

**DSWC Copper and Zinc Projection Worksheet****Example**

III. **VOLUME TO BE REMOVED**<sup>1</sup>: Date Measured: 7/18/01

**Lagoon dimensions: Top - 480 x 86 ; Bottom - 468 x 74 ; Side slopes - 1 x 1**

Liquid Depth: 1.5 ft (60,642 cubic feet x 7.48 gal/cu ft = 453,602 gallons)

Sludge Depth: 4.5 ft (166,941 cubic feet x 7.48 gal/cu ft = 1,248,719 gallons)

Total: 6.0 ft (227,583 cubic feet x 7.48 gal/cu ft = 1,702,321 gallons)

IV. **WASTE ANALYSIS DATA**: Date of Analysis: 7/31/01

**A. – Nitrogen Concentration**<sup>2</sup>:

Liquid: 5.9 lbs. PAN/1000 gal X liquid volume/1000 = 2,676 lbs. PAN

Sludge: 14.3 lbs. PAN/1000 gal X sludge volume/1000 = 17,857 lbs. PAN

Total PAN to be applied: 20,533 lbs PAN

divided by 1,702.32 Total Volume/1000

= 12.06 lbs PAN/1000 Mixed Volume Concentration

x 27.15 = 327.4 lbs per acre-inch

**B. – Copper Concentration:**

Liquid: 3.59 ppm X liquid volume = 1,628,431 ppm Cu – gallons

Sludge: 104 ppm X sludge volume = 129,860,776 ppm Cu – gallons

Total Copper to be applied = 131,489,207 ppm Cu – gallons

divided by 1,702,321 Total Volume

= 77 ppm Copper Mixed Volume Concentration

**C. – Zinc Concentration:**

Liquid: 8.24 ppm X liquid volume = 3,737,680 ppm Zn – gallons

Sludge: 174 ppm X sludge volume = 217,277,106 ppm Zn – gallons

Total Zinc to be applied = 221,014,786 ppm Zn – gallons

divided by 1,702,301 Total Volume

= 130 ppm Zinc Mixed Volume Concentration

<sup>1</sup> 1 cubic foot = 7.48 gallons

<sup>2</sup> 1 lb/1,000 gal = 27.15 lbs/ac-in

V. LAND APPLICATION OF WASTE – Lagoon # 1

Table A – Nitrogen

1	2	3	4	5	6	7	8	9	10	11
Field #	Crop	Soil Type	Realistic Yield Estimates	Nitrogen Lbs Per Acre Max.	Nitrogen Lbs Per Acre Planned	Usable Acres	Pan Amount Applied (lbs)	PAN Per Ac-In (from IV-A)	Ac-Ins Applied	Application Amount (Inches)
1	Corn	No	115	138	75	14.0	1050	327.4	3.21	0.23
2	Fes	Go	4	200	50	5.6	280	327.4	0.86	.15

Total PAN: \_\_\_\_\_

VI. SOIL TEST INFORMATION – Lagoon # 1:

Table B – Copper Levels

1	2	3	4	5	6	7	8
Date of Last Soil Test	Field #	Waste Cu Applied (ppm) (from IV-B)	Application Amount (Inches) (from V-A)	Conversion Factor <sup>3</sup>	Cu Index Adjustment	Soil Test Cu Index	New Soil Cu Index
1/1/01	1	77	0.23	6.297	111.5	45	156.5
1/1/01	2	77	0.15	6.297	72.7	32	104.7
				6.297			

Table C – Zinc Levels

1	2	3	4	5	6	7	8
Date of Last Soil Test	Field #	Waste Zn Applied (ppm) (from IV-C)	Application Amount (Inches) (from V-A)	Conversion Factor <sup>4</sup>	Zn Index Adjustment	Soil Test Zn Index	New Soil Zn Index
1/1/01	1	130	0.23	3.193	95.4	65	190.4
1/1/01	2	130	0.15	3.193	62.2	115	177.2
				3.193			

<sup>3</sup> Copper Index conversion factor = {(0.00835) \* (27.15 thousand gals/ac-in)} / .036 = 6.297

<sup>4</sup> Zinc Index conversion factor = {(0.00835) \* (27.15 thousand gals/ac-in)} / .071 = 3.193