

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of

THE TOLEDO EDISON COMPANY
and THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

(Davis-Besse Nuclear Power Station)

Docket No. 50-346

MOTION TO DELAY CLOSING OF RECORD
ON ISSUE 2 AND
MOTION TO COMPEL DISCOVERY

AFFIDAVIT OF EVELYN STEBBINS



STATE OF OHIO)
CUYAHOGA COUNTY) SS

I, Evelyn Stebbins, being first duly sworn on oath, depose and say that I am Chairman of the Coalition for Safe Electric Power and have had overall responsibility for the intervention on the Davis-Besse Nuclear Power Station, and that the following statements are true and correct to the best of my knowledge and belief.

In our interrogatories to the Applicants, we requested names of personnel who had performed quality control test for construction of entire Davis-Besse facilities, and permission to speak to them. At the Pre-Hearing Conference in Toledo, we were requested to be more specific as to the area of concern and the names of companies who had performed quality control tests. By telephone, we advised Mr. Silberg that we wished information on quality control with respect to the cooling tower, cooling tower foundation, reactor foundation, reinforcing steel, and fill, and provided the names of Michigan Testing, Pittsburgh Testing, Herron Testing, and Toledo Edison Quality Assurance people.

The Coalition was provided a list of personnel and advised that we should contact Mr. Roe to make arrangements to speak to the personnel. We were further advised by Mr. Roe that we could speak to the personnel who were on site presently, as many of the people listed were no longer there. I was also advised by Mr. Roe that Herron Testing was not at the site and he thought they had their offices in Pennsylvania. I did go to the Davis-Besse Plant, August 11 and August 20, to interview these people.

Through my own investigation, I found out that Herron Testing was in Cleveland, and I made four attempts to contact Mr. Sutcliffe of Herron Testing before I was finally able to reach him on July 23, 1973. Mr. Sutcliffe advised me that he would have to look up

8003120 738

Reference

- a) exposure to suitable samples of the general public of 17 rems per year from nuclear facilities, 1342 Tr.
- b) exposure to occupational workers in nuclear facilities to 30 rems per year to the thyroid, 2002 Tr.
- c) exposure to occupational workers in nuclear facilities to 30 rems per year to the skin, 2003 Tr.
- d) exposure to occupational workers in nuclear facilities to 75 rems per year to the forearms, 2003 Tr.
- e) exposure to occupational workers in nuclear facilities to 75 rems per year to the feet and ankles, 2003 Tr.
- f) exposure of pregnant and fertile women, as is for all occupational workers, 5 rems per year, 1999, 2000 Tr.
- g) exposure to individuals in the population of 500 millirems per year. 1505-1506 Tr.
(all, 10 CFR 20)
4. The National Council on Radiation Protection in Report No. 39 provides the following maximum occupational exposures:
- a) establishing new occupational worker categories of fertile women-dose criterion of 2-3 rems per year, and pregnant women of .5 rems during pregnancy,
- b) skin dose criterion of 15 rems per year,
- c) forearm dose criterion of 30 rems per year,
- d) feet and ankle dose criterion 15 rems per year;
- e) thyroid dose criterion of 15 rems per year. all from applicant's Exhibit 8, 1801-1802 Tr.
5. The National Council on Radiation Protection Report No. 39 also provides a non-occupational dose criterion to certain organs of the individual and the public of .5 rems per year. 1802-Tr.

6. Present 10 CFR Part 20.106 (e) provides for considering reconcentration mechanisms only after damage has been done and detected. 1507-Tr.
1904,1905-Tr.
7. Present Part 20 Standards do not include a provision specifying how apportionment of total maximum permissible radiation dosage from all sources is to be effectuated. 1379-80,
1511-Tr.
2004-Tr.
8. Part 20.1 (c) provides that cost is an element to be considered in the formulation of radiation standards to "protect" the health and safety of the public. 2007-Tr.
Tedesco,
Howe cross-exam.
9. a) The Federal Radiation Council (FRC) guidelines, after approval by the President, are the basis for "Standards for Protection Against Radiation" in 10 CFR Part 20. 1526-Tr.
- b) Recommendations of the International Commission on Radiation Protection (ICRP) and the National Council on Radiation Protection (NCRP) are generally relied on by the FRC in formulation of guidelines for Part 20 of 10 CFR. 1502,1526-Tr.
- c) Because of reconcentration, the MPC emission limits of 10 CFR Part 20 result in excessive levels to the general population beyond those permitted by 10 CFR 20.105. 1387,
1354, 1359, 1361,
1507,1508
1509,1510-Tr.
10. The ICRP has stated that its levels were set up to provide reasonable latitude for the expansion of atomic energy programs in the future. 1505-Tr.

11. The 10 CFR Part 20 allows cesium -137 maximum permissible concentrations in air and water to be 2×10^{-9} microcuries per milliliter of air and 2×10^{-5} microcuries per milliliter of water. 1507-Tr.
12. If present Part 20 Standards in Appendix B of maximum permissible concentrations in air of Cesium -137 were maintained at MPC for one day (allowable under Part 20) over pasture plants, the child consuming one liter of milk per day would get a whole body dosage of 7 rads. 1508-Tr.
13. If the same MPC for cesium -137 was maintained in the air for one year, allowable in the Standards, the whole body dose would be 2,500 rads - 5,000 times higher than the 50 millirem guideline in Part 20. 1508-Tr.
14. If a 150 pound man were to consume 2,200 grams of water per day at the MPC concentration for Cesium -137 in Part 20, he would receive 500 millirems; if a 75 pound child were to drink the same amount of water, he would be receiving 1,000 millirems; if a 100 pound pregnant woman drank the same amount of water, she would be exceeding dosages allowable in Part 20. 1509-Tr.
15. If Cesium -137 MPC of Part 20 were maintained for one year, the resultant deposition on the ground would be 300 microcuries per meter square. The exposure would be 23 rads per year. 1510-Tr.
16. The number of cancers which will be found (at other sites) as a result of the present standards for the whole body exposure could increase as much as twenty-fold, according to evidence on the record, than that

Reference

Radiation Protection.

17. An increase in infant mortality rates in areas around nuclear facilities is associated with existence in those areas of levels of radioactivity permitted by Part 20 standards.
18. Low levels of radiation comparable to levels of exposure permitted in Part 20 standards are associated with an increase in the number of cancer and leukemia cases in children, and an increase in respiratory deaths of adults.
19. Compliance with 10 CFR Part 20 is considered sufficient proof of safety by the applicant and the AEC.
20. The infant, fetus, and the early embryo are the most sensitive members of the population to radiation.

1503-Tr.

L.F.P.
exhibits
No. 1, 2, 3, 4, 5,
1352-1358,
1359-1360,
1372-1385,
1391-1392-Tr.

1341-1343,
1368,
1362-1363,
1366-1367-Tr.

p. 56, 58
staff exhibit
No. 1.

1336,
1343-1345,
1347,
1350, 1351,
1369, 1370. Tr.

II. Conclusions of Law

1. Allowing considerations of cost and economic feasibility to affect safety standards represents an erroneous conception of the Atomic Energy Act.
2. Part 20 is based on an erroneous conception of the Atomic Energy Act and, therefore, does not constitute a reasonable exercise of AEC discretion.
3. Part 20 is based on an erroneous conception of the Atomic Energy Act and therefore is not within the scope of AEC authority.
4. The Part 20 radiation exposure limits are too high to be a reasonable exercise of AEC discretion.
5. Lack of specifically lower limits for radiation exposure with respect to fetus, embryo, and fertile women represents an unreasonable exercise of AEC discretion.
6. Rates of radioactive releases permitted by Part 20 are too high to constitute a reasonable exercise of AEC discretion.
7. Part 20's maximum permissible concentrations (Appendix B) are not a reasonable exercise of AEC discretion.
8. Compliance by the proposed Davis-Besse facility with invalid Part 20 safety standards is not sufficient proof of safety.
9. Without sufficient proof of the safety of the proposed Davis-Besse Nuclear Power Station, the Atomic Safety and Licensing Board cannot be assured that its construction

(9 contd.)

will not be inimical to the health and safety of the public and therefore cannot issue a construction permit.

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As Dr. Tompkins, witness for the AEC, on page 1801 of the Transcript, states the guideline in the NCRP Report calls for a reduction of 50% of this level in Part 20 by stating:

"The maximum permissible dose equivalent to unlimited areas of the skin (other than hands and forearms) shall be 15 rems in any one year."

paragraph 234
NCRP Report No. 39
Applicant's Exhibit 8

In considering this change they comment on skin as a critical organ

"The skin may be considered a subordinate limiting tissue since exposure to penetrating radiation is usually highest at or near the skin level and external radiation of low to moderate penetration irradiates skin far more than gonads or bone marrow. A practical factor is the temptation to use the hands for manipulating radioactive sources. The skin is subject to cancer formation after relatively severe skin damage. It may be assumed, however, that late neoplasms of the skin are possible even when there is no observable early injury. For comparable (substantial) absorbed doses, the incidence of neoplasia of the skin is far less than that of neoplasia (leukemia) of the hematopoietic structure."

paragraph 197
NCRP Report No. 39
Applicant's Exhibit 8

The forearm dose criterion for occupational workers was also revised by the NCRP in Report 39. The present Part 20 standards are 2 1/2 times the NCRP recommendations. Part 20. 101 (b) allows 18 3/4 rems per calendar quarter to the hands of individuals in restricted areas.

As Dr. Tompkins points out in reference to this report on p. 1800 the Transcript that

"the forearm dose criterion for occupational workers was changed from 75 rem per year to 30 rem per year."

The NCRP report states

"The maximum permissible dose equivalent to the hands shall be 75 rems in any one year, of which not more than 25 rems shall be received in any one quarter. The maximum permissible dose equivalent to the forearms shall be 30 rems in any one year, of which not more than 10 rems shall be received in any one quarter."

paragraph 236
NCRP Report 39

Also in regard to these limits the NCRP Report 39 states in paragraph 237

"These limits are slightly more restrictive than previous limits for hands and forearms. All reasonable efforts should be made to keep exposure of hands and forearms within the general limit for skin."

The feet and ankle dose criterion for occupational workers in 10CFR 20 is 18 3/4 rems per calendar quarter or 75 rems per calendar year. As Dr. Tompkins states on p. 1801 of the Transcript in reference to the NCRP Report No. 39

"The feet and ankle dose criterion for occupational workers was changed from 75 rems per year to 15 rems per year."

This new NCRP recommendation is 5 times the presently allowable dosage in Part 20, many times more than a safe level recommended by recent scientific data. As paragraph 238 of the NCRP Report 39 states

"The maximum permissible dose equivalent for combined external and internal irradiation of any tissue, organ or organ system not otherwise singled out in the other recommendations shall be 15 rems in any one year."

The NCRP in Report 39, Applicant's Exhibit 8, also recommended a non-occupational dose criterion to certain organs of the individual and the public of .5 rem per year (p. 1802 - Transcript). But, the present NRC guidelines, and Part 20, allow 1.5 rems per year exposure to the individual and public to skin, GI tract, lung, bone, thyroid, kidney, spleen, pancreas, prostate, muscle and fatty tissue. These organs were determined to be limiting organs for:

"irradiation from internally deposited sources alone or combined with irradiations from external sources,"

paragraph 192
NCRP Report 39
Applicant's Exhibit 8

These organs were determined to be limiting organs by:
"the metabolic pathways of invading nuclides, their concentration in organs, and their effective residence times."

paragraph 192
NCRP Report 39
Applicant's Exhibit 8

Operation of nuclear facilities in compliance with MPC levels in Part 20,

expose the general public to dangerous levels of radiation beyond those permitted in 10 CFR 20.105. In citing LIFE exhibits 1,2,3,4,5, Dr. Sternglass has shown that increases in infant mortality rates, number of cancers, plus increases in respiratory deaths in adults, areas around nuclear facilities and nuclear projects is associated with existence in those levels of radioactivity permitted by Part 20 (p. 1352-1358, 1359-1360, 1372-1385, 1391-1392 Transcript)

Very strong correlations exist between rising levels of strontium-90 and other isotopes in milk and increases in infant mortality in the United States (p. 1352-1353, 1382, Transcript), according to Dr. Sternglass' studies. These sorts of health affects were at radiation levels well below those regarded as acceptable for the population. These increases in infant mortality are caused by the fact that early fetus and embryo are more sensitive than the adult. The effects of these levels tend to cause immaturity and retardation of development in infants. (p. 1354, 1369, Transcript)

The effects of low-level radiation from weapons testing has been suggested to be the cause of congenital malformations or complications such as mongolism in infants (p. 1357, Transcript). These children, already affected by radiation, are made more sensitive to the development of leukemia. (p. 1357, Transcript). This is found throughout the U. S. as a result of various rainouts and depositions of tests.

Incidence of lung cancer in adults has been shown to increase in areas of the western U. S. affected by fallout, where beta activity was 2 to 5 times as high as the East. Increases in respiratory disease rate was effected even though the concentrations of beta activity were far below 10 CFR 20 standards, (p. 1362, 1363). A rise in all infectious diseases occurred in the year following testing and correlations can be drawn between the two, because of the large increase of air-borne nuclear fission

products (p. 1370, Transcript) with liquid effluents and gaseous effluents being discharged from many plants, and with the proliferation of nuclear plants, a hazard is presented of all the emissions quantitatively causing exposure in excess of Part 20. For example, Lake Erie will not only be receiving the Davis-Besse rad wastes, but receives discharges from the Enrico Fermi Plant near Detroit, Michigan, and the Nuclear fuel reprocessing plant near Westvalley, New York. (p. 1379-1380, Transcript) One potential concentration of these effluents could cause great hazards for a populous if no provision in Part 20 takes this into consideration.

As Dr. Tamplin states on pg. 1511 of the Transcript

"What is truly needed in order to properly regulate nuclear power industry is a comprehensive analysis that takes in account both the physical and biological concentrating mechanisms and is based on quantitative data on each radionuclide in the whole industry that is anticipated for the future in each ecological region of the nation."

In normal operation of nuclear facilities radioactive effluents are to meet MPC requirements in 10 CFR Part 20, appendix B, (p. 1507, Transcript), but these regulations do not take the biological concentration mechanisms occurring in the environment into account. Subsequently the regulations allow exposure to exceed Part 20 guidelines. If present Part 20 standard for Cesium-137 discharge to the air (2×10^{-9} microcuries per ml of air) were maintained at maximum permissible concentration for one day over pasture plants, a child consuming 1 liter of milk would get a dose of 7 rads of radiation (pg 1508, Transcript). And further Dr. Tamplin stated that

"If the MPC in air were maintained for one year, which is really allowed by the standards, the dose would be 2,500 rads"

pg. 1508
Transcript

If these maximum concentrations allowed in appendix B of Part 20 are maintained, in exposure to the public, Part 20 is exceeded. If these

NPC concentrations for Cesium-137 are maintained in water, a 150 lb. man consumes 2,200 grams of water he would receive 500 millirems of radiation. If a 75 pound child were to drink the same amount he would receive 1000 millirems. And if the air concentration of Cesium-137 was maintained the resultant deposition of the ground would be 300 microcuries per meter square, as Dr. Tamplin, LIFE witness, pointed out, the exposure would be 23 rads per year.

The provisions in Part 20, appendix B, for maximum permissible concentrations do not consider reconcentration mechanisms until

"it appears that the daily intake of radioactive material from air, food, or water by a suitable sample of an exposed population group averaged over a period not exceeding one year would otherwise exceed the daily intake resulting from continuous exposure to air or water containing one third the concentration of radio-active materials specified in Appendix B." page 1904-1905
Transcript

This section 20 106 (e) is only used if those exposures are exceeded, after emissions in the environment. Dr. Martin Goldman, Applicant's witness, further states (l. 21,23,p 1905, Transcript) that the commission may consider reconcentrations problems prior to operation. However, if this has ever occurred, to limit effluents, it was under no provision for such procedures in Part 20. The fact is, as the Section 20 105 (e) states, the regulations do not require attention to this problem until after the fact.

The NCRP has recognized the greater sensitivity of the fetus; the studies Dr. Stefnjlass, witness for LIFE cited indicate critical members of the population that are excessively exposed under Part 20. The concentration of various isotopes, whether from one plant or ten, from all sources, air, water, and diet in the critical members and in critical tissues of the human -- all tend to point to a reexamination of the Part 20 standards. These standards must be over-hauled in the light of this evidence, unless the atomic energy industry is to expand at the public health cost of the public.

III CONCLUSION

The evidence presented at the Davis-Besse hearings thus proves the serious flaws in Part 20 as it presently stands. They are flaws of a quantitative nature and problems of omission, as well as a basically erroneous concept of the law. The importance of these flaws is magnified by the significance of their subject matter. They concern nothing less than the health and safety of every person in the country-- workers in nuclear facilities, the general population, the unborn generations. With matters of such vital significance at stake, there is no room for error. The area of administrative discretion narrows and Part 20 is necessarily subject to closer scrutiny than a regulation which sets up rates, or procedures for processing claims, or standards of eligibility for governmental programs.

The validity of Part 20 is not an abstract issue. Exhibit of Staff, number 1, established that the Staff relied on compliance with Part 20 to conclude that Davis-Besse will be safe and not inimical to the health and safety of the public. If Part 20 itself is unsatisfactory, the risk will be borne by all of us who live in the area near the plant. It may take a short time for the Commission to revise and improve their current standards but the cost of delay in the construction schedule is neither a legally nor morally justifiable reason for affirming the present standards. It is not even a practical reason because subsequent revision of the standards after construction will necessitate the much greater expense and labor of attempting to revise an existing system. For all these reasons, the Board should recognize that Part 20 is not within the scope of the Commission's authority and does not represent a reasonable exercise of discretion. Accordingly the Board should not grant a construction permit for the

Davis-Besse nuclear power station unless a full re-evaluation and hearing prove that the proposed plant will not be inimical to the health and safety of the public independent of Part 20 criteria.

Respectfully submitted,

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UNITED STATES OF AMERICA

ATOMIC ENERGY COMMISSION

In the Matter of

) Docket No. 50-346

) THE TOLEDO EDISON COMPANY
) AND THE CLEVELAND ELECTRIC
) ILLUMINATING COMPANY

) PROPOSED FINDINGS OF
) FACT AND CONCLUSIONS
) OF LAW

) (Davis-Besse Nuclear Power
) Station)

)
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I. FINDINGS OF FACT

Reference

1. The present Federal Radiation Council guidelines for occupational workers are:

a) for the thyroid dose criterion is 30 rems per year

1801-Tr.

b) for skin dose criterion for an unlimited part of the body is 30 rems per year

1801-Tr.

c) for forearm dose criterion is 75 rems per year

1801-Tr.

d) for feet and ankle dose criterion is 75 rems per year

e) for pregnant women and fertile woman, as is for all occupational workers, 5 rems per year

1801-02Tr.

f) for individuals in the population, 500 millirems per year

1890-Tr.

g) for the average suitable samples of population groups, 170 millirems per year

1890-Tr.

2. The Federal Radiation Council guidelines for non-occupational exposure allow 1.5 rems per year exposure to the individual and the public to skin, GI tract, lung, bone, the thyroid, kidney, spleen, pancreas, prostate, muscle tissue, and fatty tissue.

1802-Tr.

3. The present 10 CFR part 20 provides the following maximum

exposures:

8008 120 753

CERTIFICATE OF SERVICE

I hereby certify that I have this 25th day of February, 1971, forwarded copies of the foregoing to Gerald Charnoff, Esq., Attorney for Applicant, at Shaw, Pitman, Potts, Trowbridge, Madden, 910 17th Street, N. W., Washington, D. C., 20006, to Thomas S. Englehardt of the AEC Regulatory Staff, Washington D. C., 20545, to Walter T. Skallerup, Jr., Chairman, Atomic Safety and Licensing Board, Washington D. C., to Dr. Charles Winters, Atomic Safety and Licensing Board, Washington, D. C., and to Mr. Stanley Robinson, Jr., Chief Public Proceeding Branch, Atomic Energy Commission, Washington, D. C., by hand delivery to Wilson Snyder, Esq., Attorney for Toledo Edison Company, Fuller, Seney, Henry & Hodge, 800 Owens-Illinois Building, Toledo, Ohio; and mailed copies to Russell Baron, Esq., Attorney for the Coalition for Safe Nuclear Power at Brannon, Ticktin, Baron, and Manzini, Cleveland, Ohio; to Glenn Lau, RR. 1, Box 186, Oak Harbor, Ohio, and to Dr. Walter Jordan, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, Tennessee, 37830.

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samples collected during the same period in 1974. A gamma-ray spectrum of smartweed is presented in Figure 27.

Results of analyses of soil samples are given in Table 33, and a gamma-ray spectrum of a sample is presented in Figure 28. Gross beta activity ranged from 12.4 to 35.8 pCi/g dry weight, and was similar to that measured in samples collected during the same period in 1974 (ranging from 11.0 to 31.2 pCi/g dry weight). Strontium-90 activity in samples collected in September 1975 ranged from <0.2 to 0.63 pCi/g dry weight, while samples collected in September 1974 all had activities at less than 0.2 pCi/g dry weight. Cesium-137 activity ranged from 0.02 to 0.64 pCi/g dry weight and was similar to the activity in samples collected in 1974 (ranging from <0.03 to 0.96 pCi/g dry weight). Potassium-40 activity was lower in samples collected in 1975 (ranging from 11.4 to 18.6 pCi/g dry weight) than in samples collected in 1974 (ranging from 15.0 to 26.9 pCi/g dry weight).

C. The Aquatic Environment

The results of analyses of surface water samples are given in Tables 34-40 and graphically presented in Figures 29-32. Alpha activity of treated surface water samples (Tables 34-38) ranged from <0.2 pCi/l to 0.70 pCi/l; beta activity ranged from 0.97 pCi/l to 3.49 pCi/l. Gross beta activity at the Toledo Water Treatment Plant (T-12) was slightly lower than at Locations T-10 and T-11 (with a six-month average of 1.61 pCi/l at T-12 versus 2.51 pCi/l at T-10 and 2.51 pCi/l at T-11). Tritium activity was relatively uniform for all samples and ranged from 0.17 pCi/ml to 0.43 pCi/ml.

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Strontium-90 activity in quarterly composites ranged from 0.38 to 0.60 pCi/l. The results are similar to those measured in samples collected during the same period in 1974 when gross alpha, gross beta, and tritium activities ranged from <0.1 to 0.73 pCi/l, from 0.82 to 2.96 pCi/l and from <0.3 to 0.72 pCi/ml, respectively. No gamma-emitting isotopes were detected above their respective background levels in samples collected between July through December 1975.

Untreated surface water samples (Tables 39 and 40) were analyzed for gross alpha and gross beta in suspended solids, dissolved solids, and total residue. Ranges of activities were as follows (pCi/l):

	Alpha		Beta	
	Minimum	Maximum	Minimum	Maximum
Suspended solids	<0.1	0.94	<0.2	1.37
Dissolved solids	<0.2	0.93	1.61	3.47
Total residue	<0.3	1.35	2.07	4.54

Tritium activity in these samples were similar to that in treated water samples, ranging from 0.15 to 0.48 pCi/ml. Strontium-90 activity in quarterly composites ranged from 0.46 pCi/l to 1.04 pCi/l and was slightly lower at location T-12. No gamma-emitting radio-nuclides were detected above the background level as is shown in the gamma-ray spectrum of an untreated surface water sample (Figure 33).

Four species of fish (perch, carp, smelt and goldfish) were obtained from Lake Erie in the vicinity of the site and three species (perch, carp and gizzard shad) were obtained from Maumee

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Bay of Lake Erie. Gross beta and potassium-40 activities in the fish muscle were similar in all samples, averaging 2.7 pCi/g and 2.3 pCi/g wet weight, respectively. Cesium-137 activity in the fish muscle ranged from 0.004 pCi/g wet weight in carp to 0.023 pCi/g wet weight in smelt. Strontium-90 activity in the fish bones ranged from 0.02 pCi/g dry weight in smelt to 0.86 pCi/g dry weight in carp. Fish samples collected and analyzed between July and December 1974 had activities which were similar to those found in fish samples collected during the same period in 1975. Tables 41 and 42 contain the results of fish sample analyses and Figure 34 is a gamma-ray spectrum of a sample of yellow perch flesh.

Clams were collected during both the third and fourth quarters. Results of analyses of clam samples are presented in Table 43. Gross beta activity ranged from 0.7 to 1.0 pCi/g wet weight. Cesium-137 and potassium-40 activities ranged from 0.003 to 0.008 pCi/g wet weight and from 0.22 to 0.26 pCi/g wet weight, respectively. These results are similar to those measured in samples collected during the same period in 1974 when gross beta, cesium-137 and potassium-40 activities ranged from 0.51 to 1.22 pCi/g dry weight, from 0.001 to 0.009 pCi/g dry weight and from 0.14 to 0.25 pCi/g dry weight, respectively.

Results of analyses of bottom sediment samples are presented in Table 44 and a representative gamma-ray spectrum is shown in Figure 35. Gross alpha and gross beta activities ranged from <2 to 13.17 pCi/g dry weight, and from 10.2 to 24.2 pCi/g dry weight, respectively. Strontium-90 activity was less than the minimum

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detectable level (less than 0.1 pCi/g dry weight) in all samples. Cesium-137 and potassium-40 activities ranged from 0.03 to 0.17 pCi/g dry weight, and from 10.8 to 15.5 pCi/g dry weight, respectively. These activities are similar to those measured in samples collected during the same period in 1974.

Table 1. Radioactivity in environmental samples, July through September 1975.

Facility: Davis-Besse NPP		Docket No.: 50-346		Reporting Period: July-September 1975				
Sample and collection		Location ^b		Average Quarterly Results ^c				
Frequency/Type ^a				Monthly TLD's (mrem/quarter)	Quarterly TLD's (mrem/quarter)	Annual TLD's (mrem/year)		
External radiation, TLD's M/I, Q/I, A/I	(I) T- 1, 0.6 mi NE			10.5±1.6	10.1±1.6	NOT REQUIRED THIS QUARTER		
	(I) T- 2, 0.9 mi E			9.6±1.6	9.3±1.8			
	(I) T- 3, 1.4 mi SE			10.3±1.3	9.2±1.4			
	(I) T- 4, 0.8 mi S			14.6±1.3	13.1±1.9			
	(I) T- 5, 0.25 mi W			15.0±1.6	15.0±2.3			
	(I) T- 6, 0.6 mi NW			12.4±1.4	12.1±1.3			
	(I) T- 7, 0.9 mi NNW			11.3±1.8	11.9±2.0			
	(I) T- 8, 2.7 mi WSW			15.9±1.8	14.6±2.2			
	(B) T- 9, 6.8 mi SW			9.8±1.7	9.7±1.7			
	(B) T-10, 6.5 mi SE			14.5±1.5	13.9±2.2			
	(B) T-11, 9.5 mi SE			12.1±1.6	13.0±1.7			
	(B) T-12, 23.5 mi WNW			13.9±1.6	15.3±1.6			
	(B) T-14, 3.8 mi WSW			15.8±1.6	15.7±1.9			
	(B) T-15, 6.6 mi SSE			14.5±1.6	14.9±2.1			
	(B) T-23, 14.3 mi ENE			11.9±1.7	10.7±1.9			
	(B) T-24, 24.9 mi SE			16.9±1.5	15.5±2.4			
	(B) T-26, 35.1 mi SW			15.7±1.6	15.4±1.9			
	(B) T-27, 5.3 mi WNW			13.8±1.5	13.6±2.2			
	Filterable airborne particulates and charcoal W/C	(I) T- 1, 0.6 mi NE			gross alpha 0.22±0.16		10 ⁻¹⁴ µCi/cc gross beta 5.1±2.0	I-131 <2
		(I) T- 2, 0.9 mi E			0.20±0.16		5.2±2.6	<2
		(I) T- 3, 1.4 mi SE			0.19±0.13		5.1±2.5	<2
		(I) T- 4, 0.8 mi S			0.18±0.10		5.8±2.9	<2
		(I) T- 7, 0.9 mi NNW			0.17±0.08		5.4±2.6	<2
		(I) T- 8, 2.7 mi WSW			0.20±0.11		6.0±3.6	<2
		(B) T- 9, 6.8 mi SW			0.21±0.15		6.3±4.0	<2
		(B) T-10, 6.5 mi SE			0.19±0.09		6.1±3.7	<2
		(B) T-11, 9.5 mi SE			0.18±0.07		6.2±2.7	<2
(B) T-12, 23.5 mi WNW				0.19±0.05	6.2±3.1	<2		
(B) T-23, 14.3 mi ENE				0.15±0.06	5.3±3.1	<2		
(B) T-27, 5.3 mi WNW				0.18±0.06	6.2±3.4	<2		
Q/Co		Composite of background ^d locations		Sr-90 0.04±0.01	Ce-144 0.9±0.2	Ce-141 <0.2	Be-7 12.9±10	Ku-103 <0.1
		Composite of indicator locations		0.04±0.01	0.8±0.1	<0.1	12.2±6	<0.1
	Composite of background locations		Ku-106 0.5±0.2	Cs-137 0.11±0.03	Zr-95 0.2±0.1	Nb-95 0.2±0.1	Sr-89 0.09±0.05	
	Composite of indicator locations		0.4±0.1	0.13±0.02	0.1±0.1	0.2±0.1	0.05±0.05	

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Table 1. (continued)

Facility: Davis-Besse NPP		Docket No.: 50-346		Reporting Period: July-September 1975				
Sample and collection								
Frequency/Type ^a	Location ^b	Average Quarterly Results ^c						
Treated surface water (Drinking) W/G	(B) T-10, 6.5 mi SE	gross alpha		10 ⁻⁹ µCi/ml				
	(B) T-11, 11.5 mi SE	0.43±0.17		gross beta		H-3		
	(B) T-12, 23.5 mi WNW	0.42±0.05		2.52±0.17		340±60		
	(I) T-28, Unit 1 water supply	0.33±0.13		2.34±0.45		340±40		
		0.55±0.52		1.70±0.19		330±40		
				2.33±0.28		350±30		
Q/Co	(B) T-10, 6.5 mi SE		Sr-90		Cs-137			
	(B) T-11, 11.5 mi SE		0.50±0.26		<3.7			
	(B) T-12, 23.5 mi WNW		0.60±0.28		<3.7			
	(I) T-28, Unit 1 water supply		<0.3		<3.7			
			0.38±0.25		<3.7			
Untreated surface water W/G-M/Co	(I) T- 1, 0.6 mi NE	gross alpha		10 ⁻⁹ µCi/ml				
	(I) T- 2, 0.9 mi E	0.47±0.36		gross beta		H-3		
	(I) T- 3, 14. mi SE	<0.6		2.81±0.66		340±50		
	(B) T-10, 6.5 mi SE	0.74±0.36		2.75±0.36		290±30		
	(B) T-11, 9.5 mi SE	<0.6		2.99±0.20		280±70		
	(B) T-12, 23.5 mi WNW	1.35±0.58		2.69±0.20		330±20		
		0.52±0.40		2.63±0.52		330±90		
				2.93±0.07		350±60		
Q/Co	(I) T- 1, 0.6 mi NE		Sr-90		Cs-137			
	(I) T- 2, 0.9 mi E		0.88±0.30		<3.7			
	(I) T- 3, 1.4 mi SE		0.56±0.22		<3.7			
	(B) T-10, 6.5 mi SE		0.81±0.30		<3.7			
	(B) T-11, 9.5 mi SE		0.90±0.28		<3.7			
	(B) T-12, 23.5 mi WNW		1.04±0.32		<3.7			
			0.54±0.30		<3.7			
Well water Q/G	(I) T- 7, 0.9 mi NNW	gross alpha		10 ⁻⁹ µCi/ml				
	(I) T-17, 0.7 mi SW	1.18±0.74		gross beta		H-3		
	(B) T-18, 1.3 mi S	1.41±0.86		Sr-90		120±90		
	(B) T-27, 5.3 mi WNW	<3.1		0.75±0.23		90±80		
		<3.1		<0.5		<100		
				3.73±0.54				
				3.19±0.84				
				3.84±2.04				
				2.86±2.47				
				<0.5				
				<0.5				
				<0.5				
Precipitation M/C	(I) T- 1, 0.6 mi NE	10 ⁻⁹ µCi/ml		10 ⁻⁶ µCi/m ²				
	(B) T-23, 14.3 mi ENE	gross beta	H-3	gross beta				
		6.9±4.3	180±60	244±112				
		9.1±4.1	190±50	226±187				
Milk M/G	(I) T- 8, 3.2 mi WSW	gross beta		10 ⁻⁹ µCi/ml				
	(B) T-12, 23.5 mi WNW	1011± 81	I-131	Sr-89	Sr-90	Ba-140	Cs-137	K-40
	(B) T-20, 5.4 mi SSE	992± 68	<0.5	<0.5	2.49±0.12	<3.7	7.13±0.86	1230±130
	(B) T-21, 3.6 mi SSW	950± 71	<0.5	<0.5	4.52±2.11	<3.7	6.51±0.16	1230± 90
	(B) T-24, 24.9 mi SE	848±124	<3.2	<0.5	1.64±0.34	<3.7	6.37±0.73	1190± 90
		889± 73	<0.5	<0.5	2.95±0.63	<3.7	5.35±2.90	1220±150
				4.67±1.87	<3.7	5.89±0.13	1270± 90	

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NO

Table 1. (continued)

Facility: Davis-Besse NPP		Docket No.: 50-346		Reporting Period: July-September 1975					
Sample and collection		Location ^b		Average Quarterly Results ^c					
Frequency/Type ^a									
Meat SA/G	(B) T- 8, 2.7 mi WSW	gross beta		10 ⁻³ µCi/kg-wet Cs-137		K-40			
		2.10±0.02		0.010±0.002		2.5±0.1			
Vegetables and fruits SA/G	(I) T- 8, 2.7 mi WSW (squash) (I) T- 8, 2.7 mi WSW (pears) (I) T- 8, 2.7 mi WSW (plums) (B) T-19, 3.7 mi S (tomatoes) (B) T-19, 3.7 mi S (plums) (B) T-19, 3.7 mi S (melons) (I) T-25, 1.3 mi S (tomatoes) (I) T-25, 1.3 mi S (apples) (I) T-25, 1.3 mi S (peaches)	gross alpha		10 ⁻³ µCi/kg-wet I-131 Sr-90 Cs-137		K-40			
		<0.01		2.87±0.11		<0.01	0.001±0.001	0.003±0.003	3.8±0.1
		<0.01		0.99±0.03		<0.01	0.001±0.001	<0.002	1.0±0.1
		<0.02		1.43±0.04		<0.01	<0.001	<0.004	1.5±0.1
		<0.02		2.06±0.05		<0.01	0.001±0.001	<0.002	2.4±0.1
		<0.02		1.49±0.04		<0.01	<0.001	0.005±0.002	1.6±0.1
		<0.02		2.12±0.06		<0.01	<0.001	<0.005	2.8±0.1
		<0.02		1.71±0.06		<0.01	<0.001	<0.005	2.6±0.1
		<0.01		0.77±0.03		<0.01	0.001±0.001	0.007±0.003	0.9±0.1
<0.01		1.47±0.05		<0.01	0.001±0.001	0.001±0.001	1.3±0.1		
Grape juice A/G	(B) T-16, 15.3 mi ENE	gross alpha		10 ⁻⁹ µCi/ml I-131 Sr-90 Cs-137		K-40			
		gross beta		NOT REQUIRED THIS QUARTER					
Animal feed SA/G	(I) T- 8, 2.7 mi WSW (I) T- 8, 2.7 mi WSW (B) T-21, 3.6 mi SSW (B) T-21, 3.6 mi SSW	gross alpha		10 ⁻³ µCi/kg-dry Sr-90 Cs-137		K-40			
		gross beta		NOT REQUIRED THIS QUARTER					
		gross alpha		10 ⁻³ µCi/kg-dry Sr-90 Cs-137		K-40			
		gross beta		NOT REQUIRED THIS QUARTER					
Smartweed	(I) Vicinity of site	gross alpha		10 ⁻³ µCi/kg-dry Sr-90 Cs-137		K-40			
		gross beta		NOT REQUIRED THIS QUARTER					
Soil SA/G	(I) T- 1, 0.6 mi NE (I) T- 8, 2.7 mi WSW (B) T-19, 3.7 mi S (B) T-20, 5.4 mi SSE	gross beta		10 ⁻³ µCi/kg-dry Sr-90 Cs-137		K-40			
		12.4±1.8		<0.2		0.02±0.01	11.4±0.3		
		35.8±2.8		0.63±0.12		0.64±0.05	18.6±0.8		
		28.9±2.6		<0.2		0.31±0.02	17.2±0.3		
28.4±2.5		0.20±0.10		0.28±0.03	18.6±0.7				
Bottom sediments TA/G	(I) T- 1, 0.6 mi NE (I) T-29, 1.5 mi NE (I) T-30, 0.9 mi ENE	gross alpha		10 ⁻³ µCi/kg-dry Sr-90 Cs-137		K-40			
		<2		13.1±1.9		<0.1	0.03±0.02	11.5±0.5	
		7.4±4.8		16.6±3.0		<0.1	0.07±0.02	13.3±0.6	
8.1±4.8		17.8±2.9		<0.1					
Wildlife SA/G	(I) Vicinity of site	gross beta		10 ⁻³ µCi/kg-wet (flesh) Cs-137 K-40		10 ⁻³ µCi/kg-dry (bones) Sr-90			
		gross alpha		NOT REQUIRED THIS QUARTER					
Waterfowl A/G	(I) Vicinity of site	gross beta		10 ⁻³ µCi/kg-wet (flesh) Cs-137 K-40		10 ⁻³ µCi/kg-dry (bones) Sr-90			
		gross alpha		NOT REQUIRED THIS QUARTER					

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Table 1. (continued)

Facility: Davis-Besse NPP		Docket No.: 50-346		Reporting Period: July-September 1975	
Sample and collection		Average Quarterly Results ^c			
Frequency/Type ^a	Location ^b	10 ⁻³ μCi/kg-wet (flesh)			10 ⁻³ μCi/kg-dry (bone)
		gross beta	Cs-137	K-40	Sr-90
Fish	(I) T-1, 0.6 mi NE (perch)	2.0±0.1	0.011±0.002	2.1±0.1	0.68±0.11
O/G	(I) T-1, 0.6 mi NE (carp)	2.0±0.1	0.010±0.004	2.4±0.1	0.86±0.10
	(B) Maumee Bay (perch, whole)	2.0±0.1	0.021±0.010	2.5±0.2	3.04±0.01
	(B) Maumee Bay (carp)	2.1±0.1	0.004±0.002	2.3±0.1	0.57±0.06
	(B) Maumee Bay (gizzard shad)	1.9±0.1	0.020±0.008	2.2±0.2	0.33±0.05
Clams	(B) T-1, 0.6 mi NE	10 ⁻³ μCi/kg-wet			
TA/G		gross beta	Cs-137	K-40	
		0.7±0.1	0.003±0.003	7.26±0.05	

^a Frequency: W-Weekly, M-Monthly, Q-Quarterly, SA-Semi-annually, TA-Three times a year, A-Annually. Type: G-Grab, C-Continuous, P-Proportional, Co-Composite, I-Integrating.
^b Location: I-Indicator, B-Background; distance & direction are given from station.
^c Results given are the mean ± standard deviation, for weekly and monthly analyses. Results of quarterly, semi-annual, and annual analyses are reported with the counting error at the 95% confidence level. Less than (<) values given are the highest less than values for the reporting period.

