ENERGY NORTHWEST

P.O. Box 968 ■ Richland, Washington 99352-0968

May 10, 2000
GO2-00-087

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Energy Facility Site Evaluation Council
Attn: EFSEC Manager
P.O. Box 43172
Olympia, WA 98504-3172

Subject: **ENERGY NORTHWEST NUCLEAR PLANT NO. 2 (WNP-2)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
ANNUAL REPORT FOR 1999**

References:
1. WNP-2 (Operating License No. NPF-21), Technical Specification 5.6.2
2. EFSEC Resolution No. 260, January 13, 1992

Enclosed are three (3) copies of the subject report and separate data volume that are submitted per the referenced requirements.

Respectfully,

D. W. Coleman

D.W. Coleman (Mail Drop PE20)
Manager, Regulatory Affairs

Enclosures

cc (report w/o data volume, except as noted):

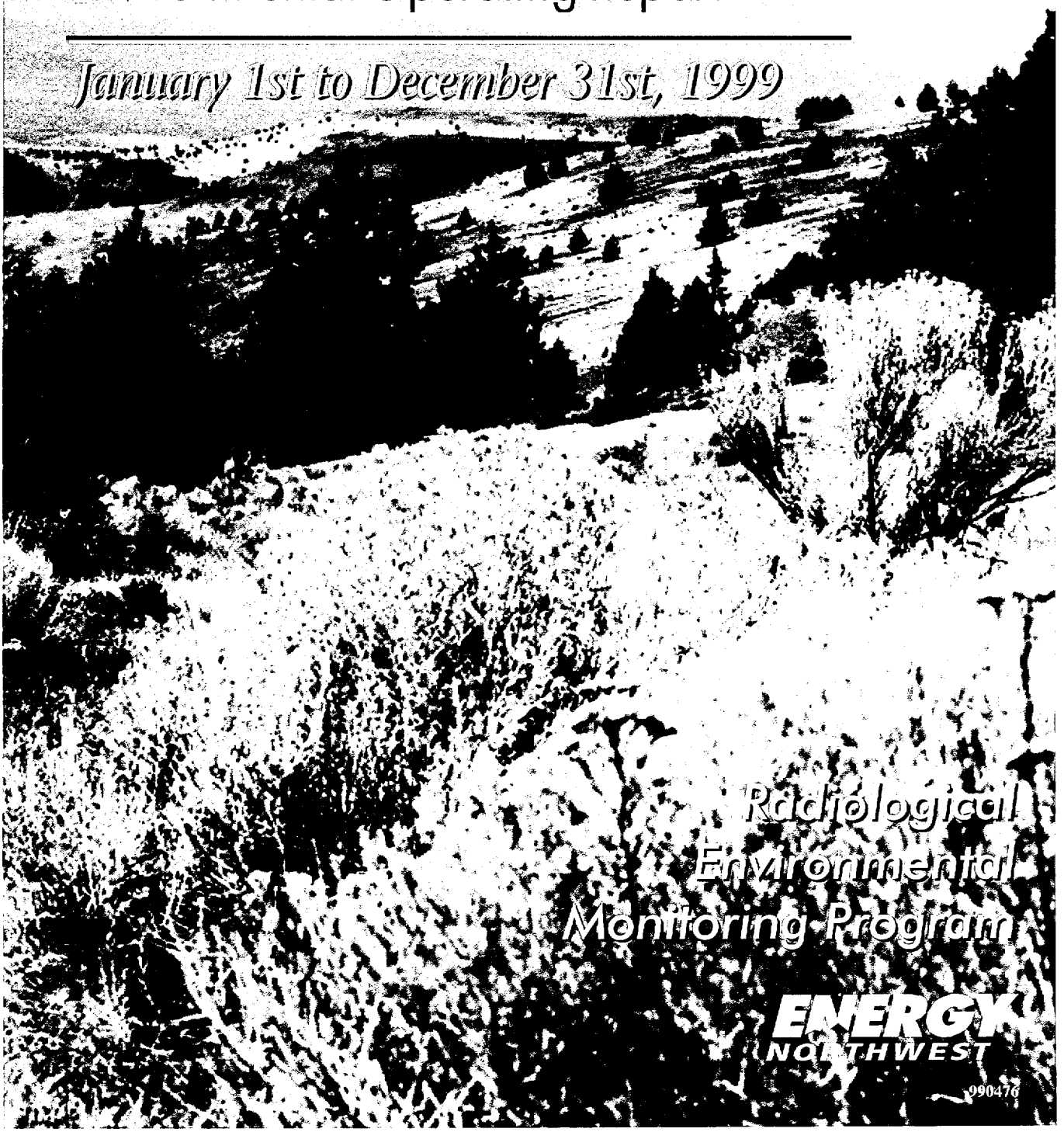
D McBaugh (WDOH)	EW Merschoff (NRC RIV)
L Albin (WDOH)(w/ data vol)	JS Cushing (NRC NRR)
JM Ayres (WDOE-Kenn)	NRC Sr Resident Inspector (927N)
TC Poindexter (Winston & Strawn)	RL Dirkes (PNNL)
DL Williams (BPA/399)	

IE25 1/3

ENERGY NORTHWEST
NUCLEAR PLANT 2

1999 Annual Radiological Environmental Operating Report

January 1st to December 31st, 1999



ENERGY NORTHWEST

NUCLEAR PLANT 2

1999 DATA TABLES
TABLES A and B

JANUARY 1 to DECEMBER 31, 1999

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Prepared by

J.E. McDonald and L.S. Schleder
Washington Public Power Supply System
Richland, WA

and

C.A. Mendola
Teledyne Brown Engineering Environmental Services
Westwood, NJ

1999 DATA TABLES

TABLE A: ROUTINE RESULTS
TABLE B: SPECIAL INTEREST SAMPLE RESULTS

TABLE A: ROUTINE RESULTS

1999 DATA TABLES

1999 DATA TABLES

TABLE B: SPECIAL INTEREST SAMPLE RESULTS

1999 REMP

ENERGY NORTHWEST

DATA TABLES

TABLE A-1.1

1999 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
1	12/31/98 to 03/31/99	0.242
	03/31/98 to 06/30/99	0.256
	06/30/98 to 09/29/99	0.229
	09/29/99 to 12/30/99	0.251
2	12/31/98 to 03/31/99	0.248
	03/31/98 to 06/30/99	0.227
	06/30/98 to 09/29/99	0.233
	09/29/99 to 12/30/99	0.233
3	12/31/98 to 03/31/99	0.231
	03/31/98 to 06/30/99	0.225
	06/30/98 to 09/29/99	0.221
	09/29/99 to 12/30/99	0.226
4	12/31/98 to 03/31/99	0.201
	03/31/98 to 06/30/99	0.209
	06/30/98 to 09/29/99	0.188
	09/29/99 to 12/30/99	0.216
5	12/31/98 to 03/31/99	0.228
	03/31/98 to 06/30/99	0.221
	06/30/98 to 09/29/99	0.202
	09/29/99 to 12/30/99	0.221
6	12/31/98 to 03/31/99-	0.224
	03/31/98 to 06/30/99	0.221
	06/30/98 to 09/29/99	0.225
	09/29/99 to 12/30/99	0.212
7	12/31/98 to 03/31/99	0.236
	03/31/98 to 06/30/99	0.225
	06/30/98 to 09/29/99	0.219
	09/29/99 to 12/30/99	0.231
8	12/31/98 to 03/31/99	0.253
	03/31/98 to 06/30/99	0.254
	06/30/98 to 09/29/99	0.241
	09/29/99 to 12/30/99	0.250

TABLE A-1.1 (cont.)

1999 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
9	12/31/98 to 03/31/99	0.219
	03/31/98 to 06/30/99	0.213
	06/30/98 to 09/29/99	0.203
	09/29/99 to 12/30/99	0.208
10	12/31/98 to 03/31/99	0.232
	03/31/98 to 06/30/99	0.229
	06/30/98 to 09/29/99	0.220
	09/29/99 to 12/30/99	0.227
11	12/31/98 to 03/31/99	0.234
	03/31/98 to 06/30/99	0.230
	06/30/98 to 09/29/99	0.225
	09/29/99 to 12/30/99	0.230
12	12/31/98 to 03/31/99	0.253
	03/31/98 to 06/30/99	0.263
	06/30/98 to 09/29/99	0.241
	09/29/99 to 12/30/99	0.255
13	12/31/98 to 03/31/99	0.234
	03/31/98 to 06/30/99	0.234
	06/30/98 to 09/29/99	0.223
	09/29/99 to 12/30/99	0.239
14	12/31/98 to 03/31/99	0.240
	03/31/98 to 06/30/99	0.229
	06/30/98 to 09/29/99	0.221
	09/29/99 to 12/30/99	0.237
15	12/31/98 to 03/31/99	0.250
	03/31/98 to 06/30/99	0.248
	06/30/98 to 09/29/99	0.240
	09/29/99 to 12/30/99	0.253
16	12/31/98 to 03/31/99	0.245
	03/31/98 to 06/30/99	0.238
	06/30/98 to 09/29/99	0.234
	09/29/99 to 12/30/99	0.234

TABLE A-1.1 (cont.)
1999 QUARTERLY TLD RESULTS
Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
17	12/31/98 to 03/31/99	0.252
	03/31/98 to 06/30/99	0.255
	06/30/98 to 09/29/99	0.236
	09/29/99 to 12/30/99	0.248
18	12/31/98 to 03/31/99	0.243
	03/31/98 to 06/30/99	0.242
	06/30/98 to 09/29/99	0.229
	09/29/99 to 12/30/99	0.244
19	12/31/98 to 03/31/99	0.250
	03/31/98 to 06/30/99	0.247
	06/30/98 to 09/29/99	0.237
	09/29/99 to 12/30/99	0.249
20	12/31/98 to 03/31/99	0.245
	03/31/98 to 06/30/99	0.242
	06/30/98 to 09/29/99	0.241
	09/29/99 to 12/30/99	0.244
21	12/31/98 to 03/31/99	0.228
	03/31/98 to 06/30/99	0.226
	06/30/98 to 09/29/99	0.217
	09/29/99 to 12/30/99	0.222
22	12/31/98 to 03/31/99	0.235
	03/31/98 to 06/30/99	0.242
	06/30/98 to 09/29/99	0.225
	09/29/99 to 12/30/99	0.240
23	12/31/98 to 03/31/99	0.235
	03/31/98 to 06/30/99	0.254[a]
	06/30/98 to 09/29/99	0.225
	09/29/99 to 12/30/99	0.233
24	12/31/98 to 03/31/99	0.236
	03/31/98 to 06/30/99	0.247
	06/30/98 to 09/29/99	0.225
	09/29/99 to 12/30/99	0.250

(a) TLD burned in brush fire. TLD replaced and calculated daily dose adjusted for shorter time in field.

TABLE A-1.1 (cont.)

1999 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
25	12/31/98 to 03/31/99	0.247
	03/31/98 to 06/30/99	0.250
	06/30/98 to 09/29/99	0.240
	09/29/99 to 12/30/99	0.243
40	12/31/98 to 03/31/99	0.217
	03/31/98 to 06/30/99	0.228
	06/30/98 to 09/29/99	0.202
	09/29/99 to 12/30/99	0.228
41	12/31/98 to 03/31/99	0.248
	03/31/98 to 06/30/99	0.246
	06/30/98 to 09/29/99	0.236
	09/29/99 to 12/30/99	0.244
42	12/31/98 to 03/31/99	0.247
	03/31/98 to 06/30/99	0.240
	06/30/98 to 09/29/99	0.232
	09/29/99 to 12/30/99	0.237
43	12/31/98 to 03/31/99	0.245
	03/31/98 to 06/30/99	0.230
	06/30/98 to 09/29/99	0.229
	09/29/99 to 12/30/99	0.229
44	12/31/98 to 03/31/99	0.229
	03/31/98 to 06/30/99	0.236
	06/30/98 to 09/29/99	0.212
	09/29/99 to 12/30/99	0.235
45	12/31/98 to 03/31/99	0.240
	03/31/98 to 06/30/99	0.231
	06/30/98 to 09/29/99	0.227
	09/29/99 to 12/30/99	0.236
46	12/31/98 to 03/31/99	0.291
	03/31/98 to 06/30/99	0.299
	06/30/98 to 09/29/99	0.285
	09/29/99 to 12/30/99	0.301

TABLE A-1.1 (cont.)

1999 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
47	12/31/98 to 03/31/99	0.217
	03/31/98 to 06/30/99	0.212
	06/30/98 to 09/29/99	0.207
	09/29/99 to 12/30/99	0.222
49	12/31/98 to 03/31/99	0.234
	03/31/98 to 06/30/99	0.244
	06/30/98 to 09/29/99	0.222
	09/29/99 to 12/30/99	0.250
50	12/31/98 to 03/31/99	0.233
	03/31/98 to 06/30/99	0.240
	06/30/98 to 09/29/99	0.220
	09/29/99 to 12/30/99	0.240
51	12/31/98 to 03/31/99	0.227
	03/31/98 to 06/30/99	0.237
	06/30/98 to 09/29/99	0.216
	09/29/99 to 12/30/99	0.233
53	12/31/98 to 03/31/99	0.260
	03/31/98 to 06/30/99	0.252
	06/30/98 to 09/29/99	0.224
	09/29/99 to 12/30/99	0.246
54	12/31/98 to 03/31/99	0.241
	03/31/98 to 06/30/99	0.245
	06/30/98 to 09/29/99	0.225
	09/29/99 to 12/30/99	0.242
55	12/31/98 to 03/31/99	0.240
	03/31/98 to 06/30/99	0.234
	06/30/98 to 09/29/99	0.230
	09/29/99 to 12/30/99	0.245
56	12/31/98 to 03/31/99	0.246
	03/31/98 to 06/30/99	0.238
	06/30/98 to 09/29/99	0.227
	09/29/99 to 12/30/99	0.239

TABLE A-1.1 (cont.)

1999 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
65	12/31/98 to 03/31/99	0.245
	03/31/98 to 06/30/99	0.232
	06/30/98 to 09/29/99	0.213
	09/29/99 to 12/30/99	0.228
71	12/31/98 to 03/31/99	0.288
	03/31/98 to 06/30/99	0.248
	06/30/98 to 09/29/99	0.262
	09/29/99 to 12/30/99	0.275
72	12/31/98 to 03/31/99	0.278
	03/31/98 to 06/30/99	0.253
	06/30/98 to 09/29/99	0.252
	09/29/99 to 12/30/99	0.266
73	12/31/98 to 03/31/99	0.241
	03/31/98 to 06/30/99	0.227
	06/30/98 to 09/29/99	0.252
	09/29/99 to 12/30/99	0.235
74	12/31/98 to 03/31/99	0.256
	03/31/98 to 06/30/99	0.243
	06/30/98 to 09/29/99	0.243
	09/29/99 to 12/30/99	0.255
75	12/31/98 to 03/31/99	0.247
	03/31/98 to 06/30/99	0.233
	06/30/98 to 09/29/99	0.229
	09/29/99 to 12/30/99	0.242
76	12/31/98 to 03/31/99	0.249
	03/31/98 to 06/30/99	0.232
	06/30/98 to 09/29/99	0.237
	09/29/99 to 12/30/99	0.238
77	12/31/98 to 03/31/99	0.240
	03/31/98 to 06/30/99	0.243
	06/30/98 to 09/29/99	0.229
	09/29/99 to 12/30/99	0.240

TABLE A-1.1 (cont.)

1999 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
78	12/31/98 to 03/31/99	0.232
	03/31/98 to 06/30/99	0.239
	06/30/98 to 09/29/99	0.218
	09/29/99 to 12/30/99	0.241
79	12/31/98 to 03/31/99	0.236
	03/31/98 to 06/30/99	0.245
	06/30/98 to 09/29/99	0.225
	09/29/99 to 12/30/99	0.240
80	12/31/98 to 03/31/99	0.232
	03/31/98 to 06/30/99	0.233
	06/30/98 to 09/29/99	0.214
	09/29/99 to 12/30/99	0.232
81	12/31/98 to 03/31/99	0.232
	03/31/98 to 06/30/99	0.240
	06/30/98 to 09/29/99	0.216
	09/29/99 to 12/30/99	0.236
82	12/31/98 to 03/31/99	0.239
	03/31/98 to 06/30/99	0.250
	06/30/98 to 09/29/99	0.231
	09/29/99 to 12/30/99	0.247
83	12/31/98 to 03/31/99	0.249
	03/31/98 to 06/30/99	0.235
	06/30/98 to 09/29/99	0.234
	09/29/99 to 12/30/99	0.247
84	12/31/98 to 03/31/99	0.245
	03/31/98 to 06/30/99	0.247
	06/30/98 to 09/29/99	0.229
	09/29/99 to 12/30/99	0.256
85	12/31/98 to 03/31/99	0.256
	03/31/98 to 06/30/99	0.243
	06/30/98 to 09/29/99	0.257
	09/29/99 to 12/30/99	0.249

TABLE A-1.1 (cont.)

1999 QUARTERLY TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
86	12/31/98 to 03/31/99	0.281
	03/31/98 to 06/30/99	0.246
	06/30/98 to 09/29/99	0.265
	09/29/99 to 12/30/99	0.272
119	12/31/98 to 03/31/99	0.243
	03/31/98 to 06/30/99	0.243
	06/30/98 to 09/29/99	0.219
	09/29/99 to 12/30/99	0.251
119-Control	12/31/98 to 03/31/99	0.243
	03/31/98 to 06/30/99	0.228
	06/30/98 to 09/29/99	0.222
	09/29/99 to 12/30/99	0.236
120	12/31/98 to 03/31/99	0.244
	03/31/98 to 06/30/99	0.239
	06/30/98 to 09/29/99	0.231
	09/29/99 to 12/30/99	0.245

TABLE A-1.2

1999 ANNUAL TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
1	12/31/98 to 12/30/99	0.223
2	12/31/98 to 12/30/99	0.213
3	12/31/98 to 12/30/99	0.204
4	12/31/98 to 12/30/99	0.191
5	12/31/98 to 12/30/99	0.205
6	12/31/98 to 12/30/99	0.201
7	12/31/98 to 12/30/99	0.207
8	12/31/98 to 12/30/99	0.231
9	12/31/98 to 12/30/99	0.199
10	12/31/98 to 12/30/99	0.211
11	12/31/98 to 12/30/99	0.218
12	12/31/98 to 12/30/99	0.237
13	12/31/98 to 12/30/99	0.217
14	12/31/98 to 12/30/99	0.218
15	12/31/98 to 12/30/99	0.231
16	12/31/98 to 12/30/99	0.223
17	12/31/98 to 12/30/99	0.229
18	12/31/98 to 12/30/99	0.220
19	12/31/98 to 12/30/99	0.222
20	12/31/98 to 12/30/99	0.225
21	12/31/98 to 12/30/99	0.198
22	12/31/98 to 12/30/99	0.216
23	12/31/98 to 12/30/99	(a)
24	12/31/98 to 12/30/99	0.222
25	12/31/98 to 12/30/99	0.235
40	12/31/98 to 12/30/99	0.197
41	12/31/98 to 12/30/99	0.215
42	12/31/98 to 12/30/99	0.215
43	12/31/98 to 12/30/99	0.208
44	12/31/98 to 12/30/99	0.211
45	12/31/98 to 12/30/99	0.214
46	12/31/98 to 12/30/99	0.271
47	12/31/98 to 12/30/99	0.199

TABLE A-1.2 (cont.)

1999 ANNUAL TLD RESULTS

Results in mR/Day

LOCATION	COLLECTION PERIOD	RESULT
49	12/31/98 to 12/30/99	0.213
50	12/31/98 to 12/30/99	0.211
51	12/31/98 to 12/30/99	0.213
53	12/31/98 to 12/30/99	0.234
54	12/31/98 to 12/30/99	0.219
55	12/31/98 to 12/30/99	0.205
56	12/31/98 to 12/30/99	0.221
65	12/31/98 to 12/30/99	0.205
71	12/31/98 to 12/30/99	0.248
72	12/31/98 to 12/30/99	0.240
73	12/31/98 to 12/30/99	0.205
74	12/31/98 to 12/30/99	0.237
75	12/31/98 to 12/30/99	0.221
76	12/31/98 to 12/30/99	0.226
77	12/31/98 to 12/30/99	0.220
78	12/31/98 to 12/30/99	0.216
79	12/31/98 to 12/30/99	0.220
80	12/31/98 to 12/30/99	0.210
81	12/31/98 to 12/30/99	0.212
82	12/31/98 to 12/30/99	0.219
83	12/31/98 to 12/30/99	0.216
84	12/31/98 to 12/30/99	0.221
85	12/31/98 to 12/30/99	0.238
86	12/31/98 to 12/30/99	0.249
119	12/31/98 to 12/30/99	0.215
119-Control	12/31/98 to 12/30/99	0.225
120	12/31/98 to 12/30/99	0.223

TABLE A-1.3

1999 TLD RESULTS - SUMMARY

Results in mR/Day

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
		QUARTERLY TLD RESULTS			
TLD (I)	0.238	0.188	0.301	224	224
TLD (C)	0.211	0.203	0.219	4	4
		ST119 QUARTERLY TLD RESULTS			
TLD (I)	0.239	0.219	0.251	4	4
TLD (C)	0.232	0.222	0.243	4	4
		ST120 QUARTERLY TLD RESULTS			
TLD (I)	0.240	0.231	0.245	4	4
		ANNUAL TLD RESULTS			
TLD (I)	0.219	0.191	0.271	55	55
TLD (C)	0.199	0.199	0.199	1	1
		ST119 ANNUAL TLD RESULTS			
TLD (I)	0.209	0.209	0.209	1	1
TLD (C)	0.225	0.225	0.225	1	1
		ST120 ANNUAL TLD RESULTS			
TLD (I)	0.223	0.223	0.223	1	1

TABLE A-2.1

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	12/28/98-01/04/99	6.9 E-03	1.8 E-03
	01/04/99-01/11/99	2.3 E-02	2.0 E-03
	01/11/99-01/18/99	5.6 E-03	1.6 E-03
	01/18/99-01/25/99	8.4 E-03	1.8 E-03
	01/25/99-02/01/99	2.0 E-02	2.0 E-03
	02/01/99-02/08/99	5.9 E-03	1.6 E-03
	02/08/99-02/16/99	9.9 E-03	1.8 E-03
	02/16/99-02/22/99	3.1 E-03	1.7 E-03
	02/22/99-03/01/99	3.7 E-03	1.7 E-03
	03/01/99-03/08/99	7.1 E-03	1.7 E-03
	03/08/99-03/15/99	1.2 E-02	2.0 E-03
	03/15/99-03/22/99	1.4 E-02	2.0 E-03
	03/22/99-03/29/99	6.9 E-03	1.7 E-03
	03/29/99-04/05/99	5.7 E-03	1.6 E-03
	04/05/99-04/12/99	9.6 E-03	1.9 E-03
	04/12/99-04/19/99	1.8 E-02	2.0 E-03
	04/19/99-04/26/99	1.0 E-02	2.0 E-03
	04/26/99-05/03/99	7.7 E-03	2.0 E-03
	05/03/99-05/10/99	4.6 E-03	1.7 E-03
	05/10/99-05/17/99	5.1 E-03	1.7 E-03
	05/17/99-05/24/99	9.8 E-03	2.0 E-03
	05/24/99-06/01/99	1.3 E-02	2.0 E-03
	06/01/99-06/07/99	5.6 E-03	1.9 E-03
	06/07/99-06/14/99	8.4 E-03	1.8 E-03
	06/14/99-06/21/99	1.4 E-02	2.0 E-03
	06/21/99-06/28/99	3.0 E-03	1.6 E-03
	06/28/99-07/06/99	5.0 E-03	1.5 E-03
	07/06/99-07/12/99	1.2 E-02	3.0 E-03
	07/12/99-07/19/99	9.5 E-03	1.9 E-03
	07/19/99-07/26/99	1.4 E-02	2.0 E-03
	07/26/99-08/02/99	1.5 E-02	2.0 E-03
	08/02/99-08/09/99 (a)	* 1.1 E-02	8.6 E-03
	08/11/99-08/16/99	6.5 E-03	2.4 E-03
	08/16/99-08/23/99	1.4 E-02	2.0 E-03
	08/23/99-08/30/99	1.3 E-02	2.0 E-03
	08/30/99-09/07/99	9.2 E-03	2.1 E-03
	09/07/99-09/13/99	1.1 E-02	2.0 E-03
	09/13/99-09/20/99	2.6 E-02	3.0 E-03
	09/20/99-09/27/99	1.5 E-02	2.0 E-03
	09/27/99-10/04/99	1.5 E-02	2.0 E-03

* Denotes a result less than the detection limit.
(a) Blown fuse; results not included in averages.

TABLE A-2.1

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	10/04/99-10/11/99	1.6 E-02	2.0 E-03
	10/11/99-10/18/99	1.6 E-02	2.0 E-03
	10/18/99-10/25/99	3.9 E-02	3.0 E-03
	10/25/99-11/01/99	1.2 E-02	2.0 E-03
	11/01/99-11/08/99	2.1 E-02	2.0 E-03
	11/08/99-11/15/99	1.3 E-02	2.0 E-03
	11/15/99-11/22/99	1.5 E-02	2.0 E-03
	11/22/99-11/29/99	9.3 E-03	2.5 E-03
	11/29/99-12/06/99	1.0 E-02	2.0 E-03
	12/06/99-12/13/99	6.6 E-03	1.6 E-03
	12/13/99-12/20/99	4.3 E-03	1.7 E-03
	12/20/99-12/27/99	2.2 E-02	3.0 E-03
	12/27/99-01/03/00	3.0 E-02	3.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	12/28/98-01/04/99	7.6 E-03	1.8 E-03
	01/04/99-01/11/99	2.0 E-02	2.0 E-03
	01/11/99-01/18/99	3.9 E-03	1.5 E-03
	01/18/99-01/25/99	1.0 E-02	2.0 E-03
	01/25/99-02/01/99	1.8 E-02	2.0 E-03
	02/01/99-02/08/99	6.8 E-03	1.7 E-03
	02/08/99-02/16/99	1.2 E-02	2.0 E-03
	02/16/99-02/22/99	3.8 E-03	1.8 E-03
	02/22/99-03/01/99	* 2.4 E-03	1.6 E-03
	03/01/99-03/08/99	7.4 E-03	1.7 E-03
	03/08/99-03/15/99 (a)	1.1 E-02	3.0 E-03
	03/15/99-03/22/99	1.3 E-02	2.0 E-03
	03/22/99-03/29/99	5.9 E-03	2.3 E-03
	03/29/99-04/05/99	5.0 E-03	1.6 E-03
	04/05/99-04/12/99	8.9 E-03	1.9 E-03
	04/12/99-04/19/99	1.7 E-02	2.0 E-03
	04/19/99-04/26/99	9.1 E-03	1.8 E-03
	04/26/99-05/03/99	7.6 E-03	2.0 E-03
	05/03/99-05/10/99	3.7 E-03	1.7 E-03
	05/10/99-05/17/99	4.7 E-03	1.6 E-03
	05/17/99-05/24/99	1.1 E-02	2.0 E-03
	05/24/99-06/01/99	1.2 E-02	2.0 E-03
	06/01/99-06/07/99	4.2 E-03	1.8 E-03
	06/07/99-06/14/99	8.8 E-03	1.9 E-03
	06/14/99-06/21/99	1.2 E-02	2.0 E-03
	06/21/99-06/28/99	3.6 E-03	1.6 E-03
	06/28/99-07/06/99	3.6 E-03	1.4 E-03
	07/06/99-07/12/99	1.4 E-02	3.0 E-03
	07/12/99-07/19/99	7.8 E-03	1.8 E-03
	07/19/99-07/26/99	1.2 E-02	2.0 E-03
	07/26/99-08/02/99	1.7 E-02	2.0 E-03
	08/02/99-08/09/99	2.0 E-02	2.0 E-03
	08/09/99-08/16/99	8.4 E-03	1.9 E-03
	08/16/99-08/23/99	1.5 E-02	2.0 E-03
	08/23/99-08/30/99	1.6 E-02	2.0 E-03
	08/30/99-09/07/99	1.0 E-02	2.0 E-03
	09/07/99-09/13/99	1.1 E-02	2.0 E-03
	09/13/99-09/20/99	2.4 E-02	3.0 E-03
	09/20/99-09/27/99	2.1 E-02	2.0 E-03
	09/27/99-10/04/99	1.8 E-02	2.0 E-03

* Denotes a result less than the detection limit.

