

APPENDIX A4 EAA FARM SCALE ALLOCATION

This Appendix sets forth the procedure the District will follow in the future to regulate total phosphorus (TP) loads from individual farms when the EAA Basin has been determined to be “Not In Compliance” with the Target or Limit according to the procedures set forth in Appendix A3. Within the context of the methodology described, “farm” refers to a hydrologic drainage area described by the District in the permits as a basin ID.

1. Individual permittees may participate in an Early Baseline Option to establish a base-year data set by monitoring the farm-level water quality and quantity discharge for a period of one year beginning January 1, 1993. The permittee who elects this option will be required to have approved BMPs in place by January 1, 1994. These permittees will be required to reduce their rainfall-adjusted phosphorus loading by at least 25 percent as compared to the rainfall-adjusted base-year loading. The procedure outlined in Appendix A3 will be used for rainfall adjustment.

2. The base year data will be verified for reasonableness. The determination will be based on an analysis of outliers, an analysis of consistency with existing total phosphorus data, rainfall data, and other relevant information. Permitted structures for which monitoring data are determined to be unreasonable shall be excluded from further participation in the Early Baseline Option.

3. In determining compliance in any future year, the measured EAA total basin load for the specified May 1 - April 30 period will be compared to the Target for the EAA Basin for the specified May 1 - April 30 period, calculated according to Appendix A3. The comparison is represented by the following ratio:

$$Y = \text{Target} / \text{Measured}$$

4. The Unit Area Loading (UAL) for each permitted structure and acreage tributary to it will be calculated. The calculation will be based on concentration and flow data reported by the permittee pursuant to the approved monitoring plan for the specified May 1 - April 30 period. The UAL will be calculated according to the following equation:

$$UAL_i = L_i / A_i$$

where,

$$UAL_i = \text{Unit Area Load for Farm}_i \text{ (lbs/acre-year)}$$

$$L_i = \text{Load calculated by SFWMD from flow and concentration data supplied by Farm } i, \text{ plus other data obtained by SFWMD, as necessary (lbs/year)}$$

$$A_i = \text{Area of Farm } i \text{ (acres)}$$

5. The UAL will be adjusted to reflect average rainfall conditions observed in the 1979 - 1988 base period and to reflect spatial variations in rainfall among EAA subbasins in the current year. The Adjusted Unit Area Load (AUAL_i) will be based on observed rainfall in the corresponding EAA subbasin (S5A, S6, S7, or S8) in the specified May 1 - April 30 period. It will be calculated according to the following:

$$AUAL_i = UAL_i (R_{am} / R_a)^{2.868}$$

$$R_a = \exp [X + 1.053 (C-C_m) - 0.1170 (S-S_m)]$$

where,

m = subscript denoting average value of rainfall statistic in base period for EAA Subbasin containing Farm i (see attached Table)

R_{am} = base period log-mean adjusted rainfall for EAA Subbasin containing Farm i (inches, see attached Table)

R_a = Adjusted subbasin rainfall in current year (inches)

X, C, S = Values as defined in Appendix A3 and computed for each subbasin

Basin	X _m	C _m	S _m	R _{am}
EAA Total	3.866	0.7205	0.7339	47.73
S5A ¹	3.918	0.7636	0.9999	50.31
S6 ²	3.907	0.7302	0.7476	49.77
S7	3.835	0.7198	0.6112	46.27
S8 ³	3.822	0.8409	0.8409	45.68

¹Also to be used for East Beach Water Control District basin ID 50-033-02.

²Also to be used for Agricultural Lease 3420 basin ID 50-077-01, and East Shore Water Control District basin ID 50-080-01.

³Also to be used for South Shore Drainage District basin ID 50-081-02, and South Florida Conservancy District basin ID 50-010-06.

6. The AUAL for the entire EAA Basin (ALOAD, lbs/yr), including basin IDs 50-033-02, 50-077-01, 50-081-02, and 50-010-06, will be calculated according to the following:

$$ALOAD = \text{SUM} [AUAL_i * A_i]$$

7. The Farm -Level Target Load (FTLOAD, lbs/yr) will be calculated based on the assumption that the percentage reduction in total load required at the Farm scale equals the percentage reduction required at the Basin scale. The calculation will be based on the following:

$$FTLOAD = ALOAD * Y$$

8. For those permittees who elected to participate in the Early Baseline Option, compliance will be determined by adjusting both current and base year measured loads to average rainfall conditions using the procedure given in paragraph 5 above. Permittees who have achieved the 25% load reduction will be identified by comparing the adjusted load for the base year with the adjusted load for the current year.

9. Permittees who did not elect to participate in the Early Baseline Option are subject to a Maximum Unit Area Loading (MUAL, lbs/acre-yr) discharge limit, which is computed by solving the following equation:

$$FTLOAD = \text{SUM} [MUAL * A_j] + \text{SUM} [AUAL_i * A_i]$$

The first summation (j) is over all Farms with $AUAL_j$ greater than MUAL, excluding those who have taken the Early Baseline Option and achieved a minimum 25% load reduction. The second summation is over all remaining Farms, which include (a) Farms with $AUAL_i$ below MUAL; and (b) Farms which elected the Early Baseline Option and met the minimum 25 percent load reduction requirement.

10. Revised BMP plans will be required for all permitted structures and tributary acreages whose $AUAL_j$ exceed MUAL. Revised BMP plans will also be required from all permittees who elected the Early Baseline Option, but did not achieve at least a 25 percent load reduction. Compliance and enforcement procedures are set forth in Rule 40E-63.145(3), (4), and (5), F.A.C.