RETS MASTER FILE

ENV 78-83

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8512310348 DOC. DATE: 84/01/19 NOTARIZED: NO DOCKET #
FACIL: 50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397

AUTH. NAME	AUTHOR AFFILIATION
PRINCE, J. K.	Washington Public Power Supply System
CARD, C. J.	Washington Public Power Supply System
SORENSEN, G. C.	Washington Public Power Supply System
RECIP. NAME	RECIPIENT AFFILIATION

Copies on microfilm ... 8/7/87

SUBJECT: "Preoperational Environ Radiological Monitoring Rept, 780301 - 840119." W/851211 ltr.

See Environ. Rept

DISTRIBUTION CODE: IE01D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 250
TITLE: General (50 Dkt)-Insp Rept/Notice of Violation Response

NOTES: 05000397
OL: 12/20/83

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	BWR PD3 PD	1	1	BRADFUTE, J	1	1
INTERNAL:	ACRS	2	2	AEOD	1	1
	ELD/HDS2	1	1	IE FILE 01	1	1
	IE/DEPER/EPB	1	1	IE/DI/ORPB	1	1
	IE/ES	1	1	NRR ROE, ML	1	1
	NRR/DSRO/RRAB	1	1			
EXTERNAL:	24X	1	1	LPDR	1	1
	NRC PDR	1	1	NSIC	1	1

2 copies rec'd 5/17/86

TOTAL NUMBER OF COPIES REQUIRED: LTTR 16 ENCL 16

Washington Public Power Supply System
P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

December 11, 1985

1985 DEC 16 PM 1:31

RECEIVED

Administrator
Region V Office of Inspection
and Enforcement
Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Dear Sirs:

SUBJECT: REVISED PREOPERATIONAL ENVIRONMENTAL
RADIOLOGICAL MONITORING REPORT FOR WNP-2

Attached is the final revision of the Preoperational Environmental Monitoring Report for WNP-2 which was originally distributed in 1984.

Please feel free to contact Catherine Card at (509) 377-8066 if you have any questions concerning this report.

Very truly yours,

Carl Van Hoff for

G. C. Sorensen, Manager
Regulatory Programs

GCS/CJC/vlc

Attachments

IE01

Washington Public Power Supply System
3000 George Washington Way P.O. Box 968 Richland, Washington 99352-0968 (509)372-5000

Envron.
See Rept.

August 29, 1985
G02-85-498

Docket No. 50-397

Mr. J. B. Martin
Regional Administrator
U.S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596

Dear Mr. Martin:

Subject: NUCLEAR PLANT NO. 2
SEMI-ANNUAL EFFLUENT REPORT
JANUARY 1 to JUNE 30, 1985 (ATTACHED)

In accordance with Title 10 of the Code of Federal Regulations, Part 50.36a (a) (2), the subject report is herewith being submitted.

Should you have any questions, please contact Mr. R. G. Graybeal, Manager, WNP-2 Health Physics/Chemistry.

Very truly yours,

CM Powers

C. M. Powers
WNP-2 Plant Manager

vih

Attachment

cc: JO Bradfute - NRC
RC DeYoung - NRC
C Eschels - EFSEC
D Jaquish - DOE
D Sherman - Amer. Nuclear Insurers
TR Strong - DSHS
AD Toth - NRC Site
Document Control Desk - NRC

#8509100040

ER1

Washington Public Power Supply System
P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

50-397

See Reports

May 15, 1985

Mr. William L. Fitch
Executive Secretary
Energy Facility Site Evaluation Council
820 East 5th Avenue
MS-PY-11
Olympia, Washington 98504

Dear Mr. Fitch:

Subject: NUCLEAR PLANT NO. 2
OPERATIONAL ECOLOGICAL MONITORING
PROGRAM REPORT: 1984

Reference: Site Certification Agreement, WNP-2
Article V.B.7

In accordance with the requirements of the Site Certification Agreement for WNP-2, the Supply System is submitting six copies of the 1984 Operational Ecological Monitoring Report for WNP-2.

Should you have any questions, do not hesitate to contact R. A. Chitwood, Manager of Emergency Planning and Environmental Programs.

Very truly yours,

GC Sorensen

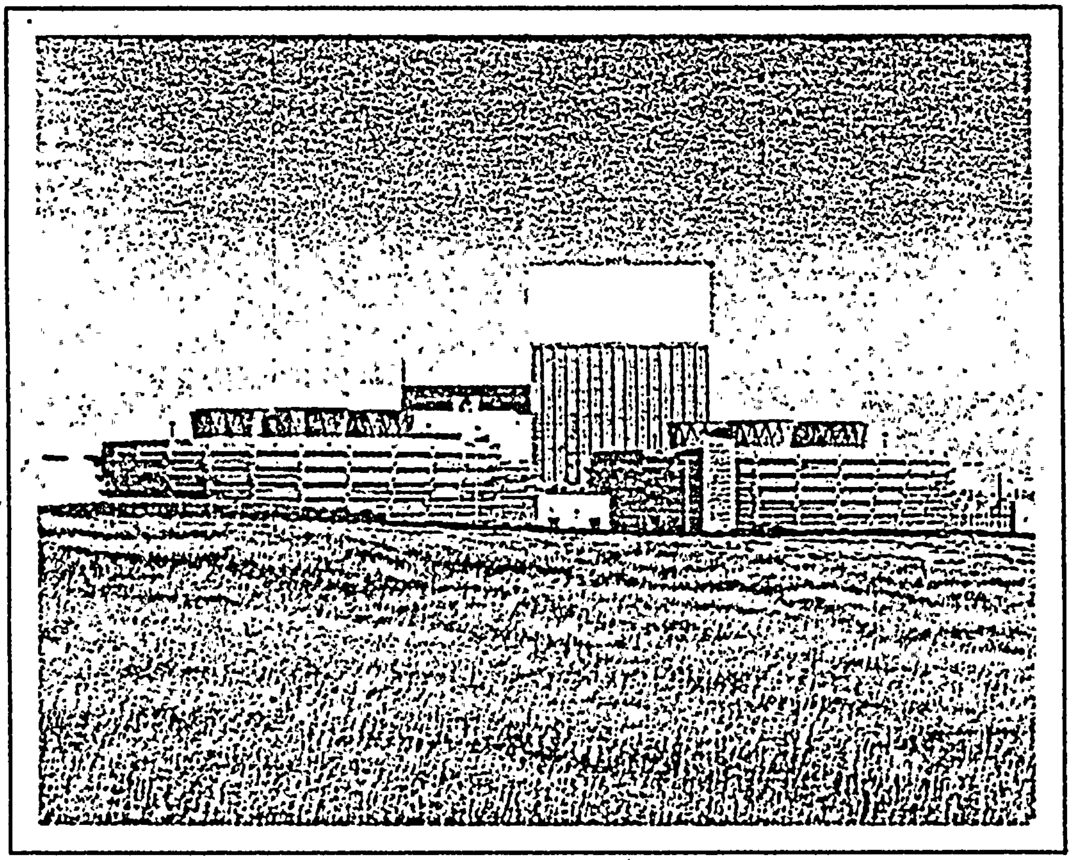
G. C. Sorensen, Manager
Regulatory Programs

Enclosures: Operational Ecological Monitoring Program for Nuclear Plant 2, 1984 Annual Report (6 copies)

cc: See attached list.

IE-06
1/1

PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM WNP-2



1985

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

IE01
1/1

PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM

WNP-2

JUNE 1984

Revised 1985

Prepared By

J.K. Prince
C.J. Card
W. Davis III

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM

WNP-2

JUNE 1984

REVISED 1985

APPROVALS:

WNP-2 Plant Manager:	C. M. Powers	11-21-85 Date
WNP-2 Licensing Manager:	P. L. Powell	11/23/85 Date
WNP-2 Health Physics/ Chemistry Manager:	R. G. Graybeal	11-21-85 Date
Emergency Planning and Environmental Programs:	R. A. Chitwood	11-25-85 Date

Originated By:	C. J. Card	11-19-85 Date

Acknowledgments

The authors would like to gratefully acknowledge L.S. Schleder and J.L. Hickam for their diligent sample handling and collection and R.W. Craig, J.E. Mudge and M.L. Miller for their leadership and program direction during the preoperational phase.

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984

CONTENTS

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984

CONTENTS

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984
(TABLES)

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984
(TABLES)

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984
(TABLES)

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984
(TABLES)

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984
(TABLES)

(FIGURES)

WASHINGTON NUCLEAR PLANT #2
PREOPERATIONAL ENVIRONMENTAL RADIOLOGICAL
MONITORING REPORT

MARCH 1978 THROUGH JANUARY 19, 1984
(FIGURES)

ABSTRACT

A preoperational Radiological Environmental Monitoring Program (REMP) was initiated in 1978 in order to provide a baseline of radiological data. This data will be utilized in the future to evaluate the impact of effluent releases of radioactivity on the surrounding environs as a result of the operation of WNP-2. The REMP was designed to meet both regulatory requirements and scientifically valid concerns.

Media which were evaluated included: air, river, drinking and well water, soil, river sediment, milk, produce, fish, and direct radiation (TLDs). All data are in concert with results previously published by other organizations on the Hanford Site. Generally, radionuclide concentrations in sampled media are at or below the detection limit. The few exceptions include very low levels of activity from Cobalt-60, Cesium-137 and Tritium in a few media as a result of worldwide fallout from atmospheric weapons testing and/or historical Hanford Site operations.

1.0 INTRODUCTION

A comprehensive environmental surveillance program is an important component of verification that designed nuclear plant operating controls for effluent releases of radioactive material are functioning as intended. Using the guidance presented in applicable regulatory documents, the radiological environmental monitoring program was designed to satisfy the criteria for a multi-plant site and was implemented in 1978, based on projected fuel loading in March 1980 for WNP-2. Minor modifications to the original program have been made during the preoperational phase to accommodate changing regulatory requirements and to ensure a smooth transition into the operations phase program for WNP-2. The preoperational phase program was initiated on March 1, 1978, and ended in January 1984 with initial criticality at WNP-2. This report summarizes the results of measurements from samples collected during this period.

The preoperational program of sampling and measuring radioactivity in the various environmental media permitted a general characterization of the existing radiation levels and concentrations prior to plant operation. This program also provided an indication of the degree of natural variation in these levels and concentrations that can be expected regardless of plant operational impacts.

Detailed information concerning site characteristics and environmental interfaces such as geography, demography, ecology, hydrology, geology and meteorology, are contained in the Environmental Report-Operating License Stage, and Final Safety Analysis Report for WNP-2 and will not be included in this report, though these interfaces were an important aspect in the design of the radiological environmental monitoring program.

2.0 SAMPLING PROGRAM

The preoperational program was designed to provide measurements of radiation and radioactive materials in specific environmental pathways and of certain radionuclides for which the highest potential dose commitment to a member of the public is expected to occur due to the operation of WNP-2. The preoperational program was implemented in three stages as indicated below:

Stage I
- Two years of sampling for:
  - Direct Radiation
  - Fish
  - Vegetation
  - Sediment

Stage II
- One year of sampling for:
  - Airborne (particulate)
  - Milk (isotopic)
  - River (Surface) water
  - Drinking water
  - Ground water

Stage III
- Six (6) months of sampling for:
  - Airborne (iodine)
  - Milk (iodine)

The above indicated sampling period for each stage is the minimum allowed per regulatory requirement. The WNP-2 preoperational phase program exceeded these minimum sampling periods in all cases. Table 2-1.0 details the operational phase monitoring plan, with a total of seventy-two (72) sampling stations. All operational phase program sampling was implemented during the preoperational phase program. Sample locations keyed to sample type at each location are graphically represented in Figure 2-1. Sample locations outside the 10 mile radius of WNP-2 containment are represented in Figure 2-2. Table 2-2.0 lists the implementation schedule and identifies changes made to the program between March 1978 and January 1984. All sampling stations are listed in Table 2-3.0 by sector, radial distance from WNP-2 containment, and sample type(s).

Analytical contractors for the preoperational REMP were 1) Eberline Services Division, Midwest Laboratory, Chicago, Illinois from March 1978 through June 1982; 2) Eberline Services Division, Albuquerque Facility Laboratory, Albuquerque, New Mexico from July 1982 through June 1983; and

3) NUS Corporation, Environmental Services Division, Radiological Laboratory, Pittsburgh, Pennsylvania from July 1983 through January 1984. Dosimetric (TLD) services were contracted to U. S. Testing from March 1978 through March 1982 when the Supply System Dosimetry Group, Radiological Support Services, became the primary supplier for environmental TLD measurements.

During September 1983, land use census information was updated using data obtained from survey questionnaires completed during the distribution of Emergency Broadcast System (EBS) radios. The EBS radios were distributed jointly by the Supply System Emergency Preparedness Group and the Franklin-Benton Counties Emergency Management Organization to residents of the area within a ten (10) mile radius of the plant site. Tables 2-4.0 and 2-5.0 are summaries of the results of the EBS survey questions that were of importance in maintaining a valid monitoring program. They indicate the locations of milk animals, vegetable gardens, livestock and residents within a five mile and a 10 mile radius from WNP-2 containment.

2.1 Sampling Methods and Procedures

To achieve meaningful and useful data from the monitoring program, sampling methods and procedures were required which provided samples representative of the potential exposure pathways in the vicinity of the plant. During the preoperational phase of the program, samples were collected to obtain background radiological information and to acquire the experience with and optimization of sampling methodologies and procedural format with respect to site specific conditions.

2.1.1 Air Particulate and Radioiodine

Air samplers were run continuously and the filter and charcoal cartridge exchanged weekly. The samples were collected using a portable, low volume, constant flow air sampling unit. Since 1983 the sampling units have been internally set and calibrated to maintain a 1.5 cfm sampling flow rate. The sampling units with air particulate filter and charcoal cartridge were placed in well ventilated metal weather housings on elevated platforms. Glass fiber (47 millimeter) filters were used for particulate sampling. Activated charcoal cartridges were used to collect radioiodine samples. The filter and cartridge were removed from the air sample and placed in protective containers for shipping. Instrumentation flow rates and other pertinent operational parameters were recorded and submitted with the samples for analysis.

2.1.2 Ambient Radiation Measurements

Thermoluminescent Dosimeters (TLDs) were placed in the field in pairs at designated locations and exchanged on either a quarterly and annual frequency. The dosimeters were sealed in weatherproof containers in the laboratory and placed approximately one (1) meter above ground level for field cycle exposure. Care was taken to minimize exposure of the TLDs during transport to and from the field.

Pressurized Ion Chambers were placed in the field for a test period beginning in September 1982. Difficulty was experienced in maintaining the operability of these units for time periods exceeding a few weeks.

2.1.3 Terrestrial Soil

Terrestrial soil samples of approximately 4 kg in weight were taken once a year. The soil samples were taken from an area of about one (1) square foot to a depth of one (1) inch. Vegetation and rocks were removed prior to sealing the containers for shipment to the analysis laboratory.

2.1.4 Garden Produce

Vegetation samples, consisting of one sample each of a typical leafy vegetable, root crop and fruit, were collected depending on local harvest availability. After removal of excess soil, tuberous crop samples were packaged and shipped for analysis.

2.1.5 Milk

Milk samples were collected semi-monthly during the summer months when pasture feeding would be a common practice and monthly during the remainder of the year. Prior to July 1983, samples were mixed with an ion exchange resin to extract and concentrate any iodine present prior to shipment. Beginning in July 1983, the milk samples were preserved with formalin solution and immediately shipped for analysis.

2.1.6 Surface and Drinking Water

Monthly aliquots from composite (integrated grab) samples were taken at surface, drinking, and discharge water sample locations. The composite sampling device was set to collect aliquots every forty-five (45) minutes. These aliquots were alternately dispersed into two large volume containers. One sample volume was acidified with concentrated acid, and a one (1) gallon sample was extracted for analysis. A tritium sample volume ($\sim$250 ml), taken from the second non-acidified container, was shipped to the laboratory for composite and analysis on a quarterly basis.

2.1.7 Well (Ground) Water

Quarterly grab samples were collected from on-site wells used to support construction activities and to provide site drinking water. Samples were collected after pumps had been activated for at least fifteen (15) minutes. The one (1) gallon samples were shipped, untreated, to the laboratory for analysis.

2.1.8 Shoreline Sediment

Shoreline area sediment samples were collected twice a year. Samples were scooped from just below the river's surface near the shoreline in areas of sediment deposition. Large rocks and foreign material were removed from the sample prior to packaging and shipping for analysis.

2.1.9 Fish

Fish samples were collected twice a year. Salmonoids were collected from the Ringold Fish Hatchery on the Columbia River and the Lower Granite Dam on the Snake River. Other fish species were collected by electroshock technique. Fish were cleaned and filletted prior to freezing in preparation for shipping to the laboratory for analysis.

2.2 Analytical Procedures and Calculational Models

2.2.1 Analytical Procedures for Radiochemical Analysis, NUS Laboratory

Laboratory methods, used by NUS in its radioanalytical programs were detailed in individual work instructions or procedures. The work instructions used in the Radiological Laboratory have been drawn from published analytical methods, including those of the Environmental Measurement Laboratory, DOE (formerly Health and Safety Laboratory of the U. S. Energy Research and Development Administration) and the laboratories of the U. S. Environmental Protection Agency, which were consistent with current regulatory positions for satisfying analytical performance standards. The current versions of these published manuals, copies of methods published in the Regulatory Guides of the U.S. Nuclear Regulatory Commission and other government or industry-approved analytical methods are at hand in the laboratory and were relied upon as the basis for laboratory protocol. All sample preparation and processing methods are covered by written work instructions. Procedural methods have been summarized in Table 2-6.0.

2.2.1.1 Calculational Models

Data analysis at NUS was performed on a DEC PDP 11/44 computer system. High resolution gamma spectra were analyzed utilizing Spectran F, the calculation model developed by Canberra Industries, Inc. for the analysis of Geli and HpGe spectra. The analysis of NaI(Tl) spectra was performed with Gamma M, a program also developed by Canberra Industries, Inc.

The programs used for the computation of results, errors and LLDs for non-spectrometric analyses were written inhouse and are documented as required.

Activities, errors and LLDs are calculated as follows:

$$\text{Activity} = \frac{\text{Sample Counts - Background Counts}}{\text{2.22*Time*Aliquot Size*Yield*Efficiency*Decay Factor}}$$

$$\text{Error(2S)} = \frac{\text{2*SQRT (Sample Counts + Background Counts)}}{\text{2.22*Time*Aliquot Size*Yield*Efficiency*Decay Factor}}$$

$$\text{LLD} = \frac{\text{4.66*SQRT (Background Counts)}}{\text{2.22*Time*Aliquot Size*Yield*Efficiency*Decay Factor}}$$

NOTE: These equations are expressed in terms of computer notation.

All results are reported in units of picoCuries per aliquot size. Individual terms are defaulted to unity as appropriate. For the calculation of SR-89, the count rate of SR-90 is subtracted after correction for differences in counting efficiencies as well as Sr-90 and Sr-89 decay and Y-90 ingrowth. Table 2-7.0 summarizes the NUS analytical sensitivities.

2.2.2 Analytical Procedures for Radiochemical Analysis for Eberline Services Division

Prior to July 1983, Eberline Services, a division of Thermo Nuclear Corporation was the analytical contractor for the preoperational REMP. Sample analysis during the tenure of service by Eberline was directed by procedural methods equal to, and in most cases, identical with, those of the USDOE, Environmental Measurements Laboratory Procedures Manual (EML-300/HASL-300) or those of the U.S. Environmental Protection Agency. General procedural methodologies and routine analytical sensitivities are discussed below.

2.2.2.1 Analytical Detection Limits and Count Rate

Since the principle known uncertainty in environmental radiological analysis is sample count rate, the data reported by Eberline presents an error term that was based on this uncertainty factor. This uncertainty was calculated by standard methods and reported at the 95 percent confidence level (2σ) if the result was greater than the Lower Limit of Detection LLD, as defined in "Detection Capabilities for Environmental Sample Analysis", Table 3 of Regulatory Guide 4.8 and Table 2 of the Radiological Assessment Branch, NRC, Branch Technical Position, Rev. 1, 1979.

Table 2-8.0 of this report reflects the current LLD values specified by Plant Technical Specifications. Contractural changes in 1982 required the vendor to report actual calculated LLDs instead of the "Detection Capability" value reported previously. The actual LLD was procedurally established as "that concentration which is 3 times the standard deviation error of the average concentration in a blank or background sample".

2.2.2.2 Air Particulates

Gross beta concentrations were measured with low background (gas flow proportional and/or Gieger) counting systems with anti-coincidence background suppression. The routine detection limit (LLD) was 0.002 pCi/m^3 for gross beta or gross alpha based on a minimum sample volume of 300 m^3/week.

Gamma isotopic analyses were performed with germanium detectors with a routine lower detection limit of about 0.05 pCi/m^3 for most gamma emitters for single filters and about 0.01 pCi/m^3 for monthly composite samples.

2.2.2.3 Radioiodine

The charcoal cartridges used were the TEDA-impregnated type. Iodine was extracted from the charcoal, chemically separated, and counted as AgI using wide beta or low beta counters which yield an LLD of 0.1 pCi/m^3.

2.2.2.4 Drinking, Surface and Ground Water

Gross beta analysis of water samples was performed by evaporation of a measured aliquot of the sample, acid digestion, planchetting of the processed sample and radiometric assay by low-level beta counting with an LLD of 0.5 pCi/l. Tritium analysis was performed on all water samples to the required LLD of 1000 pCi/l by liquid scintillation counting. Gamma isotopic analysis was performed using germanium detectors with a routine LLD of 25 pCi/l per gamma emitting radionuclide.

2.2.2.5 Soil or Sediment

Samples were oven-dried and results reported based on dry weight. Gamma emitters were measured with germanium detectors with an LLD as specified. The analysis for Sr-89 and Sr-90 was performed on ashed samples using a strontium chemical yield and two-separation technique (EML Procedures Manual 1982, E-Sr-01).

2.2.2.6 Vegetation/Garden Produce or Fish

Measured amounts of these types of samples were analyzed for gamma emitters by gamma spectrometry with counting times adjusted to provide LLDs at least as sensitive as required for the appropriate sample type. Analysis for Sr-89 and Sr-90, if performed, was on ashed samples using a strontium chemical yield and two-separation technique.

2.2.2.7 Milk

The determination of I-131 in fresh milk was based on anion exchange removal of the I-131, followed by radiochemical purification and low background beta counting. The LLD was 0.2 pCi/l or better and the overall accuracy at 0.5 pCi/l was $\pm$ 25 percent or better at the 95-percent confidence level. Gamma emitters in milk were measured with germanium detectors. The analysis for Sr-89 and Sr-90, if performed, was on ashed samples using a strontium chemical yield and two-separation technique.

2.2.3 Ambient Radiation Dosimetrics

2.2.3.1 Supply System Environmental TLDs

The responsibility for ambient radiation dose measurements resided with the Radiological Programs Group, the Supply System's Support Services Directorate. The Radiological Programs Group has been providing this in-house service since January 1982. The field dosimeters are a Teledyne $CaSO_4$:Dy phosphor sandwiched between layers of teflon. The teflon-phosphor laminate (TLD card) is approximately 32 mm x 45 mm x 0.5 mm in size with eight (8) possible readout areas per TLD card (4 primary and 4 backup readout areas). The TLD card is packaged for field use in black plastic inserted into a Teledyne (film-badge style) holder and further sealed and wrapped in aluminum foil, double bagged in plastic and placed in a cloth type pouch for field placement. Control and trip dosimeters are identically packaged and handled to assure proper evaluation of field cycle exposure. Figures 5-3 and 5.4 provide additional information relative to TLD evaluation.

2.2.3.2 U.S. Testing Dosimetry Service

Prior to the development of the Supply System's ambient radiation dose measurement system, the TLD service was contracted to U.S. Testing Co., Inc., Richland Division. The TLD material used by U.S. Testing was TLD-700. The variability in radiation sensitivity amongst the TLD chips was $\pm$ 2% at 1σ. Each dosimeter card had four (4) TLD chips enclosed. Each chip in the dosimeter card was individually calibrated and processed for evaluation by an automatic computer controlled card reader. The TLD cards were sealed in teflon film and packaged for field distribution similar to the method used currently by the Supply System. For additional information relative to the handling and evaluation of the UST TLDs, refer to Figures 5-1 and 5-2.

2.2.3.3 Supply System Pressurized Ion Chambers

Placement of three (3) pressurized ion chambers (PIC) was consistent with the requirements established by the State of Washington Energy Facility Site Evaluation Council. The Supply System began operation of the PIC units in September of 1982 as indicated in Table 2-2.0, with field placement and monthly exchange of strip chart and cassette data tapes for review and evaluation. The strip charts were visually scanned against a predesignated scale, noting

any apparent anomalous readings. Data on the cassette tapes, however, was never successfully processed and entered onto the Supply System's Prime computer. Continuous operation of the PIC units was not achieved due to the high mechanical failure rate and apparent high susceptibility to AC power supply transients. The PIC units were removed from the field and retained for use in situations requiring only short term monitoring.

2.3 Operational Phase Nonroutine Reporting Requirements

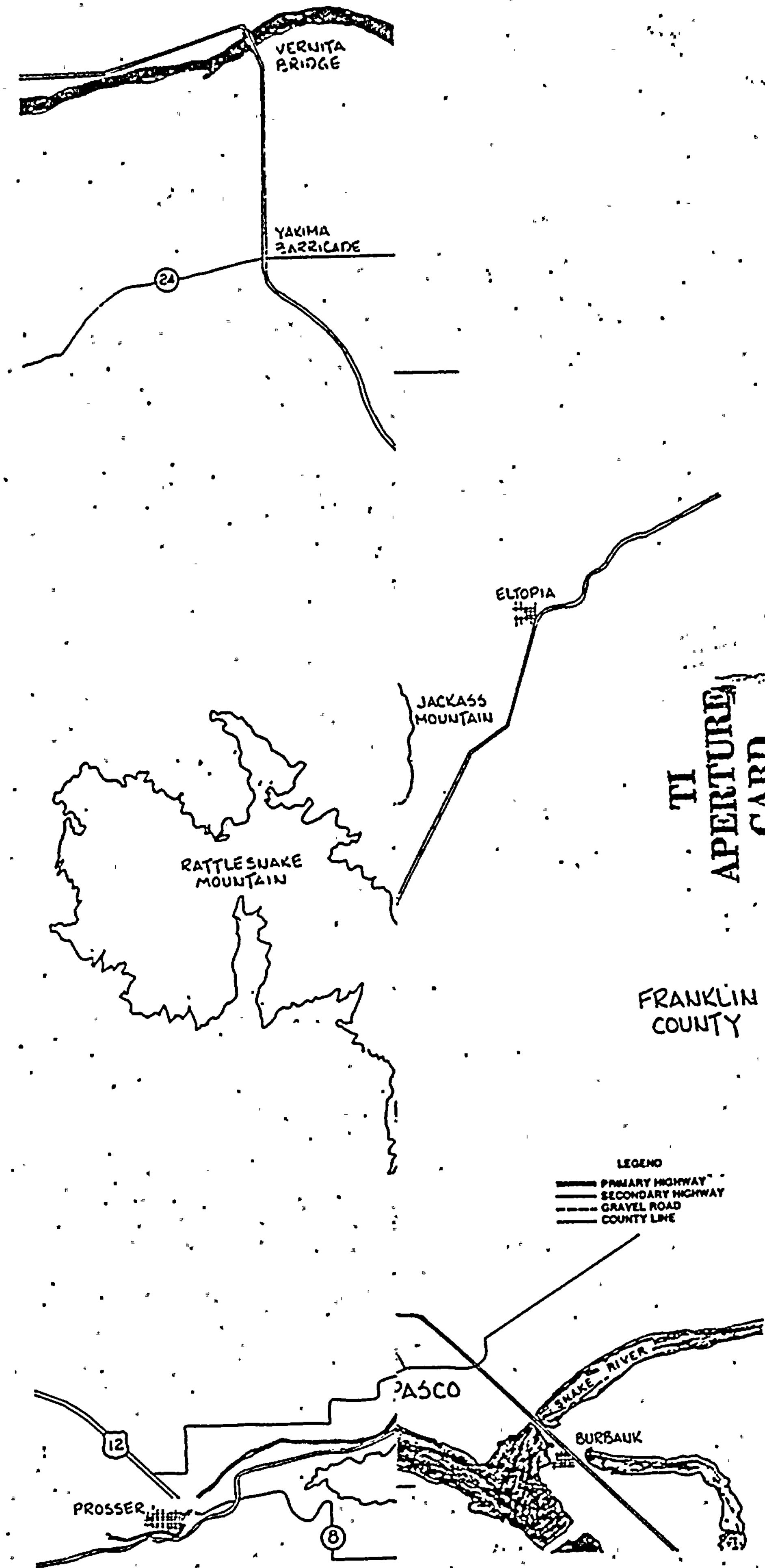
Table 2-9.0 identifies specific radionuclide concentrations for environmental sample media that form the basis of a limiting condition for plant operation, as prescribed by Plant Technical Specifications. Consistent with these requirements, a nonroutine report will be issued to the Nuclear Regulatory Commission and the Washington State, Energy Facility Site Evaluation Council if the level of radioactivity, as the result of plant effluents in an environmental sampling medium at a specified location exceeds the reporting levels (Table 2-9.0) when averaged over any calendar quarter. When more than one of the radionuclides in Table 2-9.0 are detected in the sample media, the special report is issued if:

$$\frac{\text{Concentration (1)}}{\text{Reporting level (1)}} + \frac{\text{Concentration (2)}}{\text{Reporting Level (2)}} + \ldots \geq 1.0$$

When radionuclides (other than those in Table 2-9.0) or a gamma dose are determined to be the result of plant effluents, the report is issued if the potential annual dose to a member of the public is equal to or greater than the limits summarized in Table 2-10.0, as prescribed by Section 3/4.11 of the Plant Technical Specifications.

A nonroutine report is not required if the measured level of radioactivity is not the result of plant effluents.

Special action levels such as noted in Table 2-11.0 were established as guidance to ensure that anomolous or unusual analytical result(s) initiate prompt evaluation. In general these action levels were established at approximately 25% of the above required reporting levels for the operational program. Corrective actions taken subsequent to this initial evaluation should ensure that the Table 2-9.0 reporting levels will not be exceeded as a result of routine plant operation.



8512310348-01

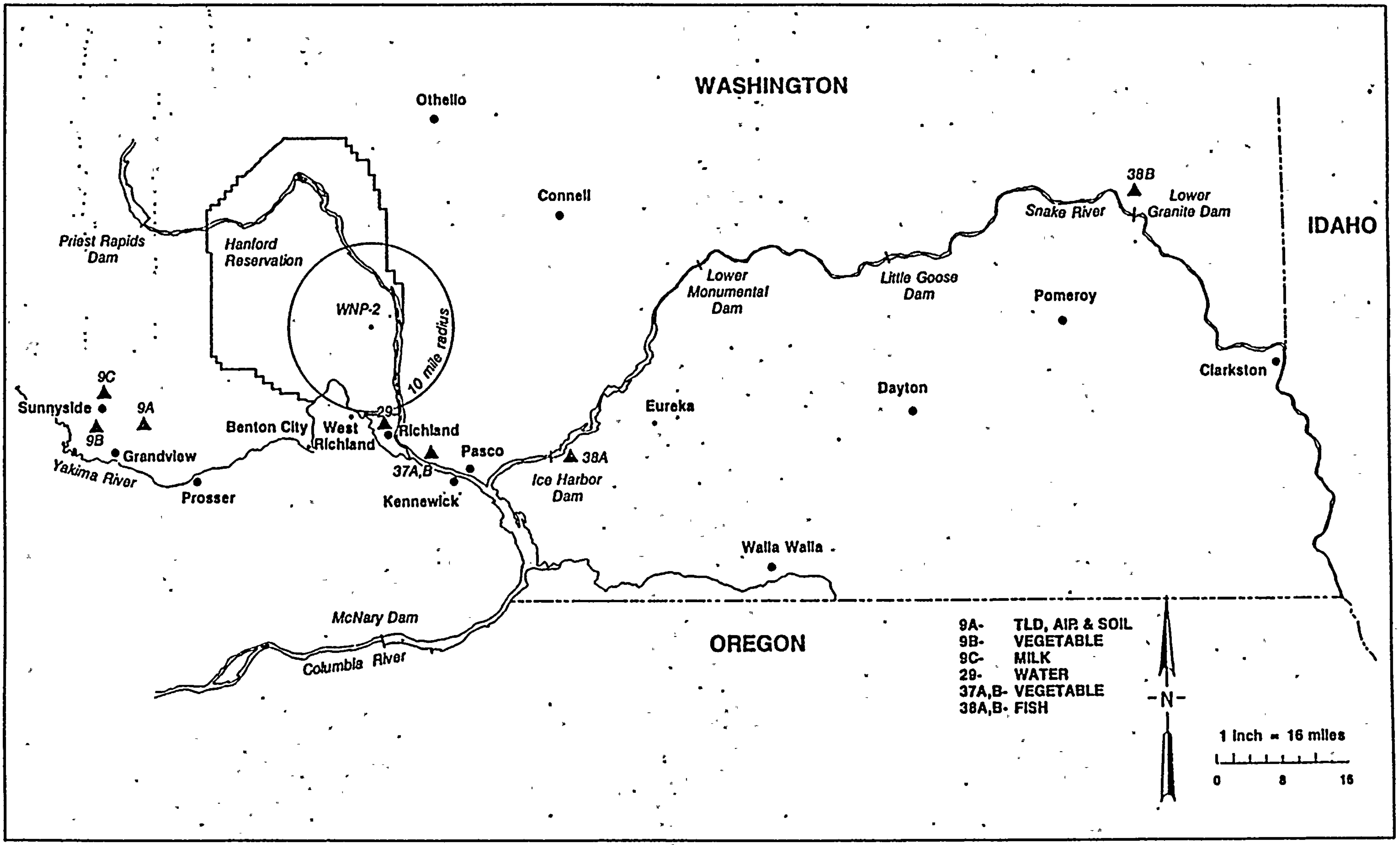


Figure 2-2

Radiological Environmental Monitoring Sample Locations Outside of 10-Mile Radius

840440.5A
(5/84)

TABLE 2-10

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM PLAN

	Sample Type[12]	Sample Location Code[1]	Sampling and Collection Frequency[1]	Type and Frequency of Analysis[1]
1.	AIRBORNE			
a.	Particulates and radioiodine (6/12)	1, 4-9, 21, 23, 40, 48, and 57	Continuous sampling Weekly collection	Particulate: Gross beta[2], weekly; gamma isotopic[3] quarterly composite (by location)
b.	Soil[10] (0/5)	9, 1, 7, 21, and 23	Annually	Gamma isotopic[3]
2.	DIRECT RADIATION			
a.	TLD[4] (34/56)	1-9, 10-25, 40-47, 49-51, 53-56, 1S-16S	Quarterly, annually	Gamma, quarterly data review
b.	PIC[11] (0/3)	1, 21, and 23	Continuous recording, monthly tape exchange	Gamma, monthly data review
3.	WATERBORNE			
a.	Surface/ Drinking Water[6] (3/4)	26, 27, 28 and 29	Composite aliquots[5] monthly	Gamma isotopic[3], Gross Beta; Tritium quarterly composite
b.	Ground Water (2/3)	31, 32, and 52	Quarterly	Gamma isotopic[3] and tritium, quarterly
c.	Sediment from shoreline (1/2)	33 and 34	Semiannually	Gamma isotopic[3]

TABLE 2-1.0 (Contd.)

	Sample Type(12)	Sample Location Code[1]	Sampling and Collection Frequency[1]	Type and Frequency of Analysis[1]
4.	INGESTION			
	a. Milk[7]	9, 35, 36, and 40	Semimonthly during grazing season, monthly at other times	Gamma isotopic[3] Iodine-131
	b. Fish[8]	30, 38, and 39	Seasonal or Semiannually	Gamma isotopic[3]
	c. Garden Produce[9]	37 and 9	Monthly during growing season in the Riverview area of Pasco and a control near Grandview	Gamma isotopic[3]

Sample locations are graphically depicted in Figures 2.0-1 and 2.0-2.

[1]Deviations are permitted if samples are unobtainable due to hazardous conditions, seasonal availability, malfunction of automatic sampling equipment, or other legitimate reasons. All deviations will be documented in the Annual Radiological Environmental Monitoring Report.

[2]Particulate sample filters will be analyzed for gross beta after at least 24-hour decay. If gross beta activity is greater than 10 times the mean of the control sample, gamma isotopic analysis should be performed on the individual sample.

[3]Gamma isotopic means identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents of the facility.

[4]TLD refers to thermoluminescent dosimeter. For purposes of WNP-2 REMP, a TLD is a phosphor card (32mm x 45mm x 0.5mm) with eight individual read-out areas (four main dosimeter areas and four back-up dosimeter areas) in each badge case. TLDs used in REMP meet the requirements of Regulatory Guide 4.13 (ANSI N545-1975), except for specified energy-dependence response. Correction factors are available for energy ranges with response outside of the specified tolerances. TLD stations 1S-16S are special interest stations and are not included amongst the 34 routine TLD stations required by Plant Technical Specification, Table 3.12-1.

TABLE 2-1.0 (Contd.)

[5]Composite samples will be collected with equipment which is capable of collecting an aliquot at time intervals which are short relative to the compositing period.

[6]Station 26, WNP-2 makeup water intake from the Columbia River, satisfies program requirements for an upstream surface water and drinking water control sample. Station #28, 300 Area sample satisfies the requirements for downstream surface water and drinking water. Drinking water samples are not routinely analysed for I-131 from a two week composite. Two week composite sample analysis is initiated when the dose calculated for the consumption of water is greater than 1 mrem per year maximum organ dose using ODCM methodology and parameters.

[7]Milk samples will be obtained from farms or individual milk animals which are located in sectors with high calculated annual average ground-level D/Qs and high dose potential. Routine milk samples are collected in areas of high dose potential instead of within 5 km because of location of milk animals. If Cesium-134 or Cesium-137 is measured in an individual milk sample in excess of 30 pCi/l, then Strontium-90 analysis should be performed.

[8]There are no commercially important species in the Hanford reach of the Columbia River. Most recreationally important species in the area are anadromous, primarily salmonoids. Four fish specimen will normally be collected by electroshock technique in the vicinity of the plant discharge (Station 30). If electroshocking produces insufficient fish samples, anadromous species may be obtained from a catch pond at Ringold Fish Hatchery (Station 39).

[9]Garden produce will routinely be obtained from farms or gardens using Columbia River water for irrigation. One sample of a root crop, leafy vegetable, and a fruit should be collected each sample period if available. The variety of the produce sample will be dependent on seasonal availability.

[10]Soil samples are collected to satisfy the requirements of the Site Certification Agreement (SCA), WNP-2.

[11]Pressurized Ion Chambers (PICs) are instruments for measuring and recording dose rate continuously. The three PICs are a part of a special two-phase, two-year monitoring program for the Energy Facility Site Evaluation Council.

[12]The number in parentheses for each sample type indicates the ratio of Radiological Environmental Technical Specification (RETS) sample locations to total number of sample locations currently being monitored in the surveillance program.

TABLE 2-2.0

REMP SAMPLE IMPLEMENTATION

Sample Type	Total Number of Locations	Implementation Status	
DIRECT RADIATION			
TLDs	24	3/78	Exclusion Area TLDs (multiple plant site)
	32	3/82	4-5 mile radius
	32	5/82	Relocate Stations 21 and 23
	49	4/83	Restricted area WNP-2
	56	9/83	RETS committment
PICs	3	9/82	1st field placement
		9/82	2 units damaged by apparent lightning strike, repair status
		11/82	2 units in field
		12/82	1 unit in field
		3/83	All units repair status
		4/83	2 units in field
		7/83	All units repair status
		1/84	1 unit in field
		2/84	2 units in field
		3/84	All uhits repair status
SOIL	5	5/78	1st samples
		5/82	Two station locations moved
AIR PARTICULATE	5	3/82	1st filters collected
	6	8/82	Additional station(s)
	9	9/82	Additional station(s)
	10	1/83	Additional station(s)
	11	2/83	Additional station(s)
	12	11/83	Additional station(s)
AIR IODINE	10	1/83	1st charcoals collected
	12	11/83	Additional station(s)
SURFACE/DRINKING WATER	2	4/82	Drinking & Discharge
	3	5/82	Drinking
	4	9/82	Drinking/Surface
GROUND WATER	1	1/80	1st routine collection
	3	3/82	Additional station(s)
SEDIMENT	2	5/78	1st collections
FISH	2	4/78	1st collections
GARDEN PRODUCE	2	6/78	1st collections
MILK	4	3/82	analysis
	4	1/83	I-131 analysis

TABLE 2-3.0

REMP SAMPLE LOCATIONS BY SECTOR

SECTOR[1]		STATION	DISTANCE[3] MILES	METERS	SAMPLE TYPE[2]
N	(1)	52	0.10	161.	GW
		1-S	0.30	483.	TLD
		47	0.50	805.	TLD
		57	0.75	1201.	AP/AI
		18	1.10	1770.	TLD
		53	7.50	12068.	TLD
NNE	(2)	2-S	0.40	644.	TLD
		2	1.80	2896.	TLD
		54	6.50	10459.	TLD
NE	(3)	3-S	0.50	805.	TLD
		19	1.80	2896.	TLD
		48	4.30	6919.	AP/AI
		46	4.70	7562.	TLD
ENE	(4)	4-S	0.40	644.	TLD
		21	1.50	2414.	AP/AI/SO/ TLD/PIC
		20	1.90	3057.	TLD
		11	3.10	4988.	TLD
		45	4.20	6758.	TLD
		44	5.70	9171.	TLD
		35	10.50	16895.	MI
		33	3.60	5792.	SE

TABLE 2-3.0 (Cont'd)

REMP SAMPLE LOCATIONS BY SECTOR

SECTOR[1]	STATION	DISTANCE[3] MILES	METERS	SAMPLE TYPE[2]
E (5)	5-S	0.40	644.	TLD
	31	1.1	1770.	GW
	32	1.2	1931.	GW
	22	2.10	3379.	TLD
	10	3.10	4988.	TLD
	26	3.20	5149.	PW
	27	3.20	5149.	DW
	43	5.70	9171.	TLD
	30	3.30	5311.	FI
	38	26.50	42649.	FI
ESE (6)	6-S	0.40	644.	TLD
	51	2.10	3379.	TLD
	23	3.00	4827.	AP/AI/SO/ TLD/PIC
	8	4.70	7562.	AP/AI/TLD
	42	5.60	9010.	TLD
	36	7.20	11585.	MI
	5	7.70	12389.	AP/AI/TLD
	34	3.50	5632	SE
SE (7)	7-S	0.50	805.	TLD
	24	1.90	3057.	TLD
	3	2.00	3218.	TLD
	41	5.80	9332.	TLD
	40	6.40	10298.	AP/AI/MI/TLD

TABLE 2-3.0 (Cont'd)

REMP SAMPLE LOCATIONS BY SECTOR

SECTOR[1]	STATION	DISTANCE[3] MILES	METERS	SAMPLE TYPE[2]
SSE (8)	8-S	0.70	1126.	TLD
	25	1.60	2574.	TLD
	55	7.00	11263.	TLD
	28	7.40	11907.	PW
	4	9.30	14964.	AI/AP/TLD
	29	11.00	17699.	PW
	37	16.00	25744.	GP
S (9)	9-S	0.70	1126.	TLD
	1	1.30	2092.	AP/AI/SO/ TLD/PIC
	6	7.70	12389.	AP/AI/TLD
SSW (10)	10-S	0.80	1287.	TLD
	50	1.20	1931.	TLD
	56	7.00	11263.	TLD
SSW (11)	11-S	0.74	1126.	TLD
	13	1.40	2253.	TLD
WSW (12)	12-S	0.50	805.	TLD
	14	1.40	2253.	TLD
	9[4]	30.00	48270.	AP/AI/MI/GP/ TLD/SO
W (13)	13-S	0.50	805.	TLD
	15	1.40	2253.	TLD
WNW (14)	14-S	0.50	805.	TLD
	16	1.40	2253.	TLD
	7	2.70	4344.	AP/AI/SO/TLD

TABLE 2-3.0 (Cont'd)

REMP SAMPLE LOCATIONS BY SECTOR

SECTOR[1]	STATION	DISTANCE[3] MILES	DISTANCE[3] METERS	SAMPLE TYPE[2]
NW (15)	15-W	0.50	805.	TLD
	49	1.20	1931.	TLD
NNW. (16)	16-S	0.40	644.	TLD
	17	1.20	1931.	TLD
	12	6.10	9815.	TLD

1 The area in the vicinity of the WNP-2 plant is separated into 16 separate sectors for reporting purposes. The 16 sectors cover 360 degrees in equal 22.5 degree sections, beginning with Sector 1 (N) at 348.75 to 11.25 degrees continuing clockwise through Sector 16 (NNW).

2 Sample Type Key:

TLD	Thermoluminescent Dosimeter	MI	Milk
AP	Air Particulate	PW	Potable Water (drinking/surface)
AI	Air Iodine	GW	Ground Water
SO	Soil	DW	Discharge Water
SE	Sediment	GP	Garden Produce
FI	Fish	PIC	Pressurized Ion Chamber

3 Distances are estimated from map positions for each location as a radial distance from WNP-2 containment.

4 The Station #9 designation is for the Sunnyside-Grandview Control Area and is actually 3 separate locations within a few miles of each other (#9-A for TLD/AI/AP/SO, #9-B for GP, and #9-C for MI) all within 30-35 miles of WNP-2.

TABLE 2-4.0

1983 LAND USE CENSUS WITHIN FIVE (5) RADIAL MILES OF WNP-2

Class of Observation		Direction*	Milage**	Numbers
Dairy Animals				
1)	Cows	-----	-----	-----
2)	Goats	-----	-----	-----
Meat Animals				
1)	Beef	ENE	4.0	75
		E	4.5	2
		E	4.7	2
2)	Sheep	-----	-----	-----
3)	Other (Poultry, other)	E	4.5	12
Vegetable Gardens (250 m^2)		NE	4.4	1
		ENE	4.0	4
		ENE	4.5	2
		E	4.5	1
		E	4.8	1
		ESE	4.5	1
		ESE	4.7	2
		ESE	4.8	1

* Direction for each location is identified according to meterological sectors (16 different, 22.5 degree compass sections with due north bisecting the 1st 22.5 degree sector, 348.75 to 11.35 degrees).

** Distances are in miles, radial distance from WNP-2 containment as estimated from map positions for each location.

TABLE 2-5.0

DISTANCES FROM WNP-2* TO NEAREST POINTS OF INTEREST WITHIN 10 MILE RADIUS

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	NW	NNW
Resident	7.6	6.0	4.4	4.0	4.3	4.2	4.8	7.5	9.5	7.5	--	--	--	--	--
Garden	7.9	7.9	4.4	4.0	4.5	4.5	5.4	7.5	9.6	7.5	--	--	--	--	--
Cow(s)**	9.4	7.9	6.4	7.0	4.8	7.3	6.0	--	10.0	--	--	--	--	--	--
Goat(s)	--	--	9.4	5.4	--	--	--	--	--	--	--	--	--	--	--
Dairy	--	--	--	--	--	7.3	9.7	--	--	--	--	--	--	--	--
Livestock (beef, sheep)	9.2	9.0	6.0	4.0	4.5	7.3	5.0	8.0	9.8	8.1	9.0	--	--	--	--

* DISTANCES ARE IN MILES, RADIAL DISTANCE FROM WNP-2 CONTAINMENT AS ESTIMATED FROM MAP POSITIONS FOR EACH LOCATION.

1983 Survey Information

** The one (1) cow in the E sector at 4.8 miles is not to be a continuous milker, therefore not a viable sampling location at this time.

TABLE 2-6.0

ANALYTICAL METHODS

NUS RADIOLOGICAL LABORATORY

SAMPLE TYPE AND ANALYSIS	PROCEDURE MANUAL REFERENCE	ANALYTICAL PROCEDURES
Airborne - Particulates (AP)		
Gross Alpha	PO.5.2.15.51	Gas proportional counting in planchet
Gross Beta	PO.5.2.15.51	Gas proportional counting in planchet
Ge(Li) gamma isotopic	PO.5.2.15.51	Compress to standard volume and GeLi count
Airborne Iodine (C)		
Iodine-131	PO.5.2.15.52	NaI (Tl) spectra
Milk (M)-Nearest Producers		
Iodine-131 (Low Level)	PO.5.2.15.40	Ion exchange; liquid-liquid extraction and mount for beta-gamma coincidence counting
Strontium-89	PO.5.2.15.31; 33; 37; 38	TCA separation; nitrate reprecipitations; yttrium milkings; proportional counting
Strontium-90	PO.5.2.15.31; 33; 37; 38	TCA separation; nitrate reprecipitations; yttrium milkings; proportional counting
Ge(Li) gamma isotopic	PO.5.2.15.60; 61	GeLi count of standard geometry

TABLE 2-6.0 (Continued)

SAMPLE TYPE AND ANALYSIS	PROCEDURE MANUAL REFERENCE	ANALYTICAL PROCEDURES
River Water (WR)		
Suspended - Gross Alpha	PO.5.2.15.10	Filtration and evaporation, transfer to stainless steel planchet, proportional counting
Suspended - Gross Beta	PO.5.2.15.10	"
Dissolved - Gross Alpha	PO.5.2.15.10	"
Dissolved - Gross Beta	PO.5.2.15.10	"
Strontium-89	PO.5.2.15.32; 33; 37; 38	Carbonate precipitation, nitrate reprecipitatons and yttrium milkings, proportional counting of strontium carbonate and yttrium oxalate
Strontium-90	PO.5.2.15.32; 33; 37; 38	"
Tritium (H^3)	PO.5.2.15.23	Distillation and liquid scintillation counting
Ge(Li) gamma isotopic	PO.5.2.15.60; 61	GeLi count of standard geometry
Vegetation-Feed and Forage-Nearest Milk Producers (FM)		
Strontium-89	PO.5.2.15.30;35;36;37;38	Ash, acid dissolution, nitrate reprecipitations and yttrium milkings, proportional counting of strontium carbonate and yttrium oxalate
Strontium-90	PO.5.2.15.30;35;36;37;38	"
Ge(Li) gamma isotopic	PO.5.2.15.30; 60	Dry, mount in standard geometry and GeLi count

TABLE 2-6.0 (Continued)

SAMPLE TYPE AND ANALYSIS	PROCEDURE MANUAL REFERENCE	ANALYTICAL PROCEDURES
Aquatic Biota-Vegetation (VA)		
Gross Beta	P0.5.2.15.30; 15	Dry, ash, mount with stainless steel planchet and count in proportional counter
Strontium-89	P0.5.2.15.30;35;36;37;38	Dry, ash, acid dissolution, nitrate reprecipitations, yttrium milkings, count strontium carbonate and yttrium oxalate in proportional counter
Strontium-90	P0.5.2.15.30;35;36;37;38	"
Ge(Li) gamma isotopic	P0.5.2.15.30; 60	Dry, mount in standard geometry and GeLi count
Vegetation-Food and Feed Crops (FF)		
Gross Beta	P0.5.2.15.30; 15	Dry, ash, mount in stainless steel planchet and count on gas proportional counter
Strontium-89	P0.5.2.15.30;35;36;37;38	Dry, ash, acid dissolution, nitrate reprecipitations, yttrium milkings, gas proportional counting of strontium carbonate and yttrium oxalate
Strontium-90	P0.5.2.15.30;35;36;37;38	"
Ge(Li) gamma isotopic	P0.5.2.15.30; 60	Dry, mount in standard geometry and GeLi count

TABLE 2-6.0 (Continued)

SAMPLE TYPE AND ANALYSIS	PROCEDURE MANUAL REFERENCE	ANALYTICAL PROCEDURES
Vegetation-Garden Crops (FG)		
Gross Beta	PO.5.2.15.3-; 15	Dry, ash, mount in stainless steel planchet and count on gas proportional counter
Strontium-89	PO.5.2.15.30;35;36;37;38	Dry, ash, acid dissolution, nitrate reprecipitations, yttrium milkings, gas proportional counting of strontium carbonate and yttrium oxalate
Strontium-90	PO.5.2.15.30;35;36;37;38	"
Ge(Li) gamma isotopic	PO.5.2.15.30; 60	Dry, mount in standard geometry and GeLi count
Background Radiation (TLD)		
Gamma Exposure (Net)-mR	PO.5.2.15.49	Teledyne RGD-2, Calcium sulfate (Dy) dosimeters
Ground water (WG)		
Gross Alpha	PO.5.2.15.10	Evaporation, transfer to stainless steel planchet, dry and count with gas proportional counter
Gross Beta	PO.5.2.15.10	"
Ge(Li) gamma isotopic	PO.5.2.15.60; 61	GeLi count of standard geometry
Tritium (H^3)	PO.5.2.15.60; 61	"

TABLE 2-6.0 (Continued)

SAMPLE TYPE AND ANALYSIS	PROCEDURE MANUAL REFERENCE	ANALYTICAL PROCEDURES
Aquatic Biota-Fish (FI)		
Gross Beta	PO.5.2.15.30; 15	Dry, ash mount with stainless steel planchet and count in proportional counter
Strontium-89	PO.5.2.15.30;35;36;37;38	Dry, ash, acid dissolution, nitrate reprecipitations yttrium milkings, count strontium carbonate and yttrium oxalate in proportional counter
Strontium-90	PO.5.2.15.30;35;36;37;38	"
Ge(Li) gamma isotopic	PO.5.2.15.30; 60	Dry, mount in standard geometry and GeLi count

TABLE 2-7.0

NUS Analytical Detection Limits

Radiological Environmental Monitoring Program (REMP)
(Page 1 of 2)

Media	Analysis Required	Sensitivity
Airborne Particulate	Gross Beta (1)	.01 pCi/m^3
	Gamma Spectrometry (2)	(3)
Airborne Iodine	I-131	.07 pCi/m^3
Soil	Gamma Spectrometry	(4)
	Sr-90 (4)	150 pCi/Kg (dry)
River Water	Gamma Spectrometry	(3)
	Tritium	500 pCi/l
Drinking Water	Gamma Spectrometry	(3)
	Gross Beta	4 pCi/l
	Tritium	500 pCi/l
	Sr-90 (5)	2 pCi/l
Ground Water	Gamma Spectrometry	(3)
	Tritium	500 pCi/l
Sediment	Gamma Spectrometry	(3)
Fish	Gamma Spectrometry	(3)
Fruits and Vegetables	Gamma Spectrometry	(3)
Milk	Gamma Spectrometry	(3)
	I-131	1 pCi/l

TABLE 2-7.0 (Continued)

(1) If the gross beta activity is greater than ten (10) times the yearly mean of the control sample, gamma analysis should be performed on the individual sample.

(2) Gamma Spectrometry means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.

(3) Detection limits for gamma spectrometry meet or exceed those required for gamma emitting isotopes in Table 2.8-0, except that the sensitivities for I-131 in milk and water are assumed to be by radiochemical methods.

(4) Individual soil samples will be analyzed for Sr-90 if the gamma results for the sample are greater than ten (10) times the mean of the control.

(5) If the gross beta activity in the water is greater than ten (10) times the mean of the previous three months activity level for the specific location or greater 8 pCi/l for an individual location, Sr-90 will be performed.

TABLE 2-8.0

DETECTION CAPABILITIES FOR ENVIRONMENTAL SAMPLE ANALYSIS

LOWER LIMIT OF DETECTION (LLD)

ANALYSIS	WATER (pCi/L)	AIRBORNE PARTICULATE OR GASES (pCi/m^3)	FISH (pCi/kg, wet)	MILK (pCi/L)	FOOD PRODUCTS (pCi/kg, wet)	SEDIMENT (pCi/kg, dry)
Gross beta	4	1×10^{-2}				
H-3	2000*					
Mn-54	15		130			
Fe-59	30		260			
Co-58, 60	15		130			
Zn-65	30		260			
Zr-95	30					
Nb-95	15					
I-131		7×10^{-2}		1	60	
Cs-134	15	5×10^{-2}	130	15	60	150
Cs-137	18	6×10^{-2}	150	18	80	180
Ba-140	60			60		
La-140	15			15		

*If no drinking water pathway exists, a valve of 3,000 pCi/L may be used.

This table is the current LLD, REMP analytical values presented by the WNP-2 Plant Technical Specifications.

TABLE 2-9.0

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES(2)

ANALYSIS	WATER (pCi/L)	AIRBORNE PARTICULATE OR GASES (pCi/M^3)	FISH (pCi/kg, wet)	MILK (pCi/L)	FOOD PRODUCTS (pCi/kg, wet)
H-3(1)	2×10^4				
Mn-54	1×10^3		3×10^4		
Fe-59	4×10^2		1×10^4		
Co-58	1×10^3		3×10^4		
Co-60	3×10^2		1×10^4		
Zn-65	3×10^2		2×10^4		
Zr-Nb-95	4×10^2				
I-131	2	0.9		3	1×10^2
Cs-134	30	10	1×10^3	60	1×10^3
Cs-137	50	20	2×10^3	70	2×10^3
Ba-La-140	2×10^2			3×10^2	

(1) For drinking water samples. The value given is the 40 CFR Part 141 value. If no drinking water pathway exists, a value of 30,000 pCi/L is used.

(2) For radionuclides other than those listed above or for a detected gamma dose greater than the control results or due to plant effluents, the reporting levels are presented according to annual Dose/Dose Committment. A summarized listing of these values is presented in Table 2-10.

TABLE 2-10.0

DOSE/DOSE COMMITMENT LIMITING CONDITIONS
RADIOACTIVE EFFLUENTS

Type of Effluent	DOSE OR DOSE COMMITMENT* Calendar Quarter	Calendar Year
Liquid to Unrestricted Area	1.5 mrem (total body) 5.0 mrem (any organ)	3 mrem (total body) 10 mrem (any organ)
Noble Gases at Site Boundry	5 mrads gamma 10 mrads beta	10 mrads gamma 20 mrads beta
I-131, I-133, H-3, & Radionuclide Particulate	7.5 mrems (any organ)	15 mrem (any organ)

* The dose/dose commitments summarized in this Table are detailed in Section 3/4.11 Radioactive Effluents, WNP-2 Plant Technical Specifications (TS). Calculations for determining dose or dose commitment are based on methodologies and parameters of the Offsite Dose Calculation Manual per TS requirements.

TABLE 2-11.0

NUS Analytical Action Levels*

Media	Analysis	Levels
Fish	Cs-137 and -134	500 pCi/Kg (wet)
	K-40	1200 pCi/Kg (wet)
	Others	2500 pCi/Kg (wet)
Sediment	Cs-137 and -134	1000 pCi/Kg (dry)
	K-40	NONE
	Others	2500 pCi/Kg (dry)
Water	H-3	Any positive value
Any	Any	Indicator = 10X Control or Control = 10X Indicator
Any	I-131	Any positive value

*Any confirmed result exceeding an indicated level requires prompt (within 2 days) notification by the laboratory. A positive value is one that is above the indicated MDL.

3.0 SUMMARY AND DISCUSSION OF RESULTS

Radiological analyses of environmental media characteristically approached and frequently fell below the detection capabilities of state-of-the-art measurement methods.(1) In this situation the analytical result is typically reported as a less than detectable (less than, LLD, LT, <) value and not as a numerical result or actual net concentration (negative, positive or measured zero). Truncated or censored data sets occur when LLD values are reported instead of net concentrations. Data sets with more than 50% of the values reported as LLD values cannot readily be evaluated by standard statistical methods. The common practice is to simply compute the mean and standard deviation using the LLD value and reporting the results as biased estimates.(2).

The preponderance of the WNP-2 preoperational phase results are LLD values. Therefore, the statistical summaries are biased estimates of the data sets as represented by a < mean value.

Tables 3-1.0 through 3-1.7 provide overall statistical summaries of the preoperational data. Each table represents a specific environmental media (i.e., air, water, soil, sediment, fish, garden produce, milk and ambient radiation). For each radionuclide reported for the specified media, a mean value and range of report values is tabulated. These values represent all results from all monitoring stations for all years, with the exception of the results for ambient radiation. During the early years of ambient radiation monitoring (1978-1982), problems occurred with the TLD methodology, resulting in large variability within the data set. Therefore, only the 1982 and 1983 TLD data has been statistically evaluated and reported in the summary tables. There is no summary information presented for the PIC monitoring systems because of the discontinuity of the field data collected as a result of the frequent system malfunctions.

Tables 3-2.0 through 3-2.8 summarize the preoperational data by year. The actual data from the preoperational monitoring program are tabulated in Section 4.0, Tables 4-1.0 through 4-8.1.

The results of the gross beta* and gamma spectrometry analyses on air particulate filters, ~ 0.03 pCi/m^3 (mean), were consistent with the general levels reported for the Hanford environs (3, 4, 13, 14). Figures 3-1 and 3-2 represent the preoperational gross beta results by plotting the mean, high and low values from all stations are plotted for each collection period. The apparently high values during the winter of 1982 were primarily due to meterological conditions causing elevated levels of natural radiation being collected on the air particulate filters. Airborne iodine-131 analyses of charcoal cartridges were all LLD values.

Gross beta* activity in water samples was also LLD values. The tritium (~ 470 pCi/L (mean)) in the water samples was essentially due to Hanford Site operations. A tritium plume beneath the WNP-2 site was the result of previous Hanford Separations Area processes.(15-20) The highest tritium activities (2600 and 1400 pCi/L) reported were in 1983 from Stations 31 and 32, wells located at WNP-1 construction site. These values were below the Washington State water quality standards.

Concentrations of cesium-137 and the naturally occurring radionuclides present in preoperational phase soil samples can be compared to values reported for the Hanford environs.(1,3-14, & 23) The cesium-137 levels reported were in part due to global fallout and its presence in soil samples was neither unexpected nor unusual.

Cobalt-60 and cesium-137 were detected in Columbia River sediment samples. The presence of some cesium-137 was expected due to global fallout. The levels of cobalt-60 (~ 255 pCi/kg (mean)) and cesium-137 (~ 287 pCi/kg (mean)) were consistent with levels indicated for Columbia River sediments as a result of past Hanford operations.(22-24)

Naturally occurring potassium-40** was the major detectable activity reported in milk samples. Except for cesium-137, all other gamma emitting nuclides reported were at or below the established lower limit of detection. Because of the presence of global fallout, cesium-137 is frequently observed in milk samples at the levels measured and compares with reported activities from Hanford surveillance.(3-14 & 26). Milk samples were also analyzed for iodine-131 during the last year of the preoperational phase. No detectable iodine activity was recorded.

---

* Total or "gross" activity measurements have been widely used for many years in making environmental radioactivity measurements because of their ease, speed and low cost compared to analyses for specific radionuclides. Caution must be taken when attempting to interpret the meaning of the results obtained from gross activity measurement. No information on the identity of radionuclides is obtained and the reported calculated activity refers only to an equivalent concentration of the selected standard calibration nuclide. Though lack of radionuclide information makes it impossible to draw a meaningful conclusion concerning dose, the use of gross activity measurements is beneficial for surveying general radioactivity levels (if it is recognized that the activity reported may either over- or under-estimate specific nuclide activity).

**The majority of the naturally occurring radioactivity found on earth are natural, terrestrial sources. Virtually everything in the world contains trace quantities of radioactivity of terrestrial origin. At least twenty-two naturally occurring single or non-series primordial (ie., of sufficiently long half-life to have survived in detectable quantities since the formation of the earth) radionuclides are known. Potassium-40 is one of these primordial radionuclides and quite possibly the most important. Since potassium is essential to life, potassium-40 is found in all living and formerly living things. It is present to some degree in essentially all environmental media, which makes it an excellent point of reference for the analytical process(25).

Potassium-40** was the major detectable activity in the edible portion of fish samples. All other results from the gamma spectrometric analysis of these fish samples were at or below the applicable detection limit.

Naturally occurring potassium-40 was the only activity reported above the applicable detection limits for all produce samples analyzed.

Environmental radiation dose rates were determined by thermoluminescent dosimeters. The mean values for both the annual and quarterly sets of TLD for the 1982 and 1983 monitoring period were 0.24 mR/day. The quarterly TLD mean values are depicted in Figure 3-3.

Additional evaluation of the 1982-83 TLD data set indicates that there was probably not a significant seasonal effect demonstrated by the results. There was some significant station to station differences, due to spatial and temporal influences in background radioactivity. Figures 3-4 and 3-5 display the results of the Duncan's multiple range test for evaluation of the difference between means for 1982 and 1983 TLD data. From the results of the Duncan statistic, it is obvious that station 46 is significantly different at the 0.050 level from other stations. Station 8 data indicates that there is difference between it and many of the other stations.

3.1 SUMMARY TABLE NOTES

The following information is pertinent to the interpretation of the summary data in the following summary tables.

Definitions and Abbreviations:

Indicator Station(s) - Includes all sample stations for the given sample type, except those station(s) designated as control stations.

Control Station(s) - Sample stations designated as controls due to their location, distance and/or area of minimal plant influence. The control station for TLDs, milk, air particulate, air iodine, soil, and garden produce is sample location #9. The control station for drinking/surface water is sample location #26. The control station for fish is sample location #38.

Yr. - Year of sample collection appropriate for the given analysis.

Isotope - The following list of codes was assigned to specific analyses to facilitate computer evaluation via available processor programs, such as SPSS (Statistical Package for the Social Sciences).

B00	-	Gross Beta - Air
AOT	-	Gross Alpha
BTG	-	Gross Beta - Ground Water
BTD	-	Gross Beta - Drinking/Surface Water
C34	-	Cesium - 134
C37	-	Cesium - 137
Z95	-	Zirconium - 95
N95	-	Niobium - 95
C44	-	Cerium - 144
I31	-	Iodine - 131
B07	-	Beryllium - 7
M54	-	Manganese - 54
I59	-	Iron - 59
C58	-	Cobalt - 58
C60	-	Cobalt - 60
Z65	-	Zinc - 65
K40	-	Potassium - 40
S90	-	Strontium - 90
S89	-	Strontium - 89
B12	-	Bismuth - 212
B14	-	Bismuth - 214
L12	-	Lead - 212
L14	-	Lead - 214
R26	-	Radium - 226
A28	-	Actinium - 228
T08	-	Thallium - 208
H03	-	Tritium (Hydrogen - 3)
B40	-	Barium - 140
L40	-	Lanthanum - 140
S13	-	Tin - 113

<u>Type</u> - Indicates whether or not the result for an analysis for a specific isotope was LLD or <u>Positive</u>.

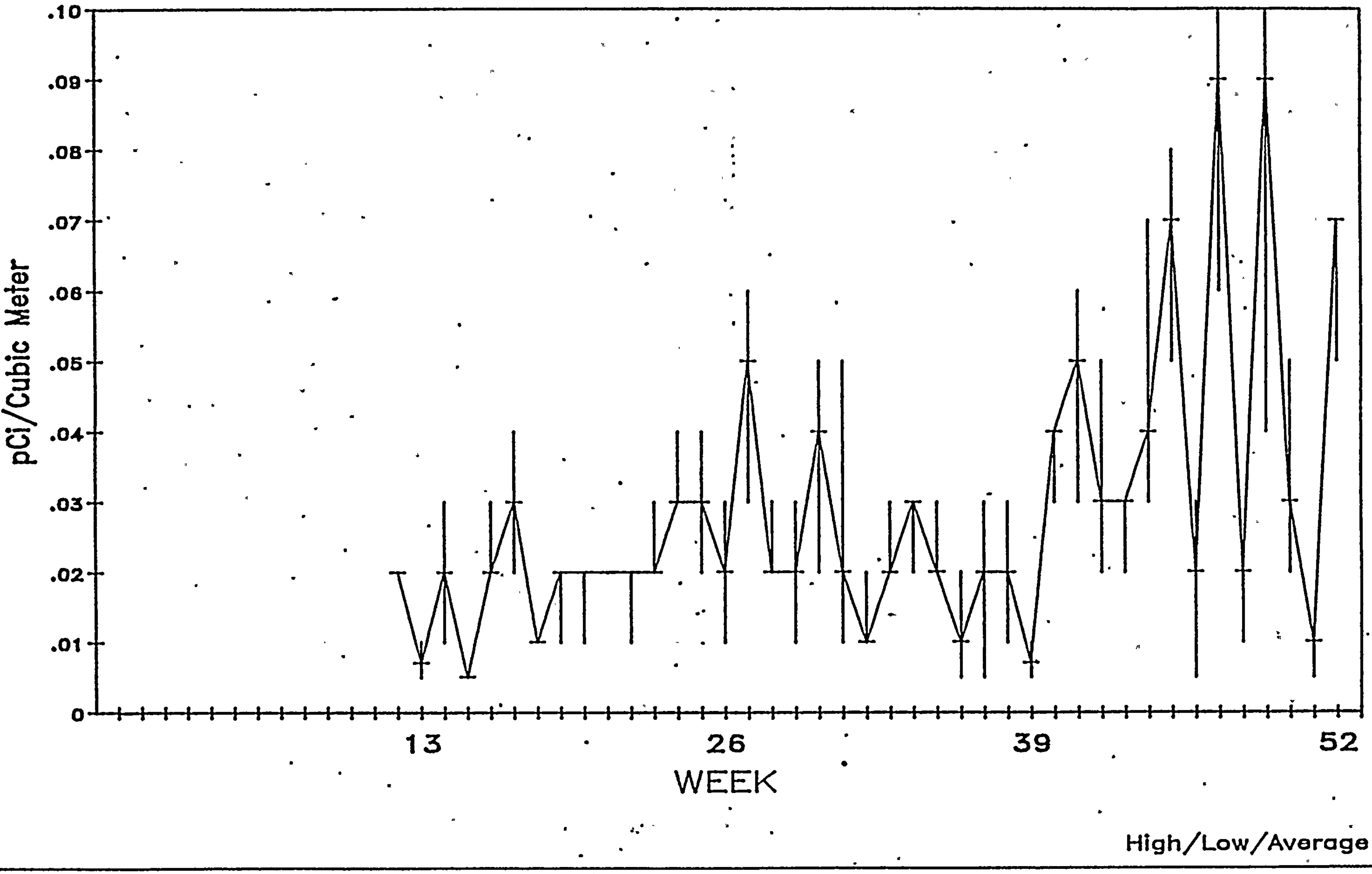
<u>Size</u> - Provides information as to the number of analyses for an isotope by type.

<u>Mean</u> - Mean value for the results for the indicated isotope and type.

<u>Max/Min</u> - Maximum and minimum provide the range of analytical values reported for each analysis by isotope and type.

<u>Max Station</u> - For isotopes with positive values the sample station with the reported maximum value is identified.

GROSS BETA IN AIR
1982



3-5

Figure 3-1

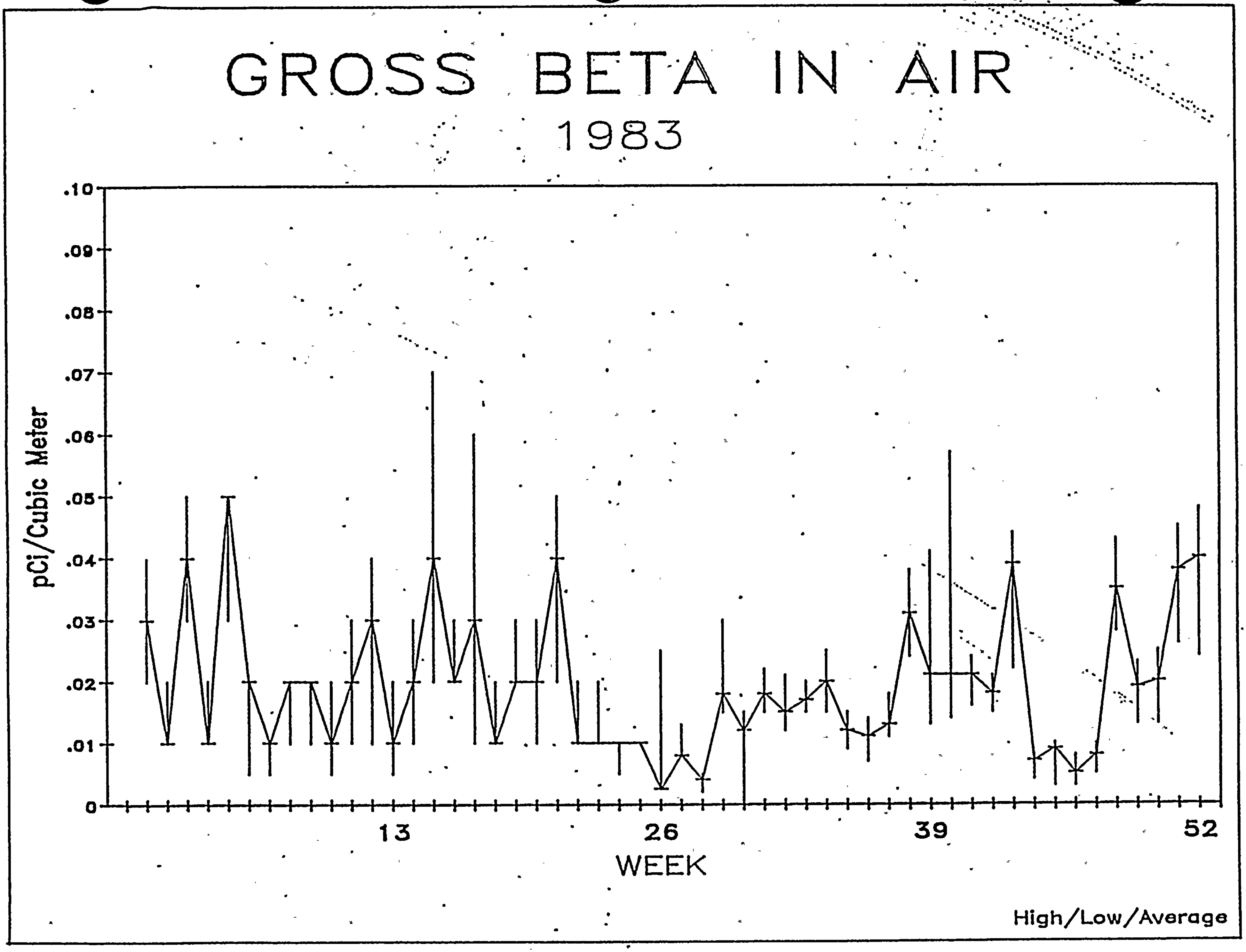

GROSS BETA IN AIR
1983
pCi/Cubic Meter
.10
.09
.08
.07
.06
.05
.04
.03
.02
.01
0
13
26
39
52
WEEK
High/Low/Average

Figure 3-2

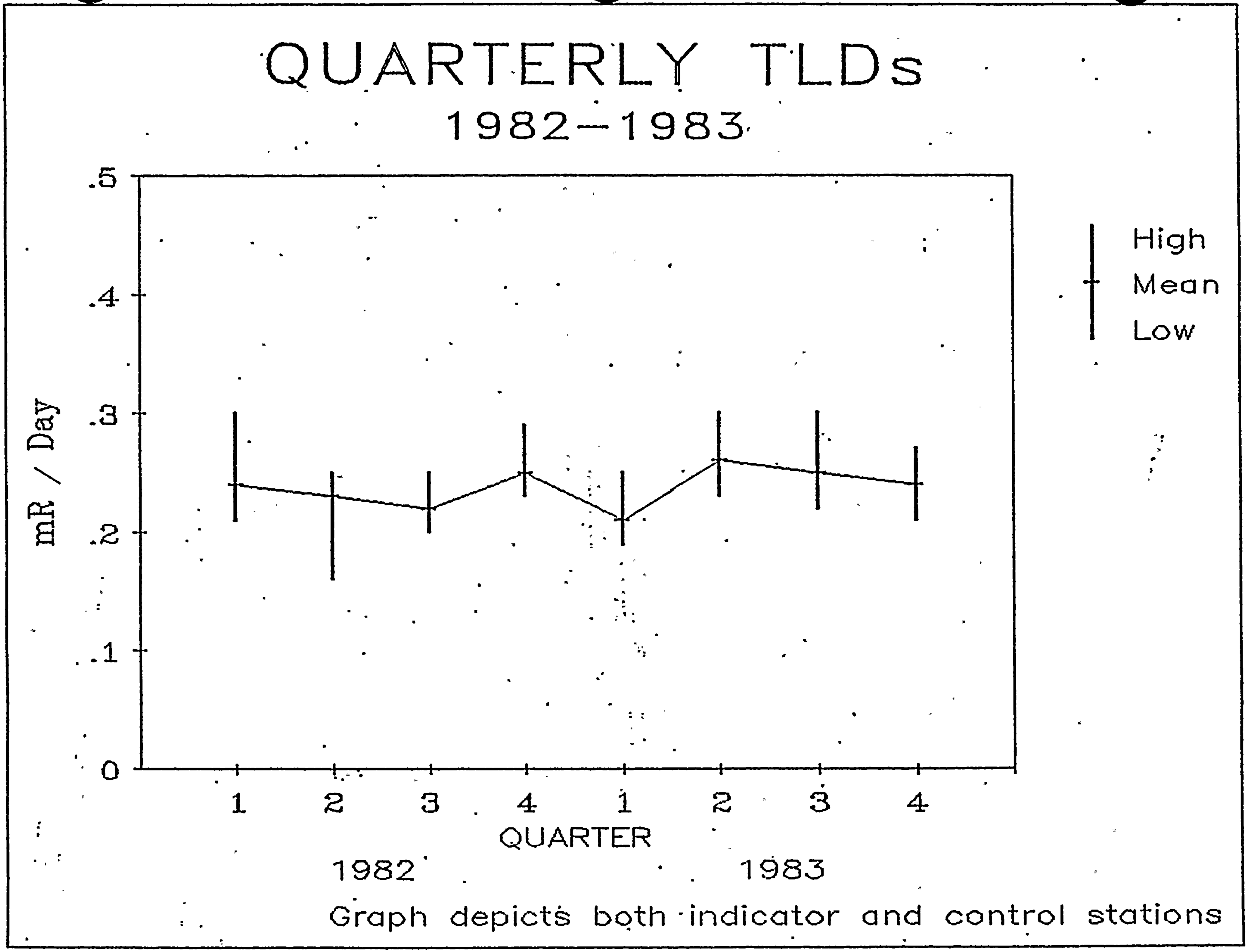

QUARTERLY TLDs
1982—1983
mR / Day
.5
.4
.3
.2
.1
0
High
Mean
Low
1 2 3 4 1 2 3 4
QUARTER
1982
1983
Graph depicts both indicator and control stations

Figure 3-3

FIGURE 3-4 Results of the Duncan Multiple Range Test indicating significant differences between mean data collected for all stations during 1982

MEAN	STATION	9	40	21	6	3	44	51	10	4	45	5	2	20	7	1	13	11	19	23	22	18	91	43	42	24	16	12	14	17	25	41	8	15	46
.2096	9																																		
.2127	40																																		
.2225	21																																		
.2233	6																																		
.2260	3	*																																	
.2263	44																																		
.2266	51																																		
.2267	10	*																																	
.2269	4	*																																	
.2285	45																																		
.2289	5	*																																	
.2310	2	*																																	
.2343	20	*	*																																
.2356	7	*	*																																
.2372	1	*	*																																
.2372	13	*	*																																
.2372	11	*	*																																
.2374	19	*	*																																
.2375	23	*																																	
.2407	22	*	*																																
.2409	18	*	*																																
.2413	91	*	*																																
.2415	43	*	*																																
.2432	42	*	*																																
.2463	24	*	*		*	*			*	*																									
.2473	16	*	*	*	*	*			*	*		*																							
.2479	12	*	*	*	*	*	*	*	*	*		*																							
.2483	14	*	*	*	*	*	*	*	*	*		*																							
.2517	17	*	*	*	*	*	*	*	*	*	*	*	*																						
.2544	25	*	*	*	*	*	*	*	*	*	*	*	*	*	*																				
.2572	41	*	*	*	*	*	*	*	*	*	*	*	*																						
.2581	8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*																
.2606	15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*													
.2896	46	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

(*) Denotes pairs of groups significantly different at the 0.050 level

851062

FIGURE 3-5 Results of the Duncan Multiple Range Test indicating significant differences between mean data collected for all TLD stations during 1983

MEAN	STATION	4	47	6	50	40	3	55	9	5	21	51	10	11	7	2	45	13	44	23	56	14	24	49	20	16	18	19	22	1	15	17	42	25	12	41	54	8	43	53	46
.2161	4																																								
.2177	47																																								
.2219	6																																								
.2223	50																																								
.2227	40																																								
.2234	3																																								
.2256	55																																								
.2264	9																																								
.2285	5																																								
.2296	21																																								
.2335	51																																								
.2346	10	*	*																																						
.2347	11	*	*																																						
.2358	7	*	*																																						
.2364	2	*	*																																						
.2370	45	*	*																																						
.2372	13	*	*																																						
.2373	44	*	*																																						
.2376	23	*	*																																						
.2379	56																																								
.2383	14	*	*																																						
.2390	24	*	*																																						
.2391	49																																								
.2399	20	*	*	*		*																																			
.2407	16	*	*	*		*	*																																		
.2426	18	*	*	*		*	*																																		
.2433	19	*	*	*		*	*																																		
.2435	22	*	*	*		*	*																																		
.2445	1	*	*	*		*	*		*																																
.2475	15	*	*	*		*	*		*	*	*																														
.2482	17	*	*	*		*	*		*	*	*																														
.2484	42	*	*	*		*	*		*	*	*																														
.2535	25	*	*	*	*	*	*	*	*	*	*		*	*	*																										
.2546	12	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*																					
.2595	41	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*		*	*		*	*	*														
.2602	54	*	*	*	*	*	*		*	*	*																														
.2626	8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*		*	*	*	*	*	*											
.2644	43	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*		*	*	*	*	*	*											
.2730	53	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*											
.2843	46	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*		

(*) Denotes pairs of groups significantly different at the 0.050 level

851062

TABLE 3-1.0

SUMMARY AIR SAMPLE DATA
ALL STATIONS/ALL YEARS

Analysis	Mean (pCi/m³)	Maximum (pCi/m³)	Minimum (pCi/m³)
B00	0.03	0.13	0.01
B07	0.07	0.09	0.04
C34	0.01	0.04	0.0014
C37	0.01	0.04	0.0013
C44	0.07	0.04	0.09
I31	0.05	0.11	0.01
N95	0.002	0.004	0.0018
Z95	0.005	0.006	0.004

TABLE 3-1.1

SUMMARY WATER SAMPLE DATA
ALL STATIONS/ALL YEARS

Analysis	Mean (pCi/m³)	Maximum (pCi/m³)	Minimum (pCi/m³)
B40	50.46	300.00	4.00
BTD	2.91	6.00	1.90
BTG	10.50	22.00	1.90
C34	3.77	12.00	1.00
C37	7.79	12.00	1.00
C58	4.76	25.00	1.00
C60	4.55	13.00	0.11
H03	433.33	800.00	80.00
H3G	467.81	2600.00	90.00
I31	0.31	0.37	0.27
I59	12.09	93.00	2.00
L40	25.46	160.00	3.00
M54	4.19	16.00	1.00
N95	5.05	29.00	1.50
Z65	8.04	27.00	1.38
Z95	10.59	63.00	2.00

TABLE 3-1.2

SUMMARY SEDIMENT SAMPLE DATA
ALL STATIONS/ALL YEARS

Analysis	Mean (pCi/m^3)	Maximum (pCi/m^3)	Minimum (pCi/m^3)
A28	635.00	830.00	440.00
B14	570.00	880.00	350.00
C34	117.00	150.00	50.00
C37	286.95	560.00	50.00
K40	15535.29	24000.00	10000.00
L12	565.00	710.00	470.00
L14	582.00	520.00	470.00
R26	575.00	860.00	420.00
T08	725.00	800.00	630.00
C60	254.60	610.00	150.00

TABLE 3-1.3

SUMMARY SOIL SAMPLE DATA
ALL STATIONS/ALL YEARS

Analysis	Mean (pCi/m^3)	Maximum (pCi/m^3)	Minimum (pCi/m^3)
C37	380.28	1880.00	20.00
C34	65.33	150.00	20.00
C58	150.00	150.00	150.00
C60	150.00	150.00	150.00
I59	260.00	260.00	260.00
K40	13750.00	21000.00	7000.00
M54	150.00	150.00	150.00
N95	150.00	150.00	150.00
Z65	150.00	150.00	150.00
Z95	150.00	150.00	150.00
A28	735.00	840.00	580.00
B12	720.00	720.00	720.00
B14	557.60	780.00	420.00
L12	296.00	400.00	160.00
L14	658.00	780.00	470.00
R26	608.00	760.00	460.00
T08	702.50	850.00	500.00

TABLE 3-1.4

SUMMARY MILK SAMPLE DATA
ALL STATIONS/ALL YEARS

Analysis	Mean	Maximum	Minimum
	pCi/m^3		
B40	105.50	2000.00	14.00
C34	3.55	14.00	0.90
C37	3.23	12.00	0.02
L40	33.95	1000.00	5.00
I31	0.51	1.00	0.09
K40	1318.75	1700.00	1100.00

TABLE 3-1.5

SUMMARY FISH SAMPLE DATA
ALL STATIONS/ALL YEARS

Analysis	Mean	Maximum	Minimum
	pCi/m^3		
C34	67.14	130.00	6.00
C37	88.84	130.00	10.00
C58	87.67	130.00	9.00
C60	80.56	130.00	9.00
I59	135.15	260.00	30.00
K40	3306.67	4200.00	2800.00
M54	86.33	130.00	8.00
N95	130.00	130.00	130.00
Z65	131.90	260.00	20.00
Z95	130.00	130.00	130.00

TABLE 3-1.6

SUMMARY PRODUCE SAMPLE DATA
ALL STATIONS/ALL YEARS

Analysis	Mean (pCi/m^3)	Maximum (pCi/m^3)	Minimum (pCi/m^3)
C34	49.12	140.00	10.00
C37	69.75	140.00	10.00
C58	80.45	130.00	80.00
C60	80.45	130.00	80.00
K40	3492.54	10000.00	2000.00
M54	80.47	130.00	80.00
N95	80.45	130.00	80.00
Z65	80.53	130.00	80.00
Z95	80.45	130.00	80.00
I31	105.61	1000.00	10.00

TABLE 3-1.7

SUMMARY TLD DATA
ALL STATIONS/ALL YEARS

QUARTERLY

Analysis	Mean (mR/Day)	Maximum* (mR/Day)	Minimum* (mR/Day)
TL	0.24	0.32	0.11

ANNUALLY

Analysis	Mean (mR/Day)	Maximum* (mR/Day)	Minimum* (mR/Day)
TL	0.24	0.31	0.20

*Values from individual TL card readings.

