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Carolina Power & Light Company
Robinson Nuclear Plant
PO Box 790
Hartsville SC 29550

Robinson File No.: 12510C
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United States Nuclear Regulatory Commission
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
1993 RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Gentlemen:

Carolina Power & Light (CP&L) Company hereby submits the 1993 Radiological Environmental Operating Report as required by Technical Specification 6.9.1.2.3.

Please contact my staff if you need additional information.

Very truly yours,

R. M. Krich - Manager
Regulatory Affairs

SAB:lst
Enclosure

c: Mr. S. D. Ebnetter, Administrator, US NRC, Region II
Mr. W. T. Orders, Senior Resident Inspector, HBRSEP

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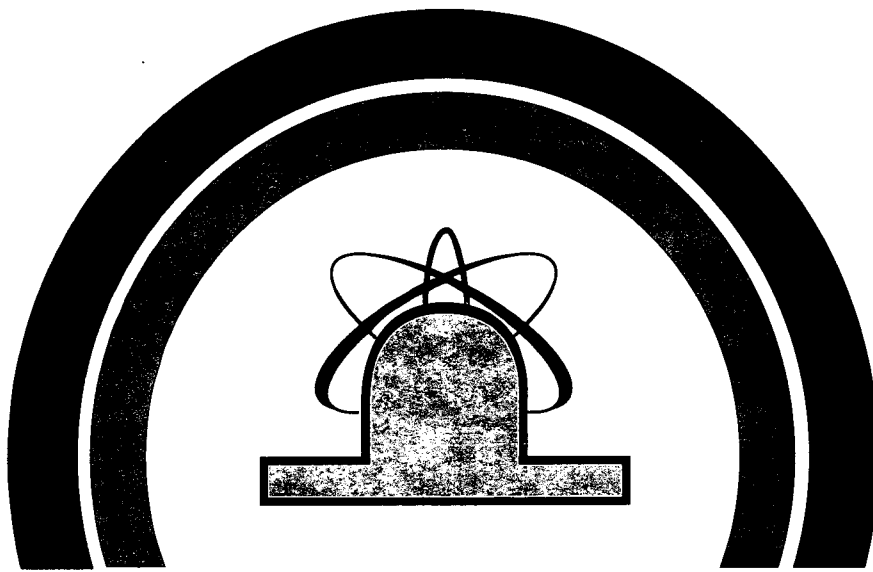
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Radiological Environmental Operating Report

1993



ROBINSON NUCLEAR PROJECT
CAROLINA POWER & LIGHT

Harris Energy & Environmental Center

Carolina Power & Light Company

New Hill, North Carolina

RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

FOR THE

H. B. ROBINSON STEAM ELECTRIC GENERATING PLANT

JANUARY 1 THROUGH DECEMBER 31, 1993

Prepared by:

Katherine C. Minard

Reviewed by:

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TABLE OF CONTENTS

TABLE OF CONTENTS	i
LIST OF FIGURES	ii
LIST OF TABLES	iii
1.0 SUMMARY	1-1
2.0 GENERAL INFORMATION	2-1
2.1 Plant and Location	2-1
2.2 Radiological Impact Considerations	2-1
2.3 Radiological Environmental Monitoring Program	2-1
3.0 INTERPRETATIONS AND CONCLUSIONS	3-1
3.1 Air Sampling	3-1
3.2 Broadleaf Vegetation	3-1
3.3 Fish	3-2
3.4 Groundwater	3-2
3.5 Milk	3-2
3.6 Food Products	3-2
3.7 Shoreline Sediment	3-2
3.8 Bottom Sediment	3-3
3.9 Aquatic Vegetation	3-3
3.10 Surface Water	3-3
3.11 Direct Radiation	3-3
3.12 Asiatic Clams	3-4
4.0 MISSED SAMPLES AND ANALYSES	4-1
4.1 Air Cartridges and Air Particulates	4-1
4.2 Broadleaf Vegetation	4-1
4.3 Thermoluminescent Dosimeters (TLDs)	4-1
5.0 LAND-USE CENSUS	5-1
6.0 ANALYTICAL PROCEDURES	6-1
6.1 Gross Beta	6-1
6.2 Tritium	6-1
6.3 Iodine-131	6-1
6.4 Gamma Spectrometry	6-1
6.5 Thermoluminescent Dosimetry (TLD)	6-2
6.6 EPA Laboratory Intercomparison Program	6-3
6.7 Lower Limits of Detection	6-3

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
2-1 H.B. Robinson Unit No. 2 Radiological Environmental Sampling Points	2-3
2-2 H.B. Robinson Unit No. 2 Radiological Environmental Sampling Points on Site	2-4
3-1 Plot of Air Particulate Gross Beta Activity by Date at Station 02 Versus Control Station Activity	3-5
3-2 Plot of Air Particulate Gross Beta Activity by Date at Station 03 Versus Control Station Activity	3-6
3-3 Plot of Air Particulate Gross Beta Activity by Date at Station 04 Versus Control Station Activity	3-7
3-4 Plot of Air Particulate Gross Beta Activity by Date at Station 05 Versus Control Station Activity	3-8
3-5 Plot of Air Particulate Gross Beta Activity by Date at Station 06 Versus Control Station Activity	3-9
3-6 Plot of Air Particulate Gross Beta Activity by Date at Station 07 Versus Control Station Activity	3-10
3-7 Plot of Air Particulate Gross Beta Activity by Date at Station 55 Versus Control Station Activity	3-11
3-8 Plot of Milk Iodine-131 Activity by Date at Station 54	3-12
3-9 Plot of Milk Iodine-131 Activity by Date at Station 63	3-13
3-10 Plot of Aquatic Vegetation Gamma Activity by Date at Control Station 41	3-14
3-11 Plot of Aquatic Vegetation Gamma Activity by Date at Station 45	3-15
3-12 Plot of Aquatic Vegetation Gamma Activity by Date at Station 46	3-16
3-13 Plot of Aquatic Vegetation Gamma Activity by Date at Station 54	3-17
3-14 Plot of Surface Water Tritium Activity by Date at Station 40	3-18
3-15 Plot of Surface Water Tritium Activity by Date at Station 57	3-19
3-16 Plot of Shoreline Sediment Activity by Date at Station 57	3-20
3-17 Plot of TLD Averages for Inner Versus Outer Ring Locations by Date	3-21

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1-1	Radioactivity in Environmental Samples	1-3
1-2	Radiological Environmental Monitoring Program Data Summary	1-4
2-1	Radiological Environmental Monitoring Program Sample Point Descriptions	2-5
5-1	Land-Use Census Distances to Locations of Interest	5-1
6-1	Typical Lower Limits of Detection (a priori) LLD Ge Gamma Spectrometry	6-4

1.0 SUMMARY

The Radiological Environmental Surveillance Program was conducted in accordance with the H.B. Robinson Steam Electric Generating Plant Technical Specifications, Off-Site Dose Calculation Manual, and approved procedures.

The purpose of the Radiological Environmental Monitoring Program is to measure accumulation of radioactivity in the environment, to determine whether this radioactivity is the result of the operations of the H.B. Robinson Steam Electric Generating Plant, and to assess the potential dose to the off-site population based on the cumulative measurements of radioactivity of plant origin. Approximately 1,170 samples were collected from indicator locations and 1,341 analyses and measurements were made during the year. Detectable radioactivity resulting from plant operations was found in only 20 samples (Table 1-1) of surface water, bottom sediment, and aquatic vegetation. Only the tritium activity in fish samples constituted a potential source of public exposure. Using the methodology of Regulatory Guide 1.109, the potential dose to a member of the public from fish consumption is 0.009 mrem per year.

1. Radioactivity in environmental samples which could be attributed to the plant operations in 1993 is summarized in Table 1-1.
2. All detectable radionuclides in the environmental samples for 1993 were less than reportable levels as defined in HBR Technical Specifications.
3. Environmental sampling and analyses performed during 1993 demonstrated that the H.B. Robinson Unit 2 Steam Electric Plant continues to operate with minimum impact on the environment and little dose to the general public.
4. A statistical summary of all the data gathered in 1993 has been compiled in Table 1-2.

5. The following locations are used as control locations and are intended to indicate conditions away from the H.B. Robinson Plant influence:

Thermoluminescent Dosimeters, Airborne and Particulate Samples	<u>Florence, S.C.</u> (Sample Location 1)
Surface Water, Bottom Sediment, and Aquatic Vegetation	<u>Black Creek at US 1</u> (Sample Location 41)
Fish	<u>Lake Bee or May Lake</u> (Sample Location 47)
Milk	<u>Cunningham Dairy</u> (Sample Location 63)
Broadleaf Vegetation	<u>10 Miles W. Bethune</u> (Sample Location 52)
Food Products	<u>>5 Miles from plant--Lowest D/Q</u> (Sample Location 49)

TABLE 1-1

Radioactivity in Environmental Samples
Attributed to Plant Operations

Sample Media	Radionuclide	Average Concentration and Occurrence	Maximum Individual Dose (mrem/yr.)
Bottom Sediment (pCi/g)	Co-60	6.76 E-1 (1/3)	*
Aquatic Vegetation (pCi/g)	Co-58	6.17 E-2 (1/3)	*
	Co-60	5.97 E-1 (1/3)	*
Surface Water (pCi/l)	H-3	4.13 E+3 (18/24)	0.009 (from fish)

*No dose calculated since no general population exposure pathway exists.

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY

H.B. Robinson Steam Electric Plant
Darlington County, South Carolina

Docket Number - 50-261
Calendar Year 1993

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) ⁽¹⁾	All Indicator Locations Mean Range ⁽²⁾	Location w/Highest Annual Mean		Control Locations Mean Range ⁽²⁾
				Name, Distance, and Direction	Mean Range ⁽²⁾	
Air Cartridge (pCi/m ³)	I-131 413 ⁽³⁾	1.2E-2	All less than LLD		All less than LLD	All less than LLD
Air Particulate (pCi/m ³)	Gross Beta 413 ⁽³⁾	1.0E-3	1.85E-2 (361/361) 6.94E-3 - 3.33E-2	Hartsville Substation 6.3 miles ESE	2.18E-2 (50/50) 9.09E-3 - 3.33E-2	1.75E-2 (52/52) 7.88E-3 - 2.89E-2
	Gamma 32	See Table 6-1	All less than LLD		All less than LLD	All less than LLD
Broadleaf Vege- tation (pCi/g, wet)	Gamma 45 ⁽³⁾⁽⁴⁾		2.90E-1 (15/30) 2.00E-2 - 5.33E-1	CP&L Property 0.25 mile SSW	3.12E-1 (8/15) 2.00E-2 - 5.33E-1	3.21E-1 (8/15) 3.75E-2 - 5.97E-1
	Cs-137	1.7E-2				
Fish (pCi/g, wet) Bottom-Feeder	Gamma 6		8.83E-2 (4/4)	Lake Robinson Site varies	9.79E-2 (2/2)	9.88E-2 (2/2)
	Cs-137	2.8E-2	4.16E-2 - 1.19E-1		7.67E-2 - 1.19E-1	7.47E-2 - 1.23E-1
	K-40	7.1E-1	3.14E+0 (4/4) 1.90E+0 - 4.59E+0	Prestwood Lake 4.9 miles ESE	3.25E+0 (2/2) 1.90E+0 - 4.59E+0	2.86E+0 (2/2) 2.49E+0 - 3.23E+0
Fish (pCi/g, wet) Free-Swimmer	Gamma 6		1.11E-1 (3/4)	Prestwood Lake 4.9 miles ESE	1.23E-1 (2/2)	1.84E-1 (2/2)
	Cs-137	2.8E-2	7.95E-2 - 1.67E-1		7.95E-2 - 1.67E-1	1.48E-1 - 2.21E-1
	K-40	7.1E-1	2.96E+0 (4/4) 1.53E+0 - 4.11E+0	Prestwood Lake 4.9 miles ESE	3.58E+0 (2/2) 3.05E+0 - 4.11E+0	2.97E+0 (2/2) 2.40E+0 - 3.54E+0
Food Products (pCi/g, wet)	Gamma 5 ⁽⁵⁾	See Table 6-1	All less than LLD		All less than LLD	All less than LLD
Groundwater (pCi/l)	Gamma 36	See Table 6-1	All less than LLD		All less than LLD	No control
	Tritium 36	1.2E+3	All less than LLD		All less than LLD	No control
Milk (pCi/l)	I-131 52	5.0E-1	All less than LLD		All less than LLD	All less than LLD
	Gamma 52	See Table 6-1	All less than LLD		All less than LLD	All less than LLD

TABLE 1-2 (continued)

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) ⁽¹⁾	All Indicator Locations Mean Range ⁽²⁾	Location w/Highest Annual Mean		Control Locations Mean Range ⁽²⁾
				Name, Distance, and Direction	Mean Range ⁽²⁾	
Shoreline Sediment (pCi/g, dry)	Gamma 4 Cs-137	2.6E-2	6.09E-2 (1/4) Single value	Ash Pond	6.09E-2 (1/2) Single value	No Control
Bottom Sediment ⁽⁶⁾ (pCi/g, dry)	Gamma 4 Co-60	2.3E-2	6.76E-1 (1/3) Single value	Lake Robinson Site varies	6.76E-1 (1/1) Single value	All less than LLD
	Cs-137	2.6E-2	4.09E-1 (3/3) 3.08E-1 - 5.84E-1	Lake Robinson Site varies	5.84E-1 (1/1) Single value	5.79E-2 (1/1) Single value
Aquatic Vegetation ⁽⁶⁾ (pCi/g, wet)	Gamma 4 Co-58	1.6E-2	6.17E-2 (1/3) Single value	Lake Robinson site varies	6.17E-2 (1/1) Single value	All less than LLD
	Co-60	1.9E-2	5.97E-1 (1/3) Single value	Lake Robinson site varies	5.97E-1 (1/1) Single value	All less than LLD
	Cs-137	1.7E-2	2.05E-2 (1/3) Single value	Lake Robinson Site varies	2.05E-2 (1/1) Single value	All less than LLD
Surface Water (pCi/l)	Gamma 36	See Table 6-1	All less than LLD		All less than LLD	All less than LLD
	Tritium 36	1.2E+3	4.13E+3 (18/24) 1.19E+3 - 7.61E+3	Ash Pond	4.16E+3 (8/12) 1.25E+3 - 7.14E+3	All less than LLD
TLD (mR/wk)	TLD 161 ⁽³⁾	1 mR	1.13E+0 (157/157) 7.00E-1 - 1.90E+0	4.4 miles SSW Intersection of SR 31-51 and 16-12	1.75E+0 (4/4) 1.60E+0 - 1.90E+0	1.10E+0 (4/4) 9.00E-1 - 1.30E+0

FOOTNOTES TO TABLE 1-2

1. Lower Limit of Detection (LLD) is the smallest concentration of radioactive material in a sample that will yield a net count above system background which will be detected with 95 percent probability with only 5 percent probability of falsely concluding that a blank observation represents a "real" signal.
2. Mean and range are based on detectable measurements only. The fractions of detectable measurements at specific locations are indicated in parentheses.
3. Missing samples are discussed in Section 4.
4. Three types of broadleaf vegetation samples are collected monthly when available from three locations for a possible total of 108 samples.
5. Food products are required to be sampled at locations where plant effluents are used to irrigate food crops. The farm previously sampled has ceased its irrigation operations. However, food products were collected for split sampling with the state of South Carolina.
6. Bottom sediment and aquatic vegetation sampling are not required by plant technical specifications. Sampling and analysis is performed to monitor any radionuclide buildup in the lake.

2.0 GENERAL INFORMATION

The following report summarizes the radiological environmental data for the H.B. Robinson Steam Electric Generating Plant during the calendar year 1993. The surveillance requirements for this report were performed by the requirements of the Radiological Effluent Technical Specifications (RETS) which were implemented on January 1, 1985.

2.1 Plant and Location

The H.B. Robinson Steam Electric Generating Plant is located in northeastern South Carolina near Hartsville and approximately 25 miles northwest of Florence. This site includes a fossil-fueled plant, Unit 1, which was placed in service in 1960 and a pressurized water nuclear power reactor, Unit 2, which entered commercial operation on March 7, 1971. The Robinson Impoundment (hereafter referred to as Lake Robinson) on the plant site was created for Unit 1 and is also a cooling reservoir for Unit 2. Lake Robinson has an area of 2,250 acres with plant intake at the south end adjacent to the dam. Following condenser use, the water is returned by a canal to a point in Lake Robinson 4.2 miles to the north.

2.2 Radiological Impact Considerations

Potential population exposure due to plant operations is most significant in the liquid release-fish-man pathway. Additional pathways are also potentially important. These are the airborne radioiodine-pasture-milk pathway, direct external radiation exposure to individuals from noble gases, radionuclide inhalation, and ingestion of food products. Contact with Lake Robinson waters, including boating and immersion (swimming), constitutes an insignificant dose to man.

2.3 Radiological Environmental Monitoring Program

The required radiological environmental sampling is defined by technical specifications. The program, as implemented by the plant, is described in the Off-Site Dose Calculation Manual. The program objective is to monitor specific elements of exposure pathways. The sampling media and release pathways are listed below.

Sampling Media	Release Pathway
Glass Fiber Filter	Airborne particulates
Iodine Collection Cartridge	Gaseous
TLDs	Gaseous
Surface Water	Liquid
Groundwater	Liquid
Shoreline Sediment	Liquid
Milk	Gaseous, airborne particulates and liquid (when irrigating)
Fish	Liquid
Food Crops	Gaseous, airborne particulates and liquid (when irrigating)
Broadleaf Vegetation (when there are no milk locations within five miles of plant site)	Gaseous and airborne particulates
Aquatic Vegetation	Liquid
Bottom Sediment	Liquid

Figures 2-1 and 2-2 provide map locations for the program's sampling locations and sample types. Table 2-1 provides the sampling point descriptions.

SYMBOL	SAMPLE TYPE	
AC	AIR CARTRIDGE	1-7, 55
AP	AIR PARTICULATE	1-7, 55
SS	SHORELINE SEDIMENT	44 57
GW	GROUNDWATER	40 42 43
BL	BROADLEAF VEGETATION	50 51 52
SW	SURFACE WATER	40 41 57
TL	TLD	1-39 55 56
MK	MILK	54 63
FI	FISH	45 46 47
FC	FOOD PRODUCTS	49 54 58
AV	AQUATIC VEGETATION	41 45 46 54
SD	BOTTOM SEDIMENT	41 45 46 54

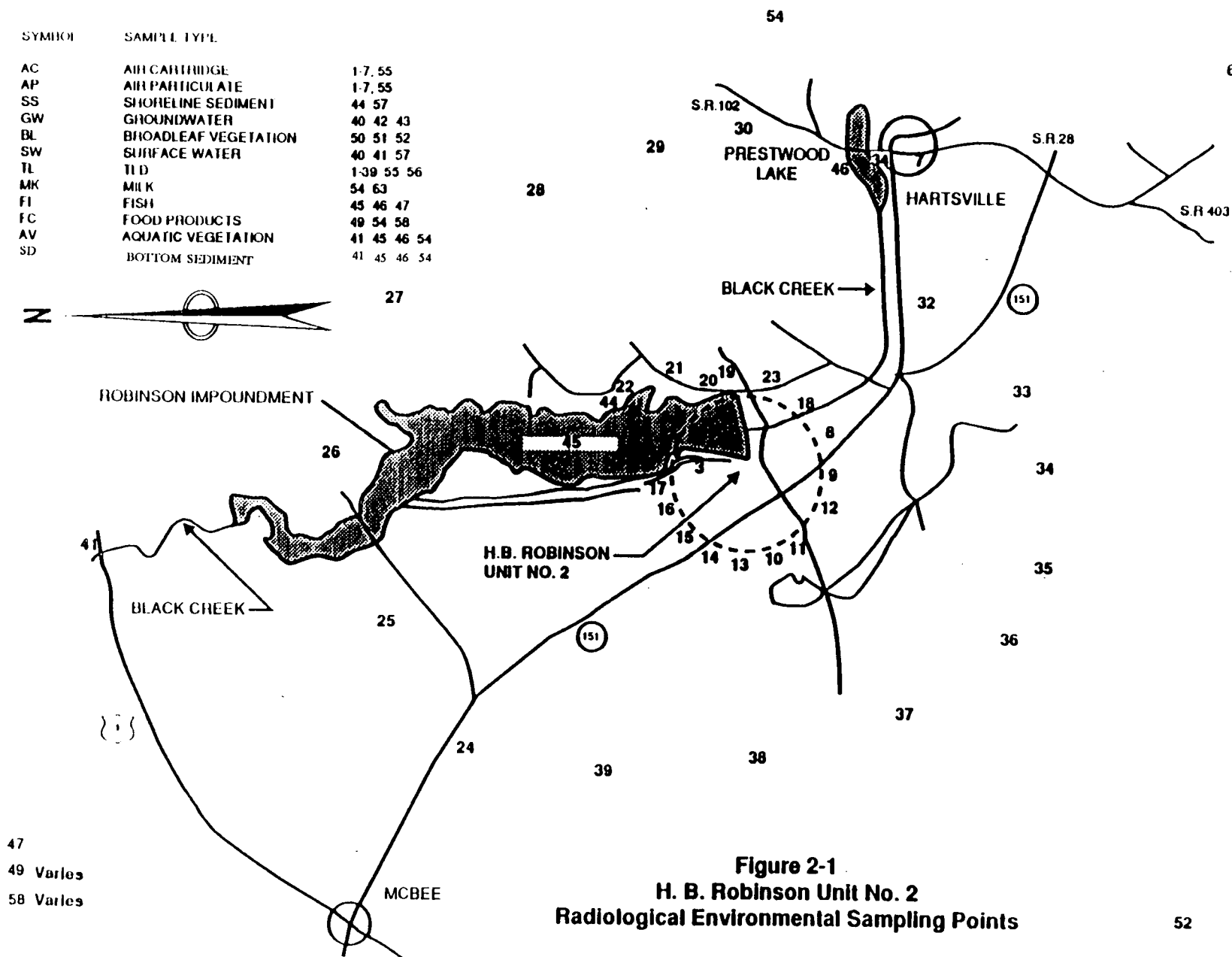


Figure 2-1
H. B. Robinson Unit No. 2
Radiological Environmental Sampling Points

FLORENCE
63 1

SYMBOL	SAMPLE TYPE	
AC	AIR CARTRIDGE	1-7, 55
AP	AIR PARTICULATE	1-7, 55
SS	SHORELINE SEDIMENT	44 57
GW	GROUNDWATER	40 42 43
SL	BROADLEAF VEGETATION	50 51 52
SW	SURFACE WATER	40 41 57
TL	TLD	1-39 55 56
MK	MILK	54 63
FI	FISH	45 46 47
FC	FOOD PRODUCTS	49 54 58
AV	AQUATIC VEGETATION	41 45 46 54
SD	BOTTOM SEDIMENT	41 43 46 54

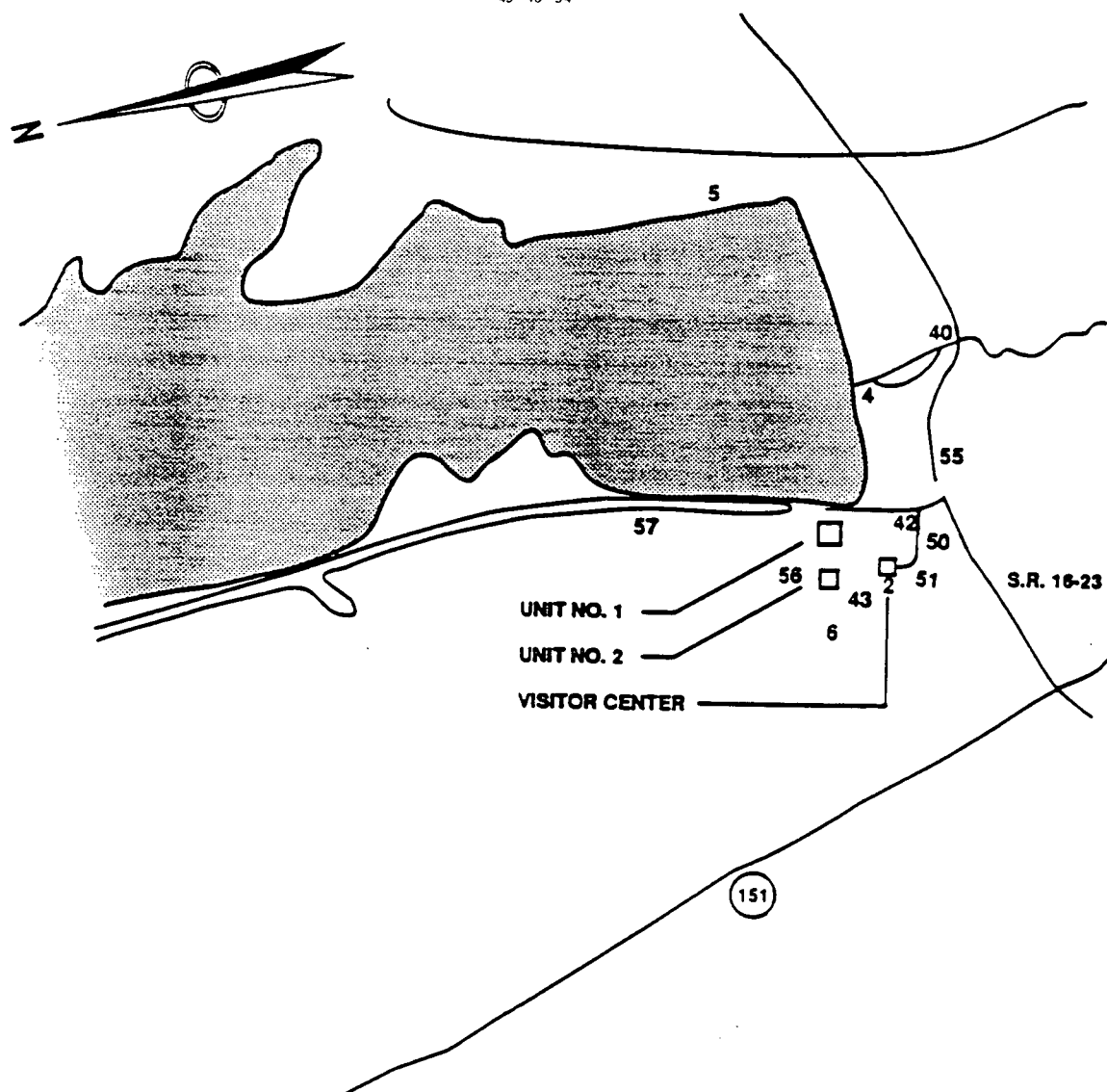


FIGURE 2-2
H. B. ROBINSON UNIT NO. 2
RADIOLOGICAL ENVIRONMENTAL SAMPLING POINTS
ON SITE

TABLE 2-1

**RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
H.B. ROBINSON STEAM ELECTRIC PLANT**

Sample Type	Sampling Point and Description¹	Sampling Frequency	Approximate Sample Size	Sample Analysis
Air Cartridge (AC)	1--26 miles ESE Florence--Control 2--0.2 mile S Information Center 3--0.7 mile N Microwave Tower 4--0.4 mile ESE Spillway 5--0.9 mile ENE Near Johnson's Landing 6--0.3 mile SW Near Information Center 7--6.3 miles ESE Hartsville Substation 55--0.3 mile SSE Near Site Boundary	Weekly	800 m ³	Iodine
Air Particulate (AP)	1--26 miles ESE Florence--Control 2--0.2 mile S Information Center 3--0.7 mile N Microwave Tower 4--0.4 mile ESE Spillway 5--0.9 mile ENE Near Johnson's Landing 6--0.3 mile SW Near Information Center 7--6.3 miles ESE Hartsville Substation 55--0.3 mile SSE Near Site Boundary	Weekly	800 m ³	Weekly--Gross Beta Quarterly--Composite- Gamma
External Radiation Dose (TL)	1--26 miles ESE Florence--Control 2--0.2 mile S Information Center 3--0.7 mile N Microwave Tower 4--0.4 mile ESE Spillway 5--0.9 mile ENE Near Johnson's Landing 6--0.3 mile SW Near Information Center 7--6.3 miles ESE Hartsville Substation 8--0.8 mile SSE Near Transmission Tower 9--1.0 mile S on Transmission Tower 10--1.0 mile WSW at Church of God Cemetery	Quarterly	Not Applicable	TLD Readout

TABLE 2 (continued)

Sample Type	Sampling Point and Description ¹	Sampling Frequency	Approximate Sample Size	Sample Analysis
External Radiation Dose (TL) (cont.)	11--1.0 mile SW Near Old Camden Road 12--1.2 miles SSW Intersection of Dirt Road Near Roads 16-23 and 16-413 13--1.0 mile W; 0.5 mile Down Extension of Road 16-846 14--0.9 mile WNW at Pine Ridge Church 15--1.0 mile NW Near Ash Pond 16--1.0 mile NNW Darlington Co. IC Turbine Plant 17--1.1 miles N Discharge Canal Road @ Unit 1 Weir 18--0.7 mile SE Near Old Railroad Trestle at Black Creek 19--1.0 mile E; 0.1 mile from Intersection of Road 16-23 and Road 16-39 20--1.3 miles ENE; 0.5 mile N of Intersection of Roads 16-23 and 16-39 21-1.4 miles NE Near Atkinson's Boat Landing 22-1.9 miles NNE Shady Rest Club 23--1.2 miles ESE on Road 16-39; 0.5 mile S of Intersection of Roads 16-23 and 16-39 24--5.0 miles NW; 1.5 miles from Intersection of SR 151, 13-711, 13-172 25--4.6 miles NNW on Road 13-346 26--5.0 miles N, on Road 13-346 27--5.0 miles NNE Road 13-763 28--4.8 miles NE on Road 13-39 29--4.1 miles ENE on Road 16-20 at Transmission Tower 30--4.6 miles E, Near Intersection of Roads 16-20 and 16-492	Quarterly	Not Applicable	TLD Readout

TABLE 2 (continued)

Sample Type	Sampling Point and Description ¹	Sampling Frequency	Approximate Sample Size	Sample Analysis
External Radiation Dose (TL) (cont.)	31--4.6 miles ESE on Lakeshore Drive 32--4.5 miles SE Transmission Tower at End of Kalber Drive 33--4.6 miles SSE on Road 16-493 34--4.6 miles S on Road 16-772 35--4.4 miles SSW Near Intersection of Roads 31-51 and 16-12 36--4.7 miles SW on Road 16-1127 37--5.0 miles WSW Transmission Tower Nearest Clay Road 38--4.9 miles W at Union Church Cemetery 39--5.0 miles WNW, .15 mile from Intersection of Road 16-231 and 13-172 55--0.3 mile SSE Near Site Boundary 56--300 feet N of ISFSI	Quarterly	Not Applicable	TLD Readout
Surface Water (SW)	40--0.6 mile ESE Black Creek at Road 16-23 41--7.2 miles NNW Black Creek @ US 1--Control 57--Ash Pond, 0.9 mile NNW	Monthly Composite	4 liters	Gamma Tritium
Groundwater (GW)	40--0.6 mile ESE Artesian Well on Road 16-23 42--Unit 1 Deep Well 43--Unit 2 Deep Well	Monthly	4 liters	Gamma Tritium
Milk (MK)	54--10.1 miles E Auburndale Plantation 63--18.4 miles ESE Cunningham Dairy--Control	Semimonthly when animals are on pasture; monthly at other times	8 liters	Iodine Gamma

TABLE 2 (continued)

Sample Type	Sampling Point and Description ¹	Sampling Frequency	Approximate Sample Size	Sample Analysis
Fish (FI)	45--Site Varies Within Lake Robinson 46--4.9 miles ESE Prestwood Lake 47--13.0 miles NW Bee Lake or 12.5 miles NNW May Lake--Control	Semiannually	500 grams	(Edible Portion) Gamma
Shoreline Sediment (SS)	44--1.9 miles NNE Shady Rest Club 57--Ash Pond, 0.9 mile NNW	Semiannually	500 grams	Gamma
Food Products (FC)	49--> 5 miles in Least D/Q Sector--Control 58--Site varies from plant	Annual at Harvest	500 grams	Gamma
Broadleaf Vegetation (BL)	50--0.25 mile SSE CP&L Property 51--0.25 mile SSW CP&L Property 52--10 miles W Bethune--Control	Monthly when available	500 grams	Gamma
Aquatic Vegetation (AV) and Bottom Sediment (SD)	46--4.9 miles ESE--Prestwood Lake 41--7.2 miles NNW Black Creek at US 1--Control 45--Site varies within Lake Robinson 54--10.1 miles E Auburndale Plantation	Annual	500 grams	Gamma

3.0 INTERPRETATIONS AND CONCLUSIONS

3.1 Air Sampling

Air samples collected during 1993 had a mean gross beta activity of 1.85 E-2 pCi/m^3 for the indicator stations versus an average concentration of 1.75 E-2 pCi/m^3 for the control stations. These data are essentially unchanged from 1992 and are consistent with preoperational data obtained for the H.B. Robinson Steam Electric Generating Plant (1.40 E-1 pCi/m^3) and are typical of the naturally occurring radionuclides of the region. Figures 3-1 through 3-7 depict the gross beta activity in air versus the control location and the preoperational average. The lower current value is primarily due to the reduction of worldwide fallout over that which was occurring during the preoperational years. These figures confirm that the indicator stations show no significant increase over the control samples and hence no discernible impact from the plant operations is apparent in the data.

The quarterly composite gamma analyses for air particulate samples for all quarters revealed no radionuclides typical of plant effluents.

All 361 air cartridge samples from the indicator stations and 52 air cartridges from the control locations had iodine-131 (I-131) activities which were less than the LLD.

3.2 Broadleaf Vegetation

Broadleaf vegetation sampling is accomplished by collecting oak, wild cherry, and sassafras leaves. Three species of samples, when available, are collected monthly at three locations (one control and two locations at the site boundary selected using historical meteorology with the highest calculated annual average ground level deposition). Broadleaf sampling is conducted since no milk animals are located within a radius of approximately five miles of the plant and is used to simulate dose to an individual via the milk pathway for compliance purposes.

During 1993, 15 of 30 samples taken from the indicator site demonstrated detectable concentrations of Cs-137 for an average value of $2.90 \text{ E-1 pCi/g (wet)}$. The control samples had detectable concentrations of Cs-137 in 8 of 15 samples with a mean concentration of $3.21 \text{ E-1 pCi/g (wet)}$. Upon comparing these results, we conclude

that the indicator values reflect fallout Cs-137 contamination. Past sampling experience further supports this interpretation.

3.3 Fish

Samples of free-swimmer and bottom-feeding fish were taken from Lake Robinson and Prestwood Lake (the first downstream lake) and compared to similar fish from a control lake unaffected by plant operations. Eleven of 12 fish samples from the indicator and control locations contained traces of Cs-137. The activity levels of fish from the indicator locations were lower than the control samples; therefore, no plant-related dose was assigned to the presence of this radionuclide. These data are very similar to the results on 1992 samples.

3.4 Groundwater

No gamma or tritium activity was detected in the 36 samples of groundwater collected in 1993 which is consistent with the observations in previous years.

3.5 Milk

Twenty-six samples from an indicator location and 26 from the control location were collected. Iodine-131 and gamma activities were all less than LLD.

