APPENDIX D

WATER QUALITY BASED LIMITATIONS ANAYSES

9.0 MGD Design Flow

Mixing Zone Predictions
annual
wet season

WQC/WLA Spreadsheet

STATS printouts
Ammonia (yearly and high flow)
Cadmium
Chromium
Copper
Nickel
Zinc

18.0 MGD Design Flow

Mixing Zone Predictions
annual
wet season

STATS printouts for WQC/WLA Spreadsheet input data
upstream expected values (EV)
97th effluent percentiles

WQC/WLA Spreadsheet

STATS printouts
Ammonia (annual and wet season)
Cadmium
Chromium
Copper
Nickel
Zinc

9.0 MGD DESIGN FLOW

Mixing Zone Predictions for Pepper's Ferry RWTA (annual)

Effluent Flow = 9.0 MGD
Stream 7Q10 = 546 MGD
Stream 30Q10 = 633 MGD
Stream 1Q10 = 436 MGD
Stream slope = 0.00093 ft/ft
Stream width = 475 ft
Bottom scale = 4
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = 2.8164 ft
Length = 70864.1 ft
Velocity = .6422 ft/sec
Residence Time = 1.2771 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 3.0748 ft
Length = 65816.89 ft
Velocity = .6804 ft/sec
Residence Time = 1.1195 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = 2.4653 ft
Length = 79254.8 ft
Velocity = .5882 ft/sec
Residence Time = 37.4252 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 2.67% of the 1Q10 is used.

Mixing Zone Predictions for Pepper's Ferry RWTA (wet season)

Effluent Flow = 9.0 MGD
Stream 7Q10 = 758 MGD
Stream 30Q10 = 1053 MGD
Stream 1Q10 = 515 MGD
Stream slope = 0.00093 ft/ft
Stream width = 475 ft
Bottom scale = 4
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = 3.4231 ft
Length = 60128.6 ft
Velocity = .7302 ft/sec
Residence Time = .9531 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 4.1664 ft
Length = 50941.97 ft
Velocity = .8307 ft/sec
Residence Time = .7098 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = 2.7205 ft
Length = 72959.09 ft
Velocity = .6277 ft/sec
Residence Time = 32.2859 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 3.1% of the 1Q10 is used.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Pepper's Ferry Regional Wastewater Treatment Authority Permit No.: VA0062685

Receiving Stream: New River

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	78.7	mg/L
90% Temperature (Annual) =	22.9	deg C
90% Temperature (Wet season) =	16.6	deg C
90% Maximum pH =	8.3	SU
10% Maximum pH =	7.3	SU
Tier Designation (1 or 2) =	2	
Public Water Supply (PWS) Y/N? =	Y	
Trout Present Y/N? =	N	
Early Life Stages Present Y/N? =	Y	

Stream Flows

1Q10 (Annual) =	436	MGD
7Q10 (Annual) =	546	MGD
30Q10 (Annual) =	633	MGD
1Q10 (Wet season) =	515	MGD
30Q10 (Wet season)	1053	MGD
30Q5 =	712	MGD
Harmonic Mean =	1506	MGD

Mixing Information

Annual - 1Q10 Mix =	2.67	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	3.1	%
- 30Q10 Mix =	100	%

Effluent Information

Mean Hardness (as CaCO3) =	223	mg/L
90% Temp (Annual) =	23	deg C
90% Temp (Wet season) =	18	deg C
90% Maximum pH =	7.3	SU
10% Maximum pH =	6.9	SU
Discharge Flow =	9	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	6.7E+02	9.9E+02	--	--	5.4E+04	7.9E+04	--	--	6.7E+01	9.9E+01	--	--	5.4E+03	7.9E+03	**--**	**--**	**5.4E+03**	**7.9E+03**
Acrolein	0	--	--	6.1E+00	9.3E+00	--	--	4.9E+02	7.5E+02	--	--	6.1E-01	9.3E-01	--	--	4.9E+01	7.5E+01	**--**	**--**	**4.9E+01**	**7.5E+01**
Acrylonitrile[c]	0	--	--	5.1E-01	2.5E+00	--	--	8.6E+01	4.2E+02	--	--	5.1E-02	2.5E-01	--	--	8.6E+00	4.2E+01	**--**	**--**	**8.6E+00**	**4.2E+01**
Aldrin [c]	0	3.0E+00	--	4.9E-04	5.0E-04	6.9E+00	--	8.2E-02	8.4E-02	7.5E-01	--	4.9E-05	5.0E-05	3.7E+01	--	8.2E-03	8.4E-03	**6.9E+00**	**--**	**8.2E-03**	**8.4E-03**
Ammonia-N (mg/l) (Yearly)	0.01	1.68E+01	9.66E-01	--	--	3.86E+01	6.82E+01	--	--	1.37E+00	2.49E-01	--	--	6.70E+01	1.71E+01	--	--	**3.86E+01**	**1.71E+01**	**--**	**--**
Ammonia-N (mg/l) (High Flow)	0.01	1.51E+01	1.40E+00	--	--	4.20E+01	1.64E+02	--	--	1.34E+00	3.58E-01	--	--	7.74E+01	4.11E+01	--	--	**4.20E+01**	**4.11E+01**	**--**	**--**
Anthracene	0	--	--	8.3E+03	4.0E+04	--	--	6.6E+05	3.2E+06	--	--	8.3E+02	4.0E+03	--	--	6.6E+04	3.2E+05	**--**	**--**	**6.6E+04**	**3.2E+05**
Antimony	0	--	--	5.6E+00	6.4E+02	--	--	4.5E+02	5.1E+04	--	--	5.6E-01	6.4E+01	--	--	4.5E+01	5.1E+03	**--**	**--**	**4.5E+01**	**5.1E+03**
Arsenic	0.35	3.4E+02	1.5E+02	1.0E+01	--	7.8E+02	9.2E+03	7.7E+02	--	8.5E+01	3.8E+01	1.3E+00	--	4.2E+03	2.3E+03	7.8E+01	--	**7.8E+02**	**2.3E+03**	**7.8E+01**	**--**
Barium	0	--	--	2.0E+03	--	--	--	1.6E+05	--	--	--	2.0E+02	--	--	--	1.6E+04	--	**--**	**--**	**1.6E+04**	**--**
Benzene [c]	0	--	--	2.2E+01	5.1E+02	--	--	3.7E+03	8.6E+04	--	--	2.2E+00	5.1E+01	--	--	3.7E+02	8.6E+03	**--**	**--**	**3.7E+02**	**8.6E+03**
Benzidine[c]	0	--	--	8.6E-04	2.0E-03	--	--	1.4E-01	3.4E-01	--	--	8.6E-05	2.0E-04	--	--	1.4E-02	3.4E-02	**--**	**--**	**1.4E-02**	**3.4E-02**
Benzo (a) anthracene [c]	0	--	--	3.8E-02	1.8E-01	--	--	6.4E+00	3.0E+01	--	--	3.8E-03	1.8E-02	--	--	6.4E-01	3.0E+00	**--**	**--**	**6.4E-01**	**3.0E+00**
Benzo (b) fluoranthene [c]	0	--	--	3.8E-02	1.8E-01	--	--	6.4E+00	3.0E+01	--	--	3.8E-03	1.8E-02	--	--	6.4E-01	3.0E+00	**--**	**--**	**6.4E-01**	**3.0E+00**
Benzo (k) fluoranthene [c]	0	--	--	3.8E-02	1.8E-01	--	--	6.4E+00	3.0E+01	--	--	3.8E-03	1.8E-02	--	--	6.4E-01	3.0E+00	**--**	**--**	**6.4E-01**	**3.0E+00**
Benzo (a) pyrene [c]	0	--	--	3.8E-02	1.8E-01	--	--	6.4E+00	3.0E+01	--	--	3.8E-03	1.8E-02	--	--	6.4E-01	3.0E+00	**--**	**--**	**6.4E-01**	**3.0E+00**
Bis2-Chloroethyl Ether [c]	0	--	--	3.0E-01	5.3E+00	--	--	5.1E+01	8.9E+02	--	--	3.0E-02	5.3E-01	--	--	5.1E+00	8.9E+01	**--**	**--**	**5.1E+00**	**8.9E+01**
Bis2-Chloroisopropyl Ether	0	--	--	1.4E+03	6.5E+04	--	--	1.1E+05	5.2E+06	--	--	1.4E+02	6.5E+03	--	--	1.1E+04	5.2E+05	**--**	**--**	**1.1E+04**	**5.2E+05**
Bis 2-Ethylhexyl Phthalate [c]	0	--	--	1.2E+01	2.2E+01	--	--	2.0E+03	3.7E+03	--	--	1.2E+00	2.2E+00	--	--	2.0E+02	3.7E+02	**--**	**--**	**2.0E+02**	**3.7E+02**
Bromoform [c]	0	--	--	4.3E+01	1.4E+03	--	--	7.2E+03	2.4E+05	--	--	4.3E+00	1.4E+02	--	--	7.2E+02	2.4E+04	**--**	**--**	**7.2E+02**	**2.4E+04**
Butylbenzylphthalate	0	--	--	1.5E+03	1.9E+03	--	--	1.2E+05	1.5E+05	--	--	1.5E+02	1.9E+02	--	--	1.2E+04	1.5E+04	**--**	**--**	**1.2E+04**	**1.5E+04**
Cadmium	0	5.8E+00	9.6E-01	5.0E+00	--	1.3E+01	5.9E+01	4.0E+02	--	7.8E-01	2.4E-01	5.0E-01	--	3.9E+01	1.5E+01	4.0E+01	--	**1.3E+01**	**1.5E+01**	**4.0E+01**	**--**
Carbon Tetrachloride [c]	0	--	--	2.3E+00	1.6E+01	--	--	3.9E+02	2.7E+03	--	--	2.3E-01	1.6E+00	--	--	3.9E+01	2.7E+02	**--**	**--**	**3.9E+01**	**2.7E+02**
Chlordane [c]	0	2.4E+00	4.3E-03	8.0E-03	8.1E-03	5.5E+00	2.7E-01	1.3E+00	1.4E+00	6.0E-01	1.1E-03	8.0E-04	8.1E-04	3.0E+01	6.6E-02	1.3E-01	1.4E-01	**5.5E+00**	**6.6E-02**	**1.3E-01**	**1.4E-01**
Chloride	9120	8.6E+05	2.3E+05	2.5E+05	--	2.0E+06	1.4E+07	1.9E+07	--	2.2E+05	6.4E+04	3.3E+04	--	1.1E+07	3.4E+06	1.9E+06	--	**2.0E+06**	**3.4E+06**	**1.9E+06**	**--**
TRC	0	1.9E+01	1.1E+01	--	--	4.4E+01	6.8E+02	--	--	4.8E+00	2.8E+00	--	--	2.3E+02	1.7E+02	--	--	**4.4E+01**	**1.7E+02**	**--**	**--**
Chlorobenzene	0	--	--	1.3E+02	1.6E+03	--	--	1.0E+04	1.3E+05	--	--	1.3E+01	1.6E+02	--	--	1.0E+03	1.3E+04	**--**	**--**	**1.0E+03**	**1.3E+04**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[c]	0	--	--	4.0E+00	1.3E+02	--	--	6.7E+02	2.2E+04	--	--	4.0E-01	1.3E+01	--	--	6.7E+01	2.2E+03	--	--	6.7E+01	2.2E+03
Chloroform	0	--	--	3.4E+02	1.1E+04	--	--	2.7E+04	8.8E+05	--	--	3.4E+01	1.1E+03	--	--	2.7E+03	8.8E+04	--	--	2.7E+03	8.8E+04
2-Chloronaphthalene	0	--	--	1.0E+03	1.6E+03	--	--	8.0E+04	1.3E+05	--	--	1.0E+02	1.6E+02	--	--	8.0E+03	1.3E+04	--	--	8.0E+03	1.3E+04
2-Chlorophenol	0	--	--	8.1E+01	1.5E+02	--	--	6.5E+03	1.2E+04	--	--	8.1E+00	1.5E+01	--	--	6.5E+02	1.2E+03	--	--	6.5E+02	1.2E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	--	--	1.9E-01	2.5E+00	--	--	2.1E-02	1.0E-02	--	--	1.0E+00	6.3E-01	--	--	1.9E-01	6.3E-01	--	--
Chromium III	0	7.6E+02	6.2E+01	--	--	1.7E+03	3.8E+03	--	--	1.2E+02	1.6E+01	--	--	6.0E+03	9.6E+02	--	--	1.7E+03	9.6E+02	--	--
Chromium VI	0	1.6E+01	1.1E+01	--	--	3.7E+01	6.8E+02	--	--	4.0E+00	2.8E+00	--	--	2.0E+02	1.7E+02	--	--	3.7E+01	1.7E+02	--	--
Chromium, Total	0.18	--	--	1.0E+02	--	--	--	8.0E+03	--	--	--	1.0E+01	--	--	--	8.0E+02	--	--	--	8.0E+02	--
Chrysene [c]	0	--	--	3.8E-03	1.8E-02	--	--	6.4E-01	3.0E+00	--	--	3.8E-04	1.8E-03	--	--	6.4E-02	3.0E-01	--	--	6.4E-02	3.0E-01
Copper	0.65	1.9E+01	7.5E+00	1.3E+03	--	4.2E+01	4.2E+02	1.0E+05	--	3.3E+00	2.4E+00	1.3E+02	--	1.3E+02	1.1E+02	1.0E+04	--	4.2E+01	1.1E+02	1.0E+04	--
Cyanide, Free	0	2.2E+01	5.2E+00	1.4E+02	1.6E+04	5.0E+01	3.2E+02	1.1E+04	1.3E+06	5.5E+00	1.3E+00	1.4E+01	1.6E+03	2.7E+02	8.0E+01	1.1E+03	1.3E+05	5.0E+01	8.0E+01	1.1E+03	1.3E+05
DDD [c]	0	--	--	3.1E-03	3.1E-03	--	--	5.2E-01	5.2E-01	--	--	3.1E-04	3.1E-04	--	--	5.2E-02	5.2E-02	--	--	5.2E-02	5.2E-02
DDE [c]	0	--	--	2.2E-03	2.2E-03	--	--	3.7E-01	3.7E-01	--	--	2.2E-04	2.2E-04	--	--	3.7E-02	3.7E-02	--	--	3.7E-02	3.7E-02
DDT [c]	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	2.5E+00	6.2E-02	3.7E-01	3.7E-01	2.8E-01	2.5E-04	2.2E-04	2.2E-04	1.4E+01	1.5E-02	3.7E-02	3.7E-02	2.5E+00	1.5E-02	3.7E-02	3.7E-02
Demeton	0	--	1.0E-01	--	--	--	6.2E+00	--	--	--	2.5E-02	--	--	--	1.5E+00	--	--	--	1.5E+00	--	--
Diazinon	0	1.7E-01	1.7E-01	--	--	3.9E-01	1.0E+01	--	--	4.3E-02	4.3E-02	--	--	2.1E+00	2.6E+00	--	--	3.9E-01	2.6E+00	--	--
Dibenz(a,h)anthracene [c]	0	--	--	3.8E-02	1.8E-01	--	--	6.4E+00	3.0E+01	--	--	3.8E-03	1.8E-02	--	--	6.4E-01	3.0E+00	--	--	6.4E-01	3.0E+00
1,2-Dichlorobenzene	0	--	--	4.2E+02	1.3E+03	--	--	3.4E+04	1.0E+05	--	--	4.2E+01	1.3E+02	--	--	3.4E+03	1.0E+04	--	--	3.4E+03	1.0E+04
1,3-Dichlorobenzene	0	--	--	3.2E+02	9.6E+02	--	--	2.6E+04	7.7E+04	--	--	3.2E+01	9.6E+01	--	--	2.6E+03	7.7E+03	--	--	2.6E+03	7.7E+03
1,4-Dichlorobenzene	0	--	--	6.3E+01	1.9E+02	--	--	5.0E+03	1.5E+04	--	--	6.3E+00	1.9E+01	--	--	5.0E+02	1.5E+03	--	--	5.0E+02	1.5E+03
3,3-Dichlorobenzidine[c]	0	--	--	2.1E-01	2.8E-01	--	--	3.5E+01	4.7E+01	--	--	2.1E-02	2.8E-02	--	--	3.5E+00	4.7E+00	--	--	3.5E+00	4.7E+00
Dichlorobromomethane [c]	0	--	--	5.5E+00	1.7E+02	--	--	9.3E+02	2.9E+04	--	--	5.5E-01	1.7E+01	--	--	9.3E+01	2.9E+03	--	--	9.3E+01	2.9E+03
1,2-Dichloroethane [c]	0	--	--	3.8E+00	3.7E+02	--	--	6.4E+02	6.2E+04	--	--	3.8E-01	3.7E+01	--	--	6.4E+01	6.2E+03	--	--	6.4E+01	6.2E+03
1,1-Dichloroethylene	0	--	--	3.3E+02	7.1E+03	--	--	2.6E+04	5.7E+05	--	--	3.3E+01	7.1E+02	--	--	2.6E+03	5.7E+04	--	--	2.6E+03	5.7E+04
1,2-trans-dichloroethylene	0	--	--	1.4E+02	1.0E+04	--	--	1.1E+04	8.0E+05	--	--	1.4E+01	1.0E+03	--	--	1.1E+03	8.0E+04	--	--	1.1E+03	8.0E+04
2,4-Dichlorophenol	0	--	--	7.7E+01	2.9E+02	--	--	6.2E+03	2.3E+04	--	--	7.7E+00	2.9E+01	--	--	6.2E+02	2.3E+03	--	--	6.2E+02	2.3E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	1.0E+02	--	--	--	8.0E+03	--	--	--	1.0E+01	--	--	--	8.0E+02	--	--	--	8.0E+02	--
1,2-Dichloropropane[c]	0	--	--	5.0E+00	1.5E+02	--	--	8.4E+02	2.5E+04	--	--	5.0E-01	1.5E+01	--	--	8.4E+01	2.5E+03	--	--	8.4E+01	2.5E+03
1,3-Dichloropropene [c]	0	--	--	3.4E+00	2.1E+02	--	--	5.7E+02	3.5E+04	--	--	3.4E-01	2.1E+01	--	--	5.7E+01	3.5E+03	--	--	5.7E+01	3.5E+03
Dieldrin [c]	0	2.4E-01	5.6E-02	5.2E-04	5.4E-04	5.5E-01	3.5E+00	8.8E-02	9.1E-02	6.0E-02	1.4E-02	5.2E-05	5.4E-05	3.0E+00	8.6E-01	8.8E-03	9.1E-03	5.5E-01	8.6E-01	8.8E-03	9.1E-03
Diethyl Phthalate	0	--	--	1.7E+04	4.4E+04	--	--	1.4E+06	3.5E+06	--	--	1.7E+03	4.4E+03	--	--	1.4E+05	3.5E+05	--	--	1.4E+05	3.5E+05
2,4-Dimethylphenol	0	--	--	3.8E+02	8.5E+02	--	--	3.0E+04	6.8E+04	--	--	3.8E+01	8.5E+01	--	--	3.0E+03	6.8E+03	--	--	3.0E+03	6.8E+03
Dimethyl Phthalate	0	--	--	2.7E+05	1.1E+06	--	--	2.2E+07	8.8E+07	--	--	2.7E+04	1.1E+05	--	--	2.2E+06	8.8E+06	--	--	2.2E+06	8.8E+06
Di-n-Butyl Phthalate	0	--	--	2.0E+03	4.5E+03	--	--	1.6E+05	3.6E+05	--	--	2.0E+02	4.5E+02	--	--	1.6E+04	3.6E+04	--	--	1.6E+04	3.6E+04
2,4 Dinitrophenol	0	--	--	6.9E+01	5.3E+03	--	--	5.5E+03	4.2E+05	--	--	6.9E+00	5.3E+02	--	--	5.5E+02	4.2E+04	--	--	5.5E+02	4.2E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	1.3E+01	2.8E+02	--	--	1.0E+03	2.2E+04	--	--	1.3E+00	2.8E+01	--	--	1.0E+02	2.2E+03	--	--	1.0E+02	2.2E+03
2,4-Dinitrotoluene [c]	0	--	--	1.1E+00	3.4E+01	--	--	1.9E+02	5.7E+03	--	--	1.1E-01	3.4E+00	--	--	1.9E+01	5.7E+02	--	--	1.9E+01	5.7E+02
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	5.0E-08	5.1E-08	--	--	4.0E-06	4.1E-06	--	--	5.0E-09	5.1E-09	--	--	4.0E-07	4.1E-07	--	--	4.0E-07	4.1E-07
1,2-Diphenylhydrazine[c]	0	--	--	3.6E-01	2.0E+00	--	--	6.1E+01	3.4E+02	--	--	3.6E-02	2.0E-01	--	--	6.1E+00	3.4E+01	--	--	6.1E+00	3.4E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	5.0E-01	3.5E+00	5.0E+03	7.1E+03	5.5E-02	1.4E-02	6.2E+00	8.9E+00	2.7E+00	8.6E-01	5.0E+02	7.1E+02	5.0E-01	8.6E-01	5.0E+02	7.1E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	5.0E-01	3.5E+00	5.0E+03	7.1E+03	5.5E-02	1.4E-02	6.2E+00	8.9E+00	2.7E+00	8.6E-01	5.0E+02	7.1E+02	5.0E-01	8.6E-01	5.0E+02	7.1E+02
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	5.0E-01	3.5E+00	--	--	5.5E-02	1.4E-02	--	--	2.7E+00	8.6E-01	--	--	5.0E-01	8.6E-01	--	--
Endosulfan Sulfate	0	--	--	6.2E+01	8.9E+01	--	--	5.0E+03	7.1E+03	--	--	6.2E+00	8.9E+00	--	--	5.0E+02	7.1E+02	--	--	5.0E+02	7.1E+02
Endrin	0	8.6E-02	3.6E-02	5.9E-02	6.0E-02	2.0E-01	2.2E+00	4.7E+00	4.8E+00	2.2E-02	9.0E-03	5.9E-03	6.0E-03	1.1E+00	5.6E-01	4.7E-01	4.8E-01	2.0E-01	5.6E-01	4.7E-01	4.8E-01
Endrin Aldehyde	0	--	--	2.9E-01	3.0E-01	--	--	2.3E+01	2.4E+01	--	--	2.9E-02	3.0E-02	--	--	2.3E+00	2.4E+00	--	--	2.3E+00	2.4E+00