TABLE 3-2.0
AIR DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ISOTOPE	TYPE	SAMPLE SIZE	MEAN	MAX	MIN	MAX STATION
1982	B00	LLD	20	< 0.0100	< 0.0100	< 0.0100	
1982	B00	POSITIVE	218	0.0335	0.1300	0.0100	5
1982	C34	LLD	20	< 0.0170	< 0.0400	< 0.0100	
1982	C37	LLD	20	< 0.0170	< 0.0400	< 0.0100	

CONTROL STATIONS

YR	ISOTOPE	TYPE	SAMPLE SIZE	MEAN	MAX	MIN
1982	B00	LLD	3	< 0.0100	< 0.0100	< 0.0100
1982	B00	POSITIVE	38	0.0242	0.0700	0.0100
1982	C34	LLD	3	< 0.0133	< 0.0200	< 0.0100
1982	C37	LLD	3	< 0.0133	< 0.0200	< 0.0100

TABLE 3-2.0 (CONTINUED)
AIR DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ISOTOPE	TYPE	SAMPLE SIZE		MEAN		MAX		MIN	MAX STATION
1983	B00	LLD	19	<	0.0065	<	0.0100	<	0.0040	
1983	B00	POSITIVE	512		0.0197		0.0700		0.0025	1
1983	B07	LLD	2	<	0.0350	<	0.0400	<	0.0300	
1983	B07	POSITIVE	19		0.0589		0.0900		0.0340	7
1983	C34	LLD	41	<	0.0059	<	0.0100	<	0.0014	
1983	C37	LLD	41	<	0.0060	<	0.0100	<	0.0015	
1983	C44	LLD	21	<	0.0082	<	0.0200	<	0.0050	
1983	I31	LLD	504	<	0.0510	<	0.1100	<	0.0100	
1983	I31	POSITIVE	1		0.0400		0.0400		0.0400	7
1983	N95	LLD	21	<	0.0029	<	0.0050	<	0.0016	
1983	Z95	LLD	21	<	0.0051	<	0.0120	<	0.0030	

CONTROL STATIONS

YR	ISOTOPE	TYPE	SAMPLE SIZE		MEAN		MAX		MIN
1983	B00	LLD	2	<	0.0075	<	0.0100	<	0.0050
1983	B00	POSITIVE	52		0.0159		0.0370		0.0031
1983	B07	POSITIVE	2		0.0385		0.0420		0.0350
1983	C34	LLD	4	<	0.0058	<	0.0100	<	0.0014
1983	C37	LLD	4	<	0.0058	<	0.0100	<	0.0013
1983	C44	LLD	2	<	0.0065	<	0.0070	<	0.0060
1983	I31	LLD	51	<	0.0502	<	0.0700	<	0.0200
1983	N95	LLD	2	<	0.0025	<	0.0030	<	0.0020
1983	Z95	LLD	2	<	0.0045	<	0.0060	<	0.0030

TABLE 3-2.1
WATER DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE		MEAN (pCi/L)		MAX (pCi/L)		MIN (pCi/L)	MAX STATION
1980	BTG	POSITIVE	3		10.68		14.33		7.52	52
1980	H3G	LLD	1	<	110.00	<	110.00	<	110.00	
1980	H3G	POSITIVE	3		230.00		330.00		90.00	52
1981	BTG	LLD	1	<	4.00	<	4.00	<	4.00	
1981	BTG	POSITIVE	3		10.16		11.30		8.17	52
1981	C34	POSITIVE	1		1.86		1.86		1.86	52
1981	C37	POSITIVE	1		0.77		0.77		0.77	52
1981	C60	LLD	1	<	0.11	<	0.11	<	0.11	
1981	H3G	LLD	1	<	10.00	<	10.00	<	10.00	
1981	H3G	POSITIVE	4		347.50		520.00		230.00	52
1981	Z65	LLD	1	<	1.38	<	1.38	<	1.38	

CONTROL STATION

There were no control stations during 1980 or 1981. The current control station (no. 26) was not operational until August 1982 concurrent with WNP-2's intake system coming on line.

TABLE 3-2.1 (CONTINUED)
WATER DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE		pCi/L MEAN		MAX		MIN	MAX STATION
1982	A0T	LLD	1	<	0.30	<	0.30	<	0.30	
1982	B40	LLD	36	<	40.78	<	130.00	<	4.00	
1982	BTD	LLD	2	<	2.00	<	2.00	<	2.00	
1982	BTD	POSITIVE	26		3.88		6.00		2.00	27
1982	BTG	LLD	2	<	19.15	<	19.30	<	19.00	
1982	BTG	POSITIVE	2		16.30		22.00		10.60	52
1982	C34	LLD	36	<	5.17	<	12.00	<	1.00	
1982	C37	LLD	36	<	5.36	<	13.00	<	1.00	
1982	C58	LLD	36	<	6.14	<	25.00	<	1.00	
1982	C60	LLD	36	<	6.31	<	13.00	<	1.00	
1982	H03	LLD	8	<	602.50	<	820.00	<	80.00	
1982	H03	POSITIVE	4		397.50		600.00		220.00	27
1982	H3G	LLD	10	<	575.00	<	1300.00	<	150.00	
1982	H3G	POSITIVE	2		195.00		200.00		190.00	52
1982	I31	LLD	1	<	0.30	<	0.30	<	0.30	
1982	I59	LLD	36	<	16.72	<	93.00	<	2.00	
1982	L40	LLD	36	<	17.42	<	50.00	<	3.00	
1982	M54	LLD	36	<	5.86	<	16.00	<	1.00	
1982	N95	LLD	36	<	6.89	<	29.00	<	1.00	
1982	S90	LLD	1	<	0.06	<	0.06	<	0.06	
1982	Z65	LLD	36	<	10.81	<	27.00	<	2.00	
1982	Z95	LLD	36	<	15.25	<	63.00	<	2.00	

TABLE 3-2.1 (CONTINUED)
WATER DATA SUMMARY BY YEAR

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/L MEAN	pCi/L MAX	pCi/L MIN
1982	B40	LLD	5	< 29.60	< 45.00	< 14.00
1982	BTD	POSITIVE	5	3.00	5.00	1.00
1982	C34	LLD	5	< 3.80	< 8.00	< 2.00
1982	C37	LLD	5	< 3.80	< 8.00	< 2.00
1982	C58	LLD	5	< 4.80	< 12.00	< 2.00
1982	C60	LLD	5	< 4.40	< 8.00	< 2.00
1982	H03	LLD	2	< 650.00	< 800.00	< 500.00
1982	H03	POSITIVE	1	270.00	270.00	270.00
1982	I59	LLD	5	< 11.80	< 32.00	< 4.00
1982	L40	LLD	5	< 11.60	< 15.00	< 5.00
1982	M54	LLD	5	< 4.00	< 9.00	< 2.00
1982	N95	LLD	5	< 5.00	< 13.00	< 2.00
1982	Z65	LLD	5	< 6.80	< 17.00	< 3.00
1982	Z95	LLD	5	< 11.40	< 27.00	< 4.00

TABLE 3-2.1 (CONTINUED)
WATER DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE		pCi/L MEAN		MAX		MIN	MAX STATION
1983	A0T	LLD	3	<	0.70	<	0.95	<	0.50	
1983	B40	LLD	44	<	58.50	<	300.00	<	11.00	
1983	BTD	LLD	9	<	2.43	<	4.00	<	1.90	
1983	BTD	POSITIVE	23		2.15		3.10		1.00	29
1983	BTG	LLD	2	<	2.15	<	2.41	<	1.90	
1983	BTG	POSITIVE	1		5.26		5.26		5.26	52
1983	C34	LLD	44	<	2.92	<	6.00	<	1.40	
1983	C37	LLD	42	<	2.99	<	6.00	<	1.40	
1983	C37	POSITIVE	2		9.95		16.00		3.90	27
1983	C58	LLD	44	<	3.88	<	10.00	<	1.00	
1983	C60	LLD	44	<	3.51	<	8.00	<	1.50	
1983	H03	LLD	7	<	310.00	<	330.00	<	300.00	
1983	H03	POSITIVE	2		310.00		390.00		230.00	29
1983	H3G	LLD	7	<	287.14	<	300.00	<	210.00	
1983	H3G	POSITIVE	4		1155.00		2600.00		290.00	31
1983	I31	LLD	3	<	0.31	<	0.37	<	0.27	
1983	I59	LLD	44	<	9.16	<	30.00	<	4.00	
1983	L40	LLD	44	<	31.57	<	160.00	<	6.00	
1983	M54	LLD	44	<	3.15	<	6.00	<	1.50	
1983	N95	LLD	42	<	3.80	<	9.00	<	1.80	
1983	S89	LLD	2	<	225.00	<	300.00	<	150.00	
1983	S90	LLD	3	<	1.88	<	3.00	<	0.65	
1983	S90	POSITIVE	2		0.34		0.44		0.24	52
1983	Z65	LLD	44	<	6.48	<	13.00	<	3.00	
1983	Z95	LLD	41	<	7.20	<	16.00	<	3.00	

TABLE 3-2.1 (CONTINUED)
WATER DATA SUMMARY BY YEAR

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/L MEAN	pCi/L MAX	pCi/L MIN
1983	B40	LLD	12	< 58.75	< 170.00	< 10.00
1983	BTD	LLD	3	< 2.33	< 3.00	< 2.00
1983	BTD	POSITIVE	7	2.74	5.00	1.90
1983	C34	LLD	12	< 2.88	< 5.00	< 1.50
1983	C37	LLD	12	< 2.96	< 5.00	< 1.40
1983	C58	LLD	12	< 3.83	< 7.00	< 2.00
1983	C60	LLD	12	< 3.52	< 5.00	< 1.60
1983	H03	LLD	3	< 310.00	< 330.00	< 300.00
1983	I59	LLD	12	< 9.08	< 20.00	< 3.00
1983	L40	LLD	12	< 32.92	< 70.00	< 9.00
1983	M54	LLD	12	< 3.08	< 5.00	< 1.50
1983	N95	LLD	12	< 3.92	< 8.00	< 2.00
1983	S13	POSITIVE	1	6.40	6.40	6.40
1983	S89	LLD	1	< 120.00	< 120.00	< 120.00
1983	S90	LLD	1	< 1.20	< 1.20	< 1.20
1983	Z65	LLD	12	< 6.50	< 11.00	< 4.00
1983	Z95	LLD	11	< 7.64	< 13.00	< 4.00

TABLE 3-2.2
SEDIMENT DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1978	C37	POSITIVE	2	435.00	490.00	380.00	34
1978	C58	LLD	2	< 150.00	< 150.00	< 150.00	
1978	C60	POSITIVE	2	350.00	380.00	320.00	34
1978	K40	POSITIVE	2	15500.00	21000.00	10000.00	34
1978	M54	LLD	2	< 150.00	< 150.00	< 150.00	
1978	N95	LLD	2	< 150.00	< 150.00	< 150.00	
1978	Z65	LLD	1	< 150.00	< 150.00	< 150.00	
1978	Z65	POSITIVE	1	370.00	370.00	370.00	34
1978	Z95	LLD	2	< 150.00	< 150.00	< 150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1978	C37	POSITIVE	2	290.00	360.00	220.00
1978	C58	LLD	2	< 150.00	< 150.00	< 150.00
1978	C60	LLD	1	< 150.00	< 150.00	< 150.00
1978	C60	POSITIVE	1	590.00	590.00	590.00
1978	K40	POSITIVE	2	11500.00	12000.00	11000.00
1978	M54	LLD	2	< 150.00	< 150.00	< 150.00
1978	N95	LLD	2	< 150.00	< 150.00	< 150.00
1978	Z65	LLD	2	< 150.00	< 150.00	< 150.00
1978	Z95	LLD	2	< 150.00	< 150.00	< 150.00

TABLE 3-2.2 (CONTINUED)
SEDIMENT DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1979	C37	POSITIVE	2	450.00	480.00	420.00	34
1979	C58	LLD	2	< 150.00	< 150.00	< 150.00	
1979	C58	POSITIVE	1	170.00	170.00	170.00	34
1979	C60	POSITIVE	2	535.00	610.00	460.00	34
1979	M54	LLD	2	< 150.00	< 150.00	< 150.00	
1979	N95	LLD	2	< 150.00	< 150.00	< 150.00	
1979	Z65	LLD	2	< 150.00	< 150.00	< 150.00	
1979	Z95	LLD	2	< 150.00	< 150.00	< 150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1979	C37	POSITIVE	2	310.00	310.00	310.00
1979	C58	LLD	2	< 150.00	< 150.00	< 150.00
1979	C60	POSITIVE	2	130.00	130.00	130.00
1979	M54	LLD	2	< 150.00	< 150.00	< 150.00
1979	N95	LLD	2	< 150.00	< 150.00	< 150.00
1979	Z65	LLD	2	< 150.00	< 150.00	< 150.00
1979	Z95	LLD	2	< 150.00	< 150.00	< 150.00

TABLE 3-2.2 (CONTINUED)
SEDIMENT DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1980	C37	LLD	1	< 150.00	< 150.00	< 150.00	
1980	C58	LLD	1	< 150.00	< 150.00	< 150.00	
1980	C60	LLD	1	< 150.00	< 150.00	< 150.00	
1980	M54	LLD	1	< 150.00	< 150.00	< 150.00	
1980	N95	LLD	1	< 150.00	< 150.00	< 150.00	
1980	Z65	LLD	1	< 150.00	< 150.00	< 150.00	
1980	Z95	LLD	1	< 150.00	< 150.00	< 150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1980	C37	POSITIVE	2	180.00	200.00	160.00
1980	C58	LLD	2	< 150.00	< 150.00	< 150.00
1980	C60	LLD	2	< 150.00	< 150.00	< 150.00
1980	K40	POSITIVE	1	13000.00	13000.00	13000.00
1980	M54	LLD	2	< 150.00	< 150.00	< 150.00
1980	N95	LLD	2	< 150.00	< 150.00	< 150.00
1980	Z65	LLD	2	< 150.00	< 150.00	< 150.00
1980	Z95	LLD	2	< 150.00	< 150.00	< 150.00

TABLE 3-2.2 (CONTINUED)
SEDIMENT DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1981	C37	POSITIVE	2	300.00	500.00	100.00	34
1981	C58	LLD	2	< 150.00	< 150.00	< 150.00	
1981	C60	LLD	2	< 150.00	< 150.00	< 150.00	
1981	K40	POSITIVE	2	14950.00	16900.00	13000.00	34
1981	M54	LLD	2	< 150.00	< 150.00	< 150.00	
1981	N95	LLD	2	< 150.00	< 150.00	< 150.00	
1981	Z65	LLD	1	< 150.00	< 150.00	< 150.00	
1981	Z95	LLD	2	< 150.00	< 150.00	< 150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1981	C37	LLD	1	< 150.00	< 150.00	< 150.00
1981	C37	POSITIVE	1	200.00	200.00	200.00
1981	C58	LLD	2	< 150.00	< 150.00	< 150.00
1981	C60	LLD	2	< 150.00	< 150.00	< 150.00
1981	K40	POSITIVE	2	16100.00	18000.00	14200.00
1981	M54	LLD	2	< 150.00	< 150.00	< 150.00
1981	N95	LLD	2	< 150.00	< 150.00	< 150.00
1981	Z65	LLD	1	< 150.00	< 150.00	< 150.00
1981	Z95	LLD	2	< 150.00	< 150.00	< 150.00

TABLE 3-2.2 (CONTINUED)
SEDIMENT DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1982	C34	LLD	1	< 150.00	< 150.00	< 150.00	
1982	C37	POSITIVE	1	310.00	310.00	310.00	34
1982	K40	POSITIVE	1	24000.00	24000.00	24000.00	34

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1982	C34	LLD	1	< 150.00	< 150.00	< 150.00
1982	C37	LLD	1	< 180.00	< 180.00	< 130.00
1982	K40	POSITIVE	1	19000.00	19000.00	17000.00

TABLE 3-2.2 (CONTINUED)
SEDIMENT DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1983	A28	POSITIVE	1	440.00	440.00	440.00	34
1983	B14	POSITIVE	2	525.00	620.00	430.00	34
1983	C34	LLD	2	< 90.00	< 130.00	< 50.00	
1983	C34	POSITIVE	1	130.00	130.00	130.00	34
1983	C37	POSITIVE	3	440.00	560.00	260.00	34
1983	K40	POSITIVE	3	16666.66	21000.00	12000.00	34
1983	L12	POSITIVE	2	520.00	570.00	470.00	34
1983	L14	POSITIVE	2	495.00	520.00	470.00	34
1983	R26	POSITIVE	2	510.00	570.00	450.00	34
1983	T08	POSITIVE	2	700.00	770.00	630.00	34

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1983	A28	POSITIVE	1	830.00	830.00	830.00
1983	B14	POSITIVE	2	615.00	880.00	350.00
1983	C34	LLD	3	< 96.67	< 140.00	< 50.00
1983	C37	LLD	2	< 90.00	< 130.00	< 50.00
1983	C37	POSITIVE	1	180.00	180.00	180.00
1983	K40	POSITIVE	3	18333.33	19000.00	17000.00
1983	L12	POSITIVE	2	610.00	710.00	510.00
1983	L14	POSITIVE	2	670.00	850.00	490.00
1983	R26	POSITIVE	2	640.00	860.00	420.00
1983	T08	POSITIVE	2	750.00	800.00	700.00

TABLE 3-2.3
SOIL DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1978	C37	LLD	1	< 150.00	< 150.00	< 150.00	
1978	C37	POSITIVE	3	566.67	700.00	500.00	3
1978	C58	LLD	4	< 150.00	< 150.00	< 150.00	
1978	C60	LLD	4	< 150.00	< 150.00	< 150.00	
1978	I59	LLD	4	< 260.00	< 260.00	< 260.00	
1978	K40	POSITIVE	4	11250.00	13000.00	10000.00	2
1978	M54	LLD	4	< 150.00	< 150.00	< 150.00	
1978	N95	LLD	4	< 150.00	< 150.00	< 150.00	
1978	Z65	LLD	8	< 150.00	< 150.00	< 150.00	
1978	Z95	LLD	4	< 150.00	< 150.00	< 150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1978	C37	POSITIVE	1	140.00	140.00	140.00
1978	C58	LLD	1	< 150.00	< 150.00	< 150.00
1978	C60	LLD	1	< 150.00	< 150.00	< 150.00
1978	I59	LLD	1	< 260.00	< 260.00	< 260.00
1978	K40	POSITIVE	1	7000.00	7000.00	7000.00
1978	M54	LLD	1	< 150.00	< 150.00	< 150.00
1978	N95	LLD	1	< 150.00	< 150.00	< 150.00
1978	Z65	LLD	2	< 150.00	< 150.00	< 150.00
1978	Z95	LLD	1	< 150.00	< 150.00	< 150.00

TABLE 3-2.3 (CONTINUED)
SOIL DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1979	C37	LLD	4	< 150.00	< 150.00	< 150.00	
1979	C58	LLD	4	< 150.00	< 150.00	< 150.00	
1979	C60	LLD	4	< 150.00	< 150.00	< 150.00	
1979	M54	LLD	4	< 150.00	< 150.00	< 150.00	
1979	N95	LLD	4	< 150.00	< 150.00	< 150.00	
1979	Z65	LLD	4	< 150.00	< 150.00	< 150.00	
1979	Z95	LLD	4	< 150.00	< 150.00	< 150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1979	C37	LLD	1	< 150.00	< 150.00	< 150.00
1979	C58	LLD	1	< 150.00	< 150.00	< 150.00
1979	C60	LLD	1	< 150.00	< 150.00	< 150.00
1979	M54	LLD	1	< 150.00	< 150.00	< 150.00
1979	N95	LLD	1	< 150.00	< 150.00	< 150.00
1979	Z65	LLD	1	< 150.00	< 150.00	< 150.00
1979	Z95	LLD	1	< 150.00	< 150.00	< 150.00

TABLE 3-2.3 (CONTINUED)
SOIL DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1980	C37	LLD	1	< 150.00	< 150.00	< 150.00	
1980	C37	POSITIVE	3	1550.00	1880.00	1120.00	7
1980	C58	LLD	4	< 150.00	< 150.00	< 150.00	
1980	C60	LLD	4	< 150.00	< 150.00	< 150.00	
1980	M54	LLD	4	< 150.00	< 150.00	< 150.00	
1980	N95	LLD	4	< 150.00	< 150.00	< 150.00	
1980	Z65	LLD	4	< 150.00	< 150.00	< 150.00	
1980	Z95	LLD	4	< 150.00	< 150.00	< 150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1980	C37	LLD	1	< 150.00	< 150.00	< 150.00
1980	C58	LLD	1	< 150.00	< 150.00	< 150.00
1980	C60	LLD	1	< 150.00	< 150.00	< 150.00
1980	M54	LLD	1	< 150.00	< 150.00	< 150.00
1980	N95	LLD	1	< 150.00	< 150.00	< 150.00
1980	Z65	LLD	1	< 150.00	< 150.00	< 150.00
1980	Z95	LLD	1	< 150.00	< 150.00	< 150.00

TABLE 3-2.3 (CONTINUED)
SOIL DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN		pCi/Kg MAX		pCi/Kg MIN		MAX STATION
1981	C37	LLD	3	<	150.00	<	150.00	<	150.00	
1981	C37	POSITIVE	1		700.00		700.00		700.00	7
1981	C58	LLD	4	<	150.00	<	150.00	<	150.00	
1981	C60	LLD	4	<	150.00	<	150.00	<	150.00	
1981	K40	POSITIVE	4		13750.00		15000.00		13000.00	1
1981	M54	LLD	4	<	150.00	<	150.00	<	150.00	
1981	N95	LLD	4	<	150.00	<	150.00	<	150.00	
1981	Z65	LLD	4	<	150.00	<	150.00	<	150.00	
1981	Z95	LLD	4	<	150.00	<	150.00	<	150.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN		pCi/Kg MAX		pCi/Kg MIN	
1981	C37	LLD	1	<	150.00	<	150.00	<	150.00
1981	C58	LLD	1	<	150.00	<	150.00	<	150.00
1981	C60	LLD	1	<	150.00	<	150.00	<	150.00
1981	K40	POSITIVE	1		13000.00		13000.00		13000.00
1981	M54	LLD	1	<	150.00	<	150.00	<	150.00
1981	N95	LLD	1	<	150.00	<	150.00	<	150.00
1981	Z65	LLD	1	<	150.00	<	150.00	<	150.00
1981	Z95	LLD	1	<	150.00	<	150.00	<	150.00

TABLE 3-2.3 (CONTINUED)
SOIL DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1982	C34	LLD	4	< 25.00	< 30.00	< 20.00	
1982	C37	LLD	1	< 20.00	< 20.00	< 20.00	
1982	C37	POSITIVE	3	226.67	330.00	80.00	23
1982	S90	POSITIVE	4	26.00	43.00	16.00	1

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1982	C34	LLD	1	< 20.00	< 20.00	< 20.00
1982	C37	POSITIVE	1	340.00	340.00	340.00
1982	S90	LLD	1	< 10.00	< 10.00	< 10.00

TABLE 3-2.3 (CONTINUED)
SOIL DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1983	A28	POSITIVE	3	746.67	840.00	580.00	1
1983	B12	POSITIVE	1	720.00	720.00	720.00	1
1983	B14	POSITIVE	4	552.50	780.00	420.00	1
1983	C34	LLD	8	< 88.75	< 150.00	< 40.00	
1983	C37	LLD	6	< 75.00	< 110.00	< 40.00	
1983	C37	POSITIVE	2	585.00	700.00	470.00	23
1983	K40	POSITIVE	8	15625.00	21000.00	10000.00	23
1983	L12	POSITIVE	4	270.00	400.00	160.00	7
1983	L14	POSITIVE	4	635.00	780.00	470.00	23
1983	R26	POSITIVE	4	592.50	760.00	460.00	1
1983	T08	POSITIVE	3	670.00	850.00	500.00	23

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1983	A28	POSITIVE	1	700.00	700.00	700.00
1983	B14	POSITIVE	1	580.00	580.00	580.00
1983	C34	LLD	2	< 75.00	< 110.00	< 40.00
1983	C37	LLD	1	< 110.00	< 110.00	< 110.00
1983	C37	POSITIVE	1	200.00	200.00	200.00
1983	K40	POSITIVE	2	15000.00	16000.00	14000.00
1983	L12	POSITIVE	1	400.00	400.00	400.00
1983	L14	POSITIVE	1	750.00	750.00	750.00
1983	R26	POSITIVE	1	670.00	670.00	670.00
1983	T08	POSITIVE	1	800.00	800.00	800.00

TABLE 3-2.4
MILK DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/L MEAN	pCi/L MAX	pCi/L MIN	MAX STATION
1982	B40	LLD	45	< 34.67	< 150.00	< 6.00	
1982	C34	LLD	45	< 4.04	< 14.00	< 1.00	
1982	C37	LLD	44	< 3.86	< 12.00	< 1.00	
1982	C37	POSITIVE	1	0.02	0.02	0.02	40
1982	L40	LLD	45	< 16.60	< 66.00	< 5.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/L MEAN	pCi/L MAX	pCi/L MIN
1982	B40	LLD	16	< 37.25	< 110.00	< 13.00
1982	C34	LLD	16	< 4.19	< 9.00	< 1.00
1982	C37	LLD	16	< 4.00	< 9.00	< 1.00
1982	L40	LLD	16	< 17.63	< 48.00	< 5.00

TABLE 3-2.4 (CONTINUED)
MILK DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/L MEAN		pCi/L MAX		pCi/L MIN		MAX STATION
1983	B40	LLD	60	<	182.87	<	5000.00	<	14.00	
1983	C34	LLD	60	<	3.20	<	8.00	<	0.90	
1983	C37	LLD	59	<	3.52	<	9.00	<	1.30	
1983	C37	POSITIVE	1		1.20		1.20		1.20	35
1983	I31	LLD	54	<	0.53	<	1.00	<	0.10	
1983	K40	POSITIVE	33		1333.33		1700.00		1100.00	40
1983	L40	LLD	60	<	48.18	<	1000.00	<	6.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/L MEAN		pCi/L MAX		pCi/L MIN	
1983	B40	LLD	20	<	86.50	<	500.00	<	16.00
1983	C34	LLD	20	<	2.96	<	7.00	<	1.00
1983	C37	LLD	20	<	3.23	<	8.00	<	1.10
1983	I31	LLD	18	<	0.53	<	1.00	<	0.09
1983	K40	POSITIVE	11		1263.64		1400.00		1100.00
1983	L40	LLD	20	<	43.35	<	300.00	<	7.00

TABLE 3-2.5
FISH DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1978	C37	LLD	8	< 130.00	< 130.00	< 130.00	
1978	C58	LLD	8	< 130.00	< 130.00	< 130.00	
1978	C60	LLD	8	< 130.00	< 130.00	< 130.00	
1978	I59	LLD	8	< 260.00	< 260.00	< 260.00	
1978	K40	POSITIVE	1	3200.00	3200.00	3200.00	30
1978	M54	LLD	8	< 130.00	< 130.00	< 130.00	
1978	N95	LLD	8	< 130.00	< 130.00	< 130.00	
1978	Z65	LLD	8	< 260.00	< 260.00	< 260.00	
1978	Z95	LLD	8	< 130.00	< 130.00	< 130.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1978	C37	LLD	2	< 130.00	< 130.00	< 130.00
1978	C58	LLD	2	< 130.00	< 130.00	< 130.00
1978	C60	LLD	2	< 130.00	< 130.00	< 130.00
1978	I59	LLD	2	< 260.00	< 260.00	< 260.00
1978	K40	POSITIVE	1	4300.00	4300.00	4300.00
1978	M54	LLD	2	< 130.00	< 130.00	< 130.00
1978	N95	LLD	2	< 130.00	< 130.00	< 130.00
1978	Z65	LLD	2	< 260.00	< 260.00	< 260.00
1978	Z95	LLD	2	< 130.00	< 130.00	< 130.00

TABLE 3.2-5 (CONTINUED)
FISH DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1979	C37	LLD	5	< 130.00	< 130.00	< 130.00	
1979	C58	LLD	5	< 130.00	< 130.00	< 130.00	
1979	M54	LLD	5	< 130.00	< 130.00	< 130.00	
1979	N95	LLD	5	< 130.00	< 130.00	< 130.00	
1979	Z65	LLD	5	< 130.00	< 130.00	< 130.00	
1979	Z95	LLD	5	< 130.00	< 130.00	< 130.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1979	C37	LLD	2	< 130.00	< 130.00	< 130.00
1979	C58	LLD	2	< 130.00	< 130.00	< 130.00
1979	M54	LLD	2	< 130.00	< 130.00	< 130.00
1979	N95	LLD	2	< 130.00	< 130.00	< 130.00
1979	Z65	LLD	2	< 130.00	< 130.00	< 130.00
1979	Z95	LLD	2	< 130.00	< 130.00	< 130.00

TABLE 3.2-5 (CONTINUED)
FISH DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1980	C34	LLD	8	< 123.75	< 130.00	< 80.00	
1980	C37	LLD	8	< 130.00	< 130.00	< 130.00	
1980	C58	LLD	8	< 123.75	< 130.00	< 80.00	
1980	C60	LLD	8	< 123.75	< 130.00	< 80.00	
1980	M54	LLD	8	< 123.75	< 130.00	< 80.00	
1980	Z65	LLD	8	< 188.75	< 260.00	< 80.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1980	C34	LLD	2	< 130.00	< 130.00	< 130.00
1980	C37	LLD	2	< 130.00	< 130.00	< 130.00
1980	C58	LLD	2	< 130.00	< 130.00	< 130.00
1980	C60	LLD	2	< 130.00	< 130.00	< 130.00
1980	M54	LLD	2	< 130.00	< 130.00	< 130.00
1980	Z65	LLD	2	< 195.00	< 260.00	< 130.00

TABLE 3.2-5 (CONTINUED)
FISH DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1981	C34	LLD	6	< 130.00	< 130.00	< 130.00	
1981	C37	LLD	6	< 130.00	< 130.00	< 130.00	
1981	C58	LLD	6	< 130.00	< 130.00	< 130.00	
1981	C60	LLD	6	< 130.00	< 130.00	< 130.00	
1981	M54	LLD	6	< 130.00	< 130.00	< 130.00	
1981	Z65	LLD	6	< 130.00	< 130.00	< 130.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1981	C34	LLD	2	< 130.00	< 130.00	< 130.00
1981	C37	LLD	2	< 130.00	< 130.00	< 130.00
1981	C58	LLD	2	< 130.00	< 130.00	< 130.00
1981	C60	LLD	2	< 130.00	< 130.00	< 130.00
1981	M54	LLD	2	< 130.00	< 130.00	< 130.00
1981	Z65	LLD	2	< 130.00	< 130.00	< 130.00

TABLE 3.2-5 (CONTINUED)
FISH DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1982	C34	LLD	8	< 23.75	< 40.00	< 10.00	
1982	C37	LLD	8	< 22.50	< 40.00	< 10.00	
1982	C58	LLD	8	< 25.00	< 30.00	< 20.00	
1982	C60	LLD	8	< 20.00	< 30.00	< 10.00	
1982	I59	LLD	8	< 63.75	< 70.00	< 50.00	
1982	M54	LLD	8	< 23.75	< 40.00	< 10.00	
1982	Z65	LLD	8	< 43.75	< 70.00	< 20.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1982	C34	LLD	2	< 15.00	< 20.00	< 10.00
1982	C37	LLD	2	< 15.00	< 20.00	< 10.00
1982	C58	LLD	2	< 25.00	< 30.00	< 20.00
1982	C60	LLD	2	< 15.00	< 20.00	< 10.00
1982	I59	LLD	2	< 40.00	< 40.00	< 40.00
1982	M54	LLD	2	< 15.00	< 20.00	< 10.00
1982	Z65	LLD	2	< 30.00	< 40.00	< 20.00

TABLE 3.2-5 (CONTINUED)
FISH DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE		pCi/Kg MEAN		MAX		MIN	MAX STATION
1983	C34	LLD	11	<	19.00	<	40.00	<	6.00	
1983	C37	LLD	5	<	30.00	<	40.00	<	20.00	
1983	C37	POSITIVE	6		34.17		50.00		16.00	30
1983	C58	LLD	11	<	25.27	<	50.00	<	9.00	
1983	C60	LLD	11	<	26.27	<	40.00	<	9.00	
1983	I59	LLD	11	<	98.18	<	200.00	<	30.00	
1983	K40	POSITIVE	11		3281.82		4200.00		2800.00	37
1983	M54	LLD	11	<	22.73	<	40.00	<	3.00	
1983	Z65	LLD	11	<	61.82	<	110.00	<	20.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE		pCi/Kg MEAN		MAX		MIN
1983	C34	LLD	2	<	17.00	<	19.00	<	15.00
1983	C37	LLD	2	<	19.50	<	20.00	<	19.00
1983	C58	LLD	2	<	28.50	<	40.00	<	17.00
1983	C60	LLD	2	<	20.00	<	20.00	<	20.00
1983	I59	LLD	2	<	95.00	<	140.00	<	50.00
1983	K40	POSITIVE	2		3000.00		3100.00		2700.00
1983	M54	LLD	2	<	18.50	<	20.00	<	17.00
1983	Z65	LLD	2	<	55.00	<	60.00	<	50.00

TABLE 3-2.6.
PRODUCE DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1978	C34	LLD	2	< 80.00	< 80.00	< 80.00	
1978	C37	LLD	14	< 80.00	< 80.00	< 80.00	
1978	C58	LLD	14	< 80.00	< 80.00	< 80.00	
1978	C60	LLD	14	< 80.00	< 80.00	< 80.00	
1978	K40	POSITIVE	8	5100.00	10000.00	3500.00	37
1978	M54	LLD	14	< 80.00	< 80.00	< 80.00	
1978	N95	LLD	14	< 80.00	< 80.00	< 80.00	
1978	Z65	LLD	11	< 80.00	< 80.00	< 80.00	
1978	Z95	LLD	14	< 80.00	< 80.00	< 80.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1978	C34	LLD	4	< 80.00	< 80.00	< 80.00
1978	C37	LLD	12	< 80.00	< 80.00	< 80.00
1978	C58	LLD	12	< 80.00	< 80.00	< 80.00
1978	C60	LLD	12	< 80.00	< 80.00	< 80.00
1978	K40	POSITIVE	4	4025.00	5400.00	3000.00
1978	M54	LLD	12	< 80.00	< 80.00	< 80.00
1978	N95	LLD	12	< 80.00	< 80.00	< 80.00
1978	Z65	LLD	12	< 80.00	< 80.00	< 80.00
1978	Z95	LLD	12	< 80.00	< 80.00	< 80.00

TABLE 3-2.6 (CONTINUED)
PRODUCE DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE		pCi/Kg MEAN		MAX		MIN	MAX STATION
1979	C37	LLD	18	<	82.78	<	130.00	<	80.00	
1979	C58	LLD	18	<	82.78	<	130.00	<	80.00	
1979	C60	LLD	18	<	82.78	<	130.00	<	80.00	
1979	M54	LLD	18	<	82.78	<	130.00	<	80.00	
1979	N95	LLD	18	<	82.78	<	130.00	<	80.00	
1979	Z65	LLD	18	<	82.78	<	130.00	<	80.00	
1979	Z95	LLD	18	<	82.78	<	130.00	<	80.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE		pCi/Kg MEAN		MAX		MIN
1979	C37	LLD	16	<	80.00	<	80.00	<	80.00
1979	C58	LLD	16	<	80.00	<	80.00	<	80.00
1979	C60	LLD	16	<	80.00	<	80.00	<	80.00
1979	M54	LLD	16	<	80.00	<	80.00	<	80.00
1979	N95	LLD	16	<	80.00	<	80.00	<	80.00
1979	Z65	LLD	16	<	80.00	<	80.00	<	80.00
1979	Z95	LLD	16	<	80.00	<	80.00	<	80.00

TABLE 3-2.6 (CONTINUED)
PRODUCE DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1980	C37	LLD	13	< 80.00	< 80.00	< 80.00	
1980	C58	LLD	13	< 80.00	< 80.00	< 80.00	
1980	C60	LLD	13	< 80.00	< 80.00	< 80.00	
1980	M54	LLD	13	< 80.00	< 80.00	< 80.00	
1980	N95	LLD	13	< 80.00	< 80.00	< 80.00	
1980	Z65	LLD	13	< 80.00	< 80.00	< 80.00	
1980	Z95	LLD	13	< 80.00	< 80.00	< 80.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1980	C37	LLD	13	< 80.00	< 80.00	< 80.00
1980	C58	LLD	13	< 80.00	< 80.00	< 80.00
1980	C60	LLD	13	< 80.00	< 80.00	< 80.00
1980	M54	LLD	13	< 80.00	< 80.00	< 80.00
1980	N95	LLD	13	< 80.00	< 80.00	< 80.00
1980	Z65	LLD	13	< 80.00	< 80.00	< 80.00
1980	Z95	LLD	13	< 80.00	< 80.00	< 80.00

TABLE 3-2.6 (CONTINUED)
PRODUCE DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1981	C37	LLD	12	< 80.00	< 80.00	< 80.00	
1981	C58	LLD	12	< 80.00	< 80.00	< 80.00	
1981	C60	LLD	12	< 80.00	< 80.00	< 80.00	
1981	M54	LLD	9	< 80.00	< 80.00	< 80.00	
1981	N95	LLD	12	< 80.00	< 80.00	< 80.00	
1981	Z65	LLD	12	< 80.00	< 80.00	< 80.00	
1981	Z95	LLD	12	< 80.00	< 80.00	< 80.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1981	C37	LLD	12	< 80.00	< 80.00	< 80.00
1981	C58	LLD	12	< 80.00	< 80.00	< 80.00
1981	C60	LLD	12	< 80.00	< 80.00	< 80.00
1981	M54	LLD	12	< 80.00	< 80.00	< 80.00
1981	N95	LLD	12	< 80.00	< 80.00	< 80.00
1981	Z65	LLD	12	< 80.00	< 80.00	< 80.00
1981	Z95	LLD	12	< 80.00	< 80.00	< 80.00

TABLE 3-2.6 (CONTINUED)
PRODUCE DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN	MAX STATION
1982	C34	LLD	12	< 58.33	< 140.00	< 10.00	
1982	C37	LLD	12	< 57.50	< 140.00	< 10.00	
1982	I31	LLD	12	< 190.00	< 1000.00	< 10.00	

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	MAX	MIN
1982	C34	LLD	12	< 42.50	< 120.00	< 20.00
1982	C37	LLD	12	< 42.50	< 120.00	< 20.00
1982	I31	LLD	12	< 149.17	< 890.00	< 30.00

TABLE 3-2.6 (CONTINUED)
PRODUCE DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN	MAX STATION
1983	C34	LLD	14	< 42.14	< 70.00	< 10.00	
1983	C37	LLD	14	< 44.29	< 80.00	< 10.00	
1983	I31	LLD	14	< 52.14	< 110.00	< 20.00	
1983	K40	LLD	1	< 2000.00	< 2000.00	< 2000.00	
1983	K40	POSITIVE	11	2869.09	6400.00	680.00	37

CONTROL STATION

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/Kg MEAN	pCi/Kg MAX	pCi/Kg MIN
1983	C34	LLD	13	< 40.00	< 60.00	< 10.00
1983	C37	LLD	13	< 43.08	< 70.00	< 10.00
1983	I31	LLD	13	< 45.15	< 60.00	< 17.00
1983	K40	LLD	1	< 1300.00	< 1300.00	< 1300.00
1983	POSITIVE	LLD	10	3048.00	6000.00	780.00

TABLE 3-2.7
QUARTERLY TLD DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/CUBIC METER MEAN	MAX	MIN	MAX STATION
1982	TL	POSITIVE	121	0.23	0.27	0.15	46

CONTROL STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	MEAN	MAX	MIN
1982	TL	POSITIVE	4	0.20	0.23	0.11

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	MEAN	MAX	MIN	MAX STATION
1983	TL	POSITIVE	150	0.25	0.32	0.17	46

CONTROL STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	MEAN	MAX	MIN
1983	TL	POSITIVE	3	0.23	0.27	0.22

TABLE 3-2.8
ANNUAL TLD DATA SUMMARY BY YEAR

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	pCi/CUBIC METER MEAN	MAX	MIN	MAX STATION
1982	TL	POSITIVE	28	0.23	0.29	0.20	46

CONTROL STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	MEAN	MAX	MIN
1982	TL	POSITIVE	1	0.21	0.22	0.21

INDICATOR STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	MEAN	MAX	MIN	MAX STATION
1983	TL	POSITIVE	45	0.25	0.31	0.20	4

CONTROL STATIONS

YR	ANALYSIS	TYPE	SAMPLE SIZE	MEAN	MAX	MIN
1983	TL	POSITIVE	1	0.22	0.23	0.21

4.0 COMMENTS AND TERMS PERTINENT TO DATA TABLES

Specific preoperational data are presented in Tables 4-1.0 through 4-8.1. These tables which are arranged according to sample station, sample type and type of analysis are consistent with the sample types outlined in Table 2-1.0 in Section 2.0.

The following abbreviations may appear in the data sets:

- NS - Indicates no sample collected
- SL - Indicates the sample was lost prior to analysis
- NA - Indicates sample analysis lost by laboratory
- NR - Indicates that a result for the indicated analysis was not reported.
- ND - Indicates that a result for an isotope was not reported for this sample (through previously reported in similiar media).

The change in the report of significant figures and the difference in LLD values for data, effective July 1983, was due to the change in contract services as noted previously, in Section 2.0 in this report.

4.1 SAMPLE DEVIATIONS

The following is a listing of the deviations/discrepancies from routine sample collection analysis frequency and/or sensitivity levels experienced during the preoperational program. Causes for the discrepancies are noted for all cases, as indicated in historical records.

Air sample deviations:

11/8 - 11/15/82,	Air sample unit at Station 5 was out of order; no sample was collected.
5/2 - 5/9/83	Air sample unit at Station 23 was out of order; no sample was collected.
7/25 - 8/15/83	Construction work at BPA White Bluffs Substation required removal and rerouting of power line to Station 5. No electrical service was available for three weeks and no sample was collected.
8/8 - 8/15/83,	Construction/remodeling of the Pettitt barn at Station 40 disrupted power to sampler; no sample was collected.
11/14 - 12/12,	Loss of power occurred at Station 7 due to breaks in buried line. Inclement weather prevented trenching and replacement of line for four weeks. No samples were collected during the outage.

9/26 - 10/10	Air sample unit malfunctioned, which resulted in a small sample volume being collected and analytical results higher than normal. (Small sample volumes result in decreased sensitivity of analysis.)

Soil Sample Deviations:

5/13/83	A special Sr-90 soil analysis was requested. Analysis was never completed.

Quarterly TLD Deviations:

Supply System Data

1980 4th Quarter,	Area 4 heater controller of the reader unit malfunctioned. Only 3 TLD areas were used to determine exposure rate for each station.
1981 1st Quarter,	The TLD from Station 13 was damaged during readout, no data retrievable.
1981 2nd Quarter,	TLD information from Station 9 was lost during processing due to machine malfunction.
1982 2nd Quarter,	Station 41 and 46 TLDs were missing. No field dose for these locations available.
1982 3rd Quarter,	Station 47 field dose was determined from back-up area TL due to improper processing of primary TL areas. Station 46 readings were lost during processing.
1983 1st Quarter,	A replacement TLD was put at station 43 for 51 days. Original TLD missing.
1983 4th Quarter,	Station 42 TLD was missing. No field dose available.

Annual TLDs

U. S. Testing Data

1979	Station 20 TLD missing.
1980	Station 14 TLD missing.
1981	Station 12 TLD missing.

Supply System Data

1980 Station 25 TLD missing.

1982 Station 15 and 41 TLDs were in the field less than 369 days (field period for all other TLDs for 1982) due to mixup with quarterly exchange TLDs.

1983 Station 19, 42 and S-4 TLDs missing.

PIC Monitoring Discrepancies:

No data reportable to date. Multiple system failures and malfunctions prevented accumulation and analysis of data.

Water Sample Deviations

10/14/82 Station 29 drinking water sample was never received by the laboratory.

8/6/83 Station 26 and 27 water samples were not analyzed for Gross Beta.

9/14/83 Quarterly Tritium analyses of drinking and surface water lost during processing.

9/14/83 Special Sr-90 analysis of Station 28 water never completed.

All preoperational data for Station 52 (WNP-2, Well #3) was obtained via the WNP-2 water quality/chemistry program conducted by U.S. Testing, not as a part of the REMP. However, this data provides good baseline information for Station 52.

Sediment Sample Deviations

5/8/80 No downstream (Station 34) sediment analysis was reported.

5/14/82 Sediment samples were shipped but no report of analysis was received.

Milk Sample Deviations:

4/26/82 All 4 milk samples were lost in processing at laboratory.

7/6/82 Station 40 milk sample was destroyed during shipping.

7/19/82 Station 35 milk sample was destroyed during shipping.

8/30/82 Station 35 milk sample was never received by laboratory.

Fish Sample Deviations:

10/29/79 Only one fish specimen was caught in the Columbia River, Station 30 (normally 4 specimen are sent for analysis).

4/26/81 Only two fish specimen were caught in Columbia River, Station 30 (normally 4 specimen are sent for analysis).

Garden Produce Sample Deviations:

6/21/82 Station 9 and 37 sample volume were insufficient to achieve required sensitivity.

Table 4-1.0

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	SEP 7, 1982	0.03	0.01
1	SEP 13, 1982	<0.01	
1	SEP 20, 1982	0.02	0.01
1	SEP 27, 1982	0.02	0.01
1	OCT 4, 1982	0.01	0.01
1	OCT 11, 1982	0.04	0.01
1	OCT 18, 1982	0.06	0.01
1	OCT 25, 1982	0.03	0.01
1	NOV 1, 1982	0.03	0.01
1	NOV 8, 1982	0.04	0.01
1	NOV 15, 1982	0.06	0.01
1	NOV 22, 1982	0.03	0.01
1	NOV 29, 1982	0.09	0.01
1	DEC 6, 1982	0.02	0.01
1	DEC 13, 1982	0.10	0.02
1	DEC 20, 1982	0.03	0.01
1	DEC 27, 1982	<0.01	
1	JAN 3, 1983	0.07	0.01
1	JAN 10, 1983	0.04	0.01
1	JAN 17, 1983	0.02	0.01
1	JAN 24, 1983	0.05	0.01
1	JAN 31, 1983	0.01	0.01
1	FEB 7, 1983	0.04	0.01
1	FEB 14, 1983	0.02	0.01
1	FEB 22, 1983	0.01	0.01
1	FEB 28, 1983	0.02	0.01
1	MAR 7, 1983	0.02	0.01
1	MAR 14, 1983	0.01	0.01
1	MAR 21, 1983	0.02	0.01
1	MAR 28, 1983	0.03	0.01
1	APR 4, 1983	0.02	0.01
1	APR 11, 1983	0.03	0.01
1	APR 18, 1983	0.07	0.01
1	APR 25, 1983	0.02	0.01
1	MAY 2, 1983	0.04	0.01
1	MAY 9, 1983	0.02	0.01
1	MAY 16, 1983	0.02	0.01
1	MAY 23, 1983	0.02	0.01
1	MAY 31, 1983	0.04	0.01
1	JUN 6, 1983	0.01	0.01
1	JUN 13, 1983	0.02	0.01
1	JUN 20, 1983	0.01	0.01
1	JUN 27, 1983	0.01	0.01
1	JUL 5, 1983	<0.005	

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	JUL 11, 1983	0.008	0.0034
1	JUL 18, 1983	0.0049	0.0031
1	JUL 25, 1983	0.025	0.004
1	AUG 1, 1983	0.014	0.003
1	AUG 8, 1983	0.018	0.004
1	AUG 15, 1983	0.017	0.004
1	AUG 22, 1983	0.019	0.004
1	AUG 29, 1983	0.02	0.004
1	SEP 6, 1983	0.015	0.003
1	SEP 12, 1983	0.014	0.004
1	SEP 19, 1983	0.018	0.004
1	SEP 26, 1983	0.033	0.005
1	OCT 3, 1983	0.022	0.004
1	OCT 10, 1983	0.019	0.004
1	OCT 17, 1983	0.022	0.004
1	OCT 24, 1983	0.02	0.003
1	OCT 31, 1983	0.041	0.005
1	NOV 7, 1983	0.0058	0.0021
1	NOV 14, 1983	0.01	0.002
1	NOV 21, 1983	0.0065	0.0021
1	NOV 28, 1983	0.0093	0.0024
1	DEC 5, 1983	0.043	0.005
1	DEC 12, 1983	0.023	0.003
1	DEC 19, 1983	0.023	0.003
1	DEC 27, 1983	0.036	0.004
1	JAN 3, 1984	0.048	0.005
1	JAN 9, 1984	0.013	0.003
1	JAN 16, 1984	0.017	0.003
4	MAR 29, 1982	0.02	0.01
4	APR 5, 1982	<0.01	
4	APR 12, 1982	0.01	0.01
4	APR 19, 1982	<0.01	
4	APR 26, 1982	0.02	0.01
4	MAY 3, 1982	0.02	0.01
4	MAY 10, 1982	0.01	0.01
4	MAY 17, 1982	0.02	0.01
4	MAY 24, 1982	0.02	0.01
4	JUN 1, 1982	0.02	0.01
4	JUN 7, 1982	0.01	0.01
4	JUN 14, 1982	0.03	0.01
4	JUN 21, 1982	0.04	0.01
4	JUN 28, 1982	0.04	0.01
4	JUL 6, 1982	0.01	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
4	JUL 12, 1982	0.05	0.01
4	JUL 19, 1982	0.03	0.01
4	JUL 26, 1982	0.03	0.01
4	AUG 2, 1982	0.04	0.01
4	AUG 9, 1982	0.03	0.01
4	AUG 16, 1982	0.01	0.01
4	AUG 23, 1982	0.03	0.01
4	AUG 30, 1982	0.03	0.01
4	SEP 7, 1982	0.02	0.01
4	SEP 13, 1982	0.02	0.01
4	SEP 20, 1982	0.02	0.01
4	SEP 27, 1982	0.01	0.01
4	OCT 4, 1982	<0.01	
4	OCT 11, 1982	0.04	0.01
4	OCT 18, 1982	0.04	0.01
4	OCT 25, 1982	0.03	0.01
4	NOV 1, 1982	0.02	0.01
4	NOV 8, 1982	0.03	0.01
4	NOV 15, 1982	0.06	0.01
4	NOV 22, 1982	0.02	0.01
4	NOV 29, 1982	0.09	0.01
4	DEC 6, 1982	0.02	0.01
4	DEC 13, 1982	0.09	0.02
4	DEC 20, 1982	0.02	0.01
4	DEC 27, 1982	0.01	0.01
4	JAN 3, 1983	0.07	0.01
4	JAN 10, 1983	0.02	0.01
4	JAN 17, 1983	0.01	0.01
4	JAN 24, 1983	0.04	0.01
4	JAN 31, 1983	0.01	0.01
4	FEB 7, 1983	0.04	0.01
4	FEB 14, 1983	0.02	0.01
4	FEB 22, 1983	0.01	0.01
4	FEB 28, 1983	0.02	0.01
4	MAR 7, 1983	0.02	0.01
4	MAR 14, 1983	0.01	0.01
4	MAR 21, 1983	0.02	0.01
4	MAR 28, 1983	0.03	0.01
4	APR 4, 1983	0.02	0.01
4	APR 11, 1983	0.02	0.01
4	APR 18, 1983	0.03	0.01
4	APR 25, 1983	0.02	0.01
4	MAY 2, 1983	0.03	0.01
4	MAY 9, 1983	0.01	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
4	MAY 16, 1983	0.03	0.01
4	MAY 23, 1983	0.02	0.01
4	MAY 31, 1983	0.04	0.01
4	JUN 6, 1983	0.01	0.01
4	JUN 13, 1983	0.01	0.01
4	JUN 20, 1983	0.01	0.01
4	JUN 27, 1983	0.01	0.01
4	JUL 5, 1983	<0.005	
4	JUL 11, 1983	0.0066	0.0033
4	JUL 18, 1983	0.0052	0.0031
4	JUL 25, 1983	0.016	0.004
4	AUG 1, 1983	0.012	0.003
4	AUG 8, 1983	0.022	0.004
4	AUG 15, 1983	0.014	0.004
4	AUG 22, 1983	0.015	0.004
4	AUG 29, 1983	0.018	0.004
4	SEP 6, 1983	0.012	0.003
4	SEP 12, 1983	0.013	0.004
4	SEP 19, 1983	0.015	0.004
4	SEP 26, 1983	0.034	0.005
4	OCT 3, 1983	0.021	0.004
4	OCT 10, 1983	0.018	0.004
4	OCT 17, 1983	0.022	0.004
4	OCT 24, 1983	0.021	0.003
4	OCT 31, 1983	0.039	0.004
4	NOV 7, 1983	0.0065	0.0022
4	NOV 14, 1983	0.0025	0.0016
4	NOV 21, 1983	<0.006	
4	NOV 28, 1983	0.0095	0.0024
4	DEC 5, 1983	0.04	0.004
4	DEC 12, 1983	0.017	0.003
4	DEC 19, 1983	0.023	0.003
4	DEC 27, 1983	0.037	0.004
4	JAN 3, 1984	0.04	0.004
4	JAN 9, 1984	0.015	0.003
4	JAN 16, 1984	0.018	0.003
5	MAR 29, 1982	0.02	0.01
5	APR 5, 1982	0.01	0.01
5	APR 12, 1982	0.03	0.01
5	APR 19, 1982	<0.01	
5	APR 26, 1982	0.03	0.01
5	MAY 3, 1982	0.04	0.01
5	MAY 10, 1982	0.01	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
5	MAY 17, 1982	0.02	0.01
5	MAY 24, 1982	0.02	0.01
5	JUN 1, 1982	0.02	0.01
5	JUN 7, 1982	0.02	0.01
5	JUN 14, 1982	0.02	0.01
5	JUN 21, 1982	0.03	0.01
5	JUN 28, 1982	0.03	0.01
5	JUL 6, 1982	0.02	0.01
5	JUL 12, 1982	0.06	0.01
5	JUL 19, 1982	0.02	0.01
5	JUL 26, 1982	0.02	0.01
5	AUG 2, 1982	0.03	0.01
5	AUG 9, 1982	0.05	0.01
5	AUG 16, 1982	0.01	0.01
5	AUG 23, 1982	0.02	0.01
5	AUG 30, 1982	0.02	0.01
5	SEP 7, 1982	0.02	0.01
5	SEP 13, 1982	<0.01	
5	SEP 20, 1982	<0.01	
5	SEP 27, 1982	0.02	0.01
5	OCT 4, 1982	<0.01	
5	OCT 11, 1982	0.03	0.01
5	OCT 18, 1982	0.04	0.01
5	OCT 25, 1982	0.02	0.01
5	NOV 1, 1982	0.02	0.01
5	NOV 8, 1982	0.03	0.01
5	NOV 15, 1982	NS	
5	NOV 22, 1982	0.03	0.01
5	NOV 29, 1982	0.07	0.01
5	DEC 6, 1982	0.01	0.01
5	DEC 13, 1982	0.13	0.02
5	DEC 20, 1982	0.02	0.01
5	DEC 27, 1982	0.01	0.01
5	JAN 3, 1983	0.07	0.01
5	JAN 10, 1983	0.03	0.01
5	JAN 17, 1983	0.01	0.01
5	JAN 24, 1983	0.03	0.01
5	JAN 31, 1983	0.01	0.01
5	FEB 7, 1983	0.03	0.01
5	FEB 14, 1983	0.01	0.01
5	FEB 22, 1983	0.01	0.01
5	FEB 28, 1983	0.01	0.01
5	MAR 7, 1983	0.02	0.01
5	MAR 14, 1983	0.01	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
5	MAR 21, 1983	0.02	0.01
5	MAR 28, 1983	0.02	0.01
5	APR 4, 1983	<0.01	
5	APR 11, 1983	0.02	0.01
5	APR 18, 1983	0.02	0.01
5	APR 25, 1983	0.02	0.01
5	MAY 2, 1983	0.02	0.01
5	MAY 9, 1983	0.01	0.01
5	MAY 16, 1983	0.02	0.01
5	MAY 23, 1983	0.01	0.01
5	MAY 31, 1983	0.03	0.01
5	JUN 6, 1983	0.01	0.01
5	JUN 13, 1983	0.01	0.01
5	JUN 20, 1983	<0.01	
5	JUN 27, 1983	0.01	0.01
5	JUL 5, 1983	<0.005	
5	JUL 11, 1983	0.0089	0.0035
5	JUL 18, 1983	<0.004	
5	JUL 25, 1983	0.015	0.003
5	AUG 1, 1983	0.0095	0.0031
5	AUG 8, 1983	0.017	0.004
5	AUG 15, 1983	0.015	0.004
5	AUG 22, 1983	0.015	0.004
5	AUG 29, 1983	0.018	0.004
5	SEP 6, 1983	0.0086	0.0026
5	SEP 12, 1983	0.012	0.004
5	SEP 19, 1983	0.012	0.003
5	SEP 26, 1983	0.025	0.004
5	OCT 3, 1983	0.013	0.003
5	OCT 10, 1983	0.016	0.004
5	OCT 17, 1983	0.016	0.004
5	OCT 24, 1983	0.019	0.003
5	OCT 31, 1983	0.032	0.004
5	NOV 7, 1983	0.0064	0.0021
5	NOV 14, 1983	0.0076	0.002
5	NOV 21, 1983	0.0045	0.0019
5	NOV 28, 1983	0.0047	0.0021
5	DEC 5, 1983	0.034	0.004
5	DEC 12, 1983	0.013	0.002
5	DEC 19, 1983	0.017	0.003
5	DEC 27, 1983	0.041	0.005
5	JAN 3, 1984	0.036	0.004
5	JAN 9, 1984	0.008	0.0024
5	JAN 16, 1984	0.02	0.003

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
6	MAR 29, 1982	0.02	0.01
6	APR 5, 1982	<0.01	
6	APR 12, 1982	0.02	0.01
6	APR 19, 1982	<0.01	
6	APR 26, 1982	0.02	0.01
6	MAY 3, 1982	0.03	0.01
6	MAY 10, 1982	0.01	0.01
6	MAY 17, 1982	0.02	0.01
6	MAY 24, 1982	0.02	0.01
6	JUN 1, 1982	0.02	0.01
6	JUN 7, 1982	0.02	0.01
6	JUN 14, 1982	0.02	0.01
6	JUN 21, 1982	0.04	0.01
6	JUN 28, 1982	0.02	0.01
6	JUL 6, 1982	0.03	0.01
6	JUL 12, 1982	0.05	0.01
6	JUL 19, 1982	0.02	0.01
6	JUL 26, 1982	0.01	0.01
6	AUG 2, 1982	0.04	0.01
6	AUG 9, 1982	0.01	0.01
6	AUG 16, 1982	0.02	0.01
6	AUG 23, 1982	0.02	0.01
6	AUG 30, 1982	0.03	0.01
6	SEP 7, 1982	0.02	0.01
6	SEP 13, 1982	<0.01	
6	SEP 20, 1982	0.03	0.01
6	SEP 27, 1982	0.02	0.01
6	OCT 4, 1982	0.01	0.01
6	OCT 11, 1982	0.03	0.01
6	OCT 18, 1982	0.05	0.01
6	OCT 25, 1982	0.02	0.01
6	NOV 1, 1982	0.02	0.01
6	NOV 8, 1982	0.04	0.01
6	NOV 15, 1982	0.07	0.01
6	NOV 22, 1982	<0.01	
6	NOV 29, 1982	0.11	0.02
6	DEC 6, 1982	0.01	0.01
6	DEC 13, 1982	0.12	0.02
6	DEC 20, 1982	0.03	0.01
6	DEC 27, 1982	0.01	0.01
6	JAN 3, 1983	0.07	0.01
6	JAN 10, 1983	0.03	0.01
6	JAN 17, 1983	0.01	0.01
6	JAN 24, 1983	0.04	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
6	JAN 31, 1983	0.01	0.01
6	FEB 7, 1983	0.05	0.01
6	FEB. 14, 1983	0.02	0.01
6	FEB 22, 1983	0.01	0.01
6	FEB 28, 1983	0.02	0.01
6	MAR 7, 1983	0.02	0.01
6	MAR 14, 1983	<0.01	
6	MAR 21, 1983	0.03	0.01
6	MAR 28, 1983	0.03	0.01
6	APR 4, 1983	0.01	0.01
6	APR 11, 1983	0.03	0.01
6	APR 18, 1983	0.03	0.01
6	APR 25, 1983	0.03	0.01
6	MAY 2, 1983	0.06	0.02
6	MAY 9, 1983	0.02	0.01
6	MAY 16, 1983	0.02	0.01
6	MAY 23, 1983	0.02	0.01
6	MAY 31, 1983	0.03	0.01
6	JUN 6, 1983	0.01	0.01
6	JUN 13, 1983	0.01	0.01
6	JUN 20, 1983	0.01	0.01
6	JUN 27, 1983	0.01	0.01
6	JUL 5, 1983	<0.005	
6	JUL 11, 1983	0.0082	0.0034
6	JUL 18, 1983	0.0038	0.003
6	JUL 25, 1983	0.014	0.003
6	AUG 1, 1983	NS	
6	AUG 8, 1983	NS	
6	AUG 15, 1983	NS	
6	AUG 22, 1983	0.015	0.006
6	AUG 29, 1983	0.019	0.004
6	SEP 6, 1983	0.013	0.003
6	SEP 12, 1983	0.0089	0.0035
6	SEP 19, 1983	0.014	0.004
6	SEP 26, 1983	0.03	0.004
6	OCT 3, 1983	0.018	0.004
6	OCT 10, 1983	0.022	0.004
6	OCT 17, 1983	0.023	0.004
6	OCT 24, 1983	0.021	0.003
6	OCT 31, 1983	0.039	0.004
6	NOV 7, 1983	0.0084	0.0023
6	NOV 14, 1983	0.0089	0.002
6	NOV 21, 1983	0.0076	0.0021
6	NOV 28, 1983	0.0088	0.0024

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
6	DEC 5, 1983	0.033	0.004
6	DEC 12, 1983	0.017	0.003
6	DEC 19, 1983	0.019	0.003
6	DEC 27, 1983	0.037	0.004
6	JAN 3, 1984	0.042	0.005
6	JAN 9, 1984	0.0098	0.0025
6	JAN 16, 1984	0.016	0.003
7	AUG 16, 1982	0.02	0.01
7	AUG 23, 1982	0.02	0.01
7	AUG 30, 1982	0.03	0.01
7	SEP 7, 1982	0.02	0.01
7	SEP 13, 1982	<0.01	
7	SEP 20, 1982	0.01	0.01
7	SEP 27, 1982	0.01	0.01
7	OCT 4, 1982	<0.01	
7	OCT 11, 1982	0.04	0.01
7	OCT 18, 1982	0.05	0.01
7	OCT 25, 1982	0.04	0.01
7	NOV 1, 1982	0.03	0.01
7	NOV 8, 1982	0.05	0.01
7	NOV 15, 1982	0.06	0.01
7	NOV 22, 1982	0.03	0.01
7	NOV 29, 1982	0.11	0.01
7	DEC 6, 1982	0.01	0.01
7	DEC 13, 1982	0.06	0.01
7	DEC 20, 1982	0.05	0.01
7	DEC 27, 1982	0.01	0.01
7	JAN 3, 1983	0.06	0.01
7	JAN 10, 1983	0.04	0.01
7	JAN 17, 1983	0.01	0.01
7	JAN 24, 1983	0.03	0.01
7	JAN 31, 1983	0.01	0.01
7	FEB 7, 1983	0.05	0.01
7	FEB 14, 1983	0.02	0.01
7	FEB 22, 1983	0.01	0.01
7	FEB 28, 1983	0.01	0.01
7	MAR 7, 1983	0.02	0.01
7	MAR 14, 1983	<0.01	
7	MAR 21, 1983	0.02	0.01
7	MAR 28, 1983	0.04	0.01
7	APR 4, 1983	0.01	0.01
7	APR 11, 1983	0.04	0.01
7	APR 18, 1983	0.03	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
7	APR 25, 1983	0.02	0.01
7	MAY 2, 1983	0.02	0.01
7	MAY 9, 1983	0.02	0.01
7	MAY 16, 1983	0.03	0.01
7	MAY 23, 1983	0.03	0.01
7	MAY 31, 1983	0.05	0.01
7	JUN 6, 1983	0.01	0.01
7	JUN 13, 1983	0.01	0.01
7	JUN 20, 1983	0.01	0.01
7	JUN 27, 1983	0.01	0.01
7	JUL 5, 1983	<0.005	
7	JUL 11, 1983	0.0082	0.0034
7	JUL 18, 1983	0.003	0.0029
7	JUL 25, 1983	0.03	0.004
7	AUG 1, 1983	0.012	0.003
7	AUG 8, 1983	0.02	0.004
7	AUG 15, 1983	0.021	0.004
7	AUG 22, 1983	0.017	0.004
7	AUG 29, 1983	0.025	0.004
7	SEP 6, 1983	0.014	0.003
7	SEP 12, 1983	0.011	0.004
7	SEP 19, 1983	0.015	0.004
7	SEP 26, 1983	0.038	0.005
7	OCT 3, 1983	0.025	0.004
7	OCT 10, 1983	0.021	0.004
7	OCT 17, 1983	0.02	0.004
7	OCT 24, 1983	0.019	0.003
7	OCT 31, 1983	0.038	0.004
7	NOV 7, 1983	0.0069	0.0022
7	NOV 14, 1983	0.01	0.003
7	NOV 21, 1983	NS	
7	NOV 28, 1983	NS	
7	DEC 5, 1983	NS	
7	DEC 12, 1983	NS	
7	DEC 19, 1983	0.022	0.003
7	DEC 27, 1983	0.037	0.004
7	JAN 3, 1984	0.043	0.005
7	JAN 9, 1984	0.017	0.003
7	JAN 16, 1984	0.019	0.003
8	MAR 29, 1982	0.02	0.01
8	APR 5, 1982	0.01	0.01
8	APR 12, 1982	0.02	0.01
8	APR 19, 1982	<0.01	

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
8	APR 26, 1982	0.02	0.01
8	MAY 3, 1982	0.02	0.01
8	MAY 10, 1982	0.01	0.01
8	MAY 17, 1982	0.02	0.01
8	MAY 24, 1982	0.02	0.01
8	JUN 1, 1982	0.02	0.01
8	JUN 7, 1982	0.02	0.01
8	JUN 14, 1982	0.02	0.01
8	JUN 21, 1982	0.03	0.01
8	JUN 28, 1982	0.03	0.01
8	JUL 6, 1982	0.02	0.01
8	JUL 12, 1982	0.04	0.01
8	JUL 19, 1982	0.02	0.01
8	JUL 26, 1982	0.02	0.01
8	AUG 2, 1982	0.05	0.01
8	AUG 9, 1982	0.01	0.01
8	AUG 16, 1982	0.01	0.01
8	AUG 23, 1982	0.02	0.01
8	AUG 30, 1982	0.03	0.01
8	SEP 7, 1982	0.03	0.01
8	SEP 13, 1982	0.02	0.01
8	SEP 20, 1982	0.01	0.01
8	SEP 27, 1982	0.03	0.01
8	OCT 4, 1982	<0.01	
8	OCT 11, 1982	0.03	0.01
8	OCT 18, 1982	0.05	0.01
8	OCT 25, 1982	0.05	0.01
8	NOV 1, 1982	0.03	0.01
8	NOV 8, 1982	0.05	0.01
8	NOV 15, 1982	0.05	0.01
8	NOV 22, 1982	0.03	0.01
8	NOV 29, 1982	0.12	0.02
8	DEC 6, 1982	0.02	0.01
8	DEC 13, 1982	0.11	0.02
8	DEC 20, 1982	0.02	0.01
8	DEC 27, 1982	0.01	0.01
8	JAN 3, 1983	0.07	0.01
8	JAN 10, 1983	0.03	0.01
8	JAN 17, 1983	0.01	0.01
8	JAN 24, 1983	0.03	0.01
8	JAN 31, 1983	0.02	0.01
8	FEB 7, 1983	0.03	0.01
8	FEB 14, 1983	0.01	0.01
8	FEB 22, 1983	0.01	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
8	FEB 28, 1983	0.01	0.01
8	MAR 7, 1983	0.02	0.01
8	MAR 14, 1983	0.01	0.01
8	MAR 21, 1983	0.02	0.01
8	MAR 28, 1983	0.02	0.01
8	APR 4, 1983	0.01	0.01
8	APR 11, 1983	0.01	0.01
8	APR 18, 1983	0.04	0.01
8	APR 25, 1983	0.02	0.01
8	MAY 2, 1983	0.02	0.01
8	MAY 9, 1983	0.01	0.01
8	MAY 16, 1983	0.02	0.01
8	MAY 23, 1983	0.01	0.01
8	MAY 31, 1983	0.03	0.01
8	JUN 6, 1983	0.01	0.01
8	JUN 13, 1983	0.01	0.01
8	JUN 20, 1983	0.01	0.01
8	JUN 27, 1983	0.01	0.01
8	JUL 5, 1983	<0.005	
8	JUL 11, 1983	0.0095	0.0035
8	JUL 18, 1983	0.0043	0.0031
8	JUL 25, 1983	0.016	0.004
8	AUG 1, 1983	0.012	0.003
8	AUG 8, 1983	0.016	0.003
8	AUG 15, 1983	0.016	0.004
8	AUG 22, 1983	0.016	0.004
8	AUG 29, 1983	0.021	0.004
8	SEP 6, 1983	0.011	0.003
8	SEP 12, 1983	0.0066	0.0032
8	SEP 19, 1983	0.012	0.003
8	SEP 26, 1983	0.03	0.004
8	OCT 3, 1983	0.016	0.004
8	OCT 10, 1983	0.014	0.003
8	OCT 17, 1983	0.02	0.004
8	OCT 24, 1983	0.017	0.003
8	OCT 31, 1983	0.039	0.004
8	NOV 7, 1983	0.0068	0.0022
8	NOV 14, 1983	0.01	0.002
8	NOV 21, 1983	0.0045	0.0019
8	NOV 28, 1983	0.0096	0.0024
8	DEC 5, 1983	0.032	0.004
8	DEC 12, 1983	0.02	0.003
8	DEC 19, 1983	0.021	0.003
8	DEC 27, 1983	0.042	0.005

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
8	JAN 3, 1984	0.044	0.005
8	JAN 9, 1984	0.012	0.003
8	JAN 16, 1984	0.019	0.003
9	MAR 29, 1982	0.02	0.01
9	APR 5, 1982	<0.01	
9	APR 12, 1982	0.01	0.01
9	APR 19, 1982	<0.01	
9	APR 26, 1982	0.02	0.01
9	MAY 3, 1982	0.02	0.01
9	MAY 10, 1982	0.01	0.01
9	MAY 17, 1982	0.01	0.01
9	MAY 24, 1982	0.01	0.01
9	JUN 1, 1982	0.02	0.01
9	JUN 7, 1982	0.01	0.01
9	JUN 14, 1982	0.02	0.01
9	JUN 21, 1982	0.03	0.01
9	JUN 28, 1982	0.03	0.01
9	JUL 6, 1982	0.01	0.01
9	JUL 12, 1982	0.03	0.01
9	JUL 19, 1982	0.02	0.01
9	JUL 26, 1982	0.03	0.01
9	AUG 2, 1982	0.02	0.01
9	AUG 9, 1982	0.01	0.01
9	AUG 16, 1982	0.01	0.01
9	AUG 23, 1982	0.02	0.01
9	AUG 30, 1982	0.03	0.01
9	SEP 7, 1982	0.02	0.01
9	SEP 13, 1982	0.02	0.01
9	SEP 20, 1982	0.03	0.01
9	SEP 27, 1982	0.01	0.01
9	OCT 4, 1982	0.01	0.01
9	OCT 11, 1982	0.03	0.01
9	OCT 18, 1982	0.04	0.01
9	OCT 25, 1982	0.03	0.01
9	NOV 1, 1982	0.03	0.01
9	NOV 8, 1982	0.04	0.01
9	NOV 15, 1982	0.07	0.01
9	NOV 22, 1982	<0.01	
9	NOV 29, 1982	0.06	0.01
9	DEC 6, 1982	0.02	0.01
9	DEC 13, 1982	0.04	0.01
9	DEC 20, 1982	0.02	0.01
9	DEC 27, 1982	0.01	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JAN 3, 1983	0.05	0.01
9	JAN 10, 1983	0.02	0.01
9	JAN 17, 1983	0.01	0.01
9	JAN 24, 1983	0.03	0.01
9	JAN 31, 1983	0.01	0.01
9	FEB 7, 1983	0.03	0.01
9	FEB 14, 1983	<0.01	
9	FEB 22, 1983	0.01	0.01
9	FEB 28, 1983	0.02	0.01
9	MAR 7, 1983	0.02	0.01
9	MAR 14, 1983	0.01	0.01
9	MAR 21, 1983	0.02	0.01
9	MAR 28, 1983	0.02	0.01
9	APR 4, 1983	0.01	0.01
9	APR 11, 1983	0.01	0.01
9	APR 18, 1983	0.03	0.01
9	APR 25, 1983	0.02	0.01
9	MAY 2, 1983	0.02	0.01
9	MAY 9, 1983	0.01	0.01
9	MAY 16, 1983	0.02	0.01
9	MAY 23, 1983	0.02	0.01
9	MAY 31, 1983	0.03	0.01
9	JUN 6, 1983	0.01	0.01
9	JUN 13, 1983	0.01	0.01
9	JUN 20, 1983	0.01	0.01
9	JUN 27, 1983	0.01	0.01
9	JUL 5, 1983	<0.005	
9	JUL 11, 1983	0.0053	0.0032
9	JUL 18, 1983	0.0042	0.003
9	JUL 25, 1983	0.015	0.003
9	AUG 1, 1983	0.0079	0.003
9	AUG 8, 1983	0.015	0.003
9	AUG 15, 1983	0.014	0.004
9	AUG 22, 1983	0.015	0.004
9	AUG 29, 1983	0.015	0.004
9	SEP 6, 1983	0.012	0.003
9	SEP 12, 1983	0.0086	0.0034
9	SEP 19, 1983	0.011	0.003
9	SEP 26, 1983	0.024	0.004
9	OCT 3, 1983	0.018	0.004
9	OCT 10, 1983	0.014	0.004
9	OCT 17, 1983	0.019	0.004
9	OCT 24, 1983	0.015	0.002
9	OCT 31, 1983	0.022	0.003

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
9	NOV 7, 1983	0.0056	0.0021
9	NOV 14, 1983	0.0088	0.002
9	NOV 21, 1983	0.0031	0.0018
9	NOV 28, 1983	0.0077	0.0023
9	DEC 5, 1983	0.028	0.003
9	DEC 12, 1983	0.017	0.003
9	DEC 19, 1983	0.017	0.003
9	DEC 27, 1983	0.031	0.004
9	JAN 3, 1984	0.037	0.004
9	JAN 9, 1984	0.011	0.003
9	JAN 16, 1984	0.015	0.002
21	SEP 7, 1982	0.02	0.01
21	SEP 13, 1982	0.01	0.01
21	SEP 20, 1982	0.03	0.01
21	SEP 27, 1982	0.02	0.01
21	OCT 4, 1982	<0.01	
21	OCT 11, 1982	0.04	0.01
21	OCT 18, 1982	0.06	0.01
21	OCT 25, 1982	0.04	0.01
21	NOV 1, 1982	0.03	0.01
21	NOV 8, 1982	0.05	0.01
21	NOV 15, 1982	0.08	0.01
21	NOV 22, 1982	0.03	0.01
21	NOV 29, 1982	0.08	0.01
21	DEC 6, 1982	0.02	0.01
21	DEC 13, 1982	0.08	0.02
21	DEC 20, 1982	0.03	0.01
21	DEC 27, 1982	0.01	0.01
21	JAN 3, 1983	0.06	0.01
21	JAN 10, 1983	0.03	0.01
21	JAN 17, 1983	0.01	0.01
21	JAN 24, 1983	0.03	0.01
21	JAN 31, 1983	0.01	0.01
21	FEB 7, 1983	0.05	0.01
21	FEB 14, 1983	0.01	0.01
21	FEB 22, 1983	<0.01	
21	FEB 28, 1983	0.02	0.01
21	MAR 7, 1983	0.02	0.01
21	MAR 14, 1983	0.01	0.01
21	MAR 21, 1983	0.02	0.01
21	MAR 28, 1983	0.03	0.01
21	APR 4, 1983	0.01	0.01
21	APR 11, 1983	0.02	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
21	APR 18, 1983	0.03	0.01
21	APR 25, 1983	0.02	0.01
21	MAY 2, 1983	0.03	0.01
21	MAY 9, 1983	0.02	0.01
21	MAY 16, 1983	0.02	0.01
21	MAY 23, 1983	0.01	0.01
21	MAY 31, 1983	0.02	0.01
21	JUN 6, 1983	0.01	0.01
21	JUN 13, 1983	0.01	0.01
21	JUN 20, 1983	0.01	0.01
21	JUN 27, 1983	0.01	0.01
21	JUL 5, 1983	<0.005	
21	JUL 11, 1983	0.0071	0.0033
21	JUL 18, 1983	0.0039	0.003
21	JUL 25, 1983	0.016	0.004
21	AUG 1, 1983	0.0093	0.0031
21	AUG 8, 1983	0.016	0.004
21	AUG 15, 1983	0.012	0.003
21	AUG 22, 1983	0.016	0.004
21	AUG 29, 1983	0.019	0.004
21	SEP 6, 1983	0.013	0.003
21	SEP 12, 1983	0.0071	0.0033
21	SEP 19, 1983	0.011	0.003
21	SEP 26, 1983	0.032	0.005
21	OCT 3, 1983	0.041	0.009
21	OCT 10, 1983	0.057	0.012
21	OCT 17, 1983	0.023	0.004
21	OCT 24, 1983	0.02	0.003
21	OCT 31, 1983	0.04	0.004
21	NOV 7, 1983	0.0077	0.0022
21	NOV 14, 1983	0.0086	0.002
21	NOV 21, 1983	0.0057	0.002
21	NOV 28, 1983	0.0065	0.0022
21	DEC 5, 1983	0.038	0.004
21	DEC 12, 1983	0.016	0.003
21	DEC 19, 1983	0.013	0.002
21	DEC 27, 1983	0.026	0.003
21	JAN 3, 1984	0.024	0.003
21	JAN 9, 1984	0.01	0.003
21	JAN 16, 1984	0.016	0.003
23	SEP 7, 1982	0.03	0.01
23	SEP 13, 1982	<0.01	
23	SEP 20, 1982	0.03	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
23	SEP 27, 1982	0.02	0.01
23	OCT 4, 1982	<0.01	
23	OCT 11, 1982	0.04	0.01
23	OCT 18, 1982	0.03	0.01
23	OCT 25, 1982	0.04	0.01
23	NOV 1, 1982	0.03	0.01
23	NOV 8, 1982	0.07	0.03
23	NOV 15, 1982	0.08	0.01
23	NOV 22, 1982	0.03	0.01
23	NOV 29, 1982	0.07	0.01
23	DEC 6, 1982	0.02	0.01
23	DEC 13, 1982	0.07	0.02
23	DEC 20, 1982	0.03	0.01
23	DEC 27, 1982	0.01	0.01
23	JAN 3, 1983	0.07	0.01
23	JAN 10, 1983	0.03	0.01
23	JAN 17, 1983	0.01	0.01
23	JAN 24, 1983	0.05	0.01
23	JAN 31, 1983	0.01	0.01
23	FEB 7, 1983	0.05	0.01
23	FEB 14, 1983	0.02	0.01
23	FEB 22, 1983	<0.01	
23	FEB 28, 1983	0.02	0.01
23	MAR 7, 1983	0.02	0.01
23	MAR 14, 1983	<0.01	
23	MAR 21, 1983	0.02	0.01
23	MAR 28, 1983	0.03	0.01
23	APR 4, 1983	0.02	0.01
23	APR 11, 1983	0.03	0.01
23	APR 18, 1983	0.04	0.01
23	APR 25, 1983	0.02	0.01
23	MAY 2, 1983	0.01	0.01
23	MAY 9, 1983	NS	
23	MAY 16, 1983	0.03	0.01
23	MAY 23, 1983	0.02	0.01
23	MAY 31, 1983	0.04	0.01
23	JUN 6, 1983	0.02	0.01
23	JUN 13, 1983	0.01	0.01
23	JUN 20, 1983	0.01	0.01
23	JUN 27, 1983	0.01	0.01
23	JUL 5, 1983	<0.005	
23	JUL 11, 1983	0.0066	0.0033
23	JUL 18, 1983	0.0034	0.003
23	JUL 25, 1983	0.022	0.004

