



STL

03033496

Severn Trent Laboratories  
128 Long Hill Cross Rd  
Shelton, CT 06468  
Tel: (203) 929-8140  
Fax: (203) 929-8142

November 17, 2004

Nuclear Materials Safety Branch  
U.S. Nuclear Regulatory Commission, Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

Attn: Licensing Assistant Section

Subject: License #06-30139-01 Renewal

As per your request, please find the attached license renewal for our laboratory. Attached are two copies of the renewal (form 313) and our current license. My understanding is that we are current with licensing fees.

If you have any questions or comments, please contact me at the laboratory (203) 929-8140.

Regards,

Peter Frick  
Laboratory Director  
STL Connecticut  
Tel. (203)-929-8140  
Fax. (203)-929-8142  
Email: [pfrick@stl-inc.com](mailto:pfrick@stl-inc.com)

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RECEIVED  
REGION 1

136008

(8-2000)  
10 CFR 30, 32, 33,  
34, 35, 36, 39, and 40

**APPLICATION FOR MATERIAL LICENSE**

Estimated burden per response to comply with this mandatory collection request: 7.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0000), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.**

**APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:**

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001

**ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:**

**IF YOU ARE LOCATED IN:**

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,  
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,  
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION  
NUCLEAR MATERIALS SAFETY BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO  
RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,  
SEND APPLICATIONS TO:

SAM NUNN ATLANTA FEDERAL CENTER  
U. S. NUCLEAR REGULATORY COMMISSION, REGION II  
61 FORSYTH STREET, S.W., SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

**IF YOU ARE LOCATED IN:**

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND  
APPLICATIONS TO:

MATERIALS LICENSING BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
801 WARRENVILLE RD.  
LISLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,  
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,  
OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR  
WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 76011-8064

**PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.**

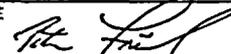
|                                                                                                                                                                                                                                                                              |                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. THIS IS AN APPLICATION FOR (Check appropriate item)</p> <p><input type="checkbox"/> A. NEW LICENSE</p> <p><input type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER _____</p> <p><input checked="" type="checkbox"/> C. RENEWAL OF LICENSE NUMBER <u>06-30139-01</u></p> | <p>2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)</p> <p>STH CONNECTICUT<br/>128 LONG HILL CROSS ROAD<br/>Shelton, CT 06484</p> |
| <p>3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED</p> <p>128 Long Hill Cross Road<br/>Shelton, CT 06484</p>                                                                                                                                                    | <p>4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION</p> <p>PETER FRICK</p> <p>TELEPHONE NUMBER</p> <p>203-929-8140</p>               |

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

|                                                                                                                                                                    |                                                                                                                                                      |              |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------|
| <p>5. RADIOACTIVE MATERIAL</p> <p>a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.</p> | <p>6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.</p>                                                                                       |              |                    |
| <p>7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.</p>                                                                    | <p>8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.</p>                                                                       |              |                    |
| <p>9. FACILITIES AND EQUIPMENT.</p>                                                                                                                                | <p>10. RADIATION SAFETY PROGRAM.</p>                                                                                                                 |              |                    |
| <p>11. WASTE MANAGEMENT.</p>                                                                                                                                       | <p>12. LICENSE FEES (See 10 CFR 170 and Section 170.31)</p> <table border="1"> <tr> <td>FEE CATEGORY</td> <td>AMOUNT ENCLOSED \$</td> </tr> </table> | FEE CATEGORY | AMOUNT ENCLOSED \$ |
| FEE CATEGORY                                                                                                                                                       | AMOUNT ENCLOSED \$                                                                                                                                   |              |                    |

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

|                                                                                                   |                                                                                                       |                               |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------|
| <p>CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE</p> <p>PETER FRICK / LABORATORY DIRECTOR</p> | <p>SIGNATURE</p>  | <p>DATE</p> <p>11/17/2004</p> |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------|

**FOR NRC USE ONLY**

| TYPE OF FEE | FEE LOG | FEE CATEGORY | AMOUNT RECEIVED | CHECK NUMBER | COMMENTS |
|-------------|---------|--------------|-----------------|--------------|----------|
|             |         |              | \$              |              |          |
| APPROVED BY |         |              |                 | DATE         |          |