3.6 Food Products

In support of the NRC/State of South Carolina Environmental Radiological Verification Monitoring program, food products consisting of collards, turnips, tomatoes, and peaches were sampled and analyzed primarily for interlaboratory comparisons. No gamma activity associated with plant operations was detected in any samples.

3.7 Shoreline Sediment

No radionuclides of plant origin were detected in four samples collected semi-annually in 1993 as was the case in 1991 and 1992. However, fallout Cs-137 was detected in a single sample in 1993.

3.8 Bottom Sediment

The 1993 data suggests a slight decrease over 1992 in the Co-60 activity in Lake Robinson (from 1.4 to 0.7 pCi/g). However, this could also be related to the variability of bottom sediment sampling. Cs-137 activities also decreased in the sediments of the indicator locations over 1992 values.

3.9 Aquatic Vegetation

The Co-58, 60 activities were observed only in the annual sample of aquatic vegetation from Lake Robinson as opposed to 1992 when they were present in both Robinson and Prestwood Lakes. The 1992 and 1993 activities for Co-58/60 in Lake Robinson were 1.4 and 0.06 pCi/g of Co-58 and 1.5 and 0.6 pCi/g of Co-60. Trace levels of Cs-137 were detected in Lake Robinson in 1993. No radionuclides were observed further downstream at Prestwood Lake or Black Creek near the Auburndale Plantation.

3.10 Surface Water

Surface waters of Lake Robinson indicated a presence of tritium which is attributed to plant operations and increased from 1992. These surface waters do not supply drinking water at any downstream location and irrigation practices downstream have not been used since 1989; therefore, radiological dose via this pathway is limited to the consumption of fish from Lake Robinson. Using the methodology of Nuclear Regulatory Guide 1.109, a dose of 0.009 mrem/year to the maximum exposed individual could be assigned to this pathway.

The monthly composite gamma analyses for surface water samples revealed no radionuclides typical of plant effluents.

3.11 Direct Radiation

Direct radiation exposure in the H.B. Robinson environs was measured by the placement of thermoluminescent dosimeters about the plant forming an inner ring at approximately 1 mile and an outer ring at 5 miles. The expectation would be that if a plant effect existed, the inner ring dose measurements would exceed those made in the outer ring. This condition was not observed since the outer ring was slightly

higher than the inner. Therefore, any direct radiation dose to the off-site population was determined to be insignificant.

3.12 Asiatic Clams

Benthic samples from Lake Robinson during 1993 continue to confirm the absence of any substantial populations of Asiatic clams (*Corbicula fluminea*). The natural chemistry of the lake, i.e., low alkalinity and hardness, inhibits their proliferation.

CP&L ENVIRONMENTAL SURVEILLANCE

GROSS BETA ACTIVITY FOR
AIR PARTICULATE SAMPLES

PLANT=HBR SAMPLE POINT=0002

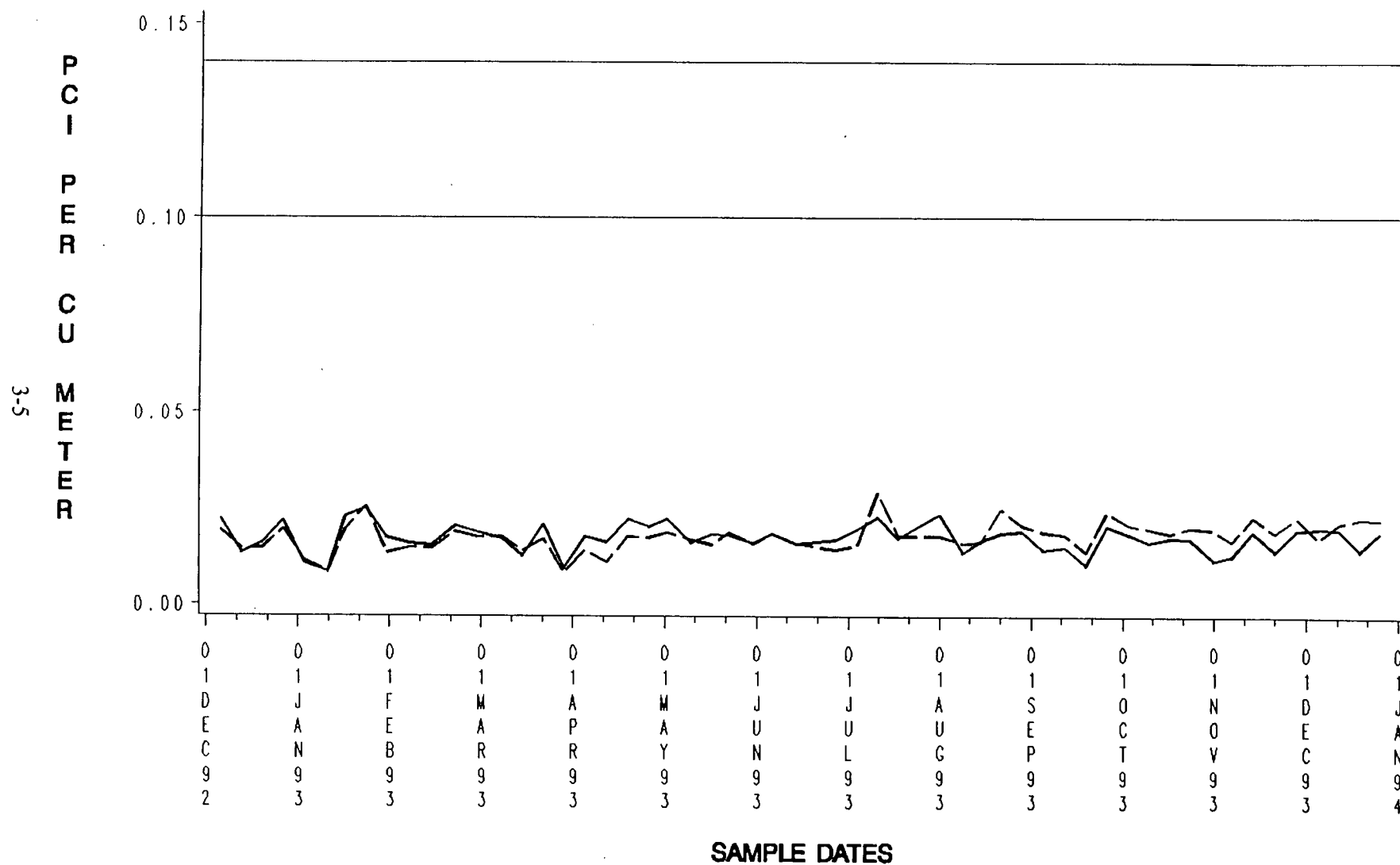


FIGURE 3-1

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=0.14
ISOTOPIC ANALYSIS REQUIRED ABOVE 0.10

CP&L ENVIRONMENTAL SURVEILLANCE
 GROSS BETA ACTIVITY FOR
 AIR PARTICULATE SAMPLES
 PLANT=HBR SAMPLE POINT=0003

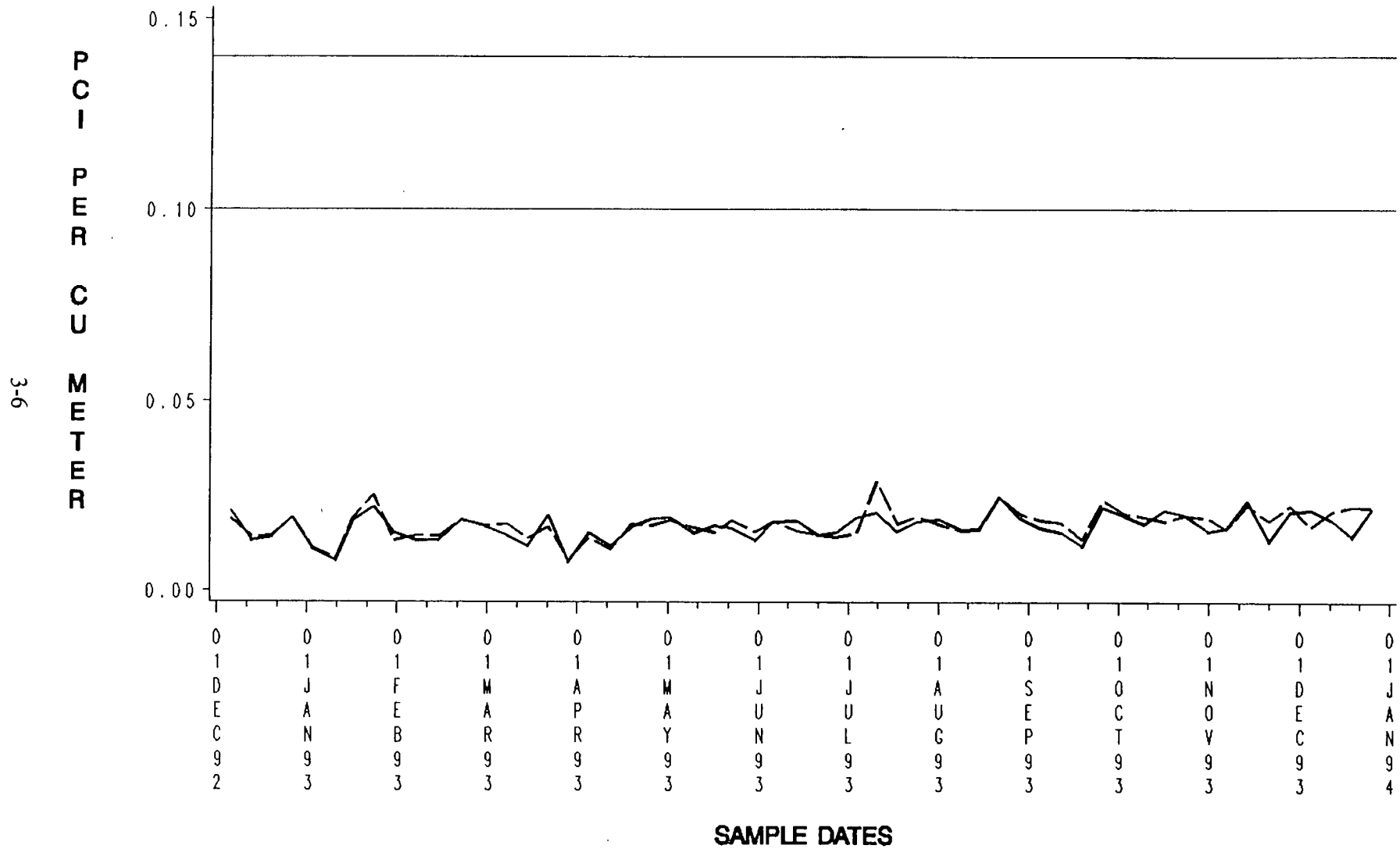


FIGURE 3-2

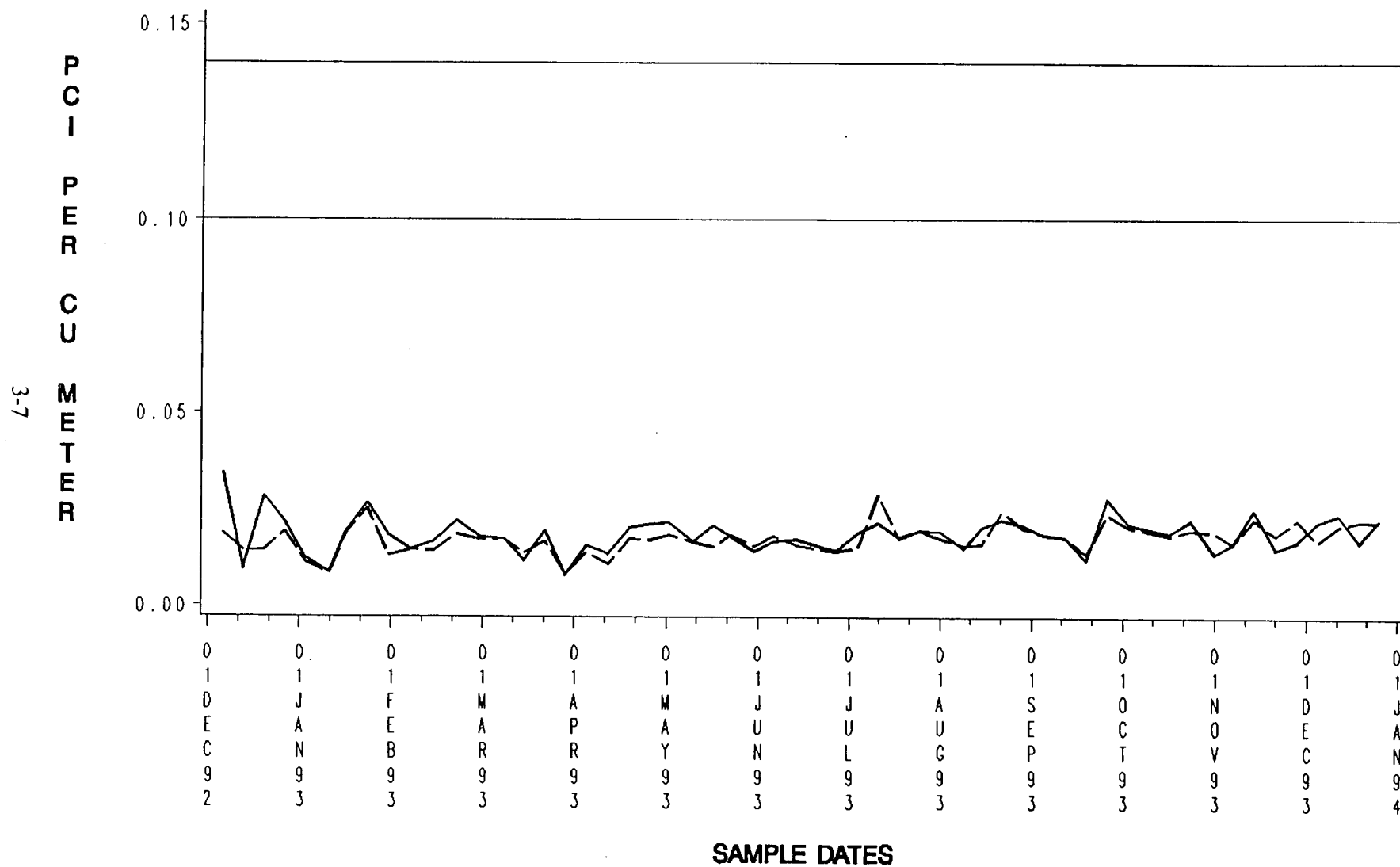
SOLID LINE FOR SAMPLE STATION
 BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=0.14
 ISOTOPIC ANALYSIS REQUIRED ABOVE 0.10

CP&L ENVIRONMENTAL SURVEILLANCE

GROSS BETA ACTIVITY FOR
AIR PARTICULATE SAMPLES

PLANT=HBR SAMPLE POINT=0004



SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=0.14
ISOTOPIC ANALYSIS REQUIRED ABOVE 0.10

CP&L ENVIRONMENTAL SURVEILLANCE

GROSS BETA ACTIVITY FOR
AIR PARTICULATE SAMPLES
PLANT=HBR SAMPLE POINT=0005

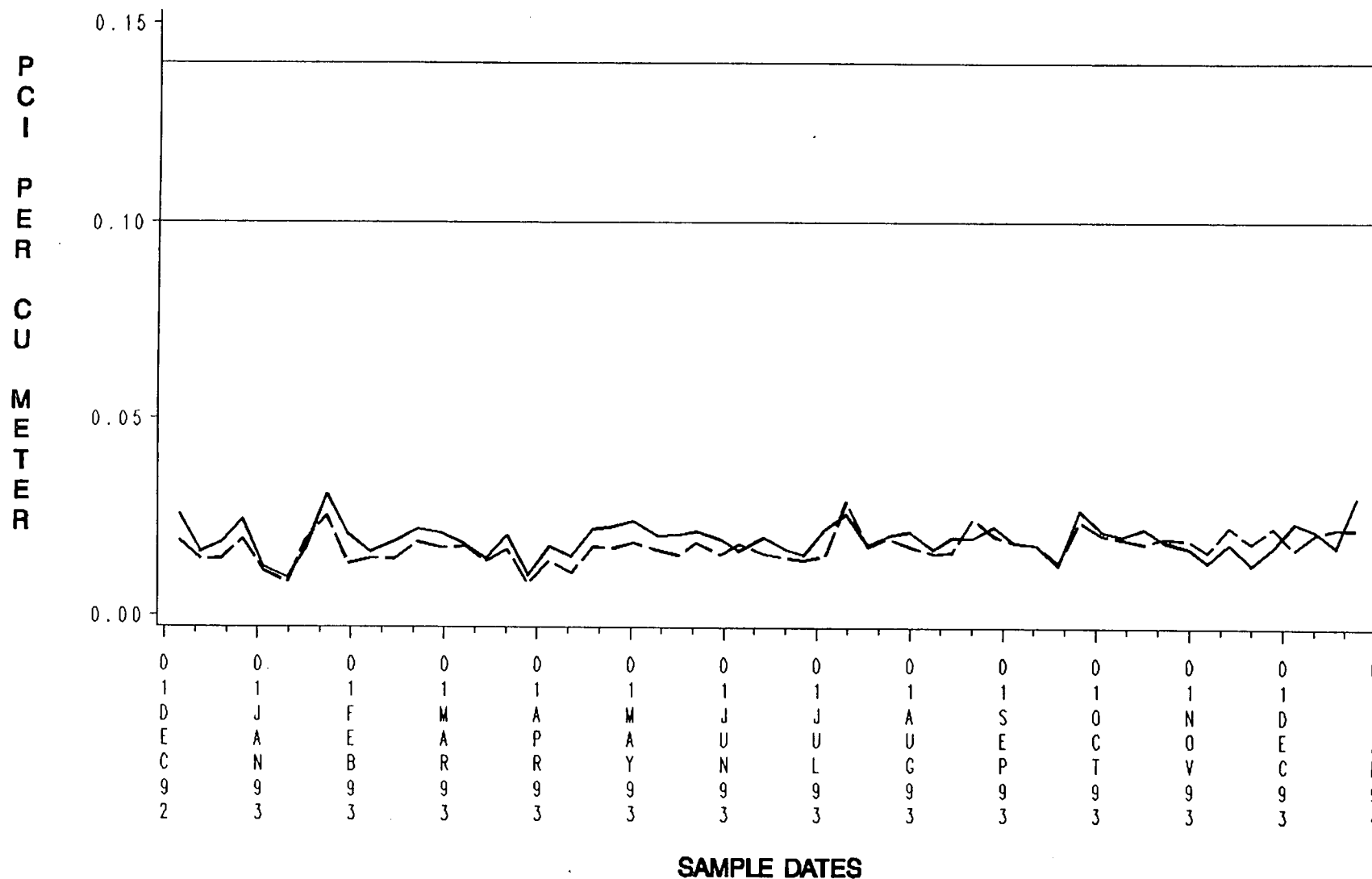


FIGURE 3-4

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=0.14
ISOTOPIC ANALYSIS REQUIRED ABOVE 0.10

CP&L ENVIRONMENTAL SURVEILLANCE

GROSS BETA ACTIVITY FOR
AIR PARTICULATE SAMPLES
PLANT=HBR SAMPLE POINT=0006

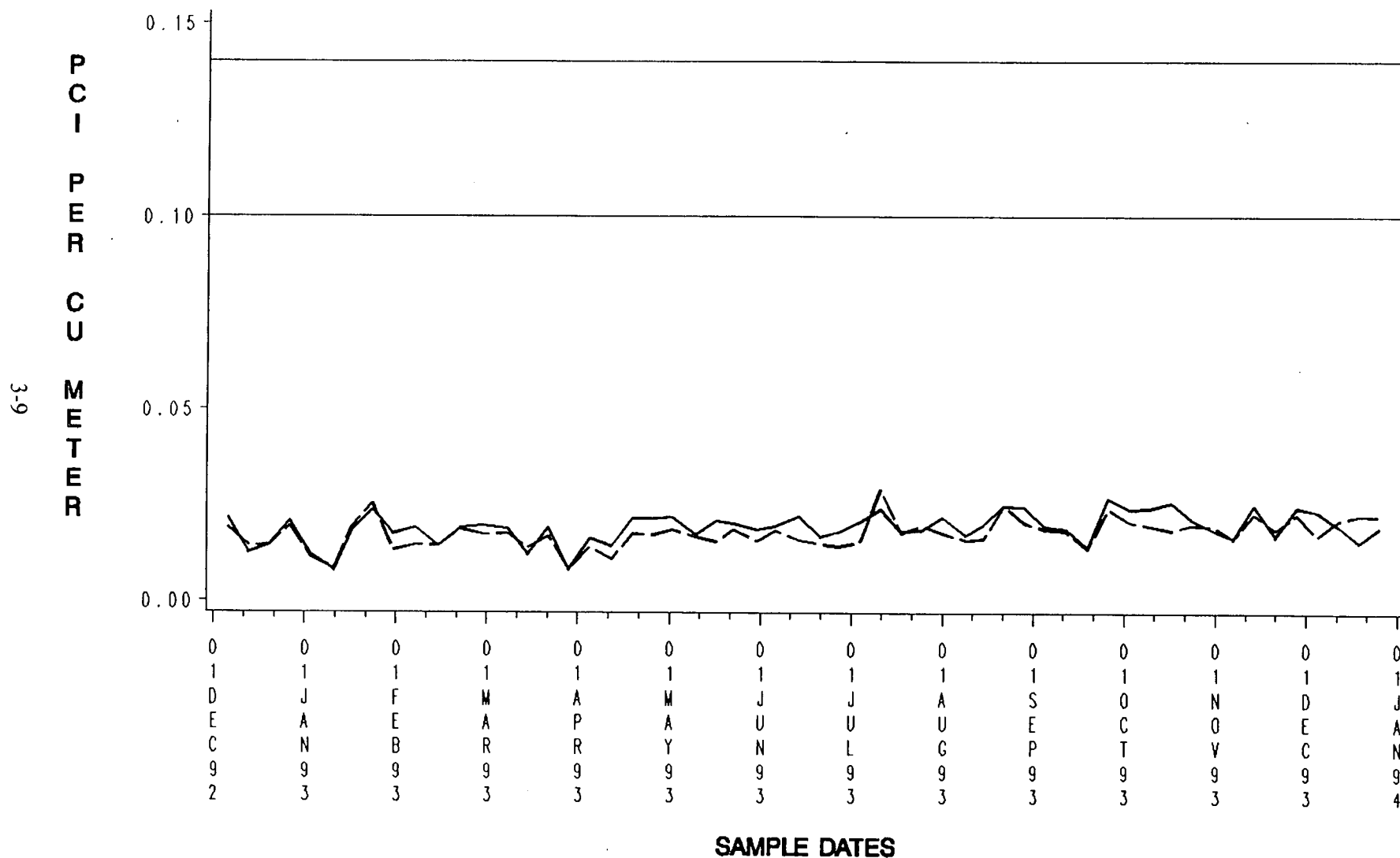


FIGURE 3-5

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=0.14
ISOTOPIC ANALYSIS REQUIRED ABOVE 0.10

CP&L ENVIRONMENTAL SURVEILLANCE

GROSS BETA ACTIVITY FOR
AIR PARTICULATE SAMPLES
PLANT=HBR SAMPLE POINT=0007

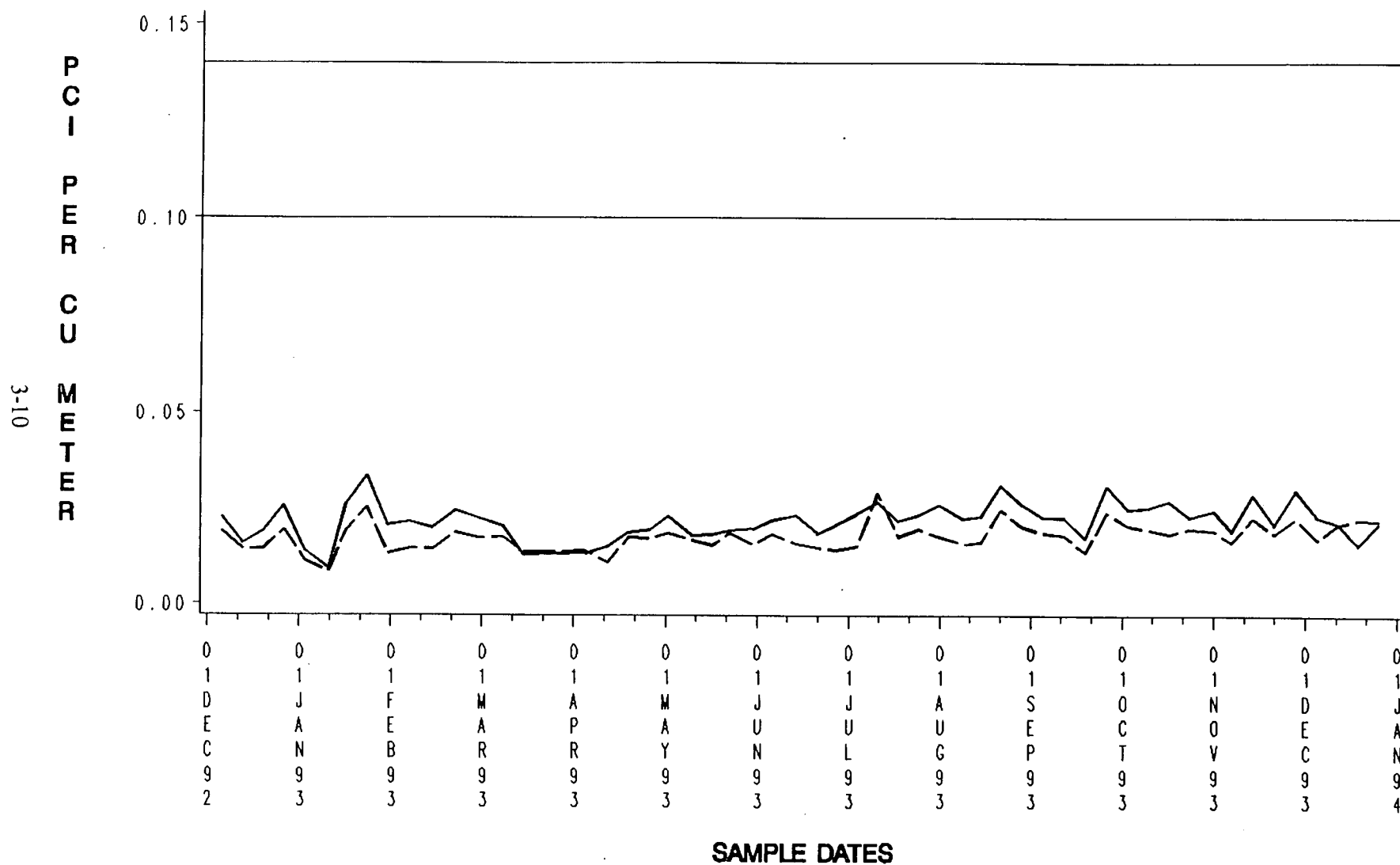


FIGURE 3-6

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=0.14
ISOTOPIC ANALYSIS REQUIRED ABOVE 0.10

CP&L ENVIRONMENTAL SURVEILLANCE
 GROSS BETA ACTIVITY FOR
 AIR PARTICULATE SAMPLES
 PLANT=HBR SAMPLE POINT=0055

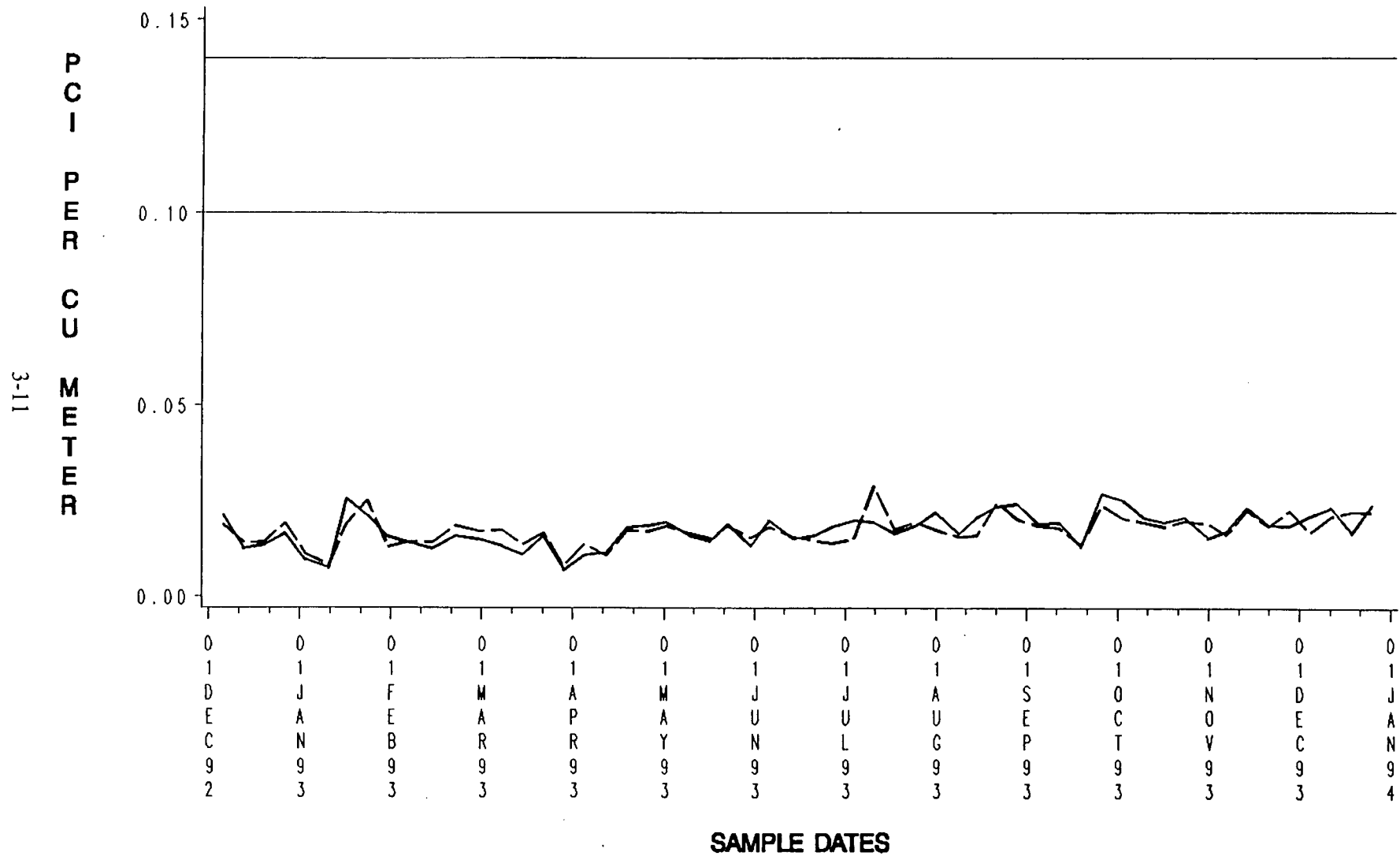


FIGURE 3-7

SOLID LINE FOR SAMPLE STATION
 BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=0.14
 ISOTOPIC ANALYSIS REQUIRED ABOVE 0.10