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
23	AUG 1, 1983	0.015	0.004
23	AUG 8, 1983	0.018	0.004
23	AUG 15, 1983	0.012	0.003
23	AUG 22, 1983	0.017	0.004
23	AUG 29, 1983	0.018	0.004
23	SEP 6, 1983	0.011	0.003
23	SEP 12, 1983	0.011	0.004
23	SEP 19, 1983	0.011	0.003
23	SEP 26, 1983	0.031	0.004
23	OCT 3, 1983	0.024	0.004
23	OCT 10, 1983	0.02	0.004
23	OCT 17, 1983	0.019	0.004
23	OCT 24, 1983	0.02	0.003
23	OCT 31, 1983	0.044	0.005
23	NOV 7, 1983	0.0054	0.0021
23	NOV 14, 1983	0.01	0.002
23	NOV 21, 1983	0.0048	0.002
23	NOV 28, 1983	0.008	0.0023
23	DEC 5, 1983	0.034	0.004
23	DEC 12, 1983	0.021	0.003
23	DEC 19, 1983	0.017	0.003
23	DEC 27, 1983	0.04	0.004
23	JAN 3, 1984	0.043	0.005
23	JAN 9, 1984	0.014	0.003
23	JAN 16, 1984	0.016	0.003
40	JAN 31, 1983	0.02	0.01
40	FEB 7, 1983	0.04	0.01
40	FEB 14, 1983	0.01	0.01
40	FEB 22, 1983	0.01	0.01
40	FEB 28, 1983	0.02	0.01
40	MAR 7, 1983	0.01	0.01
40	MAR 14, 1983	<0.01	
40	MAR 21, 1983	0.02	0.01
40	MAR 28, 1983	0.01	0.01
40	APR 4, 1983	0.01	0.01
40	APR 11, 1983	0.02	0.01
40	APR 18, 1983	0.03	0.01
40	APR 25, 1983	0.02	0.01
40	MAY 2, 1983	0.03	0.01
40	MAY 9, 1983	0.01	0.01
40	MAY 16, 1983	0.03	0.01
40	MAY 23, 1983	0.02	0.01
40	MAY 31, 1983	0.04	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
40	JUN 6, 1983	0.01	0.01
40	JUN 13, 1983	0.01	0.01
40	JUN 20, 1983	0.01	0.01
40	JUN 27, 1983	0.01	0.01
40	JUL 5, 1983	<0.005	
40	JUL 11, 1983	0.0098	0.0036
40	JUL 18, 1983	<0.004	
40	JUL 25, 1983	0.015	0.003
40	AUG 1, 1983	0.014	0.003
40	AUG 8, 1983	0.02	0.004
40	AUG 15, 1983	NS	
40	AUG 22, 1983	0.02	0.004
40	AUG 29, 1983	0.019	0.004
40	SEP 6, 1983	0.013	0.003
40	SEP 12, 1983	0.011	0.004
40	SEP 19, 1983	0.016	0.004
40	SEP 26, 1983	0.032	0.005
40	OCT 3, 1983	0.017	0.004
40	OCT 10, 1983	0.016	0.004
40	OCT 17, 1983	0.018	0.004
40	OCT 24, 1983	0.019	0.003
40	OCT 31, 1983	0.037	0.004
40	NOV 7, 1983	0.0047	0.002
40	NOV 14, 1983	0.0084	0.002
40	NOV 21, 1983	0.0054	0.002
40	NOV 28, 1983	0.008	0.0023
40	DEC 5, 1983	0.029	0.003
40	DEC 12, 1983	0.02	0.003
40	DEC 19, 1983	0.023	0.003
40	DEC 27, 1983	0.045	0.005
40	JAN 3, 1984	0.047	0.005
40	JAN 9, 1984	0.014	0.003
40	JAN 16, 1984	0.018	0.003
48	FEB 7, 1983	0.05	0.01
48	FEB 14, 1983	0.02	0.01
48	FEB 22, 1983	0.01	0.01
48	FEB 28, 1983	0.02	0.01
48	MAR 7, 1983	0.01	0.01
48	MAR 14, 1983	0.02	0.01
48	MAR 21, 1983	0.01	0.01
48	MAR 28, 1983	0.02	0.01
48	APR 4, 1983	0.02	0.01
48	APR 11, 1983	0.02	0.01

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
48	APR 18, 1983	0.04	0.01
48	APR 25, 1983	0.02	0.01
48	MAY 2, 1983	0.03	0.01
48	MAY 9, 1983	0.01	0.01
48	MAY 16, 1983	0.02	0.01
48	MAY 23, 1983	0.02	0.01
48	MAY 31, 1983	0.04	0.01
48	JUN 6, 1983	0.01	0.01
48	JUN 13, 1983	0.01	0.01
48	JUN 20, 1983	0.01	0.01
48	JUN 27, 1983	0.01	0.01
48	JUL 5, 1983	<0.005	
48	JUL 11, 1983	0.013	0.004
48	JUL 18, 1983	0.005	0.0031
48	JUL 25, 1983	0.015	0.003
48	AUG 1, 1983	0.011	0.003
48	AUG 8, 1983	0.017	0.004
48	AUG 15, 1983	0.018	0.004
48	AUG 22, 1983	0.018	0.004
48	AUG 29, 1983	0.022	0.004
48	SEP 6, 1983	0.013	0.003
48	SEP 12, 1983	0.012	0.004
48	SEP 19, 1983	0.012	0.003
48	SEP 26, 1983	0.034	0.005
48	OCT 3, 1983	0.018	0.004
48	OCT 10, 1983	0.018	0.004
48	OCT 17, 1983	0.024	0.004
48	OCT 24, 1983	0.016	0.003
48	OCT 31, 1983	0.039	0.004
48	NOV 7, 1983	0.0079	0.0022
48	NOV 14, 1983	0.0092	0.002
48	NOV 21, 1983	0.0048	0.0019
48	NOV 28, 1983	0.0098	0.0024
48	DEC 5, 1983	0.042	0.005
48	DEC 12, 1983	0.023	0.003
48	DEC 19, 1983	0.025	0.003
48	DEC 27, 1983	0.043	0.005
48	JAN 3, 1984	0.04	0.004
48	JAN 9, 1984	0.017	0.003
48	JAN 16, 1984	0.02	0.003
57	DEC 5, 1983	0.032	0.004
57	DEC 12, 1983	0.019	0.003
57	DEC 19, 1983	0.019	0.003

Table 4-1.0
(continued)

AIR

ANALYSIS: GROSS BETA
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
57	DEC 27, 1983	0.038	0.004
57	JAN 3, 1984	0.038	0.004
57	JAN 9, 1984	0.019	0.003
57	JAN 16, 1984	0.017	0.003

Table 4-1.1

AIR

ANALYSIS: BERYLLIUM -7
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	SEP 26, 1983	0.062	0.018
1	JAN 3, 1984	0.046	0.02
4	SEP 26, 1983	0.044	0.019
4	JAN 3, 1984	<0.04	
5	SEP 26, 1983	0.079	0.02
5	JAN 3, 1984	0.042	0.014
6	SEP 26, 1983	0.082	0.024
6	JAN 3, 1984	0.04	0.016
7	SEP 26, 1983	0.09	0.022
7	JAN 3, 1984	0.047	0.025
8	SEP 26, 1983	0.051	0.019
8	JAN 3, 1984	0.048	0.016
9	SEP 26, 1983	0.042	0.017
9	JAN 3, 1984	0.035	0.015
21	SEP 26, 1983	0.071	0.022
21	JAN 3, 1984	<0.03	
23	SEP 26, 1983	0.067	0.021
23	JAN 3, 1984	0.034	0.024
40	SEP 26, 1983	0.073	0.024
40	JAN 3, 1984	0.044	0.015
48	SEP 26, 1983	0.072	0.02
48	JAN 3, 1984	0.051	0.016
57	JAN 3, 1984	0.076	0.035

Table 4-1.2

AIR

ANALYSIS: CESIUM-134
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	SEP 27, 1982	<0.04	
1	DEC 27, 1982	<0.02	
1	MAR 28, 1983	<0.01	
1	JUN 27, 1983	<0.01	
1	SEP 26, 1983	<0.002	
1	JAN 3, 1984	<0.002	
4	JUN 28, 1982	<0.01	
4	SEP 27, 1982	<0.01	
4	DEC 27, 1982	<0.01	
4	MAR 28, 1983	<0.01	
4	JUN 27, 1983	<0.01	
4	SEP 26, 1983	<0.0014	
4	JAN 3, 1984	<0.003	
5	JUN 28, 1982	<0.01	
5	SEP 27, 1982	<0.01	
5	DEC 27, 1982	<0.02	
5	MAR 28, 1983	<0.01	
5	JUN 27, 1983	<0.01	
5	SEP 26, 1983	<0.0016	
5	JAN 3, 1984	<0.0016	
6	JUN 28, 1982	<0.01	
6	SEP 27, 1982	<0.04	
6	DEC 27, 1982	<0.01	
6	MAR 28, 1983	<0.01	
6	JUN 27, 1983	<0.01	
6	SEP 26, 1983	<0.0018	
6	JAN 3, 1984	<0.002	
7	SEP 27, 1982	<0.04	
7	DEC 27, 1982	<0.02	
7	MAR 28, 1983	<0.01	
7	JUN 27, 1983	<0.01	
7	SEP 26, 1983	<0.0016	
7	JAN 3, 1984	<0.002	
8	JUN 28, 1982	<0.01	
8	SEP 27, 1982	<0.01	
8	DEC 27, 1982	<0.02	
8	MAR 28, 1983	<0.01	
8	JUN 27, 1983	<0.01	
8	SEP 26, 1983	<0.0018	

Table 4-1.2
(continued)

AIR

ANALYSIS: CESIUM-134
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
8	JAN 3, 1984	<0.0015	
9	JUN 28, 1982	<0.01	
9	SEP 27, 1982	<0.02	
9	DEC 27, 1982	<0.01	
9	MAR 28, 1983	<0.01	
9	JUN 27, 1983	<0.01	
9	SEP 26, 1983	<0.0014	
9	JAN 3, 1984	<0.0018	
21	SEP 27, 1982	<0.01	
21	DEC 27, 1982	<0.02	
21	MAR 28, 1983	<0.01	
21	JUN 27, 1983	<0.01	
21	SEP 26, 1983	<0.002	
21	JAN 3, 1984	<0.002	
23	SEP 27, 1982	<0.01	
23	DEC 27, 1982	<0.01	
23	MAR 28, 1983	<0.01	
23	JUN 27, 1983	<0.01	
23	SEP 26, 1983	<0.0014	
23	JAN 3, 1984	<0.003	
40	MAR 28, 1983	<0.01	
40	JUN 27, 1983	<0.01	
40	SEP 26, 1983	<0.002	
40	JAN 3, 1984	<0.0015	
48	MAR 28, 1983	<0.01	
48	JUN 27, 1983	<0.01	
48	SEP 26, 1983	<0.0015	
48	JAN 3, 1984	<0.0019	
57	JAN 3, 1984	<0.005	

Table 4-1.3

AIR

ANALYSIS: CESIUM-137
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	SEP 27, 1982	<0.04	
1	DEC 27, 1982	<0.02	
1	MAR 28, 1983	<0.01	
1	JUN 27, 1983	<0.01	
1	SEP 26, 1983	<0.0016	
1	JAN 3, 1984	<0.003	
4	JUN 28, 1982	<0.01	
4	SEP 27, 1982	<0.01	
4	DEC 27, 1982	<0.01	
4	MAR 28, 1983	<0.01	
4	JUN 27, 1983	<0.01	
4	SEP 26, 1983	<0.002	
4	JAN 3, 1984	<0.003	
5	JUN 28, 1982	<0.01	
5	SEP 27, 1982	<0.01	
5	DEC 27, 1982	<0.02	
5	MAR 28, 1983	<0.01	
5	JUN 27, 1983	<0.01	
5	SEP 26, 1983	<0.002	
5	JAN 3, 1984	<0.0016	
6	JUN 28, 1982	<0.01	
6	SEP 27, 1982	<0.04	
6	DEC 27, 1982	<0.01	
6	MAR 28, 1983	<0.01	
6	JUN 27, 1983	<0.01	
6	SEP 26, 1983	<0.003	
6	JAN 3, 1984	<0.0015	
7	SEP 27, 1982	<0.04	
7	DEC 27, 1982	<0.02	
7	MAR 28, 1983	<0.01	
7	JUN 27, 1983	<0.01	
7	SEP 26, 1983	<0.0016	
7	JAN 3, 1984	<0.003	
8	JUN 28, 1982	<0.01	
8	SEP 27, 1982	<0.01	
8	DEC 27, 1982	<0.02	
8	MAR 28, 1983	<0.01	
8	JUN 27, 1983	<0.01	
8	SEP 26, 1983	<0.0018	

Table 4-1.3
(continued)

AIR

ANALYSIS: CESIUM-137
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
8	JAN 3, 1984	<0.0016	
9	JUN 28, 1982	<0.01	
9	SEP 27, 1982	<0.02	
9	DEC 27, 1982	<0.01	
9	MAR 28, 1983	<0.01	
9	JUN 27, 1983	<0.01	
9	SEP 26, 1983	<0.0018	
9	JAN 3, 1984	<0.0013	
21	SEP 27, 1982	<0.01	
21	DEC 27, 1982	<0.02	
21	MAR 28, 1983	<0.01	
21	JUN 27, 1983	<0.01	
21	SEP 26, 1983	<0.002	
21	JAN 3, 1984	<0.0019	
23	SEP 27, 1982	<0.01	
23	DEC 27, 1982	<0.01	
23	MAR 28, 1983	<0.01	
23	JUN 27, 1983	<0.01	
23	SEP 26, 1983	<0.002	
23	JAN 3, 1984	<0.003	
40	MAR 28, 1983	<0.01	
40	JUN 27, 1983	<0.01	
40	SEP 26, 1983	<0.0018	
40	JAN 3, 1984	<0.0016	
48	MAR 28, 1983	<0.01	
48	JUN 27, 1983	<0.01	
48	SEP 26, 1983	<0.0015	
48	JAN 3, 1984	<0.002	
57	JAN 3, 1984	<0.006	

Table 4-1.4

AIR

ANALYSIS: CERIUM-144
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	SEP 26, 1983	<0.007	
1	JAN 3, 1984	<0.013	
4	SEP 26, 1983	<0.007	
4	JAN 3, 1984	<0.013	
5	SEP 26, 1983	<0.006	
5	JAN 3, 1984	<0.006	
6	SEP 26, 1983	<0.008	
6	JAN 3, 1984	<0.006	
7	SEP 26, 1983	<0.007	
7	JAN 3, 1984	<0.01	
8	SEP 26, 1983	<0.006	
8	JAN 3, 1984	<0.006	
9	SEP 26, 1983	<0.007	
9	JAN 3, 1984	<0.006	
21	SEP 26, 1983	<0.006	
21	JAN 3, 1984	<0.009	
23	SEP 26, 1983	<0.006	
23	JAN 3, 1984	<0.013	
40	SEP 26, 1983	<0.007	
40	JAN 3, 1984	<0.005	
48	SEP 26, 1983	<0.007	
48	JAN 3, 1984	<0.005	
57	JAN 3, 1984	<0.02	

Table 4-1.5

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	JAN 24, 1983	<0.07	
1	JAN 31, 1983	<0.07	
1	FEB 7, 1983	<0.07	
1	FEB 14, 1983	<0.07	
1	FEB 22, 1983	<0.07	
1	FEB 28, 1983	<0.07	
1	MAR 7, 1983	<0.07	
1	MAR 14, 1983	<0.07	
1	MAR 28, 1983	<0.07	
1	APR 4, 1983	<0.07	
1	APR 11, 1983	<0.07	
1	APR 18, 1983	<0.07	
1	APR 25, 1983	<0.07	
1	MAY 2, 1983	<0.07	
1	MAY 9, 1983	<0.07	
1	MAY 16, 1983	<0.07	
1	MAY 23, 1983	<0.07	
1	MAY 31, 1983	<0.07	
1	JUN 6, 1983	<0.07	
1	JUN 13, 1983	<0.07	
1	JUN 20, 1983	<0.07	
1	JUN 27, 1983	<0.07	
1	JUL 5, 1983	<0.03	
1	JUL 11, 1983	<0.04	
1	JUL 18, 1983	<0.02	
1	JUL 25, 1983	<0.02	
1	AUG 1, 1983	<0.02	
1	AUG 8, 1983	<0.03	
1	AUG 15, 1983	<0.02	
1	AUG 22, 1983	<0.03	
1	AUG 29, 1983	<0.02	
1	SEP 6, 1983	<0.03	
1	SEP 12, 1983	<0.04	
1	SEP 19, 1983	<0.03	
1	SEP 26, 1983	<0.04	
1	OCT 3, 1983	<0.05	
1	OCT 10, 1983	<0.04	
1	OCT 17, 1983	<0.05	
1	OCT 24, 1983	<0.04	
1	OCT 31, 1983	<0.04	
1	NOV 7, 1983	<0.05	
1	NOV 14, 1983	<0.02	
1	NOV 21, 1983	<0.04	
1	NOV 28, 1983	<0.02	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	DEC 5, 1983	<0.03	
1	DEC 12, 1983	<0.05	
1	DEC 19, 1983	<0.04	
1	DEC 27, 1983	<0.05	
1	JAN 3, 1984	<0.07	
1	JAN 9, 1984	<0.04	
1	JAN 16, 1984	<0.05	
4	JAN 24, 1983	<0.07	
4	JAN 31, 1983	<0.07	
4	FEB 7, 1983	<0.07	
4	FEB 14, 1983	<0.07	
4	FEB 22, 1983	<0.07	
4	FEB 28, 1983	<0.07	
4	MAR 7, 1983	<0.07	
4	MAR 14, 1983	<0.07	
4	MAR 28, 1983	<0.07	
4	APR 4, 1983	<0.07	
4	APR 11, 1983	<0.07	
4	APR 18, 1983	<0.07	
4	APR 25, 1983	<0.07	
4	MAY 2, 1983	<0.07	
4	MAY 9, 1983	<0.07	
4	MAY 16, 1983	<0.07	
4	MAY 23, 1983	<0.07	
4	MAY 31, 1983	<0.07	
4	JUN 6, 1983	<0.07	
4	JUN 13, 1983	<0.07	
4	JUN 20, 1983	<0.07	
4	JUN 27, 1983	<0.07	
4	JUL 5, 1983	<0.03	
4	JUL 11, 1983	<0.04	
4	JUL 18, 1983	<0.02	
4	JUL 25, 1983	<0.02	
4	AUG 1, 1983	<0.02	
4	AUG 8, 1983	<0.03	
4	AUG 15, 1983	<0.02	
4	AUG 22, 1983	<0.03	
4	AUG 29, 1983	<0.02	
4	SEP 6, 1983	<0.03	
4	SEP 12, 1983	<0.04	
4	SEP 19, 1983	<0.03	
4	SEP 26, 1983	<0.04	
4	OCT 3, 1983	<0.05	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
4	OCT 10, 1983	<0.04	
4	OCT 17, 1983	<0.06	
4	OCT 24, 1983	<0.04	
4	OCT 31, 1983	<0.04	
4	NOV 7, 1983	<0.05	
4	NOV 14, 1983	<0.02	
4	NOV 21, 1983	<0.08	
4	NOV 28, 1983	<0.02	
4	DEC 5, 1983	<0.03	
4	DEC 12, 1983	<0.05	
4	DEC 19, 1983	<0.04	
4	DEC 27, 1983	<0.05	
4	JAN 3, 1984	<0.07	
4	JAN 9, 1984	<0.03	
4	JAN 16, 1984	<0.05	
5	JAN 24, 1983	<0.07	
5	JAN 31, 1983	<0.07	
5	FEB 7, 1983	<0.07	
5	FEB 14, 1983	<0.07	
5	FEB 22, 1983	<0.07	
5	FEB 28, 1983	<0.07	
5	MAR 7, 1983	<0.07	
5	MAR 14, 1983	<0.07	
5	MAR 28, 1983	<0.07	
5	APR 4, 1983	<0.07	
5	APR 11, 1983	<0.07	
5	APR 18, 1983	<0.07	
5	APR 25, 1983	<0.07	
5	MAY 2, 1983	<0.07	
5	MAY 9, 1983	<0.07	
5	MAY 16, 1983	<0.07	
5	MAY 23, 1983	<0.07	
5	MAY 31, 1983	<0.07	
5	JUN 6, 1983	<0.07	
5	JUN 13, 1983	<0.07	
5	JUN 20, 1983	<0.07	
5	JUN 27, 1983	<0.07	
5	JUL 5, 1983	<0.03	
5	JUL 11, 1983	<0.04	
5	JUL 18, 1983	<0.02	
5	JUL 25, 1983	<0.02	
5	AUG 1, 1983	<0.02	
5	AUG 8, 1983	<0.03	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
5	AUG 15, 1983	<0.02	
5	AUG 22, 1983	<0.03	
5	AUG 29, 1983	<0.02	
5	SEP 6, 1983	<0.03	
5	SEP 12, 1983	<0.04	
5	SEP 19, 1983	<0.03	
5	SEP 26, 1983	<0.04	
5	OCT 3, 1983	<0.05	
5	OCT 10, 1983	<0.04	
5	OCT 17, 1983	<0.05	
5	OCT 24, 1983	<0.04	
5	OCT 31, 1983	<0.04	
5	NOV 7, 1983	<0.05	
5	NOV 14, 1983	<0.02	
5	NOV 21, 1983	<0.03	
5	NOV 28, 1983	<0.02	
5	DEC 5, 1983	<0.03	
5	DEC 12, 1983	<0.05	
5	DEC 19, 1983	<0.04	
5	DEC 27, 1983	<0.05	
5	JAN 3, 1984	<0.07	
5	JAN 9, 1984	<0.04	
5	JAN 16, 1984	<0.05	
6	JAN 24, 1983	<0.07	
6	JAN 31, 1983	<0.07	
6	FEB 7, 1983	<0.07	
6	FEB 14, 1983	<0.07	
6	FEB 22, 1983	<0.07	
6	FEB 28, 1983	<0.07	
6	MAR 7, 1983	<0.07	
6	MAR 14, 1983	<0.07	
6	MAR 28, 1983	<0.07	
6	APR 4, 1983	<0.07	
6	APR 11, 1983	<0.07	
6	APR 18, 1983	<0.07	
6	APR 25, 1983	<0.07	
6	MAY 2, 1983	<0.07	
6	MAY 9, 1983	<0.07	
6	MAY 16, 1983	<0.07	
6	MAY 23, 1983	<0.07	
6	MAY 31, 1983	<0.07	
6	JUN 6, 1983	<0.07	
6	JUN 13, 1983	<0.07	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
6	JUN 20, 1983	<0.07	
6	JUN 27, 1983	<0.07	
6	JUL 5, 1983	<0.03	
6	JUL 11, 1983	<0.04	
6	JUL 18, 1983	<0.02	
6	JUL 25, 1983	<0.02	
6	AUG 1, 1983	NS	
6	AUG 8, 1983	NS	
6	AUG 15, 1983	NS	
6	AUG 22, 1983	<0.05	
6	AUG 29, 1983	<0.02	
6	SEP 6, 1983	<0.03	
6	SEP 12, 1983	<0.04	
6	SEP 19, 1983	<0.03	
6	SEP 26, 1983	<0.04	
6	OCT 3, 1983	<0.05	
6	OCT 10, 1983	<0.04	
6	OCT 17, 1983	<0.05	
6	OCT 24, 1983	<0.04	
6	OCT 31, 1983	<0.04	
6	NOV 7, 1983	<0.05	
6	NOV 14, 1983	<0.02	
6	NOV 21, 1983	<0.03	
6	NOV 28, 1983	<0.02	
6	DEC 5, 1983	<0.03	
6	DEC 12, 1983	<0.05	
6	DEC 19, 1983	<0.04	
6	DEC 27, 1983	<0.05	
6	JAN 3, 1984	<0.07	
6	JAN 9, 1984	<0.03	
6	JAN 16, 1984	<0.05	
7	JAN 24, 1983	<0.07	
7	JAN 31, 1983	<0.07	
7	FEB 7, 1983	<0.07	
7	FEB 14, 1983	<0.07	
7	FEB 22, 1983	<0.07	
7	FEB 28, 1983	<0.07	
7	MAR 7, 1983	<0.07	
7	MAR 14, 1983	<0.07	
7	MAR 28, 1983	<0.07	
7	APR 4, 1983	<0.07	
7	APR 11, 1983	<0.07	
7	APR 18, 1983	<0.07	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
7	APR 25, 1983	<0.07	
7	MAY 2, 1983	<0.07	
7	MAY 9, 1983	<0.07	
7	MAY 16, 1983	<0.07	
7	MAY 23, 1983	<0.07	
7	MAY 31, 1983	<0.07	
7	JUN 6, 1983	<0.07	
7	JUN 13, 1983	<0.07	
7	JUN 20, 1983	<0.07	
7	JUN 27, 1983	<0.07	
7	JUL 5, 1983	<0.03	
7	JUL 11, 1983	<0.04	
7	JUL 18, 1983	<0.02	
7	JUL 25, 1983	<0.02	
7	AUG 1, 1983	<0.02	
7	AUG 8, 1983	<0.03	
7	AUG 15, 1983	<0.02	
7	AUG 22, 1983	<0.03	
7	AUG 29, 1983	<0.02	
7	SEP 6, 1983	<0.03	
7	SEP 12, 1983	<0.04	
7	SEP 19, 1983	<0.03	
7	SEP 26, 1983	<0.04	
7	OCT 3, 1983	<0.05	
7	OCT 10, 1983	<0.04	
7	OCT 17, 1983	<0.05	
7	OCT 24, 1983	<0.04	
7	OCT 31, 1983	<0.04	
7	NOV 7, 1983	<0.05	
7	NOV 14, 1983	<0.03	
7	NOV 21, 1983	NS	
7	NOV 28, 1983	NS	
7	DEC 5, 1983	NS	
7	DEC 12, 1983	NS	
7	DEC 19, 1983	<0.04	
7	DEC 27, 1983	<0.06	
7	JAN 3, 1984	<0.07	
7	JAN 9, 1984	<0.05	
7	JAN 16, 1984	<0.04	
8	JAN 24, 1983	<0.07	
8	JAN 31, 1983	<0.07	
8	FEB 7, 1983	<0.07	
8	FEB 14, 1983	<0.07	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
8	FEB 22, 1983	<0.07	
8	FEB 28, 1983	<0.07	
8	MAR 7, 1983	<0.07	
8	MAR 14, 1983	<0.07	
8	MAR 28, 1983	<0.07	
8	APR 4, 1983	<0.07	
8	APR 11, 1983	<0.07	
8	APR 18, 1983	<0.07	
8	APR 25, 1983	<0.07	
8	MAY 2, 1983	<0.07	
8	MAY 9, 1983	<0.07	
8	MAY 16, 1983	<0.07	
8	MAY 23, 1983	<0.07	
8	MAY 31, 1983	<0.07	
8	JUN 6, 1983	<0.07	
8	JUN 13, 1983	<0.07	
8	JUN 20, 1983	<0.07	
8	JUN 27, 1983	<0.07	
8	JUL 5, 1983	<0.03	
8	JUL 11, 1983	<0.04	
8	JUL 18, 1983	<0.02	
8	JUL 25, 1983	<0.02	
8	AUG 1, 1983	<0.02	
8	AUG 8, 1983	<0.03	
8	AUG 15, 1983	<0.02	
8	AUG 22, 1983	<0.03	
8	AUG 29, 1983	<0.02	
8	SEP 6, 1983	<0.03	
8	SEP 12, 1983	<0.04	
8	SEP 19, 1983	<0.03	
8	SEP 26, 1983	<0.04	
8	OCT 3, 1983	<0.05	
8	OCT 10, 1983	<0.04	
8	OCT 17, 1983	<0.05	
8	OCT 24, 1983	<0.04	
8	OCT 31, 1983	<0.04	
8	NOV 7, 1983	<0.05	
8	NOV 14, 1983	<0.03	
8	NOV 21, 1983	<0.03	
8	NOV 28, 1983	<0.02	
8	DEC 5, 1983	<0.03	
8	DEC 12, 1983	<0.05	
8	DEC 19, 1983	<0.04	
8	DEC 27, 1983	<0.05	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
8	JAN 3, 1984	<0.07	
8	JAN 9, 1984	<0.05	
8	JAN 16, 1984	<0.04	
9	JAN 24, 1983	<0.07	
9	JAN 31, 1983	<0.07	
9	FEB 7, 1983	<0.07	
9	FEB 14, 1983	<0.07	
9	FEB 22, 1983	<0.07	
9	FEB 28, 1983	<0.07	
9	MAR 7, 1983	<0.07	
9	MAR 14, 1983	<0.07	
9	MAR 28, 1983	<0.07	
9	APR 4, 1983	<0.07	
9	APR 11, 1983	<0.07	
9	APR 18, 1983	<0.07	
9	APR 25, 1983	<0.07	
9	MAY 2, 1983	<0.07	
9	MAY 9, 1983	<0.07	
9	MAY 16, 1983	<0.07	
9	MAY 23, 1983	<0.07	
9	MAY 31, 1983	<0.07	
9	JUN 6, 1983	<0.07	
9	JUN 13, 1983	<0.07	
9	JUN 20, 1983	<0.07	
9	JUN 27, 1983	<0.07	
9	JUL 5, 1983	<0.03	
9	JUL 11, 1983	<0.04	
9	JUL 18, 1983	<0.03	
9	JUL 25, 1983	<0.02	
9	AUG 1, 1983	<0.03	
9	AUG 8, 1983	<0.03	
9	AUG 15, 1983	<0.03	
9	AUG 22, 1983	<0.03	
9	AUG 29, 1983	<0.02	
9	SEP 6, 1983	<0.02	
9	SEP 12, 1983	<0.04	
9	SEP 19, 1983	<0.04	
9	SEP 26, 1983	<0.05	
9	OCT 3, 1983	<0.04	
9	OCT 10, 1983	<0.03	
9	OCT 17, 1983	<0.05	
9	OCT 24, 1983	<0.03	
9	OCT 31, 1983	<0.04	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
9	NOV 7, 1983	<0.04	
9	NOV 14, 1983	<0.03	
9	NOV 21, 1983	<0.05	
9	NOV 28, 1983	<0.02	
9	DEC 5, 1983	<0.03	
9	DEC 12, 1983	<0.05	
9	DEC 19, 1983	<0.04	
9	DEC 27, 1983	<0.03	
9	JAN 3, 1984	<0.04	
9	JAN 9, 1984	<0.05	
9	JAN 16, 1984	<0.04	
21	JAN 24, 1983	<0.07	
21	JAN 31, 1983	<0.07	
21	FEB 7, 1983	<0.07	
21	FEB 14, 1983	<0.07	
21	FEB 22, 1983	<0.07	
21	FEB 28, 1983	<0.07	
21	MAR 7, 1983	<0.07	
21	MAR 14, 1983	<0.07	
21	MAR 28, 1983	<0.07	
21	APR 4, 1983	<0.07	
21	APR 11, 1983	<0.07	
21	APR 18, 1983	<0.07	
21	APR 25, 1983	<0.07	
21	MAY 2, 1983	<0.07	
21	MAY 9, 1983	<0.07	
21	MAY 16, 1983	<0.07	
21	MAY 23, 1983	<0.07	
21	MAY 31, 1983	<0.07	
21	JUN 6, 1983	<0.07	
21	JUN 13, 1983	<0.07	
21	JUN 20, 1983	<0.07	
21	JUN 27, 1983	<0.07	
21	JUL 5, 1983	<0.03	
21	JUL 11, 1983	<0.04	
21	JUL 18, 1983	<0.03	
21	JUL 25, 1983	<0.03	
21	AUG 1, 1983	<0.03	
21	AUG 8, 1983	<0.04	
21	AUG 15, 1983	<0.03	
21	AUG 22, 1983	<0.03	
21	AUG 29, 1983	<0.02	
21	SEP 6, 1983	<0.02	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
21	SEP 12, 1983	<0.03	
21	SEP 19, 1983	<0.04	
21	SEP 26, 1983	<0.05	
21	OCT 3, 1983	<0.09	
21	OCT 10, 1983	<0.11	
21	OCT 17, 1983	<0.05	
21	OCT 24, 1983	<0.03	
21	OCT 31, 1983	<0.04	
21	NOV 7, 1983	<0.04	
21	NOV 14, 1983	<0.03	
21	NOV 21, 1983	<0.05	
21	NOV 28, 1983	<0.02	
21	DEC 5, 1983	<0.04	
21	DEC 12, 1983	<0.06	
21	DEC 19, 1983	<0.04	
21	DEC 27, 1983	<0.03	
21	JAN 3, 1984	<0.04	
21	JAN 9, 1984	<0.04	
21	JAN 16, 1984	<0.05	
23	JAN 24, 1983	<0.07	
23	JAN 31, 1983	<0.07	
23	FEB 7, 1983	<0.07	
23	FEB 14, 1983	<0.07	
23	FEB 22, 1983	<0.07	
23	FEB 28, 1983	<0.07	
23	MAR 7, 1983	<0.07	
23	MAR 14, 1983	<0.07	
23	MAR 28, 1983	<0.07	
23	APR 4, 1983	<0.07	
23	APR 11, 1983	<0.07	
23	APR 18, 1983	<0.07	
23	APR 25, 1983	<0.07	
23	MAY 2, 1983	<0.07	
23	MAY 9, 1983	NS	
23	MAY 16, 1983	<0.07	
23	MAY 23, 1983	<0.07	
23	MAY 31, 1983	<0.07	
23	JUN 6, 1983	<0.07	
23	JUN 13, 1983	<0.07	
23	JUN 20, 1983	<0.07	
23	JUN 27, 1983	<0.07	
23	JUL 5, 1983	<0.03	
23	JUL 11, 1983	<0.04	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
23	JUL 18, 1983	<0.03	
23	JUL 25, 1983	<0.03	
23	AUG 1, 1983	<0.03	
23	AUG 8, 1983	<0.04	
23	AUG 15, 1983	<0.03	
23	AUG 22, 1983	<0.03	
23	AUG 29, 1983	<0.02	
23	SEP 6, 1983	<0.02	
23	SEP 12, 1983	<0.03	
23	SEP 19, 1983	<0.04	
23	SEP 26, 1983	<0.05	
23	OCT 3, 1983	<0.04	
23	OCT 10, 1983	<0.03	
23	OCT 17, 1983	<0.05	
23	OCT 24, 1983	<0.03	
23	OCT 31, 1983	<0.04	
23	NOV 7, 1983	<0.04	
23	NOV 14, 1983	<0.03	
23	NOV 21, 1983	<0.05	
23	NOV 28, 1983	<0.02	
23	DEC 5, 1983	<0.04	
23	DEC 12, 1983	<0.05	
23	DEC 19, 1983	<0.04	
23	DEC 27, 1983	<0.03	
23	JAN 3, 1984	<0.04	
23	JAN 9, 1984	<0.04	
23	JAN 16, 1984	<0.05	
40	JAN 31, 1983	<0.07	
40	FEB 7, 1983	<0.07	
40	FEB 14, 1983	<0.07	
40	FEB 22, 1983	<0.07	
40	FEB 28, 1983	<0.07	
40	MAR 7, 1983	<0.07	
40	MAR 14, 1983	<0.07	
40	MAR 28, 1983	<0.07	
40	APR 4, 1983	<0.07	
40	APR 11, 1983	<0.07	
40	APR 18, 1983	<0.07	
40	APR 25, 1983	<0.07	
40	MAY 2, 1983	<0.07	
40	MAY 9, 1983	<0.07	
40	MAY 16, 1983	<0.07	
40	MAY 23, 1983	<0.07	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
40	MAY 31, 1983	<0.07	
40	JUN 6, 1983	<0.07	
40	JUN 13, 1983	<0.07	
40	JUN 20, 1983	<0.07	
40	JUN 27, 1983	<0.07	
40	JUL 5, 1983	<0.03	
40	JUL 11, 1983	<0.04	
40	JUL 18, 1983	<0.03	
40	JUL 25, 1983	<0.03	
40	AUG 1, 1983	<0.03	
40	AUG 8, 1983	<0.04	
40	AUG 15, 1983	NS	
40	AUG 22, 1983	<0.03	
40	AUG 29, 1983	<0.02	
40	SEP 6, 1983	<0.02	
40	SEP 12, 1983	<0.03	
40	SEP 19, 1983	<0.04	
40	SEP 26, 1983	<0.05	
40	OCT 3, 1983	<0.04	
40	OCT 10, 1983	<0.03	
40	OCT 17, 1983	<0.05	
40	OCT 24, 1983	<0.03	
40	OCT 31, 1983	<0.04	
40	NOV 7, 1983	<0.04	
40	NOV 14, 1983	<0.03	
40	NOV 21, 1983	<0.05	
40	NOV 28, 1983	<0.02	
40	DEC 5, 1983	<0.04	
40	DEC 12, 1983	<0.05	
40	DEC 19, 1983	<0.01	
40	DEC 27, 1983	<0.03	
40	JAN 3, 1984	<0.04	
40	JAN 9, 1984	<0.05	
40	JAN 16, 1984	<0.04	
48	FEB 7, 1983	<0.07	
48	FEB 14, 1983	<0.07	
48	FEB 22, 1983	<0.07	
48	FEB 28, 1983	<0.07	
48	MAR 7, 1983	<0.07	
48	MAR 14, 1983	<0.07	
48	MAR 28, 1983	<0.07	
48	APR 4, 1983	<0.07	
48	APR 11, 1983	<0.07	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
48	APR 18, 1983	<0.07	
48	APR 25, 1983	<0.07	
48	MAY 2, 1983	<0.07	
48	MAY 9, 1983	<0.07	
48	MAY 16, 1983	<0.07	
48	MAY 23, 1983	<0.07	
48	MAY 31, 1983	<0.07	
48	JUN 6, 1983	<0.07	
48	JUN 13, 1983	<0.07	
48	JUN 20, 1983	<0.07	
48	JUN 27, 1983	<0.07	
48	JUL 5, 1983	<0.03	
48	JUL 11, 1983	<0.04	
48	JUL 18, 1983	<0.03	
48	JUL 25, 1983	<0.03	
48	AUG 1, 1983	<0.03	
48	AUG 8, 1983	<0.04	
48	AUG 15, 1983	<0.03	
48	AUG 22, 1983	<0.03	
48	AUG 29, 1983	<0.02	
48	SEP 6, 1983	<0.02	
48	SEP 12, 1983	<0.03	
48	SEP 19, 1983	<0.04	
48	SEP 26, 1983	<0.05	
48	OCT 3, 1983	<0.04	
48	OCT 10, 1983	<0.03	
48	OCT 17, 1983	<0.05	
48	OCT 24, 1983	<0.03	
48	OCT 31, 1983	<0.04	
48	NOV 7, 1983	<0.04	
48	NOV 14, 1983	<0.03	
48	NOV 21, 1983	<0.05	
48	NOV 28, 1983	<0.02	
48	DEC 5, 1983	<0.04	
48	DEC 12, 1983	<0.05	
48	DEC 19, 1983	<0.01	
48	DEC 27, 1983	<0.03	
48	JAN 3, 1984	<0.04	
48	JAN 9, 1984	<0.05	
48	JAN 16, 1984	<0.04	
57	DEC 5, 1983	<0.04	
57	DEC 12, 1983	<0.05	
57	DEC 19, 1983	<0.01	

Table 4-1.5
(continued)

AIR

ANALYSIS: IODINE-131
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
57	DEC 27, 1983	<0.03	
57	JAN 3, 1984	<0.04	
57	JAN 9, 1984	<0.05	
57	JAN 16, 1984	<0.04	

Table 4-1.6

AIR

ANALYSIS: NIOBIUM-95
UNITS: pCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	SEP 26, 1983	<0.004	
1	JAN 3, 1984	<0.003	
4	SEP 26, 1983	<0.0018	
4	JAN 3, 1984	<0.004	
5	SEP 26, 1983	<0.002	
5	JAN 3, 1984	<0.0016	
6	SEP 26, 1983	<0.003	
6	JAN 3, 1984	<0.003	
7	SEP 26, 1983	<0.002	
7	JAN 3, 1984	<0.004	
8	SEP 26, 1983	<0.002	
8	JAN 3, 1984	<0.0017	
9	SEP 26, 1983	<0.002	
9	JAN 3, 1984	<0.003	
21	SEP 26, 1983	<0.002	
21	JAN 3, 1984	<0.004	
23	SEP 26, 1983	<0.002	
23	JAN 3, 1984	<0.004	
40	SEP 26, 1983	<0.003	
40	JAN 3, 1984	<0.002	
48	SEP 26, 1983	<0.003	
48	JAN 3, 1984	<0.003	
57	JAN 3, 1984	<0.005	

Table 4-1.7

AIR

ANALYSIS: ZIRCONIUM-95
UNITS: PCi/M3

STATION	DATE	CONCENTRATION	TWO SIGMA
1	SEP 26, 1983	<0.005	
1	JAN 3, 1984	<0.007	
4	SEP 26, 1983	<0.005	
4	JAN 3, 1984	<0.006	
5	SEP 26, 1983	<0.004	
5	JAN 3, 1984	<0.004	
6	SEP 26, 1983	<0.005	
6	JAN 3, 1984	<0.004	
7	SEP 26, 1983	<0.004	
7	JAN 3, 1984	<0.006	
8	SEP 26, 1983	<0.005	
8	JAN 3, 1984	<0.003	
9	SEP 26, 1983	<0.006	
9	JAN 3, 1984	<0.003	
21	SEP 26, 1983	<0.005	
21	JAN 3, 1984	<0.005	
23	SEP 26, 1983	<0.004	
23	JAN 3, 1984	<0.006	
40	SEP 26, 1983	<0.005	
40	JAN 3, 1984	<0.004	
48	SEP 26, 1983	<0.004	
48	JAN 3, 1984	<0.005	
57	JAN 3, 1984	<0.012	

Table 4-2.0

WATER

ANALYSIS: GROSS ALPHA
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
52	OCT 5, 1982	<0.30	
52	FEB 22, 1983	<0.95	
52	APR 5, 1983	<0.50	
52	SEP 27, 1983	<0.64	

Table 4-2.1

WATER

ANALYSIS: BARIUM-140
UNITS: pCi/1

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<45.00	
26	OCT 14, 1982	<14.00	
26	NOV 16, 1982	<33.00	
26	DEC 16, 1982	<33.00	
26	JAN 14, 1983	<23.00	
26	FEB 10, 1983	<28.00	
26	MAR 10, 1983	<28.00	
26	APR 7, 1983	<21.00	
26	MAY 5, 1983	<28.00	
26	JUN 8, 1983	<20.00	
26	JUL 7, 1983	<10.00	
26	AUG 11, 1983	<130.00	
26	SEP 14, 1983	<170.00	
26	OCT 13, 1983	<120.00	
26	NOV 10, 1983	<100.00	
26	DEC 14, 1983	<20.00	
26	JAN 13, 1984	<30.00	
27	APR 23, 1982	<7.00	
27	MAY 20, 1982	<9.00	
27	JUN 17, 1982	<30.00	
27	JUL 16, 1982	<110.00	
27	AUG 12, 1982	<110.00	
27	SEP 9, 1982	<45.00	
27	OCT 14, 1982	<14.00	
27	NOV 16, 1982	<33.00	
27	DEC 16, 1982	<33.00	
27	JAN 14, 1983	<23.00	
27	FEB 10, 1983	<28.00	
27	MAR 10, 1983	<22.00	
27	APR 7, 1983	<16.00	
27	MAY 5, 1983	<28.00	
27	JUN 8, 1983	<20.00	
27	JUL 7, 1983	<11.00	
27	AUG 11, 1983	<100.00	
27	SEP 14, 1983	<190.00	
27	OCT 13, 1983	<120.00	
27	NOV 10, 1983	<300.00	
27	DEC 14, 1983	<20.00	
27	JAN 13, 1984	<30.00	
28	APR 23, 1982	<8.00	
28	MAY 20, 1982	<5.00	
28	JUN 17, 1982	<30.00	

Table 4-2.1
(continued)

WATER

ANALYSIS: BARIUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<130.00	
28	AUG 12, 1982	<120.00	
28	SEP 9, 1982	<35.00	
28	OCT 14, 1982	<32.00	
28	NOV 16, 1982	<33.00	
28	DEC 16, 1982	<33.00	
28	JAN 14, 1983	<23.00	
28	FEB 10, 1983	<28.00	
28	MAR 10, 1983	<28.00	
28	APR 7, 1983	<21.00	
28	MAY 5, 1983	<28.00	
28	JUN 8, 1983	<20.00	
28	JUL 7, 1983	<12.00	
28	AUG 11, 1983	<100.00	
28	SEP 14, 1983	<110.00	
28	OCT 13, 1983	<120.00	
28	NOV 10, 1983	<100.00	
28	DEC 14, 1983	<20.00	
28	JAN 13, 1984	<30.00	
29	MAY 20, 1982	<5.00	
29	JUN 17, 1982	<60.00	
29	JUL 16, 1982	<110.00	
29	AUG 12, 1982	<95.00	
29	SEP 9, 1982	<35.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<33.00	
29	DEC 16, 1982	<33.00	
29	JAN 14, 1983	<23.00	
29	FEB 10, 1983	<28.00	
29	MAR 10, 1983	<31.00	
29	APR 7, 1983	<16.00	
29	MAY 5, 1983	<28.00	
29	JUN 8, 1983	<20.00	
29	JUL 7, 1983	<15.00	
29	AUG 11, 1983	<100.00	
29	SEP 14, 1983	<60.00	
29	OCT 13, 1983	<120.00	
29	NOV 10, 1983	<200.00	
29	DEC 14, 1983	<30.00	
29	JAN 13, 1984	<30.00	
31	MAR 25, 1982	<4.00	
31	JUN 17, 1982	<32.00	

Table 4-2.1
(continued)

WATER

ANALYSIS: BARIUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<35.00	
31	DEC 27, 1982	<31.00	
31	MAR 14, 1983	<20.00	
31	JUN 10, 1983	<30.00	
31	SEP 14, 1983	<110.00	
31	DEC 14, 1983	<40.00	
32	MAR 25, 1982	<6.00	
32	JUN 17, 1982	<32.00	
32	SEP 9, 1982	<35.00	
32	DEC 27, 1982	<31.00	
32	MAR 14, 1983	<14.00	
32	JUN 10, 1983	<20.00	
32	SEP 14, 1983	<110.00	
32	DEC 14, 1983	<50.00	

Table 4-2.2

WATER

ANALYSIS: GROSS BETA
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	5.00	2.00
26	OCT 14, 1982	5.00	2.00
26	NOV 16, 1982	2.00	2.00
26	DEC 16, 1982	1.00	1.00
26	JAN 14, 1983	2.00	1.00
26	FEB 10, 1983	2.00	1.00
26	MAR 10, 1983	<3.00	
26	APR 7, 1983	5.00	1.00
26	MAY 5, 1983	<2.00	
26	JUN 8, 1983	<2.00	
26	JUL 7, 1983	NA	
26	AUG 11, 1983	NA	
26	SEP 14, 1983	3.00	1.20
26	OCT 13, 1983	2.10	1.30
26	NOV 10, 1983	2.90	1.40
26	DEC 14, 1983	2.30	1.40
26	JAN 13, 1984	1.90	1.30
27	APR 23, 1982	4.00	2.00
27	MAY 20, 1982	3.00	2.00
27	JUN 17, 1982	3.00	2.00
27	JUL 16, 1982	3.00	2.00
27	AUG 12, 1982	3.00	2.00
27	SEP 9, 1982	4.00	2.00
27	OCT 14, 1982	4.00	2.00
27	NOV 16, 1982	3.00	2.00
27	DEC 16, 1982	4.00	2.00
27	JAN 14, 1983	2.00	1.00
27	FEB 10, 1983	3.00	1.00
27	MAR 10, 1983	2.00	1.00
27	APR 7, 1983	2.00	1.00
27	MAY 5, 1983	2.00	1.00
27	JUN 8, 1983	<2.00	
27	JUL 7, 1983	NA	
27	AUG 11, 1983	NA	
27	SEP 14, 1983	<1.90	
27	OCT 13, 1983	1.90	1.40
27	NOV 10, 1983	<3.00	
27	DEC 14, 1983	2.70	1.20
27	JAN 13, 1984	1.90	1.10
28	APR 23, 1982	6.00	2.00
28	MAY 20, 1982	5.00	2.00
28	JUN 17, 1982	5.00	2.00

Table 4-2.2
(continued)

WATER

ANALYSIS: GROSS BETA
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	5.00	2.00
28	AUG 12, 1982	4.00	2.00
28	SEP 9, 1982	4.00	2.00
28	OCT 14, 1982	5.00	2.00
28	NOV 16, 1982	3.00	2.00
28	DEC 16, 1982	<2.00	
28	JAN 14, 1983	2.00	1.00
28	FEB 10, 1983	3.00	1.00
28	MAR 10, 1983	2.00	1.00
28	APR 7, 1983	3.00	1.00
28	MAY 5, 1983	1.00	1.00
28	JUN 8, 1983	<2.00	
28	JUL 7, 1983	NA	
28	AUG 11, 1983	<4.00	
28	SEP 14, 1983	<3.00	
28	OCT 13, 1983	1.80	1.20
28	NOV 10, 1983	3.10	1.40
28	DEC 14, 1983	2.10	1.10
28	JAN 13, 1984	1.40	1.10
29	MAY 20, 1982	6.00	2.00
29	JUN 17, 1982	4.00	2.00
29	JUL 16, 1982	4.00	2.00
29	AUG 12, 1982	5.00	2.00
29	SEP 9, 1982	4.00	2.00
29	OCT 14, 1982	SL	
29	NOV 16, 1982	3.00	2.00
29	DEC 16, 1982	<2.00	
29	JAN 14, 1983	3.00	1.00
29	FEB 10, 1983	2.00	1.00
29	MAR 10, 1983	2.00	1.00
29	APR 7, 1983	1.00	1.00
29	MAY 5, 1983	<2.00	
29	JUN 8, 1983	<2.00	
29	JUL 7, 1983	NA	
29	AUG 11, 1983	<2.00	
29	SEP 14, 1983	2.00	1.20
29	OCT 13, 1983	1.60	1.20
29	NOV 10, 1983	2.10	1.20
29	DEC 14, 1983	2.80	1.20
29	JAN 13, 1984	3.10	1.10

Table 4-2.2
(continued)

WATER

ANALYSIS: GROSS BETA
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
52	JAN 8, 1980	NA.	
52	MAR 4, 1980	14.33	4.32
52	JUL 8, 1980	10.19	3.66
52	OCT 1, 1980	7.52	6.20
52	JAN 5, 1981	<4.00	
52	MAR 30, 1981	11.30	6.20
52	JUL 14, 1981	8.17	5.93
52	OCT 13, 1981	11.00	6.00
52	JAN 5, 1982	10.60	6.60
52	MAR 30, 1982	22.00	21.00
52	JUL 6, 1982	<19.00	
52	OCT 5, 1982	<19.30	
52	FEB 22, 1983	5.26	0.94
52	APR 5, 1983	<2.41	
52	SEP 27, 1983	<1.90	

Table 4-2.3

WATER

ANALYSIS: CESIUM-134
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<8.00	
26	OCT 14, 1982	<3.00	
26	NOV 16, 1982	<3.00	
26	DEC 16, 1982	<3.00	
26	JAN 14, 1983	<2.00	
26	FEB 10, 1983	<3.00	
26	MAR 10, 1983	<3.00	
26	APR 7, 1983	<3.00	
26	MAY 5, 1983	<3.00	
26	JUN 8, 1983	<3.00	
26	JUL 7, 1983	<3.00	
26	AUG 11, 1983	<4.00	
26	SEP 14, 1983	<5.00	
26	OCT 13, 1983	<1.50	
26	NOV 10, 1983	<1.50	
26	DEC 14, 1983	<1.50	
26	JAN 13, 1984	<3.00	
27	APR 23, 1982	<1.00	
27	MAY 20, 1982	<3.00	
27	JUN 17, 1982	<5.00	
27	JUL 16, 1982	<10.00	
27	AUG 12, 1982	<12.00	
27	SEP 9, 1982	<10.00	
27	OCT 14, 1982	<3.00	
27	NOV 16, 1982	<3.00	
27	DEC 16, 1982	<3.00	
27	JAN 14, 1983	<2.00	
27	FEB 10, 1983	<3.00	
27	MAR 10, 1983	<3.00	
27	APR 7, 1983	<3.00	
27	MAY 5, 1983	<3.00	
27	JUN 8, 1983	<3.00	
27	JUL 7, 1983	<4.00	
27	AUG 11, 1983	<2.00	
27	SEP 14, 1983	<5.00	
27	OCT 13, 1983	<1.50	
27	NOV 10, 1983	<4.00	
27	DEC 14, 1983	<1.70	
27	JAN 13, 1984	<3.00	
28	APR 23, 1982	<2.00	
28	MAY 20, 1982	<2.00	
28	JUN 17, 1982	<5.00	

Table-4-2.3
(continued)

WATER

ANALYSIS: CESIUM-134
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<12.00	
28	AUG 12, 1982	<12.00	
28	SEP 9, 1982	<8.00	
28	OCT 14, 1982	<7.00	
28	NOV 16, 1982	<3.00	
28	DEC 16, 1982	<3.00	
28	JAN 14, 1983	<2.00	
28	FEB 10, 1983	<3.00	
28	MAR 10, 1983	<3.00	
28	APR 7, 1983	<3.00	
28	MAY 5, 1983	<3.00	
28	JUN 8, 1983	<3.00	
28	JUL 7, 1983	<4.00	
28	AUG 11, 1983	<2.00	
28	SEP 14, 1983	<3.00	
28	OCT 13, 1983	<1.50	
28	NOV 10, 1983	<1.40	
28	DEC 14, 1983	<1.40	
28	JAN 13, 1984	<3.00	
29	MAY 20, 1982	<1.00	
29	JUN 17, 1982	<8.00	
29	JUL 16, 1982	<10.00	
29	AUG 12, 1982	<10.00	
29	SEP 9, 1982	<8.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<3.00	
29	DEC 16, 1982	<3.00	
29	JAN 14, 1983	<2.00	
29	FEB 10, 1983	<3.00	
29	MAR 10, 1983	<3.00	
29	APR 7, 1983	<3.00	
29	MAY 5, 1983	<3.00	
29	JUN 8, 1983	<3.00	
29	JUL 7, 1983	<4.00	
29	AUG 11, 1983	<2.00	
29	SEP 14, 1983	<3.00	
29	OCT 13, 1983	<1.50	
29	NOV 10, 1983	<2.00	
29	DEC 14, 1983	<1.50	
29	JAN 13, 1984	<3.00	
31	MAR 25, 1982	<1.00	
31	JUN 17, 1982	<5.00	

Table 4-2.3
(continued)

WATER

ANALYSIS: CESIUM-134
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<8.00	
31	DEC 27, 1982	<2.00	
31	MAR 14, 1983	<3.00	
31	JUN 10, 1983	<6.00	
31	SEP 14, 1983	<3.00	
31	DEC 14, 1983	<1.80	
32	MAR 25, 1982	<2.00	
32	JUN 17, 1982	<5.00	
32	SEP 9, 1982	<8.00	
32	DEC 27, 1982	<2.00	
32	MAR 14, 1983	<3.00	
32	JUN 10, 1983	<4.00	
32	SEP 14, 1983	<3.00	
32	DEC 14, 1983	<5.00	
52	SEP 14, 1981	1.86	1.50

Table 4-2.4

WATER

ANALYSIS: CESIUM-137
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<8.00	
26	OCT 14, 1982	<3.00	
26	NOV 16, 1982	<3.00	
26	DEC 16, 1982	<3.00	
26	JAN 14, 1983	<2.00	
26	FEB 10, 1983	<3.00	
26	MAR 10, 1983	<3.00	
26	APR 7, 1983	<3.00	
26	MAY 5, 1983	<3.00	
26	JUN 8, 1983	<3.00	
26	JUL 7, 1983	<4.00	
26	AUG 11, 1983	<4.00	
26	SEP 14, 1983	<5.00	
26	OCT 13, 1983	<1.60	
26	NOV 10, 1983	<1.40	
26	DEC 14, 1983	<1.50	
26	JAN 13, 1984	<3.00	
27	APR 23, 1982	<1.00	
27	MAY 20, 1982	<3.00	
27	JUN 17, 1982	<6.00	
27	JUL 16, 1982	<10.00	
27	AUG 12, 1982	<13.00	
27	SEP 9, 1982	<10.00	
27	OCT 14, 1982	<3.00	
27	NOV 16, 1982	<3.00	
27	DEC 16, 1982	<3.00	
27	JAN 14, 1983	<2.00	
27	FEB 10, 1983	<3.00	
27	MAR 10, 1983	<3.00	
27	APR 7, 1983	<3.00	
27	MAY 5, 1983	<3.00	
27	JUN 8, 1983	<3.00	
27	JUL 7, 1983	<4.00	
27	AUG 11, 1983	<3.00	
27	SEP 14, 1983	<5.00	
27	OCT 13, 1983	<1.60	
27	NOV 10, 1983	16.00	3.00
27	DEC 14, 1983	<1.60	
27	JAN 13, 1984	<3.00	
28	APR 23, 1982	<2.00	
28	MAY 20, 1982	<2.00	
28	JUN 17, 1982	<6.00	

Table 4-2.4
(continued)

WATER

ANALYSIS: CESIUM-137
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<13.00	
28	AUG 12, 1982	<13.00	
28	SEP 9, 1982	<8.00	
28	OCT 14, 1982	<7.00	
28	NOV 16, 1982	<3.00	
28	DEC 16, 1982	<3.00	
28	JAN 14, 1983	<2.00	
28	FEB 10, 1983	<3.00	
28	MAR 10, 1983	<3.00	
28	APR 7, 1983	<3.00	
28	MAY 5, 1983	<3.00	
28	JUN 8, 1983	<3.00	
28	JUL 7, 1983	<4.00	
28	AUG 11, 1983	<3.00	
28	SEP 14, 1983	<3.00	
28	OCT 13, 1983	<1.60	
28	NOV 10, 1983	<1.40	
28	DEC 14, 1983	<1.40	
28	JAN 13, 1984	<3.00	
29	MAY 20, 1982	<1.00	
29	JUN 17, 1982	<8.00	
29	JUL 16, 1982	<10.00	
29	AUG 12, 1982	<10.00	
29	SEP 9, 1982	<8.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<3.00	
29	DEC 16, 1982	<3.00	
29	JAN 14, 1983	<2.00	
29	FEB 10, 1983	<3.00	
29	MAR 10, 1983	<3.00	
29	APR 7, 1983	<3.00	
29	MAY 5, 1983	<3.00	
29	JUN 8, 1983	<3.00	
29	JUL 7, 1983	<4.00	
29	AUG 11, 1983	<3.00	
29	SEP 14, 1983	<3.00	
29	OCT 13, 1983	<1.60	
29	NOV 10, 1983	3.90	1.50
29	DEC 14, 1983	<1.50	
29	JAN 13, 1984	<3.00	
31	MAR 25, 1982	<1.00	
31	JUN 17, 1982	<6.00	

Table 4-2.4
(continued)

WATER

ANALYSIS: CESIUM-137
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<8.00	
31	DEC 27, 1982	<2.00	
31	MAR 14, 1983	<3.00	
31	JUN 10, 1983	<6.00	
31	SEP 14, 1983	<3.00	
31	DEC 14, 1983	<1.80	
32	MAR 25, 1982	<2.00	
32	JUN 17, 1982	<6.00	
32	SEP 9, 1982	<8.00	
32	DEC 27, 1982	<2.00	
32	MAR 14, 1983	<3.00	
32	JUN 10, 1983	<4.00	
32	SEP 14, 1983	<3.00	
32	DEC 14, 1983	<5.00	
52	SEP 14, 1981	0.77	0.73

Table 4-2.5

WATER

ANALYSIS: COBALT-58
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<12.00	
26	OCT 14, 1982	<4.00	
26	NOV 16, 1982	<3.00	
26	DEC 16, 1982	<3.00	
26	JAN 14, 1983	<2.00	
26	FEB 10, 1983	<3.00	
26	MAR 10, 1983	<3.00	
26	APR 7, 1983	<3.00	
26	MAY 5, 1983	<3.00	
26	JUN 8, 1983	<3.00	
26	JUL 7, 1983	<6.00	
26	AUG 11, 1983	<7.00	
26	SEP 14, 1983	<7.00	
26	OCT 13, 1983	<3.00	
26	NOV 10, 1983	<2.00	
26	DEC 14, 1983	<2.00	
26	JAN 13, 1984	<4.00	
27	APR 23, 1982	<1.00	
27	MAY 20, 1982	<2.00	
27	JUN 17, 1982	<5.00	
27	JUL 16, 1982	<10.00	
27	AUG 12, 1982	<11.00	
27	SEP 9, 1982	<13.00	
27	OCT 14, 1982	<4.00	
27	NOV 16, 1982	<3.00	
27	DEC 16, 1982	<3.00	
27	JAN 14, 1983	<2.00	
27	FEB 10, 1983	<3.00	
27	MAR 10, 1983	<3.00	
27	APR 7, 1983	<3.00	
27	MAY 5, 1983	<3.00	
27	JUN 8, 1983	<3.00	
27	JUL 7, 1983	<7.00	
27	AUG 11, 1983	<4.00	
27	SEP 14, 1983	<8.00	
27	OCT 13, 1983	<3.00	
27	NOV 10, 1983	<6.00	
27	DEC 14, 1983	<2.00	
27	JAN 13, 1984	<4.00	
28	APR 23, 1982	<1.00	
28	MAY 20, 1982	<1.00	
28	JUN 17, 1982	<5.00	

Table 4-2.5
(continued)

WATER

ANALYSIS: COBALT-58
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<11.00	
28	AUG 12, 1982	<11.00	
28	SEP 9, 1982	<12.00	
28	OCT 14, 1982	<10.00	
28	NOV 16, 1982	<3.00	
28	DEC 16, 1982	<4.00	
28	JAN 14, 1983	<2.00	
28	FEB 10, 1983	<3.00	
28	MAR 10, 1983	<3.00	
28	APR 7, 1983	<3.00	
28	MAY 5, 1983	<3.00	
28	JUN 8, 1983	<3.00	
28	JUL 7, 1983	<7.00	
28	AUG 11, 1983	<4.00	
28	SEP 14, 1983	<5.00	
28	OCT 13, 1983	<3.00	
28	NOV 10, 1983	<2.00	
28	DEC 14, 1983	<1.80	
28	JAN 13, 1984	<4.00	
29	MAY 20, 1982	<1.00	
29	JUN 17, 1982	<25.00	
29	JUL 16, 1982	<10.00	
29	AUG 12, 1982	<10.00	
29	SEP 9, 1982	<12.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<3.00	
29	DEC 16, 1982	<4.00	
29	JAN 14, 1983	<2.00	
29	FEB 10, 1983	<3.00	
29	MAR 10, 1983	<3.00	
29	APR 7, 1983	<3.00	
29	MAY 5, 1983	<3.00	
29	JUN 8, 1983	<3.00	
29	JUL 7, 1983	<10.00	
29	AUG 11, 1983	<4.00	
29	SEP 14, 1983	<4.00	
29	OCT 13, 1983	<3.00	
29	NOV 10, 1983	<3.00	
29	DEC 14, 1983	<1.80	
29	JAN 13, 1984	<4.00	
31	MAR 25, 1982	<1.00	
31	JUN 17, 1982	<5.00	

Table 4-2.5
(continued)

WATER

ANALYSIS: COBALT-58
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<12.00	
31	DEC 27, 1982	<2.00	
31	MAR 14, 1983	<3.00	
31	JUN 10, 1983	<7.00	
31	SEP 14, 1983	<5.00	
31	DEC 14, 1983	<3.00	
32	MAR 25, 1982	<1.00	
32	JUN 17, 1982	<5.00	
32	SEP 9, 1982	<12.00	
32	DEC 27, 1982	<2.00	
32	MAR 14, 1983	<2.00	
32	JUN 10, 1983	<4.00	
32	SEP 14, 1983	<5.00	
32	DEC 14, 1983	<6.00	

Table 4-2.6

WATER

ANALYSIS: COBALT-60
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<8.00	
26	OCT 14, 1982	<3.00	
26	NOV 16, 1982	<5.00	
26	DEC 16, 1982	<4.00	
26	JAN 14, 1983	<2.00	
26	FEB 10, 1983	<4.00	
26	MAR 10, 1983	<4.00	
26	APR 7, 1983	<4.00	
26	MAY 5, 1983	<4.00	
26	JUN 8, 1983	<4.00	
26	JUL 7, 1983	<4.00	
26	AUG 11, 1983	<4.00	
26	SEP 14, 1983	<5.00	
26	OCT 13, 1983	<1.90	
26	NOV 10, 1983	<1.60	
26	DEC 14, 1983	<1.70	
26	JAN 13, 1984	<4.00	
27	APR 23, 1982	<2.00	
27	MAY 20, 1982	<2.00	
27	JUN 17, 1982	<9.00	
27	JUL 16, 1982	<13.00	
27	AUG 12, 1982	<13.00	
27	SEP 9, 1982	<12.00	
27	OCT 14, 1982	<4.00	
27	NOV 16, 1982	<5.00	
27	DEC 16, 1982	<4.00	
27	JAN 14, 1983	<2.00	
27	FEB 10, 1983	<4.00	
27	MAR 10, 1983	<4.00	
27	APR 7, 1983	<3.00	
27	MAY 5, 1983	<4.00	
27	JUN 8, 1983	<4.00	
27	JUL 7, 1983	<4.00	
27	AUG 11, 1983	<2.00	
27	SEP 14, 1983	<6.00	
27	OCT 13, 1983	<1.90	
27	NOV 10, 1983	<4.00	
27	DEC 14, 1983	<2.00	
27	JAN 13, 1984	<4.00	
28	APR 23, 1982	<1.00	
28	MAY 20, 1982	<1.00	
28	JUN 17, 1982	<9.00	

Table 4-2.6
(continued)

WATER

ANALYSIS: COBALT-60
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<13.00	
28	AUG 12, 1982	<13.00	
28	SEP 9, 1982	<8.00	
28	OCT 14, 1982	<8.00	
28	NOV 16, 1982	<5.00	
28	DEC 16, 1982	<4.00	
28	JAN 14, 1983	<2.00	
28	FEB 10, 1983	<6.00	
28	MAR 10, 1983	<4.00	
28	APR 7, 1983	<4.00	
28	MAY 5, 1983	<4.00	
28	JUN 8, 1983	<4.00	
28	JUL 7, 1983	<4.00	
28	AUG 11, 1983	<2.00	
28	SEP 14, 1983	<3.00	
28	OCT 13, 1983	<1.90	
28	NOV 10, 1983	<1.50	
28	DEC 14, 1983	<1.50	
28	JAN 13, 1984	<4.00	
29	MAY 20, 1982	<2.00	
29	JUN 17, 1982	<8.00	
29	JUL 16, 1982	<13.00	
29	AUG 12, 1982	<13.00	
29	SEP 9, 1982	<8.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<5.00	
29	DEC 16, 1982	<4.00	
29	JAN 14, 1983	<2.00	
29	FEB 10, 1983	<4.00	
29	MAR 10, 1983	<4.00	
29	APR 7, 1983	<3.00	
29	MAY 5, 1983	<4.00	
29	JUN 8, 1983	<4.00	
29	JUL 7, 1983	<4.00	
29	AUG 11, 1983	<2.00	
29	SEP 14, 1983	<3.00	
29	OCT 13, 1983	<1.90	
29	NOV 10, 1983	<3.00	
29	DEC 14, 1983	<1.70	
29	JAN 13, 1984	<4.00	
31	MAR 25, 1982	<1.00	
31	JUN 17, 1982	<9.00	

Table 4-2.6
(continued)

WATER

ANALYSIS: COBALT-60
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<8.00	
31	DEC 27, 1982	<3.00	
31	MAR 14, 1983	<4.00	
31	JUN 10, 1983	<8.00	
31	SEP 14, 1983	<3.00	
31	DEC 14, 1983	<2.00	
32	MAR 25, 1982	<1.00	
32	JUN 17, 1982	<9.00	
32	SEP 9, 1982	<8.00	
32	DEC 27, 1982	<3.00	
32	MAR 14, 1983	<3.00	
32	JUN 10, 1983	<4.00	
32	SEP 14, 1983	<3.00	
32	DEC 14, 1983	<6.00	
52	SEP 14, 1981	<0.11	

Table 4-2.7

WATER

ANALYSIS: IODINE-131
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
52	OCT 5, 1982	<0.30	
52	FEB 22, 1983	<0.37	
52	APR 5, 1983	<0.30	
52	SEP 27, 1983	<0.27	

Table 4-2.8

WATER

ANALYSIS: IRON-59
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<32.00	
26	OCT 14, 1982	<11.00	
26	NOV 16, 1982	<6.00	
26	DEC 16, 1982	<6.00	
26	JAN 14, 1983	<4.00	
26	FEB 10, 1983	<6.00	
26	MAR 10, 1983	<5.00	
26	APR 7, 1983	<6.00	
26	MAY 5, 1983	<5.00	
26	JUN 8, 1983	<6.00	
26	JUL 7, 1983	<20.00	
26	AUG 11, 1983	<16.00	
26	SEP 14, 1983	<20.00	
26	OCT 13, 1983	<9.00	
26	NOV 10, 1983	<3.00	
26	DEC 14, 1983	<5.00	
26	JAN 13, 1984	<8.00	
27	APR 23, 1982	<3.00	
27	MAY 20, 1982	<6.00	
27	JUN 17, 1982	<14.00	
27	JUL 16, 1982	<25.00	
27	AUG 12, 1982	<28.00	
27	SEP 9, 1982	<38.00	
27	OCT 14, 1982	<15.00	
27	NOV 16, 1982	<6.00	
27	DEC 16, 1982	<6.00	
27	JAN 14, 1983	<4.00	
27	FEB 10, 1983	<6.00	
27	MAR 10, 1983	<6.00	
27	APR 7, 1983	<4.00	
27	MAY 5, 1983	<5.00	
27	JUN 8, 1983	<6.00	
27	JUL 7, 1983	<20.00	
27	AUG 11, 1983	<11.00	
27	SEP 14, 1983	<20.00	
27	OCT 13, 1983	<9.00	
27	NOV 10, 1983	<17.00	
27	DEC 14, 1983	<5.00	
27	JAN 13, 1984	<8.00	
28	APR 23, 1982	<4.00	
28	MAY 20, 1982	<3.00	
28	JUN 17, 1982	<14.00	

Table 4-2.8
(continued)

WATER

ANALYSIS: IRON-59
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<29.00	
28	AUG 12, 1982	<28.00	
28	SEP 9, 1982	<32.00	
28	OCT 14, 1982	<34.00	
28	NOV 16, 1982	<6.00	
28	DEC 16, 1982	<5.00	
28	JAN 14, 1983	<4.00	
28	FEB 10, 1983	<4.00	
28	MAR 10, 1983	<5.00	
28	APR 7, 1983	<6.00	
28	MAY 5, 1983	<5.00	
28	JUN 8, 1983	<6.00	
28	JUL 7, 1983	<20.00	
28	AUG 11, 1983	<11.00	
28	SEP 14, 1983	<13.00	
28	OCT 13, 1983	<9.00	
28	NOV 10, 1983	<7.00	
28	DEC 14, 1983	<4.00	
28	JAN 13, 1984	<8.00	
29	MAY 20, 1982	<2.00	
29	JUN 17, 1982	<93.00	
29	JUL 16, 1982	<25.00	
29	AUG 12, 1982	<24.00	
29	SEP 9, 1982	<32.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<6.00	
29	DEC 16, 1982	<5.00	
29	JAN 14, 1983	<4.00	
29	FEB 10, 1983	<6.00	
29	MAR 10, 1983	<5.00	
29	APR 7, 1983	<4.00	
29	MAY 5, 1983	<5.00	
29	JUN 8, 1983	<6.00	
29	JUL 7, 1983	<30.00	
29	AUG 11, 1983	<11.00	
29	SEP 14, 1983	<11.00	
29	OCT 13, 1983	<9.00	
29	NOV 10, 1983	<10.00	
29	DEC 14, 1983	<5.00	
29	JAN 13, 1984	<8.00	
31	MAR 25, 1982	<2.00	
31	JUN 17, 1982	<14.00	

Table 4-2.3
(continued)

WATER

ANALYSIS: IRON-59
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<32.00	
31	DEC 27, 1982	<5.00	
31	MAR 14, 1983	<6.00	
31	JUN 10, 1983	<10.00	
31	SEP 14, 1983	<13.00	
31	DEC 14, 1983	<7.00	
32	MAR 25, 1982	<3.00	
32	JUN 17, 1982	<14.00	
32	SEP 9, 1982	<32.00	
32	DEC 27, 1982	<5.00	
32	MAR 14, 1983	<4.00	
32	JUN 10, 1983	<10.00	
32	SEP 14, 1983	<13.00	
32	DEC 14, 1983	<15.00	

Table 4-2.9

WATER

ANALYSIS: LANTHANUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<15.00	
26	OCT 14, 1982	<5.00	
26	NOV 16, 1982	<14.00	
26	DEC 16, 1982	<14.00	
26	JAN 14, 1983	<10.00	
26	FEB 10, 1983	<12.00	
26	MAR 10, 1983	<12.00	
26	APR 7, 1983	<9.00	
26	MAY 5, 1983	<12.00	
26	JUN 8, 1983	<9.00	
26	JUL 7, 1983	<14.00	
26	AUG 11, 1983	<70.00	
26	SEP 14, 1983	<90.00	
26	OCT 13, 1983	<70.00	
26	NOV 10, 1983	<70.00	
26	DEC 14, 1983	<14.00	
26	JAN 13, 1984	<13.00	
27	APR 23, 1982	<4.00	
27	MAY 20, 1982	<7.00	
27	JUN 17, 1982	<18.00	
27	JUL 16, 1982	<44.00	
27	AUG 12, 1982	<43.00	
27	SEP 9, 1982	<15.00	
27	OCT 14, 1982	<6.00	
27	NOV 16, 1982	<14.00	
27	DEC 16, 1982	<14.00	
27	JAN 14, 1983	<10.00	
27	FEB 10, 1983	<12.00	
27	MAR 10, 1983	<12.00	
27	APR 7, 1983	<7.00	
27	MAY 5, 1983	<12.00	
27	JUN 8, 1983	<9.00	
27	JUL 7, 1983	<15.00	
27	AUG 11, 1983	<50.00	
27	SEP 14, 1983	<90.00	
27	OCT 13, 1983	<70.00	
27	NOV 10, 1983	<160.00	
27	DEC 14, 1983	<14.00	
27	JAN 13, 1984	<13.00	
28	APR 23, 1982	<6.00	
28	MAY 20, 1982	<4.00	
28	JUN 17, 1982	<18.00	

Table 4-2.9
(continued)

WATER

ANALYSIS: LANTHANUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<50.00	
28	AUG 12, 1982	<48.00	
28	SEP 9, 1982	<15.00	
28	OCT 14, 1982	<14.00	
28	NOV 16, 1982	<14.00	
28	DEC 16, 1982	<14.00	
28	JAN 14, 1983	<10.00	
28	FEB 10, 1983	<12.00	
28	MAR 10, 1983	<12.00	
28	APR 7, 1983	<9.00	
28	MAY 5, 1983	<12.00	
28	JUN 8, 1983	<9.00	
28	JUL 7, 1983	<19.00	
28	AUG 11, 1983	<50.00	
28	SEP 14, 1983	<60.00	
28	OCT 13, 1983	<70.00	
28	NOV 10, 1983	<70.00	
28	DEC 14, 1983	<14.00	
28	JAN 13, 1984	<13.00	
29	MAY 20, 1982	<3.00	
29	JUN 17, 1982	<15.00	
29	JUL 16, 1982	<44.00	
29	AUG 12, 1982	<40.00	
29	SEP 9, 1982	<15.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<14.00	
29	DEC 16, 1982	<14.00	
29	JAN 14, 1983	<10.00	
29	FEB 10, 1983	<12.00	
29	MAR 10, 1983	<13.00	
29	APR 7, 1983	<7.00	
29	MAY 5, 1983	<12.00	
29	JUN 8, 1983	<9.00	
29	JUL 7, 1983	<15.00	
29	AUG 11, 1983	<50.00	
29	SEP 14, 1983	<40.00	
29	OCT 13, 1983	<70.00	
29	NOV 10, 1983	<110.00	
29	DEC 14, 1983	<13.00	
29	JAN 13, 1984	<13.00	
31	MAR 25, 1982	<4.00	
31	JUN 17, 1982	<19.00	

Table 4-2.9
(continued)

WATER

ANALYSIS: LANTHANUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<15.00	
31	DEC 27, 1982	<13.00	
31	MAR 14, 1983	<8.00	
31	JUN 10, 1983	<14.00	
31	SEP 14, 1983	<60.00	
31	DEC 14, 1983	<20.00	
32	MAR 25, 1982	<6.00	
32	JUN 17, 1982	<19.00	
32	SEP 9, 1982	<15.00	
32	DEC 27, 1982	<13.00	
32	MAR 14, 1983	<6.00	
32	JUN 10, 1983	<13.00	
32	SEP 14, 1983	<60.00	
32	DEC 14, 1983	<30.00	

Table 4-2.10

WATER

ANALYSIS: MANGANESE-54
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<9.00	
26	OCT 14, 1982	<3.00	
26	NOV 16, 1982	<3.00	
26	DEC 16, 1982	<3.00	
26	JAN 14, 1983	<2.00	
26	FEB 10, 1983	<3.00	
26	MAR 10, 1983	<3.00	
26	APR 7, 1983	<3.00	
26	MAY 5, 1983	<3.00	
26	JUN 8, 1983	<3.00	
26	JUL 7, 1983	<4.00	
26	AUG 11, 1983	<5.00	
26	SEP 14, 1983	<5.00	
26	OCT 13, 1983	<1.80	
26	NOV 10, 1983	<1.50	
26	DEC 14, 1983	<1.70	
26	JAN 13, 1984	<3.00	
27	APR 23, 1982	<1.00	
27	MAY 20, 1982	<3.00	
27	JUN 17, 1982	<5.00	
27	JUL 16, 1982	<11.00	
27	AUG 12, 1982	<13.00	
27	SEP 9, 1982	<11.00	
27	OCT 14, 1982	<4.00	
27	NOV 16, 1982	<3.00	
27	DEC 16, 1982	<3.00	
27	JAN 14, 1983	<2.00	
27	FEB 10, 1983	<3.00	
27	MAR 10, 1983	<3.00	
27	APR 7, 1983	<3.00	
27	MAY 5, 1983	<3.00	
27	JUN 8, 1983	<3.00	
27	JUL 7, 1983	<4.00	
27	AUG 11, 1983	<3.00	
27	SEP 14, 1983	<6.00	
27	OCT 13, 1983	<1.80	
27	NOV 10, 1983	<4.00	
27	DEC 14, 1983	<1.80	
27	JAN 13, 1984	<3.00	
28	APR 23, 1982	<2.00	
28	MAY 20, 1982	<2.00	
28	JUN 17, 1982	<5.00	

Table 4-2.10
(continued)

WATER

ANALYSIS: MANGANESE-54
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<14.00	
28	AUG 12, 1982	<14.00	
28	SEP 9, 1982	<9.00	
28	OCT 14, 1982	<16.00	
28	NOV 16, 1982	<3.00	
28	DEC 16, 1982	<3.00	
28	JAN 14, 1983	<2.00	
28	FEB 10, 1983	<3.00	
28	MAR 10, 1983	<3.00	
28	APR 7, 1983	<3.00	
28	MAY 5, 1983	<3.00	
28	JUN 8, 1983	<3.00	
28	JUL 7, 1983	<4.00	
28	AUG 11, 1983	<3.00	
28	SEP 14, 1983	<4.00	
28	OCT 13, 1983	<1.80	
28	NOV 10, 1983	<1.50	
28	DEC 14, 1983	<1.50	
28	JAN 13, 1984	<3.00	
29	MAY 20, 1982	<1.00	
29	JUN 17, 1982	<11.00	
29	JUL 16, 1982	<11.00	
29	AUG 12, 1982	<11.00	
29	SEP 9, 1982	<9.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<3.00	
29	DEC 16, 1982	<3.00	
29	JAN 14, 1983	<2.00	
29	FEB 10, 1983	<3.00	
29	MAR 10, 1983	<3.00	
29	APR 7, 1983	<3.00	
29	MAY 5, 1983	<3.00	
29	JUN 8, 1983	<3.00	
29	JUL 7, 1983	<5.00	
29	AUG 11, 1983	<3.00	
29	SEP 14, 1983	<3.00	
29	OCT 13, 1983	<1.80	
29	NOV 10, 1983	<3.00	
29	DEC 14, 1983	<1.50	
29	JAN 13, 1984	<3.00	
31	MAR 25, 1982	<1.00	
31	JUN 17, 1982	<5.00	

Table 4-2.10
(continued)

WATER

ANALYSIS: MANGANESE-54
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<9.00	
31	DEC 27, 1982	<2.00	
31	MAR 14, 1983	<3.00	
31	JUN 10, 1983	<6.00	
31	SEP 14, 1983	<4.00	
31	DEC 14, 1983	<2.00	
32	MAR 25, 1982	<1.00	
32	JUN 17, 1982	<5.00	
32	SEP 9, 1982	<9.00	
32	DEC 27, 1982	<2.00	
32	MAR 14, 1983	<3.00	
32	JUN 10, 1983	<4.00	
32	SEP 14, 1983	<4.00	
32	DEC 14, 1983	<5.00	

Table 4-2.11

WATER

ANALYSIS: NIOBIUM-95
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<13.00	
26	OCT 14, 1982	<4.00	
26	NOV 16, 1982	<3.00	
26	DEC 16, 1982	<3.00	
26	JAN 14, 1983	<2.00	
26	FEB 10, 1983	<3.00	
26	MAR 10, 1983	<3.00	
26	APR 7, 1983	<3.00	
26	MAY 5, 1983	<3.00	
26	JUN 8, 1983	<3.00	
26	JUL 7, 1983	<6.00	
26	AUG 11, 1983	<6.00	
26	SEP 14, 1983	<8.00	
26	OCT 13, 1983	<3.00	
26	NOV 10, 1983	<3.00	
26	DEC 14, 1983	<2.00	
26	JAN 13, 1984	<4.00	
27	APR 23, 1982	<1.00	
27	MAY 20, 1982	<3.00	
27	JUN 17, 1982	<5.00	
27	JUL 16, 1982	<10.00	
27	AUG 12, 1982	<13.00	
27	SEP 9, 1982	<14.00	
27	OCT 14, 1982	<5.00	
27	NOV 16, 1982	<3.00	
27	DEC 16, 1982	<3.00	
27	JAN 14, 1983	<2.00	
27	FEB 10, 1983	<3.00	
27	MAR 10, 1983	<3.00	
27	APR 7, 1983	<3.00	
27	MAY 5, 1983	<3.00	
27	JUN 8, 1983	<3.00	
27	JUL 7, 1983	<7.00	
27	AUG 11, 1983	<4.00	
27	SEP 14, 1983	<9.00	
27	OCT 13, 1983	<3.00	
27	NOV 10, 1983	<6.00	
27	DEC 14, 1983	<2.00	
27	JAN 13, 1984	<4.00	
28	APR 23, 1982	<4.00	
28	MAY 20, 1982	<1.00	
28	JUN 17, 1982	<5.00	

Table 4-2.11
(continued)

WATER

ANALYSIS: NIOBIUM-95
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<14.00	
28	AUG 12, 1982	<13.00	
28	SEP 9, 1982	<13.00	
28	OCT 14, 1982	<12.00	
28	NOV 16, 1982	<3.00	
28	DEC 16, 1982	<4.00	
28	JAN 14, 1983	<2.00	
28	FEB 10, 1983	<3.00	
28	MAR 10, 1983	<3.00	
28	APR 7, 1983	<3.00	
28	MAY 5, 1983	<3.00	
28	JUN 8, 1983	<3.00	
28	JUL 7, 1983	<7.00	
28	AUG 11, 1983	<4.00	
28	SEP 14, 1983	<5.00	
28	OCT 13, 1983	<3.00	
28	NOV 10, 1983	<2.00	
28	DEC 14, 1983	<1.80	
28	JAN 13, 1984	<4.00	
29	MAY 20, 1982	<1.00	
29	JUN 17, 1982	<29.00	
29	JUL 16, 1982	<10.00	
29	AUG 12, 1982	<10.00	
29	SEP 9, 1982	<13.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<3.00	
29	DEC 16, 1982	<4.00	
29	JAN 14, 1983	<2.00	
29	FEB 10, 1983	<3.00	
29	MAR 10, 1983	<3.00	
29	APR 7, 1983	<3.00	
29	MAY 5, 1983	<3.00	
29	JUN 8, 1983	<3.00	
29	JUL 7, 1983	<9.00	
29	AUG 11, 1983	<4.00	
29	SEP 14, 1983	<4.00	
29	OCT 13, 1983	<3.00	
29	NOV 10, 1983	<4.00	
29	DEC 14, 1983	<2.00	
29	JAN 13, 1984	<4.00	
31	MAR 25, 1982	<2.00	
31	JUN 17, 1982	<5.00	