## Items 5a, 5b and 5c

### Radionuclides for License Application

| <u>Radioactive Material</u>                                  | <u>Chemical and/<br/>or Physical Form</u>                                                                         | <u>Maximum Activity</u>                                                                                                                                                 |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. Hydrogen 3                                                | A. Analytical Samples                                                                                             | A. 10 millicuries                                                                                                                                                       |
| B. Any byproduct material with Atomic Numbers 3 through 83   | B. Analytical Samples                                                                                             | B. 100 microcuries per radionuclide and 10 millicuries total                                                                                                            |
| C. Any byproduct material with Atomic Numbers 83 through 103 | C. Analytical Samples                                                                                             | C. 10 microcuries per radionuclide and 100 microcuries total                                                                                                            |
| D. Any Source material                                       | D. Analytical Samples                                                                                             | D. 1 millicurie                                                                                                                                                         |
| E. Any Special Nuclear Material                              | E. A Analytical Samples                                                                                           | E. 1 millicurie                                                                                                                                                         |
| F. Nickel 63                                                 | F. Foils registered either With U S Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State. | F. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State. |

## Item 6

Low-Level radioactive samples will be analyzed for organic, inorganic and wet chemistry parameters. The sample matrices will include liquids (waters, organics, waste effluents.....) and soils ( soils, vegetation, filters,tissue and other environmental solids).

Also sealed and/or liquid standards will also be used for instrument calibration check.

## Item 7

**David D. Madumadu**  
(203) 929-8140

and

**Peter Frick**  
(203) 929-8140

- See attached resume-

- See attached resume-

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**Personnel Resume**

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Peter P. Frick

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**Qualifications Summary**

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Mr. Frick has 20 years of experience in environmental and analytical chemistry that includes broad management and leadership experience. He is responsible for the overall direction of the laboratory and has extensive knowledge in environmental analytical chemistry and business management.

**Professional Experience**

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**Laboratory Director – 2004 to present**

STL Connecticut—Shelton, CT

Mr. Frick directs the growth and development of the laboratory, including strategic plan development and implementation. He is responsible for all phases of operation within the Shelton, Connecticut facility, including; the technical and administrative management of the laboratory. The functional groups of the facility include Sample Control, Sample Preparation, Organic Chemistry, Metals, Wet Chemistry, Project Management, QA/QC and Information Technology, Report Generation, Data Management, and Human Resources. His other responsibilities include adherence to budget, staff development and control, quality assurance and quality control, scheduling, client support/liaison, as well as profit and loss responsibility for the facility. In addition, he is responsible for oversight of the Environmental Health and Safety Program, and was instrumental in the set up of the mixed waste license for the Connecticut laboratory.

**Chromatography Product Manager**

Supelco Incorporated—Bellefonte, PA—1998 to 2004

**Laboratory Director**

American Environmental Network—Schaumburg, IL—1996 to 1998

**Laboratory Manager**

Industrial Environmental Analysts—Schaumburg, IL—1995 to 1996

**Group Leader**

Industrial Environmental Analysts—Monroe, CT—1988 to 1995

**Chemist**

Environmental Analysis Corporation—Norwalk, CT—1984 to 1988

**Education**

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- BS in Chemistry – University of Connecticut—Storrs, CT—1984
- MBA in Finance – University of Bridgeport—Bridgeport, CT—1993

**Personnel Resume**

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Peter P. Frick

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**Professional Training**

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- Environmental Laboratory Management —John H. Taylor, ACS Course
- Performance Management Workshop—Cynthia. Barnet, HR Consultant
- Interview Skills Workshop—Cynthia. Barnet, HR Consultant
- Frontline Leadership Development —William Frackler, Ingoldsby, Inc.
- 40 Hour OSHA Training —Lynn Sherman, YWC Midwest
- Radiation Safety Program Training —Radiation Safety Associates, Inc.
- Theory of Constraint Training—Sigma-Aldrich, Inc.
- Strategic Sales Management —Sigma-Aldrich, Inc.
- Corporate Finance Workshops—Sigma-Aldrich, Inc.

**Professional Affiliations**

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- American Chemical Society

**CERTIFICATE OF ACHIEVEMENT**

This is to Certify that

**PETER P. FRICK**

Has Completed 40 Hours of  
**Radiation Safety Officer Training**

November 15-19, 1993



David J. Durkee  
Radiation Safety Associates, Inc.

