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ARGONNE NATIONAL LABORATORY STATE OF ILLINOIS
9700 South Cass Avenue Pollution Control Board
Argonne, Illinois 60439

Phone: (630) 252-7300
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September 2, 2003

Ms. Dorothy M. Gunn
Clerk of the Board
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph Street, Suite 11-500
Chicago, IL 60601

Dear Ms. Gunn:

Enclosed for filing please find the following:

1. The original and ten (10) copies of WRITTEN TESTIMONY OF GREGORY BARRETT, submitted on behalf of Argonne National Laboratory, as represented by the U.S. Department of Energy and The University of Chicago, Petitioners.
2. The original and ten (10) copies of the NOTICE OF FILING associated with the above-referenced WRITTEN TESTIMONY.
3. The original and ten (10) copies of the CERTIFICATE OF SERVICE associated with the referenced WRITTEN TESTIMONY.

I have arranged the documents in Items 1-3 into eleven (11) packages, constituting an original package and ten (10) copy packages, each package consisting of three documents, one document from each of Items 1-3. A note on the original package specifies it as the original package.

Ms. Dorothy M. Gunn
Clerk of the Board
Illinois Pollution Control Board

-2-

September 2, 2003

By separate cover, I am sending one (1) copy of each of items 1-3 to Mr. Bradley P. Halloran, Hearing Officer, Illinois Pollution Control Board.

Also by separate cover, I am sending one (1) copy of each of Items 1-3 to the Division of Legal Counsel, Illinois Environmental Protection Agency.

Please return a file-stamped copy of each document I have enclosed. I am enclosing a self-addressed stamped envelope for that purpose.

Sincerely,



William D. Luck
Assistant General Counsel
Argonne National Laboratory
9700 S. Cass Avenue
Argonne, IL 60439
(630)252-7300

WDL\rb

Enclosures

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SEP 03 2003

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
PETITION OF)
ARGONNE NATIONAL LABORATORY)
FOR AN ADJUSTED STANDARD)
FROM 35 Ill. Adm. Code 218.182)

STATE OF ILLINOIS
Pollution Control Board
AS 2003-04
(Adjusted Standard - Air)

WRITTEN TESTIMONY
OF
GREGORY BARRETT
ARGONNE NATIONAL LABORATORY

September 2, 2003

WRITTEN TESTIMONY OF GREGORY BARRETT

This testimony is submitted pursuant to 35 Ill. Adm. Code § 103.205 and the July 8, 2003 Hearing Officer Order entered in this matter. I, Gregory Barrett, being duly sworn upon oath, state as follows:

Professional Experience and Employment

My name is Gregory Barrett and my business address is 9700 South Cass Avenue, Building 331, Argonne, Illinois 60439. I have been employed in the group responsible for environmental compliance at Argonne National Laboratory (Argonne) for eleven (11) years. Prior to my employment at Argonne, I worked in various environmental and technical positions in the chemical industry for thirteen (13) years.

At Argonne, my primary area of responsibility is to evaluate and implement all federal and state regulatory requirements related to the Clean Air Act to which Argonne is subject. In this capacity I prepared the Argonne Title V air permit application. I coordinate the exchange of information that bears on air regulatory matters with the approximately 40 operating divisions at the Laboratory, passing along information regarding regulatory requirements and receiving information regarding performance and compliance issues relative to those requirements. In this capacity, I worked with the operating divisions to obtain the information necessary to enable me to prepare the Argonne Title V air permit application. I continue to work with the operating divisions to monitor and verify compliance with the Title V permit's terms and conditions, and to identify circumstances that may require any modifications to the existing provisions of the permit.

Background

A revised Illinois regulation, which established new vapor pressure restrictions on solvents used in cold cleaning, became effective on March 15, 1999. In preparation for the implementation of that regulation, I was involved in efforts to inform Argonne personnel engaged in potentially affected activities of the new requirements to be implemented. I did this by means of quarterly meetings and memoranda that described the specific requirements of the revised regulation and provided information on alternative solvents that would comply with the vapor pressure limits. I utilized the same approach in preparation for the regulation's March 15, 2001 deadline, which further restricted the vapor pressure for solvents employed in cold cleaning.

It became apparent that while "mainstream" types of cold cleaning activities at Argonne (e.g., automotive, machine shops) and some research activities were able to use solvents complying with the vapor pressure limits, with respect to certain research applications, due to the very stringent requirements of particular types of research, and the limitations of specific equipment involved in such research, it would be difficult to comply without compromising the quality of the equipment or the validity of the research results. The necessity of having the flexibility to use cold cleaning solvents with vapor pressures higher than the current regulatory limit in certain research related applications forms the basis of the subject Petition for an Adjusted Standard.