Table 4-2.11
(continued)

WATER

ANALYSIS: NIOBIUM-95
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<13.00	
31	DEC 27, 1982	<2.00	
31	MAR 14, 1983	<3.00	
31	JUN 10, 1983	<6.00	
31	DEC 14, 1983	<2.00	
32	MAR 25, 1982	<4.00	
32	JUN 17, 1982	<5.00	
32	SEP 9, 1982	<13.00	
32	DEC 27, 1982	<2.00	
32	MAR 14, 1983	<2.00	
32	JUN 10, 1983	<4.00	
32	DEC 14, 1983	<6.00	

Table 4-2.12

WATER

ANALYSIS: STRONTIUM-89
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 14, 1983	<120.00	
27	SEP 14, 1983	<300.00	
28	SEP 14, 1983	<150.00	
29	SEP 14, 1983	NA	

Table 4-2.13

WATER

ANALYSIS: STRONTIUM-90
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 14, 1983	<1.20	
27	SEP 14, 1983	<3.00	
28	SEP 14, 1983	<2.00	
29	SEP 14, 1983	NA	
52	OCT 5, 1982	<0.06	
52	FEB 22, 1983	0.24	0.17
52	APR 5, 1983	<0.65	
52	SEP 27, 1983	0.44	0.19

Table 4-2.14

WATER

ANALYSIS: TIN-113
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	NOV 10, 1983	6.40	3.10
27	NOV 10, 1983	ND	
28	NOV 10, 1983	ND	
29	NOV 10, 1983	ND	

Table 4-2.15

WATER

ANALYSIS: TRITIUM IN SURFACE/DRINKING WATER
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	JUN 17, 1982	NS	
26	SEP 8, 1982	<800.00	
26	DEC 16, 1982	<500.00	
26	MAR 10, 1983	270.00	150.00
26	JUN 8, 1983	<330.00	
26	SEP 14, 1983	NA	
26	DEC 14, 1983	<300.00	
27	JUN 17, 1982	<700.00	
27	SEP 8, 1982	<80.00	
27	DEC 16, 1982	600.00	200.00
27	MAR 10, 1983	510.00	220.00
27	JUN 8, 1983	<330.00	
27	SEP 14, 1983	NA	
27	DEC 14, 1983	<300.00	
28	JUN 17, 1982	<700.00	
28	SEP 8, 1982	<820.00	
28	DEC 16, 1982	<500.00	
28	MAR 10, 1983	220.00	150.00
28	JUN 8, 1983	<310.00	
28	SEP 14, 1983	NA	
28	DEC 14, 1983	230.00	170.00
29	JUN 17, 1982	<700.00	
29	SEP 8, 1982	<820.00	
29	DEC 16, 1982	<500.00	
29	MAR 10, 1983	260.00	150.00
29	JUN 8, 1983	<330.00	
29	SEP 14, 1983	NA	
29	DEC 14, 1983	390.00	170.00

Table 4-2.16

WATER

ANALYSIS: TRITIUM IN GROUND WATER
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	MAR 25, 1982	<230.00	
31	JUN 17, 1982	<700.00	
31	SEP 9, 1982	<1300.00	
31	DEC 27, 1982	<440.00	
31	MAR 14, 1983	<300.00	
31	JUN 10, 1983	2600.00	300.00
31	SEP 14, 1983	<300.00	
31	DEC 14, 1983	<300.00	
32	MAR 25, 1982	<230.00	
32	JUN 17, 1982	<700.00	
32	SEP 9, 1982	<1300.00	
32	DEC 27, 1982	<440.00	
32	MAR 14, 1983	<300.00	
32	JUN 10, 1983	1400.00	300.00
32	SEP 14, 1983	<300.00	
32	DEC 14, 1983	<300.00	
52	JAN 8, 1980	270.00	120.00
52	MAR 4, 1980	330.00	190.00
52	JUL 8, 1980	90.00	90.00
52	OCT 1, 1980	<110.00	
52	JAN 5, 1981	520.00	190.00
52	MAR 30, 1981	230.00	170.00
52	JUL 14, 1981	360.00	220.00
52	SEP 14, 1981	<10.00	
52	OCT 13, 1981	280.00	160.00
52	JAN 5, 1982	190.00	180.00
52	MAR 30, 1982	200.00	130.00
52	JUL 6, 1982	<150.00	
52	OCT 5, 1982	<260.00	
52	FEB 22, 1983	<210.00	
52	APR 5, 1983	290.00	210.00
52	SEP 27, 1983	330.00	210.00

Table 4-2.17

WATER

ANALYSIS: ZINC-65
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<17.00	
26	OCT 14, 1982	<6.00	
26	NOV 16, 1982	<3.00	
26	DEC 16, 1982	<5.00	
26	JAN 14, 1983	<3.00	
26	FEB 10, 1983	<6.00	
26	MAR 10, 1983	<6.00	
26	APR 7, 1983	<6.00	
26	MAY 5, 1983	<6.00	
26	JUN 8, 1983	<6.00	
26	JUL 7, 1983	<9.00	
26	AUG 11, 1983	<9.00	
26	SEP 14, 1983	<11.00	
26	OCT 13, 1983	<4.00	
26	NOV 10, 1983	<4.00	
26	DEC 14, 1983	<4.00	
26	JAN 13, 1984	<7.00	
27	APR 23, 1982	<2.00	
27	MAY 20, 1982	<6.00	
27	JUN 17, 1982	<13.00	
27	JUL 16, 1982	<20.00	
27	AUG 12, 1982	<27.00	
27	SEP 9, 1982	<20.00	
27	OCT 14, 1982	<7.00	
27	NOV 16, 1982	<3.00	
27	DEC 16, 1982	<5.00	
27	JAN 14, 1983	<3.00	
27	FEB 10, 1983	<6.00	
27	MAR 10, 1983	<6.00	
27	APR 7, 1983	<5.00	
27	MAY 5, 1983	<6.00	
27	JUN 8, 1983	<6.00	
27	JUL 7, 1983	<11.00	
27	AUG 11, 1983	<6.00	
27	SEP 14, 1983	<12.00	
27	OCT 13, 1983	<4.00	
27	NOV 10, 1983	<9.00	
27	DEC 14, 1983	<4.00	
27	JAN 13, 1984	<7.00	
28	APR 23, 1982	<3.00	
28	MAY 20, 1982	<3.00	
28	JUN 17, 1982	<13.00	

Table 4-2.17
(continued)

WATER

ANALYSIS: ZINC-65
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	JUL 16, 1982	<27.00	
28	AUG 12, 1982	<27.00	
28	SEP 9, 1982	<17.00	
28	OCT 14, 1982	<15.00	
28	NOV 16, 1982	<3.00	
28	DEC 16, 1982	<6.00	
28	JAN 14, 1983	<3.00	
28	FEB 10, 1983	<3.00	
28	MAR 10, 1983	<6.00	
28	APR 7, 1983	<6.00	
28	MAY 5, 1983	<6.00	
28	JUN 8, 1983	<6.00	
28	JUL 7, 1983	<11.00	
28	AUG 11, 1983	<6.00	
28	SEP 14, 1983	<8.00	
28	OCT 13, 1983	<4.00	
28	NOV 10, 1983	<3.00	
28	DEC 14, 1983	<3.00	
28	JAN 13, 1984	<7.00	
29	MAY 20, 1982	<2.00	
29	JUN 17, 1982	<22.00	
29	JUL 16, 1982	<20.00	
29	AUG 12, 1982	<20.00	
29	SEP 9, 1982	<17.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<3.00	
29	DEC 16, 1982	<6.00	
29	JAN 14, 1983	<3.00	
29	FEB 10, 1983	<6.00	
29	MAR 10, 1983	<6.00	
29	APR 7, 1983	<5.00	
29	MAY 5, 1983	<6.00	
29	JUN 8, 1983	<6.00	
29	JUL 7, 1983	<10.00	
29	AUG 11, 1983	<3.00	
29	SEP 14, 1983	<6.00	
29	OCT 13, 1983	<4.00	
29	NOV 10, 1983	<7.00	
29	DEC 14, 1983	<3.00	
29	JAN 13, 1984	<7.00	
31	MAR 25, 1982	<2.00	
31	JUN 17, 1982	<13.00	

Table 4-2.17
(continued)

WATER

ANALYSIS: ZINC-65
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 9, 1982	<17.00	
31	DEC 27, 1982	<4.00	
31	MAR 14, 1983	<6.00	
31	JUN 10, 1983	<13.00	
31	SEP 14, 1983	<8.00	
31	DEC 14, 1983	<4.00	
32	MAR 25, 1982	<3.00	
32	JUN 17, 1982	<13.00	
32	SEP 9, 1982	<17.00	
32	DEC 27, 1982	<4.00	
32	MAR 14, 1983	<5.00	
32	JUN 10, 1983	<9.00	
32	SEP 14, 1983	<8.00	
32	DEC 14, 1983	<12.00	
52	SEP 14, 1981	<1.38	

Table 4-2.18

WATER

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
26	SEP 9, 1982	<29.00	
26	OCT 14, 1982	<10.00	
26	NOV 16, 1982	<7.00	
26	DEC 16, 1982	<7.00	
26	JAN 14, 1983	<4.00	
26	FEB 10, 1983	<7.00	
26	MAR 10, 1983	<7.00	
26	APR 7, 1983	<6.00	
26	MAY 5, 1983	<7.00	
26	JUN 8, 1983	<7.00	
26	JUL 7, 1983	<11.00	
26	AUG 11, 1983	<11.00	
26	SEP 14, 1983	<13.00	
26	OCT 13, 1983	<5.00	
26	DEC 14, 1983	<4.00	
26	JAN 13, 1984	<6.00	
27	APR 23, 1982	<2.00	
27	MAY 20, 1982	<7.00	
27	JUN 17, 1982	<12.00	
27	JUL 16, 1982	<23.00	
27	AUG 12, 1982	<29.00	
27	SEP 9, 1982	<34.00	
27	OCT 14, 1982	<13.00	
27	NOV 16, 1982	<7.00	
27	DEC 16, 1982	<7.00	
27	JAN 14, 1983	<4.00	
27	FEB 10, 1983	<7.00	
27	MAR 10, 1983	<6.00	
27	APR 7, 1983	<5.00	
27	MAY 5, 1983	<7.00	
27	JUN 8, 1983	<7.00	
27	JUL 7, 1983	<13.00	
27	AUG 11, 1983	<7.00	
27	SEP 14, 1983	<14.00	
27	OCT 13, 1983	<5.00	
27	DEC 14, 1983	<4.00	
27	JAN 13, 1984	<6.00	
28	APR 23, 1982	<4.00	
28	MAY 20, 1982	<4.00	
28	JUN 17, 1982	<12.00	
28	JUL 16, 1982	<30.00	
28	AUG 12, 1982	<29.00	

Table 4-2.18
(continued)

WATER

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
28	SEP 9, 1982	<29.00	
28	OCT 14, 1982	<29.00	
28	NOV 16, 1982	<7.00	
28	DEC 16, 1982	<8.00	
28	JAN 14, 1983	<4.00	
28	FEB 10, 1983	<7.00	
28	MAR 10, 1983	<7.00	
28	APR 7, 1983	<6.00	
28	MAY 5, 1983	<7.00	
28	JUN 8, 1983	<7.00	
28	JUL 7, 1983	<13.00	
28	AUG 11, 1983	<7.00	
28	SEP 14, 1983	<9.00	
28	OCT 13, 1983	<5.00	
28	DEC 14, 1983	<3.00	
28	JAN 13, 1984	<6.00	
29	MAY 20, 1982	<2.00	
29	JUN 17, 1982	<63.00	
29	JUL 16, 1982	<23.00	
29	AUG 12, 1982	<23.00	
29	SEP 9, 1982	<29.00	
29	OCT 14, 1982	SL	
29	NOV 16, 1982	<7.00	
29	DEC 16, 1982	<8.00	
29	JAN 14, 1983	<4.00	
29	FEB 10, 1983	<7.00	
29	MAR 10, 1983	<7.00	
29	APR 7, 1983	<5.00	
29	MAY 5, 1983	<7.00	
29	JUN 8, 1983	<7.00	
29	JUL 7, 1983	<16.00	
29	AUG 11, 1983	<7.00	
29	SEP 14, 1983	<7.00	
29	OCT 13, 1983	<5.00	
29	DEC 14, 1983	<3.00	
29	JAN 13, 1984	<6.00	
31	MAR 25, 1982	<2.00	
31	JUN 17, 1982	<11.00	
31	SEP 9, 1982	<29.00	
31	DEC 27, 1982	<5.00	
31	MAR 14, 1983	<6.00	
31	JUN 10, 1983	<10.00	

Table 4-2.18
(continued)

WATER

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
31	SEP 14, 1983	<9.00	
31	DEC 14, 1983	<4.00	
32	MAR 25, 1982	<4.00	
32	JUN 17, 1982	<11.00	
32	SEP 9, 1982	<29.00	
32	DEC 27, 1982	<5.00	
32	MAR 14, 1983	<5.00	
32	JUN 10, 1983	<7.00	
32	SEP 14, 1983	<9.00	
32	DEC 14, 1983	<10.00	

Table 4-3.0

SEDIMENT

ANALYSIS: ACTINIUM-228
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 3, 1983	830.00	200.00
33	NOV 1, 1983	ND	
34	MAY 3, 1983	ND	
34	NOV 1, 1983	440.00	280.00

Table 4-3.1

SEDIMENT

ANALYSIS: BISMUTH-214
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 3, 1983	880.00	130.00
33	NOV 1, 1983	350.00	160.00
34	MAY 3, 1983	430.00	150.00
34	NOV 1, 1983	620.00	150.00

Table 4-3.2

SEDIMENT

ANALYSIS: CESIUM-134
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	NOV 5, 1982	<150.00	
33	MAY 3, 1983	<50.00	
33	MAY 3, 1983	<100.00	
33	NOV 1, 1983	<140.00	
34	NOV 5, 1982	<150.00	
34	MAY 3, 1983	<50.00	
34	MAY 3, 1983	<130.00	
34	NOV 1, 1983	130.00	

Table 4-3.3

SEDIMENT

ANALYSIS: CESIUM-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	360.00	130.00
33	DEC 21, 1978	220.00	50.00
33	JUL 10, 1979	310.00	70.00
33	NOV 19, 1979	310.00	60.00
33	MAY 8, 1980	200.00	40.00
33	NOV 18, 1980	160.00	20.00
33	MAY 8, 1981	<150.00	
33	NOV 19, 1981	200.00	100.00
33	NOV 5, 1982	<180.00	
33	MAY 3, 1983	<50.00	
33	MAY 3, 1983	180.00	50.00
33	NOV 1, 1983	<130.00	
34	MAY 17, 1978	380.00	90.00
34	NOV 27, 1978	490.00	90.00
34	JUL 10, 1979	420.00	80.00
34	NOV 19, 1979	480.00	70.00
34	NOV.18, 1980	<150.00	
34	MAY 8, 1981	500.00	100.00
34	NOV 19, 1981	100.00	100.00
34	NOV 5, 1982	310.00	90.00
34	MAY 3, 1983	500.00	100.00
34	MAY 3, 1983	560.00	90.00
34	NOV 1, 1983	260.00	80.00

Table 4-3.4

SEDIMENT

ANALYSIS: COBALT-58
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	<150.00	
33	DEC 21, 1978	<150.00	
33	JUL 10, 1979	<150.00	
33	NOV 19, 1979	<150.00	
33	MAY 8, 1980	<150.00	
33	NOV 18, 1980	<150.00	
33	MAY 8, 1981	<150.00	
33	NOV 19, 1981	<150.00	
34	MAY 17, 1978	<150.00	
34	NOV 27, 1978	<150.00	
34	JUL 10, 1979	<150.00	
34	NOV 19, 1979	<150.00	
34	NOV 18, 1980	<150.00	
34	MAY 8, 1981	<150.00	
34	NOV 19, 1981	<150.00	

FOOTNOTE: STATION 34 NOV 19,1979, COBALT-57 170.00 40.00

Table 4-3.5.

SEDIMENT

ANALYSIS: COBALT-60
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	590.00	210.00
33	DEC 21, 1978	<150.00	
33	JUL 10, 1979	130.00	60.00
33	NOV 19, 1979	130.00	50.00
33	MAY 8, 1980	<150.00	
33	NOV 18, 1980	<150.00	
33	MAY 8, 1981	<150.00	
33	NOV 19, 1981	<150.00	
34	MAY 17, 1978	320.00	110.00
34	NOV 27, 1978	380.00	110.00
34	JUL 10, 1979	460.00	120.00
34	NOV 19, 1979	610.00	110.00
34	NOV 18, 1980	<150.00	
34	MAY 8, 1981	<150.00	
34	NOV 19, 1981	<150.00	

Table 4-3.6

SEDIMENT

ANALYSIS: LEAD-212
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 3, 1983	710.00	80.00
33	NOV 1, 1983	510.00	150.00
34	MAY 3, 1983	570.00	110.00
34	NOV 1, 1983	470.00	120.00

Table 4-3.7

SEDIMENT

ANALYSIS: LEAD-214
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 3, 1983	850.00	130.00
33	NOV 1, 1983	490.00	160.00
34	MAY 3, 1983	470.00	140.00
34	NOV 1, 1983	520.00	150.00

Table 4-3.8

SEDIMENT

ANALYSIS: MANGANESE-54
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	<150.00	
33	DEC 21, 1978	<150.00	
33	JUL 10, 1979	<150.00	
33	NOV 19, 1979	<150.00	
33	MAY 8, 1980	<150.00	
33	NOV 18, 1980	<150.00	
33	MAY 8, 1981	<150.00	
33	NOV 19, 1981	<150.00	
34	MAY 17, 1978	<150.00	
34	NOV 27, 1978	<150.00	
34	JUL 10, 1979	<150.00	
34	NOV 19, 1979	<150.00	
34	NOV 18, 1980	<150.00	
34	MAY 8, 1981	<150.00	
34	NOV 19, 1981	<150.00	

Table 4-3.9

SEDIMENT

ANALYSIS: NIOBIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	<150.00	
33	DEC 21, 1978	<150.00	
33	JUL 10, 1979	<150.00	
33	NOV 19, 1979	<150.00	
33	MAY 8, 1980	<150.00	
33	NOV 18, 1980	<150.00	
33	MAY 8, 1981	<150.00	
33	NOV 19, 1981	<150.00	
34	MAY 17, 1978	<150.00	
34	NOV 27, 1978	<150.00	
34	JUL 10, 1979	<150.00	
34	NOV 19, 1979	<150.00	
34	NOV 18, 1980	<150.00	
34	MAY 8, 1981	<150.00	
34	NOV 19, 1981	<150.00	

Table 4-3.10

SEDIMENT

ANALYSIS: POTASSIUM-40
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	12000.00	3000.00
33	DEC 21, 1978	11000.00	2000.00
33	NOV 18, 1980	13000.00	1000.00
33	MAY 8, 1981	18000.00	2000.00
33	NOV 19, 1981	14200.00	1400.00
33	NOV 5, 1982	19000.00	2000.00
33	MAY 3, 1983	19000.00	3000.00
33	MAY 3, 1983	19000.00	2000.00
33	NOV 1, 1983	17000.00	2000.00
34	MAY 17, 1978	10000.00	2000.00
34	NOV 27, 1978	21000.00	2000.00
34	NOV 18, 1980	NR	
34	MAY 8, 1981	13000.00	
34	NOV 19, 1981	16900.00	1700.00
34	NOV 5, 1982	24000.00	2000.00
34	MAY 3, 1983	21000.00	3000.00
34	MAY 3, 1983	12000.00	2000.00
34	NOV 1, 1983	17000.00	2000.00

Table 4-3.11

SEDIMENT

ANALYSIS: RADIUM-226
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 3, 1983	860.00	130.00
33	NOV 1, 1983	420.00	160.00
34	MAY 3, 1983	450.00	140.00
34	NOV 1, 1983	570.00	150.00

Table 4-3.12

SEDIMENT

ANALYSIS: THALLIUM-208
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 3, 1983	800.00	160.00
33	NOV 1, 1983	700.00	210.00
34	MAY 3, 1983	630.00	210.00
34	NOV 1, 1983	770.00	220.00

Table 4-3.13

SEDIMENT

ANALYSIS: ZINC-65
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	<150.00	
33	DEC 21, 1978	<150.00	
33	JUL 10, 1979	<150.00	
33	NOV 19, 1979	<150.00	
33	MAY 8, 1980	<150.00	
33	NOV 18, 1980	<150.00	
33	MAY 8, 1981	<150.00	
34	MAY 17, 1978	<150.00	
34	NOV 27, 1978	370.00	110.00
34	JUL 10, 1979	<150.00	
34	NOV 19, 1979	<150.00	
34	NOV 18, 1980	<150.00	
34	MAY 8, 1981	<150.00	

Table 4-3.14

SEDIMENT

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
33	MAY 17, 1978	<150.00	
33	DEC 21, 1978	<150.00	
33	JUL 10, 1979	<150.00	
33	NOV 19, 1979	<150.00	
33	MAY 8, 1980	<150.00	
33	NOV 18, 1980	<150.00	
33	MAY 8, 1981	<150.00	
33	NOV 19, 1981	<150.00	
34	MAY 17, 1978	<150.00	
34	NOV 27, 1978	<150.00	
34	JUL 10, 1979	<150.00	
34	NOV 19, 1979	<150.00	
34	NOV 18, 1980	<150.00	
34	MAY 8, 1981	<150.00	
34	NOV 19, 1981	<150.00	

Table 4-4.0

SOIL

ANALYSIS: ACTINIUM-228
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 31, 1983	840.00	250.00
7	MAY 31, 1983	820.00	310.00
9	MAY 31, 1983	700.00	250.00
21	MAY 31, 1983	580.00	260.00
23	MAY 31, 1983	ND	

Table 4-4.1

SOIL

ANALYSIS: BISMUTH-212
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 31, 1983	720.00	700.00
7	MAY 31, 1983	ND	
9	MAY 31, 1983	ND	
21	MAY 31, 1983	ND	
23	MAY 31, 1983	ND	

Table 4-4.2

SOIL

ANALYSIS: BISMUTH-214
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 31, 1983	780.00	150.00
7	MAY 31, 1983	560.00	150.00
9	MAY 31, 1983	580.00	150.00
21	MAY 31, 1983	450.00	160.00
23	MAY 31, 1983	420.00	170.00

Table 4-4.3

SOIL

ANALYSIS: CESIUM-134
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 18, 1982	<20.00	
1	MAY 9, 1983	<60.00	
1	MAY 31, 1983	<110.00	
7	MAY 18, 1982	<30.00	
7	MAY 9, 1983	<40.00	
7	MAY 31, 1983	<120.00	
9	MAY 18, 1982	<20.00	
9	MAY 9, 1983	<40.00	
9	MAY 31, 1983	<110.00	
21	MAY 18, 1982	<30.00	
21	MAY 9, 1983	<40.00	
21	MAY 31, 1983	<130.00	
23	MAY 18, 1982	<20.00	
23	MAY 9, 1983	<60.00	
23	MAY 31, 1983	<150.00	

Table 4-4.4

SOIL

ANALYSIS: CESIUN-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	500.00	100.00
1	MAY 10, 1979	<150.00	
1	MAY 8, 1980	1650.00	140.00
1	MAY 8, 1981	<150.00	
1	MAY 18, 1982	80.00	30.00
1	MAY 9, 1983	<60.00	
1	MAY 31, 1983	<100.00	
2	MAY 8, 1978	<150.00	
2	MAY 10, 1979	550.00	70.00
2	MAY 8, 1980	<150.00	
2	MAY 8, 1981	300.00	100.00
3	MAY 8, 1978	700.00	100.00
3	MAY 10, 1979	140.00	30.00
3	MAY 8, 1980	1120.00	120.00
3	MAY 8, 1981	400.00	100.00
7	MAY 8, 1978	500.00	70.00
7	MAY 10, 1979	<150.00	
7	MAY 8, 1980	1880.00	140.00
7	MAY 8, 1981	700.00	100.00
7	MAY 18, 1982	270.00	40.00
7	MAY 9, 1983	<40.00	
7	MAY 31, 1983	<110.00	
9	MAY 8, 1978	140.00	40.00
9	MAY 10, 1979	<150.00	
9	MAY 8, 1980	<150.00	
9	MAY 8, 1981	<150.00	
9	MAY 18, 1982	340.00	40.00
9	MAY 9, 1983	200.00	100.00
9	MAY 31, 1983	<110.00	
21	MAY 18, 1982	<20.00	
21	MAY 9, 1983	<40.00	
21	MAY 31, 1983	<100.00	
23	MAY 18, 1982	330.00	40.00
23	MAY 9, 1983	700.00	200.00
23	MAY 31, 1983	470.00	120.00

Table 4-4.5

SOIL

ANALYSIS: COBALT-58
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	<150.00	
1	MAY 10, 1979	<150.00	
1	MAY 8, 1980	<150.00	
1	MAY 8, 1981	<150.00	
2	MAY 8, 1978	<150.00	
2	MAY 10, 1979	<150.00	
2	MAY 8, 1980	<150.00	
2	MAY 8, 1981	<150.00	
3	MAY 8, 1978	<150.00	
3	MAY 10, 1979	<150.00	
3	MAY 8, 1980	<150.00	
3	MAY 8, 1981	<150.00	
7	MAY 8, 1978	<150.00	
7	MAY 10, 1979	<150.00	
7	MAY 8, 1980	<150.00	
7	MAY 8, 1981	<150.00	
9	MAY 8, 1978	<150.00	
9	MAY 10, 1979	<150.00	
9	MAY 8, 1980	<150.00	
9	MAY 8, 1981	<150.00	

Table 4-4.6

SOIL

ANALYSIS: COBALT-60
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	<150.00	
1	MAY 10, 1979	<150.00	
1	MAY 8, 1980	<150.00	
1	MAY 8, 1981	<150.00	
2	MAY 8, 1978	<150.00	
2	MAY 10, 1979	<150.00	
2	MAY 8, 1980	<150.00	
2	MAY 8, 1981	<150.00	
3	MAY 8, 1978	<150.00	
3	MAY 10, 1979	<150.00	
3	MAY 8, 1980	<150.00	
3	MAY 8, 1981	<150.00	
7	MAY 8, 1978	<150.00	
7	MAY 10, 1979	<150.00	
7	MAY 8, 1980	<150.00	
7	MAY 8, 1981	<150.00	
9	MAY 8, 1978	<150.00	
9	MAY 10, 1979	<150.00	
9	MAY 8, 1980	<150.00	
9	MAY 8, 1981	<150.00	

Table 4-4.7

SOIL

ANALYSIS: IRON-59
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	<260.00	
2	MAY 8, 1978	<260.00	
3	MAY 8, 1978	<260.00	
7	MAY 8, 1978	<260.00	
9	MAY 8, 1978	<260.00	

Table 4-4.8

SOIL

ANALYSIS: LEAD-212
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 31, 1983	340.00	900.00
7	MAY 31, 1983	400.00	80.00
9	MAY 31, 1983	400.00	100.00
21	MAY 31, 1983	160.00	90.00
23	MAY 31, 1983	180.00	120.00

Table 4-4.9

SOIL

ANALYSIS: LEAD-214
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 31, 1983	750.00	150.00
7	MAY 31, 1983	540.00	120.00
9	MAY 31, 1983	750.00	160.00
21	MAY 31, 1983	470.00	140.00
23	MAY 31, 1983	780.00	190.00

Table 4-4.10

SOIL

ANALYSIS: MANGANESE-54
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	<150.00	
1	MAY 10, 1979	<150.00	
1	MAY 8, 1980	<150.00	
1	MAY 8, 1981	<150.00	
2	MAY 8, 1978	<150.00	
2	MAY 10, 1979	<150.00	
2	MAY 8, 1980	<150.00	
2	MAY 8, 1981	<150.00	
3	MAY 8, 1978	<150.00	
3	MAY 10, 1979	<150.00	
3	MAY 8, 1980	<150.00	
3	MAY 8, 1981	<150.00	
7	MAY 8, 1978	<150.00	
7	MAY 10, 1979	<150.00	
7	MAY 8, 1980	<150.00	
7	MAY 8, 1981	<150.00	
9	MAY 8, 1978	<150.00	
9	MAY 10, 1979	<150.00	
9	MAY 8, 1980	<150.00	
9	MAY 8, 1981	<150.00	

Table 4-4.11

SOIL

ANALYSIS: NIOBIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	<150.00	
1	MAY 10, 1979	<150.00	
1	MAY 8, 1980	<150.00	
1	MAY 8, 1981	<150.00	
2	MAY 8, 1978	<150.00	
2	MAY 10, 1979	<150.00	
2	MAY 8, 1980	<150.00	
2	MAY 8, 1981	<150.00	
3	MAY 8, 1978	<150.00	
3	MAY 10, 1979	<150.00	
3	MAY 8, 1980	<150.00	
3	MAY 8, 1981	<150.00	
7	MAY 8, 1978	<150.00	
7	MAY 10, 1979	<150.00	
7	MAY 8, 1980	<150.00	
7	MAY 8, 1981	<150.00	
9	MAY 8, 1978	<150.00	
9	MAY 10, 1979	<150.00	
9	MAY 8, 1980	<150.00	
9	MAY 8, 1981	<150.00	

Table 4-4.12

SOIL

ANALYSIS: POTASSIUM-40
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	11000.00	2000.00
1	MAY 8, 1981	15000.00	2000.00
1	MAY 9, 1983	10000.00	1000.00
1	MAY 31, 1983	17000.00	2000.00
2	MAY 8, 1978	13000.00	2000.00
2	MAY 8, 1981	13000.00	1000.00
3	MAY 8, 1978	10000.00	1000.00
3	MAY 8, 1981	14000.00	100.00
7	MAY 8, 1978	11000.00	1000.00
7	MAY 8, 1981	13000.00	1000.00
7	MAY 9, 1983	18000.00	2000.00
7	MAY 31, 1983	14000.00	2000.00
9	MAY 8, 1978	7000.00	1000.00
9	MAY 8, 1981	13000.00	1000.00
9	MAY 9, 1983	16000.00	2000.00
9	MAY 31, 1983	14000.00	2000.00
21	MAY 9, 1983	15000.00	2000.00
21	MAY 31, 1983	13000.00	2000.00
23	MAY 9, 1983	21000.00	2000.00
23	MAY 31, 1983	17000.00	3000.00

Table 4-4.13

SOIL

ANALYSIS: RADIUM-226
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 31, 1983	760.00	150.00
7	MAY 31, 1983	550.00	130.00
9	MAY 31, 1983	670.00	150.00
21	MAY 31, 1983	460.00	150.00
23	MAY 31, 1983	600.00	180.00

Table 4-4.14

SOIL

ANALYSIS: STRONTIUM-90
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 18, 1982	43.00	10.00
7	MAY 18, 1982	16.00	5.00
9	MAY 18, 1982	<10.00	
21	MAY 18, 1982	17.00	8.00
23	MAY 18, 1982	28.00	5.00

Table 4-4.15

SOIL

ANALYSIS: THALLIUM-208
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 31, 1983	ND	
7	MAY 31, 1983	660.00	190.00
9	MAY 31, 1983	800.00	200.00
21	MAY 31, 1983	500.00	190.00
23	MAY 31, 1983	850.00	250.00

Table 4-4.16

SOIL

ANALYSIS: ZINC-65
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	<150.00	
1	MAY 10, 1979	<150.00	
1	MAY 8, 1980	<150.00	
1	MAY 8, 1981	<150.00	
2	MAY 8, 1978	<150.00	
2	MAY 10, 1979	<150.00	
2	MAY 8, 1980	<150.00	
2	MAY 8, 1981	<150.00	
3	MAY 8, 1978	<150.00	
3	MAY 10, 1979	<150.00	
3	MAY 8, 1980	<150.00	
3	MAY 8, 1981	<150.00	
7	MAY 8, 1978	<150.00	
7	MAY 10, 1979	<150.00	
7	MAY 8, 1980	<150.00	
7	MAY 8, 1981	<150.00	
9	MAY 8, 1978	<150.00	
9	MAY 10, 1979	<150.00	
9	MAY 8, 1980	<150.00	
9	MAY 8, 1981	<150.00	

Table 4-4.17

SOIL

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
1	MAY 10, 1978	<150.00	
1	MAY 10, 1979	<150.00	
1	MAY 8, 1980	<150.00	
1	MAY 8, 1981	<150.00	
2	MAY 8, 1978	<150.00	
2	MAY 10, 1979	<150.00	
2	MAY 8, 1980	<150.00	
2	MAY 8, 1981	<150.00	
3	MAY 8, 1978	<150.00	
3	MAY 10, 1979	<150.00	
3	MAY 8, 1980	<150.00	
3	MAY 8, 1981	<150.00	
7	MAY 8, 1978	<150.00	
7	MAY 10, 1979	<150.00	
7	MAY 8, 1980	<150.00	
7	MAY 8, 1981	<150.00	
9	MAY 8, 1978	<150.00	
9	MAY 10, 1979	<150.00	
9	MAY 8, 1980	<150.00	
9	MAY 8, 1981	<150.00	

Table 4-5.0

MILK

ANALYSIS: BARIUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
9	MAR 15, 1982	<21.00	
9	MAR 29, 1982	<24.00	
9	APR 26, 1982	NA	
9	MAY 10, 1982	<28.00	
9	MAY 24, 1982	<27.00	
9	JUN 7, 1982	<66.00	
9	JUN 21, 1982	<46.00	
9	JUL 6, 1982	<51.00	
9	JUL 19, 1982	<110.00	
9	AUG 2, 1982	<30.00	
9	AUG 16, 1982	<21.00	
9	AUG 30, 1982	<41.00	
9	SEP 13, 1982	<13.00	
9	SEP 27, 1982	<35.00	
9	OCT 18, 1982	<33.00	
9	NOV 15, 1982	<25.00	
9	DEC 20, 1982	<25.00	
9	JAN 19, 1983	<32.00	
9	FEB 9, 1983	<31.00	
9	MAR 9, 1983	<31.00	
9	APR 13, 1983	<40.00	
9	APR 27, 1983	<23.00	
9	MAY 11, 1983	<16.00	
9	MAY 11, 1983	<20.00	
9	MAY 25, 1983	<23.00	
9	JUN 7, 1983	<30.00	
9	JUN 7, 1983	<20.00	
9	JUN 21, 1983	<24.00	
9	JUL 6, 1983	<190.00	
9	JUL 19, 1983	<400.00	
9	AUG 10, 1983	<30.00	
9	AUG 24, 1983	<90.00	
9	SEP 8, 1983	<100.00	
9	SEP 21, 1983	<70.00	
9	OCT 26, 1983	<500.00	
9	NOV 16, 1983	<30.00	
9	DEC 20, 1983	<30.00	
9	JAN 10, 1984	<30.00	
35	MAR 15, 1982	<25.00	
35	MAR 29, 1982	<18.00	
35	APR 26, 1982	NA	
35	MAY 10, 1982	<29.00	

Table 4-5.0
(continued)

MILK

ANALYSIS: BARIUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
35	MAY 24, 1982	<27.00	
35	JUN 7, 1982	<54.00	
35	JUN 21, 1982	<59.00	
35	JUL 6, 1982	<47.00	
35	JUL 19, 1982	SL	
35	AUG 2, 1982	<40.00	
35	AUG 16, 1982	<21.00	
35	AUG 30, 1982	SL	
35	SEP 13, 1982	<13.00	
35	SEP 27, 1982	<30.00	
35	OCT 18, 1982	<34.00	
35	NOV 15, 1982	<25.00	
35	DEC 20, 1982	<25.00	
35	JAN 19, 1983	<32.00	
35	FEB 9, 1983	<28.00	
35	MAR 9, 1983	<31.00	
35	APR 13, 1983	<35.00	
35	APR 27, 1983	<25.00	
35	MAY 11, 1983	<14.00	
35	MAY 11, 1983	<30.00	
35	MAY 25, 1983	<19.00	
35	JUN 7, 1983	<26.00	
35	JUN 7, 1983	<40.00	
35	JUN 21, 1983	<35.00	
35	JUL 6, 1983	<110.00	
35	JUL 19, 1983	<500.00	
35	AUG 10, 1983	<30.00	
35	AUG 24, 1983	<180.00	
35	SEP 8, 1983	<80.00	
35	SEP 21, 1983	<50.00	
35	OCT 26, 1983	<16.00	
35	NOV 16, 1983	<30.00	
35	DEC 20, 1983	<30.00	
35	JAN 10, 1984	<20.00	
36	MAR 15, 1982	<22.00	
36	MAR 29, 1982	<16.00	
36	APR 26, 1982	NA	
36	MAY 10, 1982	<29.00	
36	MAY 24, 1982	<26.00	
36	JUN 7, 1982	<54.00	
36	JUN 21, 1982	<50.00	
36	JUL 6, 1982	<35.00	

Table 4-5.0
(continued)

MILK

ANALYSIS: BARIUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
36	JUL 19, 1982	<150.00	
36	AUG 2, 1982	<23.00	
36	AUG 16, 1982	<21.00	
36	AUG 30, 1982	<17.00	
36	SEP 13, 1982	<13.00	
36	SEP 27, 1982	<29.00	
36	OCT 18, 1982	<34.00	
36	NOV 15, 1982	<25.00	
36	DEC 20, 1982	<25.00	
36	JAN 19, 1983	<32.00	
36	FEB 9, 1983	<29.00	
36	MAR 9, 1983	<31.00	
36	APR 13, 1983	<35.00	
36	APR 27, 1983	<20.00	
36	MAY 11, 1983	<14.00	
36	MAY 11, 1983	<20.00	
36	MAY 25, 1983	<23.00	
36	JUN 7, 1983	<24.00	
36	JUN 7, 1983	<30.00	
36	JUN 21, 1983	<25.00	
36	JUL 6, 1983	<500.00	
36	JUL 19, 1983	<300.00	
36	AUG 10, 1983	<30.00	
36	AUG 24, 1983	<30.00	
36	SEP 8, 1983	<180.00	
36	SEP 22, 1983	<120.00	
36	OCT 26, 1983	<2000.00	
36	NOV 16, 1983	<30.00	
36	DEC 20, 1983	<30.00	
36	JAN 10, 1984	<20.00	
40	MAR 15, 1982	<10.00	
40	MAR 29, 1982	<6.00	
40	APR 26, 1982	NA	
40	MAY 10, 1982	<28.00	
40	MAY 24, 1982	<26.00	
40	JUN 7, 1982	<64.00	
40	JUN 21, 1982	<59.00	
40	JUL 6, 1982	SL	
40	JUL 19, 1982	<130.00	
40	AUG 2, 1982	<27.00	
40	AUG 16, 1982	<21.00	
40	AUG 30, 1982	<45.00	

Table 4-5.0
(continued)

MILK

ANALYSIS: BARIUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
40	SEP 13, 1982	<18.00	
40	SEP 27, 1982	<27.00	
40	OCT 18, 1982	<33.00	
40	NOV 15, 1982	<25.00	
40	DEC 20, 1982	<25.00	
40	JAN 19, 1983	<32.00	
40	FEB 9, 1983	<28.00	
40	MAR 9, 1983	<31.00	
40	APR 13, 1983	<35.00	
40	APR 27, 1983	<18.00	
40	MAY 11, 1983	<17.00	
40	MAY 11, 1983	<20.00	
40	MAY 25, 1983	<22.00	
40	JUN 7, 1983	<25.00	
40	JUN 7, 1983	<100.00	
40	JUN 21, 1983	<40.00	
40	JUL 6, 1983	<60.00	
40	JUL 19, 1983	<300.00	
40	AUG 10, 1983	<30.00	
40	AUG 24, 1983	<140.00	
40	SEP 8, 1983	<120.00	
40	SEP 21, 1983	<50.00	
40	OCT 26, 1983	<500.00	
40	NOV 16, 1983	<30.00	
40	DEC 20, 1983	<30.00	
40	JAN 10, 1984	<20.00	

Table 4-5.1

MILK

ANALYSIS: CESIUM-134
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
9	MAR 15, 1982	<8.00	
9	MAR 29, 1982	<5.00	
9	APR 26, 1982	NA	
9	MAY 10, 1982	<7.00	
9	MAY 24, 1982	<4.00	
9	JUN 7, 1982	<4.00	
9	JUN 21, 1982	<3.00	
9	JUL 6, 1982	<5.00	
9	JUL 19, 1982	<3.00	
9	AUG 2, 1982	<3.00	
9	AUG 16, 1982	<5.00	
9	AUG 30, 1982	<9.00	
9	SEP 13, 1982	<3.00	
9	SEP 27, 1982	<2.00	
9	OCT 18, 1982	<3.00	
9	NOV 15, 1982	<1.00	
9	DEC 20, 1982	<2.00	
9	JAN 19, 1983	<3.00	
9	FEB 9, 1983	<2.00	
9	MAR 9, 1983	<2.00	
9	APR 13, 1983	<4.00	
9	APR 27, 1983	<2.00	
9	MAY 11, 1983	<3.00	
9	MAY 11, 1983	<4.00	
9	MAY 25, 1983	<3.00	
9	JUN 7, 1983	<3.00	
9	JUN 7, 1983	<5.00	
9	JUN 21, 1983	<2.00	
9	JUL 6, 1983	<1.00	
9	JUL 19, 1983	<2.00	
9	AUG 10, 1983	<7.00	
9	AUG 24, 1983	<1.40	
9	SEP 8, 1983	<1.80	
9	SEP 21, 1983	<2.00	
9	OCT 26, 1983	<2.00	
9	NOV 16, 1983	<5.00	
9	DEC 20, 1983	<4.00	
9	JAN 10, 1984	<9.00	
35	MAR 15, 1982	<10.00	
35	MAR 29, 1982	<2.00	
35	APR 26, 1982	NA	
35	MAY 10, 1982	<4.00	
35	MAY 24, 1982	<4.00	

Table 4-5.1
(continued)

MILK

ANALYSIS: CESIUM-134
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
35	JUN 7, 1982	<3.00	
35	JUN 21, 1982	<4.00	
35	JUL 6, 1982	<5.00	
35	JUL 19, 1982	SL	
35	AUG 2, 1982	<4.00	
35	AUG 16, 1982	<5.00	
35	AUG 30, 1982	SL	
35	SEP 13, 1982	<3.00	
35	SEP 27, 1982	<2.00	
35	OCT 18, 1982	<3.00	
35	NOV 15, 1982	<1.00	
35	DEC 20, 1982	<2.00	
35	JAN 19, 1983	<3.00	
35	FEB 9, 1983	<2.00	
35	MAR 9, 1983	<2.00	
35	APR 13, 1983	<3.00	
35	APR 27, 1983	<3.00	
35	MAY 11, 1983	<3.00	
35	MAY 11, 1983	<5.00	
35	MAY 25, 1983	<3.00	
35	JUN 7, 1983	<3.00	
35	JUN 7, 1983	<8.00	
35	JUN 21, 1983	<3.00	
35	JUL 6, 1983	<1.80	
35	JUL 19, 1983	<1.70	
35	AUG 10, 1983	<8.00	
35	AUG 24, 1983	<2.00	
35	SEP 8, 1983	<1.70	
35	SEP 21, 1983	<0.90	
35	OCT 26, 1983	<3.00	
35	NOV 16, 1983	<5.00	
35	DEC 20, 1983	<4.00	
35	JAN 10, 1984	<6.00	
36	MAR 15, 1982	<5.00	
36	MAR 29, 1982	<4.00	
36	APR 26, 1982	NA	
36	MAY 10, 1982	<4.00	
36	MAY 24, 1982	<14.00	
36	JUN 7, 1982	<3.00	
36	JUN 21, 1982	<3.00	
36	JUL 6, 1982	<3.00	
36	JUL 19, 1982	<4.00	
36	AUG 2, 1982	<2.00	

Table 4-5.1
(continued)

MILK

ANALYSIS: CESIUM-134
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
36	AUG 16, 1982	<5.00	
36	AUG 30, 1982	<4.00	
36	SEP 13, 1982	<3.00	
36	SEP 27, 1982	<2.00	
36	OCT 18, 1982	<3.00	
36	NOV 15, 1982	<1.00	
36	DEC 20, 1982	<2.00	
36	JAN 19, 1983	<3.00	
36	FEB 9, 1983	<2.00	
36	MAR 9, 1983	<2.00	
36	APR 13, 1983	<3.00	
36	APR 27, 1983	<2.00	
36	MAY 11, 1983	<3.00	
36	MAY 11, 1983	<4.00	
36	MAY 25, 1983	<3.00	
36	JUN 7, 1983	<3.00	
36	JUN 7, 1983	<7.00	
36	JUN 21, 1983	<2.00	
36	JUL 6, 1983	<1.30	
36	JUL 19, 1983	<1.50	
36	AUG 10, 1983	<7.00	
36	AUG 24, 1983	<5.00	
36	SEP 8, 1983	<4.00	
36	SEP 22, 1983	<3.00	
36	OCT 26, 1983	<6.00	
36	NOV 16, 1983	<5.00	
36	DEC 20, 1983	<3.00	
36	JAN 10, 1984	<7.00	
40	MAR 15, 1982	<4.00	
40	MAR 29, 1982	<2.00	
40	APR 26, 1982	NA	
40	MAY 10, 1982	<7.00	
40	MAY 24, 1982	<14.00	
40	JUN 7, 1982	<4.00	
40	JUN 21, 1982	<4.00	
40	JUL 6, 1982	SL	
40	JUL 19, 1982	<3.00	
40	AUG 2, 1982	<3.00	
40	AUG 16, 1982	<5.00	
40	AUG 30, 1982	<10.00	
40	SEP 13, 1982	<4.00	
40	SEP 27, 1982	<2.00	
40	OCT 18, 1982	<3.00	

Table 4-5.1
(continued)

MILK

ANALYSIS: CESIUM-134
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
40	NOV 15, 1982	<1.00	
40	DEC 20, 1982	<2.00	
40	JAN 19, 1983	<3.00	
40	FEB 9, 1983	<2.00	
40	MAR 9, 1983	<2.00	
40	APR 13, 1983	<3.00	
40	APR 27, 1983	<2.00	
40	MAY 11, 1983	<2.00	
40	MAY 11, 1983	<4.00	
40	MAY 25, 1983	<3.00	
40	JUN 7, 1983	<3.00	
40	JUN 7, 1983	<1.20	
40	JUN 21, 1983	<3.00	
40	JUL 6, 1983	<1.80	
40	JUL 19, 1983	<2.00	
40	AUG 10, 1983	<8.00	
40	AUG 24, 1983	<2.00	
40	SEP 8, 1983	<2.00	
40	SEP 21, 1983	<1.59	
40	OCT 26, 1983	<1.60	
40	NOV 16, 1983	<5.00	
40	DEC 20, 1983	<4.00	
40	JAN 10, 1984	<6.00	

Table 4-5.2

MILK

ANALYSIS: CESIUM-137
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
9	MAR 15, 1982	<7.00	
9	MAR 29, 1982	<5.00	
9	APR 26, 1982	NA	
9	MAY 10, 1982	<5.00	
9	MAY 24, 1982	<4.00	
9	JUN 7, 1982	<4.00	
9	JUN 21, 1982	<3.00	
9	JUL 6, 1982	<5.00	
9	JUL 19, 1982	<3.00	
9	AUG 2, 1982	<3.00	
9	AUG 16, 1982	<5.00	
9	AUG 30, 1982	<9.00	
9	SEP 13, 1982	<3.00	
9	SEP 27, 1982	<2.00	
9	OCT 18, 1982	<3.00	
9	NOV 15, 1982	<1.00	
9	DEC 20, 1982	<2.00	
9	JAN 19, 1983	<3.00	
9	FEB 9, 1983	<2.00	
9	MAR 9, 1983	<2.00	
9	APR 13, 1983	<4.00	
9	APR 27, 1983	<2.00	
9	MAY 11, 1983	<3.00	
9	MAY 11, 1983	<5.00	
9	MAY 25, 1983	<3.00	
9	JUN 7, 1983	<3.00	
9	JUN 7, 1983	<6.00	
9	JUN 21, 1983	<2.00	
9	JUL 6, 1983	<1.10	
9	JUL 19, 1983	<2.00	
9	AUG 10, 1983	<8.00	
9	AUG 24, 1983	<1.60	
9	SEP 8, 1983	<2.00	
9	SEP 21, 1983	<2.00	
9	OCT 26, 1983	<2.00	
9	NOV 16, 1983	<7.00	
9	DEC 20, 1983	<4.00	
9	JAN 10, 1984	<10.00	
35	MAR 15, 1982	<8.00	
35	MAR 29, 1982	<3.00	
35	APR 26, 1982	NA	
35	MAY 10, 1982	<4.00	
35	MAY 24, 1982	<3.00	

Table 4-5.2
(continued)

MILK

ANALYSIS: CESIUM-137
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
35	JUN 7, 1982	<3.00	
35	JUN 21, 1982	<4.00	
35	JUL 6, 1982	<5.00	
35	JUL 19, 1982	SL	
35	AUG 2, 1982	<4.00	
35	AUG 16, 1982	<5.00	
35	AUG 30, 1982	SL	
35	SEP 13, 1982	<3.00	
35	SEP 27, 1982	<2.00	
35	OCT 18, 1982	<3.00	
35	NOV 15, 1982	<1.00	
35	DEC 20, 1982	<2.00	
35	JAN 19, 1983	<3.00	
35	FEB 9, 1983	<2.00	
35	MAR 9, 1983	<2.00	
35	APR 13, 1983	<3.00	
35	APR 27, 1983	<3.00	
35	MAY 11, 1983	<3.00	
35	MAY 11, 1983	<5.00	
35	MAY 25, 1983	<3.00	
35	JUN 7, 1983	<3.00	
35	JUN 7, 1983	<9.00	
35	JUN 21, 1983	<3.00	
35	JUL 6, 1983	<1.90	
35	JUL 19, 1983	<2.00	
35	AUG 10, 1983	<8.00	
35	AUG 24, 1983	<3.00	
35	SEP 8, 1983	<2.00	
35	SEP 21, 1983	1.20	0.50
35	OCT 26, 1983	<4.00	
35	NOV 16, 1983	<6.00	
35	DEC 20, 1983	<5.00	
35	JAN 10, 1984	<7.00	
36	MAR 15, 1982	<5.00	
36	MAR 29, 1982	<3.00	
36	APR 26, 1982	NA	
36	MAY 10, 1982	<4.00	
36	MAY 24, 1982	<12.00	
36	JUN 7, 1982	<3.00	
36	JUN 21, 1982	<3.00	
36	JUL 6, 1982	<3.00	
36	JUL 19, 1982	<4.00	
36	AUG 2, 1982	<2.00	

Table 4-5.2
(continued)

MILK

ANALYSIS: CESIUM-137
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
36	AUG 16, 1982	<5.00	
36	AUG 30, 1982	<4.00	
36	SEP 13, 1982	<3.00	
36	SEP 27, 1982	<2.00	
36	OCT 18, 1982	<3.00	
36	NOV 15, 1982	<1.00	
36	DEC 20, 1982	<2.00	
36	JAN 19, 1983	<3.00	
36	FEB 9, 1983	<2.00	
36	MAR 9, 1983	<2.00	
36	APR 13, 1983	<3.00	
36	APR 27, 1983	<2.00	
36	MAY 11, 1983	<3.00	
36	MAY 11, 1983	<5.00	
36	MAY 25, 1983	<3.00	
36	JUN 7, 1983	<3.00	
36	JUN 7, 1983	<8.00	
36	JUN 21, 1983	<2.00	
36	JUL 6, 1983	<1.40	
36	JUL 19, 1983	<1.60	
36	AUG 10, 1983	<7.00	
36	AUG 24, 1983	<6.00	
36	SEP 8, 1983	<4.00	
36	SEP 22, 1983	<3.00	
36	OCT 26, 1983	<7.00	
36	NOV 16, 1983	<6.00	
36	DEC 20, 1983	<3.00	
36	JAN 10, 1984	<7.00	
40	MAR 15, 1982	<3.00	
40	MAR 29, 1982	2.00	1.00
40	APR 26, 1982	NA	
40	MAY 10, 1982	<5.00	
40	MAY 24, 1982	<12.00	
40	JUN 7, 1982	<4.00	
40	JUN 21, 1982	<4.00	
40	JUL 6, 1982	SL	
40	JUL 19, 1982	<3.00	
40	AUG 2, 1982	<3.00	
40	AUG 16, 1982	<5.00	
40	AUG 30, 1982	<10.00	
40	SEP 13, 1982	<4.00	
40	SEP 27, 1982	<2.00	
40	OCT 18, 1982	<3.00	

Table 4-5.2
(continued)

MILK

ANALYSIS: CESIUM-137
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
40	NOV 15, 1982	<1.00	
40	DEC 20, 1982	<2.00	
40	JAN 19, 1983	<3.00	
40	FEB 9, 1983	<2.00	
40	MAR 9, 1983	<2.00	
40	APR 13, 1983	<3.00	
40	APR 27, 1983	<2.00	
40	MAY 11, 1983	<2.00	
40	MAY 11, 1983	<5.00	
40	MAY 25, 1983	<3.00	
40	JUN 7, 1983	<3.00	
40	JUN 7, 1983	<1.30	
40	JUN 21, 1983	<3.00	
40	JUL 6, 1983	<2.00	
40	JUL 19, 1983	<2.00	
40	AUG 10, 1983	<9.00	
40	AUG 24, 1983	<2.00	
40	SEP 8, 1983	<3.00	
40	SEP 21, 1983	<1.70	
40	OCT 26, 1983	<1.80	
40	NOV 16, 1983	<6.00	
40	DEC 20, 1983	<5.00	
40	JAN 10, 1984	<6.00	

Table 4-5.3

MILK

ANALYSIS: IODINE-131
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JAN 19, 1983	<0.60	
9	FEB 9, 1983	<0.50	
9	MAR 9, 1983	<1.00	
9	APR 13, 1983	<0.50	
9	APR 27, 1983	<0.50	
9	MAY 11, 1983	<0.50	
9	MAY 25, 1983	<1.00	
9	JUN 7, 1983	<1.00	
9	JUN 21, 1983	<0.80	
9	JUL 6, 1983	<0.60	
9	JUL 19, 1983	<0.30	
9	AUG 10, 1983	<0.20	
9	AUG 24, 1983	<0.30	
9	SEP 8, 1983	<0.60	
9	SEP 21, 1983	<0.40	
9	OCT 26, 1983	<0.12	
9	NOV 16, 1983	<0.09	
9	DEC 20, 1983	<0.60	
9	JAN 10, 1984	<0.30	
35	JAN 19, 1983	<0.60	
35	FEB 9, 1983	<0.50	
35	MAR 9, 1983	<1.00	
35	APR 13, 1983	<0.50	
35	APR 27, 1983	<0.50	
35	MAY 11, 1983	<0.50	
35	MAY 25, 1983	<1.00	
35	JUN 7, 1983	<0.90	
35	JUN 21, 1983	<0.70	
35	JUL 6, 1983	<0.50	
35	JUL 19, 1983	<0.50	
35	AUG 10, 1983	<0.30	
35	AUG 24, 1983	<0.20	
35	SEP 8, 1983	<0.30	
35	SEP 21, 1983	<0.40	
35	OCT 26, 1983	<0.12	
35	NOV 16, 1983	<0.13	
35	DEC 20, 1983	<0.60	
35	JAN 10, 1984	<0.60	

Table 4-5.3
(continued)

MILK

ANALYSIS: IODINE-131
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
36	JAN 19, 1983	<0.60	
36	FEB 9, 1983	<0.50	
36	MAR 9, 1983	<1.00	
36	APR 13, 1983	<0.50	
36	APR 27, 1983	<0.50	
36	MAY 11, 1983	<0.50	
36	MAY 25, 1983	<1.00	
36	JUN 7, 1983	<1.00	
36	JUN 21, 1983	<0.89	
36	JUL 6, 1983	<0.60	
36	JUL 19, 1983	<0.18	
36	AUG 10, 1983	<0.30	
36	AUG 24, 1983	<0.30	
36	SEP 8, 1983	<0.40	
36	SEP 22, 1983	<0.40	
36	OCT 26, 1983	<0.10	
36	NOV 16, 1983	<0.15	
36	DEC 20, 1983	<0.90	
36	JAN 10, 1984	<0.19	
40	JAN 19, 1983	<0.60	
40	FEB 9, 1983	<0.50	
40	MAR 9, 1983	<1.00	
40	APR 13, 1983	<0.50	
40	APR 27, 1983	<0.50	
40	MAY 11, 1983	<0.50	
40	MAY 25, 1983	<1.00	
40	JUN 7, 1983	<1.00	
40	JUN 21, 1983	<1.00	
40	JUL 6, 1983	<0.50	
40	JUL 19, 1983	<0.13	
40	AUG 10, 1983	<0.30	
40	AUG 24, 1983	<0.20	
40	SEP 8, 1983	<0.70	
40	SEP 21, 1983	<0.30	
40	OCT 26, 1983	<0.14	
40	NOV 16, 1983	<0.17	
40	DEC 20, 1983	<0.60	
40	JAN 10, 1984	<0.20	

Table 4-5.4

MILK

ANALYSIS: LANTHANUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
9	MAR 15, 1982	<16.00	
9	MAR 29, 1982	<14.00	
9	APR 26, 1982	NA	
9	MAY 10, 1982	<21.00	
9	MAY 24, 1982	<16.00	
9	JUN 7, 1982	<28.00	
9	JUN 21, 1982	<21.00	
9	JUL 6, 1982	<22.00	
9	JUL 19, 1982	<48.00	
9	AUG 2, 1982	<13.00	
9	AUG 16, 1982	<9.00	
9	AUG 30, 1982	<18.00	
9	SEP 13, 1982	<5.00	
9	SEP 27, 1982	<15.00	
9	OCT 18, 1982	<14.00	
9	NOV 15, 1982	<11.00	
9	DEC 20, 1982	<11.00	
9	JAN 19, 1983	<14.00	
9	FEB 9, 1983	<13.00	
9	MAR 9, 1983	<13.00	
9	APR 13, 1983	<15.00	
9	APR 27, 1983	<10.00	
9	MAY 11, 1983	<7.00	
9	MAY 11, 1983	<12.00	
9	MAY 25, 1983	<10.00	
9	JUN 7, 1983	<13.00	
9	JUN 7, 1983	<9.00	
9	JUN 21, 1983	<11.00	
9	JUL 6, 1983	<90.00	
9	JUL 19, 1983	<200.00	
9	AUG 10, 1983	<13.00	
9	AUG 24, 1983	<40.00	
9	SEP 8, 1983	<40.00	
9	SEP 21, 1983	<30.00	
9	OCT 26, 1983	<300.00	
9	NOV 16, 1983	<15.00	
9	DEC 20, 1983	<12.00	
9	JAN 10, 1984	<14.00	
35	MAR 15, 1982	<19.00	
35	MAR 29, 1982	<13.00	
35	APR 26, 1982	NA	
35	MAY 10, 1982	<17.00	

Table 4-5.4
(continued)

MILK

ANALYSIS: LANTHANUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
35	MAY 24, 1982	<16.00	
35	JUN 7, 1982	<25.00	
35	JUN 21, 1982	<25.00	
35	JUL 6, 1982	<21.00	
35	JUL 19, 1982	SL	
35	AUG 2, 1982	<17.00	
35	AUG 16, 1982	<9.00	
35	AUG 30, 1982	SL	
35	SEP 13, 1982	<6.00	
35	SEP 27, 1982	<13.00	
35	OCT 18, 1982	<14.00	
35	NOV 15, 1982	<11.00	
35	DEC 20, 1982	<11.00	
35	JAN 19, 1983	<14.00	
35	FEB 9, 1983	<12.00	
35	MAR 9, 1983	<13.00	
35	APR 13, 1983	<15.00	
35	APR 27, 1983	<10.09	
35	MAY 11, 1983	<6.00	
35	MAY 11, 1983	<11.00	
35	MAY 25, 1983	<8.00	
35	JUN 7, 1983	<11.00	
35	JUN 7, 1983	<14.00	
35	JUN 21, 1983	<14.00	
35	JUL 6, 1983	<70.00	
35	JUL 19, 1983	<200.00	
35	AUG 10, 1983	<14.00	
35	AUG 24, 1983	<80.00	
35	SEP 8, 1983	<40.00	
35	SEP 21, 1983	<20.00	
35	OCT 26, 1983	<7.00	
35	NOV 16, 1983	<13.00	
35	DEC 20, 1983	<15.00	
35	JAN 10, 1984	<11.00	
36	MAR 15, 1982	<13.00	
36	MAR 29, 1982	<12.00	
36	APR 26, 1982	NA	
36	MAY 10, 1982	<17.00	
36	MAY 24, 1982	<19.00	
36	JUN 7, 1982	<24.00	
36	JUN 21, 1982	<23.00	
36	JUL 6, 1982	<16.00	

Table 4-5.4
(continued)

MILK

ANALYSIS: LANTHANUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
36	JUL 19, 1982	<66.00	
36	AUG 2, 1982	<10.00	
36	AUG 16, 1982	<9.00	
36	AUG 30, 1982	<7.00	
36	SEP 13, 1982	<6.00	
36	SEP 27, 1982	<12.00	
36	OCT 18, 1982	<14.00	
36	NOV 15, 1982	<11.00	
36	DEC 20, 1982	<11.00	
36	JAN 19, 1983	<14.00	
36	FEB 9, 1983	<12.00	
36	MAR 9, 1983	<13.00	
36	APR 13, 1983	<15.00	
36	APR 27, 1983	<8.00	
36	MAY 11, 1983	<6.00	
36	MAY 11, 1983	<12.00	
36	MAY 25, 1983	<10.00	
36	JUN 7, 1983	<10.00	
36	JUN 7, 1983	<12.00	
36	JUN 21, 1983	<12.00	
36	JUL 6, 1983	<200.00	
36	JUL 19, 1983	<120.00	
36	AUG 10, 1983	<14.00	
36	AUG 24, 1983	<14.00	
36	SEP 8, 1983	<80.00	
36	SEP 22, 1983	<50.00	
36	OCT 26, 1983	<1000.00	
36	NOV 16, 1983	<13.00	
36	DEC 20, 1983	<11.00	
36	JAN 10, 1984	<10.00	
40	MAR 15, 1982	<8.00	
40	MAR 29, 1982	<5.00	
40	APR 26, 1982	NA	
40	MAY 10, 1982	<21.00	
40	MAY 24, 1982	<19.00	
40	JUN 7, 1982	<28.00	
40	JUN 21, 1982	<25.00	
40	JUL 6, 1982	SL	
40	JUL 19, 1982	<57.00	
40	AUG 2, 1982	<12.00	
40	AUG 16, 1982	<9.00	
40	AUG 30, 1982	<20.00	

Table 4-5.4
(continued)

MILK

ANALYSIS: LANTHANUM-140
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
40	SEP 13, 1982	<8.00	
40	SEP 27, 1982	<12.00	
40	OCT 18, 1982	<14.00	
40	NOV 15, 1982	<11.00	
40	DEC 20, 1982	<11.00	
40	JAN 19, 1983	<14.00	
40	FEB 9, 1983	<12.00	
40	MAR 9, 1983	<13.00	
40	APR 13, 1983	<14.00	
40	APR 27, 1983	<8.00	
40	MAY 11, 1983	<7.00	
40	MAY 11, 1983	<11.00	
40	MAY 25, 1983	<9.00	
40	JUN 7, 1983	<11.00	
40	JUN 7, 1983	<50.00	
40	JUN 21, 1983	<15.00	
40	JUL 6, 1983	<20.00	
40	JUL 19, 1983	<140.00	
40	AUG 10, 1983	<15.00	
40	AUG 24, 1983	<60.00	
40	SEP 8, 1983	<50.00	
40	SEP 21, 1983	<20.00	
40	OCT 26, 1983	<180.00	
40	NOV 16, 1983	<14.00	
40	DEC 20, 1983	<15.00	
40	JAN 10, 1984	<12.00	

Table 4-5.5

MILK

ANALYSIS: POTASSIUM-40
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
9	MAY 11, 1983	1400.00	200.00
9	JUN 7, 1983	1200.00	200.00
9	JUL 6, 1983	1300.00	200.00
9	JUL 19, 1983	1200.00	200.00
9	AUG 10, 1983	1300.00	200.00
9	AUG 24, 1983	1100.00	200.00
9	SEP 8, 1983	1300.00	200.00
9	SEP 21, 1983	1200.00	200.00
9	OCT 26, 1983	1300.00	200.00
9	NOV 16, 1983	1300.00	200.00
9	DEC 20, 1983	1300.00	200.00
9	JAN 10, 1984	1400.00	200.00
35	MAY 11, 1983	1300.00	200.00
35	JUN 7, 1983	1400.00	200.00
35	JUL 6, 1983	1600.00	200.00
35	JUL 19, 1983	1100.00	200.00
35	AUG 10, 1983	1500.00	200.00
35	AUG 24, 1983	1300.00	200.00
35	SEP 8, 1983	1400.00	200.00
35	SEP 21, 1983	1300.00	200.00
35	OCT 26, 1983	1300.00	200.00
35	NOV 16, 1983	1300.00	200.00
35	DEC 20, 1983	1100.00	200.00
35	JAN 10, 1984	1400.00	200.00
36	MAY 11, 1983	1300.00	200.00
36	JUN 7, 1983	1100.00	200.00
36	JUL 6, 1983	1500.00	200.00
36	JUL 19, 1983	1100.00	200.00
36	AUG 10, 1983	1200.00	200.00
36	AUG 24, 1983	1200.00	200.00
36	SEP 8, 1983	1400.00	200.00
36	SEP 22, 1983	1300.00	200.00
36	OCT 26, 1983	1400.00	200.00
36	NOV 16, 1983	1300.00	200.00
36	DEC 20, 1983	1300.00	200.00
36	JAN 10, 1984	1300.00	200.00
40	MAY 11, 1983	1400.00	200.00
40	JUN 7, 1983	1600.00	200.00
40	JUL 6, 1983	1600.00	200.00
40	JUL 19, 1983	1100.00	200.00
40	AUG 10, 1983	1300.00	200.00

Table 4-5.5
(continued)

MILK

ANALYSIS: POTASSIUM-40
UNITS: pCi/l

STATION	DATE	CONCENTRATION	TWO SIGMA
40	AUG 24, 1983	1300.00	200.00
40	SEP 8, 1983	1400.00	200.00
40	SEP 21, 1983	1300.00	200.00
40	OCT 26, 1983	1700.00	200.00
40	NOV 16, 1983	1300.00	200.00
40	DEC 20, 1983	1300.00	200.00
40	JAN 10, 1984	1300.00	200.00

Table 4-6.0

FISH

ANALYSIS: CESIUM-134
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<80.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	APR 26, 1981	<130.00	
30	APR 26, 1981	<130.00	
30	JUN 11, 1982	<40.00	
30	JUN 11, 1982	<40.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<40.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 16, 1983	<17.00	
30	NOV 16, 1983	<16.00	
30	NOV 16, 1983	<10.00	
38	APR 21, 1980	<130.00	
38	OCT 23, 1980	<130.00	
38	APR 21, 1981	<130.00	
38	OCT 22, 1981	<130.00	
38	MAY 28, 1982	<20.00	
38	OCT 29, 1982	<10.00	
38	JUL 20, 1983	<19.00	
38	OCT 24, 1983	<15.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	JUN 27, 1983	<30.00	
39	JUN 27, 1983	<30.00	
39	JUN 27, 1983	<30.00	
39	JUN 27, 1983	<40.00	
39	NOV 14, 1983	<12.00	
39	NOV 14, 1983	<11.00	
39	NOV 14, 1983	<6.00	
39	NOV 14, 1983	<7.00	

Table 4-6.1

FISH

ANALYSIS: CESIUM-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	OCT 29, 1979	<130.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	APR 26, 1981	<130.00	
30	APR 26, 1981	<130.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<40.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<40.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 16, 1983	50.00	15.00
30	NOV 16, 1983	<20.00	
30	NOV 16, 1983	48.00	10.00
38	APR 28, 1978	<130.00	
38	OCT 24, 1978	<130.00	
38	APR 25, 1979	<130.00	
38	OCT 30, 1979	<130.00	
38	APR 21, 1980	<130.00	
38	OCT 23, 1980	<130.00	
38	APR 21, 1981	<130.00	
38	OCT 22, 1981	<130.00	
38	MAY 28, 1982	<20.00	
38	OCT 29, 1982	<10.00	
38	JUL 20, 1983	<20.00	
38	OCT 24, 1983	<19.00	

Table 4-6.1
(continued)

FISH

ANALYSIS: CESIUM-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	JUN 27, 1983	<30.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<20.00	
39	JUN 27, 1983	<40.00	
39	NOV 14, 1983	46.00	11.00
39	NOV 14, 1983	22.00	9.00
39	NOV 14, 1983	16.00	5.00
39	NOV 14, 1983	23.00	5.00

Table 4-6.2

FISH

ANALYSIS: COBALT-58
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	OCT 29, 1979	<130.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<80.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	APR 26, 1981	<130.00	
30	APR 26, 1981	<130.00	
30	JUN 11, 1982	<20.00	
30	JUN 11, 1982	<20.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<30.00	
30	NOV 5, 1982	<20.00	
30	NOV 5, 1982	<30.00	
30	NOV 5, 1982	<30.00	
30	NOV 5, 1982	<20.00	
30	NOV 16, 1983	<30.00	
30	NOV 16, 1983	<20.00	
30	NOV 16, 1983	<14.00	
38	APR 28, 1978	<130.00	
38	OCT 24, 1978	<130.00	
38	APR 25, 1979	<130.00	
38	OCT 30, 1979	<130.00	
38	APR 21, 1980	<130.00	
38	OCT 23, 1980	<130.00	
38	APR 21, 1981	<130.00	
38	OCT 22, 1981	<130.00	
38	MAY 28, 1982	<20.00	
38	OCT 29, 1982	<30.00	
38	JUL 20, 1983	<40.00	
38	OCT 24, 1983	<17.00	

Table 4-6.2
(continued)

FISH

ANALYSIS: COBALT-58
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	JUN 27, 1983	<30.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<50.00	
39	NOV 14, 1983	<20.00	
39	NOV 14, 1983	<14.00	
39	NOV 14, 1983	<9.00	
39	NOV 14, 1983	<11.00	

Table 4-6.3

FISH

ANALYSIS: COBALT-60
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<80.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	APR 26, 1981	<130.00	
30	APR 26, 1981	<130.00	
30	JUN 11, 1982	<20.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<30.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<20.00	
30	NOV 5, 1982	<10.00	
30	NOV 16, 1983	<30.00	
30	NOV 16, 1983	<30.00	
30	NOV 16, 1983	<14.00	
38	APR 28, 1978	<130.00	
38	OCT 24, 1978	<130.00	
38	APR 21, 1980	<130.00	
38	OCT 23, 1980	<130.00	
38	APR 21, 1981	<130.00	
38	OCT 22, 1981	<130.00	
38	MAY 28, 1982	<20.00	
38	OCT 29, 1982	<10.00	
38	JUL 20, 1983	<20.00	
38	OCT 24, 1983	<20.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	

Table 4-6.3
(continued)

FISH

ANALYSIS: COBALT-60
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
39	OCT 21, 1981	<130.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<40.00	
39	NOV 14, 1983	<20.00	
39	NOV 14, 1983	<16.00	
39	NOV 14, 1983	<9.00	
39	NOV 14, 1983	<10.00	

Table 4-6.4

FISH

ANALYSIS: IRON-59
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<260.00	
30	APR 26, 1978	<260.00	
30	APR 26, 1978	<260.00	
30	APR 26, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	JUN 11, 1982	<60.00	
30	JUN 11, 1982	<70.00	
30	JUN 11, 1982	<60.00	
30	JUN 11, 1982	<70.00	
30	NOV 5, 1982	<50.00	
30	NOV 5, 1982	<70.00	
30	NOV 5, 1982	<70.00	
30	NOV 5, 1982	<60.00	
30	NOV 16, 1983	<90.00	
30	NOV 16, 1983	<70.00	
30	NOV 16, 1983	<50.00	
38	APR 28, 1978	<260.00	
38	OCT 24, 1978	<260.00	
38	MAY 28, 1982	<40.00	
38	OCT 29, 1982	<40.00	
38	JUL 20, 1983	<140.00	
38	OCT 24, 1983	<50.00	
39	JUN 27, 1983	<160.00	
39	JUN 27, 1983	<170.00	
39	JUN 27, 1983	<170.00	
39	JUN 27, 1983	<200.00	
39	NOV 14, 1983	<70.00	
39	NOV 14, 1983	<30.00	
39	NOV 14, 1983	<30.00	
39	NOV 14, 1983	<40.00	

Table 4-6.5

FISH

ANALYSIS: MANGANESE-54
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	OCT 29, 1979	<130.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<80.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	APR 26, 1981	<130.00	
30	APR 26, 1981	<130.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<40.00	
30	JUN 11, 1982	<30.00	
30	JUN 11, 1982	<40.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<10.00	
30	NOV 5, 1982	<20.00	
30	NOV 5, 1982	<10.00	
30	NOV 16, 1983	<20.00	
30	NOV 16, 1983	<20.00	
30	NOV 16, 1983	<13.00	
38	APR 28, 1978	<130.00	
38	OCT 24, 1978	<130.00	
38	APR 25, 1979	<130.00	
38	OCT 30, 1979	<130.00	
38	APR 21, 1980	<130.00	
38	OCT 23, 1980	<130.00	
38	APR 21, 1981	<130.00	
38	OCT 22, 1981	<130.00	
38	MAY 28, 1982	<20.00	
38	OCT 29, 1982	<10.00	
38	JUL 20, 1983	<20.00	
38	OCT 24, 1983	<17.00	

Table 4-6.5
(continued)

FISH

ANALYSIS: MANGANESE-54
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	APR 23, 1980	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	JUN 27, 1983	<30.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<40.00	
39	JUN 27, 1983	<40.00	
39	NOV 14, 1983	<16.00	
39	NOV 14, 1983	<15.00	
39	NOV 14, 1983	<8.00	
39	NOV 14, 1983	<8.00	

Table 4-6.6

FISH

ANALYSIS: NIOBIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	OCT 29, 1979	<130.00	
38	APR 28, 1978	<130.00	
38	OCT 24, 1978	<130.00	
38	APR 25, 1979	<130.00	
38	OCT 30, 1979	<130.00	

Table 4-6.7

FISH

ANALYSIS: POTASSIUM-40
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	OCT 20, 1978	3200.00	1100.00
30	OCT 20, 1978	NR	
30	OCT 20, 1978	NR	
30	OCT 20, 1978	NR	
30	NOV 16, 1983	3100.00	400.00
30	NOV 16, 1983	3000.00	300.00
30	NOV 16, 1983	3500.00	400.00
38	OCT 24, 1978	4300.00	1200.00
38	JUL 20, 1983	3100.00	400.00
38	OCT 24, 1983	2900.00	400.00
39	JUN 27, 1983	4200.00	600.00
39	JUN 27, 1983	2900.00	600.00
39	JUN 27, 1983	3700.00	600.00
39	JUN 27, 1983	3300.00	600.00
39	NOV 14, 1983	3300.00	400.00
39	NOV 14, 1983	3300.00	400.00
39	NOV 14, 1983	2800.00	300.00
39	NOV 14, 1983	3000.00	300.00

Table 4-6.8

FISH

ANALYSIS: ZINC-65
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<260.00	
30	APR 26, 1978	<260.00	
30	APR 26, 1978	<260.00	
30	APR 26, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	OCT 20, 1978	<260.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	OCT 29, 1979	<130.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<80.00	
30	OCT 22, 1980	<130.00	
30	OCT 22, 1980	<130.00	
30	APR 26, 1981	<130.00	
30	APR 26, 1981	<130.00	
30	JUN 11, 1982	<60.00	
30	JUN 11, 1982	<70.00	
30	JUN 11, 1982	<60.00	
30	JUN 11, 1982	<70.00	
30	NOV 5, 1982	<20.00	
30	NOV 5, 1982	<30.00	
30	NOV 5, 1982	<20.00	
30	NOV 5, 1982	<20.00	
30	NOV 16, 1983	<60.00	
30	NOV 16, 1983	<60.00	
30	NOV 16, 1983	<40.00	
38	APR 28, 1978	<260.00	
38	OCT 24, 1978	<260.00	
38	APR 25, 1979	<130.00	
38	OCT 30, 1979	<130.00	
38	APR 21, 1980	<260.00	
38	OCT 23, 1980	<130.00	
38	APR 21, 1981	<130.00	
38	OCT 22, 1981	<130.00	
38	MAY 28, 1982	<40.00	
38	OCT 29, 1982	<20.00	
38	JUL 20, 1983	<60.00	
38	OCT 24, 1983	<50.00	

Table 4-6.8
(continued)

FISH

ANALYSIS: ZINC-65
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
39	APR 23, 1980	<260.00	
39	APR 23, 1980	<260.00	
39	APR 23, 1980	<260.00	
39	APR 23, 1980	<260.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	OCT 21, 1981	<130.00	
39	JUN 27, 1983	<80.00	
39	JUN 27, 1983	<100.00	
39	JUN 27, 1983	<90.00	
39	JUN 27, 1983	<110.00	
39	NOV 14, 1983	<50.00	
39	NOV 14, 1983	<40.00	
39	NOV 14, 1983	<30.00	
39	NOV 14, 1983	<20.00	

Table 4-6.9

FISH

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	APR 26, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	OCT 20, 1978	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	APR 25, 1979	<130.00	
30	OCT 29, 1979	<130.00	
38	APR 28, 1978	<130.00	
38	OCT 24, 1978	<130.00	
38	APR 25, 1979	<130.00	
38	OCT 30, 1979	<130.00	

Table 4-7.0

PRODUCE

ANALYSIS: CESIUM-134
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 19, 1982	<30.00	
9	JUN 18, 1982	<120.00	
9	JUN 18, 1982	<30.00	
9	JUL 22, 1982	<30.00	
9	JUL 22, 1982	<40.00	
9	JUL 22, 1982	<50.00	
9	AUG 24, 1982	<30.00	
9	AUG 24, 1982	<30.00	
9	AUG 24, 1982	<30.00	
9	SEP 15, 1982	<20.00	
9	SEP 15, 1982	<60.00	
9	SEP 15, 1982	<40.00	
9	MAY 16, 1983	<10.00	
9	MAY 16, 1983	<30.00	
9	JUN 20, 1983	<60.00	
9	JUN 20, 1983	<30.00	
9	JUN 20, 1983	<20.00	
9	JUL 26, 1983	<40.00	
9	JUL 26, 1983	<50.00	
9	AUG 22, 1983	<40.00	
9	AUG 22, 1983	<50.00	
9	AUG 22, 1983	<40.00	
9	SEP 26, 1983	<50.00	
9	SEP 26, 1983	<50.00	
9	SEP 26, 1983	<50.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	MAY 19, 1982	<30.00	
37	JUN 18, 1982	<140.00	
37	JUN 18, 1982	<140.00	
37	JUL 22, 1982	<30.00	
37	JUL 22, 1982	<110.00	
37	JUL 22, 1982	<40.00	
37	AUG 24, 1982	<50.00	
37	AUG 24, 1982	<50.00	
37	AUG 24, 1982	<40.00	
37	SEP 15, 1982	<10.00	
37	SEP 15, 1982	<10.00	
37	SEP 15, 1982	<50.00	

Table 4-7.0
(continued)

PRODUCE

ANALYSIS: CESIUM-134
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	MAY 16, 1983	<10.00	
37	MAY 16, 1983	<40.00	
37	JUN 20, 1983	<70.00	
37	JUN 20, 1983	<40.00	
37	JUN 20, 1983	<50.00	
37	JUL 26, 1983	<50.00	
37	JUL 26, 1983	<60.00	
37	JUL 26, 1983	<50.00	
37	AUG 22, 1983	<40.00	
37	AUG 22, 1983	<30.00	
37	AUG 22, 1983	<20.00	
37	SEP 26, 1983	<50.00	
37	SEP 26, 1983	<40.00	
37	SEP 26, 1983	<40.00	

Table 4-7.1

PRODUCE

ANALYSIS: CESIUM-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 22, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	MAY 8, 1980	<80.00	
9	MAY 8, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	

Table 4-7.1
(continued)

PRODUCE

ANALYSIS: CESIUM-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	MAY 19, 1982	<30.00	
9	JUN 18, 1982	<120.00	
9	JUN 18, 1982	<30.00	
9	JUL 22, 1982	<30.00	
9	JUL 22, 1982	<40.00	
9	JUL 22, 1982	<50.00	
9	AUG 24, 1982	<30.00	
9	AUG 24, 1982	<30.00	
9	AUG 24, 1982	<30.00	
9	SEP 15, 1982	<20.00	
9	SEP 15, 1982	<60.00	
9	SEP 15, 1982	<40.00	
9	MAY 16, 1983	<10.00	
9	MAY 16, 1983	<30.00	
9	JUN 20, 1983	<70.00	
9	JUN 20, 1983	<30.00	
9	JUN 20, 1983	<20.00	
9	JUL 26, 1983	<40.00	
9	JUL 26, 1983	<60.00	
9	AUG 22, 1983	<50.00	
9	AUG 22, 1983	<60.00	
9	AUG 22, 1983	<40.00	
9	SEP 26, 1983	<50.00	
9	SEP 26, 1983	<50.00	
9	SEP 26, 1983	<50.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	SEP 25, 1978	<80.00	

Table 4-7.1
(continued)

PRODUCE

ANALYSIS: CESIUM-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	MAY 22, 1979	<80.00	
37	MAY 22, 1979	<130.00	
37	MAY 22, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	MAY 8, 1980	<80.00	
37	MAY 8, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	

Table 4-7.1
(continued)

PRODUCE

ANALYSIS: CESIUM-137
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	AUG 18, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	MAY 19, 1982	<30.00	
37	JUN 18, 1982	<140.00	
37	JUN 18, 1982	<140.00	
37	JUL 22, 1982	<30.00	
37	JUL 22, 1982	<100.00	
37	JUL 22, 1982	<40.00	
37	AUG 24, 1982	<50.00	
37	AUG 24, 1982	<50.00	
37	AUG 24, 1982	<40.00	
37	SEP 15, 1982	<10.00	
37	SEP 15, 1982	<10.00	
37	SEP 15, 1982	<50.00	
37	MAY 16, 1983	<10.00	
37	MAY 16, 1983	<40.00	
37	JUN 20, 1983	<80.00	
37	JUN 20, 1983	<40.00	
37	JUN 20, 1983	<50.00	
37	JUL 26, 1983	<50.00	
37	JUL 26, 1983	<60.00	
37	JUL 26, 1983	<60.00	
37	AUG 22, 1983	<40.00	
37	AUG 22, 1983	<30.00	
37	AUG 22, 1983	<20.00	
37	SEP 26, 1983	<50.00	
37	SEP 26, 1983	<50.00	
37	SEP 26, 1983	<40.00	

Table 4-7.2

PRODUCE

ANALYSIS: COBALT-58
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 22, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	MAY 8, 1980	<80.00	
9	MAY 8, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	

Table 4-7.2
(continued)