CP&L ENVIRONMENTAL SURVEILLANCE

IODINE-131 ACTIVITY FOR

MILK SAMPLES

PLANT=HBR POINT=0054

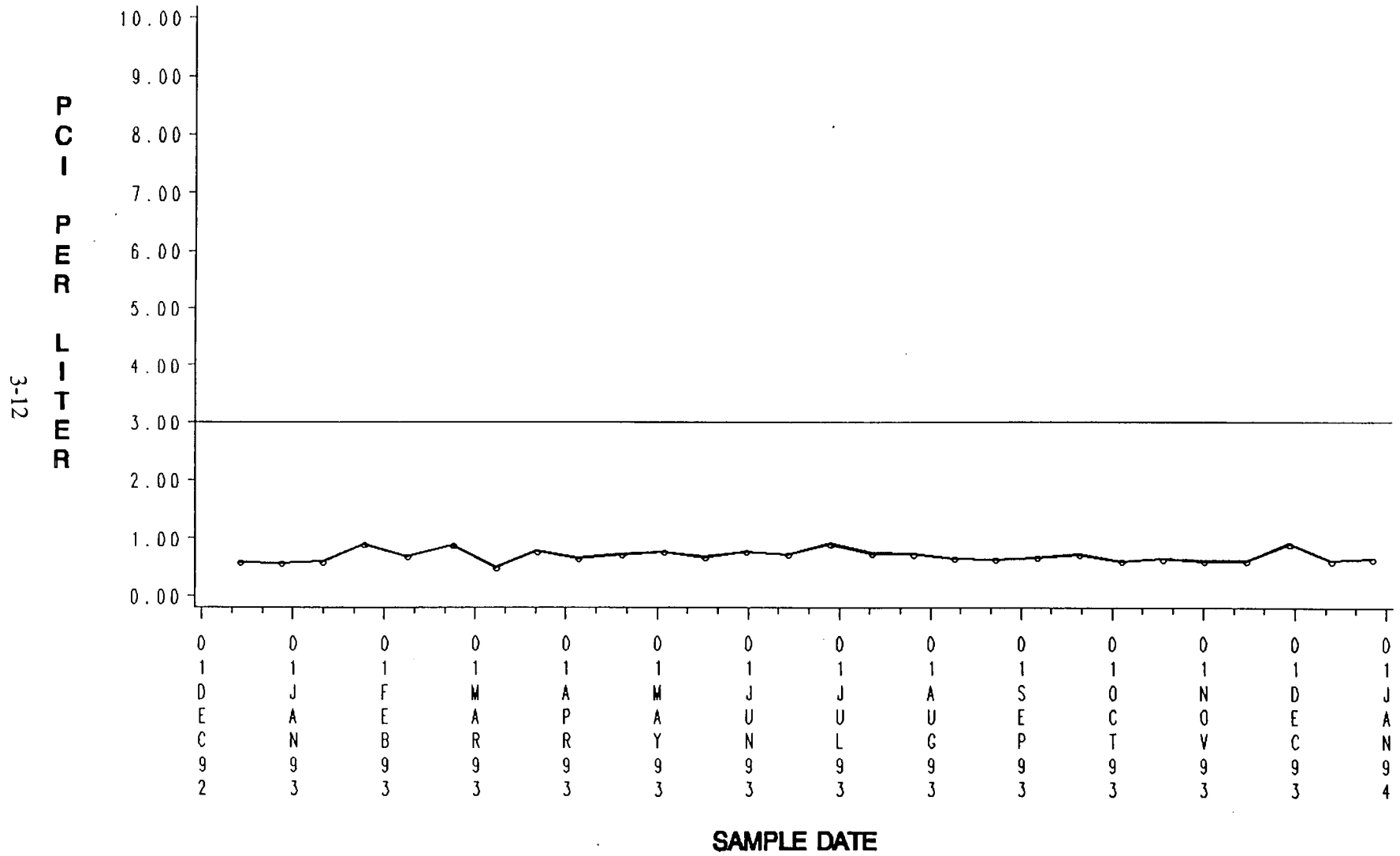


FIGURE 3-8

CP&L ENVIRONMENTAL SURVEILLANCE

IODINE-131 ACTIVITY FOR
MILK SAMPLES

PLANT=HBR POINT=0063

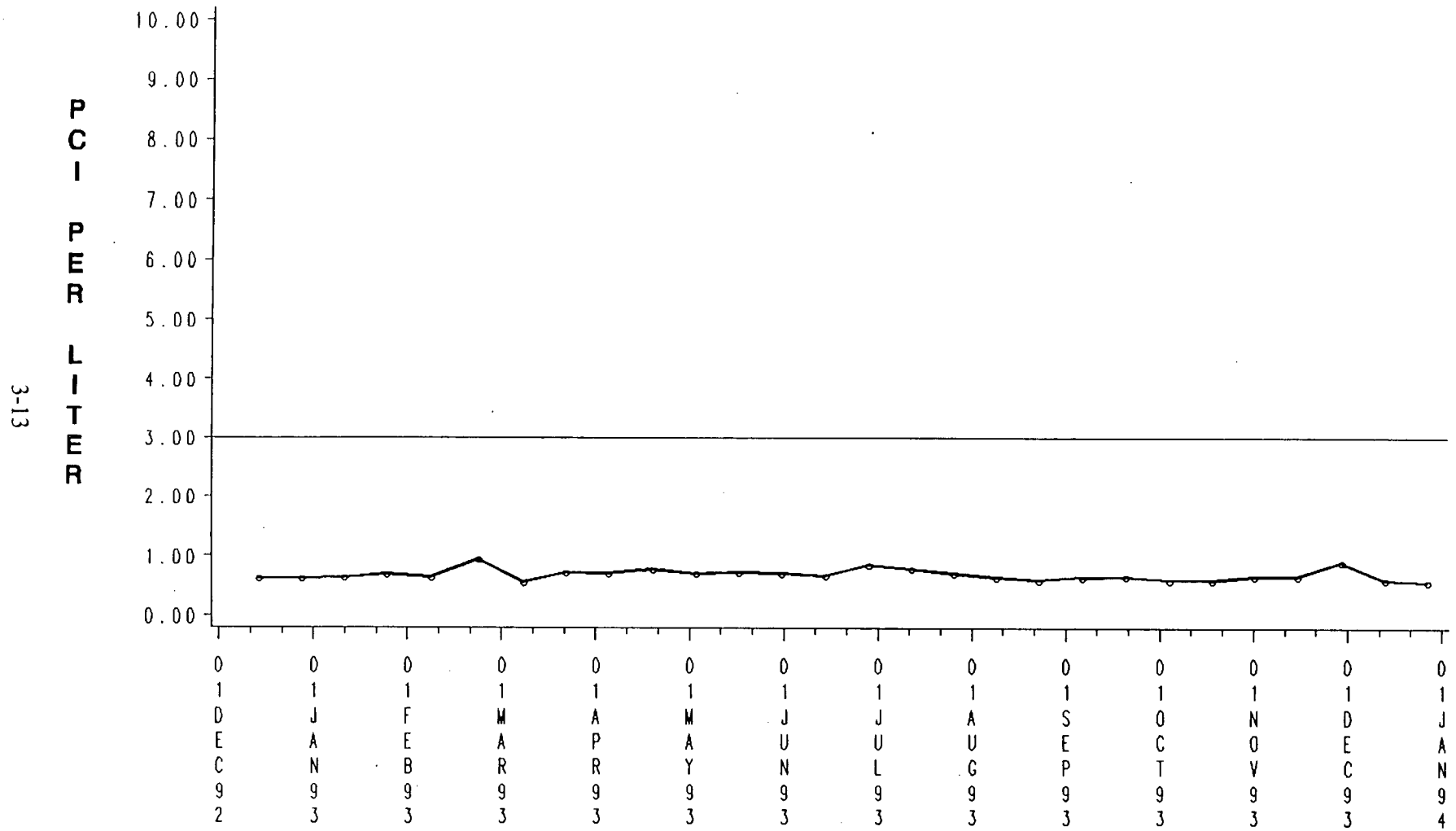


FIGURE 3-9

SAMPLE DATE

SYMBOL < LLD

STATION '0063' IS THE CONTROL POINT

REPORTING LEVEL IS 3.0

CP&L ENVIRONMENTAL SURVEILLANCE

GAMMA ACTIVITY FOR
AQUATIC VEGETATION SAMPLES
PLANT=HBR SAMPLE POINT=0041

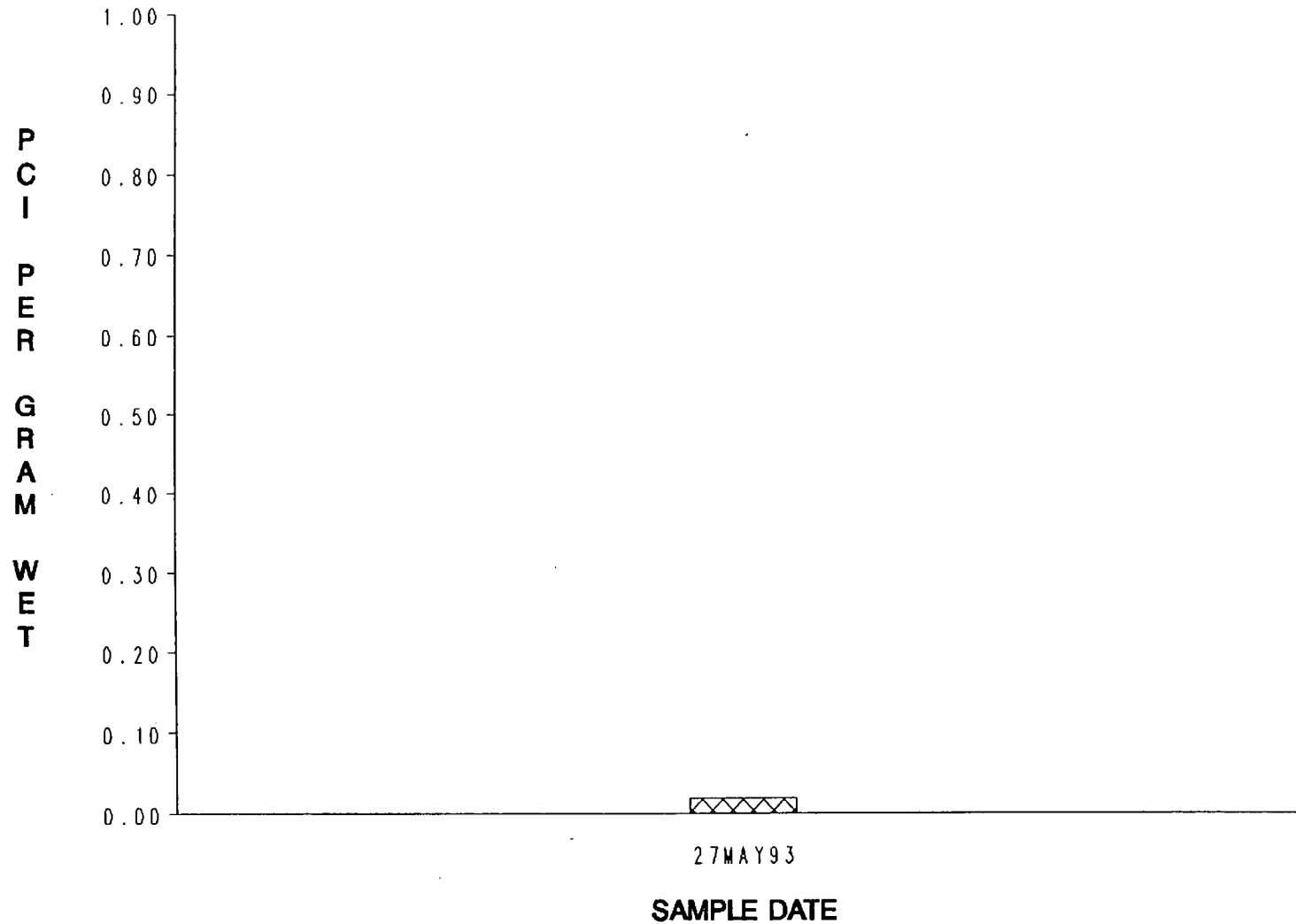


FIGURE 3-10

ISOTOPE  CS-137

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=3.55

CP&L ENVIRONMENTAL SURVEILLANCE

GAMMA ACTIVITY FOR
AQUATIC VEGETATION SAMPLES
PLANT=HBR SAMPLE POINT=0045

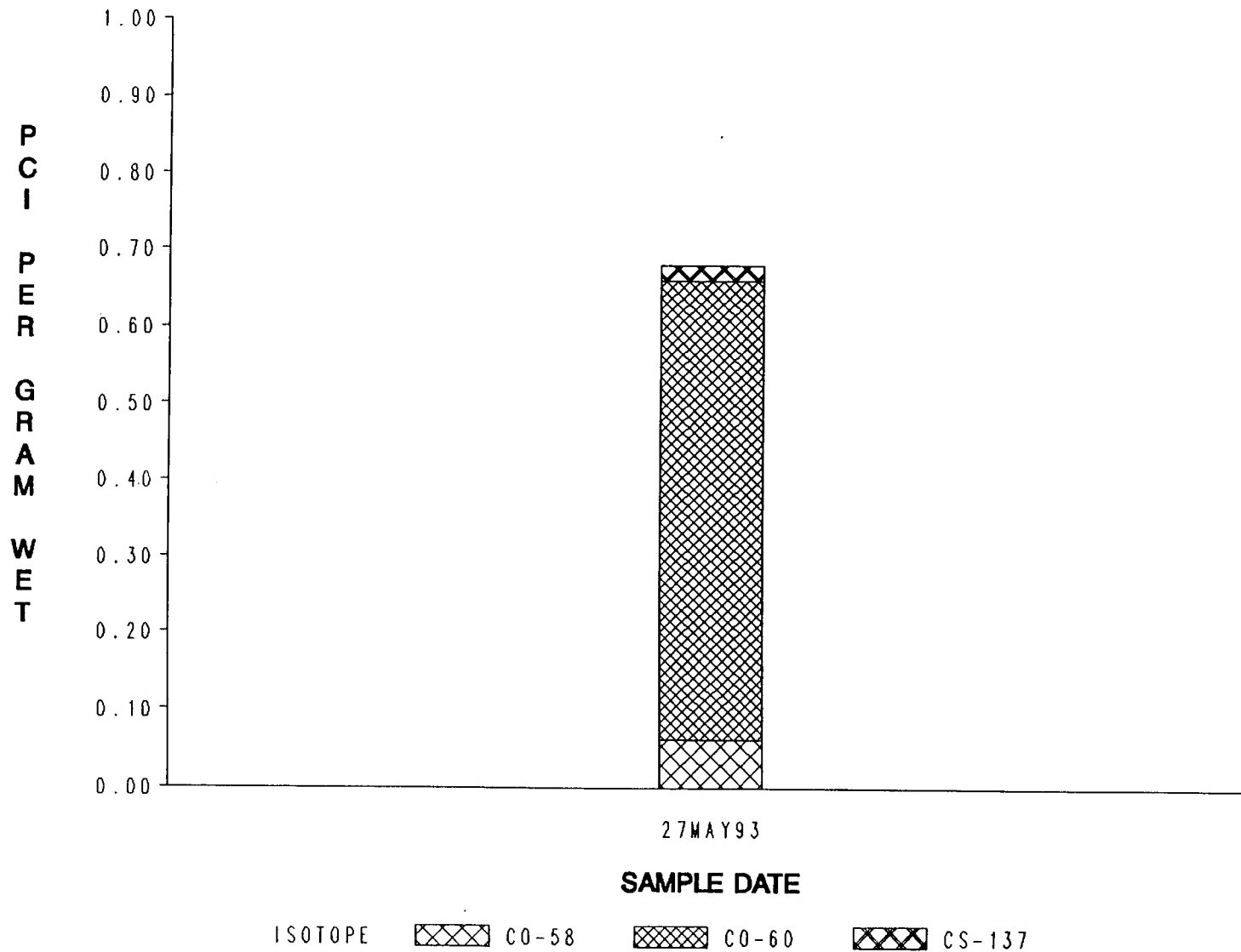


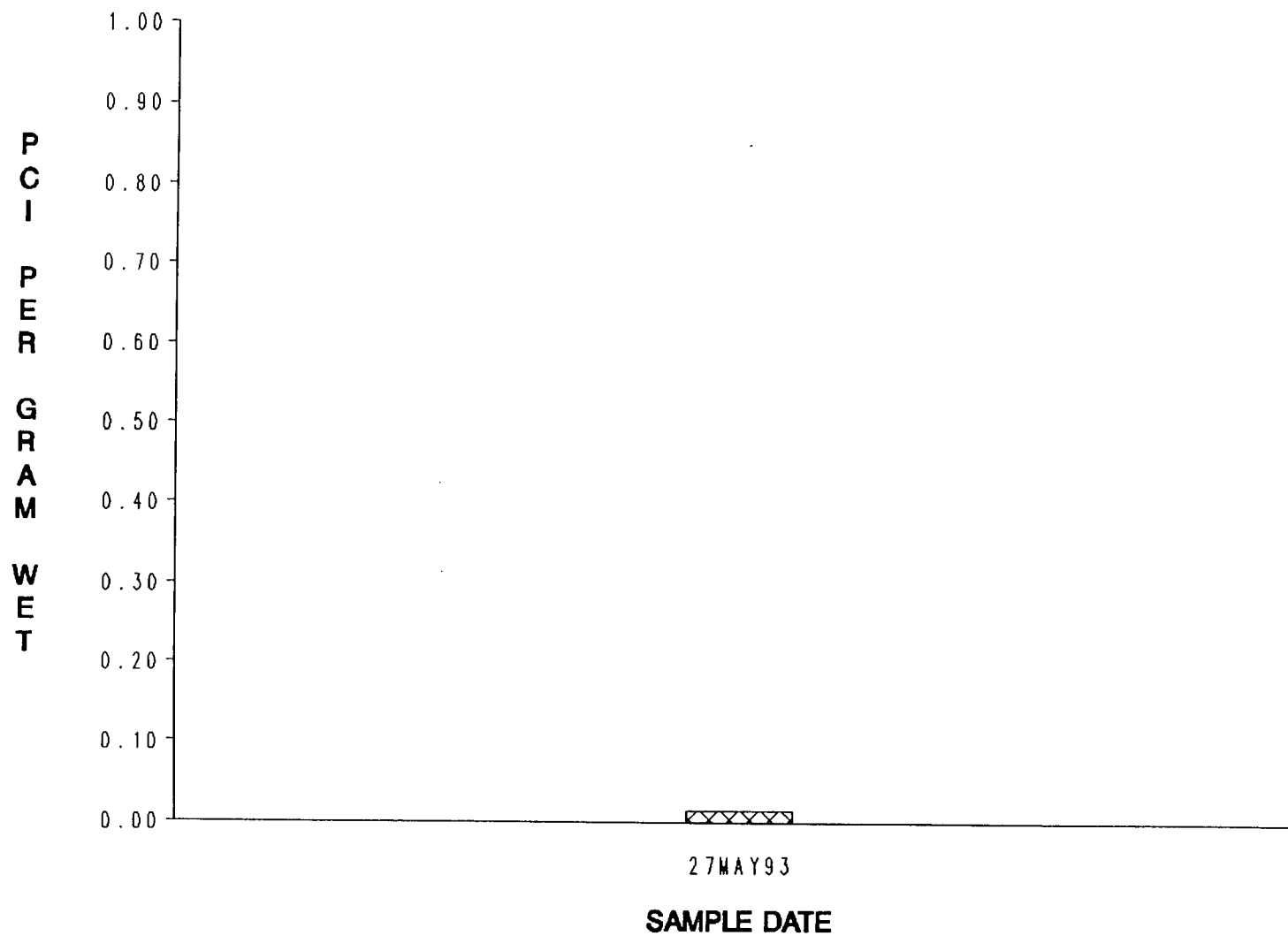
FIGURE 3-11

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=3.55

CP&L ENVIRONMENTAL SURVEILLANCE

GAMMA ACTIVITY FOR
AQUATIC VEGETATION SAMPLES
PLANT=HBR SAMPLE POINT=0046



ISOTOPE  CS-137

3-16

FIGURE 3-12

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=3.55

CP&L ENVIRONMENTAL SURVEILLANCE
GAMMA ACTIVITY FOR
AQUATIC VEGETATION SAMPLES
PLANT=HBR SAMPLE POINT=0054

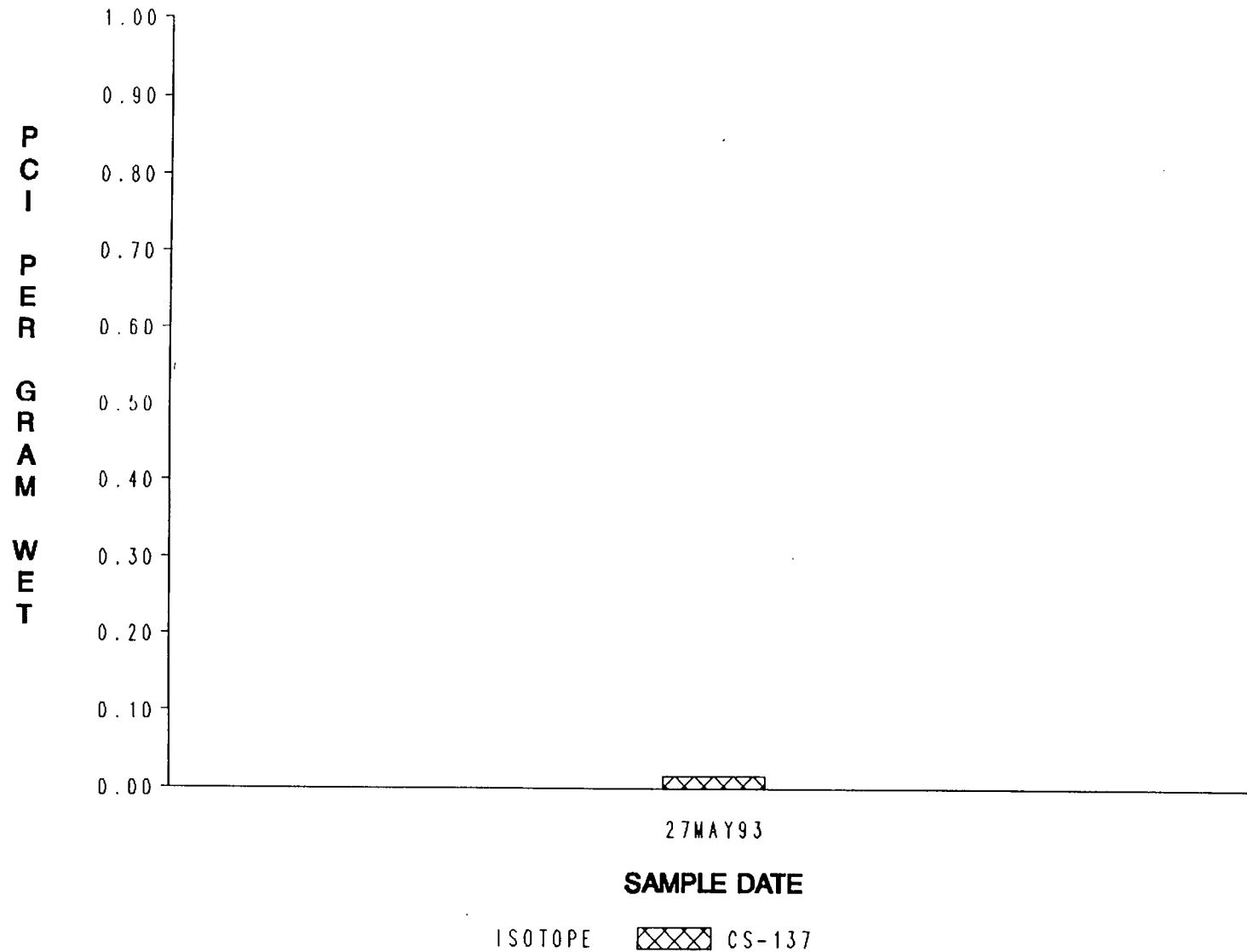


FIGURE 3-13

SOLID LINE FOR SAMPLE STATION
BROKEN LINE FOR CONTROL STATION

PRE-OP AVERAGE=3.55

CP&L ENVIRONMENTAL SURVEILLANCE
 TRITIUM ACTIVITY FOR
 SURFACE WATER SAMPLES
 PLANT=HBR SAMPLE POINT=0040

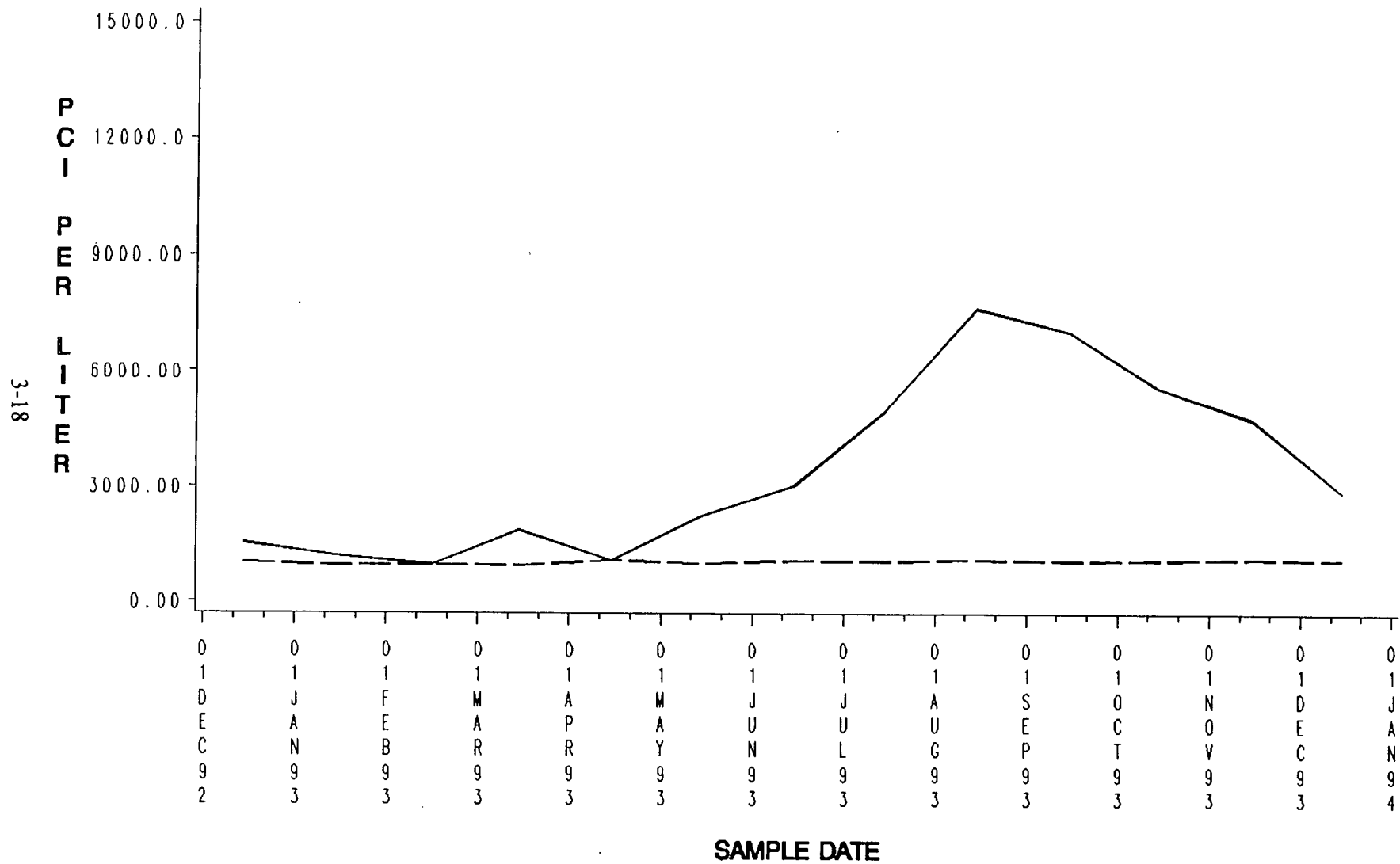


FIGURE 3-14

SOLID LINE FOR SAMPLE STATION
 BROKEN LINE FOR CONTROL STATION

SAMPLE DATA MAY OVERLAY CONTROL DATA

CP&L ENVIRONMENTAL SURVEILLANCE
 TRITIUM ACTIVITY FOR
 SURFACE WATER SAMPLES
 PLANT=HBR SAMPLE POINT=0057

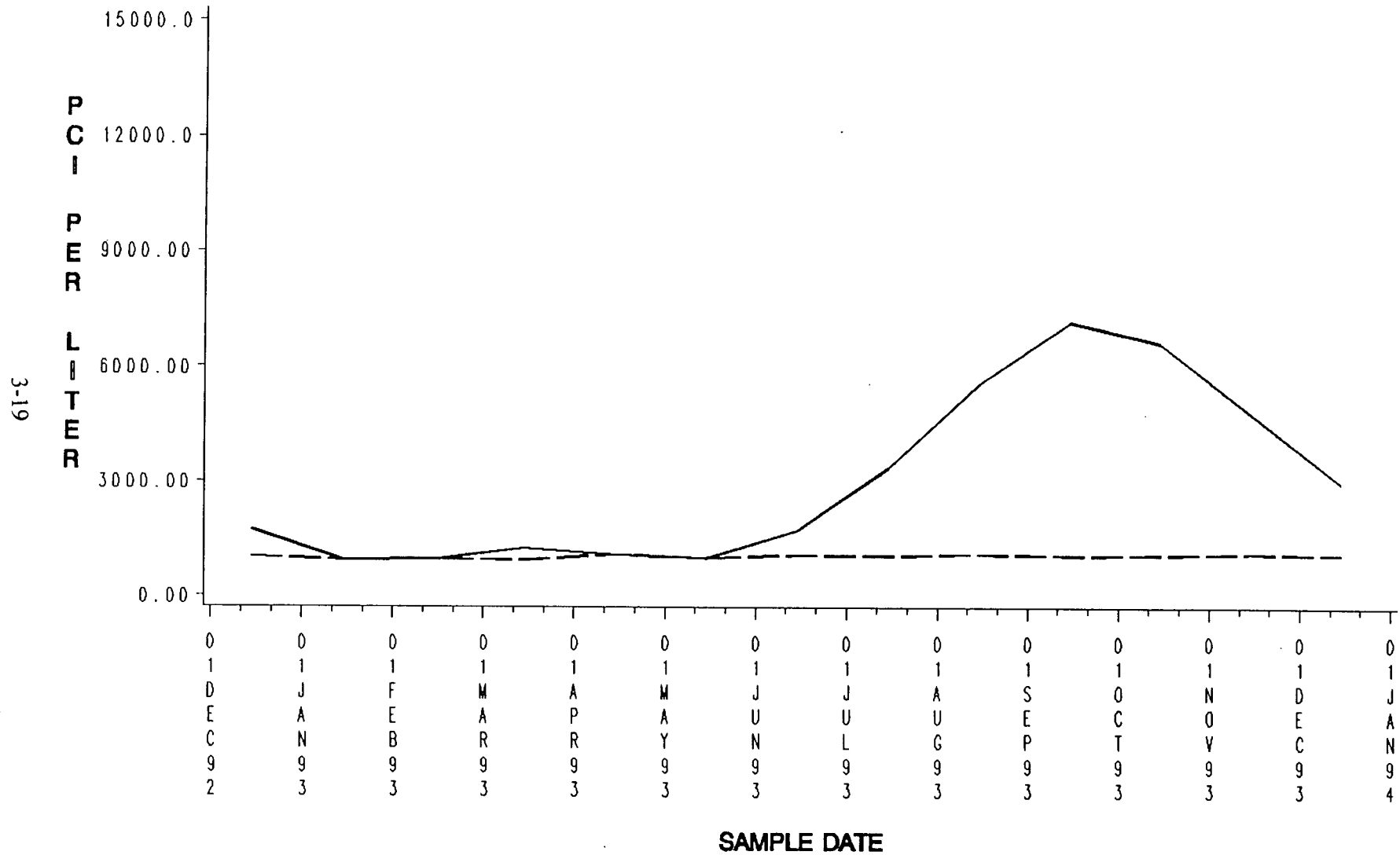


FIGURE 3-15

SOLID LINE FOR SAMPLE STATION
 BROKEN LINE FOR CONTROL STATION

SAMPLE DATA MAY OVERLAY CONTROL DATA

CP&L ENVIRONMENTAL SURVEILLANCE
GAMMA ACTIVITY FOR
SHORELINE SEDIMENT SAMPLES
PLANT=HBR SAMPLE POINT=0057

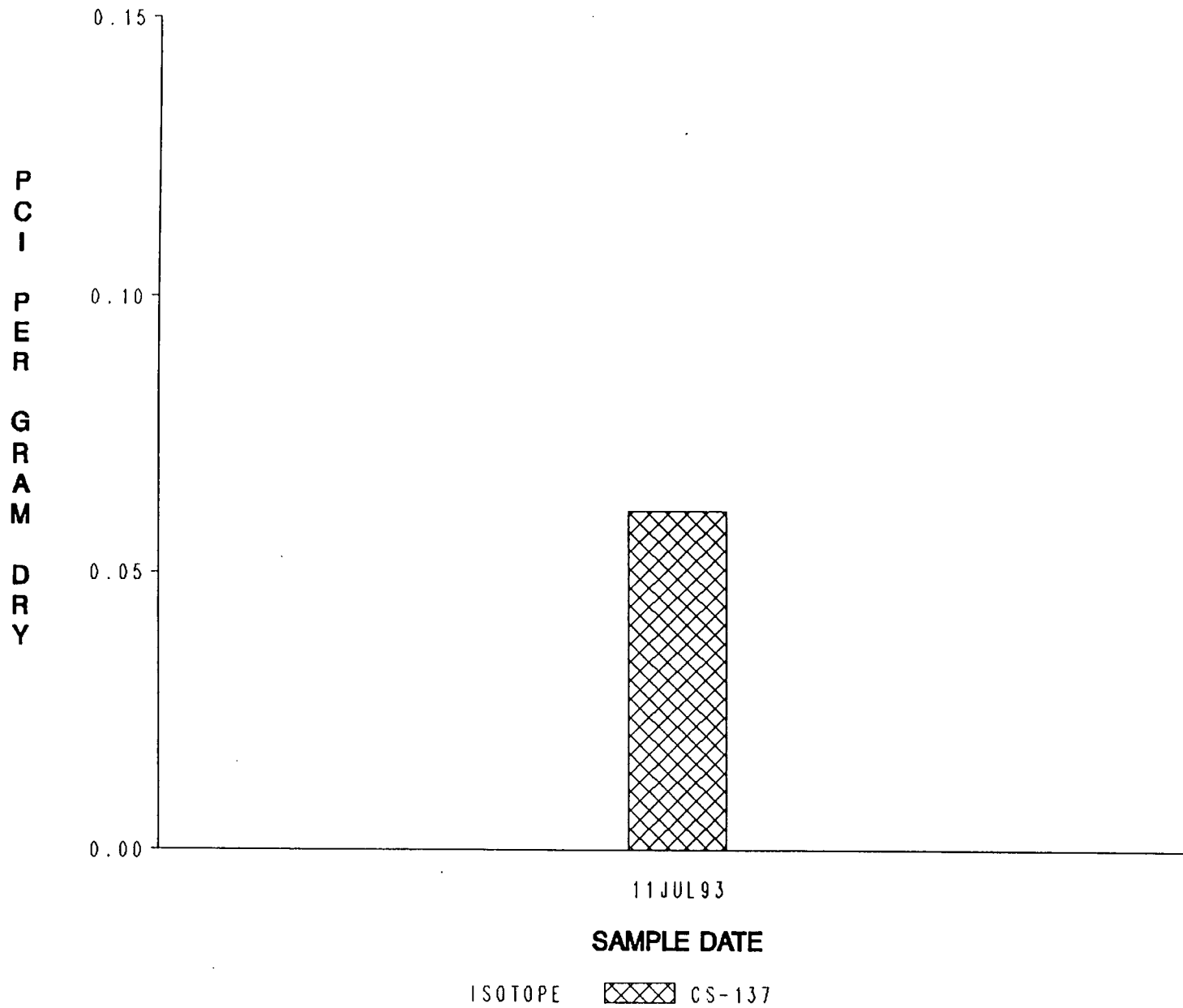


FIGURE 3-16

CP&L ENVIRONMENTAL SURVEILLANCE

TLD AVERAGES FOR
INNER AND OUTER RING LOCATIONS
PLANT=HBR

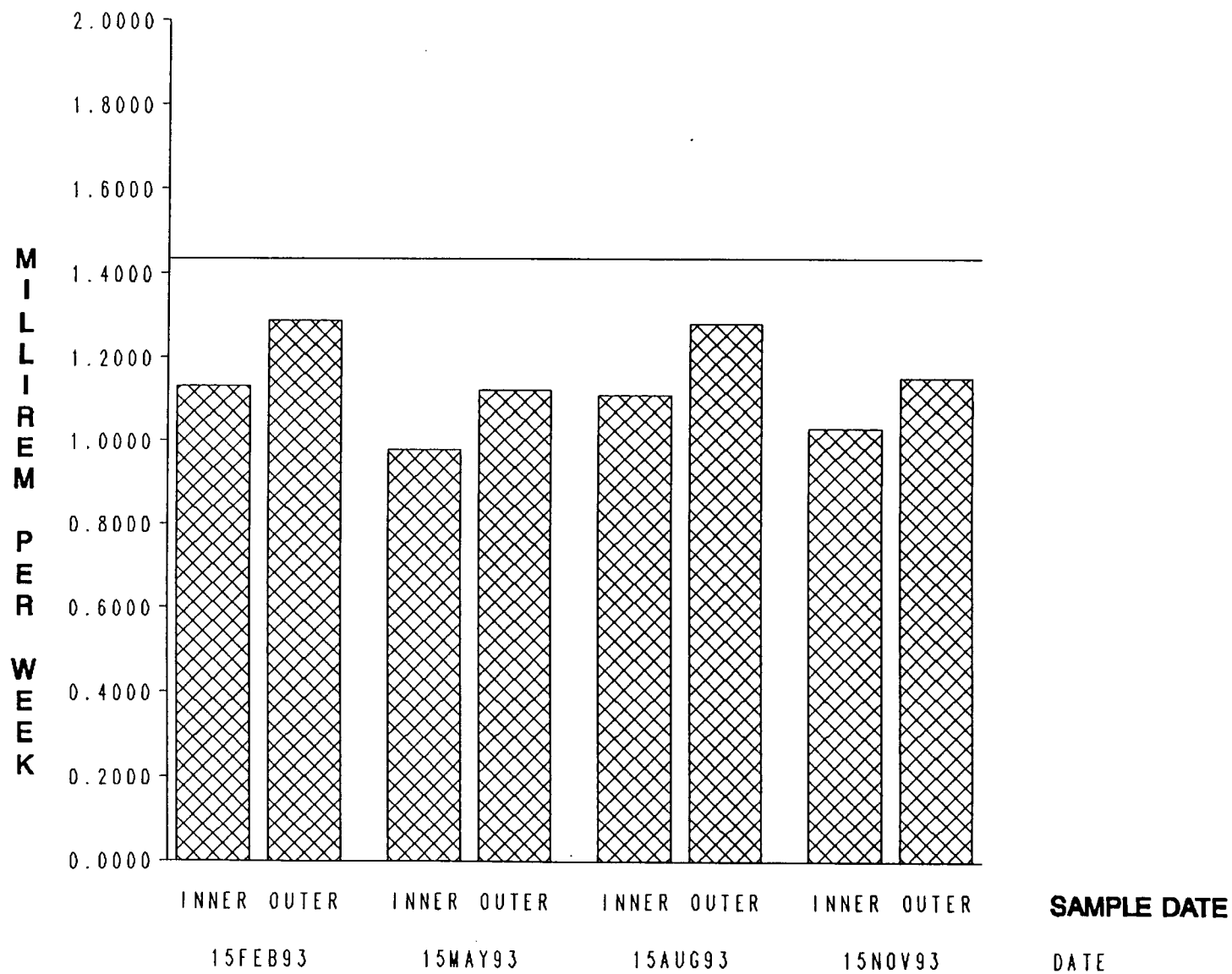


FIGURE 3-17

AVERAGE(1983-1987)=1.4358

4.0 MISSED SAMPLES

4.1 Air Cartridges and Air Particulates

No samples were available for:

- AC/AP-7 on March 22 and 29 due to sampler being out of service.
- AC/AP-2 on July 27 due to a breaker trip.