(a) Blown fuse; low sample volume.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	10/04/99-10/11/99	1.2 E-02	2.0 E-03
	10/11/99-10/18/99	1.5 E-02	2.0 E-03
	10/18/99-10/25/99	4.1 E-02	3.0 E-03
	10/25/99-11/01/99	8.1 E-03	1.8 E-03
	11/01/99-11/08/99	1.8 E-02	2.0 E-03
	11/08/99-11/15/99	1.3 E-02	2.0 E-03
	11/15/99-11/22/99	8.5 E-03	1.9 E-03
	11/22/99-11/29/99	7.2 E-03	2.4 E-03
	11/29/99-12/06/99	8.2 E-03	1.8 E-03
	12/06/99-12/13/99	6.5 E-03	1.6 E-03
	12/13/99-12/20/99	3.2 E-03	1.6 E-03
	12/20/99-12/27/99	2.3 E-02	3.0 E-03
	12/27/99-01/03/00	3.4 E-02	3.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	12/28/98-01/04/99	6.6 E-03	1.8 E-03
	01/04/99-01/11/99	2.0 E-02	2.0 E-03
	01/11/99-01/18/99	5.2 E-03	1.6 E-03
	01/18/99-01/25/99	9.4 E-03	1.8 E-03
	01/25/99-02/01/99	1.6 E-02	2.0 E-03
	02/01/99-02/08/99	6.9 E-03	1.7 E-03
	02/08/99-02/16/99	9.4 E-03	1.8 E-03
	02/16/99-02/22/99	3.3 E-03	1.7 E-03
	02/22/99-03/01/99	2.8 E-03	1.7 E-03
	03/01/99-03/08/99	7.2 E-03	1.7 E-03
	03/08/99-03/15/99	7.0 E-03	1.8 E-03
	03/15/99-03/22/99	1.2 E-02	2.0 E-03
	03/22/99-03/29/99	5.1 E-03	1.6 E-03
	03/29/99-04/05/99	5.9 E-03	1.7 E-03
	04/05/99-04/12/99	8.5 E-03	1.9 E-03
	04/12/99-04/19/99	1.6 E-02	2.0 E-03
	04/19/99-04/26/99	8.2 E-03	1.8 E-03
	04/26/99-05/03/99	8.5 E-03	2.1 E-03
	05/03/99-05/10/99	4.2 E-03	1.7 E-03
	05/10/99-05/17/99	4.0 E-03	1.6 E-03
	05/17/99-05/24/99	9.4 E-03	2.0 E-03
	05/24/99-06/01/99	1.0 E-02	2.0 E-03
	06/01/99-06/07/99	5.3 E-03	1.9 E-03
	06/07/99-06/14/99	8.1 E-03	1.8 E-03
	06/14/99-06/21/99	1.8 E-02	3.0 E-03
	06/21/99-06/28/99	3.8 E-03	1.7 E-03
	06/28/99-07/06/99	5.4 E-03	1.5 E-03
	07/06/99-07/12/99	1.5 E-02	3.0 E-03
	07/12/99-07/19/99	7.1 E-03	1.8 E-03
	07/19/99-07/26/99	1.2 E-02	2.0 E-03
	07/26/99-08/02/99	1.5 E-02	2.0 E-03
	08/02/99-08/09/99	1.6 E-02	2.0 E-03
	08/09/99-08/16/99	9.4 E-03	2.0 E-03
	08/16/99-08/23/99	1.4 E-02	2.0 E-03
	08/23/99-08/30/99	1.5 E-02	2.0 E-03
	08/30/99-09/07/99	1.2 E-02	2.0 E-03
	09/07/99-09/13/99	1.1 E-02	2.0 E-03
	09/13/99-09/20/99	1.9 E-02	2.0 E-03
	09/20/99-09/27/99	1.8 E-02	2.0 E-03
	09/27/99-10/04/99	1.7 E-02	2.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	10/04/99-10/11/99	1.4 E-02	2.0 E-03
	10/11/99-10/18/99	1.5 E-02	2.0 E-03
	10/18/99-10/25/99	3.5 E-02	3.0 E-03
	10/25/99-11/01/99	1.0 E-02	2.0 E-03
	11/01/99-11/08/99	1.9 E-02	2.0 E-03
	11/08/99-11/15/99	1.3 E-02	2.0 E-03
	11/15/99-11/22/99	1.1 E-02	2.0 E-03
	11/22/99-11/29/99	5.4 E-03	2.3 E-03
	11/29/99-12/06/99	9.9 E-03	1.8 E-03
	12/06/99-12/13/99	6.4 E-03	1.6 E-03
	12/13/99-12/20/99	2.9 E-03	1.6 E-03
	12/20/99-12/27/99	2.3 E-02	3.0 E-03
	12/27/99-01/03/00	2.6 E-02	3.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	OVERALL RESULT	UNCERTAINTY
6	12/28/98-01/04/99	8.6 E-03	1.9 E-03
	01/04/99-01/11/99	2.6 E-02	3.0 E-03
	01/11/99-01/18/99	5.8 E-03	1.6 E-03
	01/18/99-01/25/99	1.0 E-02	2.0 E-03
	01/25/99-02/01/99	2.0 E-02	2.0 E-03
	02/01/99-02/08/99	6.3 E-03	1.7 E-03
	02/08/99-02/16/99	9.6 E-03	1.8 E-03
	02/16/99-02/22/99	3.9 E-03	1.8 E-03
	02/22/99-03/01/99	3.2 E-03	1.7 E-03
	03/01/99-03/08/99	6.9 E-03	1.7 E-03
	03/08/99-03/15/99	1.1 E-02	2.0 E-03
	03/15/99-03/22/99	1.2 E-02	2.0 E-03
	03/22/99-03/29/99	5.7 E-03	1.7 E-03
	03/29/99-04/05/99	6.1 E-03	1.7 E-03
	04/05/99-04/12/99	8.8 E-03	1.9 E-03
	04/12/99-04/19/99	1.3 E-02	2.0 E-03
	04/19/99-04/26/99	1.2 E-02	2.0 E-03
	04/26/99-05/03/99	7.1 E-03	2.0 E-03
	05/03/99-05/10/99	4.6 E-03	1.7 E-03
	05/10/99-05/17/99	6.2 E-03	1.7 E-03
	05/17/99-05/24/99	1.0 E-02	2.0 E-03
	05/24/99-06/01/99	1.3 E-02	2.0 E-03
	06/01/99-06/07/99	5.1 E-03	1.9 E-03
	06/07/99-06/14/99	7.4 E-03	1.8 E-03
	06/14/99-06/21/99	1.1 E-02	2.0 E-03
	06/21/99-06/28/99	3.1 E-03	1.6 E-03
	06/28/99-07/06/99	4.3 E-03	1.4 E-03
	07/06/99-07/12/99	1.3 E-02	3.0 E-03
	07/12/99-07/19/99	9.5 E-03	1.9 E-03
	07/19/99-07/26/99	1.2 E-02	2.0 E.03
	07/26/99-08/02/99	1.5 E-02	2.0 E-03
	08/02/99-08/09/99	2.0 E-02	2.0 E-03
	08/09/99-08/16/99	1.0 E-02	2.0 E-03
	08/16/99-08/23/99	1.3 E-02	2.0 E-03
	08/23/99-08/30/99	1.4 E-02	2.0 E-03
	08/30/99-09/07/99	9.7 E-03	2.1 E-03
	09/07/99-09/13/99	1.1 E-02	2.0 E-03
	09/13/99-09/20/99	2.0 E-02	2.0 E-03
	09/20/99-09/27/99	1.7 E-02	2.0 E-03
	09/27/99-10/04/99	1.7 E-02	2.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	10/04/99-10/11/99	1.1 E-02	2.0 E-03
	10/11/99-10/18/99	1.5 E-02	2.0 E-03
	10/18/99-10/25/99	3.5 E-02	3.0 E-03
	10/25/99-11/01/99	1.0 E-02	2.0 E-03
	11/01/99-11/08/99	2.1 E-02	2.0 E-03
	11/08/99-11/15/99	1.5 E-02	2.0 E-03
	11/15/99-11/22/99	1.2 E-02	2.0 E-03
	11/22/99-11/29/99	6.3 E-03	2.3 E-03
	11/29/99-12/06/99	1.0 E-02	2.0 E-03
	12/06/99-12/13/99	7.4 E-03	1.7 E-03
	12/13/99-12/20/99	2.7 E-03	1.6 E-03
	12/20/99-12/27/99	1.9 E-02	3.0 E-03
	12/27/99-01/03/00	2.6 E-02	3.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	12/28/98-01/04/99	5.0 E-03	1.7 E-03
	01/04/99-01/11/99	2.0 E-02	2.0 E-03
	01/11/99-01/18/99	4.2 E-03	1.5 E-03
	01/18/99-01/25/99	6.7 E-03	1.7 E-03
	01/25/99-02/01/99	1.5 E-02	2.0 E-03
	02/01/99-02/08/99	5.3 E-03	1.6 E-03
	02/08/99-02/16/99	8.3 E-03	1.7 E-03
	02/16/99-02/22/99	* 2.1 E-03	1.7 E-03
	02/22/99-03/01/99	* 2.0 E-03	1.6 E-03
	03/01/99-03/08/99	4.5 E-03	1.5 E-03
	03/08/99-03/15/99	8.9 E-03	1.9 E-03
	03/15/99-03/22/99	8.8 E-03	2.0 E-03
	03/22/99-03/29/99	4.6 E-03	1.6 E-03
	03/29/99-04/05/99	5.1 E-03	1.6 E-03
	04/05/99-04/12/99	6.2 E-03	1.7 E-03
	04/12/99-04/19/99	1.3 E-02	2.0 E-03
	04/19/99-04/26/99	9.6 E-03	5.6 E-03
	04/26/99-05/03/99	1.3 E-02	2.0 E-03
	05/03/99-05/10/99	4.0 E-03	1.7 E-03
	05/10/99-05/17/99	4.3 E-03	1.6 E-03
	05/17/99-05/24/99	6.5 E-03	1.8 E-03
	05/24/99-06/01/99	1.0 E-02	2.0 E-03
	06/01/99-06/07/99	4.7 E-03	1.8 E-03
	06/07/99-06/14/99	6.1 E-03	1.7 E-03
	06/14/99-06/21/99	1.0 E-02	2.0 E-03
	06/21/99-06/28/99	* 2.2 E-03	1.6 E-03
	06/28/99-07/06/99	4.3 E-03	1.4 E-03
	07/06/99-07/12/99	1.2 E-02	3.0 E-03
	07/12/99-07/19/99	6.9 E-03	1.8 E-03
	07/19/99-07/26/99	1.2 E-02	2.0 E-03
	07/26/99-08/02/99	1.4 E-02	2.0 E-03
	08/02/99-08/09/99	1.6 E-02	2.0 E-03
	08/09/99-08/16/99	6.3 E-03	1.8 E-03
	08/16/99-08/23/99	1.2 E-02	2.0 E-03
	08/23/99-08/30/99	1.2 E-02	2.0 E-03
	08/30/99-09/07/99	9.6 E-03	2.1 E-03
	09/07/99-09/13/99	1.0 E-02	2.0 E-03
	09/13/99-09/20/99	2.0 E-02	2.0 E-03
	09/20/99-09/27/99	1.6 E-02	2.0 E-03
	09/27/99-10/04/99	1.5 E-02	2.0 E-03

* Denotes a result less than the detection limit.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	10/04/99-10/11/99	1.1 E-02	2.0 E-03
	10/11/99-10/18/99	1.6 E-02	2.0 E-03
	10/18/99-10/25/99	3.6 E-02	3.0 E-03
	10/25/99-11/01/99	8.9 E-03	1.9 E-03
	11/01/99-11/08/99	2.0 E-02	2.0 E-03
	11/08/99-11/15/99	1.1 E-02	2.0 E-03
	11/15/99-11/22/99	1.2 E-02	2.0 E-03
	11/22/99-11/29/99	5.8 E-03	2.3 E-03
	11/29/99-12/06/99	1.9 E-02	5.0 E-03
	12/06/99-12/13/99	6.5 E-03	1.6 E-03
	12/13/99-12/20/99	3.2 E-03	1.6 E-03
	12/20/99-12/27/99	1.9 E-02	3.0 E-03
	12/27/99-01/03/00	3.1 E-02	3.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	12/28/98-01/04/99	6.6 E-03	1.8 E-03
	01/04/99-01/11/99	1.8 E-02	2.0 E-03
	01/11/99-01/18/99	4.8 E-03	1.6 E-03
	01/18/99-01/25/99	8.2 E-03	1.8 E-03
	01/25/99-02/01/99	1.7 E-02	2.0 E-03
	02/01/99-02/08/99	3.8 E-03	1.5 E-03
	02/08/99-02/16/99	8.5 E-03	1.7 E-03
	02/16/99-02/22/99	3.5 E-03	1.7 E-03
	02/22/99-03/01/99	* 1.7 E-03	1.6 E-03
	03/01/99-03/08/99	5.3 E-03	1.6 E-03
	03/08/99-03/15/99	9.4 E-03	2.0 E-03
	03/15/99-03/22/99	1.1 E-02	2.0 E-03
	03/22/99-03/29/99	5.2 E-03	1.6 E-03
	03/29/99-04/05/99	4.9 E-03	1.6 E-03
	04/05/99-04/12/99	8.1 E-03	1.8 E-03
	04/12/99-04/19/99	1.4 E-02	2.0 E-03
	04/19/99-04/26/99	1.1 E-02	2.0 E-03
	04/26/99-05/03/99	5.3 E-03	1.9 E-03
	05/03/99-05/10/99	4.0 E-03	1.7 E-03
	05/10/99-05/17/99	5.3 E-03	1.7 E-03
	05/17/99-05/24/99	8.0 E-03	1.9 E-03
	05/24/99-06/01/99	1.1 E-02	2.0 E-03
	06/01/99-06/07/99	3.6 E-03	1.8 E-03
	06/07/99-06/14/99	7.9 E-03	1.8 E-03
	06/14/99-06/21/99	1.0 E-02	2.0 E-03
	06/21/99-06/28/99	* 1.5 E-03	1.5 E-03
	06/28/99-07/06/99	5.2 E-03	1.5 E-03
	07/06/99-07/12/99	1.2 E-02	3.0 E-03
	07/12/99-07/19/99	7.7 E-03	1.8 E-03
	07/19/99-07/26/99	1.2 E-02	2.0 E-03
	07/26/99-08/02/99	1.4 E-02	2.0 E-03
	08/02/99-08/09/99	1.7 E-02	2.0 E-03
	08/09/99-08/16/99	1.0 E-02	2.0 E-03
	08/16/99-08/23/99	1.3 E-02	2.0 E-03
	08/23/99-08/30/99	1.5 E-02	2.0 E-03
	08/30/99-09/07/99	9.4 E-03	2.1 E-03
	09/07/99-09/13/99	1.2 E-02	2.0 E-03
	09/13/99-09/20/99	2.1 E-02	2.0 E-03
	09/20/99-09/27/99	1.6 E-02	2.0 E-03
	09/27/99-10/04/99	1.6 E-02	2.0 E-03

* Denotes a result less than the detection limit.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	10/04/99-10/11/99	1.5 E-02	2.0 E-03
	10/11/99-10/18/99	1.4 E-02	2.0 E-03
	10/18/99-10/25/99	3.2 E-02	3.0 E-03
	10/25/99-11/01/99	8.8 E-03	1.9 E-03
	11/01/99-11/08/99	1.9 E-02	2.0 E-03
	11/08/99-11/15/99	1.2 E-02	2.0 E-03
	11/15/99-11/22/99	9.6 E-03	2.0 E-03
	11/22/99-11/29/99	4.8 E-03	2.3 E-03
	11/29/99-12/06/99	8.6 E-03	1.8 E-03
	12/06/99-12/13/99	5.9 E-03	1.6 E-03
	12/13/99-12/20/99	3.7 E-03	1.6 E-03
	12/20/99-12/27/99	2.1 E-02	3.0 E-03
	12/27/99-01/03/00	2.3 E-02	2.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	12/28/98-01/04/99	5.9 E-03	1.7 E-03
	01/04/99-01/11/99	2.2 E-02	2.0 E-03
	01/11/99-01/18/99	3.6 E-03	1.5 E-03
	01/18/99-01/25/99	6.4 E-03	1.7 E-03
	01/25/99-02/01/99	1.2 E-02	2.0 E-03
	02/01/99-02/08/99	4.5 E-03	1.6 E-03
	02/08/99-02/16/99	6.5 E-03	1.6 E-03
	02/16/99-02/22/99	3.0 E-03	1.7 E-03
	02/22/99-03/01/99	* 9.0 E-04	1.5 E-03
	03/01/99-03/08/99	5.7 E-03	1.6 E-03
	03/08/99-03/15/99	7.4 E-03	1.9 E-03
	03/15/99-03/22/99	9.7 E-03	2.0 E-03
	03/22/99-03/29/99	4.9 E-03	1.6 E-03
	03/29/99-04/05/99	4.5 E-03	1.6 E-03
	04/05/99-04/12/99	6.2 E-03	1.7 E-03
	04/12/99-04/19/99	1.1 E-02	2.0 E-03
	04/19/99-04/26/99	9.4 E-03	1.9 E-03
	04/26/99-05/03/99	6.3 E-03	2.0 E-03
	05/03/99-05/10/99	3.1 E-03	1.6 E-03
	05/10/99-05/17/99	5.3 E-03	1.7 E-03
	05/17/99-05/24/99	6.7 E-03	1.8 E-03
	05/24/99-06/01/99	1.0 E-02	2.0 E-03
	06/01/99-06/07/99	2.9 E-03	1.7 E-03
	06/07/99-06/14/99	7.2 E-03	1.8 E-03
	06/14/99-06/21/99	1.2 E-02	2.0 E-03
	06/21/99-06/28/99	3.4 E-03	1.6 E-03
	06/28/99-07/06/99	4.9 E-03	1.5 E-03
	07/06/99-07/12/99	1.1 E-02	3.0 E-03
	07/12/99-07/19/99	8.6 E-03	1.9 E-03
	07/19/99-07/26/99	9.7 E-03	1.9 E-03
	07/26/99-08/02/99	1.4 E-02	2.0 E-03
	08/02/99-08/09/99	1.8 E-02	2.0 E-03
	08/09/99-08/16/99	7.4 E-03	1.9 E-03
	08/16/99-08/23/99	1.2 E-02	2.0 E-03
	08/23/99-08/30/99	1.3 E-02	2.0 E-03
	08/30/99-09/07/99	9.0 E-03	2.1 E-03
	09/07/99-09/13/99	1.1 E-02	2.0 E-03
	09/13/99-09/20/99	1.8 E-02	2.0 E-03
	09/20/99-09/27/99	1.7 E-02	2.0 E-03
	09/27/99-10/04/99	1.7 E-02	2.0 E-03

* Denotes a result less than the detection limit.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	10/04/99-10/11/99	1.1 E-02	2.0 E-03
	10/11/99-10/18/99	1.4 E-02	2.0 E-03
	10/18/99-10/25/99	2.8 E-02	3.0 E-03
	10/25/99-11/01/99	8.3 E-03	1.9 E-03
	11/01/99-11/08/99	1.7 E-02	2.0 E-03
	11/08/99-11/15/99	1.1 E-02	2.0 E-03
	11/15/99-11/22/99	1.2 E-02	2.0 E-03
	11/22/99-11/29/99	6.6 E-03	2.4 E-03
	11/29/99-12/06/99	8.1 E-03	1.8 E-03
	12/06/99-12/13/99	5.5 E-03	1.5 E-03
	12/13/99-12/20/99	3.7 E-03	1.6 E-03
	12/20/99-12/27/99	1.8 E-02	3.0 E-03
	12/27/99-01/03/00	2.2 E-02	2.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	12/28/98-01/04/99	6.1 E-03	1.7 E-03
	01/04/99-01/11/99	2.3 E-02	2.0 E-03
	01/11/99-01/18/99	5.8 E-03	1.6 E-03
	01/18/99-01/25/99	8.3 E-03	1.8 E-03
	01/25/99-02/01/99	2.2 E-02	2.0 E-03
	02/01/99-02/08/99	4.8 E-03	1.6 E-03
	02/08/99-02/16/99	9.2 E-03	1.7 E-03
	02/16/99-02/22/99	3.3 E-03	1.7 E-03
	02/22/99-03/01/99	2.5 E-03	1.6 E-03
	03/01/99-03/08/99	4.9 E-03	1.6 E-03
	03/08/99-03/15/99	1.0 E-02	2.0 E-03
	03/15/99-03/22/99	1.1 E-02	2.0 E-03
	03/22/99-03/29/99	4.8 E-03	1.6 E-03
	03/29/99-04/05/99	4.8 E-03	1.6 E-03
	04/05/99-04/12/99	9.8 E-03	1.9 E-03
	04/12/99-04/19/99	1.4 E-02	2.0 E-03
	04/19/99-04/26/99	9.4 E-03	1.8 E-03
	04/26/99-05/03/99	7.0 E-03	2.0 E-03
	05/03/99-05/10/99	2.6 E-03	1.6 E-03
	05/10/99-05/17/99	5.8 E-03	1.7 E-03
	05/17/99-05/24/99	1.0 E-02	2.0 E-03
	05/24/99-06/01/99	1.2 E-02	2.0 E-03
	06/01/99-06/07/99	4.2 E-03	1.8 E-03
	06/07/99-06/14/99	7.3 E-03	1.8 E-03
	06/14/99-06/21/99	1.1 E-02	2.0 E-03
	06/21/99-06/28/99	* 2.2 E-03	2.1 E-03
	06/28/99-07/06/99	5.7 E-03	1.5 E-03
	07/06/99-07/12/99	1.2 E-02	3.0 E-03
	07/12/99-07/19/99	7.4 E-03	1.8 E-03
	07/19/99-07/26/99	1.3 E-02	2.0 E-03
	07/26/99-08/02/99	1.6 E-02	2.0 E-03
	08/02/99-08/09/99	1.8 E-02	2.0 E-03
	08/09/99-08/16/99	8.3 E-03	1.9 E-03
	08/16/99-08/23/99	1.2 E-02	2.0 E-03
	08/23/99-08/30/99	1.6 E-02	2.0 E-03
	08/30/99-09/07/99	8.1 E-03	2.0 E-03
	09/07/99-09/13/99	1.0 E-02	2.0 E-03
	09/13/99-09/20/99	2.0 E-02	2.0 E-03
	09/20/99-09/27/99	1.7 E-02	2.0 E-03
	09/27/99-10/04/99	1.7 E-02	2.0 E-03

* Denotes a result less than the detection limit.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	10/04/99-10/11/99	1.3 E-02	2.0 E-03
	10/11/99-10/18/99	1.5 E-02	2.0 E-03
	10/18/99-10/25/99	3.4 E-02	3.0 E-03
	10/25/99-11/01/99	9.1 E-03	1.9 E-03
	11/01/99-11/08/99	1.8 E-02	2.0 E-03
	11/08/99-11/15/99	1.4 E-02	2.0 E-03
	11/15/99-11/22/99	9.4 E-03	2.0 E-03
	11/22/99-11/29/99	6.1 E-03	2.3 E-03
	11/29/99-12/06/99	8.5 E-03	1.8 E-03
	12/06/99-12/13/99	6.7 E-03	1.6 E-03
	12/13/99-12/20/99	2.4 E-03	1.5 E-03
	12/20/99-12/27/99	1.8 E-02	3.0 E-03
	12/27/99-01/03/00	3.0 E-02	3.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	12/28/98-01/04/99	5.9 E-03	1.7 E-03
	01/04/99-01/11/99	2.1 E-02	2.0 E-03
	01/11/99-01/18/99	6.2 E-03	1.6 E-03
	01/18/99-01/25/99	8.0 E-03	1.7 E-03
	01/25/99-02/01/99	1.8 E-02	2.0 E-03
	02/01/99-02/08/99	4.6 E-03	1.6 E-03
	02/08/99-02/16/99	1.0 E-02	2.0 E-03
	02/16/99-02/22/99	4.9 E-03	1.8 E-03
	02/22/99-03/01/99	3.0 E-03	1.7 E-03
	03/01/99-03/08/99	3.3 E-03	1.5 E-03
	03/08/99-03/15/99	1.1 E-02	2.0 E-03
	03/15/99-03/22/99	1.0 E-02	2.0 E-03
	03/22/99-03/29/99	5.6 E-03	1.7 E-03
	03/29/99-04/05/99	5.7 E-03	1.6 E-03
	04/05/99-04/12/99	8.1 E-03	1.8 E-03
	04/12/99-04/19/99	1.3 E-02	2.0 E-03
	04/19/99-04/26/99	1.1 E-02	2.0 E-03
	04/26/99-05/03/99	7.2 E-03	2.0 E-03
	05/03/99-05/10/99	4.2 E-03	1.7 E-03
	05/10/99-05/17/99	5.4 E-03	1.7 E-03
	05/17/99-05/24/99	7.7 E-03	1.9 E-03
	05/24/99-06/01/99	1.0 E-02	2.0 E-03
	06/01/99-06/07/99	4.9 E-03	1.9 E-03
	06/07/99-06/14/99	7.4 E-03	1.8 E-03
	06/14/99-06/21/99	1.2 E-02	2.0 E-03
	06/21/99-06/28/99	3.6 E-03	1.6 E-03
	06/28/99-07/06/99	3.7 E-03	1.4 E-03
	07/06/99-07/12/99	1.1 E-02	3.0 E-03
	07/12/99-07/19/99	7.1 E-03	1.8 E-03
	07/19/99-07/26/99	1.1 E-02	2.0 E-03
	07/26/99-08/02/99	1.5 E-02	2.0 E-03
	08/02/99-08/09/99	1.6 E-02	2.0 E-03
	08/09/99-08/16/99	8.0 E-03	1.9 E-03
	08/16/99-08/23/99	1.3 E-02	2.0 E-03
	08/23/99-08/30/99	1.5 E-02	2.0 E-03
	08/30/99-09/07/99	1.0 E-02	2.0 E-03
	09/07/99-09/13/99	9.9 E-03	2.1 E-03
	09/13/99-09/20/99	2.0 E-02	2.0 E-03
	09/20/99-09/27/99	1.6 E-02	2.0 E-03
	09/27/99-10/04/99	1.6 E-02	2.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	10/04/99-10/11/99	1.1 E-02	2.0 E-03
	10/11/99-10/18/99	1.3 E-02	2.0 E-03
	10/18/99-10/25/99	3.3 E-02	3.0 E-03
	10/25/99-11/01/99	7.6 E-03	1.8 E-03
	11/01/99-11/08/99	1.7 E-02	2.0 E-03
	11/08/99-11/15/99	1.3 E-02	2.0 E-03
	11/15/99-11/22/99	1.3 E-02	2.0 E-03
	11/22/99-11/29/99	7.9 E-03	2.4 E-03
	11/29/99-12/06/99	9.0 E-03	1.8 E-03
	12/06/99-12/13/99	6.9 E-03	1.6 E-03
	12/13/99-12/20/99	* 1.6 E-03	1.5 E-03
	12/20/99-12/27/99	2.4 E-02	3.0 E-03
	12/27/99-01/03/00	2.9 E-02	3.0 E-03

* Denotes a result less than the detection limit.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	12/28/98-01/04/99	7.7 E-03	1.8 E-03
	01/04/99-01/11/99	2.3 E-02	2.0 E-03
	01/11/99-01/18/99	3.7 E-03	1.5 E-03
	01/18/99-01/25/99	1.1 E-02	2.0 E-03
	01/25/99-02/01/99	1.9 E-02	2.0 E-03
	02/01/99-02/08/99	5.8 E-03	1.6 E-03
	02/08/99-02/16/99	8.0 E-03	1.7 E-03
	02/16/99-02/22/99	(a)	
	02/22/99-03/01/99	(a)	
	03/01/99-03/08/99	(a)	
	03/08/99-03/15/99	(a)	
	03/15/99-03/22/99	(a)	
	03/22/99-03/29/99	(a)	
	03/29/99-04/05/99	(a)	
	04/05/99-04/12/99	8.0 E-03	1.8 E-03
	04/12/99-04/19/99	1.5 E-02	2.0 E-03
	04/19/99-04/26/99	8.6 E-03	1.8 E-03
	04/26/99-05/03/99 (b)	8.0 E-03	2.1 E-03
	05/03/99-05/10/99 (c)	4.3 E-03	1.7 E-03
	05/10/99-05/17/99	5.1 E-03	1.7 E-03
	05/17/99-05/24/99	7.9 E-03	1.9 E-03
	05/24/99-06/01/99	1.3 E-02	2.0 E-03
	06/01/99-06/07/99	4.1 E-03	1.8 E-03
	06/07/99-06/14/99	8.1 E-03	1.8 E-03
	06/14/99-06/21/99	1.1 E-02	2.0 E-03
	06/21/99-06/28/99	4.5 E-03	1.7 E-03
	06/28/99-07/06/99	4.9 E-03	1.5 E-03
	07/06/99-07/12/99	1.2 E-02	3.0 E-03
	07/12/99-07/19/99	7.1 E-03	1.8 E-03
	07/19/99-07/26/99	1.3 E-02	2.0 E-03
	07/26/99-08/02/99	1.5 E-02	2.0 E-03
	08/02/99-08/09/99 (d)	1.6 E-02	3.0 E-03
	08/12/99-08/16/99	4.5 E-03	2.9 E-03
	08/16/99-08/23/99	1.8 E-02	2.0 E-03
	08/23/99-08/30/99	1.4 E-02	2.0 E-03
	08/30/99-09/07/99	1.2 E-02	2.0 E-03
	09/07/99-09/13/99	1.1 E-02	2.0 E-03
	09/13/99-09/20/99	2.1 E-02	3.0 E-03
	09/20/99-09/27/99	1.6 E-02	2.0 E-03
	09/27/99-10/04/99	1.8 E-02	2.0 E-03

(a) Power outage; no measurable volume
(b) Power off for short time.
(c) Minor power outage.
(d) Blown fuse; low sample volume.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	10/04/99-10/11/99	1.4 E-02	2.0 E-03
	10/11/99-10/18/99	1.4 E-02	2.0 E-03
	10/18/99-10/25/99	3.5 E-02	3.0 E-03
	10/25/99-11/01/99	1.0 E-02	2.0 E-03
	11/01/99-11/08/99	1.8 E-02	2.0 E-03
	11/08/99-11/15/99	1.5 E-02	2.0 E-03
	11/15/99-11/22/99	1.1 E-02	2.0 E-03
	11/22/99-11/29/99	* 6.2 E-04	2.4 E-03
	11/29/99-12/06/99	4.5 E-03	1.8 E-03
	12/06/99-12/13/99	6.4 E-03	1.6 E-03
	12/13/99-12/20/99	4.0 E-03	1.6 E-03
	12/20/99-12/27/99	2.2 E-02	3.0 E-03
	12/27/99-01/03/00	2.7 E-02	3.0 E-03

* Denotes a result less than the detection limit.