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	5.3E+02	2.1E+03	--	--	4.2E+04	1.7E+05	--	--	5.3E+01	2.1E+02	--	--	4.2E+03	1.7E+04	--	--	4.2E+03	1.7E+04
Fluoranthene	0	--	--	1.3E+02	1.4E+02	--	--	1.0E+04	1.1E+04	--	--	1.3E+01	1.4E+01	--	--	1.0E+03	1.1E+03	--	--	1.0E+03	1.1E+03
Fluorene	0	--	--	1.1E+03	5.3E+03	--	--	8.8E+04	4.2E+05	--	--	1.1E+02	5.3E+02	--	--	8.8E+03	4.2E+04	--	--	8.8E+03	4.2E+04
Foaming Agents	0	--	--	5.0E+02	--	--	--	4.0E+04	--	--	--	5.0E+01	--	--	--	4.0E+03	--	--	--	4.0E+03	--
Guthion	0	--	1.0E-02	--	--	--	6.2E-01	--	--	--	2.5E-03	--	--	--	1.5E-01	--	--	--	1.5E-01	--	--
Heptachlor [C]	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	1.2E+00	2.3E-01	1.3E-01	1.3E-01	1.3E-01	9.5E-04	7.9E-05	7.9E-05	6.4E+00	5.9E-02	1.3E-02	1.3E-02	1.2E+00	5.9E-02	1.3E-02	1.3E-02
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	3.9E-04	3.9E-04	1.2E+00	2.3E-01	6.6E-02	6.6E-02	1.3E-01	9.5E-04	3.9E-05	3.9E-05	6.4E+00	5.9E-02	6.6E-03	6.6E-03	1.2E+00	5.9E-02	6.6E-03	6.6E-03
Hexachlorobenzene[C]	0	--	--	2.8E-03	2.9E-03	--	--	4.7E-01	4.9E-01	--	--	2.8E-04	2.9E-04	--	--	4.7E-02	4.9E-02	--	--	4.7E-02	4.9E-02
Hexachlorobutadiene[C]	0	--	--	4.4E+00	1.8E+02	--	--	7.4E+02	3.0E+04	--	--	4.4E-01	1.8E+01	--	--	7.4E+01	3.0E+03	--	--	7.4E+01	3.0E+03
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	2.6E-02	4.9E-02	--	--	4.4E+00	8.2E+00	--	--	2.6E-03	4.9E-03	--	--	4.4E-01	8.2E-01	--	--	4.4E-01	8.2E-01
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	9.1E-02	1.7E-01	--	--	1.5E+01	2.9E+01	--	--	9.1E-03	1.7E-02	--	--	1.5E+00	2.9E+00	--	--	1.5E+00	2.9E+00
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	--	9.8E-01	1.8E+00	2.2E+00	--	1.6E+02	3.0E+02	2.4E-01	--	9.8E-02	1.8E-01	1.2E+01	--	1.6E+01	3.0E+01	2.2E+00	--	1.6E+01	3.0E+01
Hexachlorocyclopentadiene	0	--	--	4.0E+01	1.1E+03	--	--	3.2E+03	8.8E+04	--	--	4.0E+00	1.1E+02	--	--	3.2E+02	8.8E+03	--	--	3.2E+02	8.8E+03
Hexachloroethane[C]	0	--	--	1.4E+01	3.3E+01	--	--	2.4E+03	5.6E+03	--	--	1.4E+00	3.3E+00	--	--	2.4E+02	5.6E+02	--	--	2.4E+02	5.6E+02
Hydrogen Sulfide	0	--	2.0E+00	--	--	--	1.2E+02	--	--	--	5.0E-01	--	--	--	3.1E+01	--	--	--	3.1E+01	--	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	3.8E-02	1.8E-01	--	--	6.4E+00	3.0E+01	--	--	3.8E-03	1.8E-02	--	--	6.4E-01	3.0E+00	--	--	6.4E-01	3.0E+00
Iron	0	--	--	3.0E+02	--	--	--	2.4E+04	--	--	--	3.0E+01	--	--	--	2.4E+03	--	--	--	2.4E+03	--
Isophorone[C]	0	--	--	3.5E+02	9.6E+03	--	--	5.9E+04	1.6E+06	--	--	3.5E+01	9.6E+02	--	--	5.9E+03	1.6E+05	--	--	5.9E+03	1.6E+05
Kepone	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--
Lead	0	1.9E+02	1.0E+01	1.5E+01	--	4.2E+02	6.4E+02	1.2E+03	--	2.3E+01	2.6E+00	1.5E+00	--	1.1E+03	1.6E+02	1.2E+02	--	4.2E+02	1.6E+02	1.2E+02	--
Malathion	0	--	1.0E-01	--	--	--	6.2E+00	--	--	--	2.5E-02	--	--	--	1.5E+00	--	--	--	1.5E+00	--	--
Manganese	14.32	--	--	5.0E+01	--	--	--	2.9E+03	--	--	--	1.8E+01	--	--	--	3.0E+02	--	--	--	3.0E+02	--
Mercury	0	1.4E+00	7.7E-01	- -	- -	3.2E+00	4.7E+01	- -	- -	3.5E-01	1.9E-01	- -	--	1.7E+01	1.2E+01	- -	--	3.2E+00	1.2E+01	- -	- -
Methyl Bromide	0	--	--	4.7E+01	1.5E+03	--	--	3.8E+03	1.2E+05	--	--	4.7E+00	1.5E+02	--	--	3.8E+02	1.2E+04	--	--	3.8E+02	1.2E+04
Methylene Chloride [C]	0	--	--	4.6E+01	5.9E+03	--	--	7.7E+03	9.9E+05	--	--	4.6E+00	5.9E+02	--	--	7.7E+02	9.9E+04	--	--	7.7E+02	9.9E+04
Methoxychlor	0	--	3.0E-02	1.0E+02	--	--	1.9E+00	8.0E+03	--	--	7.5E-03	1.0E+01	--	--	4.6E-01	8.0E+02	--	--	4.6E-01	8.0E+02	--
Mirex	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--
Nickel	0.39	2.4E+02	1.7E+01	6.1E+02	4.6E+03	5.6E+02	1.0E+03	4.9E+04	3.7E+05	3.9E+01	4.5E+00	6.1E+01	4.6E+02	1.9E+03	2.6E+02	4.9E+03	3.7E+04	5.6E+02	2.6E+02	4.9E+03	3.7E+04
Nitrate (as N)	940	--	--	1.0E+04	--	--	--	7.3E+05	--	--	--	1.8E+03	--	--	--	7.4E+04	--	--	--	7.4E+04	--
Nitrobenzene	0	--	--	1.7E+01	6.9E+02	--	--	1.4E+03	5.5E+04	--	--	1.7E+00	6.9E+01	--	--	1.4E+02	5.5E+03	--	--	1.4E+02	5.5E+03
N-Nitrosodimethylamine[C]	0	--	--	6.9E-03	3.0E+01	--	--	1.2E+00	5.1E+03	--	--	6.9E-04	3.0E+00	--	--	1.2E-01	5.1E+02	--	--	1.2E-01	5.1E+02
N-Nitrosodiphenylamine[C]	0	--	--	3.3E+01	6.0E+01	--	--	5.6E+03	1.0E+04	--	--	3.3E+00	6.0E+00	--	--	5.6E+02	1.0E+03	--	--	5.6E+02	1.0E+03
N-Nitrosodi-n-propylamine[C]	0	--	--	5.0E-02	5.1E+00	--	--	8.4E+00	8.6E+02	--	--	5.0E-03	5.1E-01	--	--	8.4E-01	8.6E+01	--	--	8.4E-01	8.6E+01
Nonylphenol	0	2.8E+01	6.6E+00	--	--	6.4E+01	4.1E+02	--	--	7.0E+00	1.7E+00	--	--	3.5E+02	1.0E+02	--	--	6.4E+01	1.0E+02	--	--
Parathion	0	6.5E-02	1.3E-02	--	--	1.5E-01	8.0E-01	--	--	1.6E-02	3.3E-03	--	--	8.0E-01	2.0E-01	--	--	1.5E-01	2.0E-01	--	--
PCB Total[C]	0	--	1.4E-02	6.4E-04	6.4E-04	--	8.6E-01	1.1E-01	1.1E-01	--	3.5E-03	6.4E-05	6.4E-05	--	2.2E-01	1.1E-02	1.1E-02	--	2.2E-01	1.1E-02	1.1E-02
Pentachlorophenol [C]	0	9.5E+00	9.0E+00	2.7E+00	3.0E+01	2.2E+01	5.5E+02	4.5E+02	5.1E+03	2.9E+00	2.2E+00	2.7E-01	3.0E+00	1.4E+02	1.4E+02	4.5E+01	5.1E+02	2.2E+01	1.4E+02	4.5E+01	5.1E+02
Phenol	0	--	--	1.0E+04	8.6E+05	--	--	8.0E+05	6.9E+07	--	--	1.0E+03	8.6E+04	--	--	8.0E+04	6.9E+06	--	--	8.0E+04	6.9E+06
Pyrene	0	--	--	8.3E+02	4.0E+03	--	--	6.6E+04	3.2E+05	--	--	8.3E+01	4.0E+02	--	--	6.6E+03	3.2E+04	--	--	6.6E+03	3.2E+04
Radionuclides	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gross Alpha Activity (pCi/L)	0	--	--	1.5E+01	--	--	--	1.2E+03	--	--	--	1.5E+00	--	--	--	1.2E+02	--	--	--	1.2E+02	--
Beta and Photon Activity (mrem/yr)	0	--	--	4.0E+00	--	--	--	3.2E+02	--	--	--	4.0E-01	--	--	--	3.2E+01	--	--	--	3.2E+01	--
Radium 226 + 228 (pCi/L)	0	--	--	5.0E+00	--	--	--	4.0E+02	--	--	--	5.0E-01	--	--	--	4.0E+01	--	--	--	4.0E+01	--
Uranium (ug/l)	0	--	--	3.0E+01	--	--	--	2.4E+03	--	--	--	3.0E+00	--	--	--	2.4E+02	--	--	--	2.4E+02	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	4.6E+01	3.1E+02	1.4E+04	3.4E+05	5.0E+00	1.3E+00	1.7E+01	4.2E+02	2.5E+02	7.7E+01	1.4E+03	3.4E+04	**4.6E+01**	**7.7E+01**	**1.4E+03**	**3.4E+04**
Silver	0	6.3E+00	--	--	--	1.4E+01	--	--	--	6.1E-01	--	--	--	3.0E+01	--	--	--	**1.4E+01**	**--**	**--**	**--**
Sulfate	8690	--	--	2.5E+05	--	--	--	1.9E+07	--	--	--	3.3E+04	--	--	--	1.9E+06	--	**--**	**--**	**1.9E+06**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	1.7E+00	4.0E+01	--	--	2.9E+02	6.7E+03	--	--	1.7E-01	4.0E+00	--	--	2.9E+01	6.7E+02	**--**	**--**	**2.9E+01**	**6.7E+02**
Tetrachloroethylene[C]	0	--	--	6.9E+00	3.3E+01	--	--	1.2E+03	5.6E+03	--	--	6.9E-01	3.3E+00	--	--	1.2E+02	5.6E+02	**--**	**--**	**1.2E+02**	**5.6E+02**
Thallium	0	--	--	2.4E-01	4.7E-01	--	--	1.9E+01	3.8E+01	--	--	2.4E-02	4.7E-02	--	--	1.9E+00	3.8E+00	**--**	**--**	**1.9E+00**	**3.8E+00**
Toluene	0	--	--	5.1E+02	6.0E+03	--	--	4.1E+04	4.8E+05	--	--	5.1E+01	6.0E+02	--	--	4.1E+03	4.8E+04	**--**	**--**	**4.1E+03**	**4.8E+04**
Total dissolved solids	0	--	--	5.0E+05	--	--	--	4.0E+07	--	--	--	5.0E+04	--	--	--	4.0E+06	--	**--**	**--**	**4.0E+06**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	1.7E+00	1.2E-02	4.7E-01	4.7E-01	1.8E-01	5.0E-05	2.8E-04	2.8E-04	9.0E+00	3.1E-03	4.7E-02	4.7E-02	**1.7E+00**	**3.1E-03**	**4.7E-02**	**4.7E-02**
Tributyltin	0	4.6E-01	7.2E-02	--	--	1.1E+00	4.4E+00	--	--	1.2E-01	1.8E-02	--	--	5.7E+00	1.1E+00	--	--	**1.1E+00**	**1.1E+00**	**--**	**--**
1,2,4-Trichlorobenzene	0	--	--	3.5E+01	7.0E+01	--	--	2.8E+03	5.6E+03	--	--	3.5E+00	7.0E+00	--	--	2.8E+02	5.6E+02	**--**	**--**	**2.8E+02**	**5.6E+02**
1,1,2-Trichloroethane[C]	0	--	--	5.9E+00	1.6E+02	--	--	9.9E+02	2.7E+04	--	--	5.9E-01	1.6E+01	--	--	9.9E+01	2.7E+03	**--**	**--**	**9.9E+01**	**2.7E+03**
Trichloroethylene [C]	0	--	--	2.5E+01	3.0E+02	--	--	4.2E+03	5.1E+04	--	--	2.5E+00	3.0E+01	--	--	4.2E+02	5.1E+03	**--**	**--**	**4.2E+02**	**5.1E+03**
2,4,6-Trichlorophenol [C]	0	--	--	1.4E+01	2.4E+01	--	--	2.4E+03	4.0E+03	--	--	1.4E+00	2.4E+00	--	--	2.4E+02	4.0E+02	**--**	**--**	**2.4E+02**	**4.0E+02**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	5.0E+01	--	--	--	4.0E+03	--	--	--	5.0E+00	--	--	--	4.0E+02	--	**--**	**--**	**4.0E+02**	**--**
Vinyl Chloride[C]	0	--	--	2.5E-01	2.4E+01	--	--	4.2E+01	4.0E+03	--	--	2.5E-02	2.4E+00	--	--	4.2E+00	4.0E+02	**--**	**--**	**4.2E+00**	**4.0E+02**
Zinc	3.68	1.6E+02	9.9E+01	7.4E+03	2.6E+04	3.6E+02	5.9E+03	5.9E+05	2.1E+06	2.7E+01	2.7E+01	7.4E+02	2.6E+03	1.2E+03	1.5E+03	5.9E+04	2.1E+05	**3.6E+02**	**1.5E+03**	**5.9E+04**	**2.1E+05**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	4.5E+01
Arsenic	7.8E+01
Barium	1.6E+04
Cadmium	5.3E+00
Chromium III	5.8E+02
Chromium VI	1.5E+01
Copper	1.7E+01
Iron	2.4E+03
Lead	9.6E+01
Manganese	3.0E+02
Mercury	1.3E+00
Nickel	1.5E+02
Selenium	1.8E+01
Silver	5.8E+00
Zinc	1.4E+02

