0.03054	-0.02084
	0.0001	**0.0023**	0.5114	**0.0314**	**0.0044**	0.5196	0.6603
	430	**445**	445	**447**	**447**	447	447
HPC	-0.02127	0.01686	0.04435	0.00918	-0.02543	-0.01884	-0.01062
	0.6460	0.7115	0.3313	0.8400	0.5760	0.6787	0.8154
	469	484	482	486	486	486	486
TCOLI	-0.00377	0.00676	0.08044	0.07942	0.05127	-0.01472	-0.00779
	0.9351	0.8821	0.0777	0.0803	0.2593	0.7461	0.8640
	469	484	482	486	486	486	486
FCOLI	0.01850	-0.01358	**0.09610**	0.03992	0.03691	-0.00974	-0.00515
	0.6895	0.7657	**0.0349**	0.3799	0.4168	0.8304	0.9098
	469	484	**482**	486	486	486	486
NCOLI	0.06979	0.04659	-0.00505	0.01701	0.03085	-0.01184	-0.01839
	0.1313	0.3064	0.9120	0.7084	0.4974	0.7946	0.6859
	469	484	482	486	486	486	486
PSEUD	0.21725	-0.10602	**0.43240**	-0.14352	-0.03620		
	0.2864	0.5987	**0.0243**	0.4751	0.8577		
	26	27	**27**	27	27	27	27
TSTAPH	0.09905	0.18986	-0.09740	0.04201	-0.03936		
	0.6302	0.3429	0.6289	0.8352	0.8454		
	26	27	27	27	27	27	27
FSTREP	0.18054	0.05051	-0.11629	0.24478	**0.58409**		
	0.3878	0.8064	0.5716	0.2281	**0.0017**		
	25	26	26	26	**26**	26	26
DATE	-0.07967	-0.07489	-0.02954	-0.04059	0.04828	-0.02756	-0.04613
	0.0648	0.0999	0.5176	0.3720	0.2882	0.5445	0.3102
	469	484	482	486	486	486	486
HOUR	0.01120	0.01429	0.00169	0.05590	0.04446	0.00071	-0.07295
	0.8084	0.7539	0.9704	0.2186	0.3280	0.9875	0.1082
	469	484	482	486	486	486	486
MONTH	-0.08264	-0.06008	-0.03576	-0.00644	0.04316	-0.00871	-0.04531
	0.0738	0.1870	0.4334	0.8874	0.3424	0.8481	0.3188
	469	484	482	486	486	486	486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SANTZR	FCOND_N	H2ORETRN	BK_N	YL_N	GN_N	PK_N
ION_N	-0.52451 0.0542 14	-0.23056 0.4084 15	-0.10483 0.7100 15	-0.22588 0.4182 15	-0.09869 0.7264 15	-0.07143 0.8003 15	 15
RAIN_N	-0.00068 0.9889 418	0.03576 0.4585 432	-0.08331 0.0841 431	0.03132 0.5161 432	-0.01264 0.7933 432	-0.07997 0.0969 432	0.00604 0.9004 432
FACILITY	**-0.12762** **0.0057** **467**	-0.04455 0.3291 482	0.03953 0.3876 480	-0.01634 0.7199 484	-0.04321 0.3429 484	-0.07030 0.1225 484	-0.00729 0.8729 484
SURF_N	**0.10263** **0.0262** **469**	**0.16538** **0.0003** **484**	0.05792 0.2043 482	**0.10537** **0.0202** **486**	0.05710 0.2089 486	0.01999 0.6602 486	0.01057 0.8161 486
DAY_N	-0.01636 0.7239 469	0.05011 0.2712 484	-0.02700 0.5543 482	-0.06714 0.1394 486	**-0.19127** **0.0001** **486**	0.00754 0.8683 486	0.02764 0.5433 486
TUR_N	**0.10593** **0.0263** **440**	**0.18971** **0.0001** **453**	0.04236 0.3684 453	**0.18278** **0.0001** **457**	**0.14848** **0.0015** **457**	**0.32558** **0.0001** **457**	 457
SANTZR	1.00000	**0.17857** **0.0001** **468**	**0.10604** **0.0222** **465**	**0.14345** **0.0018** **469**	**0.12937** **0.0050** **469**	0.04641 0.3153 469	0.04028 0.3842 469
FCOND_N	**0.17857** **0.0001** **468**	1.00000	-0.02410 0.5980 481	**0.39614** **0.0001** **484**	**0.17992** **0.0001** **484**	**0.18656** **0.0001** **484**	0.04227 0.3535 484
H2ORETRN	**0.10604** **0.0222** **465**	-0.02410 0.5980 481	1.00000	-0.06101 0.1811 482	0.03632 0.4262 482	-0.02181 0.6329 482	-0.01154 0.8006 482
BK_N	**0.14345** **0.0011** **469**	**0.39614** **0.0001** **484**	-0.06101 0.1811 482	1.00000	**0.30220** **0.0001** **486**	**0.22879** **0.0001** **486**	0.03314 0.4661 486
YL_N	0.**12937** **0.0050** **469**	**0.17992** **0.0001** **484**	0.03632 0.4262 482	**0.30220** **0.0001** **486**	1.00000	**0.16163** **0.0003** **486**	-0.01113 0.8066 486

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / Number of observations

	SANTZR	FCOND_N	H2ORETRN	BK_N	YL_N	GN_N	PK_N
GN_N	0.04647	**0.18656**	-0.02181	**0.22879**	**0.16163**	1.00000	-0.00390
	0.3153	**0.0001**	0.6329	**0.0001**	**0.0003**		0.9317
	469	**484**	482	**486**	**486**		486
PK_N	0.04028	0.04127	-0.01154	0.03314	-0.01113	-0.00390	1.00000
	0.3842	0.3535	0.8006	0.4661	0.8066	0.9317	
	469	484	482	486	486	486	

Appendix P

Results of Correlation Analyses for All Statistically Significant Bacteria Variable Pair Relationships for the ALL POOLS-486 Category

Table 8

Results of Correlation Analyses
for
Heterotrophic, Total Coliform, Non-Coliform and Fecal Coliform Bacteria
Variable Relationships

	BACTERIA VARIABLES			
VARIABLES	HPC	TCOLI	NCOLI	FCOLI
HPC	NA	+	+	+
TCOLI	+	NA	+	+
NCOLI	+	+	NA	+
FCOLI	+	+	+	NA
FSTREP	0	+	+	+
CI2FREE	-	-	-	0
CL2TOT	-	-	-	0
CYN	-	0	0	0
TDS	+	+	0	0
TUR	+	+	0	+
TEMP	0	+	+	0
SWIMRS	0	+	0	0
FACILITY	+	+	0	0
H2ORETRN	0	0	0	+
MONTH	0	0	-	0

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Heterotrophic, Total Coliform, Non-Coliform and Fecal Coliform Bacteria

	BACTERIA VARIABLES			
VARIABLES	HPC	TCOLI	NCOLI	FCOLI
HPC		61	54	77
TCOLI	53		62	78
NCOLI	54	62		79
FCOLI	55	63	74	
FSTREP		64	75	80
CI2FREE	50	59	71	
CL2TOT	51	60	72	
CYN	52	70		
TDS	56	68		
TUR		65		
TEMP		67	76	
SWIMRS		66		
FACILITY	58	69		
H2ORETRN				81
MONTH			73	

Table 9

Results of Correlation Analyses
for
Pseudomonas Aeruginosa, Total Staphylococcus
and Fecal Streptococcus Bacteria
Variable Relationships

	BACTERIA VARIABLES		
VARIABLES	PSEUD	TSTAPH	FSTREP
H2ORETRN	+	0	0
PH	0	+	0
TDS	0	+	0
TCOLI	0	0	+
NCOLI	0	0	+
FCOLI	0	0	+
TUR	0	0	+
SWIMRS	0	0	+
YLW ALG	0	0	+

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Pseudomonas Aeruginosa, Total Staphylococcus
and Fecal Streptococcus Bacteria

	BACTERIA VARIABLES		
VARIABLES	PSEUD	TSTAPH	FSTREP
H2ORETRN	83		
PH		84	
TDS		85	
TCOLI			64
NCOLI			75
FCOLI			80
TUR			
SWIMRS			86
YLW ALG			87

Appendix Q

Results of Correlation Analyses for All Statistically Significant Water Chemistry Variable Pair Relationships for the ALL POOLS-486 Category

Table 10

Results of Correlation Analyses
for
Key Water Chemistry Variable Relationships

VARIABLES	KEY WATER CHEMISTRY VARIABLES				
	CL2FREE	CL2TOT	PH	CYN	TDS
HPC	-	-	0	-	+
TCOLI	-	-	0	0	+
NCOLI	-	-	0	0	0
FCOLI	0	0	0	0	0
TSTAPH	0	0	+	0	+
CL2FREE	NA	+	0	+	0
CL2TOT	+	NA	0	+	0
PH	0	0	NA	-	0
CYN	+	+	-	NA	-
TDS	0	0	0	-	NA
ALK	0	0	+	0	0
NIT	0	0	0	0	+
HARD	0	0	0	-	+
SANTZR	0	0	-	+	-
TEMP	0	0	-	0	0
TUR	-	0	0	0	0
BLK ALG	-	-	0	0	0
SWIMRS	-	-	0	0	0
SURFTYPE	0	0	0	0	+
FACILITY	0	0	+	-	+
SURFCOND	0	0	-	+	0
MONTH	-	-	+	-	0
DAY	+	+	-	0	0
HOUR	-	-	+	0	0
H2ORETRN	0	0	0	+	0

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Key Water Chemistry Variables

	KEY WATER CHEMISTRY VARIABLES				
VARIABLES	CL2FREE	CL2TOT	PH	CYN	TDS
HPC	50	51		52	56
TCOLI	59	60			68
NCOLI	71	72			
FCOLI					
TSTAPH			84		85
CL2FREE		93		88	
CL2TOT	93			97	
PH				101	
CYN	88	97	101		113
TDS				113	
ALK			99		
NIT					110
HARD				120	115
SANTZR			100	106	114
TEMP			102		
TUR	138				
BLK ALG	168	169			
SWIMRS	89	94			
SURFTYPE					111
FACILITY			105		112
SURFCOND			159	157	
MONTH	91	96	103	108	
DAY	90	95	104		
HOUR	92	98			
H2ORETRN				107	

Table 11

Results of Correlation Analyses
for
Other Water Chemistry Variable Relationships

	OTHER WATER CHEMISTRY VARIABLES			
VARIABLES	HARD	ALK	CU	NIT
SANTZR	-	0	0	0
NIT	+	0	+	NA
VOLUME	-	0	0	0
SWIMRS	-	+	0	0
CYN	-	0	0	0
SURFCOND	-	-	0	0
BLK ALG	-	0	0	0
YLW ALG	-	0	0	0
FACILITY	+	+	+	0
PH	0	+	0	0
SURFTYPE	0	0	-	0
TDS	+	0	0	+
HARD	NA	0	0	+
CU	0	0	NA	+
RAIN	0	0	0	0
H2ORETRN	0	0	0	-
MONTH	0	0	+	+
HOUR	-	0	0	+

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
For Other Water Chemistry Variables

	OTHER WATER CHEMISTRY VARIABLES			
VARIABLES	HARD	ALK	CU	NIT
SANTZR	116			
NIT	117		127	
VOLUME	118			
SWIMRS	119	123		
CYN	120			
SURFCOND	160	161		
BLK ALG	171			
YLW ALG	182			
FACILITY	122	124	126	
PH		99		
SURFTYPE			125	
TDS	115			110
HARD				117
CU				127
RAIN				
H2ORETRN				128
MONTH				129
HOUR	121			

Appendix R

Results of Correlation Analyses for All Statistically Significant Turbidity Variable Pair Relationships for the ALL POOLS-486 Category

Table 12

Results of Correlation Analyses
for
Turbidity Variable Relationships

VARIABLES	TUR
HPC	+
TCOLI	+
FCOLI	+
FSTREP	+
BLK ALG	+
YLW ALG	+
CL2FREE	-
SWIMRS	+
DAY	-
SURFCOND	+
HOUR	+
TEMP	+

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Turbidity Variables

VARIABLES	TUR
HPC	130
TCOLI	131
FCOLI	132
FSTREP	133
BLK ALG	136
YLW ALG	137
CL2FREE	138
SWIMRS	134
DAY	139
SURFCOND	141
HOUR	142
TEMP	135
VOLUME	140

Appendix S

Results of Correlation Analyses for All Statistically Significantly Sanitizer and Environmental Variable Pair Relationships for the ALL POOLS-486 Category

Table 13

Results of Correlation Analyses
for
Sanitizer and Environmental Variable Relationships

VARIABLES	SANITIZER AND ENVIRONMENTAL VARIABLES			
	SANTZR	TEMP	RAIN	SWIMRS
CYN	+	0	0	0
HPC	0	0	0	0
PSEUD	0	0	0	0
PH	-	-	0	0
TDS	-	0	0	0
HARD	-	0	0	-
BLK ALG	+	+	0	0
YLW ALG	+	0	0	0
FACILITY	-	0	0	+
SWIMRS	0	+	0	NA
SURFCOND	+	+	0	0
MONTH	0	-	-	0
NIT	0	0	0	0
TCOLI	0	+	0	+
FSTREP	0	0	0	+
TUR	+	+	0	+
ALK	0	0	0	+
TEMP	+	NA	+	+
VOLUME	0	0	+	+
DAY	0	+	0	-
NCOLI	0	+	0	0
Cl2FREE	0	0	0	-
CL2TOT	0	0	0	-
HOUR	0	-	0	+

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Sanitizer and Environmental Variables

VARIABLES	SANITIZER AND ENVIRONMENTAL VARIABLES			
	SANTZR	TEMP	RAIN	SWIMRS
CYN	106			
HPC				
PSEUD				
PH	100	102		
TDS	114			
HARD	116			119
BLK ALG		172		
YLW ALG				
FACILITY	143			150
SWIMRS		148		
SURFCOND	158	156		
MONTH		145	146	
NIT				
TCOLI		67		66
FSTREP				86
TUR		135		134
ALK				123
TEMP			147	148
VOLUME				149
DAY		144		151
NCOLI		76		
Cl2FREE				89
CL2TOT				94
HOUR				152

Appendix T

Results of Correlation Analyses for All Statistically Significant Swimming Pool Variable Pair Relationships for the ALL POOLS-486 Category

Table 14

Results of Correlation Analyses
for
Swimming Pool Variable Relationships

VARIABLES	SWIMMING POOL VARIABLES				
	VOLUME	SURFCOND	SURFTYPE	FACILITY	H2ORETRN
HPC	0	0	0	+	0
TCOLI	0	0	0	+	0
PH	0	-	0	+	0
ALK	0	-	0	+	0
CU	0	0	-	+	0
NIT	0	0	0	0	-
HARD	-	-	0	+	0
TDS	0	0	+	+	0
SURFTYPE	-	+	NA	0	0
SWIMRS	+	0	0	+	0
H2ORETRN	-	0	0	0	NA
BLK ALG	+	+	+	0	0
YLW ALG	+	+	0	0	0
SANTZR	0	+	+	-	+
SURFCOND	0	NA	+	0	0
DAY	-	0	0	0	0
TEMP	0	+	0	0	0
TUR	0	+	0	0	0
PSEUD	0	0	0	0	+
VOLUME	NA	0	-	0	-
CYN	0	+	0	-	+
FCOLI	0	0	0	0	+

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Swimming Pool Variables

	SWIMMING POOL VARIABLES				
VARIABLES	VOLUME	SURFCOND	SURFTYPE	FACILITY	H2ORETRN
HPC				58	
TCOLI				69	
PH		159		105	
ALK		161		124	
CU			125	126	
NIT					128
HARD	118	160		122	
TDS		162	111	112	
SURFTYPE	153	155			
SWIMRS	149			150	
H2ORETRN	154				
BLK ALG	173	170	175		
YLW ALG	179	181			
SANTZR		158		144	163
SURFCOND					
DAY	165				
TEMP		156			
TUR		142			
PSEUD					83
VOLUME			153		154
CYN		157			107
FCOLI					81

Appendix U

Results of Correlation Analyses for All Statistically Significant Time Variable Pair Relationships for the ALL POOLS-486 Category

Table 15

Results of Correlation Analyses
for
Time Variable Relationships

VARIABLES	TIME VARIABLES		
	DAY	MONTH	HOUR
TEMP	+	-	-
DAY	NA	-	-
PH	-	+	+
NIT	0	+	+
RAIN	0	-	0
CL2FREE	+	-	-
CL2TOT	+	-	-
NCOLI	0	-	0
CYN	0	-	0
TUR	0	0	+
MONTH	-	NA	+
YLW ALG	-	0	0
SWIMRS	-	0	+
VOLUME	-	0	0
HARD	0	0	-

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Time Variables

VARIABLES	TIME VARIABLES		
	DAY	MONTH	HOUR
TEMP	144	145	
DAY			
PH	104	103	
NIT		129	
RAIN		146	
CL2FREE	90	91	92
CL2TOT	95	96	98
NCOLI		73	
CYN		108	
TUR			143
MONTH			
YLW ALG	183		
SWIMRS	151		152
VOLUME	165		
HARD			

Appendix V

Results of Correlation Analyses for All Statistically Significant Black and Yellow Algae Variable Pair Relationships for the ALL POOLS-486 Category

Table 16

Results of Correlation Analyses
for
Black and Yellow Algae
Variable Relationships

	ALGAE VARIABLES	
VARIABLES	BLK ALG	YLW ALG
CL2FREE	-	0
CL2TOT	-	0
SURFCOND	+	+
HARD	-	-
TUR	+	+
TEMP	+	0
VOLUME	+	+
SANTZR	+	+
BLK ALG	NA	+
YLW ALG	+	NA
DAY	0	-
SURFTYPE	+	0

Notes

+ Positive Relationship
- Negative Relationship
0 No Relationship
NA Not Applicable
See Tables 6 and 7 for abbreviations and definitions.

Figure Numbers for Graphs of the Correlations
for
Black and Yellow Algae Variables

	ALGAE VARIABLES	
VARIABLES	BLK ALG	YLW ALG
CL2FREE	168	177
CL2TOT	169	178
SURFCOND	170	181
HARD	171	182
TUR	136	137
TEMP	172	184
VOLUME	173	179
SANTZR	174	180
BLK ALG		176
YLW ALG	176	
DAY		183
SURFTYPE	175	

Appendix W

Scatter Plots of Statistically Significant Variable Pairs Identified by Correlation Analyses and Having Relationships with the Disinfection of Swimming Pools

FIGURE 40: EFFECT OF FREE CHLORINE ON HETEROTROPHIC BACTERIA POPULATION

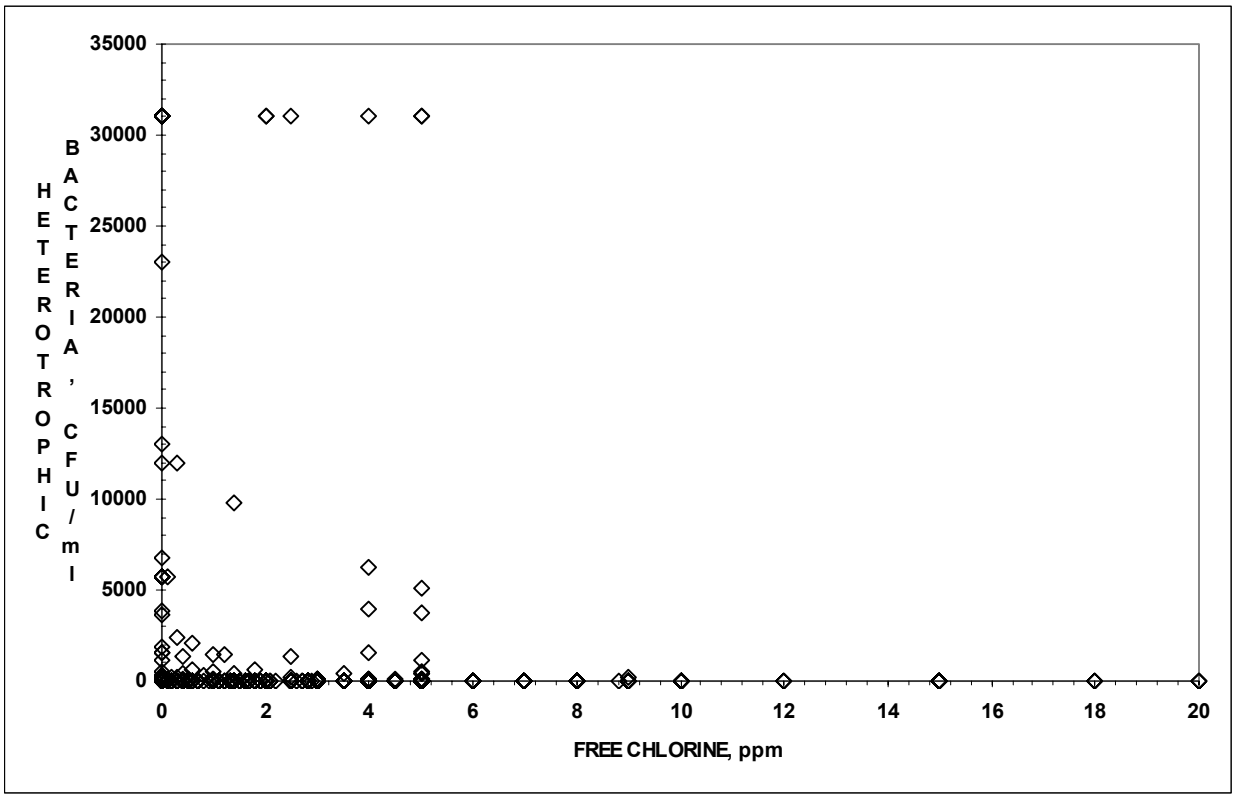


FIGURE 41: EFFECT OF FREE CHLORINE ON TOTAL COLIFORM BACTERIA POPULATION

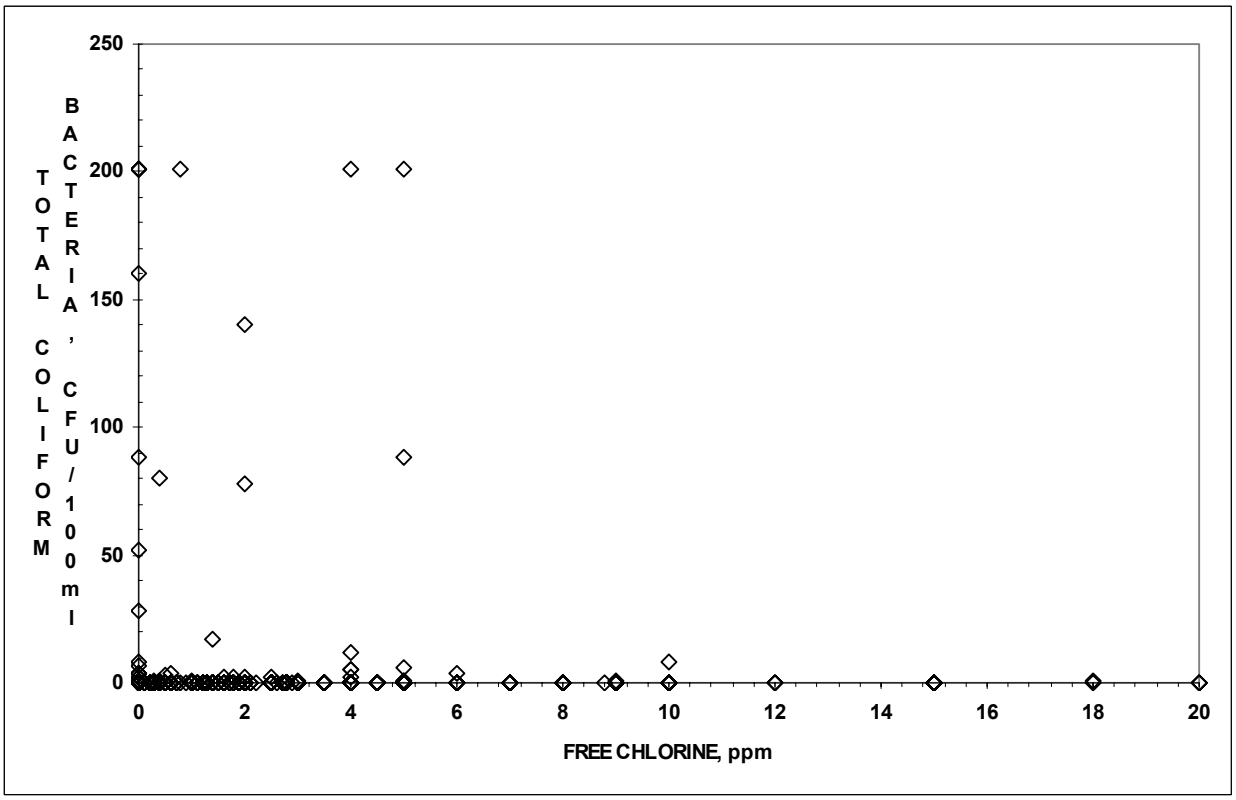


FIGURE 42: EFFECT OF FREE CHLORINE ON NON-COLIFORM BACTERIA POPULATION

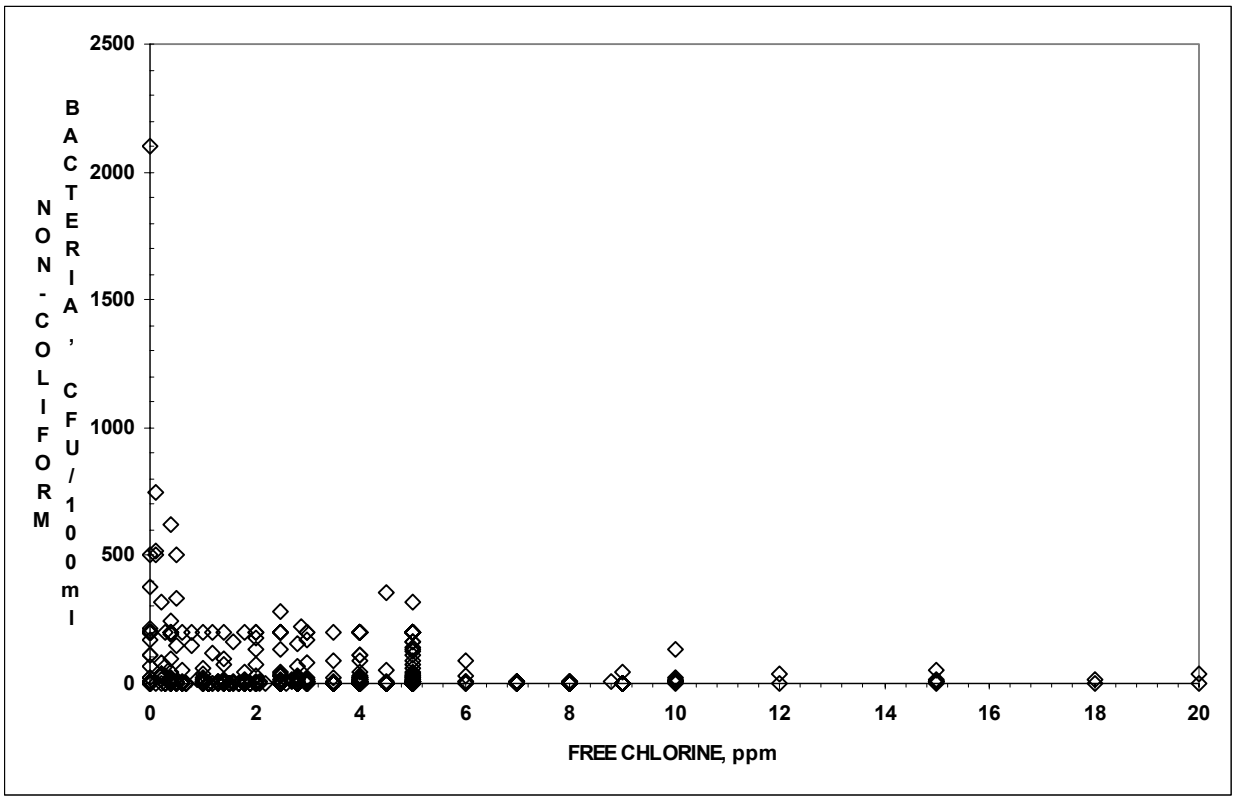


FIGURE 43: RELATIONSHIP BETWEEN FREE CHLORINE AND CYANURIC ACID

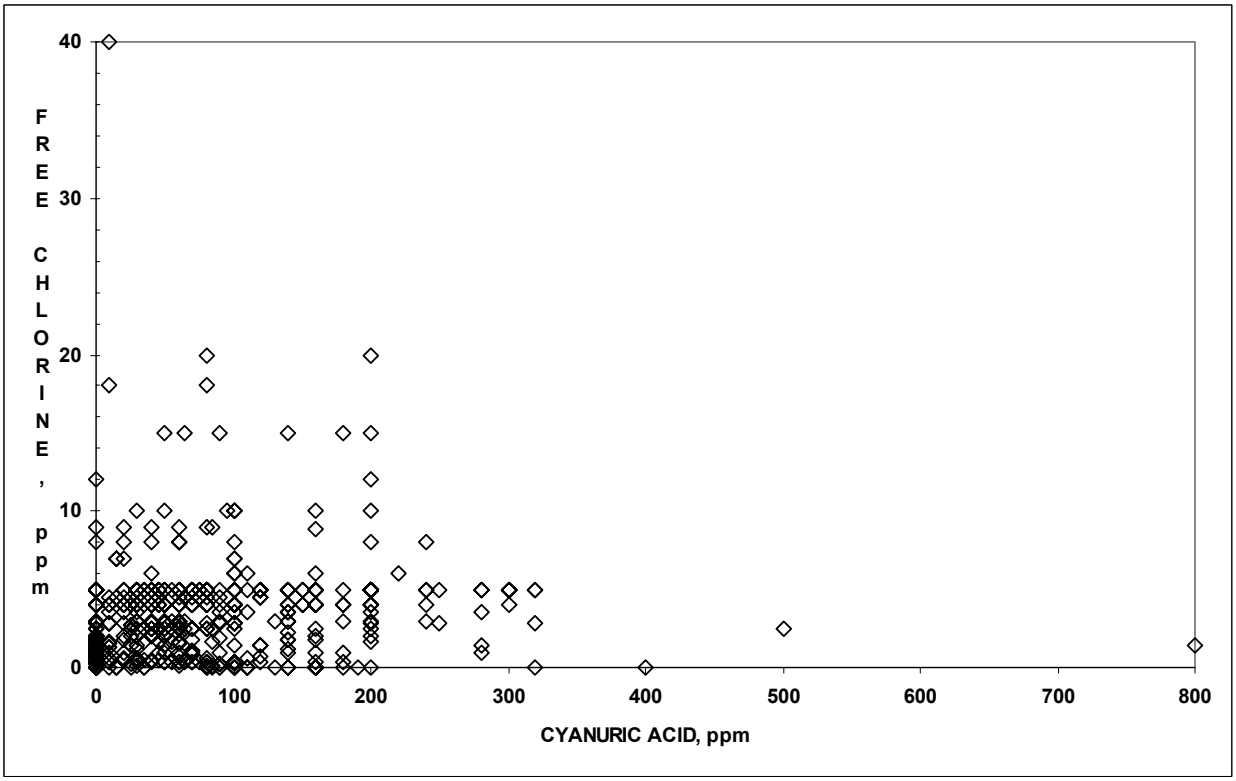


FIGURE 44: RELATIONSHIP BETWEEN HETEROTROPHIC BACTERIA POPULATION AND CYANURIC ACID

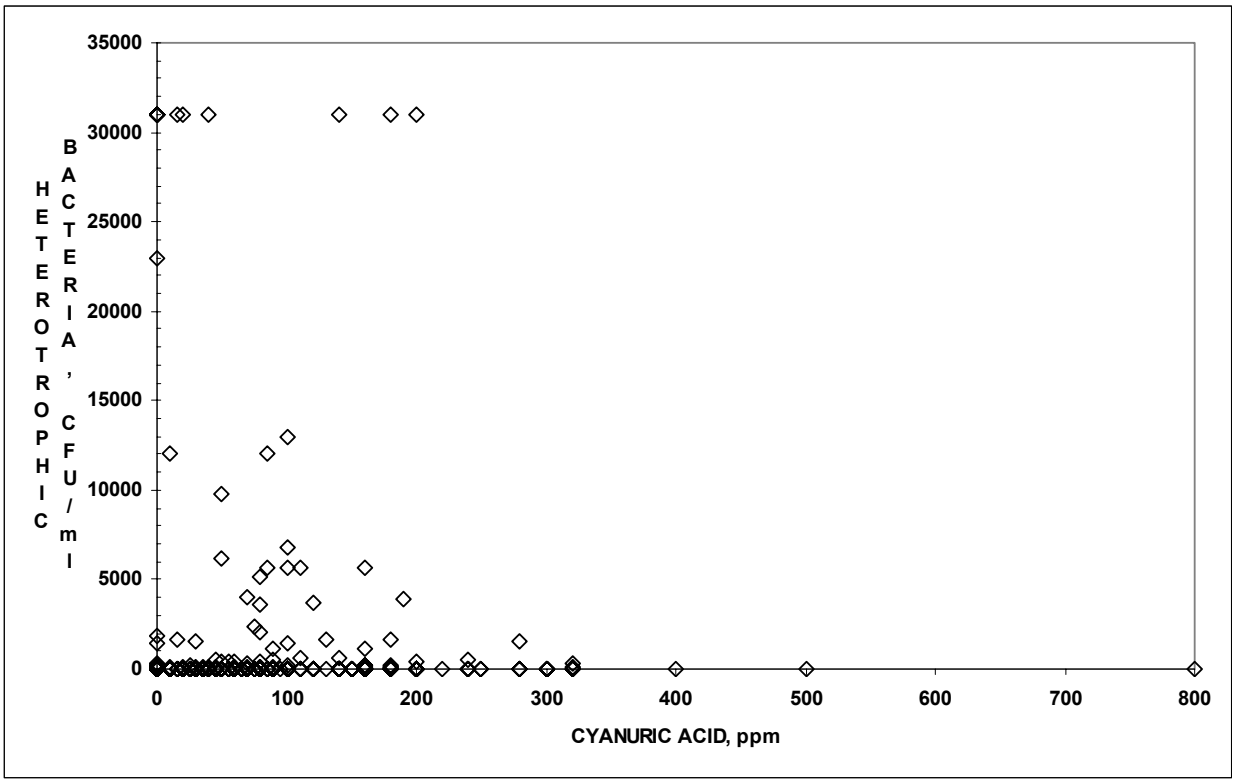


FIGURE 45: EFFECT OF BATHERLOAD ON FREE CHLORINE

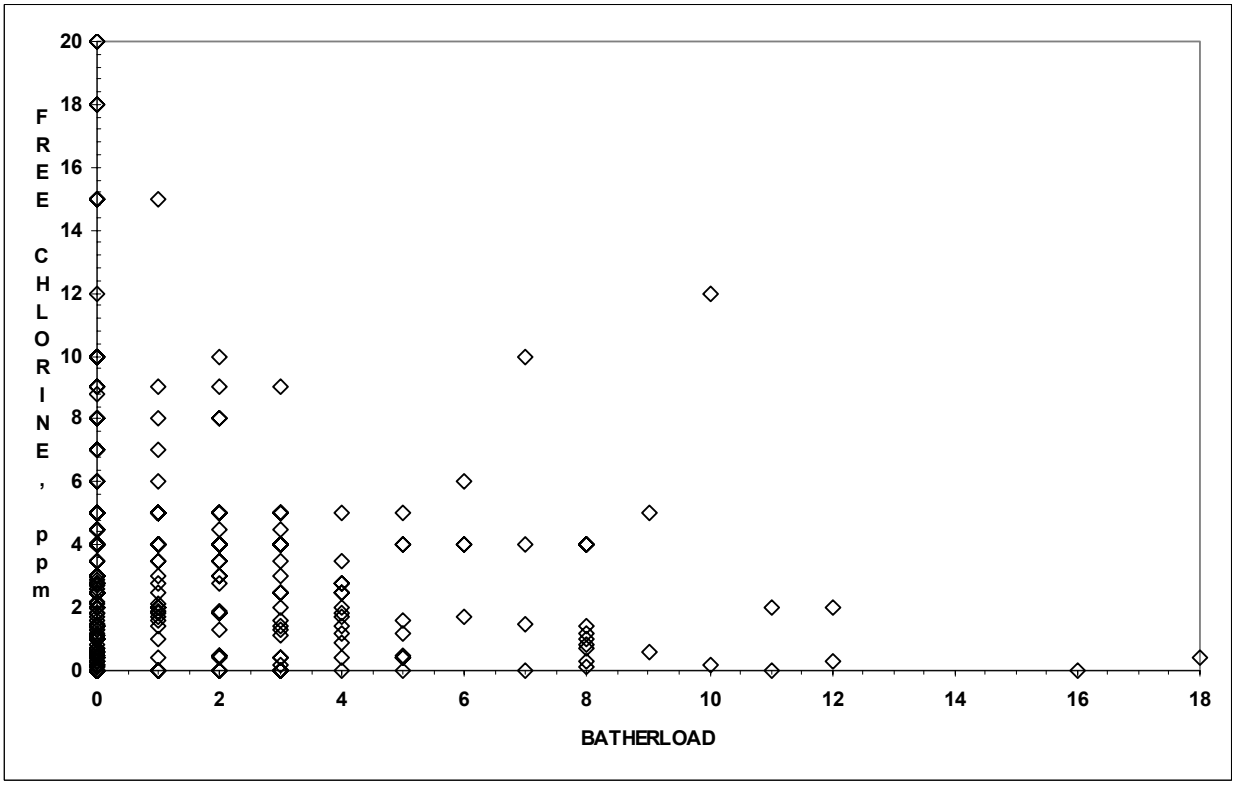


FIGURE 46: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA POPULATION AND BATHERLOAD

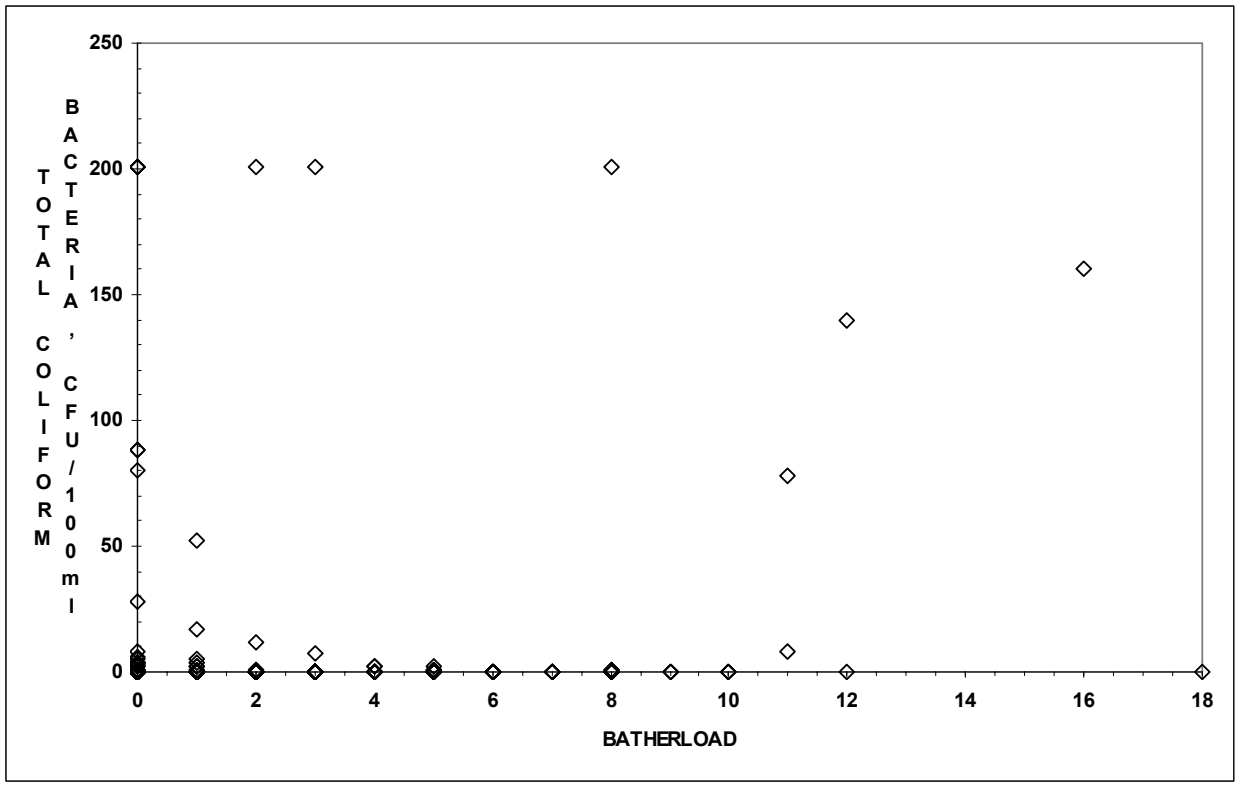


FIGURE 47: RELATIONSHIP BETWEEN HETEROTROPHIC BACTERIA POPULATION AND TOTAL DISSOLVED SOLIDS

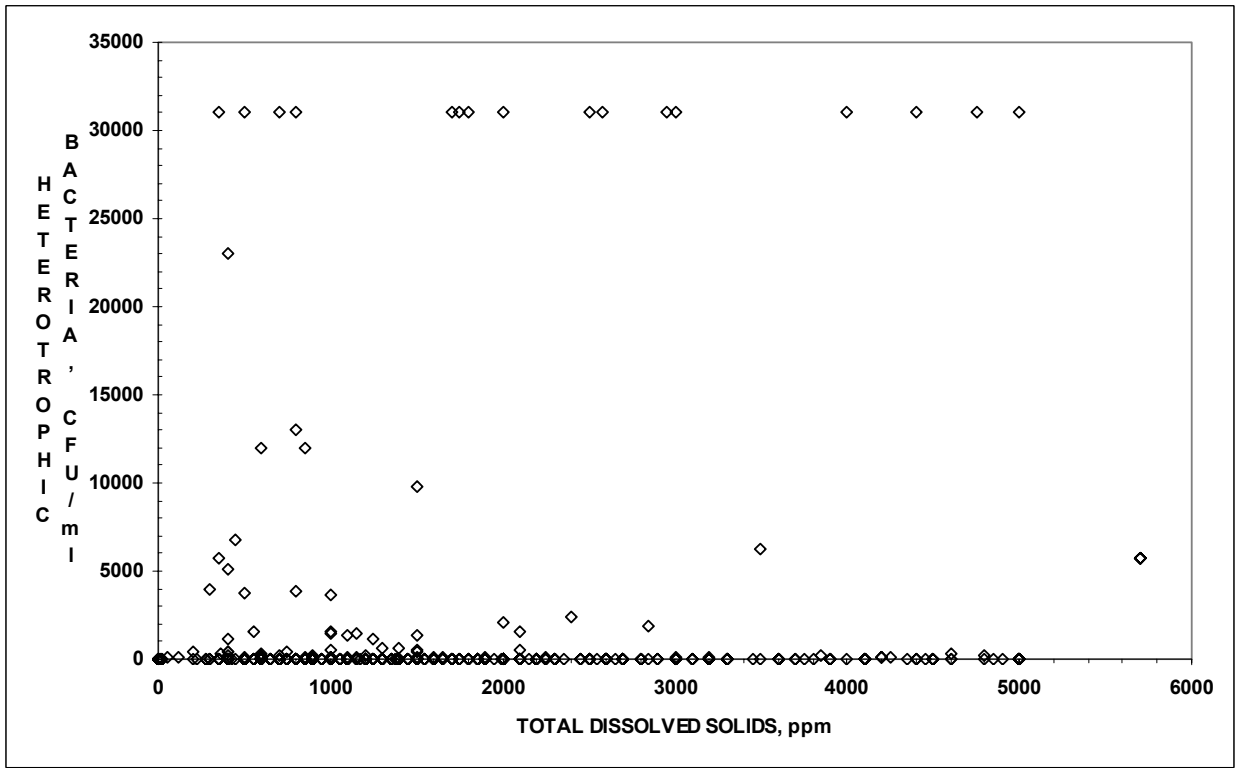


FIGURE 48: RELATIONSHIP BETWEEN TOTAL COLIFORM AND NON-COLIFORM BACTERIA POPULATIONS

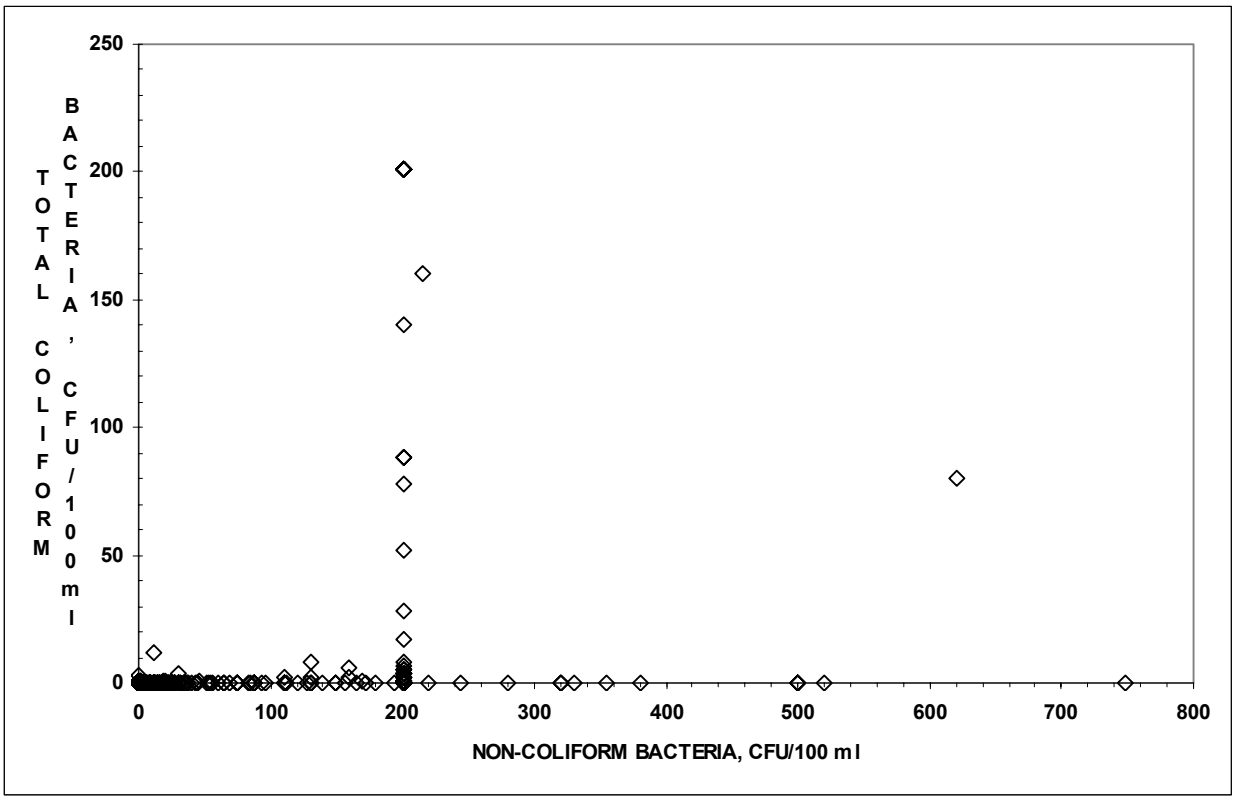
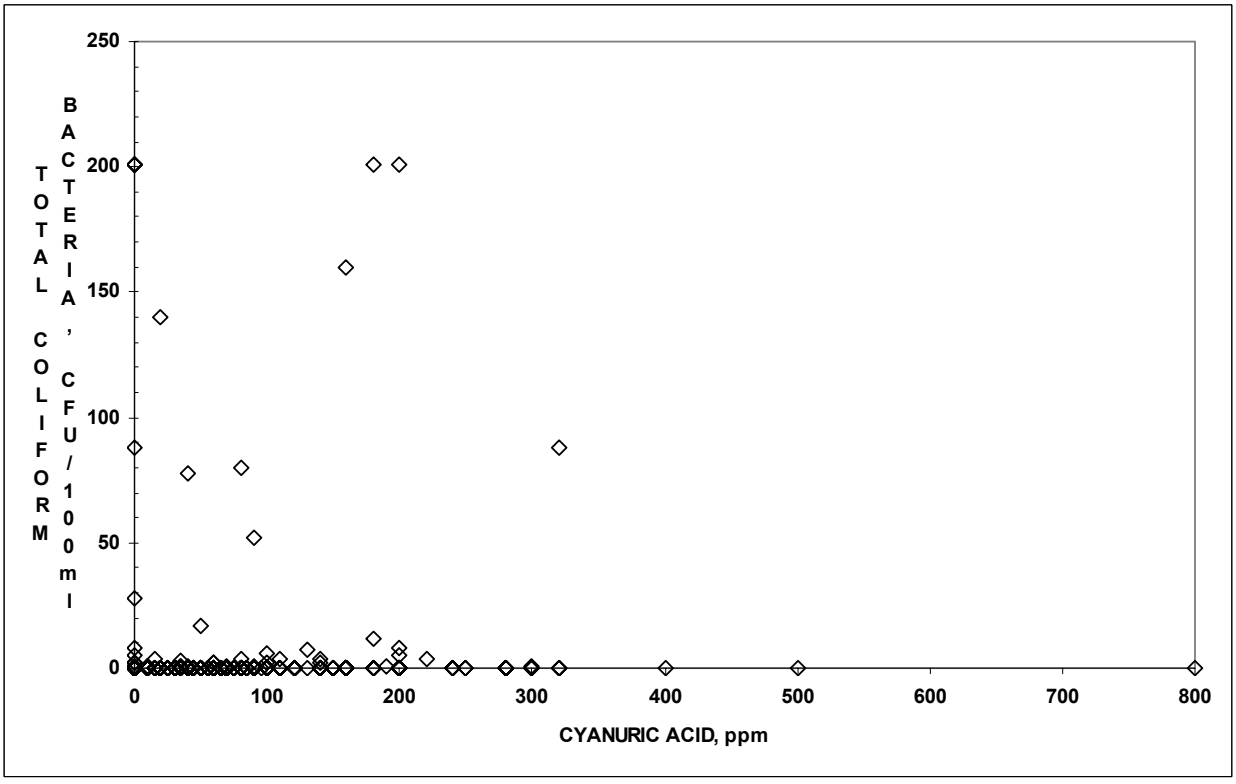


FIGURE 49: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA POPULATION AND CYANURIC ACID