Table 2. Radioactivity in environmental samples, October through December 1975.

Facility: Davis-Besse NPP		Docket No.: 50-346		Reporting Period: October-December 1975				
Sample and collection		Location ^b		Average Quarterly Results ^c				
Frequency/Type ^a				Monthly TLD's (mrem/quarter)	Quarterly TLD's (mrem/quarter)	Annual TLD's (mrem/year)		
External radiation, TLD's M/I, Q/I, A/I	(I) T- 1, 0.6 mi NE			7.9±1.6	8.5±1.5	NOT REQUIRED THIS QUARTER		
	(I) T- 2, 0.9 mi E			8.9±1.5	8.9±1.7			
	(I) T- 3, 1.4 mi SE			8.1±1.3	8.5±1.6			
	(I) T- 4, 0.8 mi S			12.3±1.9	13.4±1.8			
	(I) T- 5, 0.25 mi W			14.0±2.4	14.0±2.2			
	(I) T- 6, 0.6 mi NW			10.6±1.6	11.2±1.3			
	(I) T- 7, 0.9 mi NNW			11.7±2.4	11.2±1.8			
	(I) T- 8, 2.7 mi WSW			14.9±2.4	15.4±2.3			
	(B) T- 9, 6.8 mi SW			10.3±1.8	9.1±1.9			
	(B) T-10, 6.5 mi SE			13.8±2.0	13.7±1.9			
	(B) T-11, 9.5 mi SE			11.8±1.6	11.7±2.0			
	(B) T-12, 23.5 mi WNW			15.2±2.6	15.5±2.1			
	(B) T-14, 3.8 mi WSW			15.4±2.7	15.6±2.1			
	(B) T-15, 6.6 mi SSE			14.4±2.4	14.9±1.6			
	(B) T-23, 14.3 mi ENE			11.7±2.1	10.4±1.6			
	(B) T-24, 24.9 mi SE			16.2±2.5	15.9±2.1			
	(B) T-26, 35.1 mi SW			15.2±2.4	NS ^d			
	(B) T-27, 5.3 mi WNW			13.9±2.2	14.1±1.7			
	Filtrable airborne particulates and charcoal W/C	(I) T- 1, 0.6 mi NE			gross alpha 0.26±0.12		gross beta 5.9±2.5	I-131 <2
		(I) T- 2, 0.9 mi E			0.23±0.05		4.9±1.6	<2
		(I) T- 3, 1.4 mi SE			0.26±0.07		5.8±1.4	<2
		(I) T- 4, 0.8 mi S			0.19±0.04		4.4±0.9	<2
		(I) T- 7, 0.9 mi NNW			0.22±0.05		4.7±1.1	<2
		(I) T- 8, 2.7 mi WSW			0.15±0.04		3.6±0.9	<2
		(B) T- 9, 6.8 mi SW			0.24±0.07		5.4±1.5	<2
		(B) T-10, 6.5 mi SE			0.22±0.05		5.2±1.4	<2
		(B) T-11, 9.5 mi SE			0.26±0.10		5.9±2.0	<2
(B) T-12, 23.5 mi WNW				0.24±0.08	5.0±1.5	<2		
(B) T-23, 14.3 mi ENE				0.18±0.05	4.4±1.1	<2		
(B) T-27, 5.3 mi WNW				0.25±0.11	4.6±1.7	<2		
Q/Co		Composite of background locations			Sr-90 0.02±0.01	Ce-144 0.2±0.1	Ce-141 <0.1	Be-7 13.5±0.5
	Composite of indicator locations			0.02±0.01	0.2±0.1	0.1±0.1	12.8±0.3	<0.1
	Composite of background locations			Ru-106 0.1±0.1	Cs-137 0.05±0.01	Zr-95 0.1±0.1	Nb-95 0.1±0.1	Sr-89 <0.01
	Composite of indicator locations			0.1±0.1	0.04±0.01	0.1±0.1	0.1±0.1	<0.01

Table 2. (continued)

Facility: Davis-Besse NPP		Docket No.: 50-346	Reporting Period: October-December 1975				
Sample and collection							
Frequency/Type ^a	Location ^b	Average Quarterly Results ^c					
Treated surface water (Drinking) W/G	(B) T-10, 6.5 mi SE	gross alpha		10 ⁻⁹ µCi/ml		H-3	
	(B) T-11, 11.5 mi SE	0.62±0.07		gross beta		300±40	
	(B) T-12, 23.5 mi WNW	<0.4		2.50±0.27		290±40	
	(I) T-28, Unit 1 water supply	0.45±0.16		2.68±0.42		300±70	
		<0.4		2.37±0.25		290±40	
Q/Co	(B) T-10, 6.5 mi SE	Sr-90		Cs-137			
	(B) T-11, 11.5 mi SE	0.39±0.24		<3.7			
	(B) T-12, 23.5 mi WNW	0.56±0.26		<3.7			
	(I) T-28, Unit 1 water supply	<0.3		<3.7			
		0.49±0.25		<3.7			
Untreated surface water W/G-N/Co	(I) T- 1, 0.6 mi NE	gross alpha		10 ⁻⁹ µCi/ml		H-3	
	(I) T- 2, 0.9 mi E	0.52±0.16		gross beta		300± 60	
	(I) T- 3, 1.4 mi SE	0.57±0.13		3.03±0.49		350± 60	
	(B) T-10, 6.5 mi SE	0.85±0.37		3.18±0.10		250±110	
	(B) T-11, 9.5 mi SE	0.50±0.37		3.19±0.78		350± 80	
	(B) T-12, 23.5 mi WNW	0.88±0.38		3.01±0.74		270± 80	
Q/Co	(I) T- 1, 0.6 mi NE	Sr-90		Cs-137			
	(I) T- 2, 0.9 mi E	0.64±0.26		<3.7			
	(I) T- 3, 1.4 mi SE	0.72±0.24		<3.7			
	(B) T-10, 6.5 mi SE	0.81±0.24		<3.7			
	(B) T-11, 9.5 mi SE	0.87±0.35		<3.7			
	(B) T-12, 23.5 mi WNW	0.90±0.33		<3.7			
Well water Q/G	(I) T- 7, 0.9 mi NNW	gross alpha		10 ⁻⁹ µCi/ml		H-3	
	(I) T-17, 0.7 mi SW	<0.3		Sr-90		280±100	
	(B) T-18, 1.3 mi S	4.38±0.58		1.11±0.31		270±100	
	(B) T-27, 5.3 mi WNW	<0.3		<0.5		<100	
		2.62±0.72		<0.5		<100	
		3.39±2.04		<3.7		<100	
		2.30±1.96		<3.7		<100	
Precipitation M/C	(I) T- 1, 0.6 mi NE	10 ⁻⁹ µCi/ml		10 ⁻⁶ µCi/m ²			
	(B) T-23, 14.3 mi ENE	gross beta		gross beta			
		18.1±21.3		482±352			
		15.7± 8.9		462±183			
Milk N/G	(I) T- 8, 2.7 mi WSW	gross beta		10 ⁻⁹ µCi/ml			
	(B) T-12, 23.5 mi WNW	1081± 20		I-131		K-40	
	(B) T-20, 5.4 mi SSE	825±313		<0.5		1227±18	
	(B) T-21, 3.6 mi SSW	1010± 94		<0.5		1211±38	
	(B) T-24, 24.9 mi SE	843± 52		<0.5		1232±40	
			<0.5		Sr-89		
		<0.5		Sr-90			
		<0.5		Ba-140			
		<0.5		Cs-137			
		<0.5		K-40			
		NO SAMPLES RECEIVED DURING FOURTH QUARTER		3.04±0.59		5.04±2.52	
		<0.5		3.04±0.59		1221±71	

Table 2. (continued)

Facility: Davis-Besse MPP		Docket No.: 50-346	Reporting Period: October-December 1975			
Sample and collection		Average Quarterly Results ^c				
Frequency, Type ^a	Location ^b					
Meat SA/G	(B) T- 8, 2.7 mi WSW	<u>10⁻³μCi/kg-wet</u>				
		gross beta	Cs-137		K-40	
		NOT REQUIRED THIS QUARTER				
Vegetables and fruits SA/G	(I) T- 8, 2.7 mi WSW (B) T-19, 3.7 mi S (I) T-25, 1.3 mi S	<u>10⁻³μCi/kg-dry</u>				
		gross alpha	gross beta	I-131	Sr-90	
		NOT REQUIRED THIS QUARTER				
Grape juice A/G	(B) T-16, 15.3 mi ENE	<u>10⁻⁹μCi/ml</u>				
		gross alpha	gross beta	I-131	Sr-90	
		0.2±0.2	0.90±0.04	<3.2	0.61±0.09	
				Cs-137	K-40	
				0.009±0.001	0.77±0.01	
Animal feed SA/G	(I) T- 8, 2.7 mi WSW (B) T-21, 3.6 mi SSW	<u>10⁻³μCi/kg-dry</u>				
		gross alpha	gross beta	Sr-90	Cs-137	
		<0.2	25.2±0.7	0.202±0.023	<0.05	15.8±1.4
		0.3±0.2	13.1±0.4	0.114±0.014	0.03±0.03	
Smartweed A/G	(I) Vicinity of site	<u>10⁻³μCi/kg-dry</u>				
		gross alpha	gross beta	Sr-90	Cs-137	
		1.5±0.7	14.1±0.7	0.127±0.027	<0.04	
				K-40	11.5±0.9	
Soil SA/G	(I) T- 1, 0.6 mi NE (I) T- 8, 2.7 mi WSW (B) T-19, 3.7 mi S (B) T-20, 5.4 mi SSE	<u>10⁻³μCi/kg-dry</u>				
		gross beta	Sr-90	Cs-137	K-40	
		12.4±1.8	<0.2	0.02±0.01	11.4±0.3	
		35.8±2.8	0.63±0.12	0.64±0.05	18.6±0.8	
		28.9±2.6	<0.2	0.31±0.02	17.2±0.3	
		28.4±2.5	0.20±0.10	0.28±0.03	18.6±0.7	
Bottom sediments TA/G	(I) T- 1, 0.6 mi NE (I) T-29, 1.5 mi NE (I) T-30, 0.9 mi ENE	<u>10⁻³μCi/kg-dry</u>				
		gross alpha	gross beta	Sr-90	Cs-137	
		<3	10.2±2.4	<0.1	0.03±0.02	
		8.0±4.7	16.9±2.7	<0.1	0.07±0.02	
		13.2±5.7	24.2±3.2	<0.1	0.17±0.03	
Wildlife SA/G	(I) Vicinity of site (raccoon)	<u>10⁻³μCi/kg-wet (flesh)</u>			<u>10⁻³μCi/kg-dry (bones)</u>	
		gross beta	Cs-137	K-40	Sr-90	
		1.5±0.1	0.02±0.01	1.75±0.04	0.77±0.11	
Waterfowl SA/G	(B) T-27, 5.3 mi WNW	<u>10⁻³μCi/kg-wet (flesh)</u>			<u>10⁻³μCi/kg-dry (bones)</u>	
		gross beta	Cs-137	K-40	Sr-90	
		2.2±0.1	0.02±0.01	2.26±0.11	0.23±0.05	

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Table 2. (continued)

Facility: Davis-Besse NPP		Docket No.: 50-346	Reporting Period: October-December 1975		
Sample and collection					
Frequency/Type ^a	Location ^b	Average Quarterly Results ^c			
		10 ⁻³ μCi/kg-wet (flesh)		10 ⁻³ μCi/kg-dry (bone)	
		gross beta	Cs-137	K-40	Sr-90
Fish	(I) T- 1, 0.6 mi NE (smelt, whole)	4.7±0.1	0.023±0.005	2.6±0.1	0.32±0.01
Q/G	(I) T- 1, 0.6 mi NE (perch, whole)	6.1±0.1	0.016±0.009	3.0±0.3	0.04±0.01
	(I) T- 1, 0.6 mi NE (goldfish,	4.6±0.1	<0.01	1.8±0.2	0.59±0.07
	(I) T- 1, 0.6 mi NE (carp)	1.9±0.1	<0.01	1.8±0.2	0.35±0.01
Clams	(B) T- 1, 0.6 mi NE	10 ⁻³ μCi/kg-wet			
Q/G		gross beta	Cs-137	K-40	
		1.0±0.1	0.008±0.008	0.22±0.11	

- ^a Frequency: W-Weekly, M-Monthly, Q-Quarterly, SA-Semi-annually, TA-Three times a year, A-Annually. Type: G-Grab, C-Continuous, P-Proportional, Co-Composite, I-Integrating.
- ^b Location: I-Indicator, B-Background; distance and direction are given from station.
- ^c Results given are the mean + standard deviation for weekly and monthly analyses. Results of quarterly, semi-annual and annual analyses are reported with the counting error at the 95% confidence level. Less than (<) values given are the highest less than values for the reporting period.
- ^d N.S. - No sample. TLD's were lost in transit.

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Table 3. Sampling locations, Davis-Besse Nuclear Power Plant.

Code	Type of Location ^a	Location
T- 1	I	Site boundary, 0.6 miles NE of plant, near intake canal.
T- 2	I	Site boundary, 0.9 miles E of plant.
T- 3	I	Site boundary, 1.4 miles SE of plant, near Toussaint River and storm drain.
T- 4	I	Site boundary, 0.8 miles S of plant, near Locust Point and Toussaint River.
T- 5	I	Main entrance to site, 0.25 miles W of plant.
T- 6	I	Site boundary, 0.6 miles NW of plant.
T- 7	I	Sand Beach, 0.9 miles NNW of plant.
T- 8 ^b	I	Earl Moore Farm, 2.7 miles WSW of plant.
T- 9	B	Oak Harbor, 6.8 miles SW of plant.
T-10	B	Erie Industrial Park, 6.5 miles SE of plant.
T-11	B	Port Clinton, 9.5 miles SE of plant.
T-12	B	Toledo, 23.5 miles WNW of plant.
T-14	B	Township school, 3.8 miles WSW of plant.
T-15	B	Lacarne, 6.6 miles SSE of plant.
T-16	B	Put-In-Bay winery, 15.3 miles ENE of plant.
T-17	I	Irv Fick's well onsite, 0.7 miles SW of plant.
T-18	B	Hess Sunoco Garage, 1.3 miles S of plant, Route 2.
T-19	B	Miller Farm, 3.7 miles S of plant.
T-20	B	Daup Farm, 5.4 miles SSE of plant.
T-21 ^c	B	Haynes Farm, 3.6 miles SSW of plant.
T-22	B	Peter Farm, 2.6 miles SW of plant.

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Table 3. (continued)

Code	Type of Location ^a	Location
T-23	B	Put-In-Bay Lighthouse, 14.3 miles ENE of plant.
T-24	B	Sandusky, 24.9 miles SE of plant.
T-25	I	Winter Farm, 1.3 miles S of plant.
T-26	B	Fostoria, 35.1 miles SW of plant.
T-27	B	Magee Marsh, 5.3 miles WNW of plant.
T-28	I	Unit 1 treated water supply, onsite.
T-29	I	Lake Erie, Intake area, 1.5 miles NE of plant.
T-30	I	Lake Erie, discharge area, 0.9 miles ENE of plant.

- ^a I=Indicator locations; B=Background locations.
- ^b Distance has been redetermined and is 2.7 miles WSW at plant (previous distance reported was 3.2 miles).
- ^c Farm was sold and sampling discontinued in September 1975.

Table 4. Type and frequency of collection.

Location	Weekly	Monthly	Quarterly	Semi-annually	Annually
1					
2	AP, AI, SWU	TLD	P		
3	AP, AI, SWU	TLD		Fa, BSA, CLA	
4	AP, AI, SWU	TLD			TLD, SMW
5	AP, AI	TLD		SO	TLD
6		TLD			WL
7		TLD			TLD, WF
8	AP, AI	TLD			TLD
9	AP, AI, Mb	TLD, Mb	WW		TLD
10	AP, AI	TLD			TLD
11	AP, AI, SWU, SWT	TLD		VE, SO, AF ^b	TLD
12	AP, AI, SWU, SWT	TLD			TLD
14	AP, AI, SWU, SWT	TLD, M			TLD
15		TLD			TLD
16		TLD			TLD
17					TLD
18					TLD
19			WW		WI
20			WW		
21		M			
22		M		VE, SO	
23				SO	
24	AP, AI	TLD	P		
25		TLD, M		AF ^c	
26				ME	
27	AP, AI	TLD			TLD
28		TLD		VE	TLD
29		SWT			TLD
30					TLD
				BS ^a	
				BS ^a	

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^a Three times a year, 2nd, 3rd, and 4th quarters.
^b Beginning May 1975, milk samples from Location 8 were collected on a weekly basis and analyzed for I-131.
^c Cattle feed (silage and grain or hay) collected during 1st quarter; grass collected during 3rd quarter.

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Table 5. Sample codes used in Table 4.

Code	Description
AP	Airborne Particulate
AI	Aiborne Iodine
TLD (M)	Thermoluminescent Dosimeter - Monthly
TLD (Q)	Thermoluminescent Dosimeter - Quarterly
TLD (A)	Thermoluminescent Dosimeter - Annual
SWU	Surface water - Untreated
SWT	Surface water - Treated (tap)
WW	Well water (Ground Water)
P	Precipitation
BS	Bottom Sediments
SO	Soil
M	Milk
ME	Domestic Meat
WL	Wildlife
F	Fish
CL	Clams
VE	Fruits and Vegetables
WI	Wine
SMW	Smartweed
AF	Animal Feed (silage, grain, grass)
WF	Waterfowl

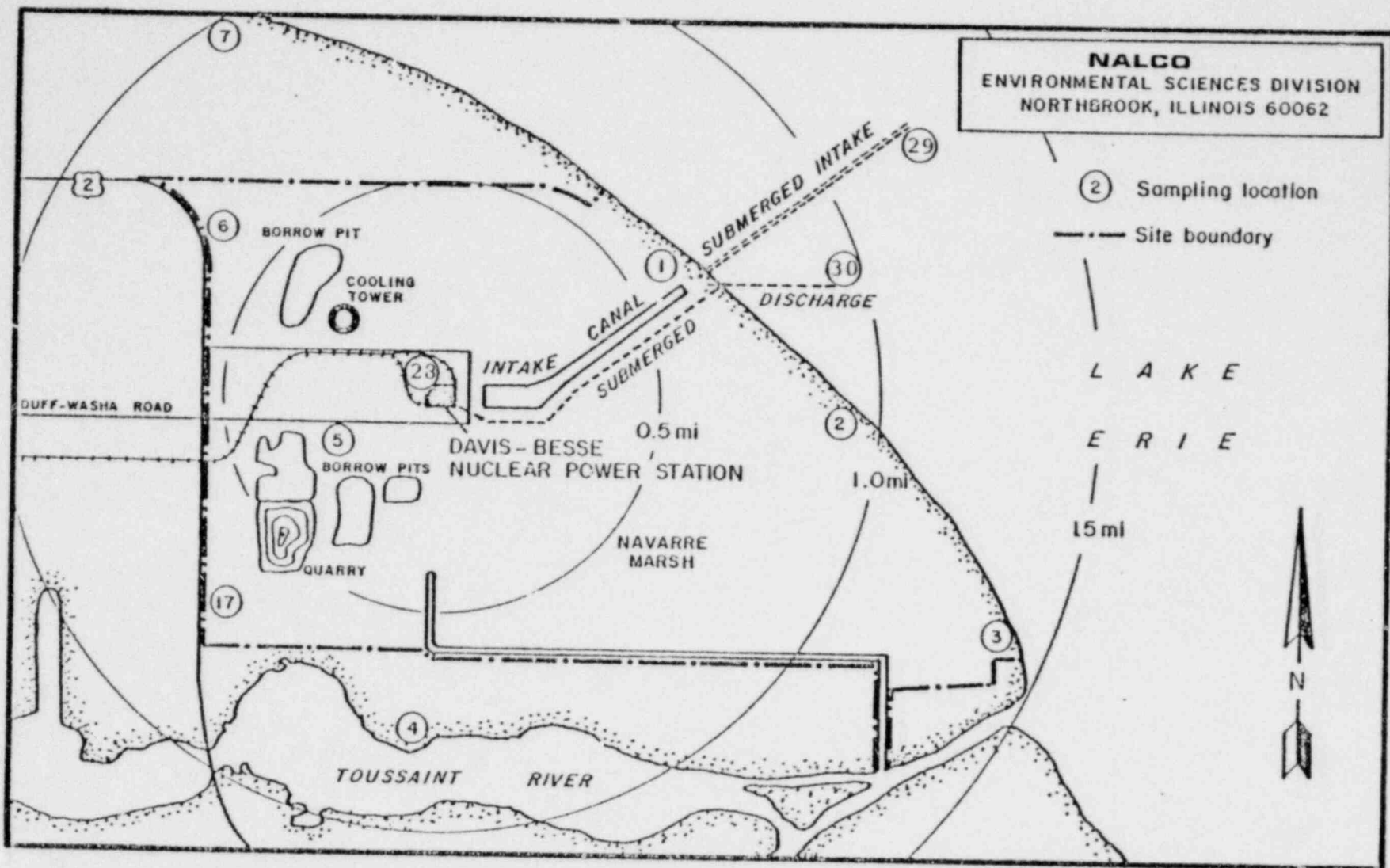


Figure 1. Sampling locations on the site periphery of the Davis-Besse NPS.

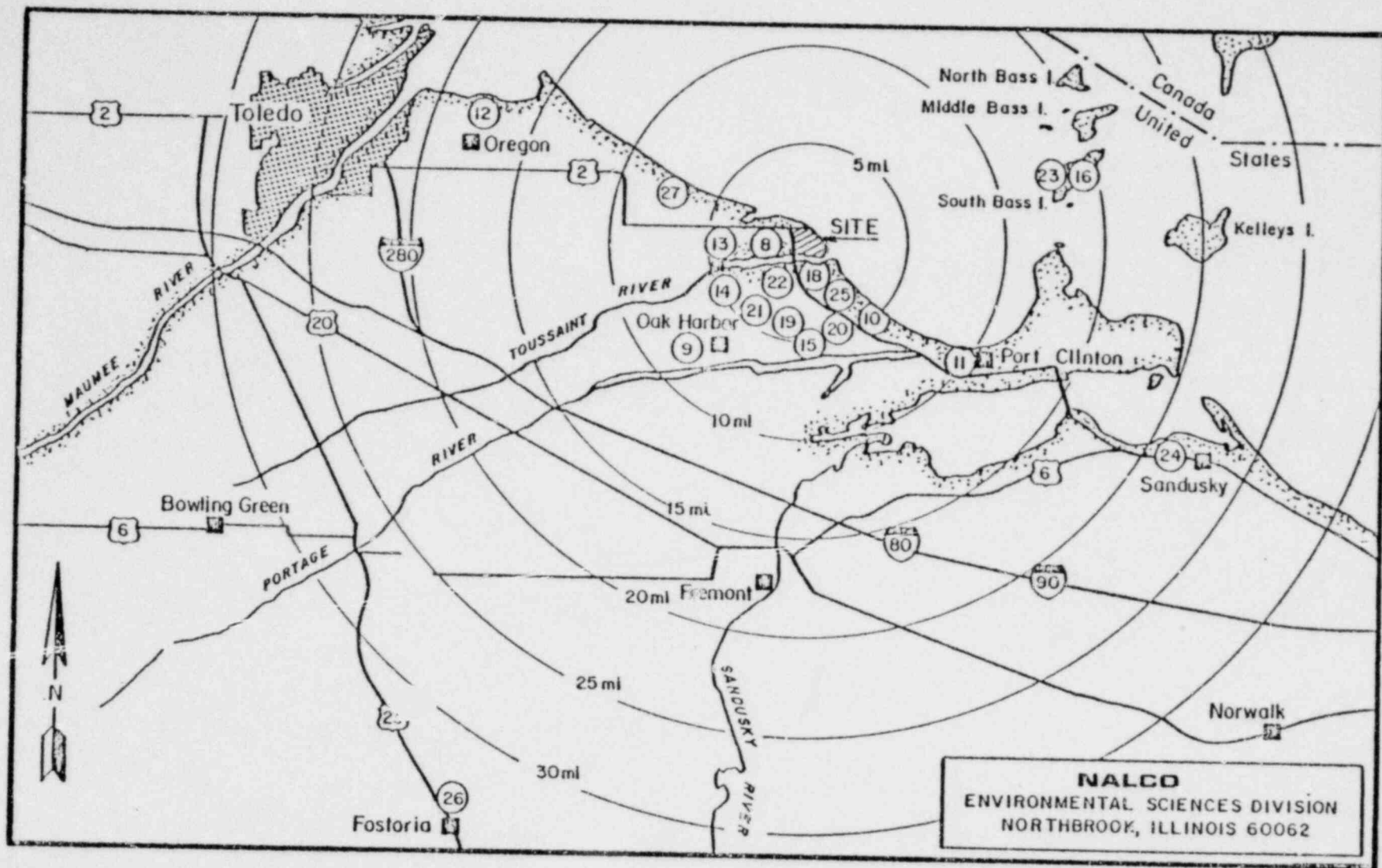


Figure 2. Sampling locations (excepting those on the site periphery), Davis-Besse NPS.

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Table 6. Airborne particulate and charcoal samples collected at Location T-1; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	232.0	0.0012+0.0006	0.083+0.004	<0.02
7-16-75	170.9	0.0051+0.0015	0.076+0.005	<0.02
7-23-75	157.7	0.0063+0.0017	0.092+0.006	<0.02
7-30-75	210.2	0.0011+0.0006	0.052+0.004	<0.02
8-04-75	183.9	0.0018+0.0009	0.049+0.004	<0.02
8-11-75	184.3	0.0010+0.0007	0.048+0.004	<0.02
8-18-75	195.0	0.0019+0.0008	0.049+0.004	<0.02
8-26-75	198.6	0.0012+0.0007	0.036+0.003	<0.02
9-02-75	183.4	0.0019+0.0009	0.041+0.004	<0.02
9-08-75	230.6	0.0016+0.0007	0.035+0.003	<0.02
9-15-75	263.2	0.0018+0.0007	0.035+0.003	<0.02
9-22-75	261.2	0.0011+0.0006	0.041+0.003	<0.02
9-29-75	274.4	0.0022+0.0007	0.029+0.002	<0.02
10-06-75	168.4	0.0034+0.0012	0.074+0.005	<0.02
10-13-75	220.0	0.0010+0.0006	0.025+0.003	<0.02
10-20-75	268.2	0.0014+0.0006	0.031+0.003	<0.02
10-27-75	253.7	0.0019+0.0007	0.052+0.003	<0.02
11-03-75	229.4	0.0021+0.0008	0.047+0.003	<0.02
11-10-75	264.0	0.0015+0.0006	0.045+0.003	<0.02
11-17-75	249.2	0.0023+0.0008	0.041+0.003	<0.02
11-24-75	137.0	0.0054+0.0017	0.106+0.006	<0.02
12-01-75	168.0	0.0025+0.0011	0.077+0.005	<0.02
12-08-75	155.7	0.0038+0.0013	0.101+0.006	<0.02
12-15-75	136.0	0.0039+0.0015	0.073+0.005	<0.02
12-22-75	259.3	0.0019+0.0005	0.047+0.002	<0.02
12-29-75	247.5	0.0027+0.0008	0.047+0.003	<0.02
Mean ± S.D. (3rd Qtr)		0.0022+0.0016	0.051+0.020	
Mean ± S.D. (4th Qtr)		0.0026+0.0012	0.059+0.025	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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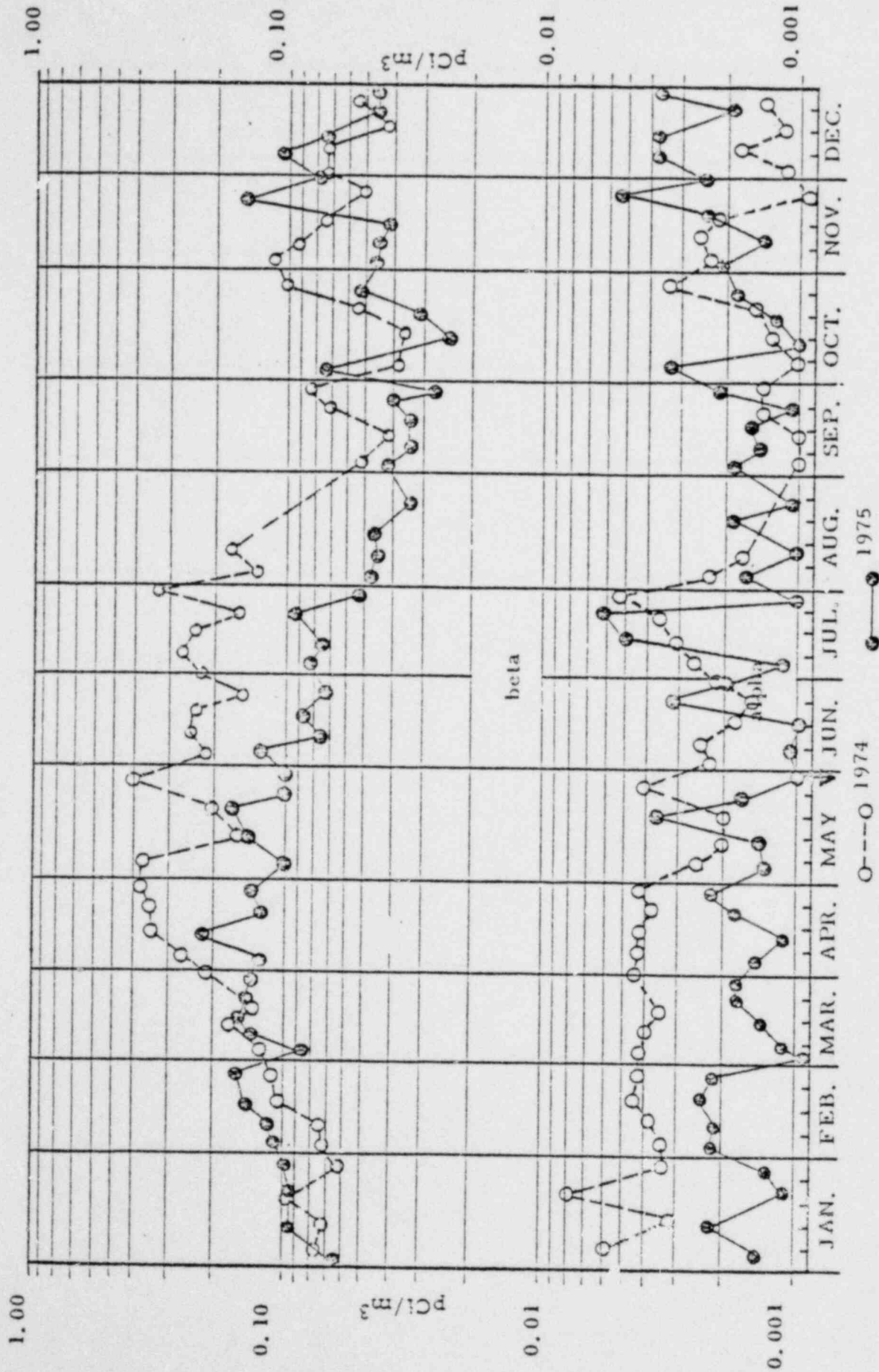


Figure 3. Air particulate samples, analyses for gross alpha and gross beta, collected near the inlet canal (T-1, site boundary, 0.6 miles NE of plant), Davis-Besse NPP. The data are from Table 6.