4.2 Broadleaf Vegetation

No broadleaf vegetation samples were available for the months of January, February, March, April, October, November, and December.

4.3 Thermoluminescent Dosimeters (TLDs)

TLD 12 was missing in the field for the first quarter.

TLDs 32 and 38 were missing in the field for the third quarter.

5.0 LAND-USE CENSUS

The 1993 land-use census was performed on May 26, 1993, in accordance with Technical Specification 3.17.2 and 4.21.2. The purpose of the survey is to identify the location of the nearest resident, the nearest meat and/or milk animal, and the nearest garden of greater than 500 square feet producing fresh, leafy vegetables in each of the 16 meteorological sectors within a distance of 5 miles.

Table 5-1 summarizes the locations of the nearest resident and garden within a 5-mile radius of the site in each of the 16 meteorological sectors. No milk-producing animals are located within a 5-mile radius of the plant. No significant changes in the land-use census occurred from the previous year.

Table 5-1 Land-Use Census Distance to Locations of Interest (miles)		
Sector	Distance to Nearest Resident	Distance to Nearest Garden
N	2.8	2.8
NNE	1.7	2.1
NE	1.3	1.5
ENE	0.8	2.9
E	0.8	---
ESE	0.6	0.6
SE	0.5	---
SSE	0.4	---
S	0.5	2.3
SSW	0.9	0.9
SW	0.4	1.2
WSW	0.5	1.0
W	0.6	0.6
WNW	1.0	1.0
NW	2.5	2.5
NNW	3.1	3.5

Global position satellite instrument used for sectors and distances.

6.0 ANALYTICAL PROCEDURES

6.1 Gross Beta

Gross beta radioactivity measurements are made utilizing a Tennelec Low-Background Alpha/Beta Counting System. The LLD for air particulates is approximately $1.0\text{E-}3$ pCi/m³.

Air particulate samples are mounted in 2-inch stainless steel planchets and counted directly for 50 minutes.

6.2 Tritium

Liquid samples requiring tritium analysis are first distilled. Five milliliters of the distillate are mixed with ten milliliters of liquid scintillation cocktail and counted in a liquid scintillation counter for 50 minutes. The LLD is approximately 1200 pCi/l.

6.3 Iodine-131

Iodine-131 airborne concentrations are analyzed by the intrinsic germanium (Ge) gamma spectrometry systems. The cartridges are placed on the detector and each charcoal cartridge is counted individually with an approximate LLD of $1.2\text{ E-}2$ pCi/m³.

Iodine-131 in milk is determined either by radiochemical or instrumental methods. Analysis involves use of anion-exchange resin and either direct gamma analysis of the resin with a sodium iodide (NaI) well-detector or sodium hypochlorite elution of the resin and organic extraction of the iodine followed by precipitation as silver iodide. The precipitate is collected on a tared filter, dried, and counted on a low-background beta counter. The LLD using the NaI detector is approximately 0.5 pCi/l for milk using a 25,000 second count time. The LLD using the radiochemical separation and beta counting is also approximately 0.5 pCi/l.

6.4 Gamma Spectrometry

Gamma spectrum analysis utilizes intrinsic germanium detectors with thin aluminum windows housed in steel and lead shields. The analyzer system is the Nuclear

Data 6685. Table 6-1 summarizes LLD values derived from instrument sensitivity based upon a blank sample background.

Air particulate filter quarterly composites are placed in a Petri dish and analyzed directly for 3,000 seconds.

Liquid samples are boiled down to reduce the volume, transferred to a PB-50 beaker, and analyzed directly for 20,000 seconds.

Shoreline and bottom sediments are dried, ground, weighed, and then analyzed in a Marinelli beaker for 5,000 seconds.

Broadleaf and aquatic vegetation and food product samples are weighed wet and analyzed in a Marinelli beaker for 20,000 seconds.

Fish samples are cleaned, dressed, and placed in a Marinelli beaker for analysis for 5,000 seconds.

6.5 Thermoluminescent Dosimetry (TLD)

Each area monitoring station includes a TLD packet, which is a polyethylene bag containing three calcium sulfate phosphors contained in a Panasonic UD-814 badge. The TLD is lighttight and the bag is weather-resistant.

Dosimeters are machine annealed before field placement. Following exposure in the field, each dosimeter is read utilizing a Panasonic TLD reader. This instrument integrates the light photons emitted from traps as the dosimeter is heated above 150°C. The photons from the lower-energy traps are automatically eliminated through a preheat cycle. Calibration is checked regularly using dosimeters irradiated to known doses. Prior to the measurement of each dosimeter, the instrument is checked through use of an internal constant light source as a secondary standard. The minimum sensitivity of the dosimeters used is approximately 1 mR.

The exposure reported is corrected for exposure received in transit and during storage through the use of control dosimeters.

6.6 EPA Laboratory Intercomparison Program

The Radiochemistry Laboratory at the Harris Energy & Environmental Center in New Hill, North Carolina, provides radioanalytical services for CP&L's nuclear plant radiological environmental surveillance programs. The laboratory is a participant in the EPA cross-check program and uses its performance in this program as a major determinant of the accuracy and precision of its analytical results.

During 1993, 46 analyses were completed on 17 samples representing three major environmental media (water, milk, and air filters). Data on the known activities and the normalized standard deviations for the 46 analyses have been received from EPA. A comparison of the average of our reported values with the EPA known activity and its normalized standard deviation is provided below:

<u>Standard Deviation From Known Activity</u>	<u>Percent of Analyses</u>
≤ 1 standard deviation	70
≤ 2 standard deviation	91
≤ 3 standard deviation	98

One of 46 analyses exceeded the 3 sigma action level. This was a potassium value for milk. The error was due to reporting the value for pCi of K-40 per liter rather than converting the value to the reporting units of milligrams of potassium per liter. When the conversion factor was applied, the result was within one standard deviation.

6.7 Lower Limits of Detection

All samples analyzed met the LLD required by Technical Specification. Typical "a priori" LLD values for the samples analyzed are listed in Table 6-1.

Table 6-1

**Typical Lower Limits of Detection (a priori LLD)
Ge Gamma Spectrometry**

<u>Surface Water/Groundwater Samples</u> (Freshwater)	
Isotope	(LLD)
Mn-54	3 pCi/ℓ
Fe-59	7
Co-58	3
Co-60	4
Zn-65	6
Zr-Nb-95	8
I-131	0.5*
Cs-134	4
Cs-137	3
Ba-La-140	4
Other Expected Gamma Emitters	1 to 100
<u>Air Particulates</u> (Quarterly Composite)	
Isotope	(LLD)
I-131	0.020 pci/m ³
Cs-134	0.001
Cs-137	0.001
Other Expected Gamma Emitters	0.001 to 0.020
<u>Milk</u> (Gamma Scan)	
Isotope	(LLD)
I-131	0.5* pCi/ℓ
Cs-134	4
Cs-137	4
Ba-La-140	4
Other Expected Gamma Emitters	1 to 281

*NaI well crystal analysis of resin concentrates of samples.

Table 6-1 (continued)

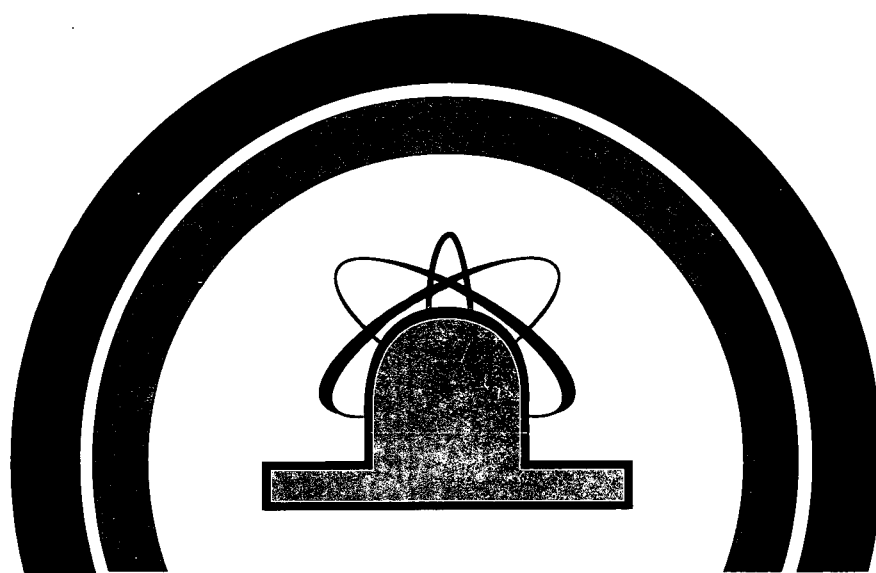
Sediments (Shoreline or Bottom)	
Isotope	(LLD)
Cs-134	37
Cs-137	26
Other Expected Gamma Emitters	21 to 1361
<u>Fish</u>	
Isotope	(LLD)
Mn-54	24 pCi/kg (wet weight)
Fe-59	57
Co-58	23
Co-60	26
Zn-65	45
Cs-134	31
Cs-137	28
Other Expected Gamma Emitters	19 to 711
<u>Food Products and Vegetation</u>	
Isotope	(LLD)
I-131	22 pCi/kg (wet weight)
Cs-134	19
Cs-137	17
Other Expected Gamma Emitters	14 to 383

Radiological Environmental Operating Report

VOLUME II

JANUARY 1, 1993 - JUNE 30, 1993

SAMPLE ANALYSIS DATA



ROBINSON NUCLEAR PROJECT
CAROLINA POWER & LIGHT

50-261

letter dated 4/26/94

9405050101

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 1

FIRST QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AC-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
01/03/93	930.0	(< 1.39E-02)
01/11/93	1052.8	(< 7.69E-03)
01/17/93	795.1	(< 1.11E-02)
01/24/93	892.8	(< 1.36E-02)
01/31/93	879.7	(< 1.09E-02)
02/07/93	832.8	(< 1.42E-02)
02/14/93	928.9	(< 7.80E-03)
02/21/93	857.7	(< 1.12E-02)
02/28/93	848.3	(< 1.04E-02)
03/08/93	665.9	(< 9.80E-03)
03/15/93	850.8	(< 1.30E-02)
03/22/93	915.0	(< 1.24E-02)
03/29/93	921.9	(< 8.04E-03)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 2

FIRST QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AC-2)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	840.6	< 3.98E-03	(< 1.39E-02)
01/11/93	962.1	< 1.09E-02	(< 7.69E-03)
01/17/93	709.3	< 1.25E-02	(< 1.11E-02)
01/24/93	837.0	< 1.23E-02	(< 1.36E-02)
01/31/93	810.9	< 1.08E-02	(< 1.09E-02)
02/07/93	714.6	< 1.18E-02	(< 1.42E-02)
02/14/93	837.9	< 1.10E-02	(< 7.80E-03)
02/21/93	791.5	< 1.51E-02	(< 1.12E-02)
02/28/93	835.4	< 1.15E-02	(< 1.04E-02)
03/08/93	950.4	< 1.15E-02	(< 9.80E-03)
03/15/93	824.7	< 9.85E-03	(< 1.30E-02)
03/22/93	839.4	< 1.20E-02	(< 1.24E-02)
03/29/93	837.7	< 1.17E-02	(< 8.04E-03)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 3

FIRST QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AC-3)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	804.2	< 1.19E-02	(< 1.39E-02)
01/11/93	933.1	< 7.47E-03	(< 7.69E-03)
01/17/93	689.6	< 1.56E-02	(< 1.11E-02)
01/24/93	816.1	< 1.15E-02	(< 1.36E-02)
01/31/93	818.9	< 1.24E-02	(< 1.09E-02)
02/07/93	635.7	< 1.82E-02	(< 1.42E-02)
02/14/93	808.6	< 1.61E-02	(< 7.80E-03)
02/21/93	785.5	< 1.73E-02	(< 1.12E-02)
02/28/93	808.6	< 1.49E-02	(< 1.04E-02)
03/08/93	913.4	< 7.87E-03	(< 9.80E-03)
03/15/93	793.8	< 1.44E-02	(< 1.30E-02)
03/22/93	816.6	< 1.24E-02	(< 1.24E-02)
03/29/93	824.0	< 1.03E-02	(< 8.04E-03)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 4

FIRST QUARTER, 1993

0.4 MI ESE - SPILLWAY (AC-4)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	805.5	< 1.18E-02	(< 1.39E-02)
01/11/93	925.2	< 1.39E-02	(< 7.69E-03)
01/17/93	690.9	< 1.14E-02	(< 1.11E-02)
01/24/93	815.4	< 1.04E-02	(< 1.36E-02)
01/31/93	809.5	< 1.20E-02	(< 1.09E-02)
02/07/93	700.1	< 1.78E-02	(< 1.42E-02)
02/14/93	810.7	< 1.27E-02	(< 7.80E-03)
02/21/93	792.9	< 9.81E-03	(< 1.12E-02)
02/28/93	810.8	< 1.09E-02	(< 1.04E-02)
03/08/93	928.1	< 1.09E-02	(< 9.80E-03)
03/15/93	807.9	< 9.56E-03	(< 1.30E-02)
03/22/93	821.8	< 7.96E-03	(< 1.24E-02)
03/29/93	817.8	< 1.09E-02	(< 8.04E-03)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 5

FIRST QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AC-5)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	738.2	< 1.69E-02	(< 1.39E-02)
01/11/93	852.9	< 4.73E-03	(< 7.69E-03)
01/17/93	618.4	< 1.55E-02	(< 1.11E-02)
01/24/93	729.5	< 1.13E-02	(< 1.36E-02)
01/31/93	720.3	< 1.51E-02	(< 1.09E-02)
02/07/93	618.6	< 1.98E-02	(< 1.42E-02)
02/14/93	719.8	< 1.37E-02	(< 7.80E-03)
02/21/93	704.0	< 1.47E-02	(< 1.12E-02)
02/28/93	724.1	< 1.00E-02	(< 1.04E-02)
03/08/93	825.2	< 1.34E-02	(< 9.80E-03)
03/15/93	693.0	< 1.53E-02	(< 1.30E-02)
03/22/93	723.2	< 1.22E-02	(< 1.24E-02)
03/29/93	733.7	< 1.38E-02	(< 8.04E-03)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 6

FIRST QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AC-6)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	843.0	< 8.92E-03	(< 1.39E-02)
01/11/93	964.9	< 5.50E-03	(< 7.69E-03)
01/17/93	727.4	< 1.13E-02	(< 1.11E-02)
01/24/93	848.9	< 1.14E-02	(< 1.36E-02)
01/31/93	831.2	< 1.57E-02	(< 1.09E-02)
02/07/93	737.8	< 1.50E-02	(< 1.42E-02)
02/14/93	846.0	< 1.60E-02	(< 7.80E-03)
02/21/93	810.2	< 1.38E-02	(< 1.12E-02)
02/28/93	834.8	< 1.45E-02	(< 1.04E-02)
03/08/93	940.6	< 7.65E-03	(< 9.80E-03)
03/15/93	802.7	< 8.28E-03	(< 1.30E-02)
03/22/93	840.0	< 7.00E-03	(< 1.24E-02)
03/29/93	849.9	< 8.72E-03	(< 8.04E-03)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 7

FIRST QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AC-7)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	721.2	< 1.12E-02	(< 1.39E-02)
01/11/93	818.7	< 1.07E-02	(< 7.69E-03)
01/17/93	621.7	< 1.53E-02	(< 1.11E-02)
01/24/93	713.3	< 9.82E-03	(< 1.36E-02)
01/31/93	695.6	< 1.09E-02	(< 1.09E-02)
02/07/93	628.1	< 1.60E-02	(< 1.42E-02)
02/14/93	721.3	< 1.45E-02	(< 7.80E-03)
02/21/93	680.9	< 3.05E-02	(< 1.12E-02)
02/28/93	711.2	< 1.70E-02	(< 1.04E-02)
03/08/93	817.3	< 8.73E-03	(< 9.80E-03)
03/15/93	535.0	< 2.07E-02	(< 1.30E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 8

FIRST QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AC-55)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	677.3	< 1.57E-02	(< 1.39E-02)
01/11/93	828.5	< 1.14E-02	(< 7.69E-03)
01/17/93	618.0	< 1.18E-02	(< 1.11E-02)
01/24/93	718.9	< 1.25E-02	(< 1.36E-02)
01/31/93	716.0	< 1.36E-02	(< 1.09E-02)
02/07/93	605.2	< 1.32E-02	(< 1.42E-02)
02/14/93	706.2	< 1.75E-02	(< 7.80E-03)
02/21/93	709.3	< 1.10E-02	(< 1.12E-02)
02/28/93	708.9	< 1.26E-02	(< 1.04E-02)
03/08/93	809.5	< 1.86E-02	(< 9.80E-03)
03/15/93	699.2	< 8.75E-03	(< 1.30E-02)
03/22/93	708.7	< 8.31E-03	(< 1.24E-02)
03/29/93	722.2	< 1.76E-02	(< 8.04E-03)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 9

SECOND QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AC-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
04/05/93	913.7	(< 1.06E-02)
04/12/93	922.2	(< 1.41E-02)
04/19/93	891.3	(< 1.03E-02)
04/26/93	908.8	(< 1.01E-02)
05/02/93	751.4	(< 9.61E-03)
05/10/93	1071.9	(< 8.70E-03)
05/17/93	903.6	(< 8.88E-03)
05/23/93	757.2	(< 1.73E-02)
05/31/93	1007.4	(< 9.98E-03)
06/06/93	763.6	(< 1.59E-02)
06/14/93	958.3	(< 7.07E-03)
06/21/93	898.0	(< 1.00E-02)
06/27/93	794.3	(< 1.41E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 10

SECOND QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AC-2)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	841.6	< 1.04E-02	(< 1.06E-02)
04/12/93	846.7	< 7.88E-03	(< 1.41E-02)
04/19/93	846.4	< 1.24E-02	(< 1.03E-02)
04/26/93	836.4	< 1.19E-02	(< 1.01E-02)
05/02/93	702.9	< 7.78E-03	(< 9.61E-03)
05/10/93	977.2	< 1.16E-02	(< 8.70E-03)
05/17/93	851.7	< 1.02E-02	(< 8.88E-03)
05/23/93	726.0	< 9.39E-03	(< 1.73E-02)
05/31/93	1037.5	< 1.41E-02	(< 9.98E-03)
06/06/93	791.4	< 1.17E-02	(< 1.59E-02)
06/14/93	1028.5	< 7.77E-03	(< 7.07E-03)
06/21/93	919.1	< 1.08E-02	(< 1.00E-02)
06/27/93	805.7	< 8.84E-03	(< 1.41E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 11

SECOND QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AC-3)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	809.3	< 1.61E-02	(< 1.06E-02)
04/12/93	819.7	< 1.67E-02	(< 1.41E-02)
04/19/93	795.1	< 1.68E-02	(< 1.03E-02)
04/26/93	769.5	< 1.17E-02	(< 1.01E-02)
05/02/93	704.1	< 1.15E-02	(< 9.61E-03)
05/10/93	946.6	< 1.17E-02	(< 8.70E-03)
05/17/93	796.5	< 1.67E-02	(< 8.88E-03)
05/23/93	711.2	< 2.14E-02	(< 1.73E-02)
05/31/93	963.7	< 7.43E-03	(< 9.98E-03)
06/06/93	725.9	< 2.07E-02	(< 1.59E-02)
06/14/93	928.5	< 1.65E-02	(< 7.07E-03)
06/21/93	853.2	< 1.48E-02	(< 1.00E-02)
06/27/93	746.6	< 1.39E-02	(< 1.41E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 12

SECOND QUARTER, 1993

0.4 MI ESE - SPILLWAY (AC-4)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	779.1	< 6.99E-03	(< 1.06E-02)
04/12/93	819.9	< 9.41E-03	(< 1.41E-02)
04/19/93	817.7	< 9.44E-03	(< 1.03E-02)
04/26/93	802.5	< 4.79E-03	(< 1.01E-02)
05/02/93	696.9	< 7.66E-03	(< 9.61E-03)
05/10/93	952.2	< 1.11E-02	(< 8.70E-03)
05/17/93	786.0	< 1.29E-02	(< 8.88E-03)
05/23/93	701.4	< 1.27E-02	(< 1.73E-02)
05/31/93	1021.9	< 7.79E-03	(< 9.98E-03)
06/06/93	772.8	< 1.17E-02	(< 1.59E-02)
06/14/93	1017.3	< 1.29E-02	(< 7.07E-03)
06/21/93	905.9	< 7.28E-03	(< 1.00E-02)
06/27/93	786.7	< 1.07E-02	(< 1.41E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 13

SECOND QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AC-5)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	735.3	< 9.09E-03	(< 1.06E-02)
04/12/93	737.6	< 1.59E-02	(< 1.41E-02)
04/19/93	734.6	< 1.32E-02	(< 1.03E-02)
04/26/93	729.0	< 1.03E-02	(< 1.01E-02)
05/02/93	632.3	< 1.86E-02	(< 9.61E-03)
05/10/93	852.9	< 1.16E-02	(< 8.70E-03)
05/17/93	740.7	< 7.91E-03	(< 8.88E-03)
05/23/93	642.0	< 1.50E-02	(< 1.73E-02)
05/31/93	915.7	< 1.21E-02	(< 9.98E-03)
06/06/93	705.4	< 1.45E-02	(< 1.59E-02)
06/14/93	923.8	< 8.06E-03	(< 7.07E-03)
06/21/93	821.6	< 1.32E-02	(< 1.00E-02)
06/27/93	717.7	< 1.22E-02	(< 1.41E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 14

SECOND QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AC-6)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	842.6	< 1.27E-02	(< 1.06E-02)
04/12/93	854.7	< 7.14E-03	(< 1.41E-02)
04/19/93	844.2	< 1.58E-02	(< 1.03E-02)
04/26/93	831.3	< 1.87E-02	(< 1.01E-02)
05/02/93	693.7	< 7.89E-03	(< 9.61E-03)
05/10/93	975.3	< 1.04E-02	(< 8.70E-03)
05/17/93	841.6	< 6.04E-03	(< 8.88E-03)
05/23/93	737.2	< 1.90E-02	(< 1.73E-02)
05/31/93	899.5	< 7.97E-03	(< 9.98E-03)
06/06/93	776.0	< 1.51E-02	(< 1.59E-02)
06/14/93	927.7	< 1.37E-02	(< 7.07E-03)
06/21/93	903.8	< 1.16E-02	(< 1.00E-02)
06/27/93	785.8	< 1.32E-02	(< 1.41E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 15

SECOND QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AC-7)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	830.8	< 5.70E-03	(< 1.06E-02)
04/12/93	825.9	< 1.38E-02	(< 1.41E-02)
04/19/93	823.4	< 1.15E-02	(< 1.03E-02)
04/26/93	828.3	< 1.54E-02	(< 1.01E-02)
05/02/93	696.6	< 1.08E-02	(< 9.61E-03)
05/10/93	956.5	< 1.02E-02	(< 8.70E-03)
05/17/93	827.1	< 1.48E-02	(< 8.88E-03)
05/23/93	719.2	< 1.34E-02	(< 1.73E-02)
05/31/93	846.4	< 1.19E-02	(< 9.98E-03)
06/06/93	626.8	< 2.97E-02	(< 1.59E-02)
06/14/93	842.9	< 1.17E-02	(< 7.07E-03)
06/21/93	741.0	< 1.82E-02	(< 1.00E-02)
06/27/93	640.2	< 1.39E-02	(< 1.41E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 16

SECOND QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AC-55)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	712.9	< 1.55E-02	(< 1.06E-02)
04/12/93	710.7	< 1.02E-02	(< 1.41E-02)
04/19/93	720.9	< 1.20E-02	(< 1.03E-02)
04/26/93	716.3	< 7.60E-03	(< 1.01E-02)
05/02/93	613.7	< 1.88E-02	(< 9.61E-03)
05/10/93	826.0	< 8.73E-03	(< 8.70E-03)
05/17/93	725.3	< 1.15E-02	(< 8.88E-03)
05/23/93	624.2	< 1.67E-02	(< 1.73E-02)
05/31/93	743.1	< 1.98E-02	(< 9.98E-03)
06/06/93	559.1	< 1.73E-02	(< 1.59E-02)
06/14/93	743.6	< 1.77E-02	(< 7.07E-03)
06/21/93	655.5	< 9.20E-03	(< 1.00E-02)
06/27/93	574.3	< 2.06E-02	(< 1.41E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 17

FIRST QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
01/03/93	930.0	(1.12 \pm 0.12 E-02)
01/11/93	1052.8	(8.29 \pm 0.99 E-03)
01/17/93	795.1	(1.91 \pm 0.16 E-02)
01/24/93	892.8	(2.51 \pm 0.17 E-02)
01/31/93	879.7	(1.30 \pm 0.14 E-02)
02/07/93	832.8	(1.45 \pm 0.15 E-02)
02/14/93	928.9	(1.42 \pm 0.14 E-02)
02/21/93	857.7	(1.85 \pm 0.15 E-02)
02/28/93	848.3	(1.71 \pm 0.15 E-02)
03/08/93	665.9	(1.73 \pm 0.18 E-02)
03/15/93	850.8	(1.37 \pm 0.14 E-02)
03/22/93	915.0	(1.66 \pm 0.14 E-02)
03/29/93	921.9	(7.88 \pm 1.08 E-03)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 18

FIRST QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	840.6	1.05 \pm 0.13 E-02	(1.12 \pm 0.12 E-02)
01/11/93	962.1	8.24 \pm 1.05 E-03	(8.29 \pm 0.99 E-03)
01/17/93	709.3	2.24 \pm 0.19 E-02	(1.91 \pm 0.16 E-02)
01/24/93	837.0	2.46 \pm 0.18 E-02	(2.51 \pm 0.17 E-02)
01/31/93	810.9	1.70 \pm 0.16 E-02	(1.30 \pm 0.14 E-02)
02/07/93	714.6	1.55 \pm 0.17 E-02	(1.45 \pm 0.15 E-02)
02/14/93	837.9	1.51 \pm 0.15 E-02	(1.42 \pm 0.14 E-02)
02/21/93	791.5	2.00 \pm 0.17 E-02	(1.85 \pm 0.15 E-02)
02/28/93	835.4	1.83 \pm 0.16 E-02	(1.71 \pm 0.15 E-02)
03/08/93	950.4	1.67 \pm 0.14 E-02	(1.73 \pm 0.18 E-02)
03/15/93	824.7	1.23 \pm 0.14 E-02	(1.37 \pm 0.14 E-02)
03/22/93	839.4	2.04 \pm 0.16 E-02	(1.66 \pm 0.14 E-02)
03/29/93	837.7	9.04 \pm 1.21 E-03	(7.88 \pm 1.08 E-03)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 19

FIRST QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	804.2	1.08 \pm 0.13 E-02	(1.12 \pm 0.12 E-02)
01/11/93	933.1	7.65 \pm 1.04 E-03	(8.29 \pm 0.99 E-03)
01/17/93	689.6	1.83 \pm 0.18 E-02	(1.91 \pm 0.16 E-02)
01/24/93	816.1	2.19 \pm 0.17 E-02	(2.51 \pm 0.17 E-02)
01/31/93	818.9	1.52 \pm 0.15 E-02	(1.30 \pm 0.14 E-02)
02/07/93	635.7	1.31 \pm 0.17 E-02	(1.45 \pm 0.15 E-02)
02/14/93	808.6	1.31 \pm 0.15 E-02	(1.42 \pm 0.14 E-02)
02/21/93	785.5	1.86 \pm 0.16 E-02	(1.85 \pm 0.15 E-02)
02/28/93	808.6	1.68 \pm 0.16 E-02	(1.71 \pm 0.15 E-02)
03/08/93	913.4	1.44 \pm 0.14 E-02	(1.73 \pm 0.18 E-02)
03/15/93	793.8	1.17 \pm 0.14 E-02	(1.37 \pm 0.14 E-02)
03/22/93	816.6	1.97 \pm 0.17 E-02	(1.66 \pm 0.14 E-02)
03/29/93	824.0	7.25 \pm 1.13 E-03	(7.88 \pm 1.08 E-03)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 20

FIRST QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	805.5	1.23 \pm 0.14 E-02	(1.12 \pm 0.12 E-02)
01/11/93	925.2	8.51 \pm 1.09 E-03	(8.29 \pm 0.99 E-03)
01/17/93	690.9	1.95 \pm 0.18 E-02	(1.91 \pm 0.16 E-02)
01/24/93	815.4	2.66 \pm 0.18 E-02	(2.51 \pm 0.17 E-02)
01/31/93	809.5	1.83 \pm 0.16 E-02	(1.30 \pm 0.14 E-02)
02/07/93	700.1	1.45 \pm 0.16 E-02	(1.45 \pm 0.15 E-02)
02/14/93	810.7	1.67 \pm 0.16 E-02	(1.42 \pm 0.14 E-02)
02/21/93	792.9	2.21 \pm 0.17 E-02	(1.85 \pm 0.15 E-02)
02/28/93	810.8	1.79 \pm 0.16 E-02	(1.71 \pm 0.15 E-02)
03/08/93	928.1	1.74 \pm 0.15 E-02	(1.73 \pm 0.18 E-02)
03/15/93	807.9	1.17 \pm 0.14 E-02	(1.37 \pm 0.14 E-02)
03/22/93	821.8	1.94 \pm 0.16 E-02	(1.66 \pm 0.14 E-02)
03/29/93	817.8	7.85 \pm 1.17 E-03	(7.88 \pm 1.08 E-03)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 21

FIRST QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	738.2	1.21 \pm 0.14 E-02	(1.12 \pm 0.12 E-02)
01/11/93	852.9	9.51 \pm 1.19 E-03	(8.29 \pm 0.99 E-03)
01/17/93	618.4	1.69 \pm 0.18 E-02	(1.91 \pm 0.16 E-02)
01/24/93	729.5	3.05 \pm 0.21 E-02	(2.51 \pm 0.17 E-02)
01/31/93	720.3	2.05 \pm 0.18 E-02	(1.30 \pm 0.14 E-02)
02/07/93	618.6	1.60 \pm 0.18 E-02	(1.45 \pm 0.15 E-02)
02/14/93	719.8	1.86 \pm 0.18 E-02	(1.42 \pm 0.14 E-02)
02/21/93	704.0	2.19 \pm 0.19 E-02	(1.85 \pm 0.15 E-02)
02/28/93	724.1	2.09 \pm 0.18 E-02	(1.71 \pm 0.15 E-02)
03/08/93	825.2	1.80 \pm 0.16 E-02	(1.73 \pm 0.18 E-02)
03/15/93	693.0	1.44 \pm 0.16 E-02	(1.37 \pm 0.14 E-02)
03/22/93	723.2	2.01 \pm 0.18 E-02	(1.66 \pm 0.14 E-02)
03/29/93	733.7	1.02 \pm 0.14 E-02	(7.88 \pm 1.08 E-03)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 22

FIRST QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	843.0	1.19 \pm 0.13 E-02	(1.12 \pm 0.12 E-02)
01/11/93	964.9	7.73 \pm 1.02 E-03	(8.29 \pm 0.99 E-03)
01/17/93	727.4	1.82 \pm 0.17 E-02	(1.91 \pm 0.16 E-02)
01/24/93	848.9	2.34 \pm 0.17 E-02	(2.51 \pm 0.17 E-02)
01/31/93	831.2	1.73 \pm 0.16 E-02	(1.30 \pm 0.14 E-02)
02/07/93	737.8	1.89 \pm 0.18 E-02	(1.45 \pm 0.15 E-02)
02/14/93	846.0	1.42 \pm 0.15 E-02	(1.42 \pm 0.14 E-02)
02/21/93	810.2	1.89 \pm 0.16 E-02	(1.85 \pm 0.15 E-02)
02/28/93	834.8	1.93 \pm 0.16 E-02	(1.71 \pm 0.15 E-02)
03/08/93	940.6	1.87 \pm 0.15 E-02	(1.73 \pm 0.18 E-02)
03/15/93	802.7	1.19 \pm 0.14 E-02	(1.37 \pm 0.14 E-02)
03/22/93	840.0	1.88 \pm 0.16 E-02	(1.66 \pm 0.14 E-02)
03/29/93	849.9	7.89 \pm 1.14 E-03	(7.88 \pm 1.08 E-03)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 23

FIRST QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	721.2	1.37 \pm 0.15 E-02	(1.12 \pm 0.12 E-02)
01/11/93	818.7	9.09 \pm 1.20 E-03	(8.29 \pm 0.99 E-03)
01/17/93	621.7	2.61 \pm 0.22 E-02	(1.91 \pm 0.16 E-02)
01/24/93	713.3	3.33 \pm 0.22 E-02	(2.51 \pm 0.17 E-02)
01/31/93	695.6	2.05 \pm 0.19 E-02	(1.30 \pm 0.14 E-02)
02/07/93	628.1	2.14 \pm 0.20 E-02	(1.45 \pm 0.15 E-02)
02/14/93	721.3	1.98 \pm 0.18 E-02	(1.42 \pm 0.14 E-02)
02/21/93	680.9	2.44 \pm 0.20 E-02	(1.85 \pm 0.15 E-02)
02/28/93	711.2	2.23 \pm 0.19 E-02	(1.71 \pm 0.15 E-02)
03/08/93	817.3	2.03 \pm 0.17 E-02	(1.73 \pm 0.18 E-02)
03/15/93	535.0	1.28 \pm 0.19 E-02	(1.37 \pm 0.14 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 24

FIRST QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
01/03/93	677.3	9.55 \pm 1.41 E-03	(1.12 \pm 0.12 E-02)
01/11/93	828.5	7.42 \pm 1.11 E-03	(8.29 \pm 0.99 E-03)
01/17/93	618.0	2.56 \pm 0.22 E-02	(1.91 \pm 0.16 E-02)
01/24/93	718.9	2.12 \pm 0.18 E-02	(2.51 \pm 0.17 E-02)
01/31/93	716.0	1.57 \pm 0.17 E-02	(1.30 \pm 0.14 E-02)
02/07/93	605.2	1.40 \pm 0.18 E-02	(1.45 \pm 0.15 E-02)
02/14/93	706.2	1.26 \pm 0.16 E-02	(1.42 \pm 0.14 E-02)
02/21/93	709.3	1.59 \pm 0.16 E-02	(1.85 \pm 0.15 E-02)
02/28/93	708.9	1.51 \pm 0.16 E-02	(1.71 \pm 0.15 E-02)
03/08/93	809.5	1.32 \pm 0.14 E-02	(1.73 \pm 0.18 E-02)
03/15/93	699.2	1.10 \pm 0.15 E-02	(1.37 \pm 0.14 E-02)
03/22/93	708.7	1.58 \pm 0.16 E-02	(1.66 \pm 0.14 E-02)
03/29/93	722.2	6.94 \pm 1.22 E-03	(7.88 \pm 1.08 E-03)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 25