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	12/28/98-01/04/99	6.4 E-03	1.8 E-03
	01/04/99-01/11/99	2.5 E-02	3.0 E-03
	01/11/99-01/18/99	4.8 E-03	1.6 E-03
	01/18/99-01/25/99	1.1 E-02	2.0 E-03
	01/25/99-02/01/99	1.9 E-02	2.0 E-03
	02/01/99-02/08/99	4.3 E-03	1.5 E-03
	02/08/99-02/16/99	1.0 E-02	2.0 E-03
	02/16/99-02/22/99	4.0 E-03	1.8 E-03
	02/22/99-03/01/99	3.7 E-03	1.7 E-03
	03/01/99-03/08/99	6.5 E-03	1.7 E-03
	03/08/99-03/15/99	9.7 E-03	2.0 E-03
	03/15/99-03/22/99	1.1 E-02	2.0 E-03
	03/22/99-03/29/99	4.1 E-03	1.6 E-03
	03/29/99-04/05/99	5.4 E-03	1.6 E-03
	04/05/99-04/12/99	9.1 E-03	1.9 E-03
	04/12/99-04/19/99	1.4 E-02	2.0 E-03
	04/19/99-04/26/99	8.9 E-03	1.8 E-03
	04/26/99-05/03/99	7.2 E-03	2.0 E-03
	05/03/99-05/10/99	4.5 E-03	1.7 E-03
	05/10/99-05/17/99	5.5 E-03	1.7 E-03
	05/17/99-05/24/99	5.9 E-03	1.8 E-03
	05/24/99-06/01/99	1.1 E-02	2.0 E-03
	06/01/99-06/07/99	3.9 E-03	1.8 E-03
	06/07/99-06/14/99	8.1 E-03	1.8 E-03
	06/14/99-06/21/99	1.1 E-02	2.0 E-03
	06/21/99-06/28/99	4.2 E-03	1.7 E-03
	06/28/99-07/06/99	4.2 E-03	1.4 E-03
	07/06/99-07/12/99	1.6 E-02	3.0 E-03
	07/12/99-07/19/99	8.1 E-03	1.8 E-03
	07/19/99-07/26/99	1.1 E-02	2.0 E-03
	07/26/99-08/02/99	1.4 E-02	2.0 E-03
	08/02/99-08/09/99	1.7 E-02	2.0 E-03
	08/09/99-08/16/99	6.8 E-03	1.8 E-03
	08/16/99-08/23/99	1.4 E-02	2.0 E-03
	08/23/99-08/30/99	1.2 E-02	2.0 E-03
	08/30/99-09/07/99	9.2 E-03	2.1 E-03
	09/07/99-09/13/99	1.0 E-02	2.0 E-03
	09/13/99-09/20/99	2.4 E-02	3.0 E-03
	09/20/99-09/27/99	1.6 E-02	2.0 E-03
	09/27/99-10/04/99	1.6 E-02	2.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	10/04/99-10/11/99	1.1 E-02	2.0 E-03
	10/11/99-10/18/99	1.2 E-02	2.0 E-03
	10/18/99-10/25/99	2.9 E-02	3.0 E-03
	10/25/99-11/01/99	8.3 E-03	1.9 E-03
	11/01/99-11/08/99	1.6 E-02	2.0 E-03
	11/08/99-11/15/99	1.0 E-02	2.0 E-03
	11/15/99-11/22/99	6.6 E-03	1.8 E-03
	11/22/99-11/29/99	6.0 E-03	2.3 E-03
	11/29/99-12/06/99	6.5 E-03	1.7 E-03
	12/06/99-12/13/99	4.3 E-03	1.5 E-03
	12/13/99-12/20/99	3.7 E-03	1.6 E-03
	12/20/99-12/27/99	1.8 E-02	3.0 E-03
	12/27/99-01/03/00	2.5 E-02	3.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	12/28/98-01/04/99	9.1 E-03	1.9 E-03
	01/04/99-01/11/99	2.0 E-02	2.0 E-03
	01/11/99-01/18/99	4.5 E-03	1.5 E-03
	01/18/99-01/25/99	8.4 E-03	1.8 E-03
	01/25/99-02/01/99	1.8 E-02	2.0 E-03
	02/01/99-02/08/99	5.7 E-03	1.6 E-03
	02/08/99-02/16/99	1.1 E-02	2.0 E-03
	02/16/99-02/22/99	4.0 E-03	1.8 E-03
	02/22/99-03/01/99	3.9 E-03	1.7 E-03
	03/01/99-03/08/99	5.3 E-03	1.6 E-03
	03/08/99-03/15/99	1.0 E-02	2.0 E-03
	03/15/99-03/22/99	1.2 E-02	2.0 E-03
	03/22/99-03/29/99	5.4 E-03	1.6 E-03
	03/29/99-04/05/99	5.8 E-03	1.7 E-03
	04/05/99-04/12/99	8.4 E-03	1.9 E-03
	04/12/99-04/19/99	1.5 E-02	2.0 E-03
	04/19/99-04/26/99	1.1 E-02	2.0 E-03
	04/26/99-05/03/99	1.0 E-02	2.0 E-03
	05/03/99-05/10/99	4.8 E-03	1.7 E-03
	05/10/99-05/17/99	5.4 E-03	1.7 E-03
	05/17/99-05/24/99	9.3 E-03	2.0 E-03
	05/24/99-06/01/99	1.3 E-02	2.0 E-03
	06/01/99-06/07/99	4.4 E-03	1.8 E-03
	06/07/99-06/14/99	8.3 E-03	1.8 E-03
	06/14/99-06/21/99	1.1 E-02	2.0 E-03
	06/21/99-06/28/99	3.9 E-03	1.7 E-03
	06/28/99-07/06/99	4.5 E-03	1.4 E-03
	07/06/99-07/12/99	1.2 E-02	3.0 E-03
	07/12/99-07/19/99	8.5 E-03	1.9 E-03
	07/19/99-07/26/99	1.2 E-02	2.0 E-03
	07/26/99-08/02/99	1.6 E-02	2.0 E-03
	08/02/99-08/09/99	2.0 E-02	2.0 E-03
	08/09/99-08/16/99	1.0 E-02	2.0 E-03
	08/16/99-08/23/99	1.4 E-02	2.0 E-03
	08/23/99-08/30/99	1.7 E-02	2.0 E-03
	08/30/99-09/07/99	1.2 E-02	2.0 E-03
	09/07/99-09/13/99	1.5 E-02	2.0 E-03
	09/13/99-09/20/99	2.8 E-02	3.0 E-03
	09/20/99-09/27/99	1.8 E-02	2.0 E-03
	09/27/99-10/04/99	2.1 E-02	2.0 E-03

TABLE A-2.1 (Cont.)

GROSS BETA ON AIR PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	10/04/99-10/11/99	1.3 E-02	2.0 E-03
	10/11/99-10/18/99	2.0 E-02	2.0 E-03
	10/18/99-10/25/99	4.2 E-02	3.0 E-03
	10/25/99-11/01/99	1.1 E-02	2.0 E-03
	11/01/99-11/08/99	2.4 E-02	3.0 E-03
	11/08/99-11/15/99	1.5 E-02	2.0 E-03
	11/15/99-11/22/99	1.5 E-02	2.0 E-03
	11/22/99-11/29/99	1.0 E-02	3.0 E-03
	11/29/99-12/06/99	1.3 E-02	2.0 E-03
	12/06/99-12/13/99	8.6 E-03	1.7 E-03
	12/13/99-12/20/99	3.9 E-03	1.6 E-03
	12/20/99-12/27/99	2.5 E-02	3.0 E-03
	12/27/99-01/03/00	3.6 E-02	3.0 E-03

TABLE A-2.2

GROSS BETA ON AIR PARTICULATE FILTERS - SUMMARY

Results in pCi/cubic meter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
Gr-Beta	(I)	1.1E-02	6.2E-04	4.2E-02	576	566
Gr-Beta	(C)	9.7E-03	9.0E-04	2.8E-02	53	52

(I) Indicator Stations
(C) Control Station

TABLE A-3.1

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
1	12/28/98-03/29/99	Be-7	8.15 E-02	9.79 E-03
		K-40	*-5.81 E-04	3.30 E-03
		Ru-103	* 6.44 E-04	6.69 E-04
		Ru-106	*-5.95 E-04	1.92 E-03
		Cs-134	* 9.23 E-05	2.25 E-04
		Cs-137	* 2.13 E-05	1.85 E-04
		Ra-226	* 1.22 E-03	3.77 E-03
		Th-228	* 4.56 E-04	3.53 E-04
	03/29/99-06/28/99	Be-7	1.45 E-01	1.14 E-02
		K-40	* 1.48 E-03	2.60 E-03
		Ru-103	* 2.67 E-04	6.30 E-04
		Ru-106	*-3.03 E-04	1.63 E-03
		Cs-134	* 1.22 E-04	2.05 E-04
		Cs-137	* 7.58 E-05	1.99 E-04
		Ra-226	*-2.51 E-03	3.20 E-03
		Th-228	*-1.85 E-06	3.09 E-04
	06/28/99-09/27/99	Be-7	1.68 E-01	1.15 E-02
		K-40	*-2.08 E-04	3.13 E-03
		Ru-103	*-1.28 E-04	6.03 E-04
		Ru-106	* 9.94 E-05	2.04 E-03
		Cs-134	* 2.69 E-05	2.04 E-04
		Cs-137	* 3.25 E-05	1.82 E-04
		Ra-226	* 1.53 E-04	3.76 E-03
		Th-228	* 2.76 E-04	3.36 E-04
	12/27/99-01/03/00	Be-7	7.00 E-02	8.76 E-03
		K-40	* 6.26 E-05	2.88 E-03
		Ru-103	*-3.22 E-04	7.16 E-04
		Ru-106	*-5.61 E-04	1.98 E-03
		Cs-134	* 0.00 E+00	1.83 E-04
		Cs-137	* 4.97 E-05	1.97 E-04
		Ra-226	* 2.66 E-03	3.72 E-03
		Th-228	* 3.85 E-04	3.29 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
4	12/28/98-03/29/99	Be-7	8.78 E-02	8.58 E-03
		K-40	* 2.25 E-03	4.86 E-03
		Ru-103	* 4.76 E-04	6.88 E-04
		Ru-106	* 3.68 E-04	2.14 E-03
		Cs-134	* 6.87 E-05	2.42 E-04
		Cs-137	* 7.12 E-05	2.19 E-04
		Ra-226	*-1.17 E-03	2.85 E-03
		Th-228	* 9.03 E-05	2.80 E-04
	03/29/99-06/28/99	Be-7	1.00 E-01	7.30 E-03
		K-40	*-1.03 E-03	3.57 E-03
		Ru-103	*-1.00 E-04	6.03 E-04
		Ru-106	* 9.99 E-04	1.71 E-03
		Cs-134	* 5.80 E-05	1.99 E-04
		Cs-137	* 1.48 E-04	1.77 E-04
		Ra-226	* 6.20 E-04	2.47 E-03
		Th-228	* 6.33 E-04	2.47 E-04
	06/28/99-09/27/99	Be-7	1.35 E-01	8.79 E-03
		K-40	5.83 E-03	2.15 E-03
		Ru-103	*-3.71 E-04	5.19 E-04
		Ru-106	* 4.20 E-04	1.39 E-03
		Cs-134	*-3.35 E-05	1.72 E-04
		Cs-137	*-9.10 E-06	1.70 E-04
		Ra-226	*-4.31 E-03	3.87 E-03
		Th-228	* 2.48 E-04	3.21 E-04
	12/27/99-01/03/00	Be-7	5.91 E-02	6.79 E-03
		K-40	*-3.78 E-03	3.91 E-03
		Ru-103	*-2.70 E-04	6.86 E-04
		Ru-106	* 1.32 E-04	1.86 E-03
		Cs-134	* 1.74 E-05	2.09 E-04
		Cs-137	* 4.19 E-05	2.01 E-04
		Ra-226	* 8.87 E-06	2.50 E-03
		Th-228	* 4.19 E-05	2.54 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
5	12/28/98-03/29/99	Be-7	9.80 E-02	9.85 E-03
		K-40	*-7.63 E-04	3.15 E-03
		Ru-103	* 6.19 E-04	7.19 E-04
		Ru-106	* 0.00 E+00	1.81 E-03
		Cs-134	* 6.61 E-05	2.13 E-04
		Cs-137	* 0.00 E+00	1.95 E-04
		Ra-226	* 2.94 E-03	3.80 E-03
		Th-228	* 7.56 E-04	3.61 E-04
	03/29/99-06/28/99	Be-7	1.49 E-01	1.24 E-02
		K-40	*-1.26 E-03	3.17 E-03
		Ru-103	* 6.13 E-05	7.23 E-04
		Ru-106	* 0.00 E+00	1.99 E-03
		Cs-134	* 1.24 E-04	1.89 E-04
		Cs-137	*-8.86 E-05	2.03 E-04
		Ra-226	*-1.14 E-03	3.75 E-03
		Th-228	*-2.06 E-04	3.62 E-04
	06/28/99-09/27/99	Be-7	1.32 E-01	8.89 E-03
		K-40	* 2.00 E-03	3.00 E-03
		Ru-103	*-2.94 E-04	5.25 E-04
		Ru-106	*-3.78 E-04	1.79 E-03
		Cs-134	*-2.02 E-05	1.91 E-04
		Cs-137	*-1.99 E-05	2.25 E-04
		Ra-226	* 6.37 E-04	3.10 E-03
		Th-228	* 1.35 E-04	2.97 E-04
	12/27/99-01/03/00	Be-7	6.58 E-01	8.14 E-02
		K-40	*-2.55 E-03	5.57 E-02
		Ru-103	* 6.54 E-03	7.88 E-03
		Ru-106	* 2.59 E-03	2.14 E-02
		Cs-134	*-9.48 E-04	2.44 E-03
		Cs-137	*-7.58 E-04	2.16 E-03
		Ra-226	*-2.76 E-02	3.01 E-02
		Th-228	*-2.18 E-03	2.81 E-03

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
6	12/28/98-03/29/99	Be-7	8.76 E-02	8.80 E-03
		K-40	*-1.11 E-03	5.85 E-03
		Ru-103	*-3.46 E-04	7.47 E-04
		Ru-106	* 4.11 E-04	2.30 E-03
		Cs-134	*-1.01 E-04	2.52 E-04
		Cs-137	*-5.90 E-05	2.48 E-04
		Ra-226	*-2.59 E-03	3.29 E-03
		Th-228	* 4.00 E-05	3.02 E-04
	03/29/99-06/28/99	Be-7	1.11 E-01	8.53 E-03
		K-40	7.72 E-03	2.86 E-03
		Ru-103	*-2.63 E-04	5.70 E-04
		Ru-106	* 6.27 E-05	1.59 E-03
		Cs-134	* 2.48 E-05	1.80 E-04
		Cs-137	*-2.96 E-04	1.91 E-04
		Ra-226	*-3.15 E-03	2.78 E-03
		Th-228	*-1.21 E-04	2.50 E-04
	06/28/99-09/27/99	Be-7	1.37 E-01	8.89 E-03
		K-40	*-1.27 E-03	2.90 E-03
		Ru-103	* 3.38 E-05	5.31 E-04
		Ru-106	*-6.46 E-05	1.74 E-03
		Cs-134	*-8.54 E-06	1.96 E-04
		Cs-137	* 2.52 E-04	1.77 E-04
		Ra-226	*-1.61 E-03	2.35 E-03
		Th-228	* 3.12 E-04	2.44 E-04
	12/27/99-01/03/00	Be-7	7.47 E-02	8.60 E-03
		K-40	* 1.16 E-03	2.40 E-03
		Ru-103	* 5.90 E-04	6.23 E-04
		Ru-106	*-6.61 E-04	1.52 E-03
		Cs-134	* 1.26 E-05	1.87 E-04
		Cs-137	*-1.00 E-04	1.63 E-04
		Ra-226	*-1.15 E-04	2.94 E-03
		Th-228	*-7.19 E-05	2.83 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
7	12/28/98-03/29/99	Be-7	7.94 E-02	6.93 E-03
		K-40	2.98 E-03	1.75 E-03
		Ru-103	* 5.19 E-04	5.66 E-04
		Ru-106	* 4.40 E-04	1.73 E-03
		Cs-134	*-2.16 E-04	1.94 E-04
		Cs-137	* 5.89 E-06	1.75 E-04
		Ra-226	*-5.12 E-05	2.53 E-03
		Th-228	* 2.35 E-04	2.49 E-04
	03/29/99-06/28/99	Be-7	1.11 E-01	1.12 E-02
		K-40	*-3.28 E-03	2.88 E-03
		Ru-103	* 9.00 E-05	6.86 E-04
		Ru-106	*-1.07 E-03	1.85 E-03
		Cs-134	* 0.00 E+00	2.06 E-04
		Cs-137	*-1.65 E-04	1.89 E-04
		Ra-226	* 3.84 E-05	3.53 E-03
		Th-228	*-2.63 E-05	3.27 E-04
	06/28/99-09/27/99	Be-7	1.38 E-01	1.06 E-02
		K-40	* 1.21 E-03	2.95 E-03
		Ru-103	* 4.18 E-04	6.18 E-04
		Ru-106	*-2.98 E-04	1.89 E-03
		Cs-134	*-6.64 E-05	2.01 E-04
		Cs-137	* 1.19 E-04	2.03 E-04
		Ra-226	* 1.89 E-04	3.81 E-03
		Th-228	*-2.42 E-04	3.52 E-04
	12/27/99-01/03/00	Be-7	6.32 E-02	6.44 E-03
		K-40	*-2.00 E-03	3.40 E-03
		Ru-103	*-2.63 E-04	6.17 E-04
		Ru-106	* 0.00 E+00	1.69 E-03
		Cs-134	*-8.51 E-05	1.88 E-04
		Cs-137	* 4.61 E-05	1.69 E-04
		Ra-226	*-5.12 E-03	2.33 E-03
		Th-228	* 2.46 E-05	2.36 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
8	12/28/98-03/29/99	Be-7	8.50 E-02	1.00 E-02
		K-40	* 2.35 E-03	3.08 E-03
		Ru-103	* 2.31 E-04	6.76 E-04
		Ru-106	* 4.11 E-04	2.04 E-03
		Cs-134	* 5.51 E-05	2.36 E-04
		Cs-137	* 1.33 E-04	2.32 E-04
		Ra-226	*-3.45 E-03	3.65 E-03
		Th-228	*-7.13 E-05	3.49 E-04
	03/29/99-06/28/99	Be-7	8.80 E-02	8.90 E-03
		K-40	* 1.04 E-03	2.42 E-03
		Ru-103	* 3.46 E-04	6.22 E-04
		Ru-106	* 8.50 E-04	1.63 E-03
		Cs-134	* 7.82 E-05	1.77 E-04
		Cs-137	* 9.91 E-05	1.60 E-04
		Ra-226	*-3.06 E-03	3.84 E-03
		Th-228	* 5.46 E-04	3.13 E-04
	06/28/99-09/27/99	Be-7	1.29 E-01	9.14 E-03
		K-40	* 1.51 E-04	4.31 E-03
		Ru-103	*-3.31 E-04	5.86 E-04
		Ru-106	*-1.75 E-03	1.92 E-03
		Cs-134	* 5.64 E-05	2.33 E-04
		Cs-137	* 9.89 E-05	2.15 E-04
		Ra-226	*-6.02 E-04	2.81 E-03
		Th-228	* 2.95 E-04	2.71 E-04
	12/27/99-01/03/00	Be-7	6.19 E-02	8.54 E-03
		K-40	* 1.10 E-03	2.62 E-03
		Ru-103	* 2.14 E-04	6.48 E-04
		Ru-106	*-3.40 E-04	1.53 E-03
		Cs-134	*-1.36 E-04	1.58 E-04
		Cs-137	* 5.42 E-05	1.71 E-04
		Ra-226	*-2.34 E-03	3.07 E-03
		Th-228	* 6.93 E-05	2.82 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9	12/28/98-03/29/99	Be-7	7.61 E-02	8.57 E-03
		K-40	*-9.14 E-04	2.91 E-03
		Ru-103	* 5.05 E-04	6.34 E-04
		Ru-106	* 2.71 E-04	1.73 E-03
		Cs-134	* 1.21 E-05	1.98 E-04
		Cs-137	*-1.95 E-05	1.75 E-04
		Ra-226	*-4.11 E-03	3.38 E-03
		Th-228	* 1.34 E-04	3.06 E-04
	03/29/99-06/28/99	Be-7	8.40 E-02	8.11 E-03
		K-40	* 3.69 E-03	4.05 E-03
		Ru-103	*-3.69 E-04	6.11 E-04
		Ru-106	*-1.18 E-03	1.83 E-03
		Cs-134	*-2.46 E-05	2.07 E-04
		Cs-137	* 1.98 E-05	1.92 E-04
		Ra-226	* 9.69 E-04	2.48 E-03
		Th-228	*-2.08 E-04	2.52 E-04
	06/28/99-09/27/99	Be-7	1.31 E-01	9.28 E-03
		K-40	*-1.01 E-02	5.81 E-03
		Ru-103	* 8.99 E-05	6.90 E-04
		Ru-106	* 1.24 E-03	2.12 E-03
		Cs-134	*-2.77 E-05	2.47 E-04
		Cs-137	* 1.12 E-04	2.38 E-04
		Ra-226	* 1.47 E-04	3.29 E-03
		Th-228	* 5.60 E-05	3.15 E-04
	12/27/99-01/03/00	Be-7	6.23 E-02	7.71 E-03
		K-40	* 9.61 E-04	2.45 E-03
		Ru-103	*-5.03 E-05	5.60 E-04
		Ru-106	* 5.53 E-04	1.54 E-03
		Cs-134	* 2.07 E-05	1.57 E-04
		Cs-137	* 2.51 E-05	1.05 E-04
		Ra-226	*-3.68 E-03	3.53 E-03
		Th-228	* 4.40 E-04	3.00 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
21	12/28/98-03/29/99	Be-7	8.47 E-02	8.17 E-03
		K-40	*-2.21 E-03	2.43 E-03
		Ru-103	*-2.85 E-04	5.27 E-04
		Ru-106	*-9.23 E-04	1.48 E-03
		Cs-134	* 7.77 E-05	1.79 E-04
		Cs-137	* 1.44 E-04	1.69 E-04
		Ra-226	*-3.07 E-03	3.69 E-03
		Th-228	* 1.19 E-04	3.05 E-04
	03/29/99-06/28/99	Be-7	1.02 E-01	9.30 E-03
		K-40	*-2.55 E-04	3.04 E-03
		Ru-103	*-4.64 E-04	6.75 E-04
		Ru-106	*-5.47 E-04	1.68 E-03
		Cs-134	* 1.03 E-05	2.01 E-04
		Cs-137	* 1.04 E-04	2.27 E-04
		Ra-226	*-1.46 E-04	3.16 E-03
		Th-228	*-8.05 E-05	2.97 E-04
	06/28/99-09/27/99	Be-7	1.47 E-01	1.09 E-02
		K-40	* 3.88 E-03	3.18 E-03
		Ru-103	* 3.39 E-04	5.37 E-04
		Ru-106	* 2.01 E-04	1.62 E-03
		Cs-134	*-6.82 E-05	1.83 E-04
		Cs-137	*-4.38 E-05	1.67 E-04
		Ra-226	* 1.98 E-03	3.23 E-03
		Th-228	*-1.02 E-04	3.06 E-04
	12/27/99-01/03/00	Be-7	5.96 E-02	7.16 E-03
		K-40	4.01 E-03	1.68 E-03
		Ru-103	* 1.58 E-04	6.63 E-04
		Ru-106	* 4.97 E-04	1.75 E-03
		Cs-134	* 2.81 E-05	1.84 E-04
		Cs-137	*-5.28 E-05	2.05 E-04
		Ra-226	* 1.67 E-04	2.84 E-03
		Th-228	* 7.58 E-04	3.00 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
23	12/28/98-03/29/99	Be-7	7.51 E-02	7.53 E-03
		K-40	* 2.22 E-03	4.13 E-03
		Ru-103	* 0.00 E+00	5.94 E-04
		Ru-106	*-1.78 E-03	1.90 E-03
		Cs-134	*-1.22 E-04	2.08 E-04
		Cs-137	*-8.55 E-05	1.95 E-04
		Ra-226	* 1.54 E-03	2.53 E-03
		Th-228	* 3.13 E-04	2.53 E-04
	03/29/99-06/28/99	Be-7	9.97 E-02	8.31 E-03
		K-40	*-1.38 E-03	2.91 E-03
		Ru-103	* 3.70 E-04	6.80 E-04
		Ru-106	*-1.96 E-04	1.82 E-03
		Cs-134	*-2.56 E-05	2.06 E-04
		Cs-137	* 1.87 E-04	1.72 E-04
		Ra-226	*-7.02 E-04	2.29 E-03
		Th-228	*-3.18 E-04	2.37 E-04
	06/28/99-09/27/99	Be-7	1.27 E-01	7.70 E-03
		K-40	* 7.43 E-04	3.47 E-03
		Ru-103	* 4.71 E-04	5.02 E-04
		Ru-106	*-8.29 E-04	1.58 E-03
		Cs-134	* 8.00 E-05	1.93 E-04
		Cs-137	*-5.97 E-06	1.70 E-04
		Ra-226	*-5.39 E-04	2.52 E-03
		Th-228	* 3.43 E-05	2.43 E-04
	12/27/99-01/03/00	Be-7	5.77 E-02	6.73 E-03
		K-40	*-3.70 E-03	2.60 E-03
		Ru-103	* 9.70 E-05	5.87 E-04
		Ru-106	* 6.06 E-05	1.59 E-03
		Cs-134	*-7.92 E-05	1.88 E-04
		Cs-137	*-1.29 E-04	1.58 E-04
		Ra-226	*-4.28 E-03	2.04 E-03
		Th-228	*-4.71 E-04	2.12 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
40	12/28/98-03/29/99	Be-7	6.45 E-02	1.15 E-02
		K-40	1.22 E-02	4.64 E-03
		Ru-103	* 1.17 E-04	1.03 E-03
		Ru-106	* 2.75 E-04	3.37 E-03
		Cs-134	* 2.92 E-04	3.46 E-04
		Cs-137	*-4.64 E-04	3.85 E-04
		Ra-226	*-7.01 E-03	5.53 E-03
		Th-228	* 1.47 E-05	5.29 E-04
	03/29/99-06/28/99	Be-7	1.15 E-01	9.40 E-03
		K-40	6.87 E-03	3.24 E-03
		Ru-103	*-1.29 E-04	6.44 E-04
		Ru-106	* 4.79 E-04	1.68 E-03
		Cs-134	*-2.70 E-05	1.93 E-04
		Cs-137	*-3.36 E-04	1.96 E-04
		Ra-226	*-1.54 E-03	3.00 E-03
		Th-228	* 9.58 E-05	2.80 E-04
	06/28/99-09/27/99	Be-7	1.40 E-01	9.47 E-03
		K-40	* 4.21 E-03	3.46 E-03
		Ru-103	*-2.55 E-04	5.99 E-04
		Ru-106	*-4.84 E-04	1.91 E-03
		Cs-134	* 0.00 E+00	2.06 E-04
		Cs-137	*-1.52 E-04	2.23 E-04
		Ra-226	* 2.70 E-03	3.39 E-03
		Th-228	*-4.40 E-05	3.03 E-04
	12/27/99-01/03/00	Be-7	5.92 E-02	9.30 E-03
		K-40	*-6.28 E-03	6.00 E-03
		Ru-103	* 3.60 E-04	9.20 E-04
		Ru-106	*-8.12 E-05	2.45 E-03
		Cs-134	*-7.51 E-05	2.92 E-04
		Cs-137	* 2.07 E-04	2.54 E-04
		Ra-226	*-1.99 E-03	3.24 E-03
		Th-228	* 7.04 E-04	3.54 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
48	12/28/98-03/29/99	Be-7	9.46 E-02	7.72 E-03
		K-40	* 1.88 E-03	3.07 E-03
		Ru-103	*-1.83 E-05	5.79 E-04
		Ru-106	* 4.50 E-04	1.90 E-03
		Cs-134	*-2.54 E-05	1.94 E-04
		Cs-137	* 2.07 E-04	1.92 E-04
		Ra-226	* 3.78 E-04	2.31 E-03
		Th-228	*-1.42 E-04	2.35 E-04
	03/29/99-06/28/99	Be-7	9.29 E-02	1.05 E-02
		K-40	7.21 E-03	3.53 E-03
		Ru-103	*-2.67 E-05	9.61 E-04
		Ru-106	* 9.42 E-04	2.62 E-03
		Cs-134	* 6.79 E-05	2.93 E-04
		Cs-137	*-1.00 E-04	2.51 E-04
		Ra-226	*-6.86 E-04	3.59 E-03
		Th-228	* 4.93 E-04	3.67 E-04
	06/28/99-09/27/99	Be-7	1.05 E-01	7.97 E-03
		K-40	* 4.61 E-04	3.10 E-03
		Ru-103	*-2.92 E-04	4.92 E-04
		Ru-106	*-1.29 E-04	1.75 E-03
		Cs-134	* 6.83 E-05	1.93 E-04
		Cs-137	* 4.19 E-05	1.83 E-04
		Ra-226	*-9.55 E-04	2.32 E-03
		Th-228	* 1.37 E-04	2.40 E-04
	12/27/99-01/03/00	Be-7	6.23 E-02	8.81 E-03
		K-40	*-1.34 E-03	3.11 E-03
		Ru-103	* 0.00 E+00	7.84 E-04
		Ru-106	* 5.05 E-04	1.96 E-03
		Cs-134	* 1.06 E-04	2.02 E-04
		Cs-137	* 8.52 E-05	2.03 E-04
		Ra-226	*-2.13 E-03	3.69 E-03
		Th-228	*-3.50 E-05	3.56 E-04

* Denotes a result less than the detection limit.