Note: do not use QL's lower than the minimum QL's provided in agency guidance

2/25/2014 4:04:31 PM

Facility = PFRWTA
Chemical = ammonia (yearly) in mg/L
Chronic averaging period = 30
WLAa = 38.6
WLAc = 68.2
Q.L. = 0.20
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

2/21/2014 9:13:24 AM

Facility = PFRWTA
Chemical = ammonia (high flow) in mg/L
Chronic averaging period = 30
WLAa = 42
WLAc = 164
Q.L. = 0.20
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

2/21/2014 9:20:22 AM

Facility = PFRWTA
Chemical = cadmium in ug/L
Chronic averaging period = 4
WLAa = 13
WLAc = 59
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = .185549
Variance = .012394
C.V. = 0.6
97th percentile daily values = .451520
97th percentile 4 day average = .308715
97th percentile 30 day average= .223782
< Q.L. = 2
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

0
0
0.2

2/21/2014 10:46:09 AM

Facility = PFRWTA
Chemical = chromium in ug/L
Chronic averaging period = 4
WLAa = 37
WLAc = 680
Q.L. = 1.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 14.1666
Variance = 72.25
C.V. = 0.6
97th percentile daily values = 34.4734
97th percentile 4 day average = 23.5703
97th percentile 30 day average= 17.0857
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

7.8
26.7
8

2/21/2014 10:00:28 AM

Facility = PFRWTA
Chemical = copper in ug/L
Chronic averaging period = 4
WLAa = 42
WLAc = 420
Q.L. = 2.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 5.2
Variance = 9.7344
C.V. = 0.6
97th percentile daily values = 12.6537
97th percentile 4 day average = 8.65170
97th percentile 30 day average= 6.27147
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5
5.3
5.3

2/21/2014 10:05:34 AM

Facility = PFRWTA
Chemical = nickel in ug/L
Chronic averaging period = 4
WLAa = 560
WLAc = 1000
Q.L. = 2.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 5.56666
Variance = 11.1556
C.V. = 0.6
97th percentile daily values = 13.5460
97th percentile 4 day average = 9.26176
97th percentile 30 day average= 6.71369
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4.5
6.7
5.5

2/21/2014 10:11:53 AM

Facility = PFRWTA
Chemical = zinc in ug/L
Chronic averaging period = 4
WLAa = 360
WLAc = 5900
Q.L. = 3.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 35
Variance = 441
C.V. = 0.6
97th percentile daily values = 85.1696
97th percentile 4 day average = 58.2326
97th percentile 30 day average= 42.2118
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

29.5
34.9
40.6

18.0 MGD DESIGN FLOW

Mixing Zone Predictions for Pepper's Ferry RWTA (annual)

Effluent Flow = 18.0 MGD
Stream 7Q10 = 546 MGD
Stream 30Q10 = 633 MGD
Stream 1Q10 = 436 MGD
Stream slope = 0.00093 ft/ft
Stream width = 475 ft
Bottom scale = 4
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = 2.8438 ft
Length = 70288.09 ft
Velocity = .6463 ft/sec
Residence Time = 1.2587 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 3.1007 ft
Length = 65353.19 ft
Velocity = .6842 ft/sec
Residence Time = 1.1055 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = 2.4952 ft
Length = 78455.96 ft
Velocity = .5929 ft/sec
Residence Time = 36.7542 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 2.72% of the 1Q10 is used.

Mixing Zone Predictions for Pepper's Ferry RWTA (wet season)

Effluent Flow = 18.0 MGD
Stream 7Q10 = 758 MGD
Stream 30Q10 = 1053 MGD
Stream 1Q10 = 515 MGD
Stream slope = 0.00093 ft/ft
Stream width = 475 ft
Bottom scale = 4
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = 3.4473 ft
Length = 59772.94 ft
Velocity = .7336 ft/sec
Residence Time = .9431 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 4.1877 ft
Length = 50722.99 ft
Velocity = .8335 ft/sec
Residence Time = .7044 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = 2.7485 ft
Length = 72331.88 ft
Velocity = .632 ft/sec
Residence Time = 31.7926 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 3.15% of the 1Q10 is used.