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Table 7. Airborne particulate and charcoal samples collected at Location T-2; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	358.5	0.0013+0.0005	0.105+0.004	<0.02
7-16-75	275.9	0.0049+0.0011	0.077+0.004	<0.02
7-23-75	275.1	0.0060+0.0012	0.088+0.004	<0.02
7-30-75	279.7	0.0017+0.0006	0.061+0.003	<0.02
8-04-75	274.4	0.0017+0.0007	0.059+0.003	<0.02
8-11-75	274.1	0.0012+0.0006	0.052+0.003	<0.02
8-18-75	283.4	0.0015+0.0006	0.054+0.003	<0.02
8-26-75	322.4	0.0012+0.0006	0.035+0.002	<0.02
9-02-75	254.9	0.0017+0.0007	0.033+0.003	<0.02
9-08-75	277.3	0.0007+0.0005	0.022+0.002	<0.02
9-15-75	332.9	0.0007+0.0004	0.028+0.002	<0.02
9-22-75	292.7	0.0016+0.0006	0.030+0.002	<0.02
9-29-75	273.6	0.0016+0.0006	0.024+0.002	<0.02
10-06-75	318.1	0.0022+0.0007	0.041+0.003	<0.02
10-13-75	225.1	0.0019+0.0008	0.025+0.003	<0.02
10-20-75	281.4	0.0017+0.0006	0.026+0.002	<0.02
10-27-75	267.0	0.0013+0.0006	0.046+0.003	<0.02
11-03-75	189.9	0.0025+0.0010	0.058+0.004	<0.02
11-10-75	183.8	0.0027+0.0011	0.076+0.005	<0.02
11-17-75	103.2	<0.0009	<0.003	<0.02
11-24-75	215.2	0.0027+0.0009	0.061+0.004	<0.02
12-01-75	239.5	0.0022+0.0008	0.054+0.003	<0.02
12-08-75	245.8	0.0030+0.0009	0.068+0.004	<0.02
12-15-75	225.6	0.0026+0.0009	0.039+0.003	<0.02
12-22-75	260.5	0.0019+0.0005	0.042+0.002	<0.02
12-29-75	216.9	0.0021+0.0008	0.048+0.003	<0.02
Mean ± S.D. (3rd Qtr)		0.0020+0.0016	0.052+0.026	
Mean ± S.D. (4th Qtr)		0.0023+0.0005	0.049+0.016	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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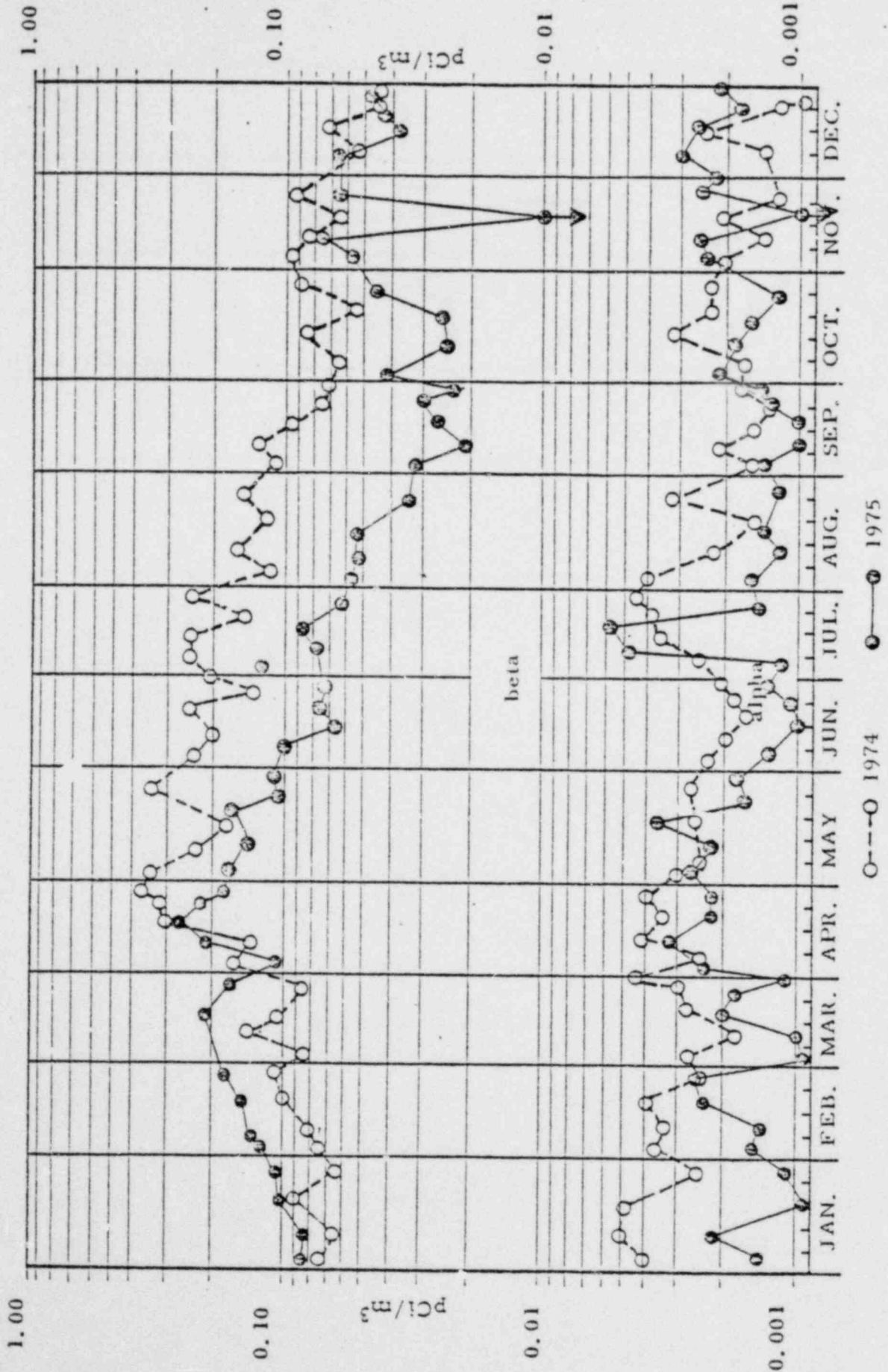


Figure 4. Air particulate samples, analyses for gross alpha and gross beta, collected at the site boundary (T-2, 0.9 miles E of plant), Davis-Besse NPP. The data are from Table 7.

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Table 8. Airborne particulate and charcoal samples collected at Location T-3; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	179.3	0.0013+0.0008	0.111+0.006	<0.02
7-16-75	244.8	0.0039+0.0011	0.074+0.004	<0.02
7-23-75	242.0	0.0053+0.0012	0.070+0.004	<0.02
7-30-75	263.5	0.0016+0.0007	0.058+0.003	<0.02
8-04-75	246.4	0.0018+0.0007	0.057+0.004	<0.02
8-11-75	270.8	0.0014+0.0006	0.052+0.003	<0.02
8-18-75	241.2	0.0011+0.0006	0.054+0.003	<0.02
8-26-75	280.5	0.0015+0.0006	0.034+0.003	<0.02
9-02-75	259.0	0.0016+0.0007	0.032+0.003	<0.02
9-08-75	250.8	0.0007+0.0005	0.023+0.002	<0.02
9-15-75	281.2	0.0016+0.0006	0.032+0.003	<0.02
9-22-75	279.9	0.0013+0.0006	0.034+0.003	<0.02
9-29-75	298.9	0.0015+0.0006	0.024+0.002	<0.02
10-06-75	290.2	0.0016+0.0006	0.052+0.003	<0.02
10-13-75	181.0	0.0014+0.0008	0.034+0.003	<0.02
10-20-75	202.2	0.0018+0.0008	0.043+0.003	<0.02
10-27-75	203.9	0.0024+0.0009	0.067+0.004	<0.02
11-03-75	210.0	0.0032+0.0011	0.049+0.004	<0.02
11-10-75	201.8	0.0026+0.0009	0.056+0.004	<0.02
11-17-75	208.2	0.0032+0.0011	0.051+0.004	<0.02
11-24-75	156.9	0.0037+0.0013	0.079+0.005	<0.02
12-01-75	186.0	0.0029+0.0011	0.069+0.004	<0.02
12-08-75	221.2	0.0024+0.0009	0.074+0.004	<0.02
12-15-75	195.8	0.0025+0.0009	0.050+0.004	<0.02
12-22-75	232.6	0.0023+0.0006	0.050+0.002	<0.02
12-29-75	192.4	0.0039+0.0012	0.075+0.005	<0.02
Mean ± S.D. (3rd Qtr)		0.0019+0.0013	0.051+0.025	
Mean ± S.D. (4th Qtr)		0.0026+0.0007	0.058+0.014	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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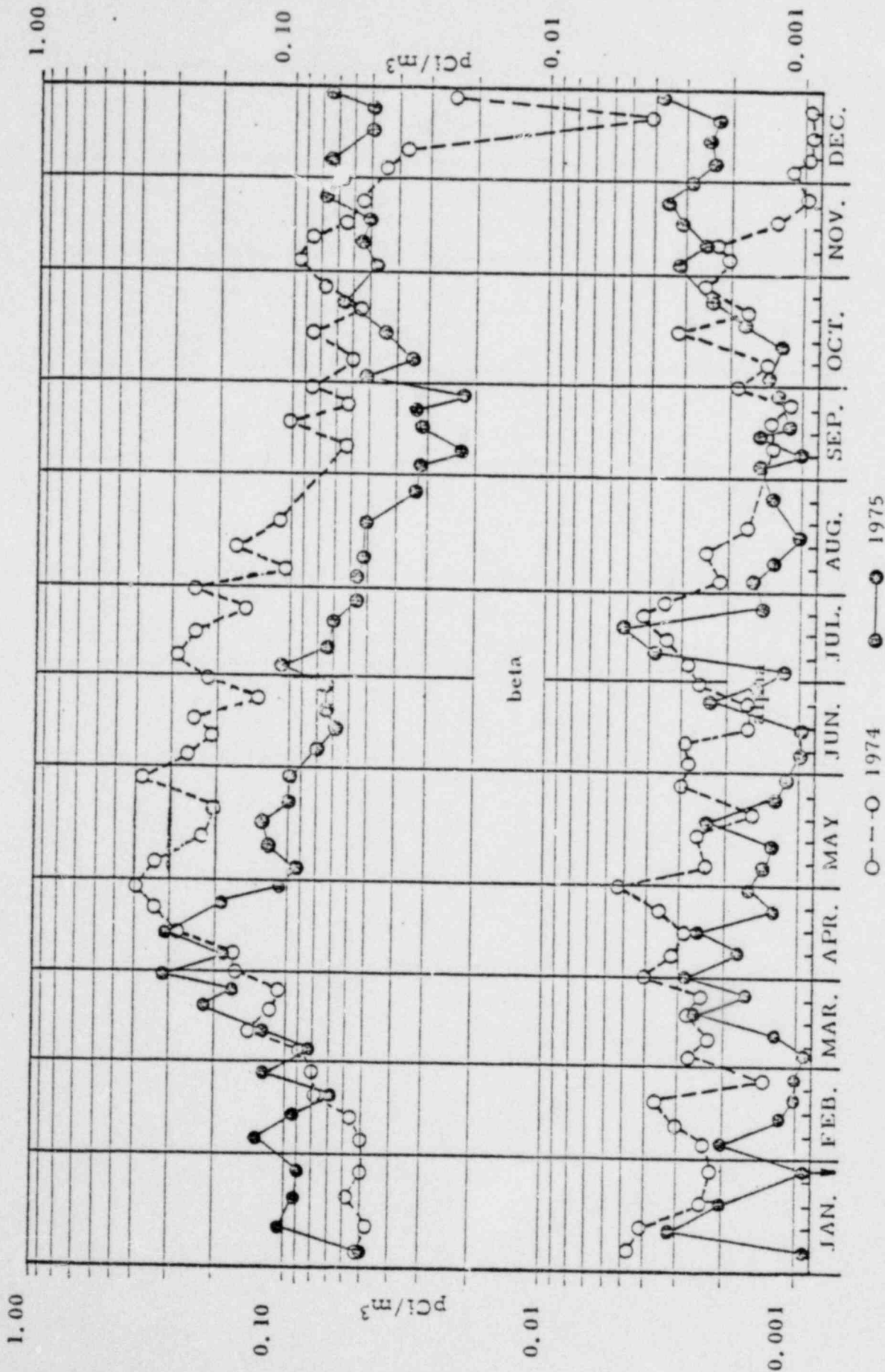


Figure 5. Air particulate samples, analyses for gross alpha and gross beta, collected near the Toussaint River and the storm drain (T-3, site boundary, 1.4 miles SE of plant), Davis Besse NPP. The data are from Table 8.

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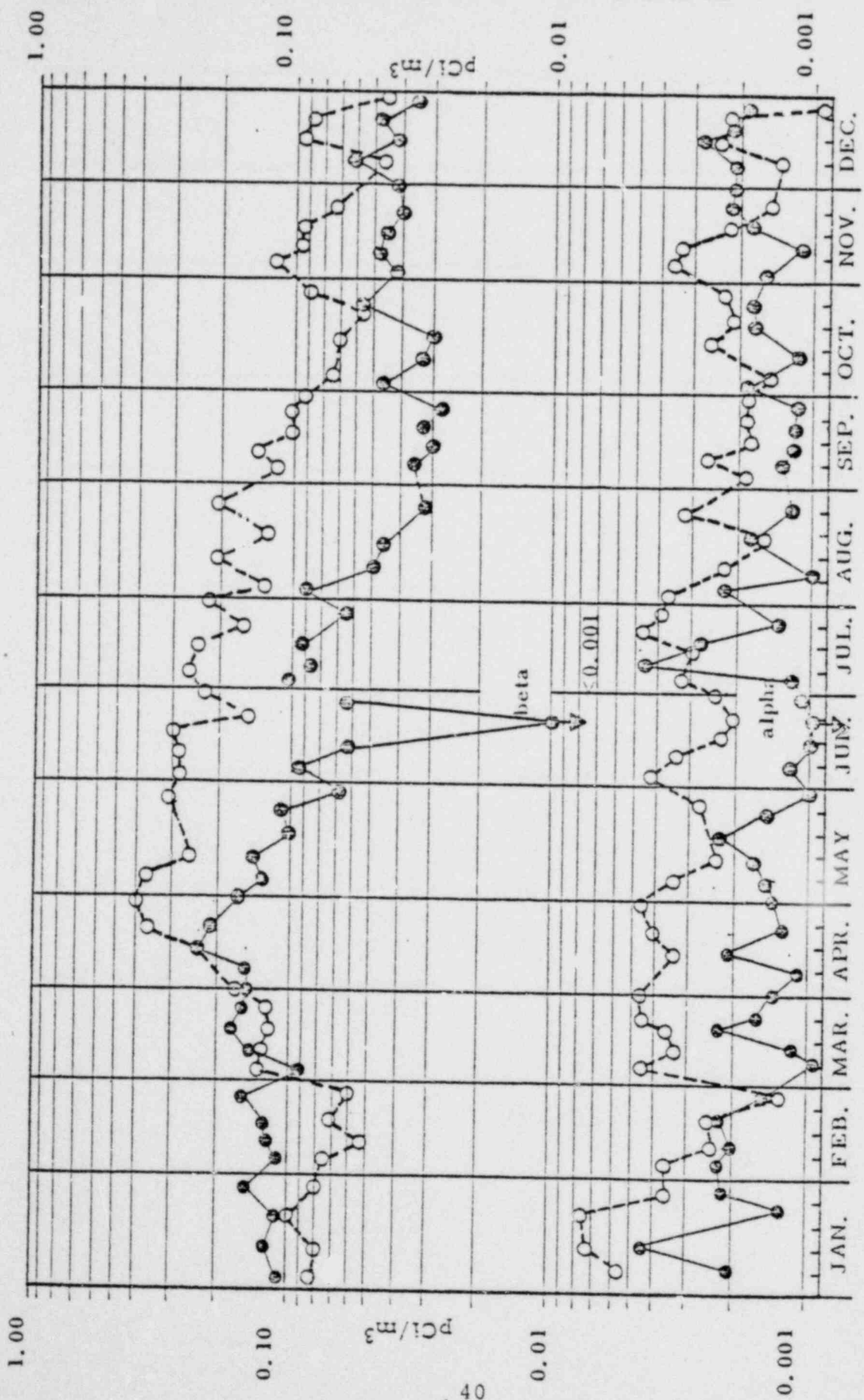
Table 9. Airborne particulate and charcoal samples collected at Location T-4; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	318.9	0.0012+0.0006	0.108+0.004	
7-16-75	267.4	0.0046+0.0011	0.086+0.004	<0.02
7-23-75	170.6	0.0029+0.0011	0.093+0.005	<0.02
7-30-75	263.1	0.0014+0.0006	0.064+0.004	<0.02
8-04-75	178.1	0.0024+0.0010	0.090+0.005	<0.02
8-11-75	268.8	0.0008+0.0005	0.049+0.003	<0.02
8-18-75	276.8	0.0018+0.0007	0.047+0.003	<0.02
8-26-75	324.9	0.0014+0.0006	0.032+0.002	<0.02
9-02-75	NS ^b	NS ^b	NS ^b	NS ^b
9-08-75	205.9	0.0014+0.0007	0.038+0.003	<0.02
9-15-75	260.8	0.0013+0.0006	0.031+0.003	<0.02
9-22-75	264.6	0.0012+0.0006	0.034+0.003	<0.02
9-29-75	266.4	0.0012+0.0006	0.028+0.002	<0.02
10-06-75	290.2	0.0020+0.0007	0.048+0.003	<0.02
10-13-75	230.3	0.0012+0.0006	0.032+0.003	<0.02
10-20-75	275.8	0.0018+0.0007	0.030+0.002	<0.02
10-27-75	243.3	0.0019+0.0007	0.058+0.004	<0.02
11-03-75	277.5	0.0016+0.0006	0.042+0.003	<0.02
11-10-75	245.8	0.0012+0.0006	0.049+0.003	<0.02
11-17-75	232.0	0.0018+0.0007	0.047+0.003	<0.02
11-24-75	323.0	0.0022+0.0007	0.040+0.003	<0.02
12-01-75	349.6	0.0021+0.0006	0.042+0.003	<0.02
12-08-75	250.7	0.0021+0.0007	0.062+0.004	<0.02
12-15-75	246.9	0.0029+0.0009	0.042+0.003	<0.02
12-22-75	251.2	0.0022+0.0006	0.049+0.002	<0.02
12-29-75	258.3	0.0018+0.0007	0.036+0.003	<0.02
Mean ± S.D. (3rd Qtr)		0.0018+0.0010	0.058+0.029	
Mean ± S.D. (4th Qtr)		0.0019+0.0004	0.044+0.009	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

^b No sample received.

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O---O 1974 ●---● 1975

Figure 6. Air particulate samples, analyses for gross alpha and gross beta, collected at Locust Point and Toussaint River (T-4, site boundary, 0.8 miles S of plant), Davis-Besse NPP. The data are from Table 9.

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Table 10. Airborne particulate and charcoal samples collected at Location T-7; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	326.1	0.0017+0.0006	0.117+0.004	<0.02
7-16-75	234.2	0.0040+0.0011	0.089+0.004	<0.02
7-23-75	265.4	0.0006+0.0005	0.047+0.003	<0.02
7-30-75	266.7	0.0015+0.0006	0.063+0.004	<0.02
8-04-75	266.9	0.0018+0.0007	0.056+0.003	<0.02
8-11-75	273.2	0.0011+0.0006	0.051+0.003	<0.02
8-18-75	269.9	0.0017+0.0007	0.062+0.004	<0.02
8-26-75	307.6	0.0015+0.0006	0.045+0.003	<0.02
9-02-75	272.7	0.0016+0.0006	0.034+0.003	<0.02
9-08-75	230.9	0.0011+0.0006	0.037+0.003	<0.02
9-15-75	289.9	0.0012+0.0006	0.032+0.002	<0.02
9-22-75	272.9	0.0020+0.0007	0.037+0.003	<0.02
9-29-75	279.9	0.0019+0.0007	0.026+0.002	<0.02
10-06-75	305.0	0.0022+0.0007	0.045+0.003	<0.02
10-13-75	229.7	0.0017+0.0007	0.031+0.003	<0.02
10-20-75	292.6	0.0014+0.0006	0.031+0.002	<0.02
10-27-75	301.2	0.0025+0.0007	0.047+0.003	<0.02
11-03-75	260.3	0.0016+0.0006	0.041+0.003	<0.02
11-10-75	274.9	0.0021+0.0007	0.048+0.003	<0.02
11-17-75	268.8	0.0022+0.0007	0.045+0.003	<0.02
11-24-75	226.3	0.0030+0.0009	0.066+0.004	<0.02
12-01-75	348.9	0.0019+0.0006	0.045+0.003	<0.02
12-08-75	281.6	0.0018+0.0006	0.062+0.003	<0.02
12-15-75	272.4	0.0023+0.0007	0.041+0.003	<0.02
12-22-75	268.3	0.0027+0.0006	0.049+0.002	<0.02
12-29-75	171.3	0.0027+0.0011	0.062+0.004	<0.02
Mean ± S.D. (3rd Qtr)		0.0017+0.0008	0.054+0.026	
Mean ± S.D. (4th Qtr)		0.0022+0.0005	0.047+0.011	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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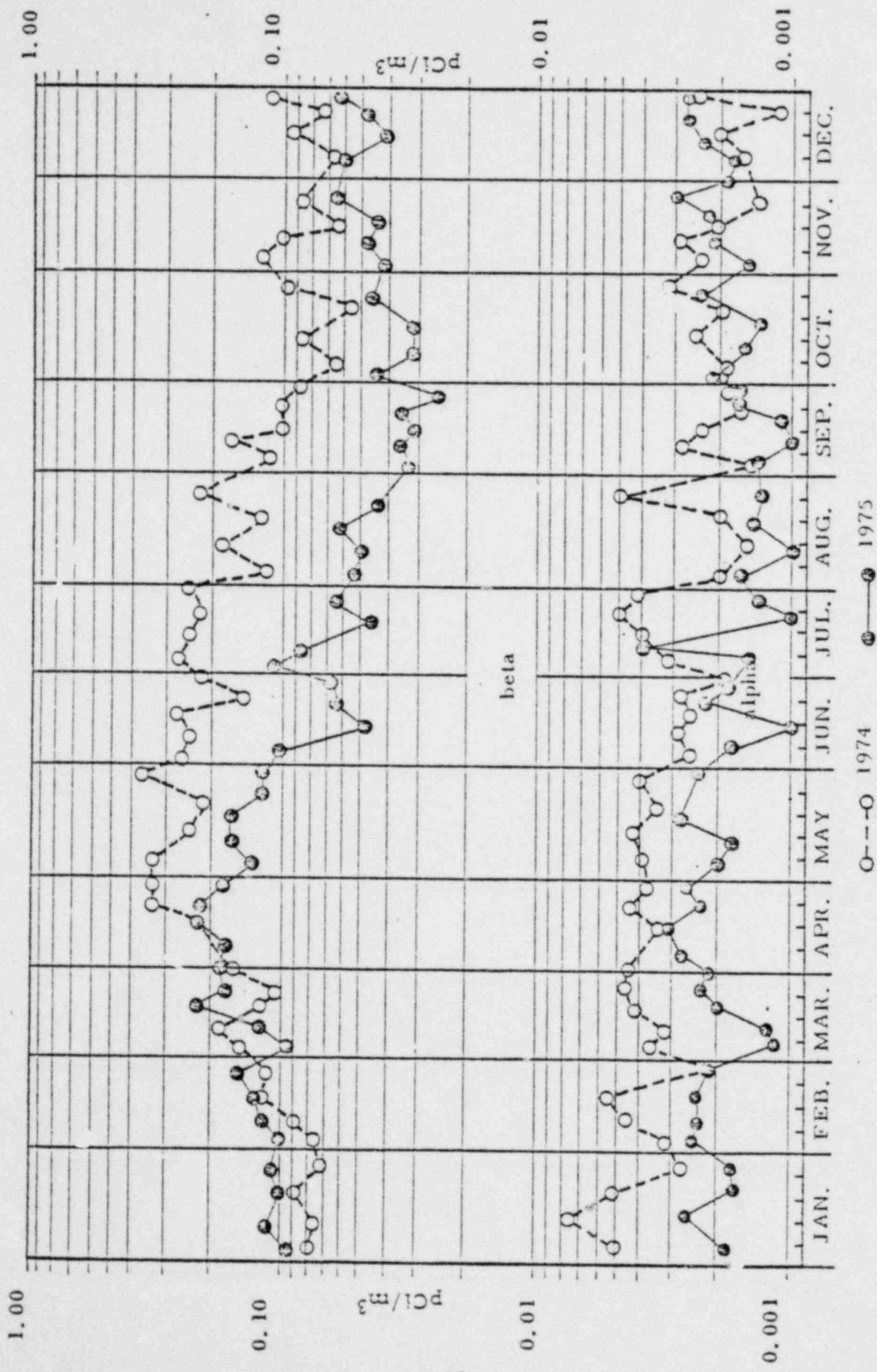


Figure 7. Air particulate samples, analyses for gross alpha and gross beta, collected at Sand Beach (T-7, 0.9 miles NNW of plant), Davis-Besse NPP. The data are from Table 10.

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Table 11. Airborne particulate and charcoal samples collected at Location T-8; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	217.1	0.0024±0.0009	0.130±0.006	<0.02
7-16-75	264.5	0.0038±0.0010	0.073±0.004	<0.02
7-23-75	160.3	0.0045±0.0014	0.136±0.006	<0.02
7-30-75	263.5	0.0017±0.0007	0.066±0.004	<0.02
8-04-75	225.6	0.0029±0.0009	0.060±0.004	<0.02
8-11-75	274.6	0.0011±0.0006	0.056±0.003	<0.02
8-18-75	252.7	0.0012±0.0006	0.057±0.003	<0.02
8-26-75	222.5	0.0014±0.0007	0.047±0.003	<0.02
9-02-75	266.9	0.0015±0.0006	0.033±0.003	<0.02
9-08-75	230.9	0.0018±0.0007	0.038±0.003	<0.02
9-15-75	289.9	0.0010±0.0005	0.027±0.002	<0.02
9-22-75	272.9	0.0008±0.0005	0.032±0.003	<0.02
9-29-75	280.0	0.0017±0.0006	0.027±0.002	<0.02
10-06-75	305.0	0.0020±0.0006	0.040±0.003	<0.02
10-13-75	214.5	0.0013±0.0007	0.034±0.003	<0.02
10-20-75	262.8	0.0015±0.0006	0.030±0.003	<0.02
10-27-75	221.9	0.0022±0.0008	0.058±0.004	<0.02
11-03-75	211.8	0.0017±0.0007	0.048±0.004	<0.02
11-10-75	274.9	0.0005±0.0004	0.024±0.002	<0.02
11-17-75	375.5	0.0013±0.0005	0.031±0.002	<0.02
11-24-75	315.9	0.0018±0.0006	0.040±0.003	<0.02
12-01-75	370.0	0.0014±0.0005	0.036±0.002	<0.02
12-08-75	387.1	0.0017±0.0006	0.040±0.002	<0.02
12-15-75	405.5	0.0013±0.0005	0.023±0.002	<0.02
12-22-75	417.9	0.0014±0.0004	0.027±0.001	<0.02
12-29-75	272.6	0.0015±0.0006	0.032±0.003	<0.02
Mean ± S.D. (3rd Qtr)		0.0020±0.0011	0.060±0.036	
Mean ± S.D. (4th Qtr)		0.0015±0.0004	0.036±0.009	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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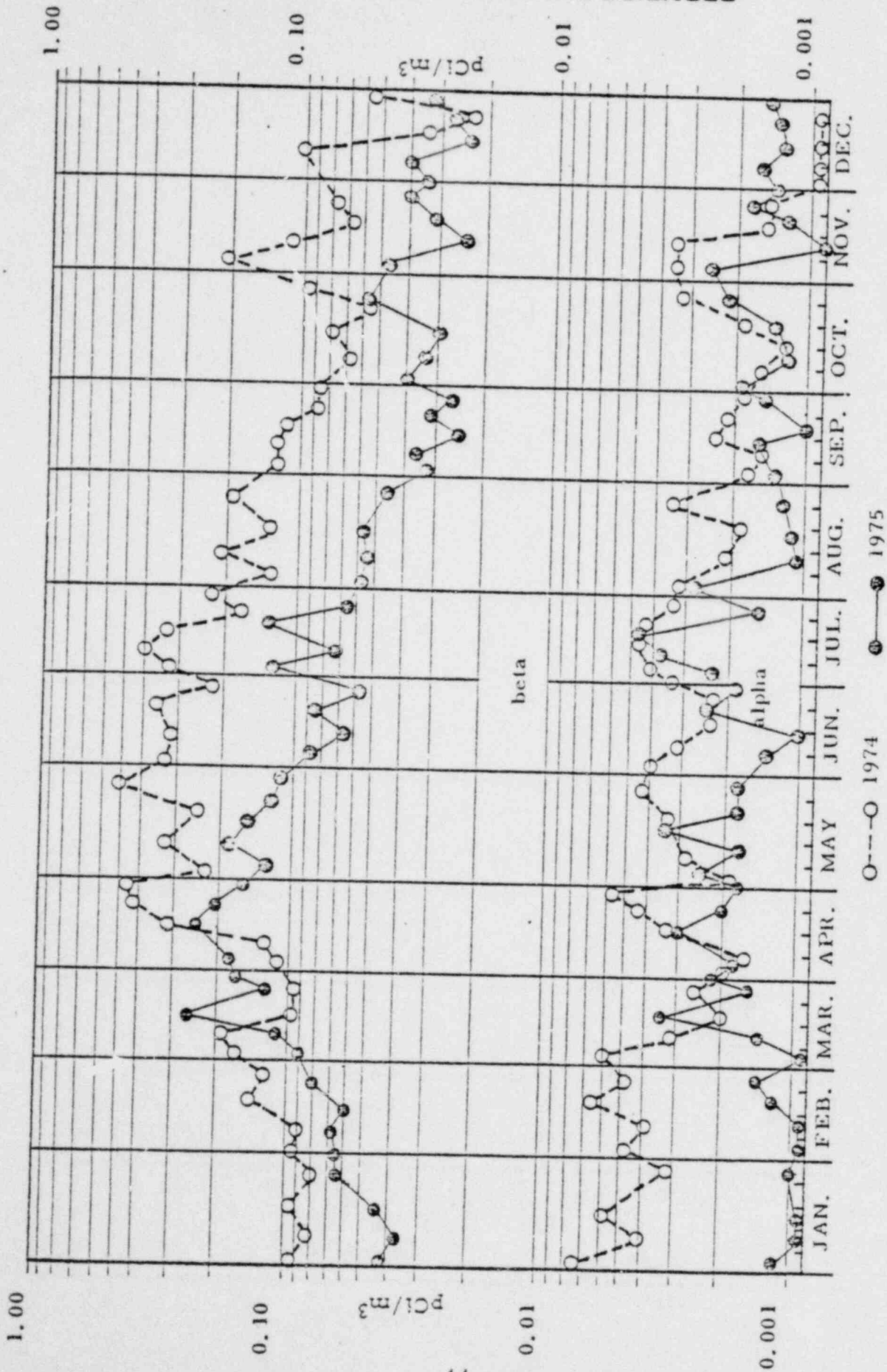


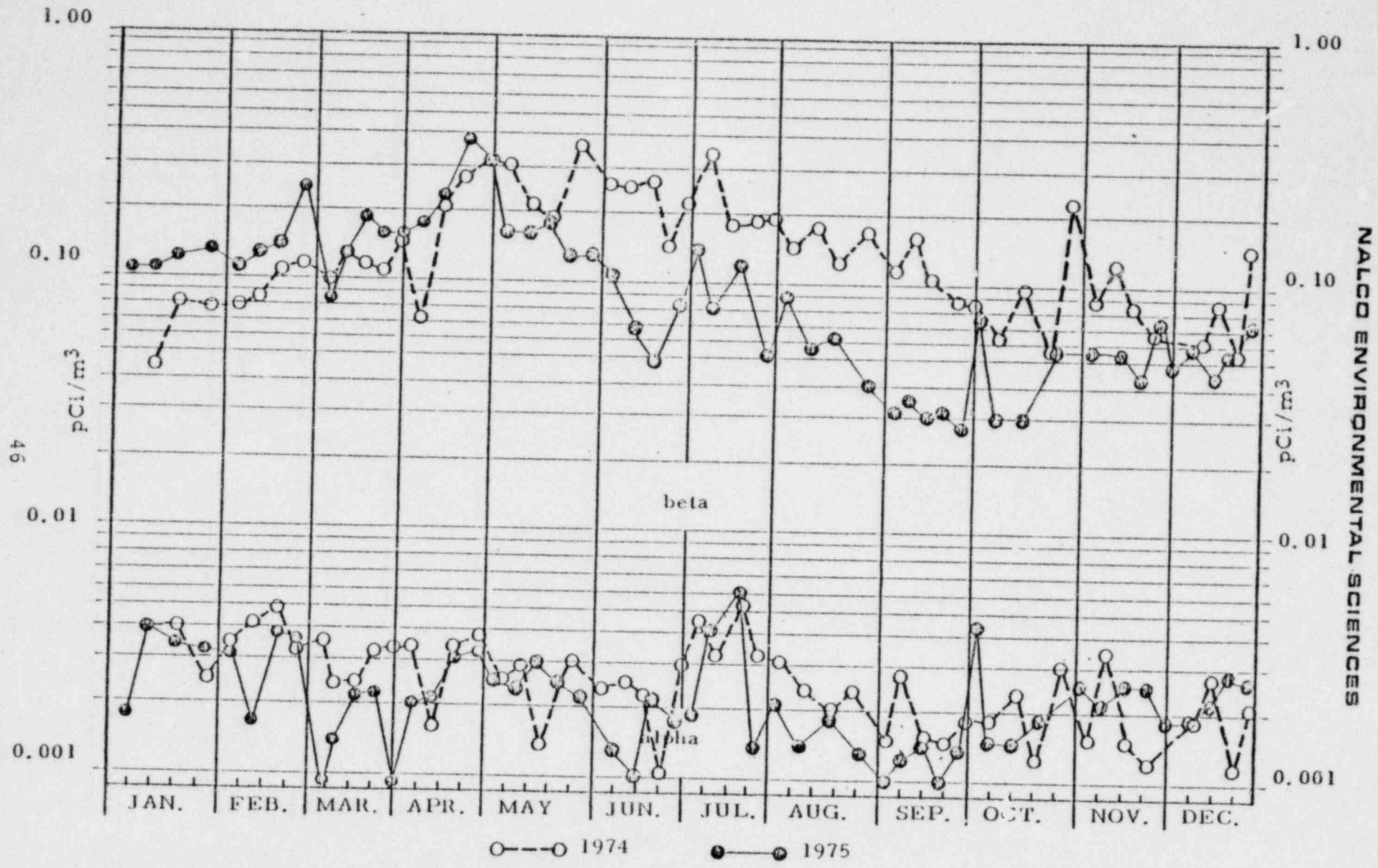
Figure 8. Air particulate samples, analyses for gross alpha and gross beta, collected at the Earl Moore Farm (T-8, 2.7 miles WSW of plant), Davis-Besse NPP. The data are from Table II.

