used, complete E.4.b. below. If sewage sludge sampling is used, complete E.4.c. below.

b. *Stack testing option.* Stack testing must be conducted using Method 101A in 40 CFR Part 61, Appendix B (''Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators''). The total quantity of mercury emitted into the atmosphere from all incinerators at a site must not exceed 3200 grams over a 24-hour period.

If stack testing is used, submit the following with this application:

- A complete report of stack testing and documentation of ongoing incinerator operating parameters indicating that the incinerator has and will continue to meet the mercury NESHAP emission rate limit.
- Copies of mercury emission rate tests for the two most recent years in which testing was conducted.

c. *Sampling option.* Sewage sludge must be sampled and analyzed using Method 105 in 40 CFR Part 61 Appendix B (''Determination of Mercury in Wastewater Treatment Plant Sewage Sludge''), and the mercury emissions calculated using the following equation must not exceed 3200 grams over a 24-hour period:

$$E_{Hg} = \frac{(M)\times(Q)\times\left(F_{sm(avg)}\right)}{1000}$$

where:

E_{Hg}=mercury emissions, g/day
M=mercury concentration in sewage sludge on a dry solids basis, in micrograms/gram
Q=sludge charging rate, in kg/day
F_{sm} = weight fraction of solids in the collected sewage sludge after mixing.

If sewage sludge sampling is used, submit a complete report of sewage sludge sampling and documentation of ongoing incinerator operating parameters indicating that the incinerator has and will continue to meet the mercury NESHAP emission rate limit.

E.5. Dispersion Factor.

a. Provide the dispersion factor, in micrograms/cubic meter/gram/second, for the sewage sludge incinerator.

The *dispersion factor* is the ratio of the increase in the ground-level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack. The dispersion factor is calculated individually by each applicant based on the results of an air dispersion model specified by the permitting authority.

b. Provide the name and type of the air dispersion model used to obtain the dispersion factor.

Approved air dispersion models are listed in EPA's *Guideline on Air Quality Models* and EPA's Support Center for Regulatory Air Models (SCRAM) bulletin board. Unless a pre-existing modeling effort has been used to calculate dispersion factor (and the results have been approved by EPA), you should work closely with the permitting authority to prepare a modeling protocol.

c. Submit a copy of the modeling results and supporting documentation with this application.

E.6. Control Efficiency.

a. Provide the control efficiency, in hundredths, for arsenic, cadmium, chromium, lead, and nickel at this sewage sludge incinerator.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack, divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

b. Submit a copy of the results of performance testing and supporting documentation, including testing dates.

Control efficiency must be determined by a performance test, the protocol for which must be approved by EPA.

E.7. Risk Specific Concentration for Chromium. The risk specific concentration (RSC) for arsenic, cadmium, chromium, and nickel is used to calculate pollutant limits for these metals in the permit. With the exception of chromium, the RSC for these metals is provided in Table 1 of § 503.43. The RSC for chromium, however, may be determined in two ways: (1) it may be located in Table 2 of § 503.43 according to the type of incinerator; or (2) it may be calculated based on the ratio of hexavalent chromium to total chromium in the exhaust stack gas.

a. Provide the RSC to be used in establishing a permit limit for chromium, in micrograms per cubic meter.

b. Specify whether the RSC was:

- Provided in Table 2 of § 503.43; or
- Calculated, using Equation 6 in 40 CFR 503.43, based on the ratio of hexavalent chromium to total chromium in the exhaust stack gas.

c. If the RSC was looked up in Table 2 of § 503.43, identify which category of incinerator type you used to obtain the RSC.

d. If you calculated the RSC using Equation 6 in 40 CFR 503.43, provide the decimal fraction of hexavalent chromium concentration to total chromium concentration in the stack exit gas. Also submit the results of incinerator stack tests for hexavalent and total chromium concentrations, including date(s) of test.

E.8. Operational Standard for Total Hydrocarbons (THC) or Carbon Monoxide (CO).

Total hydrocarbons (THC) means the organic compounds in the exit gas from a sewage sludge incinerator stack, as measured using a flame ionization detection instrument referenced to propane. Carbon monoxide (CO) can be monitored instead of THC. The operational standard for THC or CO requires that the THC or CO concentration in the exit gas be corrected for zero percent moisture and to seven percent oxygen.

a. Provide the raw value for the THC or CO concentration in stack emissions, in parts per million (ppm). The *raw value* is the concentration measured directly by the flame ionization detection instrument.

b. Provide the percent of moisture content in stack gas. This is used to correct the raw THC or CO concentration value for zero percent moisture.

c. Provide percent oxygen concentration in stack gas (in dry volume/dry volume). This is used, after correction of the THC or CO concentration for zero percent moisture, to correct the THC or CO concentration to seven percent oxygen.

d. Provide the corrected value for the THC or CO concentration in stack emissions, in ppm. The *corrected value* is the raw concentration, corrected for zero percent moisture and to seven percent oxygen.

The raw THC or CO value is first corrected for zero percent moisture by multiplying by the following correction factor (from 40 CFR 503.44):

$$\text{Correction factor (dimensionless) (0\% moisture)} = \frac{1}{(1-X)}$$

where X is the decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

The dry value is then corrected to seven percent oxygen using the correction factor determined according to the following equation:

$$\text{Correction factor (dimensionless) (7\% moisture)} = \frac{14}{(21-Y)}$$

where Y = percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

e. Submit documentation used to derive the raw THC or CO