TABLE A-3.1 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
57	12/28/98-03/29/99	Be-7	8.22 E-02	7.53 E-03
		K-40	*-1.66 E-04	2.62 E-03
		Ru-103	*-2.65 E-04	5.42 E-04
		Ru-106	*-4.99 E-04	1.62 E-03
		Cs-134	* 4.95 E-05	1.80 E-04
		Cs-137	*-3.21 E-04	1.74 E-04
		Ra-226	*-1.45 E-03	2.83 E-03
		Th-228	* 3.30 E-04	2.56 E-04
	03/29/99-06/28/99	Be-7	1.19 E-01	8.18 E-03
		K-40	*-1.03 E-03	3.52 E-03
		Ru-103	* 3.35 E-04	6.32 E-04
		Ru-106	*-5.02 E-04	1.71 E-03
		Cs-134	* 8.72 E-05	1.94 E-04
		Cs-137	* 0.00 E+00	1.81 E-04
		Ra-226	* 1.09 E-04	2.50 E-03
		Th-228	* 3.98 E-04	2.45 E-04
	06/28/99-09/27/99	Be-7	1.48 E-01	1.08 E-02
		K-40	*-2.47 E-03	6.17 E-03
		Ru-103	* 9.81 E-04	7.66 E-04
		Ru-106	* 5.09 E-04	2.49 E-03
		Cs-134	*-1.36 E-04	2.76 E-04
		Cs-137	* 1.47 E-04	2.67 E-04
		Ra-226	*-2.39 E-04	3.61 E-03
		Th-228	*-9.72 E-05	3.55 E-04
	12/27/99-01/03/00	Be-7	8.42 E-02	8.75 E-03
		K-40	* 3.30 E-04	4.42 E-03
		Ru-103	*-5.43 E-04	7.83 E-04
		Ru-106	* 0.00 E+00	2.01 E-03
		Cs-134	* 6.59 E-05	2.36 E-04
		Cs-137	* 2.26 E-05	2.08 E-04
		Ra-226	*-2.10 E-03	2.63 E-03
		Th-228	*-2.35 E-04	2.59 E-04

* Denotes a result less than the detection limit.

TABLE A-3.2 (Cont.)

GAMMA SPECTROMETRY OF PARTICULATE FILTERS - SUMMARY

Results in pCi/cubic meter

NUCLIDE		NUMBER AVERAGE	LOW	HIGH	NUMBER SAMPLES	POSITIVE
			Year to Date Summary			
Be-7	(I)	1.13E-01	5.77E-02	6.58E-01	44	44
Be-7	(C)	8.84E-02	6.23E-02	1.31E-01	4	4
K-40	(I)	8.34E-04	-6.28E-03	1.22E-02	44	7
K-40	(C)	-1.59E-03	-1.01E-02	3.69E-03	4	0
Ru-103	(I)	2.12E-04	-5.43E-04	6.54E-03	44	0
Ru-103	(C)	4.39E-05	-3.69E-04	5.05E-04	4	0
Ru-106	(I)	-2.93E-05	-1.78E-03	2.59E-03	44	0
Ru-106	(C)	2.21E-04	-1.18E-03	1.24E-03	4	0
Cs-134	(I)	-9.95E-06	-9.48E-04	2.92E-04	44	0
Cs-134	(C)	-4.88E-06	-2.77E-05	2.07E-05	4	0
Cs-137	(I)	-1.80E-05	-7.58E-04	2.52E-04	44	0
Cs-137	(C)	3.44E-05	-1.95E-05	1.12E-04	4	0

(I) Indicator Stations
(C) Control Station

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	12/28/99-01/04/99	* 4.17 E-03	6.18 E-03
	01/04/99-01/11/99	* 1.37 E-03	5.76 E-03
	01/11/99-01/18/99	* 7.38 E-05	5.39 E-03
	01/18/99-01/25/99	* 1.06 E-02	6.05 E-03
	01/25/99-02/01/99	* 9.21 E-04	5.83 E-03
	02/01/99-02/08/99	*-1.05 E-03	5.24 E-03
	02/08/99-02/16/99	*-5.02 E-03	4.73 E-03
	02/16/99-02/22/99	* 3.79 E-03	7.15 E-03
	02/22/99-03/01/99	*-3.52 E-03	1.06 E-02
	03/01/99-03/08/99	*-3.22 E-03	5.92 E-03
	03/08/99-03/15/99	*-1.96 E-03	5.66 E-03
	03/15/99-03/22/99	*-3.65 E-03	7.37 E-03
	03/22/99-03/29/99	* 6.04 E-03	7.23 E-03
	03/29/99-04/05/99	* 2.09 E-03	7.61 E-03
	04/05/99-04/12/99	* 1.42 E-04	5.38 E-03
	04/12/99-04/19/99	*-2.36 E-03	5.40 E-03
	04/19/99-04/26/99	*-9.02 E-03	1.02 E-02
	04/26/99-05/03/99	*-1.21 E-03	5.97 E-03
	05/03/99-05/10/99	* 5.07 E-03	6.33 E-03
	05/10/99-05/17/99	*-1.67 E-04	5.74 E-03
	05/17/99-05/24/99	* 3.39 E-03	5.07 E-03
	05/24/99-06/01/99	* 1.35 E-03	5.95 E-03
	06/01/99-06/07/99	*-2.09 E-03	6.66 E-03
	06/07/99-06/14/99	* 2.62 E-03	5.10 E-03
	06/14/99-06/21/99	* 3.33 E-04	6.73 E-03
	06/21/99-06/28/99	* 2.28 E-03	1.12 E-02
	06/28/99-07/06/99	*-1.64 E-03	5.28 E-03
	07/06/99-07/12/99	* 6.63 E-03	6.79 E-03
	07/12/99-07/19/99	* 2.65 E-04	6.67 E-03
	07/19/99-07/26/99	* 2.46 E-03	6.80 E-03
	07/26/99-08/02/99	*-7.90 E-04	5.17 E-03
	08/02/99-08/09/99 (a)	*-2.14 E-02	2.77 E-02
	08/11/99-08/16/99	*-1.93 E-03	7.22 E-03
	08/16/99-08/23/99	*-3.81 E-03	5.23 E-03
	08/23/99-08/30/99	* 2.21 E-03	4.87 E-03
	08/30/99-09/07/99	* 8.05 E-04	5.85 E-03
	09/07/99-09/13/99	* 8.59 E-04	7.97 E-03
	09/13/99-09/20/99	* 1.67 E-03	8.61 E-03
	09/20/99-09/27/99	* 9.17 E-05	6.12 E-03
	09/27/99-10/04/99	*-2.81 E-03	1.07 E-02

* Denotes a result less than the detection limit.
(a) Blown fuse; results not included in averages.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
1	10/04/99-10/11/99	* 7.43 E-04	6.63 E-03
	10/11/99-10/18/99	* 7.66 E-04	7.19 E-03
	10/18/99-10/25/99	* 1.81 E-03	5.60 E-03
	10/25/99-11/01/99	*-6.50 E-03	7.46 E-03
	11/01/99-11/08/99	* 7.23 E-03	8.04 E-03
	11/08/99-11/15/99	*-8.48 E-04	6.10 E-03
	11/15/99-11/22/99	*-8.91 E-03	1.08 E-02
	11/22/99-11/29/99	*-1.05 E-03	8.84 E-03
	11/29/99-12/06/99	*-3.65 E-03	5.67 E-03
	12/06/99-12/13/99	* 2.28 E-03	7.28 E-03
	12/13/99-12/20/99	*-1.53 E-03	1.00 E-02
	12/20/99-12/27/99	* 1.37 E-03	6.99 E-03
	12/27/99-01/03/00	* 6.58 E-04	6.33 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	12/28/98-01/04/99	* 4.09 E-03	6.07 E-03
	01/04/99-01/11/99	* 1.35 E-03	5.67 E-03
	01/11/99-01/18/99	* 7.26 E-05	5.31 E-03
	01/18/99-01/25/99	* 1.04 E-02	5.94 E-03
	01/25/99-02/01/99	* 9.03 E-04	5.71 E-03
	02/01/99-02/08/99	*-1.03 E-03	5.14 E-03
	02/08/99-02/16/99	*-4.95 E-03	4.66 E-03
	02/16/99-02/22/99	* 3.71 E-03	7.01 E-03
	02/22/99-03/01/99	*-3.48 E-03	1.05 E-02
	03/01/99-03/08/99	*-3.17 E-03	5.83 E-03
	03/08/99-03/15/99 (a)	*-2.86 E-03	8.24 E-03
	03/15/99-03/22/99	*-3.60 E-03	7.25 E-03
	03/22/99-03/29/99	* 8.81 E-03	1.06 E-02
	03/29/99-04/05/99	* 2.04 E-03	7.44 E-03
	04/05/99-04/12/99	* 1.40 E-04	5.31 E-03
	04/12/99-04/19/99	*-2.32 E-03	5.32 E-03
	04/19/99-04/26/99	*-8.90 E-03	1.01 E-02
	04/26/99-05/03/99	*-1.19 E-03	5.84 E-03
	05/03/99-05/10/99	* 5.00 E-03	6.25 E-03
	05/10/99-05/17/99	*-1.65 E-04	5.67 E-03
	05/17/99-05/24/99	* 3.35 E-03	5.00 E-03
	05/24/99-06/01/99	* 1.32 E-03	5.85 E-03
	06/01/99-06/07/99	*-2.05 E-03	6.54 E-03
	06/07/99-06/14/99	* 2.58 E-03	5.02 E-03
	06/14/99-06/21/99	* 3.27 E-04	6.62 E-03
	06/21/99-06/28/99	* 2.25 E-03	1.11 E-02
	06/28/99-07/06/99	*-1.61 E-03	5.20 E-03
	07/06/99-07/12/99	* 6.51 E-03	6.67 E-03
	07/12/99-07/19/99	* 2.61 E-04	6.57 E-03
	07/19/99-07/26/99	* 2.43 E-03	6.70 E-03
	07/26/99-08/02/99	*-7.74 E-04	5.06 E-03
	08/02/99-08/09/99	*-3.89 E-03	5.02 E-03
	08/09/99-08/16/99	*-1.36 E-03	5.11 E-03
	08/16/99-08/23/99	*-3.76 E-03	5.16 E-03
	08/23/99-08/30/99	* 2.17 E-03	4.79 E-03
	08/30/99-09/07/99	* 7.94 E-04	5.77 E-03
	09/07/99-09/13/99	* 8.45 E-04	7.84 E-03
	09/13/99-09/20/99	* 1.63 E-03	8.39 E-03
	09/20/99-09/27/99	* 8.52 E-05	5.69 E-03
	09/27/99-10/04/99	*-2.77 E-03	1.05 E-02

* Denotes a result less than the detection limit.
(a) Low sample volume

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
4	10/04/99-10/11/99	* 7.33 E-04	6.54 E-03
	10/11/99-10/18/99	* 7.57 E-04	7.11 E-03
	10/18/99-10/25/99	* 1.78 E-03	5.50 E-03
	10/25/99-11/01/99	*-6.41 E-03	7.36 E-03
	11/01/99-11/08/99	* 7.09 E-03	7.89 E-03
	11/08/99-11/15/99	*-8.36 E-04	6.02 E-03
	11/15/99-11/22/99	*-8.75 E-03	1.06 E-02
	11/22/99-11/29/99	*-1.03 E-03	8.67 E-03
	11/29/99-12/06/99	*-3.61 E-03	5.60 E-03
	12/06/99-12/13/99	* 2.25 E-03	7.18 E-03
	12/13/99-12/20/99	*-1.51 E-03	9.86 E-03
	12/20/99-12/27/99	* 1.34 E-03	6.87 E-03
	12/27/99-01/03/00	* 6.47 E-04	6.22 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	12/28/99-01/04/99	* 4.11 E-03	6.10 E-03
	01/04/99-01/11/99	* 1.35 E-03	5.69 E-03
	01/11/99-01/18/99	* 7.29 E-05	5.33 E-03
	01/18/99-01/25/99	* 1.05 E-02	5.98 E-03
	01/25/99-02/01/99	* 9.89 E-04	6.26 E-03
	02/01/99-02/08/99	*-1.04 E-03	5.18 E-03
	02/08/99-02/16/99	*-4.97 E-03	4.69 E-03
	02/16/99-02/22/99	* 3.73 E-03	7.04 E-03
	02/22/99-03/01/99	*-3.49 E-03	1.05 E-02
	03/01/99-03/08/99	*-3.18 E-03	5.86 E-03
	03/08/99-03/15/99	*-1.94 E-03	5.60 E-03
	03/15/99-03/22/99	*-3.61 E-03	7.29 E-03
	03/22/99-03/29/99	* 5.97 E-03	7.15 E-03
	03/29/99-04/05/99	* 2.05 E-03	7.47 E-03
	04/05/99-04/12/99	* 1.41 E-04	5.33 E-03
	04/12/99-04/19/99	*-2.33 E-03	5.34 E-03
	04/19/99-04/26/99	*-8.94 E-03	1.01 E-02
	04/26/99-05/03/99	*-1.19 E-03	5.89 E-03
	05/03/99-05/10/99	* 5.02 E-03	6.27 E-03
	05/10/99-05/17/99	*-1.65 E-04	5.68 E-03
	05/17/99-05/24/99	* 3.36 E-03	5.03 E-03
	05/24/99-06/01/99	* 1.33 E-03	5.88 E-03
	06/01/99-06/07/99	*-2.06 E-03	6.57 E-03
	06/07/99-06/14/99	* 2.60 E-03	5.06 E-03
	06/14/99-06/21/99	* 3.28 E-04	6.64 E-03
	06/21/99-06/28/99	* 2.26 E-03	1.11 E-02
	06/28/99-07/06/99	*-1.62 E-03	5.22 E-03
	07/06/99-07/12/99	* 6.54 E-03	6.70 E-03
	07/12/99-07/19/99	* 2.62 E-04	6.60 E-03
	07/19/99-07/26/99	* 2.44 E-03	6.73 E-03
	07/26/99-08/02/99	*-7.79 E-04	5.10 E-03
	08/02/99-08/09/99	*-3.90 E-03	5.03 E-03
	08/09/99-08/16/99	*-1.37 E-03	5.13 E-03
	08/16/99-08/23/99	*-3.78 E-03	5.18 E-03
	08/23/99-08/30/99	* 2.19 E-03	4.82 E-03
	08/30/99-09/07/99	* 7.98 E-04	5.79 E-03
	09/07/99-09/13/99	* 8.49 E-04	7.88 E-03
	09/13/99-09/20/99	* 1.65 E-03	8.51 E-03
	09/20/99-09/27/99	* 8.55 E-05	5.70 E-03
	09/27/99-10/04/99	*-2.78 E-03	1.06 E-02

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
5	10/04/99-10/11/99	* 7.37 E-04	6.57 E-03
	10/11/99-10/18/99	* 7.60 E-04	7.14 E-03
	10/18/99-10/25/99	* 1.79 E-03	5.53 E-03
	10/25/99-11/01/99	*-6.44 E-03	7.39 E-03
	11/01/99-11/08/99	* 7.13 E-03	7.93 E-03
	11/08/99-11/15/99	*-8.40 E-04	6.05 E-03
	11/15/99-11/22/99	*-8.79 E-03	1.06 E-02
	11/22/99-11/29/99	*-1.04 E-03	8.71 E-03
	11/29/99-12/06/99	*-3.62 E-03	5.63 E-03
	12/06/99-12/13/99	* 2.26 E-03	7.21 E-03
	12/13/99-12/20/99	*-1.51 E-03	9.88 E-03
	12/20/99-12/27/99	* 1.35 E-03	6.91 E-03
	12/27/99-01/03/00	* 6.50 E-04	6.25 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	12/28/98-01/04/99	* 4.15 E-03	6.15 E-03
	01/04/99-01/11/99	* 1.37 E-03	5.74 E-03
	01/11/99-01/18/99	* 7.36 E-05	5.38 E-03
	01/18/99-01/25/99	* 1.06 E-02	6.03 E-03
	01/25/99-02/01/99	* 9.15 E-04	5.79 E-03
	02/01/99-02/08/99	*-1.05 E-03	5.23 E-03
	02/08/99-02/16/99	*-5.01 E-03	4.72 E-03
	02/16/99-02/22/99	* 3.78 E-03	7.12 E-03
	02/22/99-03/01/99	*-3.51 E-03	1.06 E-02
	03/01/99-03/08/99	*-3.21 E-03	5.91 E-03
	03/08/99-03/15/99	*-1.96 E-03	5.65 E-03
	03/15/99-03/22/99	*-3.64 E-03	7.33 E-03
	03/22/99-03/29/99	* 6.02 E-03	7.21 E-03
	03/29/99-04/05/99	* 2.08 E-03	7.58 E-03
	04/05/99-04/12/99	* 1.41 E-04	5.36 E-03
	04/12/99-04/19/99	*-2.35 E-03	5.39 E-03
	04/19/99-04/26/99	*-9.02 E-03	1.02 E-02
	04/26/99-05/03/99	*-1.21 E-03	5.94 E-03
	05/03/99-05/10/99	* 5.06 E-03	6.32 E-03
	05/10/99-05/17/99	*-1.67 E-04	5.74 E-03
	05/17/99-05/24/99	* 3.38 E-03	5.06 E-03
	05/24/99-06/01/99	* 1.34 E-03	5.92 E-03
	06/01/99-06/07/99	*-2.07 E-03	6.62 E-03
	06/07/99-06/14/99	* 2.62 E-03	5.10 E-03
	06/14/99-06/21/99	* 3.32 E-04	6.72 E-03
	06/21/99-06/28/99	* 2.28 E-03	1.12 E-02
	06/28/99-07/06/99	*-1.63 E-03	5.27 E-03
	07/06/99-07/12/99	* 6.61 E-03	6.78 E-03
	07/12/99-07/19/99	* 2.64 E-04	6.66 E-03
	07/19/99-07/26/99	* 2.45 E-03	6.77 E-03
	07/26/99-08/02/99	*-7.86 E-04	5.14 E-03
	08/02/99-08/09/99	*-3.94 E-03	5.09 E-03
	08/09/99-08/16/99	*-1.38 E-03	5.17 E-03
	08/16/99-08/23/99	*-3.81 E-03	5.23 E-03
	08/23/99-08/30/99	* 2.20 E-03	4.85 E-03
	08/30/99-09/07/99	* 7.82 E-04	5.68 E-03
	09/07/99-09/13/99	* 8.74 E-04	8.11 E-03
	09/13/99-09/20/99	* 1.66 E-03	8.56 E-03
	09/20/99-09/27/99	* 8.62 E-05	5.75 E-03
	09/27/99-10/04/99	*-2.80 E-03	1.06 E-02

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
6	10/04/99-10/11/99	* 7.43 E-04	6.62 E-03
	10/11/99-10/18/99	* 7.64 E-04	7.18 E-03
	10/18/99-10/25/99	* 1.81 E-03	5.59 E-03
	10/25/99-11/01/99	*-6.50 E-03	7.46 E-03
	11/01/99-11/08/99	* 7.19 E-03	7.99 E-03
	11/08/99-11/15/99	*-8.48 E-04	6.10 E-03
	11/15/99-11/22/99	*-8.87 E-03	1.07 E-02
	11/22/99-11/29/99	*-1.04 E-03	8.76 E-03
	11/29/99-12/06/99	*-3.65 E-03	5.67 E-03
	12/06/99-12/13/99	* 2.28 E-03	7.27 E-03
	12/13/99-12/20/99	*-1.52 E-03	9.98 E-03
	12/20/99-12/27/99	* 1.36 E-03	6.97 E-03
	12/27/99-01/03/00	* 6.57 E-04	6.32 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	12/28/99-01/04/99	* 3.19 E-03	4.73 E-03
	01/04/99-01/11/99	* 1.05 E-03	4.41 E-03
	01/11/99-01/18/99	* 5.65 E-05	4.13 E-03
	01/18/99-01/25/99	* 8.14 E-03	4.64 E-03
	01/25/99-02/01/99	* 6.85 E-04	4.33 E-03
	02/01/99-02/08/99	*-8.05 E-04	4.02 E-03
	02/08/99-02/16/99	*-3.85 E-03	3.63 E-03
	02/16/99-02/22/99	* 3.01 E-03	5.67 E-03
	02/22/99-03/01/99	*-2.29 E-03	6.89 E-03
	03/01/99-03/08/99	*-2.40 E-03	4.42 E-03
	03/08/99-03/15/99	*-1.50 E-03	4.33 E-03
	03/15/99-03/22/99	*-2.90 E-03	5.84 E-03
	03/22/99-03/29/99	* 4.78 E-03	5.73 E-03
	03/29/99-04/05/99	* 1.66 E-03	6.04 E-03
	04/05/99-04/12/99	* 1.09 E-04	4.12 E-03
	04/12/99-04/19/99	*-1.81 E-03	4.14 E-03
	04/19/99-04/26/99	*-2.29 E-02	2.60 E-02
	04/26/99-05/03/99	*-9.04 E-04	4.45 E-03
	05/03/99-05/10/99	* 3.78 E-03	4.73 E-03
	05/10/99-05/17/99	*-1.25 E-04	4.29 E-03
	05/17/99-05/24/99	* 2.60 E-03	3.89 E-03
	05/24/99-06/01/99	* 1.07 E-03	4.72 E-03
	06/01/99-06/07/99	*-1.42 E-03	4.53 E-03
	06/07/99-06/14/99	* 2.02 E-03	3.92 E-03
	06/14/99-06/21/99	* 2.64 E-04	5.35 E-03
	06/21/99-06/28/99	* 1.82 E-03	8.95 E-03
	06/28/99-07/06/99	*-1.26 E-03	4.05 E-03
	07/06/99-07/12/99	* 4.52 E-03	4.64 E-03
	07/12/99-07/19/99	* 1.81 E-04	4.55 E-03
	07/19/99-07/26/99	* 1.96 E-03	5.41 E-03
	07/26/99-08/02/99	*-6.04 E-04	3.95 E-03
	08/02/99-08/09/99	*-3.03 E-03	3.91 E-03
	08/09/99-08/16/99	*-1.06 E-03	3.98 E-03
	08/16/99-08/23/99	*-2.93 E-03	4.02 E-03
	08/23/99-08/30/99	* 1.69 E-03	3.73 E-03
	08/30/99-09/07/99	* 6.39 E-04	4.64 E-03
	09/07/99-09/13/99	* 6.81 E-04	6.32 E-03
	09/13/99-09/20/99	* 1.14 E-03	5.88 E-03
	09/20/99-09/27/99	* 6.44 E-05	4.30 E-03
	09/27/99-10/04/99	*-1.83 E-03	6.95 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
7	10/04/99-10/11/99	* 5.08 E-04	4.53 E-03
	10/11/99-10/18/99	* 5.23 E-04	4.91 E-03
	10/18/99-10/25/99	* 1.35 E-03	4.18 E-03
	10/25/99-11/01/99	*-4.45 E-03	5.10 E-03
	11/01/99-11/08/99	* 4.92 E-03	5.47 E-03
	11/08/99-11/15/99	*-6.34 E-04	4.56 E-03
	11/15/99-11/22/99	*-7.06 E-03	8.53 E-02
	11/22/99-11/29/99	*-7.17 E-04	6.02 E-03
	11/29/99-12/06/99	*-8.50 E-03	1.32 E-02
	12/06/99-12/13/99	* 1.56 E-03	4.97 E-03
	12/13/99-12/20/99	*-9.95 E-04	6.52 E-03
	12/20/99-12/27/99	* 1.08 E-03	5.55 E-03
	12/27/99-01/03/00	* 4.92 E-04	4.73 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	12/28/98-01/04/99	*-5.25 E-03	9.59 E-03
	01/04/99-01/11/99	* 0.00 E-01	9.47 E-03
	01/11/99-01/18/99	*-3.01 E-03	8.83 E-03
	01/18/99-01/25/99	* 1.19 E-04	1.01 E-02
	01/25/99-02/01/99	*-6.18 E-04	5.16 E-03
	02/01/99-02/08/99	*-1.88 E-04	7.98 E-03
	02/08/99-02/16/99	* 3.10 E-03	7.93 E-03
	02/16/99-02/22/99	*-2.15 E-03	7.11 E-03
	02/22/99-03/01/99	*-4.32 E-04	6.85 E-03
	03/01/99-03/08/99	* 2.04 E-04	5.39 E-03
	03/08/99-03/15/99	*-6.59 E-04	8.86 E-03
	03/15/99-03/22/99	* 2.69 E-04	7.11 E-03
	03/22/99-03/29/99	*-1.47 E-03	6.97 E-03
	03/29/99-04/05/99	* 0.00 E+00	7.11 E-03
	04/05/99-04/12/99	* 3.52 E-03	8.48 E-03
	04/12/99-04/19/99	*-6.01 E-03	8.78 E-03
	04/19/99-04/26/99	*-6.54 E-03	8.50 E-03
	04/26/99-05/03/99	* 4.29 E-03	5.24 E-03
	05/03/99-05/10/99	* 5.41 E-04	5.59 E-03
	05/10/99-05/17/99	* 1.38 E-04	5.17 E-03
	05/17/99-05/24/99	*-3.43 E-03	8.29 E-03
	05/24/99-06/01/99	*-6.36 E-04	5.77 E-03
	06/01/99-06/07/99	* 7.20 E-04	1.06 E-02
	06/07/99-06/14/99	*-1.97 E-03	8.37 E-03
	06/14/99-06/21/99	* 4.15 E-03	6.47 E-03
	06/21/99-06/28/99	*-5.04 E-03	1.05 E-02
	06/28/99-07/06/99	* 4.43 E-03	8.45 E-03
	07/06/99-07/12/99	* 5.35 E-03	1.10 E-02
	07/12/99-07/19/99	*-1.49 E-03	1.09 E-02
	07/19/99-07/26/99	* 9.90 E-04	6.17 E-03
	07/26/99-08/02/99	*-3.34 E-03	8.52 E-03
	08/02/99-08/09/99	*-2.55 E-03	8.47 E-03
	08/09/99-08/16/99	* 5.10 E-03	8.47 E-03
	08/16/99-08/23/99	* 2.44 E-03	8.83 E-03
	08/23/99-08/30/99	*-1.21 E-03	8.06 E-03
	08/30/99-09/07/99	* 7.78 E-04	5.64 E-03
	09/07/99-09/13/99	* 0.00 E+00	7.36 E-03
	09/13/99-09/20/99	* 5.48 E-03	6.98 E-03
	09/20/99-09/27/99	*-1.46 E-03	8.47 E-03
	09/27/99-10/04/99	*-3.41 E-03	9.25 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
8	10/04/99-10/11/99	*-3.09 E-03	1.03 E-02
	10/11/99-10/18/99	*-5.43 E-03	1.09 E-02
	10/18/99-10/25/99	* 1.80 E-03	8.35 E-03
	10/25/99-11/01/99	* 8.29 E-03	1.04 E-02
	11/01/99-11/08/99	* 5.29 E-03	1.20 E-02
	11/08/99-11/15/99	*-1.72 E-03	9.27 E-03
	11/15/99-11/22/99	* 2.04 E-04	9.83 E-03
	11/22/99-11/29/99	* 8.10 E-04	6.18 E-03
	11/29/99-12/06/99	*-6.00 E-03	8.53 E-03
	12/06/99-12/13/99	* 1.05 E-02	1.12 E-02
	12/13/99-12/20/99	*-1.29 E-03	5.98 E-03
	12/20/99-12/27/99	* 1.25 E-03	6.78 E-03
	12/27/99-01/03/00	* 3.76 E-03	9.39 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	12/28/98-01/04/99	*-5.28 E-03	9.64 E-03
	01/04/99-01/11/99	* 0.00 E-01	9.52 E-03
	01/11/99-01/18/99	*-3.02 E-03	8.88 E-03
	01/18/99-01/25/99	* 1.20 E-04	1.01 E-02
	01/25/99-02/01/99	*-6.20 E-04	5.18 E-03
	02/01/99-02/08/99	*-2.05 E-04	8.71 E-03
	02/08/99-02/16/99	* 3.11 E-03	7.97 E-03
	02/16/99-02/22/99	*-2.16 E-03	7.13 E-03
	02/22/99-03/01/99	*-4.33 E-04	6.87 E-03
	03/01/99-03/08/99	* 2.05 E-04	5.41 E-03
	03/08/99-03/15/99	*-6.61 E-04	8.88 E-03
	03/15/99-03/22/99	* 2.70 E-04	7.13 E-03
	03/22/99-03/29/99	*-1.47 E-03	7.00 E-03
	03/29/99-04/05/99	* 0.00 E+00	7.20 E-03
	04/05/99-04/12/99	* 3.52 E-03	8.50 E-03
	04/12/99-04/19/99	*-6.05 E-03	8.83 E-03
	04/19/99-04/26/99	*-6.57 E-03	8.55 E-03
	04/26/99-05/03/99	* 4.33 E-03	5.29 E-03
	05/03/99-05/10/99	* 5.43 E-04	5.61 E-03
	05/10/99-05/17/99	* 1.39 E-04	5.19 E-03
	05/17/99-05/24/99	*-3.45 E-03	8.33 E-03
	05/24/99-06/01/99	*-6.39 E-04	5.80 E-03
	06/01/99-06/07/99	* 7.24 E-04	1.06 E-02
	06/07/99-06/14/99	*-1.98 E-03	8.42 E-03
	06/14/99-06/21/99	* 4.19 E-03	6.52 E-03
	06/21/99-06/28/99	*-5.07 E-03	1.05 E-02
	06/28/99-07/06/99	* 4.45 E-03	8.50 E-03
	07/06/99-07/12/99	* 5.40 E-03	1.11 E-02
	07/12/99-07/19/99	*-1.50 E-03	1.10 E-02
	07/19/99-07/26/99	* 9.95 E-04	6.20 E-03
	07/26/99-08/02/99	*-3.35 E-03	8.56 E-03
	08/02/99-08/09/99	*-2.57 E-03	8.54 E-03
	08/09/99-08/16/99	* 5.11 E-03	8.50 E-03
	08/16/99-08/23/99	* 2.46 E-03	8.88 E-03
	08/23/99-08/30/99	*-1.21 E-03	8.11 E-03
	08/30/99-09/07/99	* 7.83 E-04	5.68 E-03
	09/07/99-09/13/99	* 0.00 E+00	7.40 E-03
	09/13/99-09/20/99	* 5.50 E-03	7.01 E-03
	09/20/99-09/27/99	*-1.47 E-03	8.52 E-03
	09/27/99-10/04/99	*-3.43 E-03	9.30 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
9	10/04/99-10/11/99	*-3.11 E-03	1.04 E-02
	10/11/99-10/18/99	*-5.46 E-03	1.09 E-02
	10/18/99-10/25/99	* 1.80 E-03	8.39 E-03
	10/25/99-11/01/99	* 8.33 E-03	1.04 E-02
	11/01/99-11/08/99	* 5.32 E-03	1.21 E-02
	11/08/99-11/15/99	*-1.73 E-03	9.32 E-03
	11/15/99-11/22/99	* 2.05 E-04	9.88 E-03
	11/22/99-11/29/99	* 8.14 E-04	6.21 E-03
	11/29/99-12/06/99	*-6.03 E-03	8.58 E-03
	12/06/99-12/13/99	* 1.06 E-02	1.13 E-02
	12/13/99-12/20/99	*-1.30 E-03	6.02 E-03
	12/20/99-12/27/99	* 1.26 E-03	6.83 E-03
	12/27/99-01/03/00	* 3.79 E-03	9.46 E-03