Appendix X

Bacteria Variable Pairs Relationships Graphs

FIGURE 50: EFFECT OF FREE CHLORINE ON HETEROTROPHIC BACTERIA POPULATION

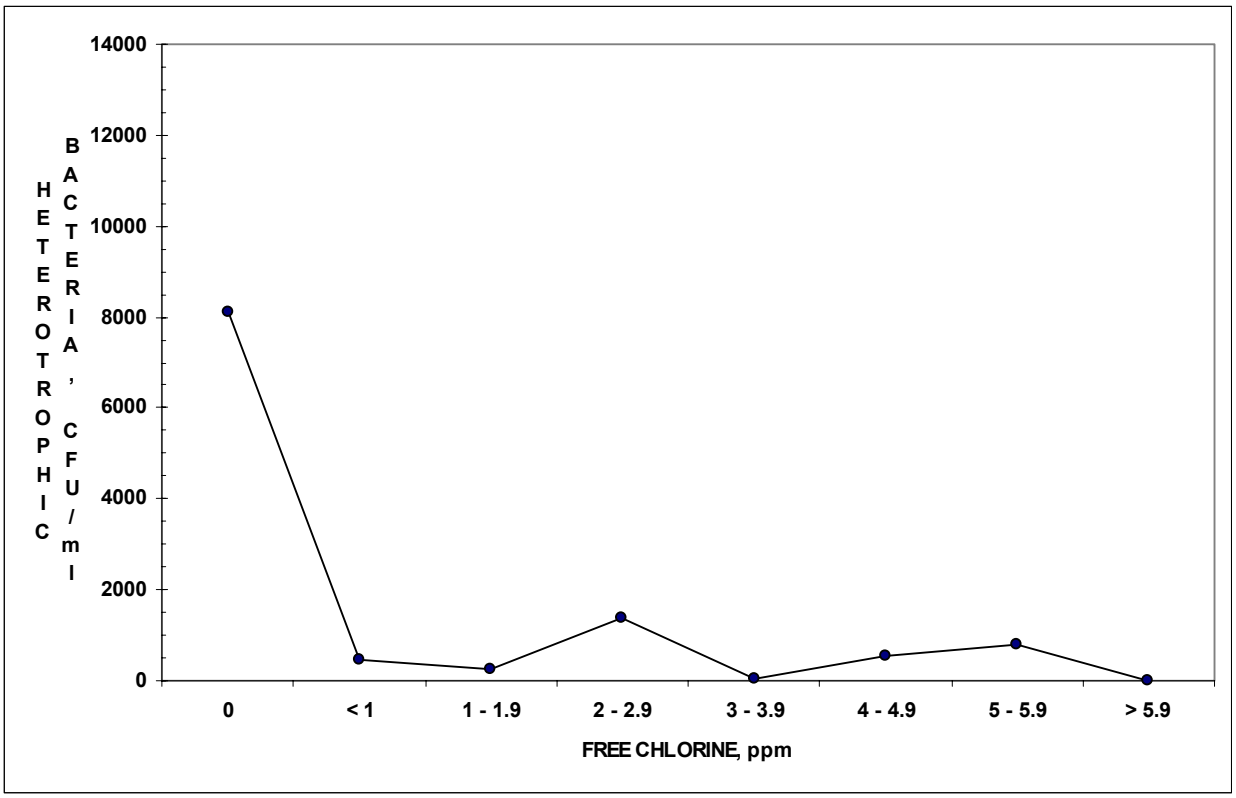


FIGURE 51: EFFECT OF TOTAL CHLORINE ON HETEROTROPHIC BACTERIA POPULATION

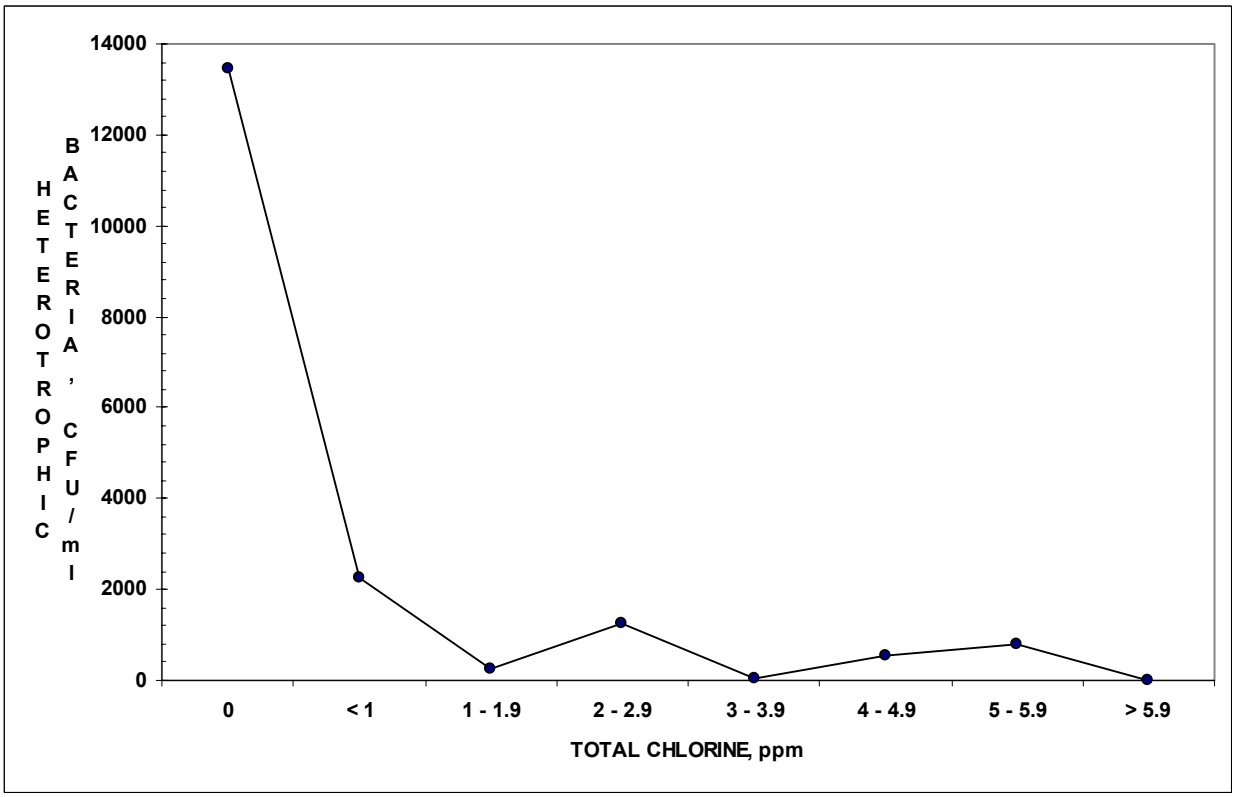


FIGURE 52: EFFECT OF CYANURIC ACID ON HETEROTROPHIC BACTERIA POPULATION

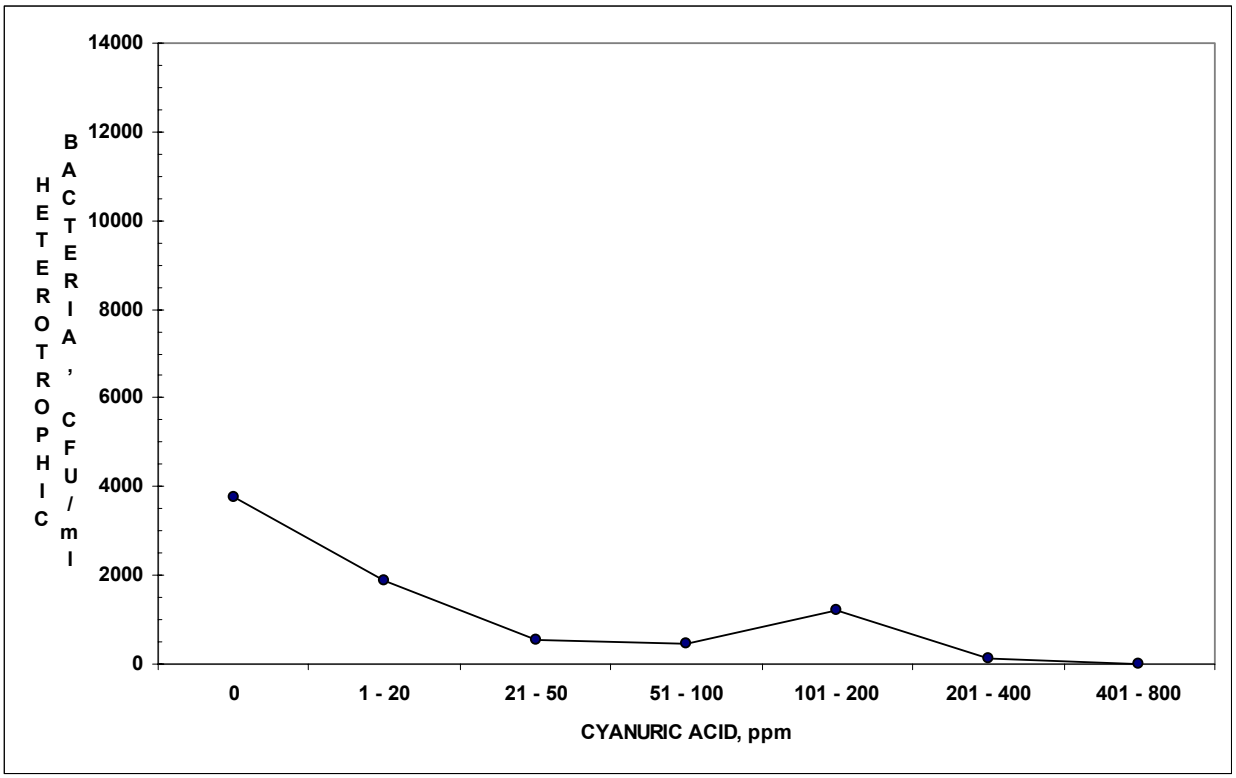


FIGURE 53: RELATIONSHIP BETWEEN HETEROTROPHIC AND TOTAL COLIFORM BACTERIA POPULATIONS

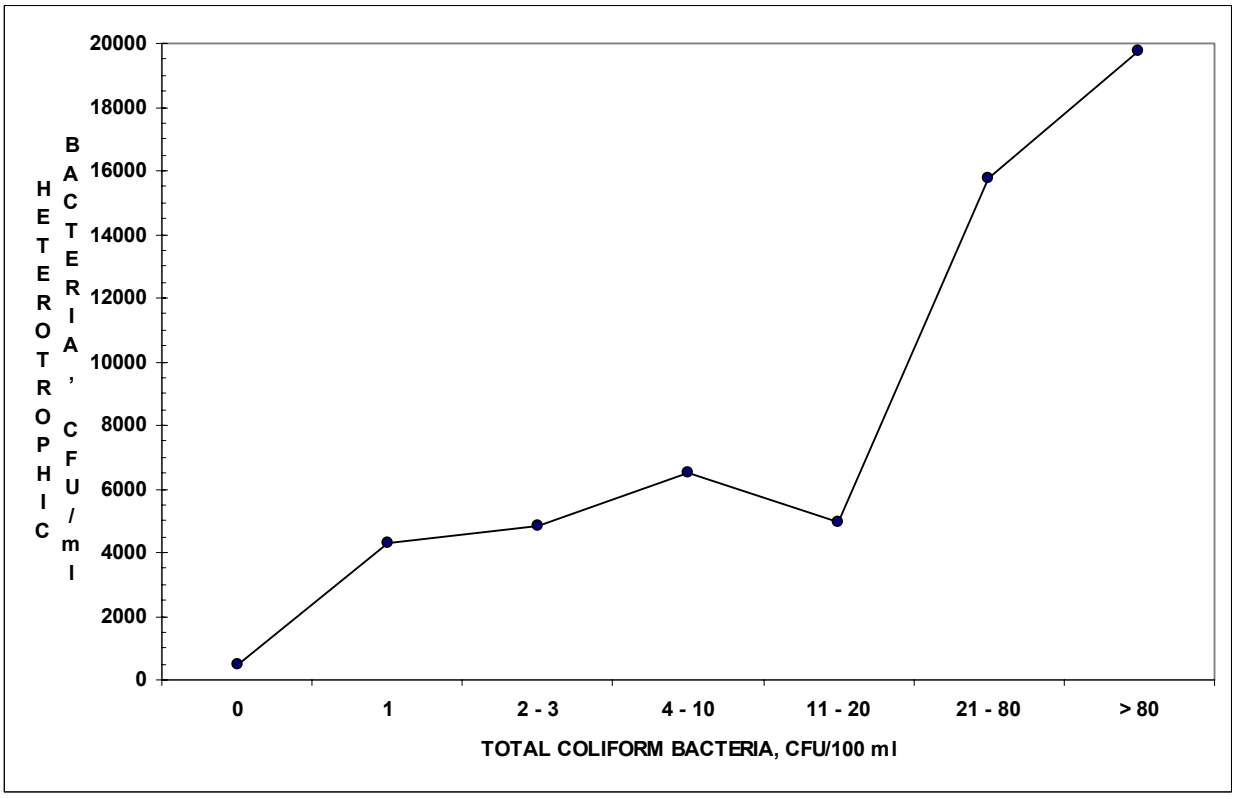


FIGURE 54: RELATIONSHIP BETWEEN HETEROTROPHIC AND NON- COLIFORM BACTERIA POPULATIONS

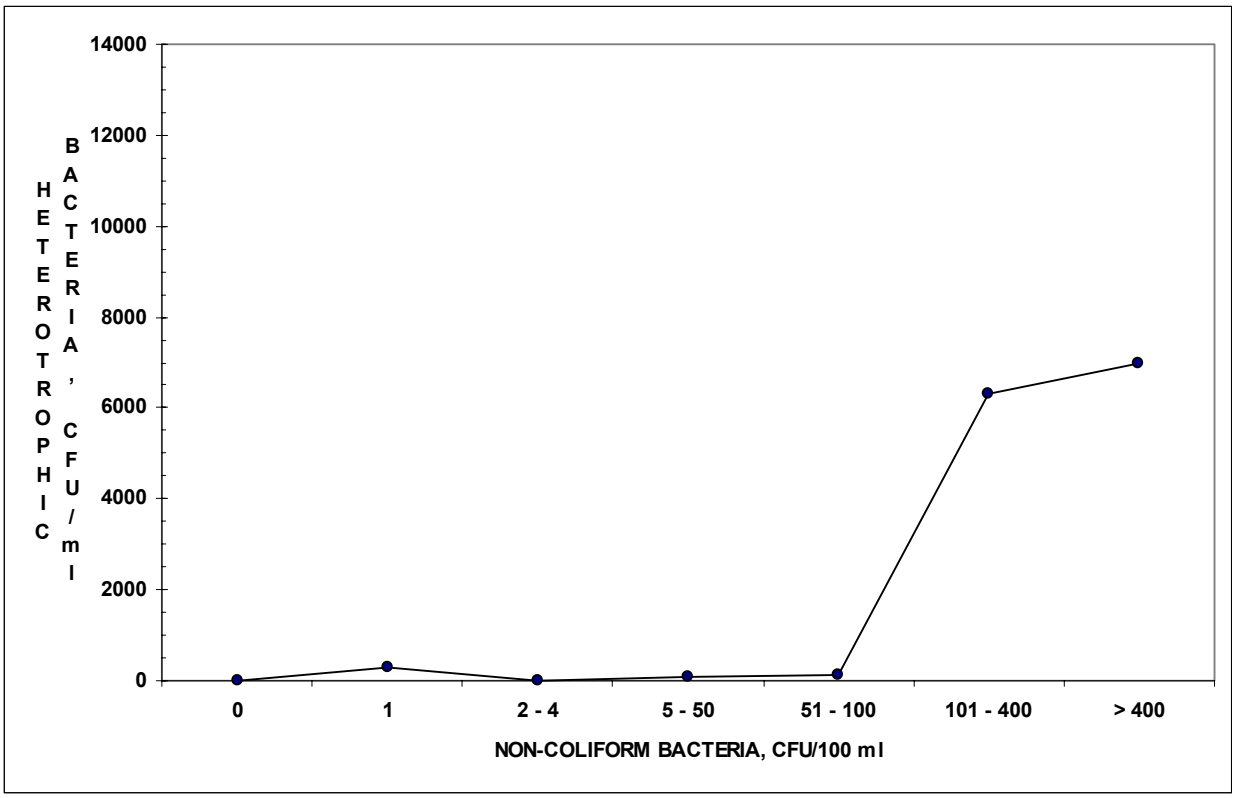


FIGURE 55: RELATIONSHIP BETWEEN HETEROTROPHIC AND FECAL COLIFORM BACTERIA POPULATIONS

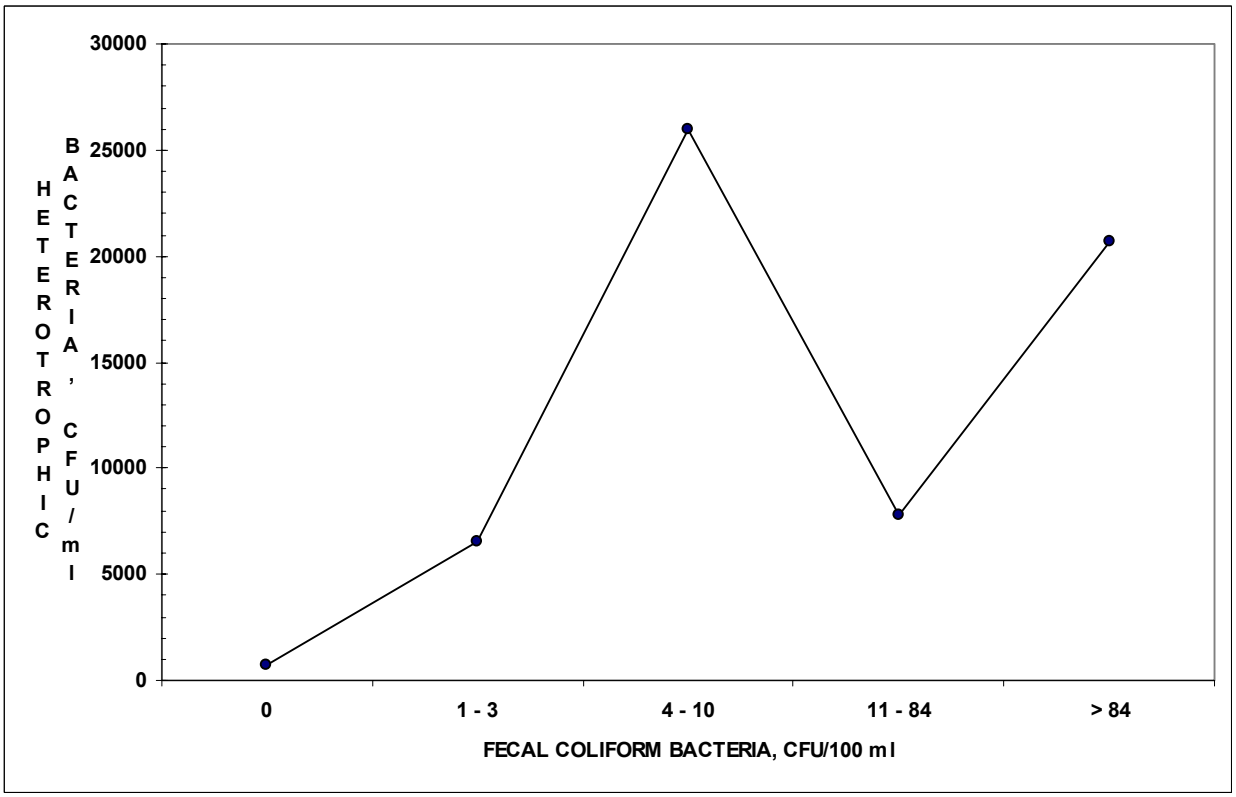


FIGURE 56: RELATIONSHIP BETWEEN HETEROTROPHIC POPULATION AND TOTAL DISSOLVED SOLIDS

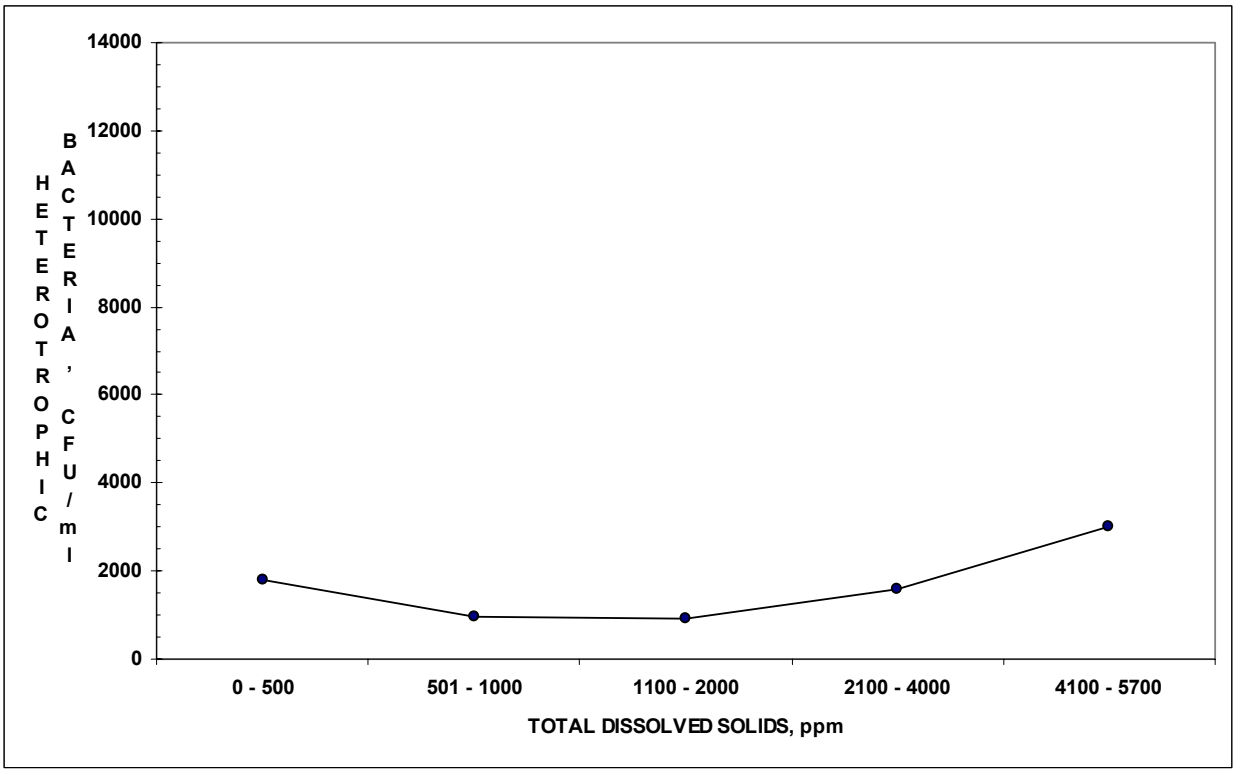


FIGURE 57: RELATIONSHIP BETWEEN HETEROTROPHIC POPULATION AND TURBIDITY

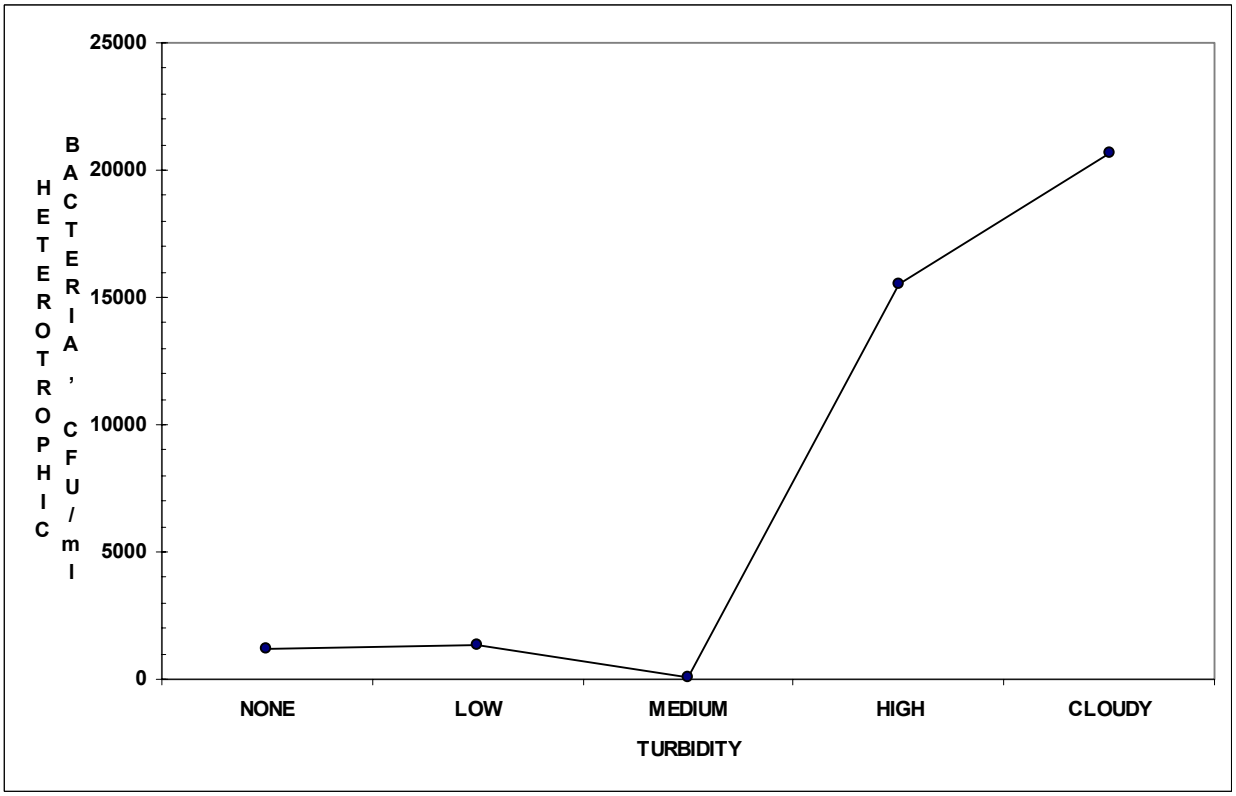


FIGURE 58: RELATIONSHIP BETWEEN HETEROTROPHIC POPULATION AND POOL FACILITY

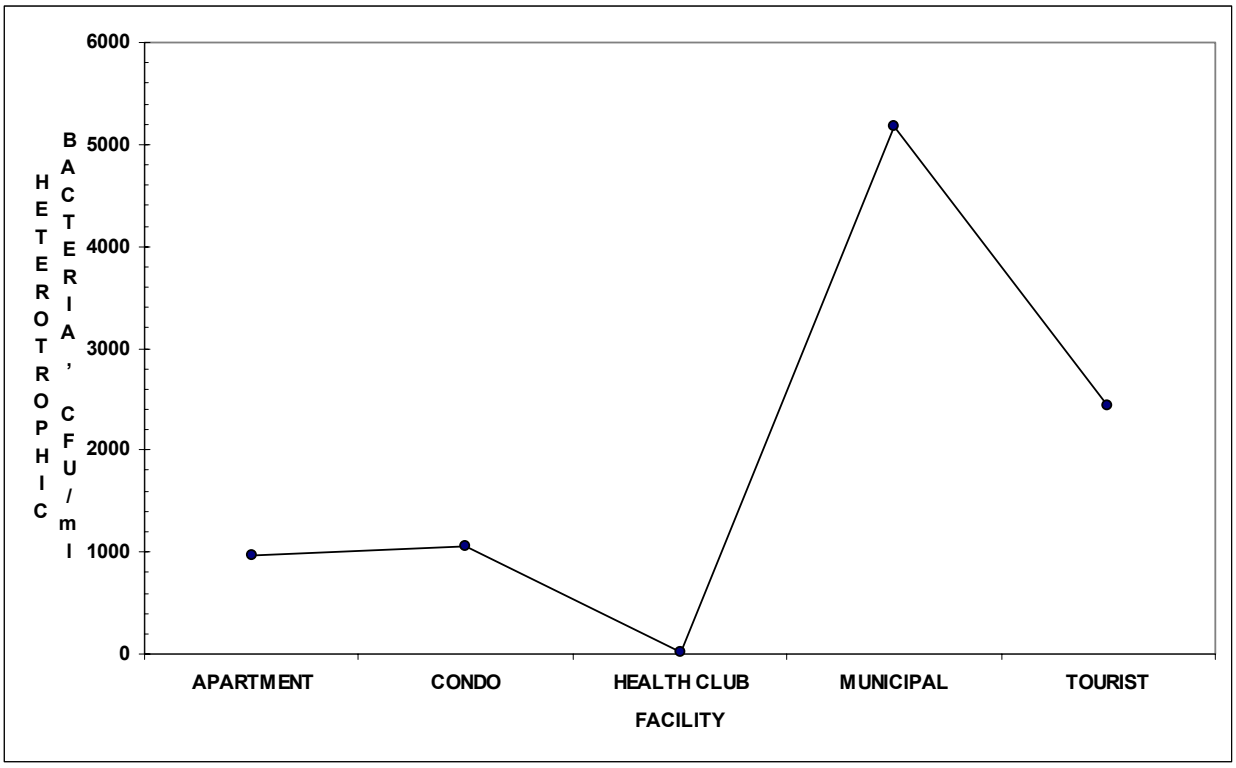


FIGURE 59: EFFECT OF FREE CHLORINE ON TOTAL COLIFORM BACTERIA POPULATION

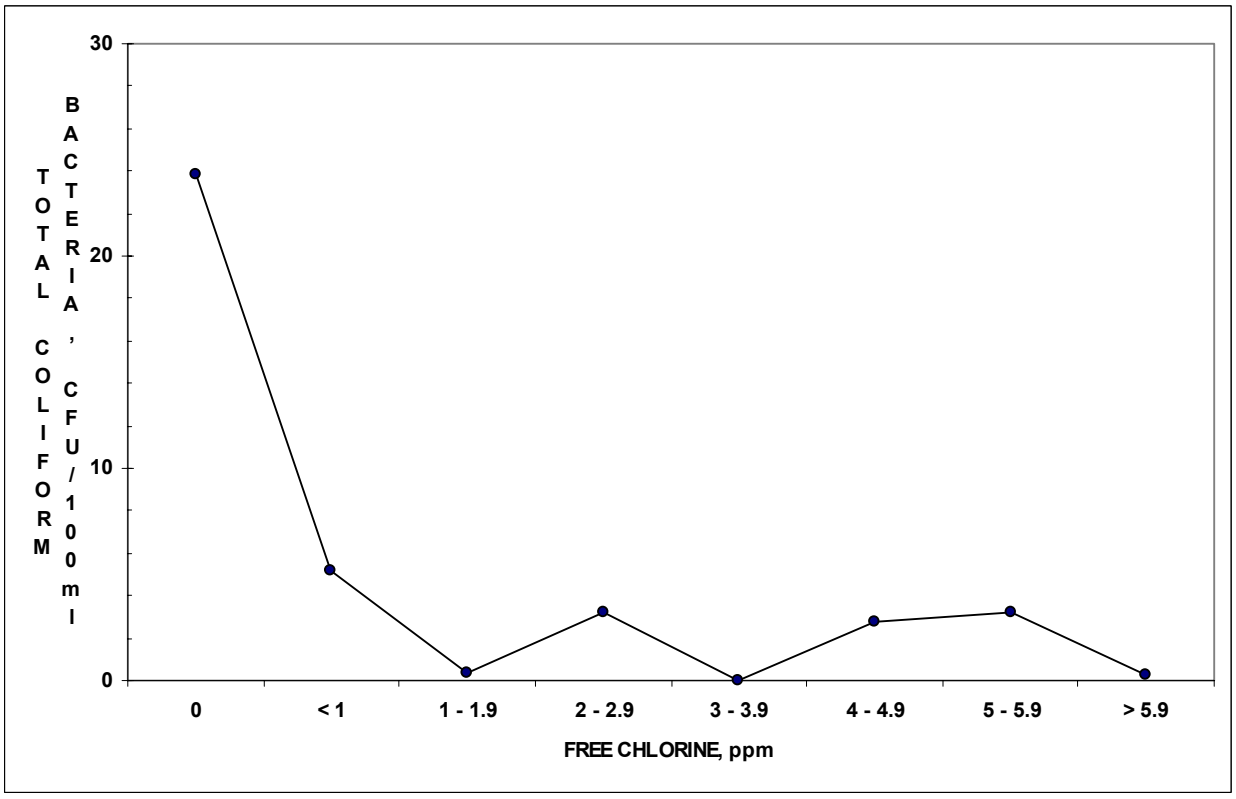


FIGURE 60: EFFECT OF TOTAL CHLORINE ON TOTAL COLIFORM BACTERIA POPULATION

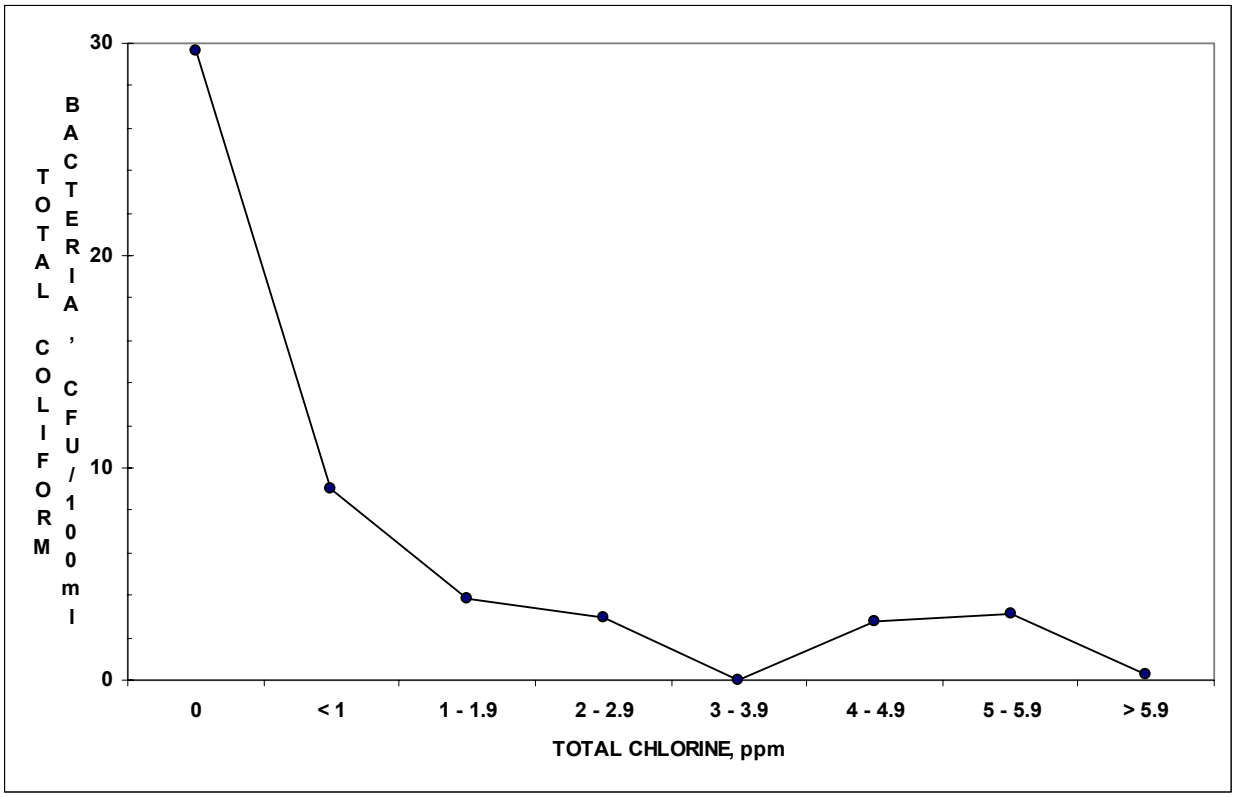


FIGURE 61: RELATIONSHIP BETWEEN TOTAL COLIFORM AND HETEROTROPHIC BACTERIA POPULATIONS

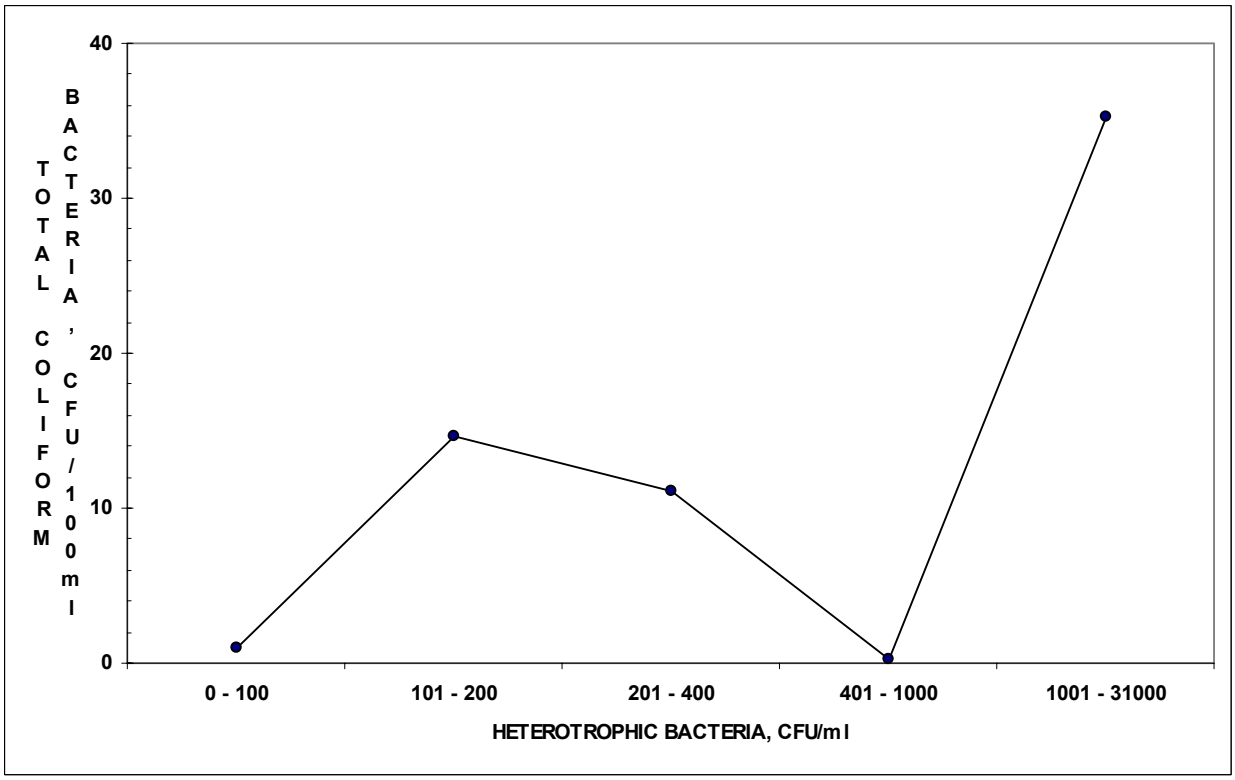


FIGURE 62: RELATIONSHIP BETWEEN TOTAL COLIFORM AND NON-COLIFORM BACTERIA POPULATIONS

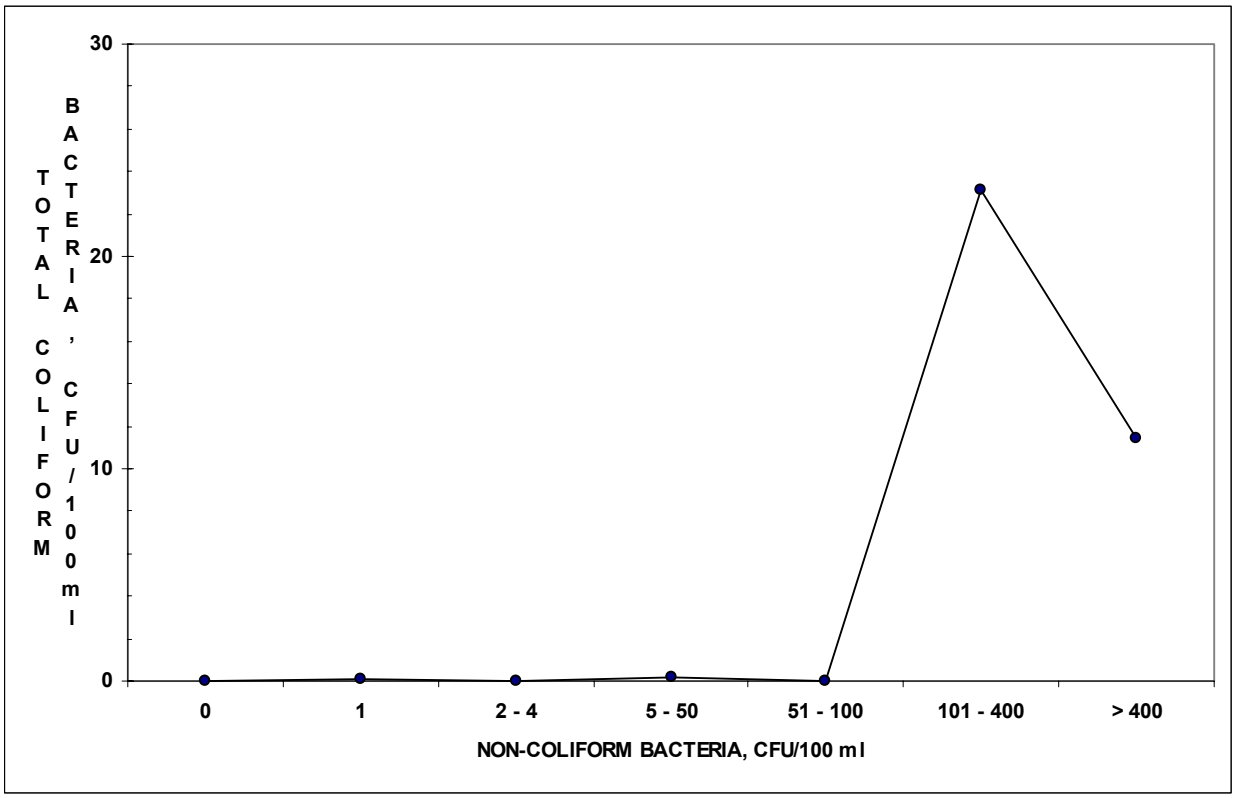


FIGURE 63: RELATIONSHIP BETWEEN TOTAL COLIFORM AND FECAL COLIFORM BACTERIA POPULATIONS

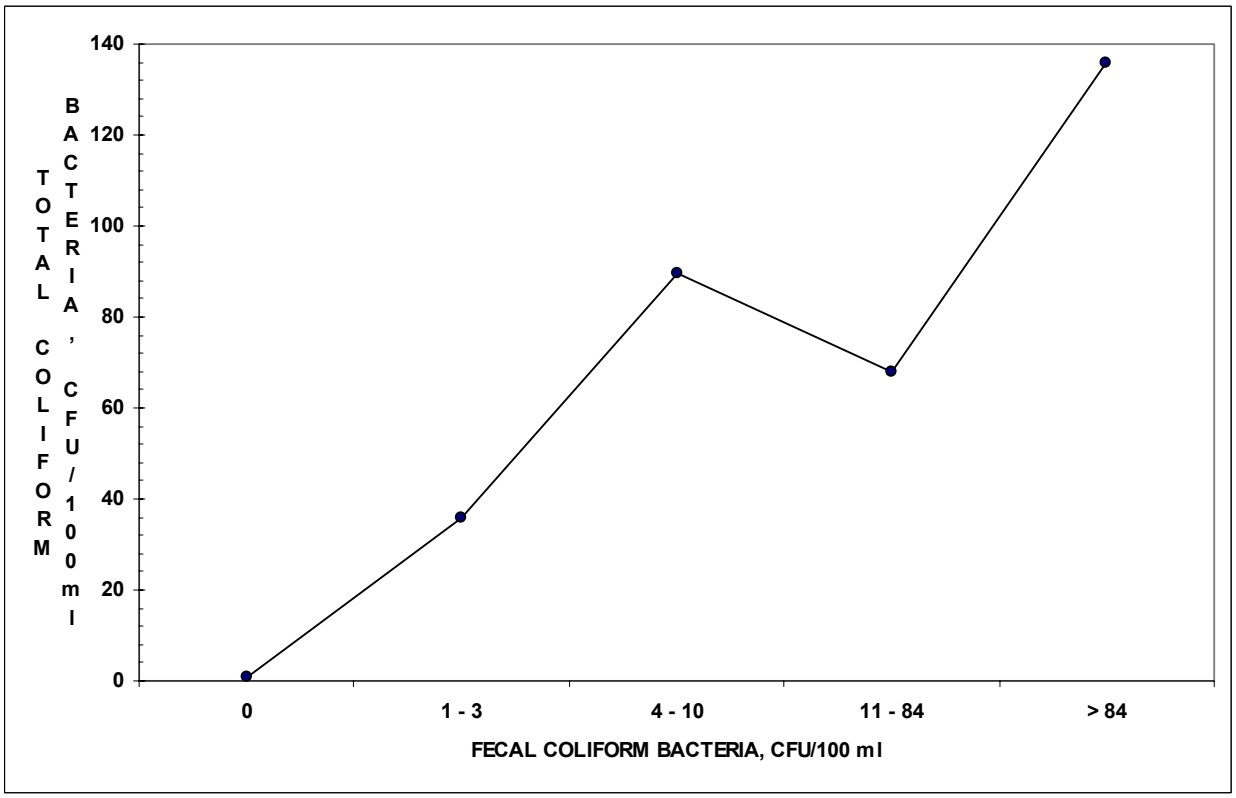


FIGURE 64: RELATIONSHIP BETWEEN TOTAL COLIFORM AND FECAL STREPTOCOCCOUS BACTERIA

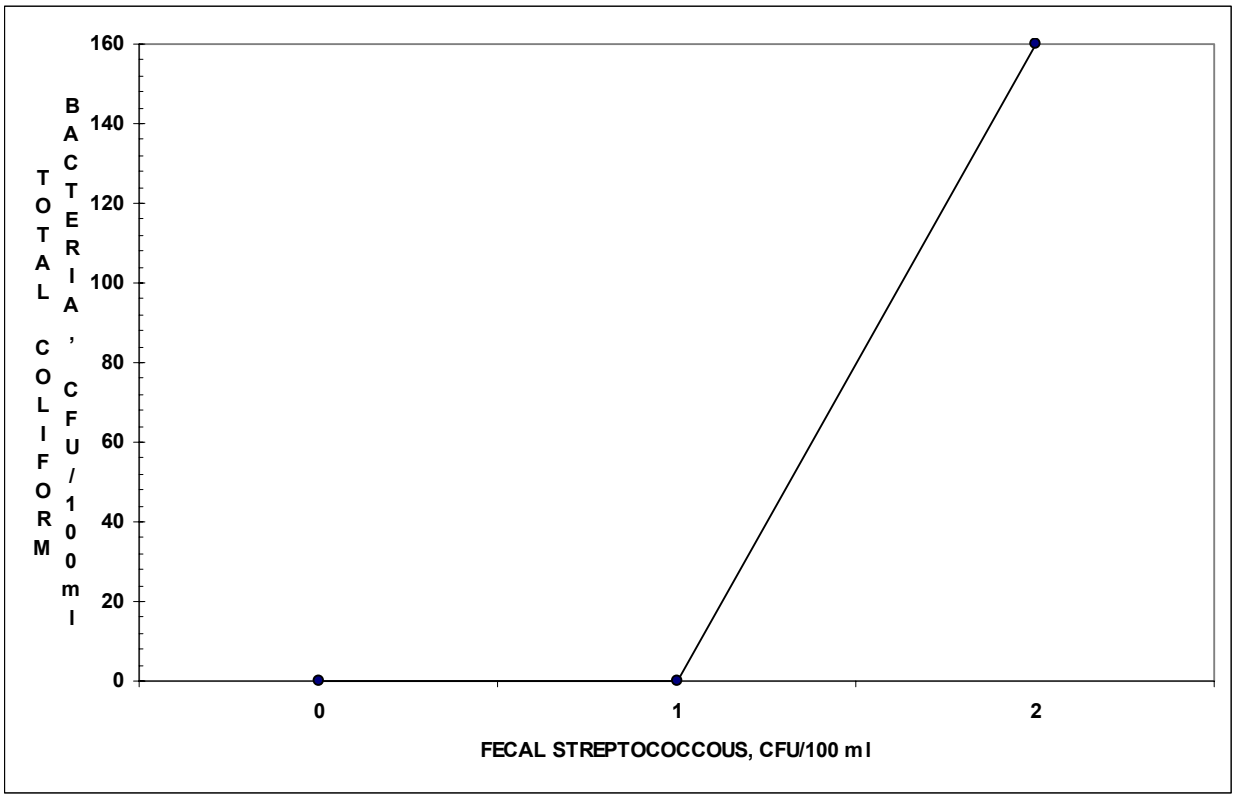


FIGURE 65: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA AND TURBIDITY

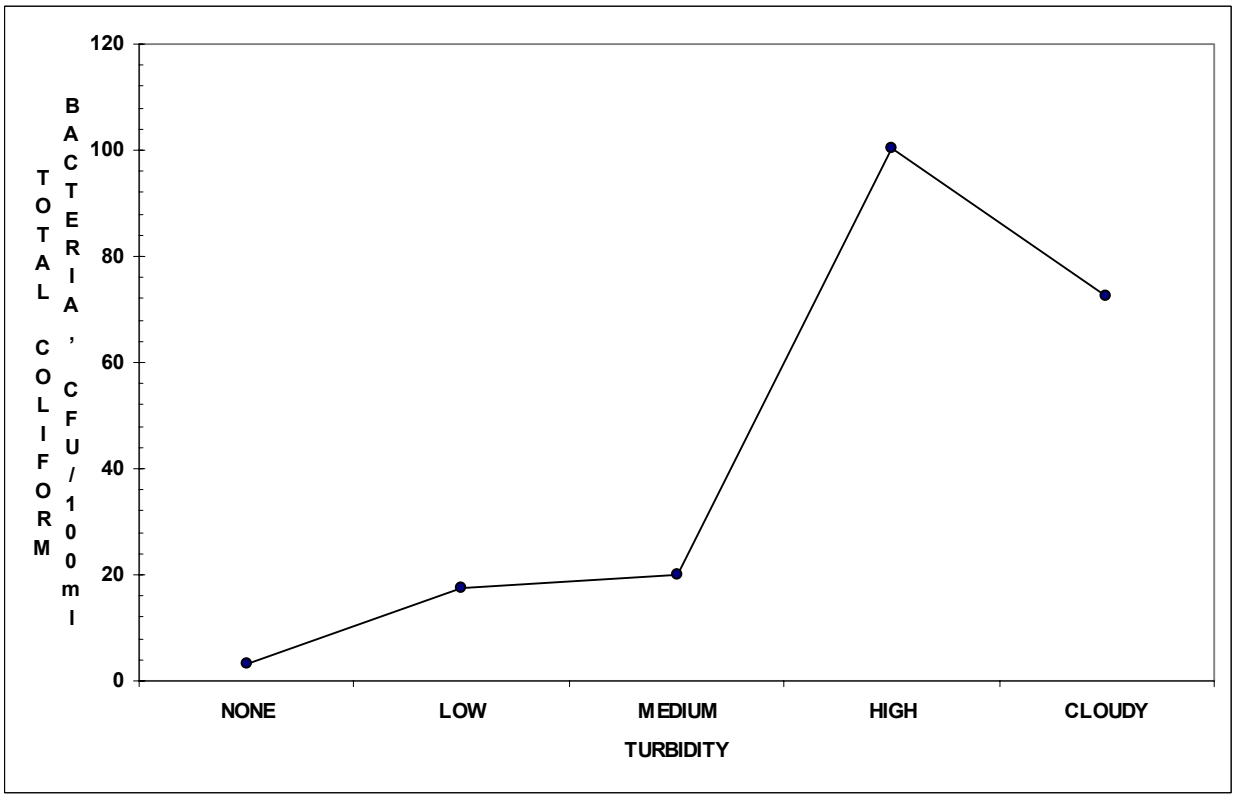


FIGURE 66: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA AND BATHERLOAD

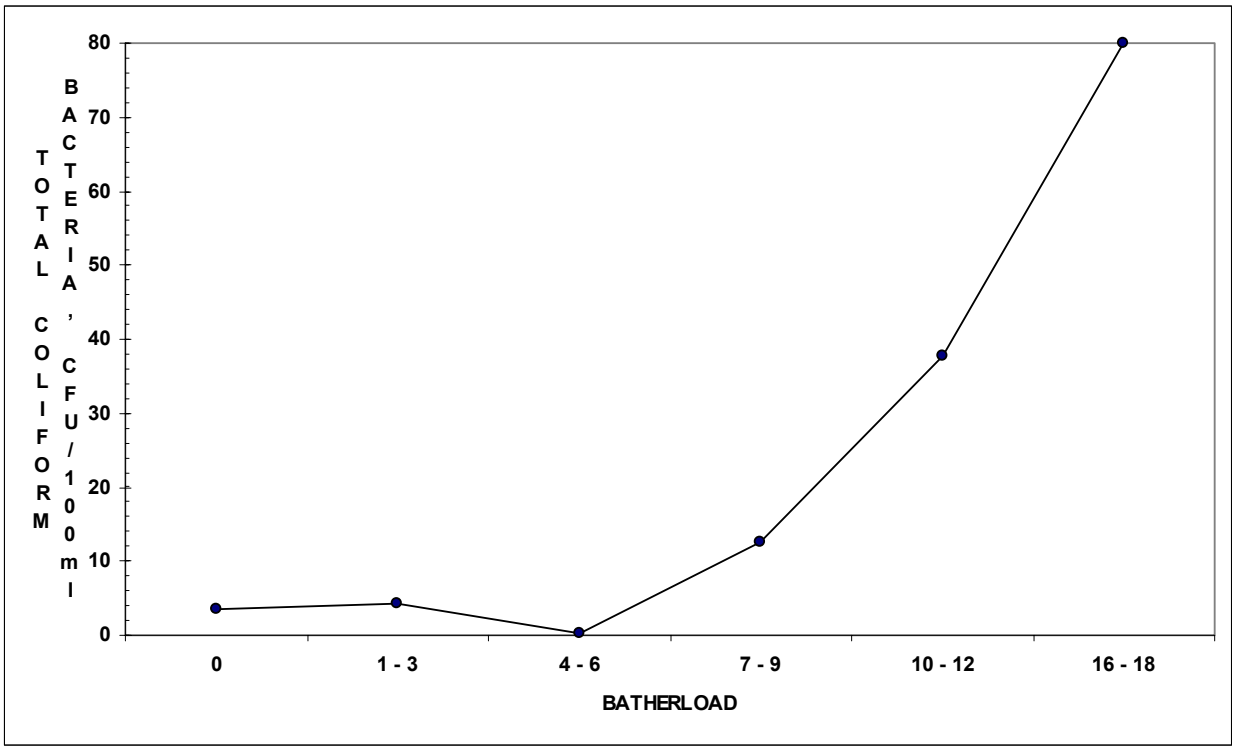


FIGURE 67: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA AND WATER TEMPERATURE

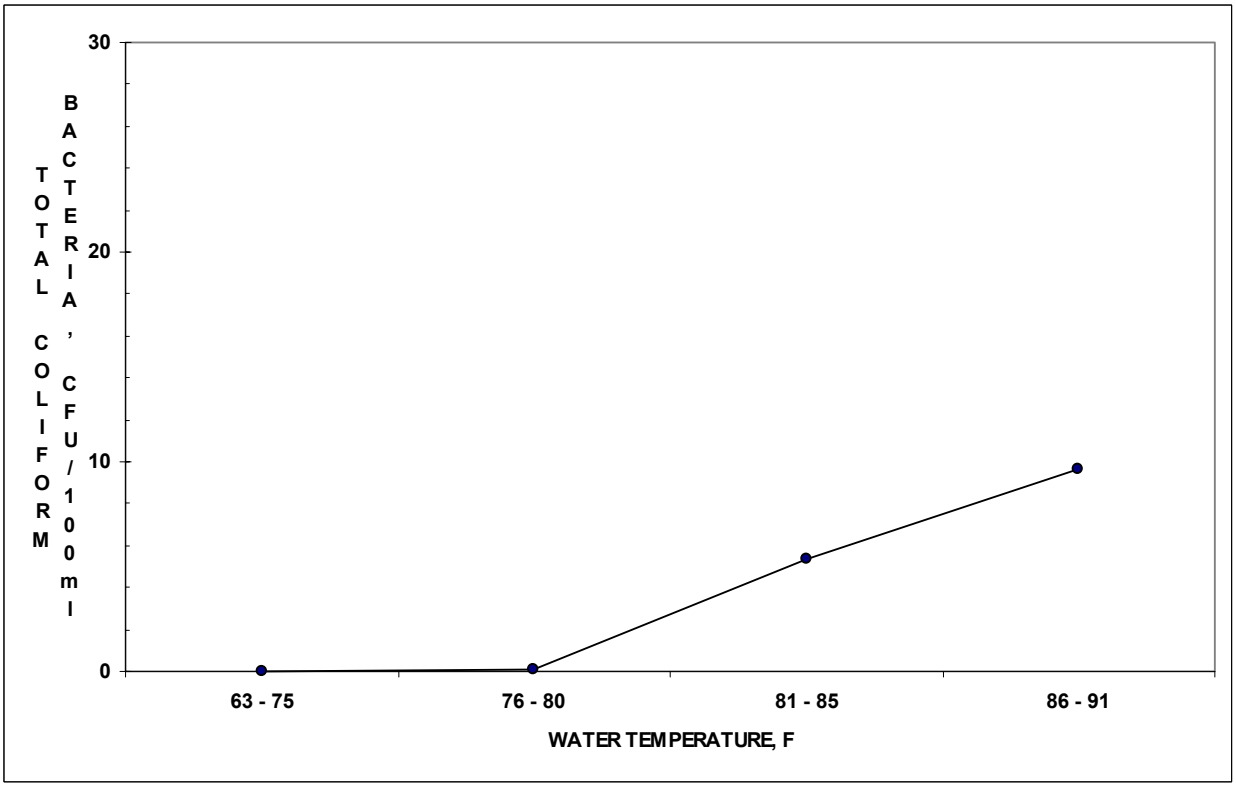


FIGURE 68: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA POPULATION AND TOTAL DISSOLVED SOLIDS

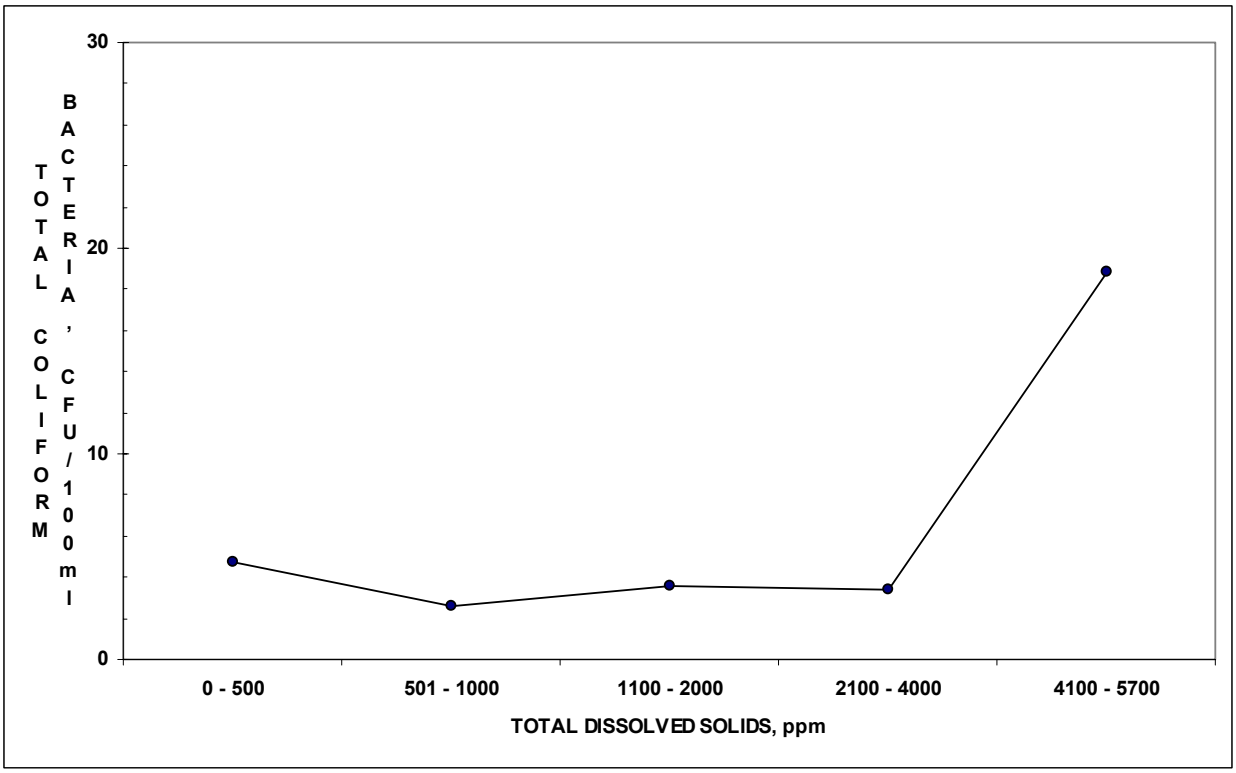


FIGURE 69: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA POPULATION AND POOL FACILITY