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Table 12. Airborne particulate and charcoal samples collected at Location T-9; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	183.9	0.0020+0.0009	0.155+0.006	<0.02
7-16-75	251.4	0.0043+0.0011	0.081+0.004	<0.02
7-23-75	184.3	0.0060+0.0015	0.129+0.006	<0.02
7-30-75	330.2	0.0014+0.0006	0.052+0.003	<0.02
8-04-75	156.8	0.0022+0.0011	0.090+0.006	<0.02
8-11-75	263.4	0.0016+0.0007	0.058+0.003	<0.02
8-18-75	256.7	0.0020+0.0007	0.063+0.004	<0.02
8-26-75	288.9	0.0014+0.0006	0.042+0.003	<0.02
9-02-75	275.2	0.0008+0.0005	0.032+0.003	<0.02
9-08-75	248.2	0.0014+0.0006	0.036+0.003	<0.02
9-15-75	281.7	0.0017+0.0006	0.031+0.002	<0.02
9-22-75	269.3	0.0010+0.0006	0.031+0.003	<0.02
9-29-75	261.3	0.0016+0.0006	0.028+0.002	<0.02
10-06-75	191.2	0.0045+0.0013	0.077+0.005	<0.02
10-13-75	238.5	0.0017+0.0007	0.030+0.003	<0.02
10-20-75	250.8	0.0017+0.0007	0.030+0.003	<0.02
10-27-75	258.4	0.0019+0.0007	0.058+0.003	<0.02
11-03-75	267.8	0.0026+0.0008	0.054+0.003	<0.02
11-10-75	241.1	0.0022+0.0008	0.053+0.003	<0.02
11-17-75	259.9	0.0026+0.0008	0.043+0.003	<0.02
11-24-75	216.5	0.0026+0.0009	0.074+0.004	<0.02
12-01-75	288.6	0.0018+0.0006	0.049+0.003	<0.02
12-08-75	300.7	0.0019+0.0006	0.060+0.003	<0.02
12-15-75	245.4	0.0023+0.0008	0.045+0.003	<0.02
12-22-75	248.3	0.0028+0.0006	0.051+0.002	<0.02
12-29-75	138.4	0.0027+0.0012	0.073+0.005	<0.02
Mean ± S.D. (3rd Qtr)		0.0021+0.0015	0.063+0.040	
Mean ± S.D. (4th Qtr)		0.0024+0.0007	0.054+0.015	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.



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Figure 9. Air particulate samples, analyses for gross alpha and gross beta, collected at Oak Harbor (T-9, 6.8 miles SW of plant), Davis-Besse NPP. The data are from Table 12.

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Table 13. Airborne particulate and charcoal samples collected at Location T-10; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	183.3	0.0033±0.0012	0.153±0.006	<0.02
7-16-75	265.6	0.0023±0.0008	0.074±0.004	<0.02
7-23-75	264.0	0.0034±0.0009	0.088±0.004	<0.02
7-30-75	246.4	0.0014±0.0006	0.067±0.004	<0.02
8-04-75	135.9	0.0036±0.0014	0.100±0.006	<0.02
8-11-75	275.6	0.0013±0.0006	0.054±0.003	<0.02
8-18-75	269.2	0.0016±0.0006	0.058±0.003	<0.02
8-26-75	310.2	0.0011±0.0005	0.030±0.002	<0.02
9-02-75	266.1	0.0010±0.0006	0.034±0.003	<0.02
9-08-75	246.2	0.0011±0.0006	0.034±0.003	<0.02
9-15-75	272.1	0.0015±0.0006	0.032±0.003	<0.02
9-22-75	268.6	0.0016±0.0006	0.036±0.003	<0.02
9-29-75	283.2	0.0017±0.0006	0.025±0.002	<0.02
10-06-75	307.6	0.0020±0.0006	0.045±0.003	<0.02
10-13-75	200.0	0.0014±0.0007	0.033±0.003	<0.02
10-20-75	258.4	0.0014±0.0006	0.029±0.003	<0.02
10-27-75	247.8	0.0025±0.0008	0.062±0.004	<0.02
11-03-75	277.6	0.0018±0.0007	0.043±0.003	<0.02
11-10-75	240.1	0.0021±0.0008	0.057±0.004	<0.02
11-17-75	248.4	0.0021±0.0008	0.051±0.003	<0.02
11-24-75	113.7	0.0025±0.0014	0.077±0.006	<0.02
12-01-75	282.6	0.0025±0.0008	0.054±0.003	<0.02
12-08-75	275.7	0.0018±0.0007	0.068±0.004	<0.02
12-15-75	257.0	0.0026±0.0008	0.041±0.003	<0.02
12-22-75	279.9	0.0024±0.0006	0.048±0.002	<0.02
12-29-75	191.7	0.0030±0.0011	0.063±0.004	<0.02
Mean ± S.D. (3rd Qtr)		0.0019±0.0009	0.061±0.037	
Mean ± S.D. (4th Qtr)		0.0022±0.0005	0.052±0.014	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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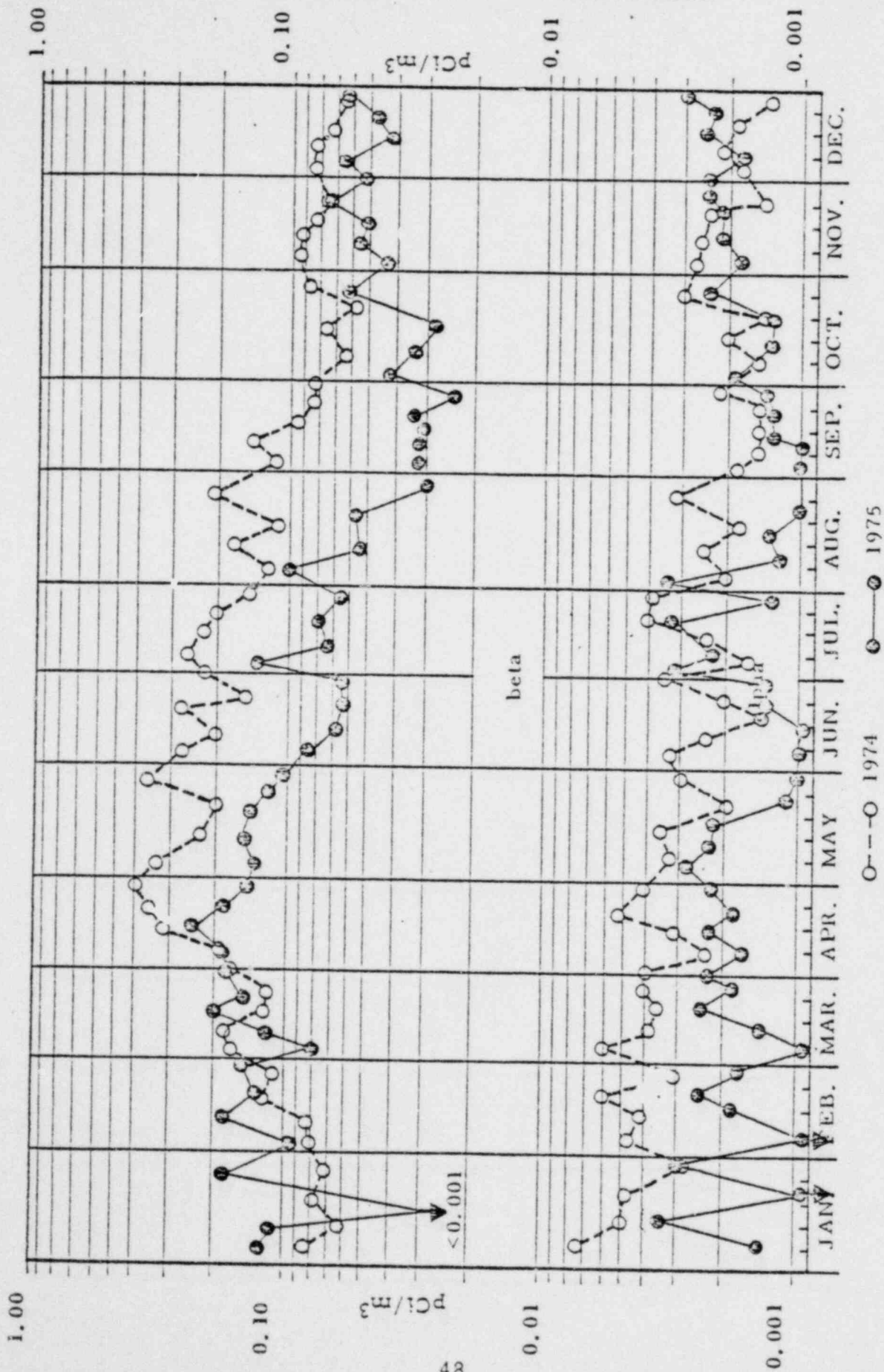


Figure 10. Air particulate samples, analyses for gross alpha and gross beta, collected at the Erie Industrial Park (T-10, 6.5 miles SE of plant), Davis-Besse NPP. The data are from Table 13.

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Table 14. Airborne particulate and charcoal samples collected at Location T-11; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	335.2	0.0007±0.0004	0.109±0.004	<0.02
7-10-75	267.6	0.0017±0.0007	0.076±0.004	<0.02
7-23-75	142.6	0.0023±0.0012	0.114±0.006	<0.02
7-30-75	249.1	0.0019±0.0007	0.071±0.004	<0.02
8-04-75	268.7	0.0019±0.0007	0.062±0.004	<0.02
8-11-75	269.7	0.0018±0.0007	0.057±0.003	<0.02
8-18-75	261.9	0.0017±0.0007	0.063±0.004	<0.02
8-26-75	293.8	0.0012±0.0006	0.041±0.003	<0.02
9-02-75	145.9	0.0037±0.0014	0.062±0.005	<0.02
9-08-75	214.0	0.0022±0.0008	0.040±0.003	<0.02
9-15-75	279.4	0.0007±0.0005	0.032±0.003	<0.02
9-22-75	265.7	0.0021±0.0007	0.039±0.003	<0.02
9-29-75	266.6	0.0018±0.0007	0.033±0.003	<0.02
10-06-75	163.3	0.0035±0.0013	0.083±0.005	<0.02
10-13-75	203.7	0.0021±0.0008	0.036±0.003	<0.02
10-20-75	252.3	0.0015±0.0006	0.030±0.003	<0.02
10-27-75	236.5	0.0025±0.0008	0.071±0.004	<0.02
11-03-75	230.6	0.0020±0.0008	0.049±0.003	<0.02
11-10-75	214.9	0.0012±0.0006	0.049±0.004	<0.02
11-17-75	224.9	0.0025±0.0009	0.049±0.003	<0.02
11-24-75	140.7	0.0049±0.0016	0.091±0.006	<0.02
12-01-75	189.2	0.0020±0.0009	0.062±0.004	<0.02
12-08-75	205.3	0.0033±0.0011	0.089±0.005	<0.02
12-15-75	193.2	0.0024±0.0009	0.051±0.004	<0.02
12-22-75	218.5	<0.0003	0.047±0.002	<0.02
12-29-75	192.8	0.0032±0.0011	0.056±0.004	<0.02
Mean ± S.D. (3rd Qtr)		0.0018±0.0007	0.062±0.027	
Mean ± S.D. (4th Qtr)		0.0026±0.0010	0.059±0.020	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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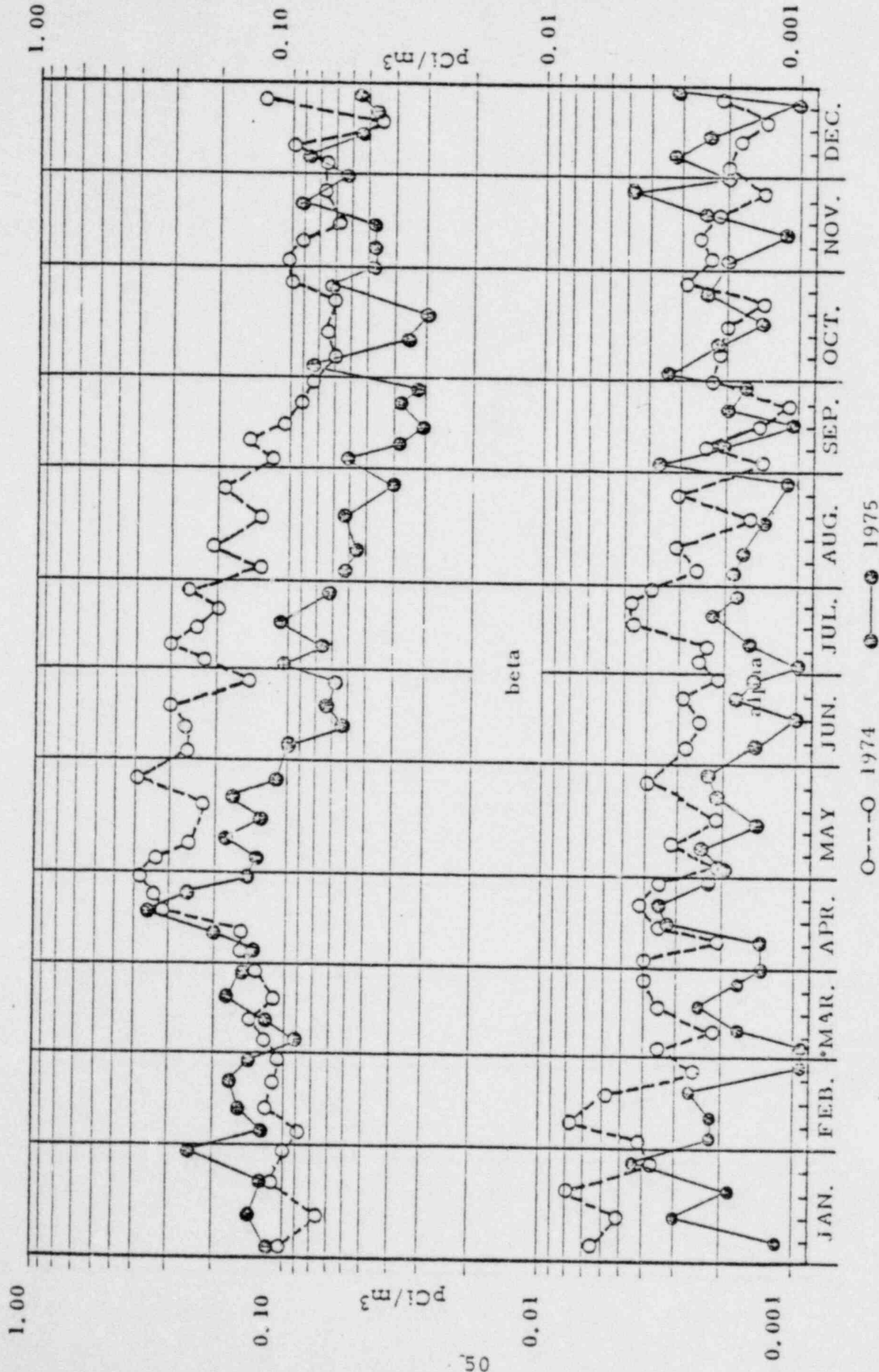


Figure 11. Air particulate samples, analyses for gross alpha and gross beta, collected at Port Clinton (T-11, 9.5 miles SE of plant), Davis-Besse NPP. The data are from Table 14.

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Table 15. Airborne particulate and charcoal samples collected at Location T-12; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	221.5	0.0020+0.0008	0.136+0.006	<0.02
7-16-75	251.2	0.0018+0.0007	0.078+0.004	<0.02
7-23-75	220.9	0.0024+0.0009	0.096+0.005	<0.02
7-30-75	216.4	0.0014+0.0007	0.073+0.004	<0.02
8-04-75	150.7	0.0027+0.0012	0.085+0.006	<0.02
8-11-75	262.0	0.0015+0.0006	0.056+0.003	<0.02
8-18-75	252.2	0.0010+0.0006	0.058+0.003	<0.02
8-25-75	266.9	0.0019+0.0007	0.040+0.003	<0.02
9-02-75	184.3	0.0019+0.0009	0.052+0.004	<0.02
9-08-75	225.1	0.0024+0.0008	0.037+0.003	<0.02
9-15-75	264.4	0.0019+0.0007	0.032+0.003	<0.02
9-22-75	255.1	0.0015+0.0006	0.040+0.003	<0.02
9-29-75	248.3	0.0022+0.0008	0.028+0.003	<0.02
10-06-75	262.6	0.0015+0.0006	0.044+0.003	<0.02
10-13-75	255.5	0.0013+0.0006	0.027+0.002	<0.02
10-20-75	191.5	0.0011+0.0007	0.027+0.003	<0.02
10-27-75	231.1	0.0032+0.0010	0.055+0.004	<0.02
11-03-75	244.9	0.0017+0.0007	0.045+0.003	<0.02
11-10-75	199.8	0.0029+0.0010	0.056+0.004	<0.02
11-17-75	211.5	0.0031+0.0010	0.053+0.004	<0.02
11-24-75	161.6	0.0040+0.0014	0.078+0.005	<0.02
12-01-75	213.2	0.0018+0.0008	0.055+0.004	<0.02
12-08-75	262.6	0.0031+0.0009	0.054+0.003	<0.02
12-15-75	191.6	0.0022+0.0009	0.033+0.003	<0.02
12-22-75	105.3	0.0025+0.0010	0.064+0.004	<0.02
12-29-75	182.7	0.0031+0.0011	0.058+0.004	<0.02
Mean ± S.D. (3rd Qtr)		0.0019+0.0005	0.067+0.031	
Mean ± S.D. (4th Qtr)		0.0024+0.0008	0.050+0.015	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

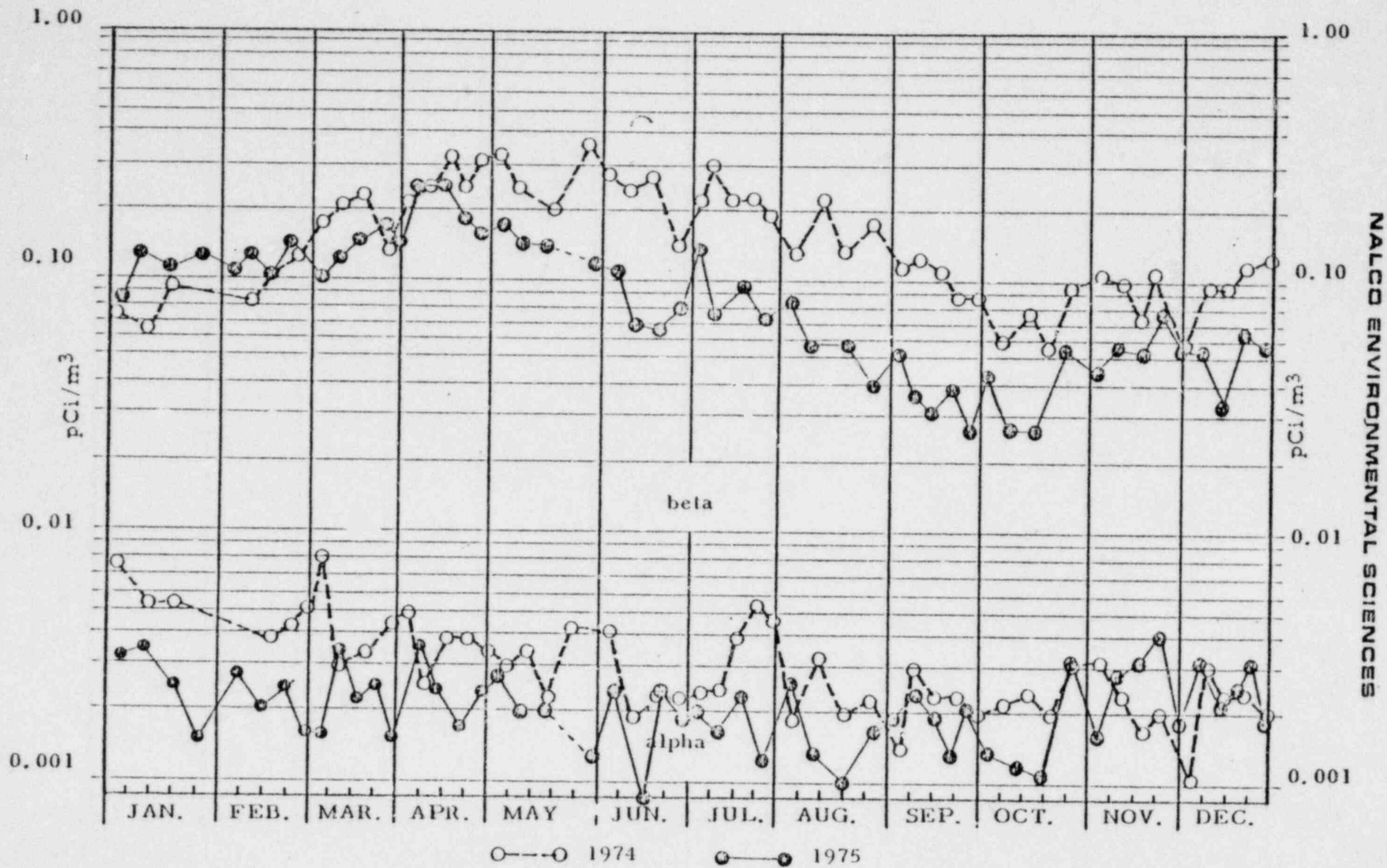


Figure 12. Air particulate samples, analyses for gross alpha and gross beta, collected at Toledo (T-12, 23.5 miles WNW of plant), Davis-Besse NPP. The data are from Table 15.

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Table 16. Airborne particulate and charcoal samples collected at Location T-23; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	281.7	0.0018+0.0007	0.114+0.005	<0.02
7-16-75	188.6	0.0033+0.0011	0.102+0.005	<0.02
7-23-75	271.7	0.0018+0.0007	0.079+0.004	<0.02
7-30-75	261.2	0.0006+0.0005	0.053+0.003	<0.02
8-04-75	253.2	0.0008+0.0005	0.059+0.004	<0.02
8-12-75	294.3	0.0015+0.0006	0.059+0.003	<0.02
8-18-75	260.1	0.0014+0.0006	0.051+0.003	<0.02
8-25-75	287.0	<0.0004	0.004+0.001	<0.02
9-01-75	154.8	0.0013+0.0009	0.031+0.003	<0.02
9-03-75	244.9	0.0012+0.0006	0.032+0.003	<0.02
9-15-75	255.4	0.0019+0.0007	0.038+0.003	<0.02
9-22-75	273.6	0.0015+0.0006	0.033+0.003	<0.02
9-29-75	268.3	0.0010+0.0006	0.028+0.002	<0.02
10-06-75	257.7	0.0021+0.0007	0.048+0.003	<0.02
10-13-75	271.9	0.0016+0.0006	0.028+0.002	<0.02
10-20-75	274.4	0.0011+0.0006	0.028+0.002	<0.02
10-27-75	262.5	0.0021+0.0007	0.054+0.003	<0.02
11-03-75	257.0	0.0027+0.0008	0.042+0.003	<0.02
11-10-75	249.8	0.0013+0.0006	0.038+0.003	<0.02
11-17-75	293.7	0.0014+0.0006	0.048+0.003	<0.02
11-24-75	214.5	0.0025+0.0009	0.065+0.004	<0.02
12-01-75	267.1	0.0020+0.0007	0.053+0.003	<0.02
12-08-75	451.5	0.0012+0.0004	0.036+0.002	<0.02
12-15-75	250.6	0.0016+0.0007	0.044+0.003	<0.02
12-21-75	268.1	0.0016+0.0005	0.036+0.002	<0.02
12-29-75	246.1	0.0022+0.0008	0.048+0.003	<0.02
Mean ± S.D. (3rd Qtr)		0.0015+0.0006	0.053+0.031	
Mean ± S.D. (4th Qtr)		0.0018+0.0005	0.044+0.011	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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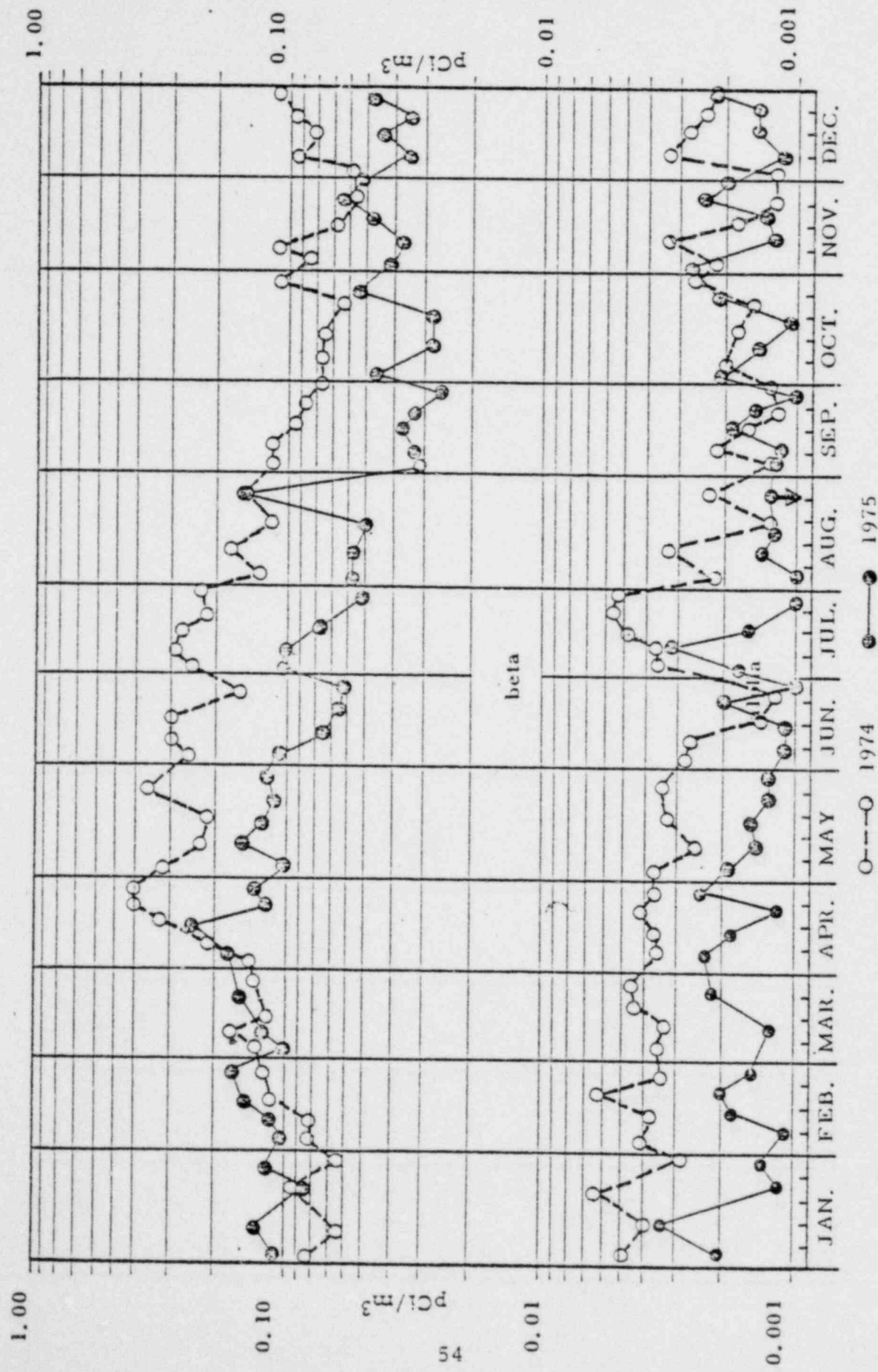


Figure 13. Air particulate samples, analyses for gross alpha and gross beta, collected at Put-In-Bay Lighthouse (T-23, 14.3 miles ENE of plant), Davis-Besse NPP. The data are from Table 16.

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Table 17. Airborne particulate and charcoal samples collected at Location T-27; analyses for gross alpha, gross beta, and iodine-131.

Date Collected	Vol. (M3)	Gross alpha (pCi/m ³) ^a	Gross beta (pCi/m ³) ^a	I-131 (pCi/m ³)
7-09-75	195.7	0.0030+0.0011	0.145+0.006	<0.02
7-16-75	220.7	0.0022+0.0008	0.079+0.004	<0.02
7-23-75	236.0	0.0025+0.0008	0.099+0.005	<0.02
7-30-75	251.7	0.0021+0.0008	0.065+0.004	<0.02
8-04-75	233.2	0.0022+0.0008	0.065+0.004	<0.02
8-11-75	164.0	0.0016+0.0009	0.069+0.005	<0.02
8-18-75	186.8	0.0019+0.0009	0.074+0.005	<0.02
8-26-75	312.2	0.0018+0.0006	0.040+0.003	<0.02
9-02-75	245.3	0.0014+0.0007	0.038+0.003	<0.02
9-08-75	243.4	0.0012+0.0006	0.036+0.003	<0.02
9-15-75	299.8	0.0015+0.0006	0.028+0.002	<0.02
9-22-75	277.1	0.0014+0.0006	0.033+0.003	<0.02
9-29-75	262.4	0.0008+0.0005	0.027+0.002	<0.02
10-06-75	296.5	0.0017+0.0006	0.040+0.003	<0.02
10-13-75	235.8	0.0006+0.0005	0.027+0.003	<0.02
10-20-75	280.6	0.0012+0.0006	0.027+0.002	<0.02
10-27-75	159.6	0.0038+0.0013	0.075+0.005	<0.02
11-03-75	270.9	0.0020+0.0007	0.039+0.003	<0.02
11-10-75	244.3	0.0020+0.0007	0.048+0.003	<0.02
11-18-75	269.0	0.0019+0.0007	0.037+0.003	<0.02
11-24-75	180.4	0.0041+0.0013	0.069+0.005	<0.02
12-01-75	278.7	0.0019+0.0007	0.051+0.003	<0.02
12-08-75	262.7	0.0026+0.0008	0.060+0.003	<0.02
12-15-75	356.8	0.0014+0.0005	0.026+0.002	<0.02
12-22-75	425.0	0.0020+0.0004	0.030+0.001	<0.02
12-29-75	166.5	0.0041+0.0013	0.065+0.005	<0.02
Mean ± S.D. (3rd Qtr)		0.0018+0.0006	0.062+0.034	
Mean ± S.D. (4th Qtr)		0.0023+0.0011	0.046+0.017	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

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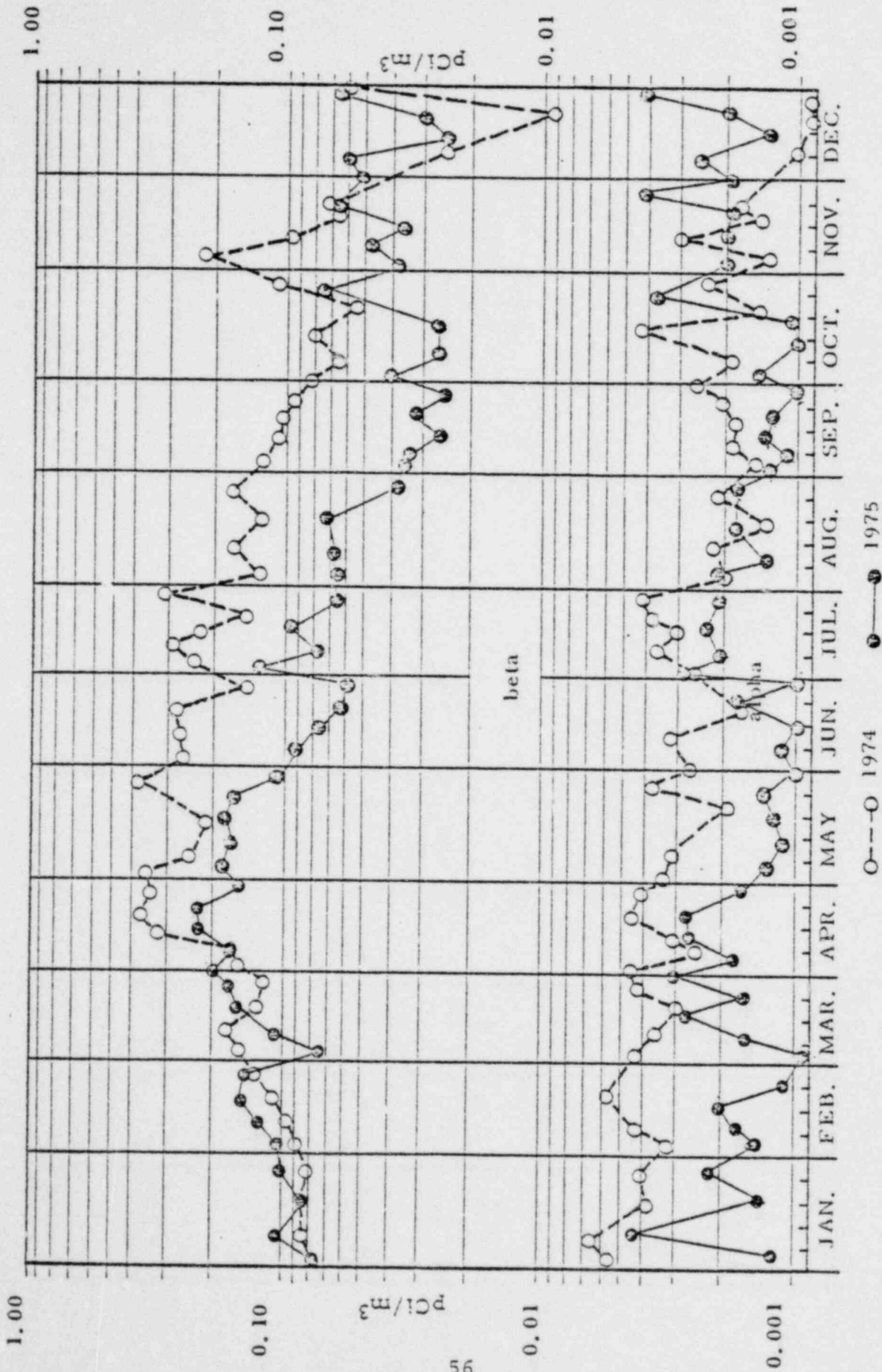


Figure 14. Air particulate samples, analyses for gross alpha and gross beta, collected at McGee Marsh (T-27, 5.3 miles WNW of plant), Davis-Besse NPP. The data are from Table 17.

Table 18. Airborne particulates, monthly average, minima and maxima for gross alpha and gross beta, July - December 1975, Davis-Besse NPP.