* Denotes a result less than the detection limit

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	12/28/98-01/04/99	*-5.34 E-03	9.74 E-03
	01/04/99-01/11/99	* 0.00 E-01	9.61 E-03
	01/11/99-01/18/99	*-3.05 E-03	8.95 E-03
	01/18/99-01/25/99	* 1.21 E-04	1.02 E-02
	01/25/99-02/01/99	*-6.29 E-04	5.25 E-03
	02/01/99-02/08/99	*-2.06 E-04	8.76 E-03
	02/08/99-02/16/99	* 3.14 E-03	8.05 E-03
	02/16/99-02/22/99	*-2.19 E-03	7.22 E-03
	02/22/99-03/01/99	*-4.37 E-04	6.93 E-03
	03/01/99-03/08/99	* 2.07 E-04	5.46 E-03
	03/08/99-03/15/99	*-6.68 E-04	8.98 E-03
	03/15/99-03/22/99	* 2.73 E-04	7.19 E-03
	03/22/99-03/29/99	*-1.49 E-03	7.06 E-03
	03/29/99-04/05/99	* 0.00 E+00	7.26 E-03
	04/05/99-04/12/99	* 3.55 E-03	8.58 E-03
	04/12/99-04/19/99	*-6.10 E-03	8.90 E-03
	04/19/99-04/26/99	*-6.63 E-03	8.62 E-03
	04/26/99-05/03/99	* 4.36 E-03	5.34 E-03
	05/03/99-05/10/99	* 5.48 E-04	5.66 E-03
	05/10/99-05/17/99	* 1.40 E-04	5.24 E-03
	05/17/99-05/24/99	*-3.46 E-03	8.36 E-03
	05/24/99-06/01/99	*-6.45 E-04	5.86 E-03
	06/01/99-06/07/99	* 7.31 E-04	1.07 E-02
	06/07/99-06/14/99	*-1.99 E-03	8.46 E-03
	06/14/99-06/21/99	* 4.21 E-03	6.55 E-03
	06/21/99-06/28/99	*-7.19 E-03	1.49 E-02
	06/28/99-07/06/99	* 4.48 E-03	8.56 E-03
	07/06/99-07/12/99	* 5.44 E-03	1.12 E-02
	07/12/99-07/19/99	*-1.51 E-03	1.11 E-02
	07/19/99-07/26/99	* 1.00 E-03	6.24 E-03
	07/26/99-08/02/99	*-3.39 E-03	8.65 E-03
	08/02/99-08/09/99	*-2.59 E-03	8.62 E-03
	08/09/99-08/16/99	* 5.16 E-03	8.57 E-03
	08/16/99-08/23/99	* 2.49 E-03	9.01 E-03
	08/23/99-08/30/99	*-1.22 E-03	8.17 E-03
	08/30/99-09/07/99	* 7.89 E-04	5.72 E-03
	09/07/99-09/13/99	* 0.00 E+00	7.47 E-03
	09/13/99-09/20/99	* 5.56 E-03	7.09 E-03
	09/20/99-09/27/99	*-1.49 E-03	8.59 E-03
	09/27/99-10/04/99	*-3.46 E-03	9.38 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
21	10/04/99-10/11/99	*-3.12 E-03	1.04 E-02
	10/11/99-10/18/99	*-5.49 E-03	1.10 E-02
	10/18/99-10/25/99	* 1.82 E-03	8.48 E-03
	10/25/99-11/01/99	* 8.38 E-03	1.05 E-02
	11/01/99-11/08/99	* 5.38 E-03	1.22 E-02
	11/08/99-11/15/99	*-1.74 E-03	9.37 E-03
	11/15/99-11/22/99	* 2.08 E-04	9.99 E-03
	11/22/99-11/29/99	* 8.25 E-04	6.29 E-03
	11/29/99-12/06/99	*-6.07 E-03	8.64 E-03
	12/06/99-12/13/99	* 1.06 E-02	1.13 E-02
	12/13/99-12/20/99	*-1.31 E-03	6.08 E-03
	12/20/99-12/27/99	* 1.27 E-03	6.89 E-03
	12/27/99-01/03/00	* 3.81 E-03	9.52 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	12/28/98-01/04/99	*-5.32 E-03	9.71 E-03
	01/04/99-01/11/99	* 0.00 E-01	9.60 E-03
	01/11/99-01/18/99	*-3.05 E-03	8.95 E-03
	01/18/99-01/25/99	* 1.21 E-04	1.02 E-02
	01/25/99-02/01/99	*-6.29 E-04	5.25 E-03
	02/01/99-02/08/99	*-2.06 E-04	8.75 E-03
	02/08/99-02/16/99	* 3.13 E-03	8.03 E-03
	02/16/99-02/22/99	*-2.19 E-03	7.21 E-03
	02/22/99-03/01/99	*-4.37 E-04	6.93 E-03
	03/01/99-03/08/99	* 2.07 E-04	5.46 E-03
	03/08/99-03/15/99	*-6.68 E-04	8.98 E-03
	03/15/99-03/22/99	* 2.72 E-04	7.17 E-03
	03/22/99-03/29/99	*-1.48 E-03	7.05 E-03
	03/29/99-04/05/99	* 0.00 E+00	7.25 E-03
	04/05/99-04/12/99	* 3.55 E-03	8.57 E-03
	04/12/99-04/19/99	*-6.09 E-03	8.89 E-03
	04/19/99-04/26/99	*-6.62 E-03	8.61 E-03
	04/26/99-05/03/99	* 4.37 E-03	5.34 E-03
	05/03/99-05/10/99	* 5.41 E-04	5.59 E-03
	05/10/99-05/17/99	* 1.40 E-04	5.23 E-03
	05/17/99-05/24/99	*-3.46 E-03	8.35 E-03
	05/24/99-06/01/99	*-6.43 E-04	5.84 E-03
	06/01/99-06/07/99	* 7.31 E-04	1.07 E-02
	06/07/99-06/14/99	*-1.99 E-03	8.46 E-03
	06/14/99-06/21/99	* 4.20 E-03	6.55 E-03
	06/21/99-06/28/99	*-5.12 E-03	1.06 E-02
	06/28/99-07/06/99	* 4.48 E-03	8.55 E-03
	07/06/99-07/12/99	* 5.43 E-03	1.12 E-02
	07/12/99-07/19/99	*-1.51 E-03	1.10 E-02
	07/19/99-07/26/99	* 1.00 E-03	6.25 E-03
	07/26/99-08/02/99	*-3.39 E-03	8.65 E-03
	08/02/99-08/09/99	*-2.59 E-03	8.61 E-03
	08/09/99-08/16/99	* 5.15 E-03	8.57 E-03
	08/16/99-08/23/99	* 2.49 E-03	9.00 E-03
	08/23/99-08/30/99	*-1.22 E-03	8.17 E-03
	08/30/99-09/07/99	* 7.88 E-04	5.71 E-03
	09/07/99-09/13/99	* 0.00 E+00	7.46 E-03
	09/13/99-09/20/99	* 5.56 E-03	7.08 E-03
	09/20/99-09/27/99	*-1.48 E-03	8.58 E-03
	09/27/99-10/04/99	*-3.46 E-03	9.37 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
23	10/04/99-10/11/99	*-3.24 E-03	1.04 E-02
	10/11/99-10/18/99	*-5.49 E-03	1.10 E-02
	10/18/99-10/25/99	* 1.82 E-03	8.47 E-03
	10/25/99-11/01/99	* 8.39 E-03	1.05 E-02
	11/01/99-11/08/99	* 5.37 E-03	1.22 E-02
	11/08/99-11/15/99	*-1.74 E-03	9.37 E-03
	11/15/99-11/22/99	* 2.08 E-04	9.98 E-03
	11/22/99-11/29/99	* 8.24 E-04	6.28 E-03
	11/29/99-12/06/99	*-6.07 E-03	8.64 E-03
	12/06/99-12/13/99	* 1.06 E-02	1.13 E-02
	12/13/99-12/20/99	*-1.31 E-03	6.08 E-03
	12/20/99-12/27/99	* 1.27 E-03	6.89 E-03
	12/27/99-01/03/00	* 3.81 E-03	9.51 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	12/28/98-01/04/99	*-3.53 E-03	6.45 E-03
	01/04/99-01/11/99	* 0.00 E-01	6.51 E-03
	01/11/99-01/18/99	*-2.07 E-03	6.06 E-03
	01/18/99-01/25/99	* 8.17 E-05	6.92 E-03
	01/25/99-02/01/99	*-4.74 E-04	3.96 E-03
	02/01/99-02/08/99	*-1.40 E-04	5.95 E-03
	02/08/99-02/16/99	* 2.12 E-03	5.44 E-03
	02/16/99-02/22/99	(a)	
	02/22/99-03/01/99	(a)	
	03/01/99-03/08/99	(a)	
	03/08/99-03/15/99	(a)	
	03/15/99-03/22/99	(a)	
	03/22/99-03/29/99	(a)	
	03/29/99-04/05/99	(a)	
	04/05/99-04/12/99	* 2.41 E-03	5.81 E-03
	04/12/99-04/19/99	*-4.13 E-03	6.03 E-03
	04/19/99-04/26/99	*-4.49 E-03	5.84 E-03
	04/26/99-05/03/99 (b)	* 3.34 E-03	4.08 E-03
	05/03/99-05/10/99 (c)	* 4.24 E-04	4.38 E-03
	05/10/99-05/17/99	* 1.06 E-04	3.97 E-03
	05/17/99-05/24/99	*-2.36 E-03	5.69 E-03
	05/24/99-06/01/99	*-4.35 E-04	3.95 E-03
	06/01/99-06/07/99	* 4.70 E-04	6.91 E-03
	06/07/99-06/14/99	*-1.35 E-03	5.75 E-03
	06/14/99-06/21/99	* 2.85 E-03	4.44 E-03
	06/21/99-06/28/99	*-3.45 E-03	7.17 E-03
	06/28/99-07/06/99	* 3.04 E-03	5.81 E-03
	07/06/99-07/12/99	* 3.50 E-03	7.19 E-03
	07/12/99-07/19/99	*-9.72 E-04	7.12 E-03
	07/19/99-07/26/99	* 6.77 E-04	4.22 E-03
	07/26/99-08/02/99	*-2.29 E-03	5.85 E-03
	08/02/99-08/09/99 (d)	*-2.73 E-03	9.07 E-03
	08/12/99-08/16/99	* 6.25 E-03	1.04 E-02
	08/16/99-08/23/99	* 1.68 E-03	6.06 E-03
	08/23/99-08/30/99	*-8.29 E-04	5.54 E-03
	08/30/99-09/07/99	* 5.32 E-04	3.86 E-03
	09/07/99-09/13/99	* 0.00 E+00	5.03 E-03
	09/13/99-09/20/99	* 4.36 E-03	5.56 E-03
	09/20/99-09/27/99	*-1.01 E-03	5.83 E-03
	09/27/99-10/04/99	*-2.34 E-03	6.36 E-03

* Denotes a result less than the detection limit.
(a) Power outage; no measurable volume.
(b) Power off for short time.
(c) Minor power outage.
(d) Blown fuse; low sample volume.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
40	10/04/99-10/11/99	*-1.94 E-03	6.73 E-03
	10/11/99-10/18/99	*-3.55 E-03	7.11 E-03
	10/18/99-10/25/99	* 1.23 E-03	5.73 E-03
	10/25/99-11/01/99	* 5.41 E-03	6.77 E-03
	11/01/99-11/08/99	* 3.45 E-03	7.84 E-03
	11/08/99-11/15/99	*-1.18 E-03	6.37 E-03
	11/15/99-11/22/99	* 1.39 E-04	6.71 E-03
	11/22/99-11/29/99	* 6.90 E-04	5.26 E-03
	11/29/99-12/06/99	*-4.83 E-03	6.87 E-03
	12/06/99-12/13/99	* 6.89 E-03	7.32 E-03
	12/13/99-12/20/99	*-9.64 E-04	4.48 E-03
	12/20/99-12/27/99	* 8.59 E-04	4.65 E-03
	12/27/99-01/03/00	* 2.58 E-03	6.45 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	12/28/98-01/04/99	* 1.68 E-03	5.56 E-03
	01/04/99-01/11/99	*-5.26 E-03	1.04 E-02
	01/11/99-01/18/99	* 4.61 E-03	1.07 E-02
	01/18/99-01/25/99	* 4.74 E-03	1.07 E-02
	01/25/99-02/01/99	* 1.21 E-03	8.16 E-03
	02/01/99-02/08/99	*-2.66 E-03	1.01 E-02
	02/08/99-02/16/99	*-2.27 E-03	5.54 E-03
	02/16/99-02/22/99	*-1.47 E-03	4.84 E-03
	02/22/99-03/01/99	*-3.43 E-04	5.44 E-03
	03/01/99-03/08/99	* 1.58 E-04	4.16 E-03
	03/08/99-03/15/99	*-4.55 E-04	6.12 E-03
	03/15/99-03/22/99	* 1.83 E-04	4.84 E-03
	03/22/99-03/29/99	*-1.00 E-03	4.75 E-03
	03/29/99-04/05/99	* 0.00 E+00	4.85 E-03
	04/05/99-04/12/99	*-1.34 E-03	6.18 E-03
	04/12/99-04/19/99	* 6.79 E-04	6.46 E-03
	04/19/99-04/26/99	*-4.37 E-04	4.50 E-03
	04/26/99-05/03/99	* 3.64 E-03	8.84 E-03
	05/03/99-05/10/99	* 4.65 E-03	9.42 E-03
	05/10/99-05/17/99	* 5.88 E-03	8.10 E-03
	05/17/99-05/24/99	* 7.04 E-03	9.62 E-03
	05/24/99-06/01/99	* 2.27 E-03	8.65 E-03
	06/01/99-06/07/99	* 1.12 E-03	4.17 E-03
	06/07/99-06/14/99	* 2.45 E-04	4.00 E-03
	06/14/99-06/21/99	*-6.83 E-04	1.01 E-02
	06/21/99-06/28/99	*-5.87 E-04	1.70 E-02
	06/28/99-07/06/99	* 8.22 E-03	9.97 E-03
	07/06/99-07/12/99	* 3.70 E-03	5.65 E-03
	07/12/99-07/19/99	* 1.92 E-03	4.34 E-03
	07/19/99-07/26/99	* 3.12 E-03	1.00 E-02
	07/26/99-08/02/99	* 3.40 E-04	5.47 E-03
	08/02/99-08/09/99	* 3.55 E-03	4.24 E-03
	08/09/99-08/16/99	*-1.32 E-03	4.41 E-03
	08/16/99-08/23/99	*-1.14 E-03	4.31 E-03
	08/23/99-08/30/99	* 2.17 E-03	4.50 E-03
	08/30/99-09/07/99	*-6.84 E-04	5.16 E-03
	09/07/99-09/13/99	* 8.45 E-04	4.55 E-03
	09/13/99-09/20/99	* 8.49 E-04	5.91 E-03
	09/20/99-09/27/99	*-4.25 E-03	6.35 E-03
	09/27/99-10/04/99	*-1.02 E-03	6.94 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
48	10/04/99-10/11/99	* 4.01 E-03	4.31 E-03
	10/11/99-10/18/99	* 8.23 E-05	4.21 E-03
	10/18/99-10/25/99	*-2.30 E-03	7.36 E-03
	10/25/99-11/01/99	* 2.61 E-03	6.38 E-03
	11/01/99-11/08/99	*-6.45 E-03	6.86 E-03
	11/08/99-11/15/99	*-1.45 E-02	1.45 E-02
	11/15/99-11/22/99	*-1.98 E-03	6.09 E-03
	11/22/99-11/29/99	* 1.43 E-03	1.03 E-02
	11/29/99-12/06/99	*-2.80 E-03	4.66 E-03
	12/06/99-12/13/99	* 2.86 E-03	6.63 E-03
	12/13/99-12/20/99	*-2.30 E-04	5.04 E-03
	12/20/99-12/27/99	*-1.64 E-03	9.98 E-03
	12/27/99-01/03/00	*-4.30 E-03	6.37 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1 (Cont.)

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	12/28/98-01/04/99	* 1.64 E-03	4.84 E-03
	01/04/99-01/11/99	*-5.30 E-03	1.04 E-02
	01/11/99-01/18/99	* 4.64 E-03	1.08 E-02
	01/18/99-01/25/99	* 4.41 E-03	9.94 E-03
	01/25/99-02/01/99	* 1.24 E-03	8.33 E-03
	02/01/99-02/08/99	*-2.71 E-03	1.03 E-02
	02/08/99-02/16/99	*-2.31 E-03	5.65 E-03
	02/16/99-02/22/99	* 8.30 E-03	1.11 E-02
	02/22/99-03/01/99	*-5.27 E-03	6.56 E-03
	03/01/99-03/08/99	*-3.55 E-03	8.43 E-03
	03/08/99-03/15/99	* 5.38 E-03	9.43 E-03
	03/15/99-03/22/99	*-1.59 E-03	5.04 E-03
	03/22/99-03/29/99	*-4.93 E-04	7.11 E-03
	03/29/99-04/05/99	*-3.77 E-03	7.23 E-03
	04/05/99-04/12/99	* 4.33 E-04	5.21 E-03
	04/12/99-04/19/99	*-2.92 E-03	4.20 E-03
	04/19/99-04/26/99	* 3.53 E-04	4.19 E-03
	04/26/99-05/03/99	* 3.64 E-03	8.84 E-03
	05/03/99-05/10/99	* 4.62 E-03	9.35 E-03
	05/10/99-05/17/99	* 5.97 E-03	8.23 E-03
	05/17/99-05/24/99	* 7.11 E-03	9.71 E-03
	05/24/99-06/01/99	* 2.62 E-03	9.97 E-03
	06/01/99-06/07/99	*-3.88 E-03	6.44 E-03
	06/07/99-06/14/99	*-5.24 E-03	6.49 E-03
	06/14/99-06/21/99	*-6.93 E-04	1.02 E-02
	06/21/99-06/28/99	*-5.98 E-04	1.73 E-02
	06/28/99-07/06/99	* 8.34 E-03	1.01 E-02
	07/06/99-07/12/99	* 1.07 E-04	6.35 E-03
	07/12/99-07/19/99	*-4.20 E-03	6.82 E-03
	07/19/99-07/26/99	* 3.15 E-03	1.01 E-02
	07/26/99-08/02/99	* 3.46 E-04	5.57 E-03
	08/02/99-08/09/99	* 1.22 E-03	6.13 E-03
	08/09/99-08/16/99	* 2.75 E-03	6.43 E-03
	08/16/99-08/23/99	* 2.30 E-03	6.97 E-03
	08/23/99-08/30/99	* 3.79 E-03	6.63 E-03
	08/30/99-09/07/99	*-6.96 E-04	5.25 E-03
	09/07/99-09/13/99	* 3.40 E-04	7.27 E-03
	09/13/99-09/20/99	* 8.63 E-04	6.00 E-03
	09/20/99-09/27/99	*-4.32 E-03	6.46 E-03
	09/27/99-10/04/99	*-1.03 E-03	7.04 E-03

* Denotes a result less than the detection limit.

TABLE A-4.1

I-131 IN CHARCOAL FILTERS

Results in pCi/cubic meter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
57	10/04/99-10/11/99	*-3.18 E-03	6.00 E-03
	10/11/99-10/18/99	* 1.56 E-03	6.74 E-03
	10/18/99-10/25/99	*-2.34 E-03	7.49 E-03
	10/25/99-11/01/99	*-1.99 E-03	5.95 E-03
	11/01/99-11/08/99	*-6.57 E-03	6.99 E-03
	11/08/99-11/15/99	*-1.47 E-02	1.47 E-02
	11/15/99-11/22/99	* 5.05 E-03	9.71 E-03
	11/22/99-11/29/99	* 1.44 E-03	1.04 E-02
	11/29/99-12/06/99	* 6.59 E-03	6.85 E-03
	12/06/99-12/13/99	* 2.90 E-03	6.73 E-03
	12/13/99-12/20/99	* 1.57 E-03	4.66 E-03
	12/20/99-12/27/99	*-1.66 E-03	1.02 E-02
	12/27/99-01/03/00	*-1.22 E-03	4.33 E-03

* Denotes a result less than the detection limit.

TABLE A-4.2

I-131 IN CHARCOAL FILTERS - SUMMARY

Results in pCi/cubic meter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
I-131	(I)	8.83E-05	-2.29E-02	1.06E-02	575	0
I-131	(C)	9.81E-05	-6.57E-03	1.06E-02	53	0

(I) Indicator Stations
(C) Control Station

TABLE A-5.1

GROSS BETA IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
		River/Drinking	
26	01/05/99-02/03/99	1.5 E+00	6.0 E-01
	02/02/99-03/02/99	* 8.4 E-01	6.7 E-01
	03/02/99-04/06/99	1.5 E+00	7.0 E-01
	04/06/99-05/04/99	1.4 E+00	8.0 E-01
	05/04/99-06/02/99	1.7 E+00	6.0 E-01
	06/02/99-07/07/99	1.2 E+00	7.0 E-01
	07/07/99-08/03/99	1.7 E+00	7.0 E-01
	08/03/99-09/01/99	1.2 E+00	7.0 E-01
	09/01/99-10/05/99	1.1 E+00	7.0 E-01
	10/05/99-11/02/99	1.1 E+00	7.0 E-01
	11/02/99-12/01/99	1.9 E+00	7.0 E-01
	12/03/99-01/04/00	1.9 E+00	7.0 E-01
29	01/05/99-02/03/99 (a)	1.6 E+01	2.0 E+00
	02/02/99-03/02/99	1.2 E+00	7.0 E-01
	03/02/99-04/06/99	1.8 E+00	7.0 E-01
	04/06/99-05/04/99	9.6 E-01	6.7 E-01
	05/04/99-06/02/99	1.7 E+00	7.0 E-01
	06/02/99-07/07/99	1.3 E+00	7.0 E-01
	07/07/99-08/03/99	1.5 E+00	6.0 E-01
	08/03/99-09/01/99	2.3 E+00	3.0 E-02
	09/01/99-10/05/99	1.8 E+00	7.0 E-01
	10/05/99-11/02/99	1.3 E+00	6.0 E-01
	11/02/99-12/01/99	* 0.0 E+00	5.5 E-01
	12/03/99-01/04/00	1.5 E+00	7.0 E-01

* Denotes a result less than the detection limit.

(a) Result is suspect and not considered valid. Not included in averages since this sample was split with the state and produced results of 1 pCi/l. The contract lab disposed of sample so it cannot be reanalyzed..