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## **Personnel Resume**

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Madumadu, David

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### **Qualifications Summary**

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Mr. Madumadu prepares and analyzes environmental samples according to scientific and EPA methodology in compliance with Severn Trent Laboratories Quality Assurance programs and SOP's. Validates and reviews data for accuracy through Level I and II reviews. David is skilled with sophisticated and complex laboratory instruments and software. Uploads laboratory data into reporting system to generate data packages for submittal to clients. Interprets and reports data for client samples by performing a broad range of analyses using independent selection and adaptation of methods and techniques. David is experienced in method modification for special testing requests. Schedules sample workload according to due dates and sample hold times, and also knowledgeable of a broad range of laboratory testing equipment requiring the exercise of discretion and judgment in its operation.

### **Professional Experience**

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**Analyst– Classical Chemistry – 1988 to present**  
STL Connecticut, Shelton, CT

1. Performs laboratory procedures requiring advanced knowledge of scientific methods, instrumentation, software, and testing procedures including:
  - Scheduling priority of samples to be analyzed to meet deadlines and maintain sample integrity
  - Batching and prepping samples for analysis taking into account special and varied client and QA requirements
  - Making reagents for sample analysis
  - Aliquots extracted samples to maximize laboratory productivity
  - Preparing appropriate standards to ensure compliant data
  - Determining appropriate analysis methods for a wide variety of organic and inorganic samples, including method modification for special testing requests
  - Operation, calibration, and maintenance of laboratory instruments
2. Uploads data into reporting system to provide Reporting Department with the necessary information to produce data packages.
3. Performs Level I review of data to ensure compliance with scientific methods and SOP's.
4. Performs Level II review of data to finalize data for PM's and clients.
5. Updates supervisors and PM's on sample status and any analysis issues.
6. Consults with PM's and clients to clarify nomenclature and analysis results.
7. Record retention of finalized data.
8. Responsible for performing job functions within Severn Trent Laboratories EH&S and QA standards.
9. Maintains housekeeping standards for work area.

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## **Personnel Resume**

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Madumadu, David

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### **Radiation Safety Officer – Shelton Laboratory, Ct. – 1996 to present** STL Connecticut, Shelton, CT

The RSO is responsible for the laboratories compliance to the NRC license and the radiation management program. Must prioritize RSO duties and responsibilities over all other duties to maintain license compliance. The RSO duties and responsibilities include the following major areas.

- Staff Training and Communication, which includes orientation of new employees, biannual refreshers, and compliance with all applicable CFR regulations.
- Radiation monitoring/ survey instrument maintenance and calibration.
- Radiation personnel monitoring and Area monitoring dosimeters.
- Work area, hazardous waste and sample radiation screening.
- Swipe testing of work areas.
- Radioactive material inventory.

### **Wastewater Operator (part-time) – 6/1989 to 8/1999** US Filter, Inc., IBM WWTP, Southbury, Ct.

- Daily maintenance, operation and troubleshooting of plant equipment and process.
- Perform laboratory analysis to ensure NPDES permit requirement is met.

### **Professor's Assistant – 9/1985-8/1987** Housatonic Community College, Bridgeport, Ct.

- Graded mathematics homework and examination.
- Tutored chemistry, computer science, mathematics, and physics.

## **Education**

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**MS. Environmental Engineering, (May 1997)**  
University of New Haven, Ct.

**B.S. Chemical Engineering, (Jan.1991)**  
**Minor: Mathematics**  
University of New Haven, Ct.

CERTIFICATE OF ACHIEVEMENT

This is to Certify that  
**DAVID D. MADUMADU**  
Has Completed 40 Hours of  
**Radiation Safety Officer Training**

April 22-26, 1996



  
K. Paul Steinmeyer

  
Tom Hasselbacher  
Radiation Safety Associates, Inc.

## **Item 8**

### **Personnel Training**

A.) Basic Laboratory Safety- provided by STL for training new employees.

1. Safe handling of Acids, Bases and solvents.
2. Use of gloves, eye protection and protective clothing
3. Proper use of hazardous chemicals.
4. Storage and disposal of chemical wastes.
5. Safe laboratory techniques.