PRODUCE

ANALYSIS: COBALT-58
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	MAY 22, 1979	<80.00	
37	MAY 22, 1979	<130.00	
37	MAY 22, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	MAY 8, 1980	<80.00	
37	MAY 8, 1980	<80.00	

Table 4-7.2
(continued)

PRODUCE

ANALYSIS: COBALT-58
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	JUN 23, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	SEP.22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	

Table 4-7.3

PRODUCE

ANALYSIS: COBALT-60
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 22, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	MAY 8, 1980	<80.00	
9	MAY 8, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	

Table 4-7.3
(continued)

PRODUCE

ANALYSIS: COBALT-60
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	MAY 22, 1979	<80.00	
37	MAY 22, 1979	<130.00	
37	MAY 22, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	MAY 8, 1980	<80.00	
37	MAY 8, 1980	<80.00	

Table 4-7.3
(continued)

PRODUCE

ANALYSIS: COBALT-60
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	JUN 23, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	

Table 4-7.4

PRODUCE

ANALYSIS: IODINE-131
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	MAY 19, 1982	<40.00	
9	JUN 18, 1982	<890.00	
9	JUN 18, 1982	<190.00	
9	JUL 22, 1982	<80.00	
9	JUL 22, 1982	<120.00	
9	JUL 22, 1982	<130.00	
9	AUG 24, 1982	<60.00	
9	AUG 24, 1982	<60.00	
9	AUG 24, 1982	<60.00	
9	SEP 15, 1982	<30.00	
9	SEP 15, 1982	<90.00	
9	SEP 15, 1982	<40.00	
9	MAY 16, 1983	<20.00	
9	MAY 16, 1983	<30.00	
9	JUN 20, 1983	<17.00	
9	JUN 20, 1983	<60.00	
9	JUN 20, 1983	<50.00	
9	JUL 26, 1983	<30.00	
9	JUL 26, 1983	<50.00	
9	AUG 22, 1983	<60.00	
9	AUG 22, 1983	<50.00	
9	AUG 22, 1983	<50.00	
9	SEP 26, 1983	<60.00	
9	SEP 26, 1983	<60.00	
9	SEP 26, 1983	<50.00	
37	MAY 19, 1982	<100.00	
37	JUN 18, 1982	<1000.00	
37	JUN 18, 1982	<370.00	
37	JUL 22, 1982	<80.00	
37	JUL 22, 1982	<290.00	
37	JUL 22, 1982	<100.00	
37	AUG 24, 1982	<90.00	
37	AUG 24, 1982	<80.00	
37	AUG 24, 1982	<70.00	
37	SEP 15, 1982	<10.00	
37	SEP 15, 1982	<10.00	
37	SEP 15, 1982	<80.00	
37	MAY 16, 1983	<20.00	
37	MAY 16, 1983	<40.00	
37	JUN 20, 1983	<110.00	
37	JUN 20, 1983	<50.00	
37	JUN 20, 1983	<60.00	
37	JUL 26, 1983	<60.00	

Table 4-7.4
(continued)

PRODUCE

ANALYSIS: IODINE-131
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	JUL 26, 1983	<60.00	
37	JUL 26, 1983	<50.00	
37	AUG 22, 1983	<40.00	
37	AUG 22, 1983	<30.00	
37	AUG 22, 1983	<60.00	
37	SEP 26, 1983	<50.00	
37	SEP 26, 1983	<50.00	
37	SEP 26, 1983	<50.00	

Table 4-7.5

PRODUCE

ANALYSIS: MANGANESE-54
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 22, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	MAY 8, 1980	<80.00	
9	MAY 8, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	

Table 4-7.5
(continued)

PRODUCE

ANALYSIS: MANGANESE-54
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	MAY 22, 1979	<80.00	
37	MAY 22, 1979	<130.00	
37	MAY 22, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	MAY 8, 1980	<80.00	
37	MAY 8, 1980	<80.00	

Table 4-7.5
(continued)

PRODUCE

ANALYSIS: MANGANESE-54
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	JUN 23, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	

Table 4-7.6

PRODUCE

ANALYSIS: NIOBIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 22, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	MAY 8, 1980	<80.00	
9	MAY 8, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	

Table 4-7.6
(continued)

PRODUCE

ANALYSIS: NIOBIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	MAY 22, 1979	<80.00	
37	MAY 22, 1979	<130.00	
37	MAY 22, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	MAY 8, 1980	<80.00	
37	MAY 8, 1980	<80.00	

Table 4-7.6
(continued)

PRODUCE

ANALYSIS: NIOBIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	JUN 23, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	AUG 19, 1930	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	JUN 23, 1981	<30.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<30.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<30.00	
37	JUL 21, 1981	<80.00	
37	AUG 18, 1981	<30.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	

Table 4-7.7

PRODUCE

ANALYSIS: POTASSIUM-40
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	SEP 25, 1978	NR	
9	SEP 25, 1978	3000.00	1000.00
9	SEP 25, 1978	NR	
9	OCT 23, 1978	4700.00	500.00
9	OCT 23, 1978	5400.00	1100.00
9	OCT 23, 1978	3000.00	900.00
9	JUN 20, 1983	2400.00	500.00
9	JUN 20, 1983	3700.00	400.00
9	JUN 20, 1983	2300.00	300.00
9	JUL 26, 1983	<1300.00	
9	JUL 26, 1983	1800.00	60.00
9	AUG 22, 1983	6000.00	600.00
9	AUG 22, 1983	4700.00	800.00
9	AUG 22, 1983	2100.00	500.00
9	SEP 26, 1983	1900.00	600.00
9	SEP 26, 1983	4600.00	900.00
9	SEP 26, 1983	980.00	360.00
37	JUN 20, 1978	5600.00	600.00
37	JUN 20, 1978	3900.00	400.00
37	JUL 24, 1978	NR	
37	JUL 24, 1978	NR	
37	JUL 24, 1978	5000.00	1800.00
37	AUG 21, 1978	3900.00	800.00
37	AUG 21, 1978	NR	
37	AUG 21, 1978	NR	
37	SEP 25, 1978	3900.00	800.00
37	SEP 25, 1978	NR	
37	SEP 25, 1978	NR	
37	OCT 23, 1978	10000.00	3000.00
37	OCT 23, 1978	5000.00	1100.00
37	OCT 23, 1978	3500.00	1000.00
37	JUN 20, 1983	6400.00	700.00
37	JUN 20, 1983	1600.00	400.00
37	JUN 20, 1983	3500.00	700.00
37	JUL 26, 1983	2700.00	500.00
37	JUL 26, 1983	<2000.00	
37	JUL 26, 1983	3100.00	700.00
37	AUG 22, 1983	4700.00	600.00
37	AUG 22, 1983	4500.00	500.00
37	AUG 22, 1983	680.00	140.00
37	SEP 26, 1983	1500.00	500.00
37	SEP 26, 1983	1900.00	500.00
37	SEP 26, 1983	980.00	350.00

Table 4-7.8

PRODUCE

ANALYSIS: ZINC-65
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 22, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	MAY 8, 1980	<80.00	
9	MAY 8, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	

Table 4-7.3
(continued)

PRODUCE

ANALYSIS: ZINC-65
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	MAY 22, 1979	<80.00	
37	MAY 22, 1979	<130.00	
37	MAY 22, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	MAY 8, 1980	<80.00	
37	MAY 8, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUL 21, 1980	<80.00	

Table 4-7.8
(continued)

PRODUCE

ANALYSIS: ZINC-65
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	

Table 4-7.9

PRODUCE

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUN 20, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	JUL 24, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	AUG 21, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	SEP 25, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	OCT 23, 1978	<80.00	
9	MAY 22, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUN 25, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	JUL 24, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	AUG 21, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	SEP 18, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	OCT 22, 1979	<80.00	
9	MAY 8, 1980	<80.00	
9	MAY 8, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUN 23, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	JUL 18, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	AUG 19, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	SEP 23, 1980	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	
9	JUN 23, 1981	<80.00	

Table 4-7.9
(continued)

PRODUCE

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	JUL 21, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	AUG 18, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
9	SEP 22, 1981	<80.00	
37	JUN 20, 1978	<80.00	
37	JUN 20, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	JUL 24, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	AUG 21, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	SEP 25, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	OCT 23, 1978	<80.00	
37	MAY 22, 1979	<80.00	
37	MAY 22, 1979	<130.00	
37	MAY 22, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUN 25, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	JUL 24, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	AUG 21, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	SEP 18, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	OCT 22, 1979	<80.00	
37	MAY 8, 1980	<80.00	
37	MAY 8, 1980	<80.00	

Table 4-7.9
(continued)

PRODUCE

ANALYSIS: ZIRCONIUM-95
UNITS: pCi/kg

STATION	DATE	CONCENTRATION	TWO SIGMA
37	JUN 23, 1980	<80.00	
37	JUN 23, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	JUL 21, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	AUG 19, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	SEP 23, 1980	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUN 23, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	JUL 21, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	AUG 18, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	
37	SEP 22, 1981	<80.00	

Table 4-8.0

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
1	JUN 30, 1978	91	0.3118	0.0897
1	SEP 29, 1978	90	0.2081	0.0242
1	JAN 2, 1979	95	0.4411	0.1972
1	MAR 30, 1979	87	0.2376	0.0217
1	JUN 29, 1979	91	0.1857	0.0609
1	SEP 28, 1979	91	0.1953	0.0519
1	JAN 2, 1980	95	0.2571	0.0845
1	MAR 28, 1980	86	0.2985	0.0888
1	MAR 28, 1980	81	0.2377	0.0467
1	JUN 27, 1980	91	0.2912	0.1347
1	SEP 26, 1980	91	0.2775	0.1598
1	SEP 26, 1980	91	0.2629	0.0389
1	DEC 31, 1980	96	0.2937	0.1728
1	DEC 31, 1980	93	0.1914	0.0094
1	MAR 27, 1981	86	0.4404	0.1888
1	MAR 27, 1981	86	0.3031	0.0270
1	JUN 26, 1981	91	0.2780	0.0434
1	JUN 26, 1981	91	0.1890	0.0147
1	SEP 25, 1981	91	0.2390	0.0463
1	SEP 25, 1981	91	0.2234	0.0093
1	DEC 31, 1981	97	0.2358	0.0825
1	DEC 31, 1981	97	0.1931	0.0373
1	MAR 26, 1982	85	0.2679	0.0740
1	MAR 26, 1982	85	0.2235	0.0129
1	JUN 25, 1982	91	0.2072	0.0096
1	SEP 24, 1982	91	0.2238	0.0206
1	DEC 30, 1982	97	0.2632	0.0142
1	APR 1, 1983	92	0.2118	0.0068
1	JUL 1, 1983	91	0.2578	0.0111
1	SEP 30, 1983	91	0.2488	0.0017
1	DEC 29, 1983	90	0.2596	0.0253
2	JUN 30, 1978	91	0.2313	0.0855
2	SEP 29, 1978	90	0.1981	0.0195
2	JAN 2, 1979	95	0.3668	0.1174
2	MAR 30, 1979	87	0.2195	0.0264
2	JUN 29, 1979	91	0.2261	0.0323
2	SEP 28, 1979	91	0.2022	0.0431
2	JAN 2, 1980	95	0.2342	0.0305
2	MAR 28, 1980	86	0.3032	0.0762
2	MAR 28, 1980	81	0.2500	0.0311
2	JUN 27, 1980	91	0.3621	0.1264
2	SEP 26, 1980	91	0.2527	0.0360
2	SEP 26, 1980	91	0.2835	0.0213
2	DEC 31, 1980	96	0.2271	0.0628
2	DEC 31, 1980	93	0.2147	0.0102
2	MAR 27, 1981	86	0.4424	0.1617

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
2	MAR 27, 1981	86	0.2523	0.0231
2	JUN 26, 1981	91	0.2706	0.0623
2	JUN 26, 1981	91	0.1810	0.0092
2	SEP 25, 1981	91	0.2519	0.0121
2	SEP 25, 1981	91	0.2368	0.0320
2	DEC 31, 1981	97	0.2691	0.0631
2	DEC 31, 1981	97	0.1700	0.0107
2	MAR 26, 1982	85	0.2597	0.0217
2	MAR 26, 1982	85	0.2300	0.0416
2	JUN 25, 1982	91	0.1940	0.0253
2	SEP 24, 1982	91	0.2224	0.0147
2	DEC 30, 1982	97	0.2489	0.0114
2	APR 1, 1983	92	0.2139	0.0100
2	JUL 1, 1983	91	0.2526	0.0130
2	SEP 30, 1983	91	0.2472	0.0151
2	DEC 29, 1983	90	0.2318	0.0047
3	JUN 30, 1978	91	0.2538	0.0255
3	SEP 29, 1978	90	0.1875	0.0192
3	JAN 2, 1979	95	0.3239	0.0383
3	MAR 30, 1979	87	0.2526	0.0461
3	JUN 29, 1979	91	0.2115	0.0146
3	SEP 28, 1979	91	0.2058	0.0412
3	JAN 2, 1980	95	0.2163	0.0556
3	MAR 28, 1980	86	0.2648	0.0287
3	MAR 28, 1980	81	0.2438	0.0370
3	JUN 27, 1980	91	0.3003	0.1262
3	SEP 26, 1980	91	0.2791	0.1050
3	SEP 26, 1980	91	0.1907	0.0374
3	DEC 31, 1980	96	0.3581	0.1086
3	DEC 31, 1980	93	0.2158	0.0195
3	MAR 27, 1981	86	0.4349	0.2385
3	MAR 27, 1981	86	0.2526	0.0293
3	JUN 26, 1981	91	0.2816	0.0256
3	JUN 26, 1981	91	0.1783	0.0049
3	SEP 25, 1981	91	0.2385	0.0416
3	SEP 25, 1981	91	0.1958	0.0192
3	DEC 31, 1981	97	0.2168	0.0991
3	DEC 31, 1981	97	0.1713	0.0108
3	MAR 26, 1982	85	0.2515	0.0925
3	MAR 26, 1982	85	0.2185	0.0138
3	JUN 25, 1982	91	0.2145	0.0123
3	SEP 24, 1982	91	0.2051	0.0154
3	DEC 30, 1982	97	0.2407	0.0096
3	APR 1, 1983	92	0.2020	0.0086
3	JUL 1, 1983	91	0.2423	0.0211
3	SEP 30, 1983	91	0.2238	0.0698

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
3	DEC 29, 1983	90	0.2254	0.0334
4	JUN 30, 1978	91	0.2099	0.0585
4	SEP 29, 1978	90	0.1856	0.0265
4	JAN 2, 1979	95	0.3089	0.1024
4	MAR 30, 1979	87	0.2224	0.0241
4	JUN 29, 1979	91	0.1923	0.0204
4	SEP 28, 1979	91	0.1920	0.0424
4	JAN 2, 1980	95	0.1939	0.0270
4	MAR 28, 1980	86	0.2547	0.0509
4	MAR 28, 1980	81	0.2037	0.1038
4	JUN 27, 1980	91	0.3429	0.2788
4	SEP 26, 1980	91	0.2530	0.1100
4	SEP 26, 1980	91	0.1964	0.0182
4	DEC 31, 1980	96	0.2680	0.0738
4	DEC 31, 1980	93	0.2050	0.0151
4	MAR 27, 1981	86	0.3779	0.1745
4	MAR 27, 1981	86	0.4054	0.0824
4	JUN 26, 1981	91	0.2473	0.0554
4	JUN 26, 1981	91	0.1607	0.0021
4	SEP 25, 1981	91	0.2176	0.0433
4	SEP 25, 1981	91	0.1887	0.0119
4	DEC 31, 1981	97	0.2211	0.0505
4	DEC 31, 1981	97	0.1742	0.0068
4	MAR 26, 1982	85	0.2382	0.0597
4	MAR 26, 1982	85	0.2768	0.0587
4	JUN 25, 1982	91	0.1667	0.0312
4	SEP 24, 1982	91	0.2034	0.0071
4	DEC 30, 1982	97	0.2495	0.0544
4	APR 1, 1983	92	0.1955	0.0090
4	JUL. 1, 1983	91	0.2297	0.0156
4	SEP 30, 1983	91	0.2165	0.0328
4	DEC 30, 1983	91	0.2229	0.0066
5	JUN 30, 1978	91	0.2321	0.0676
5	SEP 29, 1978	90	0.1772	0.0221
5	JAN 2, 1979	95	0.2637	0.1027
5	MAR 30, 1979	87	0.2086	0.0380
5	JUN 29, 1979	91	0.2148	0.0472
5	SEP 28, 1979	91	0.1964	0.0306
5	JAN 2, 1980	95	0.1800	0.0608
5	MAR 28, 1980	86	0.2477	0.0068
5	MAR 28, 1980	81	0.1852	0.0638
5	JUN 27, 1980	91	0.3387	0.1942
5	SEP 26, 1980	91	0.1599	0.1005
5	SEP 26, 1980	91	0.1459	0.0111
5	DEC 31, 1980	96	0.2885	0.1432

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
5	DEC 31, 1980	93	0.1373	0.0087
5	MAR 27, 1981	86	0.3645	0.1660
5	MAR 27, 1981	86	0.2294	0.0029
5	JUN 26, 1981	91	0.2569	0.0262
5	JUN 26, 1981	91	0.1629	0.0077
5	SEP 25, 1981	91	0.2255	0.0666
5	SEP 25, 1981	91	0.2114	0.0084
5	DEC 31, 1981	97	0.2768	0.0135
5	DEC 31, 1981	97	0.2076	0.0085
5	MAR 26, 1982	85	0.2715	0.0204
5	MAR 26, 1982	85	0.2153	0.0096
5	JUN 25, 1982	91	0.2025	0.0155
5	SEP 24, 1982	91	0.2124	0.0067
5	DEC 30, 1982	97	0.2429	0.0066
5	APR 1, 1983	92	0.2080	0.0038
5	JUL 1, 1983	91	0.2477	0.0203
5	SEP 30, 1983	91	0.2287	0.0279
5	DEC 30, 1983	91	0.2296	0.0283
6	JUN 30, 1978	91	0.2201	0.0888
6	SEP 29, 1978	90	0.1825	0.0165
6	JAN 2, 1979	95	0.3500	0.1815
6	MAR 30, 1979	87	0.2124	0.0249
6	JUN 29, 1979	91	0.2080	0.0350
6	SEP 28, 1979	91	0.1871	0.0248
6	JAN 2, 1980	95	0.2358	0.0718
6	MAR 28, 1980	86	0.2297	0.0661
6	MAR 28, 1980	81	0.2346	0.0349
6	JUN 27, 1980	91	0.2698	0.0908
6	SEP 26, 1980	91	0.2566	0.1219
6	SEP 26, 1980	91	0.1582	0.0253
6	DEC 31, 1980	96	0.3138	0.0589
6	DEC 31, 1980	93	0.2061	0.0106
6	MAR 27, 1981	86	0.4398	0.0529
6	MAR 27, 1981	86	0.2934	0.1908
6	JUN 26, 1981	91	0.2514	0.0204
6	JUN 26, 1981	91	0.1497	0.0120
6	SEP 25, 1981	91	0.2225	0.0258
6	SEP 25, 1981	91	0.2086	0.0252
6	DEC 31, 1981	97	0.2387	0.0188
6	DEC 31, 1981	97	0.1644	0.0051
6	MAR 26, 1982	85	0.2612	0.0523
6	MAR 26, 1982	85	0.2165	0.0148
6	JUN 25, 1982	91	0.2003	0.0069
6	SEP 24, 1982	91	0.2086	0.0096
6	DEC 30, 1982	97	0.2300	0.0122
6	APR 1, 1983	92	0.2047	0.0076

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
6	JUL 1, 1983	91	0.2380	0.0209
6	SEP 30, 1983	91	0.2258	0.0153
6	DEC 29, 1983	90	0.2191	0.0105
7	JUN 30, 1978	91	0.2280	0.0811
7	SEP 29, 1978	90	0.2011	0.0116
7	JAN 2, 1979	95	0.3268	0.1207
7	MAR 30, 1979	87	0.2230	0.0496
7	JUN 29, 1979	91	0.1995	0.0426
7	SEP 28, 1979	91	0.2008	0.0447
7	JAN 2, 1980	95	0.2266	0.0495
7	MAR 28, 1980	86	0.2948	0.0417
7	MAR 28, 1980	81	0.2407	0.0473
7	JUN 27, 1980	91	0.3283	0.1297
7	SEP 26, 1980	91	0.2190	0.0347
7	SEP 26, 1980	91	0.2390	0.0396
7	DEC 31, 1980	96	0.3044	0.0438
7	DEC 31, 1980	93	0.2125	0.0124
7	MAR 27, 1981	86	0.5195	0.5599
7	MAR 27, 1981	86	0.2752	0.0484
7	JUN 26, 1981	91	0.2563	0.0577
7	JUN 26, 1981	91	0.1681	0.0097
7	SEP 25, 1981	91	0.2489	0.0440
7	SEP 25, 1981	91	0.2054	0.0086
7	DEC 31, 1981	97	0.2631	0.1138
7	DEC 31, 1981	97	0.1760	0.0074
7	MAR 26, 1982	85	0.2732	0.0655
7	MAR 26, 1982	85	0.2241	0.0149
7	JUN 25, 1982	91	0.2131	0.0207
7	SEP 24, 1982	91	0.2220	0.0068
7	DEC 30, 1982	97	0.2456	0.0061
7	APR 1, 1983	92	0.2124	0.0024
7	JUL 1, 1983	91	0.2504	0.0193
7	SEP 30, 1983	91	0.2469	0.0395
7	DEC 29, 1983	90	0.2333	0.0397
8	JUN 30, 1978	91	0.2723	0.0774
8	SEP 29, 1978	90	0.2050	0.0172
8	JAN 2, 1979	95	0.3547	0.1663
8	MAR 30, 1979	87	0.2325	0.0435
8	JUN 29, 1979	91	0.2338	0.0608
8	SEP 28, 1979	91	0.2291	0.0462
8	JAN 2, 1980	95	0.2489	0.0404
8	MAR 28, 1980	86	0.3221	0.0672
8	MAR 28, 1980	81	0.2654	0.0428
8	JUN 27, 1980	91	0.3261	0.1049
8	SEP 26, 1980	91	0.2915	0.0831

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
8	SEP 26, 1980	91	0.2703	0.0346
8	DEC 31, 1980	96	0.3464	0.2606
8	DEC 31, 1980	93	0.2434	0.0183
8	MAR 27, 1981	86	0.4477	0.2228
8	MAR 27, 1981	86	0.2608	0.0177
8	JUN 26, 1981	91	0.3255	0.0138
8	JUN 26, 1981	91	0.1953	0.0342
8	SEP 25, 1981	91	0.2868	0.0395
8	SEP 25, 1981	91	0.2433	0.0309
8	DEC 31, 1981	97	0.3260	0.0779
8	DEC 31, 1981	97	0.2117	0.0364
8	MAR 26, 1982	85	0.2747	0.0369
8	MAR 26, 1982	85	0.2474	0.0122
8	JUN 25, 1982	91	0.2382	0.0117
8	SEP 24, 1982	91	0.2469	0.0138
8	DEC 30, 1982	97	0.2836	0.0108
8	APR 1, 1983	92	0.2355	0.0052
8	JUL 1, 1983	91	0.2794	0.0140
8	SEP 30, 1983	91	0.2693	0.0270
8	DEC 30, 1983	91	0.2663	0.0178
9	JUN 30, 1978	91	0.2008	0.0151
9	SEP 29, 1978	90	0.1942	0.0351
9	JAN 2, 1979	95	0.3013	0.0875
9	MAR 30, 1979	87	0.2109	0.0165
9	JUN 29, 1979	91	0.1885	0.0219
9	SEP 28, 1979	91	0.1885	0.0373
9	JAN 2, 1980	95	0.2066	0.0760
9	MAR 28, 1980	86	0.2555	0.0509
9	MAR 28, 1980	81	0.2407	0.0588
9	JUN 27, 1980	91	0.3077	0.0712
9	SEP 26, 1980	91	0.2151	0.1252
9	SEP 26, 1980	91	0.2076	0.0217
9	DEC 31, 1980	96	0.2576	0.1246
9	DEC 31, 1980	93	0.2036	0.0045
9	MAR 27, 1981	86	0.2334	0.1904
9	MAR 27, 1981	86	0.2314	0.0195
9	JUN 26, 1981	91	0.2723	0.0440
9	JUN 26, 1981	91	NS	
9	SEP 25, 1981	91	0.2247	0.0530
9	SEP 25, 1981	91	0.2002	0.0092
9	DEC 31, 1981	97	0.2843	0.0259
9	DEC 31, 1981	97	0.1430	0.0059
9	MAR 26, 1982	85	0.2274	0.0478
9	MAR 26, 1982	85	0.2126	0.0082
9	JUN 25, 1982	91	0.1726	0.0776
9	SEP 24, 1982	91	0.2088	0.0117

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
9	DEC 30, 1982	97	0.2265	0.0084
9	APR 1, 1983	92	0.2052	0.0049
9	JUL 1, 1983	91	0.2345	0.0161
9	SEP 30, 1983	91	0.2363	0.0431
9	DEC 30, 1983	91	0.2296	0.0190
10	JUN 30, 1978	91	0.2214	0.0442
10	SEP 29, 1978	90	0.1650	0.0246
10	JAN 2, 1979	95	0.2889	0.0669
10	MAR 30, 1979	87	0.2353	0.0243
10	JUN 29, 1979	91	0.2330	0.0712
10	SEP 28, 1979	91	0.1926	0.0575
10	JAN 2, 1980	95	0.2608	0.0419
10	MAR 28, 1980	86	0.3044	0.0464
10	MAR 28, 1980	81	0.1667	0.0473
10	JUN 27, 1980	91	0.2429	0.1016
10	SEP 26, 1980	91	0.2365	0.1288
10	SEP 26, 1980	91	0.2379	0.0327
10	DEC 31, 1980	96	0.3307	0.2148
10	DEC 31, 1980	93	0.1530	0.0257
10	MAR 27, 1981	86	0.2218	0.2681
10	MAR 27, 1981	86	0.2901	0.0718
10	JUN 26, 1981	91	0.2610	0.0561
10	JUN 26, 1981	91	0.1810	0.0177
10	SEP 25, 1981	91	0.2000	0.2711
10	SEP 25, 1981	91	0.2108	0.0203
10	DEC 31, 1981	97	0.2784	0.0670
10	DEC 31, 1981	97	0.1694	0.0105
10	MAR 26, 1982	85	0.2450	0.0590
10	MAR 26, 1982	85	0.2200	0.0019
10	JUN 25, 1982	91	0.2120	0.0078
10	SEP 24, 1982	91	0.2177	0.0095
10	DEC 30, 1982	97	0.2389	0.0101
10	APR 1, 1983	92	0.2123	0.0136
10	JUL 1, 1983	91	0.2518	0.0129
10	SEP 30, 1983	91	0.2439	0.0512
10	DEC 29, 1983	90	0.2306	0.0104
11	JUN 30, 1978	91	0.2621	0.0673
11	SEP 29, 1978	90	0.1897	0.0305
11	JAN 2, 1979	95	0.3226	0.0761
11	MAR 30, 1979	87	0.2572	0.0568
11	JUN 29, 1979	91	0.2140	0.0356
11	SEP 28, 1979	91	0.2047	0.0388
11	JAN 2, 1980	95	0.2371	0.0261
11	MAR 28, 1980	86	0.2878	0.0248
11	MAR 28, 1980	81	0.2562	0.0583

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
11	JUN 27, 1980	91	0.3214	0.3039
11	SEP 26, 1980	91	0.2231	0.0958
11	SEP 26, 1980	91	0.2217	0.0237
11	DEC 31, 1980	96	0.2620	0.1244
11	DEC 31, 1980	93	0.2125	0.0025
11	MAR 27, 1981	86	0.3660	0.1761
11	MAR 27, 1981	86	0.2357	0.0299
11	JUN 26, 1981	91	0.2964	0.0658
11	JUN 26, 1981	91	0.1794	0.0118
11	SEP 25, 1981	91	0.2742	0.0366
11	SEP 25, 1981	91	0.2153	0.0131
11	DEC 31, 1981	97	0.2871	0.0131
11	MAR 26, 1982	85	0.2585	0.0525
11	MAR 26, 1982	85	0.2276	0.0106
11	JUN 25, 1982	91	0.2304	0.0121
11	SEP 24, 1982	91	0.2192	0.0137
11	DEC 30, 1982	97	0.2501	0.0183
11	APR 1, 1983	92	0.2133	0.0059
11	JUL 1, 1983	91	0.2439	0.0152
11	SEP 30, 1983	91	0.2476	0.0195
11	DEC 29, 1983	90	0.2341	0.0356
12	JUN 30, 1978	91	0.2679	0.0957
12	SEP 29, 1978	90	0.2167	0.0173
12	JAN 2, 1979	95	0.3908	0.1489
12	MAR 30, 1979	87	0.2382	0.0271
12	JUN 29, 1979	91	0.2258	0.0318
12	SEP 28, 1979	91	0.2220	0.0322
12	JAN 2, 1980	95	0.2761	0.0877
12	MAR 28, 1980	86	0.3145	0.0724
12	MAR 28, 1980	81.	0.2623	0.0370
12	JUN 27, 1980	91	0.3047	0.4355
12	SEP 26, 1980	91	0.2549	0.2166
12	SEP 26, 1980	91	0.2352	0.0283
12	DEC 31, 1980	96	0.4052	0.1367
12	DEC 31, 1980	93	0.2337	0.0076
12	MAR 27, 1981	86	0.4119	0.4263
12	MAR 27, 1981	86	0.3081	0.0230
12	JUN 26, 1981	91	0.2920	0.0577
12	JUN 26, 1981	91	0.1951	0.0117
12	SEP 25, 1981	91	0.2857	0.0225
12	SEP 25, 1981	91	0.2359	0.0204
12	DEC 31, 1981	97	0.3044	0.0293
12	DEC 31, 1981	97	0.1852	0.0187
12	MAR 26, 1982	85	0.2674	0.0640
12	MAR 26, 1982	85	0.2356	0.0068
12	JUN 25, 1982	91	0.2292	0.0082

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
12	SEP 24, 1982	91	0.2353	0.0106
12	DEC 30, 1982	97	0.2719	0.0068
12	APR 1, 1983	92	0.2252	0.0114
12	JUL 1, 1983	91	0.2729	0.0130
12	SEP 30, 1983	91	0.2711	0.0302
12	DEC 29, 1983	90	0.2494	0.0080
13	JUN 30, 1978	91	0.2346	0.0485
13	SEP 29, 1978	90	0.1975	0.0160
13	JAN 2, 1979	95	0.3284	0.1014
13	MAR 30, 1979	87	0.2247	0.0166
13	JUN 29, 1979	91	0.2299	0.0476
13	SEP 28, 1979	91	0.2091	0.0192
13	JAN 2, 1980	95	0.2655	0.0451
13	MAR 28, 1980	86	0.2788	0.0580
13	MAR 28, 1980	81	0.2469	0.0451
13	JUN 27, 1980	91	0.2777	0.1124
13	SEP 26, 1980	91	0.2516	0.1003
13	SEP 26, 1980	91	0.2225	0.0394
13	DEC 31, 1980	96	0.3443	0.1796
13	DEC 31, 1980	93	0.2211	0.0130
13	MAR 27, 1981	86	0.3762	0.1753
13	MAR 27, 1981	86	NR	
13	JUN 26, 1981	91	0.2945	0.0970
13	JUN 26, 1981	91	0.1643	0.0068
13	SEP 25, 1981	91	0.2712	0.0757
13	SEP 25, 1981	91	0.2195	0.0156
13	DEC 31, 1981	97	0.2802	0.0331
13	DEC 31, 1981	97	0.1897	0.0096
13	MAR 26, 1982	85	0.2635	0.0368
13	MAR 26, 1982	85	0.2253	0.0128
13	JUN 25, 1982	91	0.2231	0.0088
13	SEP 24, 1982	91	0.2199	0.0124
13	DEC 30, 1982	97	0.2541	0.0097
13	APR 1, 1983	92	0.2109	0.0028
13	JUL 1, 1983	91	0.2544	0.0171
13	SEP 30, 1983	91	0.2537	0.0128
13	DEC 29, 1983	90	0.2300	0.0135
14	JUN 30, 1978	91	0.2404	0.0453
14	SEP 29, 1978	90	0.1906	0.0292
14	JAN 2, 1979	95	0.3476	0.0484
14	MAR 30, 1979	87	0.2353	0.0447
14	JUN 29, 1979	91	0.2110	0.0505
14	SEP 28, 1979	91	0.1956	0.0177
14	JAN 2, 1980	95	0.2211	0.0158
14	MAR 28, 1980	86	0.2584	0.0575
14	MAR 28, 1980	81	0.2407	0.0319

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
14	JUN 27, 1980	91	NS	
14	SEP 26, 1980	91	0.2555	0.1195
14	SEP 26, 1980	91	0.2319	0.0406
14	DEC 31, 1980	96	0.2539	0.0326
14	DEC 31, 1980	93	0.2022	0.0022
14	MAR 27, 1981	86	0.5145	0.2693
14	MAR 27, 1981	86	0.2567	0.0286
14	JUN 26, 1981	91	0.2407	0.0772
14	JUN 26, 1981	91	0.1703	0.0205
14	SEP 25, 1981	91	0.2541	0.0529
14	SEP 25, 1981	91	0.2357	0.0102
14	DEC 31, 1981	97	0.3041	0.0550
14	DEC 31, 1981	97	0.1712	0.0051
14	MAR 26, 1982	85	0.2553	0.0320
14	MAR 26, 1982	85	0.2991	0.0494
14	JUN 25, 1982	91	0.2229	0.0167
14	SEP 24, 1982	91	0.2184	0.0112
14	DEC 30, 1982	97	0.2460	0.0116
14	APR 1, 1983	92	0.2065	0.0085
14	JUL 1, 1983	91	0.2574	0.0352
14	SEP 30, 1983	91	0.2586	0.0263
14	DEC 29, 1983	90	0.2306	0.0177
15	JUN 30, 1978	91	0.2525	0.0684
15	SEP 29, 1978	90	0.1925	0.0061
15	JAN 2, 1979	95	0.3797	0.2183
15	MAR 30, 1979	87	0.4744	0.0455
15	JUN 29, 1979	91	0.2387	0.0692
15	SEP 28, 1979	91	0.2223	0.0326
15	JAN 2, 1980	95	0.2687	0.0797
15	MAR 28, 1980	86	0.1730	0.2143
15	MAR 28, 1980	81	0.2901	0.0428
15	JUN 27, 1980	91	0.2544	0.1579
15	SEP 26, 1980	91	0.2541	0.1135
15	SEP 26, 1980	91	0.3341	0.1137
15	DEC 31, 1980	96	0.2927	0.0691
15	DEC 31, 1980	93	0.2685	0.0204
15	MAR 27, 1981	86	0.2674	0.3344
15	MAR 27, 1981	86	0.2581	0.0264
15	JUN 26, 1981	91	0.2997	0.0333
15	JUN 26, 1981	91	0.1846	0.0047
15	SEP 25, 1981	91	0.2418	0.0779
15	SEP 25, 1981	91	0.2301	0.0113
15	DEC 31, 1981	97	0.3049	0.0111
15	DEC 31, 1981	97	0.2303	0.0087
15	MAR 26, 1982	85	0.2712	0.0837
15	MAR 26, 1982	85	0.2815	0.0460

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
15	JUN 25, 1982	91	0.2523	0.0151
15	SEP 24, 1982	91	0.2351	0.0154
15	DEC 30, 1982	97	0.2629	0.0175
15	APR 1, 1983	92	0.2259	0.0109
15	JUL 1, 1983	91	0.2620	0.0279
15	SEP 30, 1983	91	0.2559	0.0476
15	DEC 29, 1983	90	0.2462	0.0316
16	JUN 30, 1978	91	0.2236	0.0733
16	SEP 29, 1978	90	0.2189	0.1082
16	JAN 2, 1979	95	0.3721	0.1104
16	MAR 30, 1979	87	0.2468	0.0324
16	JUN 29, 1979	91	0.2288	0.0721
16	SEP 28, 1979	91	0.2245	0.0439
16	JAN 2, 1980	95	0.2829	0.0617
16	MAR 28, 1980	86	0.2622	0.0190
16	MAR 28, 1980	81	0.2623	0.0370
16	JUN 27, 1980	91	0.3577	0.1146
16	SEP 26, 1980	91	0.2272	0.1098
16	SEP 26, 1980	91	0.2236	0.0205
16	DEC 31, 1980	96	0.2781	0.1126
16	DEC 31, 1980	93	0.2520	0.0161
16	MAR 27, 1981	86	0.2468	0.3156
16	MAR 27, 1981	86	0.2497	0.0206
16	JUN 26, 1981	91	0.3005	0.0438
16	JUN 26, 1981	91	0.1731	0.0073
16	SEP 25, 1981	91	0.2462	0.0514
16	SEP 25, 1981	91	0.2405	0.0142
16	DEC 31, 1981	97	0.3330	0.0472
16	DEC 31, 1981	97	0.1776	0.0168
16	MAR 26, 1982	85	0.2703	0.0466
16	MAR 26, 1982	85	0.2341	0.0149
16	JUN 25, 1982	91	0.2471	0.0086
16	SEP 24, 1982	91	0.2239	0.0112
16	DEC 30, 1982	97	0.2610	0.0133
16	APR 1, 1983	92	0.2189	0.0005
16	JUL 1, 1983	91	0.2588	0.0343
16	SEP 30, 1983	91	0.2545	0.0128
16	DEC 29, 1983	90	0.2307	0.0169
17	JUN 30, 1978	91	0.2420	0.1543
17	SEP 29, 1978	90	0.2028	0.0168
17	JAN 2, 1979	95	0.3629	0.1244
17	MAR 30, 1979	87	0.2293	0.0472
17	JUN 29, 1979	91	0.2223	0.0232
17	SEP 28, 1979	91	0.2288	0.0835
17	JAN 2, 1980	95	0.2687	0.0454

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
17	MAR 28, 1980	86	0.2491	0.0270
17	MAR 28, 1980	81	0.2593	0.0349
17	JUN 27, 1980	91	0.2725	0.1422
17	SEP 26, 1980	91	0.2470	0.1475
17	SEP 26, 1980	91	0.2277	0.0290
17	DEC 31, 1980	96	0.3076	0.1212
17	DEC 31, 1980	93	0.2455	0.0207
17	MAR 27, 1981	86	0.3547	0.2080
17	MAR 27, 1981	86	0.2378	0.0055
17	JUN 26, 1981	91	0.2717	0.0552
17	JUN 26, 1981	91	0.1690	0.0144
17	SEP 25, 1981	91	0.2555	0.0562
17	SEP 25, 1981	91	0.2263	0.0034
17	DEC 31, 1981	97	0.3003	0.0300
17	DEC 31, 1981	97	0.1795	0.0194
17	MAR 26, 1982	85	0.2756	0.0940
17	MAR 26, 1982	85	0.2297	0.0129
17	JUN 25, 1982	91	0.2475	0.0072
17	SEP 24, 1982	91	0.2425	0.0065
17	DEC 30, 1982	97	0.2631	0.0066
17	APR 1, 1983	92	0.2133	0.0080
17	JUL 1, 1983	91	0.2614	0.0281
17	SEP 30, 1983	91	0.2567	0.0196
17	DEC 29, 1983	90	0.2612	0.0376
18	JUN 30, 1978	91	0.3143	0.0494
18	SEP 29, 1978	90	0.1928	0.0264
18	JAN 2, 1979	95	0.3832	0.1601
18	MAR 30, 1979	87	0.2497	0.0801
18	JUN 29, 1979	91	0.2214	0.0178
18	SEP 28, 1979	91	0.2000	0.0109
18	JAN 2, 1980	95	0.2547	0.0941
18	MAR 28, 1980	86	0.2622	0.0217
18	MAR 28, 1980	81	0.2469	0.0533
18	JUN 27, 1980	91	0.2846	0.1656
18	SEP 26, 1980	91	0.2456	0.0678
18	SEP 26, 1980	91	0.2420	0.0214
18	DEC 31, 1980	96	0.2521	0.0638
18	DEC 31, 1980	93	0.2219	0.0407
18	MAR 27, 1981	86	0.2669	0.1826
18	MAR 27, 1981	86	0.2341	0.0097
18	JUN 26, 1981	91	0.2646	0.0257
18	JUN 26, 1981	91	0.1615	0.0090
18	SEP 25, 1981	91	0.2486	0.0813
18	SEP 25, 1981	91	0.2112	0.0048
18	DEC 31, 1981	97	0.3093	0.0517
18	DEC 31, 1981	97	0.2038	0.0060

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
18	MAR 26, 1982	85	0.2359	0.0616
18	MAR 26, 1982	85	0.2382	0.0131
18	JUN 25, 1982	91	0.2425	0.0217
18	SEP 24, 1982	91	0.2281	0.0104
18	DEC 30, 1982	97	0.2597	0.0111
18	APR 1, 1983	92	0.2190	0.0064
18	JUL 1, 1983	91	0.2547	0.0165
18	SEP 30, 1983	91	0.2563	0.0360
18	DEC 29, 1983	90	0.2402	0.0247
19	JUN 30, 1978	91	0.2503	0.0838
19	SEP 29, 1978	90	0.2072	0.0180
19	JAN 2, 1979	95	0.3961	0.0776
19	MAR 30, 1979	87	0.2250	0.0170
19	JUN 29, 1979	91	0.2033	0.0223
19	SEP 28, 1979	91	0.2168	0.0363
19	JAN 2, 1980	95	0.2803	0.1100
19	MAR 28, 1980	86	0.2523	0.0198
19	MAR 28, 1980	81	0.1636	0.0370
19	JUN 27, 1980	91	0.3591	0.1350
19	SEP 26, 1980	91	0.2970	0.2179
19	SEP 26, 1980	91	0.2341	0.0289
19	DEC 31, 1980	96	0.3776	0.0972
19	DEC 31, 1980	93	0.1545	0.0215
19	MAR 27, 1981	86	0.3541	0.0892
19	MAR 27, 1981	86	0.4517	0.0082
19	JUN 26, 1981	91	0.3000	0.0606
19	JUN 26, 1981	91	0.1750	0.0038
19	SEP 25, 1981	91	0.2945	0.0363
19	SEP 25, 1981	91	0.2145	0.0122
19	DEC 31, 1981	97	0.3191	0.0297
19	DEC 31, 1981	97	0.1783	0.0132
19	MAR 26, 1982	85	0.2559	0.0690
19	MAR 26, 1982	85	0.2253	0.0128
19	JUN 25, 1982	91	0.2257	0.0103
19	SEP 24, 1982	91	0.2271	0.0145
19	DEC 30, 1982	97	0.2531	0.0118
19	APR 1, 1983	92	0.2188	0.0077
19	JUL 1, 1983	91	0.2584	0.0219
19	SEP 30, 1983	91	0.2524	0.0444
19	DEC 29, 1983	90	0.2434	0.0157
20	JUN 30, 1978	91	0.2819	0.0495
20	SEP 29, 1978	90	0.1883	0.0389
20	JAN 2, 1979	95	0.3916	0.0585
20	MAR 30, 1979	87	0.2466	0.0410
20	JUN 29, 1979	91	0.2643	0.2107

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
20	SEP 28, 1979	91	0.2234	0.0267
20	JAN 2, 1980	95	0.2545	0.0768
20	MAR 28, 1980	86	0.2459	0.0288
20	MAR 28, 1980	81	0.2346	0.0349
20	JUN 27, 1980	91	0.3135	0.0984
20	SEP 26, 1980	91	0.2701	0.1451
20	SEP 26, 1980	91	0.1566	0.0125
20	DEC 31, 1980	96	0.2951	0.2239
20	DEC 31, 1980	93	0.2158	0.0066
20	MAR 27, 1981	86	0.3317	0.1496
20	MAR 27, 1981	86	0.2483	0.0176
20	JUN 26, 1981	91	0.2772	0.0300
20	JUN 26, 1981	91	0.1516	0.0358
20	SEP 25, 1981	91	0.2670	0.0210
20	SEP 25, 1981	91	0.2181	0.0087
20	DEC 31, 1981	97	0.3075	0.0647
20	DEC 31, 1981	97	0.1719	0.0180
20	MAR 26, 1982	85	0.2591	0.0242
20	MAR 26, 1982	85	0.2241	0.0178
20	JUN 25, 1982	91	0.2117	0.0145
20	SEP 24, 1982	91	0.2222	0.0086
20	DEC 30, 1982	97	0.2543	0.0159
20	APR 1, 1983	92	0.2137	0.0049
20	JUL 1, 1983	91	0.2592	0.0180
20	SEP 30, 1983	91	0.2481	0.0129
20	DEC 29, 1983	90	0.2386	0.0100
21	MAR 28, 1980	81	0.2778	0.0428
21	SEP 26, 1980	91	0.2005	0.0145
21	DEC 31, 1980	93	0.2473	0.0112
21	MAR 27, 1981	86	0.2544	0.0347
21	SEP 24, 1982	91	0.2102	0.0113
21	DEC 30, 1982	97	0.2349	0.0069
21	APR 1, 1983	92	0.2142	0.0629
21	JUL 1, 1983	91	0.2351	0.0143
21	SEP 30, 1983	91	0.2388	0.0104
21	DEC 30, 1983	91	0.2304	0.0623
22	JUN 30, 1978	91	0.2569	0.0607
22	SEP 29, 1978	90	0.2028	0.0340
22	JAN 2, 1979	95	0.3026	0.0397
22	MAR 30, 1979	87	0.2178	0.0097
22	JUN 29, 1979	91	0.2005	0.0399
22	SEP 28, 1979	91	0.2132	0.0194
22	JAN 2, 1980	95	0.3450	0.2028
22	MAR 28, 1980	86	0.2427	0.0152
22	MAR 28, 1980	81	0.2407	0.0428

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
22	JUN 27, 1980	91	0.3462	0.3133
22	SEP 26, 1980	91	0.2585	0.0856
22	SEP 26, 1980	91	0.2343	0.0270
22	DEC 31, 1980	96	0.3010	0.1237
22	DEC 31, 1980	93	0.2222	0.0195
22	MAR 27, 1981	86	0.2230	0.3706
22	MAR 27, 1981	86	0.2433	0.0150
22	JUN 26, 1981	91	0.2690	0.0307
22	JUN 26, 1981	91	0.1574	0.0516
22	SEP 25, 1981	91	0.2602	0.0457
22	SEP 25, 1981	91	0.2153	0.0074
22	DEC 31, 1981	97	0.3186	0.0685
22	DEC 31, 1981	97	0.1978	0.0142
22	MAR 26, 1982	85	0.2659	0.0350
22	MAR 26, 1982	85	0.2291	0.0095
22	JUN 25, 1982	91	0.2275	0.0123
22	SEP 24, 1982	91	0.2252	0.0107
22	DEC 30, 1982	97	0.2557	0.0252
22	APR 1, 1983	92	0.2145	0.0070
22	JUL 1, 1983	91	0.2525	0.0303
22	SEP 30, 1983	91	0.2628	0.0738
22	DEC 30, 1983	91	0.2444	0.0187
23	MAR 28, 1980	81	0.2500	0.0370
23	SEP 26, 1980	91	0.1478	0.0236
23	DEC 31, 1980	93	0.2043	0.0134
23	MAR 27, 1981	86	0.2996	0.0736
23	SEP 24, 1982	91	0.2219	0.0177
23	DEC 30, 1982	97	0.2532	0.0140
23	APR 1, 1983	92	0.2163	0.0025
23	JUL 1, 1983	91	0.2559	0.0270
23	SEP 30, 1983	91	0.2437	0.0132
23	DEC 29, 1983	90	0.2347	0.0162
24	JUN 30, 1978	91	0.2379	0.0652
24	SEP 29, 1978	90	0.1969	0.0131
24	JAN 2, 1979	95	0.3237	0.0705
24	MAR 30, 1979	87	0.2075	0.0158
24	JUN 29, 1979	91	0.1992	0.0160
24	SEP 28, 1979	91	0.2126	0.0460
24	JAN 2, 1980	95	0.2324	0.0273
24	MAR 28, 1980	86	0.2320	0.0663
24	MAR 28, 1980	81	0.2438	0.0370
24	JUN 27, 1980	91	0.3055	0.1266
24	SEP 26, 1980	91	0.3124	0.1745
24	SEP 26, 1980	91	0.2404	0.0586
24	DEC 31, 1980	96	0.3156	0.1216

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
24	DEC 31, 1980	93	0.2168	0.0062
24	MAR 27, 1981	86	0.3517	0.0905
24	MAR 27, 1981	86	0.2411	0.0110
24	JUN 26, 1981	91	0.2753	0.0428
24	JUN 26, 1981	91	0.4338	0.3908
24	SEP 25, 1981	91	0.2486	0.0227
24	SEP 25, 1981	91	0.2002	0.0153
24	DEC 31, 1981	97	0.2938	0.0231
24	DEC 31, 1981	97	0.1490	0.0454
24	MAR 26, 1982	85	0.2615	0.0416
24	MAR 26, 1982	85	0.2635	0.0285
24	JUN 25, 1982	91	0.2251	0.0111
24	SEP 24, 1982	91	0.2270	0.0103
24	DEC 30, 1982	97	0.2546	0.0087
24	APR 1, 1983	92	0.2267	0.0145
24	JUL 1, 1983	91	0.2540	0.0195
24	SEP 30, 1983	91	0.2403	0.0322
24	DEC 29, 1983	90	0.2349	0.0220
25	JUN 30, 1978	91	0.2720	0.0467
25	SEP 29, 1978	90	0.1844	0.0828
25	JAN 2, 1979	95	0.3316	0.0810
25	MAR 30, 1979	87	0.2193	0.0279
25	JUN 29, 1979	91	0.2140	0.0470
25	SEP 28, 1979	91	0.2049	0.0534
25	JAN 2, 1980	95	0.2939	0.0728
25	MAR 28, 1980	86	0.2570	0.0195
25	MAR 28, 1980	81	0.2438	0.0509
25	JUN 27, 1980	91	0.2986	0.1589
25	SEP 26, 1980	91	0.2821	0.0440
25	SEP 26, 1980	91	0.2478	0.0171
25	DEC 31, 1980	96	0.4276	0.1916
25	DEC 31, 1980	93	0.2158	0.0143
25	MAR 27, 1981	86	0.3738	0.4410
25	MAR 27, 1981	86	0.2669	0.0177
25	JUN 26, 1981	91	0.3437	0.0597
25	JUN 26, 1981	91	0.2414	0.2206
25	SEP 25, 1981	91	0.2805	0.0244
25	SEP 25, 1981	91	0.2332	0.0101
25	DEC 31, 1981	97	0.3286	0.0339
25	DEC 31, 1981	97	0.2105	0.0436
25	MAR 26, 1982	85	0.2474	0.0212
25	MAR 26, 1982	85	0.2818	0.0172
25	JUN 25, 1982	91	0.2364	0.0174
25	SEP 24, 1982	91	0.2379	0.0140
25	DEC 30, 1982	97	0.2688	0.0113
25	APR 1, 1983	92	0.2277	0.0068

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
25	JUL 1, 1983	91	0.2749	0.0148
25	SEP 30, 1983	91	0.2644	0.0151
25	DEC 29, 1983	90	0.2469	0.0143
40	JUN 25, 1982	91	0.2046	0.0189
40	SEP 24, 1982	91	0.2082	0.0131
40	DEC 30, 1982	97	0.2253	0.0124
40	APR 1, 1983	92	0.1902	0.0042
40	JUL 1, 1983	91	0.2340	0.0150
40	SEP 30, 1983	91	0.2393	0.0182
40	DEC 30, 1983	91	0.2273	0.0135
41	JUN 25, 1982	91	NS	
41	SEP 24, 1982	91	0.2451	0.0152
41	DEC 30, 1982	97	0.2693	0.0183
41	APR 1, 1983	92	0.2200	0.0058
41	JUL 1, 1983	91	0.2782	0.0165
41	SEP 30, 1983	91	0.2739	0.0177
41	DEC 30, 1983	91	0.2660	0.0221
42	JUN 25, 1982	91	0.2355	0.0181
42	SEP 24, 1982	91	0.2312	0.0107
42	DEC 30, 1982	97	0.2630	0.0116
42	APR 1, 1983	92	0.2220	0.0043
42	JUL 1, 1983	91	0.2647	0.0192
42	SEP 30, 1983	91	0.2586	0.0611
42	DEC 30, 1983	91	NS	
43	JUN 25, 1982	91	0.2251	0.0074
43	SEP 24, 1982	91	0.2365	0.0122
43	DEC 30, 1982	97	0.2627	0.0062
43	APR 1, 1983	92	NS	
43	JUL 1, 1983	91	0.2740	0.0229
43	SEP 30, 1983	91	0.2668	0.0365
43	DEC 30, 1983	91	0.2524	0.0068
44	JUN 25, 1982	91	0.2153	0.0191
44	SEP 24, 1982	91	0.2195	0.0126
44	DEC 30, 1982	97	0.2441	0.0117
44	APR 1, 1983	92	0.2137	0.0061
44	JUL 1, 1983	91	0.2547	0.0200
44	SEP 30, 1983	91	0.2434	0.0267
44	DEC 30, 1983	91	0.2371	0.0215
45	JUN 25, 1982	91	0.2149	0.0149
45	SEP 24, 1982	91	0.2254	0.0144
45	DEC 30, 1982	97	0.2452	0.0115
45	APR 1, 1983	92	0.2181	0.0057

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
45	JUL 1, 1983	91	0.2537	0.0209
45	SEP 30, 1983	91	0.2433	0.0705
45	DEC 30, 1983	91	0.2327	0.0210
46	JUN 25, 1982	91	NS	
46	SEP 24, 1982	91	NS	
46	DEC 30, 1982	97	0.2896	0.0070
46	APR 1, 1983	92	0.2465	0.0064
46	JUL 1, 1983	91	0.3011	0.0246
46	SEP 30, 1983	91	0.3071	0.0230
46	DEC 30, 1983	91	0.2824	0.0240
47	APR 1, 1983	92	0.1932	0.0036
47	JUL 1, 1983	91	0.2294	0.0220
47	SEP 30, 1983	91	0.2292	0.0133
47	DEC 30, 1983	91	0.2191	0.0261
49	DEC 29, 1983	90	0.2391	0.0301
50	DEC 29, 1983	90	0.2223	0.0164
51	JUN 30, 1978	91	0.2385	0.0754
51	SEP 29, 1978	90	0.1986	0.0331
51	JAN 2, 1979	95	0.2879	0.0548
51	MAR 30, 1979	87	0.1977	0.0301
51	JUN 29, 1979	91	0.1901	0.0348
51	SEP 28, 1979	91	0.2044	0.0433
51	JAN 2, 1980	95	0.2671	0.0471
51	MAR 28, 1980	86	0.2488	0.0163
51	JUN 27, 1980	91	0.2810	0.1565
51	SEP 26, 1980	91	0.2206	0.0206
51	DEC 31, 1980	96	0.3599	0.1878
51	MAR 27, 1981	86	0.2515	0.0768
51	JUN 26, 1981	91	0.2571	0.0564
51	JUN 26, 1981	91	0.1755	0.0073
51	SEP 25, 1981	91	0.2755	0.1191
51	SEP 25, 1981	91	0.2083	0.0147
51	DEC 31, 1981	97	0.3067	0.0166
51	DEC 31, 1981	97	0.1614	0.0578
51	MAR 26, 1982	85	0.2415	0.0135
51	MAR 26, 1982	85	0.2147	0.0071
51	JUN 25, 1982	91	0.2235	0.0405
51	DEC 29, 1983	90	0.2334	0.0140
53	DEC 30, 1983	91	0.2730	0.0392

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
54	DEC 30, 1983	91	0.2602	0.0234
55	DEC 29, 1983	90	0.2257	0.0171
56	DEC 29, 1983	90	0.2379	0.0204
91	JUN 30, 1978	91	0.2473	0.0496
91	SEP 29, 1978	90	0.2242	0.0441
91	JAN 2, 1979	95	0.2821	0.0317
91	MAR 30, 1979	87	0.2333	0.0417
91	JUN 29, 1979	91	0.1775	0.0469
91	SEP 28, 1979	91	0.1959	0.0263
91	JAN 2, 1980	95	0.2637	0.0585
91	MAR 28, 1980	86	0.2451	0.0753
91	JUN 27, 1980	91	0.3602	0.2377
91	SEP 26, 1980	91	0.3140	0.1972
91	DEC 31, 1980	96	0.3083	0.0901
91	MAR 27, 1981	86	0.3558	0.2442
91	JUN 26, 1981	91	0.3187	0.0595
91	JUN 26, 1981	91	0.1758	0.0095
91	SEP 25, 1981	91	0.2676	0.0343
91	SEP 25, 1981	91	0.2216	0.0075
91	DEC 31, 1981	97	0.3309	0.0309
91	DEC 31, 1981	97	0.1755	0.0096
91	MAR 26, 1982	85	0.2732	0.0460
91	MAR 26, 1982	85	0.2362	0.0127
91	JUN 25, 1982	91	0.2146	0.0120
S 1	JUL 1, 1983	91	0.2495	0.0159
S 1	SEP 30, 1983	91	0.2497	0.0482
S 1	DEC 29, 1983	90	0.2234	0.0275
S 2	JUL 1, 1983	91	0.2575	0.0044
S 2	SEP 30, 1983	91	0.2510	0.0159
S 2	DEC 29, 1983	90	0.2399	0.0386
S 3	JUL 1, 1983	91	0.2283	0.0322
S 3	SEP 30, 1983	91	0.2393	0.0152
S 3	DEC 29, 1983	90	0.2163	0.0207
S 4	JUL 1, 1983	91	0.2649	0.0145
S 4	SEP 30, 1983	91	0.2686	0.0302
S 4	DEC 29, 1983	90	0.2561	0.0433
S 5	JUL 1, 1983	91	0.2389	0.0342
S 5	SEP 30, 1983	91	0.2236	0.0188

Table 4-8.0
(continued)

QUARTERLY TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
S 5	DEC 29, 1983	90	0.2116	0.0089
S 6	JUL 1, 1983	91	0.2516	0.0239
S 6	SEP 30, 1983	91	0.2401	0.0184
S 6	DEC 29, 1983	90	0.2341	0.0222
S 7	JUL 1, 1983	91	0.2525	0.0154
S 7	SEP 30, 1983	91	0.2575	0.0218
S 7	DEC 29, 1983	90	0.2377	0.0144
S 8	JUL 1, 1983	91	0.2571	0.0166
S 8	SEP 30, 1983	91	0.2427	0.0174
S 8	DEC 29, 1983	90	0.2425	0.0391
S 9	JUL 1, 1983	91	0.2617	0.0174
S 9	SEP 30, 1983	91	0.2514	0.0301
S 9	DEC 29, 1983	90	0.2452	0.0774
S 10	JUL 1, 1983	91	0.2501	0.0170
S 10	SEP 30, 1983	91	0.2448	0.0246
S 10	DEC 29, 1983	90	0.2345	0.0282
S 11	JUL 1, 1983	91	0.2584	0.0153
S 11	SEP 30, 1983	91	0.2499	0.0208
S 11	DEC 29, 1983	90	0.2217	0.0617
S 12	JUL 1, 1983	91	0.2696	0.0269
S 12	SEP 30, 1983	91	0.2604	0.0219
S 12	DEC 29, 1983	90	0.2412	0.0367
S 13	JUL 1, 1983	91	0.2616	0.0303
S 13	SEP 30, 1983	91	0.2533	0.0152
S 13	DEC 29, 1983	90	0.2382	0.0120
S 14	JUL 1, 1983	91	0.2520	0.0354
S 14	SEP 30, 1983	91	0.2484	0.0189
S 14	DEC 29, 1983	90	0.2326	0.0296
S 15	JUL 1, 1983	91	0.2666	0.0318
S 15	SEP 30, 1983	91	0.2655	0.0132
S 15	DEC 29, 1983	90	0.2387	0.0259
S 16	JUL 1, 1983	91	0.2439	0.0157
S 16	SEP 30, 1983	91	0.2573	0.0128
S 16	DEC 29, 1983	90	0.2455	0.0414

Table 4-8.1

OTHER TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
1	JAN 2, 1979	307	0.1941	0.0209
1	JAN 2, 1980	365	0.2336	0.0185
1	DEC 31, 1981	364	0.2393	0.0205
1	MAR 30, 1981	368	0.3533	0.0968
1	DEC 31, 1981	377	0.2309	0.0564
1	MAR 26, 1982	364	0.1988	0.0138
1	APR 1, 1983	371	0.2339	0.0096
1	DEC 30, 1983	273	0.2702	0.0370
2	JAN 2, 1979	307	0.2340	0.0870
2	JAN 2, 1980	365	0.2424	0.0292
2	DEC 31, 1981	364	0.2544	0.0682
2	MAR 30, 1981	368	0.2145	0.0435
2	DEC 31, 1981	377	0.2364	0.0397
2	MAR 26, 1982	364	0.1896	0.0175
2	APR 1, 1983	371	0.2286	0.0132
2	DEC 29, 1983	272	0.2316	0.0147
3	JAN 2, 1979	307	0.2115	0.0960
3	JAN 2, 1980	365	0.2338	0.0099
3	DEC 31, 1981	364	0.2275	0.0590
3	MAR 30, 1981	368	0.1928	0.0945
3	DEC 31, 1981	377	0.2293	0.0337
3	MAR 26, 1982	364	0.1843	0.0107
3	APR 1, 1983	371	0.2245	0.0103
3	DEC 29, 1983	272	0.2349	0.0178
4	JAN 2, 1979	307	0.1620	0.0407
4	JAN 2, 1980	365	0.2425	0.0498
4	DEC 31, 1981	364	0.2557	0.1140
4	MAR 30, 1981	368	0.1148	0.0132
4	DEC 31, 1981	377	0.2158	0.0381
4	MAR 26, 1982	364	0.1710	0.0104
4	APR 1, 1983	371	0.2040	0.0100
4	DEC 30, 1983	273	0.2755	0.0570
5	JAN 2, 1979	307	0.3055	0.1824
5	JAN 2, 1980	365	0.2218	0.0109
5	DEC 31, 1981	364	0.2598	0.1493
5	MAR 30, 1981	368	0.2137	0.0105
5	DEC 31, 1981	377	0.2521	0.0444
5	MAR 26, 1982	364	0.1808	0.0097
5	APR 1, 1983	371	0.2227	0.0063
5	DEC 30, 1983	273	0.2565	0.0116
6	JAN 2, 1979	307	0.1729	0.0320
6	JAN 2, 1980	365	0.2190	0.0183

Table 4-8.1
(continued)

OTHER TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
6	DEC 31, 1981	364	0.2196	0.0651
6	MAR 30, 1981	368	0.2099	0.0216
6	DEC 31, 1981	377	0.2085	0.0228
6	MAR 26, 1982	364	0.1776	0.0175
6	APR 1, 1983	371	0.2186	0.0108
6	DEC 29, 1983	272	0.2300	0.0087
7	JAN 2, 1979	307	0.2267	0.0911
7	JAN 2, 1980	365	0.2473	0.1290
7	DEC 31, 1981	364	0.2469	0.1101
7	MAR 30, 1981	368	0.2251	0.0102
7	DEC 31, 1981	377	0.2253	0.0408
7	MAR 26, 1982	364	0.1986	0.0131
7	APR 1, 1983	371	0.2309	0.0117
7	DEC 29, 1983	272	0.2373	0.0072
8	JAN 2, 1979	307	0.3107	0.0787
8	JAN 2, 1980	365	0.2677	0.0060
8	DEC 31, 1981	364	0.2679	0.0216
8	MAR 30, 1981	368	0.2089	0.0573
8	DEC 31, 1981	377	0.2513	0.0374
8	MAR 26, 1982	364	0.2159	0.0117
8	APR 1, 1983	371	0.2592	0.0175
8	DEC 30, 1983	273	0.2702	0.0099
9	JAN 2, 1979	307	0.2404	0.0451
9	JAN 2, 1980	365	0.2122	0.0218
9	DEC 31, 1981	364	0.2481	0.0075
9	MAR 30, 1981	368	0.2196	0.0135
9	DEC 31, 1981	377	0.2108	0.0179
9	MAR 26, 1982	364	0.1775	0.0142
9	APR 1, 1983	371	0.2137	0.0103
9	DEC 30, 1983	273	0.2235	0.0134
10	JAN 2, 1979	307	0.2312	0.0403
10	JAN 2, 1980	365	0.2358	0.1708
10	DEC 31, 1981	364	0.2309	0.0343
10	MAR 30, 1981	368	0.2775	0.2212
10	DEC 31, 1981	377	0.2167	0.0543
10	MAR 26, 1982	364	0.1939	0.0166
10	APR 1, 1983	371	0.2247	0.0051
10	DEC 29, 1983	272	0.2376	0.0143
11	JAN 2, 1979	307	0.2486	0.0575
11	JAN 2, 1980	365	0.2901	0.1047
11	DEC 31, 1981	364	0.2170	0.0740
11	MAR 30, 1981	368	0.1730	0.0157

Table 4-8.1
(continued)

OTHER TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
11	DEC 31, 1981	377	0.2200	0.0338
11	MAR 26, 1982	364	0.1941	0.0074
11	APR 1, 1983	371	0.2275	0.0029
11	DEC 29, 1983	272	0.2418	0.0131
12	JAN 2, 1979	307	0.3155	0.0794
12	JAN 2, 1980	365	0.2646	0.0236
12	DEC 31, 1981	364	0.2478	0.0313
12	MAR 30, 1981	368	0.2117	0.0294
12	DEC 31, 1981	377	NS	
12	MAR 26, 1982	364	0.2092	0.0091
12	APR 1, 1983	371	0.2528	0.0132
12	DEC 29, 1983	272	0.2580	0.0122
13	JAN 2, 1979	307	0.2199	0.0327
13	JAN 2, 1980	365	0.2525	0.0306
13	DEC 31, 1981	364	0.2704	0.0799
13	MAR 30, 1981	368	0.2300	0.0514
13	DEC 31, 1981	377	0.2103	0.0413
13	MAR 26, 1982	364	0.1933	0.0127
13	APR 1, 1983	371	0.2340	0.0127
13	DEC 29, 1983	272	0.2411	0.0046
14	JAN 2, 1979	307	0.2437	0.0533
14	JAN 2, 1980	365	0.2459	0.0161
14	DEC 31, 1981	364	9.9999	9.9999
14	MAR 30, 1981	368	0.2261	0.0270
14	DEC 31, 1981	377	0.1944	0.0709
14	MAR 26, 1982	364	0.1913	0.0122
14	APR 1, 1983	371	0.2315	0.0163
14	DEC 29, 1983	272	0.2363	0.0140
15	JAN 2, 1979	307	0.2293	0.0546
15	JAN 2, 1980	365	0.2523	0.0085
15	DEC 31, 1981	364	0.2223	0.0604
15	MAR 30, 1981	368	0.2060	0.0077
15	DEC 31, 1981	377	0.2210	0.0512
15	MAR 26, 1982	364	0.2036	0.0105
15	APR 1, 1983	371	NS	
15	DEC 29, 1983	272	0.2598	0.0084
16	JAN 2, 1979	307	0.1958	0.0574
16	JAN 2, 1980	365	0.2502	0.0187
16	DEC 31, 1981	364	0.2364	0.0513
16	MAR 30, 1981	368	0.2247	0.0272
16	DEC 31, 1981	377	0.2005	0.0605
16	MAR 26, 1982	364	0.2019	0.0221

Table 4-8.1
(continued)

OTHER TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
16	APR 1, 1983	371	0.2455	0.0142
16	DEC 29, 1983	272	0.2516	0.0163
17	JAN 2, 1979	307	0.1891	0.0901
17	JAN 2, 1980	365	0.2618	0.0160
17	DEC 31, 1981	364	0.2563	0.0439
17	MAR 30, 1981	368	0.2077	0.0278
17	DEC 31, 1981	377	0.2420	0.0758
17	MAR 26, 1982	364	0.1981	0.0088
17	APR 1, 1983	371	0.2345	0.0085
17	DEC 29, 1983	272	0.2506	0.0081
18	JAN 2, 1979	307	0.2232	0.0268
18	JAN 2, 1980	365	0.2476	0.0297
18	DEC 31, 1981	364	0.2651	0.0514
18	MAR 30, 1981	368	0.2878	0.0823
18	DEC 31, 1981	377	0.2535	0.0156
18	MAR 26, 1982	364	0.1946	0.0209
18	APR 1, 1983	371	0.2370	0.0105
18	DEC 29, 1983	272	0.2675	0.0172
19	JAN 2, 1979	307	0.2211	0.1087
19	JAN 2, 1980	365	0.2707	0.0307
19	DEC 31, 1981	364	0.2581	0.0571
19	MAR 30, 1981	368	0.2327	0.0549
19	DEC 31, 1981	377	0.2115	0.0199
19	MAR 26, 1982	364	0.1964	0.0076
19	APR 1, 1983	371	0.2346	0.0088
19	DEC 30, 1983	273	NS	NS
20	JAN 2, 1979	307	0.1978	0.0453
20	JAN 2, 1980	365	0.2243	0.0334
20	DEC 31, 1981	364	0.2729	0.0370
20	MAR 30, 1981	368	0.2051	0.0357
20	DEC 31, 1981	377	0.2354	0.0940
20	MAR 26, 1982	364	0.1958	0.0127
20	APR 1, 1983	371	0.2340	0.0114
20	DEC 29, 1983	272	0.2467	0.0277
20	DEC 30, 1983	273	0.2294	0.0134
21	APR 1, 1983	371	0.2184	0.0115
21	DEC 30, 1983	273	0.2308	0.0123
22	JAN 2, 1979	307	0.2568	0.0821
22	JAN 2, 1980	365	0.3096	0.1514
22	DEC 31, 1981	364	0.2503	0.0133
22	MAR 30, 1981	368	0.1906	0.0094

Table 4-8.1
(continued)

OTHER TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
22	DEC 31, 1981	377	0.2195	0.0588
22	MAR 26, 1982	364	0.1946	0.0135
22	APR 1, 1983	371	0.2323	0.0098
22	DEC 29, 1983	272	0.2413	0.0027
23	APR 1, 1983	371	0.2289	0.0113
23	DEC 29, 1983	272	0.2386	0.0065
24	JAN 2, 1979	307	0.2524	0.1511
24	JAN 2, 1980	365	0.2655	0.0678
24	DEC 31, 1981	364	0.2611	0.0401
24	MAR 30, 1981	368	0.0792	0.0278
24	DEC 31, 1981	377	0.2359	0.0405
24	MAR 26, 1982	364	0.1964	0.0100
24	APR 1, 1983	371	0.2336	0.0103
24	DEC 29, 1983	272	0.2410	0.0193
25	JAN 2, 1979	307	0.2625	0.0791
25	JAN 2, 1980	365	0.2655	0.0678
25	DEC 31, 1981	364	0.3018	0.0448
25	MAR 30, 1981	368	NS	NS
25	DEC 31, 1981	377	0.2332	0.0396
25	MAR 26, 1982	364	0.2174	0.0396
25	APR 1, 1983	371	0.2481	0.0142
25	DEC 29, 1983	272	0.2613	0.0148
40	APR 1, 1983	371	0.2097	0.0099
41	APR 1, 1983	371	NS	NS
41	DEC 30, 1983	273	0.2635	0.0154
42	APR 1, 1983	371	0.2351	0.0158
42	DEC 30, 1983	273	NS	NS
43	DEC 30, 1983	273	0.2417	0.0222
44	APR 1, 1983	371	0.2287	0.0126
44	DEC 30, 1983	273	0.2453	0.0309
45	APR 1, 1983	371	0.2261	0.0145
45	DEC 30, 1983	273	0.2360	0.0212
46	APR 1, 1983	371	0.2806	0.0115
46	DEC 30, 1983	273	0.2946	0.0086
47	DEC 30, 1983	273	0.2204	0.0321

Table 4-8.1
(continued)

OTHER TLD

STATION	END DATE	ELAPSED DAYS	DOSE RATE (MR/DAY)	STANDARD DEVIATION
51	JAN 2, 1979	307	0.3493	0.1874
51	JAN 2, 1980	365	0.2203	0.0139
51	DEC 31, 1981	364	0.2854	0.0457
51	MAR 30, 1981	368	0.2075	0.0224
51	DEC 31, 1981	377	0.2324	0.0275
51	MAR 26, 1982	364	0.1905	0.0124
91	JAN 2, 1979	307	0.2761	0.1110
91	JAN 2, 1980	365	0.2434	0.0145
91	DEC 31, 1981	364	0.2635	0.0554
91	MAR 30, 1981	368	0.1997	0.0180
91	DEC 31, 1981	377	0.2141	0.0497
91	MAR.26, 1982	364	0.1964	0.0139
S 1	DEC 29, 1983	272	0.2412	0.0242
S 2	DEC 29, 1983	272	0.2507	0.0190
S 3	DEC 29, 1983	272	0.2293	0.0129
S 4	DEC 30, 1983	273	NS	NS
S 5	DEC 29, 1983	272	0.2365	0.0106
S 6	DEC 29, 1983	272	0.2418	0.0200
S 7	DEC 29, 1983	272	0.2463	0.0221
S 8	DEC 29, 1983	272	0.2464	0.0377
S 9	DEC 29, 1983	272	0.2520	0.0131
S 10	DEC 29, 1983	272	0.2337	0.0506
S 11	DEC 29, 1983	272	0.2476	0.0063
S 12	DEC 29, 1983	272	0.2460	0.0287
S 13	DEC 29, 1983	272	0.2496	0.0216
S 14	DEC 29, 1983	272	0.2303	0.0203
S 15	DEC 29, 1983	272	0.2572	0.0145
S 16	DEC 29, 1983	272	0.2401	0.0150

5.0 QUALITY CONTROL

A number of steps are involved in establishing a viable environmental surveillance program that ensures that the data obtained is representative of actual concentration in the environment. First, sufficient data must be obtained to establish a definative base of historical data for each sample location and each media. Secondly, sample collection must be directed by well-established, approved procedures to assure that consistent sampling methods are used at all locations for a given media to minimize the effects of bias inherent in the sample collection process. These procedures, in conjunction with a program of analytical quality control, are necessary to maintain and demonstrate the required precision and accuracy for evaluation of environment impacts.

Section 5.1 contains quality control data, extracted from the various monthly and annual analytical reports provided by the Eberline laboratories. Section 5.2 contains the 1983 NUS Quality Control Report. Section 5.3 summarizes the quality control process for U.S. Testing's dosimetric service. Section 5.4 represents the quality control program for environmental dosimeters in the Supply System's dosimeter laboratory.

The Washington State Radiation Control Section, in support of the Energy Facility Site Evaluation Council, has established an auditing program involving the analysis of split or replicate samples from the Supply Systems sampling program. This state program provides an additional quality control check for the Supply System's REMP. Results of the state's analyses are compared with reported Supply System analyses and reported annually in the "Environmental Radiation Program Annual Report".

5.1 Eberline Laboratory Analytical Sample Quality Control

Five (5) types of samples are analyzed by the laboratory for purposes of analytical quality control. These samples are 1) blanks, 2) spikes, 3) standards, 4) intercalibration or intercomparison, and 5) splits. A blank, spike or split sample is processed for each ten (10) routine samples of a specific analysis type. Standard samples are processed only as required by procedural calibrations. Intercalibration or intercomparison samples are processed as available from the initiating laboratory. All quality control samples are processed in accordance with routine procedures for analyses of the given sample media matrix.[27]

The following tables summarize by year the quality control sample data reported by Eberline during the tenure of its contract with the Washington Public Power Supply System.