SECOND QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
04/05/93	913.7	(1.37 \pm 0.13 E-02)
04/12/93	922.2	(1.08 \pm 0.12 E-02)
04/19/93	891.3	(1.73 \pm 0.15 E-02)
04/26/93	908.8	(1.70 \pm 0.15 E-02)
05/02/93	751.4	(1.84 \pm 0.17 E-02)
05/10/93	1071.9	(1.65 \pm 0.13 E-02)
05/17/93	903.6	(1.53 \pm 0.14 E-02)
05/23/93	757.2	(1.84 \pm 0.17 E-02)
05/31/93	1007.4	(1.54 \pm 0.13 E-02)
06/06/93	763.6	(1.82 \pm 0.17 E-02)
06/14/93	958.3	(1.56 \pm 0.14 E-02)
06/21/93	898.0	(1.46 \pm 0.14 E-02)
06/27/93	794.3	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 26

SECOND QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	841.6	1.73 \pm 0.15 E-02	(1.37 \pm 0.13 E-02)
04/12/93	846.7	1.58 \pm 0.15 E-02	(1.08 \pm 0.12 E-02)
04/19/93	846.4	2.17 \pm 0.17 E-02	(1.73 \pm 0.15 E-02)
04/26/93	836.4	1.99 \pm 0.16 E-02	(1.70 \pm 0.15 E-02)
05/02/93	702.9	2.18 \pm 0.19 E-02	(1.84 \pm 0.17 E-02)
05/10/93	977.2	1.57 \pm 0.14 E-02	(1.65 \pm 0.13 E-02)
05/17/93	851.7	1.79 \pm 0.16 E-02	(1.53 \pm 0.14 E-02)
05/23/93	726.0	1.76 \pm 0.17 E-02	(1.84 \pm 0.17 E-02)
05/31/93	1037.5	1.56 \pm 0.13 E-02	(1.54 \pm 0.13 E-02)
06/06/93	791.4	1.82 \pm 0.16 E-02	(1.82 \pm 0.17 E-02)
06/14/93	1028.5	1.56 \pm 0.13 E-02	(1.56 \pm 0.14 E-02)
06/21/93	919.1	1.61 \pm 0.14 E-02	(1.46 \pm 0.14 E-02)
06/27/93	805.7	1.65 \pm 0.16 E-02	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 27

SECOND QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	809.3	1.52 \pm 0.15 E-02	(1.37 \pm 0.13 E-02)
04/12/93	819.7	1.15 \pm 0.14 E-02	(1.08 \pm 0.12 E-02)
04/19/93	795.1	1.65 \pm 0.16 E-02	(1.73 \pm 0.15 E-02)
04/26/93	769.5	1.87 \pm 0.17 E-02	(1.70 \pm 0.15 E-02)
05/02/93	704.1	1.91 \pm 0.18 E-02	(1.84 \pm 0.17 E-02)
05/10/93	946.6	1.50 \pm 0.14 E-02	(1.65 \pm 0.13 E-02)
05/17/93	796.5	1.70 \pm 0.16 E-02	(1.53 \pm 0.14 E-02)
05/23/93	711.2	1.64 \pm 0.17 E-02	(1.84 \pm 0.17 E-02)
05/31/93	963.7	1.31 \pm 0.13 E-02	(1.54 \pm 0.13 E-02)
06/06/93	725.9	1.80 \pm 0.17 E-02	(1.82 \pm 0.17 E-02)
06/14/93	928.5	1.83 \pm 0.15 E-02	(1.56 \pm 0.14 E-02)
06/21/93	853.2	1.45 \pm 0.14 E-02	(1.46 \pm 0.14 E-02)
06/27/93	746.6	1.52 \pm 0.16 E-02	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 28

SECOND QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	779.1	1.56 \pm 0.16 E-02	(1.37 \pm 0.13 E-02)
04/12/93	819.9	1.34 \pm 0.14 E-02	(1.08 \pm 0.12 E-02)
04/19/93	817.7	2.03 \pm 0.17 E-02	(1.73 \pm 0.15 E-02)
04/26/93	802.5	2.12 \pm 0.17 E-02	(1.70 \pm 0.15 E-02)
05/02/93	696.9	2.16 \pm 0.19 E-02	(1.84 \pm 0.17 E-02)
05/10/93	952.2	1.66 \pm 0.14 E-02	(1.65 \pm 0.13 E-02)
05/17/93	786.0	2.08 \pm 0.17 E-02	(1.53 \pm 0.14 E-02)
05/23/93	701.4	1.79 \pm 0.18 E-02	(1.84 \pm 0.17 E-02)
05/31/93	1021.9	1.40 \pm 0.13 E-02	(1.54 \pm 0.13 E-02)
06/06/93	772.8	1.66 \pm 0.16 E-02	(1.82 \pm 0.17 E-02)
06/14/93	1017.3	1.72 \pm 0.14 E-02	(1.56 \pm 0.14 E-02)
06/21/93	905.9	1.55 \pm 0.14 E-02	(1.46 \pm 0.14 E-02)
06/27/93	786.7	1.44 \pm 0.15 E-02	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 29

SECOND QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	735.3	1.73 \pm 0.17 E-02	(1.37 \pm 0.13 E-02)
04/12/93	737.6	1.49 \pm 0.16 E-02	(1.08 \pm 0.12 E-02)
04/19/93	734.6	2.18 \pm 0.18 E-02	(1.73 \pm 0.15 E-02)
04/26/93	729.0	2.25 \pm 0.19 E-02	(1.70 \pm 0.15 E-02)
05/02/93	632.3	2.38 \pm 0.21 E-02	(1.84 \pm 0.17 E-02)
05/10/93	852.9	2.01 \pm 0.16 E-02	(1.65 \pm 0.13 E-02)
05/17/93	740.7	2.04 \pm 0.18 E-02	(1.53 \pm 0.14 E-02)
05/23/93	642.0	2.13 \pm 0.20 E-02	(1.84 \pm 0.17 E-02)
05/31/93	915.7	1.93 \pm 0.15 E-02	(1.54 \pm 0.13 E-02)
06/06/93	705.4	1.64 \pm 0.17 E-02	(1.82 \pm 0.17 E-02)
06/14/93	923.8	1.98 \pm 0.15 E-02	(1.56 \pm 0.14 E-02)
06/21/93	821.6	1.68 \pm 0.16 E-02	(1.46 \pm 0.14 E-02)
06/27/93	717.7	1.53 \pm 0.16 E-02	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 30

SECOND QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	842.6	1.60 \pm 0.15 E-02	(1.37 \pm 0.13 E-02)
04/12/93	854.7	1.40 \pm 0.14 E-02	(1.08 \pm 0.12 E-02)
04/19/93	844.2	2.13 \pm 0.17 E-02	(1.73 \pm 0.15 E-02)
04/26/93	831.3	2.12 \pm 0.17 E-02	(1.70 \pm 0.15 E-02)
05/02/93	693.7	2.16 \pm 0.19 E-02	(1.84 \pm 0.17 E-02)
05/10/93	975.3	1.71 \pm 0.14 E-02	(1.65 \pm 0.13 E-02)
05/17/93	841.6	2.06 \pm 0.17 E-02	(1.53 \pm 0.14 E-02)
05/23/93	737.2	2.00 \pm 0.18 E-02	(1.84 \pm 0.17 E-02)
05/31/93	899.5	1.84 \pm 0.15 E-02	(1.54 \pm 0.13 E-02)
06/06/93	776.0	1.92 \pm 0.17 E-02	(1.82 \pm 0.17 E-02)
06/14/93	927.7	2.18 \pm 0.16 E-02	(1.56 \pm 0.14 E-02)
06/21/93	903.8	1.65 \pm 0.15 E-02	(1.46 \pm 0.14 E-02)
06/27/93	785.8	1.78 \pm 0.16 E-02	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 31

SECOND QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	830.8	1.31 \pm 0.14 E-02	(1.37 \pm 0.13 E-02)
04/12/93	825.9	1.49 \pm 0.15 E-02	(1.08 \pm 0.12 E-02)
04/19/93	823.4	1.86 \pm 0.16 E-02	(1.73 \pm 0.15 E-02)
04/26/93	828.3	1.92 \pm 0.16 E-02	(1.70 \pm 0.15 E-02)
05/02/93	696.6	2.28 \pm 0.20 E-02	(1.84 \pm 0.17 E-02)
05/10/93	956.5	1.78 \pm 0.14 E-02	(1.65 \pm 0.13 E-02)
05/17/93	827.1	1.80 \pm 0.16 E-02	(1.53 \pm 0.14 E-02)
05/23/93	719.2	1.91 \pm 0.18 E-02	(1.84 \pm 0.17 E-02)
05/31/93	846.4	1.96 \pm 0.16 E-02	(1.54 \pm 0.13 E-02)
06/06/93	626.8	2.17 \pm 0.20 E-02	(1.82 \pm 0.17 E-02)
06/14/93	842.9	2.31 \pm 0.17 E-02	(1.56 \pm 0.14 E-02)
06/21/93	741.0	1.84 \pm 0.17 E-02	(1.46 \pm 0.14 E-02)
06/27/93	640.2	2.05 \pm 0.20 E-02	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 32

SECOND QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
04/05/93	712.9	1.08 \pm 0.14 E-02	(1.37 \pm 0.13 E-02)
04/12/93	710.7	1.14 \pm 0.15 E-02	(1.08 \pm 0.12 E-02)
04/19/93	720.9	1.81 \pm 0.17 E-02	(1.73 \pm 0.15 E-02)
04/26/93	716.3	1.85 \pm 0.18 E-02	(1.70 \pm 0.15 E-02)
05/02/93	613.7	1.94 \pm 0.20 E-02	(1.84 \pm 0.17 E-02)
05/10/93	826.0	1.59 \pm 0.15 E-02	(1.65 \pm 0.13 E-02)
05/17/93	725.3	1.45 \pm 0.16 E-02	(1.53 \pm 0.14 E-02)
05/23/93	624.2	1.88 \pm 0.19 E-02	(1.84 \pm 0.17 E-02)
05/31/93	743.1	1.33 \pm 0.15 E-02	(1.54 \pm 0.13 E-02)
06/06/93	559.1	1.99 \pm 0.21 E-02	(1.82 \pm 0.17 E-02)
06/14/93	743.6	1.52 \pm 0.16 E-02	(1.56 \pm 0.14 E-02)
06/21/93	655.5	1.60 \pm 0.18 E-02	(1.46 \pm 0.14 E-02)
06/27/93	574.3	1.82 \pm 0.20 E-02	(1.40 \pm 0.15 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 33

FIRST QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10456.7 CUBIC METERS

ISOTOPE

CONTROL ACTIVITY

BE-7

(7.42 \pm 0.59 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 34

FIRST QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 9952.1 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

8.93 \pm 0.73 E-02

(7.42 \pm 0.59 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 35

FIRST QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 9631.5 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	9.28 \pm 0.64 E-02	(7.42 \pm 0.59 E-02)
BI-214	9.62 \pm 3.91 E-04	(LESS THAN LLD)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 36

FIRST QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 9714.8 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

9.32 \pm 0.69 E-02

(7.42 \pm 0.59 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 37

FIRST QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 8677.7 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

1.16 \pm 0.86 E-01

(7.42 \pm 0.59 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 38

FIRST QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10037.4 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

9.35 \pm 0.64 E-02

(7.42 \pm 0.59 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 39

FIRST QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 7664.3 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.01 \pm 0.09 E-01	(7.42 \pm 0.59 E-02)
K-40	6.88 \pm 5.41 E-03	(LESS THAN LLD)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 40

FIRST QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 8519.2 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

5.19 \pm 0.73 E-02

(7.42 \pm 0.59 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 41

SECOND QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11541.7 CUBIC METERS

ISOTOPE

CONTROL ACTIVITY

BE-7

(1.05 \pm 0.06 E-01)

K-40

(5.14 \pm 3.03 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 42

SECOND QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11211.1 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	5.54 \pm 0.56 E-02	(1.05 \pm 0.06 E-01)
K-40	LESS THAN LLD	(5.14 \pm 3.03 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 43

SECOND QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10569.9 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

1.22 \pm 0.08 E-01

(1.05 \pm 0.06 E-01)

K-40

LESS THAN LLD

(5.14 \pm 3.03 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 44

SECOND QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10860.3 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.27 \pm 0.09 E-01	(1.05 \pm 0.06 E-01)
K-40	LESS THAN LLD	(5.14 \pm 3.03 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 45

SECOND QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 9888.6 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.62 \pm 0.09 E-01	(1.05 \pm 0.06 E-01)
K-40	LESS THAN LLD	(5.14 \pm 3.03 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 46

SECOND QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10913.4 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

1.96 \pm 0.10 E-01

(1.05 \pm 0.06 E-01)

K-40

LESS THAN LLD

(5.14 \pm 3.03 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 47

SECOND QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10205.1 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.49 \pm 0.09 E-01	(1.05 \pm 0.06 E-01)
K-40	LESS THAN LLD	(5.14 \pm 3.03 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 48

SECOND QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 8925.6 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

9.15 \pm 0.74 E-02

(1.05 \pm 0.06 E-01)

K-40

LESS THAN LLD

(5.14 \pm 3.03 E-03)

AQUATIC VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 49

ANNUAL, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (AV-41)
(DATE COLLECTED: 05/27/93)

GAMMA SPECTROMETRY

MASS: 536.6 GRAMS WET

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(1.26 \pm 0.13 E+00)
I-131	(< 1.89E-02)
CS-134	(< 1.78E-02)
CS-137	(< 1.78E-02)
TL-208	(3.43 \pm 0.84 E-02)
PB-212	(9.25 \pm 1.24 E-02)
PB-214	(5.01 \pm 1.87 E-02)
BI-214	(4.72 \pm 1.78 E-02)
AC-228	(1.53 \pm 0.28 E-01)

AQUATIC VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 50

ANNUAL, 1993

SITE VARIES WITHIN LAKE ROBINSON (AV-45)
(DATE COLLECTED: 05/27/93)

GAMMA SPECTROMETRY

MASS: 516.2 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.09 \pm 0.08 E+00	(LESS THAN LLD)
K-40	7.00 \pm 1.16 E-01	(1.26 \pm 0.13 E+00)
CO-58	6.17 \pm 1.08 E-02	(LESS THAN LLD)
CO-60	5.97 \pm 0.18 E-01	(LESS THAN LLD)
I-131	< 2.32E-02	(< 1.89E-02)
CS-134	< 2.07E-02	(< 1.78E-02)
CS-137	2.05 \pm 0.62 E-02	(< 1.78E-02)
TL-208	5.56 \pm 0.90 E-02	(3.43 \pm 0.84 E-02)
PB-212	1.69 \pm 0.11 E-01	(9.25 \pm 1.24 E-02)
PB-214	1.38 \pm 0.17 E-01	(5.01 \pm 1.87 E-02)
BI-212	1.47 \pm 0.60 E-01	(LESS THAN LLD)
BI-214	1.60 \pm 0.20 E-01	(4.72 \pm 1.78 E-02)
RA-226	6.15 \pm 1.50 E-01	(LESS THAN LLD)
AC-228	3.26 \pm 0.39 E-01	(1.53 \pm 0.28 E-01)

AQUATIC VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 51

ANNUAL, 1993

4.9 MI ESE - PRESTWOOD LAKE (AV-46)
(DATE COLLECTED: 05/27/93)

GAMMA SPECTROMETRY

MASS: 740.1 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	7.25 \pm 6.05 E-02	(1.26 \pm 0.13 E+00)
I-131	< 2.15E-02	(< 1.89E-02)
CS-134	< 1.30E-02	(< 1.78E-02)
CS-137	< 1.46E-02	(< 1.78E-02)
TL-208	LESS THAN LLD	(3.43 \pm 0.84 E-02)
PB-212	5.25 \pm 1.40 E-02	(9.25 \pm 1.24 E-02)
PB-214	LESS THAN LLD	(5.01 \pm 1.87 E-02)
BI-214	5.12 \pm 1.26 E-02	(4.72 \pm 1.78 E-02)
RA-226	3.29 \pm 1.47 E-01	(LESS THAN LLD)
AC-228	LESS THAN LLD	(1.53 \pm 0.28 E-01)

AQUATIC VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 52

ANNUAL, 1993

10.1 MI E - AUBURNDALE PLANTATION (AV-54)
(DATE COLLECTED: 05/27/93)

GAMMA SPECTROMETRY

MASS: 528.1 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	3.00 \pm 0.16 E+00	(1.26 \pm 0.13 E+00)
I-131	< 1.30E-02	(< 1.89E-02)
CS-134	< 1.57E-02	(< 1.78E-02)
CS-137	< 1.50E-02	(< 1.78E-02)
TL-208	2.33 \pm 0.73 E-02	(3.43 \pm 0.84 E-02)
PB-212	6.26 \pm 1.10 E-02	(9.25 \pm 1.24 E-02)
PB-214	4.88 \pm 1.37 E-02	(5.01 \pm 1.87 E-02)
BI-214	4.69 \pm 1.54 E-02	(4.72 \pm 1.78 E-02)
RA-226	6.41 \pm 1.40 E-01	(LESS THAN LLD)
AC-228	2.77 \pm 0.34 E-01	(1.53 \pm 0.28 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 53

MAY, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 05/23/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 594.3 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	3.31 \pm 0.52 E-01	(2.46 \pm 0.61 E-01)
K-40	2.17 \pm 0.14 E+00	(3.54 \pm 0.14 E+00)
I-131	< 1.36E-02	(< 1.70E-02)
CS-134	< 1.49E-02	(< 1.39E-02)
CS-137	< 1.32E-02	(1.15 \pm 0.08 E-01)
PB-212	8.64 \pm 6.94 E-03	(4.70 \pm 1.28 E-02)
BI-214	2.58 \pm 1.23 E-02	(LESS THAN LLD)
RA-226	1.14 \pm 1.11 E-01	(LESS THAN LLD)
AC-228	2.19 \pm 0.28 E-01	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 54

MAY, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 05/23/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 637 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	3.49 \pm 0.56 E-01	(2.46 \pm 0.61 E-01)
K-40	2.89 \pm 0.14 E+00	(3.54 \pm 0.14 E+00)
I-131	< 1.76E-02	(< 1.70E-02)
CS-134	< 1.68E-02	(< 1.39E-02)
CS-137	< 1.35E-02	(1.15 \pm 0.08 E-01)
PB-212	2.00 \pm 0.95 E-02	(4.70 \pm 1.28 E-02)
RA-226	1.10 \pm 1.06 E-01	(LESS THAN LLD)
AC-228	2.16 \pm 0.29 E-01	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 55

MAY, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 05/23/93)

CHERRY

GAMMA SPECTROMETRY

MASS:

698 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(2.46 \pm 0.61 E-01)

K-40

(3.54 \pm 0.14 E+00)

I-131

(< 1.70E-02)

CS-134

(< 1.39E-02)

CS-137

(1.15 \pm 0.08 E-01)

PB-212

(4.70 \pm 1.28 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 56

MAY, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 05/23/93)

OAK

GAMMA SPECTROMETRY

MASS: 371.1 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	4.84 \pm 0.87 E-01	(4.94 \pm 0.72 E-01)
K-40	9.57 \pm 1.44 E-01	(1.76 \pm 0.16 E+00)
I-131	< 2.96E-02	(< 2.09E-02)
CS-134	< 2.40E-02	(< 1.74E-02)
CS-137	3.03 \pm 0.16 E-01	(4.26 \pm 0.14 E-01)
PB-212	LESS THAN LLD	(1.11 \pm 1.00 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 57

MAY, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 05/23/93)

OAK

GAMMA SPECTROMETRY

MASS: 378.4 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	LESS THAN LLD	(4.94 \pm 0.72 E-01)
K-40	1.03 \pm 0.15 E+00	(1.76 \pm 0.16 E+00)
I-131	< 3.42E-02	(< 2.09E-02)
CS-134	< 2.27E-02	(< 1.74E-02)
CS-137	3.15 \pm 0.17 E-01	(4.26 \pm 0.14 E-01)
PB-212	LESS THAN LLD	(1.11 \pm 1.00 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 58

MAY, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 05/23/93)

OAK

GAMMA SPECTROMETRY

MASS: 406.8 GRAMS WET

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
BE-7	(4.94 \pm 0.72 E-01)
K-40	(1.76 \pm 0.16 E+00)
I-131	(< 2.09E-02)
CS-134	(< 1.74E-02)
CS-137	(4.26 \pm 0.14 E-01)
PB-212	(1.11 \pm 1.00 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 59

MAY, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 05/23/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 404.2 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	5.58 \pm 0.88 E-01	(LESS THAN LLD)
K-40	3.47 \pm 0.20 E+00	(2.09 \pm 0.17 E+00)
I-131	< 2.34E-02	(< 2.75E-02)
CS-134	< 2.16E-02	(< 2.26E-02)
CS-137	< 2.37E-02	(< 2.16E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 60

MAY, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 05/23/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 429.8 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	4.67 \pm 0.68 E-01	(LESS THAN LLD)
K-40	3.74 \pm 0.20 E+00	(2.09 \pm 0.17 E+00)
I-131	< 2.01E-02	(< 2.75E-02)
CS-134	< 1.71E-02	(< 2.26E-02)
CS-137	2.00 \pm 0.64 E-02	(< 2.16E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 61

MAY, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 05/23/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 416.9 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

K-40

(2.09 \pm 0.17 E+00)

I-131

(< 2.75E-02)

CS-134

(< 2.26E-02)

CS-137

(< 2.16E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 62

JUNE, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 06/27/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 287.5 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	LESS THAN LLD	(3.30 \pm 0.89 E-01)
K-40	4.08 \pm 0.27 E+00	(4.91 \pm 0.32 E+00)
I-131	< 3.06E-02	(< 3.21E-02)
CS-134	< 2.90E-02	(< 3.23E-02)
CS-137	< 2.84E-02	(< 2.97E-02)
PB-212	2.74 \pm 2.04 E-02	(2.58 \pm 1.58 E-02)
BI-214	LESS THAN LLD	(5.01 \pm 3.27 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 63

JUNE, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 06/27/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 274.8 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	LESS THAN LLD	(3.30 \pm 0.89 E-01)
K-40	3.62 \pm 0.31 E+00	(4.91 \pm 0.32 E+00)
I-131	< 3.42E-02	(< 3.21E-02)
CS-134	< 3.14E-02	(< 3.23E-02)
CS-137	< 3.00E-02	(< 2.97E-02)
PB-212	LESS THAN LLD	(2.58 \pm 1.58 E-02)
BI-214	LESS THAN LLD	(5.01 \pm 3.27 E-02)
RA-226	4.58 \pm 2.75 E-01	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 64

JUNE, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 06/27/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 310.8 GRAMS WET

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
BE-7	(3.30 \pm 0.89 E-01)
K-40	(4.91 \pm 0.32 E+00)
I-131	(< 3.21E-02)
CS-134	(< 3.23E-02)
CS-137	(< 2.97E-02)
PB-212	(2.58 \pm 1.58 E-02)
BI-214	(5.01 \pm 3.27 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 65

JUNE, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 06/27/93)

OAK

GAMMA SPECTROMETRY

MASS: 322.2 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	6.05 \pm 0.90 E-01	(9.86 \pm 1.59 E-01)
K-40	1.63 \pm 0.21 E+00	(1.87 \pm 0.27 E+00)
I-131	< 2.30E-02	(< 3.63E-02)
CS-134	< 2.01E-02	(< 2.67E-02)
CS-137	4.15 \pm 0.17 E-01	(5.11 \pm 0.21 E-01)
BI-214	4.23 \pm 1.99 E-02	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 66

JUNE, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 06/27/93)

OAK

GAMMA SPECTROMETRY

MASS: 240.9 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	$6.58 \pm 1.37 \text{ E-01}$	$(9.86 \pm 1.59 \text{ E-01})$
K-40	$1.43 \pm 0.25 \text{ E+00}$	$(1.87 \pm 0.27 \text{ E+00})$
I-131	$< 4.58\text{E-02}$	$(< 3.63\text{E-02})$
CS-134	$< 3.52\text{E-02}$	$(< 2.67\text{E-02})$
CS-137	$5.08 \pm 0.28 \text{ E-01}$	$(5.11 \pm 0.21 \text{ E-01})$
PB-212	$4.45 \pm 2.38 \text{ E-02}$	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 67

JUNE, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 06/27/93)

OAK

GAMMA SPECTROMETRY

MASS: 250.8 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(9.86 \pm 1.59 E-01)

K-40

(1.87 \pm 0.27 E+00)

I-131

(< 3.63E-02)

CS-134

(< 2.67E-02)

CS-137

(5.11 \pm 0.21 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 68

JUNE, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 06/27/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 272.5 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	$6.44 \pm 1.14 \text{ E-01}$	$(6.92 \pm 0.80 \text{ E-01})$
K-40	$2.82 \pm 0.30 \text{ E+00}$	$(3.32 \pm 0.22 \text{ E+00})$
I-131	$< 2.73\text{E-02}$	$(< 2.14\text{E-02})$
CS-134	$< 2.60\text{E-02}$	$(< 1.86\text{E-02})$
CS-137	$< 2.84\text{E-02}$	$(3.75 \pm 0.79 \text{ E-02})$
PB-212	$2.66 \pm 2.01 \text{ E-02}$	(LESS THAN LLD)
BI-214	LESS THAN LLD	$(2.74 \pm 1.74 \text{ E-02})$

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 69

JUNE, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 06/27/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 276.6 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.11 \pm 0.18 E+00	(6.92 \pm 0.80 E-01)
K-40	5.25 \pm 0.35 E+00	(3.32 \pm 0.22 E+00)
I-131	< 2.32E-02	(< 2.14E-02)
CS-134	< 3.79E-02	(< 1.86E-02)
CS-137	7.22 \pm 1.69 E-02	(3.75 \pm 0.79 E-02)
PB-212	9.21 \pm 2.17 E-02	(LESS THAN LLD)
BI-214	1.16 \pm 0.29 E-01	(2.74 \pm 1.74 E-02)
RA-226	3.08 \pm 2.83 E-01	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 70

JUNE, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 06/27/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS:

340 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(6.92 \pm 0.80 E-01)

K-40

(3.32 \pm 0.22 E+00)

I-131

(< 2.14E-02)

CS-134

(< 1.86E-02)

CS-137

(3.75 \pm 0.79 E-02)

BI-214

(2.74 \pm 1.74 E-02)

BOTTOM FEEDER SAMPLES
(PICOCURIES PER GRAM)

HBR - 71

FIRST SEMI-ANNUAL, 1993

SITE VARIES WITHIN LAKE ROBINSON (F1-45)
(DATE COLLECTED: 05/25/93)

BOTTOM FEEDERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 524 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	3.71 \pm 0.35 E+00	(2.49 \pm 0.40 E+00)
CS-137	1.19 \pm 0.20 E-01	(7.47 \pm 1.99 E-02)
BI-214	3.95 \pm 3.46 E-02	(1.38 \pm 0.44 E-01)

BOTTOM FEEDER SAMPLES
(PICOCURIES PER GRAM)

HBR - 72

FIRST SEMI-ANNUAL, 1993

4.9 MI ESE - PRESTWOOD LAKE (F1-46)
(DATE COLLECTED: 05/25/93)

BOTTOM FEEDERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 469.9 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	4.59 \pm 0.36 E+00	(2.49 \pm 0.40 E+00)
CS-137	1.16 \pm 0.17 E-01	(7.47 \pm 1.99 E-02)
BI-214	5.15 \pm 2.39 E-02	(1.38 \pm 0.44 E-01)

BOTTOM FEEDER SAMPLES
(PICOCURIES PER GRAM)

HBR - 73

FIRST SEMI-ANNUAL, 1993

13 MI NNW - LAKE BEE - CONTROL (F1-47)
(DATE COLLECTED: 05/25/93)

BOTTOM FEEDERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 353.4 GRAMS FRESH

ISOTOPE

CONTROL ACTIVITY

K-40

(2.49 \pm 0.40 E+00)

CS-137

(7.47 \pm 1.99 E-02)

BI-214

(1.38 \pm 0.44 E-01)

FREE SWIMMER SAMPLES
(PICOCURIES PER GRAM)

HBR - 74

FIRST SEMI-ANNUAL, 1993

SITE VARIES WITHIN LAKE ROBINSON (F2-45)
(DATE COLLECTED: 05/25/93)

FREE SWIMMERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 601.7 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.53 \pm 0.18 E+00	(3.54 \pm 0.30 E+00)
CS-137	LESS THAN LLD	(2.21 \pm 0.22 E-01)

FREE SWIMMER SAMPLES
(PICOCURIES PER GRAM)

HBR - 75

FIRST SEMI-ANNUAL, 1993

4.9 MI ESE - PRESTWOOD LAKE (F2-46)
(DATE COLLECTED: 05/25/93)

FREE SWIMMERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 536.9 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	4.11 \pm 0.34 E+00	(3.54 \pm 0.30 E+00)
CS-137	1.67 \pm 0.21 E-01	(2.21 \pm 0.22 E-01)
BI-214	3.77 \pm 2.58 E-02	(LESS THAN LLD)

FREE SWIMMER SAMPLES
(PICOCURIES PER GRAM)

HBR - 76

FIRST SEMI-ANNUAL, 1993

13 MI NNW - LAKE BEE - CONTROL (F2-47)
(DATE COLLECTED: 05/25/93)

FREE SWIMMERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 538.7 GRAMS FRESH

ISOTOPE

CONTROL ACTIVITY

K-40

(3.54 \pm 0.30 E+00)

CS-137

(2.21 \pm 0.22 E-01)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 77

JANUARY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 01/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.99E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	3.16 \pm 1.93 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 78

JANUARY, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 01/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.99E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BI-214	2.95 \pm 2.18 E+00	(NOT REQUIRED)
RA-226	2.40 \pm 2.18 E+01	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 79

JANUARY, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 01/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.99E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 80

FEBRUARY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 02/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.33E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	3.17 \pm 2.60 E+01	(NOT REQUIRED)
PB-212	1.92 \pm 1.77 E+00	(NOT REQUIRED)
BI-214	3.21 \pm 2.50 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 81

FEBRUARY, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 02/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.33E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 82

FEBRUARY, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 02/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.33E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 83

MARCH, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 03/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.50E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 84

MARCH, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 03/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.50E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 85

MARCH, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 03/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.50E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	3.79 \pm 1.98 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 86

APRIL, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 04/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.29E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 87

APRIL, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 04/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.29E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 88

APRIL, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 04/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.29E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	1.78 \pm 1.77 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 89

MAY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 05/02/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.02E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	2.04 \pm 1.94 E+00	(NOT REQUIRED)
BI-214	5.96 \pm 2.73 E+00	(NOT REQUIRED)
RA-226	2.57 \pm 2.46 E+01	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 90

MAY, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 05/02/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.02E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 91

MAY, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 05/02/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.02E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 92

JUNE, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 06/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.91E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BI-214	8.09 \pm 3.44 E+00	(NOT REQUIRED)
RA-226	2.24 \pm 1.92 E+01	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 93

JUNE, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 06/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.91E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
RA-226	3.49 \pm 2.24 E-01	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 94

JUNE, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 06/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.91E+02	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	2.70 \pm 2.48 E+01	(NOT REQUIRED)
RA-226	2.97 \pm 2.85 E+01	(NOT REQUIRED)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 95

January 11, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 01/11/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 5.94E-01	(< 6.29E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.34 \pm 0.05 E+03	(1.41 \pm 0.05 E+03)
PB-212	LESS THAN LLD	(8.07 \pm 3.49 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 96

January 11, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 01/11/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.29E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.41 \pm 0.05 E+03)
PB-212	(8.07 \pm 3.49 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 97

January 25, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 01/25/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 8.89E-01	(< 6.85E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.24 \pm 0.06 E+03	(1.86 \pm 0.05 E+03)
PB-212	LESS THAN LLD	(4.10 \pm 3.68 E+00)
BI-214	LESS THAN LLD	(4.93 \pm 4.25 E+00)
RA-226	LESS THAN LLD	(4.76 \pm 4.33 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 98

January 25, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 01/25/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.85E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.86 \pm 0.05 E+03)
PB-212	(4.10 \pm 3.68 E+00)
BI-214	(4.93 \pm 4.25 E+00)
RA-226	(4.76 \pm 4.33 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 99

February 8, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 02/08/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.79E-01	(< 6.37E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.28 \pm 0.06 E+03	(1.67 \pm 0.05 E+03)
TL-208	LESS THAN LLD	(4.90 \pm 1.79 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 100

February 8, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 02/08/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.37E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.67 \pm 0.05 E+03)

TL-208

(4.90 \pm 1.79 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 101

February 22, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 02/22/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 8.78E-01	(< 9.38E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.21 \pm 0.05 E+03	(1.40 \pm 0.05 E+03)
TL-208	LESS THAN LLD	(6.09 \pm 1.57 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 102

February 22, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 02/22/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 9.38E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.40 \pm 0.05 E+03)
TL-208	(6.09 \pm 1.57 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 103

March 8, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 03/08/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 4.89E-01	(< 5.56E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.28 \pm 0.05 E+03	(1.47 \pm 0.05 E+03)
TL-208	LESS THAN LLD	(4.68 \pm 1.42 E+00)
RA-226	7.20 \pm 5.18 E+01	(LESS THAN LLD)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 104

March 8, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 03/08/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 5.56E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.47 \pm 0.05 E+03)

TL-208

(4.68 \pm 1.42 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 105

March 22, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 03/22/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.73E-01	(< 7.12E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.19 \pm 0.05 E+03	(1.35 \pm 0.05 E+03)
TL-208	4.29 \pm 2.12 E+00	(LESS THAN LLD)
PB-212	LESS THAN LLD	(3.97 \pm 3.38 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 106

March 22, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 03/22/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 7.12E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.35 \pm 0.05 E+03)

PB-212

(3.97 \pm 3.38 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 107

April 5, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 04/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.55E-01	(< 7.00E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.26 \pm 0.05 E+03	(1.62 \pm 0.06 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 108

April 5, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 04/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 7.00E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(1.62 \pm 0.06 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 109

April 19, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 04/19/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.16E-01	(< 7.66E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.54 \pm 0.05 E+03	(1.32 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 110

April 19, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 04/19/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 7.66E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.32 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 111

May 3, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 05/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.62E-01	(< 6.95E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.23 \pm 0.06 E+03	(1.46 \pm 0.06 E+03)
TL-208	LESS THAN LLD	(5.79 \pm 1.67 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 112

May 3, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 05/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.95E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.46 \pm 0.06 E+03)

TL-208

(5.79 \pm 1.67 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 113

May 17, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 05/17/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.73E-01	(< 7.19E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.32 \pm 0.05 E+03	(1.28 \pm 0.06 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 114

May 17, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 05/17/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 7.19E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(1.28 \pm 0.06 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 115

