

ENCLOSURE 2-2

**RECORDS OF SCINTILLATION COCKTAIL IN SANITARY
SEWAGE DISPOSAL (20.2005 (a)(1))**

MEMORANDUM FOR Mr. John J. McHugh, Director, Environmental, Safety & health Office.

Subject: Incinerator Formerly Located Within Building #30.

1. References Memorandum AMSSB-OES(N), dtd 20 March 2002, subject: SAB..
2. In response to your follow-on request to my above referenced response I am providing the following annotated response based in part upon additional information that I have obtained Mr. John Sieckarski, Alternate Radiation Safety Officer.
3. Activities (usage) of this incinerator:

Response: From an unknown date in 1983 this incinerator was under the direct control of Mr. Thomas Martin, Director Installation Safety Office, as Radiation Safety Officer (RSO), until November 1990. Subsequently, the undersigned as successor RSO, maintained control and use of this incinerator until the incinerator was released for removal on 2 December 1993.

During 1987 thru 1991 of this period scintillation fluid collected from various laboratories was incinerated as unregulated non-radioactive waste. This scintillation fluid was in either:

a. Glass vials, 15-ml/vial scintillation fluid, were containing in cardboard trays not exceeding one hundred vials/tray. Records indicate thirty (30) cardboard trays were disposed of in the period of 20 March 1987 thru 20 May 1991, enclosure 3.

Each vial contained a plastic screw cap, weighing approximately 3.9 grams/ cap.

Total estimated plastic weight = 11,700 grams (11.7 Kg / 25.80 lbs).

Total estimated scintillation weight = 38,700 grams (38.7 L / 85.33 lbs.).

Total radioactivity = 787.4343 micro Curies H³

$$787.4343 \mu\text{Ci } ^3\text{H} = 38,700 \text{ grams} = 0.02 \mu\text{Ci/gm}$$

b. Plastic vials, 2.3 ml/vial scintillation fluid, totaling 8,978 vials were disposed of in the period of 1985 thru 1988, enclosure 4. Each plastic vial weighing approximately 2.51 grams

Total estimated plastic weight = 22,534.78 grams (22.535 Kg / 49.69 lbs).

Total estimated scintillation weight = 17,758.484 grams (17.758 L / 39.16 lbs).

Total radioactivity = 89.78 micro Curies H³

$$89.78 \mu\text{Ci} = 17,758.484 \text{ grams} = 0.005 \mu\text{Ci/gm } ^3\text{H}$$

c. Glass jugs, 4-liter capacity, net weights ranged from approximately 1,134.0 to 3,220.5 grams.

Total estimated scintillation weight = 13,857.4 grams (13.857 Kg / 30.55 lbs.).

Total radioactivity = 69.55 micro Curies C¹⁴

$$69.55 \mu\text{Ci } ^{14}\text{C} = 13,857.4 \text{ grams} = 0.005 \mu\text{Ci/gm } ^{14}\text{C}$$



PAUL G. ANGELIS
Radiation Safety Officer

MEMORANDUM FOR Mr. John J. McHugh, Director, Environmental, Safety & health Office.

Subject: Incinerator Formerly Located Within Building #30.

1. References.

a. Material Safety Data Sheet, DuPont Chemical, Econofluor™ Pre-Mixed Scintillation Solution, enclosure 1.

b. Scintillation Solution, Formula, enclosure 2.

2. In response to your request I am providing the following response based upon information that I have obtained from Mr. David Duncan, PWT, and Mr. John Sieckarski, Alternate Radiation Safety Officer.

3. Building 30 incinerator specifications:

Response: Per Construction Specification, the incinerator was supplied by Jarvis Incinerator Co., 25 Rindge Ave. Ext., Cambridge, MA, Model #: P-150, in 1973. Natural gas was used as fuel to maintain 2000°F operating temp during waste incineration.

4. Composition of scintillation fluid:

Response: Two types of scintillation fluid were burned in this incinerator, reference 1a and b, from approximately 1987 thru 1991.

5. Activities (usage) of this incinerator:

Response: From an unknown date in 1983 this incinerator was under the direct control of Mr. Thomas Martin, Director Installation Safety Office, as Radiation Safety Officer (RSO), until November 1990. Subsequently, the undersigned as successor RSO, maintained control and use of this incinerator until the incinerator was released for removal on 2 December 1993.

During 1987 thru 1991 of this period scintillation fluid collected from various laboratories was incinerated as unregulated non-radioactive waste. This scintillation fluid was in either:

a. Glass vials, 15-ml/vial scintillation fluid, were containing in cardboard trays not exceeding one hundred vials/tray. Records indicate thirty (30) cardboard trays were disposed of in the period of 20 March 1987 thru 20 May 1991, enclosure 3.

Each vial contained a plastic screw cap, weighing approximately 3.9 grams/ cap.

Total estimated plastic weight = 11,700 grams.

Total estimated scintillation weight = 38,700 grams.

b. Plastic vials, 2.3 ml/vial scintillation fluid, totaling 8,978 vials were disposed of in the period of 1985 thru 1988, enclosure 4. Each plastic vial weighing approximately 2.51 grams
Total estimated plastic weight = 22,534.78 grams.
Total estimated scintillation weight = 17,758.484 grams.

c. Glass jugs, 4 liter capacity, net weights ranged from approximately 1,134.0 to 3,220.5 grams.
Total estimated scintillation weight = 13,857.4 grams.

6. Previous activities there:

Response: The operations of this incinerator prior to 1983, when the Radiation Laboratory was relocated to Bldg. #30, were under the overall operations of Dr. Derwood Rowley and an organization known as Science & Technology Laboratory. The Natick Soldier Center, Materials Science Team, would be the present day organizational equivalent.

7. Ash disposal information:

Response: Residual glass, vials, vermiculite, and ash was collected and disposed of as ordinary trash. Combustible materials consisted of the scintillation fluid, 3.9-gram plastic caps, 2.51-gram plastic vials, and cardboard vial tray holders.

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PAUL G. ANGELIS
Radiation Safety Officer