Table 5-1.0

QUALITY CONTROL - JULY 1978

SPLIT SAMPLES

Sample Type	Analysis	Aliquot A			Aliquot B			Units
CW	Gross β	3	±	1	5	±	2	pCi/l
Milk	I-131		≤	0.5		≤	0.5	pCi/l
WW	Sr-89		<	10		<	10	pCi/l
WW	Sr-90		<	2		<	2	pCi/l
Milk	I-131		<	0.5		<	0.5	pCi/l
Milk	I-131		<	0.5		<	0.5	pCi/l
Milk	I-131		<	0.5		<	0.5	pCi/l
SW	Gross β	5	±	2	5	±	2	pCi/l
Milk	I-131		≤	0.5		≤	0.5	pCi/l
Milk	I-131		<	0.5		<	0.5	PCi/l
LW	H-3	1.0	±	0.1	0.9	±	0.4	pCi/ml
WW	H-3	17	±	2	17	±	2	pCi/ml
SW	Gross β	7	±	2	6	±	2	pCi/l
Water	Sr-90	51	±	5	48	±	5	pCi/ml
Water	H-3	150	±	15	140	±	15	pCi/ml
Water	Sr-90	54	±	5	50	±	5	pCi/ml
Water	H-3	140	±	14	150	±	15	pCi/ml
Water	Sr-90	.04	±	.02	.04	±	.02	pCi/ml
Water	H-3	310	±	30	310	±	30	pCi/ml
Water	Sr-90	89	±	9	94	±	9	pCi/ml
Water	H-3	245	±	25	240	±	25	pCi/ml
Water	Sr-90	.05	±	.01	.03	±	.01	pCi/ml
Water	H-3	680	±	70	700	±	70	pCi/ml
Water	H-3	380	±	40	380	±	40	pCi/ml
Water	Sr-90	.09	±	.01	.11	±	.01	pCi/ml
Water	H-3	8.6	±	0.9	8.6	±	0.9	pCi/ml
Water	Sr-90	.09	±	.02	.09	±	.02	pCi/ml
Water	H-3	445	±	45	443	±	40	pCi/ml
Water	Sr-90	.14	±	.03	.16	±	.02	pCi/ml
Water	H-3	1160	±	120	1140	±	120	pCi/ml
Water	Sr-90	.04	±	.01	.05	±	.01	pCi/ml
Water	H-3	35	±	4	35	±	4	pCi/ml
Water	Sr-90		≤	.02		≤	.02	pCi/ml
Water	H-3	750	±	75	745	±	75	pCi/ml
Water	H-3	3.5	±	0.5	3.8	±	0.5	pCi/ml

Table 5-1.0
(continued)

QUALITY CONTROL - JULY 1978

BLANK SAMPLES

Sample Type	Analysis	Measured Activity		Units
DI Water	Gross β	< 1		pCi/l
AP	Sr-89	< 1	E-06	uCi/filter
AP	Sr-90	< 1	E-06	uCi/filter
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 2		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
Charcoal Cartridge	I-131	< .005		pCi/m3
Charcoal Cartridge	I-131	< .005		pCi/m3
Charcoal Cartridge	I-131	< .004		pCi/m3
Charcoal Cartridge	I-131	< .003		pCi/m3
DI Water	Gross β	< 1		pCi/l
AP	Sr-89	< 1	E-06	uCi/filter
AP	Sr-90	< 1	E-06	uCi/filter
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
Charcoal Cartridge	I-131	< .01		pCi/m3
Charcoal Cartridge	I-131	< .01		pCi/m3
Charcoal Cartridge	I-131	< .004		pCi/m3
Charcoal Cartridge	I-131	< .004		pCi/m3
Charcoal Cartridge	I-131	< .002		pCi/m3
Charcoal Cartridge	I-131	< .01		pCi/m3
Charcoal Cartridge	I-131	< .005		pCi/m3

Table 5-1.0
(continued)

QUALITY CONTROL - JULY 1978

BLANK SAMPLES (continued)

Sample Type	Analysis	Measured Activity	Units
Charcoal Cartridge	I-131	< .02	pCi/m3
Charcoal Cartridge	I-131	< .005	pCi/m3
Charcoal Cartridge	I-131	< .005	pCi/m3
DI Water	Gross β	< 1	pCi/l
DI Water	Gross β	< 1	pCi/l
DI Water	I-131	< 0.1	pCi/l
Charcoal Cartridge	I-131	< .004	pCi/m3
Charcoal Cartridge	I-131	< .003	pCi/l
DI Water	I-131	< 0.2	pCi/l
Charcoal Cartridge	I-131	< .005	pCi/m3
DI Water	Gross β	< 1	pCi/l
DI Water	I-131	< 1	pCi/l
DI Water	I-131	< 1	pCi/l

SPIKED SAMPLES

Sample Type	Analysis	Known Activity	Measured Activity	Units
Water	Cs-137	18	16 ± 3	pCi/l
Water	Cs-137	36	36 ± 4	pCi/l
Water	Cs-137	36	37 ± 4	pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - AUGUST 1978

SPLIT SAMPLES

Sample Type	Analysis	Aliquot A	Aliquot B	Units
Vegetation	Sr-90	< 0.5	< 0.5	pCi/g
Milk	I-131	< 0.5	< 0.5	pCi/l
Milk	I-131	< 0.5	< 0.5	pCi/l
Milk	Sr-89	< 10	< 10	pCi/l
Milk	Sr-90	3 ± 1	2 ± 1	pCi/l
Milk	Sr-89	≤ 5	≤ 5	pCi/l
Milk	Sr-90	6 ± 2	6 ± 2	pCi/l
Milk	I-131	≤ 0.5	≤ 0.5	pCi/l
Water	Sr-90	7.1 ± 0.7	6.6 ± 0.7	pCi/ml
Water	Sr-90	5.0 ± 0.5	4.9 ± 0.5	pCi/ml
Water	Sr-90	11.0 ± 1.1	11.5 ± 1.2	pCi/ml
Water	Sr-90	24 ± 2	22 ± 2	pCi/ml
Water	Sr-90	12 ± 1	13 ± 1	pCi/ml
Water	Sr-90	12.5 ± 1.3	11.5 ± 1.2	pCi/ml
Water	Sr-90	5.7 ± 0.6	4.9 ± 0.5	pCi/ml
Water	Sr-90	5 ± 1	4 ± 1	pCi/l
WW	Gross β	3 ± 1	3 ± 1	pCi/l
WW	Gross α	≤ 1	≤ 1	pCi/l
Milk	I-131	< 0.5	< 0.5	pCi/l
CW	Gross β	3 + 2	3 + 2	pCi/l
Soil	Sr-90	.18 ± .03	.25 ± .03	pCi/g
Water	Gross α	30 ± 3	30 ± 3	pCi/l
Water	Gross β	20 ± 3	22 ± 3	pCi/l
SW	Gross β	≤ 5	≤ 5	pCi/l
CW	Gross β	4 + 2	4 + 2	pCi/l
WW	H-3	12.4 ± 1.2	12.3 ± 1.2	pCi/ml
SW	Gross β	≤ 5	≤ 5	Pci/l

Table 5-1.0
(continued)

QUALITY CONTROL - AUGUST 1978

BLANK SAMPLES

Sample Type	Analysis	Measured Activity	Units
DI-Water	Sr-90	< .02	pCi/ml
DI Water	Sr-90	< .02	pCi/ml
DI Water	Sr-90	< .02	pCi/ml
DI Water	Sr-90	< .01	pCi/ml
DI Water	Gamma Isotopic	< .02	pCi/ml
DI Water	Gamma Isotopic	< .02	pCi/ml
DI Water	Gamma Isotopic	< .02	pCi/ml
DI Water	Gamma Isotopic	< .02	pCi/ml
DI Water	Gamma Isotopic	< .02	pCi/ml
DI Water	Gamma Isotopic	< .02	pCi/ml
DI Water	I-131	< 1	pCi/l
DI Water	Gross β	< 1	pCi/l
DI Water	I-131	< 0.5	pCi/l
DI Water	Gross β	< 2	pCi/l
DI Water	Gross β	< 2	pCi/l
DI Water	Gross β	< 2	pCi/l

SPIKED SAMPLES

Sample Type	Analysis	Known Activity	Measured Activity	Units
Water	Cs-137	33	28 ± 10	pCi/Sample
Water	Cs-137	33	24 ± 9	pCi/Sample
Water	Cs-137	33	26 ± 9	pCi/Sample
Water	H-3	2.4	2.3 ± 0.2	pCi/ml
Milk	I-131	330	320 ± 10	dpm/Sample
Milk	I-131	70 ± 7	77 ± 8	dpm/Sample
Milk	I-131	68 ± 7	61 ± 6	dpm/Sample

Table 5-1.0
(continued)

QUALITY CONTROL - SEPTEMBER 1978

SPLIT SAMPLES

Sample Type	Analysis	Aliquot A	Aliquot B	Units
CW	Gross β	6 ± 2	6 ± 2	pCi/l
CW	Gross β	< 5	< 5	pCi/l
Milk	I-131	< 0.5	< 0.5	pCi/l
SW	Gross β	< 5	< 5	pCi/l
Milk	I-131	< 0.5	< 0.5	pCi/l
CW	Gross β	< 2	< 2	pCi/l
Water	Gross β	2 ± 2	2 ± 2	pCi/l
Water	Gross α	< 7	< 7	pCi/l
Soil	Cs-137	2.5 ± 0.5	2.1 ± 0.6	pCi/g
Soil	Cs-137	2.2 ± 0.6	2.2 ± 0.6	pCi/g
Soil	Cs-137	2.0 ± 0.2	1.3 ± 0.5	pCi/g
Water	Gross β	2 ± 2	2 ± 2	pCi/l
Water	Gross α	< 1	< 1	pCi/l
Aquatic Biota	Sr-89	< .025	< .025	pCi/g
Aquatic Biota	Sr-90	0.19 ± .02	0.27 ± .03	pCi/g
Animal	Sr-89	< .01	< .02	pCi/g
Animal	Sr-90	< .01	< .02	pCi/g
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	5 ± 1	5 ± 2	pCi/l
Silt	Sr-89	< .025	< .025	pCi/g
Silt	Sr-90	< .01	< .01	pCi/g
Vegetation	Sr-90	< 0.5	< 0.5	pCi/g
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	13 ± 4	13 ± 2	pCi/l
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	3 ± 2	4 ± 3	pCi/l
Water	Gross β	1 ± 1	2 ± 1	pCi/l
Milk	I-131	< 0.5	< 0.5	pCi/l
LW	CS-137	< 10	< 10	pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - SEPTEMBER 1978

BLANK SAMPLES

Sample Type	Analysis	Measured Activity		Units
DI Water	Gross β	< 2		pCi/l
DI Water	Gross β	< 2		pCi/l
AP Blank	Sr-89	< 1	E-06	uCi/filter
AP Blank	Sr-90	< 1	E-06	uCi/filter
DI Water	Sr-89	< 1	E-08	uCi/ml
DI Water	Sr-90	< 1	E-08	uCi/ml
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	H-3	< 0.1		pCi/ml
DI Water	I-131	< 0.1		pCi/l
Charcoal Cartridge	I-131	< 0.01		pCi/m3
Charcoal Cartridge	I-131	< 0.01		pCi/m3
Water	Sr-89	< 2		pCi/l
Water	Sr-90	< 2		pCi/l
Urine	Po-210	< 1		pCi/l
Charcoal Cartridge	I-131	< 0.01		pCi/m3
DI Water	Gross β	< 1		pCi/l
DI Water	I-131	< 0.1		pCi/l
DI Water	Uranium	< 2		dpm/l

Table 5-1.0
(continued)

QUALITY CONTROL - SEPTEMBER 1978

SPIKED SAMPLES

Sample Type	Analysis	Known Activity	Measured Activity	Units
Milk	I-131	39 ± 4	44 ± 4	dpm/sample
DI Water	I-131	38 ± 4	39 ± 4	dpm/sample
DI Water	Sr-90	73	77 ± 10	dpm/sample
DI Water	H-3	2.4	2.6 ± 0.3	pCi/ml
Water	Sr-90	33 ± 3	38 ± 4	pCi/sample
Water	Cs-137	53	48 ± 11	pCi/l
Water	Sr-90	1.6 ± 0.2 E+03	1.5 ± 0.2 E+03	dpm/sample
Water	Sr-90	1.6 ± 0.2 E+03	1.8 ± 0.2 E+03	dpm/sample
Water	Sr-90	1.5 ± 0.2 E+03	1.5 ± 0.2 E+03	dpm/sample
Water	Sr-90	3.1 ± 0.3 E+03	3.4 ± 0.3 E+03	dpm/sample

Table 5-1.0
(continued)

QUALITY CONTROL - OCTOBER 1978

SPLIT SAMPLES

Sample Type	Analysis	Aliquot A	Aliquot B	Units
Lake Water	Gross β	4 ± 2	5 ± 2	pCi/l
Lake Water	Gross α	< 1	< 1	pCi/l
Milk	I-131	< 0.5	< 0.5	pCi/l
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	7 ± 4	8 ± 1	pCi/l
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	14 ± 7	12 ± 2	pCi/l
Produce	Sr-89	< .005	< 0.02	pCi/g
Produce	Sr-90	0.05 ± 0.01	0.05 ± 0.03	pCi/g
Soil	Sr-90	< 0.15	< 0.15	pCi/g
Soil	Sr-90	0.12 ± 0.02	0.16 ± 0.03	pCi/g
Soil	Sr-90	0.14 ± 0.02	0.18 ± 0.03	pCi/g
Soil	Sr-90	0.17 ± 0.03	0.20 ± 0.04	pCi/g
Soil	Sr-90	0.17 ± 0.03	0.20 ± 0.04	pCi/g
Soil	Sr-90	0.11 ± 0.05	0.08 ± 0.05	pCi/g
Soil	Sr-90	< 0.15	< 0.15	pCi/g
Soil	Sr-90	0.26 ± 0.04	0.21 ± 0.04	pCi/g
Soil	Sr-90	0.12 ± 0.04	0.18 ± 0.06	pCi/g
Soil	Sr-90	0.26 ± 0.04	0.34 ± 0.07	pCi/g
Soil	Sr-90	0.07 ± 0.06	0.10 ± 0.06	pCi/g
Water	H-3	5.4 ± 0.6	6.2 ± 0.9	pCi/ml
Water	H-3	76 ± 8	69 ± 7	pCi/ml
Water	H-3	76 ± 8	75 ± 8	pCi/ml
Water	H-3	12 ± 1	11 ± 1	pCi/ml
Soil	Sr-89	< 0.03	< 0.01	pCi/g
Soil	Sr-90	< 0.03	< 0.01	pCi/g
Surface Water	Gross β	5.2 ± 2	5 ± 2	pCi/l
Surface Water	Gross β	1.7 ± 0.7	1.9 ± 0.8	pCi/l
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	22 ± 2	25 ± 3	pCi/l
Rain Water	Gross β	3 ± 2	2 ± 1	pCi/l
Rain Water	Gross β	< 1	< 1	pCi/l
Lake Water	H-3	2.2 ± 0.2	2.4 ± 0.4	pCi/ml
Soil	Sr-89	< 0.02	< 0.01	pCi/g
Soil	Sr-90	< 0.03	< 0.01	pCi/g
Milk	Sr-89	< 10	< 10	pCi/l
Milk	Sr-90	3 ± 1	3 ± 3	pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - OCTOBER 1978

SPLIT SAMPLES (continued)

Sample Type	Analysis	Aliquot A	Aliquot B	Units
Water	Sr-89	< 9 E-09	< 9 E-09	uCi/ml
Water	SR-90	< 9 E-09	< 9 E-09	uCi/ml
Water	Grossβ	3 ± 2	3 ± 2	pCi/l
Surface Water	Grossβ	5 ± 3	4 ± 3	pCi/l
Well Water	Grossβ	40 ± 4	45 ± 8	pCi/l
Cooling Water	Grossβ	5 ± 2	5 ± 2	pCi/l
Water	H-3	70 ± 7	71 ± 7	pCi/ml
Water	H-3	6.3 ± 0.6	6.3 ± 0.6	pCi/ml
Milk	Sr-89	≤ 1	≤ 2	pCi/l
Milk	Sr-90	13 ± 3	9 ± 3	pCi/l
Milk	Sr-89	≤ 1	≤ 1	pCi/l
Milk	Sr-90	2 ± 1	4 ± 1	pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - OCTOBER 1978

BLANK SAMPLES

Sample Type	Analysis	Measured Activity		Units
DI Water	Gross β	< 2		pCi/l
DI Water	Gross α	< 1		pCi/l
DI Water	I-131	< 0.1		pCi/l
Charcoal Cartridge	I-131	< 0.004		pCi/m3
Charcoal Cartridge	I-131	< 0.005		pCi/m3
Charcoal Cartridge	I-131	< 0.003		pCi/m3
Charcoal Cartridge	I-131	< 0.009		pCi/m3
Charcoal Cartridge	I-131	< 0.008		pCi/m3
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		PCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 2	E-08	uCi/ml
DI Water	Sr-90	< 2	E-08	uCi/ml
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - OCTOBER 1978

BLANK SAMPLES (continued)

Sample Type	Analysis	Measured Activity		Units
Air Filter	Sr-89	< 2	E-06	uCi/filter
Air Filter	Sr-90	< 2	E-06	uCi/filter
DI Water	Gross β	< 2		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
Charcoal Cartridge	I-131	< 0.005		pCi/m^3
DI Water	Gross β	< 1		pCi/l
DI Water	Gross β	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1	E-08	uCi/ml
DI Water	Sr-90	< 1	E-08	uCi/ml
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	I-131	< 0.2		pCi/l
DI Water	I-131	< 0.2		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - OCTOBER 1978

BLANK SAMPLES (continued)

Sample Type	Analysis	Measured Activity		Units
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1	E-08	uCi/ml
DI Water	Sr-90	< 1	E-08	uCi/ml
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - OCTOBER 1978

SPIKED SAMPLES

Sample Type	Analysis	Known Activity	Measured Activity	Units
Water	Sr-90	1.4 ± 0.1 E+03	1.2 ± 0.1 E+03	dpm/sample
Water	Sr-90	1.4 ± 0.1 E+03	1.5 ± 0.2 E+03	dpm/sample
Water	Cs-137	53	50 ± 10	pCi/l
Water	Sr-90	1.6 ± 0.2 E+03	1.7 ± 0.2 E+03	dpm/sample
DI Water	Sr-90	1.6 ± 0.2 E+03	1.6 ± 0.2 E+03	dpm/sample
DI Water	Sr-90	1.5 ± 0.2 E+03	1.7 ± 0.2 E+03	dpm/sample

Table 5-1.0
(continued)

QUALITY CONTROL - NOVEMBER 1978

SPLIT SAMPLES

Sample Type	Analysis	Aliquot A	Aliquot B	Units
SW	Gross β	6 ± 3	9 ± 3	pCi/l
SW	Gross β	8 ± 3	8 ± 3	pCi/l
SW	Gross β	3 ± 2	4 ± 2	pCi/l
SW	Gross β	3 ± 3	3 ± 2	pCi/l
SW	Gross β	4 ± 2	8 ± 3	pCi/l
CW	Gross β	8 ± 2	6 ± 2	pCi/l
Water	Gross β	17 ± 3	15 ± 4	pCi/l
Water	Gross α	≤ 5	≤ 5	pCi/l
Soil	Gross α	4 ± 1	5 ± 2	pCi/g
CW	Gross β	5 ± 3	5 ± 3	pCi/l
AP	Sr-89	≤ 0.01	≤ 0.01	pCi/m3
AP	Sr-90	< 0.01	< 0.01	pCi/m3
LW	Gross β	8 ± 2	5 ± 2	pCi/l
Water	Gross β	3 ± 1	4 ± 1	pCi/l
Water	Gross β	4 ± 1	5 ± 2	pCi/l
Milk	Sr-89	≤ 10	≤ 10	pCi/l
Milk	Sr-90	8 ± 5	7 ± 2	pCi/l
Milk	Sr-89	≤ 10	≤ 10	pCi/l
Milk	Sr-90	10 ± 2	12 ± 1	pCi/l
Milk	Sr-89	≤ 10	≤ 10	pCi/l
Milk	Sr-90	3 ± 1	3 ± 2	pCi/l
SW	Gross β	6 ± 2	7 ± 2	pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - NOVEMBER 1978

BLANK SAMPLES

Sample Type	Analysis	Measured Activity	Units
Charcoal Cartridge	I-131	< 0.01	pCi/m^3
Charcoal Cartridge	I-131	< 0.003	pCi/m^3
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	I-131	< 0.1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l
DI Water	Sr-89	< 1	pCi/l
DI Water	Sr-90	< 1	pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - NOVEMBER 1978

BLANK SAMPLES (continued)

Sample Type	Analysis	Measured Activity		Units
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1	E-08	pCi/ml
DI Water	Sr-90	< 1	E-08	pCi/ml
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1		pCi/l
DI Water	Sr-90	< 1		pCi/l
DI Water	Sr-89	< 1	E-08	uCi/ml
DI Water	Sr-90	< 1	E-08	uCi/ml
DI Water	Gross β	< 1		pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - NOVEMBER 1978

SPIKED SAMPLES

Sample Type	Analysis	Known Activity	Measured Activity	Units
DI Water	Sr-90	73	80 ± 8	dpm/sample
Water	Cs-137	53	50 ± 5	pCi/l
Water	Cs-137	53	50 ± 5	pCi/l
Water	Cs-137	53	45 ± 5	pCi/l
Water	Sr-90	73	75 ± 5	dpm/sample
Water	Sr-90	1.5 E+03	1.4 ± 0.1 E+03	dpm/sample
Milk	I-131	180	200 ± 20	dpm/sample
Water	I-131	180	185 ± 20	dpm/sample
Water	I-131	170	180 ± 20	dpm/sample
Water	I-131	150	150 ± 15	dpm/sample
Water	I-131	150	160 ± 20	dpm/sample
Milk	I-131	160	175 ± 20	dpm/sample
Water	I-131	190	190 ± 20	dpm/sample
Water	I-131	190	200 ± 20	dpm/sample
Milk	I-131	170	150 ± 20	dpm/sample
Water	Sr-90	1.5 E+03	1.5 ± 0.2 E+03	dpm/sample
Water	Sr-90	71	76 ± 8	pCi/l
Water	Gross β	63 ± 6	53 ± 5	pCi/l
Water	Gross β	63 ± 6	60 ± 6	pCi/l
Water	Gross β	63 ± 6	60 ± 6	pCi/l
Water	Cs-137	35	39 ± 8	pCi/sample

Table 5-1.0
(continued)

QUALITY CONTROL - DECEMBER 1978

SPLIT SAMPLES

Sample Type	Analysis	Aliquot A	Aliquot B	Units
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	5 ± 2	3 ± 1	pCi/l
Milk	Sr-89	< 5	< 5	pCi/l
Milk	Sr-90	11 ± 4	13 ± 2	pCi/l
SW	Gross β	5 ± 2	4 ± 2	pCi/l
LW	Gross β	5 ± 2	8 ± 2	pCi/l
SW	Gross β	7 ± 2	6 ± 2	pCi/l
SW	Gross β	8 ± 3	8 ± 3	pCi/l
CW	H-3	1.1 ± 0.3	1.1 ± 0.3	pCi/ml

Table 5.1.0
(continued)

QUALITY CONTROL - DECEMBER 1978

BLANK SAMPLES

Sample Type	Analysis	Measured Activity	Units
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Wat	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l

Table 5-1.0
(continued)

QUALITY CONTROL - DECEMBER 1978

BLANK SAMPLES (continued)

Sample Type	Analysis	Measured Activity	Units
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	S -89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	Sr-89	< 1	pCi/l
Water	Sr-90	< 1	pCi/l
Water	I-125	< 1	pCi/l
Water	Gross β	< 1	pCi/l
DI Water	H-3	< 0.2	pCi/ml
DI Water	I-131	< 0.1	pCi/l
Charcoal Cartridge	I-131	< 0.01	pCi/m^3
AP Filter	Sr-89	< 1 E-06	uCi/filter
AP Filter	Sr-90	< 1 E-06	uCi/filter

Table 5-1.0
(continued)

QUALITY CONTROL - NOVEMBER 1978

SPIKED SAMPLES

Sample Type	Analysis	Known Activity	Measured Activity	Units
Water	Cs-137	32	30 ± 5	pCi/l
Water	Cs-137	43	38 ± 8	pCi/l
Water	I-125	570	550 ± 60	dpm/sample
Water	Cs-137	36	34 ± 5	dpm/sample
Water	I-125	240	230 ± 20	pCi/sample
Water	I-125	520	530 ± 50	dpm/sample
Water	Uranium	77	74 ± 7	dpm/sample
Water	H-3	278	280 ± 30	dpm/sample
Water	Sr-90	30 ± 3	25 ± 3	pCi/sample
Milk	I-131	35 ± 4	35 ± 4	pCi/sample
Water	I-131	36 ± 4	34 ± 3	pCi/sample
Water	I-131	36 ± 4	32 ± 3	pCi/sample
Water	I-131	38 ± 4	33 ± 3	pCi/sample
Water	I-131	38 ± 4	32 ± 3	pCi/sample
Water	I-131	37 ± 4	33 ± 3	pCi/sample
Water	Cs-137	35	38 ± 5	pCi/sample
Water	Cs-137	43	37 ± 5	pCi/sample

Table 5-1.1

RESULTS OF EPA INTERLABORATORY COMPARISONS

1978

Month	Agency Value	MWF Value	Unit
		Gross Alpha in AP Filters	
January	12	12 ± 2	pCi/filter
March	11	11 ± 1	pCi/filter
June	10	11 ± 1	pCi/filter
		Gross Beta in AP Filters*	
January	40	73 ± 4	pCi/filter
March	38	42 ± 4	pCi/filter
June	36	38 ± 4	pCi/filter

*MWF reference nuclide is Cs-137. MWF data may be expected at times to be biased high relative to EPA values depending on nuclide ratios.

Month	Agency Value	MWF Value	Unit
		Sr-90 in AP Filters	
January	10	7 ± 3	pCi/filter
March	8	8 ± 1	pCi/filter
June	9	12 ± 2	pCi/filter
		Cs-137 in AP Filters	
January	20	19 ± 3	pCi/filter
March	22	26 ± 3	pCi/filter
June	18	24 ± 5	pCi/filter

Table 5-1.1
(continued)

Month	Agency Value	MWF Value	Unit
Gross Alpha in Water			
January	7	5 ± 2	pCi/filter
March	20	24 ± 3	pCi/filter
May	13	13 ± 2	pCi/filter
July	22	31 ± 4	pCi/filter
September	5	6 ± 2	pCi/filter
November	11	10 ± 2	pCi/filter
Gross Beta in Water			
January	39	42 ± 4	pCi/l
March	29	28 ± 3	pCi/l
May	18	19 ± 2	pCi/l
July	30	32 ± 3	pCi/l
September	10	13 ± 3	pCi/l
November	26	26 ± 3	pCi/l
H-3 in Water			
February	1680	1730 ± 150	pCi/l
April	2200	2100 ± 100	pCi/l
June	2270	2450 ± 300	pCi/l
August	1230	1400 ± 300	pCi/l
Cr-51 in Water			
February	0	< 50	pCi/l
April	0	< 50	pCi/l
June	102	105 ± 15	pCi/l
August	105	60 ± 40	pCi/l
October	117	120 ± 20	pCi/l

Table 5-1.1
(continued)

Month	Agency Value	MWF Value	Unit
Co-60 in Water			
February	34	30 ± 9	pCi/l
April	49	48 ± 7	pCi/l
June	23	24 ± 3	pCi/l
August	27	27 ± 6	pCi/l
October	23	21 ± 4	pCi/l
Zn-65 in Water			
February	29	33 ± 9	pCi/l
April	59	48 ± 9	pCi/l
June	54	53 ± 12	pCi/l
August	62	62 ± 18	pCi/l
October	82	100 ± 30	pCi/l
Ru-106 in Water			
February	36	< 50	pCi/l
April	113	< 50	pCi/l
June	58	35 ± 13	pCi/l
August	41	≤ 50	pCi/l
October	46	< 50	pCi/l
Cs-134 in Water			
February	52	36 ± 8	pCi/l
April	53	53 ± 10	pCi/l
June	22	14 ± 3	pCi/l
August	9	≤ 5	pCi/l
October	.25	20 ± 8	pCi/l

Table 5-1.1
(continued)

Month	Agency Value	MWF Value	Unit
		Cs-137 in Water	
February	0	< 6	pCi/l
April	0	< 10	pCi/l
June	30	36 ± 5	pCi/l
August	15	23 ± 3	pCi/l
October	125	120 ± 10	pCi/l
		Sr-89 in Milk	
April	101	80 ± 10	pCi/l
July	41	≤ 2	
		Sr-90 in Milk	
April	9	8 ± 1	pCi/l
June	49	50 ± 5	pCi/l
		I-131 in Milk (by gamma spectrometry)	
April	82	86 ± 8	pCi/l
July	0	≤ 10	pCi/l

Table 5-1.1
(continued)

Month	Agency Value	MWF Value	Unit
Ba-140 in Milk			
April	0	< 20	pCi/l
July	0	< 20	pCi/l
Cs-137 in Milk			
April	23	24 ± 2	pCi/l
July	53	55 ± 6	pCi/l
Sr-89 in Water			
May	16	16 ± 3	pCi/l
August	14	17 ± 4	pCi/l
September	19	≤ 5	pCi/l
Sr-90 in Water			
May	17	24 ± 4	pCi/l
August	10	11 ± 2	pCi/l
September	16	21 ± 3	pCi/l

Table 5-1.2

ENVIRONMENTAL QUALITY CONTROL ANALYSES SUMMARY

1979

The tables below summarize results of samples run for process quality control purposes during 1979. These listings are in addition to such measurements as detector backgrounds, check source values, radiometric-gravimetric comparisons, system calibrations, etc. Detailed listings of each measurement are maintained at the laboratory and are available for inspection if required.

BLANK SAMPLES

Nuclide Analyzed	Number of Determinations	Number of analyses exceeding the LLD for that analysis
Gross Beta	80	1
Gross Alpha	52	0
Iodine-131	144	0
Strontium-89	199	0
Strontium-90	204	1
Gamma Emitters	44	0
Tritium H-3	45	0
Calcium-45	2	0
Uranium	9	0

SPLIT SAMPLES

Nuclide Analyzed	Number of Det'ns	No. agreeing within 2σ	No. agreeing within 3σ	No. differing by > 3σ
Gross Beta	91	87	3	1
Gross Alpha	7	7	0	0
Iodine-131	23	23	0	0
Strontium-89	74	73	0	1
Strontium-90	88	83	4	1
Gamma Emitters	69	69	0	0
Tritium H-3	69	68	1	0
Calcium-45	6	6	0	0

SPIKED SAMPLES

Nuclide Analyzed	Number of Det'ns	Within 2σ of known	Within 3σ of known	Differing from known by > 3σ
Gross Beta	55	48	5	2
Iodine-131	17	16	1	0
Strontium-89	1	1	0	0
Strontium-90	60	54	4	2
Gamma Emitters	29	29	0	0
Tritium H-3	28	27	1	0
Calcium-45	3	3	0	0
Uranium	5	5	0	0

Table5-1.3

EPA INTERCOMPARISON RESULTS

1979

Sample Type	Analysis	Agency Value	Control Limits (3σ,n=1)	MWF Measured ±2σ error	Unit
Air Filter	Gross α	5	15	3±1	pCi/filter
Air Filter	Gross β	18	15	20±2	pCi/filter
Air Filter	Sr-90	6	4.5	7±2	pCi/filter
Air Filter	Cs-137	6	15	9±1	pCi/filter
Water	Gross α	6	15	7±2	pCi/l
Water	Gross α	10	15	13±1	pCi/l
Water	Gross β	16	15	14±2	pCi/l
Water	Gross β	16	15	18±3	pCi/l
Water	H-3	1280	993	1230±300	pCi/l
Water	H-3	2270	1047	2300±200	pCi/l
Water	Sr-89	14	15	9±1	pCi/l
Water	Sr-90	6	4.5	6±1	pCi/l
Water	I-131	40	12	43±4	pCi/l
Air Filter	Gross α	14	15	13±1	pCi/filter
Air Filter	Gross β	63	15	72±7	pCi/filter
Air Filter	Sr-90	21	4.5	21±2	pCi/filter
Air Filter	Cs-137	21	15	19±2	pCi/filter
Water	H-3	1540	1010	1400±400	pCi/l
Water	Gross α	9	15	1±1	pCi/l
Water	Gross β	12	15	5±2	pCi/l
Milk	Sr-89	42	5	24±15	pCi/l
Milk	Sr-90	54	3	54±6	pCi/l
Milk	I-131	96	5	107±17	pCi/l
Milk	Cs-137	154	8	150±27	pCi/l
Milk	Ba-140	0	0	‾10	pCi/l
Milk	Sr-89	23	5	34+7	pCi/l
Milk	Sr-90	30	1.5	31±5	pCi/l
Water	Gross α	18	5	18±4	pCi/l
Water	Gross β	22	5	27±6	pCi/l
Air Filter	Gross α	9	15	10±1	pCi/filter
Air Filter	Gross β	30	15	37±4	pCi/filter
Air Filter	Sr-90	10	5	11±1	pCi/filter
Air Filter	Cs-137	10	15	11±1	pCi/filter
Milk	Sr-89	5	15	≤10	pCi/l
Milk	Sr-90	11	5	11+5	pCi/l
Milk	I-131	17	15	5±3	pCi/l
Milk	Cs-137	12	15	17±3	pCi/l
Milk	Ba-140	0	0	≤30	pCi/l
Milk	K-40	1630	250	2300±300	pci/l

Table 5-1.4

USDOE QUALITY ASSESSMENT PROGRAM

1979

Sample Type	Nuclide	Known	Measured ±2σ error	Units
Air	Co-57	0.116 E+03	0.131±0.013 E+03	pCi/filter
Air	Sr-90	0.135 E+02	0.155±0.025 E+02	pCi/filter
Air	Ru-106	0.174 E+03	0.167±0.020 E+03	pCi/filter
Air	Sb-125	0.749 E+03	0.823±0.082 E+03	pCi/filter
Air	Cs-134	0.985 E+02	0.947±0.095 E+02	pCi/filter
Air	Ca-45	0.134 E+03	0.230±0.023 E+03	pCi/filter
Soil	K-40	0.216 E+02	0.235±0.024 E+02	pCi/g
Soil	Sr-90	0.200 E+00	0.200±0.080 E+00	pCi/g
Soil	Cks-137	0.240 E+00	0.266±0.027 E+00	pCi/g
Tissue	K-40	0.840 E+01	0.900±0.090 E+01	pCi/g
Tissue	Sr-90	0.440 E-02	0.200 E+00	pCi/g
Tissue	Cs-137	0.230 E-01	0.120±0.030 E-01	pCi/g
Vegetation	K-40	0.225 E+03	0.220±0.022 E+03	pCi/g
Vegetation	Sr-90	0.573 E+01	0.593±0.059 E+01	pCi/g
Vegetation	Cs-137	0.256 E+00	0.280±0.030 E+00	pCi/g
Water	H-3	0.124 E+02	0.130±0.013 E+02	pCi/ml
Water	Na-22	0.843 E+00	0.907±0.091 E+00	pCi/ml
Water	Mn-54	0.737 E+00	0.800±0.096 E+00	pCi/ml
Water	Co-60	0.871 E+00	0.970±0.097 E+00	pCi/ml
Water	Cs-137	0.980 E+00	0.117±0.012 E+01	pCi/ml
Air	Be-7	0.147 E+04	0.140±0.020 E+04	pCi/filter
Air	Ca-45	0.115 E+03	0.133±0.030 E+03*	pCi/filter
Air	Mn-54	0.540 E+02	0.490±0.070 E+02	pCi/filter
Air	Co-60	0.135 E+03	0.150±0.030 E+03	pCi/filter
Air	Sr-90	0.101 E+02	0.107±0.050 E+02	pCi/filter
Air	Zr-95	0.252 E+03	0.210±0.030 E+03	pCi/filter
Air	Sb-125	0.146 E+04	0.160±0.030 E+04	pCi/filter
Air	Cs-137	0.130 E+03	0.125±0.014 E+03	pCi/filter
Air	Ce-144	0.294 E+04	0.240±0.041 E+04	pCi/filter
Air	K-40	0.793 E+01	1.267±0.307 E+01	pCi/filter
Soil	Cs-137	0.225 E-01	0.183±0.038 E-01	pCi/g
Soil	U	0.188 E+01	0.420±0.150 E 00	pCi/g
Vegetation	K-40	0.215 E+03	0.300±0.030 E+03	pCi/g
Vegetation	Sr-90	0.337 E+01	0.250±0.045 E+01	pCi/g
Vegetation	Cs-137	0.270 E 00	0.317±0.070 E 00	pCi/g

*Correction for a calculation error was made.

Table 5-1.4
(continued)

USDOE QUALITY ASSESSMENT PROGRAM

1979

Sample Type	Nuclide	Known	Measured ±2σ error	Units
Water	H-3	0.134 E+02	0.130±0.018 E+02	pCi/ml
Water	Na-22	0.153 E+01	0.130±0.020 E+01	pCi/ml
Water	Co-57	0.676 E 00	0.113±0.020 E+01	pCi/ml
Water	Co-60	0.124 E+01	0.120±0.015 E+01	pCi/ml
Water	Sr-89	0.342 E 00	0.340±0.030 E 00	pCi/ml
Water	Cs-137	0.124 E+01	0.103±0.020 E+01	pCi/ml
Water	U	0.356 E-01	0.400±0.141 E-01	pCi/ml
Air	Co-58	0.279 E+03	0.180±0.031 E+03	pCi/filter
Air	Sr-89	0.473 E+02	0.380±0.076 E+02	pCi/filter
Air	Sr-90	0.164 E+02	0.210±0.042 E+02	pCi/filter
Air	Ru-106	0.500 E+03	0.570±0.060 E+03	pCi/filter
Air	Cs-134	0.288 E+03	0.255±0.037 E+03	pCi/filter
Air	Cs-137	0.347 E+03	0.275±0.042 E+03	pCi/filter
Soil	K-40	0.245 E+01	0.460±0.092 E+01	pCi/g
Soil	Co-60	0.668 E 00	0.500±0.283 E 00	pCi/g
Soil	Sr-90	0.251 E+01	0.120±0.028 E+01	pCi/g
Soil	Cs-137	0.608 E+02	0.390±0.255 E+02	pCi/g
Tissue	Sr-90	0.233 E+01	0.258±0.030 E+01	pCi/g
Water	H-3	0.304 E+02	0.293±0.029 E+02	pCi/ml
Water	Ca-45	0.940 E 00	0.867±0.116 E 00	pCi/ml
Water	Zn-65	0.232 E+01	0.220±0.022 E+01	pCi/ml
Water	Sr-90	0.135 E 00	0.190±0.035 E 00	pCi/ml
Water	Cs-134	0.113 E+01	0.120±0.012 E+01	pCi/ml
Water	Cs-137	0.152 E+01	0.155±0.016 E+01	pCi/ml

Table 5-1.5

ENVIRONMENTAL QUALITY CONTROL ANALYSES SUMMARY

1980

The tables below summarize results of samples run for process quality control purposes during 1979. These listings are in addition to such measurements as detector backgrounds, check source values, radiometric-gravimetric comparisons, system calibrations, etc. Detailed listings of each measurement are maintained at the laboratory and are available for inspection if required.

BLANK SAMPLES

Nuclide Analyzed	Number of Determinations	Number of analyses exceeding the LLD for that analysis
Gross Beta	68	0
Gross Alpha	43	0
Strontium-89	49	0
Strontium-90	178	0
Iodine-131	152	0
Tritium	87	0
Gamma Emitters	46	0

SPLIT SAMPLES

Nuclide Analyzed	Number of Det'ns	No. agreeing within 2σ	No. agreeing within 3σ	No. differing by $> 3\sigma$
Gross Beta	99	94	5	0
Gross Alpha	25	23	1	0
Strontium-89	48	48	0	0
Strontium-90	48	48	0	0
Tritium	134	134	0	0
Iodine-131	77	77	0	0
Gamma Emitters	121	120	0	0
Calcium-45	2	2	1	0

SPIKED SAMPLES

Nuclide Analyzed	Number of Det'ns	Within 2σ of known	Within 3σ of known	Differing from known by $> 3\sigma$
Gross Beta	44	43	1	0
Strontium-89	23	23	2	0
Strontium-90	73	73	4	0
Tritium	52	51	1	0
Gamma Emitters	29	29	0	0
Iodine-131	29	27	2	0

Table 5-1.6

EPA INTERCOMPARISON RESULTS

1980

Sample Type	Analysis	Agency Value	Control Limits (3σ,n=1)	MWF Measured ±2σ error	Unit
Water	I-131	53	15	49±5	pCi/l
Air Filter	Gross α	10	15	11±1	pCi/filter
Air Filter	Gross β	31	15	34±3	pCi/filter
Air Filter	Sr-90	10	5	6±1	pCi/filter
Air Filter	Cs-137	12	15	16±4	pCi/filter
Water	Gross α	21	15	26±3	pCi/l
Water	Gross β	49	15	50±5	pCi/l
Water	Sr-90	7	5	8±1	pCi/l
Water	Co-60	33	15	37±4	pCi/l
Water	Cs-134	56	15	58±6	pCi/l
Water	Cs-137	0	0	< 5	pCi/l
Water	Gross α	12	15	13±1	pCi/l
Water	Gross β	27	15	29±3	pCi/l
Air Filter	Gross α	24	6	29±3	pCi/filter
Air Filter	Gross β	28	5	41±4	pCi/filter
Air Filter	Sr-90	8	2	9±1	pCi/filter
Air Filter	Cs-137	12	5	14±2	pCi/filter
Water	H-3	2040	1040	2260±230	pCi/l
Air Filter	Gross α	10	5	11±1	pCi/filter
Air Filter	Gross β	29	5	33±3	pCi/filter
Air Filter	Sr-90	9	1.5	10±1	pCi/filter
Air Filter	Cs-137	10	5	12±1	pCi/filter
Water	Gross α	30	8	30±3	pCi/l
Water	Gross β	45	5	45±5	pCi/l
Water	Sr-89	10	5	< 5	pCi/l
Water	Sr-90	20	1.5	20±2	pCi/l
Water	H-3	1750	341	1600±160	pCi/l
Milk	Sr-89	10	5	< 5	pCi/l
Milk	Sr-90	25	1.5	18±3	pCi/l
Milk	I-131	0.01	0.1	< 5	pCi/l
Milk	Cs-137	40	5	43±4	pCi/l
Milk	Ba-140	0.01	0.1	< 10	pCi/l
Milk	K	1600	80	2000±200	pCi/l
Water	Gross α	13	5	14±1	pCi/l
Water	Gross β	22	5	23±2	pCi/l
Air Filter	Gross α	15	5	18±2	pCi/filter
Air Filter	Gross β	41	5	50±5	pCi/filter
Air Filter	Sr-90	10	1.5	10±1	pCi/filter
Air Filter	Cs-137	20	5	23±2	pCi/filter

Table 5-1.6
(continued)

EPA INTERCOMPARISON RESULTS

1980

Sample Type	Analysis	Agency Value	Control Limits (3σ,n=1)	MWF Measured ±2σ error	Unit
Water	I-131	44	5	35±4	pCi/l
Water	H-3	3400	360	3030±300	pCi/l
Water	Sr-89	5	5	< 2	pCi/l
Water	Sr-90	12	1.5	12±1	pCi/l
Water	H-3	2000	345	2300±200	pCi/l
Water	Gross α	36	9	34±3	pCi/l
Water	Gross β	38	5	42±4	pCi/l
Water	H-3	1210	329	1100±100	pCi/l
Water	Sr-89	24	8.6	27±3	pCi/l
Water	Sr-90	15	2.6	14±1	pCi/l
Water	H-3	3200	625	3400±300	pCi/l
Water	Cr-51	86	8.6	< 100	pCi/l
Water	Co-60	16	8.6	19±5	pCi/l
Water	Zn-65	25	8.6	40±10	pCi/l
Water	Ru-106	46	8.6	< 50	pCi/l
Water	Cs-134	20	8.6	24±5	pCi/l
Water	Cs-137	12	8.6	15±3	pCi/l
Water	Gross α	32	8.0	31±3	pCi/l
Water	Gross β	21	5.0	22±2	pCi/l
Water	Gross α	16	8.6	21±2	pCi/l
Water	Gross β	13	8.6	19±3	pCi/l
Air Filter	Gross α	24	10.0	25±3	pCi/filter
Air Filter	Gross β	10	8.6	17±2	pCi/filter
Air Filter	Sr-90	0	0.0	< 1	pCi/filter
Air Filter	Cs-137	10	8.6	10±1	pCi/filter

Table 5-1.7

USDOE QUALITY ASSESSMENT PROGRAM

1980

Sample Type	Nuclide	Known	Measured ±2σ error	Units
Air (80-4)	Be-7	0.272 E+03	0.260±0.044 E+03	pCi/filter
Air (80-4)	Mn-54	0.720 E+02	0.645±0.095 E+02	pCi/filter
Air (80-4)	Sr-90	0.199 E+02	0.143±0.094 E+02	pCi/filter
Air (80-4)	Zr-95	0.720 E+02	0.605±0.094 E+02	pCi/filter
Air (80-4)	Sb-125	0.258 E+04	0.180±0.026 E+04	pCi/filter
Air (80-4)	Cs-137	0.257 E+03	0.230±0.034 E+03	pCi/filter
Air (80-4)	Ce-144	0.376 E+04	0.339±0.048 E+04	pCi/filter
Air (80-10)	Be-7	0.230 E+04	0.270±0.038 E+04	pCi/filter
Air (80-10)	Co-60	0.200 E+03	0.225±0.032 E+03	pCi/filter
Air (80-10)	Sr-90	0.107 E+02	0.105±0.016 E+02	pCi/filter
Air (80-10)	Cs-134	0.247 E+04	0.215±0.031 E+04	pCi/filter
Air (80-10)	Ce-141	0.404 E+03	0.475±0.068 E+03	pCi/filter
Air (80-10)	Ce-144	0.346 E+04	0.280±0.040 E+04	pCi/filter
Water (80-4)	H-3	0.103 E+02	0.097±0.017 E+02	pCi/ml
Water (80-4)	Na-22	0.107 E+01	0.095±0.014 E+01	pCi/ml
Water (80-4)	Cr-51	0.137 E+01	0.170±0.029 E+01	pCi/ml
Water (80-4)	Co-57	0.337 E 00	0.600±0.149 E 00	pCi/ml
Water (80-4)	Co-60	0.922 E 00	0.900±0.127 E 00	pCi/ml
Water (80-4)	Sr-89	0.240 E-01	0.267±0.172 E-01	pCi/ml
Water (80-4)	Cs-137	0.978 E 00	0.850±0.127 E 00	PCi/ml
Water (80-4)	U	0.283 E-01	0.200±0.173 E-01	ug/ml
Water (80-10)	H-3	0.149 E+02	0.133±0.017 E+02	pCi/ml
Water (80-10)	Co-60	0.197 E+01	0.207±0.036 E+01	pCi/ml
Water (80-10)	Sr-89	0.218 E 00	0.803±0.263 E-01	pCi/ml
Water (80-10)	Sr-90	0.216 E-01	0.230±0.069 E-01	pCi/ml
Water (80-10)	Cs-134	0.244 E+01	0.283±0.052 E+01	pCi/ml
Water (80-10)	Cs-137	0.226 E+01	0.263±0.045 E+01	pCi/ml
Soil (80-4)	K-40	0.770 E+01	1.100±0.341 E+01	pCi/g
Soil (80-4)	Sr-90	0.374 E 00	0.300±0.172 E 00	pCi/g
Soil (80-4)	Cs-137	0.680 E+01	0.507±0.087 E+01	pCi/g
Soil (80-10)	K-40	0.207 E+02	0.273±0.053 E+02	pCi/g
Soil (80-10)	Co-60	0.100 E 00	0.100±0.100 E 00	pCi/g
Soil (80-10)	Sr-90	0.460 E 00	0.333±0.172 E 00	pCi/g
Soil (80-10)	Cs-137	0.110 E+02	0.110±0.017 E+02	pCi/g

Table 5-1.7
(continued)

USDOE QUALITY ASSESSMENT PROGRAM

1980

Sample Type	Nuclide	Known	Measured ±2σ error	Units
Tissue (80-4)	K-40	0.143 E+02	0.207+0.036 E+02	pCi/g
Tissue (80-4)	Co-60	0.386 E+01	0.373±0.056 E+01	pCi/g
Tissue (80-4)	Sr-90	0.182 E+02	0.180±0.034 E+02	pCi/g
Tissue (80-4)	Cs-137	0.122 E+02	0.103±0.018 E+02	pCi/g
Tissue (80-10)	K-40	0.170 E+01	0.550+0.143 E+01	pCi/g
Tissue (80-10)	Co-60	0.874 E+01	0.950±0.141 E+01	pCi/g
Tissue (80-10)	Sr-90	0.387 E+02	0.250±0.042 E+02	pCi/g
Tissue (80-10)	Cs-137	0.275 E+02	0.270±0.044 E+02	pCi/g

Table 5-1.8

ENVIRONMENTAL QUALITY CONTROL ANALYSES SUMMARY

1981

The tables below summarize results of samples run for process quality control purposes during 1981. These listings are in addition to such measurements as detector backgrounds, check source values, radiometric-gravimetric comparisons, system calibrations, etc. Detailed listings of each measurement are maintained at the laboratory and are available for inspection if required.

BLANK SAMPLES

Nuclide Analyzed	Number of Determinations	Number of analyses exceeding the LLD for that analysis
Gross Beta	46	1*
Gross Alpha	47	0
Strontium-89	95	0
Strontium-90	95	0
Tritium	61	1*
Gamma Emitters	64	0
Iodine-131	191	0
Calcium-45	3	0

SPLIT SAMPLES

Nuclide Analyzed	Number of Det'ns	No. agreeing within 2σ	No. agreeing within 3σ	No. differing by > 3σ
Gross Beta	142	138	4	0
Gross Alpha	39	38	1	0
Gamma Emitters	126	122	4	0
Iodine-131	146	146	0	0
Strontium-89	38	38	0	0
Strontium-90	44	42	2	0
Tritium	89	89	0	0
Calcium-45	8	8	0	0
Uranium	71	71	0	0

SPIKED SAMPLES

Nuclide Analyzed	Number of Det'ns	Within 2σ of known	Within 3σ of known	Differing from Known by > 3σ
Gross Beta	55	53	1	1*
Gamma Emitters	44	43	1	0
Iodine-131	11	11	0	0
Strontium-89	18	18	0	0
Strontium-90	94	93	1	0
Tritium	45	44	1	0

*Corrective actions were taken to eliminate the problem.

Table 5-1.9

EPA INTERCOMPARISON RESULTS

1981

Sample Type	Analysis	Agency Value	Control Limits (3σ,n=3)	MWF Measured ±2σ error*	Unit
Water	I-131	22	6	17±2	pCi/l
Water	H-3	2240	604	2600±300	pCi/l
Air Filter	Gross α	21	9.1	21±2	pCi/filter
Air Filter	Gross β	19	8.7	28±3	pCi/filter
Air Filter	Sr-90	0	0	LT 1	pCi/filter
Air Filter	Cs-137	19	8.7	19±2	pCi/filter
Water	Gross α	9	8.7	10±1	pCi/l
Water	Gross β	44	8.7	43±4	pCi/l
Water	Sr-89	16	8.7	LT 5	pCi/l
Water	Sr-90	34	2.9	35±4	pCi/l
Milk	Sr-89	0	0	LT 2	pCi/l
Milk	Sr-90	20.2	2.6	14±1	pCi/l
Milk	I-131	25.8	10.4	29±3	pCi/l
Milk	Cs-137	43.5	8.7	47±5	pCi/l
Milk	Ba-140	0	0	LT 25	pCi/l
Milk	K-40	1551	134	1350±140	pCi/l
Water	H-3	1760	590	1680±170	pCi/l
Water	Cr-51	0	0	LT 100	pCi/l
Water	Co-60	25	8.7	29±5	pCi/l
Water	Zn-65	85	8.7	92±9	pCi/l
Water	Ru-106	0	0	LT 100	pCi/l
Water	Cs-134	36	8.7	29±5	pCi/l
Water	Cs-137	4	8.7	9±3	pCi/l
Water	Gross β	25	8.7	27±3	pCi/l
Water	Gross α	25	10.4	20±2	pCi/l
Air Filter	Gross α	30	13	30±3	pCi/filter
Air Filter	Gross β	50	8.7	66±7	pCi/filter
Air Filter	Sr-90	18	2.6	17±44	pCi/filter
Air Filter	Cs-137	14	8.7	15±2	pCi/filter
Water	H-3	2710	615	3000±300	pCi/l
Water	Cs-134	10	8.7	7±2	pCi/l
Water	Cs-137	15	8.7	13±1	pCi/l
Water	Sr-89	38	8.7	35±7	pCi/l
Water	Sr-90	28	2.6	24±3	pCi/l
Water	Ra-226	15.0	4.0	13.2±1.3	pCi/l
Water	Ra-228	12.0	3.1	10±2	pCi/l
Water	U	12	10	6±2	pCi/l

When analyses of a particular type result in concentrations below the detection limits, the term "LT" is used to indicate "Less Than" values for that measurement based on 3σ (99.5%) confidence level.

Table 5-1.9
(continued)

EPA INTERCOMPARISON RESULTS

1981

Sample Type	Analysis	Agency Value	Control Limits (3σ,n=3)	MWF Measured ±2σ error*	Unit
Water	Sr-89	36	8.7	29+3	pCi/l
Water	Sr-90	22	2.6	26±3	pCi/l
Water	Sr-89	25	8.7	30±8	pCi/l
Water	Sr-90	11	3.6	14±2	pCi/l
Water	I-131	26	10	40±20	pCi/l
Water	Cs-137	22	8.7	20±5	pCi/l
Water	Ba-140	0	0	LT 20	pCi/l
Water	K	1559	135	1400+140	mg/l
Water	Cr-51	0	0	LT 20	pCi/l
Water	Co-60	17	8.7	16+2	pCi/l
Water	Zn-65	0	0	LT 20	pCi/l
Water	Ru-106	15	8.7	13+4	pCi/l
Water	Cs-134	21	8.7	13±2	pCi/l
Water	Cs-137	31	8.7	25±3	pCi/l
Water	H-3	1950	596	2300±200	pCi/l
Water	Ra-226	6.7	1.7	5.9±0.4	pci/l
Water	Ra-228	8.0	2.1	10.6±1.6	pCi/l
Air Filter	Gross α	28	12	31±6	pCi/filter
Air Filter	Gross β	54	8.7	74±8	pCi/filter
Air Filter	Sr-90	19	2.6	21±5	pCi/filter
Air Filter	Cs-137	16	8.7	15±2	pCi/filter
Food	Sr-89	44	8.7	38±4	pCi/kg
Food	Sr-90	31	2.8	28±3	pCi/kg
Food	I-131	82	14	75±8	pCi/kg
Food	Cs-137	45	8.7	40±4	pCi/kg
Food	Ba-140	0	0	LT 25	pCi/kg
Food	K	2640	229	2267+227	mg/kg
Milk	Sr-89	25	8.7	13±3	pCi/l
Milk	Sr-90	17	2.6	16±3	pCi/l
Milk	I-131	0	0	LT 5	pCi/l
Milk	Cs-137	31	8.7	35+12	pCi/l
Milk	Ba-140	0	0	LT 16	pCi/l
Milk	K	1600	139	1463+305	mg/l
Water	I-131	73	13	53±11	pCi/l
Water	H-3	2630	613	2973±878	pCi/l
Water	U	23	10	14±2	pCi/l
Water	Sr-89	23	8.7	18±5	pCi/l
Water	Sr-90	11	2.6	14±2	pCi/l
Urine	H-3	2050	599	2166±624	pCi/l

Table 5-1.9
(continued)

EPA INTERCOMPARISON RESULTS

1981

Sample Type	Analysis	Agency Value	Control Limits (3σ,n=3)	MWF Measured ±2σ error*	Unit
Water	Ra-226	8.3	2.2	8.4±0.8	pCi/l
Water	Ra-228	11.7	3.0	4.6±3.7	pCi/l
Water	Gross α	33	4	32±14	pCi/l
Water	Gross β	28	8.7	30±6	pCi/l
Air Filter	Gross α	25	11	25±6	pCi/filter
Air Filter	Gross β	52	8.7	71±7	pCi/filter
Air Filter	Sr-90	16	2.6	18±2	pCi/filter
Air Filter	Cs-137	19	8.7	20±2	pCi/filter
Water	Gross α	80	35	91±26	pCi/l
Water	Gross β	96	8.7	112±11	pCi/l
Water	Co-60	0	0	LT 5	pCi/l
Water	Sr-89	21	8.7	13±6	pCi/l
Water	Sr-90	14.4	2.6	14.6±2.0	pCi/l
Water	Cs-134	12	2.6	14±2.0	pCi/l
Water	Cs-137	15	8.7	20±14	pCi/l
Water	Ra-226	12.7	3.3	11.8±3.5	pCi/l
Water	Ra-228	9.2	2.4	8.3±5.1	pCi/l
Water	U	15	10	9±2	pCi/l
Milk	Sr-89	23	8.7	24±8	pCi/l
Milk	Sr-90	18	2.6	14±5	pCi/l
Milk	I-131	52	10	58±11	pCi/l
Milk	Cs-137	25	8.7	29±9	pCi/l
Milk	Ba-140	0	0	LT 16	pCi/l
Milk	K	1530	133	1700±240	mg/l
Food	Sr-89	38	8.7	41±6	pCi/kg
Food	Sr-90	23	2.6	21±5	pCi/kg
Food	Co-60	30	8.7	35±8	pCi/kg
Food	Cs-137	33	8.7	32±8	pCi/kg
Food	Ba-140	0	0	LT 31	pCi/kg
Food	K	2730	236	2700±270	mg/kg
Water	H-3	2700	615	2950±127	pCi/l

Table 5-1.10

EPA INTERCOMPARISON RESULTS

(Lab Performance Evaluation Study - EMSL-LV)

1981

Sample Type	Analysis	Agency Value	Control Limits (3σ,n=3)	MWF Measured ±2σ error*	Unit
Water	Gross	39	10	39±4	pCi/l
Water	Gross	60	5	70±7	pCi/l
Water	CO-60	12	5	LT20	pCi/l
Water	Cs-134	12	5	11±2	pCi/l
Water	Cs-137	20	5	20±2	pCi/l
Water	Ru-106	0	-	LT100	pCi/l
Water	Zn-65	0	-	LT20	pCi/l
Water	Sr-89	6	5	5±1	pCi/l
Water	Sr-90	0	-	LT1	pCi/l
Water	Ra-226	12.8	1.8	12.6±1.3	pCi/l
Water	U	5	6	4±2	pCi/l

Table 5-1.11

USDOE QUALITY ASSESSMENT PROGRAM

1981

Sample Type	Nuclide	Known	Measured ±2 σ error	Units
Air (81-04)	Be-7	0.244 E+04	0.247±0.015 E+04	pCi/filter
Air (81-04)	Mn-54	0.117 E+03	0.093±0.006 E+03	pCi/filter
Air (81-04)	Sr-89	0.450 E+02	0.515±0.087 E+02	pCi/filter
Air (81-04)	Sr-90	0.630 E+01	0.100 E+02	pCi/filter
Air (81-04)	Zr-95	0.122 E+03	0.828±0.048 E+02	pCi/filter
Air (81-04)	Sb-125	0.139 E+04	0.133±0.006 E+04	pCi/filter
Air (81-04)	U	0.223 E+01	0.750±0.053 E+01	pCi/filter
Soil (81-04)	K-40	0.213 E+02	0.290±0.017 E+02	pCi/g
Soil (81-04)	Cs-137	0.200 E+00	0.250±0.070 E+00	pCi/g
Soil (81-04)	Ra-226	0.770 E+00	0.668±0.057 E+00	pCi/g
Tissue (81-04)	K-40	0.158 E+01	0.433±0.058 E+01	pCi/g
Tissue (81-04)	Sr-90	0.240 E+01	0.188±0.016 E+01	pCi/g
Tissue (81-04)	Ra-226	0.450 E+00	0.433±0.058 E+00	pCi/g
Tissue (81-04)	U	0.290 E-01	0.850±0.333 E-01	pCi/g
Vegetation (81-04)	K-40	0.224 E+03	0.277±0.018 E+03	pCi/g
Vegetation (81-04)	Sr-90	0.560 E+01	0.258±0.016 E+01	pCi/g
Vegetation (81-04)	Cs-137	0.230 E+00	0.200±0.058 E+00	pCi/g
Vegetation (81-04)	U	0.310 E+00	0.133±0.058 E+00	pCi/g
Water (81-04)	H-3	0.246 E+02	0.197±0.012 E+02	pCi/ml
Water (81-04)	Co-57	0.118 E+01	0.243±0.018 E+01	pCi/ml
Water (81-04)	Co-60	0.129 E+01	0.133±0.006 E+01	pCi/ml
Water (81-04)	Sr-90	0.440 E-01	0.405±0.063 E-01	pCi/ml
Water (81-04)	Cs-137	0.137 E+01	0.150±0.012 E+01	pCi/ml
Water (81-04)	Ce-141	0.527 E+01	0.193±0.012 E+01	pCi/ml
Water (81-04)	U	0.145 E-01	0.200±0.026 E-01	ug/ml
Water (81-04)	U	0.102 E-01	0.750±0.140 E-02	pCi/ml

Table 5-1.12

ENVIRONMENTAL

QUALITY CONTROL SUMMARY REPORT - 1982[1]

SPIKES AND BLANKS

Analysis	Known Value (pCi)	Reported Value (pCi)*	Spikes and Blanks Processed
Alpha	Blank	< 5	45
Alpha	76.8 (Am-241)	76.6±1.8	32
Beta	Blank	< 2	49
Beta	61.0 (Cs-137)	61.5±2.8	42
H-3	Blank	< 1	67
H-3	4450	4400 ±140	71
U-234	Blank	< 0.2	26
U-234	7.1	6.8±0.7	26
Th-230	Blank	< 0.2	10
Th-230	5.7	6.2±1.6	10
Ra-226	Blank	< 0.1	26
Ra-226	0.85	0.92±0.32	24
Pb-210	Blank	< 1	21
Pb-210	31.5	31.6±0.7	21
Sr-90	Blank	< 1	39
Sr-90	24.2	21.0±3.7	31
Pu-239	Blank	< 0.2	15
Pu-239	1.7	1.8±0.5	15
Am-241	Blank	< 0.2	2
Am-241	3.6	3.6±0.2	2
Fe-55	Blank	< 1	3
Fe-55	400	390±40	3

[1]Beginning in July, the Quality Control Summary Data was a combined summary representing both the Midwest Facility and the Albequerque Lab.

Table 5-1.12
(continued)

ENVIRONMENTAL

DUPLICATES

Analysis	First Aliquot (pCi)	Second Aliquot (pCi)
Alpha	29 ± 4	23 ± 4
Alpha	≤ 5	≤ 5
Alpha	< 5	< 5
Alpha	16 ± 8	14 ± 8
Alpha	10 ± 2	10 ± 2
Alpha	21 ± 4	22 ± 4
Alpha	12 ± 6	7 ± 5
Alpha	18 ± 2	20 ± 2
Alpha	13 ± 4	15 ± 3
Beta	8 ± 4	11 ± 4
Beta	10 ± 6	6 ± 5
Beta	≤ 2	≤ 2
Beta	4 ± 2	4 ± 2
Beta	3 ± 1	3 ± 1
Beta	9 ± 3	10 ± 3
Beta	3 ± 1	3 ± 1
Beta	≤ 1	≤ 1
Beta	2 ± 1	2 ± 1
Beta	10 ± 1	13 ± 2
Beta	5 ± 2	5 ± 2
Beta	8 ± 2	7 ± 1
Beta	6 ± 3	6 ± 3
Beta	64 ± 5	73 ± 5
Beta	6 ± 1	6 ± 1
Beta	6 ± 2	5 ± 2
Beta	4 ± 1	4 ± 1
H-3	340 ±10	350 ±10
H-3	76 ±10	67 ±10
H-3	5 ± 1	6 ± 1
H-3	≤ 1	≤ 1
H-3	< 1	< 1
H-3	< 1	< 1
H-3	< 1	< 1
H-3	9 ± 1	11 ± 1
H-3	≤ 1	≤ 1
H-3	17 ± 1	17 ± 1
H-3	≤ 1	≤ 1
H-3	1820 ±20	1840 ±20
H-3	24 ± 1	24 ± 1
H-3	8 ± 1	9 ± 1
H-3	0.6 ± 0.5	0.7 ± 0.5
H-3	0.9 ± 0.5	0.7 ± 0.5

Table 5-1:12
(continued)

ENVIRONMENTAL

DUPLICATES

Analysis	First Aliquot (pCi)	Second Aliquot (pCi)
U-235	8.1 ± 1.0	8.6 ± 1.2
U-234	15 ± 2	14 ± 2
U-234	250 ±10	230 ±10
U-234	4.3 ± 1.0	4.3 ± 1.0
U-234	2.9 ± 1.0	4.2 ± 1.2
U-234	11 ± 2	8.0 ± 1.6
U-234	5 ± 1	4 ± 1
U-234	0.6 ± 0.1	0.5 ± 0.1
U-234	0.2	0.2
U-234	39 ± 2	43 ± 3
U-234	290 ±10	280 ±10
U-238	45 ± 3	40 ± 3
U-238	0.5 ± 0.1	0.5 ± 0.1
Gamma	<15	<15
Gamma	<25	<25
Gamma	<25	<25
Gamma	<25	<25
Gamma	<25	<25
Gamma	<15	<15
Gamma	0.8 ± 0.1	0.8 ± 0.1
Gamma	2.2 ± 0.2	2.0 ± 0.2
Gamma	<25	<25
Gamma	<15	<15
Gamma	<15	<15
Gamma	<25	<25
Gamma	<10	<10
Th-230	0.5 ± 0.2	0.4 ± 0.1
Th-230	2.1 ± 0.3	2.3 ± 0.3
Ra-226	2.7 ± 0.8	3.6 ± 1.1
Ra-226	5.0 ± 1.5	5.0 ± 1.5
Ra-226	1.2 ± 0.4	0.9 ± 0.3
Ra-226	1.3 ± 0.4	2.0 ± 0.6
Ra-226	0.8 ± 0.2	0.5 ± 0.2
Ra-226	0.4 ± 0.1	0.4 ± 0.1
Ra-226	0.4 ± 0.1	0.3 ± 0.1
Ra-226	3 ± 1	3 ± 1

Table 5-1.12
(continued)
ENVIRONMENTAL

DUPLICATES

Analysis	First Aliquot (pCi)	Second Aliquot (pCi)
Pb-210	37 ± 4	35 ± 5
Pb-210	23 ± 8	31 ± 7
Pb-210	18 ±10	25 ± 9
Pu-239	3.4 ± 0.4	3.1 ± 0.3
Pu-239	0.16± 0.02	0.15± 0.02
Pu-239	7.3 ± 0.7	7.4 ± 1.2
Am-241	0.48± 0.11	0.57± 0.11
Am-241	0.10± 0.01	0.10± 0.01
Sr-89	70 ±20	110 ±20
Sr-89	23 ± 9	26 ± 9
Sr-90	<1	<1
Sr-90	140 ±20	130 ±20
Sr-90	<1	<1
Sr-90	9 ± 2	10 ± 2
Sr-90	0.4 ± 0.3	0.7 ±0.3
I-131	<1	<1
I-131	<1	<1

Table 5-1.13

ENVIRONMENTAL

USEPA - EBERLINE

1982

Sample Type	Analysis	EPA Value	EIC Value	Units
Water	Alpha	16 ± 5	16 ± 3	pCi/l
Water	Alpha	55 ± 24	27 ± 13	pCi/l
Water	Alpha	19 ± 8.7	8 ± 4	pCi/l
Water	Beta	24 ± 8.7	24 ± 5	pCi/l
Water	Beta	81 ± 8.7	64 ± 6	pCi/l
Water	Beta	23 ± 5	16 ± 7	pCi/l
Water	H-3	1830 ±340	1760 ±510	pCi/l
Water	H-3	2890 ±380	2830 ±820	pCi/l
Water	H-3	2860 ±620	1890 ±600	pCi/l
Water	Ra-226	13.4± 2.0	13.6± 4.0	pCi/l
Water	Ra-226	12.5± 3.2	11.8± 3.5	pCi/l
Water	Ra-226	10.5± 1.6	8.4± 2.5	pCi/l
Water	Ra-228	3.6± 0.9	3.4± 1.9	pCi/l
Water	Ra-228	8.7± 1.3	9.4± 3.6	pCi/l
Water	Ra-228	11.0± 1.7	17.7± 14.7	pCi/l
Water	Cs-134	1.8± 8.7	< 10	pCi/l
Water	Cs-134	35 ± 5	36 ± 3	pCi/l
Water	Cs-137	25 ± 5	28 ± 3	pCi/l
Water	Cs-137	20 ± 8.7	16 ± 7	pCi/l
Water	I-131	4.4± 0.7	5.5± 1.8	pCi/l
Water	I-131	87 ± 8.7	67 ± 14	pCi/l
Water	Cr-51	23 ± 5	< 59	pCi/l
Water	Co-60	29 ± 5	31 ± 3	pCi/l
Water	Zn-65	26 ± 5	29 ± 10	pCi/l
Water	Ru-106	0	< 25	pCi/l
Water	Pu-239	6.9± 0.7	7.2± 0.4	pCi/l
Water	Uranium	30 ± 6	24 ± 4	pCi/l
Water	Gross Uranium	16 ± 10	9 ± 1	pCi/l
Milk	Sr-89	25 ± 5	12 ± 7	pCi/l
Milk	Sr-90	16 ± 1.5	13 ± 3	pCi/l
Milk	Co-60	30 ± 5	51 ± 9	pCi/l
Milk	Cs-137	28 ± 5	39 ± 19	pCi/l
Milk	Ba-140	0	<489	pCi/l
Milk	K	1500 ± 75	1310 ±120	mg/l
Milk	I-131	5.4± 0.8	6.7± 3.1	pCi/l

Table 5-1.13
(continued)

ENVIRONMENTAL

USEPA - EBERLINE

1982

Sample Type	Analysis	EPA Value	EIC Value	Units
Air Filter	Alpha	32 ± 8	24 ± 19	pCi/Sample
Air Filter	Beta	67 ± 5	77 ± 10	pCi/Sample
Air Filter	Sr-90	20 ± 1.5	17 ± 4	pCi/Sample
Air Filter	Cs-137	27 ± 5	27 ± 9	pCi/Sample

Table 5-1.14

USDOE QUALITY ASSESSMENT PROGRAM

1982

Sample Type	Nuclide	Known	Measured ± 2σ error	Units
Air (81-10)	Co-57	0.243 E+03	0.164±0.017 E+03	pCi/filter
Air (81-10)	Co-58	0.327 E+02	0.131±0.020 E+02	pCi/filter
Air (81-10)	Co-60	0.378 E+03	0.348±0.039 E+03	pCi/filter
Air (81-10)	Sr-90	0.990 E+01	0.910±0.600 E+01	pCi/filter
Air (81-10)	Sb-125	0.104 E+04	0.585±0.062 E+03	pCi/filter
Air (81-10)	Cs-137	0.175 E+03	0.124±0.013 E+03	pCi/filter
Soil (81-10)	K-40	0.200 E+02	0.260±0.030 E+02	pCi/g
Soil (81-10)	Cs-137	0.419 E+01	0.390±0.040 E+01	pCi/g
Water (81-10)	H-3	0.156 E+02	0.153±0.020 E+02	pCi/ml
Water (81-10)	Cr-51	0.692 E+01	0.730±0.100 E+01	pCi/ml
Water (81-10)	Mn-54	0.135 E+01	0.120±0.012 E+01	pCi/ml
Water (81-10)	Fe-59	0.181 E+01	0.140±0.014 E+01	pCi/ml
Water (81-10)	Sr-90	0.110 E+00	0.129±0.021 E+00	pCi/ml
Water (81-10)	Ce-144	0.113 E+02	0.227±0.030 E+02	pCi/ml
Vegetation (81-10)	K-40	0.296 E+02	0.455±0.050 E+02	pCi/g
Vegetation (81-10)	Sr-90	0.1333 E+02	0.137±0.014 E+02	pCi/g
Vegetation (81-10)	Cs-137	0.380 E+00	0.293±0.029 E+00	pCi/g
Vegetation (81-10)	U	0.430 E-01	0.450±0.130 E-01	ug/g

Table 5-1.15

QUALITY CONTROL REPORT - 1983 (JANUARY - JUNE)

ENVIRONMENTAL
SPIKES AND BLANKS

Analysis	Known Value (pCi)	Reported Value (pCi)	Spikes and Blanks Processed
JANUARY			
Alpha	Blank	<5	4
Alpha	76.8 (Am-241)	76.6 ±0.6	4
Beta	Blank	≤2	6
Beta	61.0 (Cs-137)	61.1±0.8	6
H-3	Blank	≤1	5
H-3	4450	4450 ±150	5
U-234	Blank	≤0.2	3
U-234	7.1	6.9 ±1.2	3
Ra-226	Blank	≤0.1	3
Ra-226	0.85	0.77±0.11	3
Pb-210	Blank	≤1	5
Pb-210	31.5	31.5 ±1.3	5
Pu-239	Blank	≤0.1	5
Pu-239	1.9	2.0 ±0.2	5
Sr-90	Blank	≤1	17
Sr-90	21.2	20.7 ±4.8	17
Gamma	Blank	≤15	1
Gamma	54.5	60.8 ±9.0	1
FEBRUARY			
Alpha	Blank	<5	6
Alpha	76.8 (Am-241)	76.9 ±0.3	6
Beta	Blank	≤2	9
Beta	61.0 (Cs-137)	62.0 ±4.3	9
H-3	Blank	≤1	4
H-3	4450	4490 ±210	4
Th-230	Blank	≤0.2	2
Th-230	5.7	6.1 ±1.1	2
Ra-226	Blank	≤0.1	2
Ra-226	0.85	0.80±0.06	2
Pb-210	Blank	≤1	8
Pb-210	31.5	31.7 ±2.5	8
Pu-239	Blank	≤0.1	2
Pu-239	1.7	1.9 ±0.2	2
Sr-90	Blank	≤1	10
Sr-90	21.2	21.5 ±5.4	10

Table 5-1.15
(continued)
QUALITY CONTROL REPORT - 1983 (JANUARY - JUNE)

ENVIRONMENTAL
SPIKES AND BLANKS

Analysis	Known Value (pCi)	Reported Value (pCi)	Spikes and Blanks Processed
MARCH			
Alpha	Blank	< 5	5
Alpha	76.8 (Am-241)	76.7 ±0.7	5
Beta	Blank	< 2	5
Beta	61.0 (Cs-137)	61.8 ±3.6	5
H-3	Blank	< 1	5
H-3	4450	4490 ±290	5
Ra-226	Blank	< 0.1	3
Ra-226	0.85	0.76±0.23	3
Pb-210	Blank	< 1	4
Pb-210	31.5	32.0 ±8.2	4
Pu-239	Blank	< 0.1	2
Pu-239	1.7	2.0 ±0.4	2
Sr-90	Blank	< 1	6
Sr-90	21.2	22.0 ±1.9	6
Cs-137	Blank	< 15	1
Cs-137	109	106 ±25	1
APRIL			
Alpha	Blank	< 5	5
Alpha	76.8 (Am-2410	77.0 ±0.6	5
Beta	Blank	< 2	5
Beta	61.0 (Cs-137)	62.6 ±7.2	5
H-3	Blank	< 1	3
H-3	4450	4520 ±230	3
Th-230	Blank	< 0.2	4
Th-230	5.7	5.8 ±1.5	4
Ra-226	Blank	< 0.1	1
Ra-226	0.85	0.75±0.23	1
Pb-210	Blank	< 1	7
Pb-210	31.5	31.6 ±2.9	7
Pu-239	Blank	< 0.1	3
Pu-239	1.7	2.0 ±0.5	3
Sr-90	Blank	< 1	6
Sr-90	21.2	21.9 ±2.1	6

Table 5-1.15
(continued)

QUALITY CONTROL REPORT - 1983 (JANUARY - JUNE)

ENVIRONMENTAL
SPIKES AND BLANKS

Analysis	Known Value (pCi)	Reported Value (pCi)	Spikes and Blanks Processed
MAY			
Alpha	Blank	< 5	4
Alpha	44.6 (Am-241)	44.8 ±0.3	4
Beta	Blank	< 2	8
Beta	61.0 (Cs-137)	61.9 ±7.3	8
H-3	Blank	< 1	4
H-3	4450	4470 ±240	4
U-234	Blank	< 0.2	3
U-234	7.1	7.2 ±0.3	3
Th-230	Blank	< 0.2	5
Th-230	5.7	6.3 ±1.5	5
Ra-226	Blank	< 0.1	4
Ra-226	0.85	0.85±0.24	4
Pb-210	Blank	< 1	2
Pb-210	31.5	31.3 ±1.0	2
Pu-239	Blank	< 0.1	2
Pu-239	1.7	1.8 ±0.2	2
Sr-90	Blank	< 1	5
Sr-90	21.2	22.8 ±6.3	5
JUNE			
Alpha	Blank	< 5	5
Alpha	44.6 (Am-241)	45.0 ±0.4	5
Beta	Blank	< 2	14
Beta	61.0 (Cs-137)	61.5 ±1.2	14
H-3	Blank	< 1	4
H-3	4450	4420 ±100	4
U-234	Blank	< 0.2	3
U-234	7.1	6.8 ±1.3	3
Th-230	Blank	< 0.2	2
Th-230	5.7	5.4 ±0.5	2
Ra-226	Blank	< 0.1	6
Ra-226	0.85	0.81±0.13	6
Pb-210	Blank	< 1	4
Pb-10	31.5	31.6 ±0.8	4
Sr-90	Blank	< 1	3
Sr-90	21.2	21.1 ±0.9	3

Table 5-1.15
(continued)

QUALITY CONTROL REPORT 1983 - (JANUARY - JUNE)

DUPLICATES

Analysis	Number Processed	Within 2 Sigma	Within 3 Sigma
Alpha	30	30	0
Beta	86	86	0
H-3	76	76	0
U-234	7	7	0
Ra-226	7	7	0
Pb-210	12	11	1
Pu-239	16	16	0
Sr-89	25	25	0
Sr-90	30	30	0
Gamma	13	13	0
Pu-239	3	3	0

Table 5-1.16

USEPA CROSS CHECK PROGRAM SUMMARY

(JANUARY - JUNE) 1983

Sample Type	Analysis	EPA Value	EIC Value	Units
Water	I-131	37 ± 10	26 ± 5	pCi/l
Water	I-131	27 ± 10.4	19 ± 4	pCi/l
Water	Ra-226	12.7± 3.3	8.2± 2.5	pCi/l
Water	Ra-226	11.0± 2.9	9 ± 3	pCi/l
Water	Ra-228	0	< 7	pCi/l
Water	Ra-228	0	< 6.0	pCi/l
Water	Alpha	11 ± 8.7	17 ± 3	pCi/l
Water	Alpha	29 ± 13	17 ± 7	pCi/l
Water	Beta	31 ± 8.7	44 ± 6	pCi/l
Water	Beta	57 ± 8.7	46 ± 5	pCi/l
Water	Sr-89	29.2± 8.7	12 ± 8	pCi/l
Water	Sr-90	17.2± 2.6	22.3± 4.4	pCi/l
Water	Cr-51	45 ± 8.7	102 ± 30	pCi/l
Water	Co-60	22 ± 8.7	23 ± 3	pCi/l
Water	Zn-65	21 ± 8.7	20 ± 3	pCi/l
Water	Ru-106	48 ± 8.7	49 ± 13	pCi/l
Water	Cs-134	20 ± 8.7	21 ± 3	pCi/l
Water	Cs-137	19 ± 8.7	20 ± 3	pCi/l
Water	H-3	2560 ±612	3090 ±510	pCi/l
Water	H-3	1990 ±345	2170 ±760	pCi/l
Water	Pu-239	8.6± 1.5	9.0± 0.5	pCi/l
Water	Uranium	31 ± 10.4	27 ± 5	pCi/l
Milk	Sr-89	37 ± 8.7	19 ± 9	pCi/l
Milk	Sr-90	18 ± 2.6	11 ± 4	pCi/l
Milk	I-131	55 ± 10.4	66 ± 7	pCi/l
Milk	Cs-137	26 ± 8.7	28 ± 3	pCi/l
Milk	K	1512 ±131	1850 ±200	mg/l
Food	Sr-89	35 ± 8.7	31 ± 19	pCi/kg
Food	Sr-90	28 ± 8.7	42 ± 9	pCi/kg
Food	I-131	37 ± 10.4	< 27	pCi/kg
Food	I-131	25 ± 10	< 101	pCi/kg
Food	Cs-137	31 ± 8.7	52 ± 23	pCi/kg
Food	Cs-137	27 ± 8.7	33 ± 12	pCi/kg
Food	K-40	2780 ±240	3400 ±500	pCi/kg

Table 5-1.16
(continued)

USEPA CROSS CHECK PROGRAM SUMMARY

(JANUARY - JUNE) 1983

Sample Type	Analysis	EPA Value	EIC Value	Units
Air Filter	Alpha	27.1 ± 11.7	20 ± 2	pCi/Filter
Air Filter	Alpha	26 ± 11.2	19 ± 2	pCi/Filter
Air Filter	Beta	68 ± 8.7	72 ± 7	pCi/Filter
Air Filter	Beta	59.2 ± 8.7	77 ± 10	pCi/Filter
Air Filter	Sr-90	16.1 ± 2.6	14 ± 8	pCi/Filter
Air Filter	Sr-90	20 ± 2.6	26 ± 8	pCi/Filter
Air Filter	Cs-137	27 ± 8.7	42 ± 6	pCi/Filter
Air Filter	Cs-137	27.0 ± 8.7	32 ± 2	pCi/Filter

5.2 NUS Radiological Laboratory Quality Control Data

The following report describes the quality control program and summarizes quality control data for NUS Radiological Laboratory, a vendor of analytical services for the pre-operational REMP for WNP-2.(28)

SUMMARY OF QUALITY CONTROL DATA

FOR

THE NUS RADIOLOGICAL LABORATORY

1983

NUS Corporation
Environmental Services Division
5350 Campbells Run Road
Pittsburgh, Pennsylvania 15205

March 1984

NUS RADIOLOGICAL LABORATORY
QUALITY ASSURANCE PROGRAM

DECEMBER 1983

I. NUS RADIOLOGICAL LABORATORY QUALITY ASSURANCE PROGRAM

- A. Introduction
- B. Laboratory Analyses for Quality Assurance

II. RESULTS OF 1983 NUS RADIOLOGICAL LABORATORY INTERNAL QUALITY ASSURANCE PROGRAM

- A. Gross Alpha Analysis
  1. Air Particulate
     - a. duplicate analysis
  2. Water
     - a. duplicate analysis
     - b. blinds, spikes and references
- B. Gross Beta Analysis
  1. Air Particulate
     - a. duplicate analysis
  2. Water
     - a. duplicate analysis
     - b. blinds, spikes and references
- C. Gamma Spectral Analysis
  1. Air Particulate
     - a. duplicate analysis
     - b. blinds, spikes and references
  2. Milk
     - a. duplicate analysis
     - b. blinds, spikes and references
  3. Water
     - a. duplicate analysis
     - b. blinds, spikes and references
  4. Solids
     - a. dry weight
       - i. duplicate analysis
     - b. wet weight
       - i. duplicate analysis
     - c. blinds, spikes and references

D. Iodine-131
   1. Charcoal Cartridges
      a. duplicate analysis
      b. blinds, spikes and references
   2. Milk
      a. duplicate analysis
      b. blinds, spikes and references
   3. Water
      a. duplicate analysis
      b. blinds, spikes and references

E. Strontium
   1. Milk
      a. duplicate analysis
      b. blinds, spikes and references
   2. Water
      a. duplicate analysis
      b. blinds, spikes and references

F. Tritium
   1. Water
      a. duplicate analysis
      b. blinds, spikes and references
   2. Urine
      a. duplicate analysis
      b. blinds, spikes and references

III. RESULTS OF 1983 EPA INTERCOMPARISON PROGRAM

A. Gross Alpha Analysis
   1. Water

B. Gross Beta Analysis
   1. Water

C. Gamma Spectral Analysis
   1. Milk
   2. Water

D. Iodine-131
   1. Milk
   2. Water

E. Plutonium (water)

F. Radium (water)
   1. Ra-226 & -228

G. Strontium
   1. Milk
   2. Water

H. Tritium
   1. Water
   2. Urine

J. Uranium
   1. Water

K. Radionuclides on Air Particulate

L. EPA "Blind" Analysis (water)

M. Results of Sixth International Intercomparison of Environmental Dosimeters

IV. REPORTING OF ANALYTICAL RESULTS

V. PERFORMANCE CHECK SUMMARY

A. High Resolution Gamma Spectrometry System

B. Gas Proportional Counter

C. Liquid Scintillation Counter

VI. CHEMICAL YIELD DETERMINATION

SECTION I

NUS RADIOLOGICAL LABORATORY

QUALITY ASSURANCE PROGRAM

A. Introduction

The quality assurance program of the NUS Radiological Laboratory is briefly described in this report.

Information on each incoming sample is entered in a permanent log book. A sample number is assigned to each sample at the time of receipt. This sample number uniquely identifies each sample.

Laboratory counting instruments are calibrated, using radionuclide standards obtained from the National Bureau of Standards, the EPA, and reliable commercial suppliers, such as Amersham-Searle. Calibration of counting instruments is maintained by regular counting of radioactive reference sources. Background counting rates are measured regularly on all counting instruments. Additional performance checks for the gamma-ray scintillation spectrometer include regular checks and adjustment, when necessary, of energy calibration.

Blank samples are processed with each group of samples analyzed for specific radionuclides, using radiochemical separation procedures, as a check for possible cross-contamination. Blind, spiked (known quantities of radioactivity added), and replicate samples are processed frequently to determine analytical precision and accuracy.

B. Laboratory Analyses for Quality Assurance

The quality assurance procedures employed in the conduct of radiological monitoring programs by the Environmental Services Division Radiological Laboratory are as required in Section 5.0 of the NUS Environmental Services Division Quality Assurance Manual, 9019-XX, and detailed in NUS Radiological Laboratory Work Instructions. These procedures include the requirement for (1) laboratory analysis of samples distributed by appropriate government or other standards-maintaining agencies in a laboratory intercomparison program, and (2) analysis in duplicate of a specific fraction of the client's environmental samples.

The NUS Radiological Laboratory also participates in the U.S. Environmental Protection Agency Radioactivity Intercomparison Studies (Cross-check) Program, the results of which are included within this report.

SECTION II

RESULTS OF 1983 NUS RADIOLOGICAL LABORATORY

INTERNAL QUALITY ASSURANCE PROGRAM

A-1
GROSS ALPHA ON AIR PARTICULATE FILTER
(Page 1 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
023300/01	01/04/83	LT 4	LT 4
023460/61	01/12/83	LT 2	LT 1.2
023500/01	01/18/83	LT 3	LT 1.3
023620/21	01/28/83	LT 3	LT 2
023760/61	02/02/83	LT 2	LT 1.6
024060/61	02/22/83	LT 8	LT 8
024300/01	03/10/83	LT 6	LT 10
024360/61	03/16/83	19 ± 5	10 ± 4
024560/61	03/30/83	LT 5	9.7 ± 5.8
024660/61	04/06/83	6.4 ± 5.5	12 ± 7
024860/61	04/12/83	LT 7	LT 6
024900/01	04/19/83	LT 5	LT 5
025120/21	05/03/83	5.2 ± 3.8	7.2 ± 4.1
025300/01	05/17/83	9.3 ± 5.4	6.8 ± 6.2
025420/21	05/24/83	LT 5	LT 9
025580/81	06/01/83	5.5 ± 4.8	LT 6
025680/81	06/08/83	4.0 ± 2.9	2.5 ± 2.5

LT = Less Than

A-1
GROSS ALPHA ON AIR PARTICULATE FILTER
(Page 2 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
025780/81(1)	06/14/83	LT 2	LT 3
026000/01	06/22/83	4.9 ± 2.5	2.6 ± 1.9
026160/61	06/28/83	3.3 ± 2.4	LT 2
026340/41	07/06/83	LT 2	3.7 ± 2.0
026560/61	07/13/83	2.0 ± 1.7	LT 3
027040/41(2)	07/26/83	3.0 ± 2.4	LT 3
027300/01	08/02/83	LT 3	3.9 ± 3.0
027580/81	08/09/83	3.2 ± 2.6	LT 3
027880/81	08/17/83	2.8 ± 2.2	4.2 ± 2.8
028140/41	08/23/83	6.0 ± 3.5	7.1 ± 4.0
028320/21	08/30/83	6.1 ± 3.0	LT 3
028920/21	09/14/83	5.2 ± 2.6	LT 4
029920/21	10/11/83	LT 2	1.6 ± 1.5
030260/61	10/18/83	1.9 ± 1.7	LT 1.3
030940/41	11/08/83	1.7 ± 1.2	1.6 ± 1.4
030900/01	11/09/83	LT 0.2	LT 0.5
031640/41	11/22/83	1.2 ± 1.0	2.2 ± 1.2

LT = Less Than
(1) Previously reported value was incorrectly calculated.
(2) Previously reported date was start collection date.

A-2
GROSS ALPHA IN WATER
(Page 1 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
022820/21	12/14/82	7.8 ± 3.3	8.6 ± 3.4
022860/61	01/15/83	LT 3	LT 3
023120/21	01/21/83	LT 3	LT 2
023200/01	01/25/83	LT 2	LT 3
024440/41	04/13/83	LT 4	LT 5
025880/81	06/07/83	LT 2	LT 2
025660/61	06/10/83	LT 2	LT 2
026020/21	06/24/83	LT 2	LT 2
026460/61	06/21/83	LT 1.4	2.2 ± 1.3
027680/81	07/15/83	LT 1.9	LT 1.4
027200/01	07/18/83	LT 3	LT 3
027700/01	07/18/83	LT 0.8	LT 1.1
027780/81	08/18/83*	1.5 ± 1.1	LT 2
027800/01	07/28/83	LT 1.5	LT 1.8
027920/21	08/22/83*	LT 3	LT 3
028240/41	07/13/83	.93 ± .72	LT 2
028260/61	08/25/83	11 ± 3	13 ± 3
028980/81	08/29/83	LT 4	LT 4
028660/61	08/31/83	LT 1.6	LT 1.6
029620/21	09/22/83	13 ± 2	12 ± 2
029880/81	09/19/83	LT 3	LT 3
030160/61	10/19/83	LT 5	LT 5
031300/01	10/18/83	LT 4	LT 4
032040/41	12/07/83	3.9 ± 2.6	2.5 ± 2.4

* date received, collection date not given
LT = Less Than

A-2
GROSS ALPHA IN WATER
(Page 2 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

BLANKS, SPIKES AND REFERENCE ANALYSIS

Collection Date	Expected Result ± 2s (pCi/l)	Reported Result ± 2s (pCi/l)
02/15/83	0.0	LT 1
02/15/83	5.0 ± 0.6	7.4 ± 1.0
03/12/83	100 ± 10	62 ± 12 (1)
04/14/83	3200 ± 400	3200 ± 400
04/14/83	5800 ± 600	6300 ± 700
04/20/83	100 ± 10	99 ± 10
05/26/83	1.0 ± 0.2	1.0 ± 0.2
05/26/83	3200 ± 400	3200 ± 400
09/05/83	0.0	LT .7 (2)
09/05/83	28 ± 3	27 ± 2
09/05/83	280 ± 30	240 ± 30

LT = Less Than
(1) No unequivocal cause for discrepancy could be established. The discrepancy is presumed to be analyst error.
(2) Indicates reagent blank.