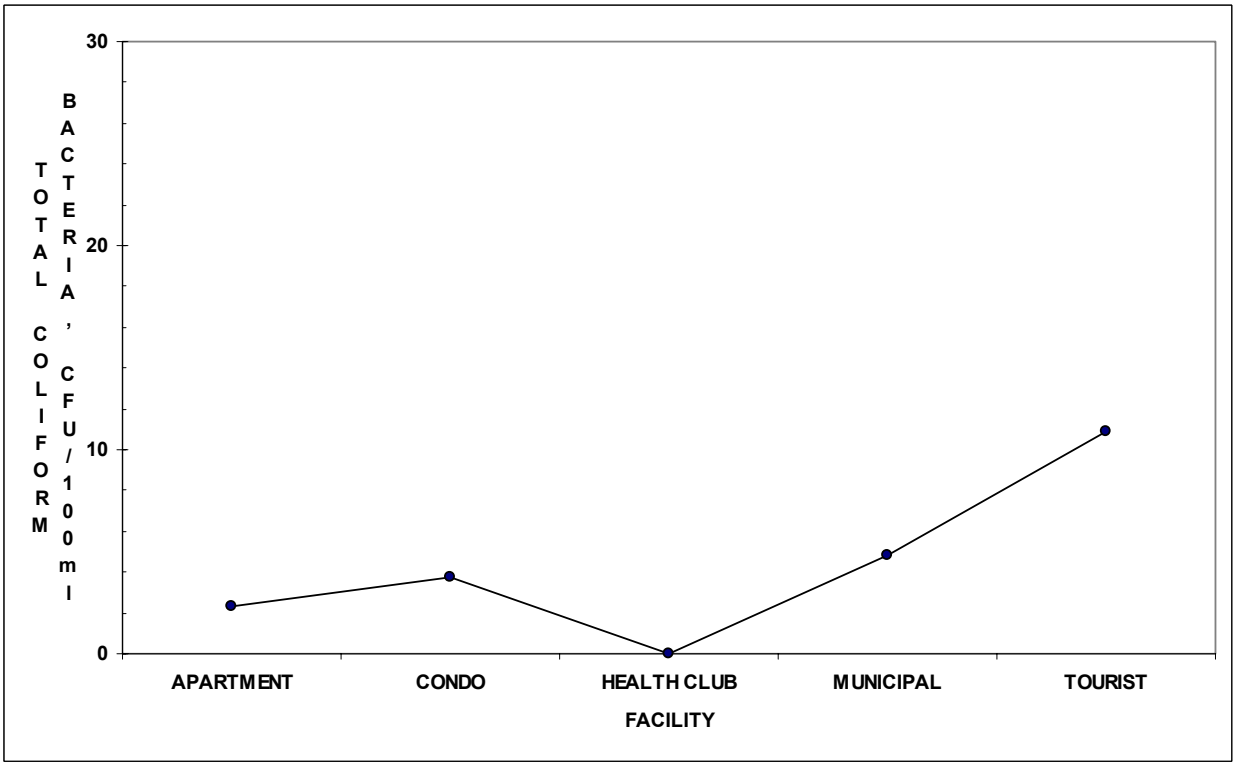


FIGURE 70: RELATIONSHIP BETWEEN TOTAL COLIFORM BACTERIA POPULATION AND CYANURIC ACID

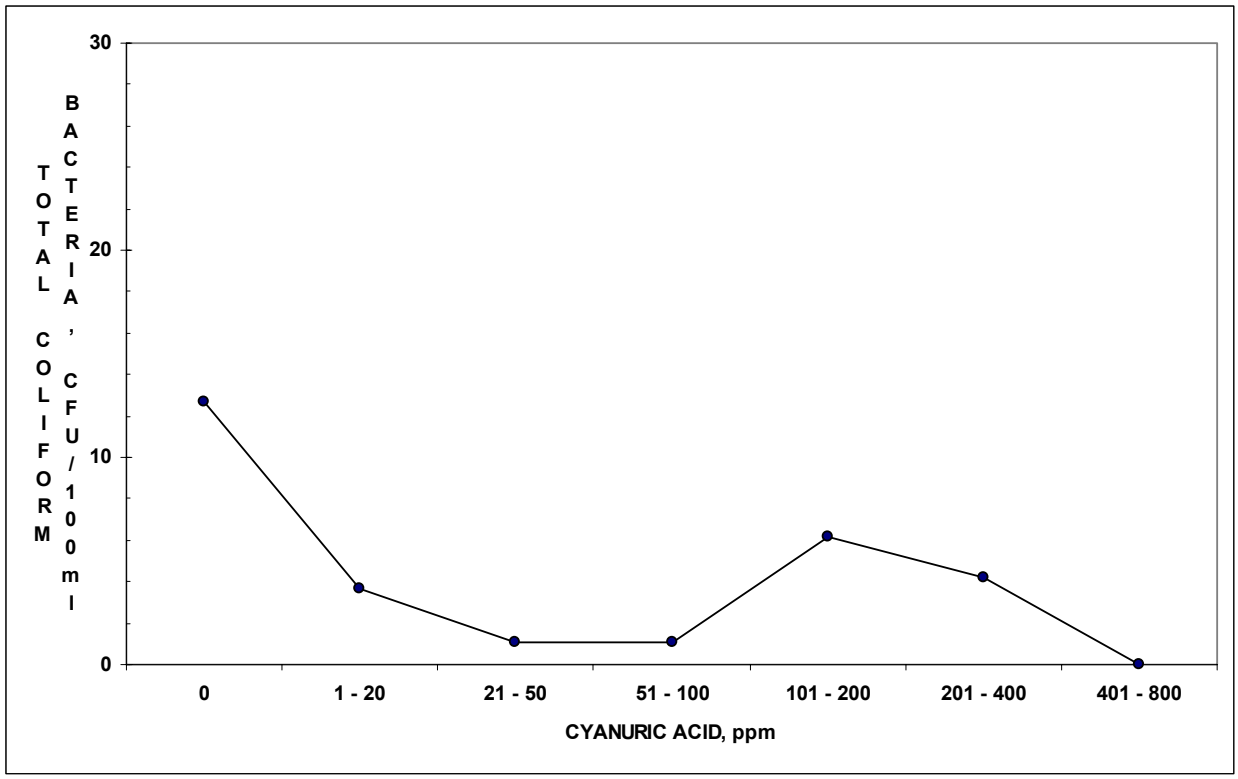


FIGURE 71: EFFECT OF FREE CHLORINE ON NON-COLIFORM BACTERIA POPULATION

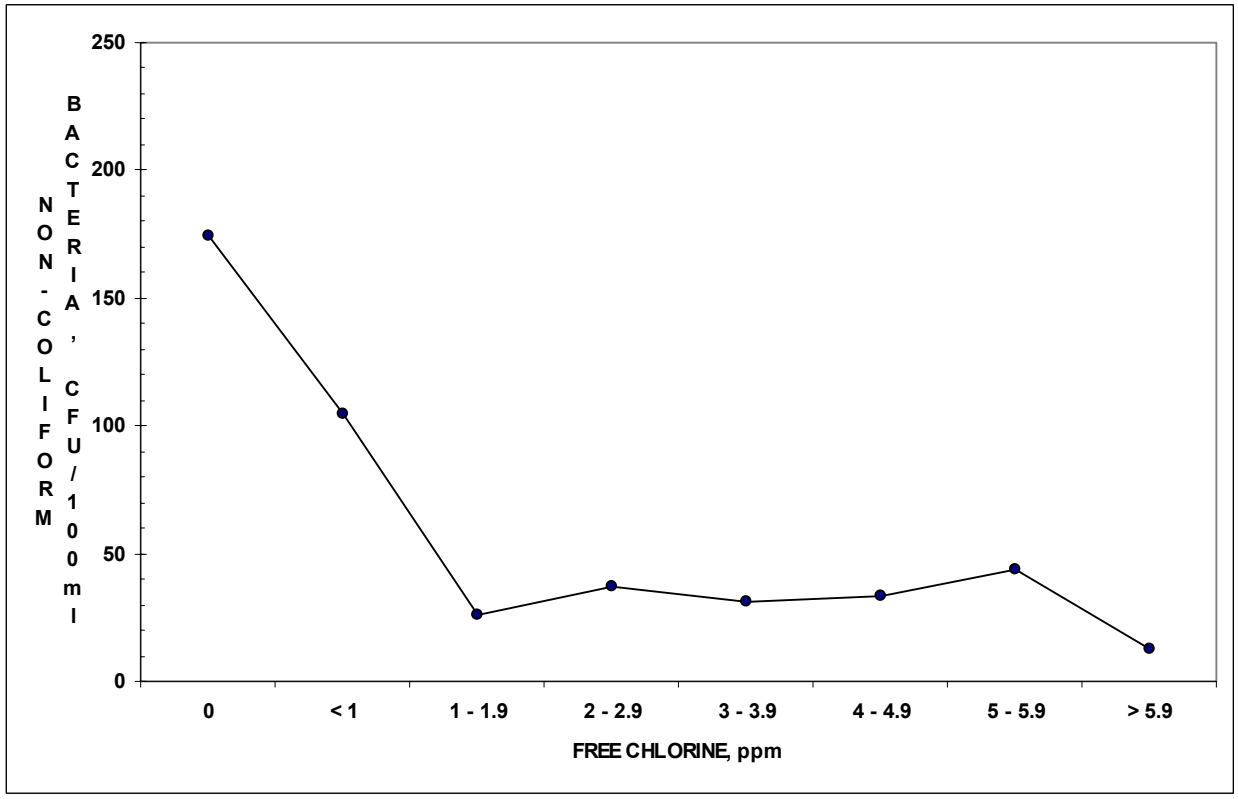


FIGURE 72: EFFECT OF TOTAL CHLORINE ON NON-COLIFORM BACTERIA POPULATION

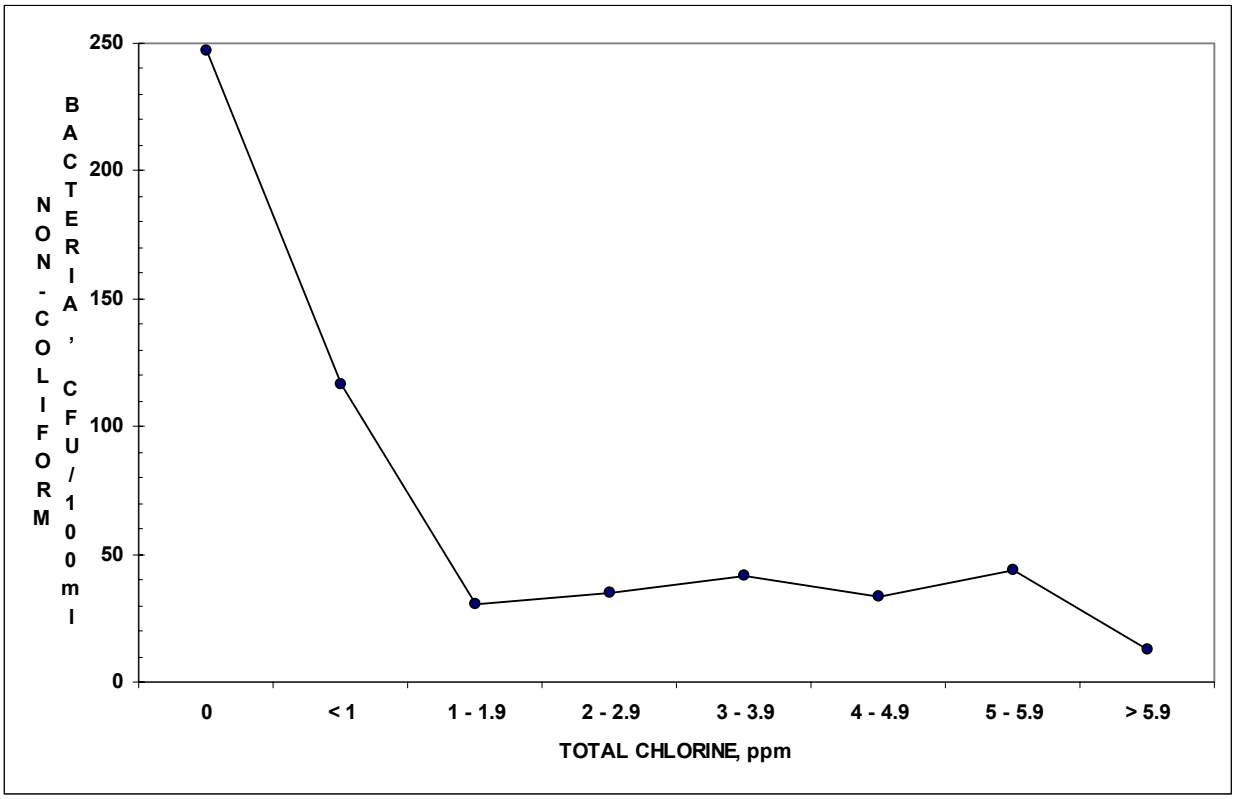


FIGURE 73: RELATIONSHIP BETWEEN NON-COLIFORM BACTERIA AND WATER SAMPLE COLLECTION MONTH

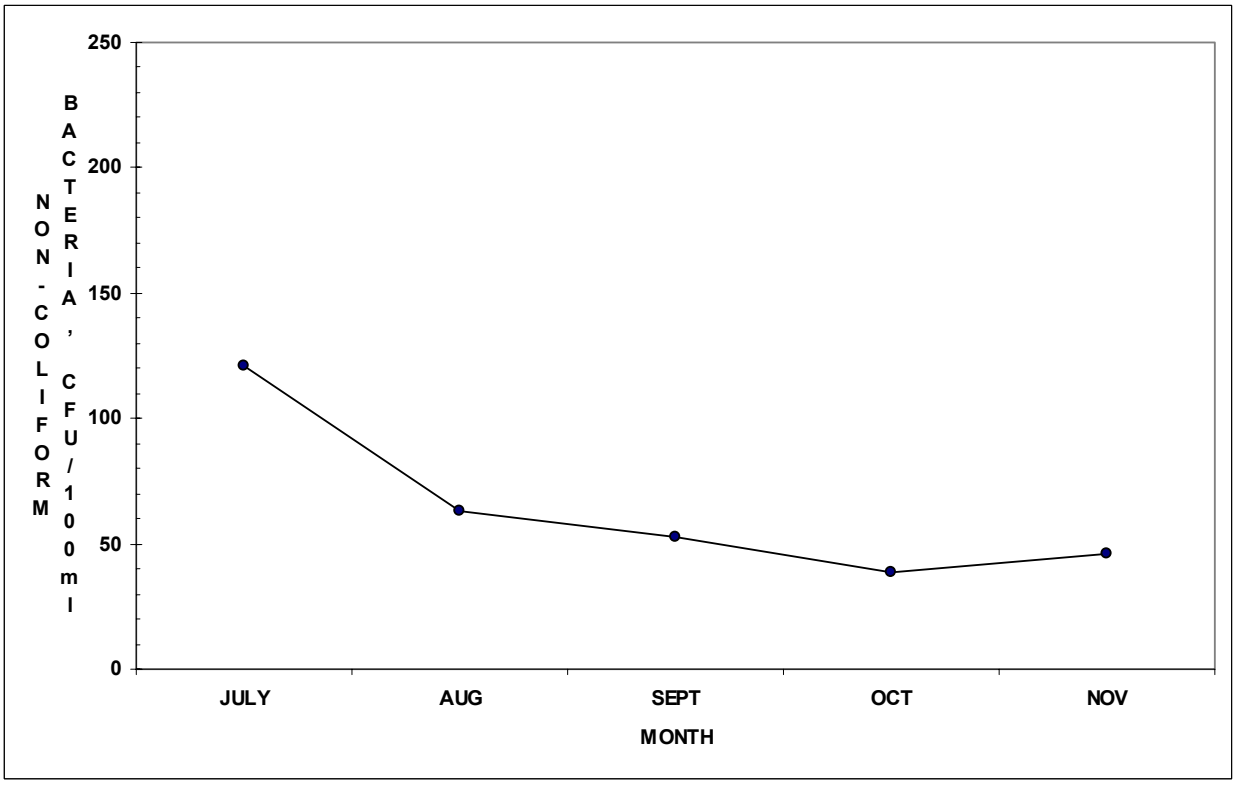


FIGURE 74: RELATIONSHIP BETWEEN NON-COLIFORM AND FECAL COLIFORM BACTERIA POPULATIONS

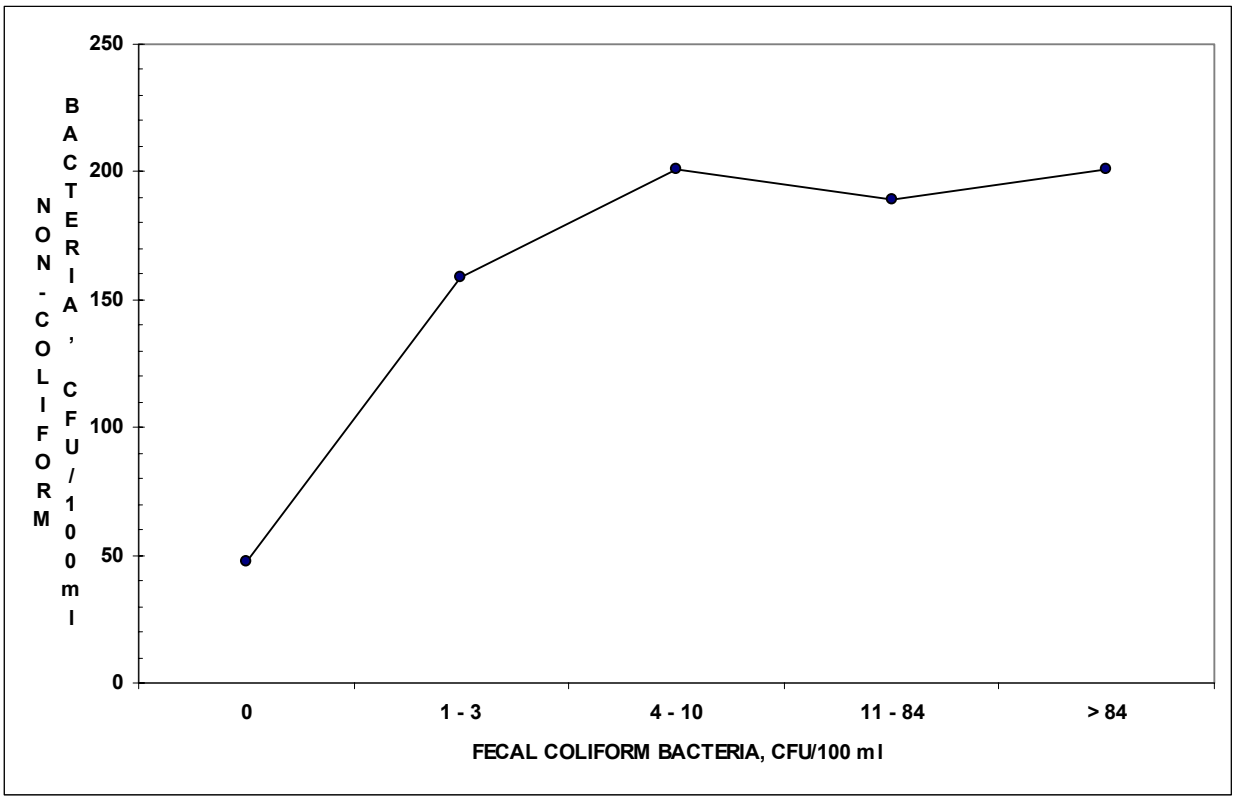


FIGURE 75: RELATIONSHIP BETWEEN NON-COLIFORM AND FECAL STREPTOCOCCOUS BACTERIA

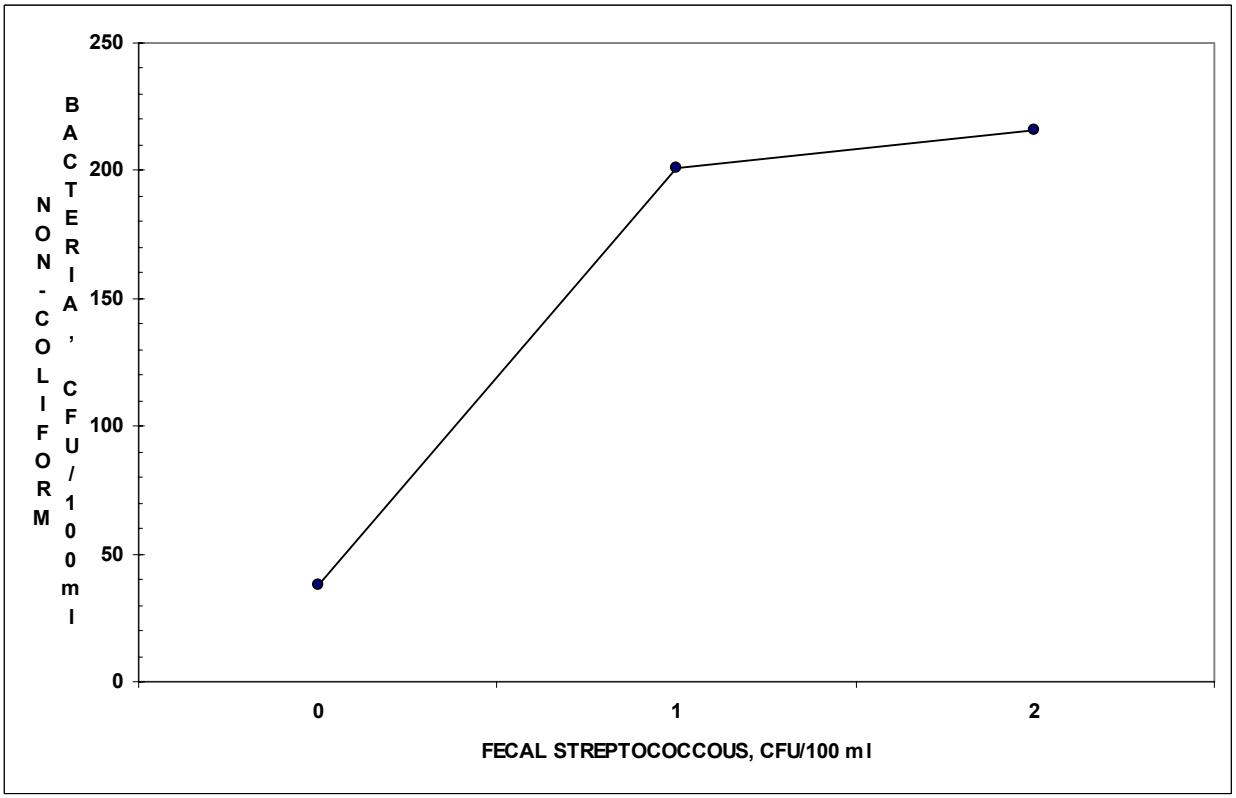


FIGURE 76: RELATIONSHIP BETWEEN NON-COLIFORM BACTERIA AND WATER TEMPERATURE

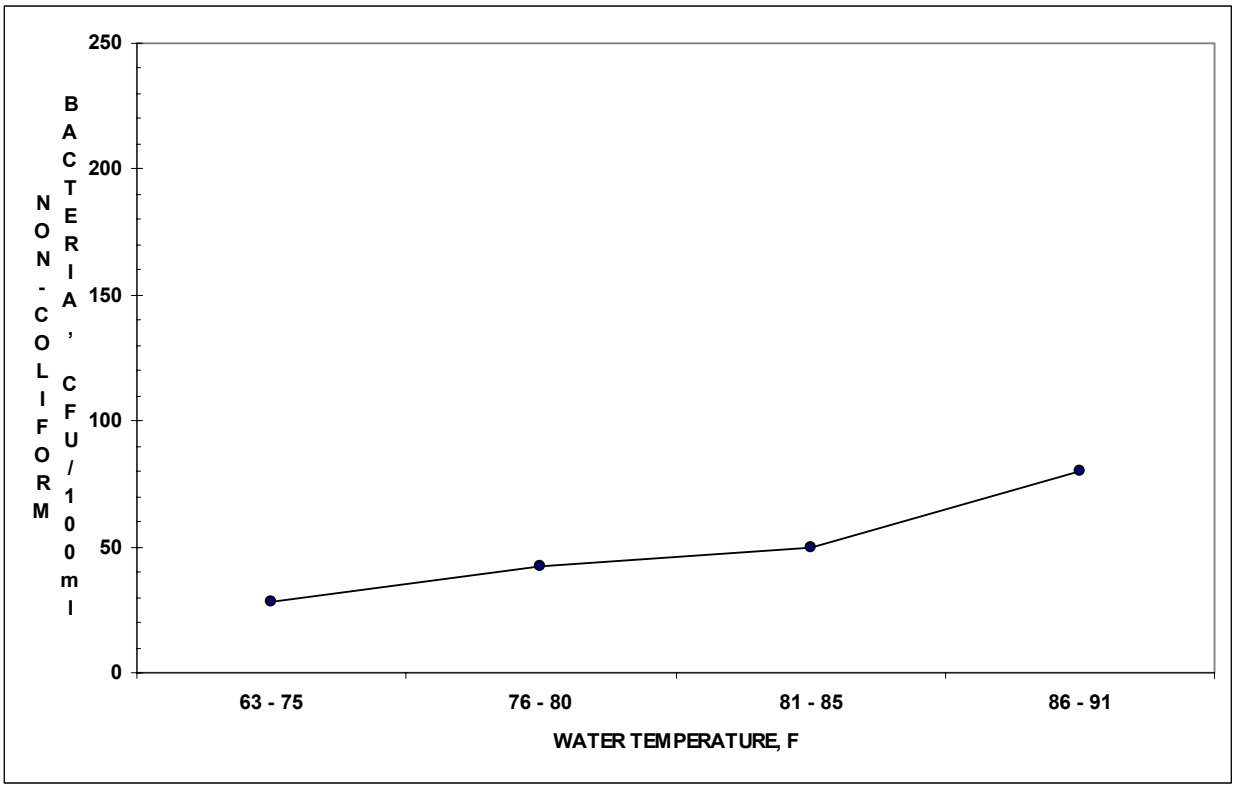


FIGURE 77: RELATIONSHIP BETWEEN FECAL COLIFORM AND HETEROTROPHIC BACTERIA POPULATIONS

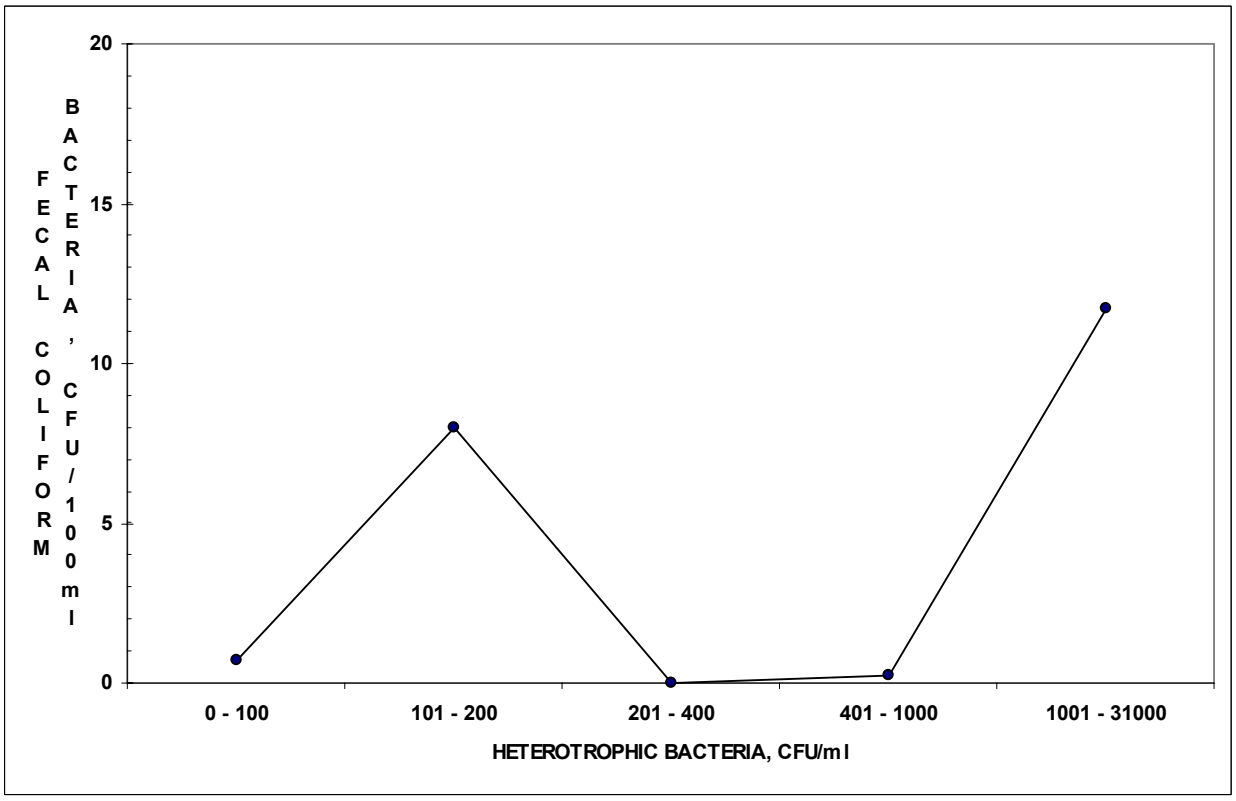


FIGURE 78: RELATIONSHIP BETWEEN FECAL AND TOTAL COLIFORM BACTERIA POPULATIONS

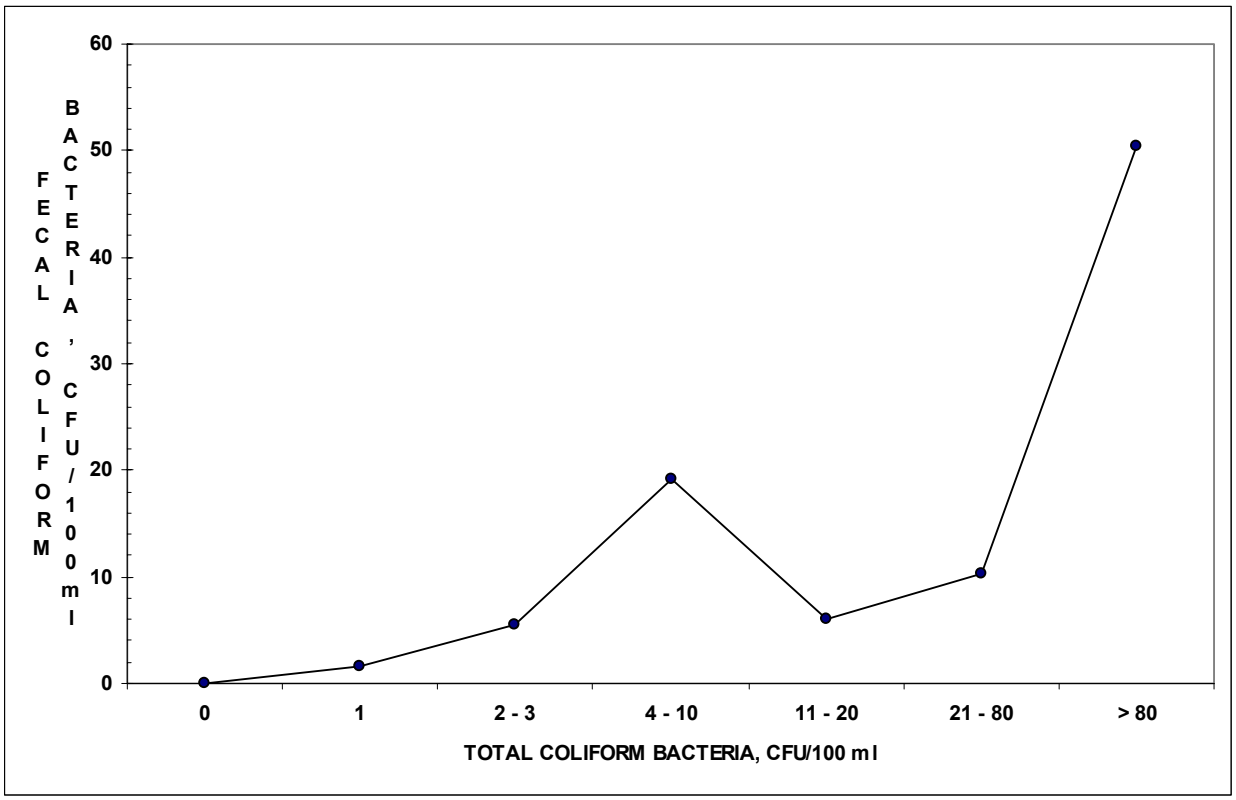


FIGURE 79: RELATIONSHIP BETWEEN FECAL COLIFORM AND NON-COLIFORM BACTERIA POPULATIONS

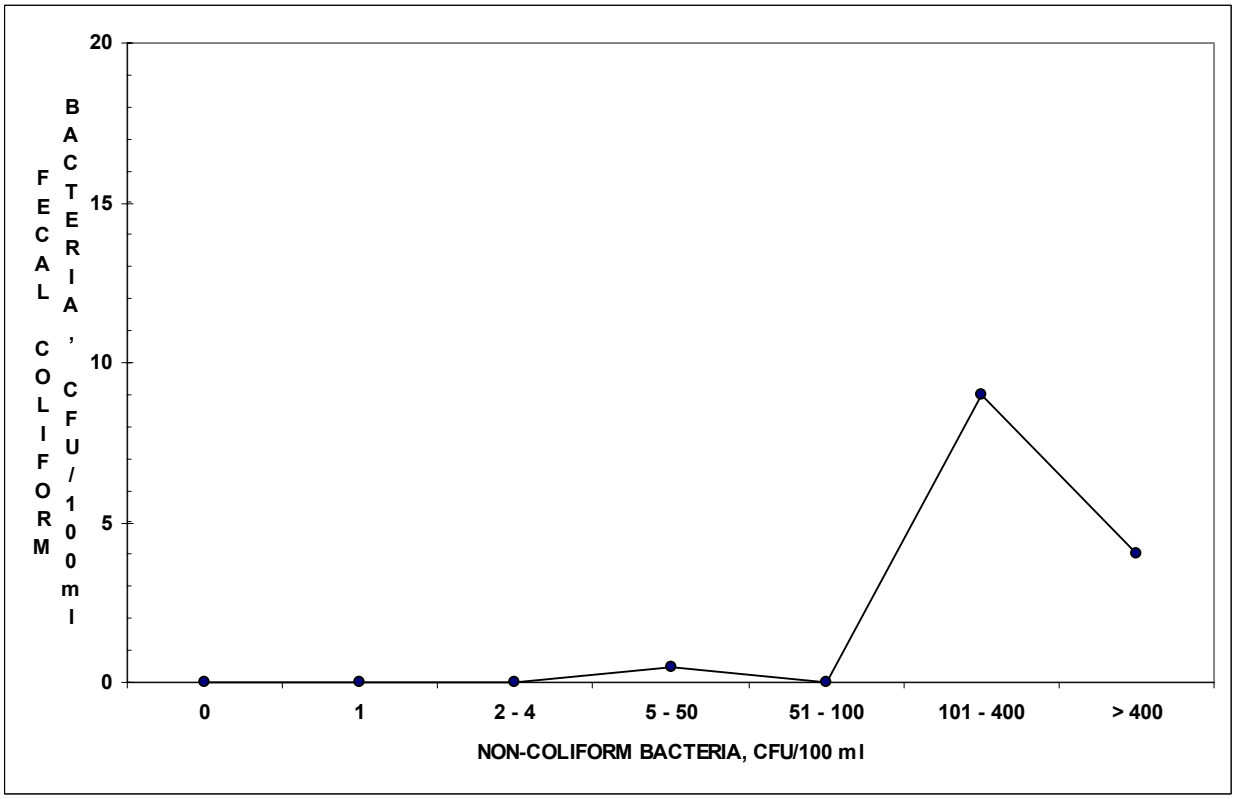


FIGURE 80: RELATIONSHIP BETWEEN FECAL COLIFORM AND FECAL STREPTOCOCCOUS BACTERIA

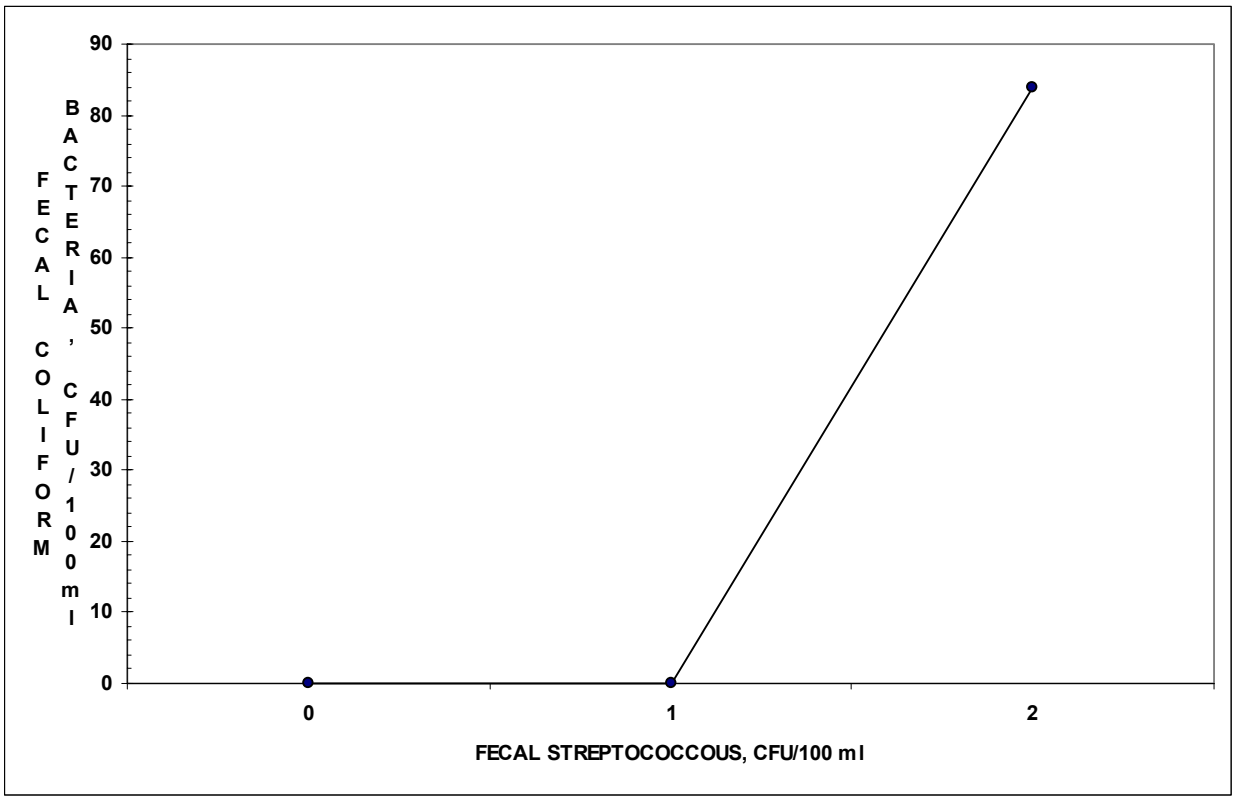


FIGURE 81: FECAL COLIFORM VS WATER RETURN

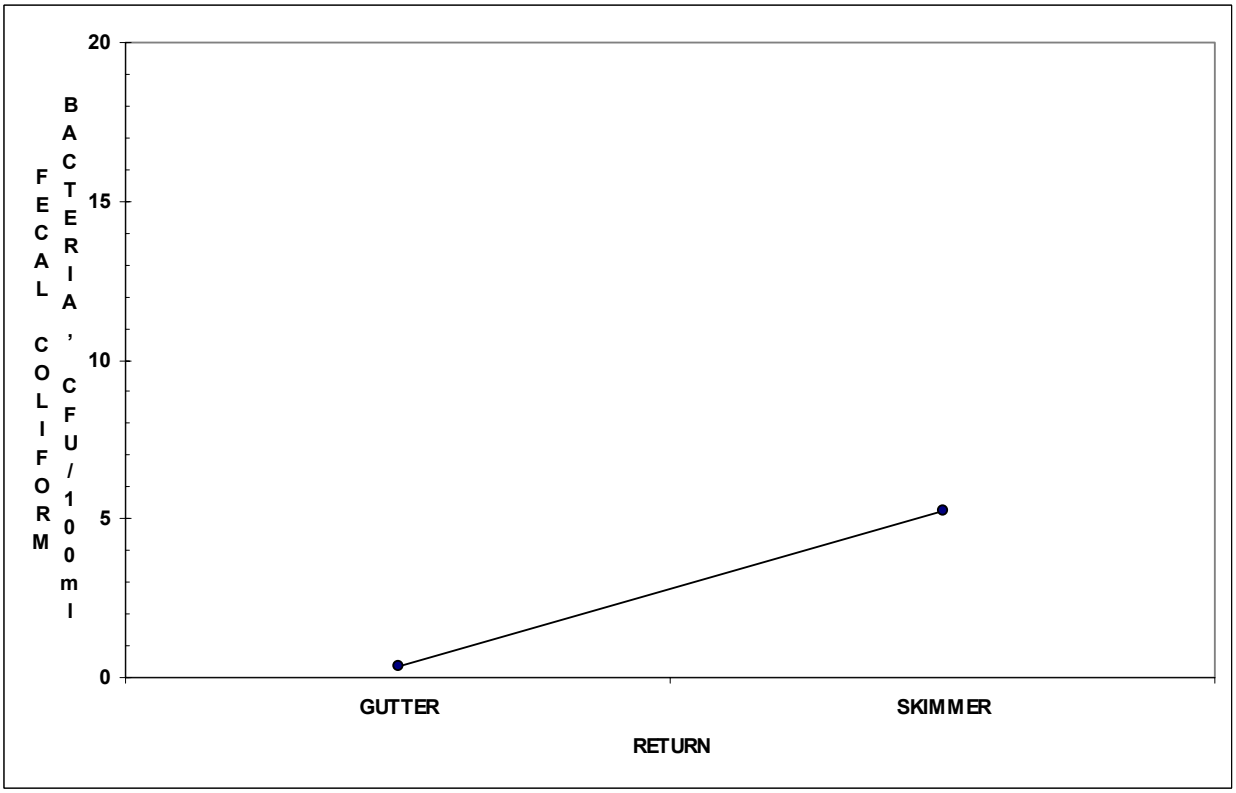


FIGURE 82: RELATIONSHIP BETWEEN PSEUDOMONAS BACTERIA POPULATION AND SANITIZER

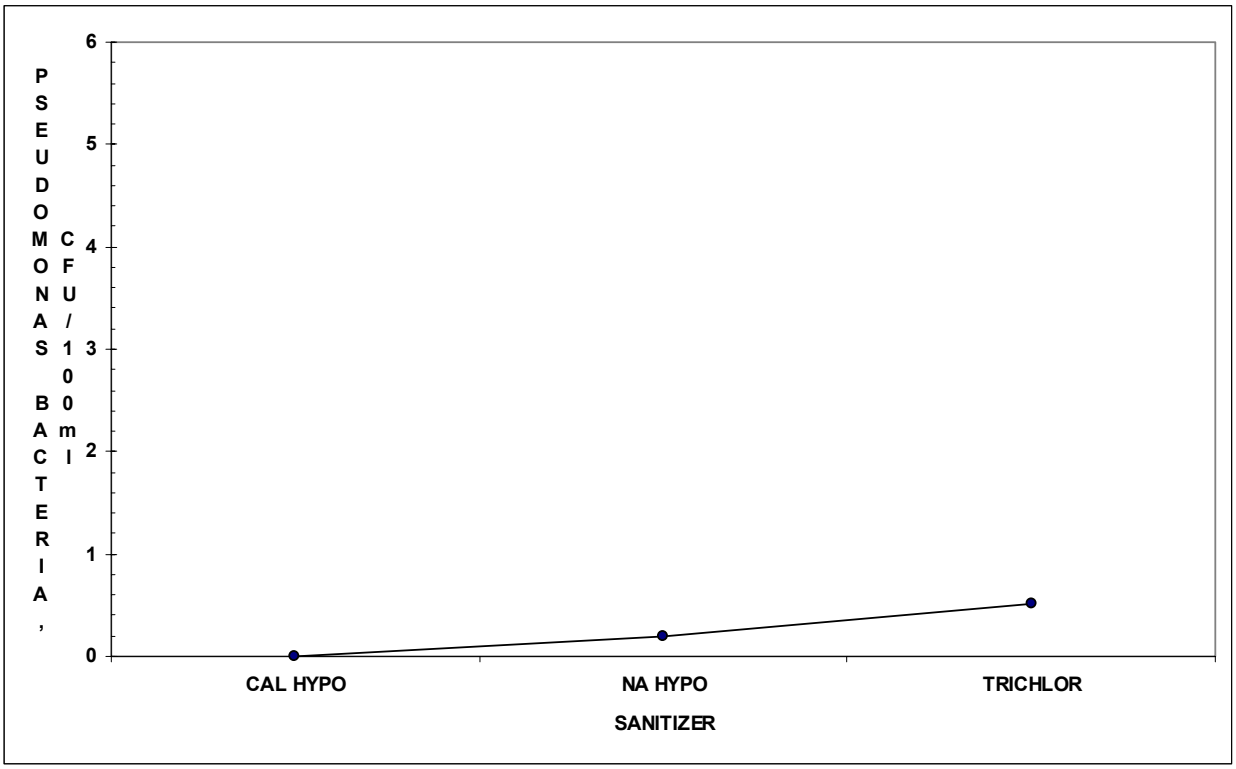


FIGURE 83: RELATIONSHIP BETWEEN PSEUDOMONAS BACTERIA POPULATION AND WATER RETURN SYSTEM

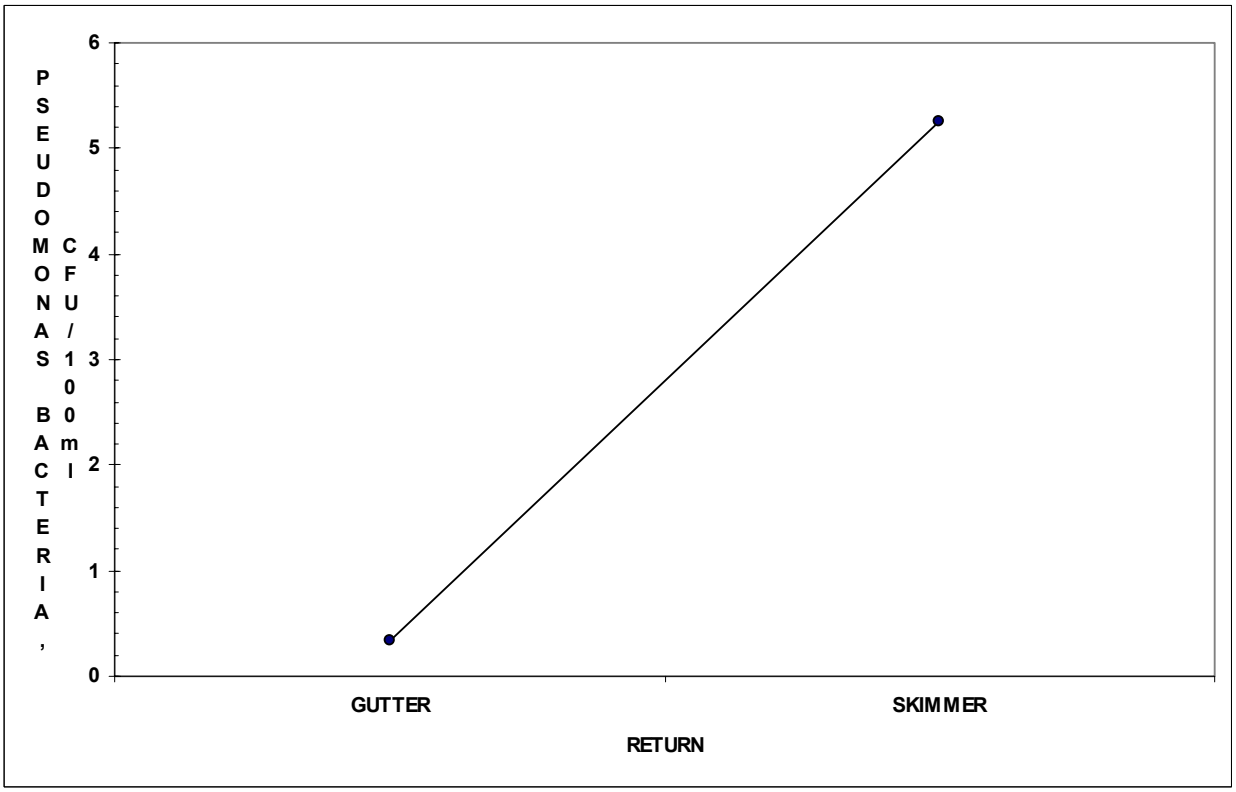


FIGURE 84: RELATIONSHIP BETWEEN TOTAL STAPHYLOCOCCUS BACTERIA POPULATION AND PH

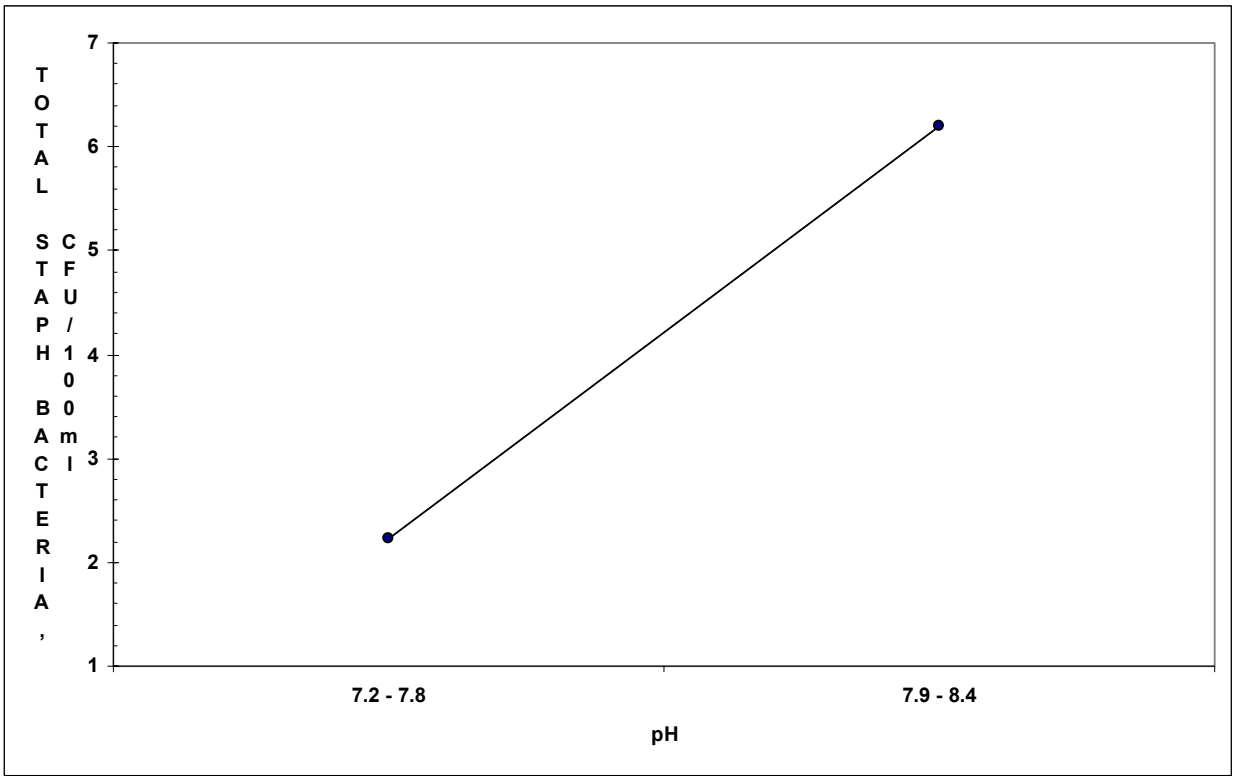


FIGURE 85: RELATIONSHIP BETWEEN TOTAL STAPHYLOCOCCUS BACTERIA AND TOTAL DISSOLVED SOLIDS

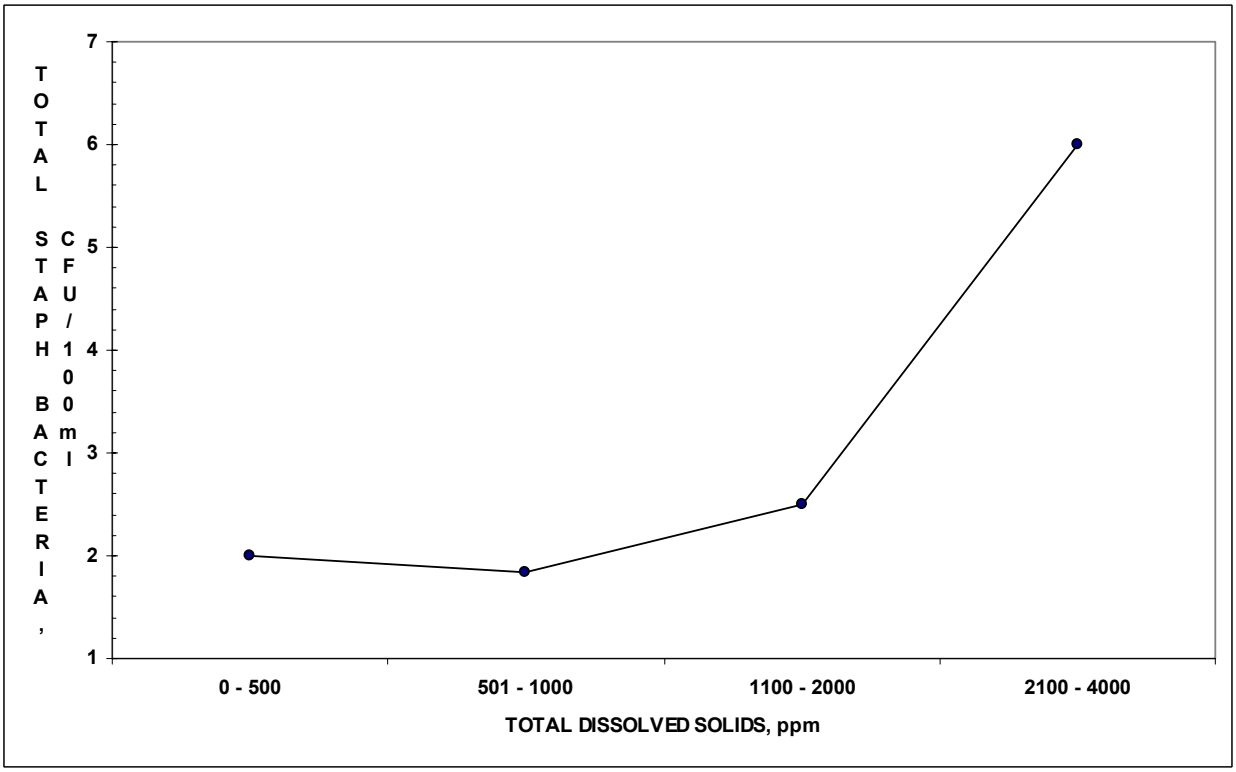


FIGURE 86: RELATIONSHIP BETWEEN FECAL STREPTOCOCCOUS BACTERIA POPULATION AND BATHERLOAD

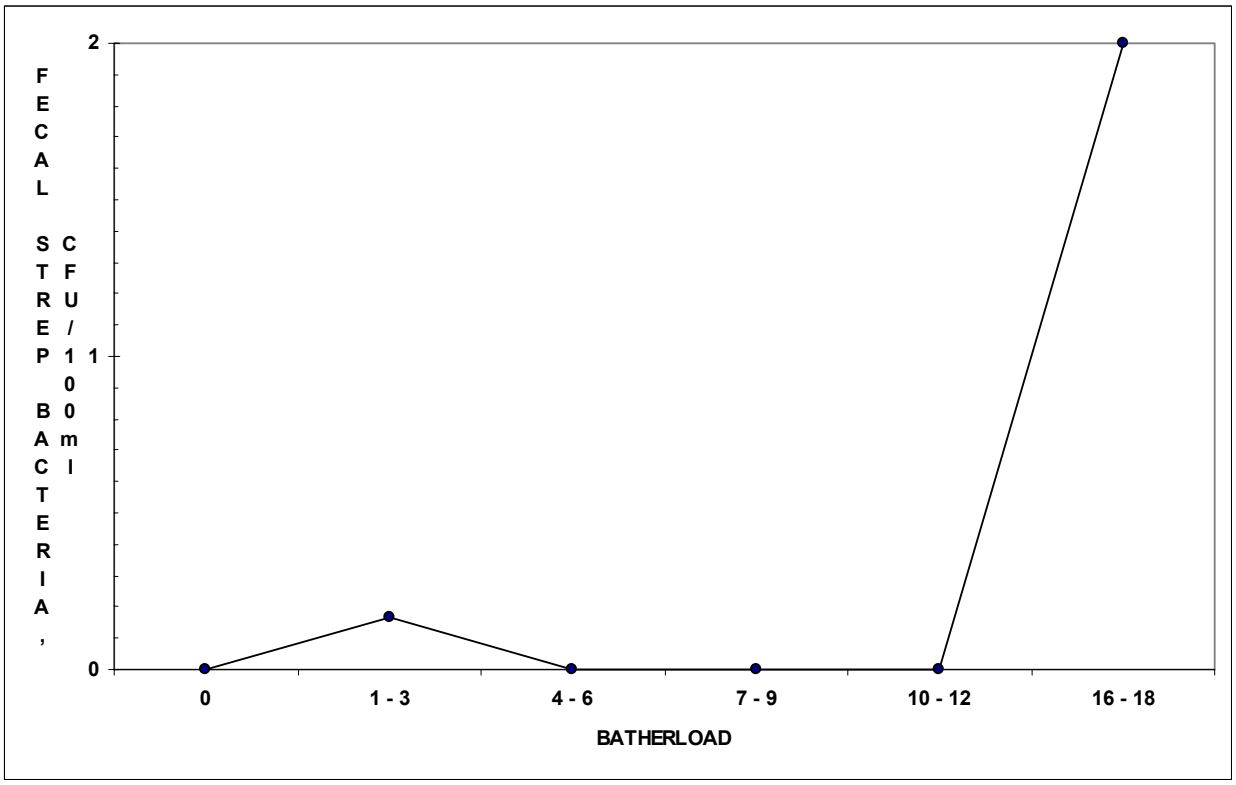
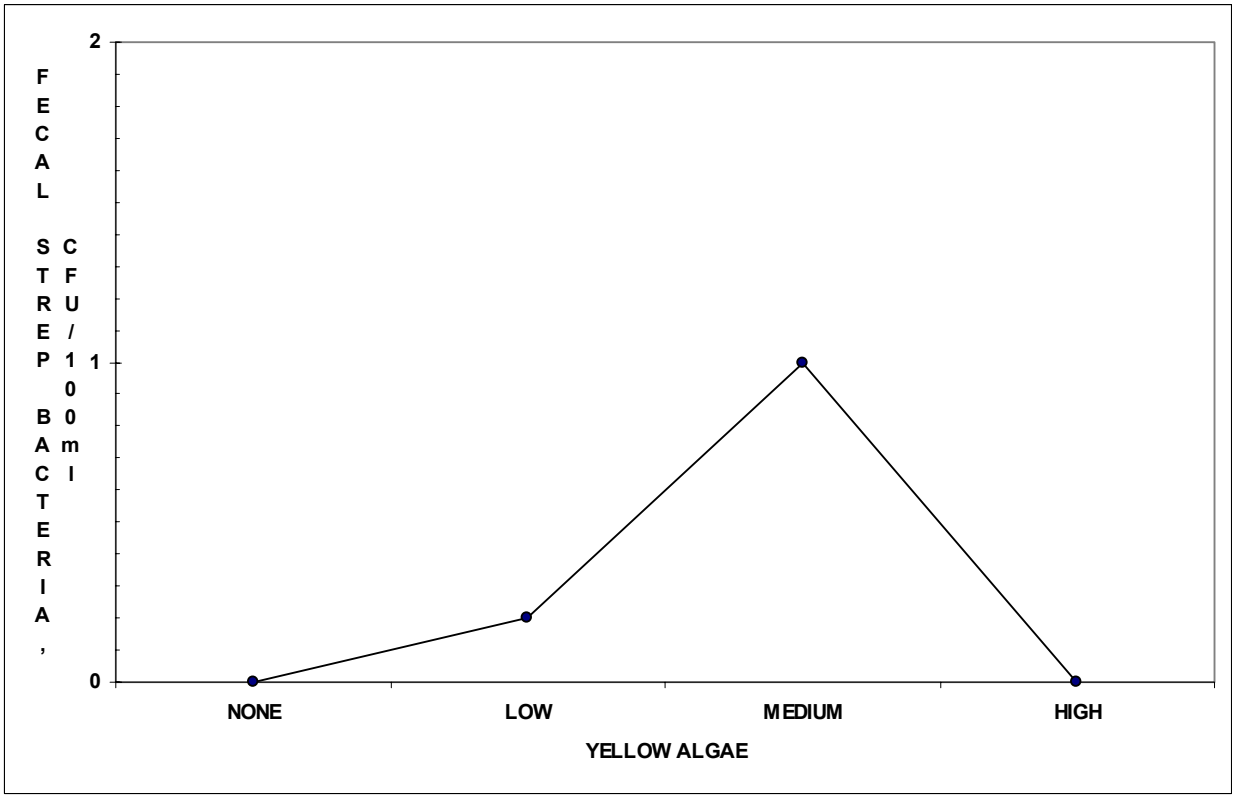