2/26/2014 9:19:39 AM

Facility = PFRWTA
Chemical = stream ammonia (annual) in mg/L
Chronic averaging period = 30
WLAa =
WLAc =
Q.L. = 0.04
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 48
Expected Value = .043450
Variance = .000118
C.V. = 0.251004
97th percentile daily values = .075492
97th percentile 4 day average = .052126
97th percentile 30 day average= .045693
< Q.L. = 37
Model used = delta lognormal

No Limit is required for this material

The data are:

0.04
0.13
0.04
0.05
0.05
0.05
0.05
0.06
0.04
0.05
0.05
0
0
0
0
0
0
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0

2/26/2014 9:26:29 AM

Facility = PFRWTA
Chemical = stream ammonia (wet season) in mg/L
Chronic averaging period = 30
WLAa =
WLAc =
Q.L. = 0.04
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 21
Expected Value = .026262
Variance = .000248
C.V. = 0.6
97th percentile daily values = .063907
97th percentile 4 day average = .043695
97th percentile 30 day average= .031674
< Q.L. = 18
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

0.05
0.04
0.05
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
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0
0

2/24/2014 3:02:12 PM

Facility = PFRWTA
Chemical = stream arsenic in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.01
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = .345
Variance = .042849
C.V. = 0.6
97th percentile daily values = .839529
97th percentile 4 day average = .574007
97th percentile 30 day average= .416088
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.44
0.25

2/24/2014 3:37:46 PM

Facility = PFRWTA
Chemical = stream chloride in mg/l
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 1
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 18
Expected Value = 9.11668
Variance = 3.42471
C.V. = 0.202990
97th percentile daily values = 13.0383
97th percentile 4 day average = 10.9726
97th percentile 30 day average= 9.75222
< Q.L. = 0
Model used = lognormal

No Limit is required for this material

The data are:

9.9
11.7
10.2
10
15.4
9.2
8.2
8
8.6
9.1
8.1
6.4
6.6
8.8
9.1
9.2
8.1
7.5

2/24/2014 3:06:46 PM

Facility = PFRWTA
Chemical = stream chromium in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.01
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = .18
Variance = .011664
C.V. = 0.6
97th percentile daily values = .438015
97th percentile 4 day average = .299482
97th percentile 30 day average= .217089
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.18
0.18

2/24/2014 3:11:55 PM

Facility = PFRWTA
Chemical = stream copper in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.01
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = .645
Variance = .149769
C.V. = 0.6
97th percentile daily values = 1.56955
97th percentile 4 day average = 1.07314
97th percentile 30 day average= .777904
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.67
0.62

2/24/2014 3:14:34 PM

Facility = PFRWTA
Chemical = stream manganese in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.01
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = 14.315
Variance = 73.7709
C.V. = 0.6
97th percentile daily values = 34.8343
97th percentile 4 day average = 23.8171
97th percentile 30 day average= 17.2646
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

13.23
15.4

2/24/2014 3:17:08 PM

Facility = PFRWTA
Chemical = stream nickel in mg/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.01
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = .385
Variance = .053361
C.V. = 0.6
97th percentile daily values = .936865
97th percentile 4 day average = .640559
97th percentile 30 day average= .464330
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.55
0.22

2/24/2014 3:49:52 PM

Facility = PFRWTA
Chemical = nitrate in mg/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.1
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 40
Expected Value = .936187
Variance = .181015
C.V. = 0.454459
97th percentile daily values = 1.92557
97th percentile 4 day average = 1.39227
97th percentile 30 day average= 1.08229
< Q.L. = 0
Model used = lognormal

No Limit is required for this material

The data are:

1.34
2.11
1.66
1.08
1.37
1.02
1.56
0.56
0.51
0.35
0.47
0.67
0.83
0.96
1.25
0.88
0.47
0.62
0.67

0.72
1.05
0.85
1.31
1.28
0.98
0.62
1.72
0.69
0.45
0.53
0.59
0.72
0.64
0.81
0.55
1.05
0.93
0.91
0.75
1.88

2/24/2014 3:32:10 PM

Facility = PFRWTA
Chemical = stream sulfate in mg/L as SO4
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 1
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 18
Expected Value = 8.69636
Variance = 1.89373
C.V. = 0.158242
97th percentile daily values = 11.5461
97th percentile 4 day average = 10.0581
97th percentile 30 day average= 9.16896
< Q.L. = 0
Model used = lognormal

No Limit is required for this material

The data are:

9.4
10
8.9
8.6
12.2
9.3
10.1
8.4
8.7
9.3
7.9
5.7
8.1
8.7
7.7
7.6
8.3
7.5

2/24/2014 3:18:35 PM

Facility = PFRWTA
Chemical = stream zinc in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.01
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 2
Expected Value = 3.675
Variance = 4.86202
C.V. = 0.6
97th percentile daily values = 8.94280
97th percentile 4 day average = 6.11442
97th percentile 30 day average= 4.43224
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5.93
1.42

2/26/2014 9:42:39 AM

Facility = PFRWTA
Chemical = ammonia (annual) 97% effluent in mg/L
Chronic averaging period = 30
WLAa = 43
WLAc = 10
Q.L. = 0.20
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 4.10944
Variance = 6.07951
C.V. = 0.6
97th percentile daily values = 9.99999
97th percentile 4 day average = 6.83725
97th percentile 30 day average= 4.95621
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4.1094468

per spreadsheet instructions for non-limited parameters

2/26/2014 9:49:22 AM

Facility = PFRWTA
Chemical = ammonia (wet season, [illegible] effluent in mg/L
Chronic averaging period = 30
WLAa =
WLAc =
Q.L. = 0.04
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 3
Expected Value = .059534
Variance = .001275
C.V. = 0.6
97th percentile daily values = .144871
97th percentile 4 day average = .099052
97th percentile 30 day average= .071801
< Q.L. = 1
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

0
0.07
0.09

2/26/2014 9:54:44 AM

Facility = PFRWTA
Chemical = cadmium 97% effluent in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = .185549
Variance = .012394
C.V. = 0.6
97th percentile daily values = .451520
97th percentile 4 day average = .308715
97th percentile 30 day average= .223782
< Q.L. = 2
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

0
0
0.2

2/26/2014 9:57:14 AM

Facility = PFRWTA
Chemical = chromium 97% effluent in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 1.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 14.1666
Variance = 72.25
C.V. = 0.6
97th percentile daily values = 34.4734
97th percentile 4 day average = 23.5703
97th percentile 30 day average= 17.0857
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

7.8
26.7
8

2/26/2014 9:59:47 AM

Facility = PFRWTA
Chemical = copper 97% effluent in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 2.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 5.2
Variance = 9.7344
C.V. = 0.6
97th percentile daily values = 12.6537
97th percentile 4 day average = 8.65170
97th percentile 30 day average= 6.27147
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5
5.3
5.3

2/26/2014 10:02:38 AM

Facility = PFRWTA
Chemical = nickel 97% effluent in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 2.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 5.56666
Variance = 11.1556
C.V. = 0.6
97th percentile daily values = 13.5460
97th percentile 4 day average = 9.26176
97th percentile 30 day average= 6.71369
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4.5
6.7
5.5

2/26/2014 10:05:56 AM

Facility = PFRWTA
Chemical = nitrate 97% effluent in mg/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 0.50
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 15.9
Variance = 91.0116
C.V. = 0.6
97th percentile daily values = 38.6913
97th percentile 4 day average = 26.4542
97th percentile 30 day average= 19.1762
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

14.2
16.5
17

2/26/2014 10:10:31 AM

Facility = PFRWTA
Chemical = phenol 97% effluent in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 12
Expected Value = 6.61494
Variance = 15.7527
C.V. = 0.6
97th percentile daily values = 16.0969
97th percentile 4 day average = 11.0058
97th percentile 30 day average= 7.97797
< Q.L. = 5
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

0
0
0
0
0
5
7
9
11
12
13
18

2/26/2014 10:13:59 AM

Facility = PFRWTA
Chemical = sulfate 97% effluent in mg/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 1.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 76.5666
Variance = 2110.48
C.V. = 0.6
97th percentile daily values = 186.318
97th percentile 4 day average = 127.390
97th percentile 30 day average= 92.3434
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

76.8
89.4
63.5

2/26/2014 10:18:08 AM

Facility = PFRWTA
Chemical = total dissolved solids 97% effluent in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 5000
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 634666.
Variance = 1450086
C.V. = 0.6
97th percentile daily values = 1544408
97th percentile 4 day average = 1055952
97th percentile 30 day average= 765441.
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

605000
712000
587000

2/26/2014 10:21:11 AM

Facility = PFRWTA
Chemical = zinc 97% effluent in ug/L
Chronic averaging period = 4
WLAa =
WLAc =
Q.L. = 3.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 35
Variance = 441
C.V. = 0.6
97th percentile daily values = 85.1696
97th percentile 4 day average = 58.2326
97th percentile 30 day average= 42.2118
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

29.5
34.9
40.6

Tier 1 Stream - Issuance/Reissuance/Modification:

"Discharge-Stream Info" sheet:

Complete the blue character cells as appropriate.
IMPORTANT: If a new discharge is proposed to an intermittant stream (dry ditch), "Current Discharge Flow" must be entered as 0.000001 MGD, rather than 0 MGD.
Print

"WQS-WLA" sheet:

See instructions in rows 117-126.

Re-run both spreadsheets for each discharge flow tier.

Tier 2 Stream - I or R/M With Proposed Expansion:

"Discharge-Stream Info" sheet:

Complete the blue character cells as appropriate.
"1992 Discharge Flow" = Permitted discharge flow in 1992 (at WQS adoption)
Print

"WQS-WLA" sheet:

See instructions in rows 127-139.

Re-run both spreadsheets for each discharge flow tier.

Tier 2 Stream - R/M for facility that has expanded since 1992

"Discharge-Stream Info" sheet:

Complete the blue character cells as appropriate.
"1992 Discharge Flow" = Permitted discharge flow in 1992 (at WQS adoption)
Print

"WQS-WLA" sheet:

See the instructions in rows 140-152.

Re-run both spreadsheets for each discharge flow tier.

Tier 2 Stream - R/M for facility that has not expanded since 1992

"Discharge-Stream Info" sheet:

Complete the blue character cells as appropriate.
"1992 Discharge Flow" = Permitted discharge flow in 1992 (at WQS adoption)
Print

"WQS-WLA" sheet:

See the instructions in rows 153-165.

Re-run both spreadsheets for each discharge flow tier.

Expected Value of Upstream Data

Generated using the "Stats" program
Set both WLAa and WLAc equal to 0
Enter the QL as appropriate for the parameter
The Sampling Frequency and Ammonia question are irrelevant - enter/answer anything.
Enter the valid stream data

97th Percentiles of Effluent Data - Permit-Limited Parameter

Convert basis for existing limit (check previous FS) to Expected Value (EV)

Acute-based limit:	EV = 0.41094468 (WLAa)
Chronic-based Ammonia limit:	EV = 0.8291508 (WLAc)
Chronic-based non-Ammonia limit:	EV = 0.60103733 (WLAc)
TRC (Standard "1.0-2.0 mg/l" range in permit):	EV = 1.643779
(Note: WLAa = WLAc = 4.0)	
TRC ("Non-Detect" limit in permit):	EV = 0.41094
(Note: WLAa = WLAc = 0.1)	
D.O.-based limit:	EV = Monthly Avg. Conc.

Generate the 97th percentiles using the "Stats" program
Enter the WLAa and WLAc from the previous FS (or as given above for TRC)
Enter a QL < the EV
Enter/answer the Sampling Frequency and Ammonia question as appropriate
Enter the EV as the sole data point

Note: If "Stats" indicates that a limit is needed during the above analysis, slightly reduce the EV and repeat until no limit is triggered.

97th Percentiles of Effluent Data - Non-Limited Parameter

Generate using "Stats" program
Set both WLAa and WLAc equal to 0
Enter the QL as appropriate for the parameter
Enter/answer the Sampling Frequency and Ammonia question as appropriate
Enter the valid effluent data

WATER QUALITY CRITERIA / WASTE LOAD ALLOCATION ANALYSIS

Facility Name:
Pepper's Ferry Regional Wastewater Treatment Authority

Receiving Stream:
New River

Permit No.: VA0062685
Date: 4/9/2014

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		
Mean Hardness (as CaCO3) =	78.7	mg/L
90% Temperature (Annual) =	22.9	deg C
90% Temperature (Wet season) =	16.6	deg C
90% Maximum pH =	8.3	SU
10% Maximum pH =	7.3	SU
Tier Designation =	2	
Public Water Supply (PWS) Y/N? =	Y	
V(alley) or P(iedmont)? =	V	
Trout Present Y/N? =	N	
Early Life Stages Present Y/N? =	Y	Y or N

Stream Flows		
1Q10 (Annual) =	436	MGD
7Q10 (Annual) =	546	MGD
30Q10 (Annual) =	633	MGD
1Q10 (Wet season) =	515	MGD
30Q10 (Wet season) =	1053	MGD
30Q5 =	712	MGD
Harmonic Mean =	1506	MGD

Mixing Information		
Annual	- 1Q10 Flow =	2.72 %
	- 7Q10 Flow =	100 %
	- 30Q10 Flow =	100 %
Wet Season	- 1Q10 Flow =	3.15 %
	- 30Q10 Flow =	100 %

Effluent Information		
Mean Hardness (as CaCO3) =	223	mg/L
90% Temp (Annual) =	23	deg C
90% Temp (Wet season) =	18	deg C
90% Maximum pH =	7.3	SU
10% Maximum pH =	6.9	SU
1992 Discharge Flow =	9.00000	MGD
Discharge Flow for Limit Analysis =	18.00000	MGD

Footnotes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise.
2. All flow values are expressed as Million Gallons per Day (MGD).
3. Discharge volumes are highest monthly average or 2C maximum for Industries and design flows for Municipals.
4. Hardness expressed as mg/l CaCO3. Standards calculated using Hardness values in the range of 25-400 mg/l CaCO3.
5. "Public Water Supply" protects for fish & water consumption. "Other Surface Waters" protects for fish consumption only.
6. Carcinogen "Y" indicates carcinogenic parameter.
7. Ammonia WQSs selected from separate tables, based on pH and temperature.
8. Metals measured as Dissolved, unless specified otherwise.
9. WLA = Waste Load Allocation (based on standards).
10. WLA = Waste Load Allocation (based on standards).
11. WLAs are based on mass balances (less background, if data exist).
12. Acute - 1 hour avg. concentration not to be exceeded more than 1/3 years.
13. Chronic - 4 day avg. concentration (30 day avg. for Ammonia) not to be exceeded more than 1/3 years.
14. Mass balances employ 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, and Harmonic Mean for Carcinogens. Actual flows employed are a function of the mixing analysis and may be less than the actual flows.
15. Effluent Limitations are calculated elsewhere using the minimum WLA and EPA's statistical approach (Technical Support Document).