B.) Radiation Safety Training- training video

1. Safe handling Procedures for radioactive Samples
2. Personnel Monitoring.
3. Radiation Detectors and Survey Instruments.
4. Sample Labeling.
5. Sample Waste Disposal.

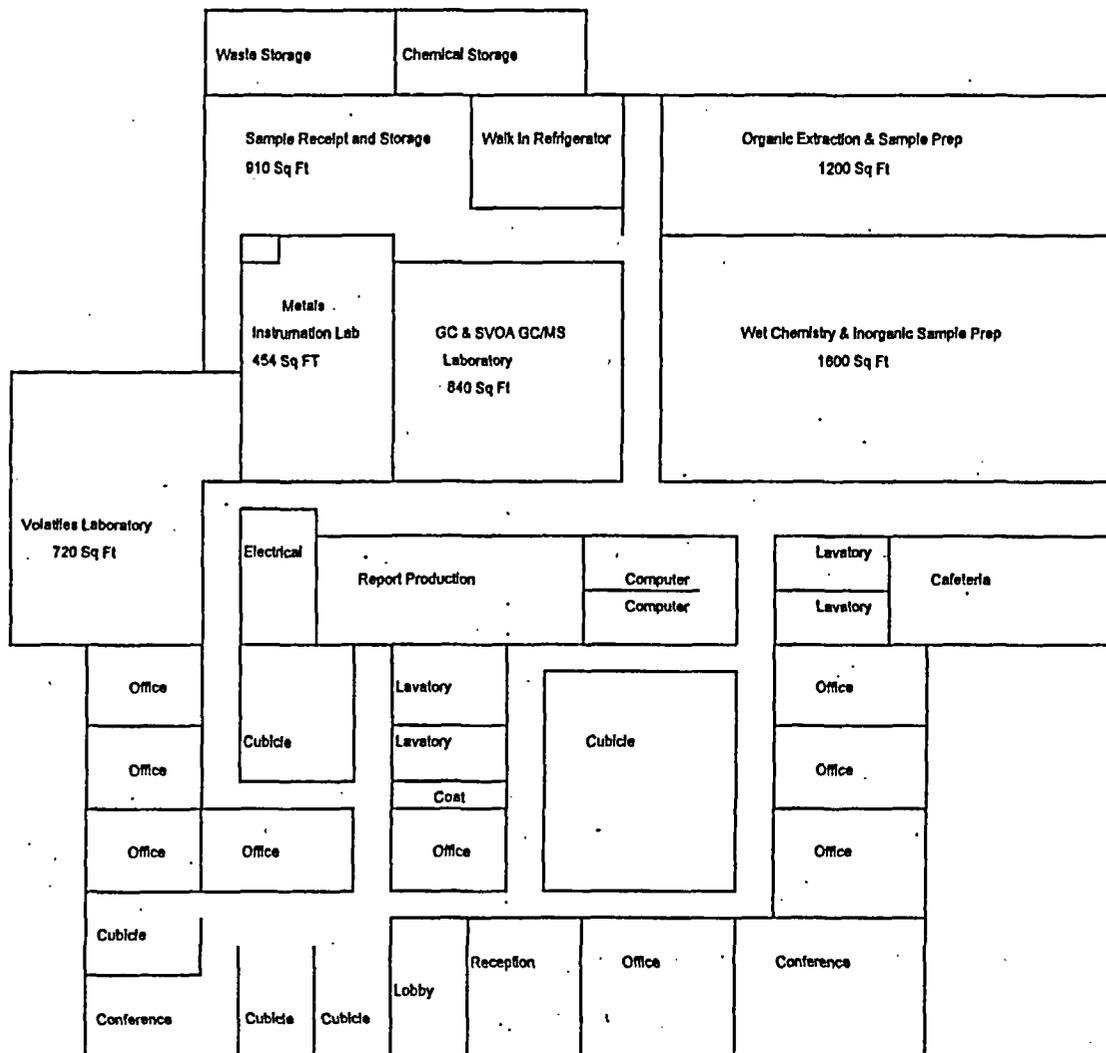
## **Item 9**

### **Facilities and Equipment**

The organic extractions will be done in the extraction laboratory and inorganic extractions will be done in the wet chemistry laboratory. Both laboratories are equipped with fume hoods, for protection from chemical fumes and airborne radioactivity. Special storage cabinets are provided for both acids and flammable solvents.

