K = Constant, 1.740×10^{-7} (1/ppm) (mole/scm)(MJ/kcal) where standard temperature for mole/scm is 20°C.

Ci = Concentration of sample component i, reported on a wet basis, in ppm, as measured by Reference Method 18 or ASTM D1946-67 (reapproved 1977), incorporated by reference in Section 215.105.

Hi = Net heat of combustion of sample component i, kcal/mole based on combustion at 25 C and 760 mm Hg. If published values are not available or cannot be calculated, the heats of combustion of vent stream components are required to be determined using ASTM D2382-76, incorporated by reference in Section 215.105.

e) The emission rate of total organic compounds in the process vent stream shall be calculated using the following equation:

$$E = K' F \sum_{i=1}^{n} C_i M_i$$

Where:

E = Emission rate of total organic compounds (minus methane and ethane) in the sample in kg/hr.

K' = Constant 2.494×10^{-6} (1/ppm) (mole/scm) (kg/g) (min/hr), where standard temperature for (mole/scm) is 20°C.

Mi = Molecular weight of sample component i (g/mole).

F = Vent stream flowrate (scm/min), at a standard temperature of 20°C.

f) The total vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Reference Method 18.

(Source: Added at 11 Ill. Reg. 20829, effective December 14, 1987)

APPENDIX F
COEFFICIENTS FOR THE TOTAL RESOURCE EFFECTIVENESS INDEX (TRE) EQUATION

This Appendix contains values for the total resource effectiveness index (TRE) equation in Subpart V.

If a flow rate falls exactly on the boundary between the indicated ranges, the operator shall use the row in which the flow rate is maximum.

COEFFICIENTS FOR TRE EQUATION FOR CHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE LESS THAN OR EQUAL TO 3.5 MJ/scm

FLOW RATE (scm/min) Min.	Max.	a	b	c	d	e	f
0.0	13.5	48.73	0.	0.404	-0.1632	0.	0.
13.5	700.	42.35	0.624	0.404	-0.1632	0.	0.024
700.	1400.	80.38	0.678	0.404	-0.1632	0.	0.034
1400.	2100.	126.41	0.712	0.404	-0.1632	0.	0.042
2100.	2800.	168.44	0.747	0.404	-0.1632	0.	0.049
2800.	3500.	210.47	0.758	0.404	-0.1632	0.	0.054

COEFFICIENTS FOR TRE EQUATION FOR CHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 3.5 MJ/scm

FLOW RATE (scm/min) Min.	Max.	a	b	c	d	e	f
0.	13.5	47.76	0.	-0.292	0.	0.	0.
13.5	700.	41.58	0.605	-0.292	0.	0.	0.0245
700.	1400.	82.84	0.658	-0.292	0.	0.	0.0346
1400.	2100.	121.10	0.691	-0.292	0.	0.	0.0424
2100.	2800.	165.36	0.715	-0.292	0.	0.	0.0490
2800.	3500.	206.62	0.734	-0.292	0.	0.	0.0548

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE LESS THAN OR EQUAL TO 0.48 MJ/scm

FLOW RATE (scm/min) Min.	Max.	a	b	c	d	e	f
0.	13.5	19.85	0.	0.113	-0.214	0.	0.
13.5	1350.	16.61	0.239	0.113	-0.214	0.	0.0245
1350.	2700.	33.91	0.260	0.113	-0.214	0.	0.0346
2700.	4050.	49.21	0.273	0.113	-0.214	0.	0.0424

COEFFICIENTS FOR TRE EQUATION FOR NONCHLORINATED PROCESS VENT STREAMS WITH NET HEATING VALUE GREATER THAN 0.48 AND LESS THAN OR EQUAL TO 1.9 MJ/scm

FLOW RATE (scm/min) Min.	Max.	a	b	c	d	e	f
0.	13.5	19.74	0.	0.400	-0.202	0.	0.
13.5	1350.	18.30	0.138	0.400	-0.202	0.	0.0245
1350.	2700.	36.28	0.150	0.400	-0.202	0.	0.0346
2700.	4050.	54.26	0.158	0.400	-0.202	0.	0.0424