May 31, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 05/31/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.63E-01	(< 7.05E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.34 \pm 0.06 E+03	(1.32 \pm 0.06 E+03)
TL-208	LESS THAN LLD	(6.66 \pm 2.10 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 116

May 31, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 05/31/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 7.05E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.32 \pm 0.06 E+03)

TL-208

(6.66 \pm 2.10 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 117

June 14, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 06/14/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.12E-01	(< 6.66E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.24 \pm 0.05 E+03	(1.33 \pm 0.05 E+03)
TL-208	5.75 \pm 1.56 E+00	(LESS THAN LLD)
RA-226	LESS THAN LLD	(4.53 \pm 4.29 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 118

June 14, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 06/14/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.66E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.33 ± 0.05 E+03)
RA-226	(4.53 ± 4.29 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 119

June 28, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 06/28/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 9.01E-01	(< 8.40E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.37 \pm 0.05 E+03	(1.39 \pm 0.06 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 120

June 28, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 06/28/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 8.40E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.39 \pm 0.06 E+03)

BOTTOM SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 121

ANNUAL, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SD-41)
(DATE COLLECTED: 05/25/93)

GAMMA SPECTROMETRY

MASS: 765.6 GRAMS DRY

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(3.62 \pm 1.59 E-01)
CS-137	(5.79 \pm 1.35 E-02)
TL-208	(4.67 \pm 0.24 E-01)
PB-212	(1.29 \pm 0.03 E+00)
PB-214	(8.88 \pm 0.40 E-01)
BI-212	(8.51 \pm 1.18 E-01)
BI-214	(8.87 \pm 0.49 E-01)
RA-226	(1.70 \pm 0.37 E+00)
AC-228	(1.48 \pm 0.08 E+00)

BOTTOM SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 122

ANNUAL, 1993

SITE VARIES WITHIN LAKE ROBINSON (SD-45)
(DATE COLLECTED: 05/25/93)

GAMMA SPECTROMETRY

MASS: 110.1 GRAMS DRY

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	2.59 \pm 0.70 E+00	(3.62 \pm 1.59 E-01)
CO-60	6.76 \pm 0.69 E-01	(LESS THAN LLD)
CS-137	5.84 \pm 0.65 E-01	(5.79 \pm 1.35 E-02)
TL-208	2.78 \pm 0.67 E-01	(4.67 \pm 0.24 E-01)
PB-212	7.08 \pm 0.96 E-01	(1.29 \pm 0.03 E+00)
PB-214	1.10 \pm 0.12 E+00	(8.88 \pm 0.40 E-01)
BI-212	LESS THAN LLD	(8.51 \pm 1.18 E-01)
BI-214	1.05 \pm 0.10 E+00	(8.87 \pm 0.49 E-01)
RA-226	2.48 \pm 0.71 E+00	(1.70 \pm 0.37 E+00)
AC-228	1.21 \pm 0.22 E+00	(1.48 \pm 0.08 E+00)

BOTTOM SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 123

ANNUAL, 1993

4.9 MI ESE - PRESTWOOD LAKE (SD-46)
(DATE COLLECTED: 05/25/93)

GAMMA SPECTROMETRY

MASS: 230.9 GRAMS DRY

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.50 \pm 0.64 E+00	(3.62 \pm 1.59 E-01)
CS-137	3.08 \pm 0.64 E-01	(5.79 \pm 1.35 E-02)
TL-208	2.39 \pm 0.10 E+00	(4.67 \pm 0.24 E-01)
PB-212	6.97 \pm 0.13 E+00	(1.29 \pm 0.03 E+00)
PB-214	4.00 \pm 0.17 E+00	(8.88 \pm 0.40 E-01)
BI-212	3.98 \pm 0.45 E+00	(8.51 \pm 1.18 E-01)
BI-214	3.58 \pm 0.16 E+00	(8.87 \pm 0.49 E-01)
RA-226	7.17 \pm 1.10 E+00	(1.70 \pm 0.37 E+00)
AC-228	7.15 \pm 0.30 E+00	(1.48 \pm 0.08 E+00)

BOTTOM SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 124

ANNUAL, 1993

10.1 MI E - AUBURNDALE PLANTATION (SD-54)
(DATE COLLECTED: 05/25/93)

GAMMA SPECTROMETRY

MASS: 222.4 GRAMS DRY

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	2.51 \pm 0.45 E+00	(3.62 \pm 1.59 E-01)
CS-137	3.36 \pm 0.36 E-01	(5.79 \pm 1.35 E-02)
TL-208	9.03 \pm 0.59 E-01	(4.67 \pm 0.24 E-01)
PB-212	2.59 \pm 0.08 E+00	(1.29 \pm 0.03 E+00)
PB-214	2.17 \pm 0.10 E+00	(8.88 \pm 0.40 E-01)
BI-212	1.42 \pm 0.29 E+00	(8.51 \pm 1.18 E-01)
BI-214	1.72 \pm 0.10 E+00	(8.87 \pm 0.49 E-01)
RA-226	4.49 \pm 0.72 E+00	(1.70 \pm 0.37 E+00)
AC-228	2.47 \pm 0.17 E+00	(1.48 \pm 0.08 E+00)

SHORELINE SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 125

FIRST SEMI-ANNUAL, 1993

1.9 MI NNE - SHADY REST CLUB (SS-44)
(DATE COLLECTED: 01/17/93)

GAMMA SPECTROMETRY

MASS: 901.6 GRAMS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TL-208	3.54 \pm 0.84 E-02	(NOT REQUIRED)
PB-212	8.56 \pm 0.85 E-02	(NOT REQUIRED)
PB-214	1.31 \pm 0.14 E-01	(NOT REQUIRED)
BI-214	1.04 \pm 0.13 E-01	(NOT REQUIRED)
AC-228	8.39 \pm 1.89 E-02	(NOT REQUIRED)

SHORELINE SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 126

FIRST SEMI-ANNUAL, 1993

0.9 MI NNW - ASH POND (SS-57)
(DATE COLLECTED: 01/17/93)

GAMMA SPECTROMETRY

MASS: 1015.4 GRAMS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.79 \pm 0.15 E+00	(NOT REQUIRED)
TL-208	3.61 \pm 0.17 E-01	(NOT REQUIRED)
PB-212	1.15 \pm 0.02 E+00	(NOT REQUIRED)
PB-214	5.65 \pm 0.27 E-01	(NOT REQUIRED)
BI-212	6.87 \pm 0.83 E-01	(NOT REQUIRED)
BI-214	5.35 \pm 0.27 E-01	(NOT REQUIRED)
RA-226	1.60 \pm 0.24 E+00	(NOT REQUIRED)
AC-228	1.05 \pm 0.06 E+00	(NOT REQUIRED)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 127

JANUARY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	1.19 \pm 0.59 E+03	(< 9.33E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	LESS THAN LLD	(2.86 \pm 1.72 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 128

JANUARY, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 9.33E+02)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

PB-212

(2.86 \pm 1.72 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 129

JANUARY, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.33E+02	(< 9.33E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	2.46 \pm 1.73 E+00	(2.86 \pm 1.72 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 130

FEBRUARY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.50E+02	(< 9.50E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BI-214	LESS THAN LLD	(4.68 \pm 2.95 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 131

FEBRUARY, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 9.50E+02)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

BI-214

(4.68 \pm 2.95 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 132

FEBRUARY, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.50E+02	(< 9.50E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	1.95 \pm 1.80 E+00	(LESS THAN LLD)
BI-214	LESS THAN LLD	(4.68 \pm 2.95 E+00)
RA-226	7.65 \pm 2.52 E+01	(LESS THAN LLD)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 133

MARCH, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	1.86 \pm 0.61 E+03	(< 9.33E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 134

MARCH, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 9.33E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 135

MARCH, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	$1.25 \pm 0.59 \text{ E}+03$	(< $9.33\text{E}+02$)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
RA-226	$2.05 \pm 1.99 \text{ E}+01$	(LESS THAN LLD)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 136

APRIL, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(< 1.07E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TL-208	LESS THAN LLD	(5.51 \pm 1.25 E+00)
RA-226	3.26 \pm 2.14 E+01	(LESS THAN LLD)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 137

APRIL, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.07E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

TL-208

CONTROL ACTIVITY

(5.51 \pm 1.25 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 138

APRIL, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(< 1.07E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TL-208	LESS THAN LLD	(5.51 \pm 1.25 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 139

MAY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	2.24 \pm 0.65 E+03	(< 9.91E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 140

MAY, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 9.91E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 141

MAY, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 9.91E+02	(< 9.91E+02)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 142

JUNE, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	$3.03 \pm 0.71 \text{ E}+03$	(< $1.07\text{E}+03$)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	$3.12 \pm 2.70 \text{ E}+01$	$(5.89 \pm 3.17 \text{ E}+01)$
BI-214	$6.33 \pm 3.55 \text{ E}+00$	(LESS THAN LLD)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 143

JUNE, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.07E+03)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(5.89 \pm 3.17 E+01)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 144

JUNE, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	1.72 \pm 0.68 E+03	(< 1.07E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	LESS THAN LLD	(5.89 \pm 3.17 E+01)
PB-212	3.70 \pm 2.27 E+00	(LESS THAN LLD)
BI-214	6.93 \pm 4.09 E+00	(LESS THAN LLD)

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 145

FIRST QUARTER, 1993

	<u>STATION</u>	<u>MILLIROENTGEN PER WEEK</u>
	CONTROL	(1.30 \pm 0.30 E+00)
1	26 MI ESE - FLORENCE - CONTROL	1.30 \pm 0.30 E+00
2	0.2 MI S - INFORMATION CENTER	1.10 \pm 0.30 E+00
3	0.7 MI N - MICROWAVE TOWER	1.60 \pm 0.30 E+00
4	0.4 MI ESE - SPILLWAY	1.00 \pm 0.30 E+00
5	0.9 MI ENE - JOHNSON'S LANDING	1.20 \pm 0.30 E+00
6	0.3 MI SW - INFORMATION CENTER	1.20 \pm 0.40 E+00
7	6.3 MI ESE - HARTSVILLE CP&L SUBSTATION	1.20 \pm 0.30 E+00
8	0.8 MI SSE - POWER POLES FROM HBR	9.00 \pm 3.00 E-01
9	1.0 MI S - POWER POLE NEAR HWY 151	1.60 \pm 0.30 E+00
10	1.0 MI WSW - CHURCH OF GOD CEMETERY	1.30 \pm 0.30 E+00
11	1.0 MI SW - POWER POLE AT OLD CAMDEN RD	9.00 \pm 3.00 E-01
13	1.0 MI W-PINE TREE WHERE DIRT RD SPLITS	8.00 \pm 3.00 E-01
14	0.9 MI WNW - HWY 151 AT PINE RIDGE CH	1.00 \pm 0.30 E+00
15	1.0 MI NW -DIRT RD NEAR ASH POND	1.00 \pm 0.30 E+00
16	1.0 MI NNW - DARLINGTON IC TURBINE PLANT	1.00 \pm 0.30 E+00
17	1.1 MI N - DIS CANAL RD AT UNIT 1 WEIR	1.10 \pm 0.30 E+00
18	0.7 MI SE - TRAIN TRESTLE OVER BLACK CR	9.00 \pm 3.00 E-01
19	1.0 MI E - RD S-16-23	1.10 \pm 0.30 E+00
20	1.3 MI ENE - RD S-16-39 NORTH	1.30 \pm 0.30 E+00
21	ATKINSON'S BOAT LANDING	1.20 \pm 0.30 E+00
22	1.9 MI NNE - SHADY REST NEAR DOCK	1.30 \pm 0.30 E+00

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 146

FIRST QUARTER, 1993

<u>STATION</u>		<u>MILLIROENTGEN PER WEEK</u>
CONTROL		(1.30 \pm 0.30 E+00)
23	1.2 MI ESE - INT RD 41E-5 AND S-16-39	1.00 \pm 0.30 E+00
24	5.0 MI NW - S-13-711 PAST PEACH FARM	1.30 \pm 0.30 E+00
25	4.6 MI NNW - RD S-13-346 OFF 151 NORTH	9.00 \pm 3.00 E-01
26	5.0 MI N - RD S-13-346	1.30 \pm 0.30 E+00
27	5.0 MI NNE - RD S-13-763 NEAR INTER	1.50 \pm 0.30 E+00
28	4.8 MI NE - NEAR DUMPSTER RD S-13-39	1.40 \pm 0.30 E+00
29	RD S-16-20 SOUTH OF LOOKOUT TOWER	1.20 \pm 0.30 E+00
30	4.6 MI E - RD S-16-20 JOHNSON FENCE CO	1.20 \pm 0.30 E+00
31	4.6 MI ESE - LAKESHORE DRIVE	1.40 \pm 0.30 E+00
32	4.5 MI SE - END OF KALBER DRIVE	1.00 \pm 0.30 E+00
33	4.6 MI SSE-RD S16-493 NEAR SEGAR'S ENTR	1.30 \pm 0.30 E+00
34	4.6 MI S - RD S-16-772	9.00 \pm 3.00 E-01
35	4.4 MI SSW - INT RD S-31-51 & S-16-12	1.90 \pm 0.30 E+00
36	4.7 MI SW - PAVED RD OFF RD S-16-85	1.50 \pm 0.30 E+00
37	5.0 MI WSW - TRANS TOWER NEAR CLAY RD	1.80 \pm 0.30 E+00
38	4.9 MI W - RD S-16-231 AT UNION CHURCH	1.10 \pm 0.30 E+00
39	5.0 MI WNW - POWER POLE IN FIELD	1.00 \pm 0.30 E+00
55	0.3 MI SSE - SITE BOUNDARY	1.10 \pm 0.30 E+00
56	300 FT N OF ISFSI	1.30 \pm 0.30 E+00

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 147

SECOND QUARTER, 1993

	<u>STATION</u>	<u>MILLIROENTGEN PER WEEK</u>
	CONTROL	(9.00 \pm 1.00 E-01)
1	26 MI ESE - FLORENCE - CONTROL	9.00 \pm 1.00 E-01
2	0.2 MI S - INFORMATION CENTER	1.00 \pm 0.10 E+00
3	0.7 MI N - MICROWAVE TOWER	1.30 \pm 0.10 E+00
4	0.4 MI ESE - SPILLWAY	9.00 \pm 1.00 E-01
5	0.9 MI ENE - JOHNSON'S LANDING	9.00 \pm 1.00 E-01
6	0.3 MI SW - INFORMATION CENTER	9.00 \pm 1.00 E-01
7	6.3 MI ESE - HARTSVILLE CP&L SUBSTATION	9.00 \pm 1.00 E-01
8	0.8 MI SSE - POWER POLES FROM HBR	8.00 \pm 1.00 E-01
9	1.0 MI S - POWER POLE NEAR HWY 151	1.40 \pm 0.10 E+00
10	1.0 MI WSW - CHURCH OF GOD CEMETERY	1.00 \pm 0.10 E+00
11	1.0 MI SW - POWER POLE AT OLD CAMDEN RD	8.00 \pm 1.00 E-01
12	1.2 MI SSW-PINE TREE AT 2ND INT DIRT RD	1.10 \pm 0.10 E+00
13	1.0 MI W-PINE TREE WHERE DIRT RD SPLITS	7.00 \pm 1.00 E-01
14	0.9 MI WNW - HWY 151 AT PINE RIDGE CH	9.00 \pm 1.00 E-01
15	1.0 MI NW -DIRT RD NEAR ASH POND	9.00 \pm 1.00 E-01
16	1.0 MI NNW - DARLINGTON IC TURBINE PLANT	1.00 \pm 0.10 E+00
17	1.1 MI N - DIS CANAL RD AT UNIT 1 WEIR	1.00 \pm 0.10 E+00
18	0.7 MI SE - TRAIN TRESTLE OVER BLACK CR	9.00 \pm 1.00 E-01
19	1.0 MI E - RD S-16-23	1.00 \pm 0.10 E+00
20	1.3 MI ENE - RD S-16-39 NORTH	1.00 \pm 0.10 E+00
21	ATKINSON'S BOAT LANDING	1.10 \pm 0.10 E+00

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 148

SECOND QUARTER, 1993

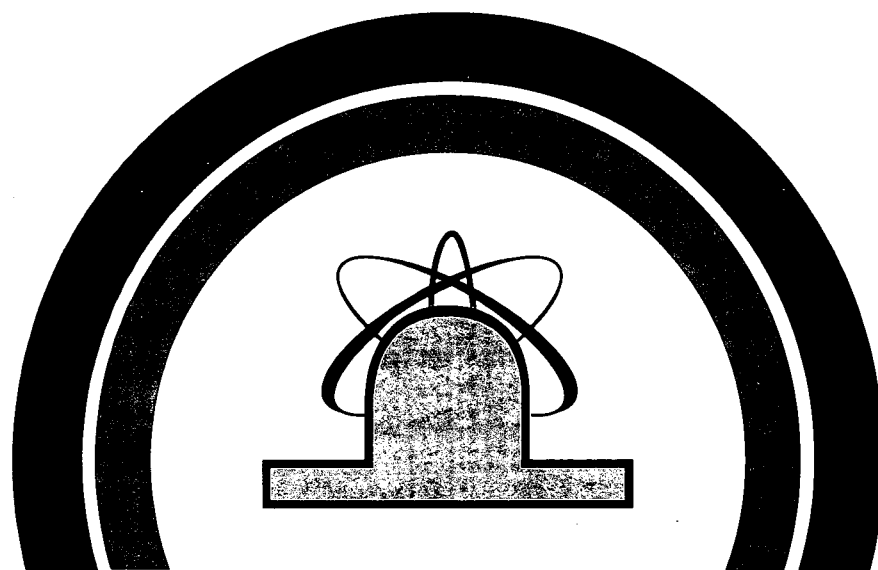
	<u>STATION</u>	<u>MILLIROENTGEN PER WEEK</u>
	CONTROL	(9.00 \pm 1.00 E-01)
22	1.9 MI NNE - SHADY REST NEAR DOCK	9.00 \pm 1.00 E-01
23	1.2 MI ESE - INT RD 41E-5 AND S-16-39	9.00 \pm 1.00 E-01
24	5.0 MI NW - S-13-711 PAST PEACH FARM	1.20 \pm 0.10 E+00
25	4.6 MI NNW - RD S-13-346 OFF 151 NORTH	9.00 \pm 1.00 E-01
26	5.0 MI N - RD S-13-346	1.20 \pm 0.10 E+00
27	5.0 MI NNE - RD S-13-763 NEAR INTER	1.10 \pm 0.10 E+00
28	4.8 MI NE - NEAR DUMPSTER RD S-13-39	1.30 \pm 0.10 E+00
29	RD S-16-20 SOUTH OF LOOKOUT TOWER	1.20 \pm 0.10 E+00
30	4.6 MI E - RD S-16-20 JOHNSON FENCE CO	1.10 \pm 0.10 E+00
31	4.6 MI ESE - LAKESHORE DRIVE	1.00 \pm 0.10 E+00
32	4.5 MI SE - END OF KALBER DRIVE	1.00 \pm 0.10 E+00
33	4.6 MI SSE-RD S16-493 NEAR SEGAR'S ENTR	1.10 \pm 0.10 E+00
34	4.6 MI S - RD S-16-772	8.00 \pm 1.00 E-01
35	4.4 MI SSW - INT RD S-31-51 & S-16-12	1.60 \pm 0.40 E+00
36	4.7 MI SW - PAVED RD OFF RD S-16-85	1.50 \pm 0.10 E+00
37	5.0 MI WSW - TRANS TOWER NEAR CLAY RD	1.40 \pm 0.10 E+00
38	4.9 MI W - RD S-16-231 AT UNION CHURCH	1.10 \pm 0.10 E+00
39	5.0 MI WNW - POWER POLE IN FIELD	1.10 \pm 0.10 E+00
55	0.3 MI SSE - SITE BOUNDARY	1.00 \pm 0.10 E+00
56	300 FT N OF ISFSI	9.00 \pm 1.00 E-01

Radiological Environmental Operating Report

VOLUME III

JULY 1, 1993 - DECEMBER 31, 1993

SAMPLE ANALYSIS DATA



ROBINSON NUCLEAR PROJECT
CAROLINA POWER & LIGHT

50-261

letter dated 4/26/94

9405050104

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 1

THIRD QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AC-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
07/04/93	876.0	(< 1.14E-02)
07/11/93	797.3	(< 1.04E-02)
07/18/93	899.1	(< 8.83E-03)
07/25/93	904.5	(< 8.60E-03)
08/01/93	881.8	(< 1.10E-02)
08/09/93	1039.7	(< 8.15E-03)
08/15/93	775.4	(< 1.81E-02)
08/22/93	894.0	(< 1.42E-02)
08/29/93	903.1	(< 9.58E-03)
09/05/93	888.6	(< 3.97E-03)
09/12/93	891.2	(< 9.75E-03)
09/19/93	905.4	(< 1.02E-02)
09/26/93	886.7	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 2

THIRD QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AC-2)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	915.5	< 1.13E-02	(< 1.14E-02)
07/11/93	908.3	< 1.64E-02	(< 1.04E-02)
07/18/93	929.9	< 1.58E-02	(< 8.83E-03)
08/01/93	256.5	< 2.80E-02	(< 1.10E-02)
08/09/93	1251.3	< 7.94E-03	(< 8.15E-03)
08/15/93	936.1	< 1.43E-02	(< 1.81E-02)
08/22/93	1091.5	< 9.44E-03	(< 1.42E-02)
08/29/93	1046.3	< 6.91E-03	(< 9.58E-03)
09/05/93	1071.4	< 1.15E-02	(< 3.97E-03)
09/12/93	1085.7	< 9.45E-03	(< 9.75E-03)
09/19/93	1103.4	< 9.82E-03	(< 1.02E-02)
09/26/93	1103.6	< 7.94E-03	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 3

THIRD QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AC-3)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	833.2	< 1.03E-02	(< 1.14E-02)
07/11/93	818.0	< 1.16E-02	(< 1.04E-02)
07/18/93	850.3	< 1.29E-02	(< 8.83E-03)
07/25/93	848.4	< 1.11E-02	(< 8.60E-03)
08/01/93	849.9	< 9.28E-02	(< 1.10E-02)
08/09/93	963.9	< 6.75E-03	(< 8.15E-03)
08/15/93	729.9	< 1.17E-02	(< 1.81E-02)
08/22/93	842.8	< 1.20E-02	(< 1.42E-02)
08/29/93	863.3	< 1.16E-02	(< 9.58E-03)
09/05/93	874.5	< 8.77E-03	(< 3.97E-03)
09/12/93	841.1	< 9.49E-03	(< 9.75E-03)
09/19/93	863.8	< 1.30E-02	(< 1.02E-02)
09/26/93	860.1	< 1.00E-02	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 4

THIRD QUARTER, 1993

0.4 MI ESE - SPILLWAY (AC-4)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	889.0	< 9.42E-03	(< 1.14E-02)
07/11/93	883.6	< 1.61E-02	(< 1.04E-02)
07/18/93	905.4	< 9.29E-03	(< 8.83E-03)
07/25/93	890.4	< 8.74E-03	(< 8.60E-03)
08/01/93	898.0	< 6.48E-03	(< 1.10E-02)
08/09/93	1019.0	< 6.98E-03	(< 8.15E-03)
08/15/93	772.7	< 1.22E-02	(< 1.81E-02)
08/22/93	879.6	< 8.80E-03	(< 1.42E-02)
08/29/93	901.1	< 7.28E-03	(< 9.58E-03)
09/05/93	883.6	< 1.50E-02	(< 3.97E-03)
09/12/93	885.1	< 8.81E-03	(< 9.75E-03)
09/19/93	902.0	< 8.61E-03	(< 1.02E-02)
09/26/93	889.3	< 1.12E-02	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 5

THIRD QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AC-5)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	807.4	< 1.52E-02	(< 1.14E-02)
07/11/93	799.1	< 1.11E-02	(< 1.04E-02)
07/18/93	829.0	< 1.29E-02	(< 8.83E-03)
07/25/93	818.6	< 1.08E-02	(< 8.60E-03)
08/01/93	835.0	< 1.03E-02	(< 1.10E-02)
08/09/93	975.7	< 8.72E-03	(< 8.15E-03)
08/15/93	732.4	< 2.03E-02	(< 1.81E-02)
08/22/93	853.4	< 1.09E-02	(< 1.42E-02)
08/29/93	867.2	< 1.25E-02	(< 9.58E-03)
09/05/93	847.4	< 1.13E-02	(< 3.97E-03)
09/12/93	838.3	< 1.13E-02	(< 9.75E-03)
09/19/93	853.9	< 1.39E-02	(< 1.02E-02)
09/26/93	851.2	< 1.10E-02	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 6

THIRD QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AC-6)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	884.2	< 1.32E-02	(< 1.14E-02)
07/11/93	877.6	< 1.08E-02	(< 1.04E-02)
07/18/93	901.3	< 1.80E-02	(< 8.83E-03)
07/25/93	900.5	< 1.25E-02	(< 8.60E-03)
08/01/93	896.2	< 1.06E-02	(< 1.10E-02)
08/09/93	1019.9	< 1.20E-02	(< 8.15E-03)
08/15/93	777.0	< 9.99E-03	(< 1.81E-02)
08/22/93	878.2	< 1.26E-02	(< 1.42E-02)
08/29/93	859.8	< 1.11E-02	(< 9.58E-03)
09/05/93	860.4	< 1.41E-02	(< 3.97E-03)
09/12/93	891.8	< 1.22E-02	(< 9.75E-03)
09/19/93	904.2	< 1.60E-02	(< 1.02E-02)
09/26/93	884.1	< 1.05E-02	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 7

THIRD QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AC-7)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	717.2	< 1.31E-02	(< 1.14E-02)
07/11/93	710.3	< 7.59E-03	(< 1.04E-02)
07/18/93	736.7	< 1.57E-02	(< 8.83E-03)
07/25/93	739.0	< 7.97E-03	(< 8.60E-03)
08/01/93	733.6	< 1.80E-02	(< 1.10E-02)
08/09/93	849.5	< 8.66E-03	(< 8.15E-03)
08/15/93	627.0	< 1.61E-02	(< 1.81E-02)
08/22/93	727.0	< 1.18E-02	(< 1.42E-02)
08/29/93	737.2	< 1.67E-02	(< 9.58E-03)
09/05/93	728.4	< 1.11E-02	(< 3.97E-03)
09/12/93	726.7	< 1.66E-02	(< 9.75E-03)
09/19/93	736.2	< 1.19E-02	(< 1.02E-02)
09/26/93	734.5	< 1.36E-02	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 8

THIRD QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AC-55)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	649.1	< 1.20E-02	(< 1.14E-02)
07/11/93	647.1	< 1.63E-02	(< 1.04E-02)
07/18/93	659.5	< 1.53E-02	(< 8.83E-03)
07/25/93	651.0	< 1.28E-02	(< 8.60E-03)
08/01/93	653.7	< 1.41E-02	(< 1.10E-02)
08/09/93	739.1	< 1.19E-02	(< 8.15E-03)
08/15/93	558.1	< 1.96E-02	(< 1.81E-02)
08/22/93	650.9	< 1.19E-02	(< 1.42E-02)
08/29/93	658.2	< 1.41E-02	(< 9.58E-03)
09/05/93	645.9	< 1.64E-02	(< 3.97E-03)
09/12/93	645.3	< 1.12E-02	(< 9.75E-03)
09/19/93	651.4	< 7.82E-03	(< 1.02E-02)
09/26/93	653.6	< 1.69E-02	(< 1.01E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 9

FOURTH QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AC-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
10/03/93	884.7	(< 1.11E-02)
10/10/93	867.8	(< 6.50E-03)
10/17/93	892.9	(< 1.51E-02)
10/24/93	892.4	(< 1.10E-02)
11/01/93	885.2	(< 1.02E-02)
11/07/93	858.5	(< 1.19E-02)
11/14/93	808.8	(< 1.37E-02)
11/21/93	878.0	(< 9.07E-03)
11/28/93	855.4	(< 1.10E-02)
12/05/93	835.3	(< 1.04E-02)
12/12/93	786.4	(< 1.53E-02)
12/19/93	414.5	(< 1.92E-02)
12/26/93	515.2	(< 2.39E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 10

FOURTH QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AC-2)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	1030.2	< 1.16E-02	(< 1.11E-02)
10/10/93	1016.3	< 1.19E-02	(< 6.50E-03)
10/17/93	1106.4	< 5.97E-03	(< 1.51E-02)
10/24/93	1112.9	< 9.73E-03	(< 1.10E-02)
11/01/93	1117.4	< 5.96E-03	(< 1.02E-02)
11/07/93	1103.9	< 9.69E-03	(< 1.19E-02)
11/14/93	1081.3	< 8.78E-03	(< 1.37E-02)
11/21/93	934.7	< 1.33E-02	(< 9.07E-03)
11/28/93	930.9	< 1.18E-02	(< 1.10E-02)
12/05/93	979.5	< 1.34E-02	(< 1.04E-02)
12/12/93	965.6	< 9.07E-03	(< 1.53E-02)
12/19/93	984.0	< 1.35E-02	(< 1.92E-02)
12/26/93	985.4	< 9.53E-03	(< 2.39E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 11

FOURTH QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AC-3)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	846.2	< 9.39E-03	(< 1.11E-02)
10/10/93	849.6	< 1.11E-02	(< 6.50E-03)
10/17/93	851.5	< 9.79E-03	(< 1.51E-02)
10/24/93	847.7	< 1.39E-02	(< 1.10E-02)
11/01/93	861.2	< 9.31E-03	(< 1.02E-02)
11/07/93	835.6	< 8.39E-03	(< 1.19E-02)
11/14/93	843.1	< 1.28E-02	(< 1.37E-02)
11/21/93	865.1	< 1.16E-02	(< 9.07E-03)
11/28/93	841.5	< 1.43E-02	(< 1.10E-02)
12/05/93	858.7	< 1.25E-02	(< 1.04E-02)
12/12/93	841.7	< 1.13E-02	(< 1.53E-02)
12/19/93	846.6	< 1.11E-02	(< 1.92E-02)
12/26/93	845.1	< 1.22E-02	(< 2.39E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 12

FOURTH QUARTER, 1993

0.4 MI ESE - SPILLWAY (AC-4)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	880.4	< 9.43E-03	(< 1.11E-02)
10/10/93	886.3	< 6.67E-03	(< 6.50E-03)
10/17/93	889.2	< 1.16E-02	(< 1.51E-02)
10/24/93	885.6	< 6.62E-03	(< 1.10E-02)
11/01/93	896.3	< 6.74E-03	(< 1.02E-02)
11/07/93	890.7	< 7.96E-03	(< 1.19E-02)
11/14/93	883.9	< 8.72E-03	(< 1.37E-02)
11/21/93	903.5	< 9.69E-03	(< 9.07E-03)
11/28/93	885.4	< 1.13E-02	(< 1.10E-02)
12/05/93	856.1	< 7.71E-03	(< 1.04E-02)
12/12/93	860.6	< 1.08E-02	(< 1.53E-02)
12/19/93	857.8	< 1.25E-02	(< 1.92E-02)
12/26/93	863.3	< 9.95E-03	(< 2.39E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 13

FOURTH QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AC-5)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	832.6	< 8.81E-03	(< 1.11E-02)
10/10/93	830.6	< 7.96E-03	(< 6.50E-03)
10/17/93	841.5	< 1.20E-02	(< 1.51E-02)
10/24/93	837.1	< 1.30E-02	(< 1.10E-02)
11/01/93	842.8	< 8.77E-03	(< 1.02E-02)
11/07/93	846.9	< 8.39E-03	(< 1.19E-02)
11/14/93	847.0	< 1.10E-02	(< 1.37E-02)
11/21/93	860.8	< 1.00E-02	(< 9.07E-03)
11/28/93	836.6	< 8.44E-03	(< 1.10E-02)
12/05/93	741.0	< 1.66E-02	(< 1.04E-02)
12/12/93	744.9	< 1.65E-02	(< 1.53E-02)
12/19/93	737.8	< 1.08E-02	(< 1.92E-02)
12/26/93	241.1	< 4.58E-02	(< 2.39E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 14

FOURTH QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AC-6)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	857.4	< 1.34E-02	(< 1.11E-02)
10/10/93	797.0	< 1.01E-02	(< 6.50E-03)
10/17/93	879.7	< 1.19E-02	(< 1.51E-02)
10/24/93	887.3	< 1.22E-02	(< 1.10E-02)
11/01/93	894.2	< 1.29E-02	(< 1.02E-02)
11/07/93	891.6	< 1.25E-02	(< 1.19E-02)
11/14/93	865.3	< 1.27E-02	(< 1.37E-02)
11/21/93	887.7	< 1.22E-02	(< 9.07E-03)
11/28/93	838.1	< 9.98E-03	(< 1.10E-02)
12/05/93	962.3	< 1.07E-02	(< 1.04E-02)
12/12/93	899.4	< 1.20E-02	(< 1.53E-02)
12/19/93	995.2	< 9.49E-03	(< 1.92E-02)
12/26/93	1001.7	< 1.27E-02	(< 2.39E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 15

FOURTH QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AC-7)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	734.5	< 1.37E-02	(< 1.11E-02)
10/10/93	692.9	< 9.55E-03	(< 6.50E-03)
10/17/93	722.7	< 1.43E-02	(< 1.51E-02)
10/24/93	727.5	< 1.38E-02	(< 1.10E-02)
11/01/93	732.4	< 1.10E-02	(< 1.02E-02)
11/07/93	725.3	< 7.73E-03	(< 1.19E-02)
11/14/93	686.1	< 1.57E-02	(< 1.37E-02)
11/21/93	733.6	< 1.08E-02	(< 9.07E-03)
11/28/93	660.4	< 1.56E-02	(< 1.10E-02)
12/05/93	959.5	< 8.34E-03	(< 1.04E-02)
12/12/93	935.5	< 1.24E-02	(< 1.53E-02)
12/19/93	929.0	< 7.82E-03	(< 1.92E-02)
12/26/93	947.6	< 1.17E-02	(< 2.39E-02)

AIR CARTRIDGE SAMPLES - IODINE
(PICOCURIES PER CUBIC METER)

HBR - 16

FOURTH QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AC-55)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	630.3	< 8.09E-03	(< 1.11E-02)
10/10/93	605.1	< 1.45E-02	(< 6.50E-03)
10/17/93	636.7	< 1.59E-02	(< 1.51E-02)
10/24/93	639.6	< 1.03E-02	(< 1.10E-02)
11/01/93	640.6	< 1.04E-02	(< 1.02E-02)
11/07/93	637.2	< 1.29E-02	(< 1.19E-02)
11/14/93	627.7	< 1.01E-02	(< 1.37E-02)
11/21/93	643.5	< 1.12E-02	(< 9.07E-03)
11/28/93	627.5	< 1.93E-02	(< 1.10E-02)
12/05/93	633.0	< 1.17E-02	(< 1.04E-02)
12/12/93	632.5	< 2.18E-02	(< 1.53E-02)
12/19/93	635.6	< 1.95E-02	(< 1.92E-02)
12/26/93	631.1	< 1.36E-02	(< 2.39E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 17