FIGURE 87: RELATIONSHIP BETWEEN FECAL STREPTOCOCCOUS BACTERIA AND YELLOW ALGAE



Appendix Y

Water Chemistry Variable Pairs Relationships Graphs

FIGURE 88: RELATIONSHIP BETWEEN FREE CHLORINE AND CYANURIC ACID

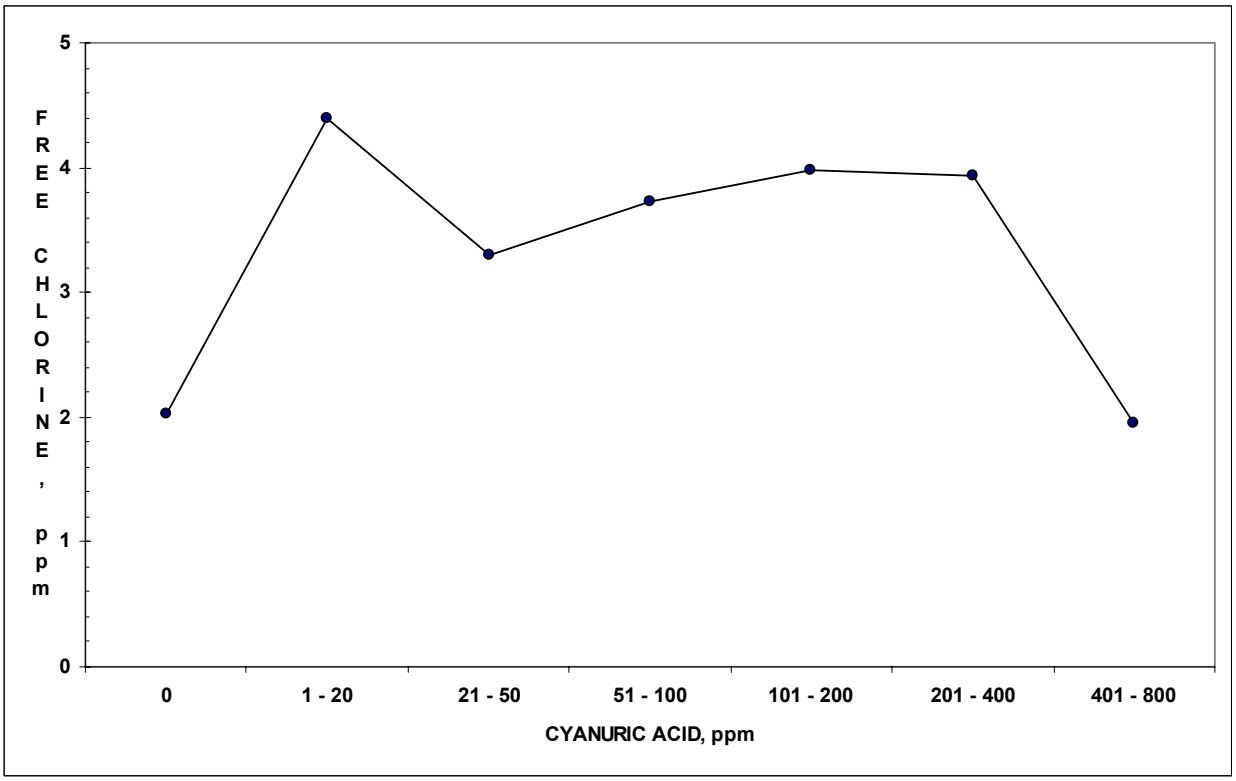


FIGURE 89: RELATIONSHIP BETWEEN FREE CHLORINE AND BATHERLOAD

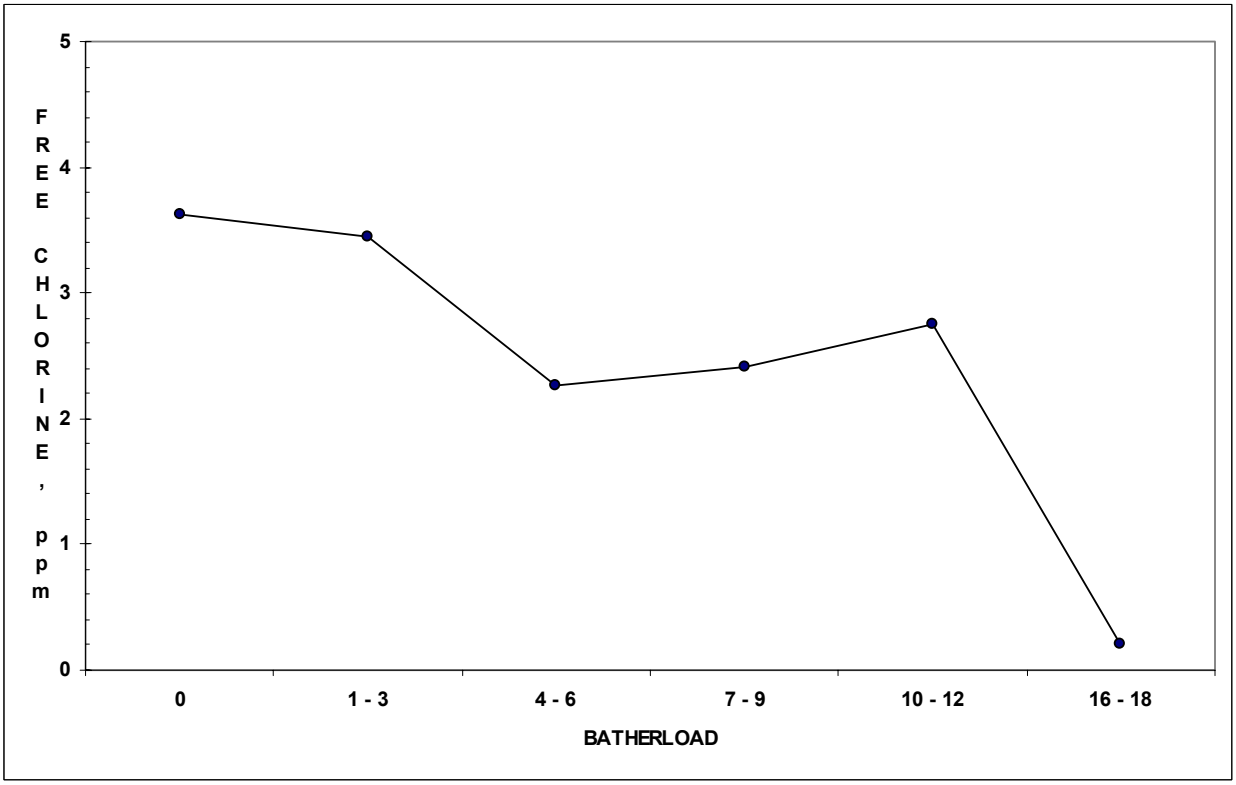


FIGURE 90: RELATIONSHIP BETWEEN FREE CHLORINE AND WATER SAMPLE COLLECTION DAY

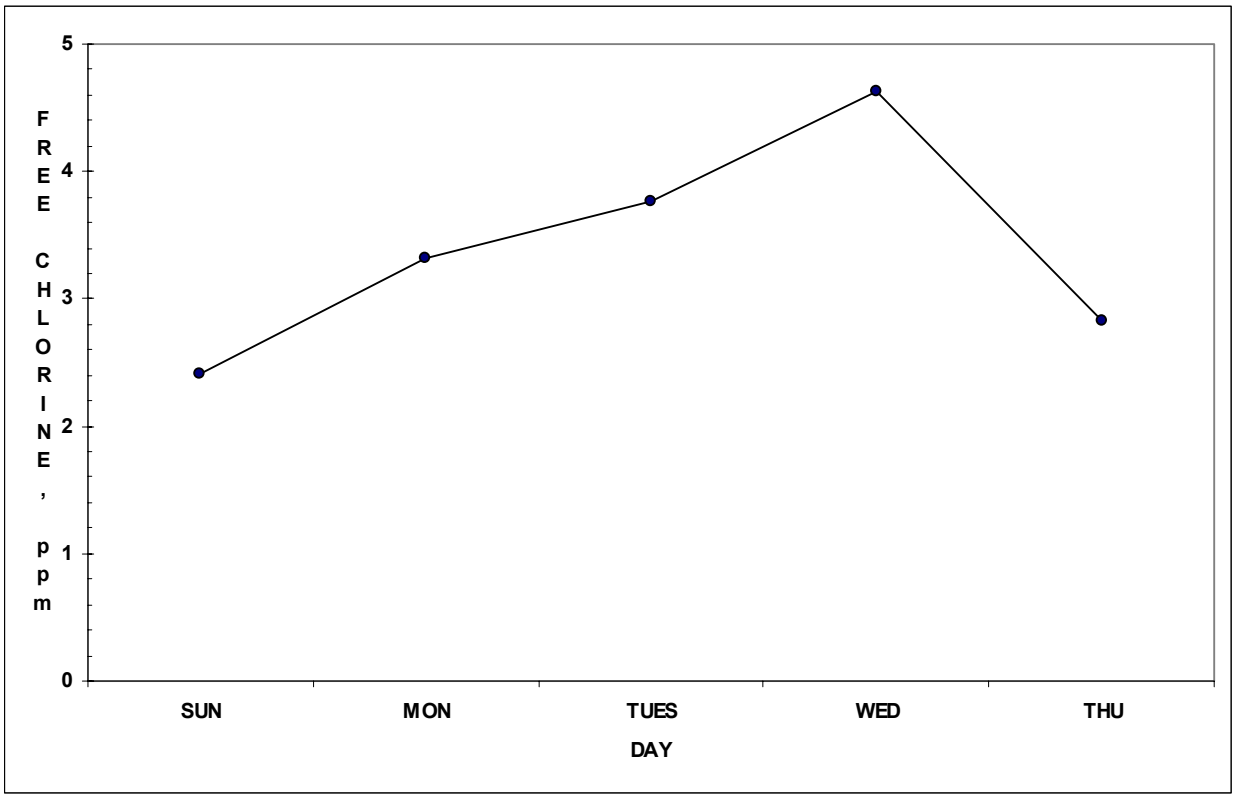


FIGURE 91: RELATIONSHIP BETWEEN FREE CHLORINE AND WATER SAMPLE COLLECTION MONTH

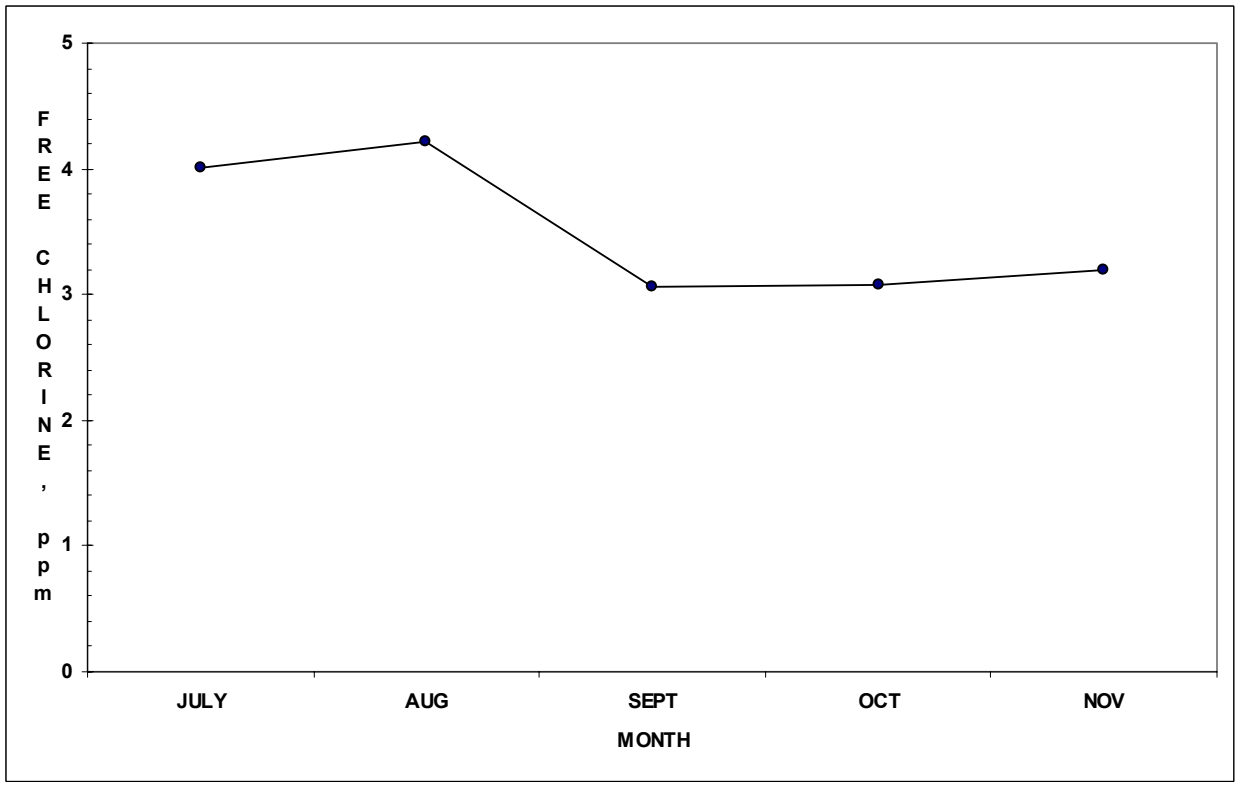


FIGURE 92: RELATIONSHIP BETWEEN FREE CHLORINE AND TIME OF DAY

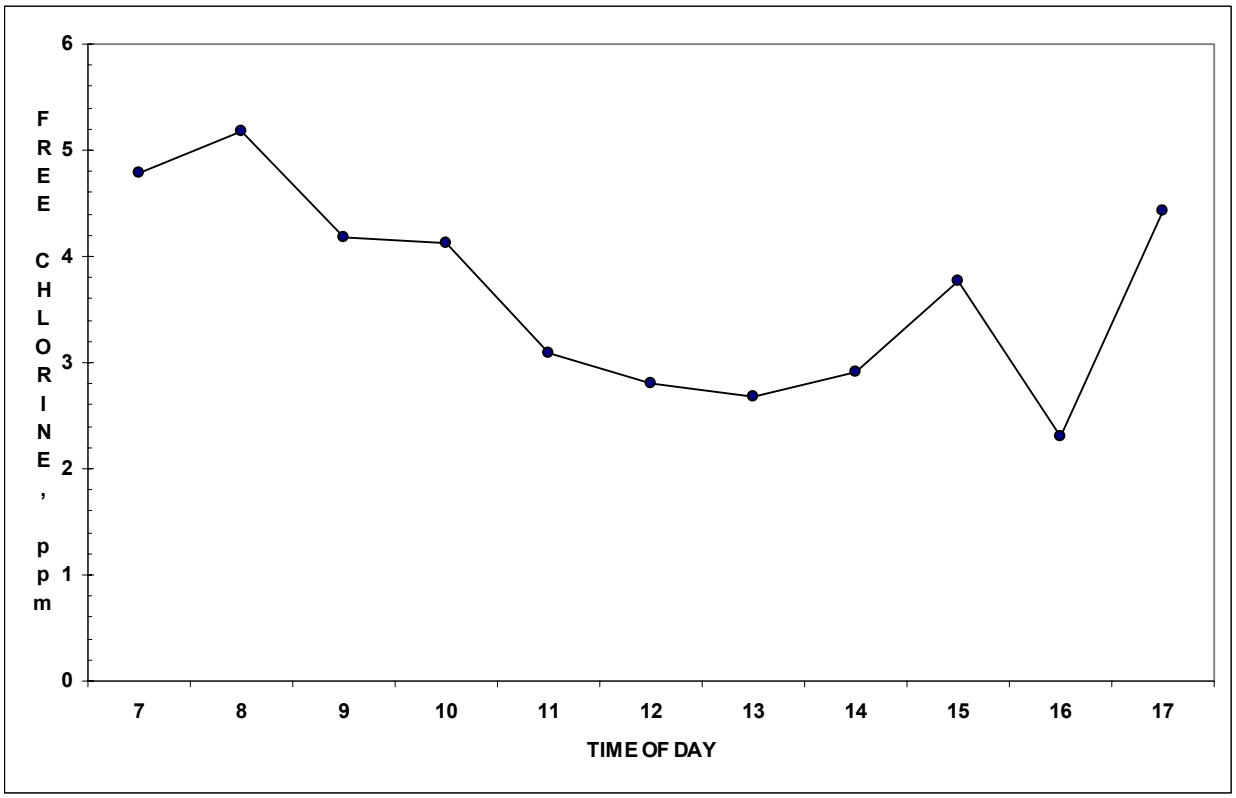


FIGURE 93: RELATIONSHIP BETWEEN FREE AND TOTAL CHLORINE

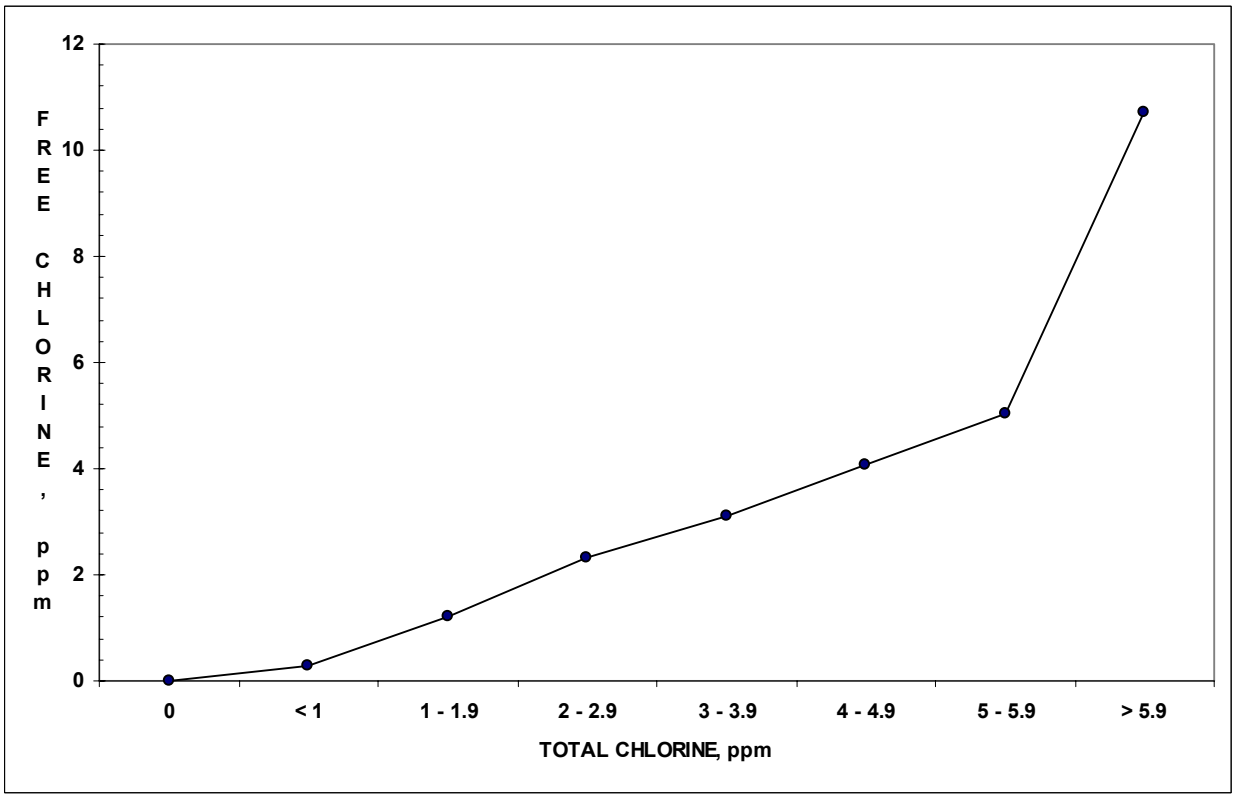


FIGURE 94: RELATIONSHIP BETWEEN TOTAL CHLORINE AND BATHERLOAD

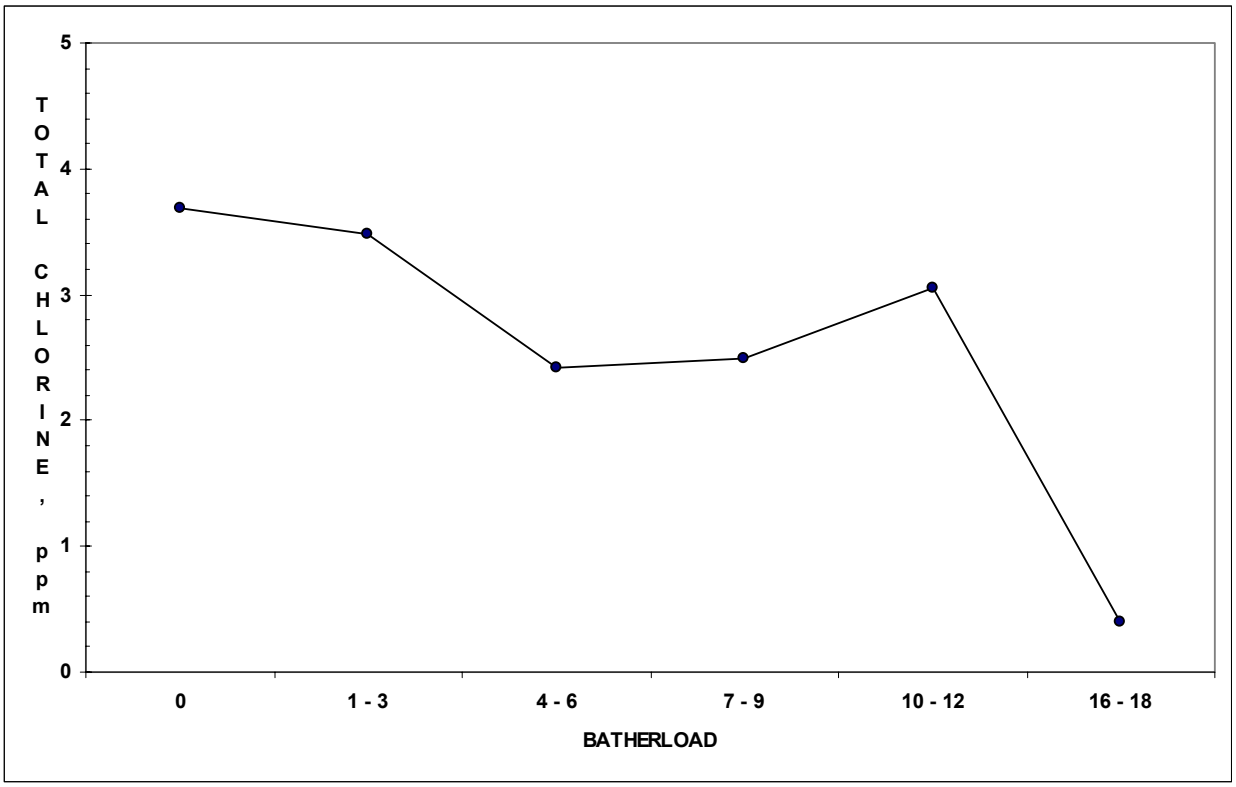


FIGURE 95: RELATIONSHIP BETWEEN TOTAL CHLORINE AND WATER SAMPLE COLLECTION DAY

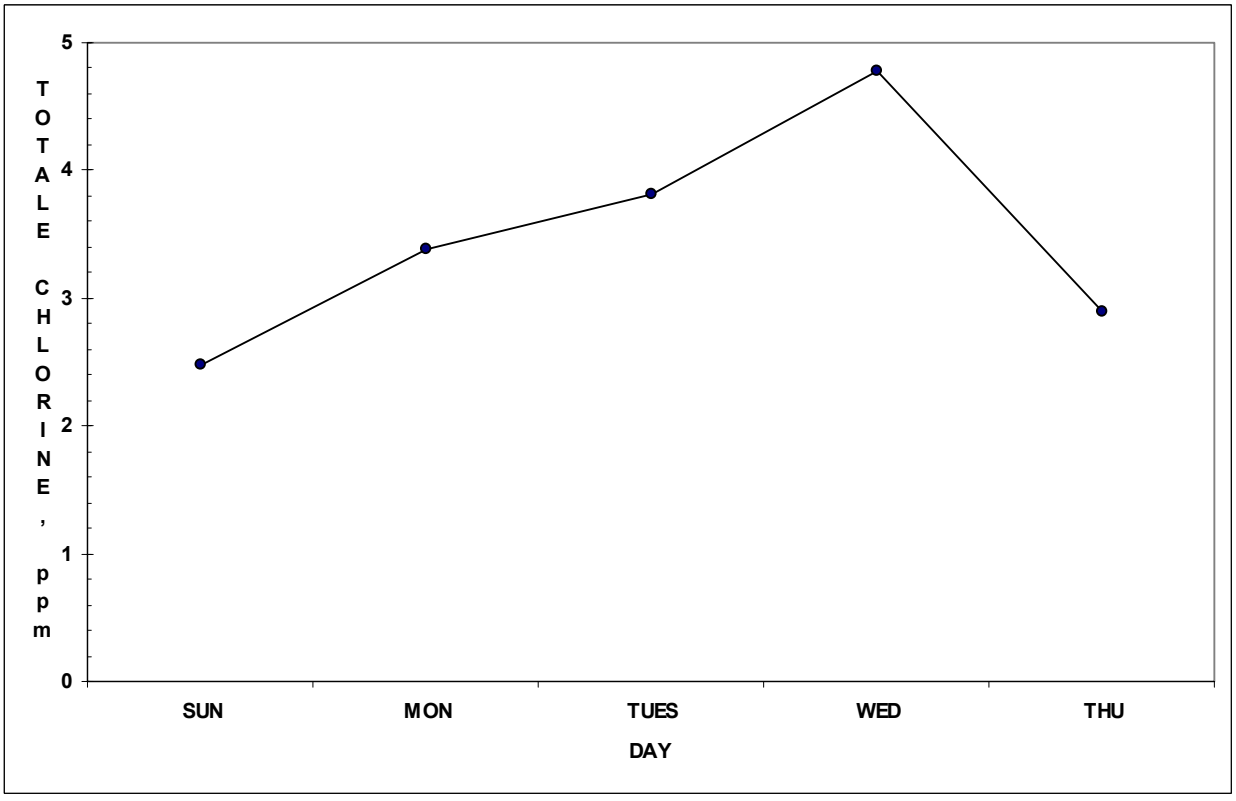


FIGURE 96: RELATIONSHIP BETWEEN TOTAL CHLORINE AND WATER SAMPLE COLLECTION MONTH

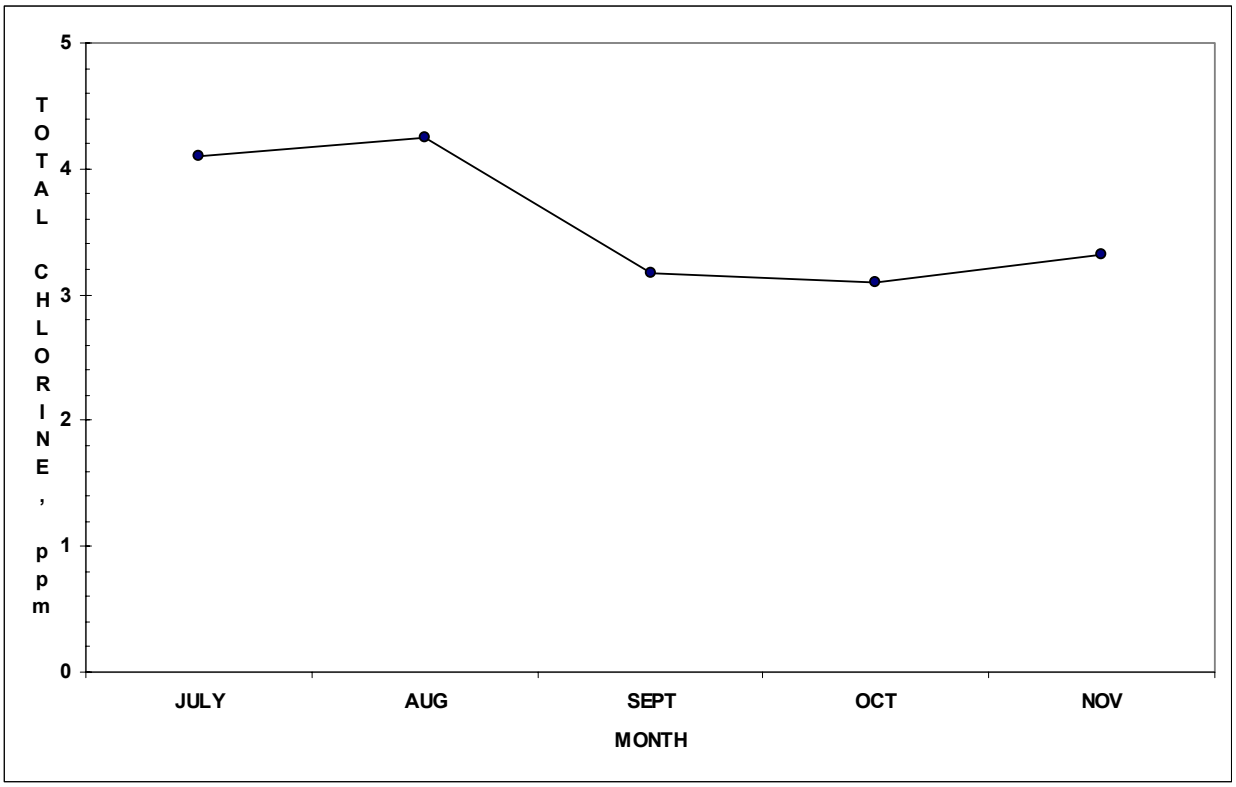


FIGURE 97: RELATIONSHIP BETWEEN TOTAL CHLORINE AND CYANURIC ACID

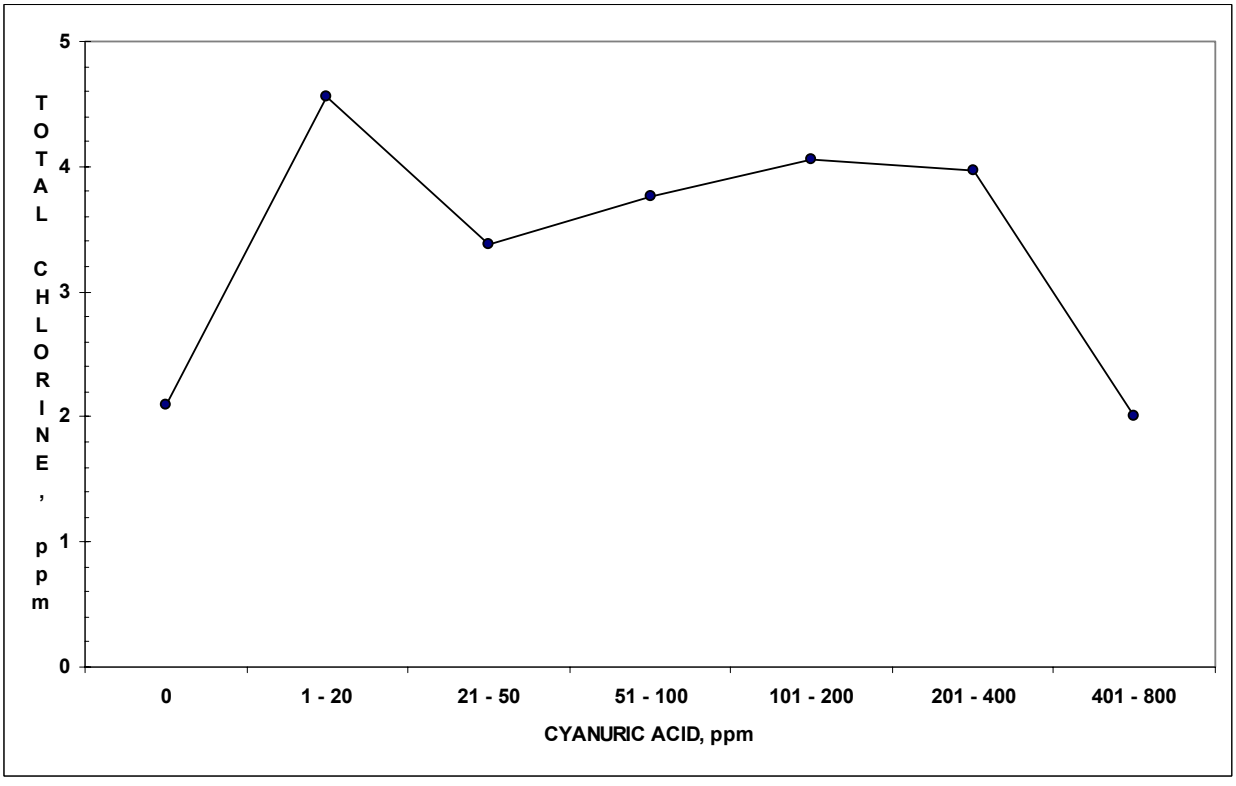


FIGURE 98: RELATIONSHIP BETWEEN TOTAL CHLORINE AND TIME OF DAY

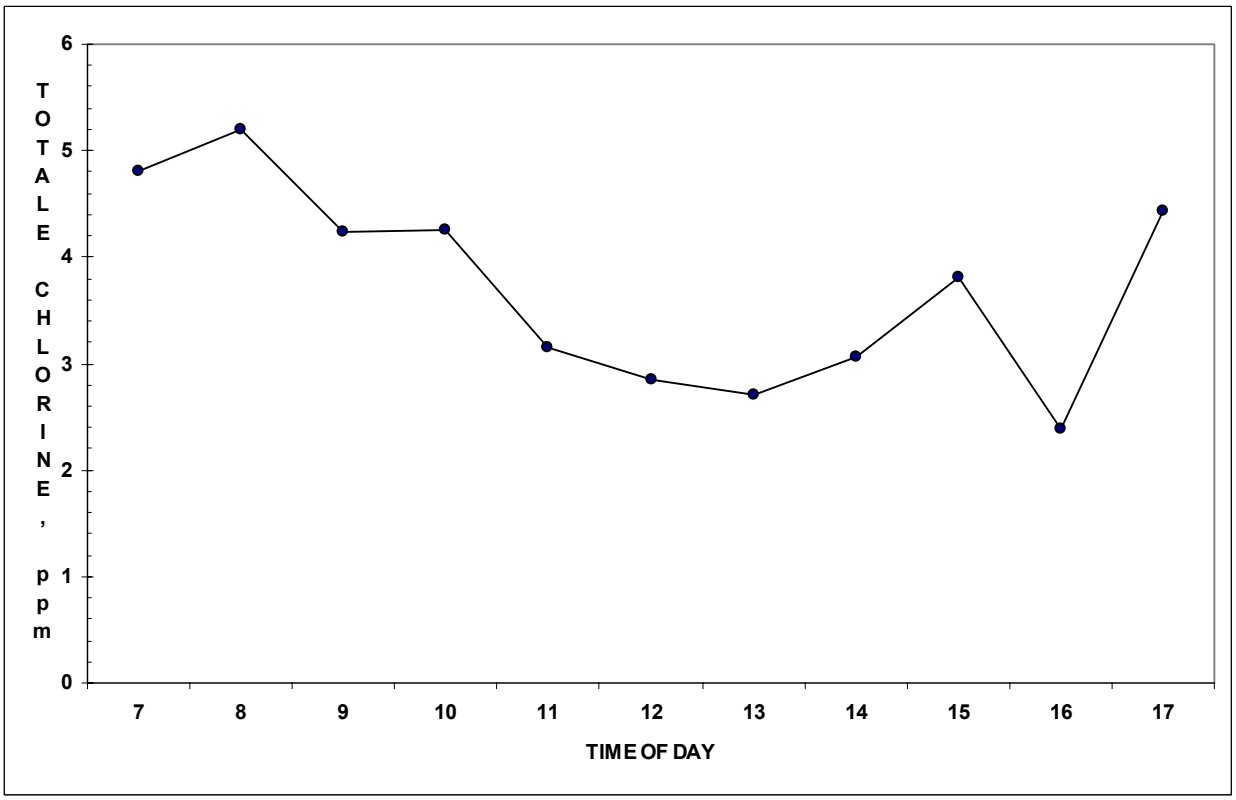


FIGURE 99: RELATIONSHIP BETWEEN PH AND ALKALINITY

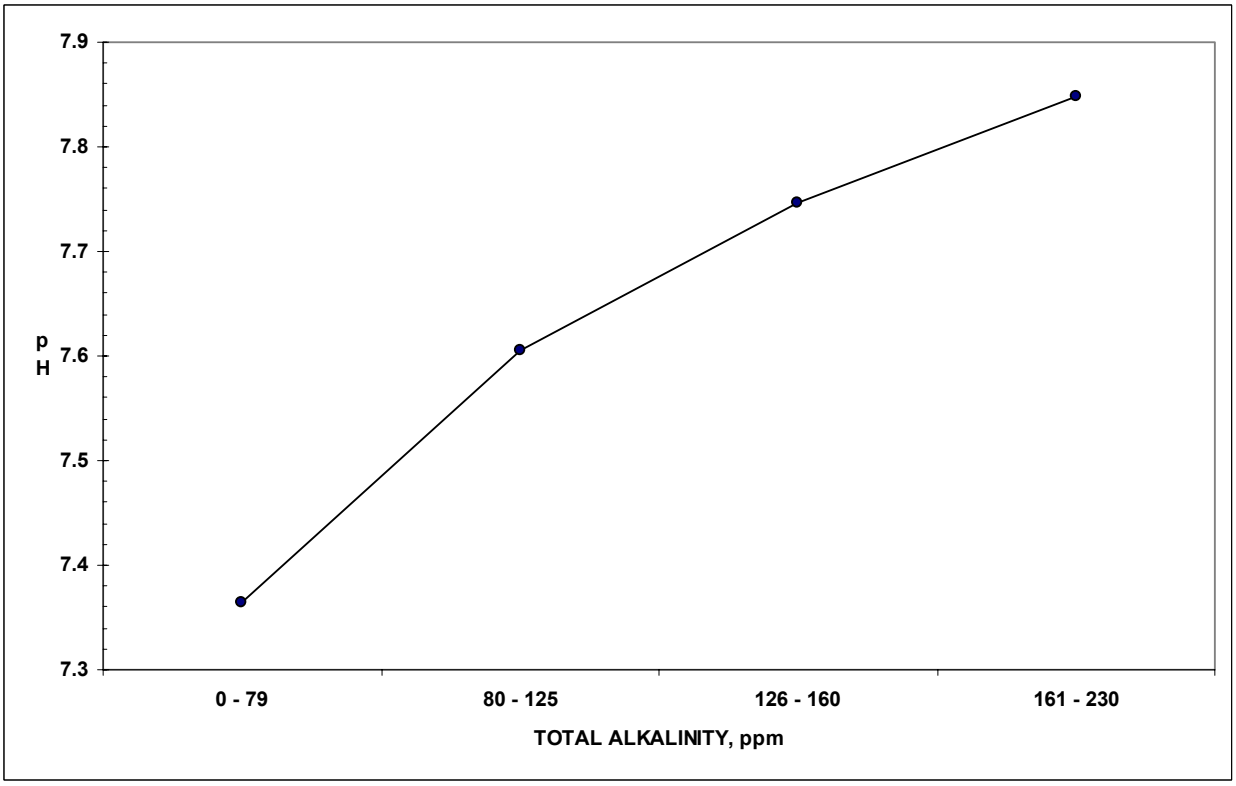


FIGURE 100: RELATIONSHIP BETWEEN PH AND SANITIZER

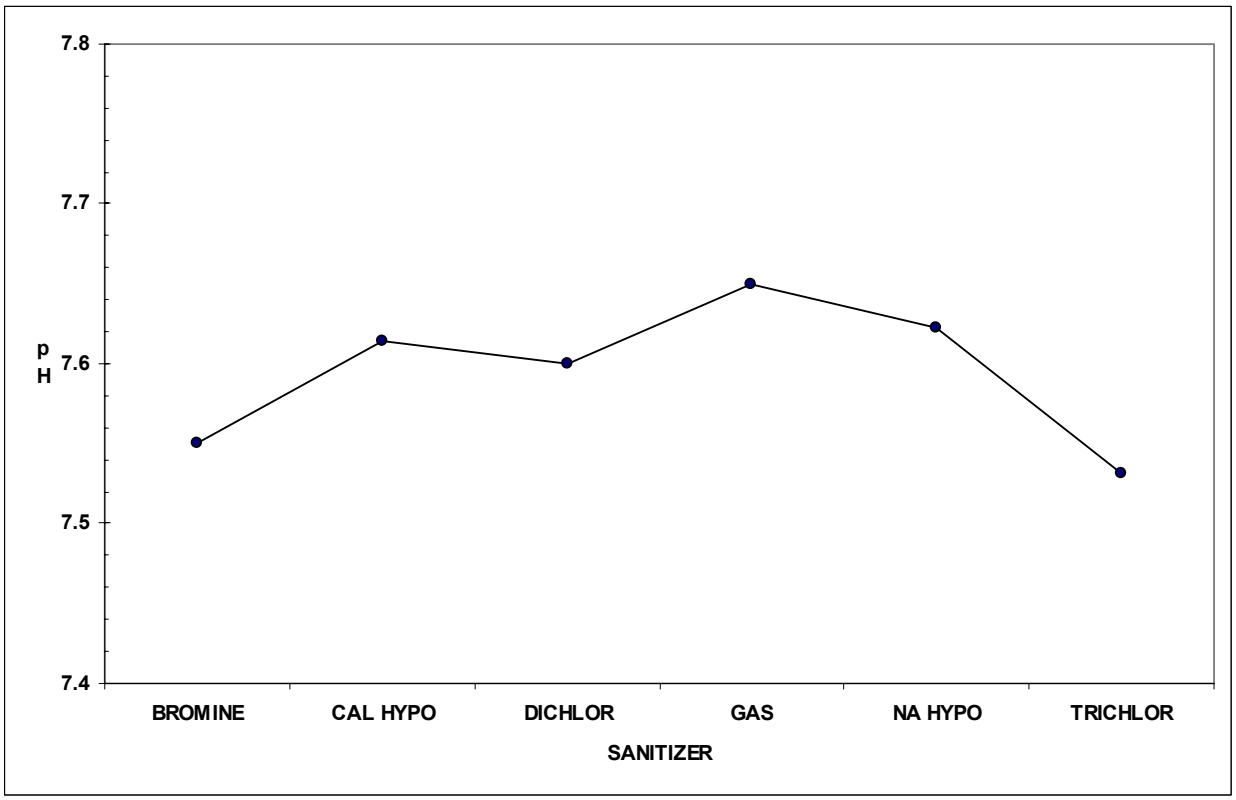


FIGURE 101: RELATIONSHIP BETWEEN PH AND CYANURIC ACID

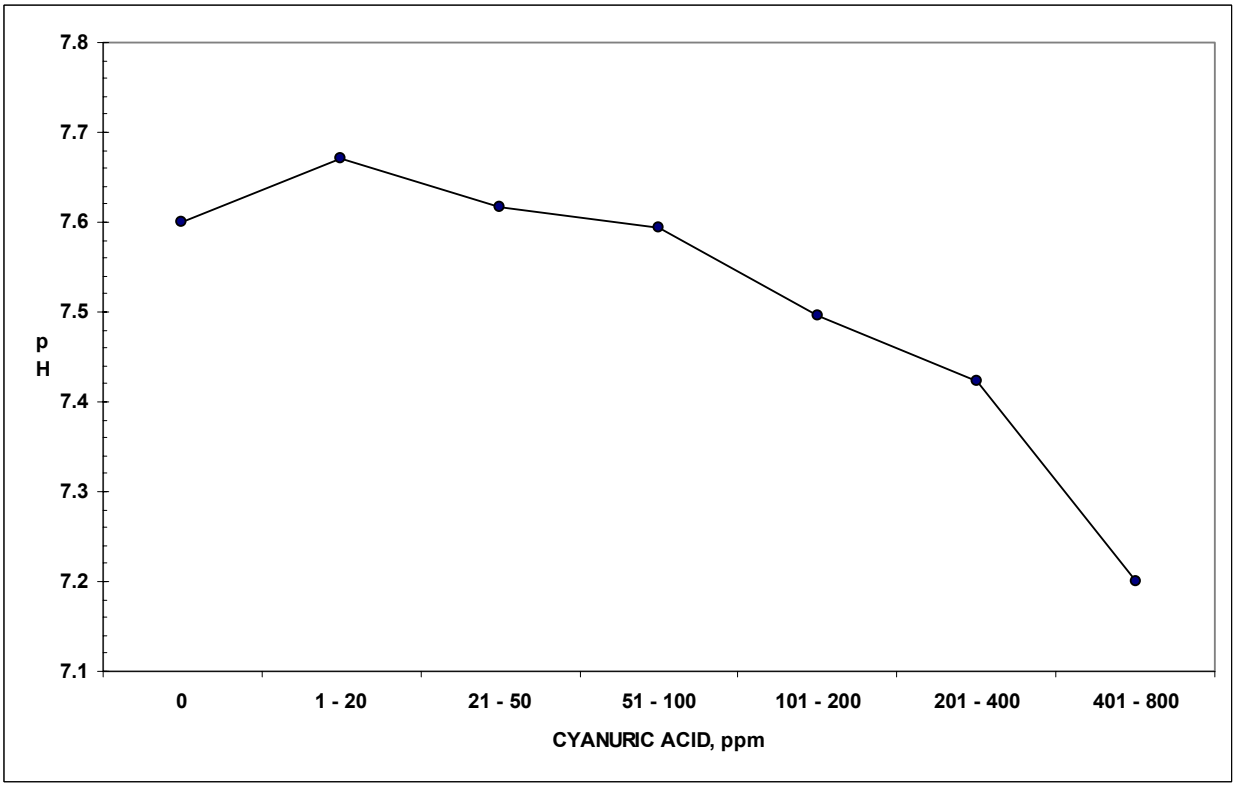


FIGURE 102: RELATIONSHIP BETWEEN PH AND WATER TEMPERATURE

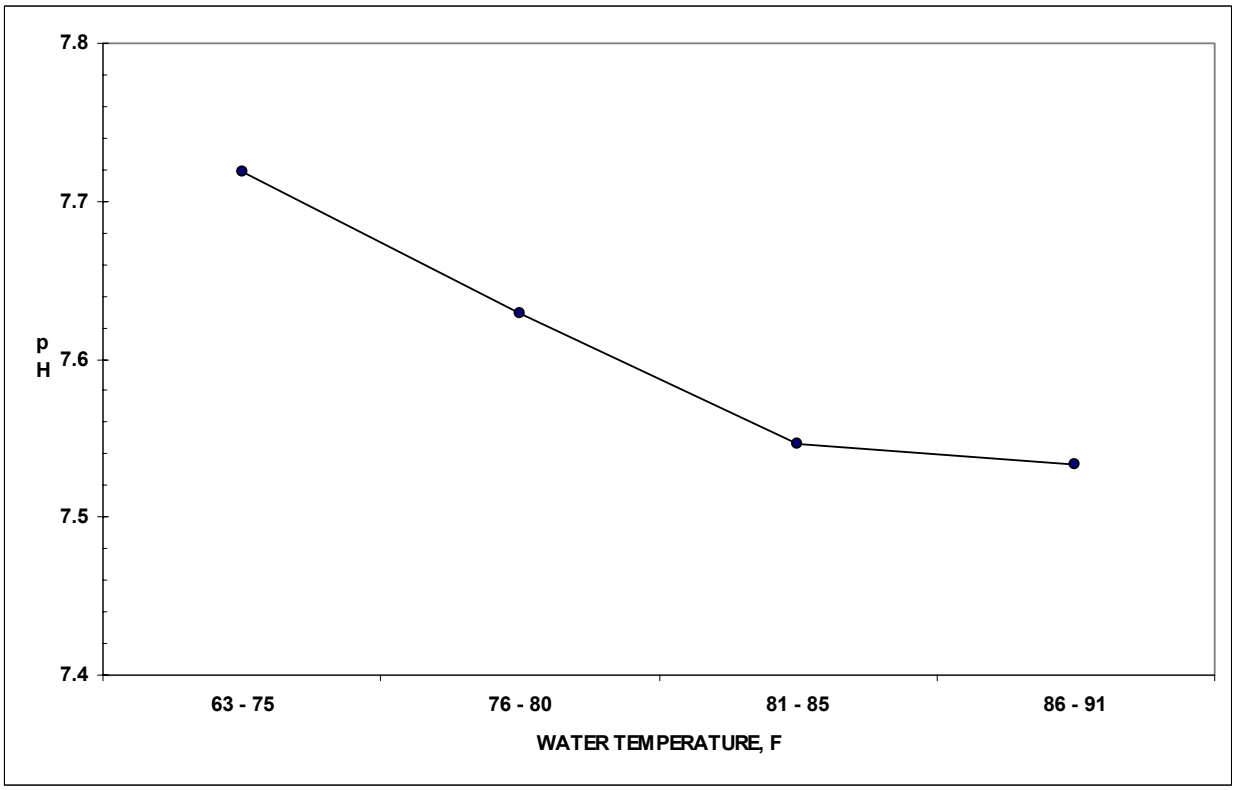


FIGURE 103: RELATIONSHIP BETWEEN PH AND WATER SAMPLE COLLECTION MONTH

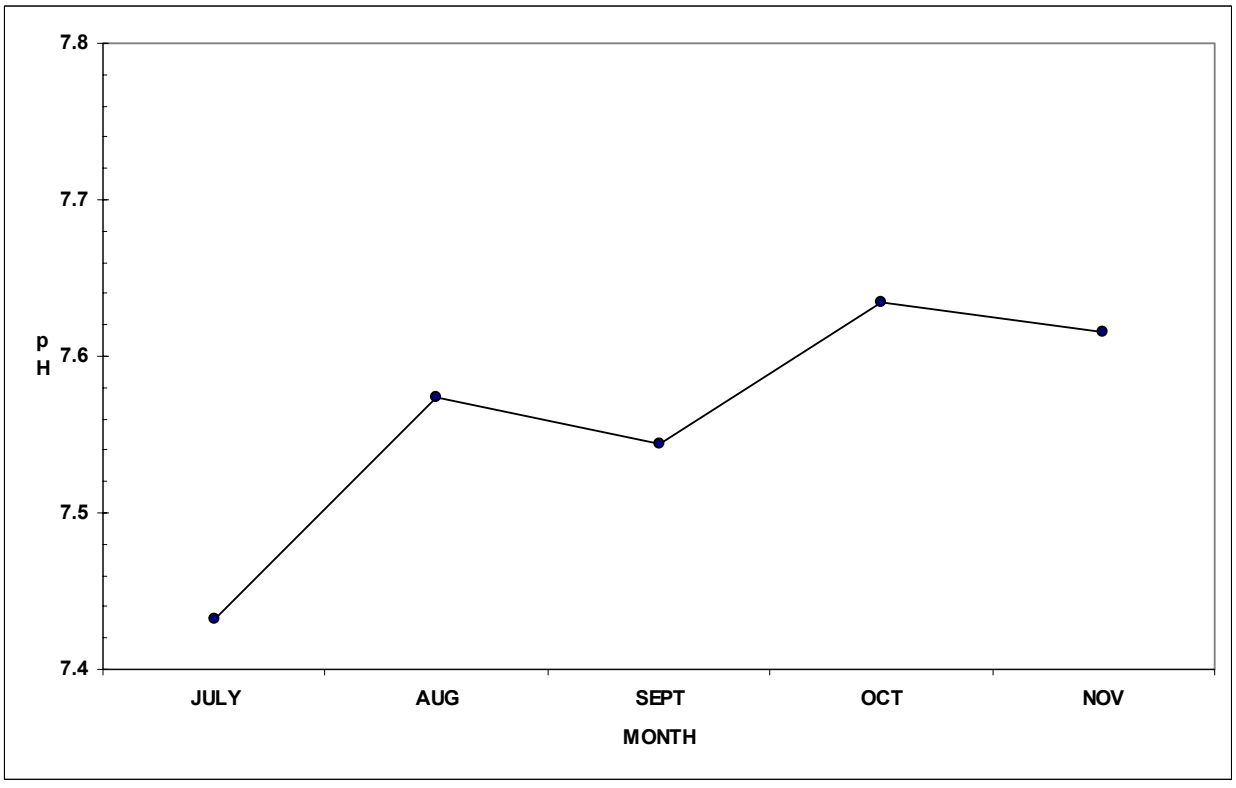


FIGURE 104: RELATIONSHIP BETWEEN PH AND WATER SAMPLE COLLECTION DAY

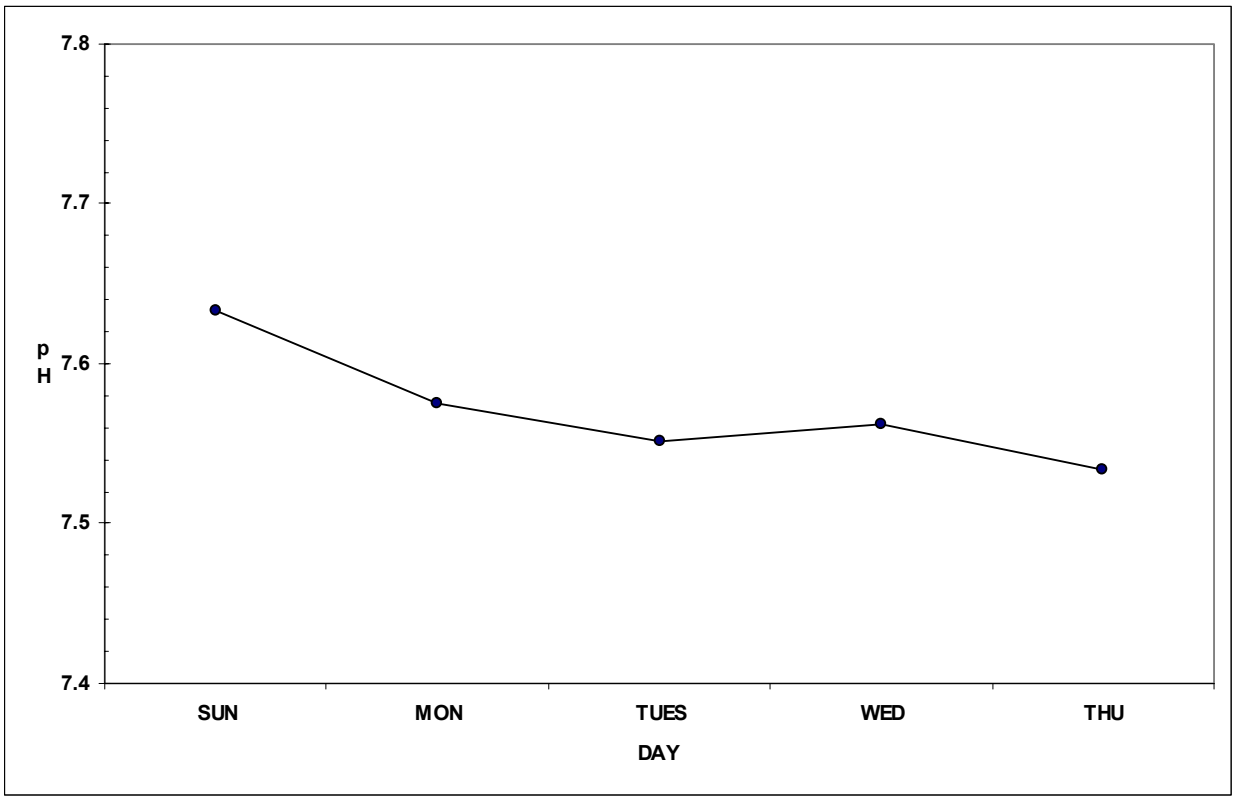


FIGURE 105: RELATIONSHIP BETWEEN PH AND FACILITY POOL

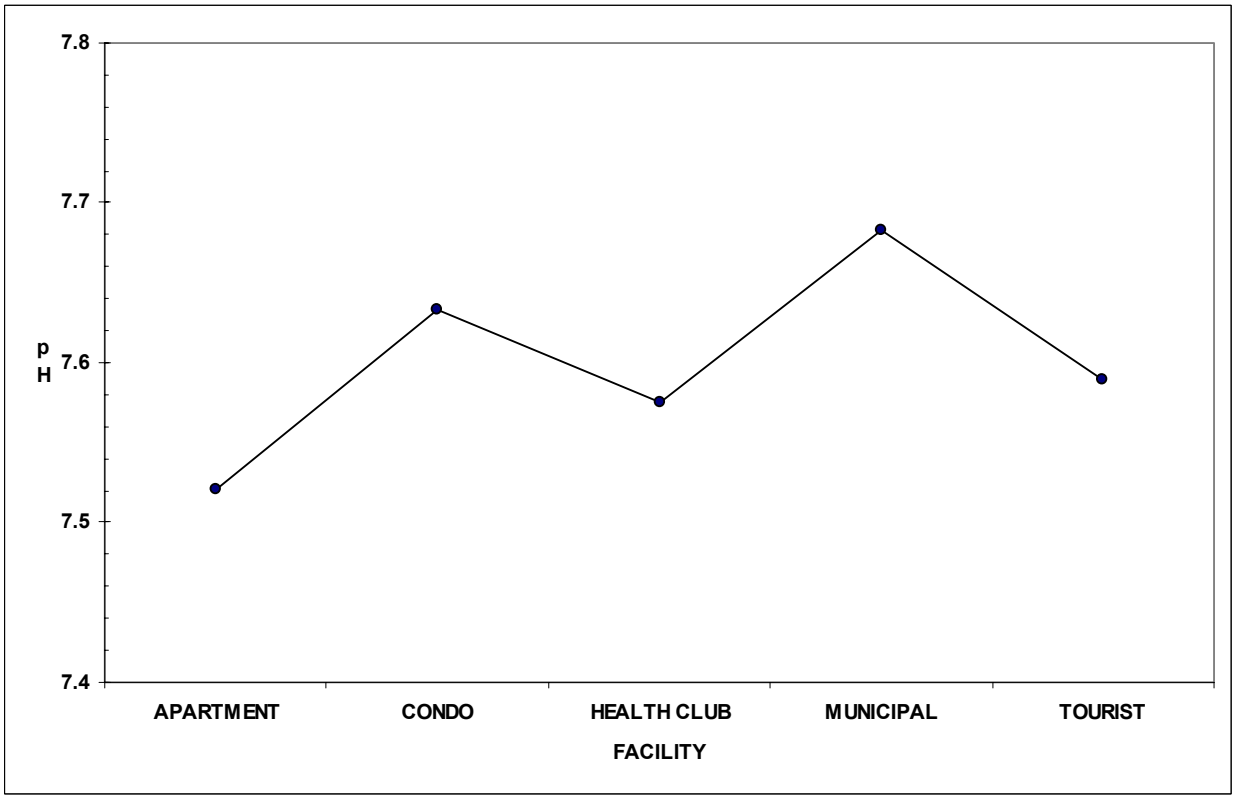


FIGURE 106: RELATIONSHIP BETWEEN CYANURIC ACID AND SANITIZER

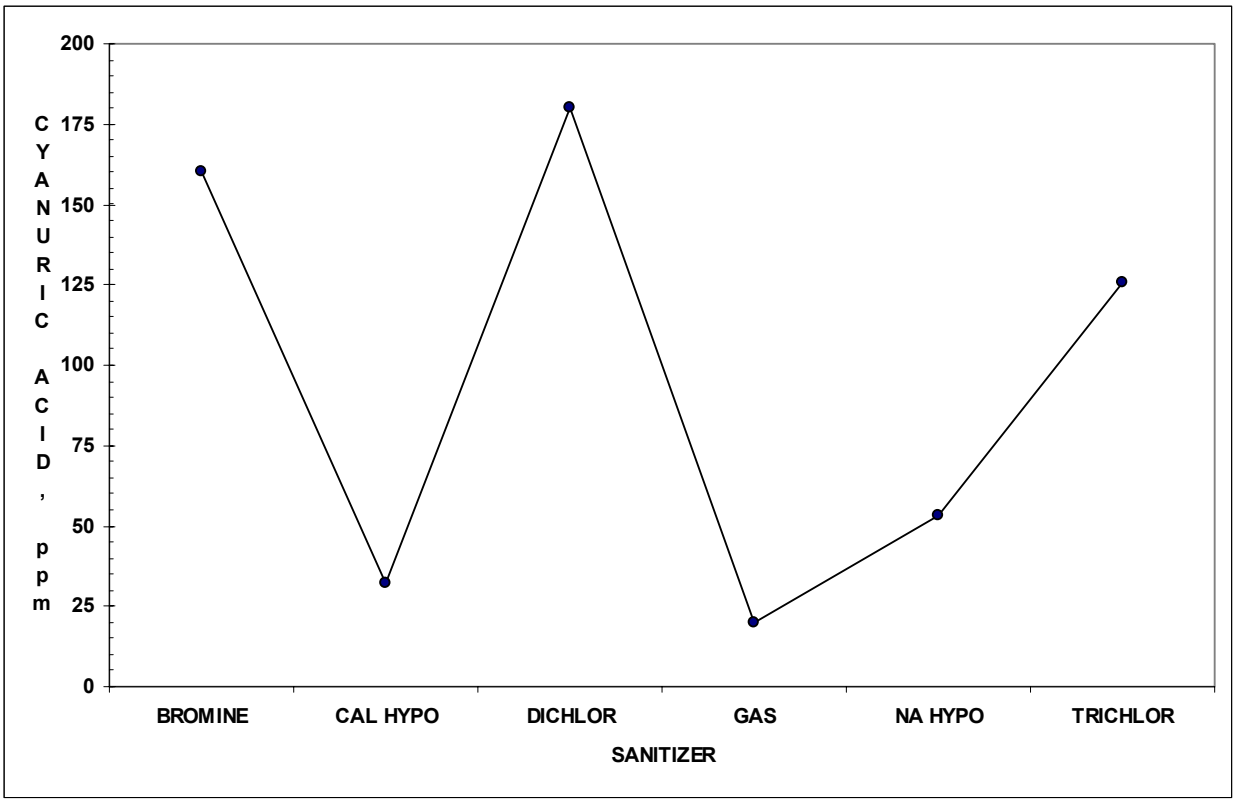


FIGURE 107: RELATIONSHIP BETWEEN CYANURIC ACID AND WATER RETURN

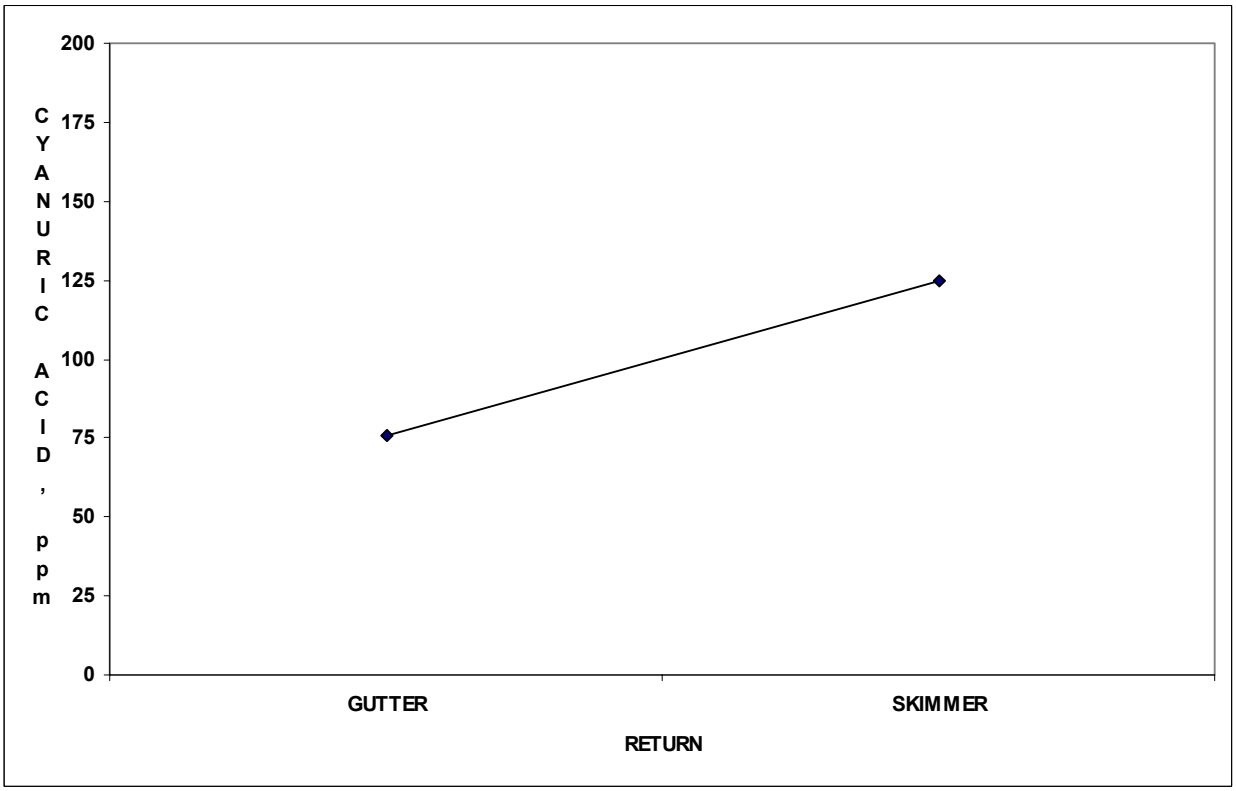