----- Sketch of facility is provided-----

Severn Trent Laboratories  
Shelton, CT



TOTAL SQUARE FOOTAGE APPROX. 16006

## Item 10

### Radiation Protection Program

#### I. Protective Clothing

- A. A lab-coat will be worn at all times while working in the laboratory.
- B. Gloves will be worn when working with radioactive solids and liquids. Gloves are worn to prevent contamination of hands and to prevent the spread of contamination throughout the work area. Gloved hands should NOT be used to open doors or draws, operating light switches and touching face, hair and clothing.
- C. Safety Glasses will be worn at all times while working in the laboratory.

#### II Area Monitoring

The controls listed in the following paragraphs will be in place to monitor personnel exposure.

- A. Area monitors (Landauer) will be used in each of the laboratories.
- B. An Eberline RM-14S radiation monitor with an HP-210AL probe will be stationed in the laboratories for personnel and area monitoring.

#### III General Laboratory Practice

- A. There will be no eating, drinking or smoking in the laboratory.
- B. No pipetting by mouth.
- C. Use a fume hood when working with acids, solvents or other hazardous chemicals.
- D. The general good laboratory practices and procedures that are acceptable in a chemistry laboratory are applicable to the radioactive samples.

#### IV Swipe Tests

- A. There will be a quarterly swiping and counting of laboratory bench tops, inside hoods, and entrances/exits. A minimum of 10 locations will be selected randomly by the RSO on a monthly basis wherever the radioactive samples are being analyzed.
- B. Personnel performing swipes must wear gloves.

- C. Using a 5.5cm swipe filter, approximately 100 square cm of area will be swipped.
- E. Each filter envelope will be labeled with date, location and initials.
- F. The swipes will then be counted with an eberline SRM-100 with a pancake probe for five minutes to determine if there is any radioactivity above background levels.
- G. Counts for all locations are recorded, initialed and dated on log sheet for future retrieval and inspection.
- H. In the event of any contamination (greater than 15 cpm above background) is observed, area is immediately decontaminated, reswiped and counted again. This process is repeated until decontamination is verified.
- I The above decontamination and recounts should be recorded on the log sheets.

#### V. Fixed Contamination Monitoring

- A. All surveys are done with the Eberline RM-14S Radiation Monitor coupled with the HP-210AL Probe. This a thin window "pancake" GM tube with sensitivity to alpha/beta/gamma.
- B. Benchtops, floor or other surface to be surveyed is scanned with the probe within ½ inch of the surface.
- C. Any contamination above background is observed via the radiation monitor alarm.
- D. Areas found to contain fixed contamination are decontaminated immediately (see Section on Decontamination).

#### VI Decontamination Procedures

- A. Skin
  - 1. Wash Contaminated area for 2 to 3 minutes with a mild hand soap and warm water. Caution: water should be comfortable to touch. Hot water dilates the pores and cold water contracts the pores.
  - 2. Rinse thoroughly, remove excess water and monitor.
  - 3. Repeat steps 1 and 2 two additional times.
  - 4. If the above is insufficient, lightly scrub contaminated area with a soft brush using a heavy lather and warm water for 2 minutes.

5. Rinse thoroughly, remove excess water and monitor.
6. Repeat steps 4 and 5 two additional times.
7. If the above is insufficient, assistance should be solicited from the RSO.

**B. Surface of Items**

1. If the isotope is short-lived, it may be expedient to isolate the area and allow radioactive to reduce contamination.
2. Use soap or detergents and complexing solutions to clean surfaces (Radiacwash, count-off, EDTA, etc.). Isolate specific areas of contamination and clean these, always working toward the area of highest contamination.
3. Check area by direct survey and swipe tests. Contaminated areas will be posted appropriately until decontamination procedures are complete and the area has been verified to be uncontaminated.
4. Decontamination characteristics of specific materials:

Unfilled wood: Poor  
Concrete: Poor  
Porcelain: Fair  
Stainless Steel: Good  
Polished Stainless Steel: Excellent  
Glass: Excellent  
Linoleum: Good  
Masonite: Good  
Asphalt tile: Good  
Vinyl Tile: Good

**VII Personnel Monitoring**

**A. Personnel Survey/ Frisk Monitoring**

1. An Eberline RM-14S Radiation Monitor will be available in the laboratory. This can be used to monitor the background radiation.
2. Workers may check their hands and feet using the Eberline monitor prior to exiting.