Month	Location	Number of samples	Gross alpha (pCi/m ³)		Gross beta (pCi/m ³)		
			Average	Maximum	Average	Maximum	
July	T- 1	4	0.0034	0.0011	0.076	0.052	
	T- 2	4	0.0035	0.0013	0.083	0.061	
	T- 3	4	0.0030	0.0013	0.078	0.058	
	T- 4	4	0.0025	0.0012	0.088	0.064	
	T- 7	4	0.0020	0.0006	0.079	0.047	
	T- 8	4	0.0031	0.0017	0.101	0.066	
	T- 9	4	0.0032	0.0014	0.104	0.052	
	T-10	4	0.0026	0.0014	0.096	0.067	
	T-11	4	0.0017	0.0007	0.093	0.071	
	T-12	4	0.0019	0.0014	0.096	0.073	
	T-23	4	0.0019	0.0006	0.087	0.053	
	T-27	4	0.0025	0.0021	0.097	0.065	
	August	T- 1	4	0.0015	0.0010	0.045	0.036
		T- 2	4	0.0014	0.0012	0.050	0.035
T- 3		4	0.0015	0.0011	0.049	0.034	
T- 4		4	0.0016	0.0008	0.055	0.032	
T- 7		4	0.0015	0.0011	0.054	0.045	
T- 8		4	0.0017	0.0011	0.055	0.047	
T- 9		4	0.0018	0.0014	0.063	0.042	
T-10		4	0.0019	0.0011	0.061	0.030	
T-11		4	0.0017	0.0012	0.056	0.041	
T-12		4	0.0018	0.0010	0.060	0.040	
T-23		4	0.0012	<0.0004	0.043	0.004	
T-27		4	0.0019	0.0016	0.062	0.040	

Table 18. (continued)

Month	Location	Number of samples	Gross alpha (pCi/m ³)			Gross beta (pCi/m ³)			
			Average	Minimum	Maximum	Average	Minimum	Maximum	
September	T-1	5	0.0017	0.0011	0.0022	0.036	0.029	0.041	
	T-2	5	0.0013	0.0007	0.0017	0.027	0.022	0.033	
	T-3	5	0.0013	0.0007	0.0016	0.029	0.023	0.034	
	T-4	4	0.0013	0.0012	0.0014	0.033	0.028	0.038	
	T-7	5	0.0016	0.0011	0.0020	0.033	0.026	0.037	
	T-8	5	0.0014	0.0008	0.0018	0.031	0.027	0.038	
	T-9	5	0.0013	0.0008	0.0017	0.032	0.028	0.036	
	T-10	5	0.0014	0.0010	0.0017	0.032	0.025	0.036	
	T-11	5	0.0021	0.0007	0.0037	0.041	0.032	0.062	
	T-12	5	0.0020	0.0015	0.0024	0.038	0.028	0.052	
	T-23	5	0.0014	0.0010	0.0019	0.032	0.028	0.038	
	T-27	5	0.0013	0.0008	0.0015	0.031	0.027	0.036	
	October	T-1	4	0.0019	0.0010	0.0034	0.046	0.025	0.074
		T-2	4	0.0018	0.0013	0.0022	0.035	0.025	0.046
T-3		4	0.0018	0.0014	0.0024	0.049	0.034	0.067	
T-4		4	0.0017	0.0012	0.0020	0.042	0.030	0.058	
T-7		4	0.0020	0.0014	0.0025	0.039	0.031	0.047	
T-8		4	0.0018	0.0013	0.0022	0.041	0.030	0.058	
T-9		4	0.0025	0.0017	0.0045	0.049	0.030	0.077	
T-10		4	0.0018	0.0014	0.0025	0.042	0.029	0.062	
T-11		4	0.0024	0.0015	0.0035	0.055	0.030	0.083	
T-12		4	0.0018	0.0011	0.0032	0.038	0.027	0.055	
T-23		4	0.0017	0.0011	0.0021	0.040	0.028	0.054	
T-27	4	0.0018	0.0006	0.0038	0.042	0.027	0.075		

Table 18. (continued)

Month	Location of samples	Number of samples	Gross alpha (pCi/m ³)			Gross beta (pCi/m ³)			
			Average	Minimum	Maximum	Average	Minimum	Maximum	
November	T- 1	5	0.0028	0.0015	0.0054	0.063	0.041	0.106	
	T- 2	5	0.0025	<0.0009	0.0027	0.062	<0.003	0.076	
	T- 3	5	0.0031	0.0026	0.0037	0.061	0.049	0.079	
	T- 4	5	0.0018	0.0012	0.0022	0.044	0.040	0.049	
	T- 7	5	0.0022	0.0016	0.0030	0.049	0.041	0.066	
	T- 8	5	0.0013	0.0005	0.0018	0.035	0.024	0.043	
	T- 9	5	0.0023	0.0018	0.0026	0.055	0.043	0.074	
	T-10	5	0.0022	0.0018	0.0025	0.056	0.043	0.077	
	T-11	5	0.0025	0.0012	0.0049	0.060	0.049	0.091	
	T-12	5	0.0027	0.0017	0.0040	0.057	0.045	0.078	
	T-23	5	0.0020	0.0013	0.0027	0.049	0.038	0.065	
	T-27	5	0.0024	0.0019	0.0041	0.049	0.037	0.069	
	December	T- 1	4	0.0031	0.0019	0.0039	0.067	0.047	0.101
		T- 2	4	0.0024	0.0019	0.0030	0.049	0.039	0.068
T- 3		4	0.0028	0.0023	0.0039	0.062	0.050	0.075	
T- 4		4	0.0023	0.0018	0.0029	0.047	0.036	0.062	
T- 7		4	0.0024	0.0018	0.0027	0.054	0.041	0.062	
T- 8		4	0.0015	0.0013	0.0017	0.031	0.023	0.040	
T- 9		4	0.0024	0.0019	0.0028	0.057	0.045	0.073	
T-10		4	0.0025	0.0018	0.0030	0.055	0.041	0.068	
T-11		4	0.0030	<0.0003	0.0033	0.061	0.047	0.089	
T-12		4	0.0027	0.0022	0.0031	0.052	0.033	0.064	
T-23		4	0.0017	0.0012	0.0022	0.041	0.036	0.048	
T-27		4	0.0025	0.0014	0.0041	0.045	0.026	0.065	

Table 19. Airborne particulates, analyses for ^{89}Sr , ^{90}Sr , and gamma-emitting isotopes; quarterly composites of weekly samples from indicator and background monitoring locations.

Location	Collection Period	Air Volume (M ³)	pCi/m ³				
			^{90}Sr	^{89}Sr	^{144}Ce	^{141}Ce	^7Be
Indicator	July-September	19934	0.0004+0.0001	0.0005+0.0005	0.008+0.001	<0.001	0.122+0.006
	October-December	19442	0.0002+0.0001	<0.0001	0.002+0.001	0.001+0.001	0.128+0.003
Background	July-September	19243	0.0004+0.0001	0.0009+0.0005	0.009+0.002	<0.002	0.129+0.010
	October-December	18691	0.0002+0.0001	<0.0001	0.002+0.001	<0.001	0.135+0.005

Location	Collection Period	Air Volume (M ³)	pCi/m ³				
			^{103}Ru	^{106}Ru	^{137}Cs	^{95}Zr	^{95}Nb
Indicator	July-September	19934	<0.001	0.004+0.001	0.0013+0.0002	0.001+0.001	0.002+0.001
	October-December	19442	<0.001	0.001+0.001	0.0004+0.0001	0.001+0.001	0.001+0.001
Background	July-September	19243	<0.001	0.005+0.002	0.0011+0.0003	0.002+0.001	0.002+0.001
	October-December	18691	<0.001	0.001+0.001	0.0005+0.0001	0.001+0.001	0.001+0.001

Count rate, counts/1000 min.

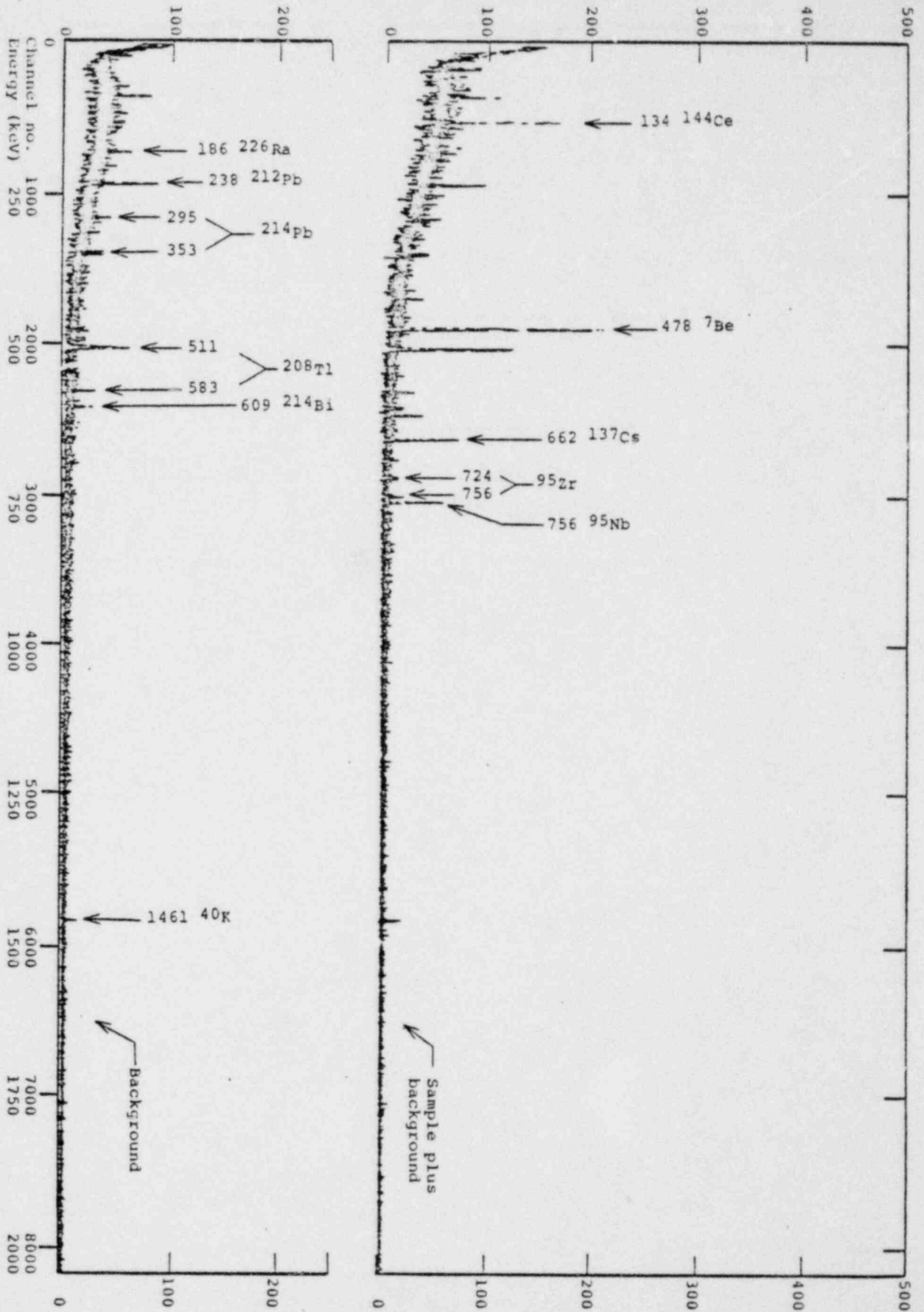


Figure 15. Gamma-ray spectrum of air particulates, 30-2048 keV. Detector: Ge(Li), 86.8 cm³ closed end coaxial. Sample: air particulate filters composite of all indicator locations, 19934 m³ of air collected 1 July through 29 September 1975. Counts: 1000 min. on 13 November 1975, Davis-Besse NPP.

Table 20. Area monitors - TLD (mrem), monthly, July - December 1975.

Location	July 35 days	August 29 days	September 34 days	Total for July-September 98 days	July-September adjusted to 91 days
T- 1	5.2+0.5	2.6+1.4	3.5+0.9	11.3+1.7	10.5+1.6
T- 2	3.3+0.7	3.2+1.3	3.8+0.8	10.3+1.7	9.6+1.6
T- 3	3.6+0.7	3.4+1.1	4.1+0.5	11.1+1.4	10.3+1.3
T- 4	5.5+0.9	3.8+0.8	6.4+0.8	15.7+1.4	14.6+1.3
T- 5	5.3+0.8	4.3+1.1	6.6+1.1	16.2+1.7	15.0+1.6
T- 6	4.5+0.7	4.0+1.2	4.9+0.6	13.4+1.5	12.4+1.4
T- 7	4.1+0.9	2.8+1.5	5.3+0.9	12.2+2.0	11.3+1.8
T- 8	6.1+0.9	4.6+1.2	6.4+1.3	17.1+2.0	15.9+1.8
T- 9	3.6+0.9	2.5+1.5	4.5+0.7	10.6+1.9	9.8+1.7
T-10	5.4+0.8	4.6+1.2	5.6+0.8	15.6+1.6	14.5+1.5
T-11	4.4+0.8	3.3+1.3	5.3+0.7	13.0+1.7	12.1+1.6
T-12	5.7+1.0	3.4+0.9	5.9+1.1	15.0+1.7	13.9+1.6
T-14	6.0+0.7	4.3+1.1	6.7+1.3	17.0+1.7	15.8+1.6
T-15	5.4+1.0	4.5+1.1	5.7+0.9	15.6+1.7	14.5+1.6
T-23	4.3+0.8	2.9+1.5	5.6+0.8	12.8+1.9	11.9+1.7
T-24	6.4+0.9	5.3+0.8	6.5+1.1	18.2+1.6	16.9+1.5
T-26	6.4+1.1	4.6+0.9	5.9+0.9	16.9+1.7	15.7+1.6
T-27	5.1+0.8	4.0+0.9	5.8+1.1	14.9+1.6	13.8+1.5
Mean \pm SD ^a	5.0+1.0	3.8+0.8	5.5+1.0	14.2+2.5	13.3+2.3

Table 20. (continued)

Location	October 28 days	November 30 days	December 35 days	October-December 93 days	October-December adjusted to 91 days
T- 1	2.5+0.7	2.6+0.6	3.0+1.4	8.1+1.6	7.9+1.6
T- 2	2.8+0.8	2.9+0.7	3.4+1.1	9.1+1.5	8.9+1.5
T- 3	2.5+0.6	2.9+0.8	2.9+0.8	8.3+1.3	8.1+1.3
T- 4	3.9+0.7	3.9+0.8	4.8+1.6	12.6+1.9	12.3+1.9
T- 5	4.2+0.7	4.6+0.9	6.3+2.1	15.1+2.4	14.8+2.4
T- 6	3.3+0.5	3.5+0.7	4.0+1.4	10.8+1.6	10.6+1.6
T- 7	3.2+0.9	3.5+0.7	5.3+2.1	12.0+2.4	11.7+2.4
T- 8	4.6+0.8	5.1+0.9	5.5+2.1	15.2+2.4	14.9+2.4
T- 9	2.7+0.5	3.2+0.7	4.6+1.6	10.5+1.8	10.3+1.8
T-10	4.0+0.7	4.1+0.5	6.0+1.8	14.1+2.0	13.8+2.0
T-11	4.0+0.8	3.5+0.6	4.6+1.3	12.1+1.6	11.8+1.6
T-12	4.9+0.6	4.7+1.0	5.9+2.3	15.5+2.6	15.2+2.6
T-14	5.0+0.9	4.4+1.1	6.3+2.3	15.7+2.7	15.4+2.7
T-15	4.4+0.8	4.2+0.9	6.1+2.1	14.7+2.4	14.4+2.4
T-23	3.8+0.6	3.7+0.9	4.5+1.8	12.0+2.1	11.7+2.1
T-24	5.2+1.1	5.0+1.1	6.4+2.0	16.6+2.5	16.2+2.5
T-26	4.8+1.1	4.9+1.0	NS ^b	9.7+1.5 ^c	15.2+2.4
T-27	4.4+0.7	4.4+1.0	6.0+1.8	15.3+2.2	14.9+2.2
Mean + SD	3.9+0.9	4.0+0.8	5.0+1.2	12.8+2.8	12.7+2.7

a S.D. = Standard deviation.
 b N.S. = No sample. TLD's were lost in transit.
 c 58 days not included in the mean.

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Table 21. Area monitors-TLD (mrem), quarterly, July - December 1975.

Location	3rd quarter July-September 99 Days	3rd quarter adjusted to 91 Days	4th quarter October-December 91 Days
T- 1	11.0+1.7	10.1+1.6	8.5+1.5
T- 2	10.1+2.0	9.3+1.8	8.9+1.7
T- 3	10.0+1.5	9.2+1.4	8.5+1.6
T- 4	14.2+2.1	13.1+1.9	13.4+1.8
T- 5	16.3+2.5	15.0+2.3	14.0+2.2
T- 6	13.2+1.4	12.1+1.3	11.2+1.3
T- 7	13.0+2.2	11.9+2.0	11.2+1.8
T- 8	15.9+2.4	14.6+2.2	15.4+2.3
T- 9	10.6+1.9	9.7+1.7	9.1+1.9
T-10	15.1+2.4	13.9+2.2	13.7+1.9
T-11	14.1+1.9	13.0+1.7	11.7+2.0
T-12	16.6+1.7	15.3+1.6	15.5+2.1
T-14	17.1+2.1	15.7+1.9	15.6+2.1
T-15	16.2+2.3	14.9+2.1	14.9+1.6
T-23	11.6+2.1	10.7+1.9	10.4+1.6
T-24	16.9+2.6	15.5+2.4	15.9+2.1
T-26	16.8+2.1	15.4+1.9	N.S. ^b
T-27	14.8+2.4	13.6+2.2	14.1+1.7
Mean + S.D. ^a	14.1+2.5	12.9+2.3	12.5+2.7

^a S.D. - Standard deviation.

^b N.S. - No sample. TLD's were lost in transit.

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Table 22. Monthly precipitation samples, analyses for gross beta and tritium, July - December 1975, Davis-Besse NPS.

Location	Date Collected	Gross beta ^a		Tritium ^a	
		pCi/l	pCi/m ²	pCi/ml	
T-1 (site boundary 0.6 mi NE of plant, near inlet canal)	July	9.9 +0.7	306+ 23	0.23+0.07	
	August	1.9 +0.3	115+ 17	0.12+0.07	
	September	8.8 +0.6	311+ 23	0.18+0.07	
	Mean ± S.D. ^b	6.9 +4.3	244+112	0.18+0.06	
	October	1.6 +0.3	82+ 18	0.23+0.09	
	November	42.1 +1.7	742+ 30	<0.1	
	December	10.6 +0.5	622+ 27	<0.1	
	Mean ± S.D.	18.1 +21.3	482+352	0.23+0.09	
	T-23 (Put-In-Bay, 14.3 mi ENE of station)	July	11.8 +3.1	57+ 15	0.19+0.07
		August	4.4 +0.2	427+ 24	0.14+0.07
September		11.1 +1.1	193+ 17	0.23+0.07	
Mean ± S.D.		9.1 +4.1	226+187	0.19+0.05	
October		12.1 +1.1	296+ 28	0.25+0.09	
November		25.8 +1.4	432+ 23	<0.1	
December		9.1 +0.4	659+ 28	<0.1	
Mean ± S.D.		15.7 +8.9	462+183	0.25+0.09	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

^b S.D. = Standard deviation.

Table 23. Well water samples, analyses for gross alpha, gross beta, and tritium, July - December 1975.

Location	Date Collected	Gross alpha (pCi/l) ^a			Gross beta (pCi/l) ^a			Tritium pCi/ml
		Suspended Solids	Dissolved Solids	Total Residue	Suspended Solids	Dissolved Solids	Total Residue	
T-7 (Sand beach, 0.9 mi NNW of station)	10-02-75	<0.1	1.18±0.74	1.18±0.74	<0.2	3.73±0.54	3.73±0.54	0.14±0.09
	11-10-75	<0.1	<0.2	<0.3	0.23±0.20	4.15±0.54	4.38±0.58	0.28±0.10
T-17 (Irv Fick's well 0.7 mi SW of station)	10-02-75	<0.1	1.41±0.86	1.41±0.86	0.48±0.20	2.71±0.82	3.19±0.84	0.12±0.08
	11-10-75	<0.1	<0.2	<0.3	<0.2	2.62±0.72	2.62±0.72	0.27±0.10
T-18 (Hess Sunoco Garage 1.3 mi S of station, State Route 2)	10-02-75	<0.1	<4 ^b	<4 ^b	<0.2	3.84±2.04	3.84±2.04	0.09±0.08
	11-10-75	<0.1	<0.2	<0.3	0.21±0.20	3.18±2.04	3.39±2.05	<0.1
T-27 (McGee Marsh, 5.3 mi WNW of station)	10-02-75	<0.1	<4 ^b	<4 ^b	<0.2	2.86±2.47	2.86±2.47	<0.1
	11-10-75	<0.1	<0.2	<0.3	0.23±0.20	2.07±1.91	2.30±1.96	<0.1

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

^b Sample was analyzed for Ra-226 activity, which was <0.5 pCi/l.

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Table 24. Well water samples, analyses for ^{90}Sr and gamma-emitting isotopes, July - December 1975.

Location	Date Collected	pCi/l ^a	
		^{90}Sr	^{137}Cs
T-7 (Sand Beach, 0.9 mi. NNW of plant)	10-02-75	0.75±0.23	<3.7
	11-10-75	1.11±0.31	<3.7
T-17 (Irv Fick's well, 0.7 mi. SW of plant)	10-02-75	<0.5	<3.7
	11-10-75	<0.5	<3.7
T-18 (Hess' Sunoco Garage 1.3 mi. S of plant, State Route 2)	10-02-75	<0.5	<3.7
	11-10-75	<0.5	<3.7
T-27 (McGee Marsh, 5.3 mi. WNW of plant)	10-02-75	<0.5	<3.7
	11-10-75	<0.5	<3.7

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

Count rate, counts/1000 min.

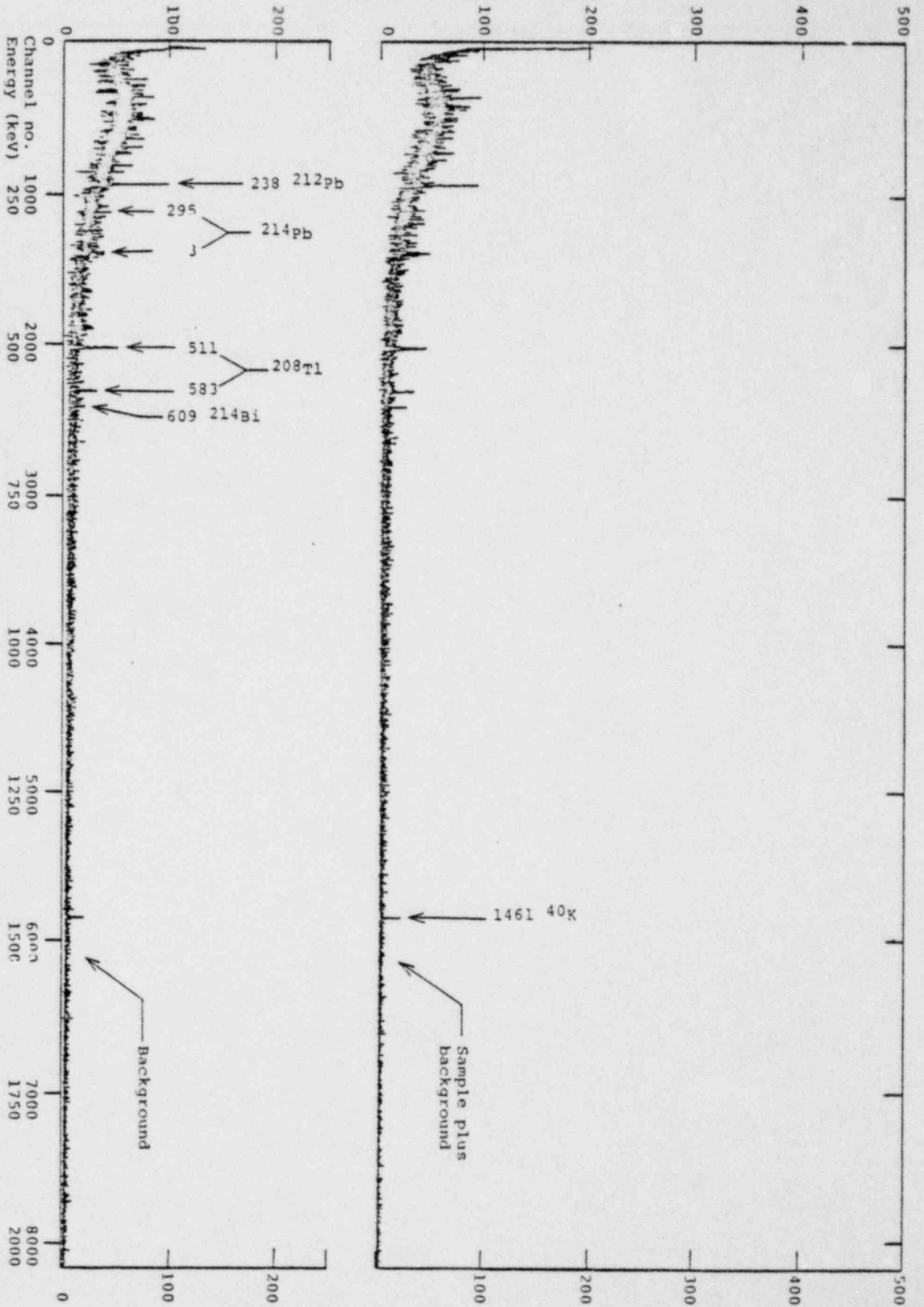


Figure 16.

Gamma-ray spectrum of well water, 0.2560 keV. Detector: 10 cm x 10 cm NaI(Tl), Sample: 3.5 l of well water, collected 2 October 1975 at Fick's well, onsite (T-17, 0.7 mi. SW of plant) Counts: 1000 min. on 9 October 1975, Davis-Besse NPP.

Table 25. Milk samples, analyses for gross beta, ^{89}Sr , ^{90}Sr , and gamma-emitting isotopes, July - December 1975.

Location	Date Collected	Gross beta	^{89}Sr	pCi/l ^a				
				^{90}Sr	^{131}Ib	^{140}Ba	^{137}Cs	^{40}K
T-8 (Earl Moore Farm, 2.7 mi. WSW of plant)	6-28-75	1078+25	<0.5	2.58+0.56	<0.5	<3.7	6.86+1.61	1351+20
	8-05-75	921+41	<0.5	2.36+0.55	<0.5	<3.7	8.10+1.33	1098+18
	9-02-75	1033+43	<0.5	2.53+0.50	<0.5	<3.7	6.44+1.07	1242+19
	Mean + SD	1011+81	<0.5	2.49+0.12	<0.5	<3.7	7.13+0.86	1230+127
	10-06-75	1083+43	<0.5	3.65+0.49	<0.5	<3.7	7.65+1.36	1218+19
	11-03-75	1190+31	<0.5	2.30+0.56	<0.5	<3.7	5.89+2.34	1215+33
	12-01-75	1060+25	<0.5	3.01+0.57	<0.5	<3.7	7.92+2.4	1247+34
	Mean + SD	1081+20	<0.5	2.99+0.68	<0.5	<3.7	7.15+1.10	1227+18
	6-28-75	1056+43	<0.5	4.24+0.57	<3.2	<3.7	6.56+2.51	1292+35
	8-05-75	921+41	<0.5	6.79+1.10	<3.2	<3.7	6.41+2.33	1258+33
T-12 (Toledo Dairy, 23.5 mi. WNW of plant)	9-02-75	999+42	<0.5	2.57+0.35	<3.2	<3.7	6.33+1.33	1131+18
	Mean + SD	992+68	<0.5	4.52+2.11	<3.2	<3.7	6.51+0.16	1227+85
	10-01-75	969+45	<0.5	3.18+0.57	<3.2	<3.7	6.56+1.34	1150+18
	11-03-75	1056+31	<0.5	3.32+0.56	<3.2	<3.7	3.42+2.30	1172+33
	11-26-75	949+29	<0.5	3.97+0.71	<3.2	<3.7	7.26+1.34	1312+20
	Mean + SD	825+313	<0.5	3.49+0.42	<3.2	<3.7	5.75+2.05	1211+88

Table 25. (continued)

Location	Date Collected	pCi/I ^a							
		Gross beta	⁸⁹ Sr	⁹⁰ Sr	¹³¹ I ^b	¹⁴⁰ Ba	¹³⁷ Cs	⁴⁰ K	
T-20 (Daup Farm, 5.4 mi. SSE of plant)	6-28-75	869+ 23	<0.5	1.95+0.47	<0.5	<3.7	6.05+2.51	1294+ 35	
	8-05-75	996+ 24	<0.5	1.27+0.43	<0.5	<3.7	7.20+1.29	1131+ 18	
	9-02-75	986+ 42	<0.5	1.69+0.43	<0.5	<3.7	5.86+1.67	1137+ 23	
	Mean + SD	950+ 71	<0.5	1.64+0.34	<0.5	<3.7	6.37+0.73	1187+ 92	
	10-06-75	1102+ 44	<0.5	0.97+0.47	<0.5	<3.7	3.77+2.32	1228+ 33	
	11-03-75	915+ 29	<0.5	0.96+0.35	<0.5	<3.7	5.71+2.34	1236+ 34	
	12-01-75	1014+ 25	<0.5	1.55+0.46	<0.5	<3.7	4.61+1.32	1232+ 19	
	Mean + SD	1010+ 94	<0.5	1.16+0.34	<0.5	<3.7	3.70+2.59	1232+ 4	
	T-21 (Haynes Farm, 3.6 mi. SE of plant)	6-28-75	760+ 21	<0.5	2.50+0.56	<3.2	<3.7	7.40+1.61	1331+ 21
		8-05-75	935+ 41	<0.5	3.39+0.89	<3.2	<3.7	3.30+1.27	1117+ 18
9-02-75		NS ^c	NS ^c	NS ^c	NS ^c	NS ^c	NS ^c	NS ^c	
Mean + SD		848+124	0.5	2.95+0.63	3.2	3.7	5.35+2.90	1224+151	
T-24 (Toft's Dairy in Sandusky, 24.9 mi. SE of plant)	6-28-75	871+23	<0.5	3.67+0.59	<0.5	<3.7	5.75+1.24	1309+35	
	8-05-75	970+42	<0.5	6.83+1.01	<0.5	<3.7	6.01+1.29	1169+18	
	9-02-75	827+38	<0.5	3.51+0.60	<0.5	<3.7	5.90+1.33	1155+18	
	Mean + SD	889+73	<0.5	4.67+1.87	<0.5	<3.7	5.89+0.13	1211+85	
	10-06-75	783+38	<0.5	2.40+0.53	<0.5	<3.7	7.83+2.37	1243+34	
	11-03-75	876+28	<0.5	3.55+0.55	<0.5	<3.7	4.33+2.30	1142+33	
	12-01-75	871+23	<0.5	3.17+0.62	<0.5	<3.7	2.95+1.32	1279+19	
	Mean + SD	843+52	<0.5	3.04+0.59	<0.5	<3.7	5.04+2.52	1221+71	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

^b Iodine-131 values were obtained by chemical separation.

^c NS - No samp. received.

Table 26. Milk samples, analyses for calcium, stable potassium, and ratios of $pCi^{90}Sr/gCa$ and $pCi^{137}Cs/gK$, July - December 1975.

Location	Date Collected	Calcium g/l	Potassium g/l	$pCi^{90}Sr/gCa$	$pCi^{137}Cs/gK$
T-8 (Farl Moore Farm, 2.7 mi. WSW of plant)	6-28-75	1.21	1.58+0.03	2.13	4.34
	8-05-75	1.05	1.28+0.03	2.25	6.32
	9-02-75	1.09	1.45+0.03	2.32	4.44
	10-06-75	1.11	1.43+0.02	3.29	5.34
	11-03-75	1.15	1.42+0.04	2.00	4.15
	12-01-75	1.05	1.39+0.04	2.17	5.70
T-12 (Toledo Dairy, 23.5 mi. WSW of plant)	6-28-75	1.00	1.51+0.04	4.24	4.34
	8-05-75	1.11	1.47+0.04	6.12	4.52
	9-02-75	1.16	1.32+0.03	2.22	4.79
	10-01-75	1.08	1.45+0.04	2.94	4.52
	11-03-75	1.01	1.35+0.02	3.29	2.53
	11-26-75	1.06	1.27+0.02	3.75	5.72
T-20 (Daup Farm, 5.4 mi. SSE of plant)	6-28-75	1.10	1.52+0.04	1.77	3.98
	8-05-75	1.09	1.32+0.02	1.17	5.45
	9-02-75	1.19	1.33+0.03	1.42	4.41
	10-06-75	1.05	1.44+0.04	0.92	2.62
	11-03-75	1.05	1.45+0.04	0.91	3.94
	12-01-75	1.03	1.15+0.02	1.50	4.01

Table 26. (continued)

Location	Date Collected	Calcium g/l	Potassium g/l	pCi ⁹⁰ Sr/gCa	pCi ¹³⁷ Cs/gK
T-21 (Haynes Farm, 3.5 mi. SE of plant)	6-28-75	1.11	1.56+0.02	2.25	4.84
	8-05-75	1.06	1.31+0.02	2.59	2.52
	9-02-75	NS ^b	NS	NS	NS
	10-06-75	NS	NS	NS	NS
	11-03-75	NS	NS	NS	NS
	12-01-75	NS	NS	NS	NS
T-24 (Toft's Dairy in Sandusky, 24.9 mi. SE of plant)	6-28-75	1.13	1.53+0.04	3.25	3.76
	8-05-75	1.14	1.36+0.02	5.99	4.42
	9-02-75	1.21	1.35+0.02	2.90	4.37
	10-06-75	1.11	1.46+0.04	2.16	5.36
	11-03-75	1.07	1.44+0.04	3.32	3.01
	12-01-75	1.07	1.50+0.02	2.96	3.36

^a SD = Standard deviation.
^b NS = No sample received.

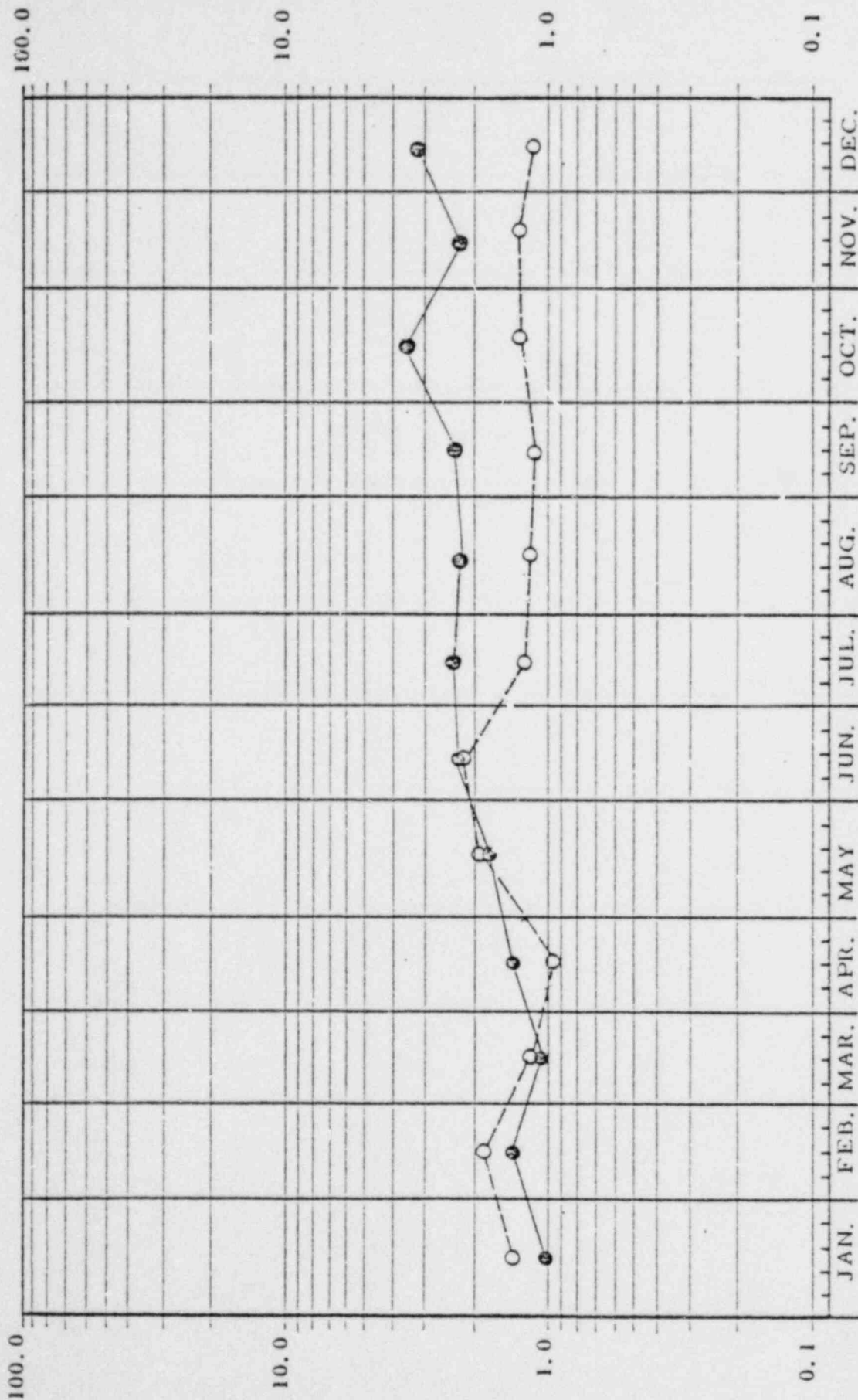
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Table 27. Milk samples collected weekly at Location T-8 (Earl Moore Farm, 3.2 mi WSW of plant); analyses for I-131.