FIGURE 108: RELATIONSHIP BETWEEN CYANURIC ACID AND WATER SAMPLE COLLECTION MONTH

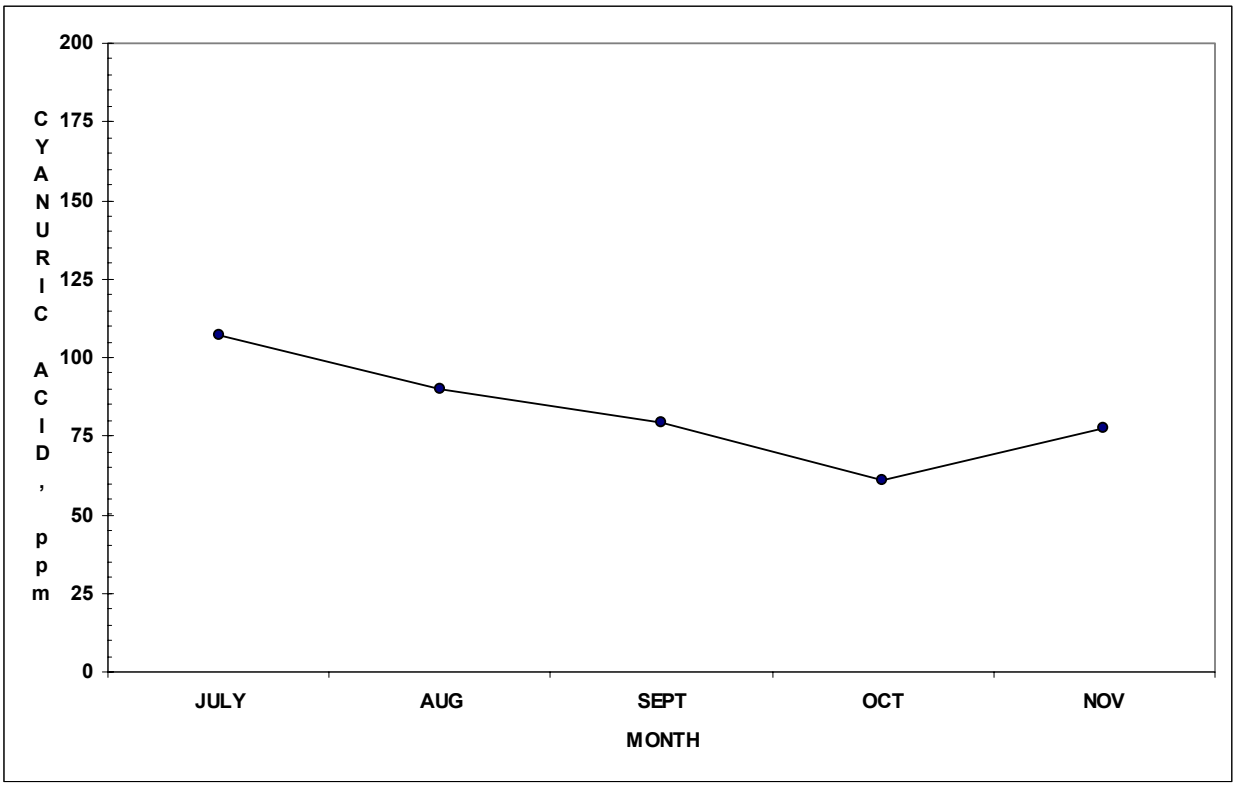


FIGURE 109: RELATIONSHIP BETWEEN CYANURIC ACID AND FACILITY POOL

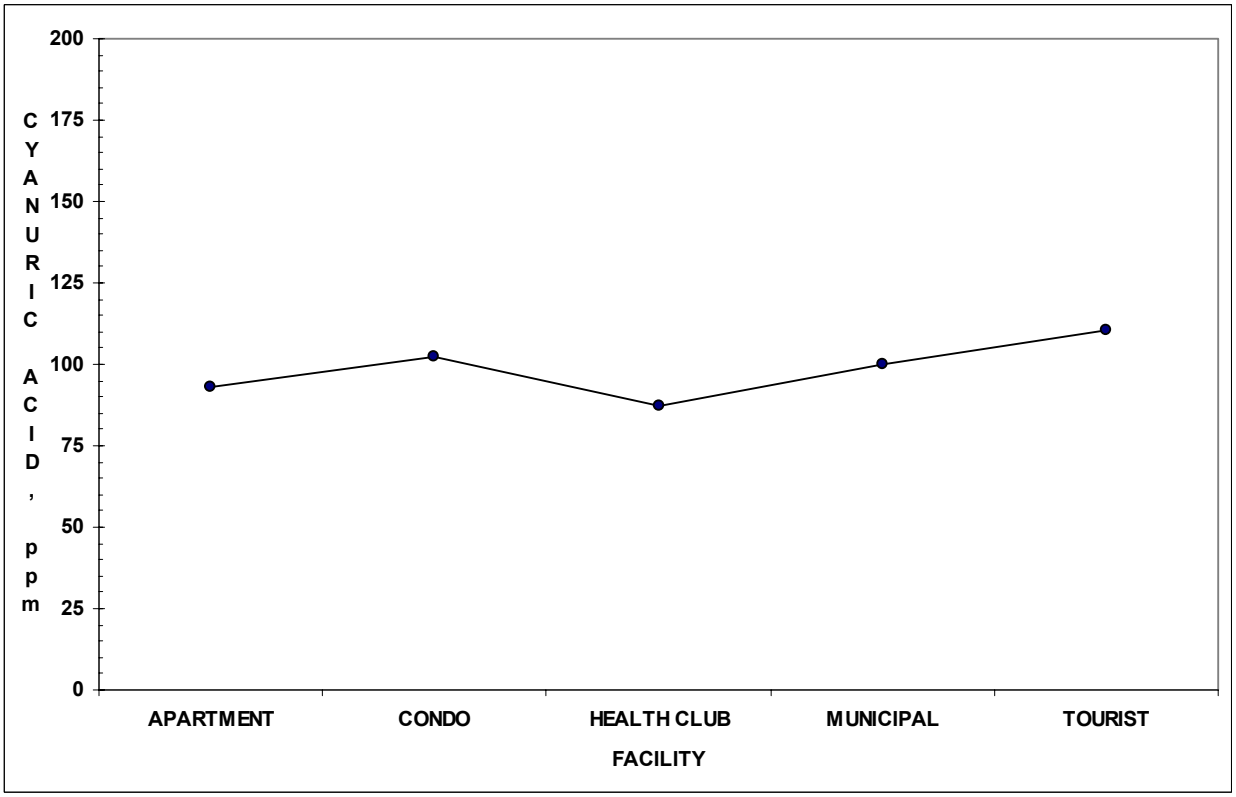


FIGURE 110: RELATIONSHIP BETWEEN TOTAL DISSOLVED SOLIDS AND NITRATE

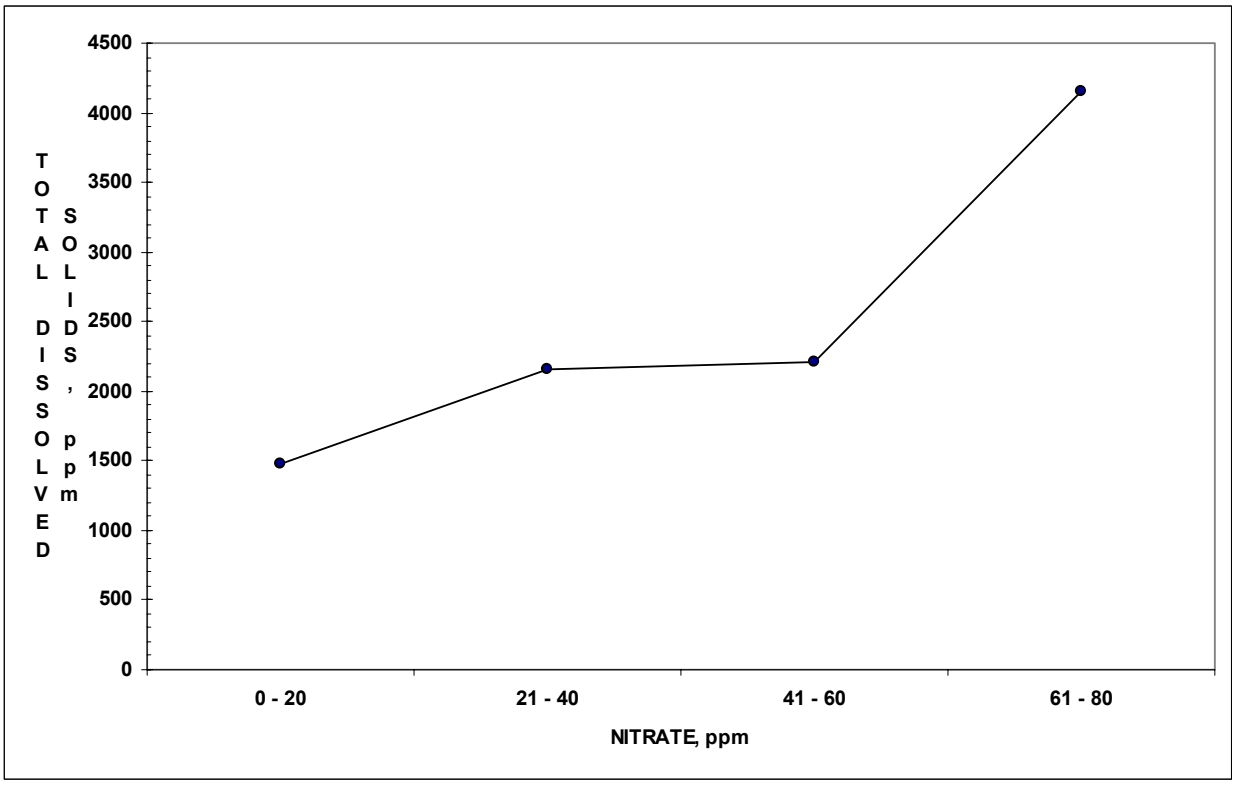


FIGURE 111: RELATIONSHIP BETWEEN TOTAL DISSOLVED SOLIDS AND SURFACE

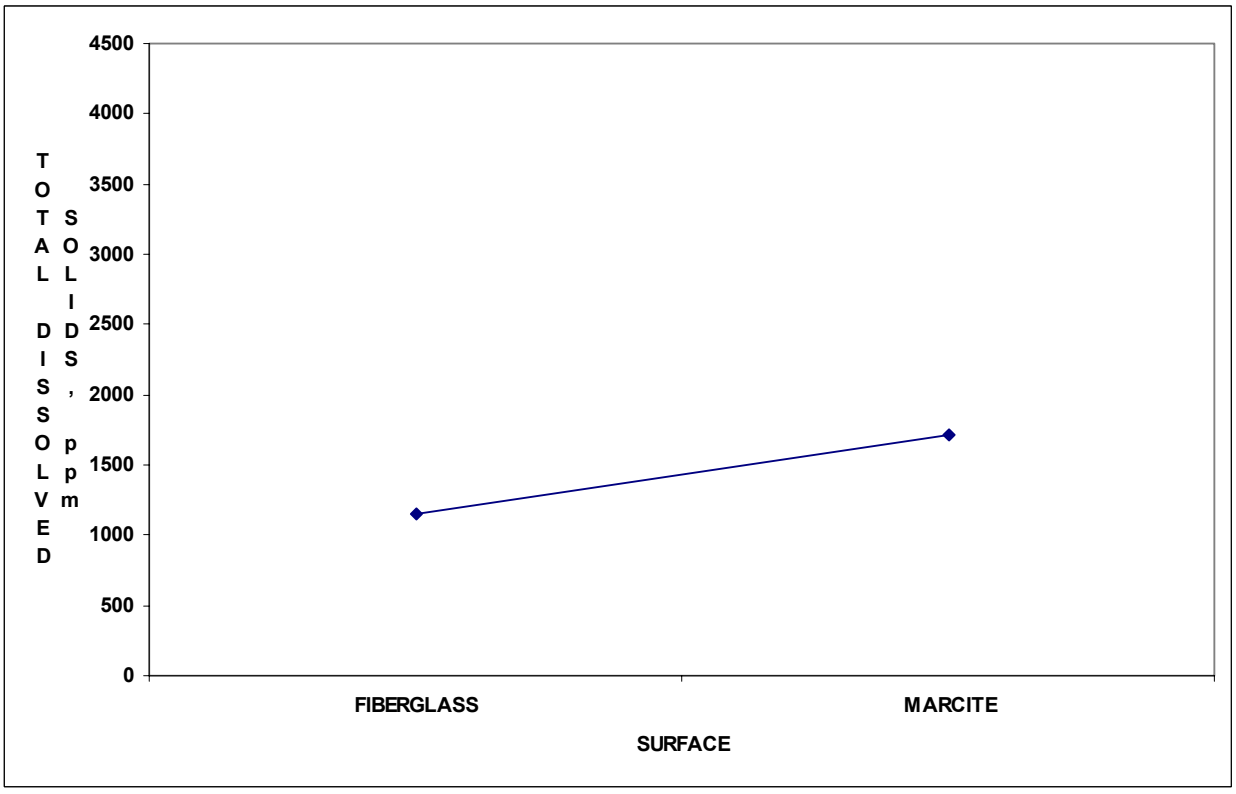


FIGURE 112: RELATIONSHIP BETWEEN TOTAL DISSOLVED SOLIDS AND FACILITY POOL

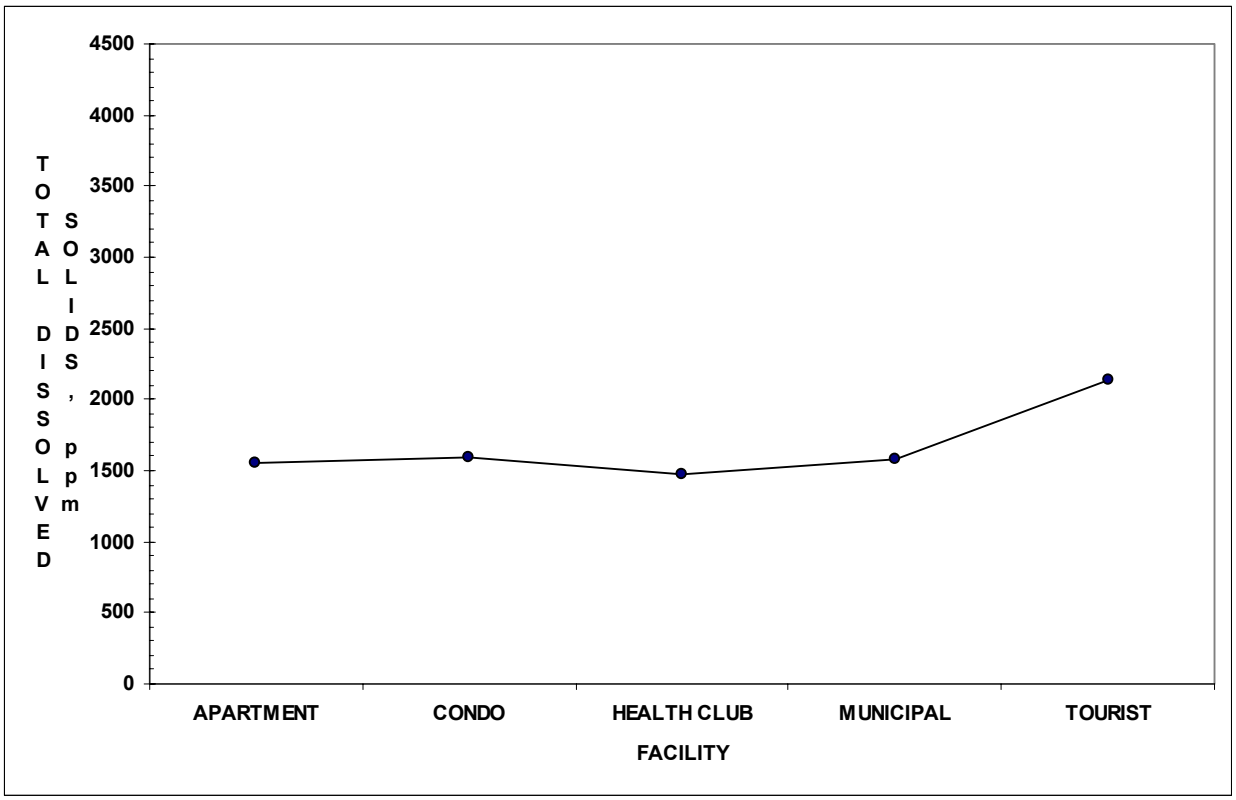


FIGURE 113: RELATIONSHIP BETWEEN TOTAL DISSOLVED SOLIDS AND CYANURIC ACID

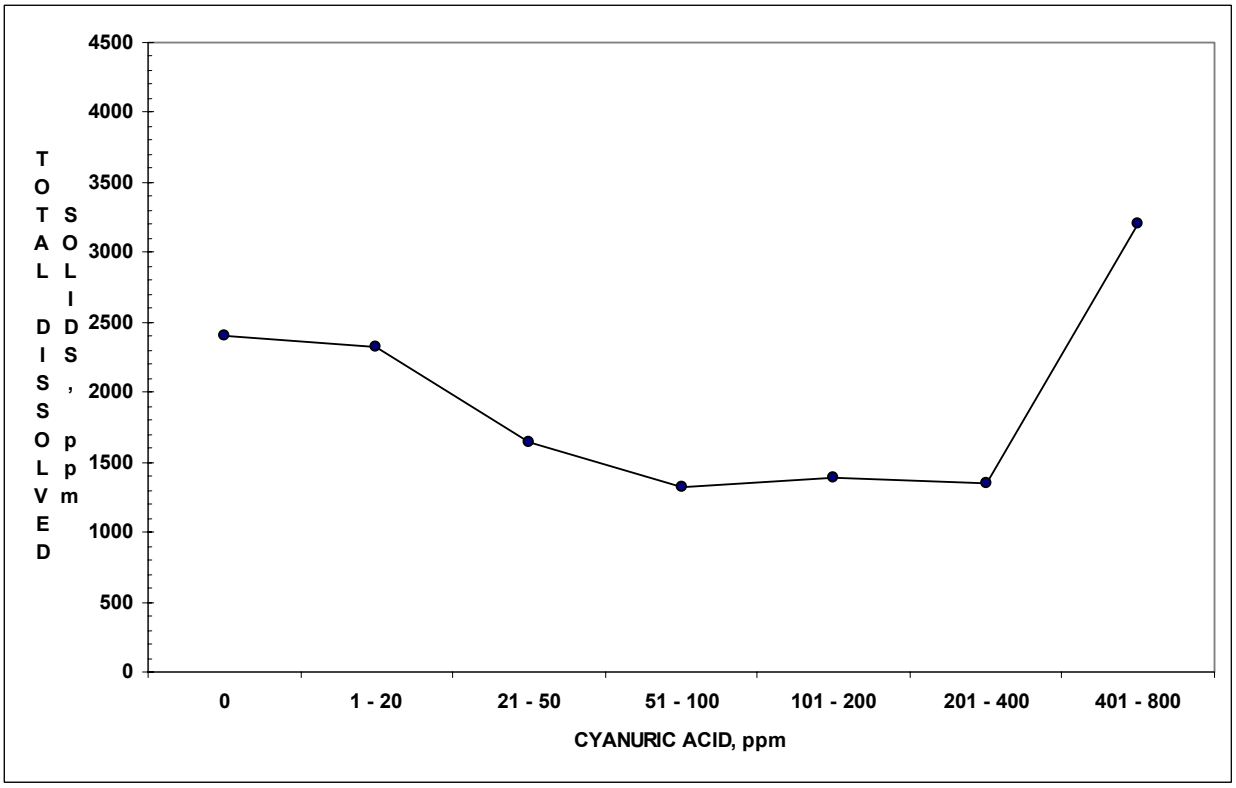


FIGURE 114: RELATIONSHIP BETWEEN TOTAL DISSOLVED SOLIDS AND SANITIZER

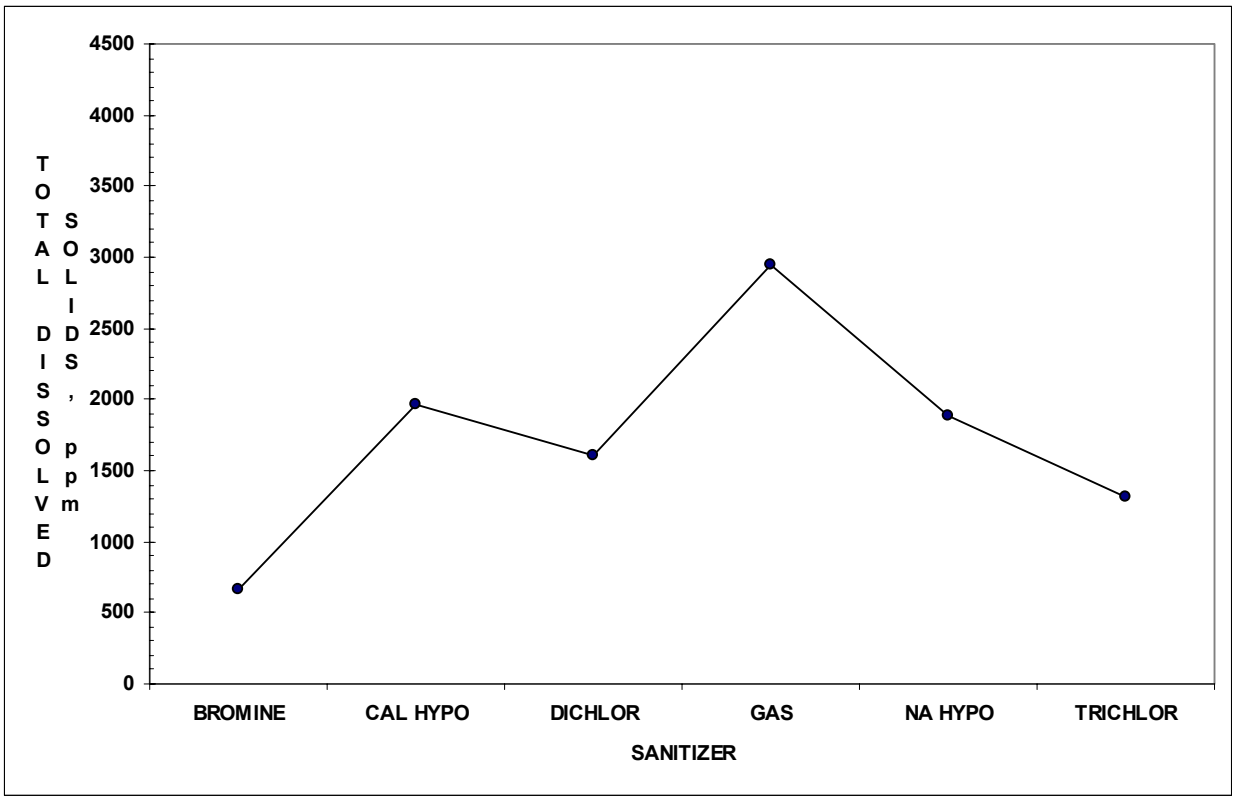


FIGURE 115: RELATIONSHIP BETWEEN TOTAL DISSOLVED SOLIDS AND HARDNESS

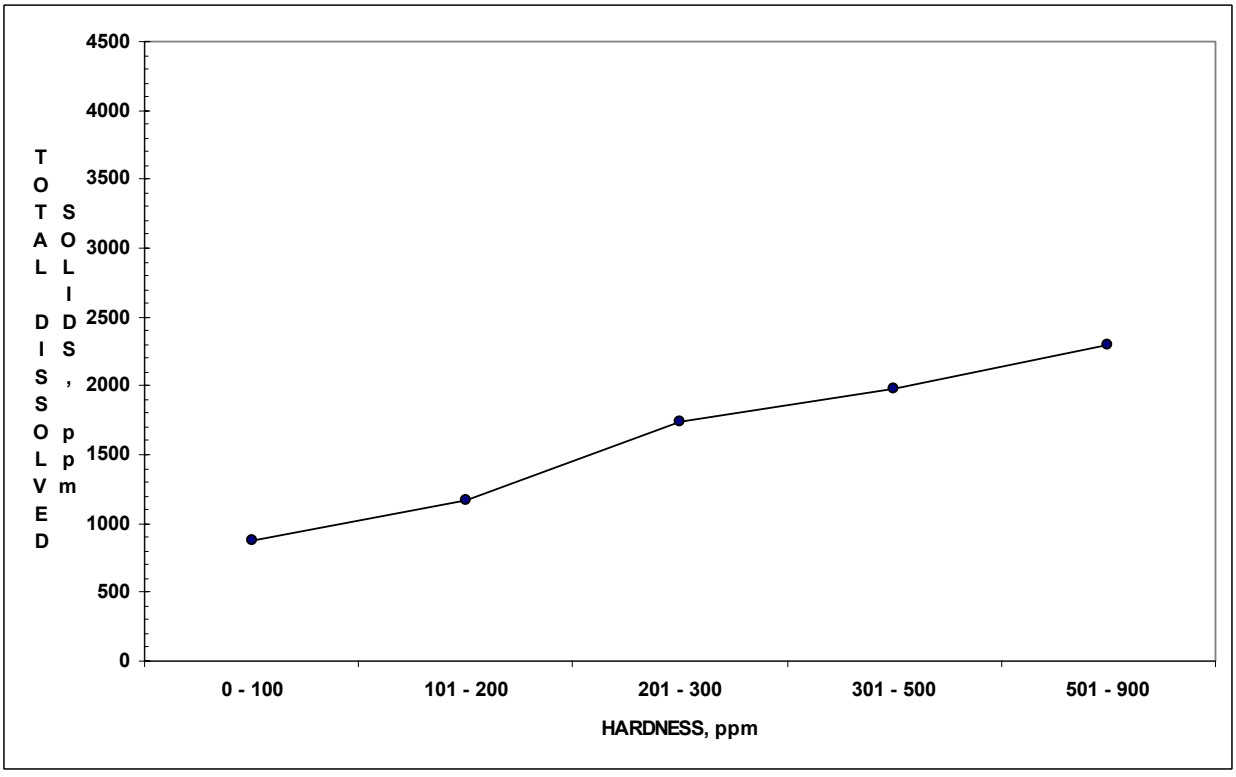


FIGURE 116: RELATIONSHIP BETWEEN WATER HARDNESS AND SANITIZER

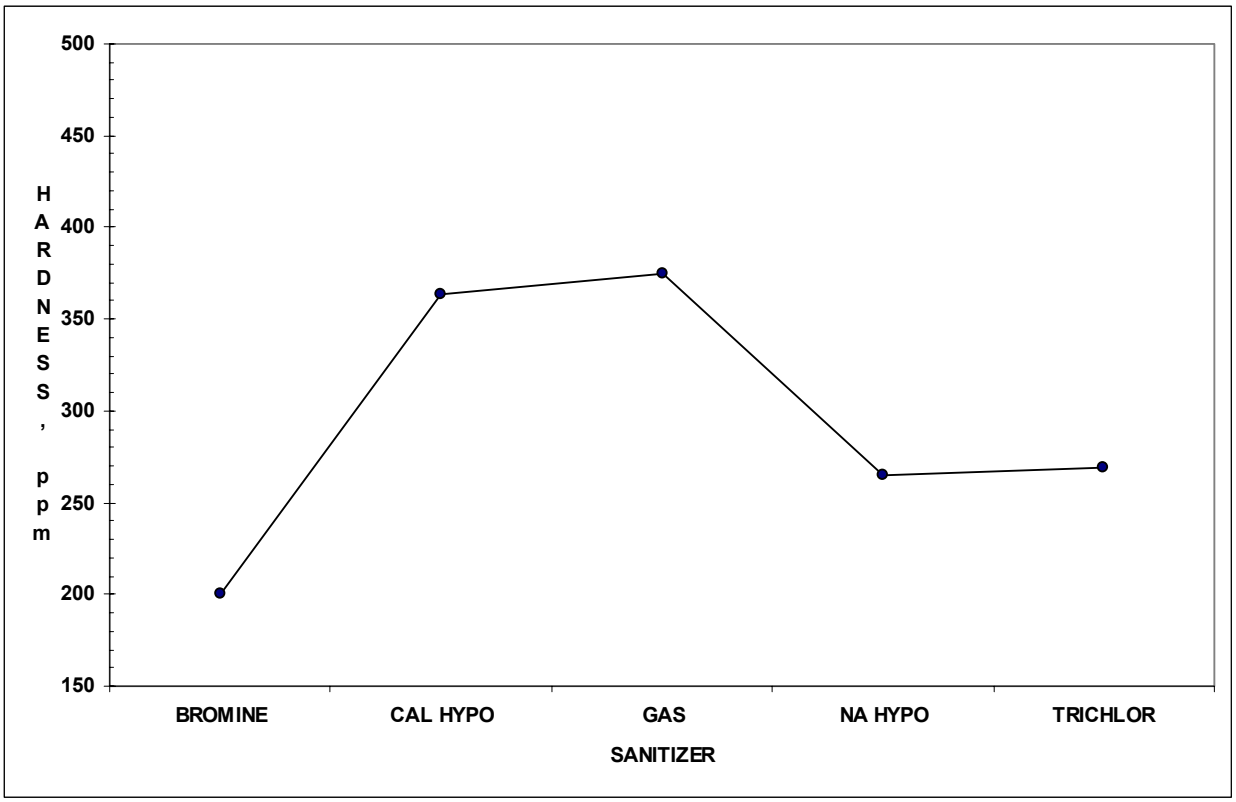


FIGURE 117: RELATIONSHIP BETWEEN WATER HARDNESS AND NITRATE

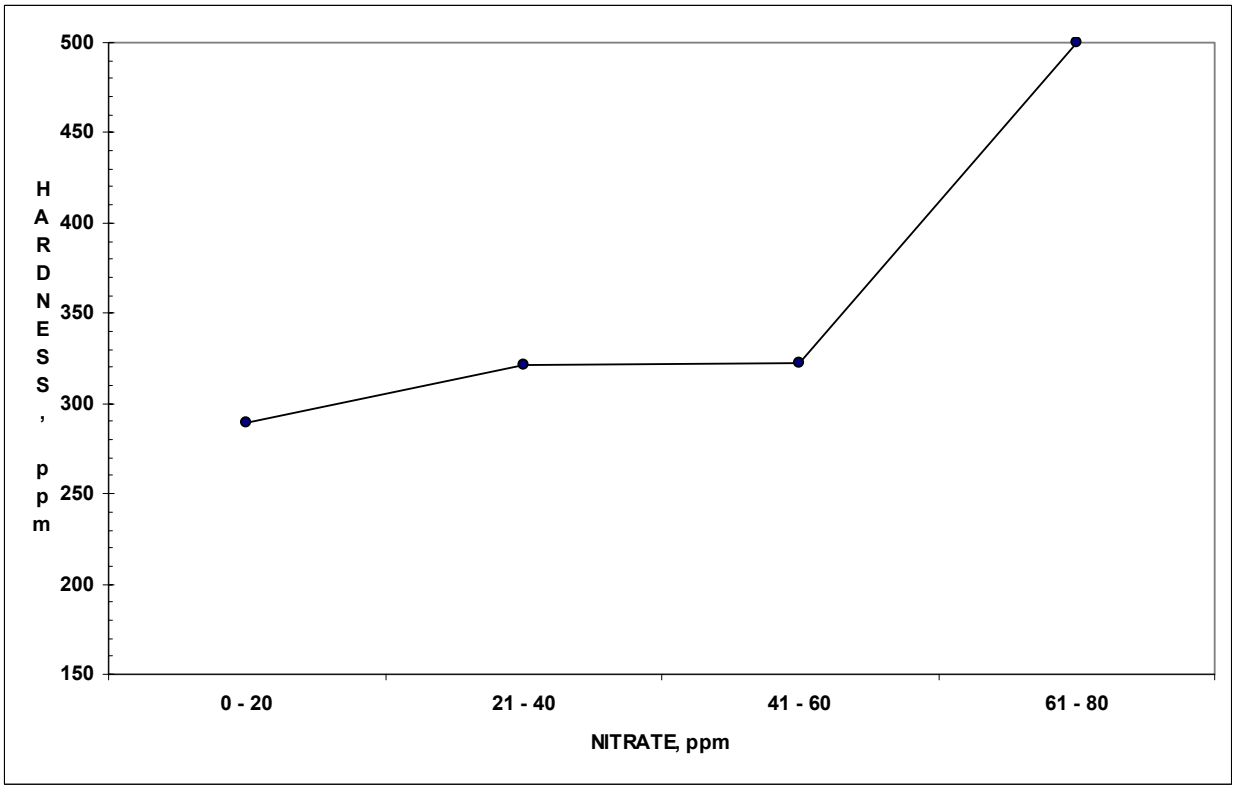


FIGURE 118: RELATIONSHIP BETWEEN WATER HARDNESS AND POOL VOLUME

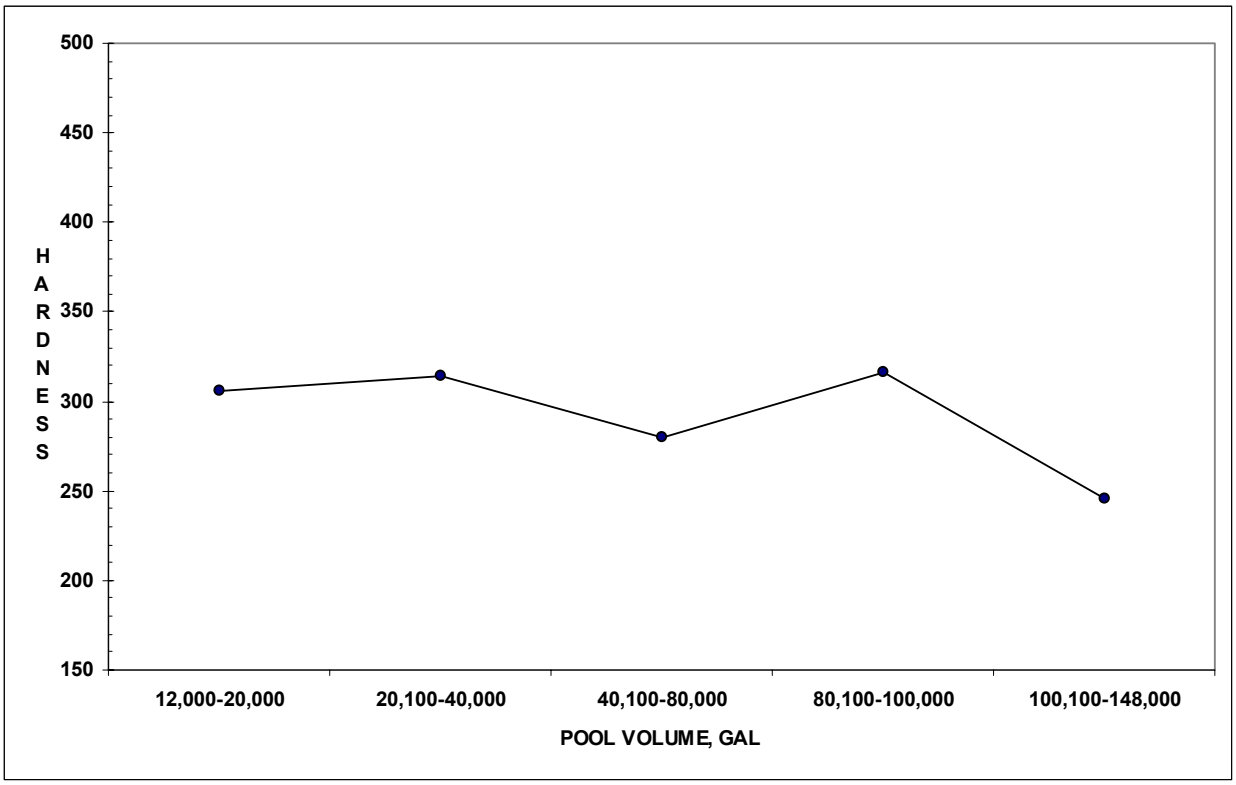


FIGURE 119: RELATIONSHIP BETWEEN WATER HARDNESS AND BATHERLOAD

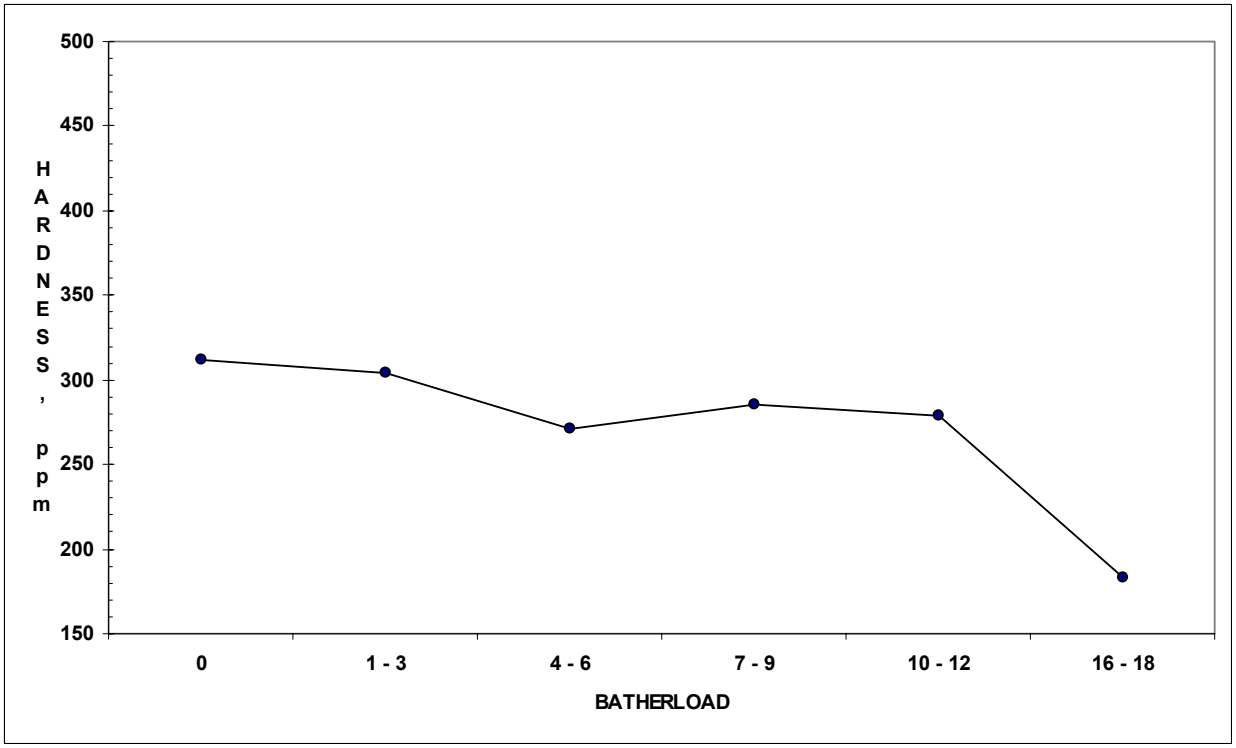


FIGURE 120: RELATIONSHIP BETWEEN WATER HARDNESS AND CYANURIC ACID

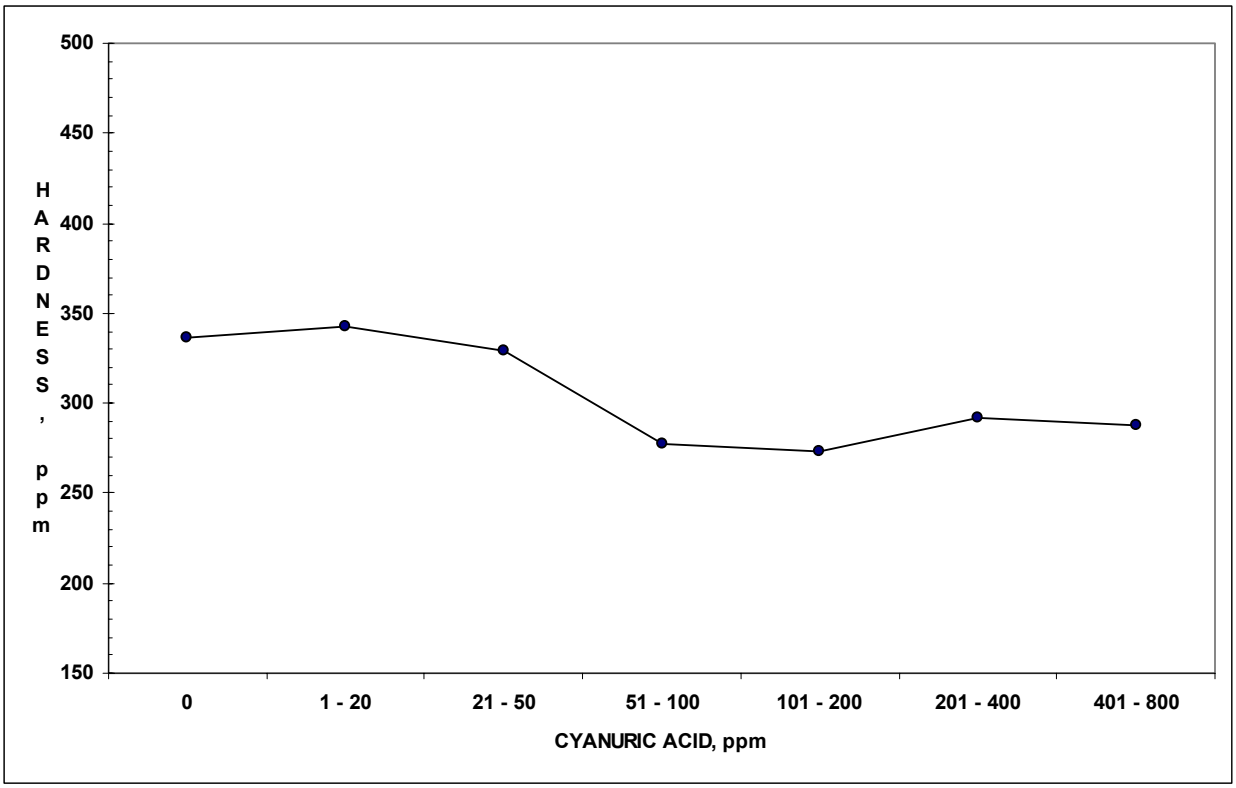


FIGURE 121: RELATIONSHIP BETWEEN WATER HARDNESS AND TIME OF DAY

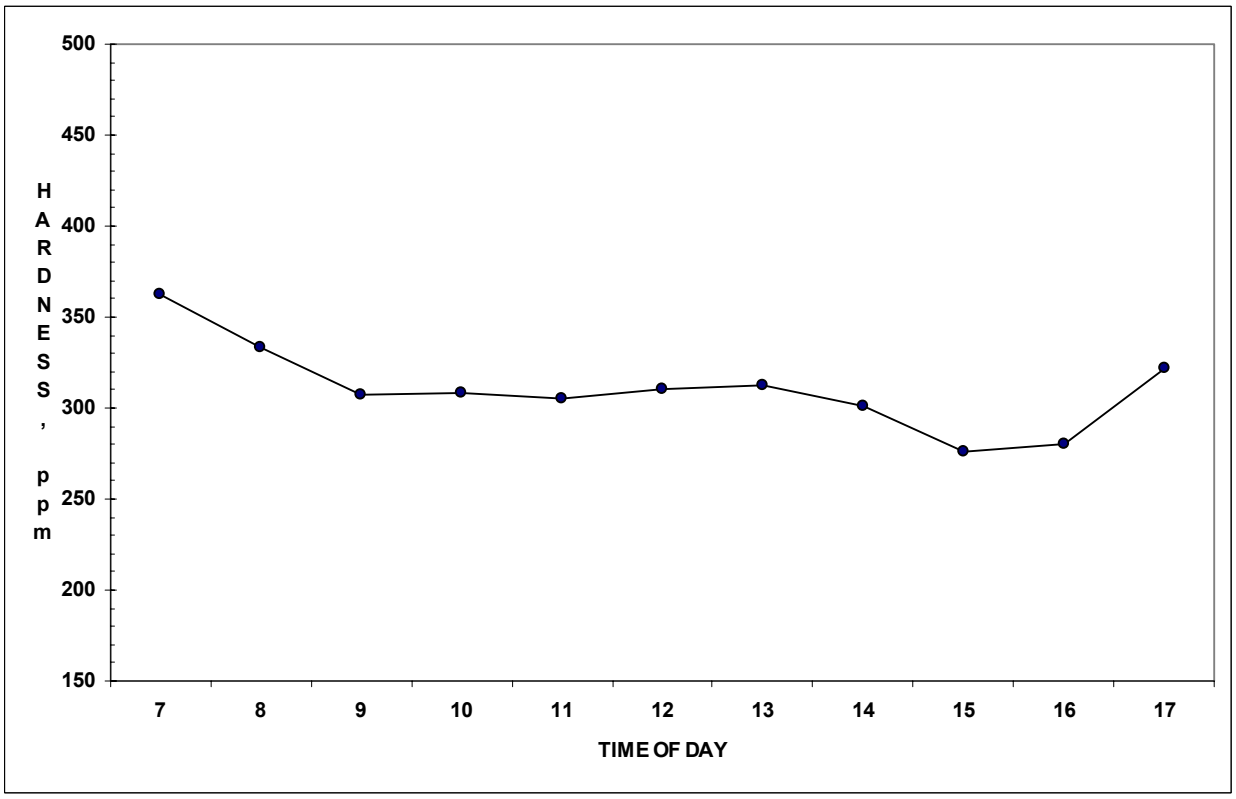


FIGURE 122: RELATIONSHIP BETWEEN WATER HARDNESS AND FACILITY POOL

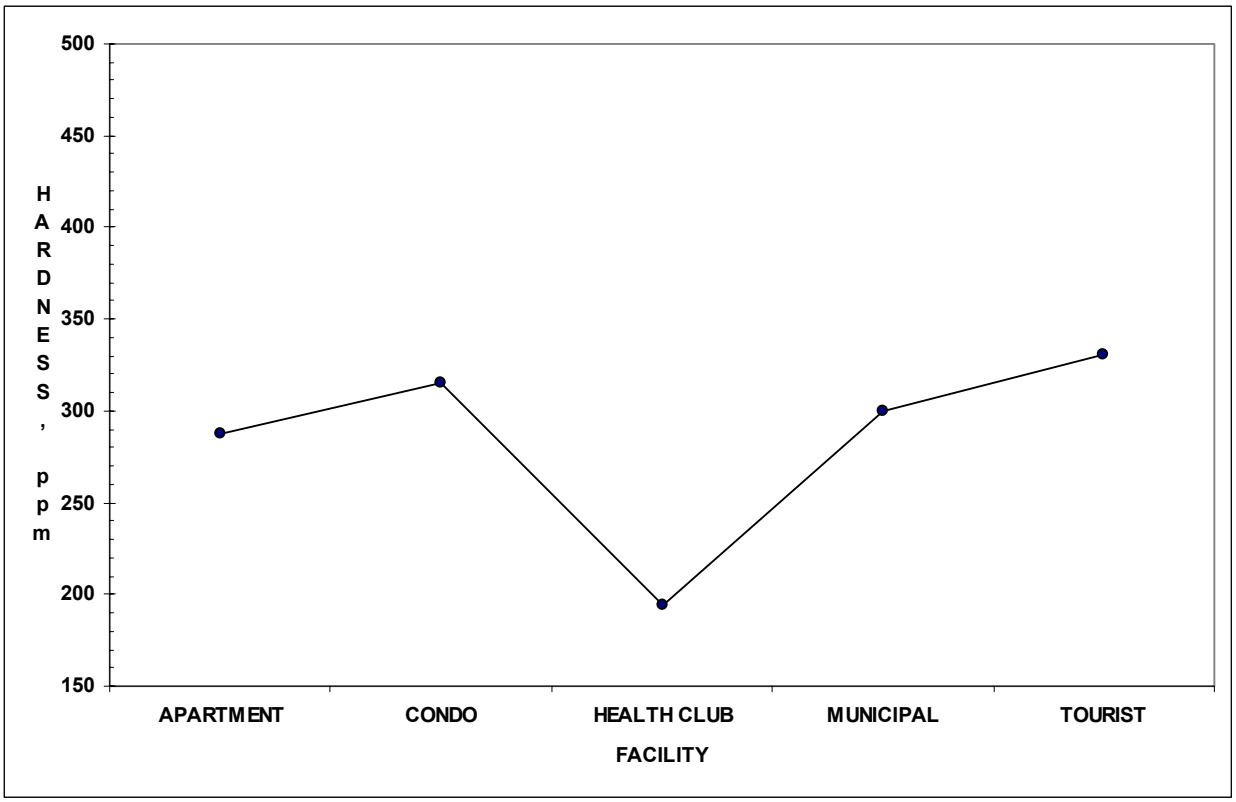


FIGURE 123: RELATIONSHIP BETWEEN TOTAL ALKALINITY AND BATHERLOAD

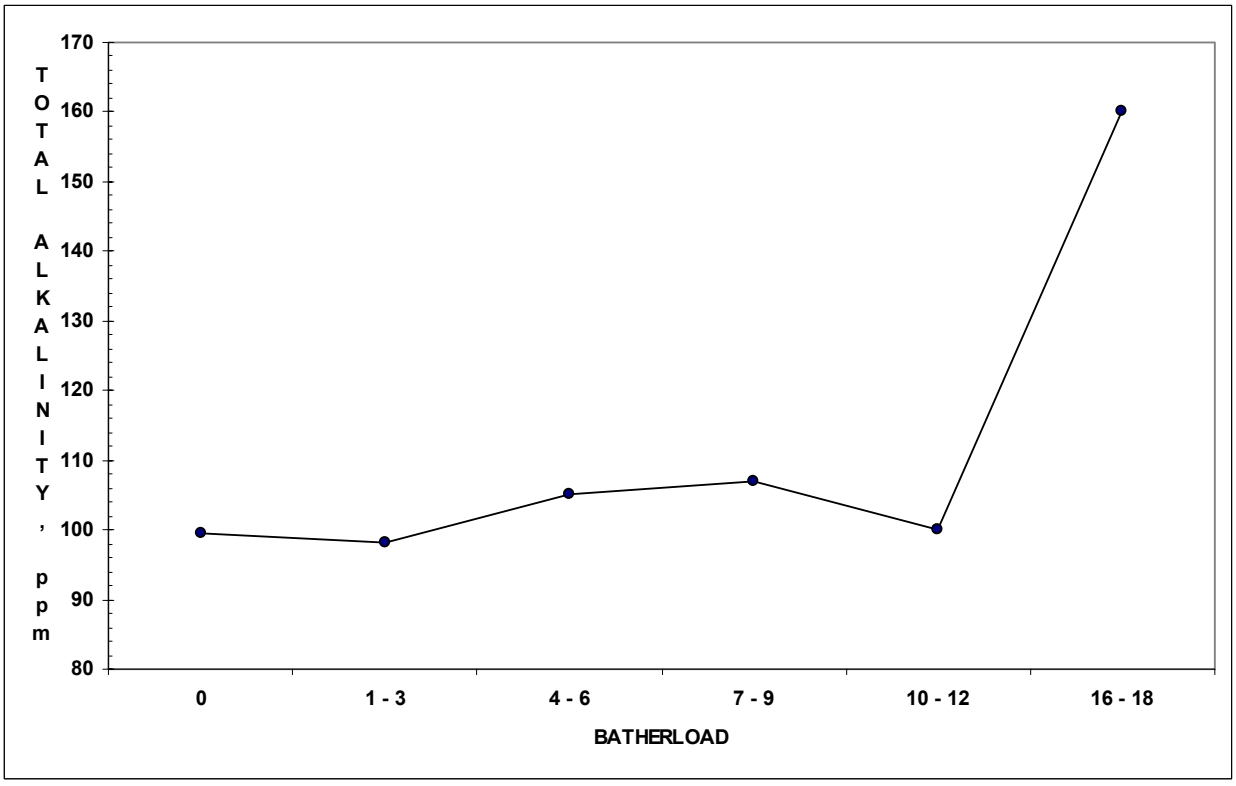


FIGURE 124: RELATIONSHIP BETWEEN TOTAL ALKALINITY AND FACILITY POOL

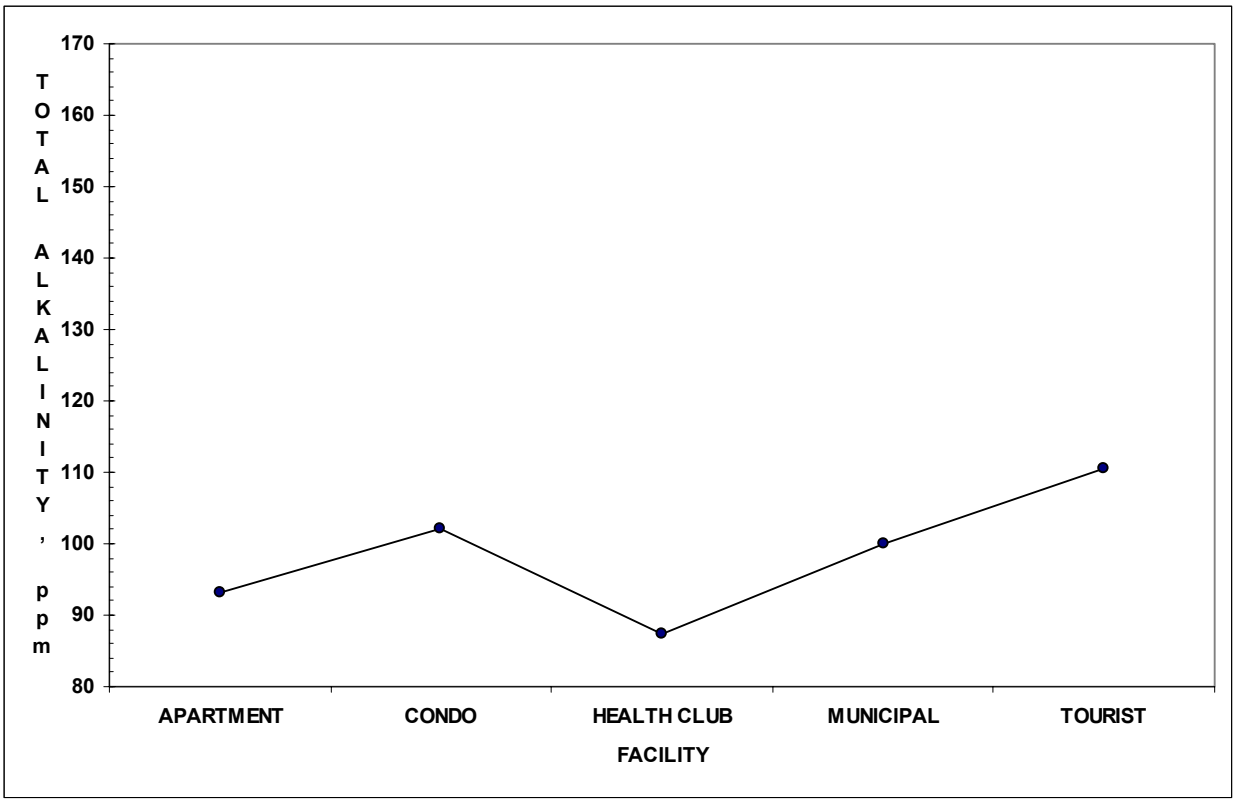


FIGURE 125: RELATIONSHIP BETWEEN COPPER AND SURFACE

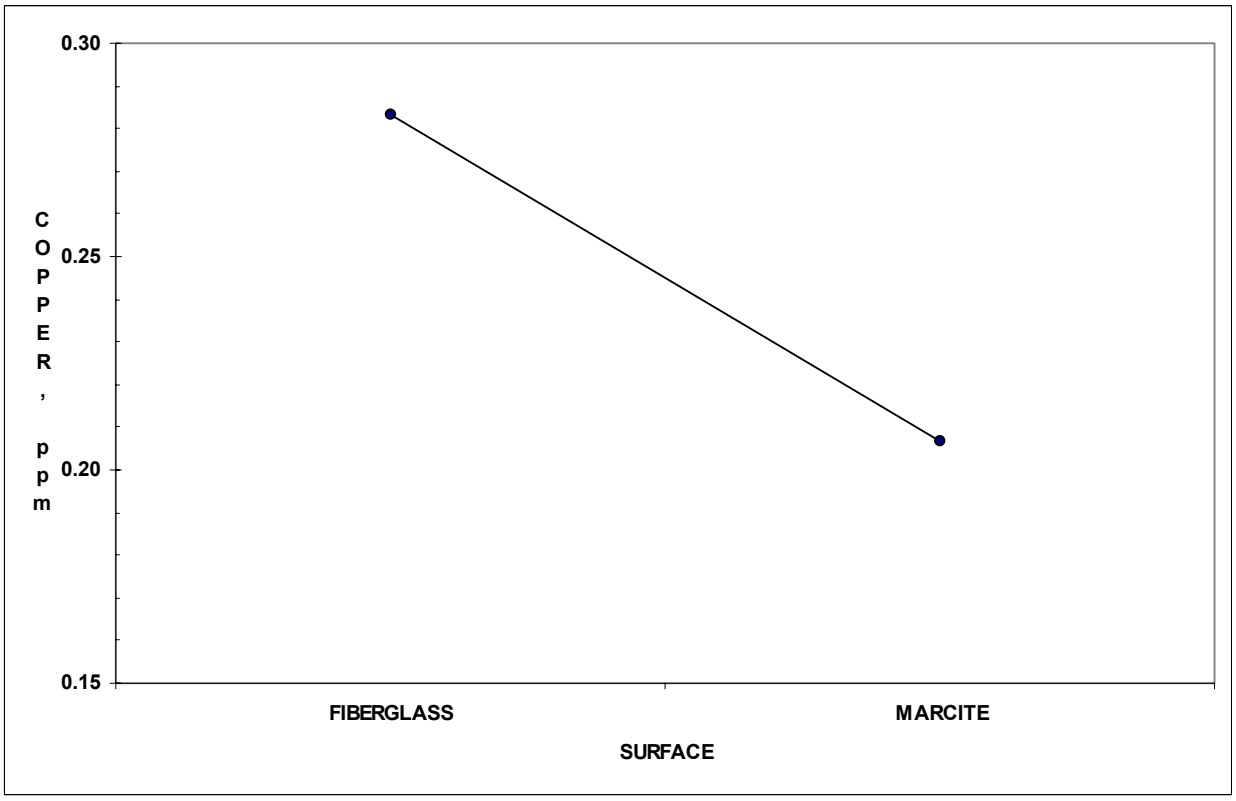


FIGURE 126: RELATIONSHIP BETWEEN COPPER AND FACILITY POOL

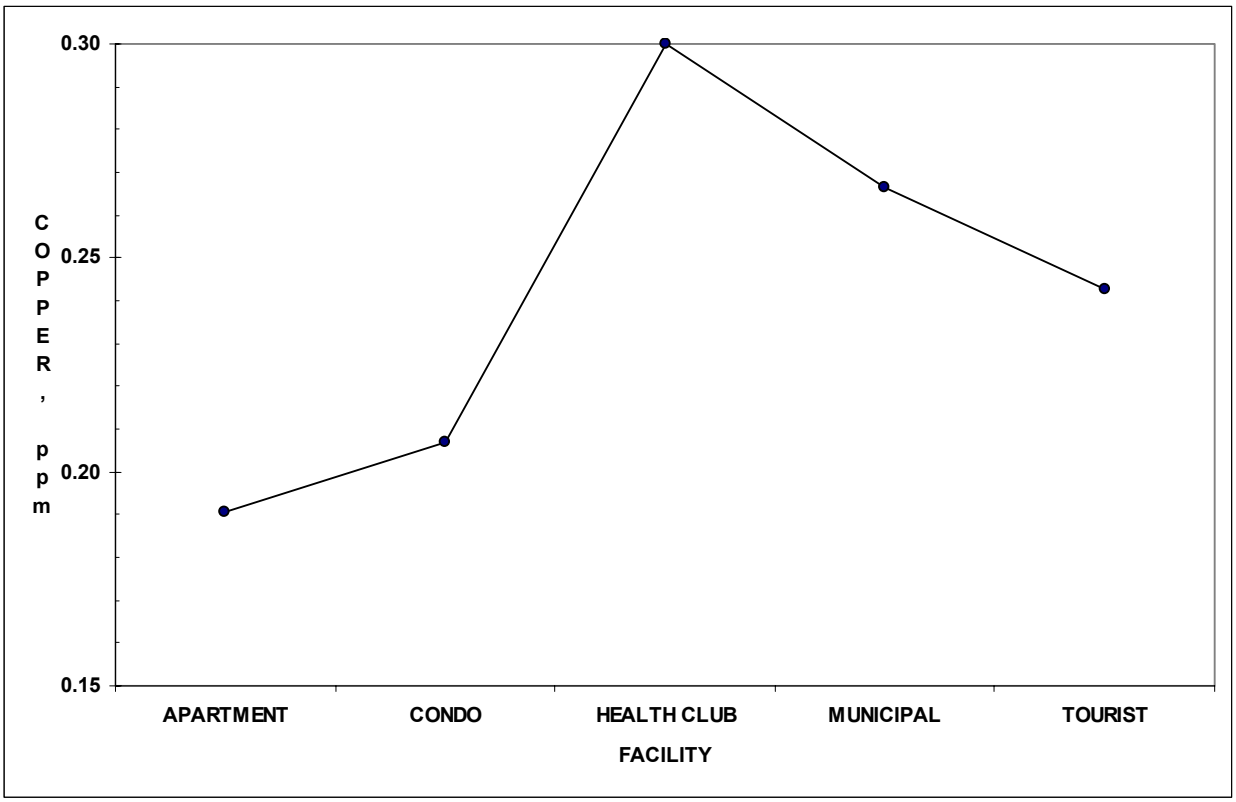


FIGURE 127: RELATIONSHIP BETWEEN COPPER AND NITRATE

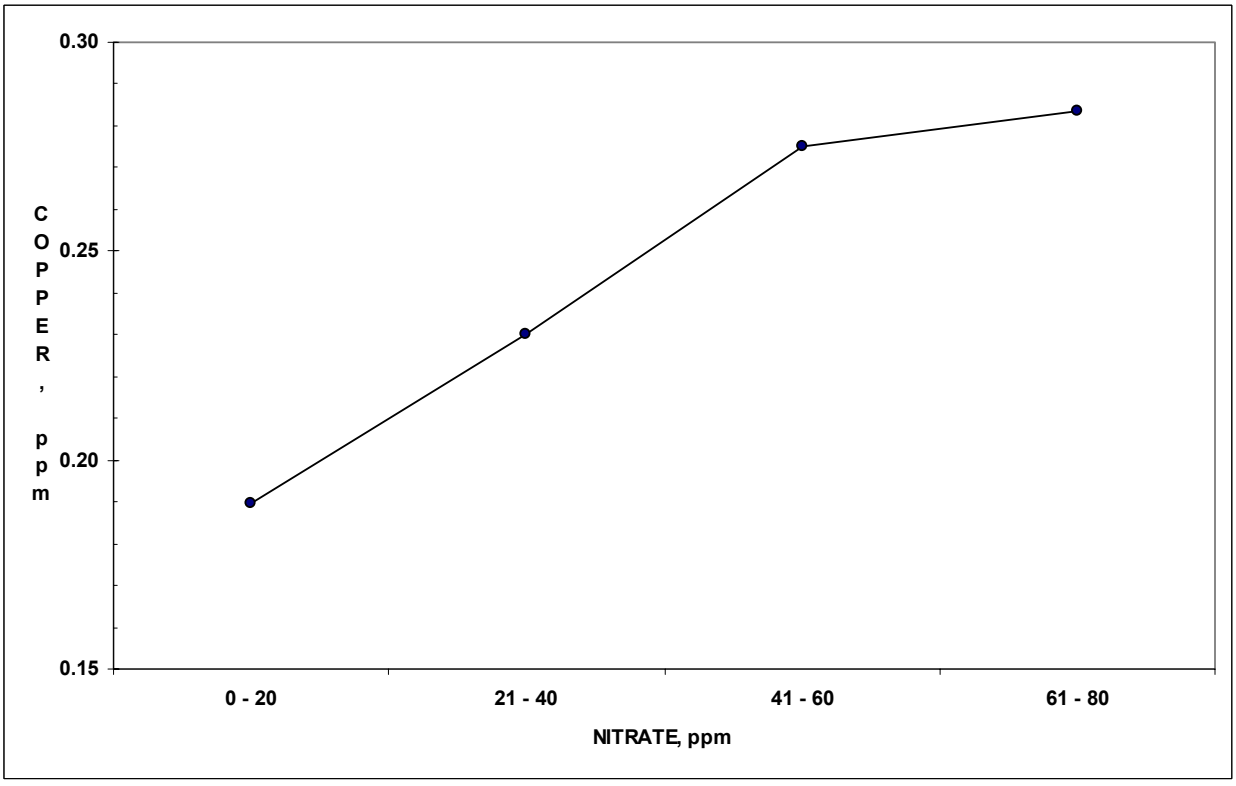


FIGURE 128: NITRATE VS WATER RETURN

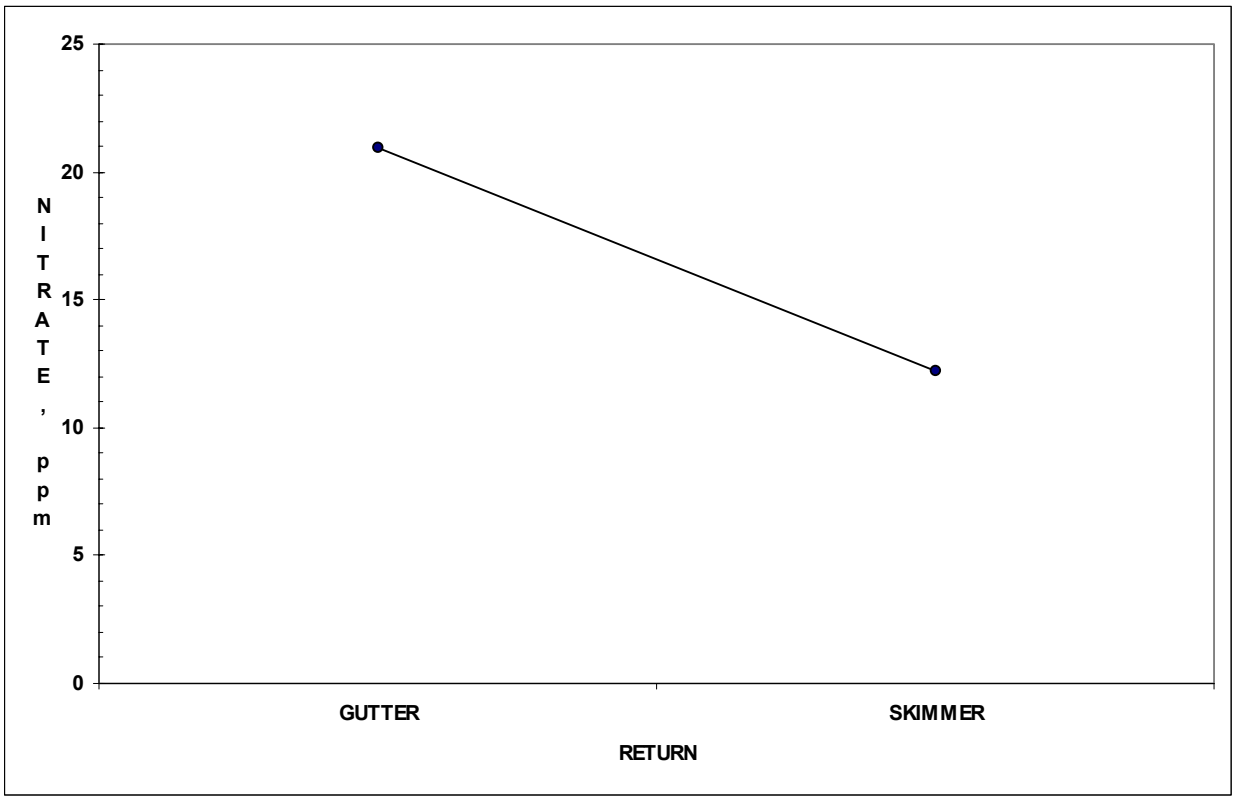
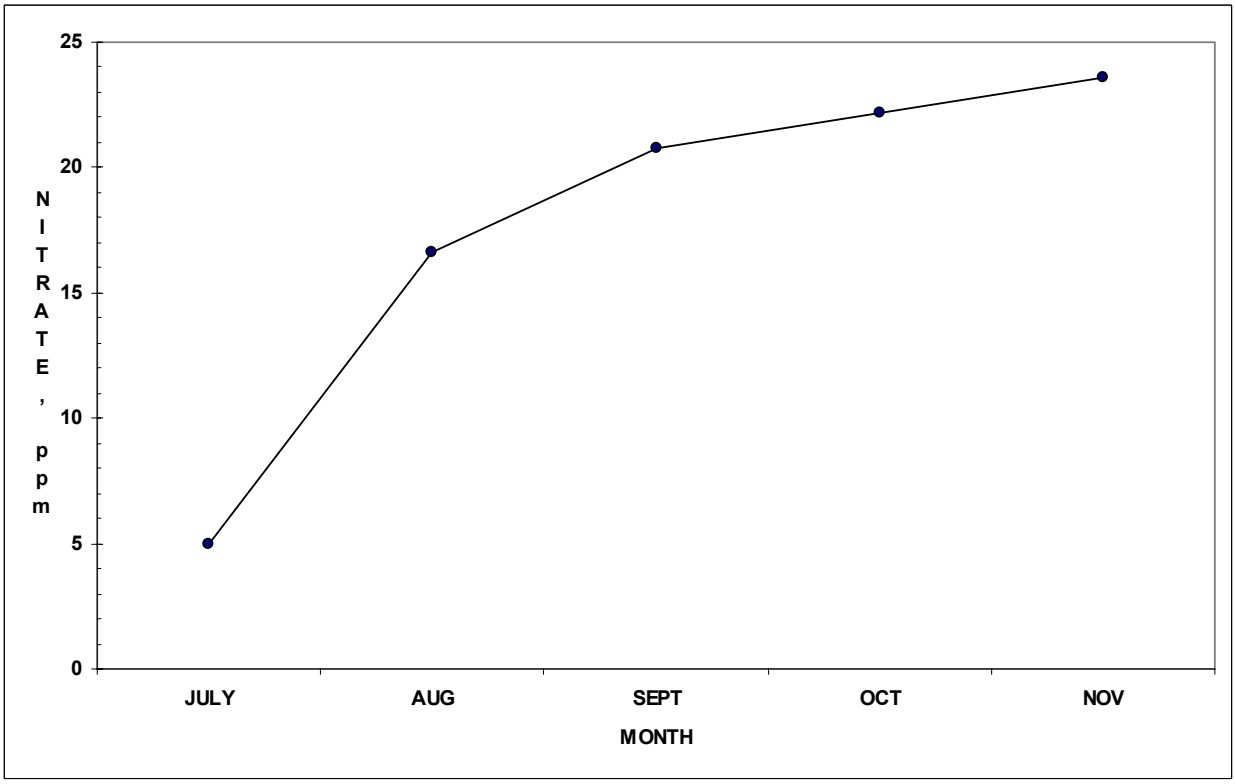