Argonne's Research Mission and the Anticipated Impact of the Proposed Adjusted Standard

As one of the laboratories in the national laboratory system owned by the U.S. Department of Energy, Argonne National Laboratory occupies an important and, in many cases, unique niche in the many branches of basic energy and related sciences research that constitute its research mission. Many of Argonne's research facilities offer opportunities to the international scientific community that represent state-of-the-art and developing technologies, which might not otherwise be accessible. The construction and operation of such facilities often require maintenance of an extreme contaminant-free environment, and methods that maybe prove sufficient when employed for cold cleaning in the conventional manufacturing or processing sense can create significant technical problems when used in these more specialized facilities.

Argonne National Laboratory is committed to furthering its important research mission on behalf of the U.S. Department of Energy, while complying with applicable environmental regulations and minimizing the environmental impact resulting from the execution of its mission. In my capacity as the coordinator with the operating divisions on air regulatory matters, I directed that the divisions conduct a review of their activities that need to use organic solvents that do not meet the cold cleaning vapor pressure limits. This resulted in the compilation of Exhibit 2 to the Petition for an Adjusted Standard, attached hereto to my testimony.

As indicated in Exhibit 2, the use of organic solvents that do not meet the cold cleaning vapor pressure requirements is necessary for cold cleaning activities involving the preparation of sample materials and associated apparatus for testing and analysis. Such activities include washing and rinsing slides, sample preparation, specimen cleaning, gel stain/de-staining, membrane rinsing, and the cleaning of small parts and equipment associated with the preparation of sample materials for testing and analysis. This is the basis for the adjusted standard that

Argonne is proposing in the Petition for an Adjusted Standard. The proposed adjusted standard also provides that it would not apply where solvents meeting the regulatory vapor pressure limits can be used without compromising the quality of the equipment being used or the validity of research results.

Based on the input I received I also prepared Exhibit 3 to the Petition for an Adjusted Standard, also attached hereto to my testimony, which shows the Laboratory-wide average annual usage, for the years 1999-2001, for the organic solvents that would be used to accomplish cold cleaning under the proposed adjusted standard. It is estimated that approximately one-third of the Laboratory-wide usage of these solvents would be for cold cleaning, so that the environmental impact from the requested adjusted standard is expected to be negligible (estimated at no more than 200 gallons, or approximately 1500 pounds, on an annual basis). At the same time the inability to use such solvents could adversely affect or possibly render inoperable some of the research operations that constitute a major component of Argonne's mission.

Technical Difficulties with Wiping and Solvents Meeting the Cold Cleaning Rule

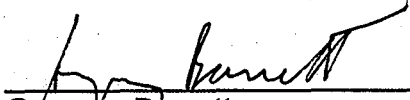
The very nature of volatile organic solvents with higher vapor pressures, namely their ability to evaporate quickly, is the characteristic needed to perform acceptable cleaning activities in certain research applications. In such cases the use of a wiping technique or the use of a low vapor pressure cold cleaning solvent results in the presence of residues on instrument and sample surfaces. Such residues are unacceptable in systems where high vacuum conditions must be maintained in order to ensure proper instrument operation and valid research results.

Administrative Difficulties with the Cold Cleaning Rule

While the major concern of Argonne is with the technical difficulties of complying with the vapor pressure limit of the cold cleaning rule, the recordkeeping aspects would impose a significant burden on the Argonne research community that would appear to far outweigh any benefit. Because of the small scale intermittent use of common laboratory solvents in activities meeting the definition of cold cleaning, the attempt to track these usages as a subset of total sitewide solvent usage would be an extremely difficult administrative task.

Conclusion

Argonne National Laboratory has a long history of distinguished scientific achievement that is well known as it continues its mission into the twenty-first century. I strongly believe that this petition for an adjusted standard is very much justified to enable the Laboratory's important research activities to proceed.



Gregory Barrett
Environmental Engineer
Argonne National Laboratory
9700 S. Cass Avenue
Argonne, Illinois 60439

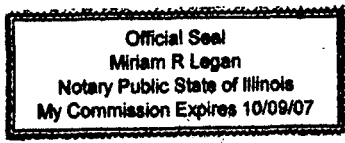
Sept 2, 2003

Date

Subscribed and Sworn to before me
this 2nd day of September, 2003.