Date Collected	I-131 pCi/l ^a
7-07-75	<0.5
7-14-75	<0.5
7-21-75	<0.5
7-28-75	NA ^b
8-05-75	<0.5
8-11-75	<0.5
8-18-75	<0.5
8-26-75	<0.5
9-02-75	<0.5
9-08-75	<0.5
9-14-75	NS ^c
9-22-75	<0.5
9-29-75	<0.5
10-06-75	<0.5
10-13-75	<0.5
10-20-75	<0.5
10-27-75	<0.5

- ^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.
- ^b NA - Not analyzed, milk was spoiled when received.
- ^c NS - No sample received.

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○---○ 1974 ●---● 1975

Figure 17. Milk samples, analyses for ⁹⁰Sr, collected from Earl Moore Farm (T-8, 3.2 miles WSW of plant), Davis-Besse NPP. The data are from Table 25.

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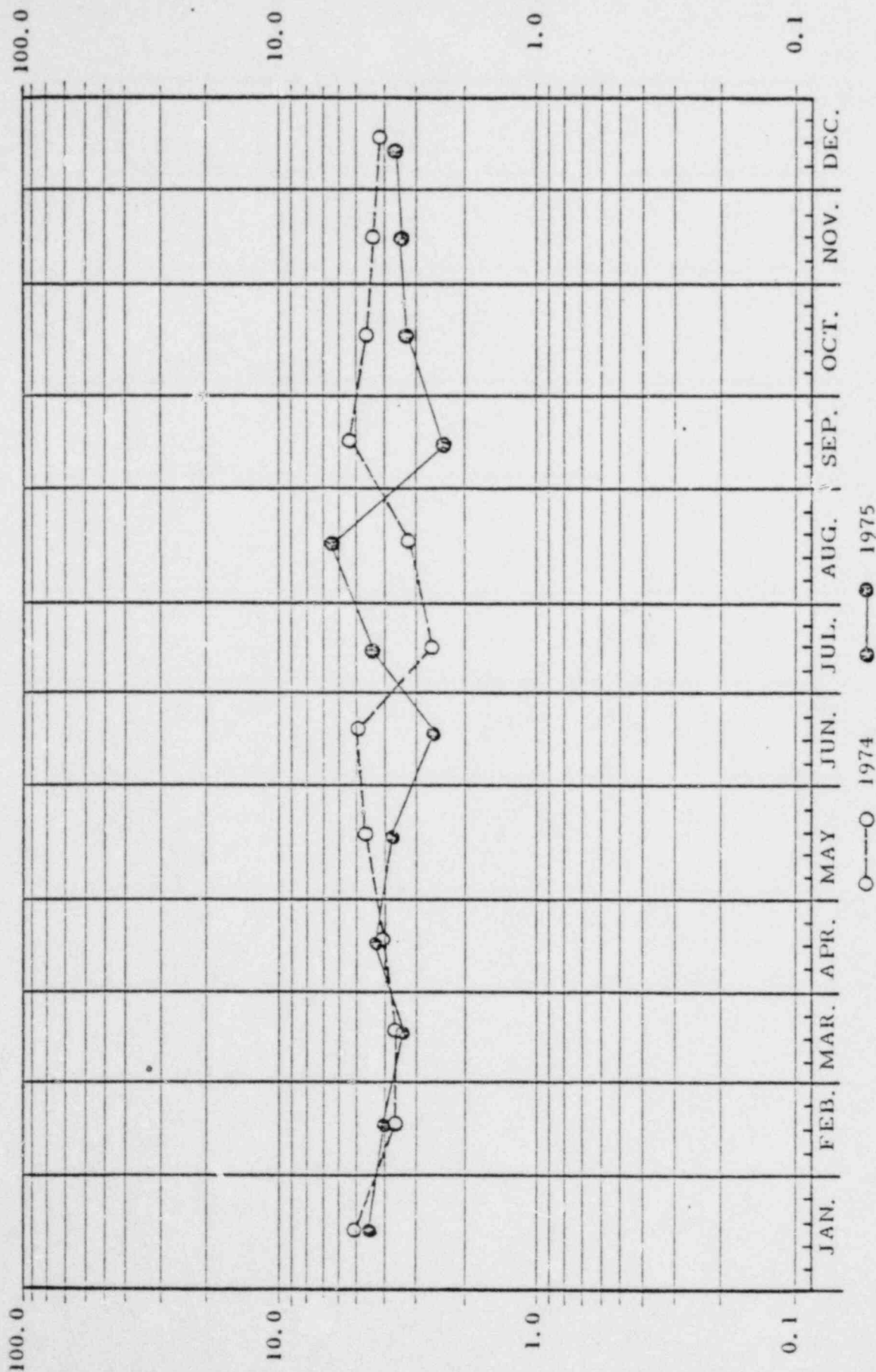
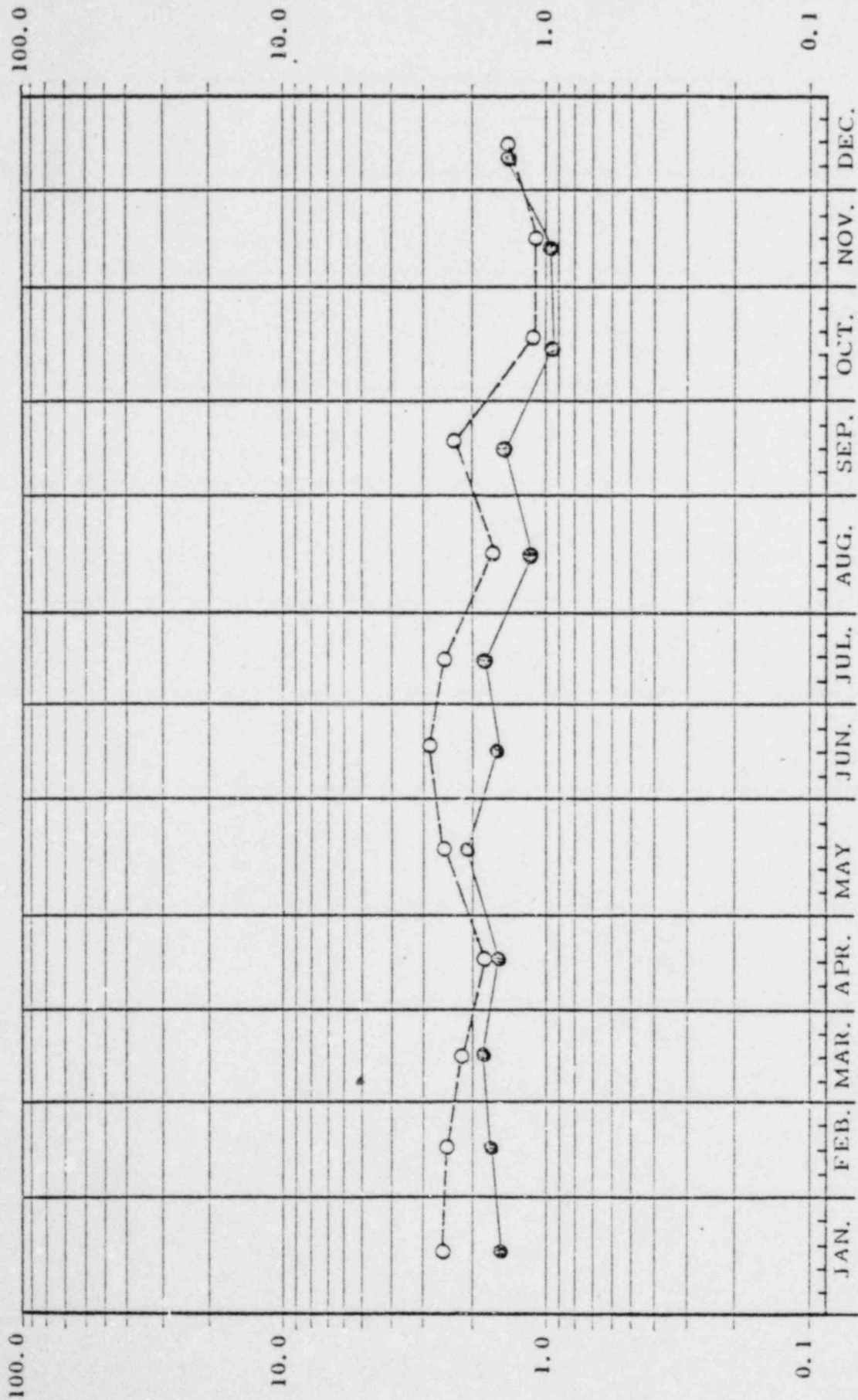


Figure 18. Milk samples, analyses for ⁹⁰Sr, collected from a Toledo Dairy (T-12, 23.5 miles WNW of plant), Davis-Besse NPP. The data are from Table 25.

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○---○ 1974 ●---● 1975

Figure 19. Milk samples, analyses for ⁹⁰Sr, collected from Daup Farm (T-20, 5.4 miles SSE of plant), Davis-Besse NPP. The data are from Table 25.

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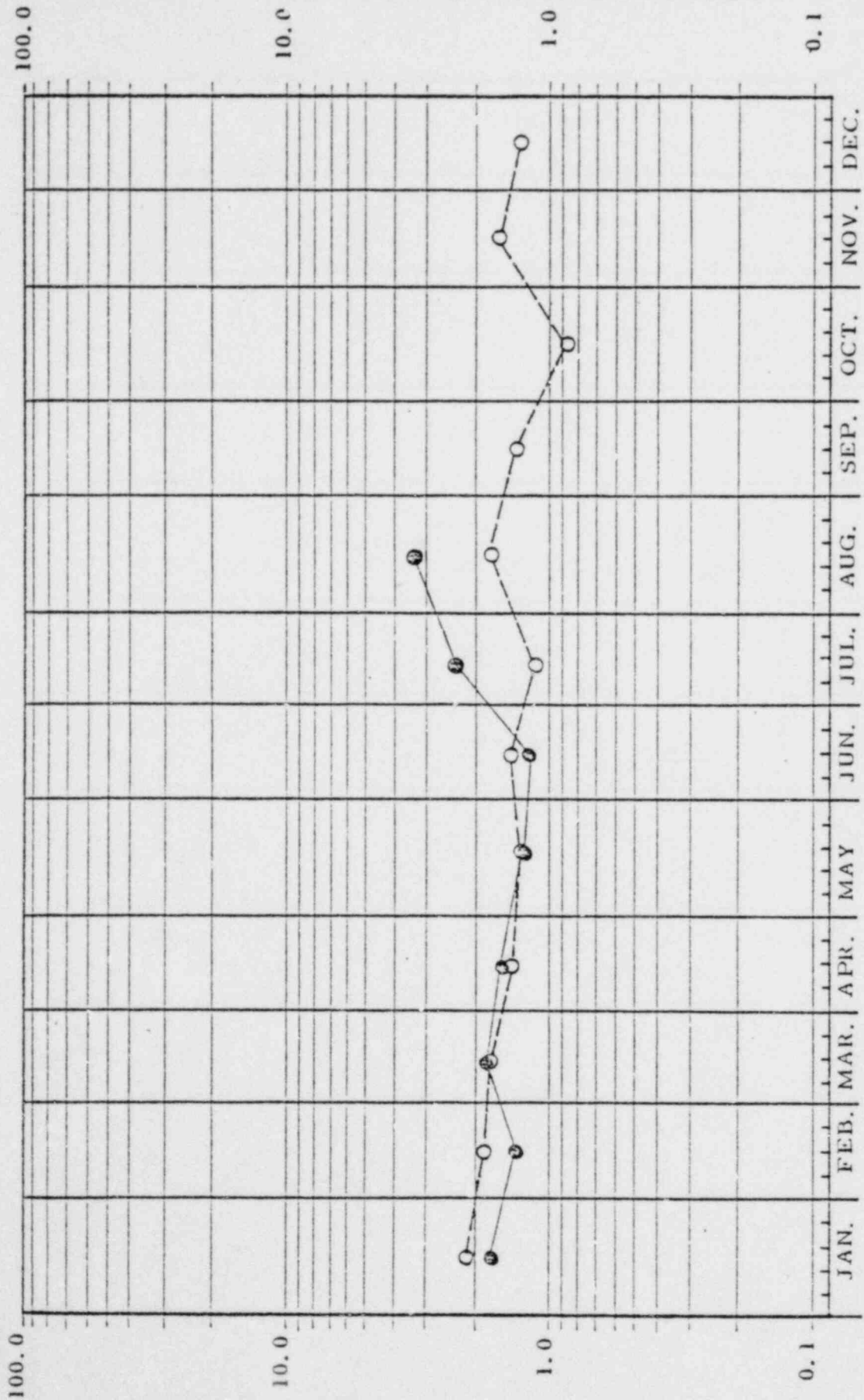


Figure 20. Milk samples, analyses for ^{90}Sr , collected from Haynes Farm (T-21, 3.6 miles SE of plant), Davis-Besse NPP. The data are from Table 25.

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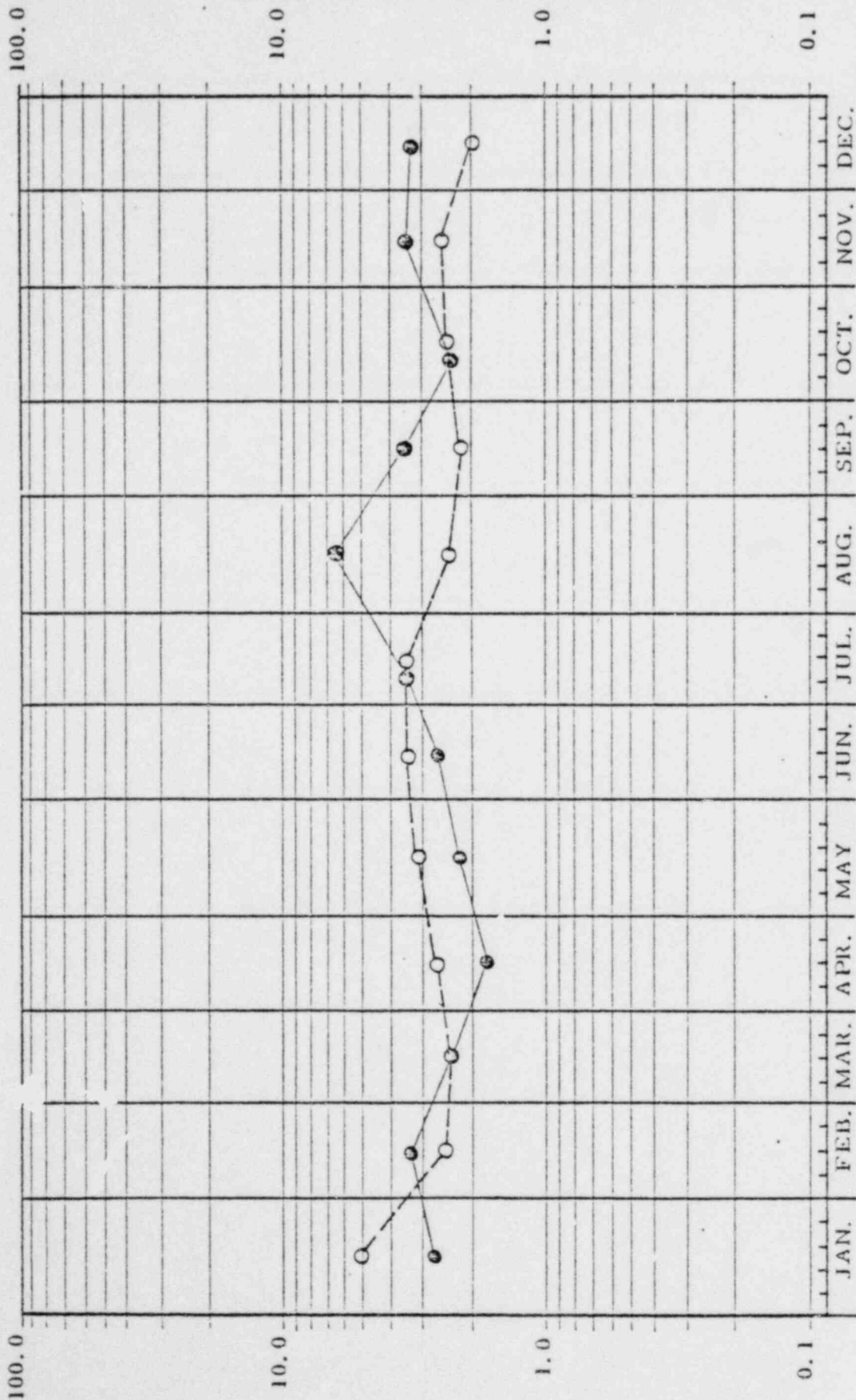


Figure 21. Milk samples, analyses for ⁹⁰Sr, collected from Toff's Dairy in Sandusky (T-24, 24.9 miles SE of plant), Davis-Besse NPP. The data are from Table 25.

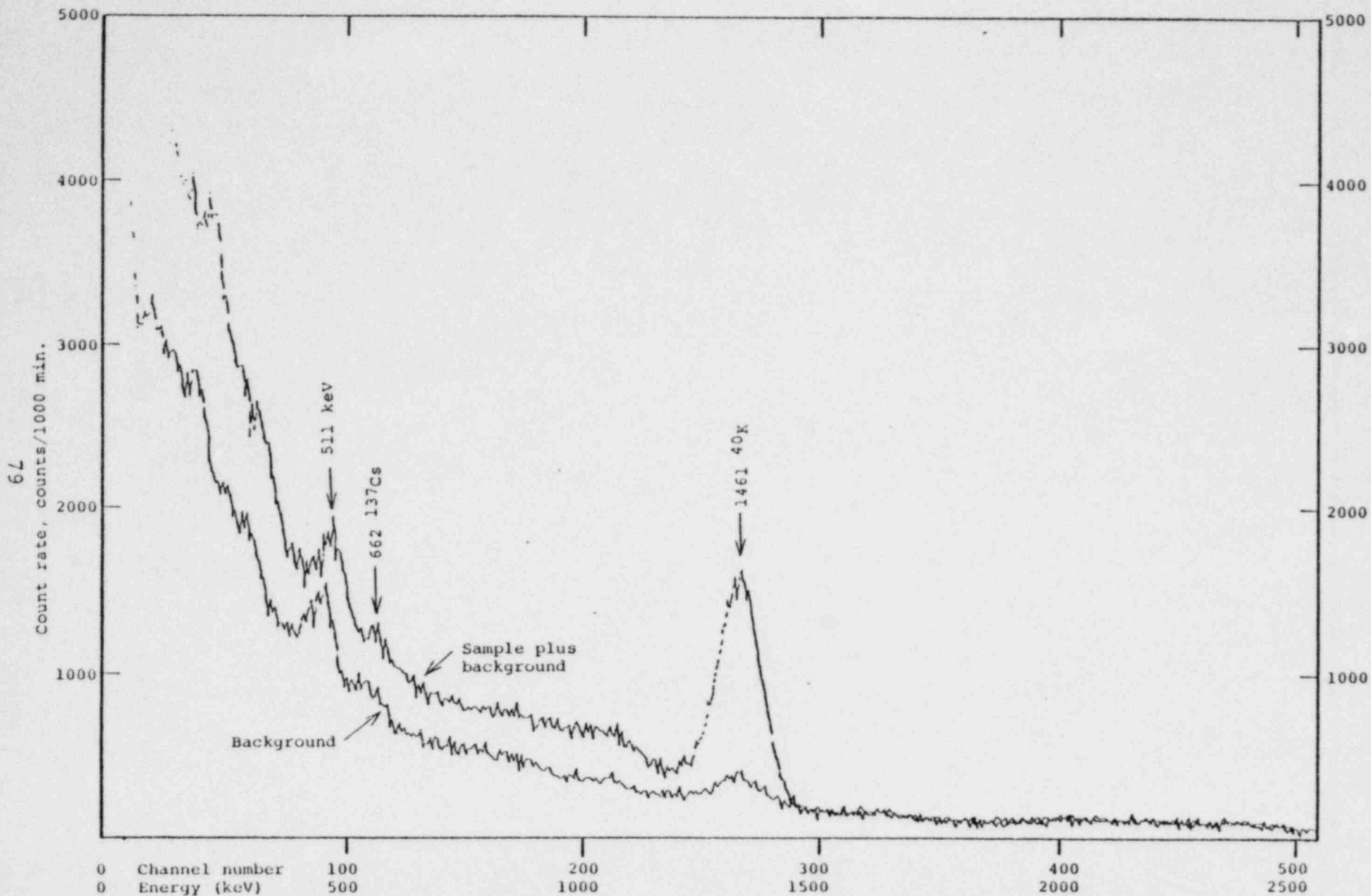


Figure 22. Gamma-ray spectrum of milk, 0-2560 keV. Detector: 10cm x 10cm NaI(Tl), Sample: 3.5 l of milk, collected 3 November 1975 from Toledo (T-12, 23.5 mi. WNW of plant). Counts: 1000 min. on 4 December 1975, Davis-Besse NPP.

Table 28. Fruit and vegetable samples, analyses for gross alpha, gross beta, ⁹⁰Sr, and gamma-emitting isotopes, July - December 1975.

Location	Date Collected	Sample Type	Weight (g)	pCi/g ^a					
				Gross alpha	Gross beta	Sr-90	I-131	Cs-137	K-40
T-8 (Moore Farm, 2.7 mi WSW of plant)	9-09-75	Squash	Wet 1420	<0.03	2.87±0.11	0.001±0.001	<0.01	0.003±0.003	3.8±0.1
			Dry 106	<0.4	38.4 ±1.4	0.02 ±0.01	<0.1	0.042±0.040	51.0±0.9
			Ash 11.46	<4	355 ±13	0.16 ±0.12	<1	0.39 ±0.37	472 ±8
T-8	9-09-75	Pears	Wet 4446	<0.01	0.99±0.03	0.001±0.001	<0.01	<0.002	1.3±0.1
			Dry 541	<0.1	8.1 ±0.3	0.01 ±0.01	<0.1	<0.02	8.2±0.3
			Ash 13.70	<4	322 ±11	0.45 ±0.18	<3	<0.6	324 ±12
T-8	9-09-75	Plums	Wet 4107	<0.02	1.43±0.04	<0.001	<0.01	<0.004	1.5±0.1
			Dry 541	<0.1	10.9 ±0.3	<0.005	<0.1	<0.03	11.2±0.7
			Ash 17.13	<4	343 ±10	<0.1	<2	<0.2	354 ±22
T-19 (Miller Farm, 3.7 mi S of plant)	9-09-75	Tomatoes	Wet 9630	<0.02	2.06±0.05	0.001±0.001	<0.01	<0.002	2.4±0.1
			Dry 517	<0.5	38.4 ±0.94	0.024±0.012	<0.2	<0.04	44.0±1.6
			Ash 58.19	<4	341 ±8	0.21 ±0.11	<2	<0.4	391 ±14
T-19	9-09-75	Plums	Wet 5609	<0.02	1.49±0.04	<0.001	<0.01	0.005±0.002	1.6±0.1
			Dry 597	<0.2	14.2 ±0.4	<0.008	<0.2	0.044±0.015	15.1±0.5
			Ash 31.62	<4	269 ±8	<0.2	<2	0.82 ±0.28	285 ±9
T-19	9-09-75	Melons	Wet 3256	<0.02	2.12±0.06	<0.001	<0.01	<0.005	2.8±0.1
			Dry 168	<0.5	41.1 ±1.1	<0.02	<0.2	<0.09	54.7±2.4
			Ash 19.25	<4	359 ±9	<0.2	<2	<0.8	477 ±21
T-25 (Winter Farm, 1.3 mi S of plant)	9-09-75	Tomatoes	Wet 3492	<0.02	1.71±0.06	<0.001	<0.01	<0.005	2.6±0.1
			Dry 169	<0.4	35.3 ±1.2	<0.02	<0.2	<0.1	54.4±2.8
			Ash 18.19	<4	329 ±11	<0.1	<2	<0.9	501 ±19
T-25	9-09-75	Apples	Wet 8160	<0.01	0.77±0.03	0.001±0.001	<0.01	0.007±0.003	0.9±0.1
			Dry 908	<0.1	6.9 ±0.3	0.01 ±0.01	<0.1	0.061±0.027	8.2±0.8
			Ash 20.57	<4	306 ±12	0.38 ±0.19	<3	2.69 ±1.12	362 ±35
T-25	9-09-75	Peaches	Wet 5277	<0.01	1.47±0.05	0.001±0.001	<0.01	0.001±0.001	1.3±0.1
			Dry 308	<0.1	25.1 ±0.8	0.02 ±0.01	<0.2	0.016±0.015	27.4±0.6
			Ash 9.92	<2	332 ±11	0.30 ±0.16	<3	0.50 ±0.47	692 ±17
T-16 (Put-In-Bay Winery, 15.3 mi. ENE of plant)	11-24-75	Grape juice	Wet 3500	0.2±0.2	0.90±0.04	0.61 ±0.09	<3.2	0.009±0.001	0.77±0.01

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample. Gamma-spectral analyses showed that all other gamma-emitting isotopes were less than the minimum detectable limits.

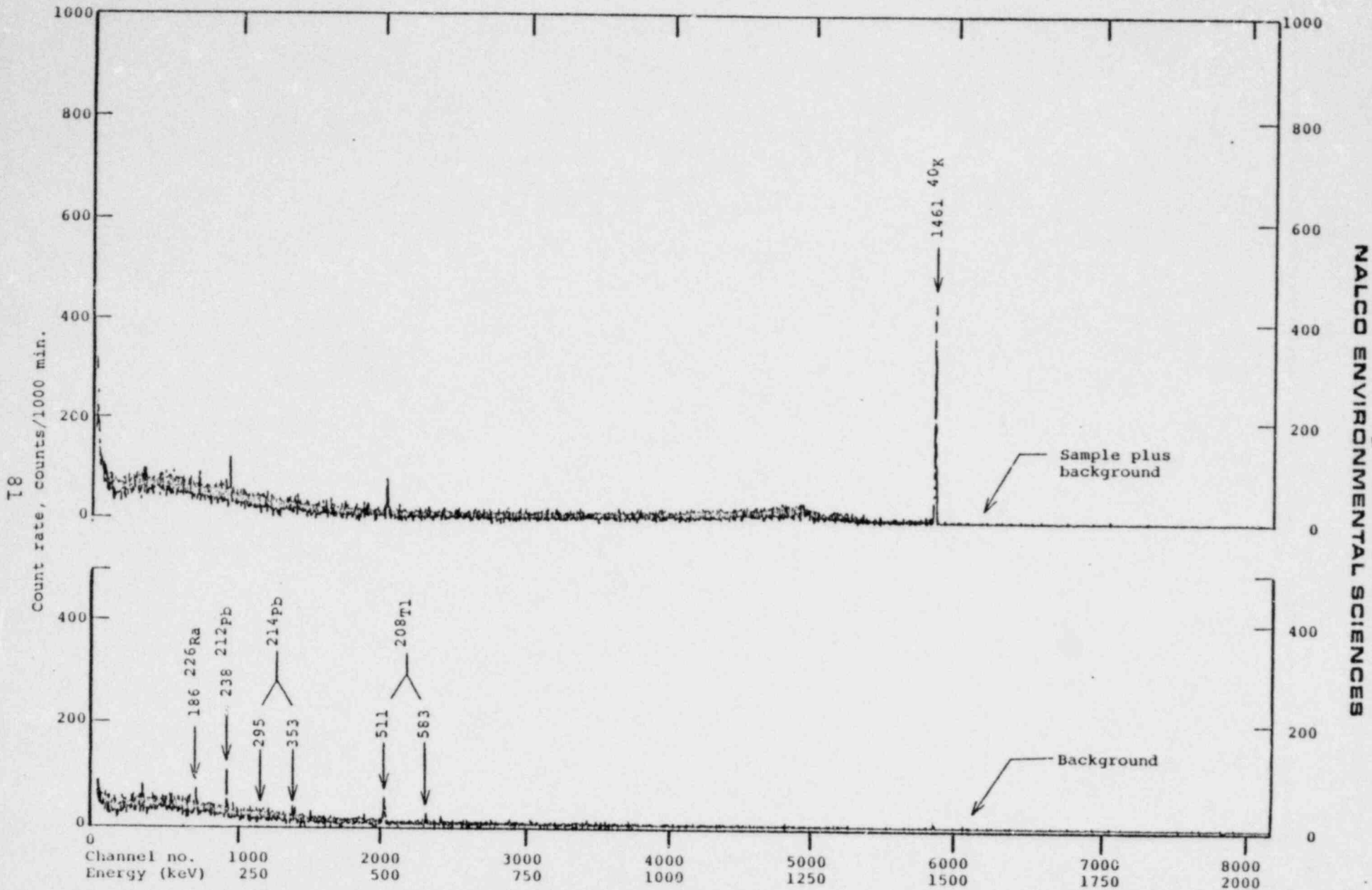


Figure 23. Gamma-ray spectrum of peaches, 30-2048 keV. Detector: Ge(Li), 86.8 cm³ closed end coaxial. Sample: 308 g of dry peaches, collected 9 September 1975 from Winter Farm (T-25, 1.3 mi. S of plant). Counts: 1000 min. on 15 October 1975, Davis-Besse NPP.

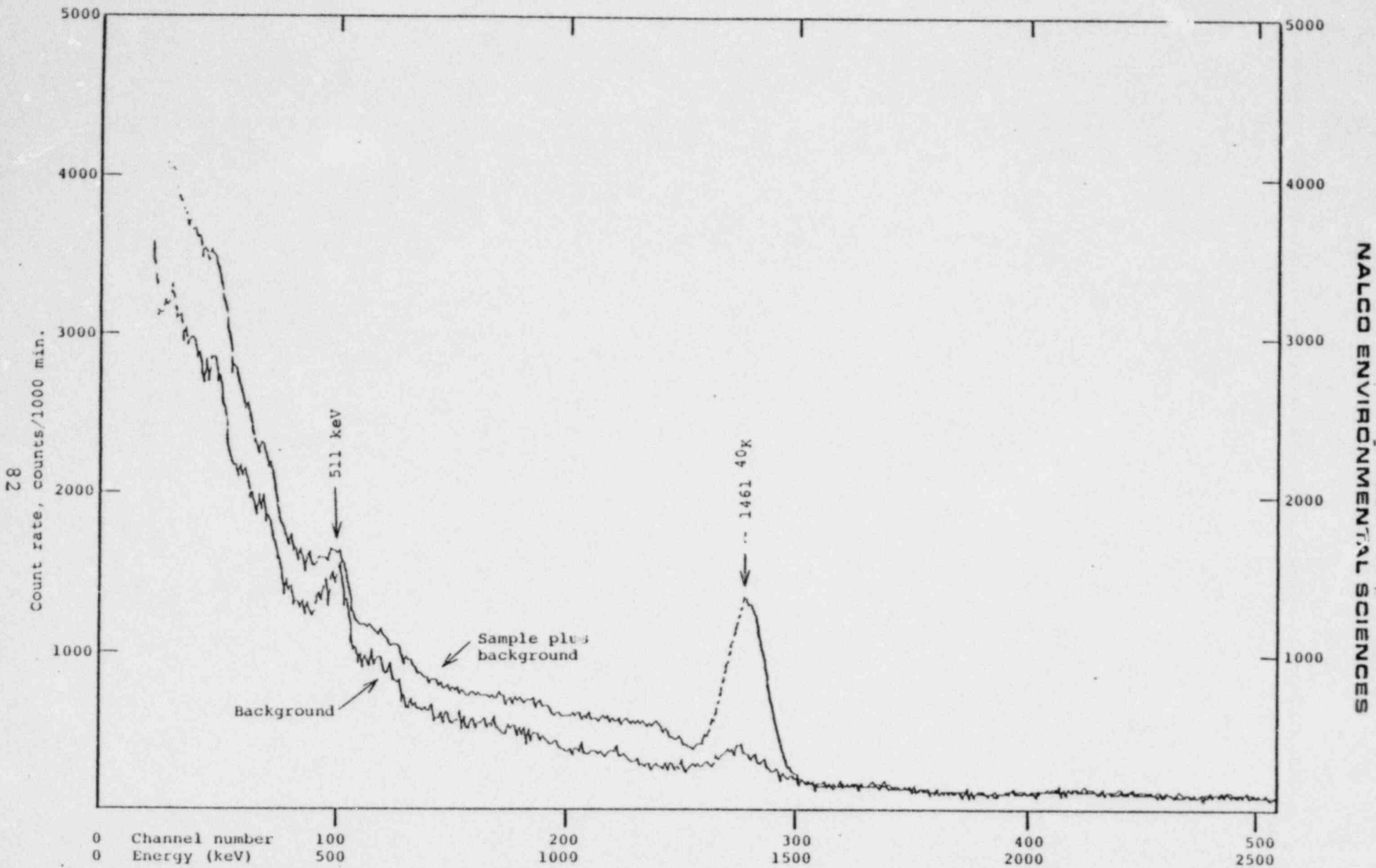


Figure 24. Gamma-ray spectrum of grape juice, 0-2560 keV. Detector: 10cm x 10cm NaI(Tl). Sample: 3.5 l of grape juice, collected 24 November 1975 from Put-In-Bay Winery (T-16, 15.3 mi. ENE of plant). Counts: 3790 min. from 5 December to 8 December 1975. Davis-Besse NPP.

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Table 29. Beef sample, analyses for gross beta and gamma-emitting isotopes, July - December 1975.

Date Collected	Weight	pCi/g ^a		
		Gross beta	¹³⁷ Cs	⁴⁰ K
9-09-75	Wet 1812	2.10±0.02	0.010±0.002	2.5±0.1
	Ash 15.86	240 ±2	1.13 ±0.27	284 ±9

^a The error given is the probable counting error at the 95% confidence level. Gamma spectral analyses showed that all other gamma-emitting isotopes were less than the minimum detectable levels.

Count rate, counts/1000 min.