THIRD QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
07/04/93	876.0	(1.50 \pm 0.14 E-02)
07/11/93	797.3	(2.89 \pm 0.20 E-02)
07/18/93	899.1	(1.75 \pm 0.15 E-02)
07/25/93	904.5	(1.95 \pm 0.16 E-02)
08/01/93	881.8	(1.75 \pm 0.15 E-02)
08/09/93	1039.7	(1.57 \pm 0.13 E-02)
08/15/93	775.4	(1.60 \pm 0.15 E-02)
08/22/93	894.0	(2.45 \pm 0.17 E-02)
08/29/93	903.1	(2.03 \pm 0.16 E-02)
09/05/93	888.6	(1.85 \pm 0.16 E-02)
09/12/93	891.2	(1.78 \pm 0.15 E-02)
09/19/93	905.4	(1.35 \pm 0.14 E-02)
09/26/93	886.7	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 18

THIRD QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	915.5	1.92 \pm 0.15 E-02	(1.50 \pm 0.14 E-02)
07/11/93	908.3	2.24 \pm 0.17 E-02	(2.89 \pm 0.20 E-02)
07/18/93	929.9	1.69 \pm 0.14 E-02	(1.75 \pm 0.15 E-02)
08/01/93	256.5	2.31 \pm 0.37 E-02	(1.75 \pm 0.15 E-02)
08/09/93	1251.3	1.32 \pm 0.11 E-02	(1.57 \pm 0.13 E-02)
08/15/93	936.1	1.63 \pm 0.14 E-02	(1.60 \pm 0.15 E-02)
08/22/93	1091.5	1.83 \pm 0.14 E-02	(2.45 \pm 0.17 E-02)
08/29/93	1046.3	1.87 \pm 0.14 E-02	(2.03 \pm 0.16 E-02)
09/05/93	1071.4	1.39 \pm 0.12 E-02	(1.85 \pm 0.16 E-02)
09/12/93	1085.7	1.47 \pm 0.12 E-02	(1.78 \pm 0.15 E-02)
09/19/93	1103.4	1.02 \pm 0.11 E-02	(1.35 \pm 0.14 E-02)
09/26/93	1103.6	2.00 \pm 0.14 E-02	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 19

THIRD QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	833.2	1.92 \pm 0.16 E-02	(1.50 \pm 0.14 E-02)
07/11/93	818.0	2.05 \pm 0.17 E-02	(2.89 \pm 0.20 E-02)
07/18/93	850.3	1.55 \pm 0.15 E-02	(1.75 \pm 0.15 E-02)
07/25/93	848.4	1.81 \pm 0.16 E-02	(1.95 \pm 0.16 E-02)
08/01/93	849.9	1.87 \pm 0.16 E-02	(1.75 \pm 0.15 E-02)
08/09/93	963.9	1.61 \pm 0.14 E-02	(1.57 \pm 0.13 E-02)
08/15/93	729.9	1.64 \pm 0.16 E-02	(1.60 \pm 0.15 E-02)
08/22/93	842.8	2.47 \pm 0.19 E-02	(2.45 \pm 0.17 E-02)
08/29/93	863.3	1.90 \pm 0.16 E-02	(2.03 \pm 0.16 E-02)
09/05/93	874.5	1.65 \pm 0.15 E-02	(1.85 \pm 0.16 E-02)
09/12/93	841.1	1.52 \pm 0.15 E-02	(1.78 \pm 0.15 E-02)
09/19/93	863.8	1.16 \pm 0.13 E-02	(1.35 \pm 0.14 E-02)
09/26/93	860.1	2.19 \pm 0.17 E-02	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 20

THIRD QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	889.0	1.88 \pm 0.16 E-02	(1.50 \pm 0.14 E-02)
07/11/93	883.6	2.16 \pm 0.17 E-02	(2.89 \pm 0.20 E-02)
07/18/93	905.4	1.79 \pm 0.15 E-02	(1.75 \pm 0.15 E-02)
07/25/93	890.4	1.95 \pm 0.16 E-02	(1.95 \pm 0.16 E-02)
08/01/93	898.0	1.94 \pm 0.16 E-02	(1.75 \pm 0.15 E-02)
08/09/93	1019.0	1.49 \pm 0.13 E-02	(1.57 \pm 0.13 E-02)
08/15/93	772.7	2.02 \pm 0.17 E-02	(1.60 \pm 0.15 E-02)
08/22/93	879.6	2.24 \pm 0.17 E-02	(2.45 \pm 0.17 E-02)
08/29/93	901.1	2.10 \pm 0.16 E-02	(2.03 \pm 0.16 E-02)
09/05/93	883.6	1.84 \pm 0.16 E-02	(1.85 \pm 0.16 E-02)
09/12/93	885.1	1.78 \pm 0.15 E-02	(1.78 \pm 0.15 E-02)
09/19/93	902.0	1.19 \pm 0.13 E-02	(1.35 \pm 0.14 E-02)
09/26/93	889.3	2.77 \pm 0.18 E-02	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 21

THIRD QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	807.4	2.18 \pm 0.17 E-02	(1.50 \pm 0.14 E-02)
07/11/93	799.1	2.57 \pm 0.19 E-02	(2.89 \pm 0.20 E-02)
07/18/93	829.0	1.79 \pm 0.16 E-02	(1.75 \pm 0.15 E-02)
07/25/93	818.6	2.02 \pm 0.17 E-02	(1.95 \pm 0.16 E-02)
08/01/93	835.0	2.12 \pm 0.17 E-02	(1.75 \pm 0.15 E-02)
08/09/93	975.7	1.68 \pm 0.14 E-02	(1.57 \pm 0.13 E-02)
08/15/93	732.4	1.98 \pm 0.17 E-02	(1.60 \pm 0.15 E-02)
08/22/93	853.4	1.97 \pm 0.16 E-02	(2.45 \pm 0.17 E-02)
08/29/93	867.2	2.25 \pm 0.17 E-02	(2.03 \pm 0.16 E-02)
09/05/93	847.4	1.85 \pm 0.16 E-02	(1.85 \pm 0.16 E-02)
09/12/93	838.3	1.78 \pm 0.16 E-02	(1.78 \pm 0.15 E-02)
09/19/93	853.9	1.27 \pm 0.14 E-02	(1.35 \pm 0.14 E-02)
09/26/93	851.2	2.65 \pm 0.18 E-02	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 22

THIRD QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	884.2	2.03 \pm 0.16 E-02	(1.50 \pm 0.14 E-02)
07/11/93	877.6	2.37 \pm 0.17 E-02	(2.89 \pm 0.20 E-02)
07/18/93	901.3	1.80 \pm 0.15 E-02	(1.75 \pm 0.15 E-02)
07/25/93	900.5	1.83 \pm 0.15 E-02	(1.95 \pm 0.16 E-02)
08/01/93	896.2	2.17 \pm 0.16 E-02	(1.75 \pm 0.15 E-02)
08/09/93	1019.7	1.70 \pm 0.14 E-02	(1.57 \pm 0.13 E-02)
08/15/93	777.0	1.97 \pm 0.17 E-02	(1.60 \pm 0.15 E-02)
08/22/93	878.2	2.45 \pm 0.18 E-02	(2.45 \pm 0.17 E-02)
08/29/93	859.8	2.43 \pm 0.18 E-02	(2.03 \pm 0.16 E-02)
09/05/93	860.4	1.92 \pm 0.16 E-02	(1.85 \pm 0.16 E-02)
09/12/93	891.8	1.86 \pm 0.15 E-02	(1.78 \pm 0.15 E-02)
09/19/93	904.2	1.38 \pm 0.14 E-02	(1.35 \pm 0.14 E-02)
09/26/93	884.1	2.66 \pm 0.18 E-02	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 23

THIRD QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	717.2	2.35 \pm 0.19 E-02	(1.50 \pm 0.14 E-02)
07/11/93	710.3	2.66 \pm 0.21 E-02	(2.89 \pm 0.20 E-02)
07/18/93	736.7	2.16 \pm 0.18 E-02	(1.75 \pm 0.15 E-02)
07/25/93	739.0	2.32 \pm 0.19 E-02	(1.95 \pm 0.16 E-02)
08/01/93	733.6	2.58 \pm 0.20 E-02	(1.75 \pm 0.15 E-02)
08/09/93	849.5	2.22 \pm 0.17 E-02	(1.57 \pm 0.13 E-02)
08/15/93	627.0	2.29 \pm 0.20 E-02	(1.60 \pm 0.15 E-02)
08/22/93	727.0	3.09 \pm 0.22 E-02	(2.45 \pm 0.17 E-02)
08/29/93	737.2	2.60 \pm 0.20 E-02	(2.03 \pm 0.16 E-02)
09/05/93	728.4	2.25 \pm 0.19 E-02	(1.85 \pm 0.16 E-02)
09/12/93	726.7	2.25 \pm 0.19 E-02	(1.78 \pm 0.15 E-02)
09/19/93	736.2	1.73 \pm 0.17 E-02	(1.35 \pm 0.14 E-02)
09/26/93	734.5	3.06 \pm 0.21 E-02	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 24

THIRD QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
07/04/93	649.1	1.99 \pm 0.19 E-02	(1.50 \pm 0.14 E-02)
07/11/93	647.1	1.94 \pm 0.19 E-02	(2.89 \pm 0.20 E-02)
07/18/93	659.5	1.65 \pm 0.18 E-02	(1.75 \pm 0.15 E-02)
07/25/93	651.0	1.85 \pm 0.19 E-02	(1.95 \pm 0.16 E-02)
08/01/93	653.7	2.20 \pm 0.20 E-02	(1.75 \pm 0.15 E-02)
08/09/93	739.1	1.65 \pm 0.17 E-02	(1.57 \pm 0.13 E-02)
08/15/93	558.1	2.06 \pm 0.21 E-02	(1.60 \pm 0.15 E-02)
08/22/93	650.9	2.35 \pm 0.21 E-02	(2.45 \pm 0.17 E-02)
08/29/93	658.2	2.42 \pm 0.20 E-02	(2.03 \pm 0.16 E-02)
09/05/93	645.9	1.90 \pm 0.19 E-02	(1.85 \pm 0.16 E-02)
09/12/93	645.3	1.92 \pm 0.19 E-02	(1.78 \pm 0.15 E-02)
09/19/93	651.4	1.31 \pm 0.17 E-02	(1.35 \pm 0.14 E-02)
09/26/93	653.6	2.67 \pm 0.22 E-02	(2.38 \pm 0.17 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 25

FOURTH QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>CONTROL ACTIVITY</u>
10/03/93	884.7	(2.03 \pm 0.16 E-02)
10/10/93	867.8	(1.94 \pm 0.16 E-02)
10/17/93	892.9	(1.82 \pm 0.15 E-02)
10/24/93	892.4	(1.97 \pm 0.15 E-02)
11/01/93	885.2	(1.92 \pm 0.16 E-02)
11/07/93	858.5	(1.61 \pm 0.15 E-02)
11/14/93	808.8	(2.25 \pm 0.18 E-02)
11/21/93	878.0	(1.83 \pm 0.15 E-02)
11/28/93	855.4	(2.23 \pm 0.17 E-02)
12/05/93	835.3	(1.68 \pm 0.16 E-02)
12/12/93	786.4	(2.08 \pm 0.17 E-02)
12/19/93	414.5	(2.21 \pm 0.26 E-02)
12/26/93	515.2	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 26

FOURTH QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	1030.2	1.80 \pm 0.14 E-02	(2.03 \pm 0.16 E-02)
10/10/93	1016.3	1.59 \pm 0.13 E-02	(1.94 \pm 0.16 E-02)
10/17/93	1106.4	1.70 \pm 0.13 E-02	(1.82 \pm 0.15 E-02)
10/24/93	1112.9	1.69 \pm 0.13 E-02	(1.97 \pm 0.15 E-02)
11/01/93	1117.4	1.12 \pm 0.11 E-02	(1.92 \pm 0.16 E-02)
11/07/93	1103.9	1.24 \pm 0.11 E-02	(1.61 \pm 0.15 E-02)
11/14/93	1081.3	1.86 \pm 0.14 E-02	(2.25 \pm 0.18 E-02)
11/21/93	934.7	1.36 \pm 0.13 E-02	(1.83 \pm 0.15 E-02)
11/28/93	930.9	1.91 \pm 0.15 E-02	(2.23 \pm 0.17 E-02)
12/05/93	979.5	1.95 \pm 0.15 E-02	(1.68 \pm 0.16 E-02)
12/12/93	965.6	1.93 \pm 0.15 E-02	(2.08 \pm 0.17 E-02)
12/19/93	984.0	1.39 \pm 0.13 E-02	(2.21 \pm 0.26 E-02)
12/26/93	985.4	1.86 \pm 0.15 E-02	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 27

FOURTH QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	846.2	1.97 \pm 0.16 E-02	(2.03 \pm 0.16 E-02)
10/10/93	849.6	1.75 \pm 0.15 E-02	(1.94 \pm 0.16 E-02)
10/17/93	851.5	2.10 \pm 0.17 E-02	(1.82 \pm 0.15 E-02)
10/24/93	847.7	1.98 \pm 0.16 E-02	(1.97 \pm 0.15 E-02)
11/01/93	861.2	1.56 \pm 0.15 E-02	(1.92 \pm 0.16 E-02)
11/07/93	835.6	1.64 \pm 0.15 E-02	(1.61 \pm 0.15 E-02)
11/14/93	843.1	2.35 \pm 0.18 E-02	(2.25 \pm 0.18 E-02)
11/21/93	865.1	1.29 \pm 0.13 E-02	(1.83 \pm 0.15 E-02)
11/28/93	841.5	2.08 \pm 0.17 E-02	(2.23 \pm 0.17 E-02)
12/05/93	858.7	2.12 \pm 0.17 E-02	(1.68 \pm 0.16 E-02)
12/12/93	841.7	1.87 \pm 0.16 E-02	(2.08 \pm 0.17 E-02)
12/19/93	846.6	1.41 \pm 0.14 E-02	(2.21 \pm 0.26 E-02)
12/26/93	845.1	2.16 \pm 0.17 E-02	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 28

FOURTH QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	880.4	2.12 \pm 0.16 E-02	(2.03 \pm 0.16 E-02)
10/10/93	886.3	2.01 \pm 0.16 E-02	(1.94 \pm 0.16 E-02)
10/17/93	889.2	1.89 \pm 0.16 E-02	(1.82 \pm 0.15 E-02)
10/24/93	885.6	2.23 \pm 0.16 E-02	(1.97 \pm 0.15 E-02)
11/01/93	896.3	1.34 \pm 0.14 E-02	(1.92 \pm 0.16 E-02)
11/07/93	890.7	1.61 \pm 0.15 E-02	(1.61 \pm 0.15 E-02)
11/14/93	883.9	2.48 \pm 0.18 E-02	(2.25 \pm 0.18 E-02)
11/21/93	903.5	1.47 \pm 0.14 E-02	(1.83 \pm 0.15 E-02)
11/28/93	885.4	1.68 \pm 0.15 E-02	(2.23 \pm 0.17 E-02)
12/05/93	856.1	2.19 \pm 0.17 E-02	(1.68 \pm 0.16 E-02)
12/12/93	860.6	2.38 \pm 0.18 E-02	(2.08 \pm 0.17 E-02)
12/19/93	857.8	1.66 \pm 0.15 E-02	(2.21 \pm 0.26 E-02)
12/26/93	863.3	2.26 \pm 0.17 E-02	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 29

FOURTH QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	832.6	2.14 \pm 0.17 E-02	(2.03 \pm 0.16 E-02)
10/10/93	830.6	2.02 \pm 0.17 E-02	(1.94 \pm 0.16 E-02)
10/17/93	841.5	2.20 \pm 0.17 E-02	(1.82 \pm 0.15 E-02)
10/24/93	837.1	1.87 \pm 0.16 E-02	(1.97 \pm 0.15 E-02)
11/01/93	842.8	1.71 \pm 0.16 E-02	(1.92 \pm 0.16 E-02)
11/07/93	846.9	1.35 \pm 0.14 E-02	(1.61 \pm 0.15 E-02)
11/14/93	847.0	1.82 \pm 0.16 E-02	(2.25 \pm 0.18 E-02)
11/21/93	860.8	1.29 \pm 0.13 E-02	(1.83 \pm 0.15 E-02)
11/28/93	836.6	1.74 \pm 0.16 E-02	(2.23 \pm 0.17 E-02)
12/05/93	741.0	2.35 \pm 0.19 E-02	(1.68 \pm 0.16 E-02)
12/12/93	744.9	2.16 \pm 0.18 E-02	(2.08 \pm 0.17 E-02)
12/19/93	737.8	1.75 \pm 0.17 E-02	(2.21 \pm 0.26 E-02)
12/26/93	241.1	3.00 \pm 0.42 E-02	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 30

FOURTH QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	857.4	2.37 \pm 0.17 E-02	(2.03 \pm 0.16 E-02)
10/10/93	797.0	2.40 \pm 0.18 E-02	(1.94 \pm 0.16 E-02)
10/17/93	879.7	2.55 \pm 0.18 E-02	(1.82 \pm 0.15 E-02)
10/24/93	887.3	2.10 \pm 0.16 E-02	(1.97 \pm 0.15 E-02)
11/01/93	894.2	1.82 \pm 0.15 E-02	(1.92 \pm 0.16 E-02)
11/07/93	891.6	1.61 \pm 0.14 E-02	(1.61 \pm 0.15 E-02)
11/14/93	865.3	2.46 \pm 0.18 E-02	(2.25 \pm 0.18 E-02)
11/21/93	887.7	1.66 \pm 0.15 E-02	(1.83 \pm 0.15 E-02)
11/28/93	838.1	2.42 \pm 0.18 E-02	(2.23 \pm 0.17 E-02)
12/05/93	962.3	2.31 \pm 0.16 E-02	(1.68 \pm 0.16 E-02)
12/12/93	899.4	1.94 \pm 0.16 E-02	(2.08 \pm 0.17 E-02)
12/19/93	995.2	1.52 \pm 0.13 E-02	(2.21 \pm 0.26 E-02)
12/26/93	1001.7	1.90 \pm 0.15 E-02	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 31

FOURTH QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)

<u>DATE</u> <u>COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	734.5	2.47 \pm 0.19 E-02	(2.03 \pm 0.16 E-02)
10/10/93	692.9	2.51 \pm 0.20 E-02	(1.94 \pm 0.16 E-02)
10/17/93	722.7	2.68 \pm 0.20 E-02	(1.82 \pm 0.15 E-02)
10/24/93	727.5	2.26 \pm 0.18 E-02	(1.97 \pm 0.15 E-02)
11/01/93	732.4	2.43 \pm 0.19 E-02	(1.92 \pm 0.16 E-02)
11/07/93	725.3	1.91 \pm 0.18 E-02	(1.61 \pm 0.15 E-02)
11/14/93	686.1	2.84 \pm 0.22 E-02	(2.25 \pm 0.18 E-02)
11/21/93	733.6	2.07 \pm 0.18 E-02	(1.83 \pm 0.15 E-02)
11/28/93	660.4	2.97 \pm 0.22 E-02	(2.23 \pm 0.17 E-02)
12/05/93	959.5	2.28 \pm 0.16 E-02	(1.68 \pm 0.16 E-02)
12/12/93	935.5	2.11 \pm 0.16 E-02	(2.08 \pm 0.17 E-02)
12/19/93	929.0	1.55 \pm 0.14 E-02	(2.21 \pm 0.26 E-02)
12/26/93	947.6	2.10 \pm 0.16 E-02	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES - BETA
(PICOCURIES PER CUBIC METER)

HBR - 32

FOURTH QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)

<u>DATE COLLECTED</u>	<u>CUBIC METERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
10/03/93	630.3	2.51 \pm 0.21 E-02	(2.03 \pm 0.16 E-02)
10/10/93	605.1	2.07 \pm 0.20 E-02	(1.94 \pm 0.16 E-02)
10/17/93	636.7	1.94 \pm 0.19 E-02	(1.82 \pm 0.15 E-02)
10/24/93	639.6	2.06 \pm 0.19 E-02	(1.97 \pm 0.15 E-02)
11/01/93	640.6	1.53 \pm 0.18 E-02	(1.92 \pm 0.16 E-02)
11/07/93	637.2	1.70 \pm 0.18 E-02	(1.61 \pm 0.15 E-02)
11/14/93	627.7	2.31 \pm 0.21 E-02	(2.25 \pm 0.18 E-02)
11/21/93	643.5	1.86 \pm 0.18 E-02	(1.83 \pm 0.15 E-02)
11/28/93	627.5	1.86 \pm 0.19 E-02	(2.23 \pm 0.17 E-02)
12/05/93	633.0	2.10 \pm 0.20 E-02	(1.68 \pm 0.16 E-02)
12/12/93	632.5	2.32 \pm 0.21 E-02	(2.08 \pm 0.17 E-02)
12/19/93	635.6	1.67 \pm 0.18 E-02	(2.21 \pm 0.26 E-02)
12/26/93	631.1	2.40 \pm 0.21 E-02	(2.19 \pm 0.23 E-02)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 33

THIRD QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11542.8 CUBIC METERS

ISOTOPE

CONTROL ACTIVITY

BE-7

(1.01 \pm 0.06 E-01)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 34

THIRD QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11868.6 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.10 \pm 0.07 E-01	(1.01 \pm 0.06 E-01)
RA-226	4.57 \pm 3.58 E-03	(LESS THAN LLD)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 35

THIRD QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11039.2 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

8.66 \pm 0.77 E-02

(1.01 \pm 0.06 E-01)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 36

THIRD QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11598.8 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

9.06 \pm 0.61 E-02

(1.01 \pm 0.06 E-01)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 37

THIRD QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10908.6 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

1.12 \pm 0.06 E-01

(1.01 \pm 0.06 E-01)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 38

THIRD QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11535.2 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

1.37 \pm 0.07 E-01

(1.01 \pm 0.06 E-01)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 39

THIRD QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10503.3 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

1.28 \pm 0.08 E-01

(1.01 \pm 0.06 E-01)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 40

THIRD QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 8462.9 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

8.53 \pm 0.69 E-02

(1.01 \pm 0.06 E-01)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 41

FOURTH QUARTER, 1993

26 MI ESE - FLORENCE - CONTROL (AP-1)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10375.1 CUBIC METERS

ISOTOPE

CONTROL ACTIVITY

BE-7

(9.42 \pm 0.75 E-02)

K-40

(6.19 \pm 4.77 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 42

FOURTH QUARTER, 1993

0.2 MI S - INFORMATION CENTER (AP-2)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 13348.5 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	7.99 \pm 0.64 E-02	(9.42 \pm 0.75 E-02)
K-40	LESS THAN LLD	(6.19 \pm 4.77 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 43

FOURTH QUARTER, 1993

0.7 MI N - MICROWAVE TOWER (AP-3)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11033.6 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	$9.29 \pm 0.70 \text{ E-02}$	$(9.42 \pm 0.75 \text{ E-02})$
K-40	LESS THAN LLD	$(6.19 \pm 4.77 \text{ E-03})$

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 44

FOURTH QUARTER, 1993

0.4 MI ESE - SPILLWAY (AP-4)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11439.1 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	9.76 \pm 0.73 E-02	(9.42 \pm 0.75 E-02)
K-40	LESS THAN LLD	(6.19 \pm 4.77 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 45

FOURTH QUARTER, 1993

0.9 MI ENE - JOHNSON'S LANDING (AP-5)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10040.7 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.26 \pm 0.08 E-01	(9.42 \pm 0.75 E-02)
K-40	LESS THAN LLD	(6.19 \pm 4.77 E-03)
BI-214	1.08 \pm 0.50 E-03	(LESS THAN LLD)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 46

FOURTH QUARTER, 1993

0.3 MI SW - INFORMATION CENTER (AP-6)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 11656.9 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	9.24 \pm 0.59 E-04	(9.42 \pm 0.75 E-02)
K-40	LESS THAN LLD	(6.19 \pm 4.77 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 47

FOURTH QUARTER, 1993

6.3 MI ESE - HARTSVILLE CP&L SUBSTATION (AP-7)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 10187 CUBIC METERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.41 \pm 0.09 E-01	(9.42 \pm 0.75 E-02)
K-40	LESS THAN LLD	(6.19 \pm 4.77 E-03)

AIR PARTICULATE SAMPLES
(PICOCURIES PER CUBIC METER)

HBR - 48

FOURTH QUARTER, 1993

0.3 MI SSE - SITE BOUNDARY (AP-55)
(COMPOSITE SAMPLE)

GAMMA SPECTROMETRY

VOLUME: 8220.4 CUBIC METERS

ISOTOPE

SAMPLE ACTIVITY

CONTROL ACTIVITY

BE-7

6.46 \pm 0.63 E-04

(9.42 \pm 0.75 E-02)

K-40

LESS THAN LLD

(6.19 \pm 4.77 E-03)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 49

JULY, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 07/25/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 369.5 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	4.08 \pm 0.87 E-01	(5.86 \pm 0.76 E-01)
K-40	3.11 \pm 0.29 E+00	(2.64 \pm 0.23 E+00)
I-131	< 2.57E-02	(< 3.04E-02)
CS-134	< 2.73E-02	(< 2.74E-02)
CS-137	1.03 \pm 0.16 E-01	(1.17 \pm 0.13 E-01)
PB-212	3.07 \pm 1.54 E-02	(LESS THAN LLD)
BI-214	1.04 \pm 0.31 E-01	(LESS THAN LLD)
RA-226	2.60 \pm 2.27 E-01	(LESS THAN LLD)
AC-228	LESS THAN LLD	(2.72 \pm 0.40 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 50

JULY, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 07/25/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 438.4 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	3.15 \pm 0.64 E-01	(5.86 \pm 0.76 E-01)
K-40	2.40 \pm 0.17 E+00	(2.64 \pm 0.23 E+00)
I-131	< 1.94E-02	(< 3.04E-02)
CS-134	< 1.88E-02	(< 2.74E-02)
CS-137	5.72 \pm 0.86 E-02	(1.17 \pm 0.13 E-01)
PB-212	2.18 \pm 1.09 E-02	(LESS THAN LLD)
BI-214	2.93 \pm 1.62 E-02	(LESS THAN LLD)
AC-228	2.11 \pm 0.37 E-01	(2.72 \pm 0.40 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 51

JULY, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 07/25/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 287.5 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(5.86 \pm 0.76 E-01)

K-40

(2.64 \pm 0.23 E+00)

I-131

(< 3.04E-02)

CS-134

(< 2.74E-02)

CS-137

(1.17 \pm 0.13 E-01)

AC-228

(2.72 \pm 0.40 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 52

JULY, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 07/25/93)

OAK

GAMMA SPECTROMETRY

MASS: 431.9 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	5.09 \pm 0.79 E-01	(1.07 \pm 0.11 E+00)
K-40	1.39 \pm 0.16 E+00	(2.16 \pm 0.18 E+00)
I-131	< 1.82E-02	(< 2.70E-02)
CS-134	< 1.66E-02	(< 2.15E-02)
CS-137	2.50 \pm 0.13 E-01	(3.97 \pm 0.20 E-01)
PB-212	1.51 \pm 1.16 E-02	(3.07 \pm 1.75 E-02)
RA-226	2.88 \pm 1.88 E-01	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 53

JULY, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 07/25/93)

OAK

GAMMA SPECTROMETRY

MASS: 460.4 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	7.93 \pm 1.04 E-01	(1.07 \pm 0.11 E+00)
K-40	1.45 \pm 0.16 E+00	(2.16 \pm 0.18 E+00)
I-131	< 2.43E-02	(< 2.70E-02)
CS-134	< 2.18E-02	(< 2.15E-02)
CS-137	4.89 \pm 0.17 E-01	(3.97 \pm 0.20 E-01)
PB-212	LESS THAN LLD	(3.07 \pm 1.75 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 54

JULY, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 07/25/93)

OAK

GAMMA SPECTROMETRY

MASS: 416.3 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(1.07 \pm 0.11 E+00)

K-40

(2.16 \pm 0.18 E+00)

I-131

(< 2.70E-02)

CS-134

(< 2.15E-02)

CS-137

(3.97 \pm 0.20 E-01)

PB-212

(3.07 \pm 1.75 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 55

JULY, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 07/25/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 496.2 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	5.67 \pm 0.65 E-01	(7.20 \pm 1.12 E-01)
K-40	1.87 \pm 0.15 E+00	(3.12 \pm 0.25 E+00)
I-131	< 1.41E-02	(< 2.62E-02)
CS-134	< 1.37E-02	(< 2.66E-02)
CS-137	< 1.53E-02	(< 2.74E-02)
TL-208	LESS THAN LLD	(2.13 \pm 0.77 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 56

JULY, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 07/25/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 494.3 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	3.61 \pm 0.59 E-01	(7.20 \pm 1.12 E-01)
K-40	1.66 \pm 0.15 E+00	(3.12 \pm 0.25 E+00)
I-131	< 1.45E-02	(< 2.62E-02)
CS-134	< 1.38E-02	(< 2.66E-02)
CS-137	< 1.42E-02	(< 2.74E-02)
TL-208	1.75 \pm 0.74 E-02	(2.13 \pm 0.77 E-02)
PB-212	3.64 \pm 1.02 E-02	(LESS THAN LLD)
BI-214	2.08 \pm 1.59 E-02	(LESS THAN LLD)
AC-228	7.72 \pm 2.50 E-02	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 57

JULY, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 07/25/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 386.6 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(7.20 \pm 1.12 E-01)

K-40

(3.12 \pm 0.25 E+00)

I-131

(< 2.62E-02)

CS-134

(< 2.66E-02)

CS-137

(< 2.74E-02)

TL-208

(2.13 \pm 0.77 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 58

AUGUST, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 08/29/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 436.1 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	8.09 \pm 1.06 E-01	(7.66 \pm 1.14 E-01)
K-40	4.14 \pm 0.23 E+00	(4.92 \pm 0.35 E+00)
I-131	< 2.17E-02	(< 3.33E-02)
CS-134	< 2.69E-02	(< 3.79E-02)
CS-137	< 2.27E-02	(< 3.57E-02)
PB-212	7.11 \pm 1.98 E-02	(5.02 \pm 2.23 E-02)
BI-214	LESS THAN LLD	(3.95 \pm 3.68 E-02)
RA-226	2.70 \pm 2.10 E-01	(5.33 \pm 2.98 E-01)
AC-228	3.75 \pm 0.60 E-01	(5.11 \pm 0.68 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 59

AUGUST, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 08/29/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 305.7 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	5.00 \pm 0.80 E-01	(7.66 \pm 1.14 E-01)
K-40	2.65 \pm 0.24 E+00	(4.92 \pm 0.35 E+00)
I-131	< 2.69E-02	(< 3.33E-02)
CS-134	< 2.64E-02	(< 3.79E-02)
CS-137	< 2.39E-02	(< 3.57E-02)
PB-212	2.73 \pm 1.58 E-02	(5.02 \pm 2.23 E-02)
BI-214	3.68 \pm 2.78 E-02	(3.95 \pm 3.68 E-02)
RA-226	2.84 \pm 2.13 E-01	(5.33 \pm 2.98 E-01)
AC-228	2.98 \pm 0.62 E-01	(5.11 \pm 0.68 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 60

AUGUST, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 08/29/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 284.7 GRAMS WET

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
BE-7	(7.66 \pm 1.14 E-01)
K-40	(4.92 \pm 0.35 E+00)
I-131	(< 3.33E-02)
CS-134	(< 3.79E-02)
CS-137	(< 3.57E-02)
PB-212	(5.02 \pm 2.23 E-02)
BI-214	(3.95 \pm 3.68 E-02)
RA-226	(5.33 \pm 2.98 E-01)
AC-228	(5.11 \pm 0.68 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 61

AUGUST, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 08/29/93)

OAK

GAMMA SPECTROMETRY

MASS: 347.7 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.16 \pm 0.10 E+00	(1.39 \pm 0.12 E+00)
K-40	2.33 \pm 0.20 E+00	(2.15 \pm 0.20 E+00)
I-131	< 2.19E-02	(< 2.79E-02)
CS-134	< 2.05E-02	(< 2.43E-02)
CS-137	3.47 \pm 0.16 E-01	(5.97 \pm 0.21 E-01)
TL-208	3.60 \pm 0.96 E-02	(LESS THAN LLD)
PB-212	2.61 \pm 1.57 E-02	(LESS THAN LLD)
BI-214	3.62 \pm 2.11 E-02	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 62

AUGUST, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 08/29/93)

OAK

GAMMA SPECTROMETRY

MASS: 396.3 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.68 \pm 0.12 E+00	(1.39 \pm 0.12 E+00)
K-40	2.44 \pm 0.21 E+00	(2.15 \pm 0.20 E+00)
I-131	< 2.55E-02	(< 2.79E-02)
CS-134	< 2.26E-02	(< 2.43E-02)
CS-137	5.00 \pm 0.20 E-01	(5.97 \pm 0.21 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 63

AUGUST, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 08/29/93)

OAK

GAMMA SPECTROMETRY

MASS: 371.8 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(1.39 \pm 0.12 E+00)

K-40

(2.15 \pm 0.20 E+00)

I-131

(< 2.79E-02)

CS-134

(< 2.43E-02)

CS-137

(5.97 \pm 0.21 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 64

AUGUST, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 08/29/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 332.6 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.32 \pm 0.09 E+00	(9.93 \pm 0.92 E-01)
K-40	2.12 \pm 0.20 E+00	(1.13 \pm 0.17 E+00)
I-131	< 1.99E-02	(< 1.89E-02)
CS-134	< 2.04E-02	(< 1.85E-02)
CS-137	2.95 \pm 0.94 E-02	(< 1.81E-02)
TL-208	1.56 \pm 0.82 E-02	(LESS THAN LLD)
PB-212	LESS THAN LLD	(1.57 \pm 1.52 E-02)
BI-214	2.37 \pm 1.63 E-02	(LESS THAN LLD)
AC-228	LESS THAN LLD	(5.79 \pm 3.70 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 65

AUGUST, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 08/29/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 327.3 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.19 \pm 0.12 E+00	(9.93 \pm 0.92 E-01)
K-40	2.52 \pm 0.25 E+00	(1.13 \pm 0.17 E+00)
I-131	< 2.92E-02	(< 1.89E-02)
CS-134	< 3.17E-02	(< 1.85E-02)
CS-137	< 3.32E-02	(< 1.81E-02)
PB-212	LESS THAN LLD	(1.57 \pm 1.52 E-02)
BI-214	3.77 \pm 3.51 E-02	(LESS THAN LLD)
AC-228	LESS THAN LLD	(5.79 \pm 3.70 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 66

AUGUST, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 08/29/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 345.8 GRAMS WET

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
BE-7	(9.93 \pm 0.92 E-01)
K-40	(1.13 \pm 0.17 E+00)
I-131	(< 1.89E-02)
CS-134	(< 1.85E-02)
CS-137	(< 1.81E-02)
PB-212	(1.57 \pm 1.52 E-02)
AC-228	(5.79 \pm 3.70 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 67

SEPTEMBER, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 09/26/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 560.1 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	9.43 \pm 0.53 E-01	(8.53 \pm 1.22 E-01)
K-40	2.14 \pm 0.14 E+00	(2.28 \pm 0.17 E+00)
I-131	< 1.07E-02	(< 2.07E-02)
CS-134	< 1.37E-02	(< 2.26E-02)
CS-137	< 1.25E-02	(< 1.92E-02)
TL-208	3.52 \pm 0.68 E-02	(LESS THAN LLD)
PB-212	1.12 \pm 0.11 E-01	(3.41 \pm 1.44 E-02)
BI-214	3.75 \pm 1.28 E-02	(LESS THAN LLD)
RA-226	1.50 \pm 1.09 E-01	(LESS THAN LLD)
AC-228	2.54 \pm 0.30 E-01	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 68