Facility Name: [illegible] | Permit No.: VA0002685
Receiving Stream: New River | Date: 4/9/2014

Toxic Parameter and Form	Carcinogen?	97th Percentiles of Effluent Concentrations: Daily	4-Day	30-Day	Expected Value of Upstream Data	Current Downstream Mix Concentrations: Acute	Chronic	H-Health
Acenaphthene	N	0	0	0	0	0	0	0
Acrolein	N	0	0	0	0	0	0	0
Acrylonitrile	Y	0	0	0	0	0	0	0
Aldrin	Y	0	0	0	0	0	0	0
Ammonia-N (Annual)	N	9.99999	6.83725	4.95621	0.043450	#######	#######	0.104774
Ammonia-N (Wet Season)	N	#######	######	#######	0.026252	#######	#######	0.026830
Anthracene	N	0	0	0	0	0	0	0
Antimony	N	0	0	0	0	0	0	0
Arsenic	N	0	0	0	0.345	#######	#######	0.000000
Barium	N	0	0	0	0	0	0	0
Benzene	Y	0	0	0	0	0	0	0
Benzidine	Y	0	0	0	0	0	0	0
Benzo(a)anthracene	Y	0	0	0	0	0	0	0
Benzo(a)pyrene	Y	0	0	0	0	0	0	0
Benzo(b)fluoranthene	Y	0	0	0	0	0	0	0
Benzo(k)fluoranthene	Y	0	0	0	0	0	0	0
Bis2-Chloroethyl Ether	Y	0	0	0	0	0	0	0
Bis2-Chloroisopropyl Ether	N	0	0	0	0	0	0	0
Bis2-Ethylhexyl Phthalate	Y	0	0	0	0	0	0	0
Bromoform	Y	0	0	0	0	0	0	0
Butyl Benzyl Phthalate	N	0	0	0	0	0	0	0
Cadmium	N	#######	######	#######	0	#######	#######	0.002793
Carbon Tetrachloride	Y	0	0	0	0	0	0	0
Chlordane	Y	0	0	0	0	0	0	0
Chloride	N	0	0	0	9.11698	8.93230	8.95884	9.00286
Chlorine, Total Residual	N	0	0	0	0	0	0	0
Chlorobenzene	N	0	0	0	0	0	0	0
Chlorodibromomethane	Y	0	0	0	0	0	0	0
Chloroform	N	0	0	0	0	0	0	0
2-Chloronaphthalene	N	0	0	0	0	0	0	0
2-Chlorophenol	N	0	0	0	0	0	0	0
Chlorpyrifos	N	0	0	0	0	0	0	0
Chromium (+3)	N	0	0	0	0	0	0	0
Chromium (+6)	N	0	0	0	0	0	0	0
Total Chromium	N	34.4734	23.5703	17.0857	0.18	0.87	0.56	0.39
Chrysene	Y	0	0	0	0	0	0	0
Copper	N	#######	8.65170	6.27147	0.645	0.888	0.775	0.715
Cyanide, Free	N	0	0	0	0	0	0	0
DDD	Y	0	0	0	0	0	0	0
DDE	Y	0	0	0	0	0	0	0
DDT	Y	0	0	0	0	0	0	0
Demeton	N	0	0	0	0	0	0	0
Diazinon	N	0	0	0	0	0	0	0
Dibenz(a,h)anthracene	Y	0	0	0	0	0	0	0
1,2-Dichlorobenzene	N	0	0	0	0	0	0	0
1,3-Dichlorobenzene	N	0	0	0	0	0	0	0
1,4-Dichlorobenzene	N	0	0	0	0	0	0	0
3,3-Dichlorobenzidine	Y	0	0	0	0	0	0	0
Dichlorobromomethane	Y	0	0	0	0	0	0	0
1,2-Dichloroethane	Y	0	0	0	0	0	0	0
1,1-Dichloroethylene	N	0	0	0	0	0	0	0
1,2-trans-dichloroethylene	N	0	0	0	0	0	0	0
2,4-Dichlorophenol	N	0	0	0	0	0	0	0
2,4-Dichlorophenoxy Acetic Acid	N	0	0	0	0	0	0	0
1,2-Dichloropropane	Y	0	0	0	0	0	0	0
1,3-Dichloropropene	Y	0	0	0	0	0	0	0
Dieldrin	Y	0	0	0	0	0	0	0
Diethyl Phthalate	N	0	0	0	0	0	0	0
2,4 Dimethylphenol	N	0	0	0	0	0	0	0
Dimethyl Phthalate	N	0	0	0	0	0	0	0
Di-n-Butyl Phthalate	N	0	0	0	0	0	0	0
2,4 Dinitrophenol	N	0	0	0	0	0	0	0
2-Methyl-4,6-Dinitrophenol	N	0	0	0	0	0	0	0
2,4-Dinitrotoluene	Y	0	0	0	0	0	0	0
Dioxin +	Y	0	0	0	0	0	0	0
1,2-Diphenylhydrazine	Y	0	0	0	0	0	0	0
Alpha-Endosulfan	N	0	0	0	0	0	0	0
Beta-Endosulfan	N	0	0	0	0	0	0	0
Alpha+Beta-Endosulfan	N	0	0	0	0	0	0	0
Endosulfan Sulfate	N	0	0	0	0	0	0	0
Endrin	N	0	0	0	0	0	0	0
Endrin Aldehyde	N	0	0	0	0	0	0	0
Ethylbenzene	N	0	0	0	0	0	0	0
Fluoranthene	N	0	0	0	0	0	0	0
Fluorene	N	0	0	0	0	0	0	0
Foaming Agents (MBAS)	N	0	0	0	0	0	0	0
Guthion	N	0	0	0	0	0	0	0
Heptachlor	Y	0	0	0	0	0	0	0
Heptachlor Epoxide	Y	0	0	0	0	0	0	0
Hexachlorobenzene	Y	0	0	0	0	0	0	0
Hexachlorobutadiene	Y	0	0	0	0	0	0	0
Hexachlorocyclohexane Alpha-BH	Y	0	0	0	0	0	0	0
Hexachlorocyclohexane Beta-BHC	Y	0	0	0	0	0	0	0
Hexachlorocyclohexane Gamma-BHC (Lindane)	Y	0	0	0	0	0	0	0
Hexachlorocyclopentadiene	N	0	0	0	0	0	0	0
Hexachloroethane	Y	0	0	0	0	0	0	0
Hydrogen Sulfide	N	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	Y	0	0	0	0	0	0	0
Iron	N	0	0	0	0	0	0	0
Isophorone	Y	0	0	0	0	0	0	0
Kepone	N	0	0	0	0	0	0	0
Lead	N	0	0	0	0	0	0	0
Malathion	N	0	0	0	0	0	0	0
Manganese	N	0	0	0	14.315	14.025	14.083	14.136
Mercury	N	0	0	0	0	0	0	0
Methyl Bromide	N	0	0	0	0	0	0	0
Methylene Chloride	Y	0	0	0	0	0	0	0
Methoxychlor	N	0	0	0	0	0	0	0
Mirex	N	0	0	0	0	0	0	0
Nickel	N	#######	9.26176	6.71369	0.385	0.651	0.529	0.464
Nitrate (as N)	N	38.6913	26.4542	19.1762	0.936187	1.6998	1.3500	1.1639
Nitrobenzene	N	0	0	0	0	0	0	0
N-Nitrosodimethylamine	Y	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	Y	0	0	0	0	0	0	0
N-Nitrosodi-n-propylamine	Y	0	0	0	0	0	0	0
Nonylphenol	N	0	0	0	0	0	0	0
Parathion	N	0	0	0	0	0	0	0
PCB Total	Y	0	0	0	0	0	0	0
Pentachlorophenol	Y	0	0	0	0	0	0	0
Phenol	N	#######	######	7.93797	0	0.32556	0.17847	0.09959
Pyrene	N	0	0	0	0	0	0	0
RadNuc - Beta Part & Photon Act	N	0	0	0	0	0	0	0
RadNuc - Gross Alpha Part Act	N	0	0	0	0	0	0	0
RadNuc - Radium 226 + 228	N	0	0	0	0	0	0	0
RadNuc - Uranium	N	0	0	0	0	0	0	0
Selenium, Total Recoverable	N	0	0	0	0	0	0	0
Silver	N	0	0	0	0	0	0	0
Sulfate	N	186.318	127.390	92.3434	8.69636	12.289	10.621	9.740
1,1,2,2-Tetrachloroethane	Y	0	0	0	0	0	0	0
Tetrachloroethylene	N	0	0	0	0	0	0	0
Thallium	N	0	0	0	0	0	0	0
Toluene	N	0	0	0	0	0	0	0
Total Dissolved Solids	N	1544408	######	765441	0	31235	17124	5555
Toxaphene	Y	0	0	0	0	0	0	0
Tributyltin	N	0	0	0	0	0	0	0
1,2,4-Trichlorobenzene	N	0	0	0	0	0	0	0
1,1,2-Trichloroethane	Y	0	0	0	0	0	0	0
Trichloroethylene	Y	0	0	0	0	0	0	0
2,4,6-Trichlorophenol	Y	0	0	0	0	0	0	0
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	N	0	0	0	0	0	0	0
Vinyl Chloride	Y	0	0	0	0	0	0	0
Zinc	N	85.1696	58.2329	42.2118	3.675	5.323	4.560	4.156

PRE - EXPANSION WATER QUALITY CRITERIA (9.000 MGD Discharge Flow - 100% Stream Mix); **INSTREAM BASELINES**; **ANTIDEGRADATION WASTE LOAD ALLOCATIONS** (18.000 MGD Discharge - 100% Stream Mix)

