

PERMIT ATTACHMENT E
FORESTVILLE WATER DISTRICT
WASTE DISCHARGE REQUIREMENTS ORDER NO. R1-2004-0027
FINAL ZINC EFFLUENT LIMITATIONS

Hardness-Dependent Effluent Limitations for Zinc
Total Recoverable Zinc (ug/l)

Hardness mg/l as CaCO3	CCC 4-Day Ave. (ug/l)	CMC 1-Hour Ave. (ug/l)	AMEL (ug/l)	MDEL (ug/l)	CV=0.57
5	9.5	9.5	4.8	9.4	
10	17.0	17.0	8.7	17.0	
15	24.0	24.0	12.2	24.0	
20	30.6	30.6	15.6	30.6	
25	37.0	37.0	18.8	37.0	CCC = Criteria Continuous Concentration
30	43.2	43.2	22.0	43.1	{0.8545[ln(hardness)] - 1.702}
35	49.2	49.2	25.1	49.1	= e
40	55.1	55.1	28.1	55.0	
45	60.9	60.9	31.0	60.8	CMC = Criteria Maximum Concentration
50	66.6	66.6	33.9	66.5	{0.9422[ln(hardness0)] - 1.700}
55	72.2	72.2	36.8	72.1	= e
60	77.7	77.7	39.6	77.6	
65	83.2	83.2	42.4	83.0	AMEL = Average Monthly Effluent Limitation
70	88.6	88.6	45.1	88.4	= 1.52[min(0.542CCC,0.3335CMC)]
75	93.9	93.9	47.8	93.7	
80	99.2	99.2	50.5	99.0	MDEL = Maximum Daily Effluent Limitation
85	104.4	104.4	53.2	104.2	= 2.98[min(0.542CCC,0.335CMC)]
90	109.6	109.6	55.8	109.4	
95	114.7	114.7	58.4	114.5	Hardness - hardness of the receiving water
100	119.8	119.8	61.0	119.6	at the time the discharge is sampled.
105	124.9	124.9	63.6	124.7	
110	129.9	129.9	66.1	129.7	
115	134.9	134.9	68.7	134.7	
120	139.8	139.8	71.2	139.6	
125	144.8	144.8	73.7	144.5	
130	149.6	149.6	76.2	149.4	
135	154.5	154.5	78.7	154.2	
140	159.3	159.3	81.1	159.1	
145	164.2	164.2	83.6	163.9	
150	168.9	168.9	86.0	168.6	
155	173.7	173.7	88.4	173.4	
160	178.4	178.4	90.9	178.1	
165	183.1	183.1	93.3	182.8	
170	187.8	187.8	95.6	187.5	
175	192.5	192.5	98.0	192.2	
180	197.2	197.2	100.4	196.8	
185	201.8	201.8	102.7	201.4	
190	206.4	206.4	105.1	206.0	
195	211.0	211.0	107.4	210.6	
200	215.6	215.6	109.8	215.2	
205	220.1	220.1	112.1	219.7	
210	224.7	224.7	114.4	224.3	
215	229.2	229.2	116.7	228.8	
220	233.7	233.7	119.0	233.3	
225	238.2	238.2	121.3	237.8	
230	242.7	242.7	123.6	242.3	
235	247.1	247.1	125.8	246.7	
240	251.6	251.6	128.1	251.1	
245	256.0	256.0	130.4	255.6	
250	260.4	260.4	132.6	260.0	
255	264.8	264.8	134.9	264.4	
260	269.2	269.2	137.1	268.8	
265	273.6	273.6	139.3	273.1	
270	278.0	278.0	141.5	277.5	
275	282.3	282.3	143.8	281.9	
280	286.7	286.7	146.0	286.2	
285	291.0	291.0	148.2	290.5	
290	295.3	295.3	150.4	294.8	
295	299.6	299.6	152.6	299.1	
300	303.9	303.9	154.8	303.4	
310	312.5	312.5	159.1	312.0	
320	321.0	321.0	163.5	320.5	
330	329.5	329.5	167.8	328.9	
340	337.9	337.9	172.1	337.4	
350	346.3	346.3	176.4	345.8	
360	354.7	354.7	180.6	354.1	
370	363.0	363.0	184.9	362.4	
380	371.3	371.3	189.1	370.7	
390	379.6	379.6	193.3	379.0	
400	387.8	387.8	197.5	387.2	
>400	387.8	387.8	197.5	387.2	