NOTARY PUBLIC



**Argonne National Laboratory-East
Summary of Current Research-Related Cold Cleaning Activities**

On a building-by-building basis, the following listing sets forth information regarding current research-related use by Argonne National Laboratory-East research divisions of organic solvents (ethanol, hexane, isopropanol, or methanol) for cold cleaning activities involving the preparation of sample materials and associated apparatus for testing and analysis. Such activities include washing and rinsing slides, sample preparation, specimen cleaning, gel stain/de-staining, membrane rinsing, and the cleaning of small parts and equipment associated with the preparation of sample materials for testing and analysis.

Building 200 – Materials Science (Rooms 114, 174)

Solvents are used for drying glassware.

Building 202 – Biosciences (Rooms 111, 210, 218, 226, 254, 301, 362, 366)

Alcohols (ethanol, isopropanol, methanol) are used in gel stain/de-staining and washing/rinsing slides. Ethanol also is used in sterilization.

Building 203 – Environmental Research (Room 134)

Solvents are used for sample preparation.

Building 212 – Energy Technology/Materials Science (Rooms 106A, 110, 124, 130, 133, 216, 219, 235, 237)

Solvents are used for sample preparation.

Building 223 – Materials Science (Rooms A126, B134, C137, B218, C226)

Alcohols and xylene are used for specimen cleaning.

Building 360 – Intense Pulsed Neutron Source (Room 248)

Solvents are used for sample preparation.

Building 362 – Advanced Photon Source Experimental Facilities/Energy Systems (Rooms 002, 208, 232)

These divisions use solvents for sample preparation, glassware cleaning (immersion), and membrane rinsing (isopropanol).

Building 369 – Energy Systems

Solvents are used in glassware cleaning (immersion).

Building 400 – Advanced Photon Source Operations (Rooms MLC-1, 1-CR-A)

Solvents may be employed in sample preparation and small parts cleaning.

Building 401 – Advanced Photon Source Experimental Facilities (Rooms L0104, L1103, L1104, L2104, L3104)

Solvents may be employed in sample preparation and small parts cleaning.

Buildings 431-435 – Advanced Photon Source Users (Rooms 030, A030, B030, C030, D030, E030)

Solvents may be used on accelerator systems and for sample preparation.

Argonne National Laboratory-East
Average Annual Usage of Certain Organic Solvents
1999-2001

Ethanol, hexane, isopropanol, methanol, and toluene are solvents identified as being used for cold cleaning in research activities at Argonne National Laboratory-East. Although Argonne can track total usage of these solvents, it is infeasible to track only the precise usage for cold cleaning. It is estimated that about one third of the total usage would be for cold cleaning. The usage information below is based on average overall annual usage of each solvent during the period 1999 – 2001.

<u>Solvent</u>	<u>Total Usage(lb/year)</u>	<u>Estimated Usage for Cold Cleaning in Research Applications (lb/year)</u>
Ethanol	3,297	1,099
Hexane	169	56
Isopropanol	971	324
Methanol	729	243
Toluene	266	89

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STATE OF ILLINOIS
Pollution Control Board
AS 2003-04
(Adjusted Standard-Air)

NOTICE OF FILING

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the WRITTEN TESTIMONY OF GREGORY BARRETT, a copy of which is herewith served upon you.

PLEASE TAKE NOTICE ALSO that the above-referenced WRITTEN TESTIMONY has been printed on recycled paper meeting the terms of the Pollution Control Board's regulation on that subject.

For THE UNIVERSITY OF CHICAGO:

William D. Luck

William D. Luck
Assistant General Counsel
Argonne National Laboratory
Operated by The University of Chicago
For the U.S. Department of Energy
9700 S. Cass Avenue
Argonne, Illinois 60439
(630) 252-7300

2 September 2003
Date

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CERTIFICATE OF SERVICE

I, the undersigned, certify that I have served the original and nine (9) duplicate copies of the attached WRITTEN TESTIMONY OF GREGORY BARRETT, upon the following person, by depositing it with FEDERAL EXPRESS on this date:

Pollution Control Board
Attention: Clerk
James R. Thompson Center
100 W. Randolph Street, Suite 11-500
Chicago, Illinois 60601-3218

I further certify that I have served one (1) copy of the attached WRITTEN TESTIMONY OF GREGORY BARRETT upon each of the following persons, by depositing it with FEDERAL EXPRESS on this date:

Bradley P. Halloran
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center,
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

Rachel Doctors
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

For THE UNIVERSITY OF CHICAGO:

William D. Luck

William D. Luck
Assistant General Counsel
Argonne National Laboratory
Operated by The University of Chicago
For the U.S. Department of Energy
9700 S. Cass Avenue
Argonne, Illinois 60439
(630) 252-7300

2 September 2003
Date