TABLE A-5.1

GROSS BETA IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
		Discharge	
27	01/05/99-02/03/99	1.9 E+01	2.0 E+00
	02/02/99-03/02/99	1.5 E+01	2.0 E+00
	03/02/99-04/06/99	1.8 E+01	2.0 E+00
	04/06/99-05/04/99	1.8 E+01	2.0 E+00
	05/04/99-06/02/99	2.7 E+00	8.0 E-01
	06/02/99-07/07/99	3.9 E+00	9.0 E-01
	07/07/99-08/03/99	1.3 E+01	2.0 E+00
	08/03/99-09/01/99	1.5 E+01	2.0 E+00
	09/01/99-10/05/99	1.8 E+01	2.0 E+00
	10/05/99-11/02/99	3.3 E+00	1.0 E+00
	11/02/99-12/01/99	1.6 E+01	2.0 E+00
	12/03/99-01/04/99	2.0 E+01	2.0 E+00

* Denotes a result less than the detection limit.

TABLE A-5.2

GROSS BETA IN WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
River/Drinking						
Gr-Beta	(I)	1.40E+00	0.0E+00	2.3E+00	12	10
Gr-Beta	(C)	1.42E+00	8.4E-01	1.9E+00	12	11
Discharge						
Gr-Beta	(I)	1.35E+01	2.7E+00	2.0E+01	12	12

(I) Indicator Stations
(C) Control Station

TABLE A-6.1

TRITIUM IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
		River/Drinking	
26	01/05/99-04/06/99	* 6.8 E+01	1.03 E+02
	04/06/99-07/07/99	* 1.1 E+02	1.06 E+02
	07/07/99-10/05/99	* 9.5 E+01	1.64 E+02
	10/05/99-01/04/00	*-9.5 E+00	1.03 E+02
29	01/05/99-04/06/99	* 4.9 E+01	1.02 E+02
	04/06/99-07/07/99	* 9.2 E+01	1.01 E+02
	07/07/99-10/05/99	* 1.1 E+02	1.56 E+02
	10/05/99-01/04/00	* 1.3 E+02	1.56 E+02
		Discharge	
27	01/05/99-04/06/99	* 3.1 E+01	1.02 E+02
	04/06/99-07/07/99	* 7.0 E+01	1.04 E+02
	07/07/99-10/05/99	* 1.9 E+02	1.67 E+02
	10/05/99-01/04/00	*-2.7 E+02	1.28 E+02

* Denotes a result less than the detection limit.

TABLE A-6.1 (Cont.)

TRITIUM IN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
		Ground	
31 (Well 1)	03/02/99	* 1.0 E+02	1.01 E+02
	06/02/99	* 6.7 E+01	9.78 E+01
	09/01/99	*-1.4 E+02	9.43 E+01
	12/01/99	* 2.6 E+01	9.89 E+01
32 (Well 2)	03/02/99	* 6.1 E+01	9.91 E+01
	06/02/99	* 5.3 E+01	9.73 E+01
	09/01/99	*-4.9 E+01	9.81 E+01
	12/01/99	* 3.1 E+01	9.91 E+01
52 (Well 3)	03/02/99	1.8 E+02	1.00 E+02
	06/02/99	* 5.7 E+01	9.75 E+01
	09/01/99	*-3.9 E+01	9.85 E+01
	12/01/99	* 1.0 E+02	1.02 E+02

* Denotes a result less than the detection limit.

TABLE A-6.2

TRITIUM IN WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
River/Drinking						
H-3	(I)	9.5E+01	4.9E+01	1.3E+02	4	0
H-3	(C)	6.6E+01	-9.5E+00	1.1E+02	4	0
Ground						
H-3	(I)	3.7E+01	-1.4E+02	1.8E+02	12	1
Discharge						
H-3	(I)	5.3E+00	-2.7E+02	1.9E+02	4	0

(I) Indicator Stations
(C) Control Station

TABLE A-7.1

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
26	01/05/99-02/03/99	Be-7	*-3.34 E+00	1.27 E+01
		K-40	*-4.48 E+01	1.78 E+01
		Mn-54	* 3.76 E-01	1.23 E+00
		Co-58	*-2.65 E-01	1.21 E+00
		Fe-59	* 1.74 E+00	2.53 E+00
		Co-60	*-7.68 E-01	1.37 E+00
		Zn-65	* 0.00 E+00	2.56 E+00
		Zr-95	*-2.17 E-01	2.47 E+00
		Nb-95	* 3.77 E-01	1.33 E+00
		Cs-134	* 4.92 E-01	1.41 E+00
		Cs-137	* 1.79 E+00	1.51 E+00
		Ba-140	*-2.76 E+00	3.97 E+00
		La-140	*-5.38 E-01	1.78 E+00
		Ra-226	*-8.33 E+01	3.37 E+01
		Th-228	* 3.01 E+00	2.81 E+00
	02/02/99-03/02/99	Be-7	* 1.42 E+00	1.86 E+01
		K-40	*-6.10 E+01	4.03 E+01
		Mn-54	* 3.65 E-01	2.05 E+00
		Co-58	*-6.87 E-01	2.00 E+00
		Fe-59	* 3.19 E+00	4.10 E+00
		Co-60	* 1.15 E+00	2.08 E+00
		Zn-65	* 2.42 E+00	4.50 E+00
		Zr-95	*-3.50 E-01	4.14 E+00
		Nb-95	* 1.73 E-01	2.05 E+00
		Cs-134	*-2.48 E-01	2.14 E+00
		Cs-137	* 7.89 E-01	2.27 E+00
		Ba-140	* 4.13 E+00	6.31 E+00
		La-140	*-3.78 E-01	2.29 E+00
		Ra-226	*-1.31 E+01	3.82 E+01
		Th-228	* 5.33 E+00	3.29 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
26	03/02/99-04/06/99	Be-7	*-1.45 E+01	2.04 E+01
		K-40	*-5.24 E+01	4.12 E+01
		Mn-54	*-6.18 E-01	2.18 E+00
		Co-58	*-1.77 E+00	2.21 E+00
		Fe-59	* 2.95 E+00	4.65 E+00
		Co-60	* 8.30 E-01	2.10 E+00
		Zn-65	*-3.79 E+00	4.82 E+00
		Zr-95	* 3.40 E+00	4.65 E+00
		Nb-95	* 2.40 E+00	2.27 E+00
		Cs-134	*-3.34 E-01	2.46 E+00
		Cs-137	* 1.52 E+00	2.34 E+00
		Ba-140	* 2.93 E+00	8.63 E+00
		La-140	* 2.07 E+00	3.43 E+00
		Ra-226	*-2.99 E+00	4.07 E+01
		Th-228	* 2.19 E+00	3.52 E+00
	04/06/99-05/04/99	Be-7	*1.16 E+01	1.54 E+01
		K-40	*-4.32 E+01	2.20 E+01
		Mn-54	* 2.36 E-01	1.57 E+00
		Co-58	*-6.62 E-01	1.56 E+00
		Fe-59	*-4.88 E-01	3.17 E+00
		Co-60	* 2.79 E-01	1.56 E+00
		Zn-65	*-4.90 E-01	3.43 E+00
		Zr-95	* 2.63 E+00	3.14 E+00
		Nb-95	*-2.20 E+00	1.62 E+00
		Cs-134	*-2.13 E-01	1.74 E+00
		Cs-137	*-4.60 E+00	1.94 E+00
		Ba-140	*-5.11 E-01	6.42 E+00
		La-140	*-1.60 E+00	2.79 E+00
		Ra-226	*-3.11 E+01	3.59 E+01
		Th-228	* 3.03 E+00	2.90 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
26	05/04/99-06/02/99	Be-7	*-2.83 E+00	1.88 E+01
		K-40	* 3.48 E+00	2.74 E+01
		Mn-54	*-5.05 E-01	1.82 E+00
		Co-58	* 1.32 E-01	2.00 E+00
		Fe-59	* 6.48 E-01	4.35 E+00
		Co-60	*-6.65 E-01	1.93 E+00
		Zn-65	* 2.61 E+00	4.32 E+00
		Zr-95	* 1.01 E+00	4.12 E+00
		Nb-95	* 3.76 E-01	1.99 E+00
		Cs-134	*-3.39 E-01	2.02 E+00
		Cs-137	* 3.42 E+00	2.18 E+00
		Ba-140	*-1.56 E+00	7.56 E+00
		La-140	*-7.44 E-01	3.47 E+00
		Ra-226	*-4.77 E+01	4.02 E+01
		Th-228	* 2.82 E+00	3.56 E+00
	06/02/99-07/07/99	Be-7	* 2.82 E+00	1.59 E+01
		K-40	*-2.02 E+01	2.26 E+01
		Mn-54	* 2.59 E-01	1.54 E+00
		Co-58	*-7.80 E-01	1.61 E+00
		Fe-59	*-3.41 E-01	3.73 E+00
		Co-60	*-5.17 E-01	1.79 E+00
		Zn-65	* 1.56 E+00	3.58 E+00
		Zr-95	* 2.64 E-01	3.45 E+00
		Nb-95	* 1.31 E-01	1.69 E+00
		Cs-134	* 8.78 E-01	1.79 E+00
		Cs-137	* 2.25 E+00	1.83 E+00
		Ba-140	*-1.77 E+00	7.25 E+00
		La-140	*-4.23 E+00	3.19 E+00
		Ra-226	*-3.01 E+01	3.30 E+01
		Th-228	* 6.19 E-01	2.93 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
26	07/07/99-08/03/99	Be-7	*-2.87 E+00	1.66 E+01
		K-40	*-2.16 E+01	2.52 E+01
		Mn-54	*-3.35 E-01	1.71 E+00
		Co-58	*-4.50 E-01	1.79 E+00
		Fe-59	* 3.55 E-01	3.77 E+00
		Co-60	*-6.92 E-02	1.87 E+00
		Zn-65	* 1.20 E+00	3.45 E+00
		Zr-95	* 1.92 E+00	3.47 E+00
		Nb-95	* 1.81 E+00	1.80 E+00
		Cs-134	* 1.71 E+00	1.95 E+00
		Cs-137	*-3.90 E+00	2.10 E+00
		Ba-140	*-1.75 E+00	6.69 E+00
		La-140	* 0.00 E+00	3.01 E+00
		Ra-226	*-2.30 E+00	4.01 E+01
		Th-228	*-6.56 E-01	3.30 E+00
	08/03/99-09/01/99	Be-7	*-7.36 E+00	1.58 E+01
		K-40	*-1.78 E+01	1.96 E+01
		Mn-54	* 6.47 E-01	1.58 E+00
		Co-58	* 7.83 E-01	1.67 E+00
		Fe-59	*-4.57 E-01	3.70 E+00
		Co-60	*-1.29 E-01	1.77 E+00
		Zn-65	* 3.35 E+00	3.44 E+00
		Zr-95	*-1.68 E+00	3.36 E+00
		Nb-95	* 4.81 E-01	1.72 E+00
		Cs-134	* 6.01 E-01	1.84 E+00
		Cs-137	* 1.61 E+00	1.75 E+00
		Ba-140	*-2.55 E+00	7.47 E+00
		La-140	*-2.73 E+00	3.57 E+00
		Ra-226	*-1.29 E+01	3.28 E+01
		Th-228	*-4.39 E+00	2.95 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
26	09/01/99-10/05/99	Be-7	* 2.34 E+00	2.59 E+01
		K-40	*-2.13 E+02	5.57 E+01
		Mn-54	* 8.08 E-01	2.39 E+00
		Co-58	* 1.02 E+00	2.76 E+00
		Fe-59	*-2.35 E+00	6.36 E+00
		Co-60	* 2.06 E+00	2.29 E+00
		Zn-65	* 4.59 E+00	5.46 E+00
		Zr-95	*-3.87 E+00	5.60 E+00
		Nb-95	*-1.35 E+00	2.88 E+00
		Cs-134	* 9.54 E-01	2.60 E+00
		Cs-137	* 1.41 E+00	2.56 E+00
		Ba-140	* 1.50 E+00	1.78 E+01
		La-140	*-9.84 E+00	6.65 E+00
		Ra-226	* 2.46 E+01	4.62 E+01
		Th-228	*-3.14 E+00	3.97 E+00
	10/05/99-11/02/99	Be-7	*-2.61 E+00	2.05 E+01
		K-40	*-1.75 E+01	2.45 E+01
		Mn-54	* 7.25 E-01	1.95 E+00
		Co-58	*-1.37 E-01	2.01 E+00
		Fe-59	*-1.79 E-01	4.66 E+00
		Co-60	*-1.07 E+00	1.90 E+00
		Zn-65	* 2.99 E+00	4.01 E+00
		Zr-95	* 3.98 E-01	4.33 E+00
		Nb-95	* 9.87 E-01	2.16 E+00
		Cs-134	*-3.84 E-01	2.07 E+00
		Cs-137	* 2.21 E+00	2.13 E+00
		Ba-140	*-1.38 E+01	1.29 E+01
		La-140	*-2.51 E+00	6.46 E+00
		Ra-226	* 1.21 E+00	3.89 E+01
		Th-228	*-6.94 E+00	3.38 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
26	11/02/99-12/01/98	Be-7	* 3.06 E+00	2.67 E+01
		K-40	*-4.44 E+00	5.73 E+01
		Mn-54	* 9.22 E-02	2.33 E+00
		Co-58	* 1.57 E-01	2.72 E+00
		Fe-59	*-3.85 E+00	6.10 E+00
		Co-60	*-7.28 E-01	2.41 E+00
		Zn-65	* 2.36 E+00	5.56 E+00
		Zr-95	* 1.21 E+00	5.71 E+00
		Nb-95	* 9.02 E-01	2.84 E+00
		Cs-134	* 4.41 E-01	2.67 E+00
		Cs-137	* 1.46 E+00	2.63 E+00
		Ba-140	* 2.70 E+00	1.76 E+01
		La-140	* 1.10 E+00	6.38 E+00
		Ra-226	*-5.11 E+01	4.62 E+01
		Th-228	*-7.46 E+00	4.03 E+00
	12/03/99-01/04/00	Be-7	* 9.77 E+00	2.44 E+01
		K-40	*-1.68 E+02	5.81 E+01
		Mn-54	* 9.05 E-01	2.56 E+00
		Co-58	*-1.39 E+00	2.64 E+00
		Fe-59	* 4.91 E+00	5.78 E+00
		Co-60	*-3.90 E-01	2.50 E+00
		Zn-65	*-4.59 E+00	5.84 E+00
		Zr-95	* 3.40 E+00	5.29 E+00
		Nb-95	* 1.05 E+00	2.64 E+00
		Cs-134	*-1.09 E+00	2.94 E+00
		Cs-137	* 3.34 E+00	2.90 E+00
		Ba-140	* 4.47 E+00	1.04 E+01
		La-140	*-3.71 E+00	3.81 E+00
		Ra-226	* 1.32 E+01	4.96 E+01
		Th-228	* 3.19 E-01	4.21 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
29	01/05/99-02/03/99	Be-7	*-8.62 E+00	1.42 E+01
		K-40	*-3.92 E+01	2.50 E+01
		Mn-54	* 9.27 E-01	1.57 E+00
		Co-58	*-1.93 E-01	1.52 E+00
		Fe-59	*-1.54 E+00	3.27 E+00
		Co-60	*-2.86 E+00	1.59 E+00
		Zn-65	* 1.59 E+00	3.31 E+00
		Zr-95	* 8.63 E-01	3.16 E+00
		Nb-95	* 2.63 E+00	1.62 E+00
		Cs-134	*-1.74 E+00	1.74 E+00
		Cs-137	* 8.11 E-01	1.77 E+00
		Ba-140	*-2.59 E+00	4.64 E+00
		La-140	* 1.28 E+00	1.95 E+00
		Ra-226	*-7.92 E+01	2.82 E+01
		Th-228	*-7.47 E+00	2.51 E+00
	02/03/99-03/02/99	Be-7	*-8.47 E+00	1.52 E+01
		K-40	*-7.11 E+01	3.11 E+01
		Mn-54	* 2.38 E-01	1.65 E+00
		Co-58	*-1.03 E-01	1.62 E+00
		Fe-59	* 4.56 E+00	3.21 E+00
		Co-60	* 4.81 E-01	1.71 E+00
		Zn-65	* 5.03 E-01	3.60 E+00
		Zr-95	* 2.04 E+00	3.31 E+00
		Nb-95	* 1.86 E+00	1.64 E+00
		Cs-134	*-6.31 E-01	1.88 E+00
		Cs-137	* 7.70 E-01	1.88 E+00
		Ba-140	* 7.39 E-01	5.08 E+00
		La-140	*-8.60 E-01	1.99 E+00
		Ra-226	* 1.10 E+01	3.37 E+01
		Th-228	*-4.04 E+00	2.87 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
29	03/02/99-04/06/99	Be-7	*-1.45 E+01	1.94 E+01
		K-40	*-1.09 E+02	5.09 E+01
		Mn-54	* 1.39 E+00	2.14 E+00
		Co-58	*-7.91 E-01	2.13 E+00
		Fe-59	* 4.88 E+00	4.51 E+00
		Co-60	* 2.41 E+00	2.15 E+00
		Zn-65	* 2.34 E+00	4.83 E+00
		Zr-95	*-6.87 E-02	4.24 E+00
		Nb-95	* 1.70 E+00	2.14 E+00
		Cs-134	* 7.71 E-01	2.33 E+00
		Cs-137	* 1.02 E+00	2.41 E+00
		Ba-140	*-2.61 E+00	6.92 E+00
		La-140	*-1.56 E-01	2.69 E+00
		Ra-226	*-1.28 E+02	4.09 E+01
		Th-228	*-7.79 E+00	3.56 E+00
	04/06/99-05/04/99	Be-7	* 3.10 E+00	1.68 E+01
		K-40	* 3.99 E+00	2.56 E+01
		Mn-54	* 1.09 E+00	1.75 E+00
		Co-58	*-3.58 E-01	1.67 E+00
		Fe-59	* 1.57 E+00	3.66 E+00
		Co-60	*-1.02 E-01	1.86 E+00
		Zn-65	*-3.86 E+00	3.41 E+00
		Zr-95	*-1.37 E-01	3.53 E+00
		Nb-95	*-4.08 E-01	1.62 E+00
		Cs-134	*-5.89 E-01	1.83 E+00
		Cs-137	* 3.60 E+00	1.98 E+00
		Ba-140	* 3.81 E+00	7.21 E+00
		La-140	* 1.77 E+00	3.13 E+00
		Ra-226	*-5.07 E+00	3.95 E+01
		Th-228	*-5.00 E+00	3.56 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
29	05/04/99-06/02/99	Be-7	*-1.01 E+01	2.49 E+01
		K-40	*-9.70 E+01	6.18 E+01
		Mn-54	* 1.27 E+00	2.49 E+00
		Co-58	*-8.87 E-01	2.79 E+00
		Fe-59	* 1.73 E+00	5.84 E+00
		Co-60	* 1.78 E+00	2.77 E+00
		Zn-65	* 1.34 E-01	5.96 E+00
		Zr-95	*-1.06 E-01	5.41 E+00
		Nb-95	* 1.05 E-01	2.73 E+00
		Cs-134	* 1.14 E-01	2.89 E+00
		Cs-137	* 1.55 E+00	2.85 E+00
		Ba-140	* 2.67 E+00	1.07 E+01
		La-140	* 1.49 E+00	4.11 E+00
		Ra-226	* 1.18 E+01	5.10 E+01
		Th-228	* 9.77 E-01	4.33 E+00
	06/02/99-07/07/99	Be-7	* 4.73 E+00	1.81 E+01
		K-40	*-1.11 E+02	3.51 E+01
		Mn-54	* 7.69 E-01	1.81 E+00
		Co-58	* 2.98 E-01	1.88 E+00
		Fe-59	* 1.90 E+00	4.20 E+00
		Co-60	* 4.58 E-01	1.86 E+00
		Zn-65	*-8.00 E-01	3.96 E+00
		Zr-95	*-5.73 E-01	3.97 E+00
		Nb-95	* 5.68 E-01	1.96 E+00
		Cs-134	* 8.27 E-01	1.99 E+00
		Cs-137	* 1.55 E+00	2.01 E+00
		Ba-140	*-3.30 E+00	8.34 E+00
		La-140	*-7.64 E-01	3.29 E+00
		Ra-226	*-2.47 E+01	3.37 E+01
		Th-228	* 4.59 E+00	2.97 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
29	07/07/99-08/03/99	Be-7	* 4.78 E+00	1.89 E+01
		K-40	*-3.67 E+01	2.70 E+01
		Mn-54	*-2.02 E-01	1.95 E+00
		Co-58	* 0.00 E+00	1.98 E+00
		Fe-59	* 6.79 E-01	4.34 E+00
		Co-60	* 1.61 E+00	2.13 E+00
		Zn-65	* 1.73 E-01	4.62 E+00
		Zr-95	*-5.38 E-01	4.19 E+00
		Nb-95	* 2.87 E+00	2.18 E+00
		Cs-134	*-1.46 E+00	2.05 E+00
		Cs-137	* 1.91 E+00	2.28 E+00
		Ba-140	*-1.20 E+00	8.03 E+00
		La-140	*-3.89 E+00	3.50 E+00
		Ra-226	*-2.64 E+01	4.47 E+01
		Th-228	*-1.09 E+01	3.80 E+00
	08/03/99-09/01/99	Be-7	* 4.90 E+00	2.12 E+01
		K-40	*-1.20 E+02	5.19 E+01
		Mn-54	*-9.03 E-01	2.08 E+00
		Co-58	* 4.63 E-01	2.24 E+00
		Fe-59	*-3.85 E+00	4.94 E+00
		Co-60	* 7.89 E-01	2.15 E+00
		Zn-65	* 4.04 E+00	4.77 E+00
		Zr-95	* 4.67 E+00	4.74 E+00
		Nb-95	* 1.47 E-01	2.32 E+00
		Cs-134	* 2.33 E-01	2.34 E+00
		Cs-137	* 2.35 E+00	2.35 E+00
		Ba-140	* 1.28 E-01	1.01 E+01
		La-140	* 3.78 E+00	3.83 E+00
		Ra-226	*-3.91 E+01	4.19 E+01
		Th-228	* 9.71 E+00	3.62 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
29	09/01/99-10/05/99	Be-7	* 5.08 E+00	2.04 E+01
		K-40	*-3.69 E+01	2.28 E+01
		Mn-54	* 3.99 E-01	1.77 E+00
		Co-58	* 5.19 E-01	1.93 E+00
		Fe-59	* 1.66 E+00	4.16 E+00
		Co-60	* 1.23 E+00	1.92 E+00
		Zn-65	* 1.02 E+00	3.65 E+00
		Zr-95	* 1.51 E+00	4.07 E+00
		Nb-95	* 5.61 E-01	1.92 E+00
		Cs-134	* 1.81 E-01	1.98 E+00
		Cs-137	* 5.80 E-01	1.91 E+00
		Ba-140	* 6.33 E-01	1.27 E+01
		La-140	* 5.67 E-01	5.71 E+00
		Ra-226	*-4.90 E+00	4.43 E+01
		Th-228	*-2.44 E-01	3.62 E+00
	10/05/99-11/02/99	Be-7	* 8.42 E+00	2.07 E+01
		K-40	* 1.67 E+01	3.09 E+01
		Mn-54	* 1.22 E+00	1.89 E+00
		Co-58	* 1.57 E+00	2.15 E+00
		Fe-59	* 2.05 E+00	4.71 E+00
		Co-60	* 5.23 E-01	1.68 E+00
		Zn-65	* 4.73 E-01	4.10 E+00
		Zr-95	* 1.26 E+00	4.48 E+00
		Nb-95	* 1.04 E+00	2.21 E+00
		Cs-134	*-1.00 E+00	2.06 E+00
		Cs-137	* 1.94 E+00	2.06 E+00
		Ba-140	*-3.98 E+00	1.50 E+01
		La-140	* 2.62 E+00	5.77 E+00
		Ra-226	*-2.60 E+01	3.55 E+01
		Th-228	*-6.86 E+00	3.13 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		River/Drinking		
29	11/02/99-12/01/99	Be-7	*-3.63 E+00	1.82 E+01
		K-40	*-1.86 E+01	3.18 E+01
		Mn-54	* 5.33 E-01	1.65 E+00
		Co-58	*-1.47 E+00	1.80 E+00
		Fe-59	* 2.80 E-01	4.03 E+00
		Co-60	* 4.58 E-01	1.58 E+00
		Zn-65	* 1.57 E+00	3.58 E+00
		Zr-95	*-2.95 E-01	3.76 E+00
		Nb-95	*-2.35 E+00	1.90 E+00
		Cs-134	*-1.07 E+00	1.81 E+00
		Cs-137	* 1.33 E+00	1.83 E+00
		Ba-140	*-5.52 E-01	1.12 E+01
		La-140	*-1.48 E+00	4.40 E+00
		Ra-226	* 5.03 E+00	3.27 E+01
		Th-228	* 3.34 E+00	2.84 E+00
	12/03/99-01/04/00	Be-7	* 7.55 E+00	1.80 E+01
		K-40	* 1.07 E+01	3.22 E+01
		Mn-54	* 2.35 E-01	1.92 E+00
		Co-58	*-9.25 E-01	1.93 E+00
		Fe-59	* 1.36 E+00	4.11 E+00
		Co-60	*-2.69 E-01	2.00 E+00
		Zn-65	* 3.51 E-01	4.52 E+00
		Zr-95	* 2.53 E+00	3.97 E+00
		Nb-95	* 2.27 E+00	2.08 E+00
		Cs-134	*-5.09 E-01	2.25 E+00
		Cs-137	* 7.72 E-01	2.22 E+00
		Ba-140	* 3.84 E+00	7.43 E+00
		La-140	* 4.59 E-01	2.90 E+00
		Ra-226	*-9.65 E+01	3.53 E+01
		Th-228	*-2.15 E+00	3.08 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Discharge		
27	01/05/99-02/03/99	Be-7	* 1.54 E+01	1.62 E+01
		K-40	*-2.09 E+01	2.37 E+01
		Mn-54	* 3.95 E-01	1.67 E+00
		Co-58	*-9.56 E-01	1.66 E+00
		Fe-59	* 4.29 E-01	3.46 E+00
		Co-60	* 5.09 E-01	1.74 E+00
		Zn-65	* 1.11 E+00	3.26 E+00
		Zr-95	* 9.61 E-01	3.30 E+00
		Nb-95	* 8.22 E-01	1.74 E+00
		Cs-134	* 1.90 E-01	1.80 E+00
		Cs-137	*-1.87 E+00	2.08 E+00
		Ba-140	* 8.89 E-01	6.21 E+00
		La-140	*-3.41 E+00	2.77 E+00
		Ra-226	* 1.11 E+01	3.85 E+01
		Th-228	* 3.17 E+00	3.21 E+00
	02/02/99-03/02/99	Be-7	* 1.14 E+01	2.16 E+01
		K-40	*-1.58 E+02	5.75 E+01
		Mn-54	* 1.98 E+00	2.42 E+00
		Co-58	* 1.13 E+00	2.47 E+00
		Fe-59	* 7.69 E-01	5.00 E+00
		Co-60	* 2.58 E+00	2.50 E+00
		Zn-65	* 9.29 E+00	5.69 E+00
		Zr-95	*-2.71 E-01	4.89 E+00
		Nb-95	* 1.70 E+00	2.38 E+00
		Cs-134	*-8.18 E-01	2.70 E+00
		Cs-137	* 1.99 E+00	2.75 E+00
		Ba-140	* 4.37 E-01	7.57 E+00
		La-140	*-4.88 E+00	2.75 E+00
		Ra-226	*-2.55 E+02	4.61 E+01
		Th-228	*-1.30 E+00	4.05 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Discharge		
27	03/02/99-04/06/99	Be-7	* 3.13 E+00	2.52 E+01
		K-40	*-1.95 E+02	5.92 E+01
		Mn-54	* 1.44 E+00	2.54 E+00
		Co-58	* 2.05 E+00	2.69 E+00
		Fe-59	* 1.85 E+00	5.72 E+00
		Co-60	* 9.35 E-01	2.74 E+00
		Zn-65	* 3.51 E+00	5.89 E+00
		Zr-95	* 3.51 E+00	5.65 E+00
		Nb-95	* 1.53 E+00	2.71 E+00
		Cs-134	* 1.72 E-01	2.86 E+00
		Cs-137	* 6.37 E+00	2.99 E+00
		Ba-140	* 4.78 E-01	1.01 E+01
		La-140	*-1.71 E+00	3.58 E+00
		Ra-226	*-1.10 E+02	4.95 E+01
		Th-228	*-7.96 E+00	4.21 E+00
	04/06/99-05/04/99	Be-7	* 7.27 E+00	1.56 E+01
		K-40	*-4.52 E+01	2.42 E+01
		Mn-54	* 1.36 E+00	1.53 E+00
		Co-58	*-4.93 E-02	1.54 E+00
		Fe-59	* 3.17 E+00	3.30 E+00
		Co-60	* 1.22 E+00	1.69 E+00
		Zn-65	*-1.89 E+00	3.11 E+00
		Zr-95	*-2.85 E-01	3.17 E+00
		Nb-95	*-4.70 E-02	1.54 E+00
		Cs-134	* 3.55 E-01	1.59 E+00
		Cs-137	*-5.38 E-01	1.65 E+00
		Ba-140	* 6.01 E+00	6.50 E+00
		La-140	* 5.20 E-01	2.52 E+00
		Ra-226	*-3.22 E+01	3.78 E+01
		Th-228	*-3.78 E-01	3.11 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Discharge		
27	05/04/99-06/02/99	Be-7	* 6.70 E+00	2.18 E+01
		K-40	*-2.19 E+01	4.26 E+01
		Mn-54	*-8.22 E-01	2.08 E+00
		Co-58	* 1.52 E+00	2.32 E+00
		Fe-59	*-2.45 E+00	5.14 E+00
		Co-60	* 1.68 E+00	2.29 E+00
		Zn-65	*-2.46 E+00	5.12 E+00
		Zr-95	* 1.51 E+00	4.61 E+00
		Nb-95	*-2.99 E+00	2.28 E+00
		Cs-134	*-1.35 E+00	2.27 E+00
		Cs-137	* 2.28 E-01	2.34 E+00
		Ba-140	* 1.89 E-01	1.14 E+00
		La-140	*-1.18 E+00	4.36 E+00
		Ra-226	*-1.63 E+01	3.92 E+01
		Th-228	* 3.98 E-01	3.44 E+00
	06/02/99-07/07/99	Be-7	*-1.79 E+00	1.60 E+01
		K-40	*-2.45 E+00	2.37 E+01
		Mn-54	*-4.01 E-01	1.51 E+00
		Co-58	*-3.80 E-01	1.60 E+00
		Fe-59	* 1.63 E+00	3.39 E+00
		Co-60	* 9.19 E-01	1.69 E+00
		Zn-65	* 2.28 E+00	3.13 E+00
		Zr-95	* 4.56 E-01	3.36 E+00
		Nb-95	* 9.04 E-01	1.73 E+00
		Cs-134	*-2.87 E-01	1.72 E+00
		Cs-137	* 1.01 E+00	1.81 E+00
		Ba-140	*-2.02 E+00	7.17 E+00
		La-140	*-5.68 E-01	3.15 E+00
		Ra-226	*-2.25 E+01	3.72 E+01
		Th-228	*-9.02 E-01	3.15 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Discharge		
27	07/07/99-08/03/99	Be-7	* 0.00 E+00	1.75 E+01
		K-40	*-6.47 E+01	2.84 E+01
		Mn-54	* 4.64 E-02	1.93 E+00
		Co-58	*-1.65 E+00	1.91 E+00
		Fe-59	* 9.10 E-01	4.08 E+00
		Co-60	* 5.95 E-01	1.88 E+00
		Zn-65	* 9.26 E-01	4.14 E+00
		Zr-95	* 2.61 E+00	4.02 E+00
		Nb-95	* 2.31 E+00	2.00 E+00
		Cs-134	*-2.66 E+00	2.06 E+00
		Cs-137	* 1.39 E+00	2.09 E+00
		Ba-140	*-1.43 E+00	7.09 E+00
		La-140	* 4.79 E-01	2.73 E+00
		Ra-226	*-4.29 E+01	3.55 E+01
		Th-228	*-7.02 E+00	3.02 E+00
	08/03/99-09/01/99	Be-7	* 5.95 E+00	1.72 E+01
		K-40	*-2.09 E+01	3.54 E+01
		Mn-54	* 3.50 E-01	1.80 E+00
		Co-58	*-7.11 E-01	1.91 E+00
		Fe-59	*-1.37 E+00	4.00 E+00
		Co-60	* 1.43 E+00	1.88 E+00
		Zn-65	*-1.60 E+00	3.95 E+00
		Zr-95	* 1.94 E+00	3.95 E+00
		Nb-95	* 1.03 E+00	1.96 E+00
		Cs-134	* 1.13 E-01	2.02 E+00
		Cs-137	* 2.61 E+00	2.00 E+00
		Ba-140	* 5.38 E+00	8.40 E+00
		La-140	* 2.12 E+00	3.32 E+00
		Ra-226	*-1.43 E+01	3.33 E+01
		Th-228	* 1.31 E+00	2.91 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Discharge		
27	09/01/99-10/05/99	Be-7	* 7.66 E-01	1.80 E+01
		K-40	* 1.94 E+01	3.17 E+01
		Mn-54	*-4.55 E-01	1.59 E+00
		Co-58	* 3.71 E-02	1.81 E+00
		Fe-59	* 2.21 E+00	4.09 E+00
		Co-60	* 7.56 E-01	1.60 E+00
		Zn-65	* 1.86 E+00	3.50 E+00
		Zr-95	* 7.24 E-01	3.66 E+00
		Nb-95	* 2.26 E+00	1.95 E+00
		Cs-134	* 0.00 E+00	1.78 E+00
		Cs-137	* 1.97 E+00	1.80 E+00
		Ba-140	*-3.59 E+00	1.23 E+01
		La-140	*-1.37 E+00	4.80 E+00
		Ra-226	*-3.88 E+01	3.23 E+01
		Th-228	*-2.68 E+00	2.88 E+00
	10/05/99-11/02/99	Be-7	*-1.84 E+00	2.11 E+01
		K-40	*-1.27 E+01	2.73 E+01
		Mn-54	* 3.12 E-01	1.91 E+00
		Co-58	* 0.00 E+00	1.85 E+00
		Fe-59	*-7.33 E-01	4.52 E+00
		Co-60	* 6.33 E-01	1.93 E+00
		Zn-65	* 9.64 E-01	3.90 E+00
		Zr-95	* 1.65 E+00	4.25 E+00
		Nb-95	* 2.53 E+00	2.20 E+00
		Cs-134	* 1.39 E+00	1.84 E+00
		Cs-137	* 5.76 E-01	1.93 E+00
		Ba-140	*-7.60 E+00	1.30 E+01
		La-140	*-4.11 E+00	5.79 E+00
		Ra-226	*-2.08 E+01	4.33 E+01
		Th-228	* 2.34 E+00	3.67 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Discharge		
27	11/02/99-12/01/98	Be-7	* 8.19 E-01	1.82 E+01
		K-40	* 5.05 E+01	2.07 E+01
		Mn-54	*-1.23 E-01	1.53 E+00
		Co-58	* 0.00 E+00	1.69 E+00
		Fe-59	* 1.08 E+00	3.96 E+00
		Co-60	* 8.99 E-02	1.87 E+00
		Zn-65	* 4.93 E+00	3.46 E+00
		Zr-95	*-8.08 E-01	3.70 E+00
		Nb-95	* 8.68 E-01	1.81 E+00
		Cs-134	* 5.89 E-01	1.70 E+00
		Cs-137	* 1.76 E+00	1.79 E+00
		Ba-140	* 3.23 E-01	1.15 E+01
		La-140	*-4.81 E+00	5.32 E+00
		Ra-226	* 3.75 E+00	3.27 E+01
		Th-228	*-8.71 E-02	3.34 E+00
	12/03/99-01/04/00	Be-7	* 2.90 E+01	2.46 E+01
		K-40	*-3.32 E+01	6.20 E+01
		Mn-54	* 2.50 E+00	2.64 E+00
		Co-58	*-1.02 E+00	2.60 E+00
		Fe-59	* 1.15 E+00	5.77 E+00
		Co-60	* 6.88 E-01	2.68 E+00
		Zn-65	* 1.32 E-01	5.88 E+00
		Zr-95	*-1.55 E+00	5.54 E+00
		Nb-95	* 1.94 E+00	2.78 E+00
		Cs-134	*-4.53 E-01	3.00 E+00
		Cs-137	* 1.59 E+00	2.91 E+00
		Ba-140	*-1.18 E+00	9.72 E+00
		La-140	* 9.26 E-01	3.77 E+00
		Ra-226	* 3.28 E+00	5.22 E+01
		Th-228	* 1.79 E+00	4.33 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Ground		
31	03/02/99	Be-7	* 1.19 E+01	1.91 E+01
		K-40	*-3.86 E+01	2.46 E+01
		Mn-54	*-6.73 E-01	1.90 E+00
		Co-58	*-4.91 E-01	1.99 E+00
		Fe-59	* 4.90 E+00	4.33 E+00
		Co-60	*-5.52 E-01	1.95 E+00
		Zn-65	* 1.14 E+01	4.95 E+00
		Zr-95	*-2.34 E+00	3.89 E+00
		Nb-95	* 1.68 E+00	2.13 E+00
		Cs-134	* 4.65 E-01	2.22 E+00
		Cs-137	* 3.10 E+00	2.17 E+00
		Ba-140	* 1.95 E+00	5.99 E+00
		La-140	*-1.94 E+00	2.83 E+00
		Ra-226	*-4.58 E+01	4.59 E+01
		Th-228	* 3.96 E+00	4.01 E+00
	06/02/99	Be-7	*-3.20 E+00	1.71 E+01
		K-40	*-4.87 E+01	3.33 E+01
		Mn-54	*-1.26 E+00	1.75 E+00
		Co-58	*-1.29 E+00	1.76 E+00
		Fe-59	* 6.58 E-01	3.64 E+00
		Co-60	* 1.28 E+00	1.76 E+00
		Zn-65	* 1.41 E+00	3.59 E+00
		Zr-95	* 1.24 E+00	3.65 E+00
		Nb-95	*-1.37 E+00	1.90 E+00
		Cs-134	*-4.14 E-02	1.93 E+00
		Cs-137	* 4.08 E-01	1.98 E+00
		Ba-140	*-1.51 E+00	7.39 E+00
		La-140	* 6.09 E-01	2.72 E+00
		Ra-226	* 2.16 E+01	3.52 E+01
		Th-228	*-1.27 E+00	3.09 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Ground		
31	09/01/99	Be-7	*-7.74 E+00	1.91 E+01
		K-40	*-7.30 E+01	2.98 E+01
		Mn-54	* 4.38 E-01	1.90 E+00
		Co-58	*-1.28 E+00	2.06 E+00
		Fe-59	* 6.46 E-01	4.42 E+00
		Co-60	* 4.81 E-01	1.99 E+00
		Zn-65	* 3.29 E+00	4.03 E+00
		Zr-95	* 1.75 E+00	4.23 E+00
		Nb-95	* 1.27 E+00	2.07 E+00
		Cs-134	*-4.71 E-01	2.16 E+00
		Cs-137	*-4.64 E-02	2.05 E+00
		Ba-140	*-4.29 E+00	1.00 E+01
		La-140	*-1.54 E+00	3.96 E+00
		Ra-226	*-4.29 E+01	3.57 E+01
		Th-228	* 2.31 E+00	3.17 E+00
	12/01/99	Be-7	* 1.41 E+01	1.94 E+01
		K-40	* 1.52 E+01	2.49 E+01
		Mn-54	*-2.61 E+00	1.86 E+00
		Co-58	*-1.24 E-01	1.94 E+00
		Fe-59	*-1.93 E+00	4.66 E+00
		Co-60	* 1.63 E+00	1.94 E+00
		Zn-65	*-2.15 E+00	3.93 E+00
		Zr-95	* 1.44 E+00	4.07 E+00
		Nb-95	*-1.19 E-01	1.97 E+00
		Cs-134	*-5.84 E-01	1.91 E+00
		Cs-137	*-5.54 E-01	1.93 E+00
		Ba-140	* 5.90 E+00	1.24 E+01
		La-140	*-4.02 E+00	5.41 E+00
		Ra-226	*-1.62 E+01	3.67 E+01
		Th-228	*-6.81 E+00	3.37 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Ground		
32	03/02/99	Be-7	* 1.08 E+01	2.04 E+01
		K-40	*-3.12 E+01	2.83 E+01
		Mn-54	* 0.00 E+00	2.14 E+00
		Co-58	*-1.44 E+00	2.22 E+00
		Fe-59	*-3.50 E+00	4.22 E+00
		Co-60	* 2.13 E+00	2.46 E+00
		Zn-65	* 4.42 E+00	4.73 E+00
		Zr-95	*-1.55 E+00	4.23 E+00
		Nb-95	* 4.86 E+00	2.45 E+00
		Cs-134	* 7.46 E-01	2.38 E+00
		Cs-137	* 8.40 E-01	2.42 E+00
		Ba-140	*-3.75 E+00	6.35 E+00
		La-140	* 1.94 E+00	2.79 E+00
		Ra-226	*-2.01 E+01	5.64 E+01
		Th-228	* 1.08 E+01	4.64 E+00
	06/02/99	Be-7	*-4.38 E+00	1.89 E+01
		K-40	*-1.70 E+01	2.47 E+01
		Mn-54	* 1.19 E-01	1.96 E+00
		Co-58	*-7.73 E-01	1.92 E+00
		Fe-59	*-2.58 E+00	4.33 E+00
		Co-60	* 8.91 E-01	2.12 E+00
		Zn-65	*-3.09 E+00	4.83 E+00
		Zr-95	* 1.24 E-01	4.12 E+00
		Nb-95	*-1.23 E-01	2.04 E+00
		Cs-134	* 1.91 E+00	2.21 E+00
		Cs-137	* 2.65 E+00	2.15 E+00
		Ba-140	* 5.65 E+00	9.74 E+00
		La-140	* 0.00 E+00	4.32 E+00
		Ra-226	*-4.63 E+01	3.89 E+01
		Th-228	* 5.66 E+00	3.55 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
32	09/01/99	Be-7	* 5.90 E+00	1.64 E+01
		K-40	*-1.38 E+01	2.21 E+01
		Mn-54	* 1.42 E+00	1.56 E+00
		Co-58	*-5.87 E-01	1.57 E+00
		Fe-59	* 0.00 E+00	3.47 E+00
		Co-60	* 1.34 E-01	1.55 E+00
		Zn-65	* 3.50 E-01	3.31 E+00
		Zr-95	* 1.88 E+00	3.18 E+00
		Nb-95	* 1.35 E+00	1.67 E+00
		Cs-134	* 8.87 E-01	1.68 E+00
		Cs-137	* 1.21 E+00	1.77 E+00
		Ba-140	* 4.22 E+00	7.54 E+00
		La-140	*-1.45 E-01	3.12 E+00
		Ra-226	*-2.02 E+01	4.02 E+01
		Th-228	*-4.44 E+00	3.20 E+00
	12/01/99	Be-7	* 3.72 E+00	2.01 E+01
		K-40	*-2.70 E+01	2.67 E+01
		Mn-54	* 1.08 E+00	1.66 E+00
		Co-58	*-1.35 E+00	1.94 E+00
		Fe-59	* 4.93 E-01	4.09 E+00
		Co-60	* 1.16 E+00	1.98 E+00
		Zn-65	* 2.93 E+00	3.98 E+00
		Zr-95	* 9.94 E-01	4.06 E+00
		Nb-95	* 1.29 E+00	1.94 E+00
		Cs-134	* 1.57 E+00	1.91 E+00
		Cs-137	* 1.68 E+00	1.90 E+00
		Ba-140	* 1.18 E+00	1.20 E+01
		La-140	*-1.35 E+00	5.49 E+00
		Ra-226	*-6.47 E+01	4.13 E+01
		Th-228	* 8.04 E+00	3.53 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Ground		
52	03/02/99	Be-7	*-9.91 E-01	1.50 E+01
		K-40	*-1.23 E+01	2.18 E+01
		Mn-54	*-2.57 E+00	1.51 E+00
		Co-58	*-5.25 E-02	1.43 E+00
		Fe-59	*-9.67 E-01	2.84 E+00
		Co-60	* 6.85 E-01	1.55 E+00
		Zn-65	* 1.44 E+00	2.90 E+00
		Zr-95	* 1.00 E-01	3.01 E+00
		Nb-95	* 6.96 E-01	1.56 E+00
		Cs-134	* 0.00 E-01	1.64 E+00
		Cs-137	* 1.52 E+00	1.79 E+00
		Ba-140	* 1.48 E+00	4.91 E+00
		La-140	*-6.36 E-01	2.20 E+00
		Ra-226	*-1.90 E+01	4.01 E+01
		Th-228	* 1.08 E+00	3.43 E+00
	06/02/99	Be-7	*-1.42 E+00	1.76 E+01
		K-40	*-2.44 E+01	2.46 E+01
		Mn-54	* 7.68 E-01	1.80 E+00
		Co-58	*-4.64 E-01	1.82 E+00
		Fe-59	* 1.86 E+00	3.93 E+00
		Co-60	*-7.42 E-01	2.04 E+00
		Zn-65	* 8.52 E-01	3.72 E+00
		Zr-95	* 1.55 E+00	3.71 E+00
		Nb-95	* 1.54 E+00	1.89 E+00
		Cs-134	*-7.07 E-01	1.89 E+00
		Cs-137	* 4.35 E+00	2.06 E+00
		Ba-140	*-1.07 E+00	7.82 E+00
		La-140	*-1.20 E+00	3.73 E+00
		Ra-226	*-1.08 E+02	3.66 E+01
		Th-228	*-1.61 E+00	3.26 E+00