3. In the event that the monitor alarm indicates bodily contamination, the RSO should be notified immediately. The contaminated worker should not leave the area until the RSO arrives to evaluate the situation.

**B. Personnel Monitoring**

The laboratory will not be conducting radiochemistry analyses, Therefore there will not be any radioactive standards except a few low-level calibration check standards for the survey meters. Therefore the low-level environmental samples will be the only source for exposure to individuals.

1. Three individuals including the RSO who survey the incoming samples are provided with personnel monitoring badges, and thus far the highest measured exposure has been 3 mrem for a 2 month period. The badges used are Luxel individual personnel monitoring badges from Landauer at a bimonthly frequency.
2. There are seven areas of the laboratory that have Luxel quarterly area monitoring badges. The highest measured exposure has been 5 mrem per 3 months.

**VIII Sample Receiving/Screening**

- A.** Immediately upon receipt, the samples are surveyed for gamma activity at the surface of the shipping container while it is still on the delivery truck or on the loading dock. The container is surveyed with an Eberline ASP-1/SPA-8 Microroetgen meter. If the container has a reading greater than 0.5 mR/hr, the container is refused and returned to the client. The shipping container never gets into the building without an external gamma scan.

Note: The action level of 0.5 mR/hr is based on maintaining sample activity levels below the limits of the facility's license, and also to limit the radiation levels within the facility to below the permissible levels of radiation in an unrestricted area as specified in Title 10, Chapter 1, Code of Federal Regulations, Part 20.105.

- B.** If the external gamma radiation level is less than 0.5 mR/hr, the container is taken into the Sample Management area.
- C.** The samples are then taken out of the containers under a fume hood and checked against the chain-of-custody. The sample management personnel are required to wear lab coats, safety glasses and gloves when handling samples.
- D.** The samples are then logged into the Laboratory information system and stored in the appropriate locations awaiting analysis.

**IX. Radioactive Source Storage and Inventory.**

- A. All radioactive standards and sources will be stored in a locked, limited access area.
- B. Upon receipt, all radioactive standards and sources will be recorded, and the records will list the radionuclides, manufacturer, date of receipt, chemical /physical form, volume/weight and activity concentration.
- C. An inventory will be conducted every 6 months to account for all radioactive standards and sources in possession. Records for these will kept on file for 2 years from date of inventory.

**Item 11**

**Waste Management**

**I Volume of Waste**

The following are the predicted volumes of radioactive waste for disposal:

- A. SOLIDS:- Approximately 0.25 drums (55 gallon drum) per calender year.
- B. LIQUIDS:- Approximately one 20-liter carboy per year (aqueous).
- C. LIQ LIQUIDS:- Approximately one 20-liter carboy per year (organic).

**II Storage of Waste**

All waste will be stored in a locked, limited access location (waste room) during the interim between generation and shipment to the waste disposal site. Radiation waste will be isolated from flammable waste.

So far we have not had and radioactive waste to dispose of. All mixed waste samples received had no activity above background, and the unused samples were returned to the client.

Since Connecticut does not have a low-level radioactive wase disposal site, the waste will be kept on site. When the low level disposal site has been cited and opened, the waste will then be shipped off for disposal.

### III Waste Composition

#### A. Liquid Waste

1. First and second wash waters from equipment decontamination.
2. Acids and Bases. Both must be neutralized.
3. Liquids from sample digestions.
4. Solvents, water insoluble compounds.
5. Separate carboys must be kept for acid waste, liquid waste and organic waste.

#### B. Solid Waste

1. Solid waste are put into a special container labeled "radioactive waste" or a similar notation.
2. Examples of solid waste are gloves, absorbent paper, filters, planchets, plastic bottles Kimwipes and rags.
- 3 As solid is added to the container, approximate activity added is noted in a logbook, along with the isotope present if known. Thus when the container is full, it's composition an total activity estimate can be given to the waste shipper.