Toxic Parameter and Form	Pre-Exp. Aquatic Protection Acute	Pre-Exp. Aquatic Protection Chronic	Pre-Exp. Human Health Public Water Supplies	Pre-Exp. Human Health Other Surface Waters	Instream Baselines Acute	Instream Baselines Chronic	Instream Baselines H-Health	Antideg. WLA Aquatic Protection Acute	Antideg. WLA Aquatic Protection Chronic	Antideg. WLA Human Health
Acenaphthene	None	None	6.7E+02	9.9E+02	None	None	6.7E+01	N/A	N/A	2.7E+03
Acrolein	None	None	6.1E+00	9.3E+00	None	None	6.1E-01	N/A	N/A	2.5E+01
Acrylonitrile	None	None	5.1E-01	2.5E+00	None	None	5.1E-02	N/A	N/A	4.3E+00
Aldrin	3.0E+00	None	4.9E-04	5.0E-04	7.5E-01	None	4.9E-05	1.9E+01	N/A	4.1E-03
Ammonia-N (Annual)	5.4E+00 mg/L	9.7E-01 mg/L	None	None	1.5E+00 mg/L	3.3E-01 mg/L	None	3.8E+01 mg/L	1.0E+01 mg/L	N/A
Ammonia-N (Wet Season)	5.3E+00 mg/L	1.4E+00 mg/L	None	None	1.4E+00 mg/L	3.7E-01 mg/L	None	3.9E+01 mg/L	2.1E+01 mg/L	N/A
Anthracene	None	None	8.3E+03	4.0E+04	None	None	8.3E+02	N/A	N/A	3.4E+04
Antimony	None	None	5.6E+00	6.4E+02	None	None	5.6E-01	N/A	N/A	2.3E+01
Arsenic	3.4E+02	1.5E+02	1.0E+01	None	8.5E+01	3.8E+01	1.0E+00	2.1E+03	1.2E+03	4.1E+01
Barium	None	None	2.0E+03	None	None	None	2.0E+02	N/A	N/A	8.1E+03
Benzene	None	None	2.2E+01	5.1E+02	None	None	2.2E+00	N/A	N/A	1.9E+02
Benzidine	None	None	8.6E-04	2.0E-03	None	None	8.6E-05	N/A	N/A	7.3E-03
Benzo(a)anthracene	None	None	3.8E-02	1.8E-01	None	None	3.8E-03	N/A	N/A	3.2E-01
Benzo(a)pyrene	None	None	3.8E-02	1.8E-01	None	None	3.8E-03	N/A	N/A	3.2E-01
Benzo(b)fluoranthene	None	None	3.8E-02	1.8E-01	None	None	3.8E-03	N/A	N/A	3.2E-01
Benzo(k)fluoranthene	None	None	3.8E-02	1.8E-01	None	None	3.8E-03	N/A	N/A	3.2E-01
Bis2-Chloroethyl Ether	None	None	3.0E-01	5.3E+00	None	None	3.0E-02	N/A	N/A	2.5E+00
Bis2-Chloroisopropyl Ether	None	None	1.4E+03	6.5E+04	None	None	1.4E+02	N/A	N/A	5.7E+03
Bis2-Ethylhexyl Phthalate	None	None	1.2E+01	2.2E+01	None	None	1.2E+00	N/A	N/A	1.0E+02
Bromoform	None	None	4.3E+01	1.4E+03	None	None	4.3E+00	N/A	N/A	3.6E+02
Butyl Benzyl Phthalate	None	None	1.5E+03	1.9E+03	None	None	1.5E+02	N/A	N/A	6.1E+03
Cadmium	3.1E+00	9.6E-01	5.0E+00	None	7.9E-01	2.4E-01	5.0E-01	2.0E+01	7.7E+00	2.0E+01
Carbon Tetrachloride	None	None	2.3E+00	1.6E+01	None	None	2.3E-01	N/A	N/A	1.9E+01
Chlordane	2.4E+00	4.3E-03	8.0E-03	8.1E-03	6.0E-01	1.1E-03	8.0E-04	1.5E+01	3.4E-02	6.8E-02
Chloride	8.6E+02 mg/L	2.3E+02 mg/L	2.5E+02 mg/L	None	2.2E+02 mg/L	6.4E+01 mg/L	3.3E+01 mg/L	5.4E+03 mg/L	1.7E+03 mg/L	9.8E+02 mg/L
Chlorine, Total Residual	1.9E-02 mg/L	1.1E-02 mg/L	None	None	4.8E-03 mg/L	2.8E-03 mg/L	None	1.2E-01 mg/L	8.6E-02 mg/L	N/A
Chlorobenzene	None	None	1.3E+02	1.6E+03	None	None	1.3E+01	N/A	N/A	5.3E+02
Chlorodibromomethane	None	None	4.0E+00	1.3E+02	None	None	4.0E-01	N/A	N/A	3.4E+01
Chloroform	None	None	3.4E+02	1.1E+04	None	None	3.4E+01	N/A	N/A	1.4E+03
2-Chloronaphthalene	None	None	1.0E+03	1.6E+03	None	None	1.0E+02	N/A	N/A	4.1E+03
2-Chlorophenol	None	None	8.1E+01	1.5E+02	None	None	8.1E+00	N/A	N/A	3.3E+02
Chlorpyrifos	8.3E-02	4.1E-02	None	None	2.1E-02	1.0E-02	None	5.2E-01	3.2E-01	N/A
Chromium (+3)	4.6E+02	6.2E+01	None	None	1.2E+02	1.6E+01	None	3.0E+03	4.9E+02	N/A
Chromium (+6)	1.6E+01	1.1E+01	None	None	4.0E+00	2.8E+00	None	1.0E+02	8.6E+01	N/A
Total Chromium	None	None	1.0E+02	None	None	None	1.0E+01	N/A	N/A	4.1E+02
Chrysene	None	None	3.8E-03	1.8E-02	None	None	3.8E-04	N/A	N/A	3.2E-02
Copper	1.1E+01	7.5E+00	1.3E+03	None	3.4E+00	2.5E+00	1.3E+02	7.1E+01	5.7E+01	5.3E+03
Cyanide, Free	2.2E+01	5.2E+00	1.4E+02	1.6E+04	5.5E+00	1.3E+00	1.4E+01	1.4E+02	4.1E+01	5.7E+02
DDD	None	None	3.1E-03	3.1E-03	None	None	3.1E-04	N/A	N/A	2.6E-02
DDE	None	None	2.2E-03	2.2E-03	None	None	2.2E-04	N/A	N/A	1.9E-02
DDT	1.1E+00	1.0E-03	2.2E-03	2.2E-03	2.8E-01	2.5E-04	2.2E-04	6.9E+00	7.8E-03	1.9E-02
Demeton	None	1.0E-01	None	None	None	2.5E-02	None	N/A	7.8E-01	N/A
Diazinon	1.7E-01	1.7E-01	None	None	4.3E-02	4.3E-02	None	1.1E+00	1.3E+00	N/A
Dibenz(a,h)anthracene	None	None	3.8E-02	1.8E-01	None	None	3.8E-03	N/A	N/A	3.2E-01
1,2-Dichlorobenzene	None	None	4.2E+02	1.3E+03	None	None	4.2E+01	N/A	N/A	1.7E+03
1,3-Dichlorobenzene	None	None	3.2E+02	9.6E+02	None	None	3.2E+01	N/A	N/A	1.3E+03
1,4-Dichlorobenzene	None	None	6.3E+01	1.9E+02	None	None	6.3E+00	N/A	N/A	2.6E+02
3,3-Dichlorobenzidine	None	None	2.1E-01	2.8E-01	None	None	2.1E-02	N/A	N/A	1.8E+00
Dichlorobromomethane	None	None	5.5E+00	1.7E+02	None	None	5.5E-01	N/A	N/A	4.7E+01
1,2-Dichloroethane	None	None	3.8E+00	3.7E+02	None	None	3.8E-01	N/A	N/A	3.2E+01
1,1-Dichloroethylene	None	None	3.3E+02	7.1E+03	None	None	3.3E+01	N/A	N/A	1.3E+03
1,2-trans-dichloroethylene	None	None	1.4E+02	1.0E+04	None	None	1.4E+01	N/A	N/A	5.7E+02
2,4-Dichlorophenol	None	None	7.7E+01	2.9E+02	None	None	7.7E+00	N/A	N/A	3.1E+02
2,4-Dichlorophenoxy Acetic Acid	None	None	1.0E+02	None	None	None	1.0E+01	N/A	N/A	4.1E+02
1,2-Dichloropropane	None	None	5.0E+00	1.5E+02	None	None	5.0E-01	N/A	N/A	4.2E+01
1,3-Dichloropropene	None	None	3.4E+00	2.1E+02	None	None	3.4E-01	N/A	N/A	2.9E+01
Dieldrin	2.4E-01	5.6E-02	5.2E-04	5.4E-04	6.0E-02	1.4E-02	5.2E-05	1.5E+00	4.4E-01	4.4E-03
Diethyl Phthalate	None	None	1.7E+04	4.4E+04	None	None	1.7E+03	N/A	N/A	6.9E+04
2,4 Dimethylphenol	None	None	3.8E+02	8.5E+02	None	None	3.8E+01	N/A	N/A	1.5E+03
Dimethyl Phthalate	None	None	2.7E+05	1.1E+06	None	None	2.7E+04	N/A	N/A	1.1E+06
Di-n-Butyl Phthalate	None	None	2.0E+03	4.5E+03	None	None	2.0E+02	N/A	N/A	8.1E+03
2,4 Dinitrophenol	None	None	6.9E+01	5.3E+03	None	None	6.9E+00	N/A	N/A	2.8E+02
2-Methyl-4,6-Dinitrophenol	None	None	1.3E+01	2.8E+02	None	None	1.3E+00	N/A	N/A	5.3E+01
2,4-Dinitrotoluene	None	None	1.1E+00	3.4E+01	None	None	1.1E-01	N/A	N/A	9.3E+00
Dioxin +	None	None	5.0E-08	5.1E-08	None	None	5.0E-09	N/A	N/A	2.0E-07
1,2-Diphenylhydrazine	None	None	3.6E-01	2.0E+00	None	None	3.6E-02	N/A	N/A	3.0E+00
Alpha-Endosulfan	2.2E-01	5.6E-02	6.2E+01	8.9E+01	5.5E-02	1.4E-02	6.2E+00	1.4E+00	4.4E-01	2.5E+02
Beta-Endosulfan	2.2E-01	5.6E-02	6.2E+01	8.9E+01	5.5E-02	1.4E-02	6.2E+00	1.4E+00	4.4E-01	2.5E+02
Alpha+Beta-Endosulfan	2.2E-01	5.6E-02	None	None	5.5E-02	1.4E-02	None	1.4E+00	4.4E-01	N/A
Endosulfan Sulfate	None	None	6.2E+01	8.9E+01	None	None	6.2E+00	N/A	N/A	2.5E+02
Endrin	8.6E-02	3.6E-02	5.9E-02	6.0E-02	2.2E-02	9.0E-03	5.9E-03	5.4E-01	2.8E-01	2.4E-01
Endrin Aldehyde	None	None	2.9E-01	3.0E-01	None	None	2.9E-02	N/A	N/A	1.2E+00
Ethylbenzene	None	None	5.3E+02	2.1E+03	None	None	5.3E+01	N/A	N/A	2.1E+03
Fluoranthene	None	None	1.3E+02	1.4E+02	None	None	1.3E+01	N/A	N/A	5.3E+02
Fluorene	None	None	1.1E+03	5.3E+03	None	None	1.1E+02	N/A	N/A	4.5E+03
Foaming Agents (MBAS)	None	None	5.0E+02	None	None	None	5.0E+01	N/A	N/A	2.0E+03
Guthion	None	1.0E-02	None	None	None	2.5E-03	None	N/A	7.8E-02	N/A
Heptachlor	5.2E-01	3.8E-03	7.9E-04	7.9E-04	1.3E-01	9.5E-04	7.9E-05	3.3E+00	3.0E-02	6.7E-03
Heptachlor Epoxide	5.2E-01	3.8E-03	3.9E-04	3.9E-04	1.3E-01	9.5E-04	3.9E-05	3.3E+00	3.0E-02	3.3E-03
Hexachlorobenzene	None	None	2.8E-03	2.9E-03	None	None	2.8E-04	N/A	N/A	2.4E-02
Hexachlorobutadiene	None	None	4.4E+00	1.8E+02	None	None	4.4E-01	N/A	N/A	3.7E+01
Hexachlorocyclohexane Alpha-BH	None	None	2.6E-02	4.9E-02	None	None	2.6E-03	N/A	N/A	2.2E-01
Hexachlorocyclohexane Beta-BHC	None	None	9.1E-02	1.7E-01	None	None	9.1E-03	N/A	N/A	7.7E-01
Hexachlorocyclohexane Gamma-BHC (Lindane)	9.5E-01	None	9.8E-01	1.8E+00	2.4E-01	None	9.8E-02	6.0E+00	N/A	8.3E+00
Hexachlorocyclopentadiene	None	None	4.0E+01	1.1E+03	None	None	4.0E+00	N/A	N/A	1.6E+02
Hexachloroethane	None	None	1.4E+01	3.3E+01	None	None	1.4E+00	N/A	N/A	1.2E+02
Hydrogen Sulfide	None	2.0E+00	None	None	None	5.0E-01	None	N/A	1.6E+01	N/A
Indeno(1,2,3-cd)pyrene	None	None	3.8E-02	1.8E-01	None	None	3.8E-03	N/A	N/A	3.2E-01
Iron	None	None	3.0E+02	None	None	None	3.0E+01	N/A	N/A	1.2E+03
Isophorone	None	None	3.5E+02	9.6E+03	None	None	3.5E+01	N/A	N/A	3.0E+03
Kepone	None	Zero	None	None	None	Zero	None	N/A	Zero	N/A
Lead	9.2E+01	1.0E+01	1.5E+01	None	2.3E+01	2.6E+00	1.5E+00	5.8E+02	8.1E+01	6.1E+01
Malathion	None	1.0E-01	None	None	None	2.5E-02	None	N/A	7.8E-01	N/A
Manganese	None	None	5.0E+01	None	None	None	1.8E+01	N/A	N/A	1.5E+02
Mercury	1.4E+00	7.7E-01	None	None	3.5E-01	1.9E-01	None	8.8E+00	6.0E+00	N/A
Methyl Bromide	None	None	4.7E+01	1.5E+03	None	None	4.7E+00	N/A	N/A	1.9E+02
Methylene Chloride	None	None	4.6E+01	5.9E+03	None	None	4.6E+00	N/A	N/A	3.9E+02
Methoxychlor	None	3.0E-02	1.0E+02	None	None	7.5E-03	1.0E+01	N/A	2.4E-01	4.1E+02
Mirex	None	Zero	None	None	None	Zero	None	N/A	Zero	N/A
Nickel	1.5E+02	1.7E+01	6.1E+02	4.6E+03	3.9E+01	4.6E+00	6.1E+01	9.7E+02	1.3E+02	2.5E+03
Nitrate (as N)	None	None	1.0E+01 mg/L	None	None	None	2.0E+00 mg/L	N/A	N/A	4.6E+01 mg/L
Nitrobenzene	None	None	1.7E+01	6.9E+02	None	None	1.7E+00	N/A	N/A	6.9E+01
N-Nitrosodimethylamine	None	None	6.9E-03	3.0E+01	None	None	6.9E-04	N/A	N/A	5.8E-02
N-Nitrosodiphenylamine	None	None	3.3E+01	6.0E+01	None	None	3.3E+00	N/A	N/A	2.8E+02
N-Nitrosodi-n-propylamine	None	None	5.0E-02	5.1E+00	None	None	5.0E-03	N/A	N/A	4.2E-01
Nonylphenol	2.8E+01	6.6E+00	None	None	7.0E+00	1.7E+00	None	1.6E+02	5.2E+01	N/A
Parathion	6.5E-02	1.3E-02	None	None	1.6E-02	3.3E-03	None	4.1E-01	1.0E-01	N/A
PCB Total	None	1.4E-02	6.4E-04	6.4E-04	None	3.5E-03	6.4E-05	N/A	1.1E-01	5.4E-03
Pentachlorophenol	1.2E+01	9.0E+00	2.7E+00	3.0E+01	2.9E+00	2.2E+00	2.7E-01	7.3E+01	7.0E+01	2.3E+01
Phenol	None	None	1.0E+04	8.6E+05	None	None	1.0E+03	N/A	N/A	4.1E+04
Pyrene	None	None	8.3E+02	4.0E+03	None	None	8.3E+01	N/A	N/A	3.4E+03
RadNuc - Beta Part & Photon Act	None	None	4.0E+00 mrem	None	None	None	4.0E-01 mrem	N/A	N/A	1.6E+01 mrem
RadNuc - Gross Alpha Part Act	None	None	1.5E+01 pCi/L	None	None	None	1.5E+00 pCi/L	N/A	N/A	6.1E+01 pCi/L
RadNuc - Radium 226 + 228	None	None	5.0E+00 pCi/L	None	None	None	5.0E-01 pCi/L	N/A	N/A	2.0E+01 pCi/L
RadNuc - Uranium	None	None	3.0E+01	None	None	None	3.0E+00	N/A	N/A	1.2E+02
Selenium, Total Recoverable	2.0E+01	5.0E+00	1.7E+02	4.2E+03	5.0E+00	1.3E+00	1.7E+01	1.3E+02	3.9E+01	6.9E+02
Silver	2.4E+00	None	None	None	6.1E-01	None	None	1.5E+01	N/A	N/A
Sulfate	None	None	2.5E+02 mg/L	None	None	None	3.4E+01 mg/L	N/A	N/A	1.0E+03 mg/L
1,1,2,2-Tetrachloroethane	None	None	1.7E+00	4.0E+01	None	None	1.7E-01	N/A	N/A	1.4E+01
Tetrachloroethylene	None	None	6.9E+00	3.3E+01	None	None	6.9E-01	N/A	N/A	5.8E+01
Thallium	None	None	2.4E-01	4.7E-01	None	None	2.4E-02	N/A	N/A	9.7E-01
Toluene	None	None	5.1E+02	6.0E+03	None	None	5.1E+01	N/A	N/A	2.1E+03
Total Dissolved Solids	None	None	5.0E+05	None	None	None	5.9E+04	N/A	N/A	2.4E+06
Toxaphene	7.3E-01	2.0E-04	2.8E-03	2.8E-03	1.8E-01	5.0E-05	2.8E-04	4.6E+00	1.6E-03	2.4E-02
Tributyltin	4.6E-01	7.2E-02	None	None	1.2E-01	1.8E-02	None	2.9E+00	5.6E-01	N/A
1,2,4-Trichlorobenzene	None	None	3.5E+01	7.0E+01	None	None	3.5E+00	N/A	N/A	1.4E+02
1,1,2-Trichloroethane	None	None	5.9E+00	1.6E+02	None	None	5.9E-01	N/A	N/A	5.0E+01
Trichloroethylene	None	None	2.5E+01	3.0E+02	None	None	2.5E+00	N/A	N/A	2.1E+02
2,4,6-Trichlorophenol	None	None	1.4E+01	2.4E+01	None	None	1.4E+00	N/A	N/A	1.2E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	None	None	5.0E+01	None	None	None	5.0E+00	N/A	N/A	2.0E+02
Vinyl Chloride	None	None	2.5E-01	2.4E+01	None	None	2.5E-02	N/A	N/A	2.1E+00
Zinc	9.9E+01	9.9E+01	7.4E+03	2.6E+04	2.9E+01	2.8E+01	7.4E+02	6.3E+02	7.7E+02	3.0E+04