B-1
GROSS BETA ON AIR PARTICULATE FILTER
(Page 1 of 8)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
023240/41	01/01/83	27 ± 7	27 ± 7
023280/81	01/04/83	23 ± 7	23 ± 7
023300/01	01/04/83	16 ± 5	19 ± 5
023320/21	01/04/83	31 ± 6	31 ± 6
023400/01	01/11/83	20 ± 7	17 ± 7
023420/21	01/11/83	44 ± 6	42 ± 6
023460/61	01/12/83	13 ± 5	13 ± 5
023480/81	01/15/83	15 ± 7	18 ± 7
023500/01	01/18/83	7.6 ± 4.7	9.1 ± 4.9
023540/41	01/18/83	16 ± 6	15 ± 6
023580/81	01/22/83	19 ± 7	14 ± 6
023620/21	01/28/83	LT 8	LT 7
023640/41	01/25/83	16 ± 6	18 ± 6
023660/61	01/25/83	29 ± 6	34 ± 6
023760/61	02/02/83	7.5 ± 6.2	13 ± 6
023800/01	02/01/83	29 ± 5	29 ± 6
023880/81	02/08/83	29 ± 5	25 ± 5
023960/61	02/15/83	30 ± 6	24 ± 5
024020/21	02/22/83	24 ± 5	19 ± 5
024060/61	02/22/83	LT 11	LT 11
024080/81	02/22/83	28 ± 7	16 ± 7

LT = Less Than

B-1
GROSS BETA ON AIR PARTICULATE FILTER
(Page 2 of 8)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
024100/01	02/26/83	16 ± 8	9.3 ± 7.6
024140/41	03/01/83	20 ± 5	20 ± 5
024200/01	03/01/83	14 ± 7	10 ± 7
024220/21	03/05/83	24 ± 7	24 ± 7
024240/41	03/08/83	21 ± 7	12 ± 7
024300/01	03/10/83	LT 9	LT 10
024320/21	03/12/83	12 ± 5	8 ± 7
024340/41	03/18/83	14 ± 4	16 ± 5
024360/61	03/16/83	22 ± 7	21 ± 7
024380/81	03/18/83	15 ± 7	13 ± 6
024420/21	03/15/83	22 ± 5	25 ± 6
024460/61	03/22/83	7.2 ± 6.1	LT 10
024480/81	03/23/83	10 ± 5	14 ± 4
024500/01	03/26/83	20 ± 7	21 ± 8
024560/61	03/30/83	6.7 ± 5.7	5.7 ± 5.7
024620/21	04/03/83	13 ± 6	15 ± 6
024640/41	03/30/83	19 ± 4	19 ± 4
024660/61	04/06/83	12 ± 6	8.3 ± 5.9
024680/81	04/05/83	15 ± 6	17 ± 6

LT = Less Than

B-1
GROSS BETA ON AIR PARTICULATE FILTER
(Page 3 of 8)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
024700/01	04/06/83	16 ± 5	13 ± 5
024840/41	04/13/83	24 ± 5	23 ± 5
024860/61	04/12/83	LT 9	LT 9
024880/81	04/16/83	12 ± 6	13 ± 6
024900/01	04/19/83	LT 8	LT 8
024920/21	04/19/83	15 ± 7	8.2 ± 6.4
024940/41	04/20/83	18 ± 5	22 ± 5
024960/61	04/23/83	15 ± 7	8.7 ± 6.8
024980/81	04/26/83	9.6 ± 6.4	11 ± 7
025040/41	04/27/83	23 ± 5	23 ± 5
025080/81	04/30/83	12 ± 6	8.1 ± 6.7
025120/21	05/03/83	18 ± 5	19 ± 5
025140/41	05/03/83	14 ± 6	8.7 ± 6.5
025160/61	05/04/83	20 ± 6	31 ± 6
025200/01	05/06/83	LT 20	LT 30
025220/21	05/10/83	17 ± 7	13 ± 6
025260/61	05/11/83	21 ± 5	19 ± 5
025280/81	05/14/83	15 ± 6	17 ± 6
025300/01	05/17/83	25 ± 6	25 ± 6

LT = Less Than

B-1
GROSS BETA ON AIR PARTICULATE FILTER
(Page 4 of 8)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
025340/41	05/18/83	19 ± 5	18 ± 5
025380/81	05/21/83	9.1 ± 6.1	10 ± 6
025420/21	05/24/83	7.4 ± 5.3	LT 8
025440/41	05/24/83	11 ± 6	12 ± 6
025480/81	05/25/83	14 ± 4	14 ± 4
025560/61	05/31/83	LT 10	8.8 ± 6.3
025580/81	06/01/83	LT 8	6.5 ± 5.0
025600/01	06/01/83	12 ± 3	15 ± 3
025680/81	06/08/83	LT 9	9.2 ± 5.7
025700/01	06/07/83	22 ± 5	13 ± 5
025740/41	06/11/83	18 ± 7	12 ± 6
025780/81	06/14/83	17 ± 8	18 ± 7
025800/01	06/14/83	13 ± 6	10 ± 6
025900/01	06/15/83	23 ± 5	21 ± 5
025980/81	06/21/83	24 ± 6	20 ± 7
026000/01	06/22/83	18 ± 6	18 ± 6
026080/81	06/22/83	7.6 ± 5.3	13 ± 5
026160/61	06/28/83	72 ± 10	73 ± 10
026200/01	06/28/83	6.6 ± 6.1	11 ± 6

LT = Less Than

B-1

GROSS BETA ON AIR PARTICULATE FILTER

(Page 5 of 8)

NUS Radiological Laboratory

Internal Quality Control Program

1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
026300/01	07/05/83	10 ± 6	8.5 ± 6.1
026320/21	07/05/83	LT 5	LT 5
026340/41	07/06/83	11 ± 5	9.8 ± 5.1
026480/81	07/06/83	21 ± 5	20 ± 5
026420/21	07/06/83	12 ± 3	9.1 ± 2.4
026520/21	07/11/83	8.2 ± 3.4	9.9 ± 3.6
026560/61	07/13/83	10 ± 5	11 ± 6
026580/81	07/13/83	11 ± 5	7.5 ± 4.6
026640/41	07/14/83	9.8 ± 3	10 ± 3
026660/61	07/18/83	3.8 ± 3.0	5.4 ± 2.9
026740/41	07/16/83	19 ± 7	17 ± 7
026760/61	07/19/83	35 ± 8	34 ± 8
026820/21	07/21/83	18 ± 4	21 ± 4
026860/61	07/20/83	16 ± 5	15 ± 5
026960/61	07/25/83	15 ± 3	12 ± 3
027020/21	07/26/83	12 ± 7	17 ± 7
027040/41	07/26/83	17 ± 7	15 ± 7
027180/81	07/29/83	10 ± 3	15 ± 3
027260/61	07/26/83	26 ± 7	19 ± 7

LT = Less Than

B-1
GROSS BETA ON AIR PARTICULATE FILTER
(Page 6 of 8)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 $\pm$ 2s (E-03 pCi/m^3)	Result #2 $\pm$ 2s (E-03 pCi/m^3)
027220/21	08/01/83	12 $\pm$ 3	12 $\pm$ 3
027260/61	08/02/83	26 $\pm$ 7	19 $\pm$ 7
027280/81	08/02/83	29 $\pm$ 6	30 $\pm$ 6
027300/01	08/02/83	9.1 $\pm$ 6.0	6.4 $\pm$ 5.8
027360/61	08/04/83	15 $\pm$ 4	23 $\pm$ 4
027480/81	08/06/83	19 $\pm$ 7	13 $\pm$ 6
027500/01	08/08/83	16 $\pm$ 4	16 $\pm$ 4
027580/81	08/09/83	LT 9	5.7 $\pm$ 5.7
027600/01	08/09/83	24 $\pm$ 7	23 $\pm$ 7
027720/21	08/11/83	19 $\pm$ 3	18 $\pm$ 3
027760/61	08/15/83	12 $\pm$ 3	17 $\pm$ 4
027820/21	08/16/83	11 $\pm$ 6	7.8 $\pm$ 6.1
027840/41	08/17/83	8.6 $\pm$ 3.0	6.5 $\pm$ 2.7
027880/81	08/17/83	14 $\pm$ 6	6.8 $\pm$ 5.0
027900/01	08/17/83	21 $\pm$ 5	19 $\pm$ 5
028040/41	08/22/83	16 $\pm$ 4	17 $\pm$ 4
028140/41	08/23/83	39 $\pm$ 9	38 $\pm$ 9
028200/01	08/25/83	17 $\pm$ 3	19 $\pm$ 3
028300/01	08/27/83	16 $\pm$ 7	16 $\pm$ 7
028320/21	08/30/83	22 $\pm$ 6	18 $\pm$ 6

LT = Less Than

B-1
GROSS BETA ON AIR PARTICULATE FILTER
(Page 7 of 8)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
028340/41	08/29/83	18 ± 4	18 ± 4
028380/81	08/30/83	29 ± 7	21 ± 6
028460/61	09/01/83	16 ± 3	19 ± 3
028480/81	08/31/83	17 ± 4	18 ± 5
028500/01	09/03/83	11 ± 7	19 ± 7
028620/21	09/07/83	37 ± 6	37 ± 6
028820/21	09/12/83	14 ± 4	12 ± 4
028920/21	09/14/83	23 ± 5	19 ± 5
028960/61	09/14/83	17 ± 5	16 ± 5
029080/81	09/20/83	23 ± 7	21 ± 7
029100/01	09/19/83	18 ± 4	15 ± 4
029180/81	09/21/83	25 ± 5	20 ± 5
029420/21	09/28/83	37 ± 6	32 ± 4
029740/41	10/05/83	34 ± 4	36 ± 4
029760/61	10/08/83	68 ± 9	70 ± 9
029780/81	10/03/83	18 ± 4	17 ± 4
029820/21	10/08/83	18 ± 4	16 ± 4
029920/21	10/11/83	15 ± 4	13 ± 4
029960/61	10/12/83	39 ± 4	42 ± 4

LT = Less Than

B-1
GROSS BETA ON AIR PARTICULATE FILTER

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
030100/01	10/10/83	14 ± 3	12 ± 3
030120/21	10/15/83	8.2 ± 2.5	9.6 ± 2.6
030260/61	10/18/83	23 ± 5	20 ± 5
030280/81	10/19/83	18 ± 5	21 ± 5
030300/01	10/18/83	LT 8	LT 8
030360/61	10/22/83	11 ± 2	11 ± 2
030380/81	10/23/83	18 ± 5	14 ± 4
030600/01	10/24/83	19 ± 3	17 ± 3
030620/21	10/29/83	3.4 ± 1.9	6.1 ± 1
030754	10/31/83	22 ± 3	19 ± 3
030780/81	11/02/83	18 ± 5	19 ± 5
030840/41	11/05/83	7.8 ± 1.9	6.6 ± 1.9
030940/41	11/08/83	10 ± 3	15 ± 4
031280/81	11/12/83	9.2 ± 2.0	10 ± 2
031360/61	11/16/83	17 ± 5	21 ± 5
031440/41	11/07/83	6.9 ± 2.2	8.1 ± 2.2
031500/01	11/19/83	16 ± 6	20 ± 6
031640/41	11/22/83	3.8 ± 3.1	5.5 ± 3.1
031760/61	11/28/83	8.0 ± 2.3	9.7 ± 2.2

LT = Less Than

B-2
GROSS BETA IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
022820/21	12/14/83	LT 6	LT 6
022860/61	01/15/83	LT 2	2.3 ± 1.4
023120/21	01/23/83	LT 2	LT 2
023200/01	01/25/83	1.5 ± 1.4	3.8 ± 1.3
024120/21	02/28/83	2.7 ± 1.3	3.4 ± 1.4
024440/41	04/13/83	2.3 ± 1.5	LT 3
024520/21	03/19/83	(0.11 ± 0.02)E06	(0.11 ± 0.02)E06(1)
024540/41	03/28/83	3.2 ± 1.3	2.3 ± 1.3
024600/01	03/31/83	3.1 ± 1.4	4.1 ± 1.5
025000/01	04/26/83	1.5 ± 1.3	1.8 ± 1.3
025020/21	04/16/83	(0.21 ± 0.03)E06	(0.22 ± 0.03)E06
025180/81	05/21/83	2.1 ± 1.4	1.9 ± 1.4
025500/01	05/21/83	3700 ± 400	3600 ± 400
025520/21	05/28/83	6.8 ± 1.4	4.6 ± 1.4
025880/81	06/07/83	6.7 ± 1.6	3.9 ± 1.5
026120/21	06/27/83	3.2 ± 1.4	3.9 ± 1.5
026180/81	06/27/83	LT 2	LT 2
026460/61	06/21/83	2.2 ± 1.4	4.9 ± 1.5
027160/61	07/29/83	LT 15	LT 15
029620/21	09/22/83	16 ± 2	18 ± 2
030160/61	10/19/83	LT 8	LT 8
030200/01	10/17/83	3.2 ± 1.4	3.8 ± 1.4
031220/21	11/10/83	LT 3	LT 2
031540/41	11/23/83(2)	710 ± 80	710 ± 80

LT = Less Than
(1) This result edited since previous report. Prior reports were in error due to typo on original data.
(2) Date received, collection date not given.

B-2
GROSS BETA IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

REFERENCE, SPIKES OR BLANK ANALYSIS

Collection Date	Expected Result ± 2s (pCi/l)	Reported Result ± 2s (pCi/l)
03/12/83	520 ± 52	520 ± 60
04/20/83	520 ± 52	490 ± 50
04/28/83	520 ± 52	525 ± 60
05/26/83	5.2 ± 0.5	5.1 ± 0.6

LT = Less Than

C-1
GAMMA SPECTROMETRY ON AIR PARTICULATE FILTER (COMPOSITE)
(Page 1 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (E-03 pCi/m^3)	Result #2 ± 2s (E-03 pCi/m^3)
023380/81	01/04/83	Be-7	71 ± 27	58 ± 12
		Ce-144	LT 10	LT 3
		Cs-134	LT 3	LT 0.8
		Cs-137	LT 2	LT 0.8
		Nb-95	LT 3	LT 0.7
		Zr-95	LT 7	LT 0.7
024780/81	03/30/83	Be-7	58 ± 13	45 ± 12
		Ce-144	LT 4	LT 3
		Cs-134	LT 1.2	LT 1.0
		Cs-137	LT 1.0	LT 0.9
		Nb-95	LT 1.2	LT 1.1
		Zr-95	LT 2	LT 2
024740/41	04/03/83	Be-7	47 ± 18	49 ± 18
		Ce-144	LT 6	LT 8
		Cs-134	LT 2	LT 2
		Cs-137	LT 2	LT 1.6
		Nb-95	LT 2	LT 1.3
		Zr-95	LT 3	LT 3
024760/61	04/05/83	Be-7	57 ± 15	54 ± 15
		Ce-144	LT 4	LT 5
		Co-134	LT 1.4	LT 1.7
		Cs-137	LT 1.2	LT 1.3
		Nb-95	LT 1.7	LT 1.6
		Zr-95	LT 3	LT 2

LT = Less Than

C-1
GAMMA SPECTROMETRY ON AIR PARTICULATE FILTER (COMPOSITE)
(Page 2 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 $\pm$ 2s (E-03 pCi/m^3)	Result #2 $\pm$ 2s (E-03 pCi/m^3)
025360/61	05/11/83	Ba-140	LT 20	LT 40
		Cs-134	LT 4	LT 7
		Cs-137	LT 5	LT 7
		K-40	1300 $\pm$ 200	1300 $\pm$ 200
		La-140	LT 12	LT 16
027100/01	07/06/83	Be-7	79 $\pm$ 28	78 $\pm$ 35
		Ce-144	LT 11	LT 15
		Cs-134	5.4 $\pm$ 2.2	4.8 $\pm$ 2.3
		Cs-137	14 $\pm$ 3	18 $\pm$ 5
		Nb-95	LT 4	LT 3
		Zr-95	LT 6	LT 8
027120/21	07/06/83	Be-7	37 $\pm$ 33	LT 80
		Ce-144	LT 12	LT 14
		Cs-134	LT 4	LT 4
		Cs-137	LT 4	LT 3
		Nb-95	LT 5	LT 5
		Zr-95	LT 10	LT 7
030700/01	09/26/83	Be-7	79 $\pm$ 20	61 $\pm$ 21
		Ce-144	LT 6	LT 6
		Cs-134	LT 1.6	LT 1.9
		Cs-137	LT 2	LT 1.9
		Nb-95	LT 2	LT 3
		Zr-95	LT 4	LT 5
030920/21	10/01/83	Be-7	42 $\pm$ 14	48 $\pm$ 14
		Ce-144	LT 5	LT 6
		Cs-134	LT 1.6	LT 1.3
		Cs-137	LT 1.3	LT 1.6
		Nb-95	LT 3	LT 2
		Zr-95	LT 5	LT 4

LT = Less Than

C-1
GAMMA SPECTROMETRY ON AIR PARTICULATE FILTER

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES OR BLIND ANALYSIS

Collection Date	Nuclides	Expected Result ± 2s (pCi/l)	Reported Result ± 2s (pCi/l)
05/26/83	Co-57	14 ± 2	17 ± 13
	Co-60	90 ± 18	82 ± 19
	Cd-109	410 ± 82	420 ± 90
	Ce-139	15 ± 3	16 ± 3
	Cs-137	80 ± 16	73 ± 14
	Hg-203	12 ± 3	17 ± 6
	Sn-113	45 ± 9	41 ± 10
	Sr-85	33 ± 7	31 ± 8
	Y-88	88 ± 18	87 ± 14

LT = Less Than

C-2
GAMMA SPECTROMETRY OF MILK
(Page 1 of 4)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
023560/61	01/18/83	Ba-140	LT 30	LT 30
		Cs-134	LT 9	LT 10
		Cs-137	LT 8	LT 10
		K-40	1300 ± 200	1200 ± 200
		La-140	LT 15	LT 11
024720/21	04/11/83	Ba-140	LT 20	LT 17
		Cs-134	LT 9	LT 6
		Cs-137	LT 10	LT 8
		K-40	1800 ± 200	1600 ± 200
		La-140	LT 12	LT 10
025460/61	05/25/83	Ba-140	LT 19	LT 20
		Cs-134	LT 5	LT 5
		Cs-137	LT 5	LT 6
		K-40	1400 ± 200	1400 ± 200
		La-140	LT 8	LT 11

LT = Less Than

C-2
GAMMA SPECTROMETRY OF MILK
(Page 2 of 4)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
026980/81	07/25/83	Ba-140	LT 30	LT 40
		Cs-134	LT 5	LT 6
		Cs-137	LT 5	LT 7
		K-40	1700 ± 200	1600 ± 200
		La-140	LT 15	LT 15
027740/41	08/12/83	Ba-140	LT 30	LT 30
		Cs-134	LT 7	LT 6
		Cs-137	LT 9	LT 8
		K-40	1700 ± 200	1500 ± 200
		La-140	LT 14	LT 14
026100/01	06/27/83	Ba-140	LT 90	LT 40
		Co-58	LT 3	LT 3
		Co-60	LT 1.9	LT 1.9
		Cs-134	LT 1.4	LT 1.4
		Cs-137	1.7 ± 0.8	LT 1.6
		Fe-59	LT 10	LT 7
		K-40	1500 ± 200	1700 ± 200
		La-140	LT 30	LT 20
		Mn-54	LT 1.7	LT 1.7
		Nb-95	LT 3	LT 2
		Zn-65	LT 5	LT 5
		Zr-95	LT 5	LT 4

LT = Less Than

C-2
GAMMA SPECTROMETRY OF MILK
(Page 3 of 4)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
027980/81	08/22/83	Ba-140	LT 60	LT 110
		Co-58	LT 1.8	LT 3
		Co-60	LT 1.4	LT 2
		Cs-134	LT 0.9	LT 1.6
		Cs-137	1.8 ± 0.6	2.6 ± 1.0
		Fe-59	LT 7	LT 11
		K-40	1200 ± 200	1300 ± 200
		La-140	LT 30	LT 50
		Mn-54	LT 1.2	LT 2
		Nb-95	LT 3	LT 6
		Zn-65	LT 4	LT 6
		Zr-95	LT 3	LT 6
028280/81	08/27/83	Ba-140	LT 70	LT 90
		Cs-134	LT 1.2	LT 1.3
		Cs-137	LT 1.4	LT 1.5
		K-40	1100 ± 200	1100 ± 200
		La-140	LT 300	LT 40

LT = Less Than

C-2
GAMMA SPECTROMETRY OF MILK
(Page 4 of 4)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
030680/81	10/31/83	Ba-140	LT 20	LT 40
		Cs-134	LT 2	LT 4
		Cs-137	1.6 ± 1.3	LT 4
		K-40	1700 ± 200	2000 ± 200
		La-140	LT 11	LT 19
031740/41	11/28/83	Ba-140	LT 30	LT 40
		Cs-134	LT 5	LT 6
		Cs-137	LT 6	LT 8
		K-40	1700 ± 200	1700 ± 200
		La-140	LT 13	LT 20

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 1 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
023860/61	01/31/83	Ba-140	LT 40	LT 40
		Co-58	LT 7	LT 10
		Co-60	LT 7	LT 9
		Cs-134	LT 7	LT 8
		Cs-137	LT 7	LT 7
		Fe-59	LT 16	LT 19
		La-140	LT 16	LT 20
		Mn-54	LT 6	LT 8
		Nb-95	LT 7	LT 8
		Zn-65	LT 15	LT 20
		Zr-95	LT 13	LT 14
024040/41	02/21/83	Ba-140	LT 30	LT 20
		Co-58	LT 11	LT 7
		Co-60	LT 11	LT 8
		Cs-134	LT 10	LT 7
		Cs-137	LT 11	LT 7
		Fe-59	LT 20	LT 13
		La-140	LT 13	LT 10
		Mn-54	LT 10	LT 7
		Nb-95	LT 11	LT 6
		Zn-65	LT 30	LT 15
		Zr-95	LT 20	LT 12

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 2 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
024120/21	02/28/83	Ba-140	LT 30	LT 10
		Co-58	LT 9	LT 4
		Co-60	LT 7	LT 6
		Co-134	LT 10	LT 3
		Cs-137	LT 11	LT 4
		Fe-59	LT 17	LT 9
		La-140	LT 12	LT 8
		Mn-54	LT 10	LT 4
		Nb-95	LT 10	LT 4
		Zn-65	LT 17	LT 10
		Zr-95	LT 18	LT 7
024400/01	03/16/83	Ba-140	LT 12	LT 13
		Co-58	LT 4	LT 4
		Co-60	LT 5	LT 5
		Cs-134	LT 4	LT 6
		Cs-137	LT 5	LT 5
		Fe-59	LT 11	LT 10
		La-140	LT 6	LT 7
		Mn-54	LT 4	LT 5
		Nb-95	LT 4	LT 4
		Zn-65	LT 11	LT 10
		Zr-95	LT 7	LT 9

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 3 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
024580/81	03/28/83	Ba-140	LT 30	LT 14(1)
		Co-58	LT 7	LT 5
		Co-60	LT 6	LT 5
		Cs-134	LT 6	LT 4
		Cs-137	LT 5	LT 5
		Fe-59	LT 12	LT 8
		La-140	LT 14	LT 11
		Mn-54	LT 5	LT 4
		Nb-95	LT 5	LT 5
		Zn-65	LT 14	LT 11
		Zr-95	LT 12	LT 9
024540/41	03/28/83	Ba-140	LT 16	LT 20
		Co-58	LT 5	LT 5
		Co-60	LT 6	LT 5
		Cs-134	LT 6	LT 5
		Cs-137	LT 6	LT 6
		Fe-59	LT 10	LT 12
		La-140	LT 9	LT 10
		Mn-54	LT 6	LT 5
		Nb-95	LT 5	LT 5
		Zn-65	LT 14	LT 12
		Zr-95	LT 10	LT 10

LT = Less Than
(1) Result #2 was incorrectly stated on previous report(s).

C-3
GAMMA SPECTROMETRY OF WATER
(Page 4 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
024600/01	03/31/83	Ag-110M	LT 5	LT 10
		Ba-140	LT 19	LT 40
		Be-7	LT 4	LT 9
		Ce-141	LT 11	LT 20
		Co-58	LT 7	LT 10
		Co-60	LT 7	LT 10
		Cr-51	LT 50	LT 90
		Cs-134	LT 7	LT 10
		Cs-136	LT 8	LT 12
		Cs-137	LT 6	LT 9
		Fe-59	LT 16	LT 20
		I-131	LT 8	LT 16
		I-133	LT 300	LT 600
		K-40	LT 80	LT 90
		La-140	LT 11	LT 17
		Mn-54	LT 7	LT 10
		Mo-99	LT 17	LT 40
		Na-22	LT 7	LT 10
		Nb-95	LT 6	LT 9
		Ra-226	LT 12	LT 30
		Ru-103	LT 7	LT 11
		Ru-106	LT 60	LT 8
		Sb-125	LT 13	LT 30
		Te-129M	LT 5	LT 10
		Te-132	LT 12	LT 30
		Zn-65	LT 15	LT 20
		Zr-95	LT 12	LT 18

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 5 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
025060/61	04/30/83	Ba-140	LT 14	LT 20
		Co-58	LT 5	LT 7
		Co-60	LT 8	LT 7
		Cs-134	LT 5	LT 6
		Cs-137	LT 4	LT 7
		Fe-59	LT 10	LT 14
		La-140	LT 14	LT 9
		Mn-54	LT 4	LT 6
		Nb-95	LT 4	LT 7
		Zn-65	LT 13	LT 12
		Zr-95	LT 8	LT 12
025240/41	05/10/83	Ba-140	LT 20	LT 30
		Co-58	LT 6	LT 8
		Co-60	LT 7	LT 9
		Cs-134	LT 6	LT 8
		Cs-137	LT 6	LT 8
		Fe-59	LT 12	LT 16
		La-140	LT 11	LT 16
		Mn-54	LT 6	LT 8
		Nb-95	LT 6	LT 8
		Zn-65	LT 12	LT 19
		Zr-95	LT 11	LT 15

LT = Less Than

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
025521/22	05/28/83	Ba-140	LT 10	LT 15
		Co-58	LT 3	LT 5
		Co-60	LT 3	LT 5
		Cs-134	LT 2	LT 4
		Cs-137	LT 3	LT 5
		Fe-59	LT 6	LT 9
		La-140	LT 5	LT 8
		Mn-54	LT 3	LT 4
		Nb-95	LT 3	LT 5
		Zn-65	LT 6	LT 9
		Zr-95	LT 5	LT 8
025540/41	05/25/83	Ba-140	LT 17	LT 80
		Co-58	LT 3	LT 12
		Co-60	LT 3	LT 12
		Cs-134	LT 3	LT 11
		Cs-137	LT 3	LT 11
		Fe-59	LT 8	LT 30
		K-40	270 ± 50	260 ± 70
		La-140	LT 9	LT 30
		Mn-54	LT 3	LT 11
		Nb-95	LT 3	LT 13
		Zn-65	LT 7	LT 30
		Zr-95	LT 6	LT 20
026120/21	06/27/83	Ba-140	LT 9	LT 9
		Co-58	LT 2	LT 1.5
		Co-60	LT 2	LT 2
		Cs-134	LT 2	LT 2
		Cs-137	LT 1.1	LT 1.0
		Fe-59	LT 5	LT 4
		La-140	LT 11	LT 12
		Mn-54	LT 1.3	LT 1.3
		Nb-95	LT 1.4	LT 1.4
		Zn-65	LT 4	LT 4
		Zr-95	LT 3	LT 3

LT = Less Than

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
026140/41	06/25/83	Ba-140	LT 8	LT 10
		Co-58	LT 1.2	LT 1.4
		Co-60	LT 1.8	LT 2
		Cs-134	LT 3	LT 2
		Cs-137	LT 0.8	LT 0.9
		Fe-59	LT 4	LT 4
		La-140	LT 10	LT 13
		Mn-54	LT 0.9	LT 1.1
		Nb-95	LT 1.1	LT 1.3
		Zn-65	LT 3	LT 3
		Zr-95	LT 1.9	LT 2
026180/81	06/27/83	Ba-140	LT 40	LT 7
		Co-58	LT 3	LT 0.8
		Co-60	LT 4	LT 1.4
		Cs-134	LT 1.4	2.1 ± 0.3
		Cs-137	LT 1.7	LT 0.6
		Fe-59	LT 10	LT 3
		La-140	LT 50	LT 11
		Mn-54	LT 2	LT 0.6
		Nb-95	LT 3	LT 0.8
		Zn-65	LT 7	LT 2
		Zr-95	LT 5	LT 1.4

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 8 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
026280/81	06/30/83	Ag-110M	LT 4	LT 5
		Ba-140	LT 14	LT 30
		Be-7	LT 8	LT 10
		Ce-141	LT 20	LT 30
		Co-58	LT 7	LT 10
		Co-60	LT 4	LT 5
		Cr-51	LT 200	LT 300
		Cs-134	LT 3	LT 9000
		Cs-136	LT 400	LT 3 E31
		Cs-137	LT 3	LT 500
		Fe-59	LT 30	LT 4
		I-131	LT 60000.	LT 90000
		I-133	LT 1.2 E31	LT 3 E31
		K-40	LT 40	LT 50
		La-140	LT 14	LT 30
		Mn-54	LT 4	LT 5
		Mo-99	LT 9 E09	LT 1.6 E16
		Na-22	LT 4	LT 5
		Nb-95	LT 7	LT 11
		Ra-226	LT 30	LT 70
		Ru-103	LT 14	LT 18
		Ru-106	LT 30	LT 40
		Sb-125	LT 8	LT 11
		Te-129M	LT 16	LT 20
		Te-132	LT 4 E08	LT 6 E08
		Zn-65	LT 10	LT 11
		Zr-95	LT 14	LT 20

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 9 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
026720/21	07/06/83	Ba-140	LT 20	LT 16
		Co-58	LT 5	LT 15
		Co-60	LT 3	LT 8
		Cs-134	LT 2	LT 7
		Cs-137	LT 2	LT 8
		Fe-59	LT 13	LT 50
		La-140	LT 20	LT 16
		Mn-54	LT 3	LT 9
		Nb-95	LT 4	LT 16
		Zn-65	LT 6	LT 19
		Zr-95	LT 8	LT 13
026620/21	07/15/83	Ba-140	LT 9	LT 10
		Co-58	LT 4	LT 13
		Co-60	LT 3	LT 8
		Cs-134	LT 2	LT 7
		Cs-137	LT 2	LT 8
		Fe-59	LT 12	LT 40
		La-140	LT 9	LT 10
		Mn-54	LT 3	LT 9
		Nb-95	LT 4	LT 14
		Zn-65	LT 6	LT 18
		Zr-95	LT 7	LT 20
026880/81	07/21/83	Ba-140	LT 7	LT 9
		Co-58	LT 9	LT 7
		Co-60	LT 6	LT 6
		Cs-134	LT 5	LT 5
		Cs-137	LT 5	LT 5
		Fe-59	LT 30	LT 20
		K-40	LT 130	LT 90
		La-140	LT 7	LT 9
		Mn-54	LT 6	LT 5
		Nb-95	LT 8	LT 9
		Zn-65	LT 14	LT 12
		Zr-95	LT 15	LT 15

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 10 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
027140/41	07/30/83	Ba-140	LT 190	LT 150
		Co-58	LT 7	LT 6
		Co-60	LT 6	LT 4
		Cs-134	LT 5	LT 4
		Cs-137	LT 5	LT 4
		Fe-59	LT 20	LT 17
		K-40	LT 90	LT 60
		La-140	LT 100	LT 90
		Mn-54	LT 5	LT 4
		Nb-95	LT 8	LT 6
		Zn-65	LT 12	LT 9
		Zr-95	LT 13	LT 11
027620/21	08/10/83	Ba-140	LT 80	LT 140
		Co-58	LT 5	LT 7
		Co-60	LT 4	LT 4
		Cs-134	LT 4	LT 4
		Cs-137	LT 4	LT 4
		Fe-59	LT 14	LT 16
		K-40	LT 60	LT 50
		La-140	LT 50	LT 70
		Mn-54	LT 4	LT 5
		Nb-95	LT 5	LT 6
		Zn-65	LT 9	LT 9
		Zr-95	LT 10	LT 11

LT = Less Than

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
028000/01	08/22/83	Ba-140	LT 30	LT 30
		Co-58	LT 1.6	LT 1.6
		Co-60	LT 1.3	LT 1.3
		Cs-134	LT 1.1	LT 1.1
		Cs-137	LT 1.1	LT 1.1
		Fe-59	LT 4	LT 4
		K-40	LT 12	LT 12
		La-140	LT 15	LT 15
		Mn-54	LT 1.2	LT 1.2
		Nb-95	LT 1.7	LT 1.7
		Zn-65	LT 3	LT 3
		Zr-95	LT 3	LT 3
028780/81	09/14/83	Ba-140	LT 190	LT 150
		Co-58	LT 8	LT 5
		Co-60	LT 6	LT 4
		Cs-134	LT 5	LT 3
		Cs-137	LT 5	LT 4
		Fe-59	LT 20	LT 14
		La-140	LT 90	LT 80
		Mn-54	LT 6	LT 4
		Nb-95	LT 9	LT 6
		Zn-65	LT 12	LT 9
		Zr-95	LT 14	LT 10

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
029000/01	09/19/83	Ba-140	LT 60	LT 60
		Co-58	LT 3	LT 3
		Co-60	LT 2	LT 2
		Cr-51	LT 40	LT 40
		Cs-134	LT 2	LT 2
		Cs-137	LT 2	LT 2
		Fe-59	LT 8	LT 8
		K-40	NOT DETECTED	LT 5
		La-140	LT 40	LT 40
		Mn-54	LT 2	LT 2
		Nb-95	LT 3	LT 3
		Zn-65	LT 5	LT 5
		Zr-95	LT 5	LT 5
029160/61	09/21/83	Ba-140	LT 190	LT 190
		Co-58	LT 3	LT 3
		Co-60	LT 1.6	LT 1.6
		Cs-134	LT 1.5	LT 1.5
		Cs-137	LT 1.5	LT 1.5
		Fe-59	LT 9	LT 9
		K-40	LT 19	LT 19
		La-140	LT 110	LT 110
		Mn-54	LT 1.7	LT 1.7
		Nb-95	LT 3	LT 3
		Zn-65	LT 4	LT 4
		Zr-95	LT 5	LT 5

LT = Less Than

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
029200/01	09/24/83	Ba-140	LT 200	LT 200
		Co-58	LT 5	LT 5
		Co-60	LT 3	LT 3
		Cs-134	LT 3	LT 3
		Cs-137	LT 3	LT 2
		Fe-59	LT 15	LT 14
		La-140	LT 120	LT 120
		Mn-54	LT 3	LT 3
		Nb-95	LT 5	LT 5
		Zn-65	LT 7	LT 7
		Zr-95	LT 9	LT 9
029940/41	10/12/83	Ba-140	LT 170	LT 170
		Co-58	LT 3	LT 3
		Co-60	LT 2	LT 2
		Cs-134	LT 1.9	LT 1.9
		Cs-137	LT 2	LT 2
		Fe-59	LT 10	LT 10
		K-40	LT 20	LT 20
		La-140	LT 100	LT 100
		Mn-54	LT 2	LT 2
		Nb-95	LT 4	LT 4
		Zn-65	LT 5	LT 5
		Zr-95	LT 6	LT 6
030500/01	10/26/83	Co-60	22 ± 10	29 ± 9
		Cs-137	15 ± 7	17 ± 6

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 14 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

<u>SPIKES OR BLIND ANALYSIS</u>

Collection Date	Nuclides	Expected Result ± 2s (pCi/lit)	Reported Result ± 2s (pCi/lit)
03/14/83	Cd-109	1000 ± 200	1300 ± 400
	Ce-139	47 ± 5	46 ± 10
	Co-57	38 ± 4	49 ± 11
	Co-60	204 ± 21	210 ± 30
	Cs-134	176 ± 18	180 ± 20
	Cs-137	178 ± 18	190 ± 20
	Hg-203	81 ± 9	110 ± 20
	Sn-113	155 ± 16	140 ± 20
	Sr-85	158 ± 16	160 ± 20
	Y-88	313 ± 32	290 ± 40
04/14/83	Cd-109	1400 ± 140	1100 ± 400
	Ce-139	60 ± 6	45 ± 12
	Co-57	53 ± 5	45 ± 9
	Co-60	300 ± 30	280 ± 30
	Cs-137	268 ± 27	260 ± 30
	Hg-203	78 ± 18	75 ± 24
	Sn-113	194 ± 19	170 ± 20
	Sr-85	171 ± 17	160 ± 20
	Y-88	385 ± 40	420 ± 60

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER
(Page 15 of 16)

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES OR BLIND ANALYSIS

Collection Date	Nuclides	Expected Result ± 2s (pCi/lit)	Reported Result ± 2s (pCi/lit)
05/24/83	Co-57	28 ± 6	26 ± 8
	Co-60	180 ± 36	190 ± 30
	Cd-109	800 ± 160	980 ± 380
	Ce-139	29 ± 6	25 ± 8
	Cs-137	160 ± 32	160 ± 20
	Hg-203	25 ± 5	19 ± 9
	Sn-113	90 ± 18	91 ± 17
	Sr-85	66 ± 13	66 ± 13
	Y-88	170 ± 34	140 ± 30
05/24/83	Ba-140	0.0	LT 14
	Co-58	0.0	LT 2
	Co-60	0.0	LT 2
	Cs-134	0.0	LT 2
	Cs-137	0.0	LT 2
	Fe-59	0.0	LT 5
	La-140	0.0	LT 6
	Mn-54	0.0	LT 2
	Nb-95	0.0	LT 2
	Zn-65	0.0	LT 4
	Zr-95	0.0	LT 4

LT = Less Than

C-3
GAMMA SPECTROMETRY OF WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES OR BLIND ANALYSIS

Collection Date	Nuclides	Expected Result ± 2s (pCi/lit)	Reported Result ± 2s (pCi/lit)
05/27/83	Co-57	18 ± 4	19 ± 6
	Co-60	110 ± 20	99 ± 15
	Cd-109	510 ± 110	360 ± 190
	Ce-139	18 ± 4	14 ± 6
	Cs-137	100 ± 20	84. ± 12
	Hg-203	15 ± 3	LT 13
	Sn-113	56 ± 12	44 ± 10
	Sr-85	40 ± 8	52 ± 10
	Y-88	110 ± 20	120 ± 20

LT = Less Than

C-4
GAMMA SPECTROMETRY OF SOLIDS (dry)
(Page 1 of 7)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/kg)	Result #2 ± 2s (pCi/kg)
025620/21	05/03/83	Ac-228	830 ± 200	780 ± 280
		Bi-214	880 ± 130	690 ± 170
		Cs-134	LT 100	LT 140
		Cs-137	180 ± 50	160 ± 80
		K-40	19000 ± 2000	17000 ± 2000
		Pb-212	710 ± 80	550 ± 90
		Pb-214	850 ± 130	740 ± 140
		Ra-226	860 ± 130	720 ± 150
		Tl-208	800 ± 160	880 ± 220
026500/01	07/12/83	Be-7	LT 40	LT 50
		Cs-134	LT 5	LT 5
		Cs-137	LT 5	LT 5
		I-131	LT 9	LT 19
		K-40	2100 ± 300	2300 ± 300
024180/81	01/21/83	Co-58	LT 90	LT 70
		Co-60	LT 60	LT 50
		Cs-134	LT 50	LT 50
		Cs-137	LT 60	LT 50
		Fe-59	LT 300	LT 200
		K-40	1400 ± 500	1300 ± 300
		Mn-54	LT 70	LT 50
		Zn-65	LT 170	LT 130

LT = Less Than

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/kg)	Result #2 ± 2s (pCi/kg)
025760/61	05/27/83	Co-58	LT 50	LT 60
		Co-60	LT 50	LT 50
		Cs-134	LT 40	LT 40
		Cs-137	56 ± 28	81 ± 30
		Fe-59	LT 190	LT 200
		K-40	3500 ± 700	4600 ± 700
		Mn-54	LT 50	LT 40
		Zn-65	LT 110	LT 120
025940/41	06/10/83	Co-58	LT 40	LT 50
		Co-60	LT 30	LT 30
		Cs-134	LT 20	LT 30
		Cs-137	LT 30	LT 40
		Fe-59	LT 150	LT 150
		K-40	3200 ± 500	2600 ± 600
		Mn-54	LT 30	LT 40
		Zn-65	LT 70	LT 90
025400/01	05/24/83	Co-58	LT 19	LT 15
		Co-60	LT 19	LT 18
		Cs-134	LT 16	LT 13
		Cs-137	30 ± 12	38 ± 10
		Fe-59	LT 70	LT 13
		K-40	3100 ± 400	3400 ± 400
		Mn-54	LT 17	LT 50
		Zn-65	LT 50	LT 15

LT = Less Than

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/kg)	Result #2 ± 2s (pCi/kg)
027000/01	07/25/83	Ag-110M	LT 50	LT 60
		Ba-140	LT 120	LT 120
		Be-7	LT 40	LT 40
		Ce-141	LT 50	LT 60
		Co-58	LT 50	LT 60
		Co-60	LT 60	LT 70
		Cr-51	LT 400	LT 400
		Cs-134	LT 50	LT 50
		Cs-136	LT 36	LT 70
		Cs-137	LT 50	LT 60
		Fe-59	LT 110	LT 110
		I-131	LT 50	LT 50
		I-133	LT 600	LT 600
		K-40	2900 ± 700	2900 ± 800
		La-140	LT 80	LT 60
		Mn-54	LT 50	LT 50
		Mo-99	LT 60	LT 100
		Na-22	LT 70	LT 70
		Nb-95	LT 50	LT 50
		Ra-226	LT 700	LT 1000
		Ru-103	LT 50	LT 50
		Ru-106	LT 400	LT 500
		Sb-125	LT 120	LT 120
		Te-129M	LT 40	LT 40
		Te-132	LT 60	LT 90
		Zn-65	LT 140	LT 120
		Zr-95	LT 100	LT 100

LT = Less Than

C-4
GAMMA SPECTROMETRY OF SOLIDS (wet)
(Page 4 of 7)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/kg)	Result #2 ± 2s (pCi/kg)
027060/61	07/26/83	Be-7	500 ± 90	470 ± 140
		Cs-134	LT 12	LT 20
		Cs-137	LT 14	LT 20
		I-131	LT 40	LT 60
		K-40	6800 ± 700	7200 ± 800
027860/61	08/18/83	Cs-134	LT 60	LT 40
		Cs-137	LT 70	LT 40
		I-131	LT 60	LT 40
		K-40	1800 ± 500	2000 ± 400
027940/41	08/15/83	Cs-134	LT 11	LT 15
		Cs-137	LT 14	LT 17
		I-131	LT 30	LT 30
		K-40	2400 ± 300	2400 ± 300
029380/81	08/26/83	Co-58	LT 60	LT 20
		Co-60	LT 50	LT 16
		Cs-134	LT 40	16 ± 5
		Cs-137	LT 40	38 ± 8
		Fe-59	LT 200	LT 80
		K-40	1300 ± 300	1100 ± 200
		Mn-54	LT 40	LT 12
		Zn-65	LT 90	LT 30

LT = Less Than

C-4
GAMMA SPECTROMETRY OF SOLIDS (wet)
(Page 5 of 7)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/kg)	Result #2 ± 2s (pCi/kg)
028520/21	09/01/83	Cs-134	LT 4	LT 2
		Cs-137	LT 4	LT 2
		I-131	LT 9	LT 10
		K-40	1200 ± 200	1200 ± 200
028940/41	09/13/83	Cs-134	LT 14	LT 18
		Cs-137	LT 13	LT 19
		I-131	LT 30	LT 40
		K-40	2200 ± 300	2200 ± 400
029240/41	09/24/83	Cs-134	LT 40	LT 40
		Cs-137	LT 40	LT 50
		I-131	LT 60	LT 60
		K-40	2900 ± 500	3600 ± 600
030220/21	10/19/83	Co-58	LT 50	LT 20
		Co-60	LT 40	LT 30
		Cs-134	LT 40	LT 18
		Cs-137	LT 40	LT 20
		Fe-59	LT 110	LT 60
		K-40	4700 ± 500	3900 ± 400
		Mn-54	LT 40	LT 19
		Zn-65	LT 100	LT 50
031340/41	11/14/83	Co-58	LT 20	LT 20
		Co-60	LT 20	LT 18
		Cs-134	LT 12	LT 14
		Cs-137	46 ± 11	30 ± 10
		Fe-59	LT 70	LT 60
		Mn-54	LT 16	LT 16
		Zn-65	LT 50	LT 50
		K-40	3300 ± 400	3600 ± 400

LT = Less Than

C-4
GAMMA SPECTROMETRY OF SOLIDS (wet)
(Page 6 of 7)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclides	Result #1 ± 2s (pCi/kg)	Result #2 ± 2s (pCi/kg)
031400/01	11/14/83	Co-58	LT 70	LT 90
		Co-60	LT 60	LT 70
		Cs-134	LT 50	LT 50
		Cs-137	LT 50	LT 50
		Fe-59	LT 150	LT 170
		Mn-54	LT 50	LT 60
		Zn-65	LT 110	LT 140
		K-40	1100 ± 400	LT 900

LT = Less Than

C-4
GAMMA SPECTROMETRY OF SOLIDS
(Page 7 of 7)

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES OR BLIND ANALYSIS

Collection Date	Nuclides	Expected Result ± 2s (pCi/lit)	Reported Result ± 2s (pCi/lit)	
05/27/83	Co-57	31 ± 6	15 ± 15	
	Co-60	190 ± 38	200 ± 40	
	Cd-109	870 ± 170	530 ± 570	*
	Ce-139	31 ± 6	21 ± 16	
	Cs-137	170 ± 34	130 ± 30	
	Hg-203	26 ± 6	LT 40	*
	Sn-113	96 ± 20	67 ± 28	
	Sr-85	70 ± 14	LT 50	*
	Y-88	190 ± 38	170 ± 40	
05/27/83	Co-57	0.0	LT 30	*
	Co-60	0.0	LT 40	*
	Cd-109	0.0	LT 1000	*
	Ce-139	0.0	LT 30	*
	Cs-137	0.0	LT 40	*
	Hg-203	0.0	LT 40	*
	Sn-113	0.0	LT 50	*
	Sr-85	0.0	LT 50	*
	Y-88	0.0	LT 40	*

LT = Less Than
* = Lower sensitivity due to short counting time.

D-1
IODINE-131 IN CHARCOAL CARTRIDGES
(Page 1 of 3)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (pCi/cu. m.)	Result #2 ± 2s (pCi/cu. m.)
025820/21	06/12/83	LT 0.014	LT 0.014
025960/61	06/12/83	LT 0.02	LT 0.02
026060/61	06/24/83	LT 0.018	LT 0.018
026240/41	06/30/83	LT 0.016	LT 0.016
026400/01	07/07/83	LT 0.017	LT 0.017
026680/81	07/18/83	LT 0.03	LT 0.017
026840/41	07/21/83	LT 0.011	LT 0.02
028180/81	08/23/83	LT 0.07	LT 0.03
028220/21	08/26/83	LT 0.009	LT 0.014
028540/41	09/06/83	LT 0.03	LT 0.05
028640/41	09/09/83	LT 0.013	LT 0.02
028700/01	09/10/83	LT 0.04	LT 0.04
028900/01	09/15/83	LT 0.013	LT 0.015
029060/61	09/20/83	LT 0.06	LT 0.04
029120/21	09/19/83	LT 0.04	LT 0.03
029140/41	09/22/83	LT 0.015	LT 0.02
029220/21	09/23/83	LT 0.06	LT 0.07
029320/21	09/26/83	LT 0.04	LT 0.04
029360/61	09/27/83	LT 0.06	LT 0.06
029560/61	10/04/83	LT 0.05	LT 0.05

LT = Less Than

D-1
IODINE-131 IN CHARCOAL CARTRIDGES

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (pCi/cu. m.)	Result #2 ± 2s (pCi/cu. m.)
029640/41	09/30/83	LT 0.015	LT 0.017
029680/81	10/04/83	LT 0.04	LT 0.07
029860/61	10/11/83	LT 0.07	LT 0.05
030140/41	10/15/83	LT 0.019	LT 0.03
030340/41	10/17/83	LT 0.05	LT 0.05
030520/21	10/25/83	LT 0.07	LT 0.06
030540/41	10/26/83	LT 0.04	LT 0.04
030560/61	10/26/83	LT 0.07	LT 0.05
030580/81	10/24/83	LT 0.04	LT 0.05
030660/61	10/29/83	LT 0.06	LT 0.05
030740/41	11/01/83	LT 0.06	LT 0.05
030760/61	10/31/83	LT 0.04	LT 0.04
030820/21	11/02/83	LT 0.06	LT 0.05
031000/01	11/09/83	LT 0.05	LT 0.04
031200/01	11/09/83	LT 0.04	LT 0.06
031420/21	11/15/83	LT 0.04	LT 0.02
031460/61	11/17/83	LT 0.03	LT 0.05
031480/81	11/14/83	LT 0.03	LT 0.019
031560/61	11/20/83	LT 0.009	LT 0.02
031720/21	11/23/83	LT 0.04	LT 0.03
031820/21	11/27/83	LT 0.015	LT 0.017

LT = Less Than

D-1
IODINE-131 IN CHARCOAL CARTRIDGES
(Page 3 of 3)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (pCi/cu. m.)	Result #2 ± 2s (pCi/cu. m.)
031840/41	11/29/83	LT 0.04	LT 0.019
031860/61	11/23/83	LT 0.05	LT 0.07
031900/01	11/30/83	LT 0.03	LT 0.03
031940/41	12/03/83	LT 0.06	LT 0.03
031960/61	12/04/83	LT 0.009	LT 0.03
032100/01	12/05/83	LT 0.03	LT 0.07
032120/21	12/07/83	LT 0.05	LT 0.06
032260/61	12/12/83	LT 0.013	LT 0.02
032400/01	12/13/83	LT 0.03	LT 0.05
032420/21	12/15/83	LT 0.07	LT 0.06
032460/61	12/19/83	LT 0.013	LT 0.009
032500/01	12/20/83	LT 0.06	LT 0.04
032520/21	12/19/83	LT 0.04	LT 0.04
032580/81	12/21/83	LT 0.07	LT 0.06
032640/41	12/27/83	LT 0.014	LT 0.015

LT = Less Than

D-2
IODINE-131 IN MILK
(Page 1 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Results #1 ± 2s (pCi/l)	Results #2 ± 2s (pCi/l)
023560/61	01/18/83	LT 0.5	LT 0.6
024720/21	04/11/83	LT 0.3	LT 0.2
025460/61	05/25/83	LT 0.6	LT 0.7
026100/01	06/27/83	LT 0.03	LT 0.015
026980/81	07/25/83	LT 0.3	LT 0.4
027980/81	08/22/83	LT 0.03	LT 0.05
030640/41	10/29/83	LT 0.12	LT 0.12
030680/81	10/31/83	LT 0.12	LT 0.12
031740/41	11/28/83	LT 0.14	LT 0.2
032340/41	12/14/83	LT 0.08	LT 0.08

LT = Less Than

D-2
IODINE-131 IN MILK
(Page 2 of 2)

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES, BLIND, AND REFERENCE ANALYSIS

Collection Date	Expected Results ± 2s (pCi/l)	Reported Results ± 2s (pCi/l)
02/28/83	2.8 ± 1.0	1.0 ± 0.1
03/09/83	9.9 ± 2.0	8.6 ± 1.0
04/14/83	13.4 ± 2	12 ± 2
05/10/83	23.7 ± 3	22 ± 3
05/26/83	6.0 ± 1.0	4.0 ± 1.0
06/15/83	11 ± 2	8.0 ± 0.8
06/22/83	5.8 ± 1.0	5.2 ± 0.6

LT = Less Than

D-3
IODINE-131 IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
023080/81	12/25/82	LT 0.5	LT 0.5
024400/01	03/16/83	LT 0.3	LT 0.3
024600/01	03/31/83	LT 0.3	LT 0.3
025540/41	05/25/83	LT 0.5	LT 0.5
026180/81	06/27/83	LT 0.7	LT 0.06
026280/81	06/30/83	LT 0.5	LT 0.6
026720/21	07/06/83	LT 0.4	LT 0.04
026880/81	07/21/83	LT 0.3	LT 0.6
027160/61	07/29/83	LT 0.2	LT 0.2
030200/01	10/17/83	LT 0.06	LT 0.05
031320/21	11/14/83	0.08 ± 0.03	0.12 ± 0.03
031380/81	11/14/83	LT 0.08	LT 0.08
031600/01	11/21/83	0.15 ± 0.07	LT 0.12

LT = Less Than

D-3
IODINE-131 IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES, BLIND, AND REFERENCE ANALYSIS

Collection Date	Expected Result ± 2s (pCi/l)	Reported Result ± 2s (pCi/l)
01/24/83	6.9 ± 0.7	6.2 ± 1.7
01/24/83	3.4 ± 0.3	3.5 ± 1.3
01/24/83	0.0	LT 0.3
04/14/83	27 ± 3	23 ± 3
05/02/83	9.4 ± 1	11 ± 2
06/22/83	8.7 ± 1.0	8.1 ± 1.0(1)

LT = Less Than
(1) Changed to reflect correct reporting convention.

E-1
STRONTIUM IN MILK

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclide	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
022860/61	01/18/83	Sr-89	LT 1.0	LT 1.0
		Sr-90	LT 1.0	LT 1.0
027980/81	08/22/83	Sr-89	LT 1.0	LT 0.7
		Sr-90	LT 2	LT 2

LT = Less Than

E-1
STRONTIUM IN MILK

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES, BLIND AND REFERENCE ANALYSIS

Collection Date	Nuclide	Expected Result ± 2s (pCi/l)	Reported Result ± 2s (pCi/l)
02/28/83	Sr-89	0.0	0.0
	Sr-90	4.1 ± 0.8	3.7 ± 1.2
03/09/83	Sr-89	9 ± 2	6.4 ± 4.7
	Sr-90	45 ± 10	30 ± 6

LT = Less Than

E-2
STRONTIUM IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Nuclide	Result #1 $\pm$ 2s (pCi/l)	Result #2 $\pm$ 2s (pCi/l)
022780/81	01/06/83	Sr-90	LT 1.1	LT 1.2
022820/21	01/26/83	Sr-90	LT 1.2	LT 1.1
022860/61	12/15/82	Sr-90	LT 1.0	LT 1.0
031583	09/30/83	Sr-89	7300 $\pm$ 800	6900 $\pm$ 700
		Sr-90	30 $\pm$ 4	25 $\pm$ 4

LT = Less Than

E-2
STRONTIUM IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

(SPIKES, BLIND AND REFERENCE ANALYSIS)

Collection Date	Nuclides	Expected Result #1 ± 2s (pCi/lit)	Reported Result #2 ± 2s (pCi/lit)
02/28/83	Sr-90	4.1 ± 0.8	4.7 ± 1.0
03/04/83	Sr-89	0.0	LT 1.0
	Sr-90	0.0	LT 1.0
03/04/83	Sr-90	8.7 ± 1.0	8.6 ± 1.0
03/09/83	Sr-89	8.3 ± 2.0	7.1 ± 1.9
	Sr-90	25 ± 5	23 ± 3
04/14/83	Sr-89	7.3 ± 2	11 ± 5
	Sr-90	8.2 ± 2	5.2 ± 5.1
04/14/83	Sr-89	15 ± 4	20 ± 6
	Sr-90	21 ± 4	10 ± 7

LT = Less Than

F-1
TRITIUM IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result 1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
022940/41	01/11/83	LT 300	LT 300
023780/81	09/27/82	LT 300	LT 300
024120/21	03/28/83	LT 300	LT 300
025000/01	04/26/83	LT 300	LT 300
025540/41	05/25/83	LT 300	LT 300
025720/21	04/07/83	LT 300	LT 300
026460/61	06/21/83	6000 ± 600	5800 ± 600
026800/01	06/27/83	780 ± 200	740 ± 200
028600/01	08/24/83	2300 ± 300	2500 ± 300
031800/01	11/29/83	LT 300	LT 300

LT = Less Than

F-1
TRITIUM IN WATER

NUS Radiological Laboratory
Internal Quality Control Program
1983

SPIKES, BLANK, AND REFERENCE ANALYSIS

Collection Date	Expected Result ± 2s (pCi/l)	Reported Result ± 2s (pCi/l)
01/03/83	4500 ± 500	4300 ± 400
01/18/83	4600 ± 500	4200 ± 400
01/28/83	4600 ± 500	4800 ± 500
02/18/83	4600 ± 500	4200 ± 400
02/25/83	4600 ± 500	4500 ± 500
03/18/83	4600 ± 500	4300 ± 500
04/18/83	4600 ± 500	4200 ± 500
04/27/83	4600 ± 500	4000 ± 400
04/29/83	4600 ± 500	4900 ± 500
04/14/83	0.0	LT 300
04/14/83	0.0	LT 300
04/26/83	4590 ± 500	4300 ± 500
05/18/83	4590 ± 500	3200 ± 400
06/20/83	4590 ± 500	4000 ± 400
06/28/83	4590 ± 500	4100 ± 500

LT = Less Than

F-2
TRITIUM IN URINE

NUS Radiological Laboratory
Internal Quality Control Program
1983

DUPLICATE ANALYSIS

NUS ID#	Collection Date	Result #1 ± 2s (pCi/l)	Result #2 ± 2s (pCi/l)
026380/81	06/15/83	4000 ± 1900	2400 ± 1600
029720/21	08/19/83	21000 ± 3000	19000 ± 2000

LT = Less Than

SECTION III

RESULTS OF 1983 EPA COMPARISON PROGRAM

A-1
GROSS ALPHA IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
01/21/83	29 ± 4	30 ± 1
03/18/83	31 ± 4	31 ± 2
05/20/83	11 ± 3	16 ± 2
07/15/83	7.0 ± 2.9	11 ± 1
11/18/83	14 ± 5	11 ± 0 (1)

(1) Value not reported to EPA in time to be included in report.

B-1
GROSS BETA IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
01/21/83	31 ± 3	33 ± 1
03/18/83	28 ± 3	24 ± 2
05/20/83	57 ± 6	46 ± 5
07/15/83	22 ± 3	27 ± 2
11/18/83	16 ± 5	14 ± 1 (1)

(1) Value not reported to EPA in time to be included in report.

C-2
GAMMA SPECTROMETRY OF WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	Nuclides	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
02/04/83	Cr-51	45 ± 3	LT 40
	Co-60	22 ± 3	22 ± 2
	Zn-65	21 ± 3	19 ± 1
	Ru-106	48 ± 3	41 ± 8
	Cs-134	20 ± 3	20 ± 1
	Cs-137	19 ± 3	20 ± 0
06/03/83	Cr-51	60 ± 3	LT 80
	Co-60	13 ± 3	14 ± 1
	Zn-65	36 ± 3	37 ± 5
	Ru-106	40 ± 3	LT 50
	Cs-134	47 ± 3	42 ± 2
	Cs-137	26 ± 3	26 ± 2
10/07/83	Cr-51	51 ± 5	35 ± 6(1)
	Co-60	19 ± 5	19 ± 1
	Zn-65	40 ± 5	39 ± 1
	Ru-106	52 ± 5	40 ± 3
	Cs-134	15 ± 5	13 ± 1
	Cs-137	22 ± 5	22 ± 1

LT - Less Than

(1) Average counting error for these analyses was ± 14 which overlaps the EPA warning and control limits.

D-1
IODINE IN MILK

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
02/25/83	55 ± 3	56 ± 6
06/10/83	30 ± 3	43 ± 0(1)
10/28/83	40 ± 6.93	27 ± 1.7

(1) Only one number reported due to improper preparation of sample. Insufficient data to determine statistics.

D-2

IODINE-131 IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
12/03/82	37 ± 3	35 ± 3
04/01/83	27 ± 3	25 ± 3
08/05/83	14 ± 6	11 ± 1
12/16/83	20 ± 6	16 ± 1

E-1
PLUTONIUM IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
07/08/83	8.9 ± 0.5	8.3 ± 0.9

F-1
RADIUM-226 & 228 IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	Nuclide	EPA Value ± 1s (pCi/l)	NUS Value ± 1s (pCi/l)
12/17/82	Ra-226	11.0 ± 1.0	11 ± 2
	Ra-228	0.0 ± 0.0	LT 1
03/11/83	Ra-226	12.7 ± 1.0	10 ± 1
	Ra-228	0.0 ± 0.0	LT 1
06/17/83	Ra-226	4.8 ± 0.4	6.2 ± 1.4
	Ra-228	0.0 ± 0.0	LT 1
09/09/83	Ra-226	3.1 ± 0.47	5.3 ± 0.7(1)
	Ra-228	2.0 ± 0.3	1.9 ± 0.5

LT = Less Than

(1) anomalous results under investigation.

G-1
STRONTIUM IN MILK

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	Nuclide	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
02-25-83	Sr-89	37 ± 3	30 ± 6
	Sr-90	18 ± 1	16 ± 0

G-2
STRONTIUM IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	Nuclide	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
01/07/83	Sr-89	29.2 ± 2.9	29 ± 3
	Sr-90	17.2 ± 0.9	15 ± 1
05/06/83	Sr-89	57 ± 3	64 ± 5
	Sr-90	38 ± 1	42 ± 3
09/02/83	Sr-89	15 ± 5	22 ± 2
	Sr-90	10 ± 1.5	7.3 ± 0

H-1
TRITIUM IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
02/11/83	2560 ± 204	2530 ± 140
04/08/83	3330 ± 210	3500 ± 0
06/10/83	1529 ± 194	1333 ± 58
08/12/83	1836 ± 198	1900 ± 200
10/14/83	1210 ± 190	1167 ± 58
12/09/83	2389 ± 203	2333 ± 58

H-2
TRITIUM IN URINE

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results $\pm$ 1s (pCi/l)	NUS Results $\pm$ 1s (pCi/l)
03/18/83	2470 $\pm$ 210	1967 $\pm$ 404
06/10/83	1589 $\pm$ 195	1367 $\pm$ 58
11/04/83	1008 $\pm$ 338	1474 $\pm$ 320 (1)

(1) Value not reported to EPA in time for report.

J-1
URANIUM IN WATER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	EPA Results ± 1s (pCi/l)	NUS Results ± 1s (pCi/l)
02/18/83	31 ± 3	33 ± 1
08/19/83	26 ± 3	27 ± 1

K-1
RADIONUCLIDES ON AIR FILTER

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	Radionuclide	EPA Value ±1s (pCi/filter)	NUS Value ±1s (pCi/filter)	
03/25/83	Alpha	26 ± 3.7	27.3 ± 2	(1)
	Beta	68 ± 3	68 ± 1	
	Sr-90	20 ± 1	22 ± 2	
	Cs-137	27 ± 3	29 ± 6	
08/26/83	Alpha	13 ± 5	10 ± 2	
	Beta	36 ± 5	35 ± 5	
	Sr-90	10 ± 1.5	125 ± 5	(2)
	Cs-137	15 ± 5	13 ± 5	
11/25/83	Alpha	19 ± 2.9	26.7 ± 1.5	
	Beta	50 ± 2.9	53.7 ± 1.2	

(1) Value from original EPA report was incorrect. Report value is recalculated with correct efficiency. Original reported value was 79.7.

(2) Anomalous results under investigation.

L-1

EPA "Blind" Analysis (water)

USEPA INTERCOMPARISON PROGRAM 1983

Collection Date	Nuclide	EPA Value ± 1s (pCi/l)	NUS Value ± 1s (pCi/l)
05/09/83	Alpha	64 ± 16	57 ± 4 (1)
	Beta	149 ± 7.5	123 ± 6 (1)
	Sr-89	24 ± 3	27 ± 3
	Sr-90	13 ± 1	17 ± 1
	Ra-226	8.5 ± 0.8	9.2 ± 0.1
	Ra-228	4.7 ± 0.4	3.3 ± 0.4
	Co-60	30 ± 3	31 ± 1
	Cs-134	33 ± 3	29 ± 2
	Cs-137	27 ± 3	25 ± 2
	U	25 ± 3	25 ± 2
11/14/83	Alpha	22 ± 5.5	21 ± 2
	Beta	63 ± 5	58 ± 4
	Sr-89	17 ± 5	25 ± 3
	Sr-90	8 ± 1.5	10.57 ± 2.21
	Ra-226	5.1 ± 0.8	5.5 ± 0.3
	Ra-228	2.8 ± 0.4	1.73 ± .23
	Co-60	11 ± 5	15.33 ± 3.1 (2)
	Cs-137	15 ± 5	9.17 ± 3.0
	Cs-134	15 ± 5	9.9 ± 1.82
	U	11 ± 6	12 ± 0

(1) Original EPA report was incorrect, corrected EPA value did not include an error

(2) NUS value is average of one positive value and two LLD's which were reported.

M-1
Results of Sixth International Intercomparison
of Environmental Dosimeters

	Expected Value $\pm$1s (mR)	NUS Value $\pm$1s (mR)
Field Exposure	43.5 $\pm$ 2.2	51.2 $\pm$ 7.9
Field Exposure (pre-irradiated)	202 $\pm$ 10	218 $\pm$ 13
Lab Exposure	158 $\pm$ 8	161 $\pm$ 11

SECTION IV

REPORTING OF ANALYTICAL RESULTS

In the tables presenting analytical measurements, the calculated value is reported with the two sigma counting error (2s) derived from a statistical analysis of both the sample and background count rates. The precision of the results is influenced by the size of the sample, the background count rate, and the method used to round off the value obtained to reflect the degree of significance of the results. For analytical results obtained from gamma spectral analysis, the precision is also influenced by the composition and concentrations of the radionuclides in the sample, the size of the sample, and the assumptions used in selecting the radionuclides to be quantitatively determined. The two sigma error for the net counting rate is:

$$2s = 2\left[\frac{R_s}{t_s} + \frac{R_b}{t_b}\right]^{1/2}$$

where:

R_s = sample counting rate

R_b = background counting rate

t_s = sample counting time

t_b = background counting time

If the measurements on the samples are not statistically significant (i.e., the two sigma count error is equal to or greater than the net measured value), then the radioactivity concentrations in the sample are considered not detected.

Results reported as less than ("LT") are below the lower limit of detection (LLD). The LLD is defined as the smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95 percent probability with only 5 percent probability of falsely concluding that blank observation represents a "real" signal.

For a particular measurement system (that may include radiochemical separation):

$$LLD = \frac{4.66 s_b}{E \times V \times 2.22 \times Y \times \exp(-\lambda \Delta t)}$$

where:

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume)

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)

E is the counting efficiency (as counts per disintegration)

V is the sample size (in units of mass or volume)

2.22 is the number of disintegrations per minute per picocurie

Y is the fractional radiochemical yield (when applicable)

λ is the radioactive decay constant for the particular radionuclide

Δt is the elapsed time between sample collection and counting

The following are definitions or descriptions of statistical terms used in the reporting and analysis of environmental monitoring results.

Precision relates to the reproducibility of measurements within a set, that is, to the scatter or dispersion of a set about its central value.

Measures of the Central Value of a Set. Mean (or Average or Arithmetic Mean) is the sum $\sum_{i=1}^{n} X_i$ of the values of individual results divided by the number of results in the set. The mean is given by:

$$\bar{X} = (X_1 \pm X_2 \pm \ldots X_n) / n = \sum_{i=1}^{n} X_i/n$$

Measures of Precision with a Set. Standard Deviation is the square root of the quantity (sum of squares of deviations of individual results from the mean, divided by one less than the number of results in the set). The standard deviation, s, is given by:

$$s = \sqrt{\sum_{i=1}^{n} (X_i - X)^2 / (n-1)}$$

Standard deviation has the same units as the measurement. It becomes a more reliable expression of precision as n becomes larger. When the measurements are independent and normally distributed, the most useful statistics are the mean for the central value and the standard deviation for the dispersion.

Note: In the USEPA Intercomparison Program, the standard deviation given by EPA is the expected laboratory result from three analyses. The standard deviation given by NUS is the standard deviation from the mean of three reported values.

Relative Standard Deviation is the standard deviation expressed as a fraction of the mean, $s/\bar{X}$. It is sometimes multiplied by 100 and expressed as a percentage.

Range is the difference in magnitude between the largest and the smallest results in a set. Instead of a single value, the actual limits are sometimes expressed (minimum value/maximum value).

Section V

Performance Check Summary

Part A
(Page 1 of 2)

High Resolution Gamma Spectrometry System

Period Covered 1-January-83 to 31-December-83

Detection System	Time Period	No. of Measurements	Co-60 ± 1s Efficiency Check[1]	Energy Calibration[2] Offset ± 1s	Energy Calibration[2] Slope ± 1s	K-40 ± 1s Background[3]
01	01/03-03/29/83	13	765 ± 35	.367 ± .252	.5005 ± .0003	136 ± 20 (4)
	04/05-06/14/83	11	150 ± 13	-.662 ± .088	.5001 ± .0002	140 ± 16 (5)
	06/21-10/05/83	16	143 ± 13	.490 ± .139	.4994 ± .0002	138 ± 32 (6)
	10/12/83	1	1457 ± 49	.453 ± .045	.4990 ± .0499	119 ± 12 (7)
	10/20-12/28/83	11	1396 ± 27	.511 ± .121	.4996 ± .0001	149 ± 29 (8)
02	01/03-03/29/83	13	973 ± 35	-.349 ± .236	.5007 ± .0001	139 ± 26 (4)
	04/05-10/05/83	27	188 ± 17	-.031 ± .153	.5008 ± .0002	126 ± 22 (5)
	10/12-12/28/83	12	1700 ± 45	.191 ± .073	.5007 ± .0001	131 ± 23 (7)
03	01/03-02/08/83	6	934 ± 27	.077 ± .045	.5008 ± .0003	145 ± 32 (4)
	02/14-03/29/83	7	934 ± 17	.031 ± .060	.5010 ± .0003	142 ± 38 (8)
	04/05-07/27/83	17	169 ± 13	.0003 ± .0956	.5003 ± .0007	144 ± 30 (5)
	08/03-10/05/83	10	178 ± 18	-.019 ± .098	.4996 ± .0004	130 ± 43 (8)
	10/12-11/30/83	8	1672 ± 14	.034 ± .045	.4996 ± .0001	137 ± 26 (7)
	12/08-12/28/83	4	1622 ± 19	.276 ± .280	.5005 ± .0004	101 ± 7 (8)
04	01/03-03/29/83	13	936 ± 49	.152 ± .114	.4994 ± .0002	264 ± 32 (4)
	04/05-06/07/83	10	177 ± 18	.053 ± .088	.4992 ± .0002	250 ± 36 (5)
	06/14-06/21/83	2	165 ± 14	.453 ± .197	.4995 ± .0004	231 ± 28 (8)
	06/28/83	1	187 ± 19	-.104 ± .010	.5001 ± .0500	235 ± 24 (6)
	07/02-09/06/83	10	179 ± 19	.192 ± .416	.5000 ± .0004	238 ± 36 (8)
	10/12-12/28/83	12	1868 ± 53	-.728 ± .084	.5001 ± .0003	292 ± 36 (7)(9)
06	10/20-12/14/83	10	1598 ± 31	-.688 ± .104	.5010 ± .0002	377 ± 19 (7)(9)
	12/21-12/28/83	2	1572 ± 17	-.955 ± .039	.5005 ± .0000	335 ± 14 (8)

Part A
(Page 2 of 2)

High Resolution Gamma Spectrometry System

Period Covered 1-January-83 to 31-December-83

---

1. Efficiency Control Limits are ± 3 standard deviations of cumulative average.
2. Energy calibration Control Limits are 1.0 for offset and .500 ± .001 for slope.
3. Overnight (54,000 seconds), empty shield backgrounds are counted once per week on each detector. One peak is traced for each system to observe long term trends. The peak tracked for system #1 is from K-40. The peak tracked for other systems is from Pb-212.
4. Standard MS6CB
5. Standard 24161
6. New ADC Installed
7. Standard 26708
8. Gain Adjusted
9. New Detector

Part B

Gas-Proportional Counters

Period Covered 01-January 83 to 31-December-83

Counter Number	No. of Measurements	Alpha (1) Efficiency ± 2s	Alpha Control Limits	Beta (1) Efficiency	Beta Control Limits
42	89	.238 ± .006 (2)	.243 ± .018 (3)	.416 ± .007 (2)	.414 ± .021 (3)
43	89	.263 ± .011 (4)	.264 ± .015 (3)	.400 ± .006 (5)	.399 ± .012 (3)
44 (6)	16	.299 ± .008	.299 ± .024 (7)	.422 ± .007	.422 ± .021 (7)
45 (8)	24	.256 ± .033	.263 ± .103 (11)	.385 ± .016 (9)	.388 ± .044

1. Mean and standard deviation for all efficiency checks in period.
2. Only one count was outside of control limits and could not be confirmed.
3. Control limits reestablished using first 20 performance checks of 1983.
4. Control limits reestavlished using first 20 performance checks of 1983, instituting proper decay correction of SR-Y-90 plated standard.
5. One count was slightly above control level and could not be confirmed. One count below control level due to low gas. Situation was immediately corrected.
6. One count was outside of control limits due to low gas. Situation was immediately corrected.
7. New installation.
8. Based on first 16 performance checks.
9. Recent installation.
10. One count was outside of control limits due to gas valve being closed. Situation was immediately corrected.
11. Artificially high alpha control limit is due to insufficient data points. It should be noted that this counter is being used primarily analyses of beta emitters. Alpha control limits will be reestablished when more data are obtained.

Part C

Packard Liquid Scintillation Counter

Period Covered 1-January-83 to 31-December-83

Counter Number	Time Period	No. of Measurements	Tritium Efficiency(1)	Tritium Control Limits	
52	01/03-05/07/83	18	.625 ± .003	.625 ± .008	
	05/12-09/14/83	13	.616 ± .001	.616 ± .004	(2)

1. Counter efficiency based on unquenched tritium standard solution.
2. Refrigeration unit turned on 07-May-83. Control limits reestablished.

Iodine-131:

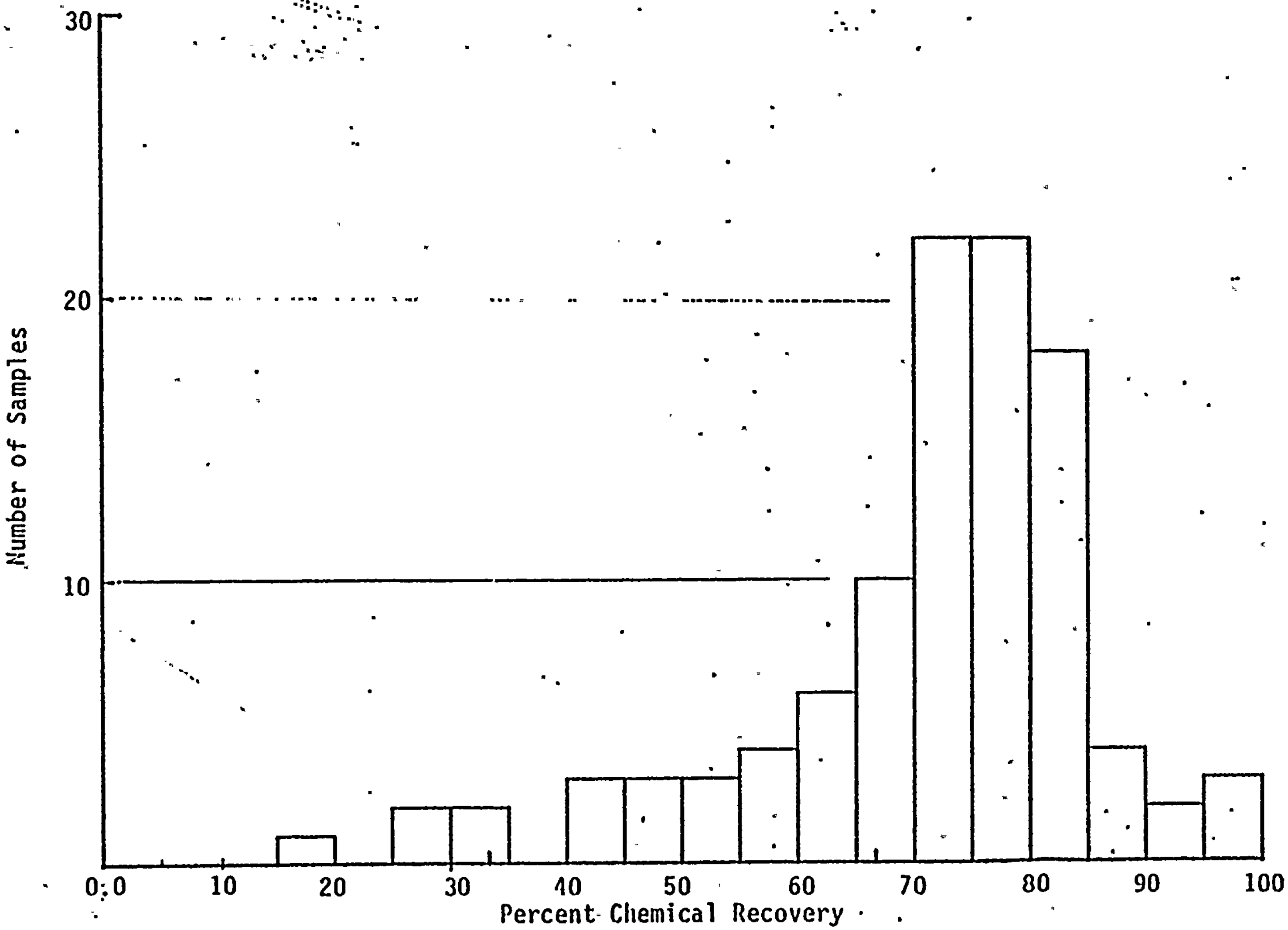
Based on gravimetric determination using a standardized stable iodide carrier precipitated as CuI.

Sr-89/90:

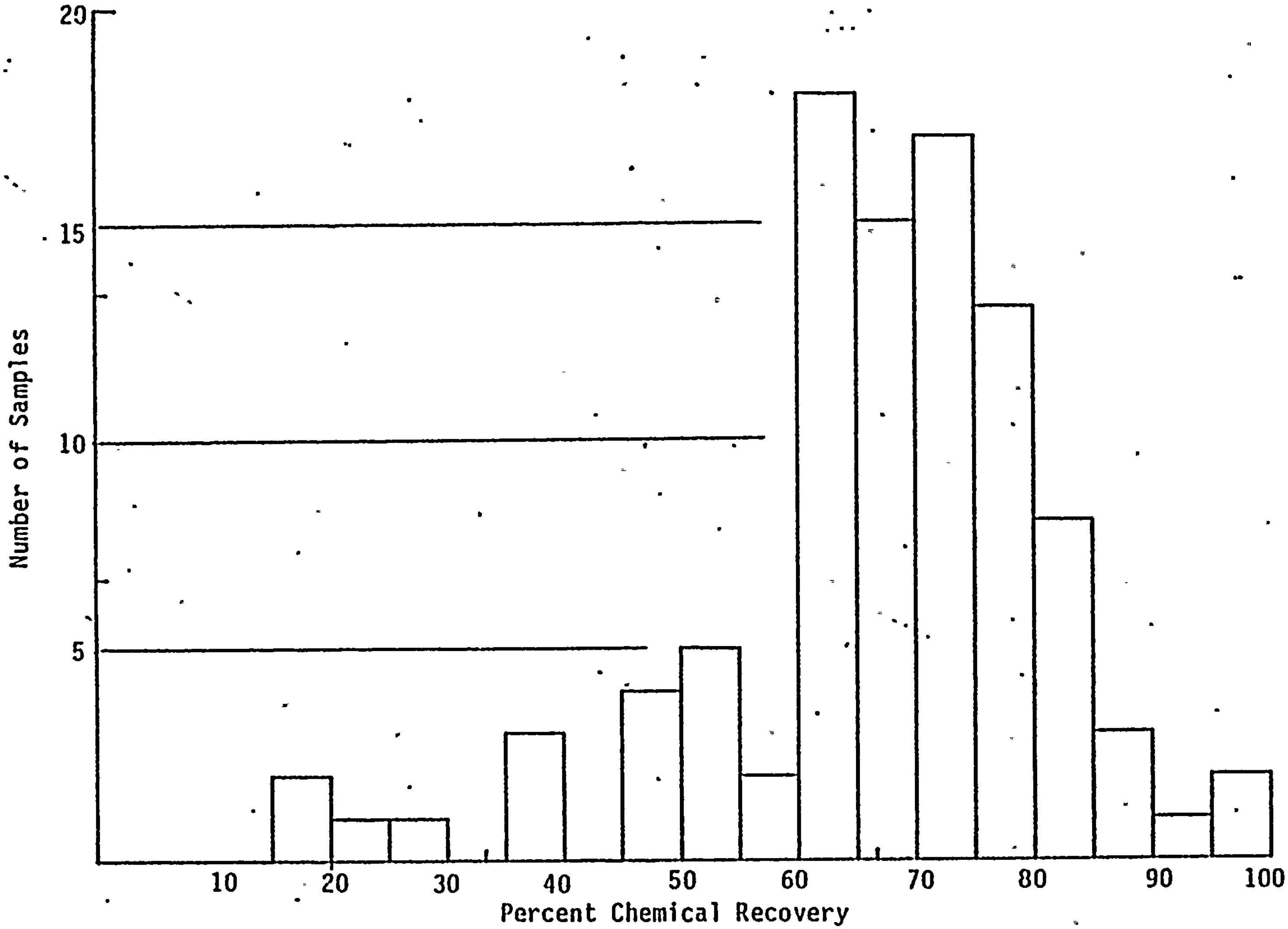
Based on gravimetric determination using a standardized stable strontium carrier precipitated as $SrCO_3$. In determination of Sr-90 using Y-90 ingrowth method, Y-90 chemical recovery is based on gravimetric determination using a standardized stable yttrium carrier precipitated as $Y_2(C_2O_4)_3$.