FIGURE 129: NITRATE VS MONTH



Appendix Z

Turbidity Variable Pairs Relationships Graphs

FIGURE 130: RELATIONSHIP BETWEEN TURBIDITY AND HETEROTROPHIC PLATE COUNT

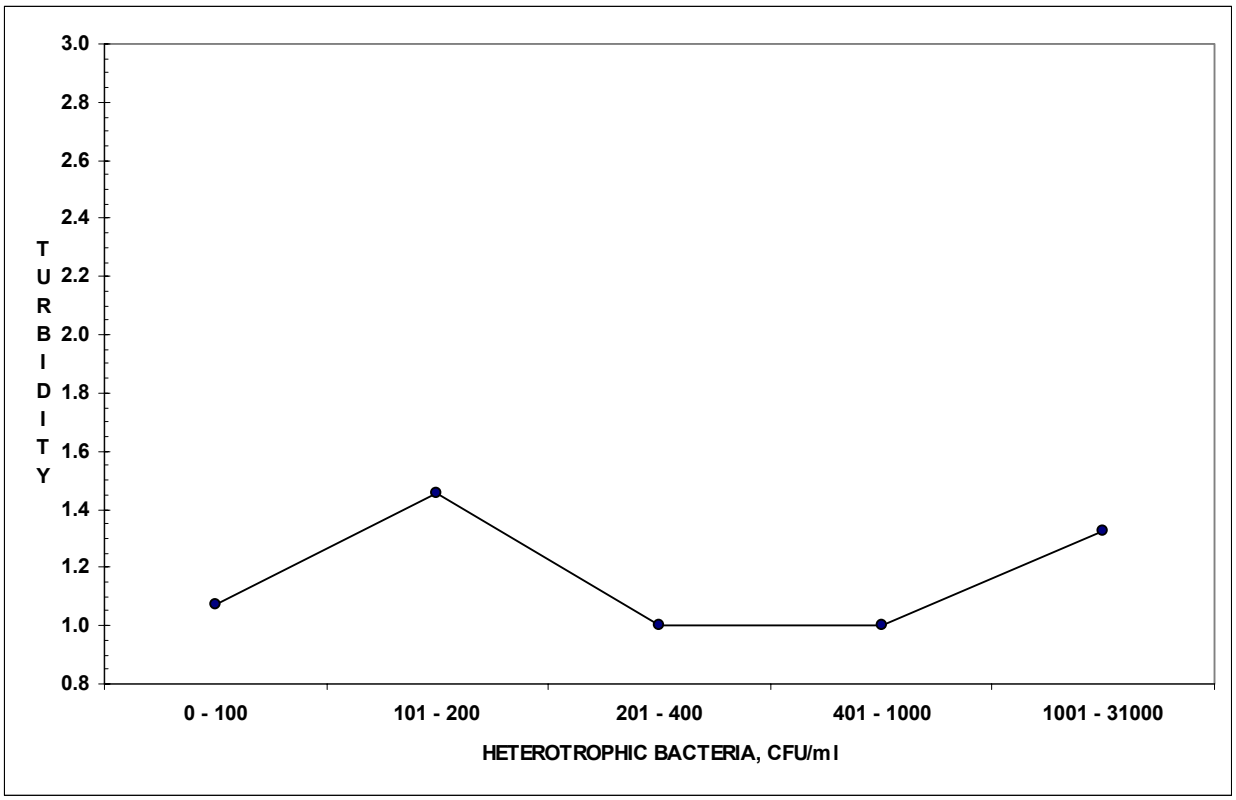


FIGURE 131: RELATIONSHIP BETWEEN TURBIDITY AND TOTAL COLIFORM BACTERIA POPULATION

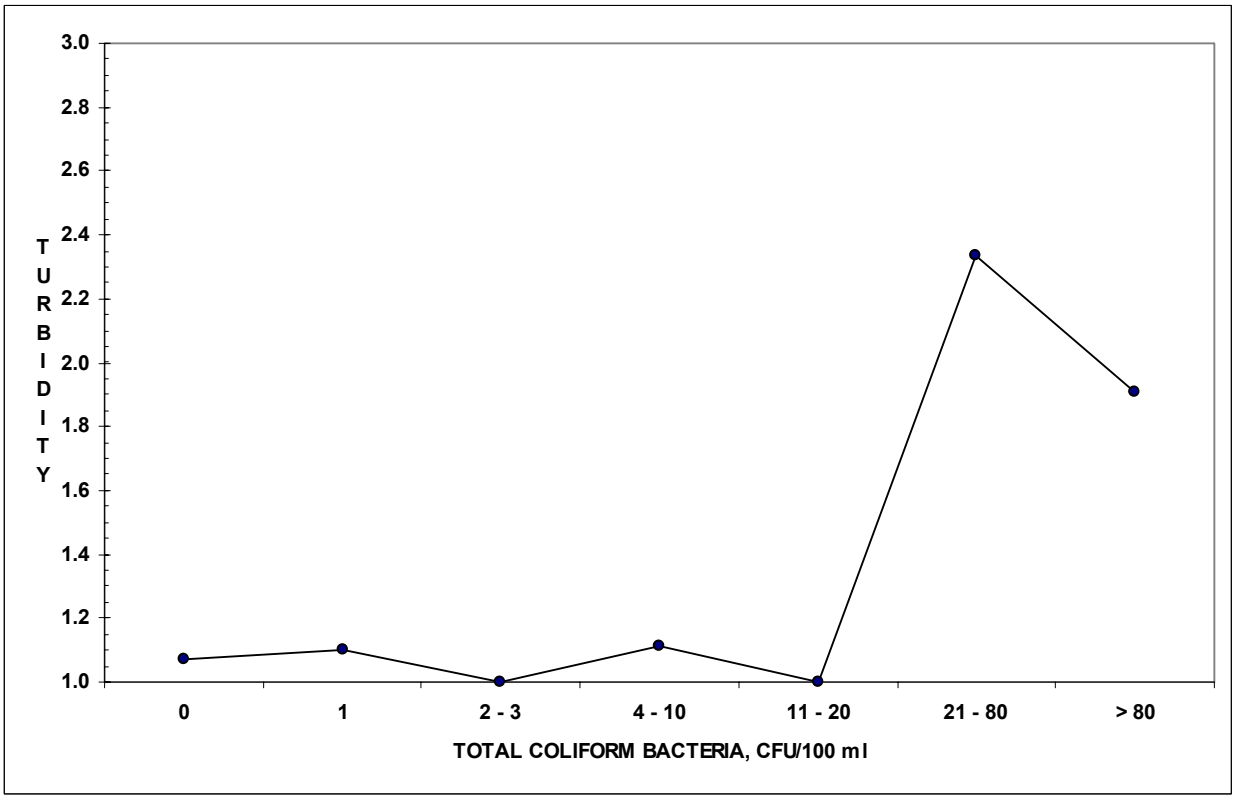


FIGURE 132: RELATIONSHIP BETWEEN TURBIDITY AND FECAL COLIFORM BACTERIA POPULATION

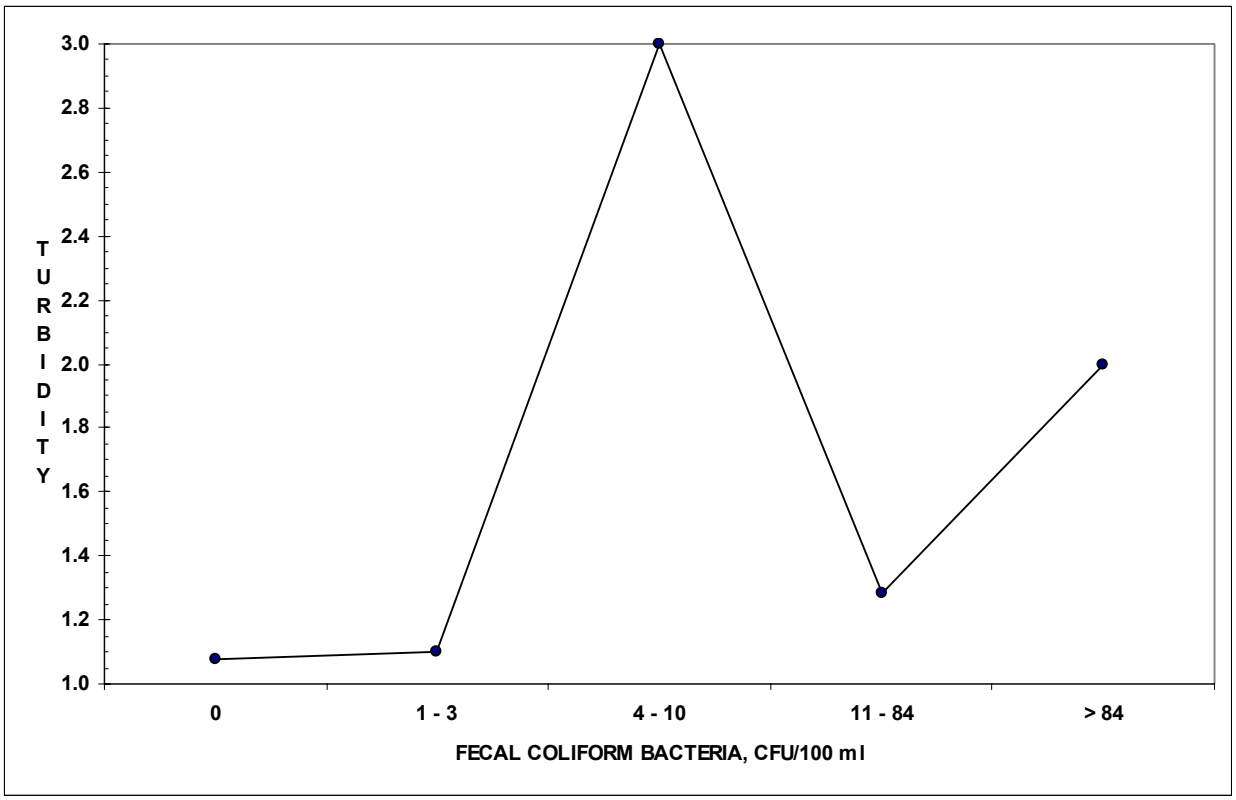


FIGURE 133: RELATIONSHIP BETWEEN TURBIDITY AND FECAL STREPTOCOCCOUS BACTERIA

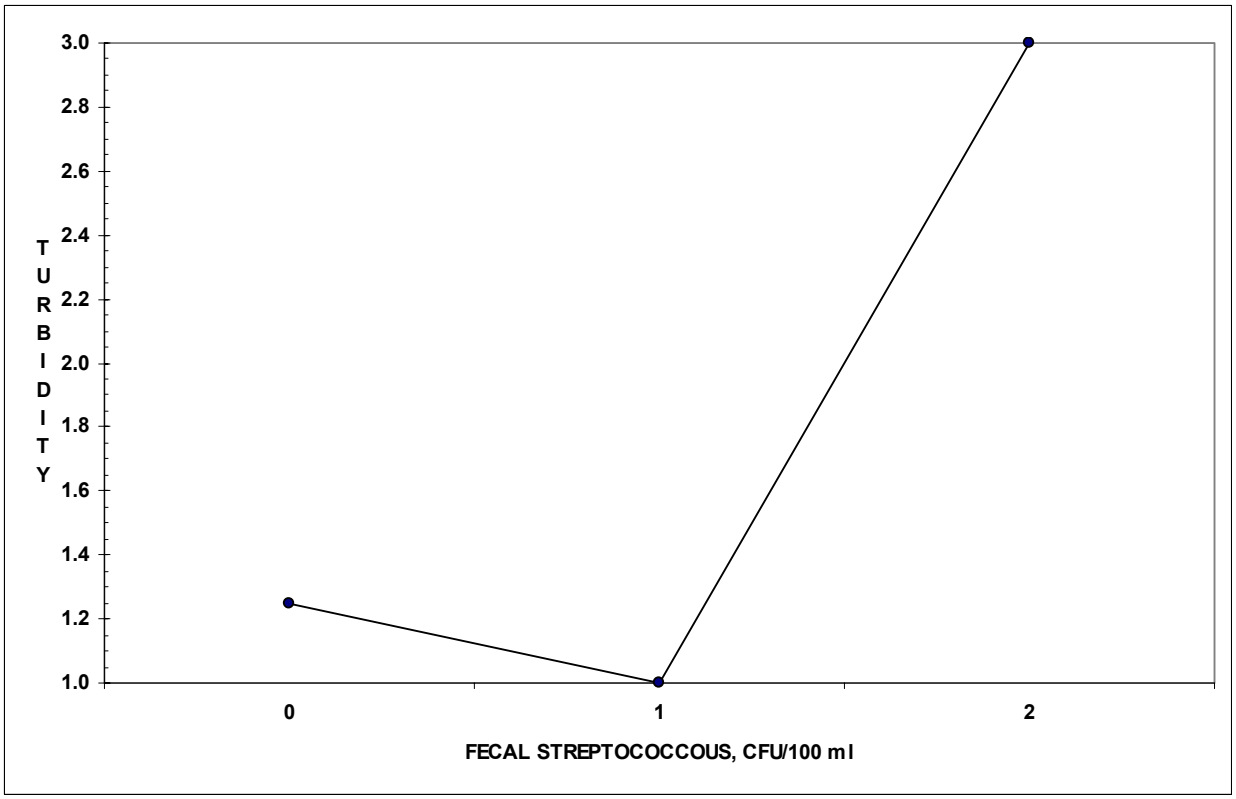


FIGURE 134: RELATIONSHIP BETWEEN TURBIDITY AND BATHERLOAD

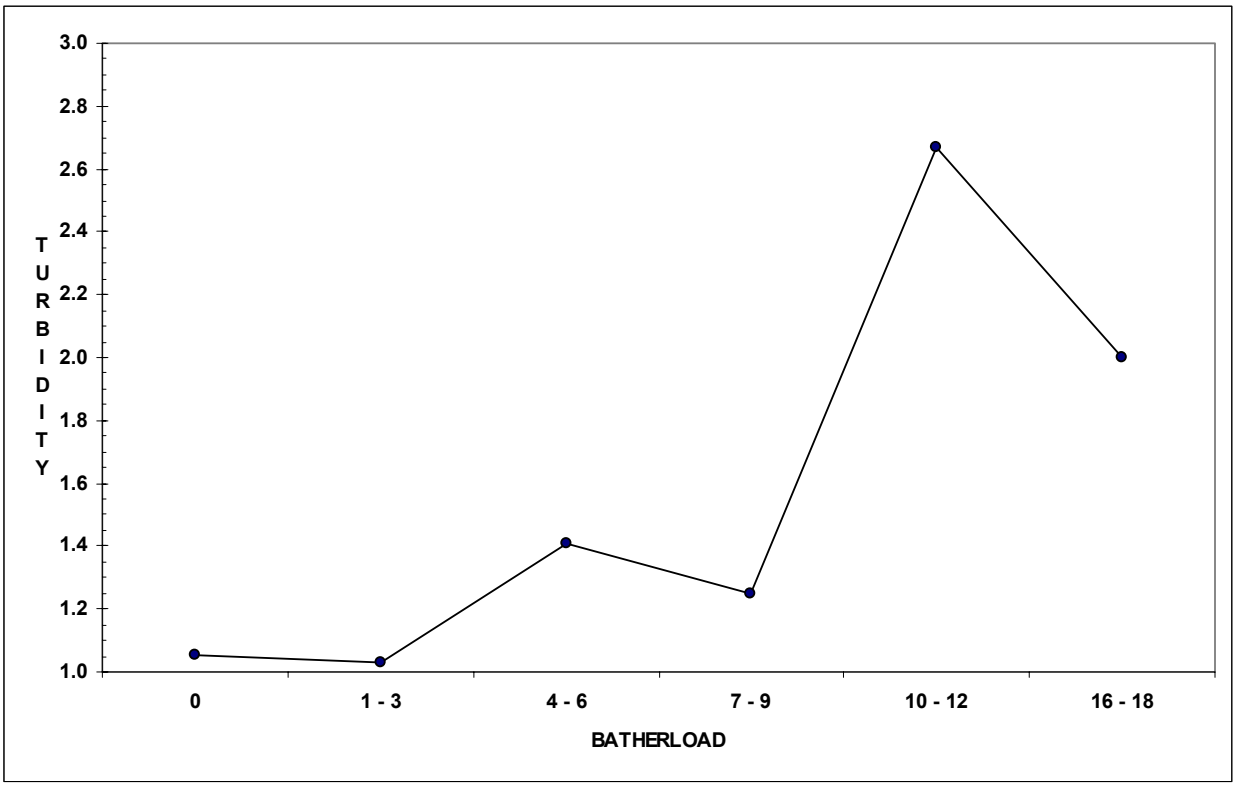


FIGURE 135: RELATIONSHIP BETWEEN TURBIDITY AND WATER TEMPERATURE

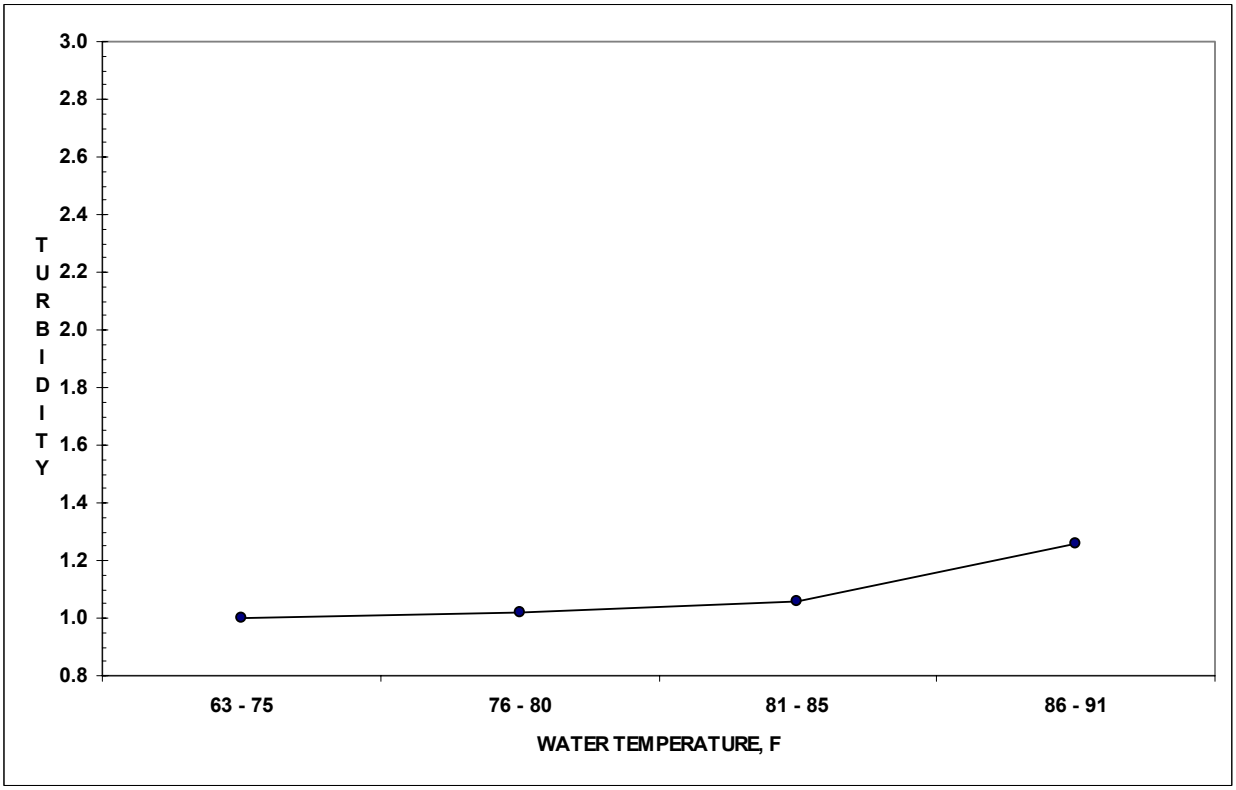


FIGURE 136: RELATIONSHIP BETWEEN TURBIDITY AND BLACK ALGAE

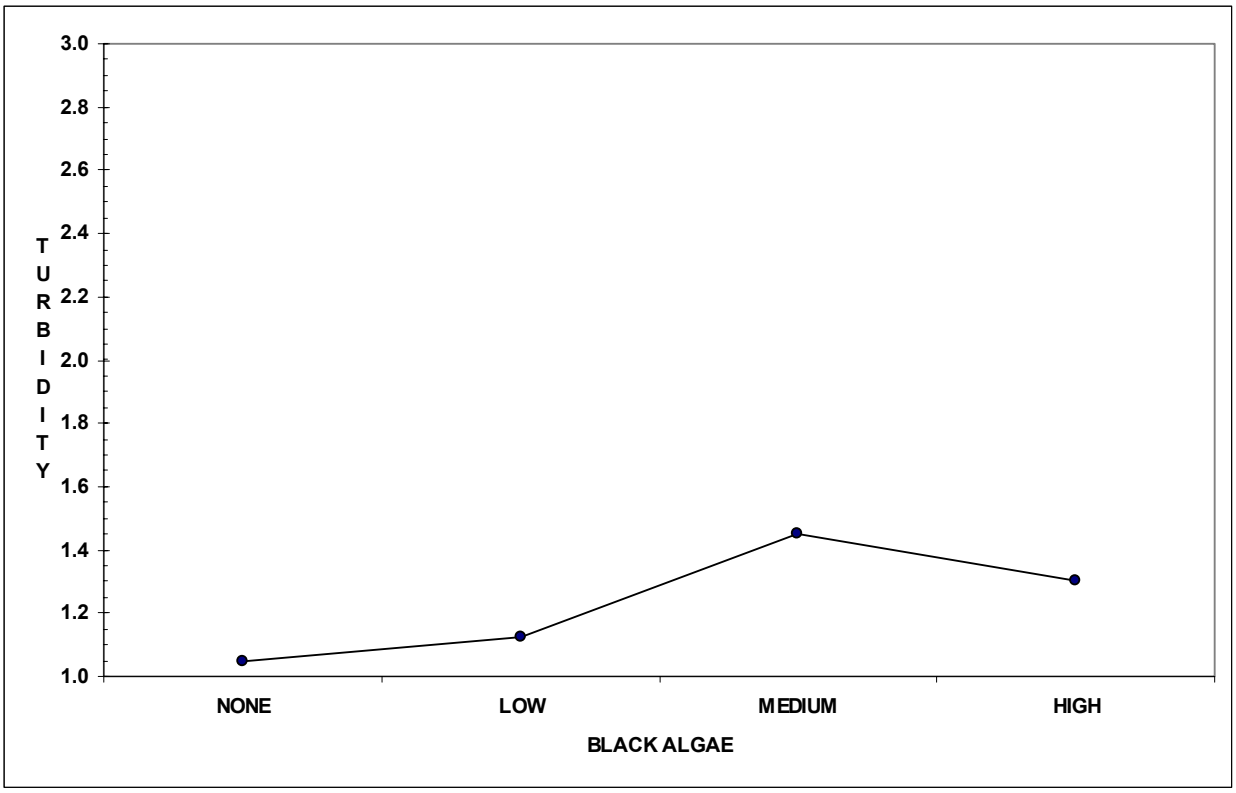


FIGURE 137: RELATIONSHIP BETWEEN TURBIDITY AND YELLOW ALGAE

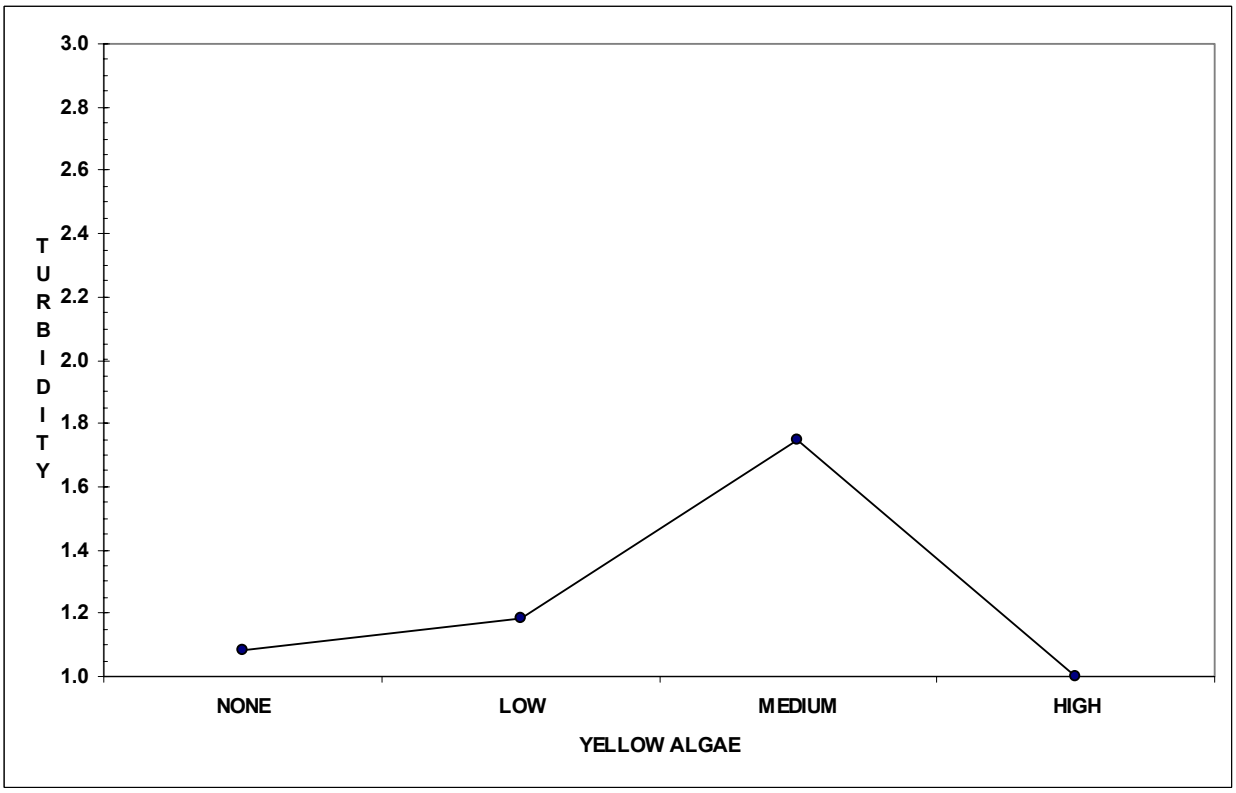


FIGURE 138: RELATIONSHIP BETWEEN TURBIDITY AND FREE CHLORINE

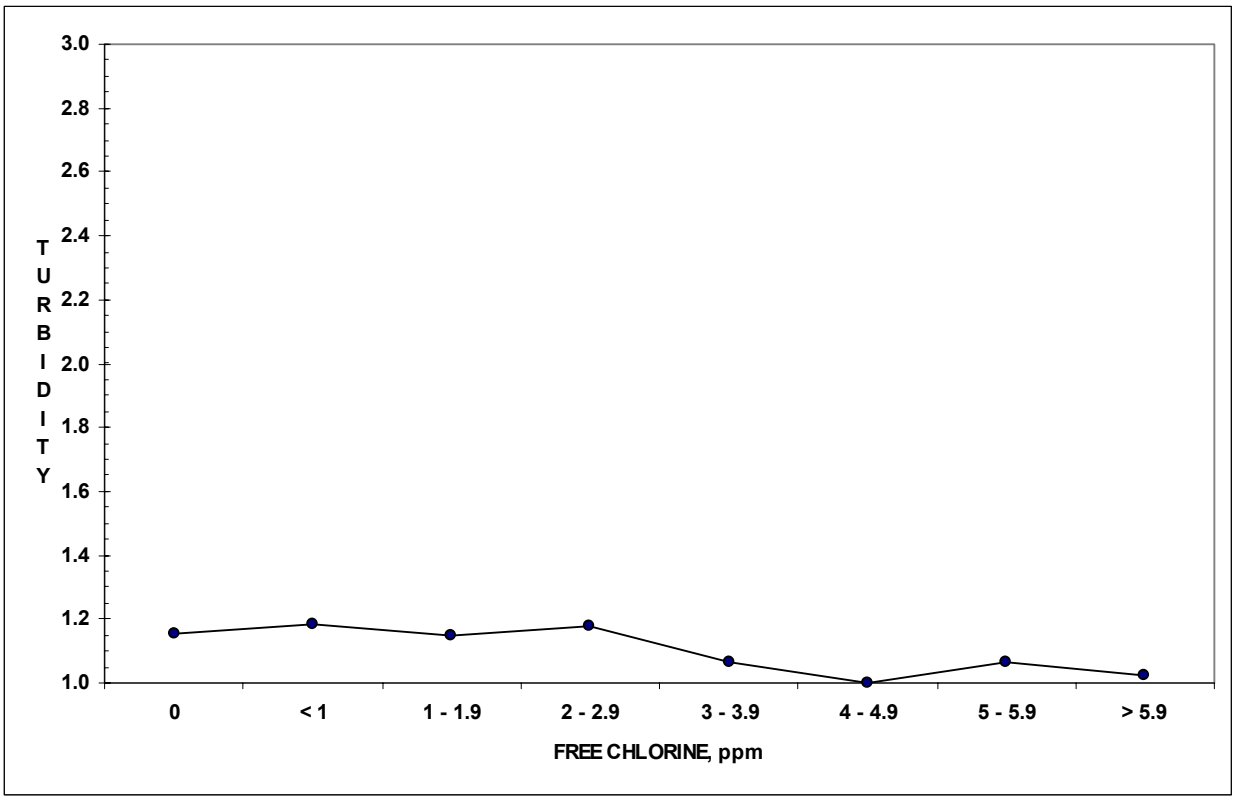


FIGURE 139: RELATIONSHIP BETWEEN TURBIDITY AND WATER SAMPLE COLLECTION DAY

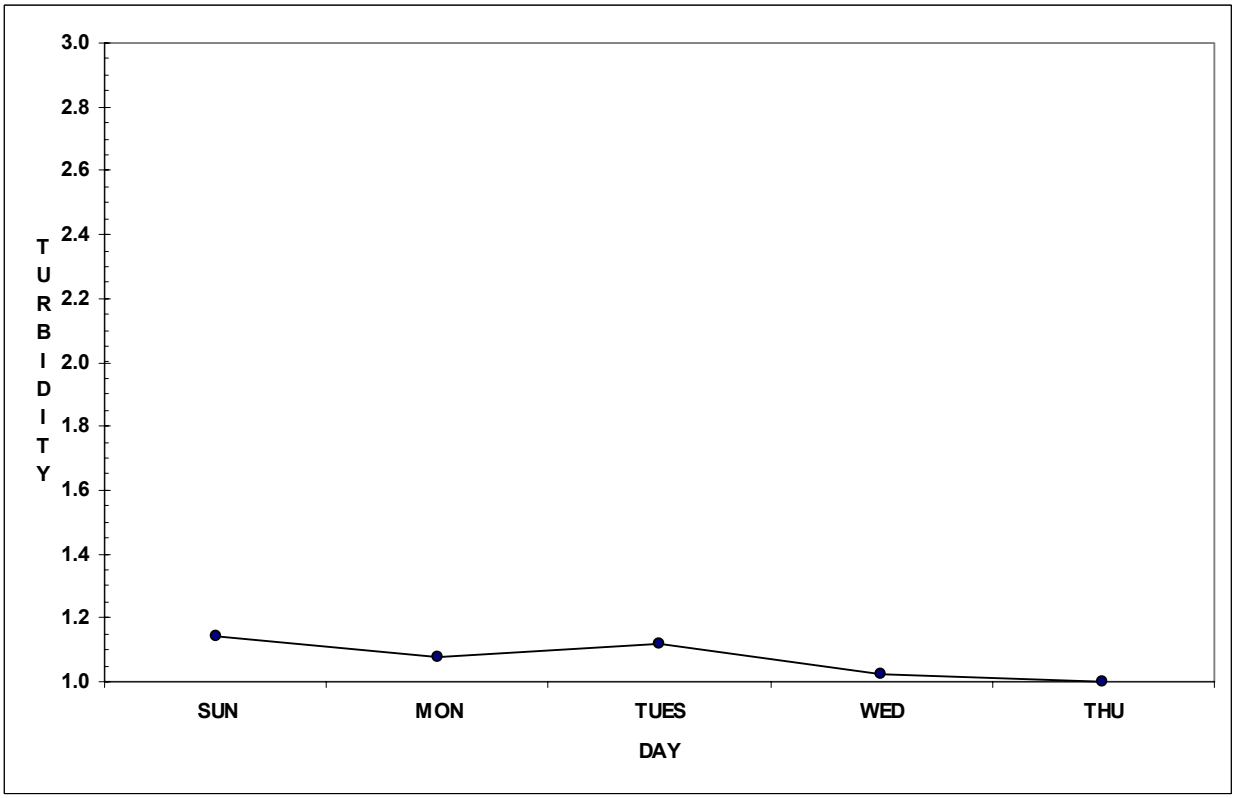


FIGURE 140: RELATIONSHIP BETWEEN TURBIDITY AND POOL VOLUME

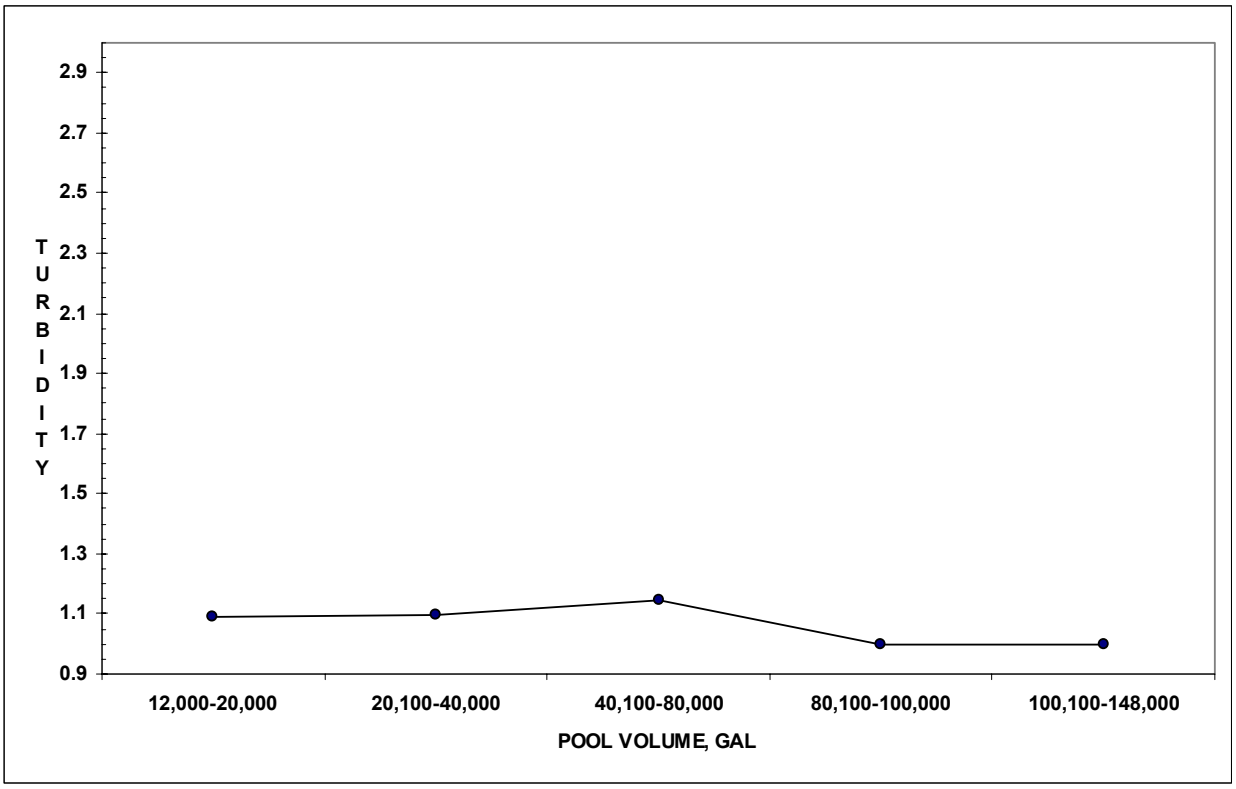


FIGURE 141: RELATIONSHIP BETWEEN TURBIDITY AND POOL SURFACE CONDITION

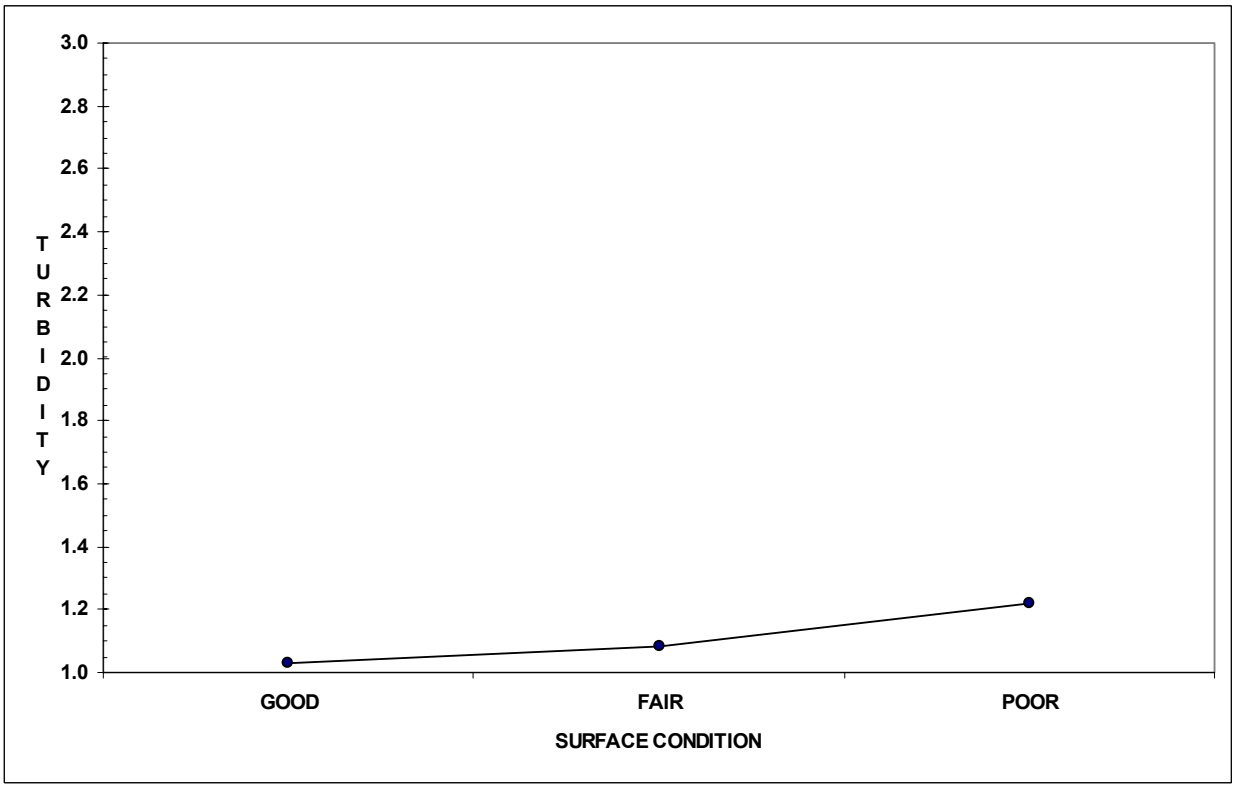
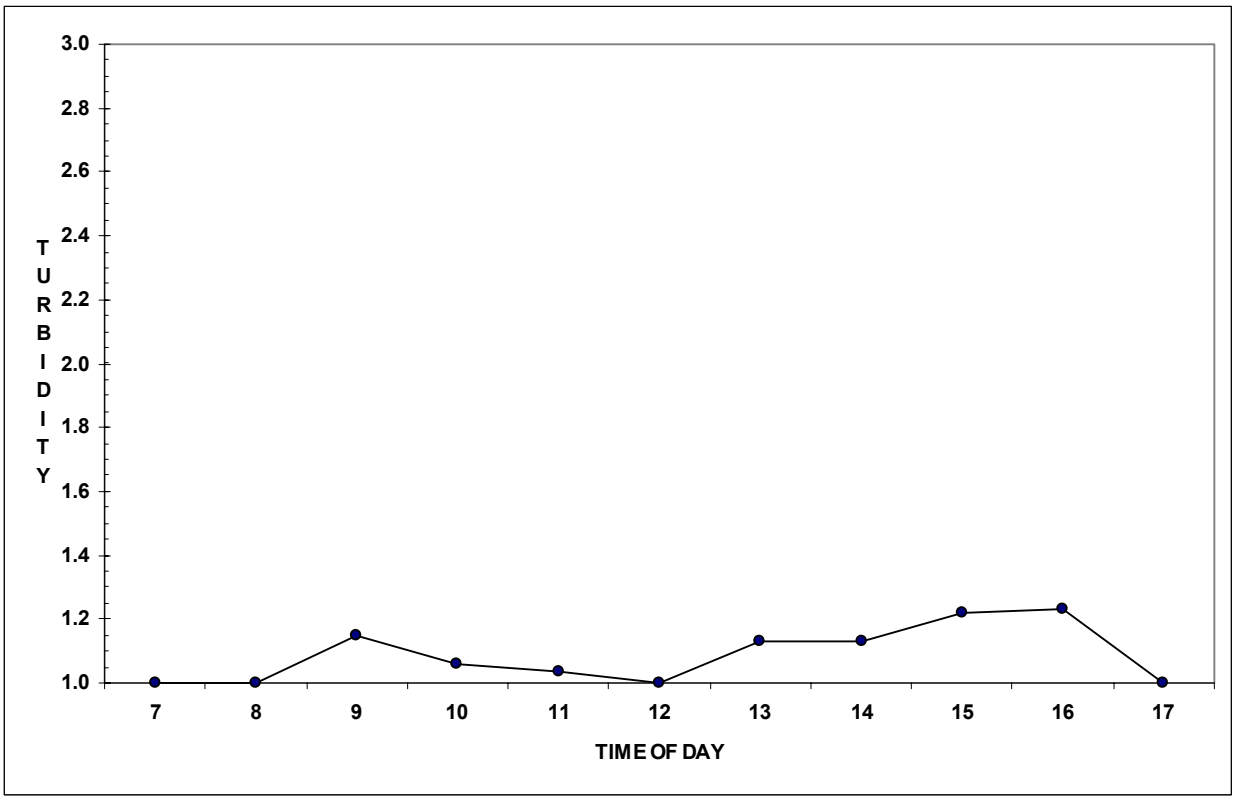


FIGURE 142: RELATIONSHIP BETWEEN TURBIDITY AND TIME OF DAY



Appendix AA

Sanitizer and Environmental Variable Pairs Relationships Graphs

FIGURE 143: SANITIZER VS FACILITY POOL

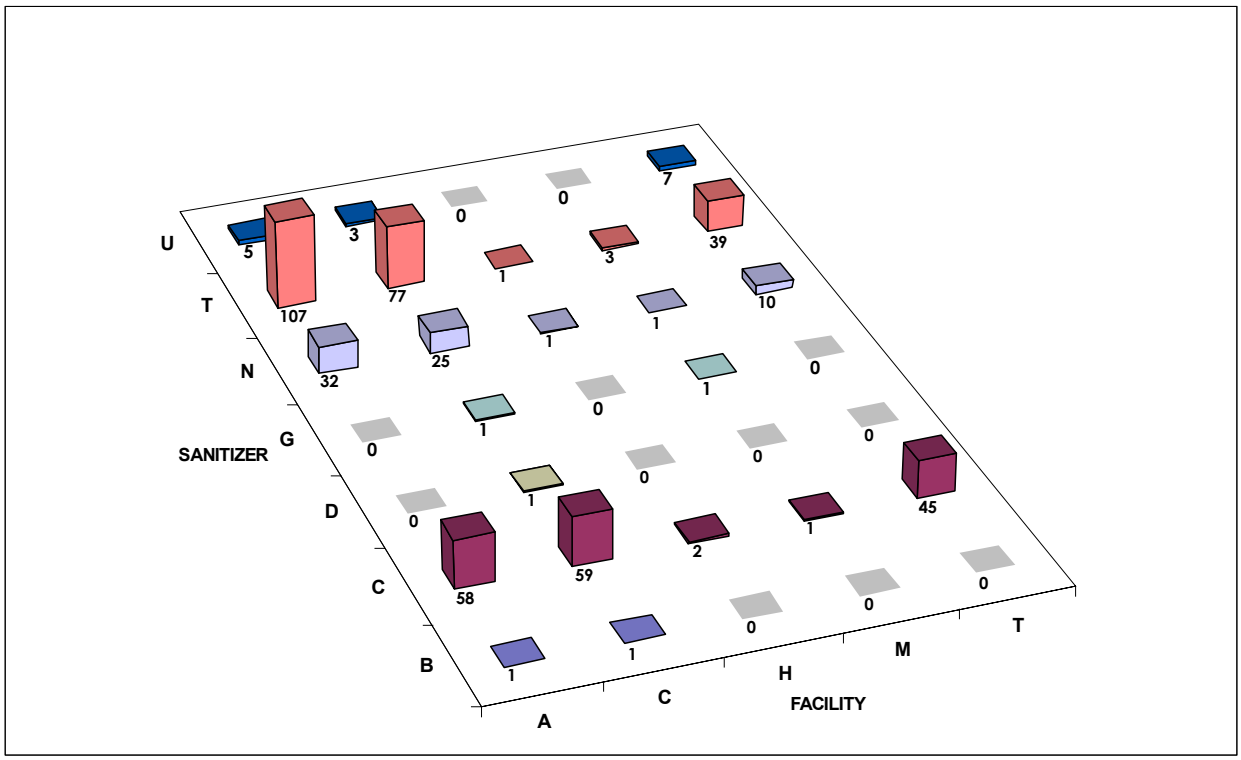


FIGURE 144: RELATIONSHIP BETWEEN WATER TEMPERATURE AND DAY

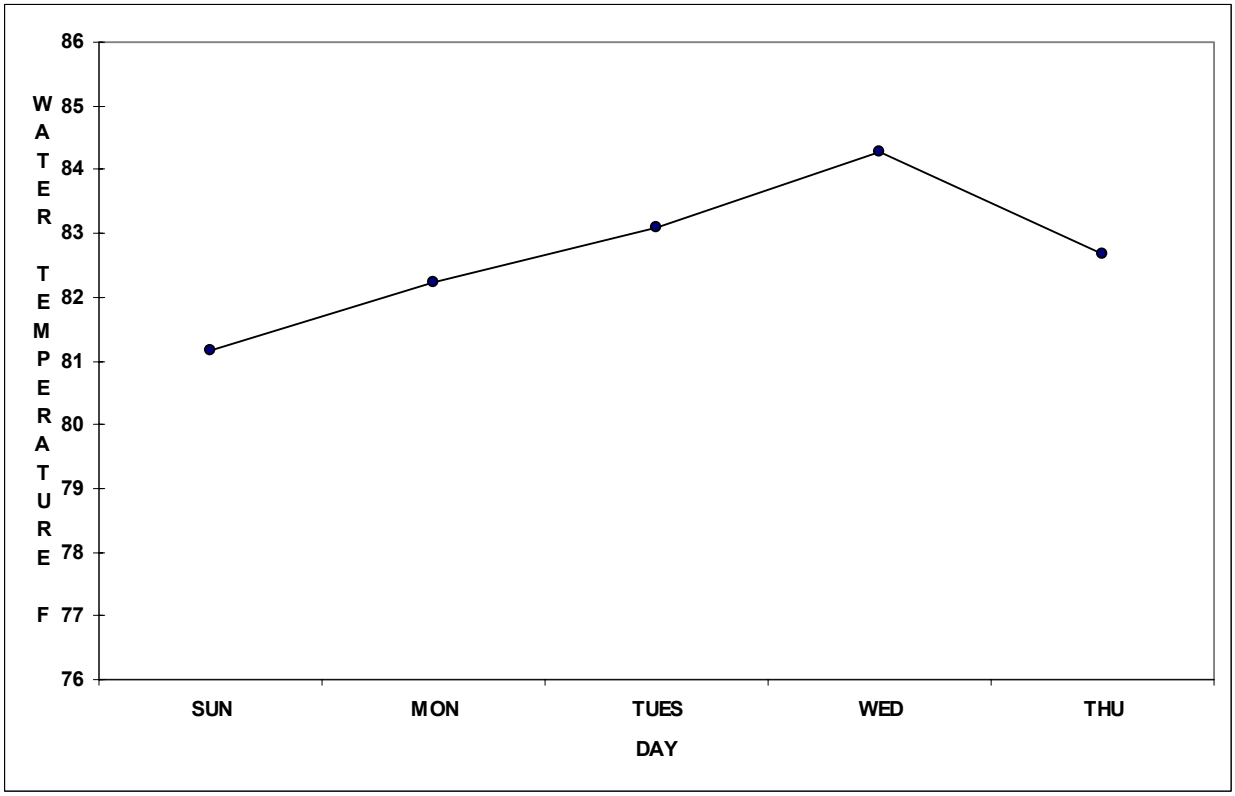


FIGURE 145: RELATIONSHIP BETWEEN WATER TEMPERATURE AND WATER SAMPLE COLLECTION MONTH

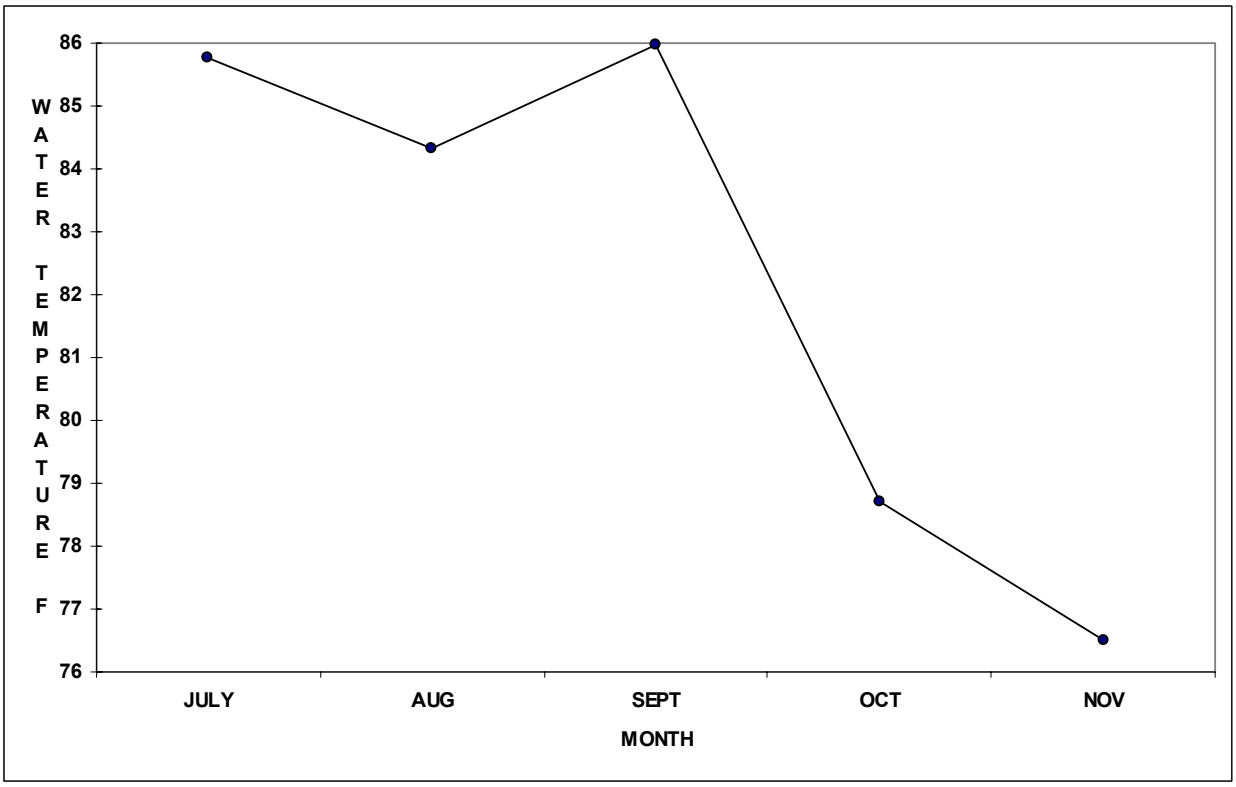


FIGURE 146: RELATIONSHIP BETWEEN RAINFALL AND WATER SAMPLE COLLECTION MONTH

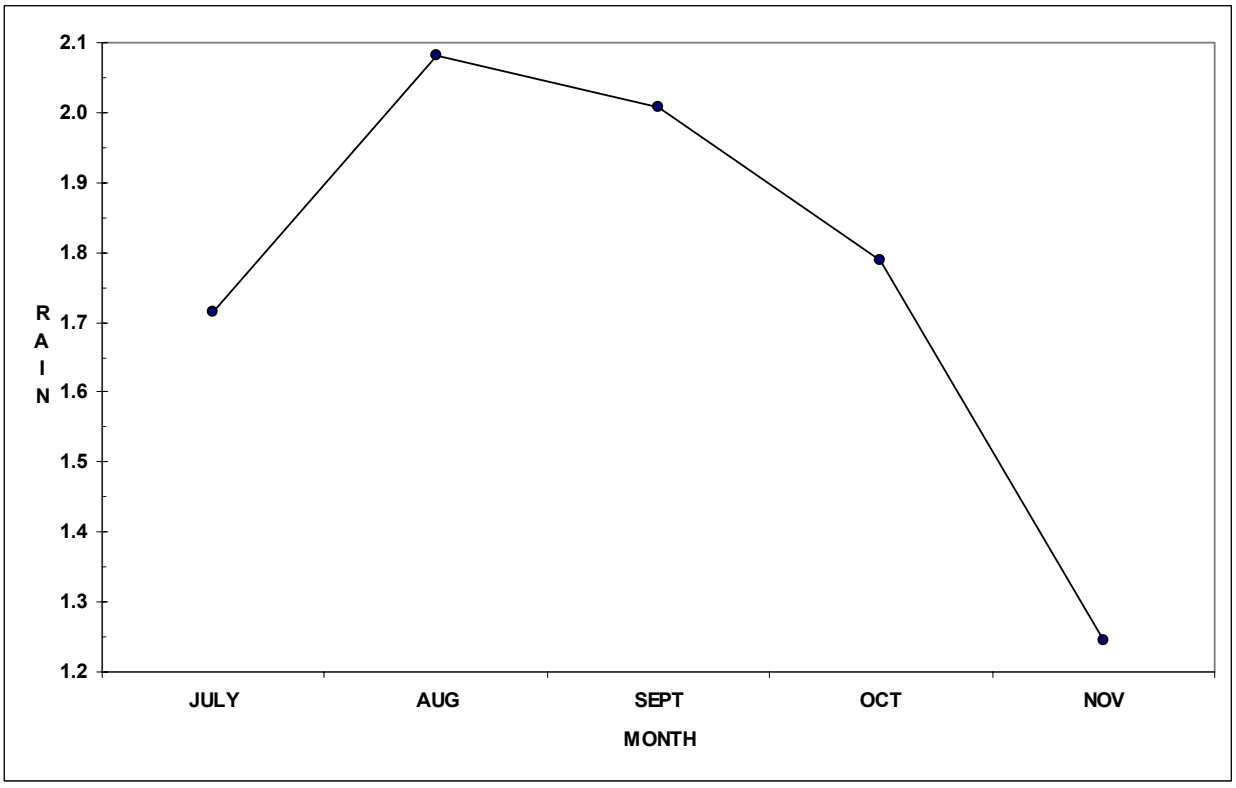


FIGURE 147: RELATIONSHIP BETWEEN RAINFALL AND WATER TEMPERATURE

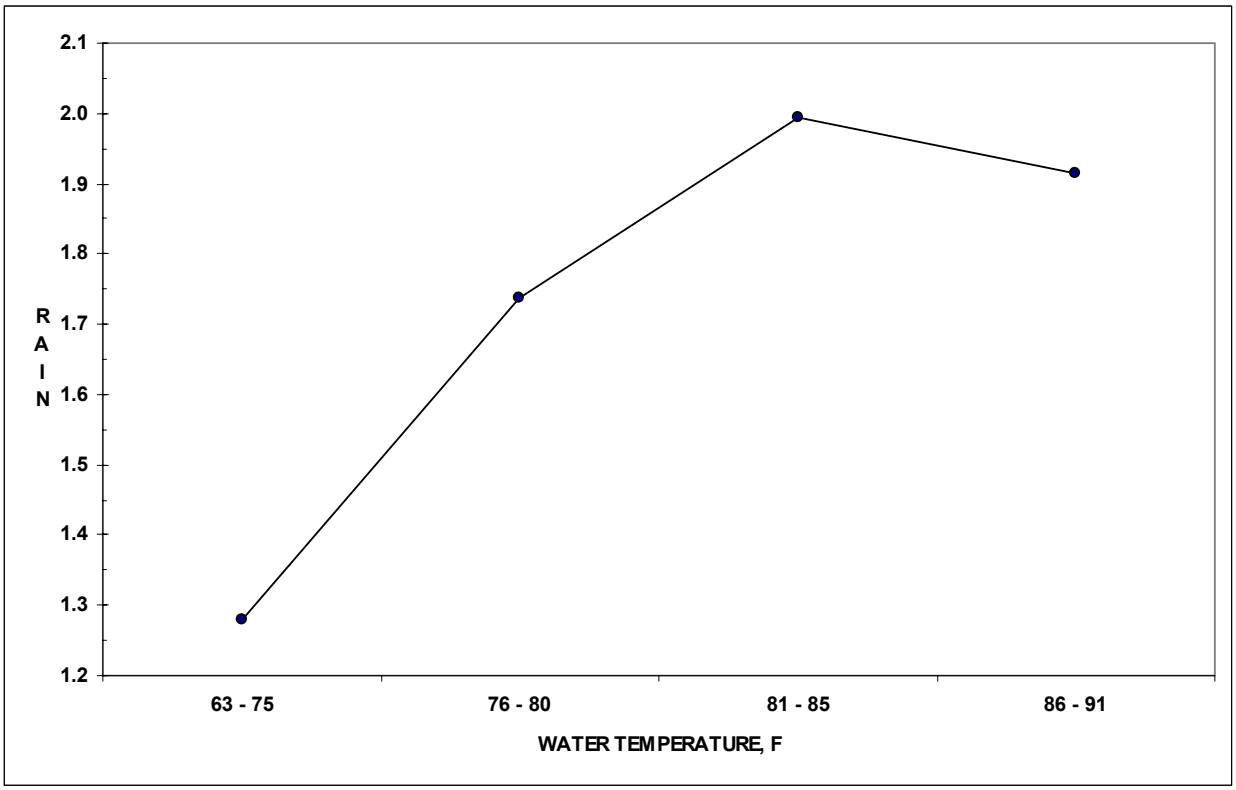


FIGURE 148: RELATIONSHIP BETWEEN BATHERLOAD AND WATER TEMPERATURE

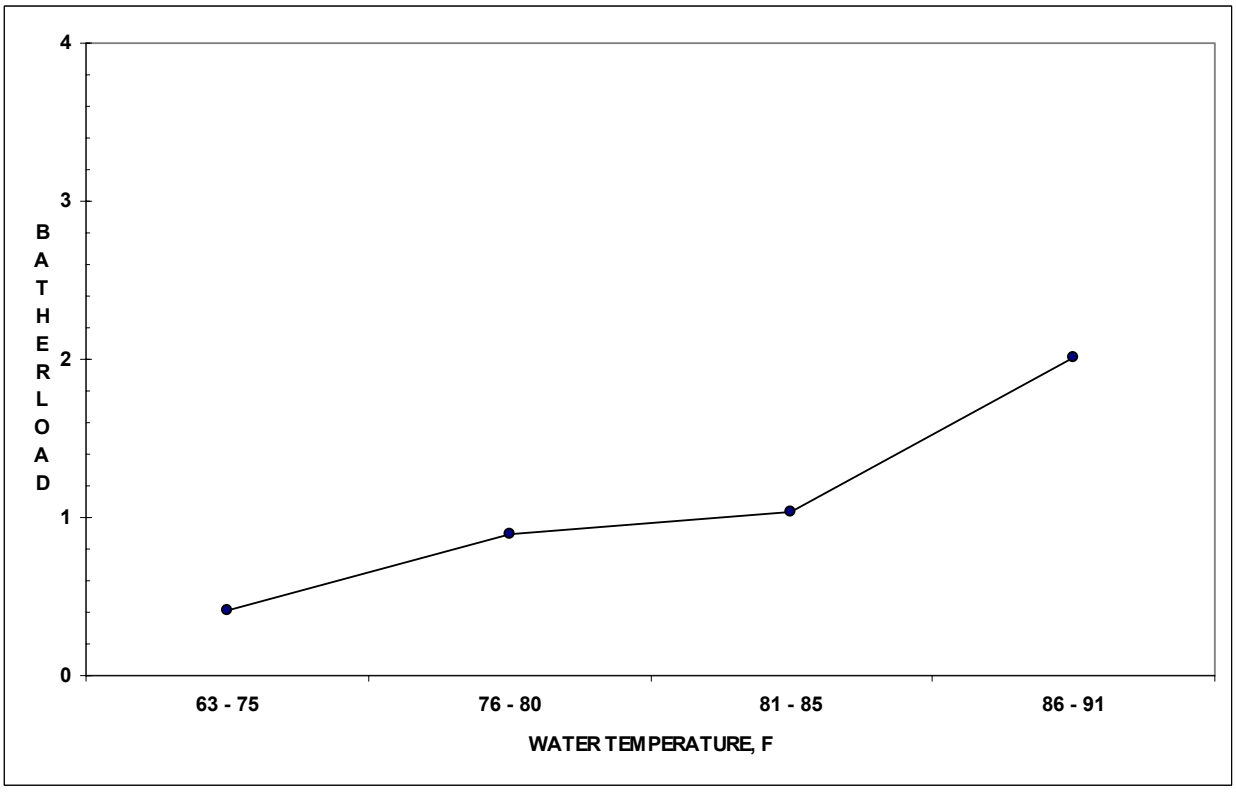


FIGURE 149: RELATIONSHIP BETWEEN BATHERLOAD AND POOL VOLUME

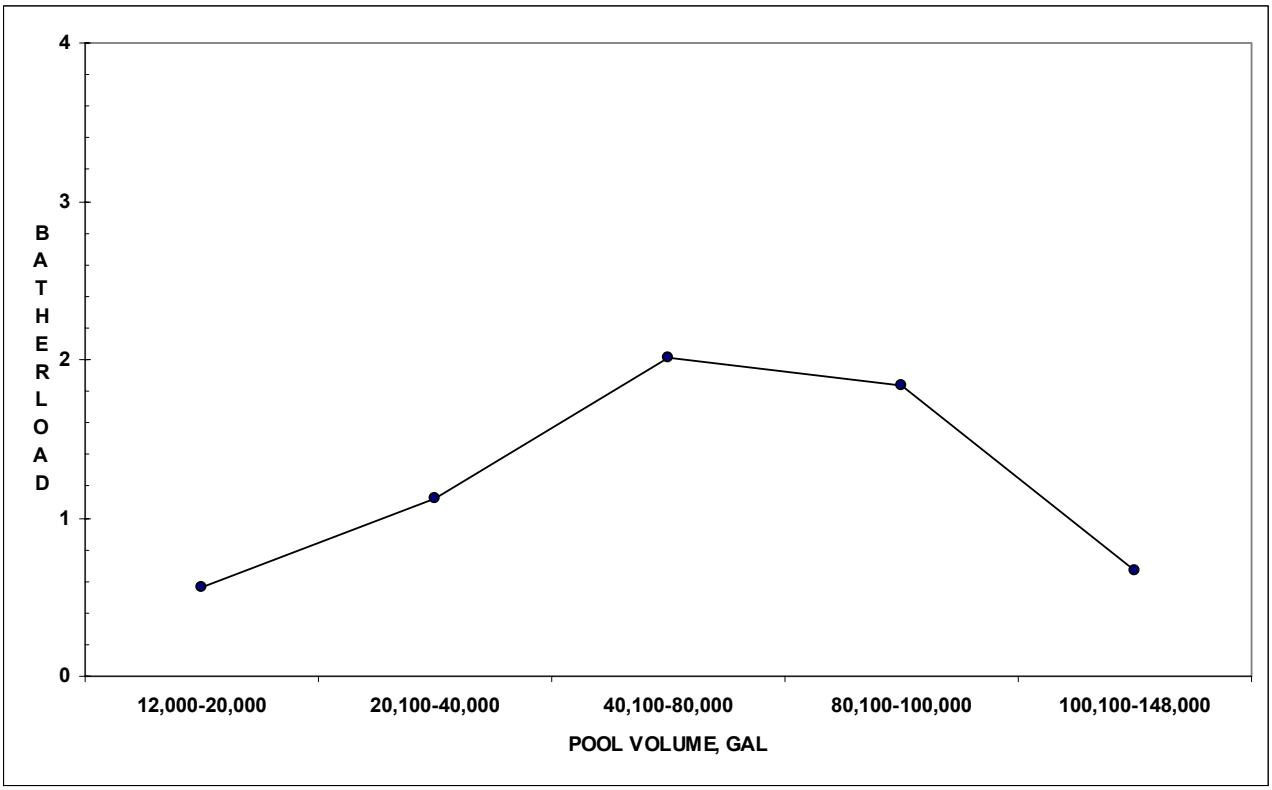


FIGURE 150: RELATIONSHIP BETWEEN BATHERLOAD AND FACILITY POOL

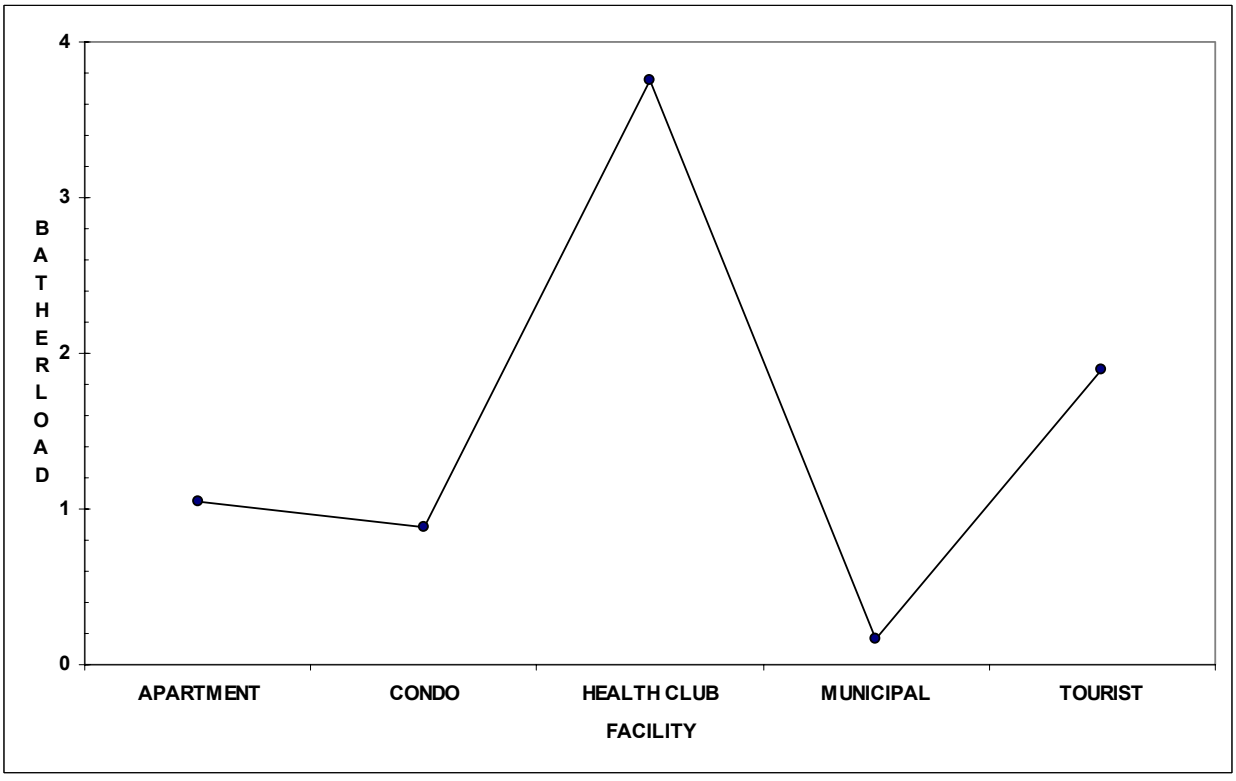


FIGURE 151: RELATIONSHIP BETWEEN BATHERLOAD AND WATER SAMPLE COLLECTION DAY

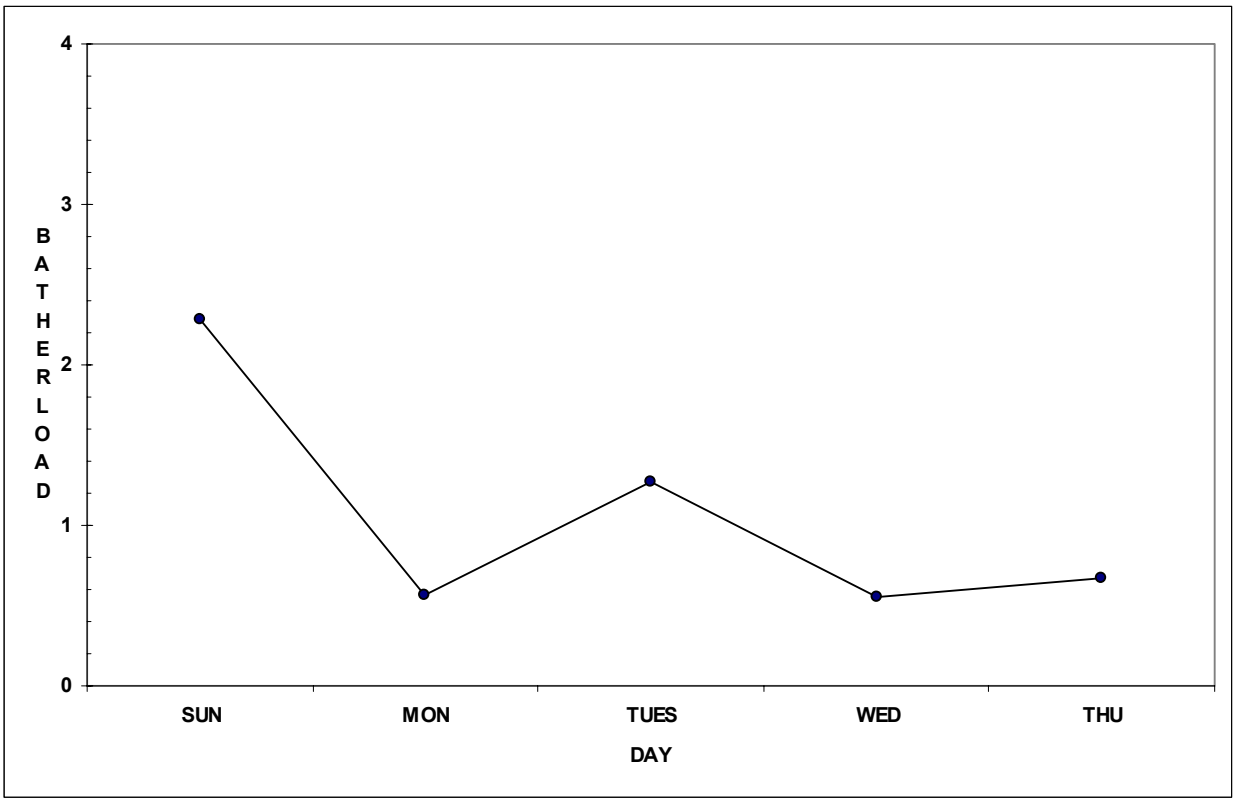
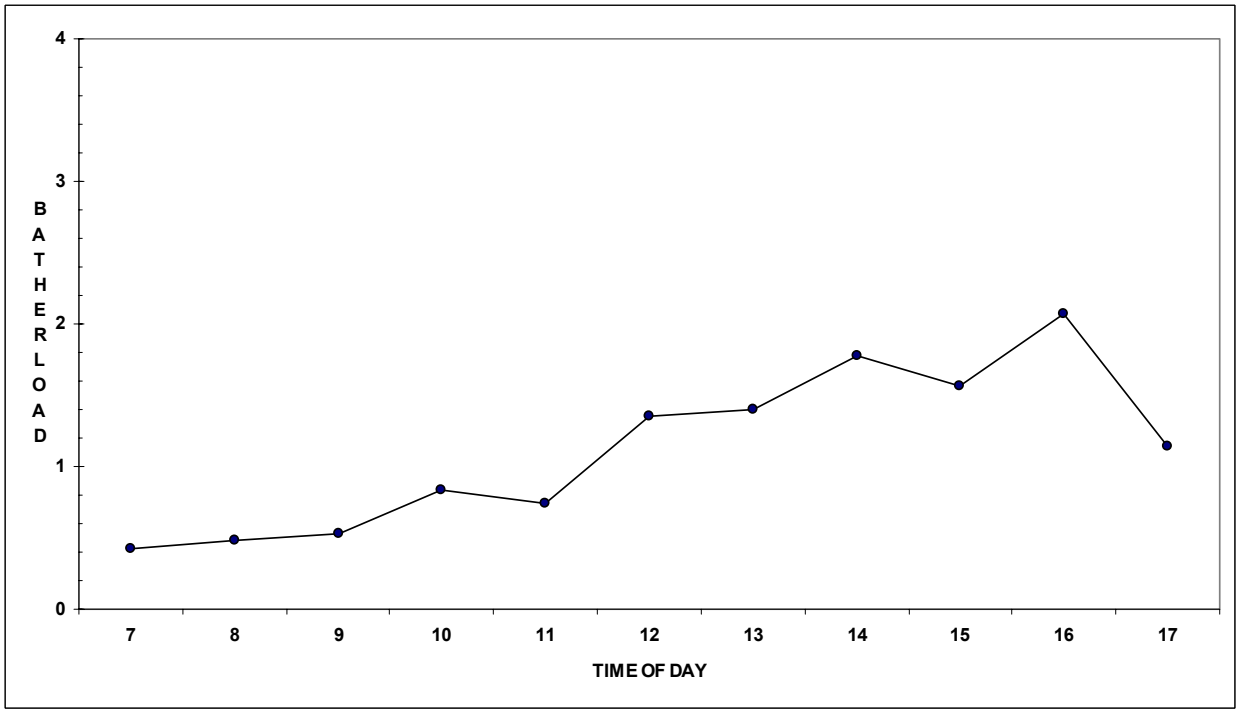