POST - EXPANSION WATER QUALITY CRITERIA (18.000 MGD Discharge Flow - Mix per "Mixer"); **NON-ANTIDEGRADATION WASTE LOAD ALLOCATIONS** (18.000 MGD Discharge - Mix per "Mixer"); **MOST RESTRICTIVE WASTE LOAD ALLOCATIONS** (18.000 MGD Discharge Flow)

Toxic Parameter and Form	Post-Exp. Aquatic Protection Acute	Post-Exp. Aquatic Protection Chronic	Post-Exp. Human Health Public Water Supplies	Post-Exp. Human Health Other Surface Waters	Non-Antideg. Aquatic Protection Acute	Non-Antideg. Aquatic Protection Chronic	Non-Antideg. Human Health	Target Level	Most Restrictive Aquatic Protection Acute	Most Restrictive Aquatic Protection Chronic	Most Restrictive Human Health
Acenaphthene	None	None	6.7E+02	9.9E+02	N/A	N/A	2.7E+04	N/A	N/A	N/A	2.7E+03
Acrolein	None	None	6.1E+00	9.3E+00	N/A	N/A	2.5E+02	N/A	N/A	N/A	2.5E+01
Acrylonitrile	None	None	5.1E-01	2.5E+00	N/A	N/A	4.3E+01	N/A	N/A	N/A	4.3E+00
Aldrin	3.0E+00	None	4.9E-04	5.0E-04	5.0E+00	N/A	4.1E-02	N/A	5.0E+00	N/A	4.1E-03
Ammonia-N (Annual)	2.0E+01 mg/L	###### mg/L	None	None	3.3E+01 mg/L	3.6E+01 mg/L	N/A	N/A	3.3E+01 mg/L	1.0E+01 mg/L	N/A
Ammonia-N (Wet Season)	1.9E+01 mg/L	###### mg/L	None	None	3.5E+01 mg/L	8.6E+01 mg/L	N/A	N/A	3.5E+01 mg/L	2.1E+01 mg/L	N/A
Anthracene	None	None	8.3E+03	4.0E+04	N/A	N/A	3.4E+05	N/A	N/A	N/A	3.4E+04
Antimony	None	None	5.6E+00	6.4E+02	N/A	N/A	2.3E+02	2.3E+02	N/A	N/A	2.3E+01
Arsenic	3.4E+02	######	1.0E+01	None	5.6E+02	4.7E+03	4.1E+02	2.3E+02	5.6E+02	1.2E+03	4.1E+01
Barium	None	None	2.0E+03	None	N/A	N/A	8.1E+04	8.1E+04	N/A	N/A	8.1E+03
Benzene	None	None	2.2E+01	5.1E+02	N/A	N/A	1.9E+03	N/A	N/A	N/A	1.9E+02
Benzidine	None	None	8.6E-04	2.0E-03	N/A	N/A	7.3E-02	N/A	N/A	N/A	7.3E-03
Benzo(a)anthracene	None	None	3.8E-02	1.8E-01	N/A	N/A	3.2E+00	N/A	N/A	N/A	3.2E-01
Benzo(a)pyrene	None	None	3.8E-02	1.8E-01	N/A	N/A	3.2E+00	N/A	N/A	N/A	3.2E-01
Benzo(b)fluoranthene	None	None	3.8E-02	1.8E-01	N/A	N/A	3.2E+00	N/A	N/A	N/A	3.2E-01
Benzo(k)fluoranthene	None	None	3.8E-02	1.8E-01	N/A	N/A	3.2E+00	N/A	N/A	N/A	3.2E-01
Bis2-Chloroethyl Ether	None	None	3.0E-01	5.3E+00	N/A	N/A	2.5E+01	N/A	N/A	N/A	2.5E+00
Bis2-Chloroisopropyl Ether	None	None	1.4E+03	6.5E+04	N/A	N/A	5.7E+04	N/A	N/A	N/A	5.7E+03
Bis2-Ethylhexyl Phthalate	None	None	1.2E+01	2.2E+01	N/A	N/A	1.0E+03	N/A	N/A	N/A	1.0E+02
Bromoform	None	None	4.3E+01	1.4E+03	N/A	N/A	3.6E+03	N/A	N/A	N/A	3.6E+02
Butyl Benzyl Phthalate	None	None	1.5E+03	1.9E+03	N/A	N/A	6.1E+04	N/A	N/A	N/A	6.1E+03
Cadmium	6.9E+00	9.8E-01	5.0E+00	None	1.1E+01	3.1E+01	2.0E+02	4.6E+00	1.1E+01	7.7E+00	2.0E+01
Carbon Tetrachloride	None	None	2.3E+00	1.6E+01	N/A	N/A	1.9E+02	N/A	N/A	N/A	1.9E+01
Chlordane	2.4E+00	4.3E-03	8.0E-03	8.1E-03	4.0E+00	1.3E-01	6.8E-01	N/A	4.0E+00	3.4E-02	6.8E-02
Chloride	8.6E+02 mg/L	###### mg/L	2.5E+02 mg/L	None	1.4E+03 mg/L	6.9E+03 mg/L	9.8E+03 mg/L	N/A	1.4E+03 mg/L	1.7E+03 mg/L	9.8E+02 mg/L
Chlorine, Total Residual	1.9E-02 mg/L	1.1E-02 mg/L	None	None	3.2E-02 mg/L	3.4E-01 mg/L	N/A	N/A	3.2E-02 mg/L	8.6E-02 mg/L	N/A
Chlorobenzene	None	None	1.3E+02	1.6E+03	N/A	N/A	5.3E+03	N/A	N/A	N/A	5.3E+02
Chlorodibromomethane	None	None	4.0E+00	1.3E+02	N/A	N/A	3.4E+02	N/A	N/A	N/A	3.4E+01
Chloroform	None	None	3.4E+02	1.1E+04	N/A	N/A	1.4E+04	N/A	N/A	N/A	1.4E+03
2-Chloronaphthalene	None	None	1.0E+03	1.6E+03	N/A	N/A	4.1E+04	N/A	N/A	N/A	4.1E+03
2-Chlorophenol	None	None	8.1E+01	1.5E+02	N/A	N/A	3.3E+03	N/A	N/A	N/A	3.3E+02
Chlorpyrifos	8.3E-02	4.1E-02	None	None	1.4E-01	1.3E+00	N/A	N/A	1.4E-01	3.2E-01	N/A
Chromium (+3)	8.6E+02	######	None	None	1.4E+03	2.0E+03	N/A	5.7E+02	1.4E+03	4.9E+02	N/A
Chromium (+6)	1.6E+01	######	None	None	2.7E+01	3.4E+02	N/A	1.1E+01	2.7E+01	8.6E+01	N/A
Total Chromium	None	None	1.0E+02	None	N/A	N/A	4.0E+03	4.0E+03	N/A	N/A	4.1E+02
Chrysene	None	None	4.4E-02	4.9E-01	N/A	N/A	3.7E+00	N/A	N/A	N/A	3.2E-02
Copper	2.2E+01	######	1.3E+03	None	3.5E+01	2.2E+02	5.3E+04	1.4E+01	3.5E+01	5.7E+01	5.3E+03
Cyanide, Free	2.2E+01	######	1.4E+02	1.6E+04	3.6E+01	1.6E+02	5.7E+03	N/A	3.6E+01	4.1E+01	5.7E+02
DDD	None	None	3.1E-03	3.1E-03	N/A	N/A	2.6E-01	N/A	N/A	N/A	2.6E-02
DDE	None	None	2.2E-03	2.2E-03	N/A	N/A	1.9E-01	N/A	N/A	N/A	1.9E-02
DDT	1.1E+00	1.0E-03	2.2E-03	2.2E-03	1.8E+00	3.1E-02	1.9E-01	N/A	1.8E+00	7.8E-03	1.9E-02
Demeton	None	1.0E-01	None	None	N/A	3.1E+00	N/A	N/A	N/A	7.8E-01	N/A
Diazinon	1.7E-01	1.7E-01	None	None	2.8E-01	5.3E+00	N/A	N/A	2.8E-01	1.3E+00	N/A
Dibenz(a,h)anthracene	None	None	3.8E-02	1.8E-01	N/A	N/A	3.2E+00	N/A	N/A	N/A	3.2E-01
1,2-Dichlorobenzene	None	None	4.2E+02	1.3E+03	N/A	N/A	1.7E+04	N/A	N/A	N/A	1.7E+03
1,3-Dichlorobenzene	None	None	3.2E+02	9.6E+02	N/A	N/A	1.3E+04	N/A	N/A	N/A	1.3E+03
1,4-Dichlorobenzene	None	None	6.3E+01	1.9E+02	N/A	N/A	2.6E+03	N/A	N/A	N/A	2.6E+02
3,3-Dichlorobenzidine	None	None	2.1E-01	2.8E-01	N/A	N/A	1.8E+01	N/A	N/A	N/A	1.8E+00
Dichlorobromomethane	None	None	5.5E+00	1.7E+02	N/A	N/A	4.7E+02	N/A	N/A	N/A	4.7E+01
1,2-Dichloroethane	None	None	3.8E+00	3.7E+02	N/A	N/A	3.2E+02	N/A	N/A	N/A	3.2E+01
1,1-Dichloroethylene	None	None	3.3E+02	7.1E+03	N/A	N/A	1.3E+04	N/A	N/A	N/A	1.3E+03
1,2-trans-dichloroethylene	None	None	1.4E+02	1.0E+04	N/A	N/A	5.7E+03	N/A	N/A	N/A	5.7E+02
2,4-Dichlorophenol	None	None	7.7E+01	2.9E+02	N/A	N/A	3.1E+03	N/A	N/A	N/A	3.1E+02
2,4-Dichlorophenoxy Acetic Acid	None	None	1.0E+02	None	N/A	N/A	4.1E+03	N/A	N/A	N/A	4.1E+02
1,2-Dichloropropane	None	None	5.0E+00	1.5E+02	N/A	N/A	4.2E+02	N/A	N/A	N/A	4.2E+01
1,3-Dichloropropene	None	None	3.4E+00	2.1E+02	N/A	N/A	2.9E+02	N/A	N/A	N/A	2.9E+01
Dieldrin	2.4E-01	5.6E-02	5.2E-04	5.4E-04	4.0E-01	1.6E+00	4.4E-02	N/A	4.0E-01	4.4E-01	4.4E-03
Diethyl Phthalate	None	None	1.7E+04	4.4E+04	N/A	N/A	6.9E+05	N/A	N/A	N/A	6.9E+04
2,4 Dimethylphenol	None	None	3.8E+02	8.5E+02	N/A	N/A	1.5E+04	N/A	N/A	N/A	1.5E+03
Dimethyl Phthalate	None	None	2.7E+05	1.1E+06	N/A	N/A	1.1E+07	N/A	N/A	N/A	1.1E+06
Di-n-Butyl Phthalate	None	None	2.0E+03	4.5E+03	N/A	N/A	8.1E+04	N/A	N/A	N/A	8.1E+03
2,4 Dinitrophenol	None	None	6.9E+01	5.3E+03	N/A	N/A	2.8E+03	N/A	N/A	N/A	2.8E+02
2-Methyl-4,6-Dinitrophenol	None	None	1.3E+01	2.8E+02	N/A	N/A	5.3E+02	N/A	N/A	N/A	5.3E+01
2,4-Dinitrotoluene	None	None	1.1E+00	3.4E+01	N/A	N/A	9.3E+01	N/A	N/A	N/A	9.3E+00
Dioxin +	None	None	5.0E-08	5.1E-08	N/A	N/A	2.0E-06	N/A	N/A	N/A	2.0E-07
1,2-Diphenylhydrazine	None	None	3.6E-01	2.0E+00	N/A	N/A	3.0E+01	N/A	N/A	N/A	3.0E+00
Alpha-Endosulfan	2.2E-01	5.6E-02	6.2E+01	8.9E+01	3.6E-01	1.8E+00	2.5E+03	N/A	3.6E-01	4.4E-01	2.5E+02
Beta-Endosulfan	2.2E-01	5.6E-02	6.2E+01	8.9E+01	3.6E-01	1.8E+00	2.5E+03	N/A	3.6E-01	4.4E-01	2.5E+02
Alpha+Beta-Endosulfan	2.2E-01	5.6E-02	None	None	3.6E-01	1.8E+00	N/A	N/A	3.6E-01	4.4E-01	N/A
Endosulfan Sulfate	None	None	6.2E+01	8.9E+01	N/A	N/A	2.5E+03	N/A	N/A	N/A	2.5E+02
Endrin	8.6E-02	3.6E-02	5.9E-02	6.0E-02	1.4E-01	1.1E+00	2.4E+00	N/A	1.4E-01	2.8E-01	2.4E-01
Endrin Aldehyde	None	None	2.9E-01	3.0E-01	N/A	N/A	1.2E+01	N/A	N/A	N/A	1.2E+00
Ethylbenzene	None	None	5.3E+02	2.1E+03	N/A	N/A	2.1E+04	N/A	N/A	N/A	2.1E+03
Fluoranthene	None	None	1.3E+02	1.4E+02	N/A	N/A	5.3E+03	N/A	N/A	N/A	5.3E+02
Fluorene	None	None	1.1E+03	5.3E+03	N/A	N/A	4.5E+04	N/A	N/A	N/A	4.5E+03
Foaming Agents (MBAS)	None	None	5.0E+02	None	N/A	N/A	2.0E+04	N/A	N/A	N/A	2.0E+03
Guthion	None	1.0E-02	None	None	N/A	3.1E-01	N/A	N/A	N/A	7.8E-02	N/A