* Denotes a result less than the detection limit.

TABLE A-7.1 (Cont.)

GAMMA SPECTROMETRY OF WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
		Ground		
52	09/01/99	Be-7	*-5.30 E+00	1.38 E+01
		K-40	*-3.64 E+01	1.73 E+01
		Mn-54	* 9.97 E-01	1.31 E+00
		Co-58	*-4.10 E-02	1.36 E+00
		Fe-59	* 3.95 E-01	2.78 E+00
		Co-60	*-1.65 E-01	1.25 E+00
		Zn-65	* 1.06 E+00	2.63 E+00
		Zr-95	*-2.05 E+00	2.85 E+00
		Nb-95	* 2.04 E+00	1.44 E+00
		Cs-134	* 5.37 E-01	1.40 E+00
		Cs-137	* 2.66 E-02	1.41 E+00
		Ba-140	*-1.38 E+00	6.47 E+00
		La-140	*-2.39 E+00	2.77 E+00
		Ra-226	*-5.69 E+01	3.29 E+01
		Th-228	* 2.19 E+00	2.83 E+00
	12/01/99	Be-7	* 6.92 E+00	2.11 E+01
		K-40	* 3.32 E+01	4.10 E+01
		Mn-54	* 7.59 E-01	2.03 E+00
		Co-58	* 7.07 E-01	2.21 E+00
		Fe-59	* 1.80 E+00	5.26 E+00
		Co-60	* 5.13 E-01	2.07 E+00
		Zn-65	* 4.90 E+00	4.47 E+00
		Zr-95	*-1.86 E+00	4.64 E+00
		Nb-95	* 5.82 E-01	2.39 E+00
		Cs-134	* 8.08 E-01	2.19 E+00
		Cs-137	* 1.08 E+00	2.19 E+00
		Ba-140	*-1.90 E+00	1.39 E+01
		La-140	* 2.33 E+00	5.97 E+00
		Ra-226	*-1.17 E+01	3.76 E+01
		Th-228	* 3.67 E+00	3.27 E+00

* Denotes a result less than the detection limit.

TABLE A-7.2

GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary River/Drinking						
K-40	(I)	-5.07E+01	-1.20E+02	1.67E+01	12	0
K-40	(C)	-5.50E+01	-2.13E+02	3.48E+00	12	0
Mn-54	(I)	5.81E-01	-9.03E-01	1.39E+00	12	0
Mn-54	(C)	2.46E-01	-6.18E-01	9.05E-01	12	0
Co-60	(I)	5.42E-01	-2.86E+00	2.41E+00	12	0
Co-60	(C)	-1.43E-03	-1.07E+00	2.06E+00	12	0
Co-58	(I)	-1.56E-01	-1.47E+00	1.57E+00	12	0
Co-58	(C)	-3.37E-01	-1.77E+00	1.02E+00	12	0
Cs-134	(I)	-4.06E-01	-1.74E+00	8.27E-01	12	0
Cs-134	(C)	2.06E-01	-1.09E+00	1.71E+00	12	0
Cs-137	(I)	1.52E+00	5.80E-01	3.60E+00	12	0
Cs-137	(C)	9.42E-01	-4.60E+00	3.42E+00	12	0
Nb-95	(I)	9.16E-01	-2.35E+00	2.87E+00	12	0
Nb-95	(C)	4.28E-01	-2.20E+00	2.40E+00	12	0

(I) Indicator Station
(C) Control Station

TABLE A-7.2 (Cont.)

GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
			Year to Date Summary			
			River/Drinking			
Zr-95	(I)	9.30E-01	-5.73E-01	4.67E+00	12	0
Zr-95	(C)	6.76E-01	-3.87E+00	3.40E+00	12	0
Zn-65	(I)	6.28E-01	-3.86E+00	4.04E+00	12	0
Zn-65	(C)	1.02E+00	-4.59E+00	4.59E+00	12	0
Fe-59	(I)	1.27E+00	-3.85E+00	4.88E+00	12	0
Fe-59	(C)	5.11E-01	-3.85E+00	4.91E+00	12	0
Ba-140	(I)	-2.01E-01	-3.98E+00	3.84E+00	12	0
Ba-140	(C)	-7.48E-01	-1.38E+01	4.47E+00	12	0
La-140	(I)	4.01E-01	-3.89E+00	3.78E+00	12	0
La-140	(C)	-1.93E+00	-9.84E+00	2.07E+00	12	0

(I) Indicator Station
(C) Control Station

TABLE A-7.2

GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
			Year to Date Discharge			
K-40	(I)	-4.21E+01	-1.95E+02	5.05E+01	12	0
Mn-54	(I)	5.49E-01	-8.22E-01	2.50E+00	12	0
Co-60	(I)	1.00E+00	8.99E-02	2.58E+00	12	0
Co-58	(I)	-2.43E-03	-1.65E+00	2.05E+00	12	0
Cs-134	(I)	-2.30E-01	-2.66E+00	1.39E+00	12	0
Cs-137	(I)	1.42E+00	-1.87E+00	6.37E+00	12	0
Nb-95	(I)	1.07E+00	-2.99E+00	2.53E+00	12	0
Zr-95	(I)	8.71E-01	-1.55E+00	3.51E+00	12	0
Zn-65	(I)	1.59E+00	-2.46E+00	9.29E+00	12	0
Fe-59	(I)	7.20E-01	-2.45E+00	3.17E+00	12	0
Ba-140	(I)	-1.76E-01	-7.60E+00	6.01E+00	12	0
La-140	(I)	-1.50E+00	-4.88E+00	2.12E+00	12	0

(I) Indicator Station

TABLE A-7.2

GAMMA SPECTROMETRY OF WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
			Year to Date Ground			
K-40	(I)	-2.28E+01	-7.30E+01	3.32E+01	12	0
Mn-54	(I)	-1.28E-01	-2.61E+00	1.42E+00	12	0
Co-60	(I)	6.20E-01	-7.42E-01	2.13E+00	12	0
Co-58	(I)	-5.99E-01	-1.44E+00	7.07E-01	12	0
Cs-134	(I)	4.27E-01	-7.07E-01	1.91E+00	12	0
Cs-137	(I)	1.36E+00	-5.54E-01	4.35E+00	12	0
Nb-95	(I)	1.14E+00	-1.37E+00	4.86E+00	12	0
Zr-95	(I)	1.07E-01	-2.34E+00	1.88E+00	12	0
Zn-65	(I)	2.23E+00	-3.09E+00	1.14E+01	12	0
Fe-59	(I)	1.48E-01	-3.50E+00	4.90E+00	12	0
Ba-140	(I)	5.40E-01	-4.29E+00	5.90E+00	12	0
La-140	(I)	-6.95E-01	-4.02E+00	2.33E+00	12	0

(I) Indicator Station

TABLE A-8.1

GAMMA SPECTROMETRY OF SOIL

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
01	05/07/99	K-40	1.41 E+04	2.95 E+02
		Cs-134	*3.29 E+01	7.33 E+00
		Cs-137	3.04 E+02	1.28 E+01
		Ra-226	7.67 E+02	1.48 E+02
		Th-228	7.13 E+02	2.19 E+01
07	05/07/99	K-40	1.36 E+04	2.77 E+02
		Cs-134	* 2.71 E+01	6.99 E+00
		Cs-137	2.07 E+02	1.29 E+01
		Ra-226	8.52 E+02	1.63 E+02
		Th-228	5.99 E+02	5.99 E+01
09	05/07/99	K-40	1.23 E+04	2.65 E+02
		Cs-134	* 3.32 E+01	7.00 E+01
		Cs-137	8.91 E+01	1.03 E+01
		Ra-226	8.91 E+02	1.57 E+02
		Th-228	6.58 E+02	1.68 E+01
21	05/07/99	K-40	1.40 E+04	2.75 E+02
		Cs-134	* 2.61 E+01	6.40 E+00
		Cs-137	1.87 E+01	7.16 E+00
		Ra-226	8.09 E+02	1.48 E+02
		Th-228	4.81 E+02	1.45 E+01
23	05/07/99	K-40	1.18 E+04	2.96 E+02
		Cs-134	* 2.80 E+01	7.57 E+00
		Cs-137	1.22 E+02	1.23 E+01
		Ra-226	6.06 E+02	1.71 E+02
		Th-228	5.04 E+02	1.64 E+01

* Denotes a result less than the detection limit.

TABLE A-8.2

GAMMA SPECTROMETRY OF SOIL - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	1.34E+04	1.18E+04	1.41E+04	4	4
K-40	(C)	1.23E+04	1.23E+04	1.23E+04	1	1
Cs-134	(I)	2.85E+01	2.61E+01	3.29E+01	4	0
Cs-134	(C)	3.32E+01	3.32E+01	3.32E+01	1	0
Cs-137	(I)	1.63E+02	1.87E+01	3.04E+02	4	4
Cs-137	(C)	8.91E+01	8.91E+01	8.91E+01	1	1
Ra-226	(I)	7.59E+02	6.06E+02	8.52E+02	4	4
Ra-226	(C)	8.91E+02	8.91E+02	8.91E+02	1	1
Th-228	(I)	5.74E+02	4.81E+02	7.13E+02	4	4
Th-228	(C)	6.58E+02	6.58E+02	6.58E+02	1	1

(I) Indicator Station
(C) Control Stations

TABLE A-9.1

GAMMA SPECTROMETRY OF SEDIMENT

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
33 (Upstream)	10/19/99	K-40	1.53 E+04	3.18 E+02
		Co-57	*-9.24 E+00	7.81 E+00
		Co-60	* 6.26 E+00	7.97 E+00
		Cs-134	* 5.16 E+01	9.11 E+00
		Cs-137	5.16 E+01	1.19 E+01
		Ra-226	1.25 E+03	2.04 E+02
		Eu-152	* 1.01 E+02	4.12 E+01
		Th-228	1.02 E+03	2.16 E+01
34 (Downstream)	10/19/99	K-40	1.44 E+04	3.09 E+02
		Co-57	* 3.44 E+00	7.77 E+00
		Co-60	* 1.42 E+00	7.47 E+00
		Cs-134	* 3.25 E+01	8.56 E+00
		Cs-137	1.68 E+02	1.11 E+01
		Ra-226	1.38 E+03	1.91 E+02
		Eu-152	* 1.20 E+02	4.10 E+01
		Th-228	1.19 E+03	2.73 E+01

* Denotes a result less than the detection limit.