SEPTEMBER, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 09/26/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 492.1 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	7.54 \pm 0.57 E-01	(8.53 \pm 1.22 E-01)
K-40	2.32 \pm 0.16 E+00	(2.28 \pm 0.17 E+00)
I-131	< 1.24E-02	(< 2.07E-02)
CS-134	< 1.59E-02	(< 2.26E-02)
CS-137	< 1.24E-02	(< 1.92E-02)
TL-208	1.90 \pm 0.79 E-02	(LESS THAN LLD)
PB-212	2.45 \pm 1.03 E-02	(3.41 \pm 1.44 E-02)
BI-214	4.28 \pm 1.29 E-02	(LESS THAN LLD)
RA-226	4.58 \pm 1.51 E-01	(LESS THAN LLD)
AC-228	2.57 \pm 0.32 E-01	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 69

SEPTEMBER, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 09/26/93)

CHERRY

GAMMA SPECTROMETRY

MASS: 452.5 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(8.53 \pm 1.22 E-01)

K-40

(2.28 \pm 0.17 E+00)

I-131

(< 2.07E-02)

CS-134

(< 2.26E-02)

CS-137

(< 1.92E-02)

PB-212

(3.41 \pm 1.44 E-02)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 70

SEPTEMBER, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 09/26/93)

OAK

GAMMA SPECTROMETRY

MASS: 483 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.20 \pm 0.07 E+00	(1.29 \pm 0.12 E+00)
K-40	1.87 \pm 0.15 E+00	(1.91 \pm 0.17 E+00)
I-131	< 1.52E-02	(< 2.62E-02)
CS-134	< 1.57E-02	(< 2.01E-02)
CS-137	4.08 \pm 0.14 E-01	(3.66 \pm 0.16 E-01)
PB-212	1.33 \pm 1.08 E-02	(LESS THAN LLD)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 71

SEPTEMBER, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 09/26/93)

OAK

GAMMA SPECTROMETRY

MASS: 377.8 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.62 \pm 0.12 E+00	(1.29 \pm 0.12 E+00)
K-40	2.13 \pm 0.21 E+00	(1.91 \pm 0.17 E+00)
I-131	< 2.49E-02	(< 2.62E-02)
CS-134	< 2.46E-02	(< 2.01E-02)
CS-137	5.33 \pm 0.20 E-01	(3.66 \pm 0.16 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 72

SEPTEMBER, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 09/26/93)

OAK

GAMMA SPECTROMETRY

MASS: 424.6 GRAMS WET

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
BE-7	(1.29 \pm 0.12 E+00)
K-40	(1.91 \pm 0.17 E+00)
I-131	(< 2.62E-02)
CS-134	(< 2.01E-02)
CS-137	(3.66 \pm 0.16 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 73

SEPTEMBER, 1993

SSE - CP&L PROPERTY (BL-50)
(DATE COLLECTED: 09/26/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 462.2 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.74 \pm 0.10 E+00	(2.10 \pm 0.14 E+00)
K-40	4.22 \pm 0.20 E+00	(5.42 \pm 0.28 E+00)
I-131	< 1.87E-02	(< 2.33E-02)
CS-134	< 2.02E-02	(< 2.66E-02)
CS-137	< 2.17E-02	(< 2.40E-02)
PB-212	9.42 \pm 1.85 E-02	(1.43 \pm 1.23 E-02)
RA-226	LESS THAN LLD	(3.36 \pm 2.08 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 74

SEPTEMBER, 1993

SSW - CP&L PROPERTY (BL-51)
(DATE COLLECTED: 09/26/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS: 520.8 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.75 \pm 0.10 E+00	(2.10 \pm 0.14 E+00)
K-40	5.53 \pm 0.22 E+00	(5.42 \pm 0.28 E+00)
I-131	< 1.64E-02	(< 2.33E-02)
CS-134	< 2.12E-02	(< 2.66E-02)
CS-137	< 2.20E-02	(< 2.40E-02)
PB-212	2.34 \pm 1.24 E-02	(1.43 \pm 1.23 E-02)
RA-226	LESS THAN LLD	(3.36 \pm 2.08 E-01)

BROADLEAF VEGETATION SAMPLES
(PICOCURIES PER GRAM)

HBR - 75

SEPTEMBER, 1993

10 MI W - BETHUNE - CONTROL (BL-52)
(DATE COLLECTED: 09/26/93)

SASSAFRAS

GAMMA SPECTROMETRY

MASS:

394 GRAMS WET

ISOTOPE

CONTROL ACTIVITY

BE-7

(2.10 \pm 0.14 E+00)

K-40

(5.42 \pm 0.28 E+00)

I-131

(< 2.33E-02)

CS-134

(< 2.66E-02)

CS-137

(< 2.40E-02)

PB-212

(1.43 \pm 1.23 E-02)

RA-226

(3.36 \pm 2.08 E-01)

BOTTOM FEEDER SAMPLES
(PICOCURIES PER GRAM)

HBR - 76

SECOND SEMI-ANNUAL, 1993

SITE VARIES WITHIN LAKE ROBINSON (F1-45)
(DATE COLLECTED: 11/30/93)

BOTTOM FEEDERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 597.2 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	2.36 \pm 0.25 E+00	(3.23 \pm 0.33 E+00)
CS-137	7.67 \pm 1.46 E-02	(1.23 \pm 0.23 E-01)
PB-212	3.63 \pm 1.50 E-02	(4.97 \pm 2.77 E-02)
PB-214	LESS THAN LLD	(2.04 \pm 0.41 E-01)
BI-214	4.73 \pm 2.86 E-02	(2.10 \pm 0.46 E-01)
RA-226	LESS THAN LLD	(6.90 \pm 4.05 E-01)

BOTTOM FEEDER SAMPLES
(PICOCURIES PER GRAM)

HBR - 77

SECOND SEMI-ANNUAL, 1993

4.9 MI ESE - PRESTWOOD LAKE (F1-46)
(DATE COLLECTED: 11/30/93)

BOTTOM FEEDERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 652.1 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.90 \pm 0.21 E+00	(3.23 \pm 0.33 E+00)
CS-137	4.16 \pm 1.14 E-02	(1.23 \pm 0.23 E-01)
PB-212	LESS THAN LLD	(4.97 \pm 2.77 E-02)
PB-214	LESS THAN LLD	(2.04 \pm 0.41 E-01)
BI-214	6.67 \pm 2.39 E-02	(2.10 \pm 0.46 E-01)
RA-226	LESS THAN LLD	(6.90 \pm 4.05 E-01)

BOTTOM FEEDER SAMPLES
(PICOCURIES PER GRAM)

HBR - 78

SECOND SEMI-ANNUAL, 1993

13 MI NNW - LAKE BEE - CONTROL (F1-47)
(DATE COLLECTED: 11/30/93)

BOTTOM FEEDERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 473 GRAMS FRESH

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(3.23 \pm 0.33 E+00)
CS-137	(1.23 \pm 0.23 E-01)
PB-212	(4.97 \pm 2.77 E-02)
PB-214	(2.04 \pm 0.41 E-01)
BI-214	(2.10 \pm 0.46 E-01)
RA-226	(6.90 \pm 4.05 E-01)

FREE SWIMMER SAMPLES
(PICOCURIES PER GRAM)

HBR - 79

SECOND SEMI-ANNUAL, 1993

SITE VARIES WITHIN LAKE ROBINSON (F2-45)
(DATE COLLECTED: 11/30/93)

FREE SWIMMERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 783.3 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	3.14 \pm 0.22 E+00	(2.40 \pm 0.32 E+00)
CS-137	8.79 \pm 1.28 E-02	(1.48 \pm 0.25 E-01)
PB-212	LESS THAN LLD	(8.68 \pm 3.56 E-02)
BI-214	LESS THAN LLD	(1.20 \pm 0.36 E-01)

FREE SWIMMER SAMPLES
(PICOCURIES PER GRAM)

HBR - 80

SECOND SEMI-ANNUAL, 1993

4.9 MI ESE - PRESTWOOD LAKE (F2-46)
(DATE COLLECTED: 11/30/93)

FREE SWIMMERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 599.4 GRAMS FRESH

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	3.05 \pm 0.25 E+00	(2.40 \pm 0.32 E+00)
CS-137	7.95 \pm 1.32 E-02	(1.48 \pm 0.25 E-01)
PB-212	LESS THAN LLD	(8.68 \pm 3.56 E-02)
BI-214	4.94 \pm 2.63 E-02	(1.20 \pm 0.36 E-01)

FREE SWIMMER SAMPLES
(PICOCURIES PER GRAM)

HBR - 81

SECOND SEMI-ANNUAL, 1993

13 MI NNW - LAKE BEE - CONTROL (F2-47)
(DATE COLLECTED: 11/30/93)

FREE SWIMMERS, EDIBLE PORTION

GAMMA SPECTROMETRY

MASS: 519.1 GRAMS FRESH

ISOTOPE

CONTROL ACTIVITY

K-40

(2.40 \pm 0.32 E+00)

CS-137

(1.48 \pm 0.25 E-01)

PB-212

(8.68 \pm 3.56 E-02)

BI-214

(1.20 \pm 0.36 E-01)

FOOD CROP SAMPLES
(PICOCURIES PER GRAM)

HBR - 82

ANNUAL, 1993

SITE VARIES FROM PLANT (FC-58)
(DATE COLLECTED: 07/11/93)

PEACHES

GAMMA SPECTROMETRY

MASS: 1036.4 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.78 \pm 0.08 E+00	(NOT REQUIRED)
I-131	< 8.24E-03	(NOT REQUIRED)
CS-134	< 7.39E-03	(NOT REQUIRED)
CS-137	< 6.29E-03	(NOT REQUIRED)

FOOD CROP SAMPLES
(PICOCURIES PER GRAM)

HBR - 83

ONE TIME PER GROWING SEASON, 1993

GREATER THAN 5 MI FROM SITE - CONTROL (FC-49)
(DATE COLLECTED: 07/11/93)

TOMATOES

GAMMA SPECTROMETRY

MASS: 738.7 GRAMS WET

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(3.13 \pm 0.16 E+00)
I-131	(< 1.12E-02)
CS-134	(< 1.32E-02)
CS-137	(< 1.32E-02)
BI-214	(2.64 \pm 1.22 E-02)

FOOD CROP SAMPLES
(PICOCURIES PER GRAM)

HBR - 84

ONE TIME PER GROWING SEASON, 1993

SITE VARIES FROM PLANT (FC-58)
(DATE COLLECTED: 07/11/93)

TOMATOES

GAMMA SPECTROMETRY

MASS: 789.1 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.68 \pm 0.10 E+00	(3.13 \pm 0.16 E+00)
I-131	< 8.25E-03	(< 1.12E-02)
CS-134	< 8.31E-03	(< 1.32E-02)
CS-137	< 8.69E-03	(< 1.32E-02)
PB-212	6.81 \pm 6.20 E-03	(LESS THAN LLD)
BI-214	1.73 \pm 0.94 E-02	(2.64 \pm 1.22 E-02)

FOOD CROP SAMPLES
(PICOCURIES PER GRAM)

HBR - 85

ONE TIME PER GROWING SEASON, 1993

SITE VARIES FROM PLANT (FC-58)
(DATE COLLECTED: 11/21/93)

COLLARDS

GAMMA SPECTROMETRY

MASS: 546.3 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	3.87 \pm 0.17 E+00	(NOT REQUIRED)
I-131	< 1.20E-02	(NOT REQUIRED)
CS-134	< 1.30E-02	(NOT REQUIRED)
CS-137	< 1.35E-02	(NOT REQUIRED)
TL-208	6.04 \pm 0.76 E-02	(NOT REQUIRED)
PB-212	1.61 \pm 0.13 E-01	(NOT REQUIRED)
BI-212	1.13 \pm 0.42 E-01	(NOT REQUIRED)
BI-214	2.09 \pm 1.30 E-02	(NOT REQUIRED)
RA-226	2.07 \pm 1.17 E-01	(NOT REQUIRED)
AC-228	5.23 \pm 2.54 E-02	(NOT REQUIRED)

FOOD CROP SAMPLES
(PICOCURIES PER GRAM)

HBR - 86

ONE TIME PER GROWING SEASON, 1993

SITE VARIES FROM PLANT (FC-58)
(DATE COLLECTED: 11/21/93)

TURNIPS AND GREENS

GAMMA SPECTROMETRY

MASS: 514 GRAMS WET

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.66 \pm 0.49 E-01	(NOT REQUIRED)
K-40	2.70 \pm 0.14 E+00	(NOT REQUIRED)
I-131	< 1.41E-02	(NOT REQUIRED)
CS-134	< 1.41E-02	(NOT REQUIRED)
CS-137	< 1.58E-02	(NOT REQUIRED)
TL-208	2.13 \pm 0.47 E-02	(NOT REQUIRED)
PB-212	7.90 \pm 1.22 E-02	(NOT REQUIRED)
BI-214	2.30 \pm 1.46 E-02	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 87

JULY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 07/04/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 88

JULY, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 07/04/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 89

JULY, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 07/04/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 90

AUGUST, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 08/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.04E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.57 \pm 0.29 E+02	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 91

AUGUST, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 08/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.04E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 92

AUGUST, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 08/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.04E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	3.68 \pm 1.59 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 93

SEPTEMBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 09/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.09E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 94

SEPTEMBER, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 09/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.09E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 95

SEPTEMBER, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 09/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.09E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	2.03 \pm 1.73 E+00	(NOT REQUIRED)
BI-214	4.87 \pm 4.02 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 96

OCTOBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 10/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.05E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 97

OCTOBER, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 10/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.05E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	8.30 \pm 2.64 E+00	(NOT REQUIRED)
BI-214	5.11 \pm 2.71 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 98

OCTOBER, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 10/03/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.05E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
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ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 99

NOVEMBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 11/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 100

NOVEMBER, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 11/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	2.85 \pm 2.05 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 101

NOVEMBER, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 11/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.07E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TL-208	5.98 \pm 2.53 E+00	(NOT REQUIRED)
BI-214	3.14 \pm 2.17 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 102

DECEMBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (GW-40)
(DATE COLLECTED: 12/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.11E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	4.68 \pm 3.19 E+00	(NOT REQUIRED)
BI-214	5.16 \pm 3.89 E+00	(NOT REQUIRED)

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 103

DECEMBER, 1993

UNIT 1 DEEP WELL NEAR SITE ENTRANCE (GW-42)
(DATE COLLECTED: 12/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.11E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

GROUNDWATER SAMPLES
(PICOCURIES PER LITER)

HBR - 104

DECEMBER, 1993

UNIT 2 DEEP WELL (GW-43)
(DATE COLLECTED: 12/05/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	< 1.11E+03	(NOT REQUIRED)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	3.28 \pm 1.92 E+00	(NOT REQUIRED)
BI-214	4.53 \pm 4.20 E+00	(NOT REQUIRED)
RA-226	3.26 \pm 3.21 E+01	(NOT REQUIRED)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 105

July 12, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 07/12/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.38E-01	(< 7.75E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.37 \pm 0.05 E+03	(1.50 \pm 0.05 E+03)
RA-226	LESS THAN LLD	(4.47 \pm 4.41 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 106

July 12, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 07/12/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 7.75E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.50 \pm 0.05 E+03)

RA-226

(4.47 \pm 4.41 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 107

July 26, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 07/26/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.24E-01	(< 7.03E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.95 \pm 0.07 E+03	(2.14 \pm 0.07 E+03)
TL-208	LESS THAN LLD	(2.50 \pm 2.43 E+00)
PB-212	LESS THAN LLD	(7.02 \pm 4.25 E+00)
BI-214	LESS THAN LLD	(9.20 \pm 7.53 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 108

July 26, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 07/26/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 7.03E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(2.14 ± 0.07 E+03)
TL-208	(2.50 ± 2.43 E+00)
PB-212	(7.02 ± 4.25 E+00)
BI-214	(9.20 ± 7.53 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 109

August 9, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 08/09/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.44E-01	(< 6.39E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.28 \pm 0.05 E+03	(1.40 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 110

August 9, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 08/09/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.39E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(1.40 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 111

August 23, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 08/23/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.30E-01	(< 5.94E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.34 \pm 0.06 E+03	(1.48 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 112

August 23, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 08/23/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 5.94E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.48 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 113

September 6, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 09/06/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.65E-01	(< 6.41E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.35 \pm 0.06 E+03	(1.42 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 114

September 6, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 09/06/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.41E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.42 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 115

September 20, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 09/20/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 7.17E-01	(< 6.49E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.35 \pm 0.06 E+03	(1.46 \pm 0.06 E+03)
TL-208	LESS THAN LLD	(6.01 \pm 1.61 E+00)
PB-212	6.16 \pm 4.98 E+00	(LESS THAN LLD)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 116

September 20, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 09/20/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.49E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.46 ± 0.06 E+03)
TL-208	(6.01 ± 1.61 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 117

October 4, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 10/04/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 5.97E-01	(< 5.93E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.30 \pm 0.05 E+03	(1.47 \pm 0.06 E+03)
TL-208	LESS THAN LLD	(5.06 \pm 1.72 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 118

October 4, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 10/04/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 5.93E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.47 ± 0.06 E+03)
TL-208	(5.06 ± 1.72 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 119

October 18, 1993

10.1 MI E - AUBURNDAL E PLANTATION (MK-54)
(DATE COLLECTED: 10/18/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.41E-01	(< 5.92E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.18 \pm 0.05 E+03	(2.11 \pm 0.07 E+03)
PB-212	3.93 \pm 3.33 E+00	(6.17 \pm 3.68 E+00)
PB-214	LESS THAN LLD	(2.20 \pm 0.71 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 120

October 18, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 10/18/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 5.92E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(2.11 ± 0.07 E+03)
PB-212	(6.17 ± 3.68 E+00)
PB-214	(2.20 ± 0.71 E+01)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 121

November 1, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 11/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.06E-01	(< 6.51E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.13 \pm 0.05 E+03	(1.34 \pm 0.05 E+03)
TL-208	LESS THAN LLD	(6.03 \pm 1.40 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 122

November 1, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 11/01/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.51E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.34 \pm 0.05 E+03)
TL-208	(6.03 \pm 1.40 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 123

November 15, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 11/15/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.01E-01	(< 6.54E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.22 \pm 0.05 E+03	(1.34 \pm 0.05 E+03)
RA-226	6.60 \pm 4.84 E+01	(LESS THAN LLD)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 124

November 15, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 11/15/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 6.54E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.34 \pm 0.05 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 125

November 29, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 11/29/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 9.04E-01	(< 8.95E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	2.03 \pm 0.04 E+03	(1.36 \pm 0.08 E+03)
TL-208	6.77 \pm 1.74 E+00	(LESS THAN LLD)
PB-212	1.47 \pm 0.21 E+01	(LESS THAN LLD)
PB-214	1.87 \pm 0.34 E+01	(LESS THAN LLD)
BI-214	1.54 \pm 0.29 E+01	(LESS THAN LLD)
RA-226	2.23 \pm 0.30 E+02	(LESS THAN LLD)
AC-228	1.93 \pm 0.65 E+01	(LESS THAN LLD)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 126

November 29, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 11/29/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 8.95E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

<u>ISOTOPE</u>	<u>CONTROL ACTIVITY</u>
K-40	(1.36 \pm 0.08 E+03)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 127

December 13, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 12/13/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.10E-01	(< 5.98E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.21 \pm 0.04 E+03	(1.29 \pm 0.05 E+03)
TL-208	5.20 \pm 1.67 E+00	(5.45 \pm 1.68 E+00)
BI-214	5.84 \pm 4.73 E+00	(LESS THAN LLD)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 128

December 13, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 12/13/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 5.98E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(1.29 \pm 0.05 E+03)

TL-208

(5.45 \pm 1.68 E+00)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 129

December 27, 1993

10.1 MI E - AUBURNDALE PLANTATION (MK-54)
(DATE COLLECTED: 12/27/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	< 6.41E-01	(< 5.64E-01)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.22 \pm 0.05 E+03	(1.30 \pm 0.05 E+03)
TL-208	LESS THAN LLD	(5.03 \pm 1.66 E+00)
BI-214	5.03 \pm 4.82 E+00	(LESS THAN LLD)

MILK SAMPLES
(PICOCURIES PER LITER)

HBR - 130

December 27, 1993

18 MI ESE - CUNNINGHAM FARM - CONTROL (MK-63)
(DATE COLLECTED: 12/27/93)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
I-131	4.0	(< 5.64E-01)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40	(1.30 ± 0.05 E+03)
TL-208	(5.03 ± 1.66 E+00)

SHORELINE SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 131

SECOND SEMI-ANNUAL, 1993

1.9 MI NNE - SHADY REST CLUB (SS-44)
(DATE COLLECTED: 07/11/93)

GAMMA SPECTROMETRY

MASS: 1003 GRAMS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BE-7	1.58 \pm 0.50 E-01	(NOT REQUIRED)
K-40	3.95 \pm 6.80 E-02	(NOT REQUIRED)
TL-208	9.37 \pm 0.86 E-02	(NOT REQUIRED)
PB-212	2.35 \pm 0.13 E-01	(NOT REQUIRED)
PB-214	2.52 \pm 0.16 E-01	(NOT REQUIRED)
BI-212	2.01 \pm 0.49 E-01	(NOT REQUIRED)
BI-214	2.32 \pm 0.17 E-01	(NOT REQUIRED)
RA-226	6.35 \pm 1.24 E-01	(NOT REQUIRED)
AC-228	2.68 \pm 0.28 E-01	(NOT REQUIRED)

SHORELINE SEDIMENT SAMPLES
(PICOCURIES PER GRAM)

HBR - 132

SECOND SEMI-ANNUAL, 1993

0.9 MI NNW - ASH POND (SS-57)
(DATE COLLECTED: 07/11/93)

GAMMA SPECTROMETRY

MASS: 1001.2 GRAMS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	1.74 \pm 0.20 E+00	(NOT REQUIRED)
CS-137	6.09 \pm 1.13 E-02	(NOT REQUIRED)
TL-208	4.55 \pm 0.22 E-01	(NOT REQUIRED)
PB-212	1.25 \pm 0.03 E+00	(NOT REQUIRED)
PB-214	1.13 \pm 0.04 E+00	(NOT REQUIRED)
BI-212	8.71 \pm 1.16 E-01	(NOT REQUIRED)
BI-214	1.11 \pm 0.04 E+00	(NOT REQUIRED)
RA-226	2.39 \pm 0.32 E+00	(NOT REQUIRED)
AC-228	1.33 \pm 0.09 E+00	(NOT REQUIRED)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 133

JULY, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	4.95 \pm 0.73 E+03	(< 1.05E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 134

JULY, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.05E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 135

JULY, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	3.34 \pm 0.70 E+03	(< 1.05E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	2.21 \pm 2.00 E+00	(LESS THAN LLD)
BI-214	5.22 \pm 2.71 E+00	(LESS THAN LLD)
RA-226	2.64 \pm 2.60 E+01	(LESS THAN LLD)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 136

AUGUST, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	$7.61 \pm 0.80 \text{ E}+03$	(< $1.09\text{E}+03$)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	LESS THAN LLD	$(1.76 \pm 1.70 \text{ E}+00)$

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 137

AUGUST, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.09E+03)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

PB-212

(1.76 \pm 1.70 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 138

AUGUST, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	5.52 \pm 0.77 E+03	(< 1.09E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	5.54 \pm 2.60 E+00	(1.76 \pm 1.70 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 139

SEPTEMBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	7.01 \pm 0.77 E+03	(< 1.05E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 140

SEPTEMBER, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.05E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 141

SEPTEMBER, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	7.14 \pm 0.77 E+03	(< 1.05E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	5.41 \pm 3.71 E+01	(LESS THAN LLD)
BI-214	7.99 \pm 3.38 E+00	(LESS THAN LLD)
RA-226	6.89 \pm 3.16 E+01	(LESS THAN LLD)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 142

OCTOBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	5.54 \pm 0.76 E+03	(< 1.08E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	LESS THAN LLD	(3.47 \pm 2.32 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 143

OCTOBER, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.08E+03)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

PB-212

(3.47 \pm 2.32 E+00)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 144

OCTOBER, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	$6.60 \pm 0.78 \text{ E}+03$	(< $1.08\text{E}+03$)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
PB-212	LESS THAN LLD	$(3.47 \pm 2.32 \text{ E}+00)$

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 145

NOVEMBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	$4.74 \pm 0.76 \text{ E}+03$	(< $1.11\text{E}+03$)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
BI-214	$1.33 \pm 0.27 \text{ E}+01$	(LESS THAN LLD)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 146

NOVEMBER, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.11E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 147

NOVEMBER, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	4.75 \pm 0.76 E+03	(< 1.11E+03)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

ISOTOPE

SAMPLE ACTIVITY CONTROL ACTIVITY

ALL GAMMA EMITTERS LESS THAN LLD

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 148

DECEMBER, 1993

0.6 MI ESE-SC23 AT BLACK CR AND ART WELL (SW-40)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	$2.86 \pm 0.72 \text{ E}+03$	(< $1.09\text{E}+03$)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	LESS THAN LLD	$(3.71 \pm 3.41 \text{ E}+01)$

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 149

DECEMBER, 1993

7.2 MI NNW - BLACK CREEK - CONTROL (SW-41)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	(< 1.09E+03)

GAMMA SPECTROMETRY

VOLUME:

1 LITERS

ISOTOPE

CONTROL ACTIVITY

K-40

(3.71 \pm 3.41 E+01)

SURFACE WATER SAMPLES
(PICOCURIES PER LITER)

HBR - 150

DECEMBER, 1993

0.9 MI NNW - ASH POND (SW-57)
(COMPOSITE SAMPLE)

RADIOCHEMISTRY

<u>ANALYSIS</u>	<u>LITERS</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
TRITIUM	0.005	$2.95 \pm 0.72 \text{ E}+03$	(< $1.09\text{E}+03$)

GAMMA SPECTROMETRY

VOLUME: 1 LITERS

<u>ISOTOPE</u>	<u>SAMPLE ACTIVITY</u>	<u>CONTROL ACTIVITY</u>
K-40	LESS THAN LLD	$(3.71 \pm 3.41 \text{ E}+01)$
RA-226	$4.28 \pm 3.17 \text{ E}+01$	(LESS THAN LLD)

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 151

THIRD QUARTER, 1993

<u>STATION</u>		<u>MILLIROENTGEN PER WEEK</u>
CONTROL		(1.20 \pm 0.40 E+00)
1	26 MI ESE - FLORENCE - CONTROL	1.20 \pm 0.40 E+00
2	0.2 MI S - INFORMATION CENTER	1.00 \pm 0.30 E+00
3	0.7 MI N - MICROWAVE TOWER	1.30 \pm 0.30 E+00
4	0.4 MI ESE - SPILLWAY	1.00 \pm 0.30 E+00
5	0.9 MI ENE - JOHNSON'S LANDING	1.10 \pm 0.30 E+00
6	0.3 MI SW - INFORMATION CENTER	1.20 \pm 0.50 E+00
7	6.3 MI ESE - HARTSVILLE CP&L SUBSTATION	1.10 \pm 0.40 E+00
8	0.8 MI SSE - POWER POLES FROM HBR	9.00 \pm 3.00 E-01
9	1.0 MI S - POWER POLE NEAR HWY 151	1.60 \pm 0.30 E+00
10	1.0 MI WSW - CHURCH OF GOD CEMETERY	1.10 \pm 0.30 E+00
11	1.0 MI SW - POWER POLE AT OLD CAMDEN RD	8.00 \pm 3.00 E-01
12	1.2 MI SSW-PINE TREE AT 2ND INT DIRT RD	1.40 \pm 0.30 E+00
13	1.0 MI W-PINE TREE WHERE DIRT RD SPLITS	8.00 \pm 3.00 E-01
14	0.9 MI WNW - HWY 151 AT PINE RIDGE CH	1.00 \pm 0.30 E+00
15	1.0 MI NW -DIRT RD NEAR ASH POND	1.00 \pm 0.30 E+00
16	1.0 MI NNW - DARLINGTON IC TURBINE PLANT	1.00 \pm 0.30 E+00
17	1.1 MI N - DIS CANAL RD AT UNIT 1 WEIR	1.10 \pm 0.30 E+00
18	0.7 MI SE - TRAIN TRESTLE OVER BLACK CR	1.00 \pm 0.40 E+00
19	1.0 MI E - RD S-16-23	1.00 \pm 0.40 E+00
20	1.3 MI ENE - RD S-16-39 NORTH	1.20 \pm 0.40 E+00
21	ATKINSON'S BOAT LANDING	1.40 \pm 0.30 E+00

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 152

THIRD QUARTER, 1993

	<u>STATION</u>	<u>MILLIROENTGEN PER WEEK</u>
	CONTROL	(1.20 \pm 0.40 E+00)
22	1.9 MI NNE - SHADY REST NEAR DOCK	1.30 \pm 0.30 E+00
23	1.2 MI ESE - INT RD 41E-5 AND S-16-39	1.00 \pm 0.30 E+00
24	5.0 MI NW - S-13-711 PAST PEACH FARM	1.30 \pm 0.30 E+00
25	4.6 MI NNW - RD S-13-346 OFF 151 NORTH	9.00 \pm 3.00 E-01
26	5.0 MI N - RD S-13-346	1.30 \pm 0.30 E+00
27	5.0 MI NNE - RD S-13-763 NEAR INTER	1.30 \pm 0.40 E+00
28	4.8 MI NE - NEAR DUMPSTER RD S-13-39	1.40 \pm 0.30 E+00
29	RD S-16-20 SOUTH OF LOOKOUT TOWER	1.20 \pm 0.30 E+00
30	4.6 MI E - RD S-16-20 JOHNSON FENCE CO	1.10 \pm 0.40 E+00
31	4.6 MI ESE - LAKESHORE DRIVE	1.40 \pm 0.40 E+00
33	4.6 MI SSE-RD S16-493 NEAR SEGAR'S ENTR	1.20 \pm 0.30 E+00
34	4.6 MI S - RD S-16-772	8.00 \pm 3.00 E-01
35	4.4 MI SSW - INT RD S-31-51 & S-16-12	1.90 \pm 0.40 E+00
36	4.7 MI SW - PAVED RD OFF RD S-16-85	1.60 \pm 0.40 E+00
37	5.0 MI WSW - TRANS TOWER NEAR CLAY RD	1.70 \pm 0.30 E+00
39	5.0 MI WNW - POWER POLE IN FIELD	1.10 \pm 0.30 E+00
55	0.3 MI SSE - SITE BOUNDARY	1.00 \pm 0.40 E+00
56	300 FT N OF ISFSI	1.30 \pm 0.40 E+00

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 153

FOURTH QUARTER, 1993

	<u>STATION</u>	<u>MILLIROENTGEN PER WEEK</u>
	CONTROL	(1.00 \pm 0.10 E+00)
1	26 MI ESE - FLORENCE - CONTROL	1.00 \pm 0.10 E+00
2	0.2 MI S - INFORMATION CENTER	1.00 \pm 0.10 E+00
3	0.7 MI N - MICROWAVE TOWER	1.20 \pm 0.10 E+00
4	0.4 MI ESE - SPILLWAY	9.00 \pm 1.00 E-01
5	0.9 MI ENE - JOHNSON'S LANDING	1.00 \pm 0.10 E+00
6	0.3 MI SW - INFORMATION CENTER	1.00 \pm 0.10 E+00
7	6.3 MI ESE - HARTSVILLE CP&L SUBSTATION	9.00 \pm 1.00 E-01
8	0.8 MI SSE - POWER POLES FROM HBR	8.00 \pm 1.00 E-01
9	1.0 MI S - POWER POLE NEAR HWY 151	1.50 \pm 0.10 E+00
10	1.0 MI WSW - CHURCH OF GOD CEMETERY	1.00 \pm 0.10 E+00
11	1.0 MI SW - POWER POLE AT OLD CAMDEN RD	9.00 \pm 1.00 E-01
12	1.2 MI SSW-PINE TREE AT 2ND INT DIRT RD	1.10 \pm 0.10 E+00
13	1.0 MI W-PINE TREE WHERE DIRT RD SPLITS	8.00 \pm 1.00 E-01
14	0.9 MI WNW - HWY 151 AT PINE RIDGE CH	1.20 \pm 0.10 E+00
15	1.0 MI NW -DIRT RD NEAR ASH POND	9.00 \pm 1.00 E-01
16	1.0 MI NNW - DARLINGTON IC TURBINE PLANT	1.00 \pm 0.10 E+00
17	1.1 MI N - DIS CANAL RD AT UNIT 1 WEIR	1.00 \pm 0.10 E+00
18	0.7 MI SE - TRAIN TRESTLE OVER BLACK CR	9.00 \pm 1.00 E-01
19	1.0 MI E - RD S-16-23	1.00 \pm 0.10 E+00
20	1.3 MI ENE - RD S-16-39 NORTH	1.10 \pm 0.10 E+00
21	ATKINSON'S BOAT LANDING	1.00 \pm 0.10 E+00

ENVIRONMENTAL TLD
(MILLIROENTGEN PER WEEK)

HBR - 154

FOURTH QUARTER, 1993

<u>STATION</u>		<u>MILLIROENTGEN PER WEEK</u>
CONTROL		(1.00 \pm 0.10 E+00)
22	1.9 MI NNE - SHADY REST NEAR DOCK	1.10 \pm 0.10 E+00
23	1.2 MI ESE - INT RD 41E-5 AND S-16-39	1.00 \pm 0.10 E+00
24	5.0 MI NW - S-13-711 PAST PEACH FARM	1.30 \pm 0.10 E+00
25	4.6 MI NNW - RD S-13-346 OFF 151 NORTH	1.00 \pm 0.10 E+00
26	5.0 MI N - RD S-13-346	1.20 \pm 0.10 E+00
27	5.0 MI NNE - RD S-13-763 NEAR INTER	9.00 \pm 1.00 E-01
28	4.8 MI NE - NEAR DUMPSTER RD S-13-39	1.30 \pm 0.10 E+00
29	RD S-16-20 SOUTH OF LOOKOUT TOWER	1.20 \pm 0.10 E+00
30	4.6 MI E - RD S-16-20 JOHNSON FENCE CO	1.20 \pm 0.10 E+00
31	4.6 MI ESE - LAKESHORE DRIVE	1.10 \pm 0.10 E+00
32	4.5 MI SE - END OF KALBER DRIVE	1.00 \pm 0.10 E+00
33	4.6 MI SSE-RD S16-493 NEAR SEGAR'S ENTR	1.20 \pm 0.10 E+00
34	4.6 MI S - RD S-16-772	8.00 \pm 1.00 E-01
35	4.4 MI SSW - INT RD S-31-51 & S-16-12	1.60 \pm 0.20 E+00
36	4.7 MI SW - PAVED RD OFF RD S-16-85	1.50 \pm 0.10 E+00
37	5.0 MI WSW - TRANS TOWER NEAR CLAY RD	1.40 \pm 0.10 E+00
38	4.9 MI W - RD S-16-231 AT UNION CHURCH	1.20 \pm 0.10 E+00
39	5.0 MI WNW - POWER POLE IN FIELD	1.10 \pm 0.20 E+00
55	0.3 MI SSE - SITE BOUNDARY	1.10 \pm 0.10 E+00
56	300 FT N OF ISFSI	1.00 \pm 0.10 E+00