Heptachlor	5.2E-01	3.8E-03	7.9E-04	7.9E-04	8.6E-01	1.2E-01	6.7E-02	N/A	8.6E-01	3.0E-02	6.7E-03
Heptachlor Epoxide	5.2E-01	3.8E-03	3.9E-04	3.9E-04	8.6E-01	1.2E-01	3.3E-02	N/A	8.6E-01	3.0E-02	3.3E-03
Hexachlorobenzene	None	None	2.8E-03	2.9E-03	N/A	N/A	2.4E-01	N/A	N/A	N/A	2.4E-02
Hexachlorobutadiene	None	None	4.4E+00	1.8E+02	N/A	N/A	3.7E+02	N/A	N/A	N/A	3.7E+01
Hexachlorocyclohexane Alpha-BH	None	None	2.6E-02	4.9E-02	N/A	N/A	2.2E+00	N/A	N/A	N/A	2.2E-01
Hexachlorocyclohexane Beta-BHC	None	None	9.1E-02	1.7E-01	N/A	N/A	7.7E+00	N/A	N/A	N/A	7.7E-01
Hexachlorocyclohexane Gamma-BHC (Lindane)	9.5E-01	None	9.8E-01	1.8E+00	1.6E+00	N/A	8.3E+01	N/A	1.6E+00	N/A	8.3E+00
Hexachlorocyclopentadiene	None	None	4.0E+01	1.1E+03	N/A	N/A	1.6E+03	N/A	N/A	N/A	1.6E+02
Hexachloroethane	None	None	1.4E+01	3.3E+01	N/A	N/A	1.2E+03	N/A	N/A	N/A	1.2E+02
Hydrogen Sulfide	None	######	None	None	N/A	6.3E+01	N/A	N/A	N/A	1.6E+01	N/A
Indeno(1,2,3-cd)pyrene	None	None	3.8E-02	1.8E-01	N/A	N/A	3.2E+00	N/A	N/A	N/A	3.2E-01
Iron	None	None	3.0E+02	None	N/A	N/A	1.2E+04	1.2E+04	N/A	N/A	1.2E+03
Isophorone	None	None	3.5E+02	9.6E+03	N/A	N/A	3.0E+04	N/A	N/A	N/A	3.0E+03
Kepone	None	Zero	None	None	N/A	Zero	N/A	N/A	N/A	Zero	N/A
Lead	2.3E+02	######	1.5E+01	None	3.8E+02	3.4E+02	6.1E+02	1.5E+02	3.8E+02	8.1E+01	6.1E+01
Malathion	None	1.0E-01	None	None	N/A	3.1E+00	N/A	N/A	N/A	7.8E-01	N/A
Manganese	None	None	5.0E+01	None	N/A	N/A	1.5E+03	1.5E+03	N/A	N/A	1.5E+02
Mercury	1.4E+00	7.7E-01	None	None	2.3E+00	2.4E+01	N/A	1.0E+00	2.3E+00	6.0E+00	N/A
Methyl Bromide	None	None	4.7E+01	1.5E+03	N/A	N/A	1.9E+03	N/A	N/A	N/A	1.9E+02
Methylene Chloride	None	None	4.6E+01	5.9E+03	N/A	N/A	3.9E+03	N/A	N/A	N/A	3.9E+02
Methoxychlor	None	3.0E-02	1.0E+02	None	N/A	9.4E-01	4.1E+03	N/A	N/A	2.4E-01	4.1E+02
Mirex	None	Zero	None	None	N/A	Zero	N/A	N/A	N/A	Zero	N/A
Nickel	2.8E+02	######	6.1E+02	4.6E+03	4.6E+02	5.3E+02	2.5E+04	1.9E+02	4.6E+02	1.3E+02	2.5E+03
Nitrate (as N)	None	None	1.0E+01 mg/L	None	N/A	N/A	3.7E+02 mg/L	N/A	N/A	N/A	4.6E+01 mg/L
Nitrobenzene	None	None	1.7E+01	6.9E+02	N/A	N/A	6.9E+02	N/A	N/A	N/A	6.9E+01
N-Nitrosodimethylamine	None	None	6.9E-03	3.0E+01	N/A	N/A	5.8E-01	N/A	N/A	N/A	5.8E-02
N-Nitrosodiphenylamine	None	None	3.3E+01	6.0E+01	N/A	N/A	2.8E+03	N/A	N/A	N/A	2.8E+02
N-Nitrosodi-n-propylamine	None	None	5.0E-02	5.1E+00	N/A	N/A	4.2E+00	N/A	N/A	N/A	4.2E-01
Nonylphenol	2.8E+01	######	None	None	4.6E+01	2.1E+02	N/A	N/A	4.6E+01	5.2E+01	N/A
Parathion	6.5E-02	1.3E-02	None	None	1.1E-01	4.1E-01	N/A	N/A	1.1E-01	1.0E-01	N/A
PCB Total	None	1.4E-02	6.4E-04	6.4E-04	N/A	4.4E-01	5.4E-02	N/A	N/A	1.1E-01	5.4E-03
Pentachlorophenol	8.9E+00	######	2.7E+00	3.0E+01	1.5E+01	2.8E+02	2.3E+02	N/A	1.5E+01	7.0E+01	2.3E+01
Phenol	None	None	1.0E+04	8.6E+05	N/A	N/A	4.1E+05	N/A	N/A	N/A	4.1E+04
Pyrene	None	None	8.3E+02	4.0E+03	N/A	N/A	3.4E+04	N/A	N/A	N/A	3.4E+03
RadNuc - Beta Part & Photon Act	None	None	4.0E+00 mrem	4.0E+00 mrem	N/A	N/A	1.6E+02 mrem	N/A	N/A	N/A	1.6E+01 mrem
RadNuc - Gross Alpha Part Act	None	None	1.5E+01 pCi/L	None	N/A	N/A	6.1E+02 pCi/L	N/A	N/A	N/A	6.1E+01 pCi/L
RadNuc - Radium 226 + 228	None	None	5.0E+00 pCi/L	None	N/A	N/A	2.0E+02 pCi/L	N/A	N/A	N/A	2.0E+01 pCi/L
RadNuc - Uranium	None	None	3.0E+01	None	N/A	N/A	1.2E+03	N/A	N/A	N/A	1.2E+02
Selenium, Total Recoverable	2.0E+01	######	1.7E+02	4.2E+03	3.3E+01	1.6E+02	6.9E+03	1.3E+01	3.3E+01	3.9E+01	6.9E+02
Silver	8.2E+00	None	None	None	1.4E+01	N/A	N/A	5.5E+00	1.4E+01	N/A	N/A
Sulfate	None	None	2.5E+02 mg/L	None	N/A	N/A	9.8E+03 mg/L	N/A	N/A	N/A	1.0E+03 mg/L
1,1,2,2-Tetrachloroethane	None	None	1.7E+00	4.0E+01	N/A	N/A	1.4E+02	N/A	N/A	N/A	1.4E+01
Tetrachloroethylene		None	6.9E+00	3.3E+01	0.0E+00	N/A	5.8E+02	N/A	N/A	N/A	5.8E+01
Thallium	None	None	2.4E-01	4.7E-01	N/A	N/A	9.7E+00	N/A	N/A	N/A	9.7E-01
Toluene	None	None	5.1E+02	6.0E+03	N/A	N/A	2.1E+04	N/A	N/A	N/A	2.1E+03
Total Dissolved Solids	None	None	5.0E+05	None	N/A	N/A	2.0E+07	N/A	N/A	N/A	2.4E+06
Toxaphene	7.3E-01	2.0E-04	2.8E-03	2.8E-03	1.2E+00	6.3E-03	2.4E-01	N/A	1.2E+00	1.6E-03	2.4E-02
Tributyltin	4.6E-01	7.2E-02	None	None	7.6E-01	2.3E+00	N/A	N/A	7.6E-01	5.6E-01	N/A
1,2,4-Trichlorobenzene	None	None	3.5E+01	7.0E+01	N/A	N/A	1.4E+03	N/A	N/A	N/A	1.4E+02
1,1,2-Trichloroethane	None	None	5.9E+00	1.6E+02	N/A	N/A	5.0E+02	N/A	N/A	N/A	5.0E+01
Trichloroethylene	None	None	2.5E+01	3.0E+02	N/A	N/A	2.1E+03	N/A	N/A	N/A	2.1E+02
2,4,6-Trichlorophenol	None	None	1.4E+01	2.4E+01	N/A	N/A	1.2E+03	N/A	N/A	N/A	1.2E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	None	None	5.0E+01	None	N/A	N/A	2.0E+03	N/A	N/A	N/A	2.0E+02
Vinyl Chloride	None	None	2.5E-01	2.4E+01	N/A	N/A	2.1E+01	N/A	N/A	N/A	2.1E+00
Zinc	1.8E+02	######	7.4E+03	2.6E+04	3.0E+02	3.1E+03	3.0E+05	1.2E+02	3.0E+02	7.7E+02	3.0E+04

2/25/2014 1:46:36 PM

Facility = PFRWTA - 18 MGD
Chemical = ammonia (annual) in mg/L
Chronic averaging period = 30
WLAa = 38
WLAc = 10
Q.L. = 0.20
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 20.1767009341631
Average Weekly limit = 12.0355047239564
Average Monthly LImit = 10

The data are:

9

2/25/2014 1:39:21 PM

Facility = PFRWTA - 18 MGD
Chemical = ammonia (wet season) in mg/L
Chronic averaging period = 30
WLAa = 39
WLAc = 21
Q.L. = 0.20
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

2/25/2014 1:56:47 PM

Facility = PFRWTA - 18 MGD
Chemical = cadmium in ug/L
Chronic averaging period = 4
WLAa = 20
WLAc = 7.7
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = .185549
Variance = .012394
C.V. = 0.6
97th percentile daily values = .451520
97th percentile 4 day average = .308715
97th percentile 30 day average= .223782
< Q.L. = 2
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

0
0
0.2

2/25/2014 2:00:19 PM

Facility = PFRWTA - 18 MGD
Chemical = chromium in ug/L
Chronic averaging period = 4
WLAa = 100
WLAc = 86
Q.L. = 1.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 14.1666
Variance = 72.25
C.V. = 0.6
97th percentile daily values = 34.4734
97th percentile 4 day average = 23.5703
97th percentile 30 day average= 17.0857
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

7.8
26.7
8

2/25/2014 2:03:24 PM

Facility = PFRWTA - 18 MGD
Chemical = copper in ug/L
Chronic averaging period = 4
WLAa = 71
WLAc = 57
Q.L. = 2.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 5.2
Variance = 9.7344
C.V. = 0.6
97th percentile daily values = 12.6537
97th percentile 4 day average = 8.65170
97th percentile 30 day average= 6.27147
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5
5.3
5.3

2/25/2014 2:06:00 PM

Facility = PFRWTA - 18 MGD
Chemical = nickel in ug/L
Chronic averaging period = 4
WLAa = 970
WLAc = 130
Q.L. = 2.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 5.56666
Variance = 11.1556
C.V. = 0.6
97th percentile daily values = 13.5460
97th percentile 4 day average = 9.26176
97th percentile 30 day average= 6.71369
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4.5
6.7
5.5

2/25/2014 2:08:48 PM

Facility = PFRWTA - 18 MGD
Chemical = zinc in ug/L
Chronic averaging period = 4
WLAa = 630
WLAc = 770
Q.L. = 3.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 35
Variance = 441
C.V. = 0.6
97th percentile daily values = 85.1696
97th percentile 4 day average = 58.2326
97th percentile 30 day average= 42.2118
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

29.5
34.9
40.6