CHEMICAL RECOVERY

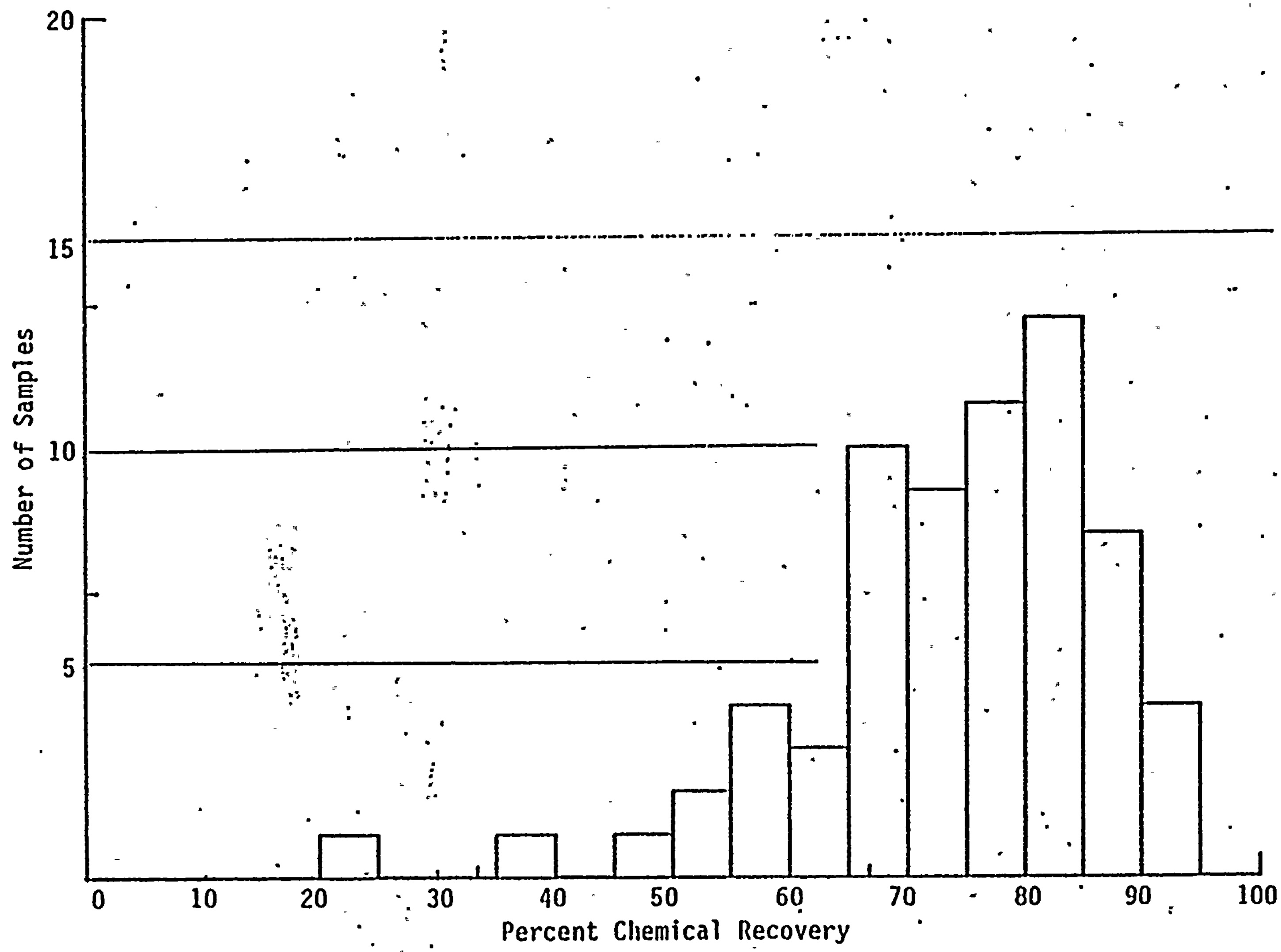
ANALYSIS	METHOD	MOUNT	MEDIA	PRECIPITATE	NO. OF SAMPLES	MEAN	STANDARD DEVIATION
Iodine-131	Coincidence	Ring Mount	Milk	CuI	95	.667	.151
			Water	CuI	105	.711	.148
	Gas Proportional	2" planchet	Milk	CuI	67	.738	.131
			Water	CuI	152	.755	.128
Strontium	Two Point	2" planchet	Milk	$SrCO_3$	27	.487	.233
89 and 90	Method		Water	$SrCO_3$	34	.598	.250
		Ring Mount	Water	$SrCO_3$	9	.601	.164
	Ingrowth	2" planchet	Milk	$SrCO_3$	11	.373	.217
				$Y_2(C_2O_4)_3$	11	.448	.171
			Water	$SrCO_3$	8	.403	.123
				$Y_2(C_2O_4)_3$	8	.446	.045
		Ring Mount	Solids	$SrCO_3$	4	.442	.120
				$Y_2(C_2O_4)_3$	4	.419	.157



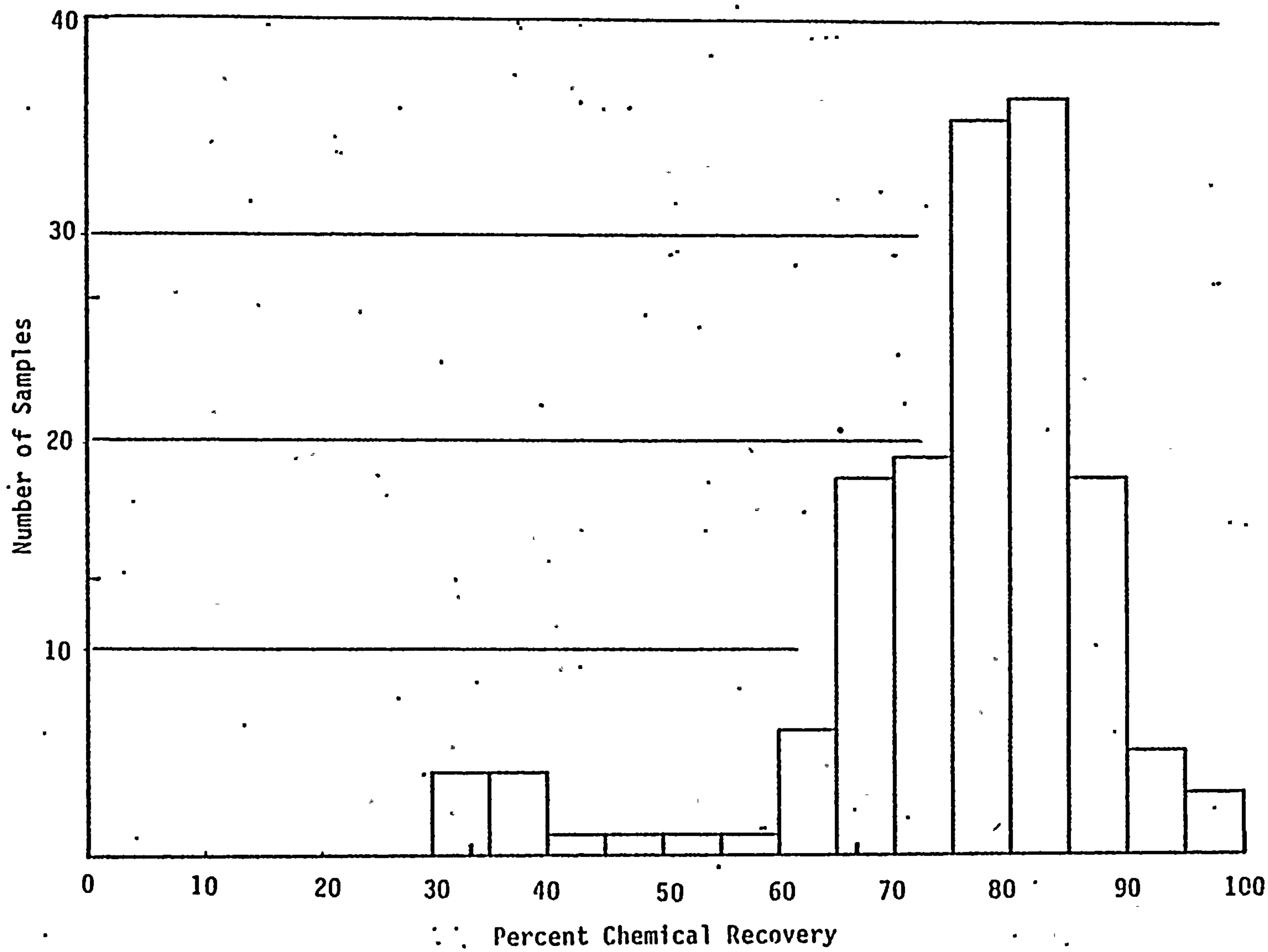
1983 Iodine-131 in Milk
βγ Coincidence Counting
CuI Precipitation



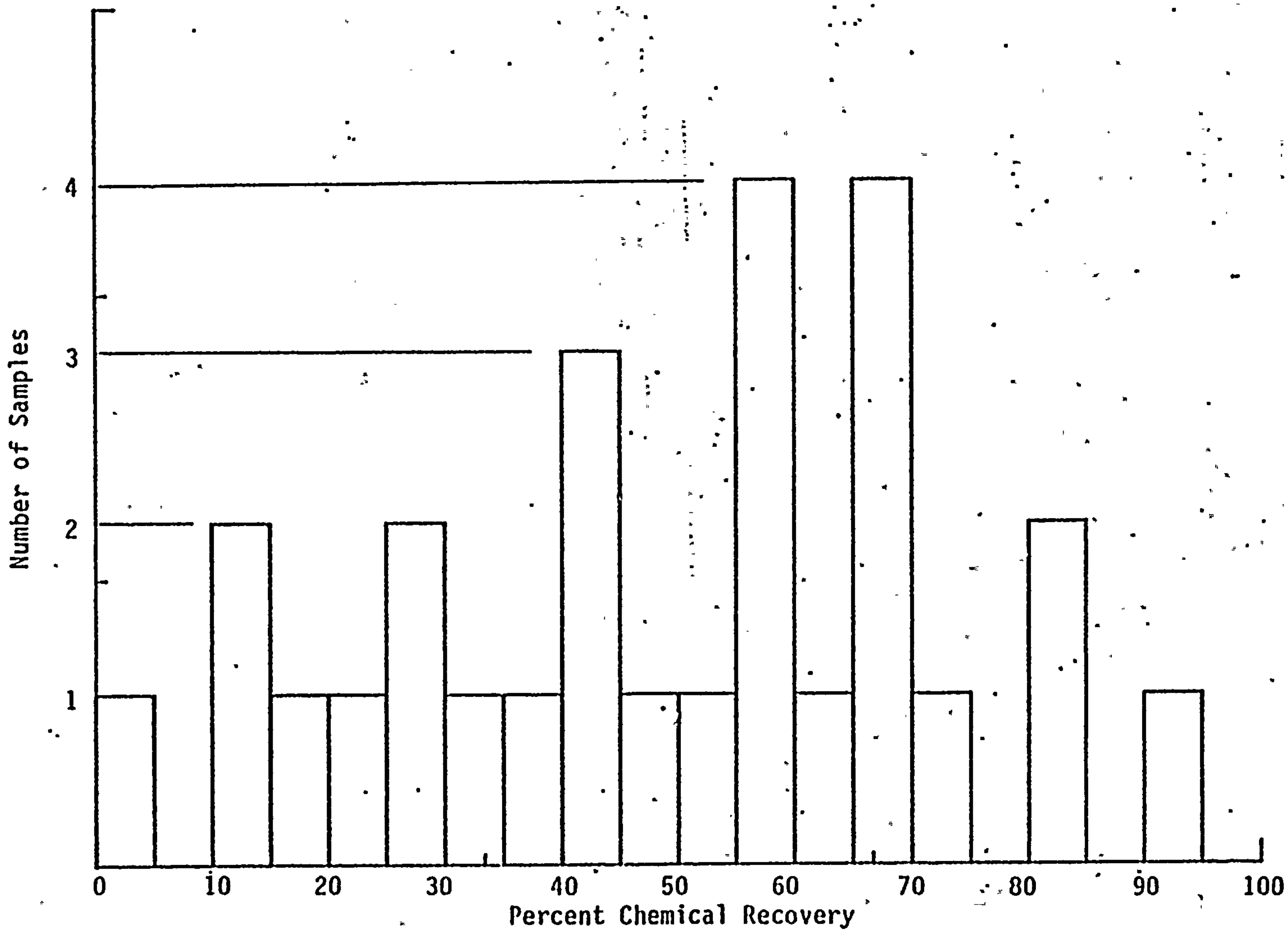
1983 Iodine-131 in Water
βY Coincidence Counting
CuI Precipitation



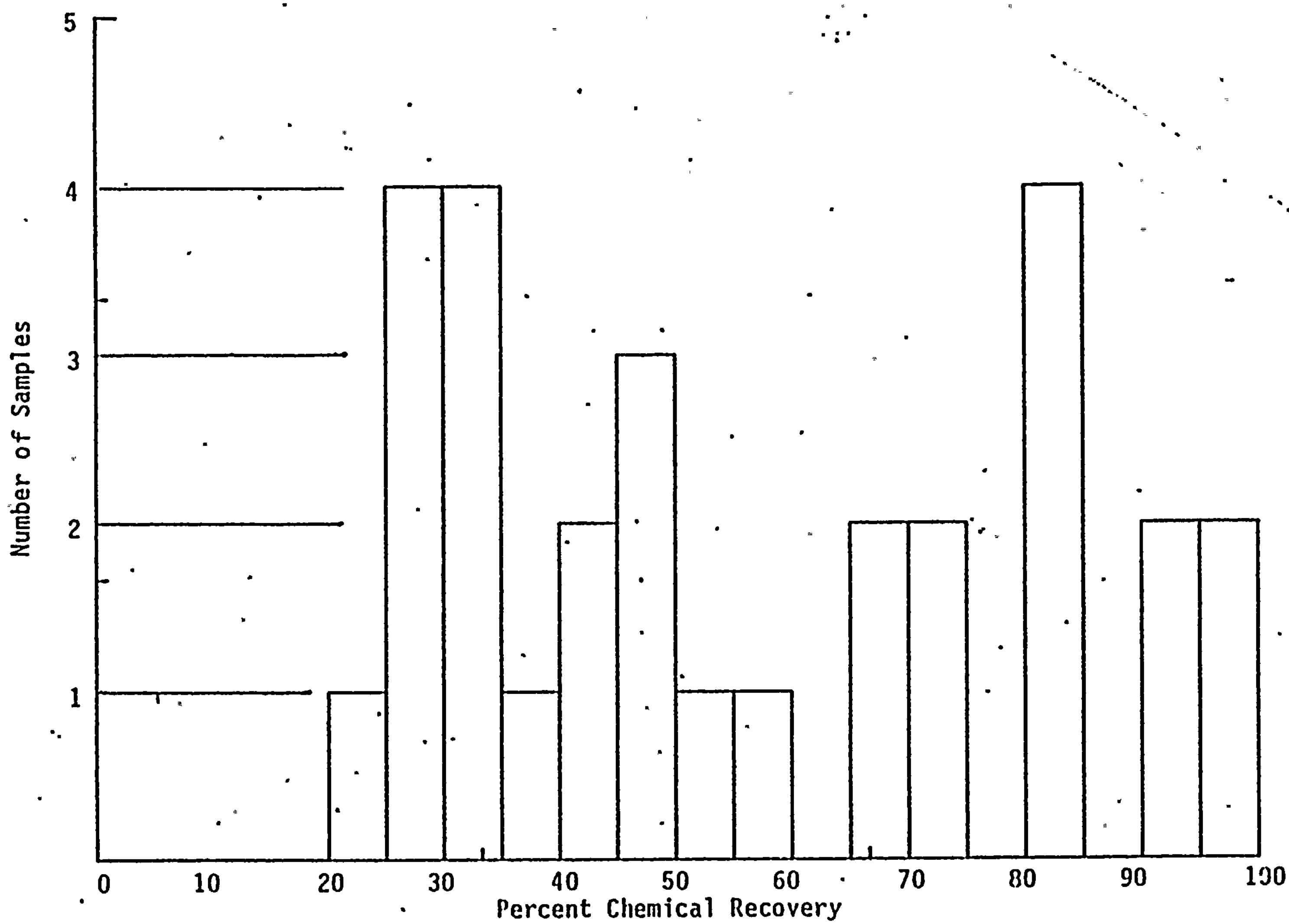
1983 Iodine-131 in Milk
Gas Proportional Counting
CuI Precipitation



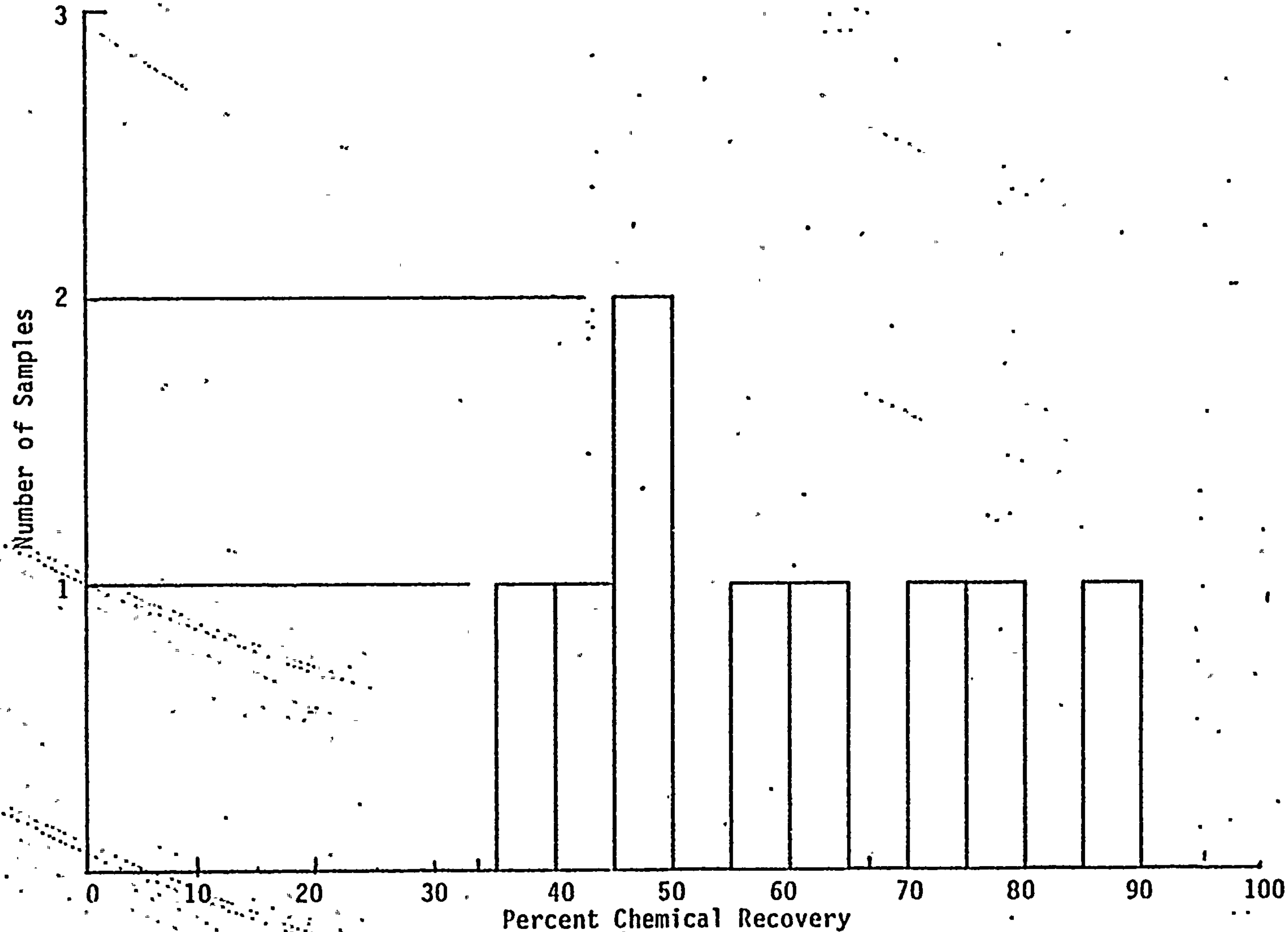
1983 Iodine-131 in Water
Gas Proportional Counting
CuI Precipitation



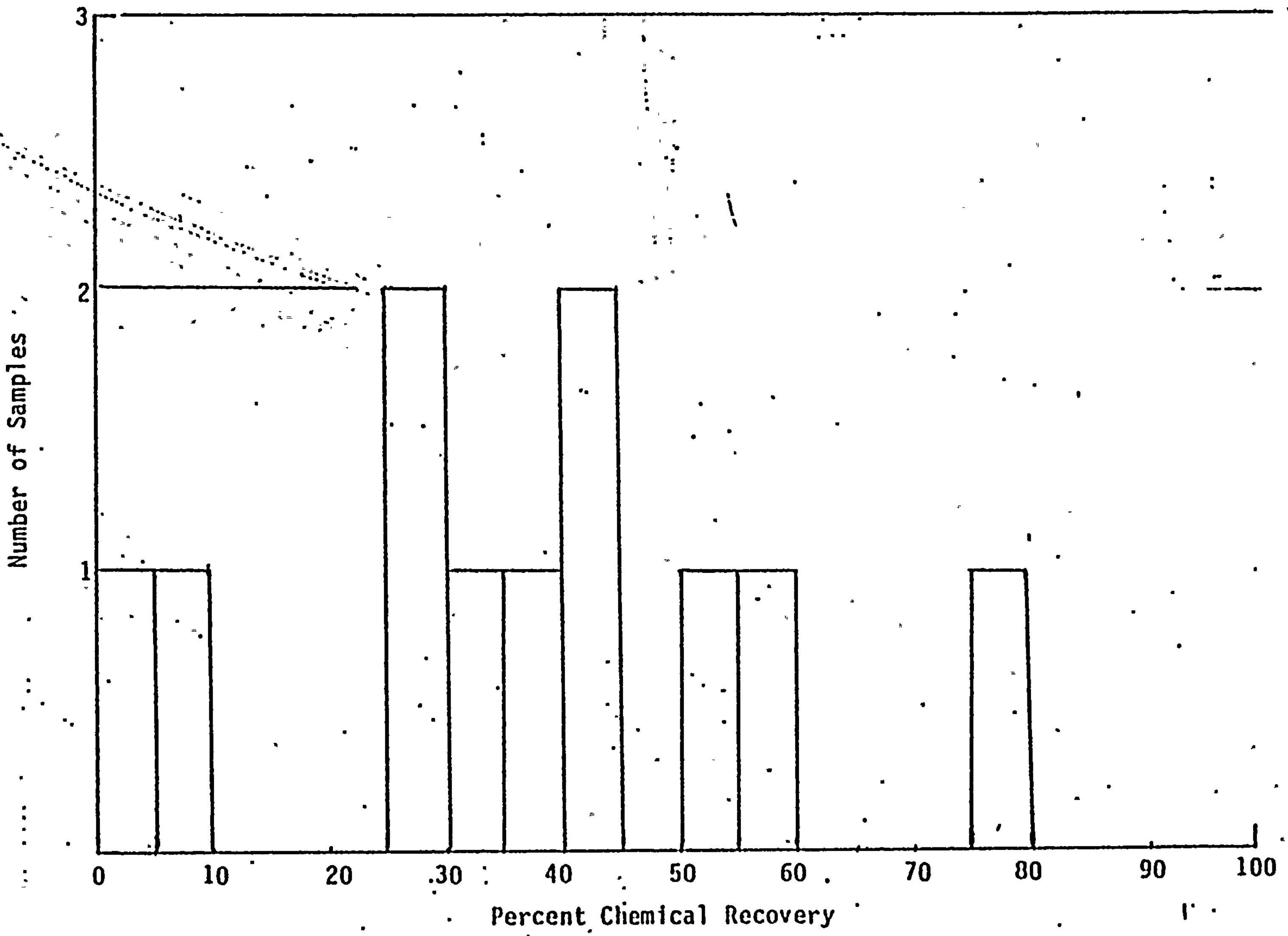
1983 Strontium in Milk
Two Point Method
2" Planchet
Strontium Carbonate Precipitation



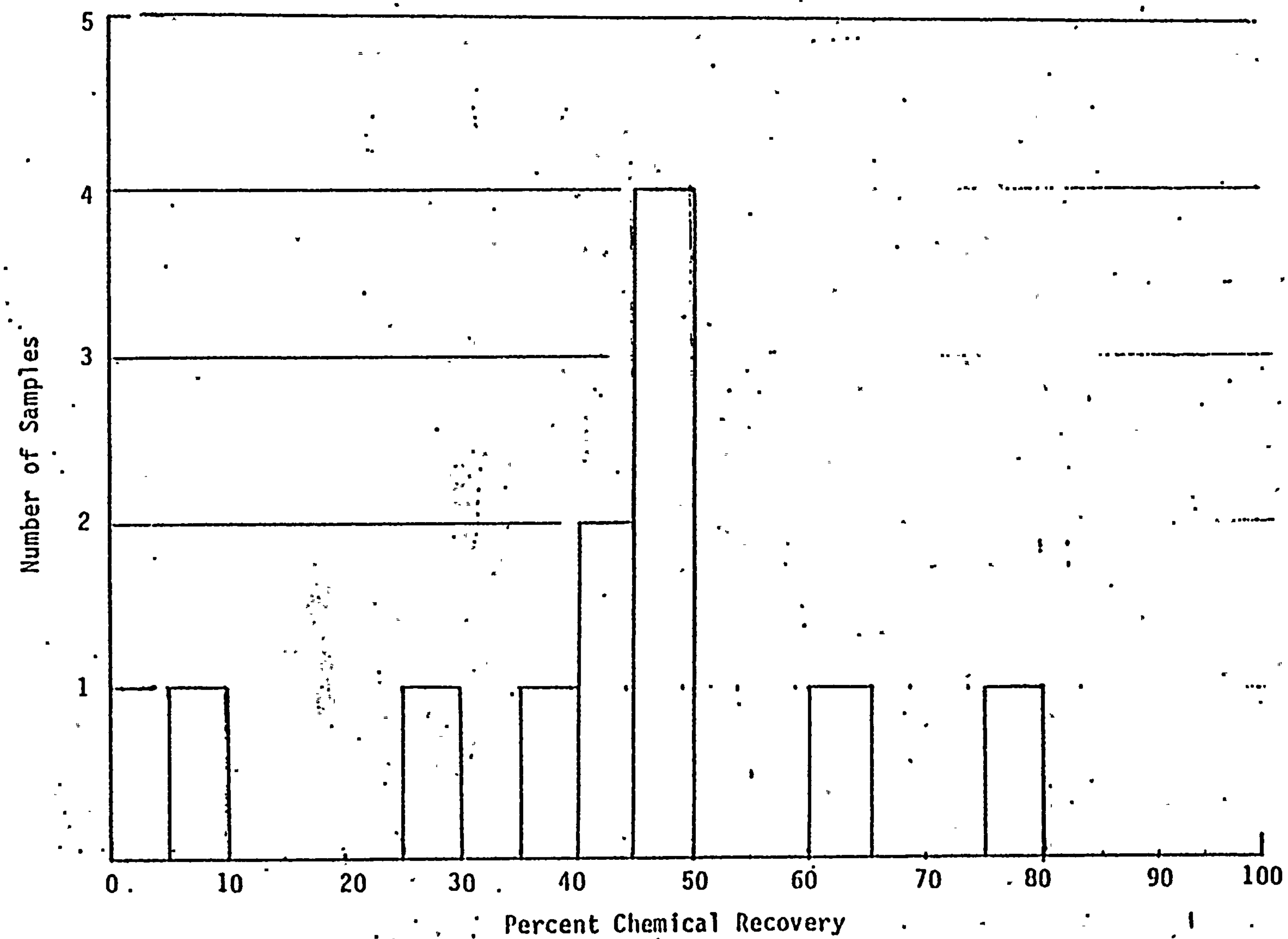
1983 Strontium in Water
Two Point Method
2" Planchet
Strontium Carbonate Precipitation



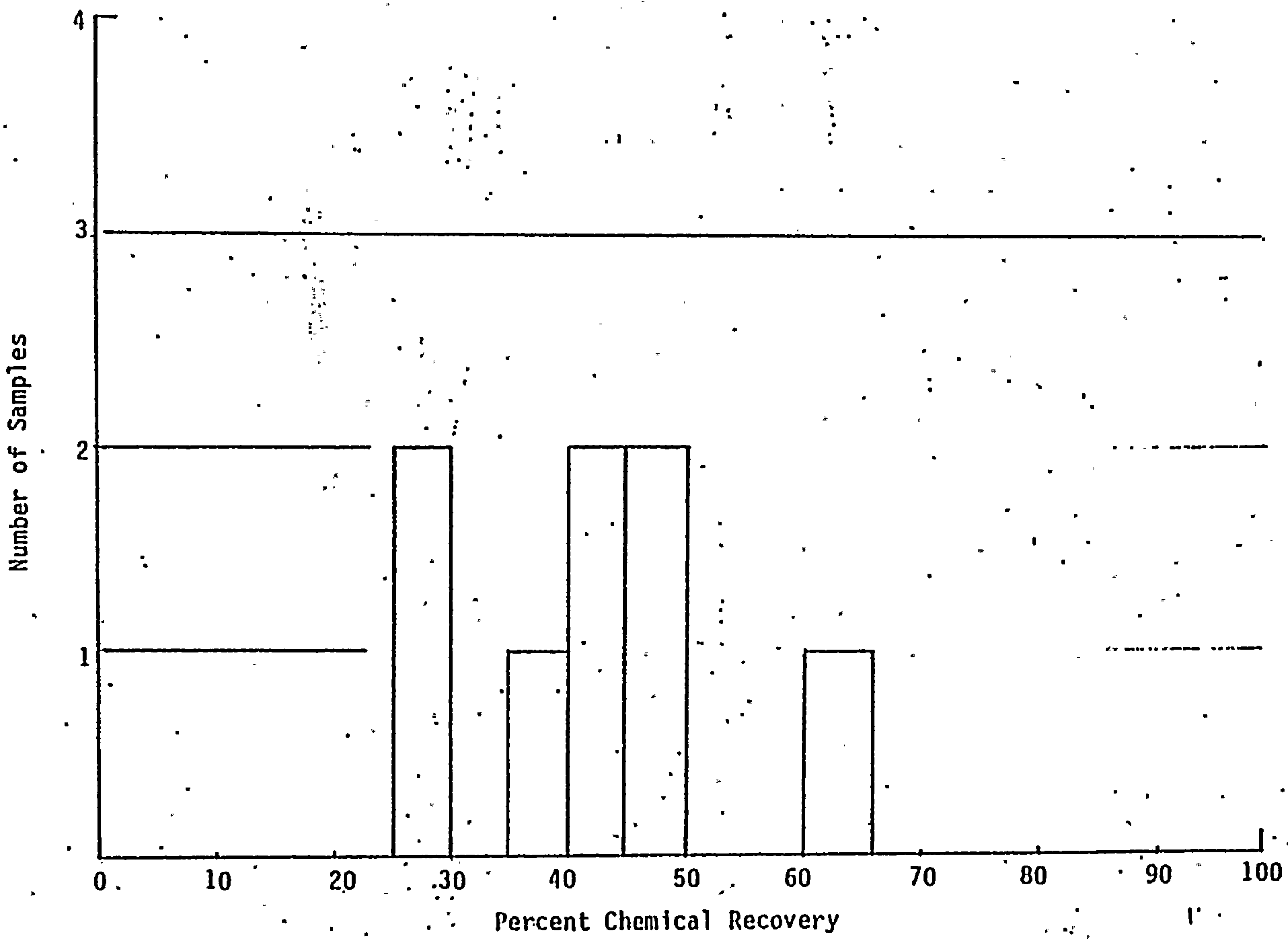
1983 Strontium in Water
Two Point Method
Ring Mount
Strontium Carbonate Precipitation



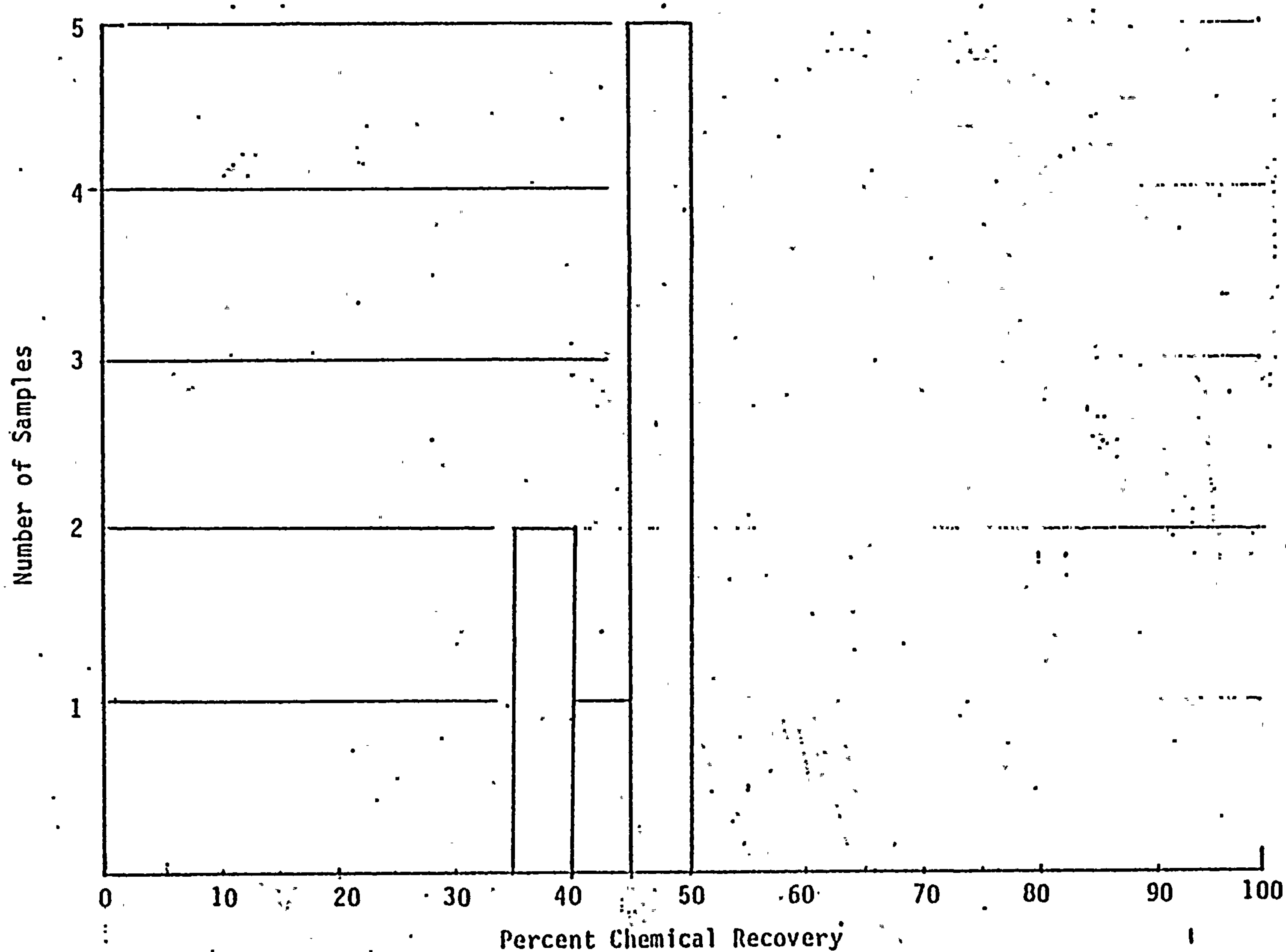
1983 Strontium in Milk
Ingrowth Method
2" Planchet
Strontium Carbonate Precipitation



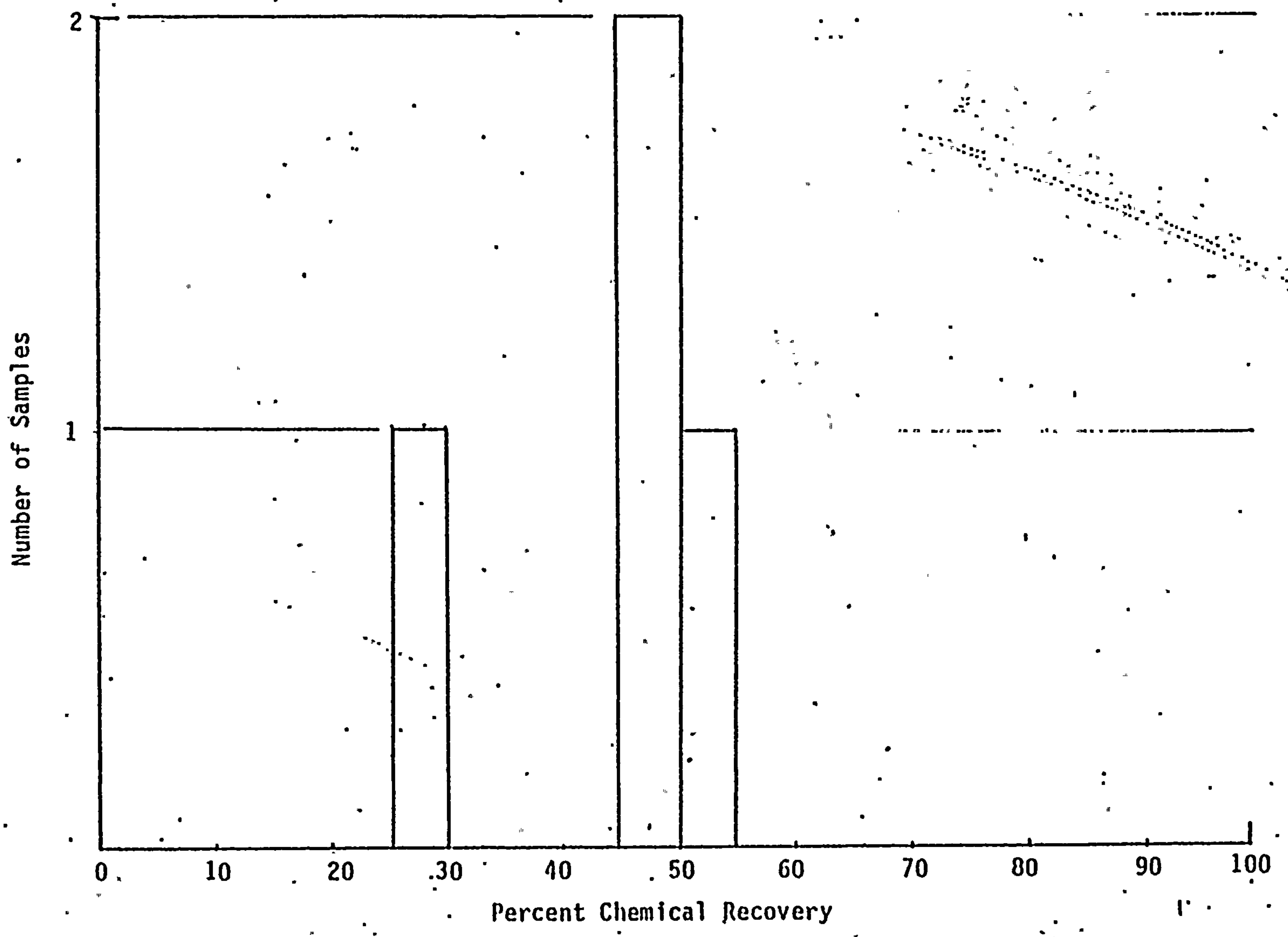
1983 Strontium in Milk
Ingrowth Method
Yttrium Oxalate Precipitation
2" Planchet



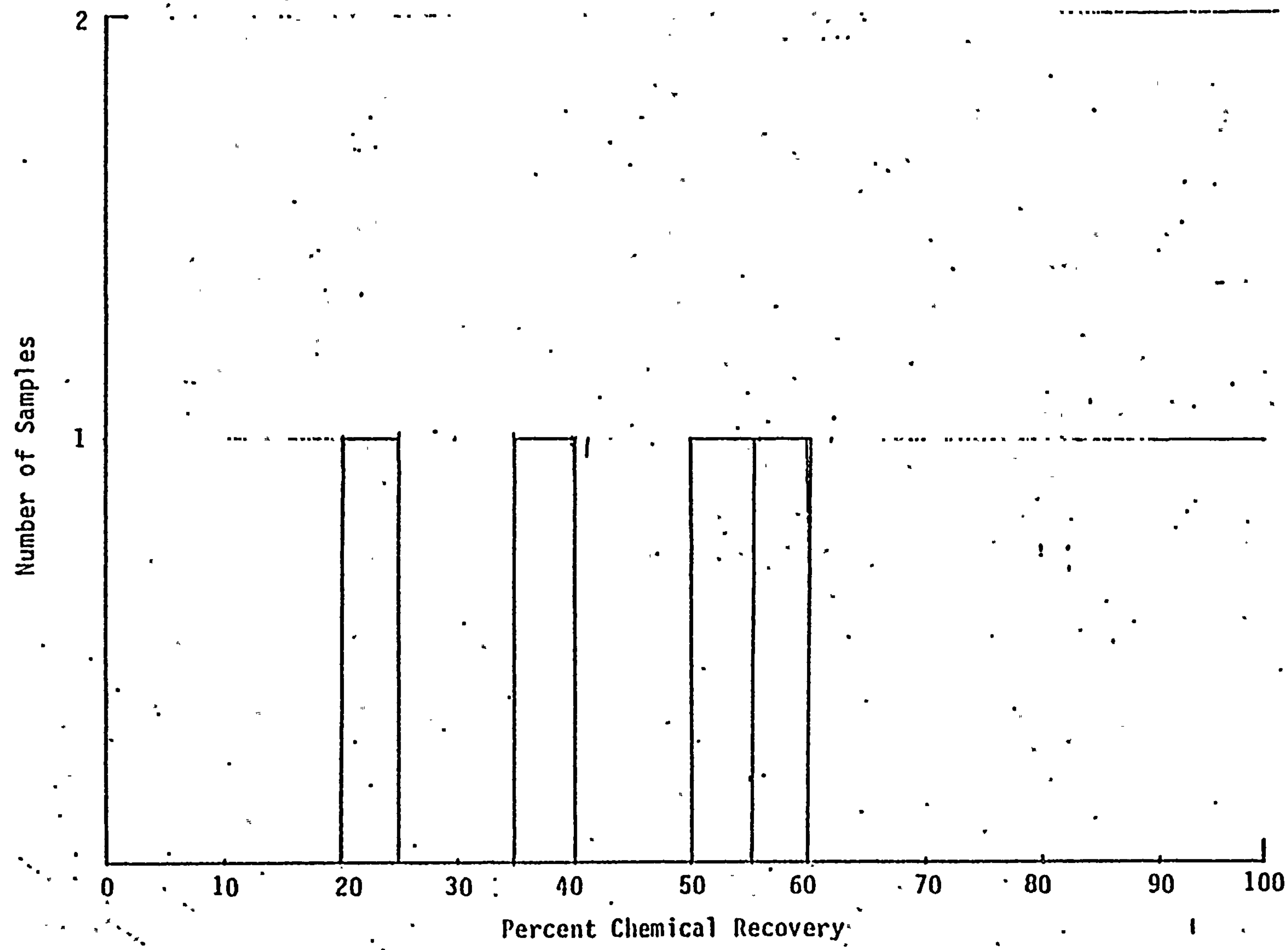
1983 Strontium in Water
Ingrowth Method
Strontium Carbonate Precipitation
2" Planchet



1983 Strontium in Water.
Ingrowth Method
Yttrium Oxalate Precipitation
2" Planchet



1983 Strontium in Solids
Ingrowth Method
Strontium Carbonate Precipitation
Ring Mount



1983 Strontium in Solids
Ingrowth Method
Yttrium Oxalate Precipitation
Ring Mount

5.3 U.S. Testing Quality Control

United States Testing Company, Inc., Richland Laboratory (U.S. Testing) provided dosimetric services to the Supply System from 1978 through 1982 as a part of the WNP-2 pre-operational REMP. The following figures and tables summarize U.S. Testing's quality control program, as detailed in Quality Assurance Procedures Manual, Quality Control Program, Operating Procedures for WPPSS Radiological Environmental Monitoring Program. Figures 5-1 and 5-2 illustrate the Quality Control Programs for dosimeter acceptance and for dosimeter processing, respectively. Table 5-3.1 provides a summary of International Intercomparison of Environmental Dosimeter results for the U.S. Testing program.

U.S. TESTING
QUALITY ASSURANCE — NEW TLD DOSIMETERS

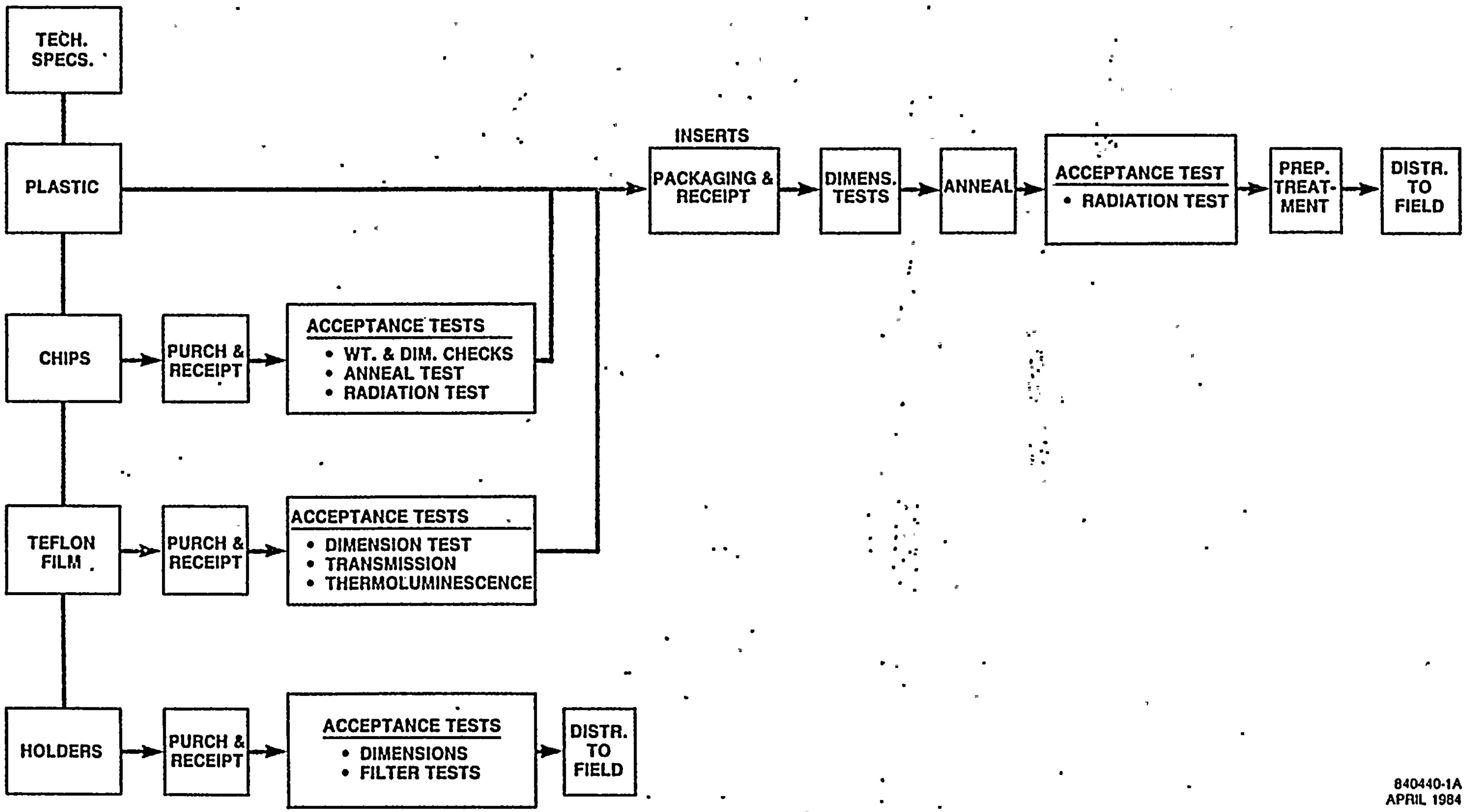
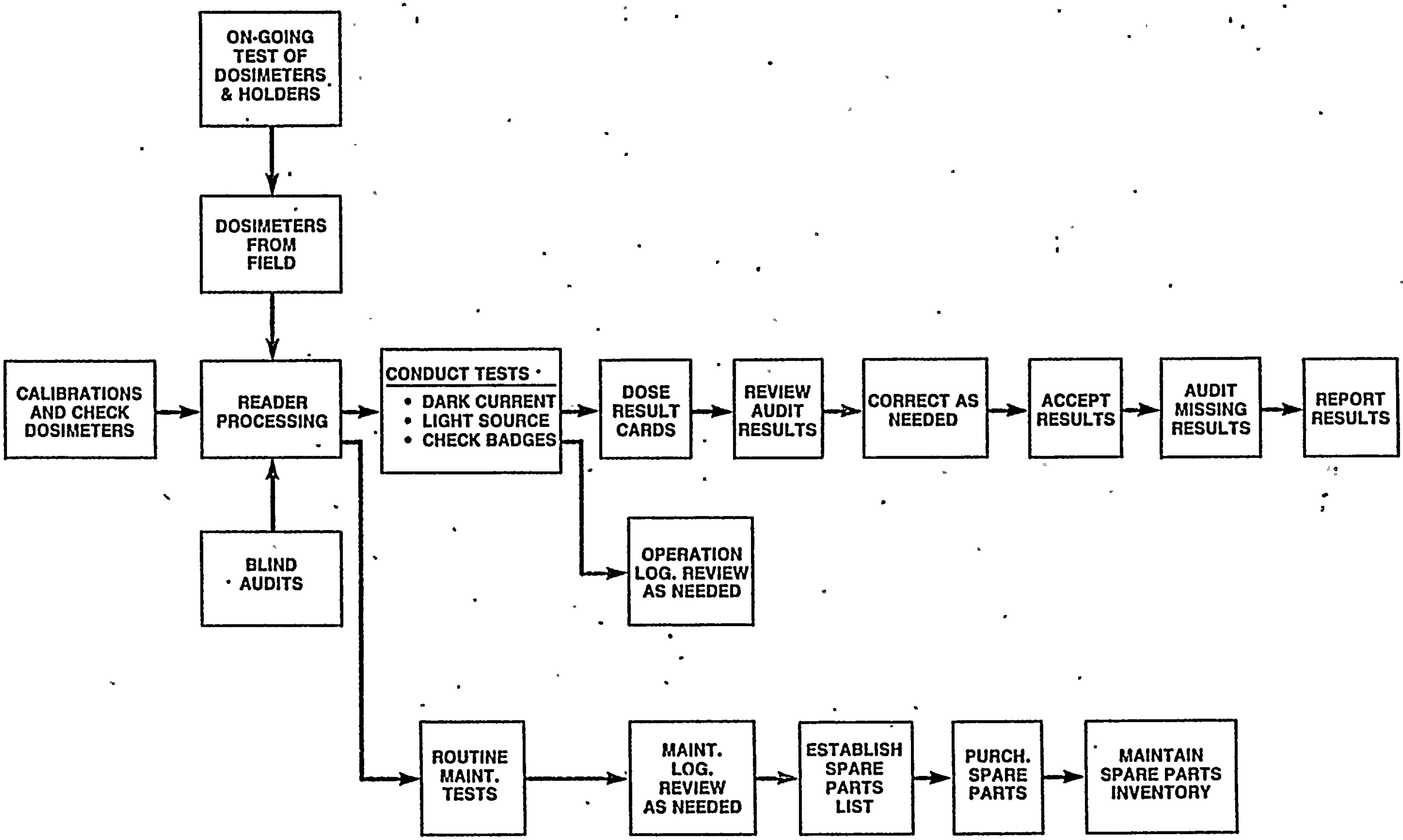


Figure 5-1

U.S. TESTING
QUALITY ASSURANCE — TLD DOSIMETER PROCESSING



840440-2A
APRIL 1984

Figure 5-2

Table 5-3.1

INTERNATIONAL INTERCOMPARISON OF ENVIRONMENTAL DOSIMETERS

U. S. TESTING DATA

			5th		6th	
I.	Total Exp. Measured		Exposure (mR)	Error (mR)	Exposure (mR)	Error (mR)
	Field Dosimeter	1	43.0		44.5	
	Field Dosimeter	2	49.3		47.0	
	Field (Pre Irr.) Dos.	1	108.0		177.7	
	Field (Pre Irr.) Dos.	2	94.9		171.9	
	Lab Dosimeter	1	122.0		132.6	
	Lab Dosimeter	2	110.0		128.0	
	Control Dosimeter	1	14.5		8.5	
	Control Dosimeter	2	11.3		7.9	
II.	Estimated Exposures					
	Participants Results:					
	Field Exposure		39.6	9.6	44.3	4.1
	Field (Pre Irr.) Exp.		88.3	21.4	173.4	5.7
	Lab Exposure		103.0	19.8	122.2	5.1
	Authors Results:					
	Field Exposure		36.6		44.3	
	Field (Pre Irr.) Exp.		88.3		173.4	
	Lab Exposure		103.0		122.2	
III. B	Estimated Storage Exp.		5.2		0.4	
III. C	Estimated Transit Exp.					
	Participants Results		1.0	3.0	0.8	2.6
	Authors Results		1.4		0.8	

5.4 Supply System Environmental TLD Quality Control

Figures 5-3 and 5-4, the following tables and the calculation log represent Supply System Support Services, Radiological Program's quality control for support of the REMP ambient radiation measurement activities. Radiological Programs began field trials in 1980, concurrent with the TLD services being supplied by U.S. Testing. After compilation of sufficient data demonstrating the Supply System's capability to conduct this aspect of the REMP internally, the TLD services through U.S. Testing were discontinued. Table 5.4-1 summarizes Supply System, International Intercomparison of Environmental Dosimeters, data from 1983.

SUPPLY SYSTEM
ENVIRONMENTAL TLD PREPARATION-USE-EVALUATION CYCLE (RPI 4.12)

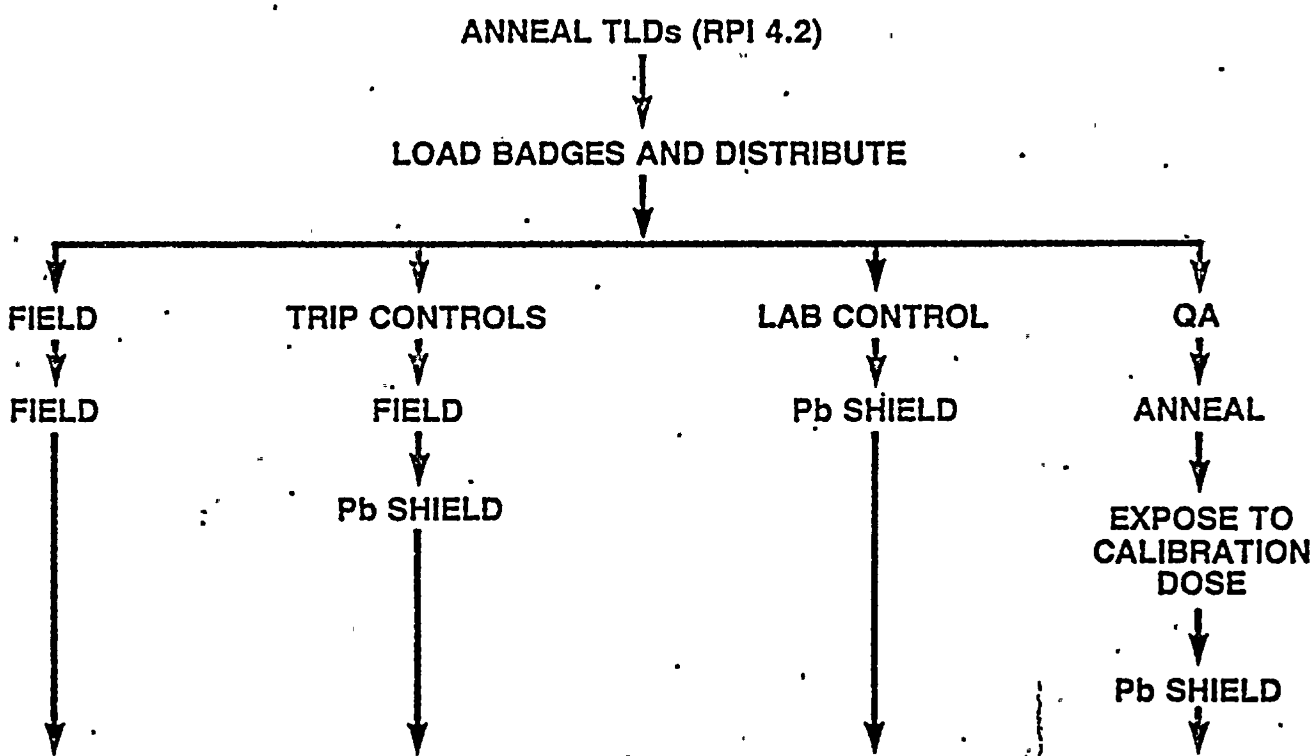
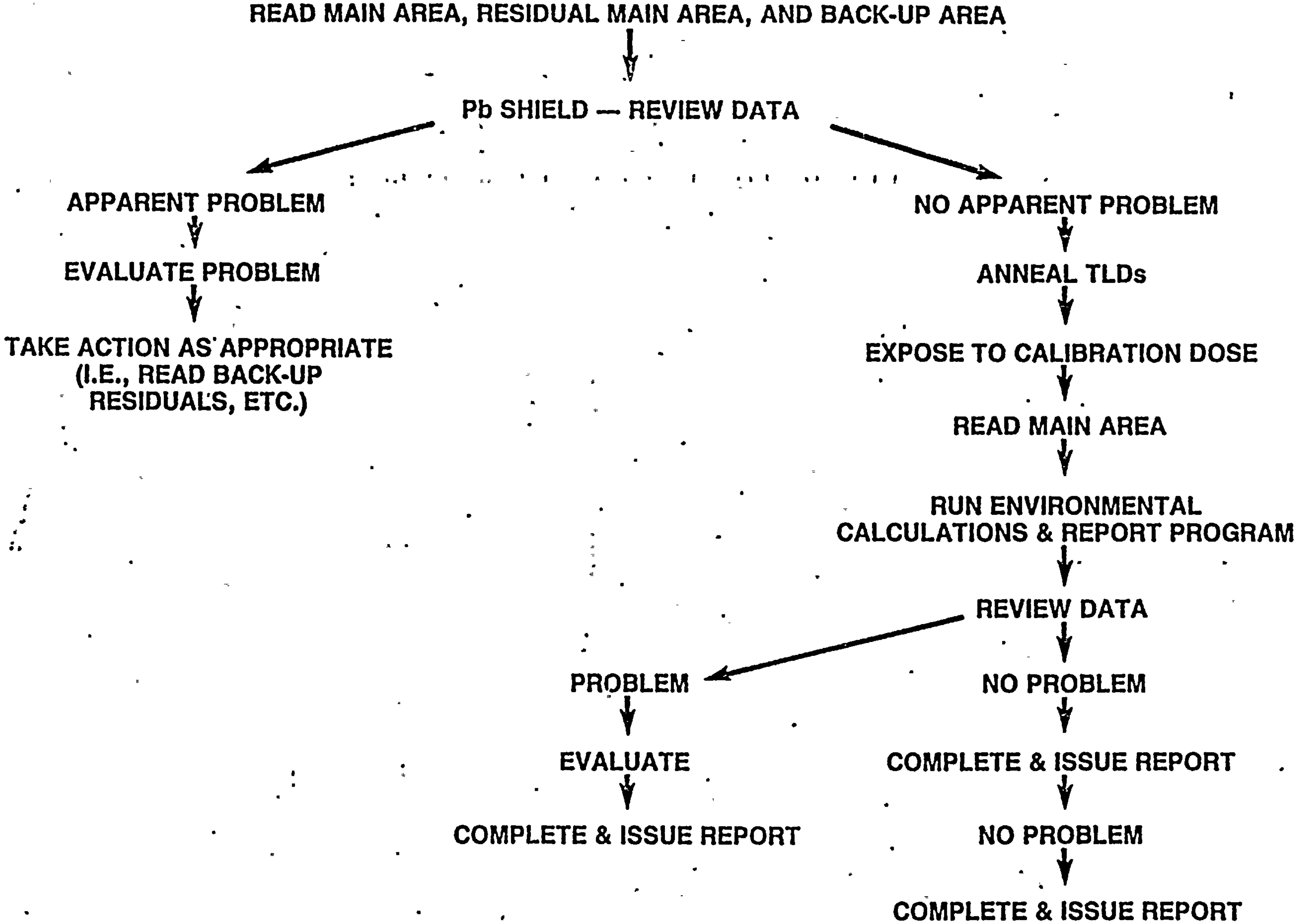


Figure 5-3

840440-3A
APRIL 1984

SUPPLY SYSTEM TLD EVALUATION



*RADIOLOGICAL PROGRAMS INSTRUCTION 4:12

840440-4A
APRIL 1984

Figure 5-4

Table 5-4.1

SIXTH INTERNATIONAL INTERCOMPARISON OF ENVIRONMENTAL DOSIMETERS

SUPPLY SYSTEM DATA 1983

		Exposure (mR)	Error (mR)
I.	Total Exposure Measured		
	Field Dosimeter 1*	48.8	
	Field Dosimeter 2*	50.0	
	Field (Pre. Irr.) Dose 1*	212.2	
	Field (Pre. Irr.) Dose 2*	210.0	
	Lab Dosimeter 1	13:2	
	Lab Dosimeter 2	13.0	
II.	Estimated Exposures		
	Participants Results		
	Field Exposure	43.6	3.0
	Field (Pre. Irr.) Exp.	206.8	12.2
	Lab Exposure	160.3	7.6
	Authors Results		
	Field Exposure	43.6	
	Field (Pre. Irr.) Exp:	204.8	
	Lab Exposure	160.3	
III B	Estimated Storage Exp.	1.9	
III A	Estimated Transit Exp.		
	Participants Results	1.0	0.8
	Authors Results	4.4	

* Type of correction applied
1 Analytical correction
2 Physicial

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

CALCULATION LOG

RADIOLOGICAL PROGRAMS

PROJECT	CALCULATION NO.	DATE ASSIGNED	
02	84-2	01-84	PAGE 1 OF 3

TITLE
CALCULATION OF THE SUMMATION OF ERRORS ASSOCIATED WITH THE ENVIRONMENTAL TLD'S

QUALITY AFFECTING ☒ YES ☐ NO

RETENTION ☒ LIFETIME ☐ NONPERMANENT

I. PURPOSE

The purpose of this calculation is to show compliance with Section 3.3 of ANSI N545-1975 as modified by Regulatory Guide 4.13. The specific requirement is as follows: Ninety-five percent of the final values (after all appropriate corrections to the measurements are applied, including those for errors expected under field conditions) shall differ from the correct value by less than 30% of the correct value.

II. CONTENTS

III. ASSUMPTIONS

For purpose of this evaluation the following assumption and data are used:

A. Calibration source strength: ± 5%

At 25 mR exposure = 1.3 mR
At 104 mR exposure = 5.2 mR

B. Calibration time: ± 3 seconds = 1 mR

C. Read out: Based on reproducibility study performed March 1983 (data attached):

At 25 mR, ignoring TLD 189 which obviously had a bad calibration factor, the results ranged from 22 mR to 26 mR. An error of $<\pm$ 3 mR is indicated.

COMPLETED BY	DATE 5/2/84
REVIEWED BY	DATE 5/2/84
APPROVED BY	DATE 5/7/84

5-173

At 104 mR, ignoring the 100 mR exposure and TLD 127 which obviously had a bad calibration factor for area 2, the results ranged from 101 mR to 105 mR. The average is 103.6. An error of $\leq \pm$ 3 mR is indicated.

D. Uniformity and Reproducibility: Since the TLD's used in the cited reproducibility study were randomly chosen, any errors due to non-uniformity and nonreproducibility would be included in the read out error.

E. Residuals: Errors associated with residual readings on the TLDs would be included in the read out error.

F. Length of field cycle: Based on teledynes' study "Evaluation of Teledynes Isotopes' Environmental TLD System for Compliance with U.S.N.R.C. Reg. Guide 4.13 and ANSI N545-1975" dated January 6, 1982.

For a 91 day cycle, the study indicates a 7% reduction or about 1.8 mR.

For a 365 day cycle, the error would not exceed four times the error in the 91 day cycle, because the rate of fading decreases with cycle length. Therefore, a maximum error of 7 mR is assumed.

IV. METHOD OF CALCULATION

The overall error is determined by taking the square root of the sum of the square of the individual errors.

V. CALCULATION

For a 91 day cycle or 25 mR exposure:

$$E = \sqrt{(1.3)^2 + (1)^2 + (3)^2 + (1.8)^2} = 3.9$$

$$\frac{3.9}{25} = 16\%$$

For a 365 day cycle or 100 mR exposure:

$$E = \sqrt{(5.2)^2 + (1)^2 + (3)^2 + (7)^2} = 9.3$$

$$\frac{9.3}{100} = 9\%$$

VI. CONCLUSIONS

The environmental TLD program complies with Section 3.3 of ANSI N545-1975.

VII. ATTACHMENT

A. Reproducibility Study - Environmental TLD's, March 1983, Washington Public Power Supply System

VIII. REFERENCES

A. Regulatory Guide 4.13

B. ANSI N545-1975

C. Evaluation of Teledyne Isotopes' Environmental TLD System for Compliance with U.S.N.R.C. Reg. Guide 4.13 and ANSI N 545-1975, January 6, 1982

Reproducibility Study
Environmental TLD's
March 1983

The attached data is from re-inked TLD's and was collected as part of the acceptance testing procedure.

TLD's were dosed, read, and annealed four times (the first being a calibration). Samples A and B were calibrated at 104 mR. Sample C calibrated at 50 mR.

Generally the data was very consistent and good from run to run. It appears that the bulk of the deviation (i.e., all of $2\sigma > 1.9$) was due to bad calibration values or to a single shift in a residual. That is, the 2σ was consistent from run to run for an individual TLD and therefore measures a bias in the system rather than a random fluctuation about a mean.

Sample A Reproducibility
Environmental TLD's

TLD Number	Dose	A1	A2	A3	A4	$\overline{m}$	2σ
149	100	98	97	101	101	99	4.1
	104	105	105	106	106	106	1.2
	104	103	104	105	106	104	2.6
	104	101	102	104	104	102	3.0
075	100	97	96	98	97	97	1.6
	104	104	105	104	105	105	1.2
	104	106	106	104	104	105	2.3
	104	102	101	102	101	102	1.2
028	100	100	100	100	101	100	1.0
	104	105	105	103	105	104	2.0
	104	105	105	103	104	104	1.9
	104	101	103	103	104	103	2.5
121	100	99	97	100	98	98	2.6
	104	103	104	104	104	104	1.0
	104	104	105	105	104	104	1.2
	104	102	102	105	103	103	2.8
025	100	98	97	98	99	98	1.6
	104	105	104	103	105	104	1.9
	104	105	104	103	105	104	1.9
	104	105	101	103	103	103	3.3
161	100	95	97	107	98	99	10.6
	104	104	106	103	104	104	2.5
	104	104	104	104	105	104	1.0
	104	101	101	103	102	102	1.9
106	100	105	98	100	98	100	6.6
	104	103	104	104	104	104	1.0
	104	103	104	104	104	104	1.0
	104	102	103	103	103	103	1.0
127	100	104	98	99	99	100	5.4
	104	111	102	103	102	104	8.7
	104	113	104	105	104	106	8.7
	104	111	101	106	106	106	8.2

For 104 mR Dose

Range $\overline{m}$ = 102-106 mR

Average $\overline{m}$ = 104 mR
σ = 1.27

Sample B Reproducibility
Environmental TLD's

TLD Number	Dose	A1	A2	A3	A4	$\overline{m}$	2σ
007	25	19	23	24	24	22	4.8
	25	20	24	25	24	23	4.4
	25	20	24	24	24	23	4.0
	25	19	24	24	25	23	5.4
189	25	13	20	21	23	19	8.7
	25	14	22	22	24	20	8.9
	25	14	21	22	23	20	8.2
	25	13	20	22	23	20	9.0
116	25	27	27	25	24	26	3.0
	25	25	24	24	25	24	1.2
	25	24	24	25	24	24	1.0
	25	24	24	24	25	24	1.0
002	25	23	23	24	24	24	1.2
	25	24	23	24	24	24	1.0
	25	24	23	24	24	24	1.0
	25	23	23	23	24	23	1.0
141	25	27	26	26	25	26	1.6
	25	24	24	24	24	24	0.0
	25	24	24	24	24	24	0.0
	25	23	23	24	24	24	0.0
066	25	22	22	23	24	23	1.9
	25	22	23	24	24	23	1.9
	25	22	23	23	24	23	1.6
	25	22	22	23	24	23	1.9
74	25	24	24	24	24	24	0.0
	25	24	24	24	24	24	0.0
	25	24	24	24	24	24	0.0
	25	24	24	24	24	24	0.0

W/O TLD 189

Range $\overline{m}$ = 22-26 mR

Average $\overline{m}$ = 24 mR
σ = 0.9

Sample C Reproducibility Study
Environmental TLD's

TLD Number	Dose	A1	A2	A3	A4	$\overline{m}$	2σ
101	50	64	52	55	55	56	10.4
	50	49	49	48	50	49	1.6
	50	47	48	47	49	48	1.9
073	50	50	50	50	49	50	1.0
	50	50	50	49	50	50	1.0
	50	49	49	49	48	49	1.0
	50	50	51	51	49	50	1.9
182	50	50	50	49	50	50	1.0
	50	51	51	50	50	50	1.2
	50	49	48	48	50	49	1.9
	50	51	51	51	50	51	1.0
158	50	50	48	49	49	49	1.6
	50	51	49	49	49	50	2.0
	50	48	47	48	49	48	1.6
	50	50	49	50	49	50	1.2
188	50	44	48	48	49	47	4.4
	50	45	48	48	49	48	3.5
	50	44	47	47	48	46	3.5
	50	44	48	48	48	47	4.0
136	50	51	51	49	50	50	1.9
	50	51	50	50	50	50	1.0
	50	48	48	49	49	48	1.2
	50	49	49	49	49	49	0.0
003	50	48	49	50	50	49	1.9
	50	50	49	50	50	50	1.0
	50	48	48	49	49	48	1.2
	50	49	50	50	49	50	1.2

Range $\overline{m}$ = 46-56 mR

Average $\overline{m}$ = 49
σ = 1.8

TELEDYNE ISOTOPES

EVALUATION
of
TELEDYNE ISOTOPES'
ENVIRONMENTAL TLD SYSTEM
for
COMPLIANCE
with
U.S.N.R.C. REG. GUIDE 4.13
and
ANSI N545-1975

January 6, 1982

TELEDYNE ISOTOPES
50 VAN BUREN AVENUE
Westwood, New Jersey 07675

EVALUATION OF $CaSO_4$:Dy TEFLON TLD FOR COMPLIANCE WITH ANSI N545-1975

Dependence of Exposure Interpretation on the Length of Field Cycle

Purpose: To repeat the initial study (1979) for the maximum temperature conditions expected in the field.

Preparation: A field cycle of three months was tested. Forty 25% $CaSO_4$:Dy Teflon dosimeters were used for this test. All were annealed at 250°C for one hour prior to encasing in black plastic pouches. Twenty were inserted between two 0.093 inch copper rectangular sheets of the same dimensions as the TLD's and placed in the TI EV-2 plastic TLD holder. The other 20 were shielded with 0.022 inch copper and packaged in the same type holders.

Exposure: On November 26, 1980, 10 each of the 0.093" and 0.022" shielded TLD's were place in an office closet. The other 20 were placed in a Grieve Corp Model LO-200C oven maintained at 50°C. The oven temperature was checked on numerous occasions by reading a thermometer.

Five TLD's of each temperature exposure and copper shielding were removed after 47 days and read on a TI Model 8300 TLD reader. The remaining TLD's were removed after 91 days and read. All were reirradiated with a 132 mR dose of Cs-137 gamma rays and reread to determine the sensitivity of each area of each TLD.

Results: The results of the exposures in mR are:

47 days data:

room temperature	(0.022" Cu)	10.6 ± 0.4
room temperature	(0.093" Cu)	9.6 ± 0.6
50°C	(0.022" Cu)	8.7 ± 0.2
50°C	(0.093" Cu)	7.9 ± 0.2

91 days data:

room temperature	(0.022" Cu)	19.7 ± 0.2
room temperature	(0.093" Cu)	17.0 ± 0.1
50°C	(0.022" Cu)	15.8 ± 0.1
50°C	(0.093" Cu)	14.1 ± 0.4

The ratio of the response for 91 days to twice that obtained for 47 days is given by:

room temperature (0.022" Cu) $\frac{19.7}{2(10.6)} = 0.93$

room temperature (0.093" Cu) $\frac{17.0}{2(9.6)} = 0.89$

50°C (0.022" Cu) $\frac{15.8}{2(8.7)} = 0.91$

$$50^{o}C \quad (0.093\text{" Cu}) \quad \frac{14.1}{2(7.9)} = 0.89$$

Conclusion: Section 4.3.3 of ANSI N545-1975 states "The ratio of the response obtained for the field cycle to twice that obtained for half the field cycle shall not be less than 0.90". The test results were 0.93 for 0.022" Cu shielding and 0.89 for 0.093" Cu shielding.

The guide further states "This test shall be repeated under both the minimum and maximum temperature conditions expected in the field. For these tests, the ratio of the response obtained for the field cycle to twice that obtained for half the field cycle shall not be less than 0.85." The test results for 50^{o}C were 0.91 for 0.022" Cu shielding and 0.89 for 0.093" Cu shielding. Thus, the ANSI guide is satisfied for this test at the maximum temperature conditions expected in the field.

The attached data sheets list the exposures of each of the four areas of each TLD. The TLD's for each temperature and exposure duration are numbered as below:

	47 days		91 days	
	0.022" Cu	0.093" Cu	0.022" Cu	0.093" Cu
Room temperature	RT423-22	RT473-93	RT424-22	RT470-93
	RT427-22	RT474-93	RT425-22	RT471-93
	RT430-22	RT475-93	RT426-22	RT472-93
	RT431-22	RT477-93	RT428-22	RT476-93
	RT432-22	RT479-93	RT429-22	RT478-93
50^{o}C	OT413-22	OT461-93	OT414-22	OT460-93
	OT415-22	OT462-93	OT416-22	OT464-93
	OT420-22	OT463-93	OT417-22	OT465-93
	OT421-22	OT468-93	OT418-22	OT466-93
	OT422-22	OT469-93	OT419-22	OT467-93

TELEDYNE ISOTOPES
50 VAN BUREN AVENUE
WESTWOOD, NEW JERSEY 07675
(201) 664-7070 TELEX.134474

ENVIRONMENTAL TLD EXPOSURE REPORT

11/26/80 - 01/12/81

ANSI

THE RESULTS INDICATED BELOW HAVE BEEN OBTAINED USING THE TELEDYNE ISOTOPES READOUT SYSTEM AND DOSIMETERS. THE ORIGINAL DATA ARE RETAINED ON FILE.

GROSS EXPOSURES IN MR.

IDENT.	AREA 1	AREA 2	AREA 3	AREA 4	AVERAGE	STD. DEV.
RT423-22	10.0	10.7	10.3	10.5	10.4	0.3
RT427-22	10.0	10.4	9.8	11.0	10.3	0.5
RT430-22	10.1	10.5	11.0	10.1	10.4	0.4
RT431-22	11.5	10.8	10.5	11.4	11.0	0.5
RT432-22	11.2	11.3	10.4	11.5	11.1	0.5
RT473-93	9.2	9.5	9.3	9.1	9.3	0.2
RT474-93	9.3	9.9	9.5	9.3	9.5	0.3
RT475-93	10.4	11.2	9.8	10.6	10.5	0.6
RT477-93	10.1	8.8	9.8	9.6	9.6	0.5
RT479-93	8.8	9.2	8.9	8.9	9.0	0.1
OT413-22	8.8	9.0	8.5	8.2	8.6	0.4
OT415-22	8.5	9.1	8.9	8.6	8.8	0.3
OT420-22	8.3	8.7	8.5	8.6	8.5	0.2
OT421-22	8.6	9.1	8.7	8.5	8.7	0.3
OT422-22	9.0	9.2	8.7	9.0	9.0	0.2
OT461-93	7.6	8.3	7.5	7.6	7.8	0.4
OT462-93	7.9	8.1	7.5	8.4	8.0	0.4
OT463-93	8.8	8.2	8.0	8.0	8.2	0.4
OT468-93	7.7	7.5	7.3	7.9	7.6	0.2
OT469-93	8.3	7.5	8.3	7.9	8.0	0.4

THESE GROSS EXPOSURES WERE OBTAINED IN THE ABSENCE OF DESIGNATED CONTROL DOSIMETERS FOR SUBTRACTING TRANSIT DOSES AND SYSTEM BACKGROUND.

APPROVED J.D. Martin

DATE 06/23/81

TELEDYNE ISOTOPES
50 VAN BUREN AVENUE
WESTWOOD, NEW JERSEY 0767'
(201) 664-7070, TELEX 134474

ENVIRONMENTAL TLD EXPOSURE REPORT

11/26/80 - 02/25/81

ANSI

THE RESULTS INDICATED BELOW HAVE BEEN OBTAINED USING THE TELEDYNE ISOTOPES READOUT SYSTEM AND DOSIMETERS. THE ORIGINAL DATA ARE RETAINED ON FILE.

GROSS EXPOSURES IN MR

IDENT.	AREA 1	AREA 2	AREA 3	AREA 4	AVERAGE	STD. DEV.
RT424-22	19.2	19.3	19.7	19.9	19.5	0.3
RT425-22	19.8	20.0	20.0	19.6	19.8	0.2
RT426-22	18.9	19.9	19.5	19.9	19.6	0.5
RT428-22	19.2	19.6	19.8	20.0	19.7	0.3
RT429-22	19.6	20.0	19.9	20.0	19.9	0.2
RT470-93	17.1	16.9	17.1	17.3	17.1	0.2
RT471-93	17.4	16.9	17.0	17.1	17.1	0.2
RT472-93	16.9	16.9	16.9	17.1	16.9	0.1
RT476-93	16.6	16.7	16.8	17.3	16.8	0.3
RT478-93	16.7	17.1	17.1	17.0	16.9	0.2
OT414-22	15.5	15.9	16.2	15.9	15.9	0.3
OT416-22	15.6	16.1	16.1	15.8	15.9	0.2
OT417-22	15.9	16.0	16.0	15.7	15.9	0.1
OT418-22	15.7	15.9	15.7	15.6	15.7	0.1
OT419-22	15.3	16.1	15.7	15.7	15.7	0.3
OT460-93	14.4	15.2	15.0	14.7	14.8	0.3
OT464-93	13.6	13.8	13.9	14.2	13.9	0.2
OT465-93	13.7	13.8	13.7	14.2	13.9	0.2
OT466-93	14.0	14.4	13.9	14.1	14.1	0.2
OT467-93	14.2	14.1	13.8	14.0	14.0	0.1

THESE GROSS EXPOSURES WERE OBTAINED IN THE ABSENCE OF DESIGNATED CONTROL DOSIMETERS FOR SUBTRACTING TRANSIT DOSES AND SYSTEM BACKGROUND.

APPROVED J. G. Martin
DATE 06/23/81

5.5 State of Washington Department of Social and Health Services, Radiation Control Section, Office of Environmental Health Programs

The State of Washingtons Radiation Control Section in support of the states, Energy Facility Site Evaluation Council, has established an auditing program that involves the analysis of split or replicate samples from the Supply Systems sampling program. This duplicate analysis of environmental media provides an additional quality control phase to the Supply Systems program. The results of the states analyses are compared with reported Supply System analysis and reported annually by the Washington State Department of Social and Health Services in an Environmental Radiation Program Annual Report.

The Department of Social and Health Services auditing program began in 1978 concurrent with the implementation of the Supply Systems pre-operational radiological environmental monitoring program.

6.0 REFERENCES

1 NCRP Report #50, Environmental Radiation Measurements, 1976.

2 Gilbert, R.O. and R.R. Kinnison, "Statistical Methods for Estimating the Mean and Variance from Radionuclide Data Sets Containing Negative, Unreported or Less-Than Values", Health Physics 1981, Vol. 40, pp 377-390.

3 PNL-2932, Environmental Surveillance at Hanford for CY-1978.1979.

4 PNL-3283, Environmental Surveillance at Hanford for CY-1979.1980.

5 PNL-3728, Environmental Surveillance at Hanford for CY-1980.1981.

6 PNL-4211, Environmental Surveillance at Hanford for CY-1981.1982.

7 PNL-4657, Environmental Surveillance at Hanford for CY-1982.1983.

8 PNL-5038, Environmental Surveillance at Hanford for CY-1983.1984.

9 PNL-2933, Environmental Status of the Hanford Site for CY-1978.1979.

10 PNL-3284, Environmental Status of the Hanford Site for CY-1979.1980.

11 PNL-3729, Environmental Status of the Hanford Site for CY-1980.1981.

12 PNL-4212, Environmental Status of the Hanford Site for CY-1981.1982.

13 PNL-4658, Environmental Status of the Hanford Site for CY-1982.1983.

14 PNL-5039, Environmental Status of the Hanford Site for CY-1983.1984.

15 PNL-2724, Vertical Contamination in the Unconfined Ground Water at the Hanford Site, Washington, 1978.1979.

16 PNL-3284, Vertical Contamination in the Unconfined Ground Water at the Hanford Site, Washington, 1979.1980.

17 PNL-3729, Vertical Contamination in the Unconfined Ground Water at the Hanford Site, Washington, 1980.1981.

18 PNL-4212, Vertical Contamination in the Unconfined Ground Water at the Hanford Site, Washington, 1981.1982.

19 PNL-4658, Vertical Contamination in the Unconfined Ground Water at the Hanford Site, Washington, 1982.1983.

20 PNL-5039, Vertical Contamination in the Unconfined Ground Water at the Hanford Site, Washington, 1983.1984.

21 Site Certification Agreement (SCA) between the State of Washington and the Washington Public Power Supply System for Hanford #2 (WNP-2), Attachment I (Rev. 1) January 1978.

22 BNWL-2305. Association of Hanford Origin Radionuclides with Columbia River Sediment. 1977.

23 PNL-3127. Radiological Survey of Exposed Shorelines and Islands of the Columbia River Between Vernita and the Snake River Confluence. 1980.

24 Beasley, T.M. and C.D. Jennings, "Inventories of Ru-239/240, Am-241, Cs-137 and Co-60 in Columbia River Sediments from Hanford to the Columbia River Estuary", Environmental Science and Technology. 1984, 18, pg. 207-212.

25 NCRP Report 45, Natural Background Radiation in the United States, 1975.

26 Kathren, R.L., Radioactivity in the Environment, Sources, Distribution, and Surveillance, Harwood Academic Publishers, 1984.

27 Eberline Nuclear Services Division Quality Assurance Manual, Eberline Nuclear Services, Santa Fe, New Mexico, July 1984.

28 Summary of Quality Control Data For the NUS Radiological Laboratory, NUS Corporation, 1983, Environmental Services Division, Pittsburgh, Pennsylvania, March 1984.

DISTRIBUTION

No. of Copies		No. of Copies	

SUPPLY SYSTEM:

J.D. Martin
WNP-2 Plant Manager
MD# 927S
P.O. Box 968
Richland, WA 99352

(3) R.G. Graybeal
WNP-2 Health Physics/
Chemistry, Manager
MD# 927S
P.O. Box 968
Richland, WA 99352

R.P. Powell
WNP-2 Project Licensing, Manager
MD# 956B
P.O. Box 968
Richland, WA 99352

G.C. Sorensen
Regulatory Programs, Manager
MD# 340
P.O. Box 968
Richland, WA 99352

C. Van Hoff
Senior State Liaison
MD# 340
P.O. Box 968
Richland, WA 99352

J.P. Chasse
Senior Environmental Licensing,
Engineer
MD# 340
P.O. Box 968
Richland, WA 99352

R.A. Chitwood
Emergency Planning and Environmental
Programs, Manager
MD# 1020
P.O. Box 968
Richland, WA 99352

D.E. Larson
Radiological Programs, Manager
MD# 1020
P.O. Box 968
Richland, WA 99352

Environmental Programs Library
MD# 1020
P.O. Box 968
Richland, WA 99352

R.W. Craig
Radiological Support Services,
Supervisor
MD# 1020
P.O. Box 968
Richland, WA 99352

W. Davis III
Environmental Programs
MD# 1020
P.O. Box 968
Richland, WA 99352

WNP-2 Files
MD# 964Y
P.O. Box 968
Richland, WA 99352

Supply System Library
MD# 330
P.O. Box 968
Richland, WA 99352

DISTRIBUTION

No. of Copies

OFFSITE AGENCIES:

(3) L. Fitch
Executive Secretary
EFSEC
820 East 5th Avenue
Olympia, WA 98504

(3) R.R. Mooney
WA State Dept. Social & Health Services
Mail Stop B17-9
1409 Smith Tower Bldg.
Seattle, WA 98104

R.D. Paris
Radiation Control Section
Oregon State Health Division
P.O. Box 231
Portland, OR 97207

R.L. Dirkes
Supervisor
Occupational & Environmental Protection
Battelle, PNL
Bldg. 318, Trailer 3, Room 15
P.O. Box 999
Richland, WA 99352

J.K. Prince
WIPP-Project
P.O. Box 2078
Carlsbad, NM 88221

No. of Copies

(1) T. Strong
WA State Dept. Social & Health Services
Airdustrial Park - Bldg. 6
Mail Stop LF-13
Olympia, WA 98504

(3) D.R. Elle
U.S. Department of Energy
Richland Operations Office
Federal Building
825 Jadwin Avenue
Richland, WA 99352

K.R. Price
Senior Research Scientist, Occupational & Environmental Protection
Battelle, PNL
Bldg. 318, Trailer 3, Room 34
P.O. Box 999
Richland, WA 99352

E. Cowan
Environmental Protection Agency Region X
1200 - 6th Avenue
Seattle, WA 98101