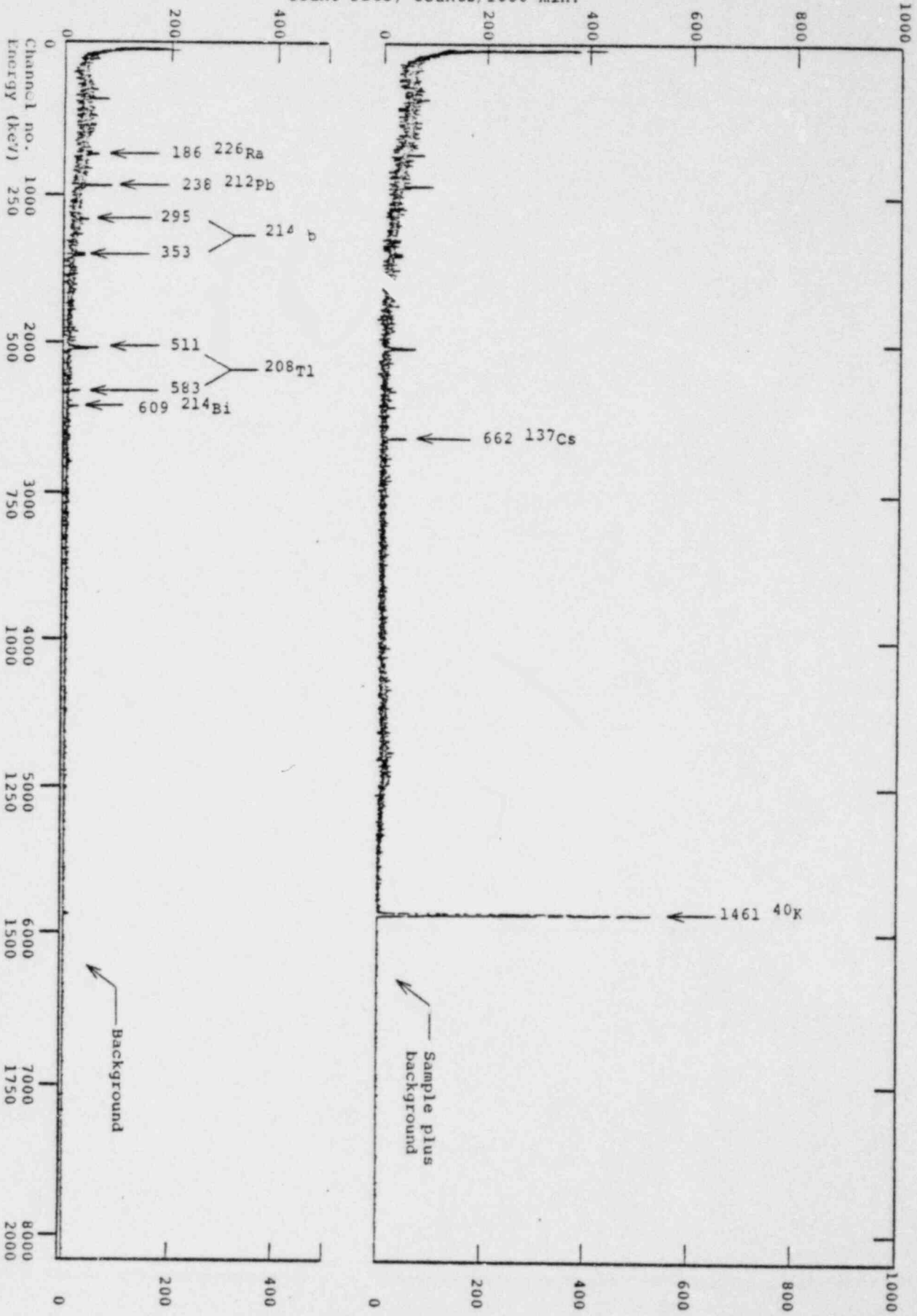


Figure 25. Gamma-ray spectrum of beef, 30-2048 keV. Detector: Ga(Li) 86.8 cm³ closed end coaxial. Sample: 15.857 g of ashed beef, collected 9 September 1975 from Moore Farm (T-8, 2.7 mi. WSW of plant). Counts: 1000 min. on 16 December 1975, Davis-Besse NPP.

Table 30. Wildlife (Raccoon) sample, analyses for gross beta, ^{90}Sr , and gamma-emitting isotopes, July - December 1975.

Date Collected	Location	Sample Type	Weight (g)		Gross beta	pCi/g ^a		
						^{90}Sr	^{137}Cs	^{40}K
11-16-75	T-1	Flesh	Wet	620	1.5+0.1	NA ^b	0.02+0.01	1.8 +0.1
			Ash	4.36	212 \pm 3		3.10 \pm 0.28	249 \pm 6
		Bones	Dry	27.31	NA	0.77+0.11	NA ^b	NA ^b
			Ash	15.42	NA	1.36 \pm 0.19		

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

^b NA - Analyses not required.

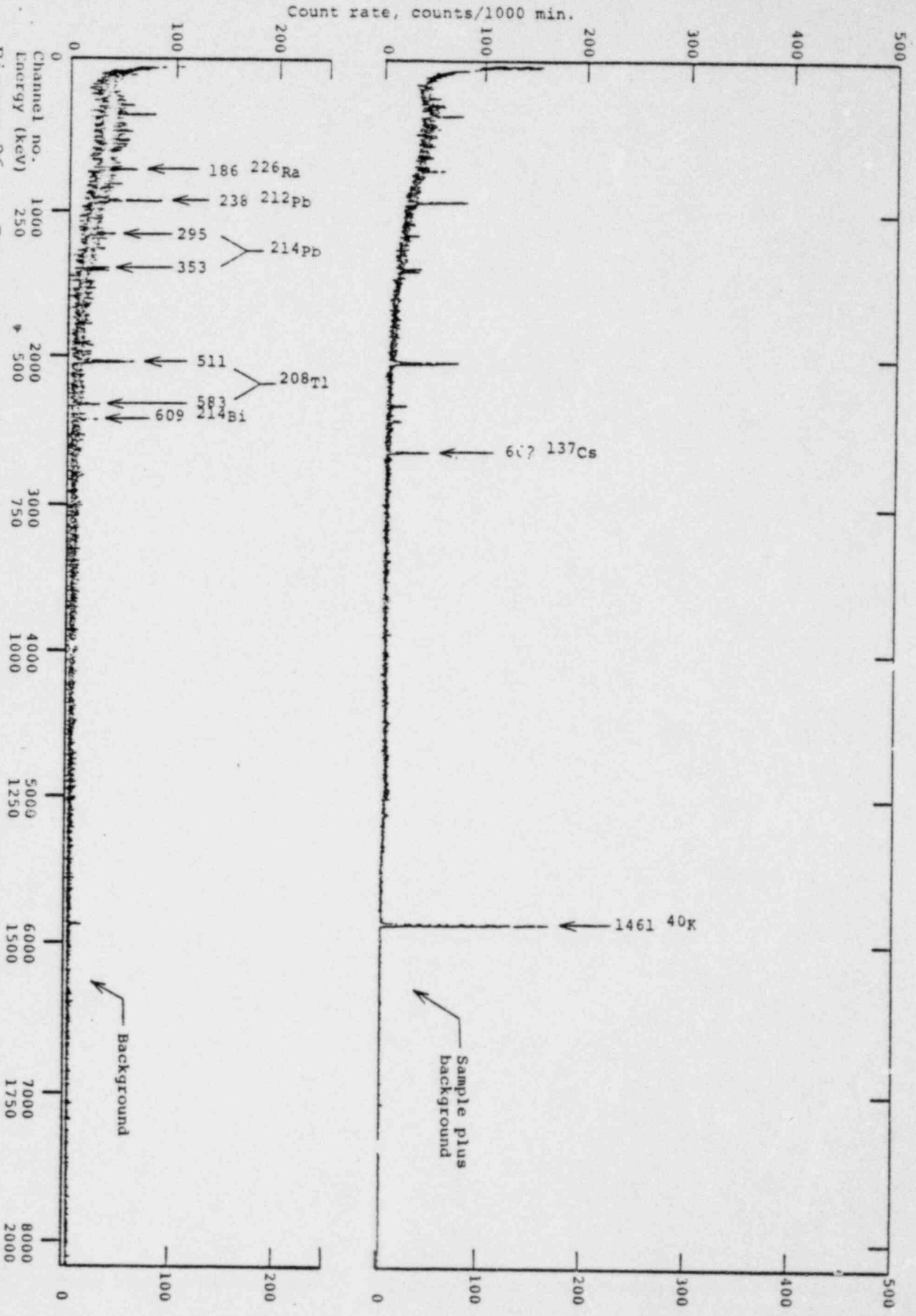


Figure 26. Gamma-ray spectrum of Raccoon flesh, 30-2048 keV. Detector: Ge(Li), 86.8 cm³ closed end coaxial. Sample: 4.364 g of ash, collected 16 November 1975 in the vicinity of the plant. Counts: 5250 min. from 19 December to 23 December 1975. Davis-Besse NPP.

Table 31. Waterfowl (goose) sample, analyses for gross beta, ^{90}Sr and gamma-emitting isotopes, July - December 1975.

Date Collected	Location	Sample Type	Weight (g)	Gross beta	pCi/g ^a		
					^{90}Sr	^{137}Cs	^{40}K
12-29-75	T-27	Flesh	Wet 759	2.2+0.1	NAb	0.02+0.01	2.3 +0.1
			Ash 7.31	223 $\bar{\pm}$ 3			
		Bones	Dry 52.25	NA	0.23+0.05	NA	NA
			Ash 21.68				

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

^b NA - Analyses not required.

Table 32. Animal feed samples, analyses for gross alpha, gross beta, ⁹⁰Sr, and gamma-emitting isotopes, July - December 1975.

Location	Sample type	Date Collected	Weight (g)	pCi/g ^a				
				Gross alpha	Gross beta	⁹⁰ Sr	¹³⁷ Cs	⁴⁰ K
T-1 (Site boundary, 0.6 mi NE of plant)	Smartweed	10-06-75	Wet 2490	0.5±0.2	4.6±0.2	0.041±0.009	<0.01	3.7±0.3
			Dry 805	1.5±0.7	14.1±0.7	0.127±0.027	<0.04	11.5±0.9
			Ash 141.08	9 ±4	81 ±4	0.72 ±0.15	<0.2	65 ±5
T-8 (Earl Moore Farm, 2.7 mi WSW of site)	Grass	10-02-75	Wet 2202	<0.1	8.5±0.2	0.068±0.008	<0.02	5.3±0.5
			Dry 738	<0.2	25.2±0.7	0.20±0.023	<0.05	15.8±1.4
			Ash 75.66	<2	246 ±7	1.97 ±0.22	<0.5	154 ±13
T-21 (Haynes Farm, 3.6 mi SSW of plant)	Grass	10-02-75	Wet 2583	0.1±0.1	2.4±0.1	0.021±0.003	0.01±0.01	4.8±0.2
			Dry 484	0.3±0.2	13.1±0.4	0.114±0.014	0.03±0.03	25.5±0.9
			Ash 38.53	3 ±3	164 ±6	1.43 ±0.17	0.4 ±0.4	320 ±11

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample. Gamma spectral analyses showed that all other gamma-emitting isotopes were less than the minimum detectable levels in hay and silage samples.

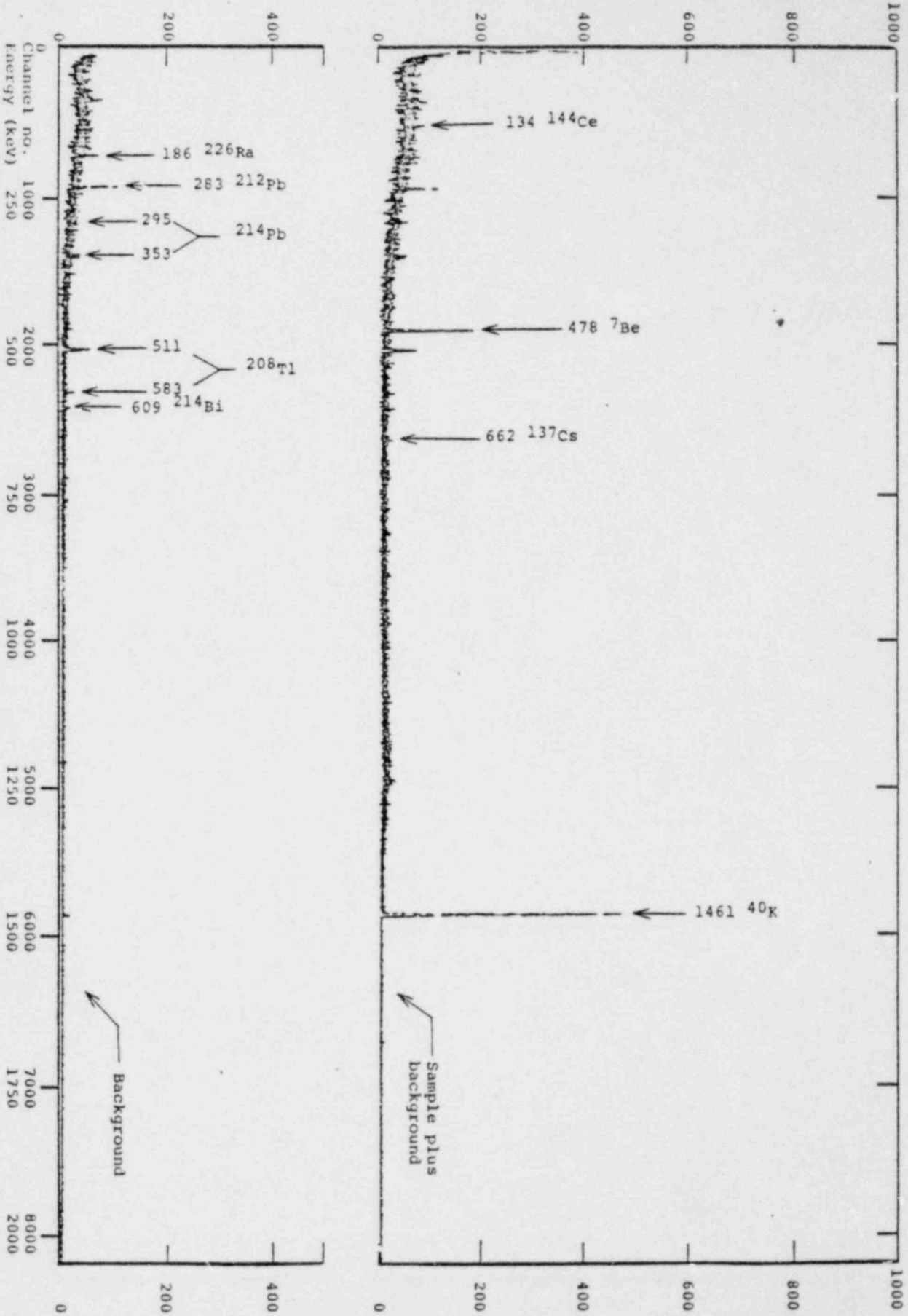


Figure 27. Gamma-ray spectrum of smartweed, 30-2048 keV. Detector: Ge(Li), 86.8 cm³ closed end coaxial. Sample: 167 g of dry silage, collected 2 October 1975 from Haynes Farm (T-21, 3.6 ml. SSW of plant). Counts: 1000 min. on 5 November 1975, Davis-Besse NPP.

Table 33. Soil samples analyses for gross beta, ^{90}Sr , and gamma-emitting isotopes July - December 1975.

Location	Date Collected	Gross beta	^{90}Sr	pCi/g dry weight ^a	
				^{137}Cs	^{40}K
T-1 (Site boundary, 0.6 mi NE of plant)	9-09-75	12.4 \pm 1.8	<0.2	0.02 \pm 0.01	11.4 \pm 0.3
T-8 (Earl Moore Farm, 2.7 mi WSW of plant)	9-09-75	35.8 \pm 2.8	0.63 \pm 0.12	0.64 \pm 0.05	18.6 \pm 0.8
T-19 (Miller Farm, 3.7 mi S of plant)	9-09-75	28.9 \pm 2.6	<0.2	0.31 \pm 0.02	17.2 \pm 0.3
T-20 (Daup Farm, 5.4 mi SSE of plant)	9-09-75	28.4 \pm 2.5	0.20 \pm 0.10	0.28 \pm 0.03	18.6 \pm 0.7

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background samples.

Count rate, counts/1000 min.

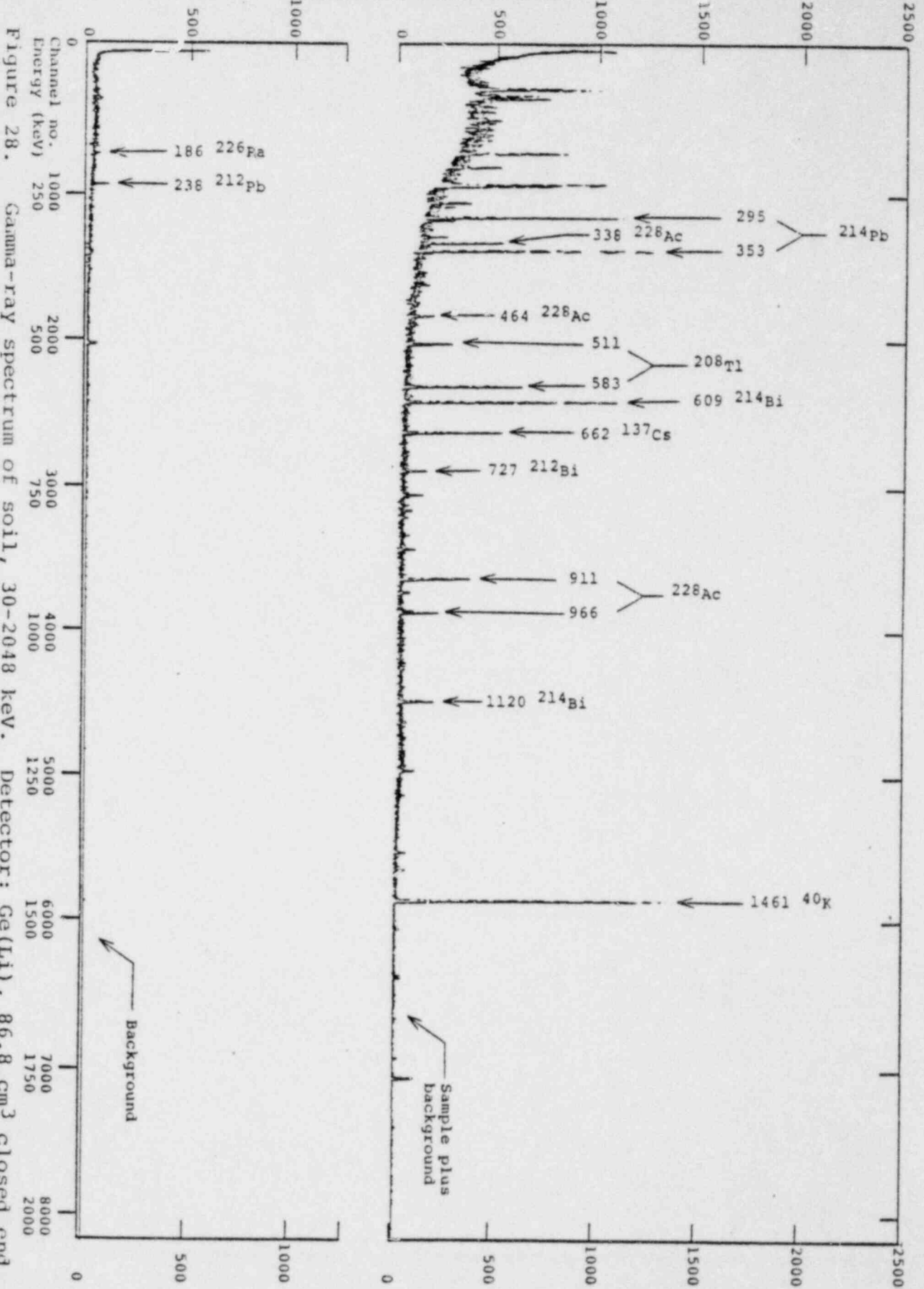


Figure 28. Gamma-ray spectrum of soil, 30-2048 keV. Detector: Ge(Li), 86.8 cm³ closed end coaxial. Sample: 752 g of dry soil, collected 9 September 1975 at Miller Farm (T-19, 3.7 mi. S of plant, near intake canal). Counts: 1000 min. on 8 December 1975, Davis-Besse NPP.

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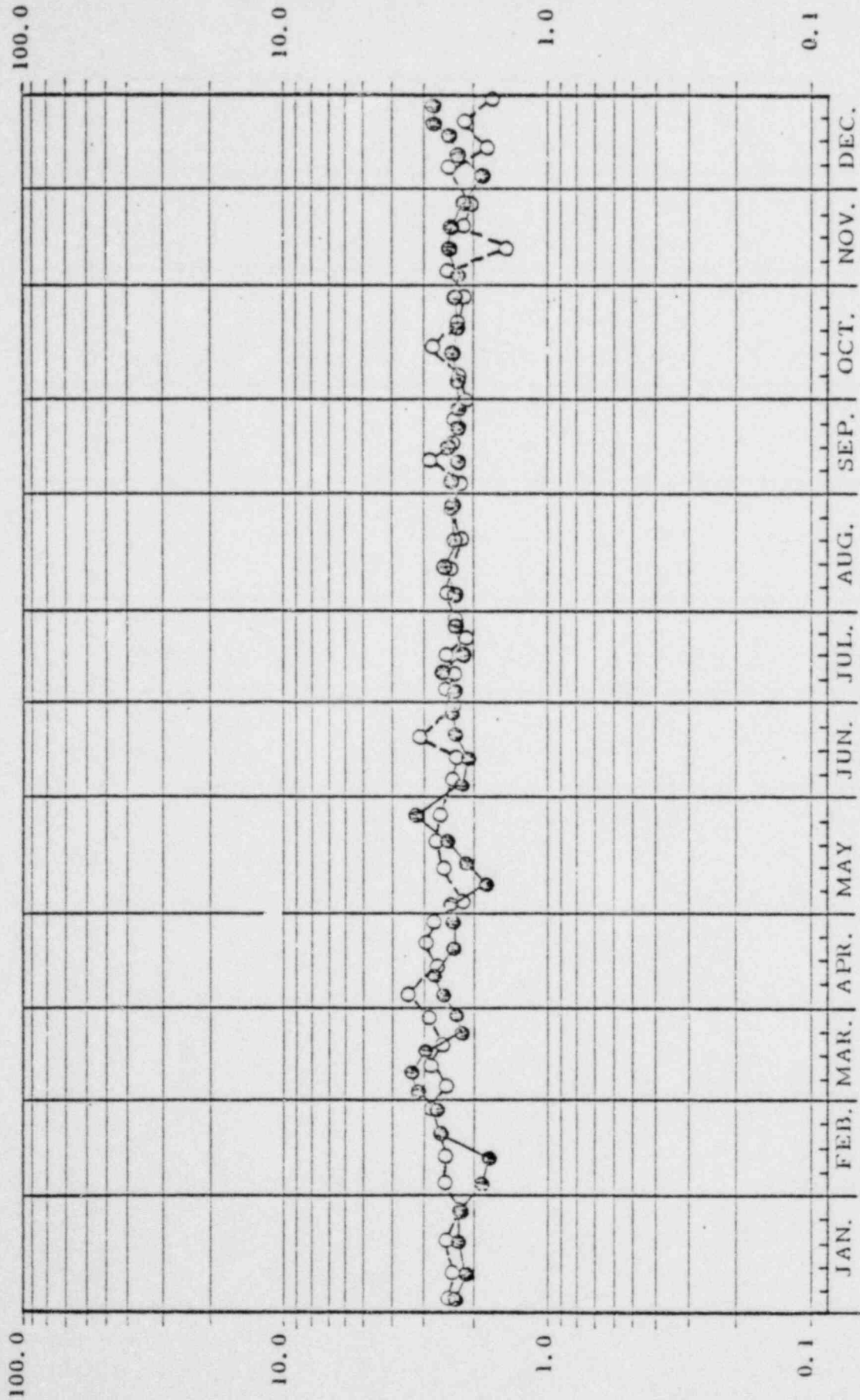
Table 34. Treated surface water samples collected at Location T-10, analyses for gross alpha, gross beta, and tritium.

Date Collected	pCi/l ^a		pCi/ml ^a
	Gross alpha	Gross beta	Tritium
7-07-75	<0.2	2.55±0.29	0.43±0.07
7-14-75	<0.3	2.87±0.39	0.29±0.08
7-21-75	<0.2	2.38±0.25	0.36±0.08
7-28-75	0.41±0.37	2.44±0.29	0.37±0.08
8-04-75	<0.3	2.44±0.36	0.35±0.07
8-11-75	0.27±0.22	2.78±0.27	0.35±0.07
8-18-75	0.31±0.30	2.50±0.26	0.30±0.07
8-26-75	<0.2	2.65±0.26	0.34±0.07
9-02-75	<0.4	2.56±0.37	0.35±0.08
9-08-75	0.70±0.49	2.33±0.36	0.40±0.08
9-15-75	<0.4	2.54±0.27	0.37±0.08
9-22-75	<0.4	2.33±0.26	0.32±0.08
9-29-75	0.50±0.26	2.34±0.19	0.18±0.08
Mean ± S.D. ^b	0.44±0.17	2.52±0.17	0.34±0.06
10-07-75	<0.4	2.49±0.38	0.26±0.09
10-13-75	0.63±0.39	2.56±0.29	0.30±0.09
10-20-75	<0.3	2.47±0.28	0.29±0.09
10-27-75	0.55±0.37	2.55±0.29	0.24±0.09
11-03-75	<0.3	2.33±0.36	0.31±0.09
11-10-75	<0.3	2.68±0.39	0.32±0.10
11-17-75	0.69±0.47	2.65±0.39	0.29±0.10
11-24-75	<0.2	2.12±0.36	0.40±0.10
12-01-75	<0.3	1.90±0.35	0.30±0.11
12-08-75	<0.2	2.44±0.27	0.31±0.11
12-15-75	<0.3	2.64±0.40	0.32±0.11
12-22-75	<0.3	2.80±0.29	0.34±0.11
12-29-75	<0.3	2.88±0.29	0.27±0.11
Mean ± S.D.	0.62±0.07	2.50±0.27	0.30±0.04

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

^b Less than (<) values are not included in the mean.

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Figure 29. Treated surface water samples, gross beta activity, collected from Erie Industrial Park (T-10, 6.5 miles SE of plant), Davis-Besse NPP. The data are from Table 34.

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Table 35. Treated surface water samples collected at Location T-11, analyses for gross alpha, gross beta, and tritium, July - December 1975.

Date Collected	pCi/l ^a		pCi/ml ^a
	Gross alpha	Gross beta	Tritium
7-07-75	<0.4	2.22±0.29	0.31±0.08
7-14-75	<0.3	2.23±0.35	0.37±0.08
7-21-75	<0.2	2.75±0.38	0.35±0.08
7-28-75	<0.3	3.10±0.40	0.34±0.08
8-04-75	0.45±0.26	1.18±0.20	0.36±0.07
8-11-75	<0.3	2.42±0.26	0.29±0.07
8-18-75	<0.3	2.11±0.24	0.32±0.07
8-26-75	<0.2	2.00±0.24	0.32±0.07
9-02-75	<0.5	2.47±0.38	0.35±0.08
9-08-75	<0.2	2.45±0.19	0.39±0.08
9-15-75	<0.3	2.31±0.19	0.40±0.08
9-22-75	0.38±0.34	2.60±0.20	0.28±0.08
9-29-75	<0.4	2.58±0.38	0.32±0.08
Mean ± S.D. ^b	0.42±0.05	2.34±0.45	0.34±0.04
10-07-75	<0.4	3.16±0.41	0.30±0.09
10-13-75	<0.3	2.31±0.27	0.32±0.09
10-20-75	<0.4	3.23±0.32	0.27±0.09
10-27-75	<0.3	2.51±0.28	0.38±0.09
11-03-75	<0.3	2.85±0.39	0.28±0.09
11-10-75	<0.3	2.64±0.39	0.22±0.10
11-17-75	<0.3	2.06±0.36	0.32±0.10
11-24-75	NA ^c	NA	0.25±0.10
12-01-75	<0.3	2.48±0.39	0.31±0.11
12-08-75	<0.2	2.60±0.27	0.33±0.11
12-15-75	<0.3	2.34±0.38	0.31±0.11
12-22-75	<0.3	2.51±0.27	0.30±0.11
12-29-75	<0.3	3.49±0.32	0.24±0.11
Mean ± S.D.	-	2.68±0.42	0.29±0.04

- a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.
- b Less than (<) values are not included in the mean.
- c NA = Insufficient sample for gross alpha and gross beta analyses.

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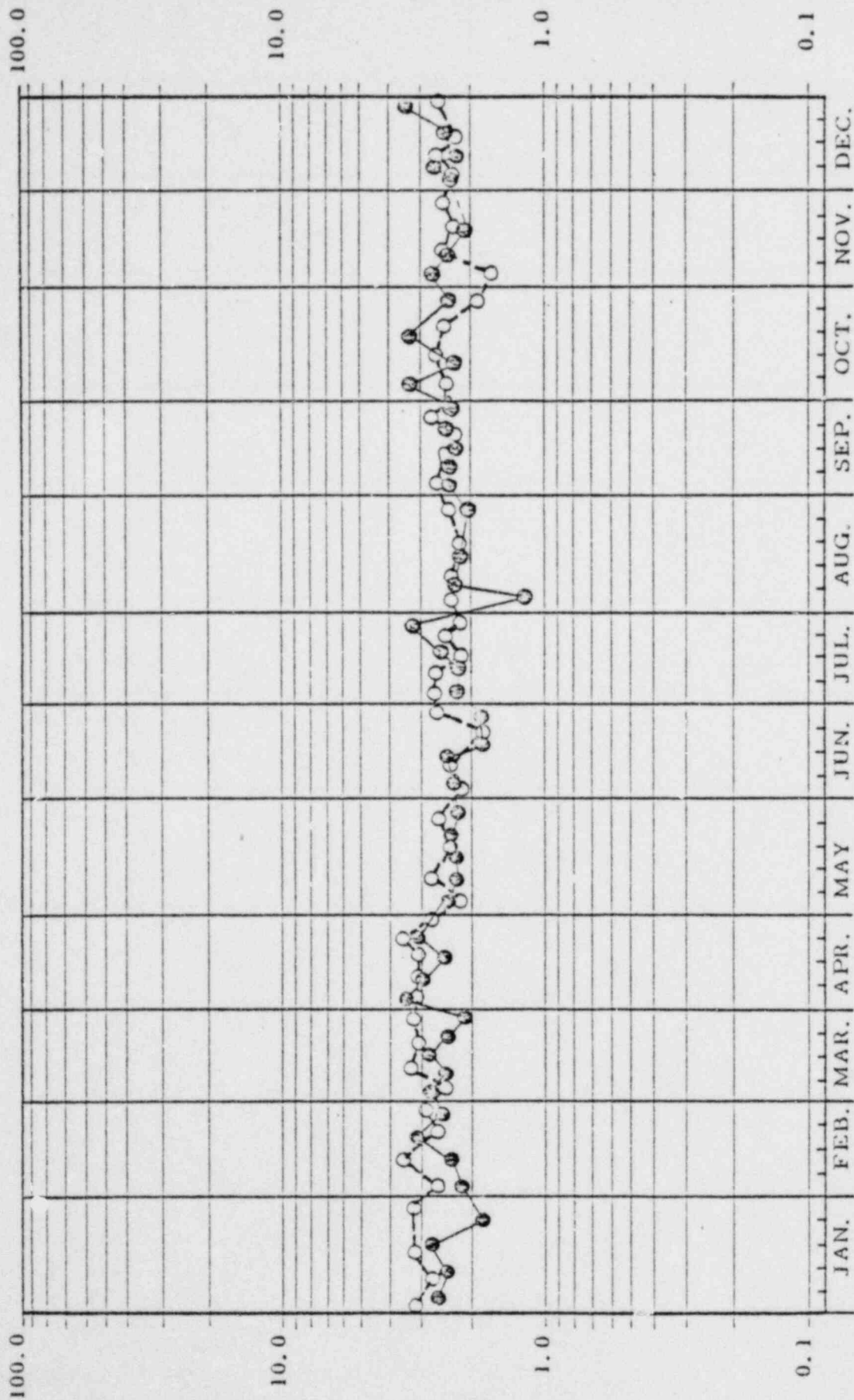


Figure 30. Treated surface water samples, gross beta activity, collected from Port Clinton (T-11, 11.5 miles SE of plant), Davis-Besse NPP. The data are from Table 35.

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Table 36. Treated surface water samples collected at Location T-12, analyses for gross alpha, gross beta, and tritium, July - December 1975.

Date Collected	pCi/l ^a		pCi/ml ^a
	Gross alpha	Gross beta	Tritium
7-07-75	<0.3	1.75±0.27	0.37±0.08
7-14-75	<0.2	2.09±0.29	0.34±0.08
7-21-75	<0.2	1.59±0.26	0.37±0.08
7-28-75	0.24±0.24	1.39±0.24	0.37±0.08
8-04-75	<0.3	1.67±0.26	0.33±0.08
8-11-75	<0.2	1.46±0.26	0.35±0.08
8-18-75	<0.3	1.59±0.26	0.31±0.07
8-25-75	<0.2	1.70±0.27	0.32±0.07
9-02-75	0.42±0.33	1.64±0.27	0.41±0.08
9-08-75	<0.3	1.87±0.27	0.27±0.09
9-15-75	<0.2	1.67±0.19	0.28±0.09
9-22-75	<0.2	1.68±0.19	0.30±0.09
9-29-75	<0.3	1.97±0.21	0.30±0.09
Mean ± S.D. ^b	0.33±0.13	1.70±0.19	0.33±0.04
10-06-75	<0.2	1.62±0.27	0.27±0.09
10-13-75	<0.2	1.72±0.19	0.29±0.09
10-20-75	<0.2	1.59±0.19	0.35±0.09
10-27-75	<0.2	1.42±0.18	0.37±0.09
11-03-75	<0.2	1.54±0.30	0.28±0.09
11-10-75	<0.2	1.24±0.26	0.36±0.11
11-17-75	<0.3	1.51±0.27	0.38±0.11
11-24-75	0.56±0.33	1.34±0.26	0.39±0.11
12-01-75	0.33±0.28	0.97±0.24	0.34±0.11
12-08-75	<0.2	1.75±0.28	0.23±0.11
12-15-75	<0.2	2.06±0.30	0.17±0.11
12-22-75	<0.2	1.27±0.25	0.28±0.11
12-29-75	<0.3	1.64±0.28	0.23±0.11
Mean ± S.D.	0.45±0.16	1.51±0.27	0.30±0.07

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

^b Less than (<) values are not included in the mean.

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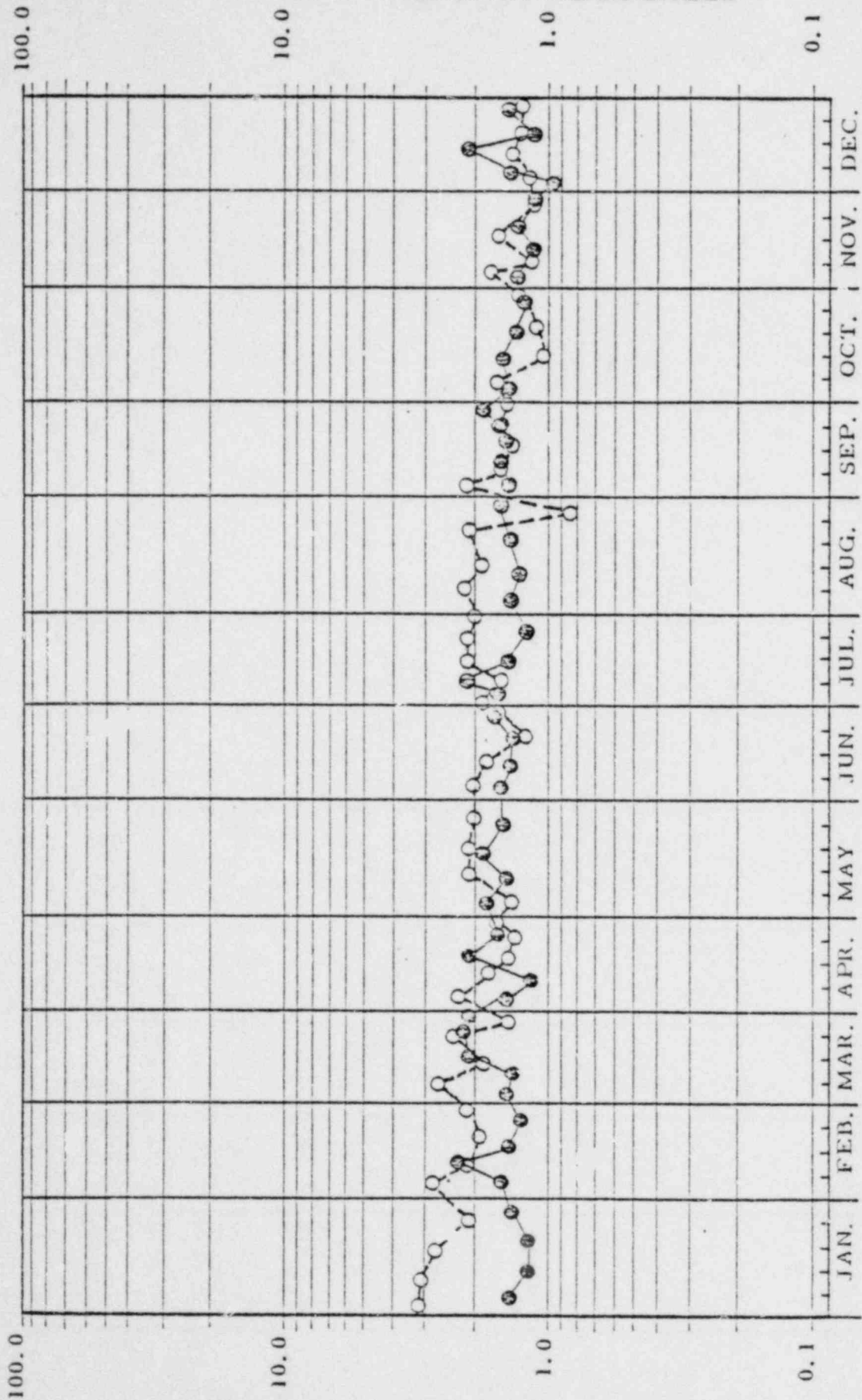


Figure 31. Treated surface water samples, gross beta activity, collected from Toledo Water Treatment Plant (T-12, 23.5 miles WNW of plant), Davis-Besse NPP. The data are from Table 36.

