

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.

1. APPLICATION FOR:
(Check and/or complete as appropriate)

a. NEW LICENSE

b. AMENDMENT TO:
LICENSE NUMBER

c. RENEWAL OF:
LICENSE NUMBER

LEL 23535

2. APPLICANT'S NAME (Institution, firm, person, etc.)

TRACE TECHNOLOGIES, INC.

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
201-685-2100

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

JOHN W LEATHERDALE, P.E.

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
201-685-2100

4. APPLICANT'S MAILING ADDRESS (Include Zip Code)

10 RADEL AVENUE
BRIDGEWATER, NEW JERSEY 08807

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED
(Include Zip Code)

10 RADEL AVENUE
BRIDGEWATER, NEW JERSEY 08807

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL
(See Items 16 and 17 for required training and experience of each individual named below)

RECEIVED BY LFMB

FULL NAME

TITLE

a. JOHN W LEATHERDALE, P.E.

PRESIDENT

DATE

5/20/85

b. RAJESH SINGHVI

LAB MANAGER

LET

May 9

7. RADIATION PROTECTION OFFICER

JOHN W LEATHERDALE

Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

8. LICENSED MATERIAL

LINE NO.	ELEMENT AND MASS NUMBER A	CHEMICAL AND/OR PHYSICAL FORM B	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source) C	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME D
(1)	TRITIUM (H ³)	TRITIUM TRITIDE	AID MODEL 510-6007	MAXIMUM/SOURCE 200 MILLICURIES SEALED SOURCE
(2)		FOIL		
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL
E

(1) USED IN ANALYTICAL INSTRUMENT DEVELOPMENT (AID, INC.) MODEL 510-6007 ELECTRON

(2) CAPTURE DETECTOR AS USED IN AID GAS CHROMATOGRAPH.

(3) MAY 16 1985

(4)

Applicant... 4065/5002 +
Check No... 110/30 + 120
Amount/Fee Category... Application
Type of Fee...
Date Check Rec'd... 5/20/85
Received By... Brown

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	SOURCE SEALED AND CONTAINED IN GAS CHROMATOGRAPH AS STATED IN 8.E.1		
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A.	MANUFACTURER'S NAME B.	MODEL NUMBER C.	NUMBER AVAILABLE D.	RADIATION DETECTED (alpha, beta, gamma, neutron) E.	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F.
(1)	NOT APPLICABLE					
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY NOT APPLICABLE	<input type="checkbox"/> b. CALIBRATED BY APPLICANT <i>Attach a separate sheet describing method, frequency and standards used for calibrating instruments.</i>
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12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A.	SUPPLIER (Service Company) B.	EXCHANGE FREQUENCY C.
<input type="checkbox"/> (1) FILM BADGE <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____ 	NOT APPLICABLE	<input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY <input type="checkbox"/> OTHER (Specify): _____

13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)

- ☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

NOT APPLICABLE

14. WASTE DISPOSAL

- a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED _____
- b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

ALL SERVICE OF SEAL SOURCE IN 8.C.1 WILL BE PERFORMED BY AID.

INFORMATIC REQUIRED FOR ITEMS 15, 16 AND 11

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures (if needed), day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures; or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.
16. **FORMAL TRAINING IN RADIATION SAFETY.** Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.
 - a. Principles and practices of radiation protection.
 - b. Radioactivity measurement standardization and monitoring techniques and instruments.
 - c. Mathematics and calculations basic to the use and measurement of radioactivity.
 - d. Biological effects of radiation.
17. **EXPERIENCE.** Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 30, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our 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.

LICENSE FEE REQUIRED
(See Section 170.31, 10 CFR 170)

b. CERTIFYING OFFICIAL (Signature)

c. NAME (Type or print)

JOHN W LEATHERDALE, P.E.

d. TITLE
PRESIDENT

e. DATE

MAY 10, 1985

1) LICENSE FEE CATEGORY: 2

2) LICENSE FEE ENCLOSED: \$ \$110.00

15. RADIATION PROTECTION PROGRAM -

The seal source shall be located with the gas chromatograph at all times. Records shall be kept as to the physical location of the source as used in the laboratory. This log shall be kept by the Radiation Safety Officer.

The seal source shall be vented at all times by means of a rubber tubing routed into the exhaust from a laboratory fume hood.

Cleaning of the seal source shall be as per the manufacturers' instructions - see attached.

16. FORMAL TRAINING -

See attached resume.

17. EXPERIENCE -

Various operating personnel in the laboratory have had direct operational experience with this type of seal source.

I Cleaning the detector

Loss in sensitivity will result if high boiling compounds coat the tritium foil. Running the instrument overnight at $200 + ^\circ\text{C}$ with carrier gas flowing through the unit will usually clear most contaminants from the cell. Chemically cleaning the detector is accomplished by cooling the unit to room temperature and removing the lid assembly. The column is then removed. The lid is placed in an inverted position over a 400 ml beaker such that the DET EXIT PORT is over the beaker. A funnel is connected to the detector column fitting and about 50 ml of methanol containing about 5% by weight of sodium or potassium hydroxide is poured through the cell. After draining, a second 50 ml portion of methanol is poured through the cell. After draining is complete, the cell is dried with a clean dry gas and replaced on the unit. The methanol used to clean the cell is poured down the drain and flushed with a copious amount of water as it will contain approximately 5×10^{-3} microcuries of tritium.

IF THE TRITIUM FOIL MUST BE REPLACED DUE TO CONTAMINATION THAT CANNOT BE REMOVED BY THE ABOVE METHODS OR DUE TO ANY OTHER CAUSE, THE DETECTOR ASSEMBLY MUST BE RETURNED TO ANALYTICAL INSTRUMENT DEVELOPMENT, INC. FOR FOIL REPLACEMENT. UNDER NO CIRCUMSTANCE SHOULD THE USER ATTEMPT TO OPEN THE CELL.

Ex. 6

JOHN W LEATHERDALE

EDUCATION:

B.S. Chemical Engineering, [REDACTED]
Newark College of Engineering
Newark, New Jersey
Graduate Study Chem Engr 1971-73
Newark College of Engineering
Newark, New Jersey

PROFESSIONAL:

Licensed Professional Engineer
NJ, NY, OH, SC

Member:

American Institute of Chemical Engineers
American Chemical Society
Water Pollution Control Federation
Air Pollution Control Association
American Society of Testing Materials

**EXPERIENCE:
HISTORY**

TRACE TECHNOLOGIES, INC. - President

1975 -

Responsible for technical operations of environmental consulting company specializing in air, water, and hazardous materials. Numerous projects in environmental field including ventilation of depleted uranium/uranium oxide from machining and incineration operations at NL Nuclear in Albany, NY.

FORMAL RADIATION TRAINING:

At NL Nuclear 1979
Safety classes attended and review of procedures by NL Radiation Safety Officer.

Mr. Robert G. Gallagher
President, Applied Health Physics

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