5.1.2.2 Place the probe/nozzle into the duct at the first sampling point and turn on the pump. A minimum vacuum of 15 in. Hg or 0.47 atmosphere between the critical orifice and pump is required to maintain critical flow. Sample for the time interval previously determined for that point. Move to the second point and sample for the time interval determined for that point; sample all points on the traverse in this manner. Keep ice around the impingers during the run. Complete the traverse and turn off the pump. Move to the next sampling port and repeat. Record the final dry gas meter reading. (NOTE: If an approximate mass emission rate is desired, record the stack temperature before and after the run.)

5.1.2.3 Post Test Leak Check. Remove the probe assembly and flexible tubing from the first impinger. Do not cover the nozzle. Seal the inlet tube of the first impinger with a finger covered by clear plastic wrap and turn on the pump. The vacuum in the line between the pump and the critical orifice must be at least 15 in. Hg. Observe any leak rate on the dry gas meter. If the leak rate exceeds 0.02 cfm, reject the run. If the leak rate is acceptable, take the probe assembly and impinger assembly to the sample recovery area.

5.2 Sample Recovery.

5.2.1 Container No. 1. (a) After the train has been moved to the sample recovery area, disconnect the tubing that joins the first impinger with the second.

(b) The first impinger jar is also used as the sample container jar. Unscrew the lid from the first impinger jar. Lift the inlet/outlet tube assembly almost out of the jar, and using the wash bottle, rinse the outside of the impinger tip that was immersed in the

impinger jar with extra absorbing solution; rinse the inside of the tip as well.

(c) Recover the second impinger by removing the lid and pouring any contents from the second impinger into the first impinger. Rinse the second impinger including the inside and outside of the impinger stem as well as any connecting plastic tubing with extra absorbing solution and place the rinse into the first impinger.

(d) Hold the nozzle and connecting plastic tubing in a vertical position so that the tubing forms a "U." Using the wash bottle, partially fill the tubing with sampling reagent. Raise and lower the end of the plastic tubing several times to cause the reagent to contact the major portion of the internal parts of the assembly thoroughly. Do not raise the solution level too high or part of the sample will be lost. Place the nozzle end of the assembly over the mouth of the first impinger jar (sample container) and elevate the plastic tubing so that the solution flows rapidly out of the nozzle. Perform this procedure three times. Next, repeat the recovery procedure but allow the solution to flow rapidly out the open end of the plastic tubing into the first impinger jar.

(e) Place a piece of clear plastic wrap over the mouth of the first impinger jar. Use a standard lid and band assembly to seal the jar. Label the jar with the sample number and mark the liquid level to gauge any losses during handling.

5.2.2 Container No. 2 (Reagent Blank). Place approximately 500 ml of the 0.1 N NaOH or 0.1 N NaHCO3 absorbing solution in a labeled sample container.

5.2.3 Sample Filtration for IC/PCR. If the sample is to be analyzed for Cr+6 by IC/PCR, it must be filtered immediately following

$$Y = \frac{Ft._{m}^{3} (T_{m} + 460)}{17.647 (Ft_{pt}^{3}) (P_{bar})}$$

recovery as described in section 5.2.3 of Method 306 of this appendix.

5.3 Analysis. Sample preparation and analysis procedures are identical to Method 306, section 5.3 of this appendix.

6. Calibration

6.1 Dry Gas Meter. (a) Dry gas meter calibrations may be performed by either the manufacturer, a firm who provides calibration services, or the tester. The dry gas meter calibration coefficient (Ym) must be determined prior to initial use of the meter, and must be checked following each field use.

(b) If the dry gas meter is new, the manufacturer will have specified the Y_m for the meter. The manufacturer may also have included a calibration orifice and a data sheet with the meter that may be used for calibration purposes. The sheet will specify a standard cubic foot volume and a sample time, and these values were determined when the orifice was used to set the initial Y_m for the meter. The Y_m may be checked by disconnecting the critical orifice in the sampling train and replacing it with the calibration orifice. The inlet side of the calibration orifice is open to the atmosphere and is not reconnected to the sample train. Record the initial dry gas meter volume and meter temperature. Turn on the pump and operate it for the number of minutes specified by the manufacturer's data sheet. Stop the pump and record the final dry gas meter volume and temperature. Subtract the start volume from the stop volume and average the temperatures. Check the Y_m for the dry gas meter after the test by using the following equation:

Where:

Ft.³_m=Cubic feet given by meter manufacturer T_m=Temperature of meter in degrees Fahrenheit

Ft3pt=Cubic feet from dry gas meter, post test P_{bar}=Barometric pressure in inches of

mercurv

Compare the Y_m just calculated with the Ym given by the manufacturer:

$$Y_{m}(manufacturer)$$

Y_m (calculated after test)

If this value is between 0.95 and 1.05, the Y_m of the meter is acceptable. If the value lies outside the specified range, the test series

shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before and after) that gives the lower value of total sample volume. Return the dry gas meter to the manufacturer for recalibration. The calibration may also be conducted as specified in section 5.3.1 or section 7 of Method 5 (40 CFR part 60, appendix A), except that it is only necessary to check the calibration at an approximate flow rate of 0.75 cfm. The calibration of the dry gas meter must be checked after each field use in the same manner. If the values of Y_m obtained before and after a test series differ by more than 5%, the test series shall either be voided, or calculations for the test series

$$C_{Cr} = \frac{(M_{Cr})(T_{m} + 460)}{(499.8)(Y_{m})(V_{m})(P_{bar})} \qquad Eq.306A-2$$

shall be performed using whichever meter coefficient value (i.e., before or after) that gives the lower value of total sample volume. 6.2 GFAA Spectrometer. Same as Method

306, section 6.2 of this appendix.

6.3 ICP Spectrometer. Same as Method 306, section 6.3 of this appendix.

7. Quality Control

Same as Method 306, section 7 of this appendix.

8. Calculations

8.1 Pollutant Concentration. Calculate C_{cr}, the Cr concentration in the stack gas, in mg/dscm on a dry basis as follows:

where:

306 of this appendix, Eq. 306-1, µg.

T_m=Dry gas meter temperature, °F.

M_{Cr}=Amount of Cr in sample from Method