Table 37. Treated surface water samples, collected at Location T-28, analyses for gross alpha, gross beta, and tritium, July - December 1975.

Date Collected	pCi/l ^a		pCi/ml ^a
	Gross alpha	Gross beta	Tritium
7-07-75	<0.3	2.64+0.30	0.34+0.08
7-14-75	<0.2	2.87+0.38	0.34+0.08
7-21-75	<0.3	2.11+0.25	0.39+0.08
7-28-75	<0.3	2.05+0.34	0.35+0.08
8-04-75	<0.3	2.54+0.37	0.40+0.07
8-11-75	<0.2	1.83+0.24	0.29+0.07
8-18-75	<0.2	2.24+0.25	0.33+0.07
8-26-75	<0.3	2.35+0.26	0.31+0.07
9-02-75	0.55+0.52	2.25+0.36	0.33+0.08
9-08-75	<0.5	2.09+0.35	0.36+0.08
9-15-75	<0.4	2.45+0.37	0.37+0.08
9-22-75	<0.4	2.51+0.38	0.37+0.08
9-29-75	<0.4	2.30+0.26	0.39+0.08
Mean + S.D. ^b	0.55+0.52	2.33+0.28	0.35+0.03
10-07-75	<0.4	2.72+0.38	0.23+0.09
10-13-75	<0.3	2.31+0.28	0.26+0.09
10-20-75	<0.3	2.49+0.29	0.30+0.09
10-27-75	<0.5	2.63+0.41	0.33+0.09
11-03-75	<0.3	2.52+0.37	0.22+0.09
11-10-75	<0.3	2.49+0.39	0.34+0.10
11-17-75	<0.3	2.24+0.37	0.32+0.10
11-24-75	<0.3	2.20+0.37	0.32+0.10
12-01-75	<0.3	1.88+0.35	0.33+0.11
12-08-75	<0.2	2.16+0.36	0.28+0.11
12-15-75	<0.2	2.05+0.25	0.33+0.11
12-22-75	<0.2	2.50+0.27	0.22+0.11
12-29-75	<0.2	2.59+0.28	0.28+0.11
Mean + S.D.	-	2.37+0.25	0.29+0.04

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample.

^b Less than (<) values are not included in the mean.

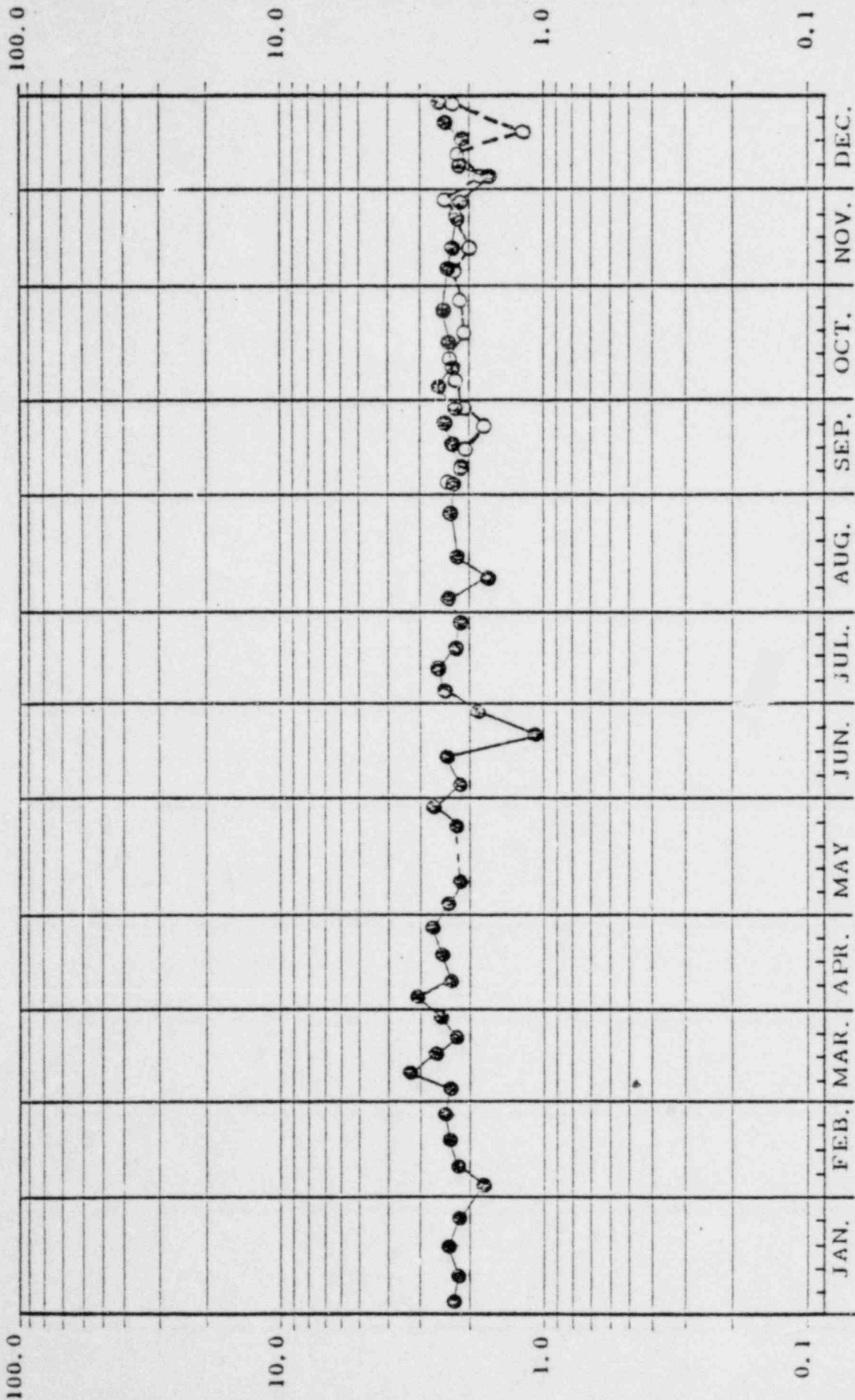


Figure 32. Treated surface water samples, gross beta activity, collected from Unit 1 treated water supply (T-28, onsite), Davis-Besse NPP. The data are from Table 37.

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Table 38. Treated surface water samples, quarterly composites of weekly grab samples, for July-September and October-December 1975, analyses for ^{90}Sr and gamma-emitting isotopes.

Location	Composited	pCi/l ^a	
		^{90}Sr	^{137}Cs
T-10 (Erie Industrial Park tap water, 6.5 mi. SE of plant)	July-September	0.50+0.26	<3.7
	October-December	0.39±0.24	<3.7
T-11 (Port Clinton tap water, 9.5 mi. SE of plant)	July-September	0.60+0.28	<3.7
	October-December	0.56±0.26	<3.7
T-12 (Toledo tap water, 23.5 mi. WNW of plant)	July-September	<0.3	<3.7
	October-December	<0.3	<3.7
T-28 (Unit 1 treated water supply, onsite)	July-September	0.38+0.29	<3.7
	October-December	0.49±0.25	<3.7

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

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Table 39. Untreated surface water samples, monthly composites of weekly grab samples, analyses for gross alpha, gross beta, and tritium, July - December 1975.

Location	Month Collected	Gross alpha (pCi/l) ^a			Gross beta (pCi/l) ^a			Tritium pCi/ml ^b	
		Suspended solids	Dissolved solids	Total residue	Suspended solids	Dissolved solids	Total residue		
T-1 (Site boundary, 0.6 mi NE of plant near inlet canal)	July	0.21±0.20	<0.2	0.21±0.20	0.46±0.22	1.61±0.23	2.07±0.32	0.34±0.07	
	August	0.29±0.15	<0.4	<0.3	0.72±0.18	2.62±0.38	3.34±0.42	0.29±0.07	
	September	0.35±0.09	0.37±0.32	0.72±0.33	0.62±0.08	2.41±0.26	3.03±0.27	0.38±0.09	
	Mean±S.D.	0.29±0.07	0.37±0.32	0.47±0.36	0.60±0.13	2.21±0.53	2.81±0.66	0.34±0.05	
	October	0.21±0.19	<0.3	<0.7	0.49±0.21	2.35±0.38	2.84±0.43	0.30±0.09	
	November	0.63±0.31	<0.2	0.63±0.31	1.12±0.28	2.47±0.27	3.59±0.38	0.36±0.10	
	December	<0.1	0.41±0.24	0.41±0.24	0.15±0.13	2.51±0.27	2.66±0.30	0.24±0.11	
	Mean±S.D.	0.42±0.30	0.41±0.24	0.52±0.16	0.59±0.49	2.44±0.08	3.03±0.49	0.30±0.06	
	T-2 (Site boundary, 0.9 mi E of plant)	July	0.18±0.18	<0.6	<1	0.36±0.21	2.14±0.35	2.50±0.41	0.32±0.07
		August	0.38±0.17	<0.4	<1	0.74±0.18	2.42±0.50	3.16±0.53	0.29±0.07
September		<0.1	<0.3	<0.4	0.35±0.15	2.23±0.23	2.58±0.27	0.27±0.09	
Mean±S.D.		0.28±0.14	-	-	0.48±0.22	2.26±0.14	2.75±0.36	0.29±0.03	
October		0.19±0.18	<0.3	<0.7	0.45±0.21	2.71±0.40	3.16±0.45	0.39±0.09	
November		0.24±0.20	0.42±0.35	0.56±0.40	0.62±0.24	2.48±0.38	3.10±0.45	0.28±0.10	
December		0.16±0.11	0.32±0.23	0.48±0.26	0.28±0.14	3.01±0.29	3.29±0.32	0.37±0.11	
Mean±S.D.		0.20±0.04	0.37±0.07	0.57±0.13	0.45±0.17	2.73±0.27	3.18±0.10	0.35±0.06	
T-3 (Site boundary, 1.4 mi SE of plant near Toussaint River and storm drain)		July	<0.2	<0.4	<0.6	0.80±0.24	2.42±0.24	3.22±0.34	0.31±0.09
		August	0.21±0.13	<0.3	<0.6	0.64±0.17	2.19±0.35	2.83±0.39	0.32±0.07
	September	0.32±0.16	0.42±0.32	0.74±0.36	0.53±0.16	2.40±0.26	2.93±0.31	0.20±0.09	
	Mean±S.D.	0.27±0.08	0.42±0.32	0.74±0.36	0.66±0.14	2.34±0.13	2.99±0.20	0.28±0.07	
	October	0.22±0.18	<0.4	<0.8	0.45±0.20	3.01±0.40	3.46±0.45	0.23±0.09	
	November	0.43±0.25	0.63±0.42	1.11±0.49	0.63±0.24	3.12±0.42	3.80±0.48	0.15±0.13	
	December	0.15±0.11	0.43±0.23	0.58±0.25	0.34±0.15	1.98±0.25	2.32±0.29	0.36±0.11	
	Mean±S.D.	0.27±0.15	0.56±0.18	0.85±0.37	0.49±0.17	2.70±0.63	3.19±0.78	0.25±0.11	
	T-10 (Erie Industrial Park intake, 6.3 mi SE of plant)	July	<0.1	<0.6	<0.7	<0.2	2.58±0.38	2.58±0.38	0.34±0.07
		August	0.29±0.14	<0.4	<0.8	0.67±0.18	2.25±0.49	2.92±0.52	0.31±0.07
September		<0.1	<0.3	<0.4	0.26±0.15	2.32±0.35	2.38±0.38	0.34±0.09	
Mean±S.D.		0.29±0.14	-	-	0.47±0.29	2.38±0.17	2.69±0.20	0.33±0.02	
October		<0.1	<0.3	<0.4	0.27±0.19	2.11±0.34	2.38±0.39	0.30±0.09	
November		0.76±0.38	<0.3	0.76±0.38	1.37±0.30	2.45±0.28	3.32±0.41	0.45±0.10	
December		<0.1	0.23±0.22	0.23±0.22	<0.2	2.83±0.29	2.33±0.29	0.31±0.11	
Mean±S.D.		0.76±0.38	0.23±0.22	0.50±0.37	0.32±0.78	2.46±0.36	3.01±0.74	0.35±0.08	
T-11 (Port Clinton water intake, 9.5 mi SE of plant)		July	0.61±0.33	0.74±0.48	1.35±0.58	0.71±0.24	2.45±0.36	3.16±0.41	0.43±0.07
		August	0.29±0.15	<0.4	<0.8	0.65±0.17	1.96±0.24	2.61±0.29	0.30±0.07
	September	0.40±0.17	<0.3	<0.9	0.46±0.16	1.67±0.31	2.13±0.12	0.26±0.09	
	Mean±S.D.	0.43±0.16	0.74±0.48	1.35±0.58	0.61±0.13	2.03±0.39	2.63±0.52	0.33±0.09	
	October	<0.1	0.93±0.53	0.93±0.53	<0.2	2.49±0.39	2.49±0.39	0.24±0.09	
	November	0.94±0.44	0.29±0.26	1.23±0.51	1.82±0.32	2.72±0.28	4.54±0.43	0.20±0.10	
	December	<0.1	0.48±0.26	0.48±0.26	0.24±0.14	2.73±0.28	2.97±0.31	0.36±0.11	
	Mean±S.D.	0.94±0.44	0.57±0.33	0.88±0.38	1.03±1.12	2.65±0.14	3.03±1.07	0.27±0.08	
	T-12 (Toledo water intake, 23.5 mi WNW of plant)	July	<0.2	0.52±0.40	0.52±0.40	0.25±0.20	2.74±0.37	3.00±0.42	0.38±0.08
		August	<0.2	<0.3	<0.5	0.26±0.18	2.60±0.27	2.86±0.32	0.39±0.08
September		0.51±0.28	<0.3	<1	0.45±0.20	2.48±0.26	2.93±0.33	0.29±0.09	
Mean±S.D.		0.51±0.28	0.52±0.40	0.52±0.40	0.32±0.11	2.61±0.13	2.93±0.07	0.35±0.06	
October		0.30±0.21	0.42±0.35	0.72±0.41	0.39±0.22	2.49±0.38	2.83±0.44	0.29±0.10	
November		<0.1	<0.2	<0.3	0.28±0.21	2.80±0.28	3.08±0.35	0.35±0.11	
December		0.40±0.19	0.72±0.29	1.12±0.35	0.92±0.18	3.47±0.30	4.39±0.30	0.48±0.11	
Mean±S.D.		0.35±0.07	0.57±0.21	0.92±0.28	0.53±0.34	2.92±0.50	3.45±0.82	0.37±0.10	

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.
^b Less than (<) values are not included in the mean.

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Table 40. Untreated surface water samples, quarterly composites of weekly grab samples, for July-September and October-December 1975, analyses for ⁹⁰Sr and gamma-emitting isotopes.

Location	Dates composited	pCi/l ^a	
		⁹⁰ Sr	¹³⁷ Cs ^b
T-1 (Site boundary, 0.6 mi. NE of plant near inlet canal)	July-Sept.	0.88+0.30	<3.7
	Oct.-Dec.	0.64+0.26	<3.7
T-2 (Site boundary, 0.9 mi. E of plant)	July-Sept.	0.56+0.22	<3.7
	Oct.-Dec.	0.72+0.24	<3.7
T-3 (Toussaint River, site boundary 1.4 mi. SE of plant)	July-Sept.	0.81+0.30	<3.7
	Oct.-Dec.	0.81+0.24	<3.7
T-10 (Erie Industrial Park intake, 6.5 mi. SE of plant)	July-Sept.	0.90+0.28	<3.7
	Oct.-Dec.	0.87+0.35	<3.7
T-11 (Port Clinton water intake, 11.5 mi. SE of plant)	July-Sept.	1.04+0.32	<3.7
	Oct.-Dec.	0.90+0.33	<3.7
T-12 (Toledo water intake, 23.5 mi. WNW of plant)	July-Sept.	0.54+0.30	<3.7
	Oct.-Dec.	0.46+0.27	<3.7

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

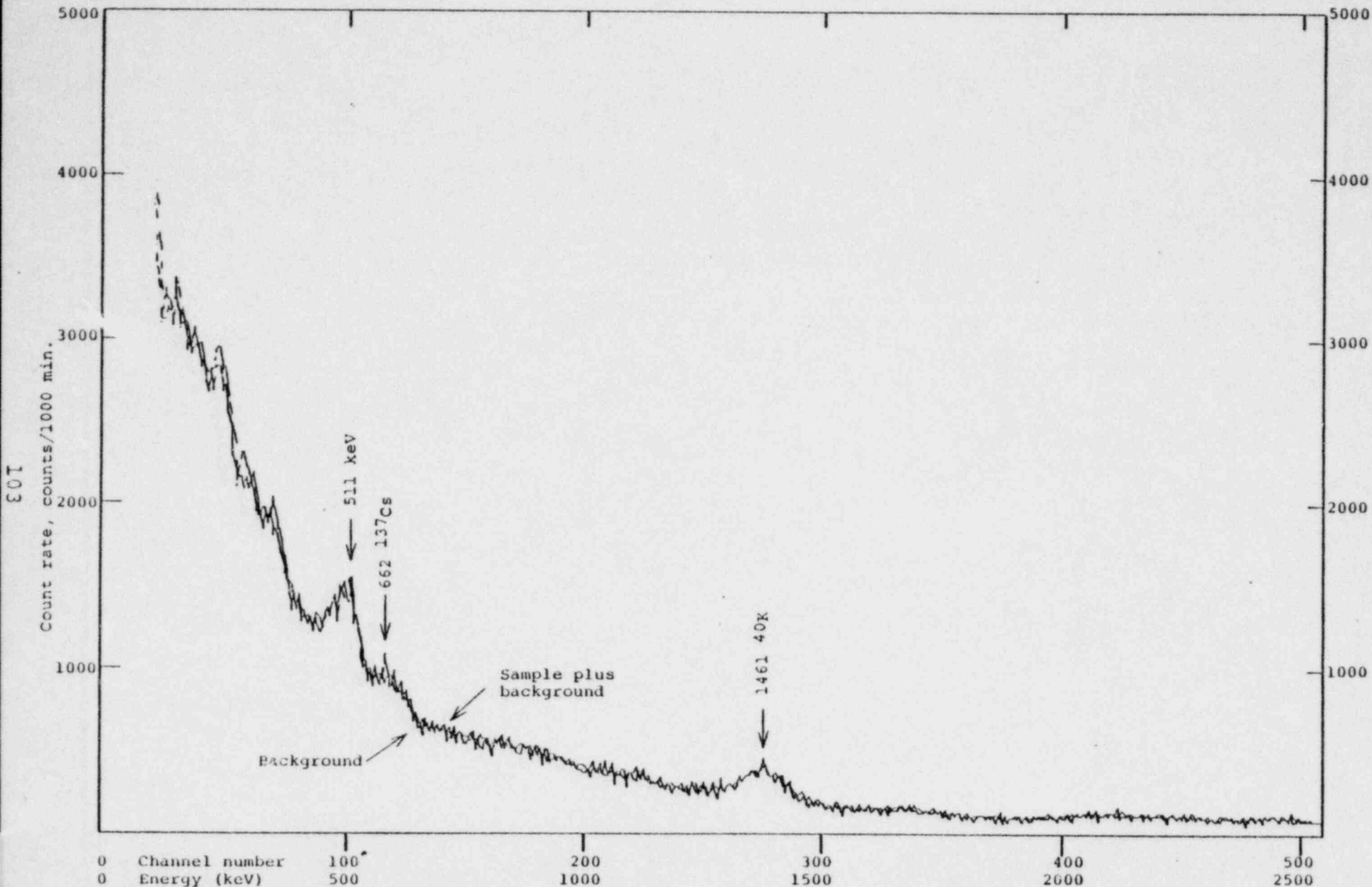


Figure 33. Gamma-ray spectrum of untreated surface water, 0-2560 keV. Detector: 10cm x 10cm NaI(Tl), (No.1). Sample: 3.5 l of untreated surface water, composite of weekly grab samples, collected from 7 July through 29 September 1975 from Site boundary near Toussaint River (T-3, 1.4 mi. SE of plant). Counts: 1000 min. on 14 October 1975, Davis-Besse NPP.

Table 41. Fish samples, analyses for gross beta, ^{90}Sr , and gamma-emitting isotopes, collected from Lake Erie in the vicinity of the site (T-1).

Type of fish	Collected	Sample type	Weight (g)	pCi/g^{a}			
				Gross beta	^{90}Sr	^{137}Cs	^{40}K
Yellow Perch	9-09-75	Muscle	Wet 798	2.0+0.1	NA ^b	0.011+0.002	2.1+0.1
			Ash 15.15	106 \pm 2		0.60 \pm 0.10	110 \pm 3
		Bone	Dry 36.44	NA	0.68+0.11	NA	NA
			Ash 18.24		1.36+0.22		
Carp	9-09-75	Muscle	Wet 886	2.0+0.1	NA	0.010+0.004	2.4+0.1
			Ash 8.80	200 \pm 3		1.05 \pm 0.39	246 \pm 11
		Bone	Dry 18.03	NA	0.86+0.10	NA	NA
			Ash 9.03		1.71 \pm 0.19		
Smelt	11-17-75	Whole	Wet 1797	4.7+0.1	0.02+0.01	0.023+0.005	2.6+0.1
			Ash 40.65	171 \pm 3	0.95 \pm 0.14	1.02 \pm 0.23	113 \pm 6
Perch	11-17-75	Whole	Wet 1696	6.1+0.1	0.04+0.01	0.016+0.009	3.0+0.3
			Ash 85.51	122 \pm 3	0.86 \pm 0.13	0.32 \pm 0.18	60 \pm 5
Goldfish	11-17-75	Muscle	Wet 967	1.6+0.1	NA	<0.01	1.8+0.2
			Ash 7.93	198 \pm 5		<0.7	221 \pm 19
		Bone	Dry 13.69	NA	0.59+0.07	NA	NA
			Ash 5.97		1.36+0.17		
Carp	11-17-75	Muscle	Wet 732	1.9+0.1	NA	<0.01	1.8+0.2
			Ash 6.45	216 \pm 5		<0.5	203 \pm 18
		Bone	Dry 22.00	NA	0.35+0.01	NA	NA
			Ash 9.29		0.82 \pm 0.12		

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

^b N.A. - Analysis not required.

Table 42. Fish samples, analyses for gross beta, ^{90}Sr , and gamma-emitting isotopes, collected from Maumee Bay.

Type of fish	Date Collected	Sample type	Weight (g)	Gross beta	pCi/g^{d}		
					^{90}Sr	^{137}Cs	^{40}K
Perch	9-16-75	Whole	Wet 1669	2.0+0.1	0.04+0.01	0.021+0.010	2.5+0.2
			Ash 82.32	41 \pm 2	0.76 \pm 0.12	0.42 \pm 0.20	50 \pm 5
Carp	9-16-75	Muscle	Wet 956	2.1+0.1	NA ^b	0.004+0.002	2.3+0.1
			Ash 9.19	218 \pm 3		0.41 \pm 0.18	239 \pm 5
		Bone	Dry 21.24	NA	0.57+0.06	NA	NA
			Ash 9.41		1.28 \pm 0.14		
Gizzard Shad	9-16-75	Muscle	Wet 962	1.9+0.1	NA	0.020+0.008	2.2+0.2
			Ash 9.42	191 \pm 3		2.08 \pm 0.84	221 \pm 21
		Bone	Dry 20.06	NA	0.33+0.05	NA	NA
			Ash 9.28		0.70 \pm 0.10		

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

^b N.A. - Analysis not required.

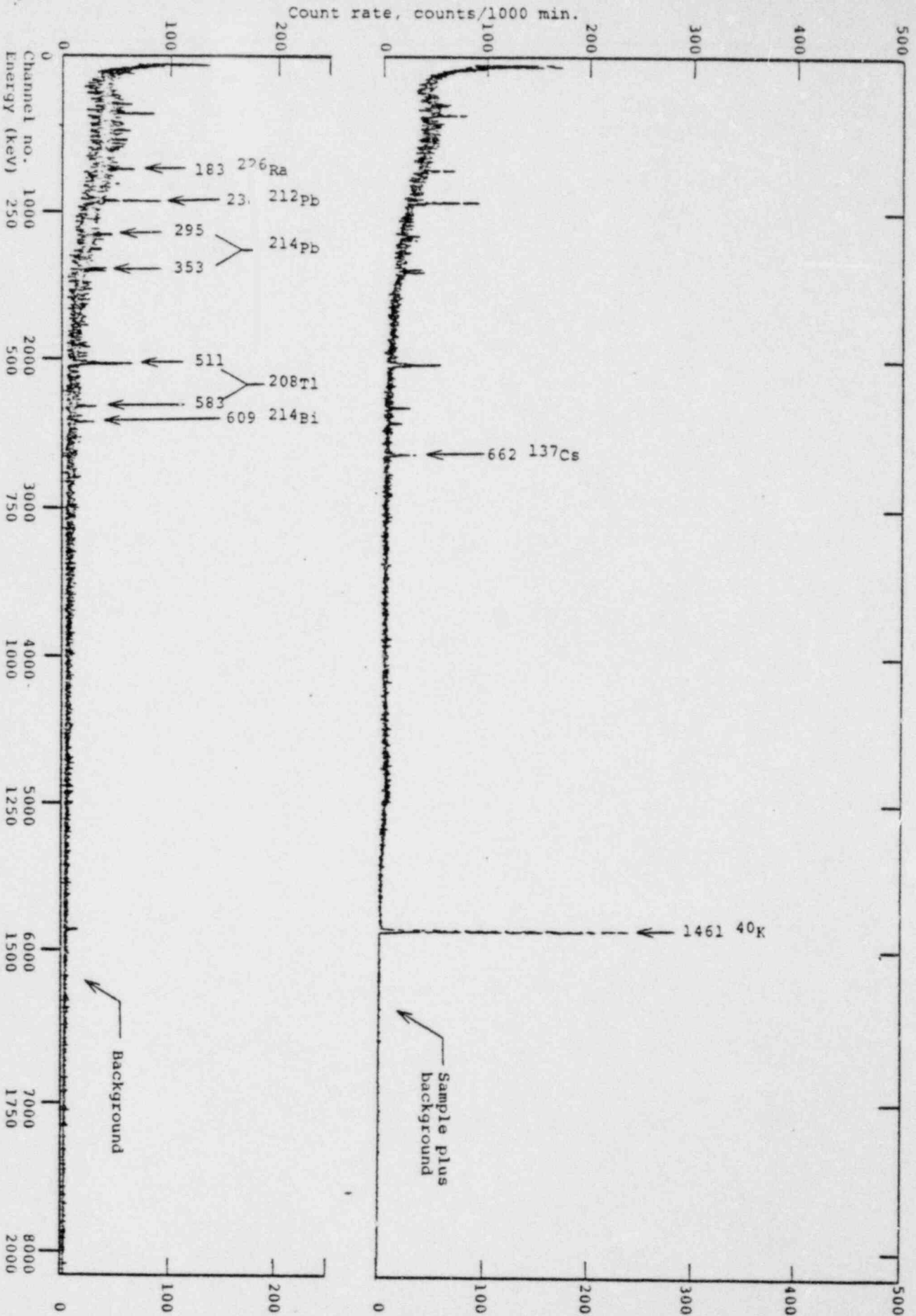


Figure 34. Gamma-ray spectrum of yellow perch flesh, 30-2048 keV. Detector: Ge(Li), 86.8 cm³ closed end coaxial. Sample: 15.149 g of ashed flesh, collected 9 September 1975 from Lake Erie in the vicinity of site. Counts: 3900 min. from 12 December to 15 December 1975, Davis-Besse NPP.

Table 43. Clam samples from Lake Erie in the vicinity of the site, analyses for gross beta and gamma-emitting isotopes, July-December 1975.

Date Collected	Weight (g)	pCi/g ^a		
		Gross beta	¹³⁷ Cs	⁴⁰ K
9-09-75	Wet 1402	0.7+0.1	0.003+0.003	0.26+0.05
	Ash 31.31	32 ±1	0.15 ±0.14	11.6 ±2.1
11-17-75	Wet 804	1.0+0.1	0.008+0.008	0.22+0.11
	Ash 26.06	31 ±1	0.25 ±0.25	6.9 ±3.5

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3-sigma counting error for background sample. Gamma spectral analyses showed that all other gamma-emitting isotopes were less than the minimum detectable levels.

Table 44. Bottom sediment samples, analyses for gross alpha, gross beta, ⁹⁰Sr, and gamma-emitting isotopes, July-December 1975.

Location	Date Collected	pCi/g-dry weight ^a				
		Gross alpha	Gross beta	⁹⁰ Sr	¹³⁷ Cs	⁴⁰ K
T-1 (Site boundary, 0.6 mi. NE of plant)	10-06-75	<2	13.1+1.9	<0.1	0.03+0.01	10.8+0.4
	11-06-75	<3	10.2+2.4	<0.1	0.03+0.02	11.5+0.5
T-29 (Lake Erie, intake area 1.5 mi. NE of plant)	10-09-75	7.4 +4.8	16.6+3.0	<0.1	0.04+0.02	15.5+0.6
	11-17-75	8.0 +4.7	16.9+2.7	<0.1	0.07+0.02	13.3+0.6
T-30 (Lake Erie, discharge area, 0.9 mi. ENE of plant)	10-09-75	8.1 +4.8	17.8+2.9	<0.1	0.07+0.01	14.7+0.3
	11-17-75	13.2 +5.7	24.2+3.2	<0.1	0.17+0.03	13.7+0.6

^a The error given is the probable counting error at the 95% confidence level. Less than (<) values are based on 3 sigma counting error for background samples. Gamma-spectral analyses showed that all other gamma-emitting isotopes were less than the minimum detectable limits.

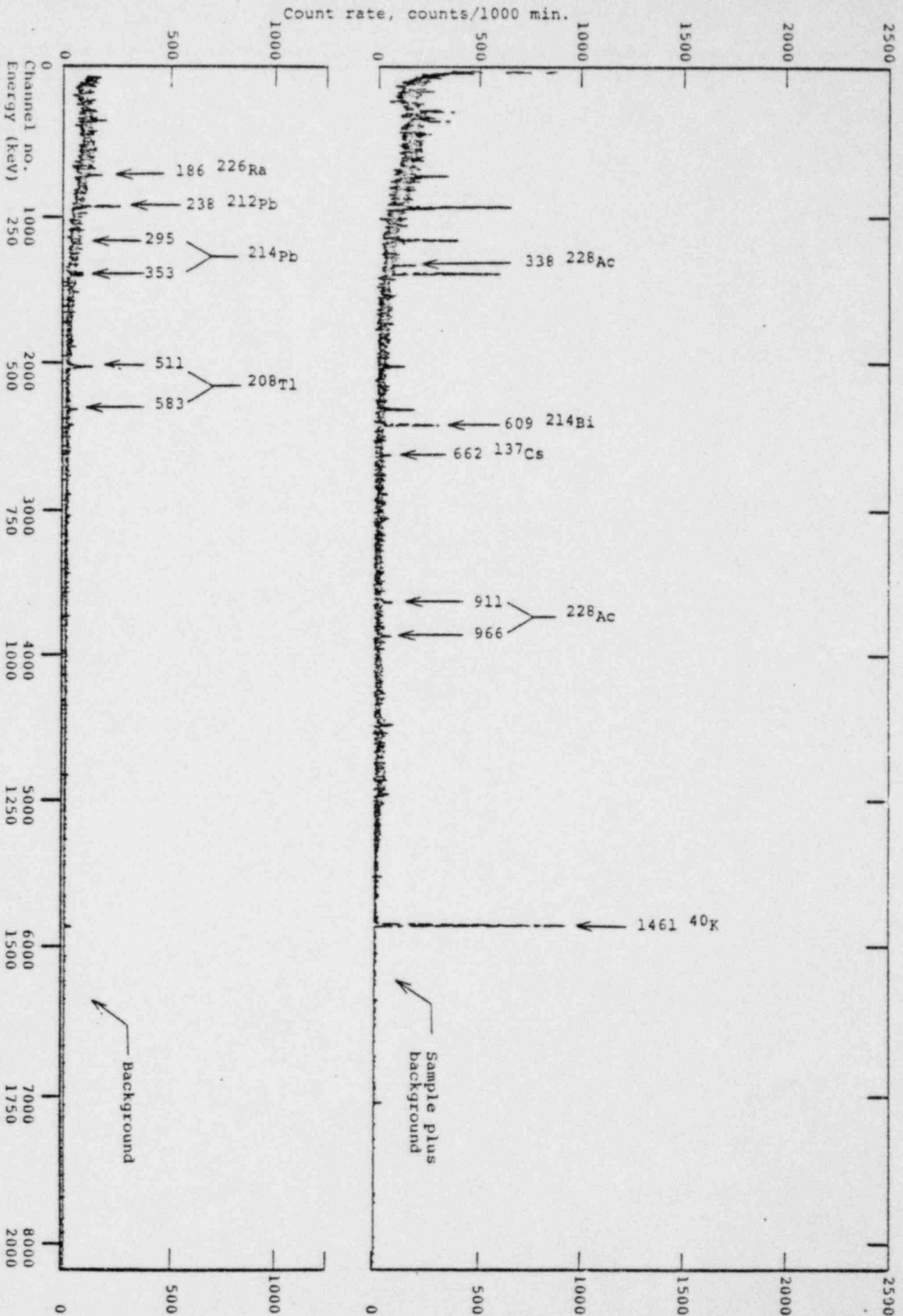


Figure 35.

Gamma-ray spectrum of bottom sediments, 30-2048 keV. Detector: Ge(Li), 86.8 cm³ closed end coaxial. Sample: 777 g of dry bottom sediments, collected 6 November 1975 from Lake Erie (T-1, 0.5 mi. NE of plant, near intake canal). Counts: 300 min. on 8 December 1975, Davis-Besse NPP.

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