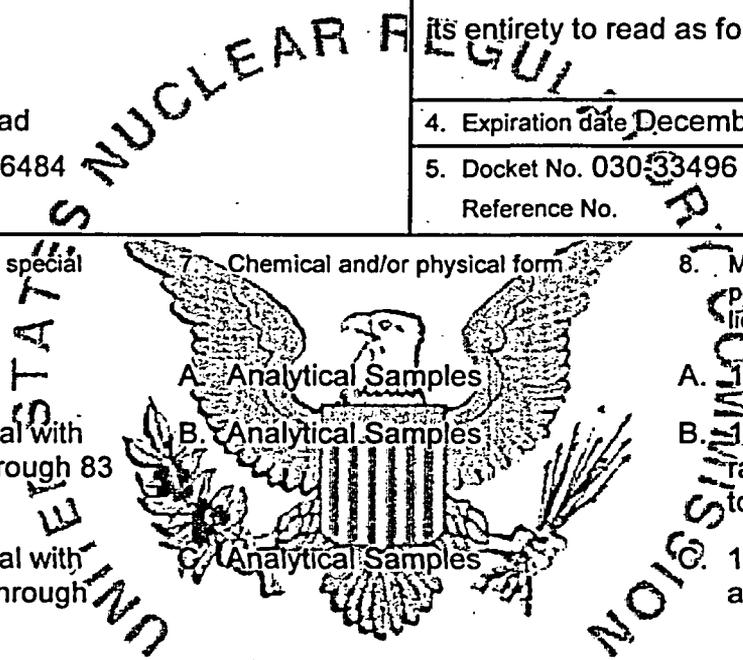
### IV Mixed Waste

All unused mixed waste samples remaining after sample analysis will be returned to the customer requesting the analysis. This policy will be strictly enforced via written contracts with each customer. It will also be stated in this contract that we are not to hold this mixed waste material for periods longer than 120 days after the completion of the analyses.

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

|                                                                                                                                                   |                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p style="text-align: center;">Licensee</p> <p>1. Severn Trent Laboratories</p> <p>2. 128 Long Hill Cross Road<br/>Shelton, Connecticut 06484</p> | <p>In accordance with the letter dated December 11, 2002,</p> <p>3. License number 06-30139-01 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date December 31, 2004</p> <hr/> <p>5. Docket No. 030-33496<br/>Reference No.</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



|                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Hydrogen 3</p> <p>B. Any byproduct material with Atomic Numbers 3 through 83</p> <p>C. Any byproduct material with Atomic Numbers 84 through 103</p> <p>D. Any source material</p> <p>E. Any Special Nuclear Material</p> <p>F. Nickel 63</p> | <p>7. Chemical and/or physical form</p> <p>A. Analytical Samples</p> <p>B. Analytical Samples</p> <p>C. Analytical Samples</p> <p>D. Analytical Samples</p> <p>E. Analytical Samples</p> <p>F. Foils registered either with U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State.</p> | <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 10 millicuries</p> <p>B. 100 microcuries per radionuclide and 10 millicuries total</p> <p>C. 10 microcuries per radionuclide and 100 microcuries total</p> <p>D. 1 millicurie</p> <p>E. 1 millicurie</p> <p>F. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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## 9. Authorized use:

- A. through E. Laboratory analysis of environmental samples as a service for others.
- F. To be used for sample analysis in compatible gas chromatography devices that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess, and use the devices.