FIGURE 152: RELATIONSHIP BETWEEN BATHERLOAD AND TIME OF DAY



Appendix BB

Swimming Pool Variable Pairs Relationships Graphs

FIGURE 153: RELATIONSHIP BETWEEN POOL VOLUME AND SURFACE TYPE

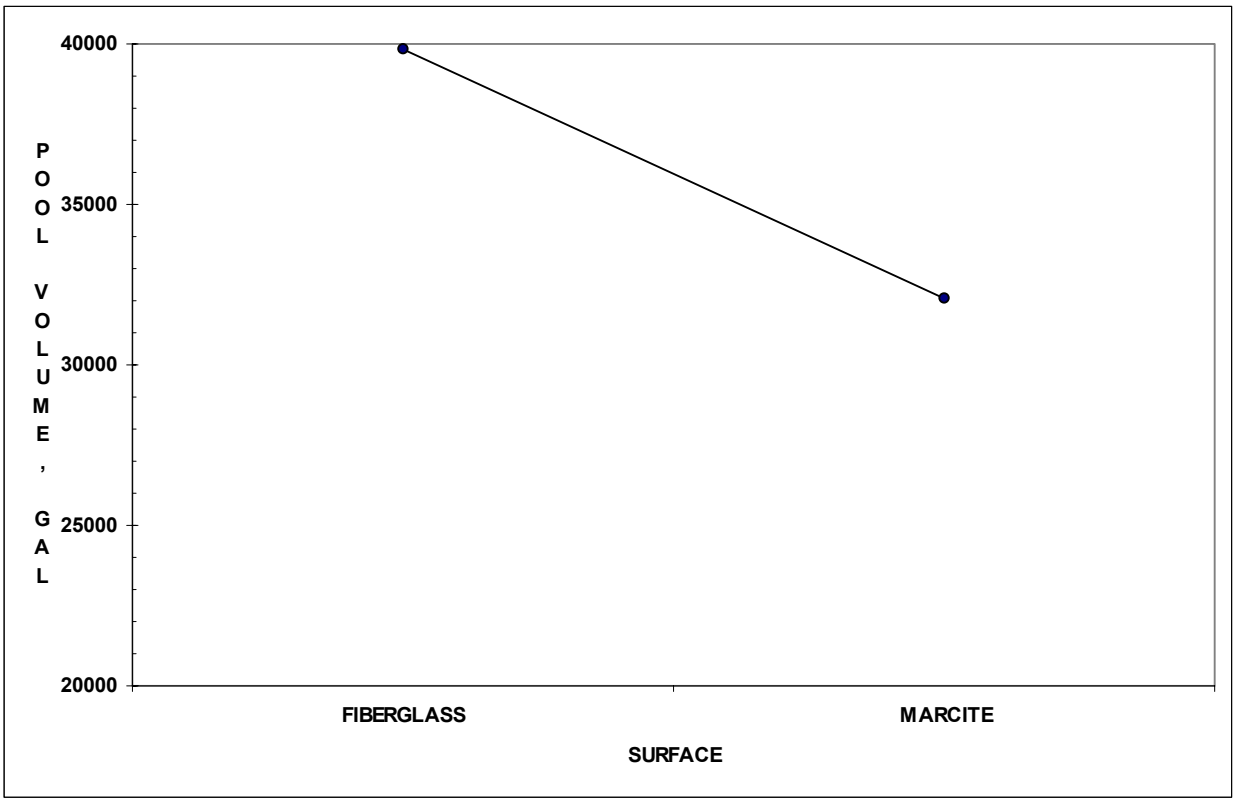


FIGURE 154: RELATIONSHIP BETWEEN POOL VOLUME AND WATER RETURN

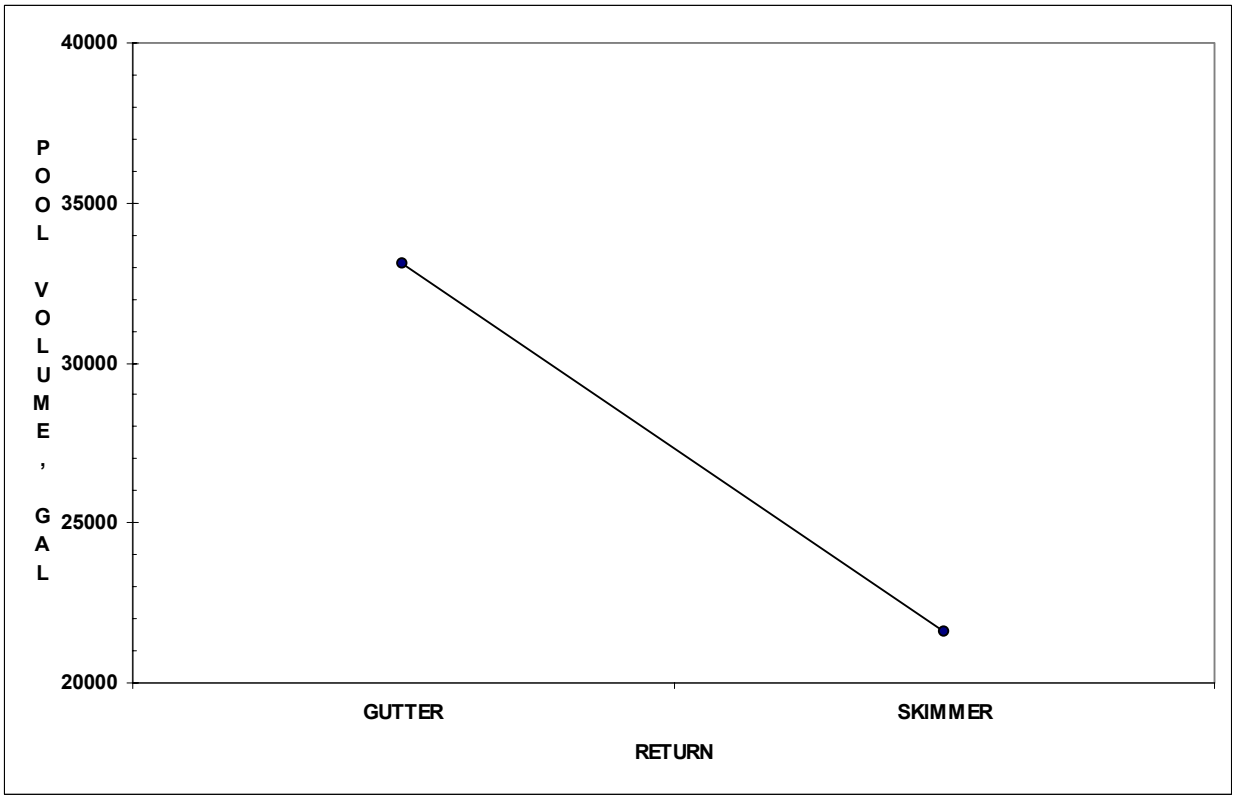


FIGURE 155: SURFACE CONDITION VS SURFACE TYPE

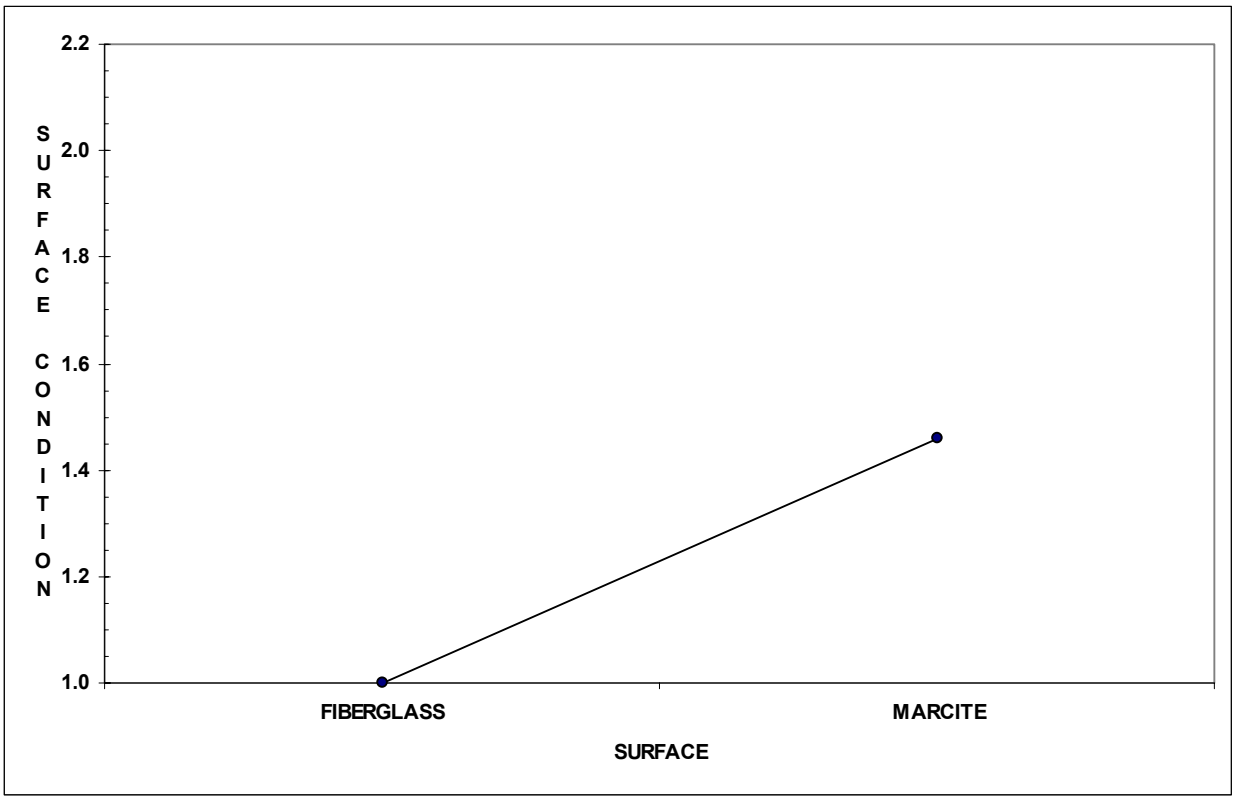


FIGURE 156: RELATIONSHIP BETWEEN SURFACE CONDITION AND WATER TEMPERATURE

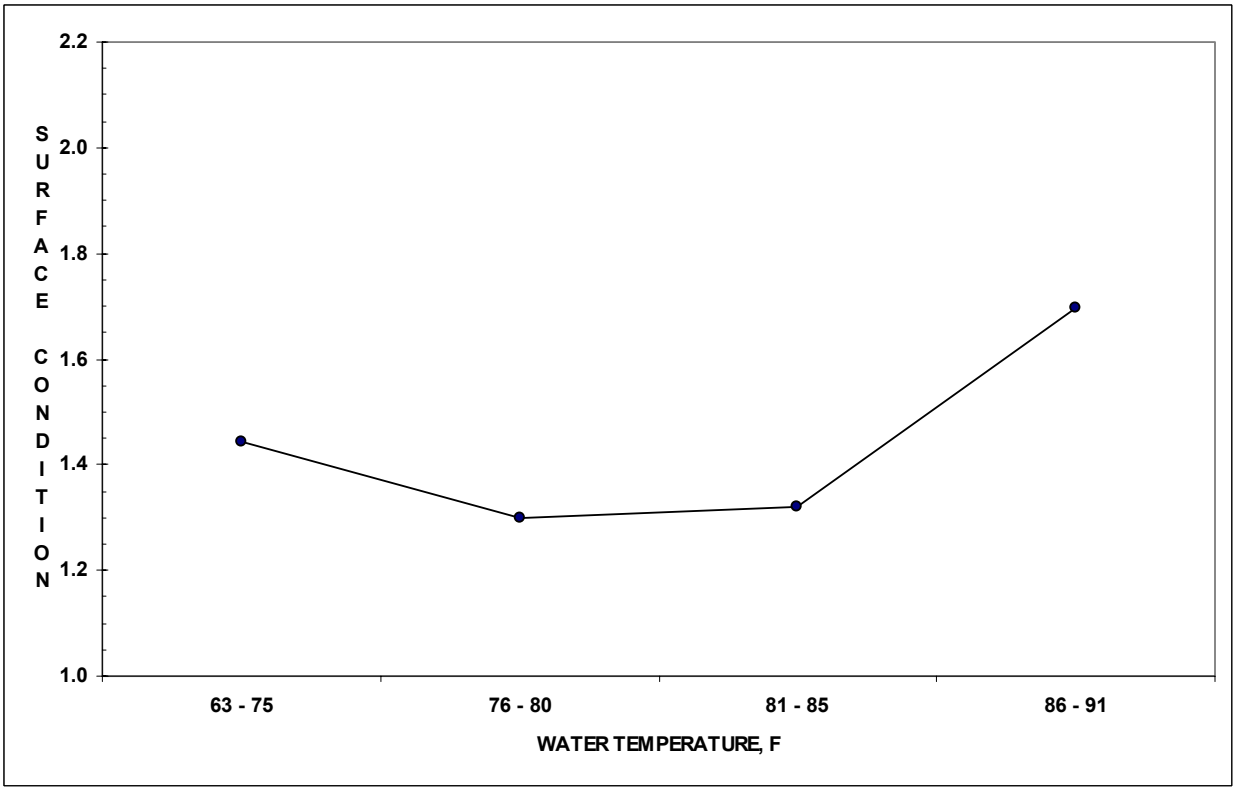


FIGURE 157: RELATIONSHIP BETWEEN SURFACE CONDITION AND CYANURIC ACID

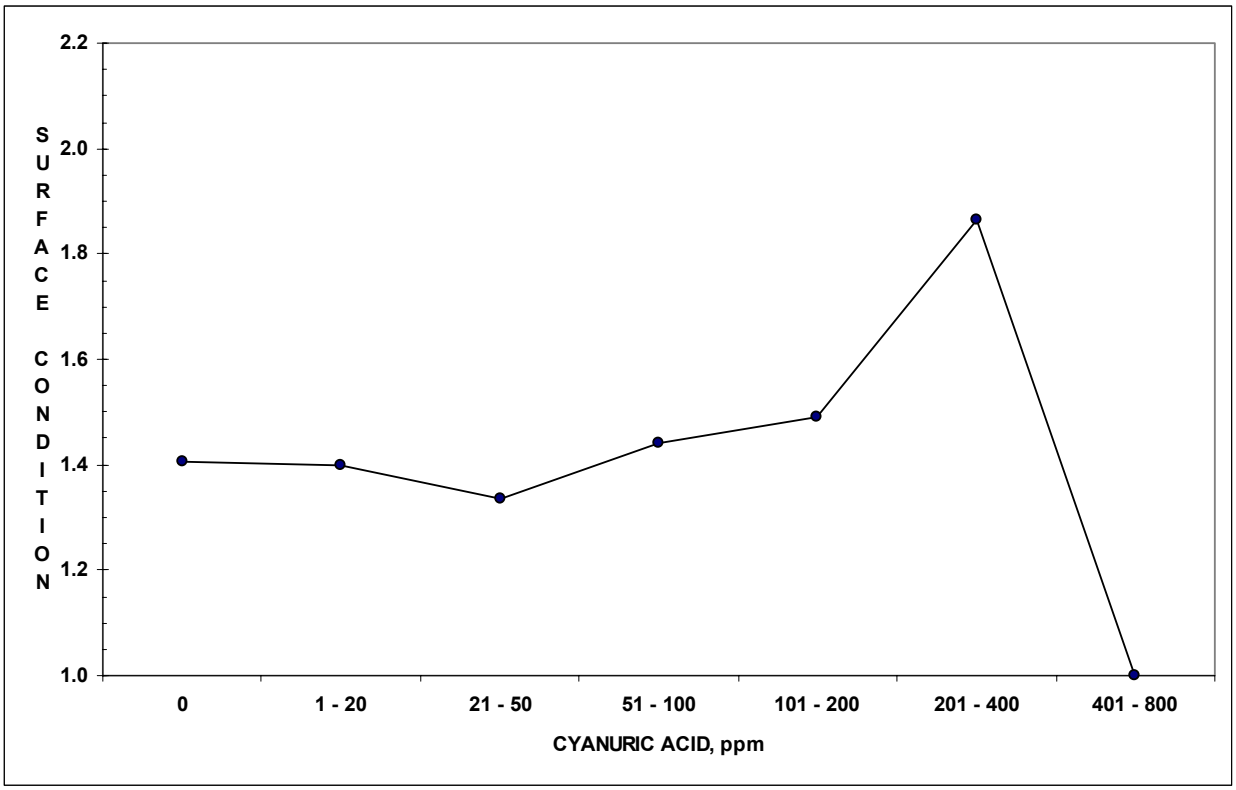


FIGURE 158: RELATIONSHIP BETWEEN SURFACE CONDITION AND SANITIZER

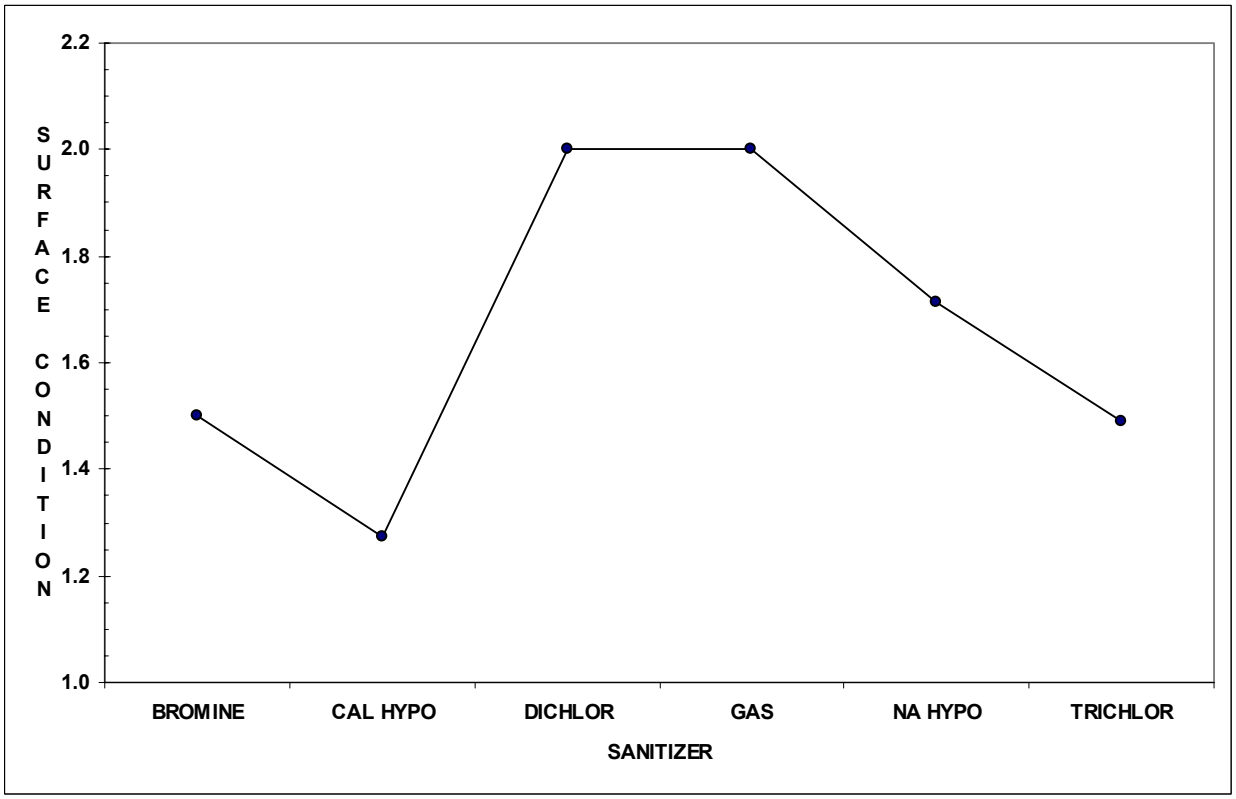


FIGURE 159: RELATIONSHIP BETWEEN SURFACE CONDITION AND PH

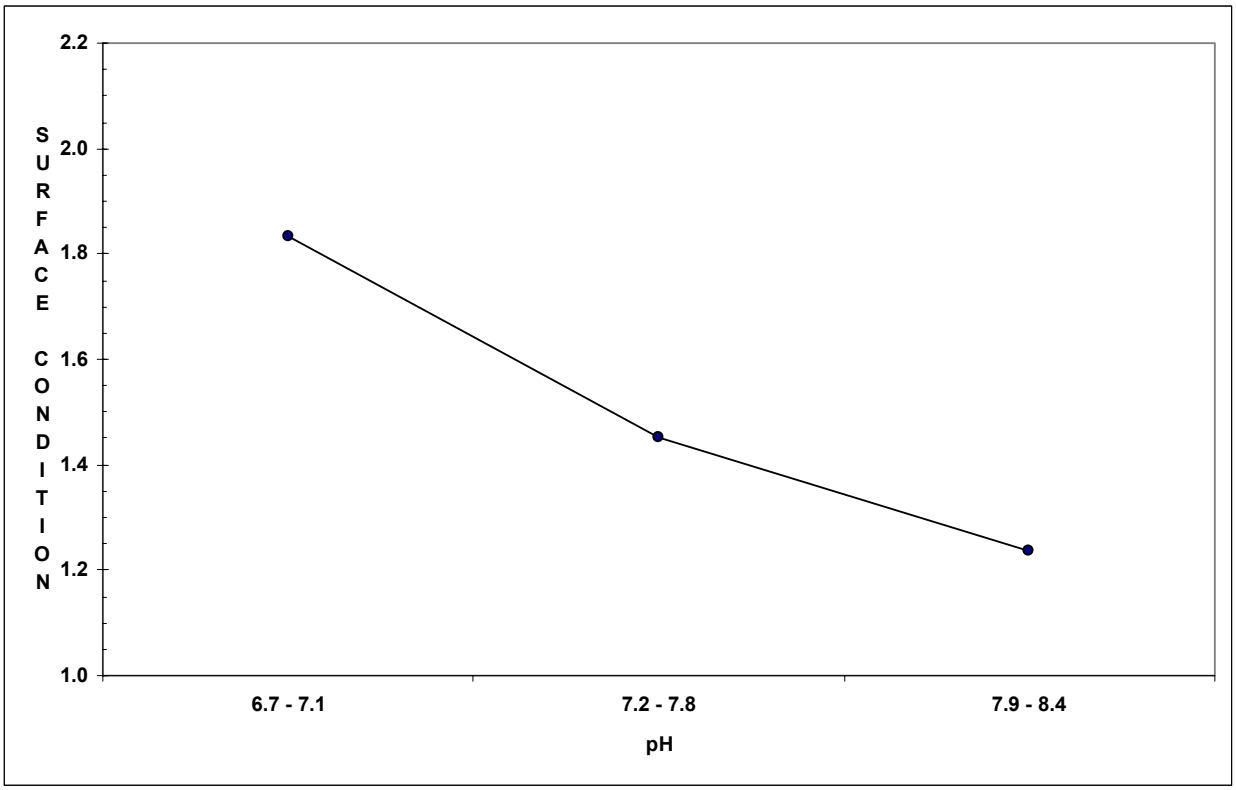


FIGURE 160: RELATIONSHIP BETWEEN SURFACE CONDITION AND WATER HARDNESS

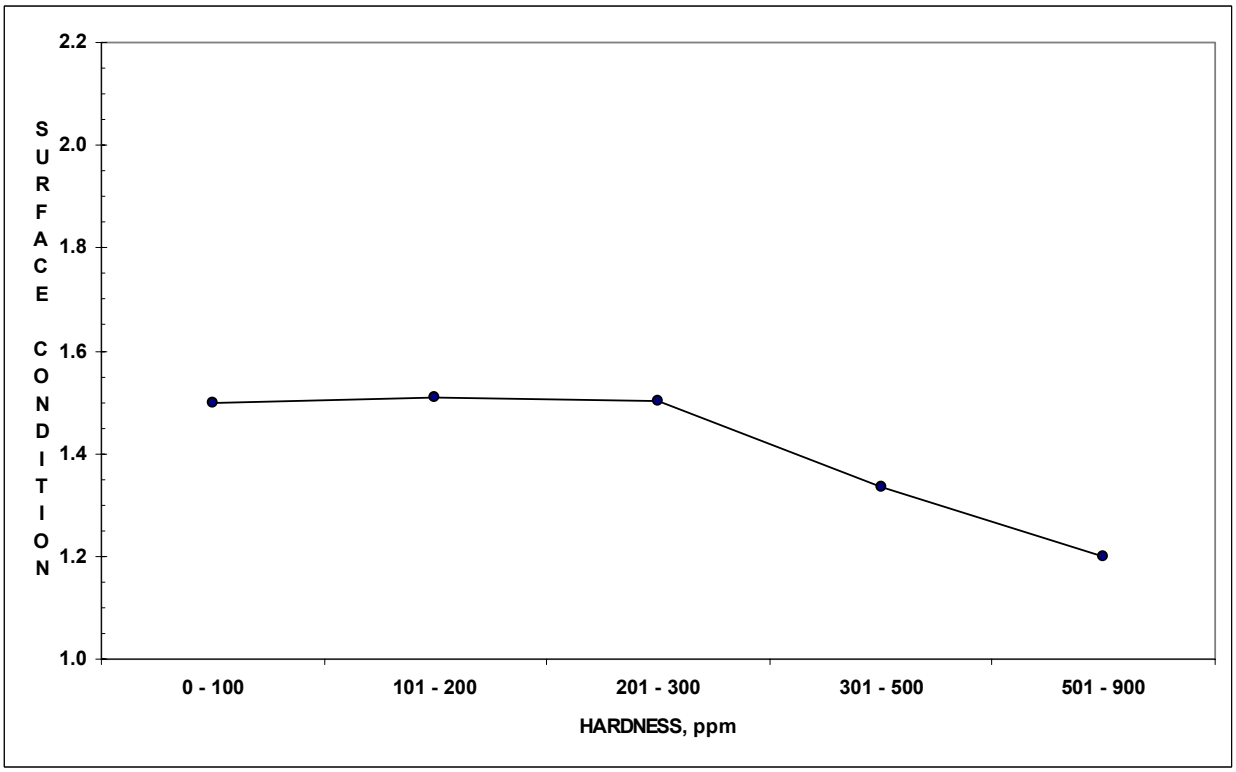


FIGURE 161: RELATIONSHIP BETWEEN SURFACE CONDITION AND TOTAL ALKALINITY

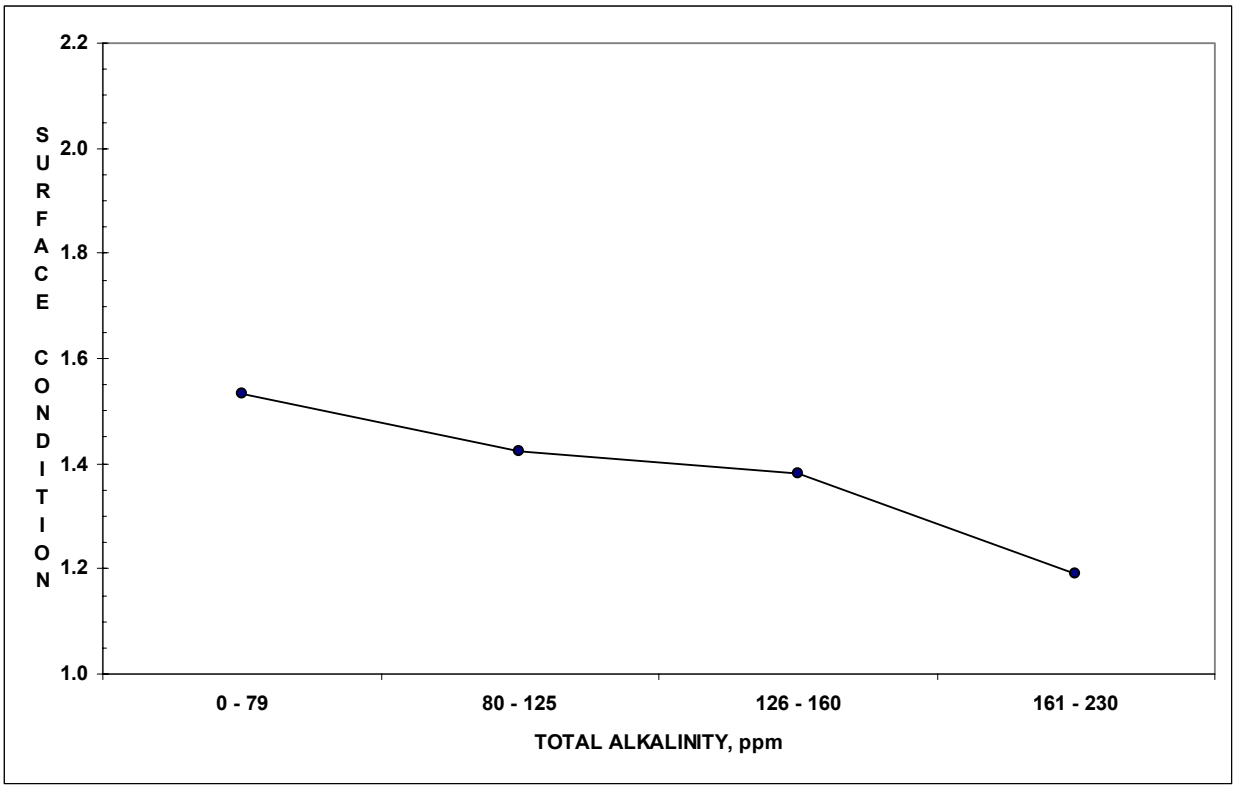


FIGURE 162: RELATIONSHIP BETWEEN SURFACE CONDITION AND TOTAL DISSOLVED SOLIDS

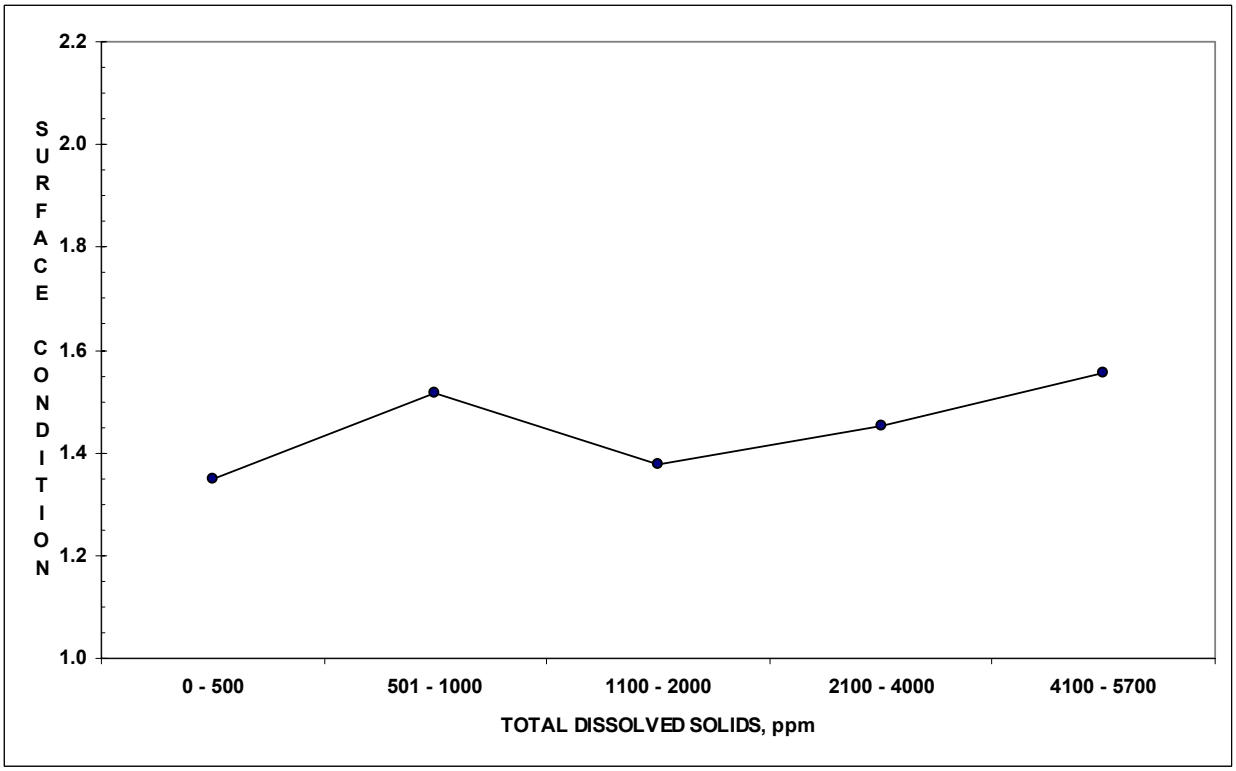
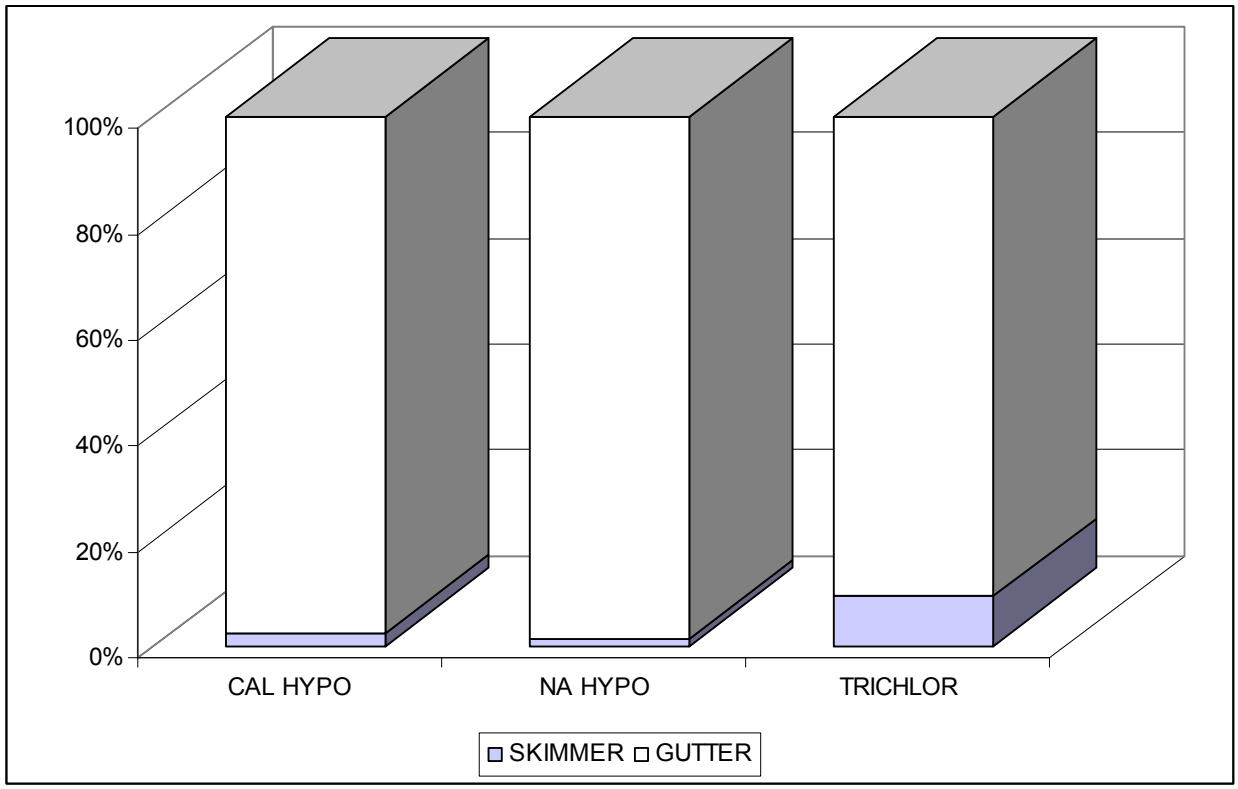


FIGURE 163: % OF WATER RETURN TYPE VS SANITIZER



Appendix CC

Time Variable Pairs Relationships Graphs

FIGURE 164: NUMBER OF POOLS SAMPLED BY WATER SAMPLE COLLECTION DAY

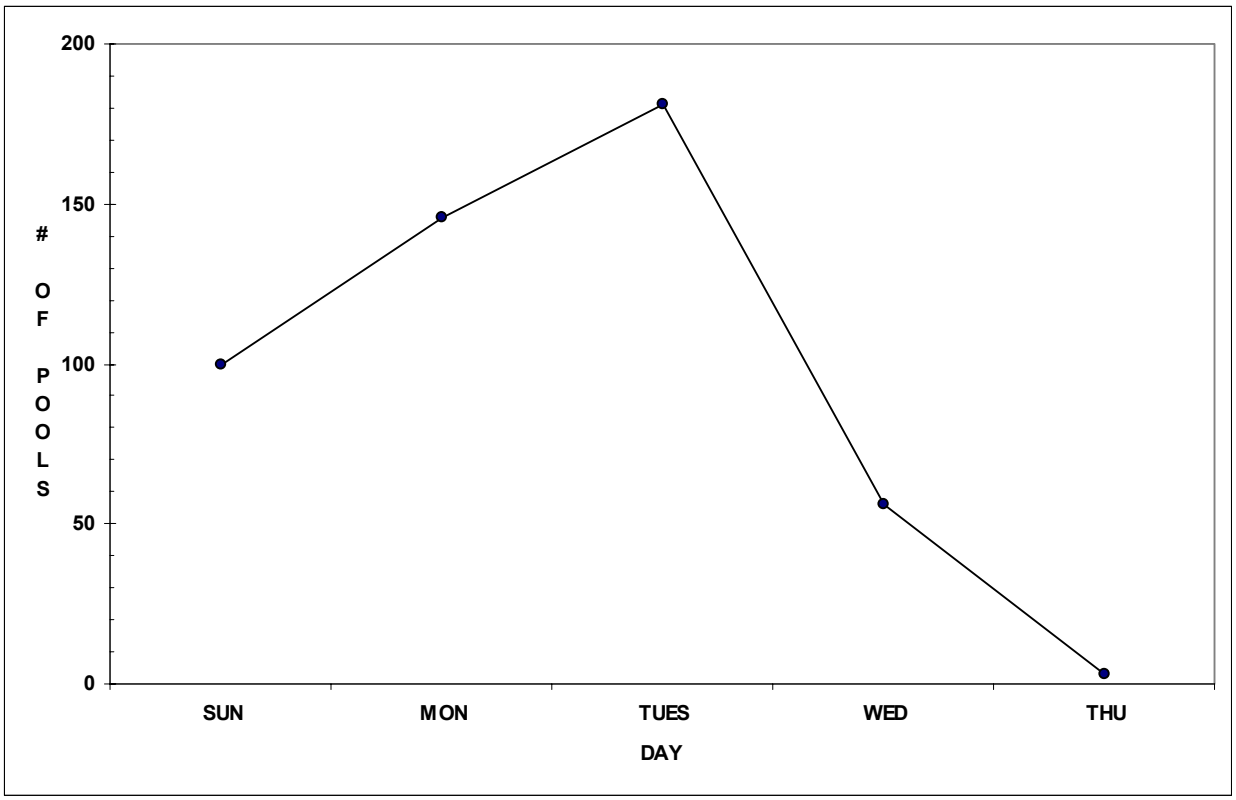


FIGURE 165: RELATIONSHIP BETWEEN POOL VOLUME AND WATER SAMPLE COLLECTION DAY

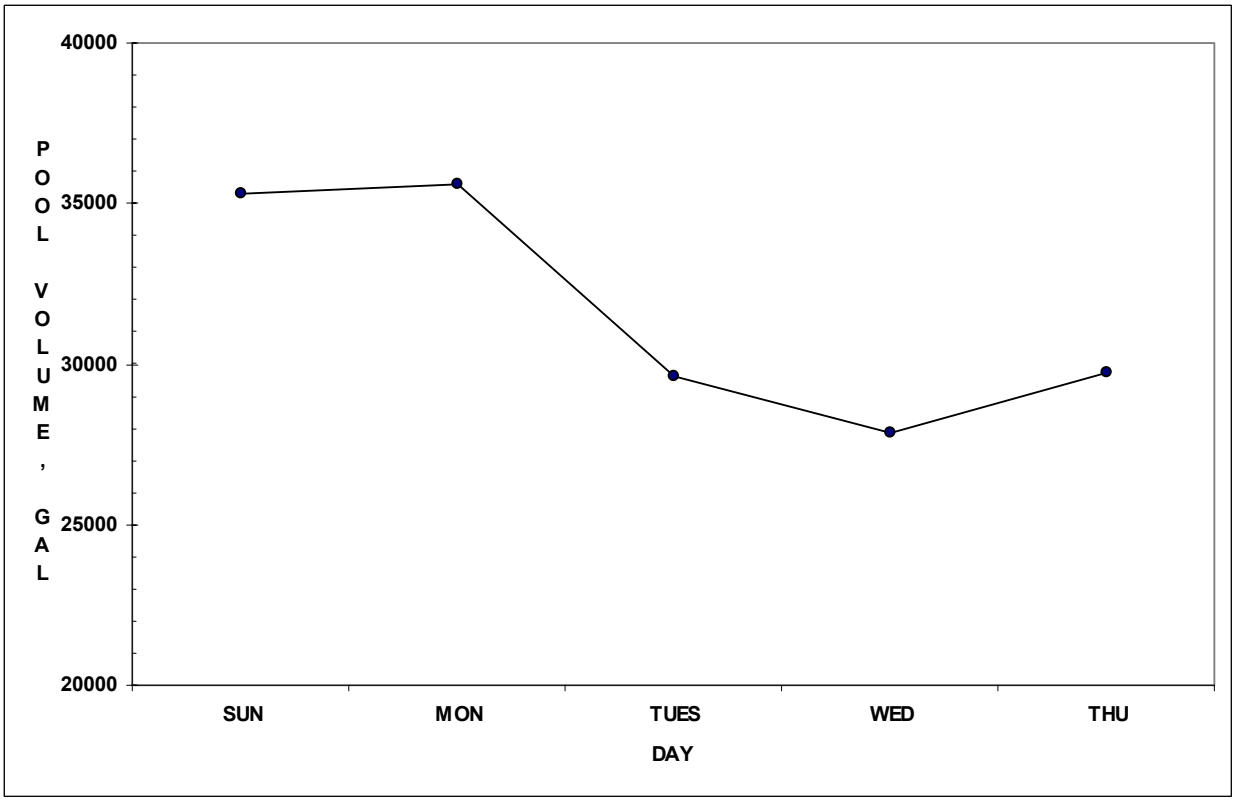


FIGURE 166: NUMBER OF POOLS SAMPLED BY WATER SAMPLE COLLECTION MONTH

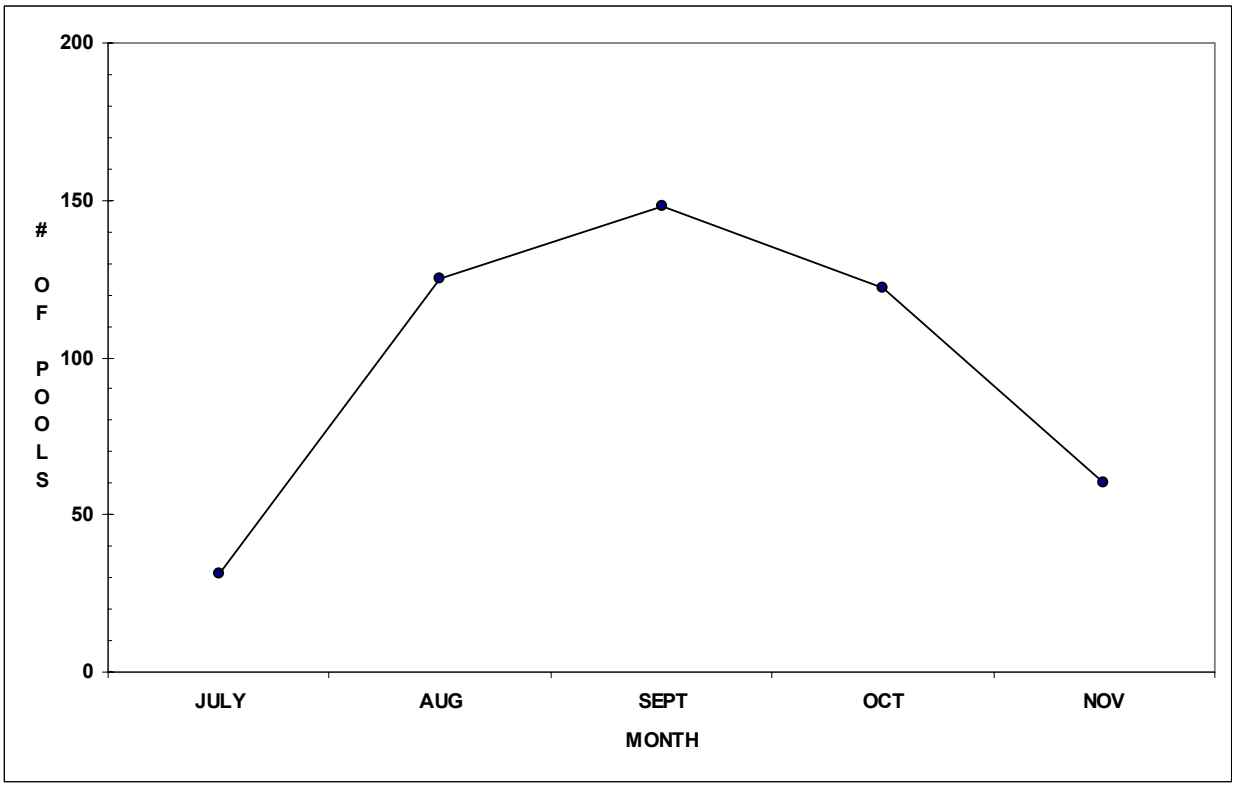
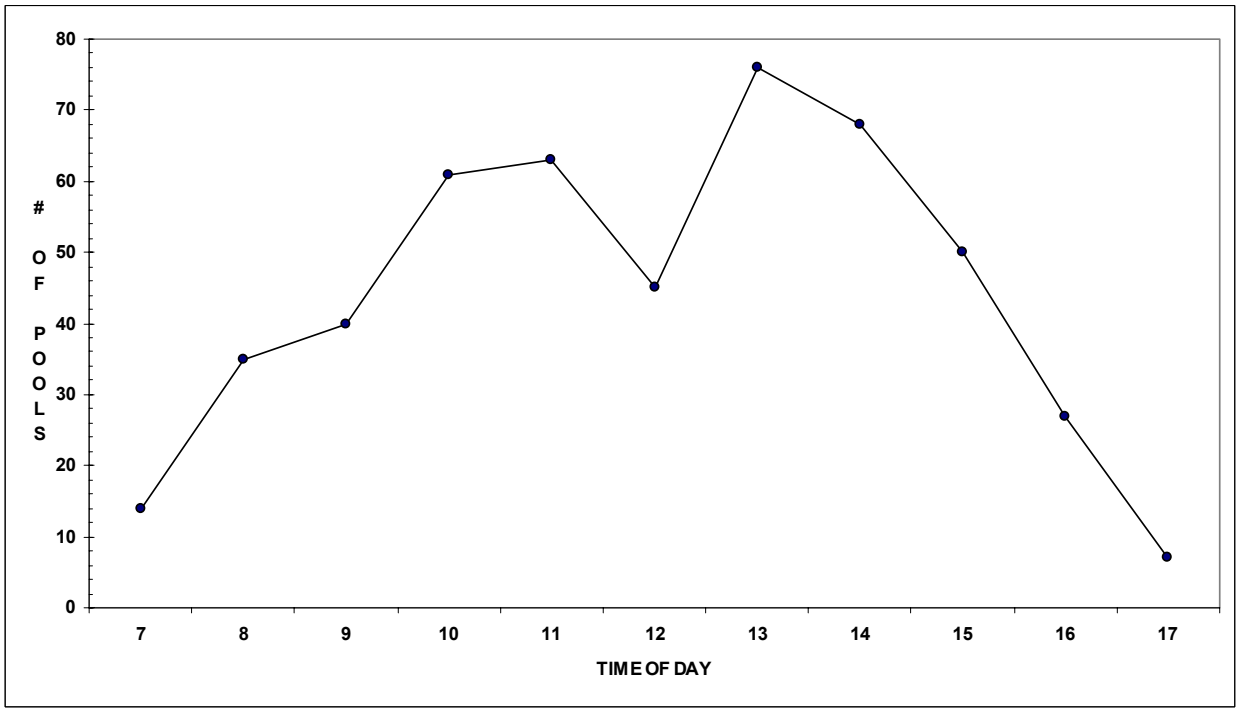


