

# ENTROPY

ENVIRONMENTALISTS, INC

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August 18, 1993

Mr. Duane Powell  
Powell Fabrication & Manufacturing, Inc.  
740 East Monroe Road  
St. Louis, Michigan 48880

Re: Preliminary Test Results, August 11th and 12th

Dear Duane,

The Powell Fabrication Sentry scrubbing system was tested by Entropy, Inc. on August 11th and 12th. The chlorine emissions tests were conducted in accordance with U.S. EPA Reference Method SW846 0051. This method is identical to U.S. EPA Reference Method 26. I am not aware of any other test methods which are recognized by the U.S. EPA for the measurement of chlorine in effluent gas streams. I believe that the data provided by the U.S. EPA Reference Method is substantially more accurate than provided by the EIT sensor and by Drager colorimetric indicator tubes. The preliminary results for the chlorine release tests are summarized in the table below.

Table 1. Preliminary Chlorine Emission Concentration Data

Date of Test	Chlorine Release Conditions	Outlet Cl <sub>2</sub> ppm
8-11-93	Peak	4.98
8-11-93	Sustained	0.36
8-12-93	Peak	6.14
8-12-93	Sustained	0.31

The peak concentration test was conducted during the 20 minute period during the chlorine release. Based on the chlorine evaporation rate data, we believe that this period had the maximum inlet concentration to the scrubber system.

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The chlorine release rates during these peak periods were well above the 78 pounds per minute rate specified in the Uniform Fire Codes. The sustained chlorine release tests were conducted during one hour periods as the remainder of the chlorine evaporated in the release room. The purpose of these "end-of-release" tests was to evaluate the scrubber's capability for high efficiency removal of chlorine over the entire time period of the chlorine release.

The chlorine emission concentration data indicates that the chlorine levels were well below the required 15 ppm limit specified in the Uniform Fire Codes. The results indicate that the Sentry scrubber system exceeded the performance requirements of the Uniform Fire Codes.

Entropy is completing quality assurance checks on the laboratory analyses and on the field data. We do not anticipate any major changes in the chlorine emission concentration data as result of the checks. A complete report on the tests including the raw data sheets, calibration data, and emission calculations will be completed in several weeks.

Thanks for your assistance during the recent test program. We will be glad to answer any questions you may have concerning the test procedures and results.

Sincerely,



John R. Richards, Ph.D., P.E.  
Director, Control Equipment Testing and Optimization  
Entropy, Inc.

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