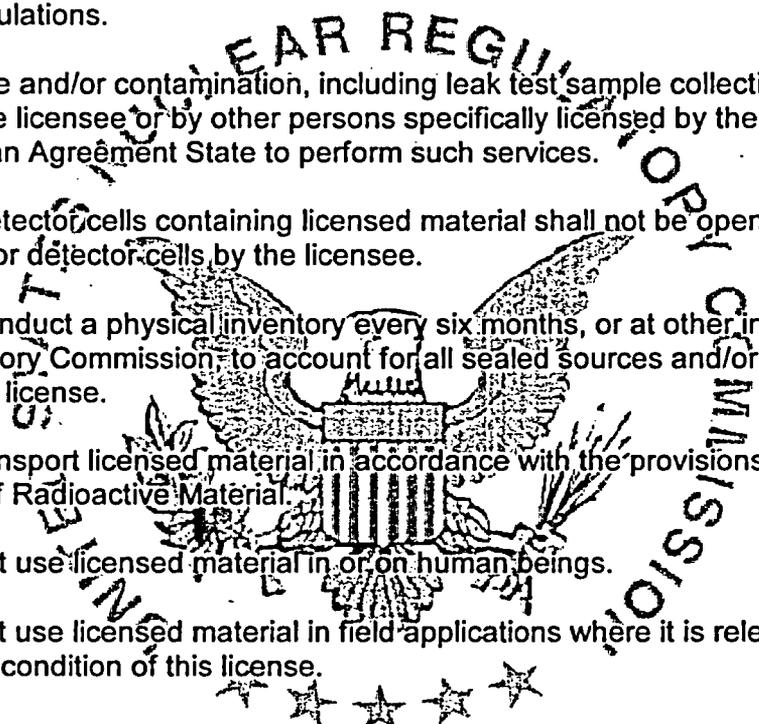
**CONDITIONS**

10. Licensed material may be used only at the licensee's facilities located at 128 Long Hill Cross Road, Shelton, Connecticut.
11. A. Licensed material shall be used by or under the supervision of David Madumadu.  
B. The Radiation Safety Officer for this license is David Madumadu.
12. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.  
B. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.  
C. Sealed sources need not be tested if they are in storage and are not being used; however, when they are removed from storage for use or transferred to another person and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

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- D. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- E. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
13. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders or detector cells by the licensee.
14. The licensee shall conduct a physical inventory every six months, or at other interval approved by the U.S. Nuclear Regulatory Commission, to account for all sealed sources and/or devices received and possessed under the license.
15. The licensee may transport licensed material in accordance with the provisions of 10 CFR 71, "Packaging and Transportation of Radioactive Material."
16. The licensee shall not use licensed material in or on human beings.
17. The licensee shall not use licensed material in field applications where it is released except as provided otherwise by specific condition of this license.



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18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Letter dated March 17, 1994
- B. Letter received September 30, 1994
- C. Letter dated November 28, 1994
- D. Letter dated July 20, 1998
- E. Letter dated July 21, 1998
- F. Letter dated September 9, 1998
- G. Letter dated October 26, 1998
- H. Facsimile dated October 26, 1998
- I. Facsimile dated December 30, 1998
- J. Letter dated March 14, 2000



For the U.S. Nuclear Regulatory Commission

Date February 25, 2003

By

*Original signed by Sattar Lodhi, Ph.D.*

Sattar Lodhi, Ph.D.  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety  
Region I  
King of Prussia, Pennsylvania 19406

27062324

This is to acknowledge the receipt of your letter/application dated

November 17, 2004, and to inform you that the initial processing which includes an administrative review has been performed.

There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information. *Renewal*

Please provide to this office within 30 days of your receipt of this card

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A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned Mail Control Number 136008.  
When calling to inquire about this action, please refer to this control number.  
You may call us on (610) 337-5398, or 337-5260.

BETWEEN: : (FOR LFMS USE)  
 : INFORMATION FROM LTS  
 : -----  
 :  
 License Fee Management Branch, ARM : Program Code: 03225  
 and : Status Code: 0  
 Regional Licensing Sections : Fee Category: 3P 1D 2C  
 : Exp. Date: 20041231  
 : Fee Comments: \_\_\_\_\_  
 : Decom Fin Assur Req'd: Y  
 : ::::::::::::::::::::::::::::::::::::::::::::::::::::

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED  
 Applicant/Licensee: SEVERN TRENT LABORATORIES  
 Received Date: 20041119  
 Docket No: 3033496  
 Control No.: 136008  
 License No.: 06-30139-01  
 Action Type: Renewal

2. FEE ATTACHED

Amount: \_\_\_\_\_  
 Check No.: \_\_\_\_\_

3. COMMENTS

Signed \_\_\_\_\_  
 Date ③ 11/23/04

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /\_/)

1. Fee Category and Amount: \_\_\_\_\_

2. Correct Fee Paid. Application may be processed for:

Amendment \_\_\_\_\_  
 Renewal \_\_\_\_\_  
 License \_\_\_\_\_

3. OTHER \_\_\_\_\_

Signed \_\_\_\_\_  
 Date \_\_\_\_\_