FIGURE 167: NUMBER OF POOLS SAMPLED BY TIME OF DAY



Appendix DD

Algae Variable Pairs Relationships Graphs

FIGURE 168: RELATIONSHIP BETWEEN BLACK ALGAE AND FREE CHLORINE

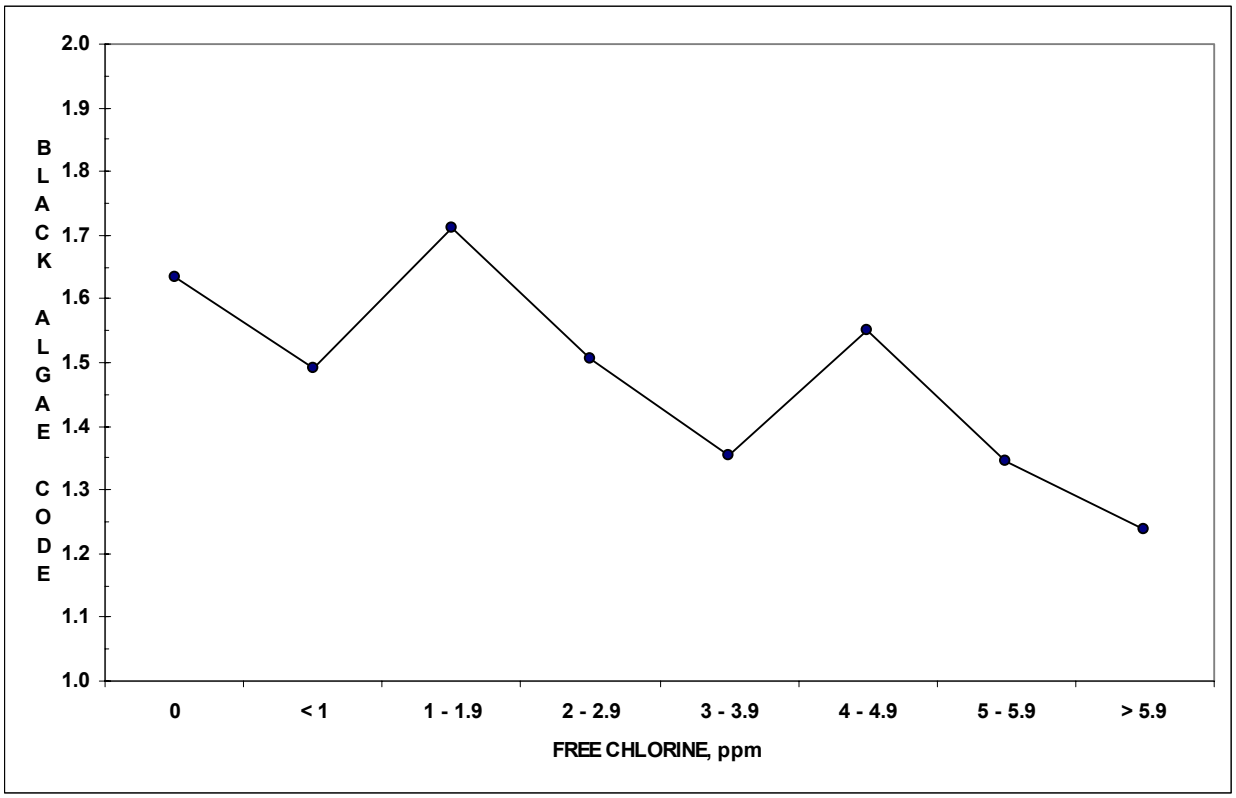


FIGURE 169: RELATIONSHIP BETWEEN BLACK ALGAE AND TOTAL CHLORINE

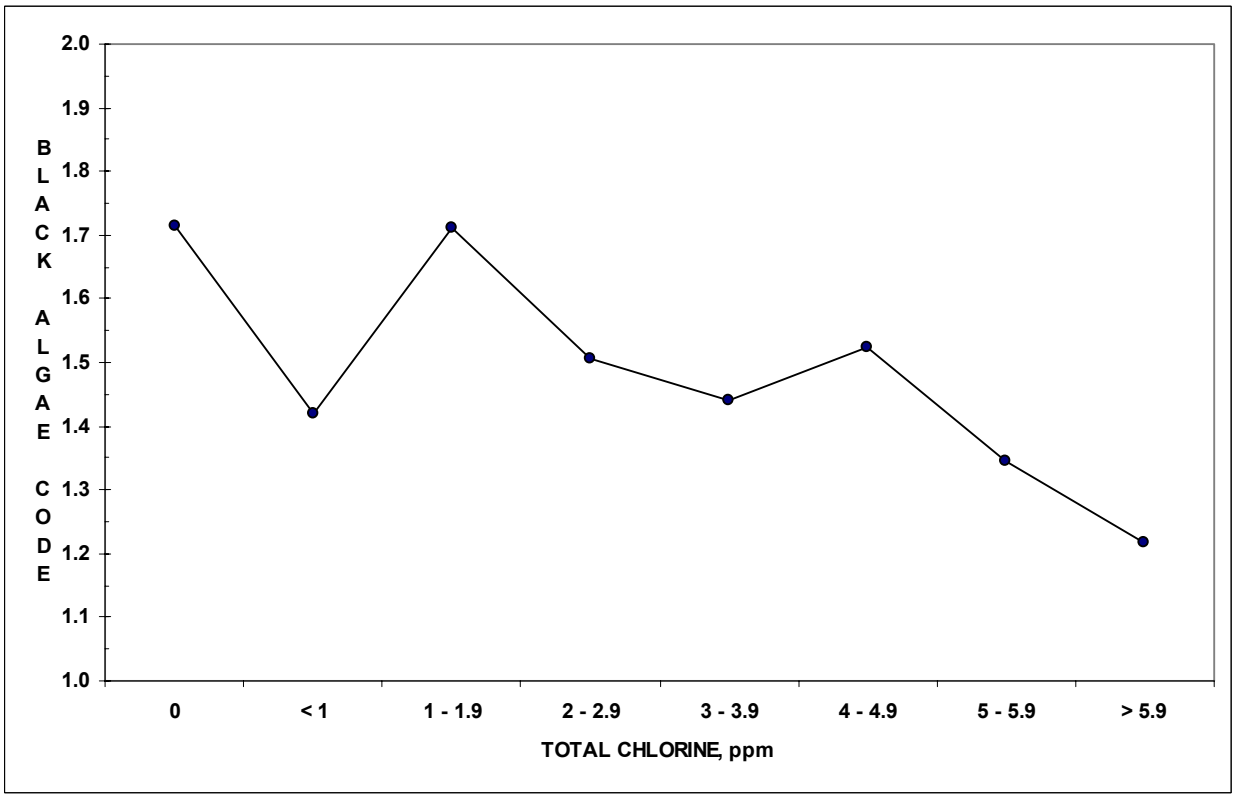


FIGURE 170: RELATIONSHIP BETWEEN BLACK ALGAE AND SURFACE CONDITION

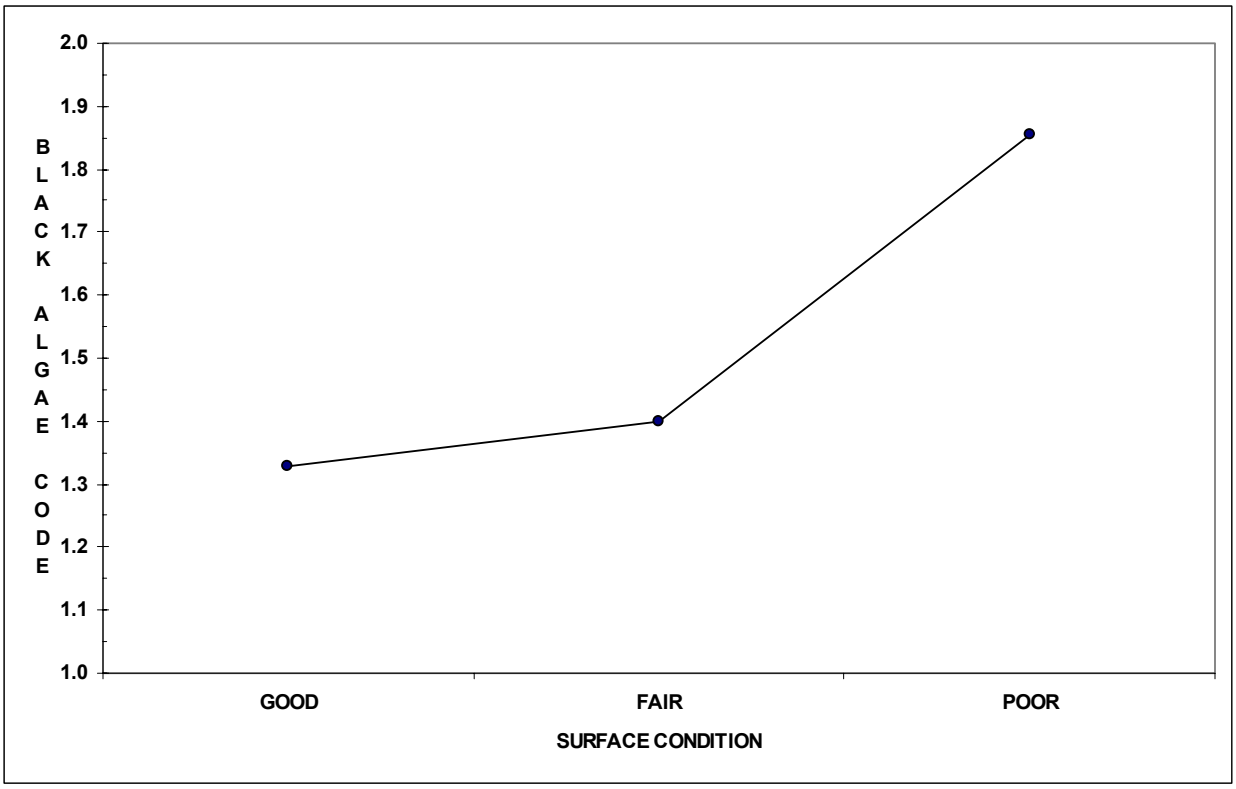


FIGURE 171: RELATIONSHIP BETWEEN BLACK ALGAE AND WATER HARDNESS

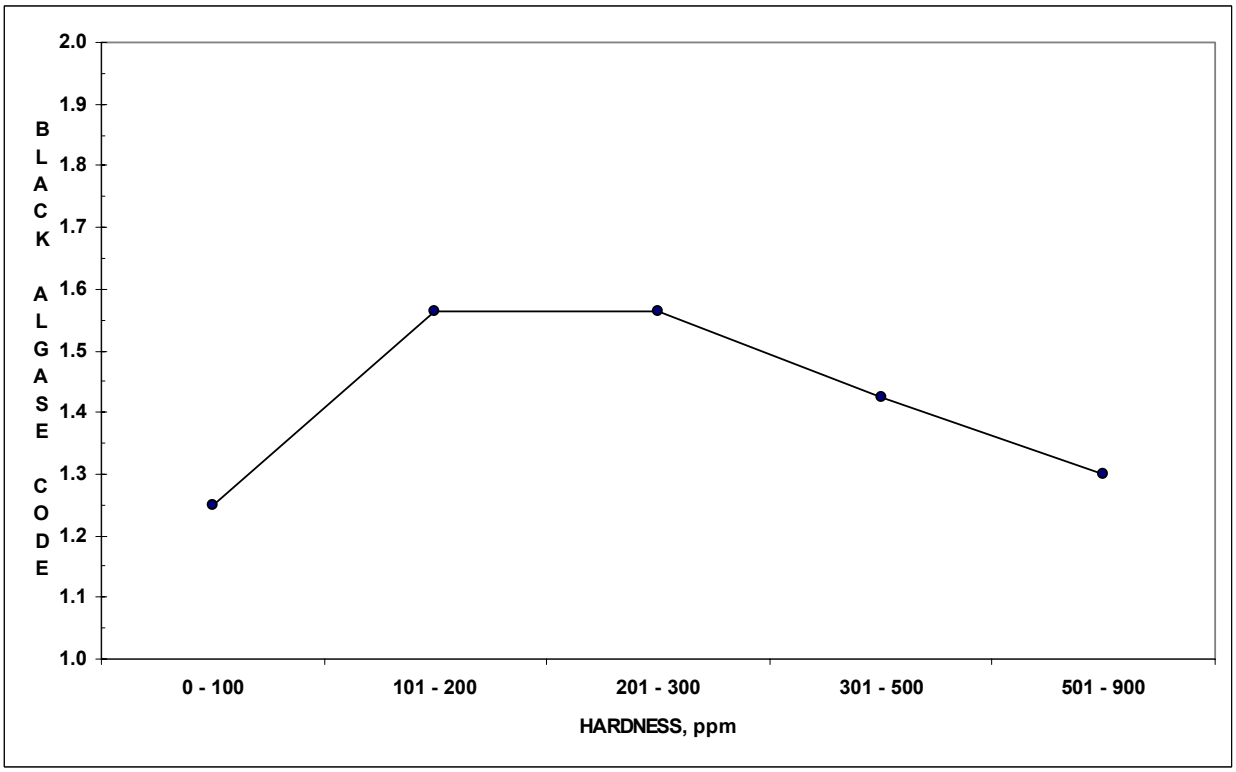


FIGURE 172: RELATIONSHIP BETWEEN BLACK ALGAE AND WATER TEMPERATURE

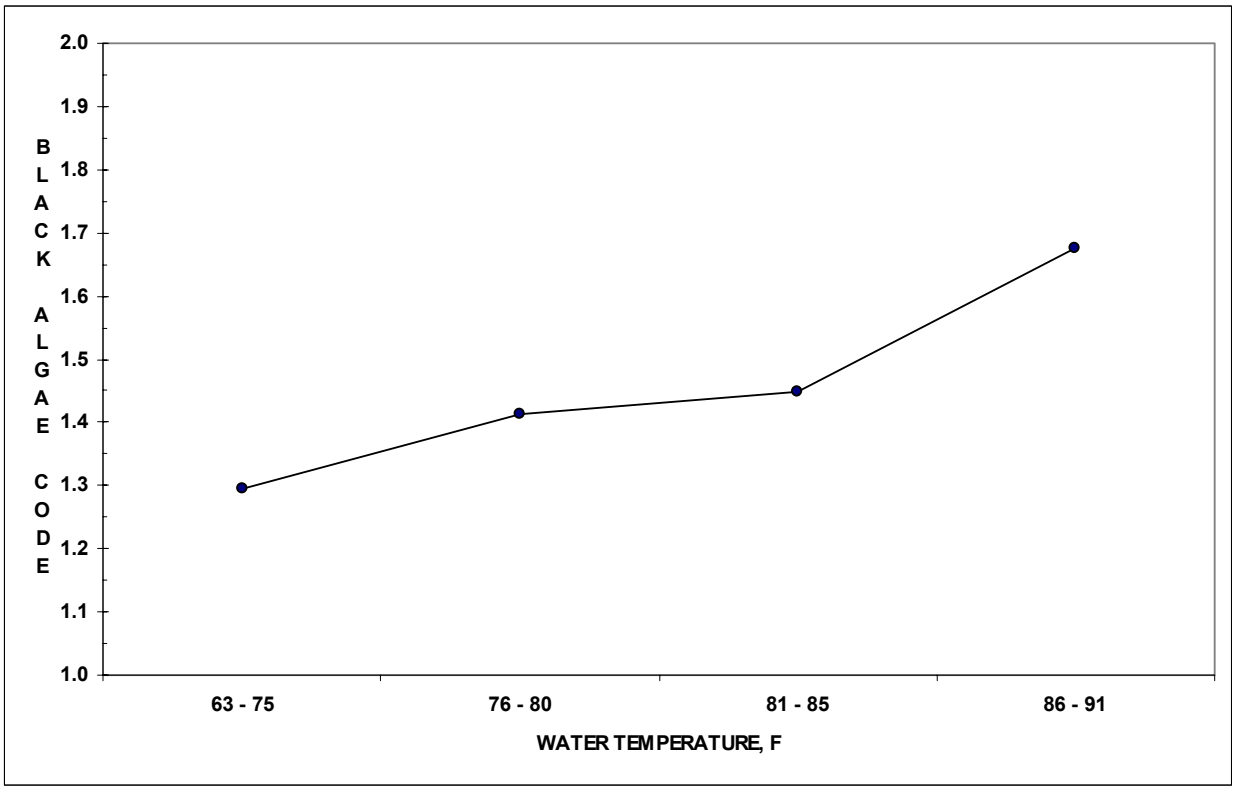


FIGURE 173: RELATIONSHIP BETWEEN BLACK ALGAE AND POOL VOLUME

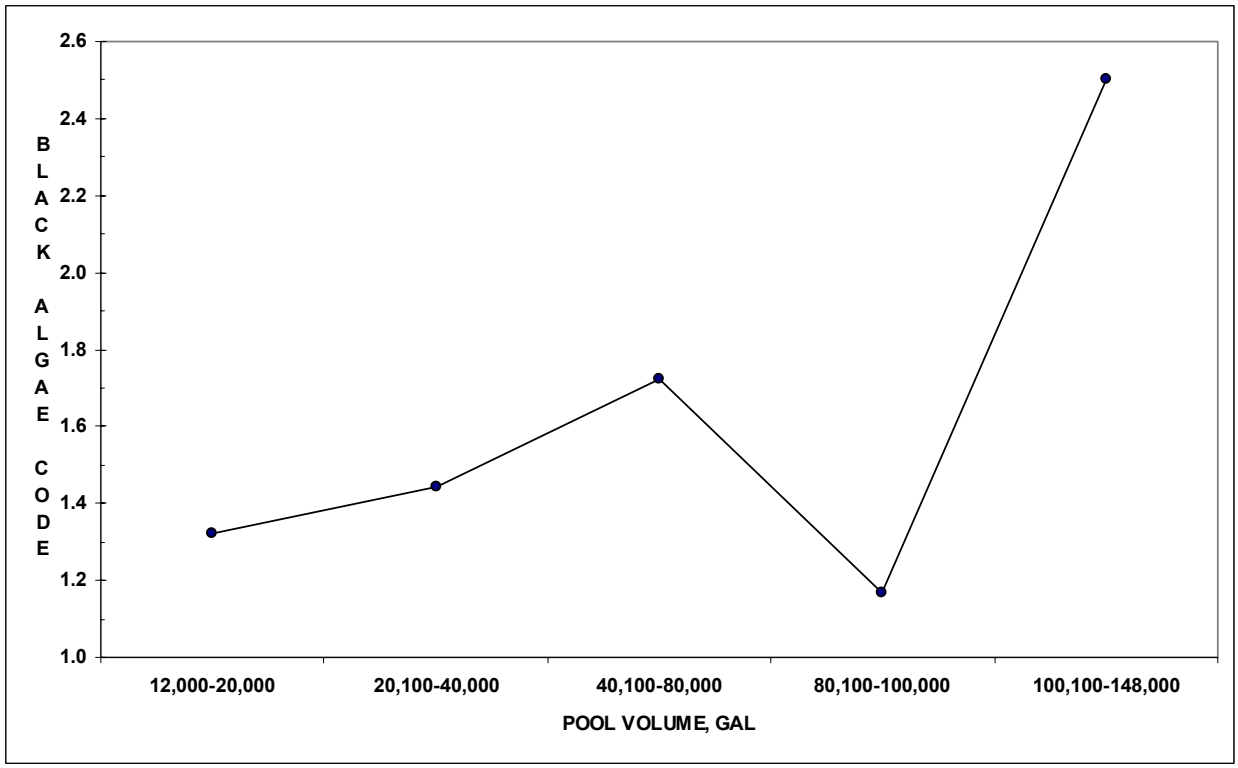


FIGURE 174: RELATIONSHIP BETWEEN BLACK ALGAE AND SANITIZER

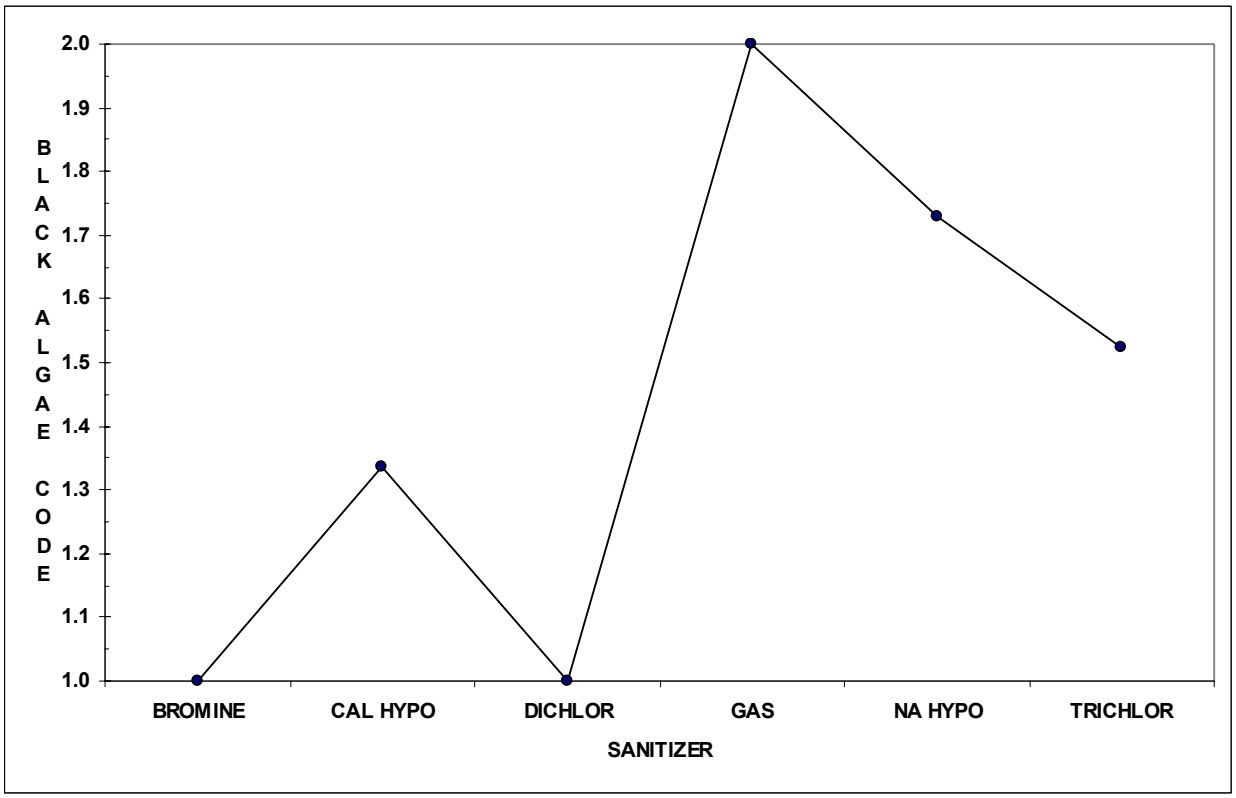


FIGURE 175: RELATIONSHIP BETWEEN BLACK ALGAE AND SURFACE TYPE

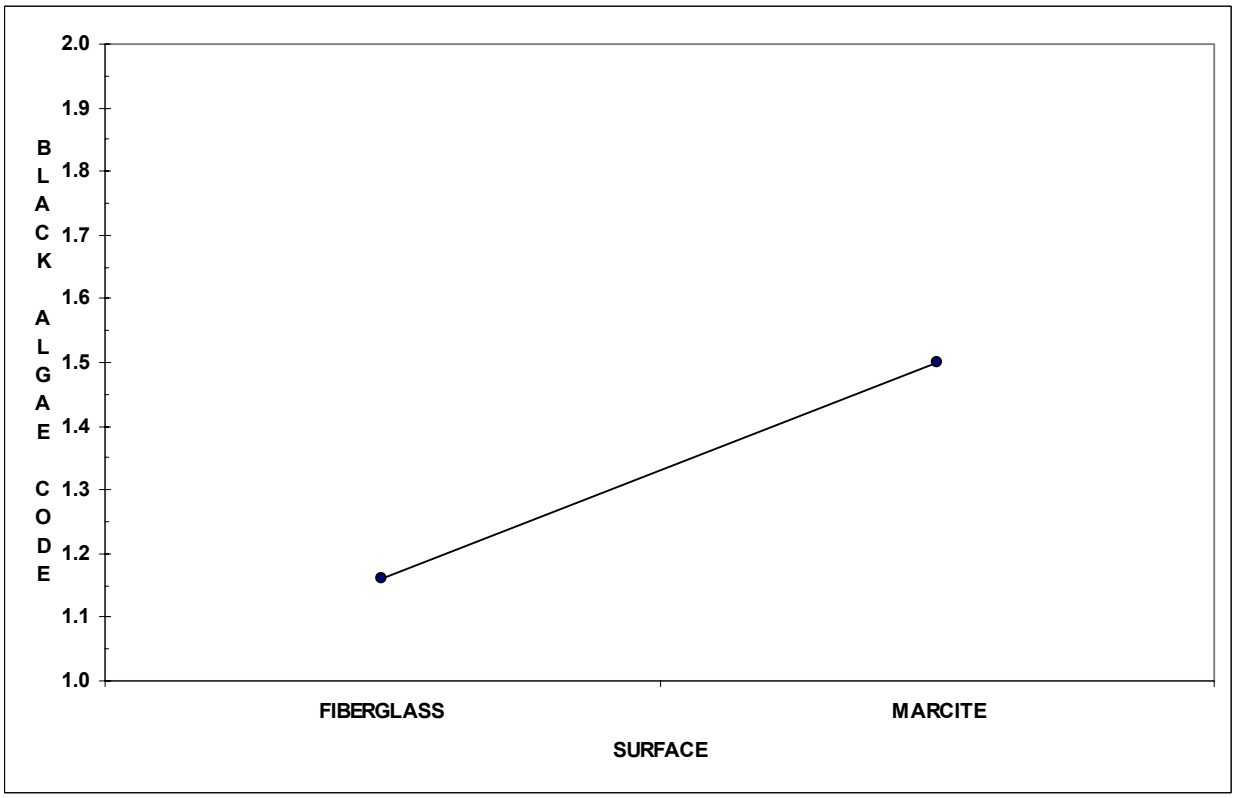


FIGURE 176: RELATIONSHIP BETWEEN BLACK ALGAE AND YELLOW ALGAE

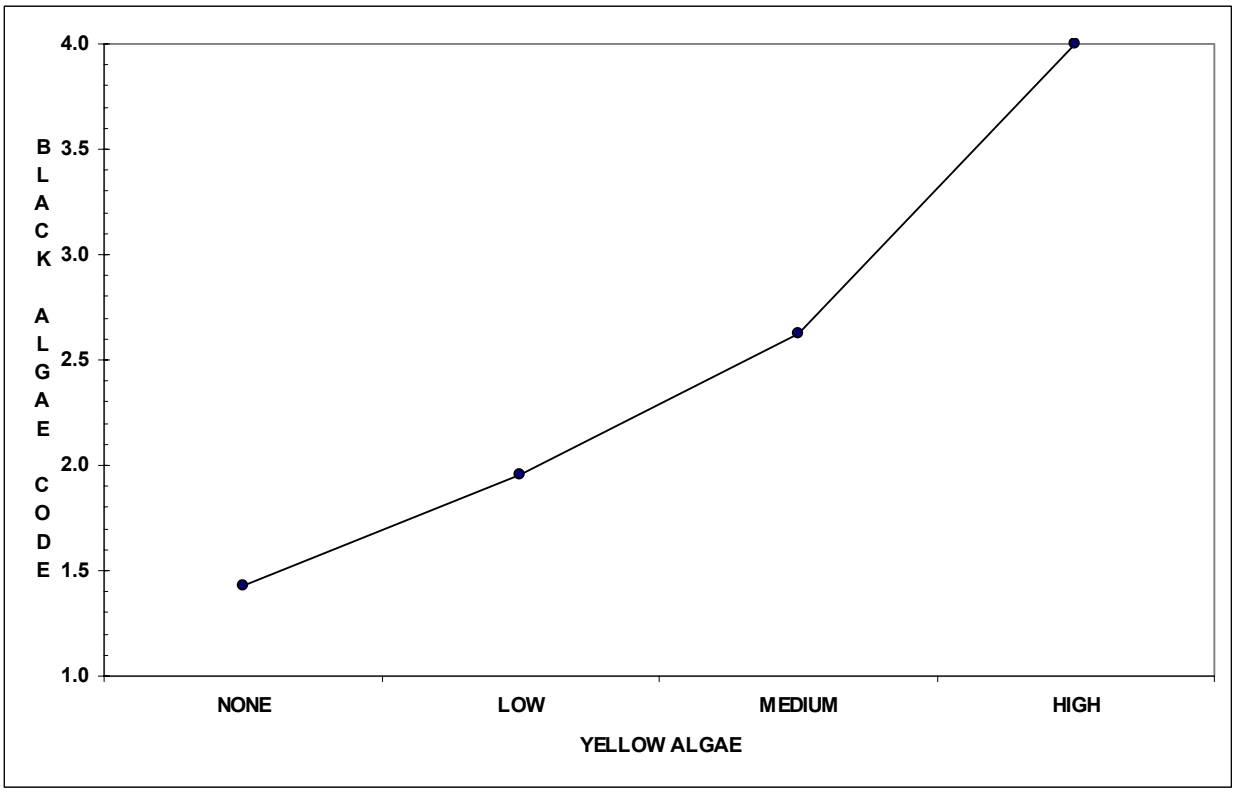


FIGURE 177: RELATIONSHIP BETWEEN YELLOW ALGAE AND FREE CHLORINE

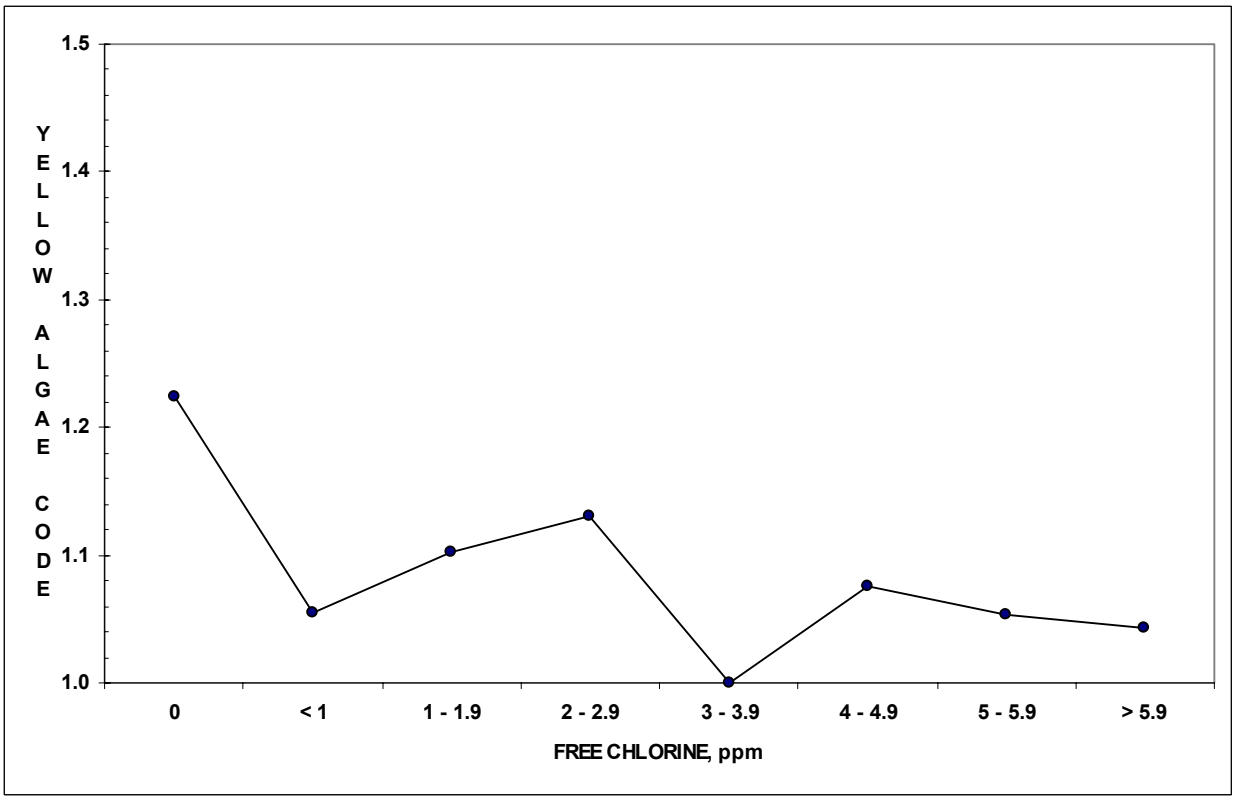


FIGURE 178: RELATIONSHIP BETWEEN YELLOW ALGAE AND TOTAL CHLORINE

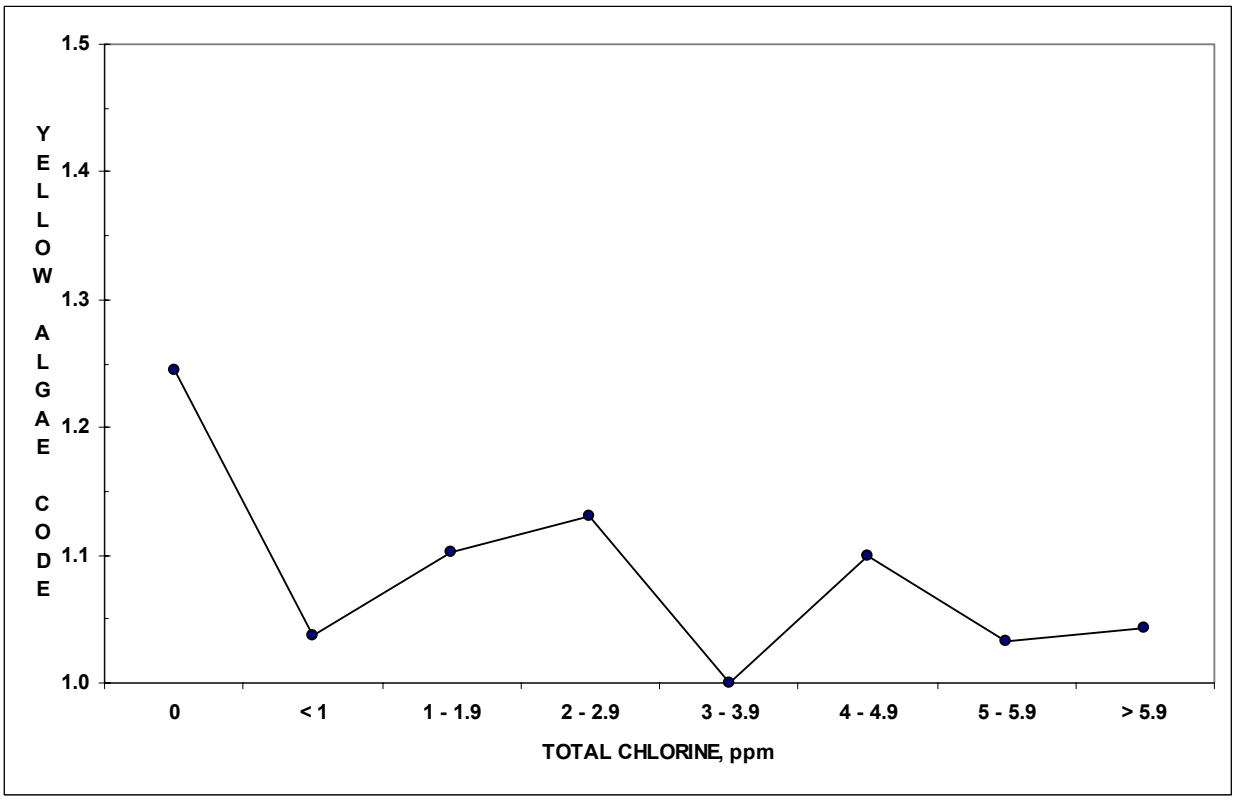


FIGURE 179: RELATIONSHIP BETWEEN YELLOW ALGAE AND POOL VOLUME

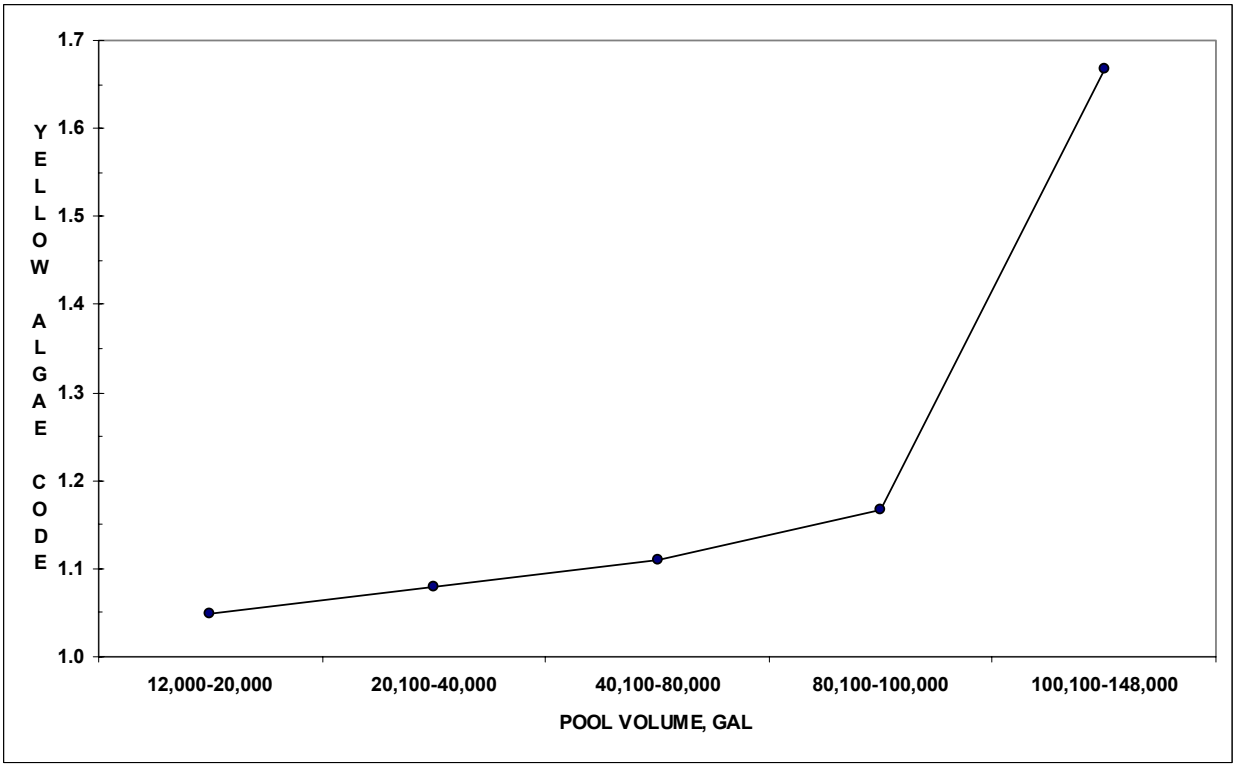


FIGURE 180: RELATIONSHIP BETWEEN YELLOW ALGAE AND SANITIZER

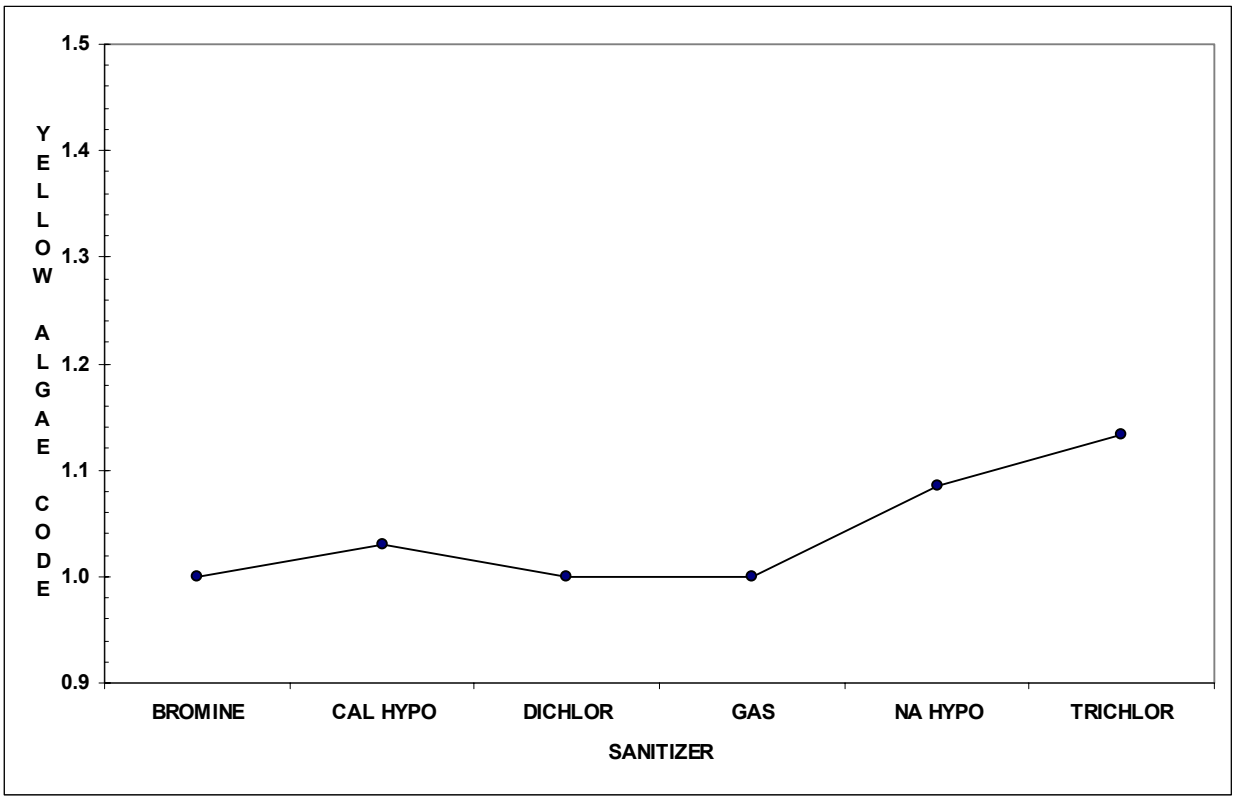


FIGURE 181: YELLOW ALGAE VS SURFACE CONDITION

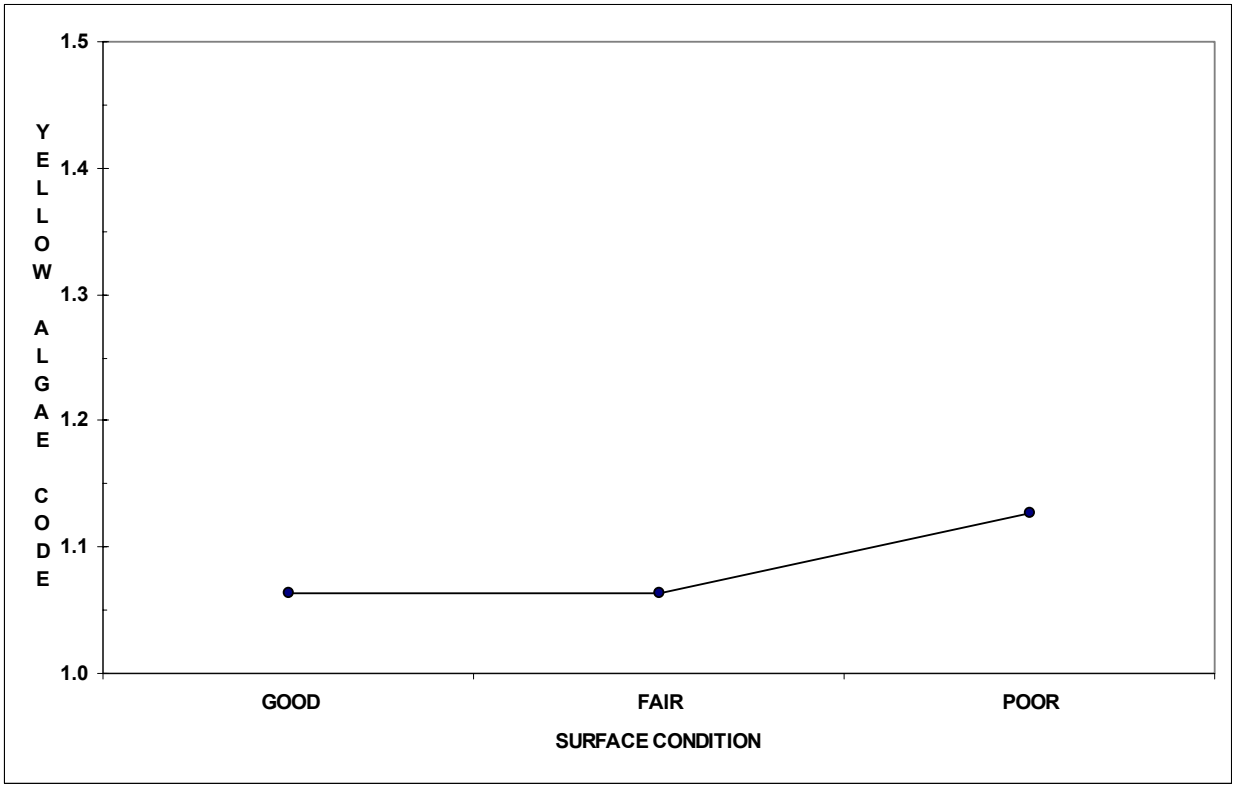


FIGURE 182: RELATIONSHIP BETWEEN YELLOW ALGAE AND WATER HARDNESS

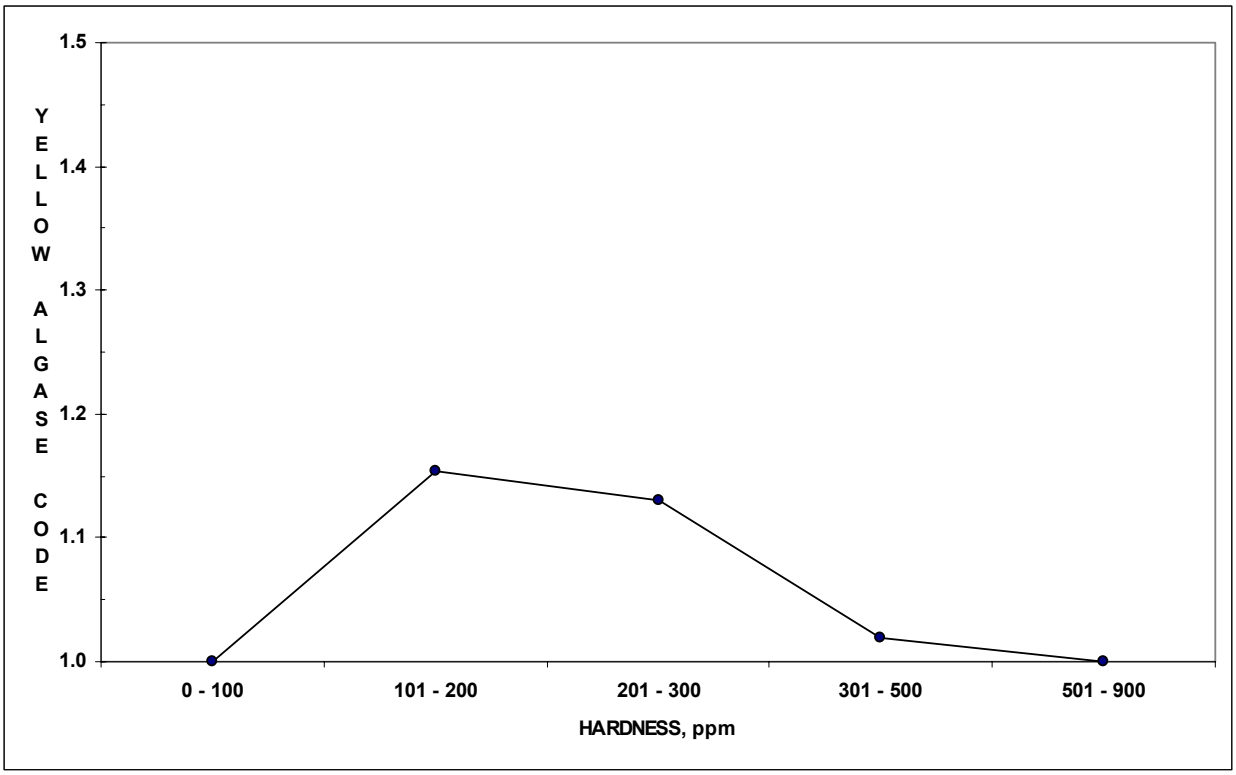


FIGURE 183: RELATIONSHIP BETWEEN YELLOW ALGAE AND WATER SAMPLE COLLECTION DAY

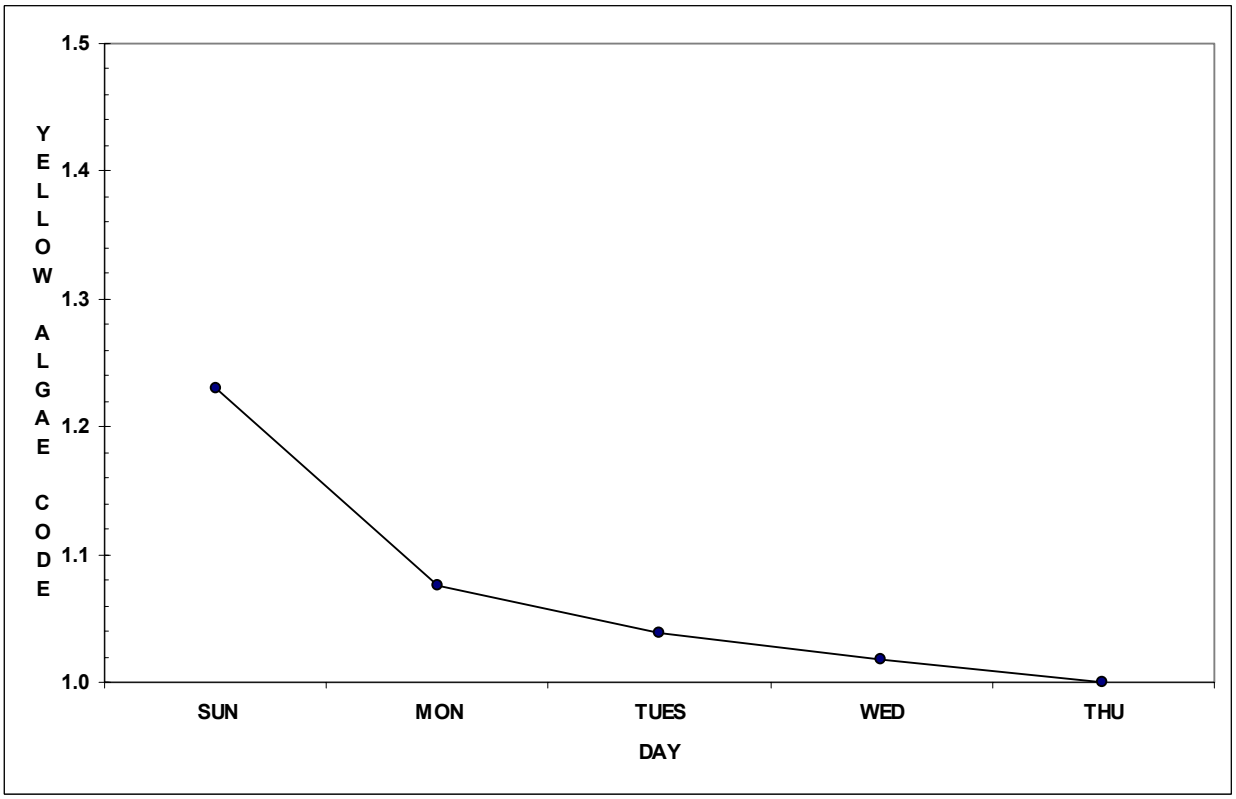
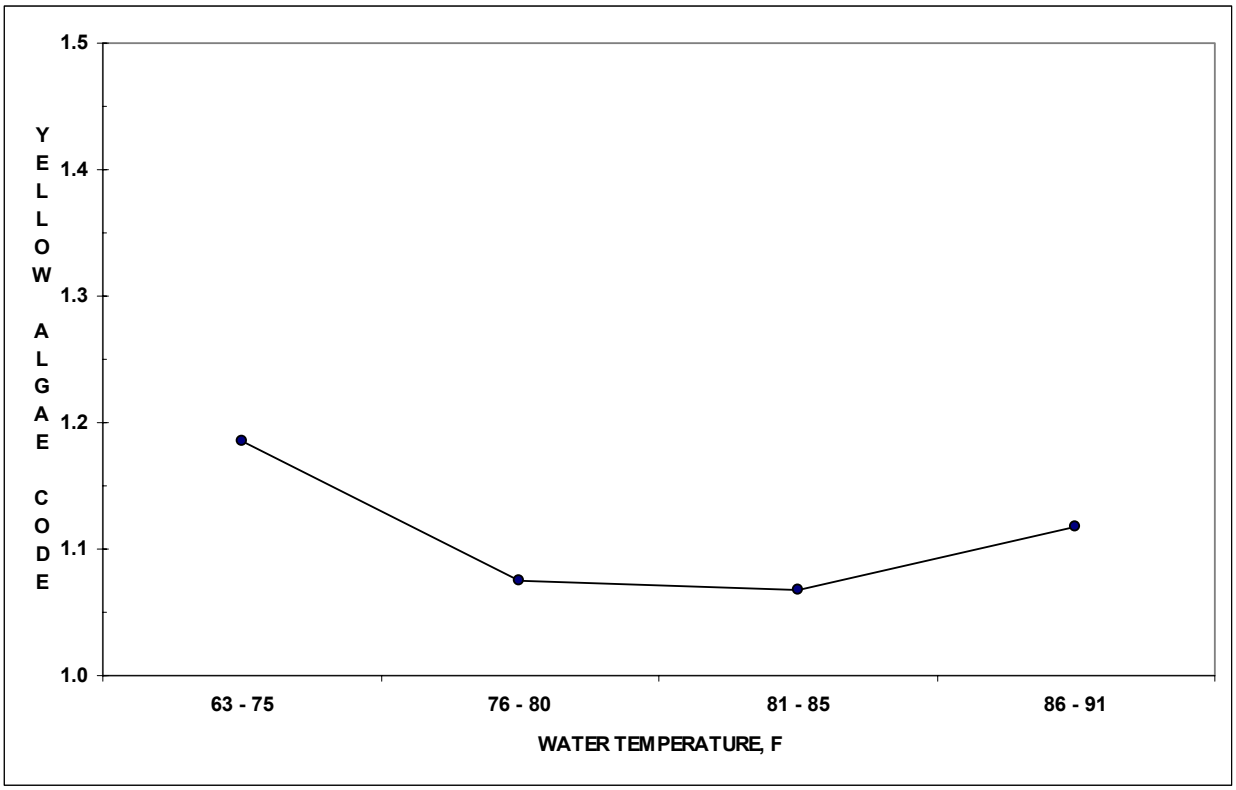


FIGURE 184: RELATIONSHIP BETWEEN YELLOW ALGAE AND WATER TEMPERATURE



Appendix EE

Determination of Pools Satisfactory and Unsatisfactory for Swimming by the Criteria of the Various Judgment Models

FIGURE 185: POOLS DEEMED SATISFACTORY AND UNSATISFACTORY FOR SWIMMING BY MODEL A CRITERIA (BACTERIA ONLY)

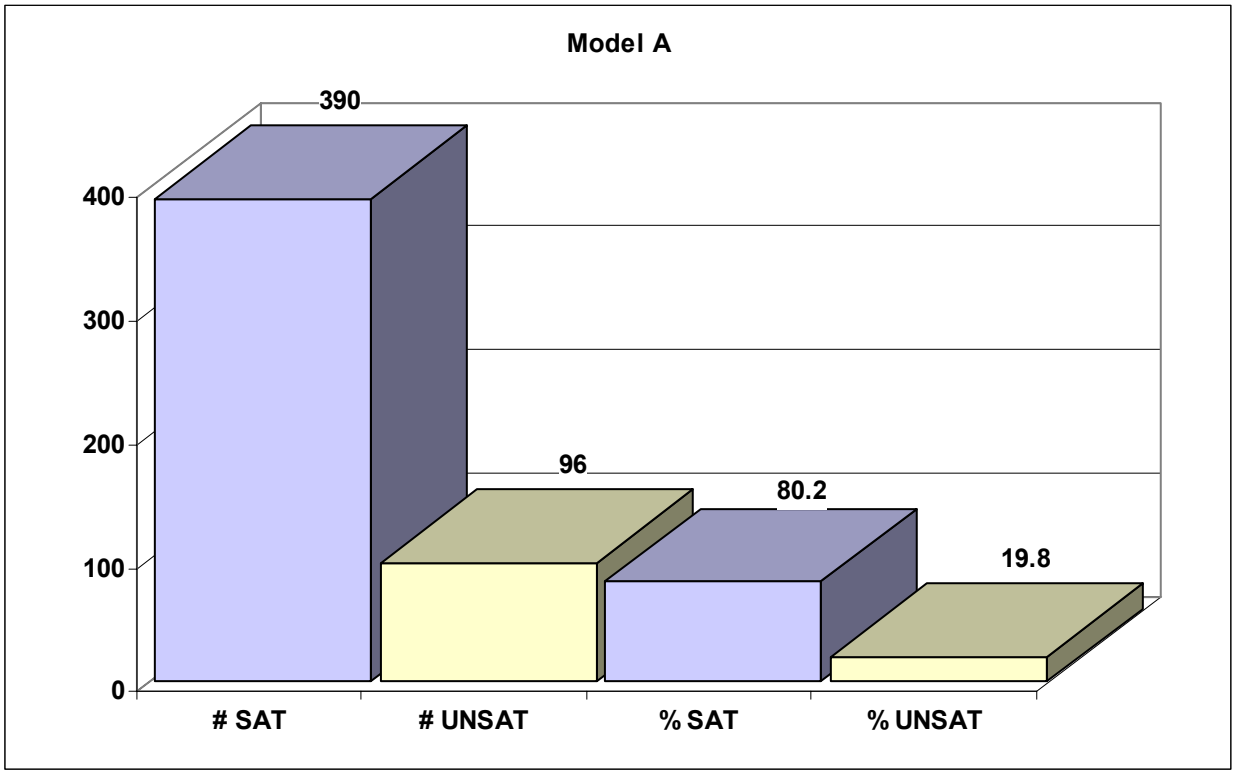


FIGURE 186: POOLS DEEMED SATISFACTORY AND UNSATISFACTORY FOR SWIMMING BY MODEL B CRITERIA (FREE CHLORINE)

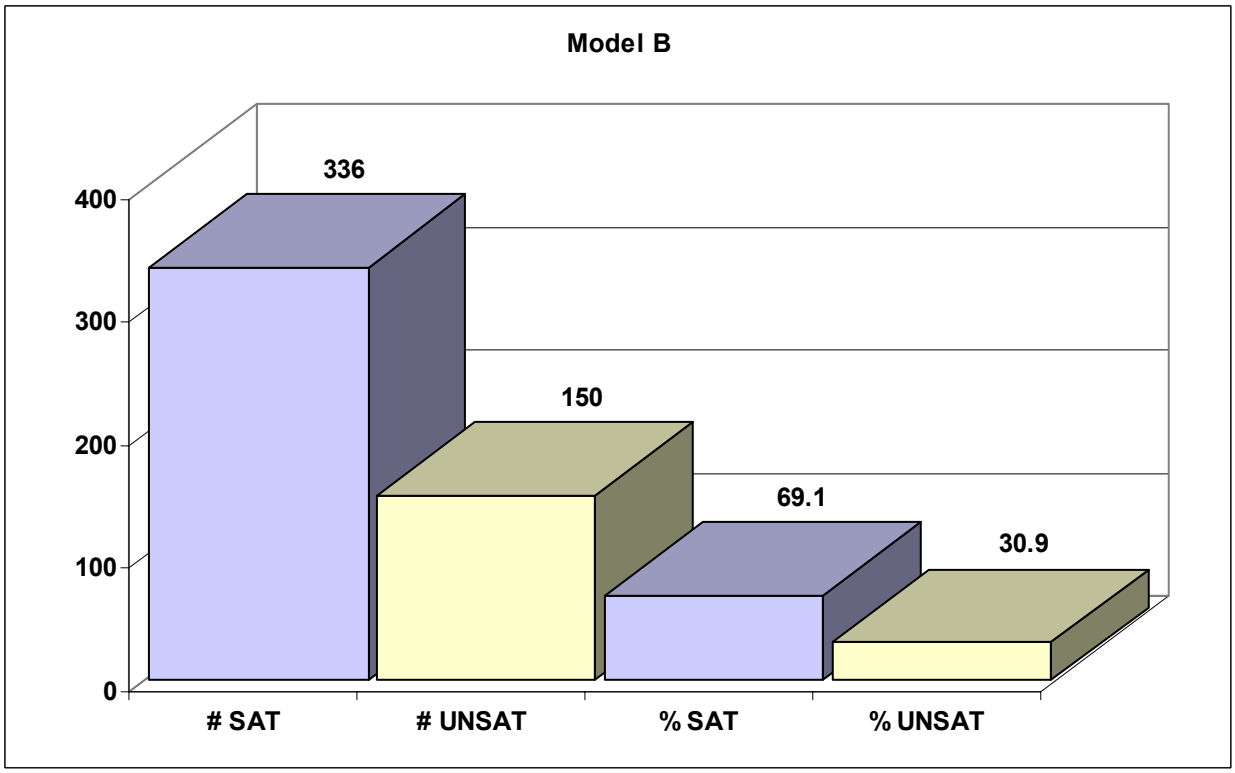


FIGURE 187: POOLS DEEMED SATISFACTORY AND UNSATISFACTORY FOR SWIMMING BY MODEL C CRITERIA (BACTERIA AND FREE CHLORINE)

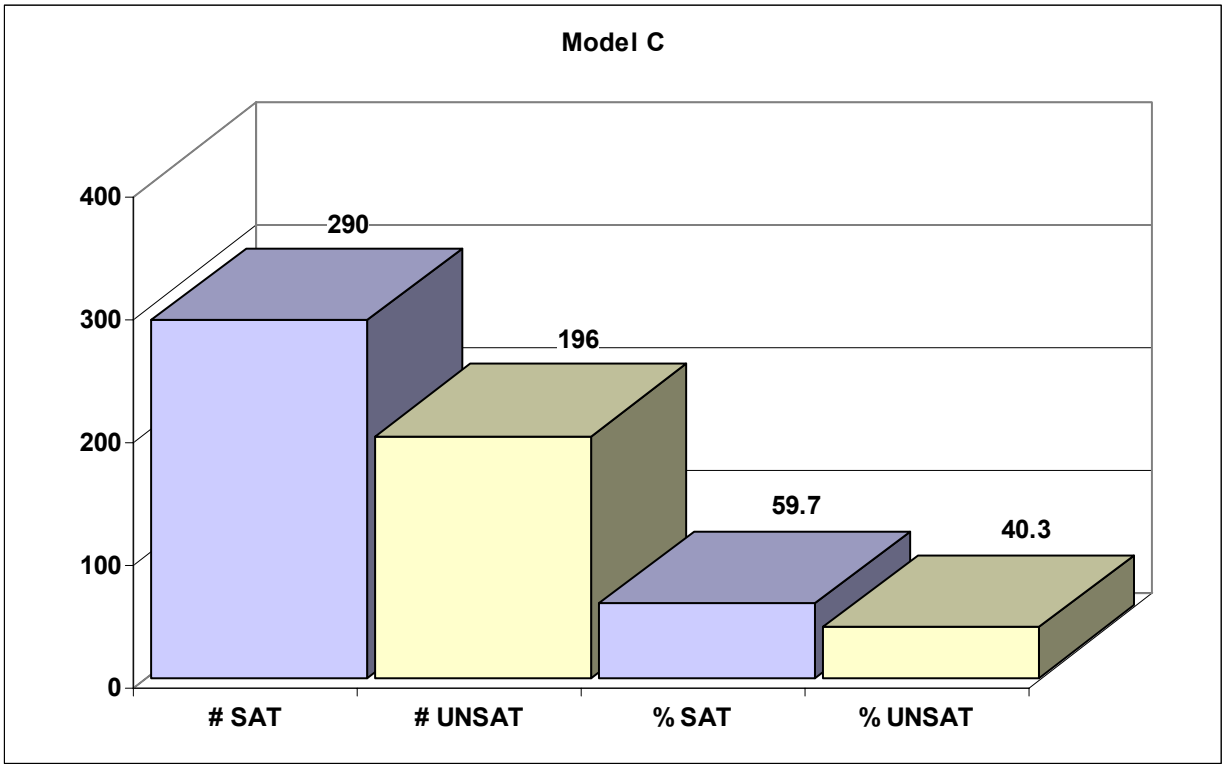


FIGURE 188: POOLS DEEMED SATISFACTORY AND UNSATISFACTORY FOR SWIMMING BY MODEL D CRITERIA (FREE CHLORINE AND pH)

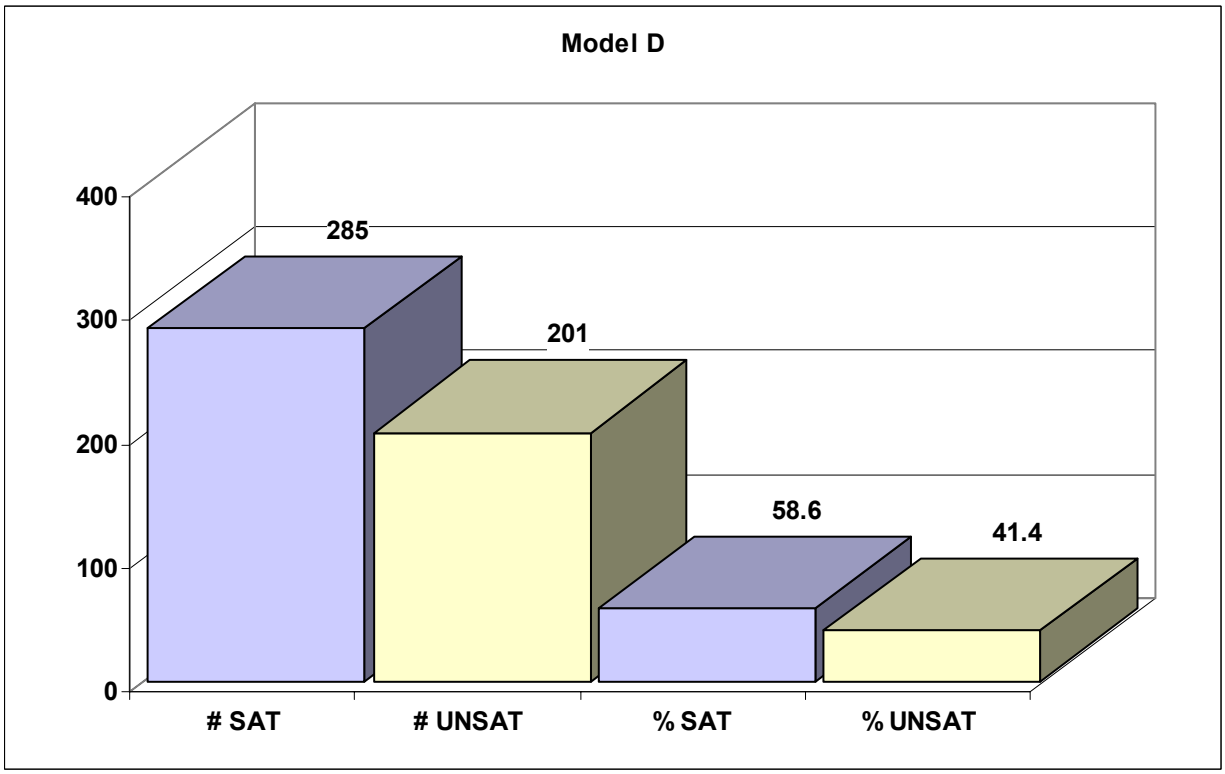


FIGURE 189: POOLS DEEMED SATISFACTORY AND UNSATISFACTORY FOR SWIMMING BY MODEL E CRITERIA (1-5 FREE CHLORINE, pH AND CYANURIC ACID)

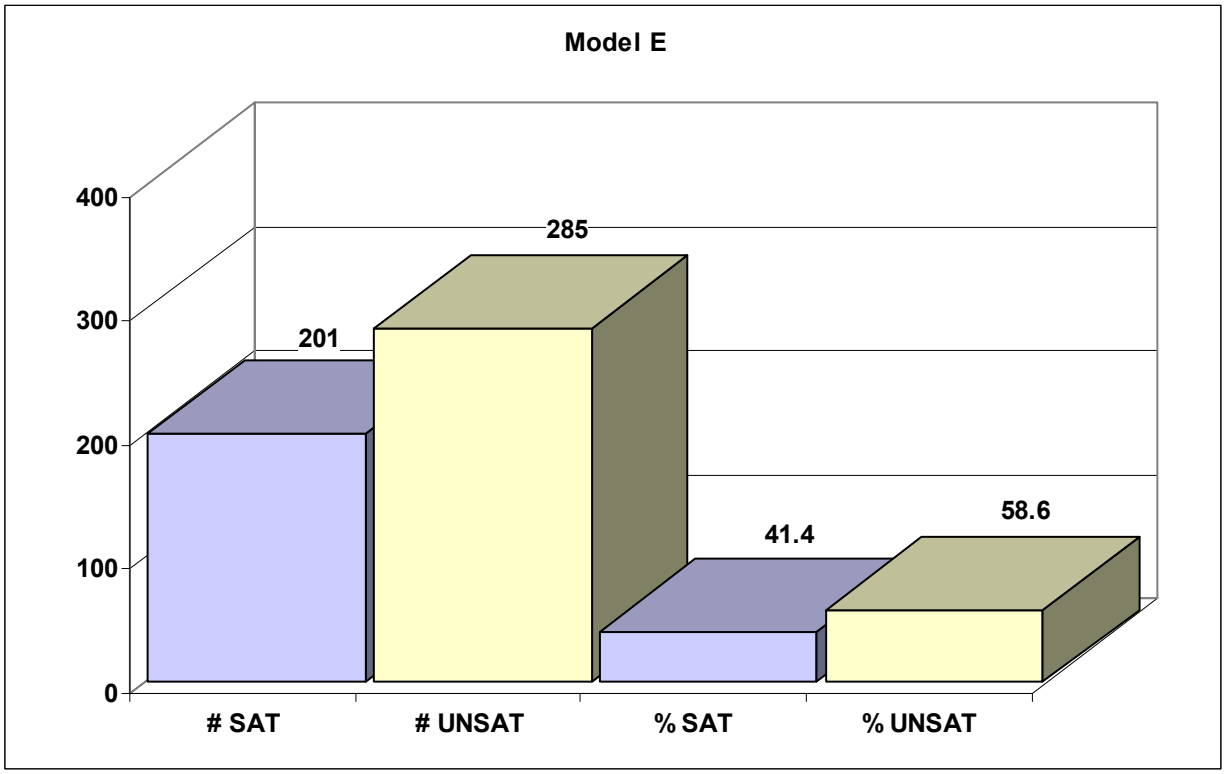


FIGURE 190: POOLS DEEMED SATISFACTORY AND UNSATISFACTORY FOR SWIMMING BY MODEL F CRITERIA (1-3 FREE CHLORINE, pH AND CYANURIC ACID)

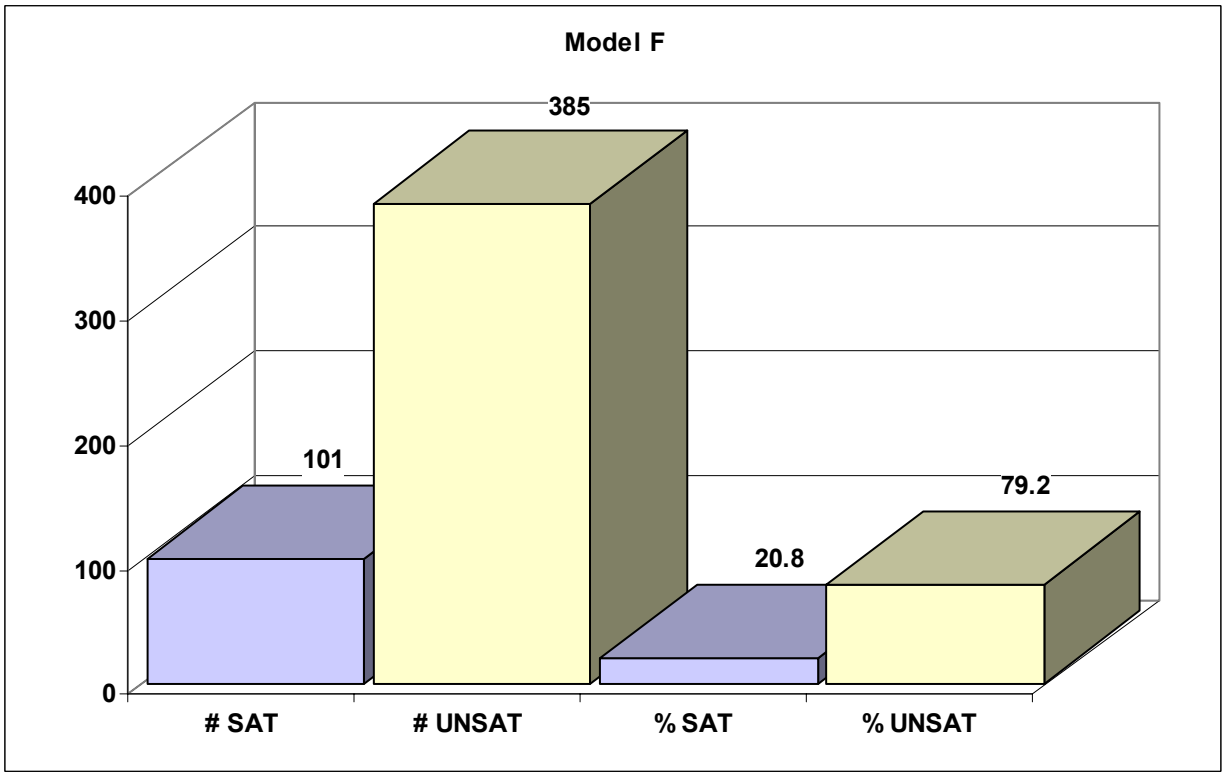


FIGURE 191: % of POOLS DEEMED SATISFACTORY AND UNSATISFACTORY FOR SWIMMING BY POOL JUDGMENT CRITERIA