TABLE A-9.2

GAMMA SPECTROMETRY OF SEDIMENT- SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	1.44E+04	1.44E+04	1.44E+04	1	1
K-40	(C)	1.53E+04	1.53E+04	1.53E+04	1	1
Co-57	(I)	3.44E+00	3.44E+00	3.44E+00	1	0
Co-57	(C)	-9.24E+00	-9.24E+00	-9.24E+00	1	0
Co-60	(I)	1.42E+00	1.42E+00	1.42E+00	1	0
Co-60	(C)	6.26E+00	6.26E+00	6.26E+00	1	0
Cs-134	(I)	3.25E+01	3.25E+01	3.25E+01	1	0
Cs-134	(C)	5.16E+01	5.16E+01	5.16E+01	1	0
Cs-137	(I)	1.68E+02	1.68E+02	1.68E+02	1	1
Cs-137	(C)	5.16E+01	5.16E+01	5.16E+01	1	1
Ra-226	(I)	1.38E+03	1.38E+03	1.38E+03	1	1
Ra-226	(C)	1.25E+03	1.25E+03	1.25E+03	1	1
Eu-152	(I)	1.20E+02	1.20E+02	1.20E+02	1	0
Eu-152	(C)	1.01E+02	1.01E+02	1.01E+02	1	0
Th-228	(I)	1.19E+03	1.19E+03	1.19E+03	1	1
Th-228	(C)	1.02E+03	1.02E+03	1.02E+03	1	1

(I) Indicator Stations

TABLE A-10.1

GAMMA SPECTROMETRY OF FISH

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
30 Carp	08/24/99	K-40	3.00 E+03	1.94 E+02
		Mn-54	* 4.81 E+00	7.10 E+00
		Co-58	*-8.90 E-01	8.19 E+00
		Fe-59	* 4.56 E+00	1.95 E+01
		Co-60	*-3.79 E+00	7.39 E+00
		Zn-65	* 6.82 E+00	1.73 E+01
		Cs-134	* 2.86 E+00	7.48 E+00
		Cs-137	*-2.21 E+00	9.26 E+00
		Ra-226	* 2.36 E+01	1.53 E+02
		Th-228	*-1.02 E+01	1.29 E+01
30 Sucker	08/24/99	K-40	3.07 E+03	1.79 E+02
		Mn-54	* 4.55 E+00	6.52 E+00
		Co-58	* 0.00 E+00	7.85 E+00
		Fe-59	*-7.09 E+00	1.85 E+01
		Co-60	*-7.08 E+00	6.70 E+00
		Zn-65	* 7.49 E+00	1.58 E+01
		Cs-134	*-4.19 E+00	7.12 E+00
		Cs-137	* 8.65 E+00	7.28 E+00
		Ra-226	*-8.40 E+01	1.06 E+02
		Th-228	* 4.37 E+00	9.81 E+00
30 Steelhead	09/01/99	K-40	3.68 E+03	1.86 E+02
		Mn-54	*-8.42 E-01	5.99 E+00
		Co-58	* 6.08 E-01	6.38 E+00
		Fe-59	* 7.35 E+00	1.51 E+01
		Co-60	*-4.18 E+00	5.97 E+00
		Zn-65	* 1.69 E+01	1.48 E+01
		Cs-134	*-4.68 E+00	6.81 E+00
		Cs-137	* 7.09 E+00	6.66 E+00
		Ra-226	*-7.82 E+01	1.02 E+02
		Th-228	*-8.89 E+00	9.08 E+00

* Denotes a result less than the detection limit.

TABLE A-10.1 (Cont.)

GAMMA SPECTROMETRY OF FISH

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
38 Carp	08/25/99	K-40	3.00 E+03	2.32 E+02
		Mn-54	* 6.62 E+00	7.76 E+00
		Co-58	* 1.82 E+00	8.86 E+00
		Fe-59	* 3.91 E+00	2.16 E+01
		Co-60	* 1.37 E+01	8.90 E+00
		Zn-65	*-2.03 E+00	1.74 E+01
		Cs-134	* 3.37 E+00	8.36 E+00
		Cs-137	* 8.31 E+00	9.08 E+00
		Ra-226	*-1.94 E+02	1.77 E+02
		Th-228	* 1.39 E+00	1.54 E+01
38 Sucker	08/25/99	K-40	2.98 E+03	1.72 E+02
		Mn-54	* 2.93 E+00	6.69 E+00
		Co-58	*-4.54 E+00	7.42 E+00
		Fe-59	*-4.31 E+00	1.81 E+01
		Co-60	*-1.25 E+00	6.71 E+00
		Zn-65	*-3.74 E-01	1.54 E+01
		Cs-134	* 1.40 E+00	7.16 E+00
		Cs-137	* 7.86 E+00	7.01 E+00
		Ra-226	*-1.16 E+02	1.06 E+02
		Th-228	* 7.00 E+00	9.59 E+00
38 Steelhead	09/02/99	K-40	3.22 E+03	2.04 E+02
		Mn-54	* 7.09 E+00	7.95 E+00
		Co-58	* 0.00 E+00	8.22 E+00
		Fe-59	* 9.68 E+00	1.97 E+01
		Co-60	*-2.65 E+00	8.05 E+00
		Zn-65	*-1.21 E+01	1.90 E+01
		Cs-134	*-9.74 E-01	8.60 E+00
		Cs-137	* 2.39 E+00	8.38 E+00
		Ra-226	* 4.68 E+01	1.29 E+02
		Th-228	* 3.93 E+00	1.15 E+01

* Denotes a result less than the detection limit.

TABLE A-10.2

GAMMA SPECTROMETRY OF FISH - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
K-40	(I)	3.25E+03	3.00E+03	3.68E+03	3	3
K-40	(C)	3.07E+03	2.98E+03	3.22E+03	3	3
Co-60	(I)	-5.02E+00	-7.08E+00	-3.79E+00	3	0
Co-60	(C)	3.27E+00	-2.65E+00	1.37E+01	3	0
Fe-59	(I)	1.61E+00	-7.09E+00	7.35E+00	3	0
Fe-59	(C)	3.09E+00	-4.31E+00	9.68E+00	3	0
Zn-65	(I)	1.04E+01	6.82E+00	1.69E+01	3	0
Zn-65	(C)	-4.83E+00	-1.21E+01	-3.74E-01	3	0
Co-58	(I)	-9.40E-02	-8.90E-01	6.08E-01	3	0
Co-58	(C)	-9.07E-01	-4.54E+00	1.82E+00	3	0
Cs-134	(I)	-2.00E+00	-4.68E+00	2.86E+00	3	0
Cs-134	(C)	1.27E+00	-9.74E-01	3.37E+00	3	0
Cs-137	(I)	4.51E+00	-2.21E+00	8.65E+00	3	0
Cs-137	(C)	6.19E+00	2.39E+00	8.31E+00	3	0
Mn-54	(I)	2.84E+00	-8.42E-01	4.81E+00	3	0
Mn-54	(C)	5.55E+00	2.93E+00	7.09E+00	3	0

(I) Indicator Station
(C) Control Stations

TABLE A-10.2

GAMMA SPECTROMETRY OF FISH - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Ra-226	(I)	-4.62E+01	-8.40E+01	2.36E+01	3	0
Ra-226	(C)	-8.77E+01	-1.94E+02	4.68E+01	3	0
Th-228	(I)	-4.91E+00	-1.02E+01	4.37E+00	3	0
Th-228	(C)	4.11E+00	1.39E+00	7.00E+00	3	0

(I) Indicator Station
(C) Control Stations

TABLE A-11.1

I-131 IN MILK

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
9B	01/19/99	*-1.2 E-01	1.63 E-01
	02/09/99	*-3.2 E-02	1.45 E-01
	03/09/99	* 0.0 E-01	1.52 E-01
	04/13/99	* 1.4 E-01	1.80 E-01
	04/27/99	* 1.2 E-01	1.65 E-01
	05/11/99	* 1.4 E-01	2.00 E-01
	05/25/99	* 0.0 E+00	2.70 E-01
	06/08/99	* 0.0 E+00	2.09 E-01
	06/22/99	* 1.2 E-01	1.42 E-01
	07/13/99	*-1.4 E-01	2.32 E-01
	07/27/99	* 8.5 E-02	1.52 E-01
	08/10/99	* 4.5 E-02	1.55 E-01
	08/24/99	* 1.1 E-01	1.54 E-01
	09/14/99	* 4.5 E-02	1.46 E-01
	09/28/99	* 2.6 E-01	2.84 E-01
	10/12/99	* 2.4 E-01	1.83 E-01
	11/09/99	* 8.7 E-02	1.22 E-01
	12/14/99	*-4.0 E-02	1.32 E-01
36	01/19/99	* 2.8 E-02	1.89 E-01
	02/09/99	* 2.7 E-02	1.07 E-01
	03/09/99	*-2.6 E-02	1.75 E-01
	04/13/99	* 4.6 E-02	1.49 E-01
	04/27/99	* 1.4 E-01	1.67 E-01
	05/11/99	* 1.5 E-01	1.70 E-01
	05/25/99	* 1.5 E-01	1.30 E-01
	06/08/99	* 1.0 E-01	2.46 E-01
	06/22/99	* 8.1 E-02	1.40 E-01
	07/13/99	* 2.4 E-01	2.09 E-01
	07/27/99	* 1.6 E-01	1.66 E-01
	08/10/99	* 1.9 E-01	1.84 E-01
	08/24/99	* 1.1 E-01	2.00 E-01
	09/14/99	* 5.1 E-02	1.87 E-01
	09/28/99	*-6.5 E-02	4.39 E-01
	10/12/99	* 3.1 E-01	2.13 E-01
	11/09/99	* 1.7 E-01	1.34 E-01
	12/14/99	*-2.0 E-01	1.36 E-01

* Denotes a result less than the detection limit.

TABLE A-11.1

I-131 IN MILK

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
64	01/19/99	*-1.5 E-01	1.64 E-01
	02/09/99	* 4.3 E-02	1.92 E-01
	03/09/99	* 6.4 E-02	1.58 E-01
	04/13/99	* 1.0 E-01	1.42 E-01
	04/27/99	* 1.2 E-01	1.72 E-01
	05/11/99	* 1.3 E-01	1.50 E-01
	05/25/99	* 6.2 E-02	2.09 E-01
	06/08/99	* 1.2 E-01	1.73 E-01
	06/22/99	*-9.3 E-02	1.54 E-01
	07/13/99	* 1.2 E-01	2.09 E-01
	07/27/99	* 1.9 E-01	1.51 E-01
	08/10/99	* 6.9 E-02	1.68 E-01
	08/24/99	* 2.3 E-01	1.55 E-01
	09/14/99	* 2.1 E-01	1.68 E-01
	09/28/99	* 2.2 E-01	1.93 E-01
	10/12/99	* 3.3 E-01	2.34 E-01
	11/09/99	* 1.1 E-01	1.23 E-01
	12/14/99	*-4.7 E-02	1.53 E-01

* Denotes a result less than the detection limit.

TABLE A-11.2

I-131 IN MILK - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
I-131	(I)	8.42E-02	-2.0E-01	3.3E-01	54	0

(I) Indicator Stations only

TABLE A-12.1

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9B	01/19/99	K-40	1.36 E+03	5.70 E-01
		Cs-134	* 1.12 E+00	2.13 E+00
		Cs-137	* 2.18 E+00	2.08 E+00
		Ba-140	* 1.68 E+00	5.82 E+00
		La-140	* 1.28 E+00	2.31 E+00
	02/09/99	K-40	1.39 E+03	5.69 E-01
		Cs-134	*-6.72 E-01	2.08 E+00
		Cs-137	* 9.91 E-02	2.09 E+00
		Ba-140	* 1.76 E+00	5.83 E+00
		La-140	*-2.25 E-01	2.27 E+00
	03/09/99	K-40	1.40 E+03	5.74 E+01
		Cs-134	* 7.71 E-02	2.46 E+00
		Cs-137	* 5.80 E-01	2.44 E+00
		Ba-140	*-8.67 E-02	7.05 E+00
		La-140	*-2.33 E-01	2.56 E+00
	04/13/99	K-40	1.86 E+03	8.51 E+01
		Cs-134	* 6.39 E-01	2.86 E+00
		Cs-137	* 1.87 E+00	2.79 E+00
		Ba-140	* 3.67 E+00	7.53 E+00
		La-140	* 0.00 E+00	3.11 E+00
	04/27/99	K-40	1.28 E+03	6.58 E+01
		Cs-134	*-7.03 E-01	1.86 E+00
		Cs-137	*-1.56 E-01	1.95 E+00
		Ba-140	*-2.62 E+00	6.68 E+00
		La-140	*-1.27 E+00	2.51 E+00
	05/11/99	K-40	1.46 E+03	5.86 E+01
		Cs-134	*-9.77 E-01	2.09 E+00
		Cs-137	* 2.81 E+00	2.09 E+00
		Ba-140	* 6.63 E-01	6.81 E+00
		La-140	*-8.90 E-02	2.50 E+00
	05/25/99	K-40	1.21 E+03	7.64 E+01
		Cs-134	*-2.96 E-01	2.38 E+00
		Cs-137	* 1.18 E+00	2.44 E+00
		Ba-140	* 6.27 E-01	6.55 E+00
		La-140	*-1.26 E+00	2.57 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9B	06/08/99	K-40	1.40 E+03	6.70 E+01
		Cs-134	* 1.41 E+00	1.93 E+00
		Cs-137	* 1.50 E+00	1.86 E+00
		Ba-140	* 1.05 E+00	6.39 E+00
		La-140	*-1.42 E+00	2.46 E+00
	06/22/99	K-40	1.16 E+03	7.04 E+01
		Cs-134	*-4.90 E-01	2.31 E+00
		Cs-137	* 2.53 E+00	2.31 E+00
		Ba-140	*-1.47 E+00	7.76 E+00
		La-140	* 9.85 E-01	3.11 E+00
	07/13/99	K-40	1.27 E+03	6.88 E+01
		Cs-134	*-3.94 E-01	2.95 E+00
		Cs-137	* 2.14 E+00	2.95 E+00
		Ba-140	*-1.55 E+00	8.07 E+00
		La-140	* 1.71 E+00	2.84 E+00
	07/27/99	K-40	1.32 E+03	7.78 E+01
		Cs-134	*-1.59 E+00	2.41 E+00
		Cs-137	* 1.08 E+00	2.34 E+00
		Ba-140	*-5.06 E+00	7.73 E+00
		La-140	*-6.86 E-01	3.18 E+00
	08/10/99	K-40	1.47 E+03	7.12 E+01
		Cs-134	* 2.22 E-01	2.48 E+00
		Cs-137	* 4.90 E-02	2.58 E+00
		Ba-140	*-1.89 E+00	8.53 E+00
		La-140	* 1.43 E+00	3.22 E+00
	08/24/99	K-40	1.35 E+03	7.91 E+01
		Cs-134	* 1.85 E+00	2.32 E+00
		Cs-137	* 1.42 E+00	2.19 E+00
		Ba-140	* 3.56 E+00	7.50 E+00
		La-140	* 1.95 E-01	3.17 E+00
	09/14/99	K-40	1.32 E+03	6.48 E+01
		Cs-134	* 1.47 E-01	2.45 E+00
		Cs-137	* 2.97 E+00	2.47 E+00
		Ba-140	*-8.75 E+00	7.76 E+00
		La-140	*-8.00 E+00	2.94 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9B	09/28/99	K-40	1.22 E+03	7.20 E+01
		Cs-134	* 6.02 E-01	2.23 E+00
		Cs-137	* 7.05 E-01	2.18 E+00
		Ba-140	*-4.86 E+00	7.28 E+00
		La-140	*-2.22 E+00	3.12 E+00
	10/12/99	K-40	1.44 E+03	8.22 E+01
		Cs-134	*-1.90 E+00	2.18 E+00
		Cs-137	* 3.65 E-01	2.26 E+00
		Ba-140	*-1.28 E+00	1.11 E+01
		La-140	*-2.76 E-01	3.82 E+00
	11/09/99	K-40	1.31 E+03	7.54 E+01
		Cs-134	* 4.87 E-01	2.32 E+00
		Cs-137	* 1.83 E+00	2.28 E+00
		Ba-140	* 3.18 E+00	8.46 E+00
		La-140	*-3.49 E+00	3.57 E+00
	12/14/99	K-40	1.40 E+03	5.68 E+01
		Cs-134	*-1.20 E+00	2.14 E+00
		Cs-137	* 3.59 E-01	2.13 E+00
		Ba-140	* 6.08 E+00	6.92 E+00
		La-140	* 2.45 E+00	2.61 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
36	01/19/99	K-40	1.36 E+03	6.34 E+01
		Cs-134	*-6.43 E-01	1.90 E+00
		Cs-137	* 1.12 E+00	1.90 E+00
		Ba-140	*-1.41 E+00	5.28 E+00
		La-140	* 2.90 E-01	2.29 E+00
	02/09/99	K-40	1.24 E+03	6.19 E+01
		Cs-134	* 8.72 E-01	1.96 E+00
		Cs-137	* 2.57 E+00	1.97 E+00
		Ba-140	* 2.22 E+00	5.44 E+00
		La-140	*-1.06 E+00	2.29 E+00
	03/09/99	K-40	1.38 E+03	5.73 E+01
		Cs-134	*-4.48 E-01	2.11 E+00
		Cs-137	* 1.39 E+00	2.01 E+00
		Ba-140	*-2.86 E+00	5.93 E+00
		La-140	*-2.25 E-01	2.15 E+00
	04/13/99	K-40	1.29 E+03	8.02 E+01
		Cs-134	*-7.86 E-01	2.40 E+00
		Cs-137	* 1.51 E+00	2.53 E+00
		Ba-140	* 2.12 E+00	6.83 E+00
		La-140	* 1.24 E+00	2.74 E+00
	04/27/99	K-40	1.43 E+03	7.85 E+01
		Cs-134	*-2.10 E-01	2.35 E+00
		Cs-137	*-3.08 E-01	2.33 E+00
		Ba-140	* 0.00 E+00	8.07 E+00
		La-140	* 1.55 E+00	3.22 E+00
	05/11/99	K-40	1.31 E+03	7.92 E+01
		Cs-134	* 5.23 E-01	2.25 E+00
		Cs-137	* 2.03 E+00	2.24 E+00
		Ba-140	*-4.62 E+00	7.01 E+00
		La-140	* 8.96 E-01	3.00 E+00
	05/25/99	K-40	1.47 E+03	8.06 E+01
		Cs-134	* 6.80 E-02	2.23 E+00
		Cs-137	* 3.09 E+00	2.31 E+00
		Ba-140	* 4.64 E+00	6.20 E+00
		La-140	*-1.34 E+00	2.55 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
36	06/08/99	K-40	1.40 E+03	7.55 E+01
		Cs-134	* 3.36 E-01	2.42 E+00
		Cs-137	* 1.60 E+00	2.33 E+00
		Ba-140	* 3.52 E+00	7.90 E+00
		La-140	* 0.00 E+00	2.85 E+00
	06/22/99	K-40	1.39 E+03	7.90 E+01
		Cs-134	* 2.13 E-01	2.42 E+00
		Cs-137	* 5.59 E-01	2.41 E+00
		Ba-140	*-1.83 E-01	7.97 E+00
		La-140	*-2.89 E+00	3.15 E+00
	07/13/99	K-40	1.35 E+03	7.03 E+01
		Cs-134	*-2.07 E+00	2.57 E+00
		Cs-137	* 4.83 E-01	2.51 E+00
		Ba-140	* 2.78 E+00	6.99 E+00
		La-140	* 0.00 E+01	2.68 E+00
	07/27/99	K-40	1.37 E+03	7.70 E+01
		Cs-134	*-2.09 E-01	2.36 E+00
		Cs-137	* 2.06 E+00	2.46 E+00
		Ba-140	* 3.56 E-01	7.99 E+00
		La-140	*-1.36 E+00	3.41 E+00
	08/10/99	K-40	1.28 E+03	7.64 E+01
		Cs-134	* 1.41 E-01	2.42 E+00
		Cs-137	*-6.21 E-02	2.29 E+00
		Ba-140	* 0.00 E+00	7.54 E+00
		La-140	* 0.00 E+00	3.11 E+00
	08/24/99	K-40	1.56 E+03	8.07 E+01
		Cs-134	* 7.84 E-01	2.39 E+00
		Cs-137	* 1.63 E+00	2.26 E+00
		Ba-140	* 1.95 E-01	7.95 E+00
		La-140	*-1.61 E+00	3.38 E+00
	09/14/99	K-40	1.33 E+03	7.36 E+01
		Cs-134	* 8.82 E-01	2.25 E+00
		Cs-137	* 2.20 E+00	2.23 E+00
		Ba-140	* 1.13 E+00	7.29 E+00
		La-140	* 0.00 E+00	3.07 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
36	09/28/99	K-40	1.23 E+03	7.25 E+01
		Cs-134	* 1.03 E+00	2.20 E+00
		Cs-137	* 2.98 E+00	2.27 E+00
		Ba-140	*-6.60 E-01	7.09 E+00
		La-140	*-6.30 E-01	3.32 E+00
	10/12/99	K-40	1.31 E+03	8.83 E+01
		Cs-134	* 6.91 E-01	2.81 E+00
		Cs-137	* 1.13 E+00	2.60 E+00
		Ba-140	*-7.54 E+00	1.29 E+01
		La-140	* 1.01 E+00	4.98 E+00
	11/09/99	K-40	1.34 E+03	7.58 E+01
		Cs-134	* 3.35 E-01	2.34 E+00
		Cs-137	* 5.84 E-01	2.29 E+00
		Ba-140	* 4.22 E+00	8.85 E+00
		La-140	*-7.69 E-01	3.85 E+00
	12/14/99	K-40	1.28 E+03	7.71 E+01
		Cs-134	* 6.60 E-01	2.29 E+00
		Cs-137	* 1.61 E+00	2.16 E+00
		Ba-140	* 4.92 E+00	7.03 E+00
		La-140	* 2.46 E+00	3.06 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
64	01/19/99	K-40	1.43 E+03	6.06 E+01
		Cs-134	* 4.24 E-01	2.46 E+00
		Cs-137	*-9.21 E-01	2.43 E+00
		Ba-140	*-8.69 E-01	7.14 E+00
		La-140	* 1.16 E+00	2.58 E+00
	02/09/99	K-40	1.44 E+03	6.07 E+01
		Cs-134	* 3.08 E-01	2.49 E+00
		Cs-137	* 2.25 E+00	2.48 E+00
		Ba-140	* 1.56 E+00	7.06 E+00
		La-140	*-2.01 E+00	2.58 E+00
	03/09/99	K-40	1.49 E+03	4.93 E+01
		Cs-134	*-7.84 E-01	1.78 E+00
		Cs-137	* 1.56 E+00	1.73 E+00
		Ba-140	*-1.96 E-01	5.02 E+00
		La-140	* 2.11 E-01	1.79 E+00
	04/13/99	K-40	1.39 E+03	7.85 E+01
		Cs-134	*-1.25 E+00	3.21 E+00
		Cs-137	* 3.21 E+00	3.31 E+00
		Ba-140	*-2.10 E+00	8.91 E+00
		La-140	*-2.63 E+00	3.28 E+00
	04/27/99	K-40	1.39 E+03	6.80 E+01
		Cs-134	*-1.48 E+00	2.53 E+00
		Cs-137	* 2.54 E+00	2.48 E+00
		Ba-140	*-1.72 E+00	8.53 E+00
		La-140	* 4.91 E-01	3.20 E+00
	05/11/99	K-40	1.36 E+03	8.04 E+01
		Cs-134	* 3.64 E-01	2.26 E+00
		Cs-137	* 1.34 E+00	2.41 E+00
		Ba-140	* 2.82 E+00	7.85 E+00
		La-140	*-2.79 E+00	3.11 E+00
	05/25/99	K-40	1.48 E+03	7.18 E+01
		Cs-134	* 1.68 E+00	1.98 E+00
		Cs-137	* 1.49 E+00	2.01 E+00
		Ba-140	*-6.66 E-01	5.29 E+00
		La-140	*-5.75 E-01	2.20 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
64	06/08/99	K-40	1.33 E+03	6.50 E+01
		Cs-134	*-1.33 E+00	2.44 E+00
		Cs-137	* 2.80 E+00	2.45 E+00
		Ba-140	*-1.83 E+00	8.13 E+00
		La-140	*-1.07 E+01	3.24 E+00
	06/22/99	K-40	1.36 E+03	6.70 E+01
		Cs-134	* 3.52 E-01	1.90 E+00
		Cs-137	* 1.30 E+00	2.04 E+00
		Ba-140	*-2.80 E+00	6.49 E+00
		La-140	*-1.75 E+00	2.42 E+00
	07/13/99	K-40	1.53 E+03	6.00 E+01
		Cs-134	* 3.27 E-01	2.11 E+00
		Cs-137	* 1.81 E+00	2.06 E+00
		Ba-140	* 1.35 E+00	5.41 E+00
		La-140	*-1.38 E+00	2.07 E+00
	07/27/99	K-40	1.43 E+03	8.35 E+01
		Cs-134	* 4.68 E-01	2.29 E+00
		Cs-137	* 1.37 E-01	2.18 E+00
		Ba-140	*-4.03 E-01	6.98 E+00
		La-140	* 3.74 E-01	3.13 E+00
	08/10/99	K-40	1.51 E+03	7.40 E+01
		Cs-134	* 1.72 E-01	3.08 E+00
		Cs-137	* 1.67 E+00	2.97 E+00
		Ba-140	* 1.05 E+00	1.01 E+01
		La-140	* 1.74 E+00	3.76 E+00
	08/24/99	K-40	1.37 E+03	8.12 E+01
		Cs-134	* 0.00 E+00	2.38 E+00
		Cs-137	* 2.56 E+00	2.35 E+00
		Ba-140	* 3.27 E+00	8.17 E+00
		La-140	*-1.89 E-01	3.54 E+00
	09/14/99	K-40	1.45 E+03	6.50 E+01
		Cs-134	*-1.19 E+00	1.95 E+00
		Cs-137	*-2.66 E+00	2.27 E+00
		Ba-140	*-2.88 E+00	6.57 E+00
		La-140	*-7.92 E-01	2.82 E+00

* Denotes a result less than the detection limit.

TABLE A-12.1 (Cont.)

GAMMA SPECTROMETRY OF MILK

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
64	9/28/99	K-40	1.42 E+03	7.95 E+01
		Cs-134	* 2.89 E-01	2.25 E+00
		Cs-137	* 2.85 E+00	2.18 E+00
		Ba-140	* 7.46 E-01	6.92 E+00
		La-140	* 1.73 E-01	2.84 E+00
	10/12/99	K-40	1.32 E+03	7.56 E+01
		Cs-134	*-2.18 E-01	2.43 E+00
		Cs-137	*-1.73 E+00	2.80 E+00
		Ba-140	* 2.80 E-01	1.19 E+01
		La-140	*-2.18 E+00	4.74 E+00
	11/09/99	K-40	1.44 E+03	6.96 E+01
		Cs-134	*-2.82 E+00	2.42 E+00
		Cs-137	* 3.36 E+00	2.50 E+00
		Ba-140	* 8.39 E-01	9.64 E+00
		La-140	*-2.55 E+00	3.53 E+00
	12/14/99	K-40	1.32 E+03	7.59 E+01
		Cs-134	*-9.09 E-01	2.36 E+00
		Cs-137	* 2.16 E+00	2.43 E+00
		Ba-140	* 1.46 E+00	7.33 E+00
		La-140	* 1.64 E-01	3.12 E+00

* Denotes a result less than the detection limit.

TABLE A-12.2

GAMMA SPECTROMETRY OF MILK - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
K-40	(I)	1.38E+03	1.16E+03	1.86E+03	54	54
Cs-134	(I)	-9.44E-02	-2.82E+00	1.85E+00	54	0
Cs-137	(I)	1.40E+00	-2.66E+00	3.36E+00	54	0
Ba-140	(I)	6.37E-02	-8.75E+00	6.08E+00	54	0
La-140	(I)	-6.81E-01	-1.07E+01	2.46E+00	54	0

(I) Indicator Stations

TABLE A-13.1

I-131 IN BROADLEAF IN LIEU OF MILK

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
9G	03/09/99	* 5.3 E+00	5.80 E+00
	04/27/99	(a)	
	05/25/99	(b)	
	06/22/99	(c)	
	07/27/99	* 1.3 E+01	1.70 E+01
	08/24/99	*-1.1 E+00	7.44 E+00
	09/28/99	* 8.9 E+00	2.37 E-01
	10/12/99	* 6.9 E+00	6.71 E+00
	11/09/99	* 2.3 E+01	2.47 E+01
	12/14/99	* 2.3 E+01	2.30 E+01

* Denotes a result less then the detection limit.
(a) Analysis not performed.
(b) Analysis not performed; sample could not be located.
(c) Request for I-131 analysis on 7/21/99. Due to delay, I-131 spec could not be met.

TABLE A-13.2

I-131 IN BROADLEAF IN LIEU OF MILK – SUMMARY

Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary					
I-131	1.1E+01	-1.1E+00	2.3E+01	7	0

TABLE A-14.1

GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9G Grass-Meeker	01/19/99	K-40	6.89 E+03	1.73 E+02
		Cs-134	* 3.00 E+00	3.72 E+00
		Cs-137	* 1.65 E+00	3.55 E+00
		Ba-140	*-3.12 E+00	1.30 E+01
		La-140	* 1.25 E+00	4.84 E+00
9G Grass-Meeker	02/09/99	K-40	4.45 E+03	9.09 E+01
		Cs-134	*-1.59 E+00	2.40 E+00
		Cs-137	* 1.05 E+00	2.40 E+00
		Ba-140	* 2.44 E+00	6.58 E+00
		La-140	* 2.22 E+00	2.38 E+00
9G Grass-Meeker	03/09/99	K-40	4.24 E+03	1.13 E+02
		Cs-134	* 1.22 E+00	2.52 E+00
		Cs-137	* 1.60 E+00	2.57 E+00
		Ba-140	*-8.49 E-01	7.41 E+00
		La-140	* 1.05 E-01	2.52 E+00
9G Grass-Meeker	04/27/99	K-40	6.78 E+03	1.79 E+02
		Cs-134	*-2.49 E+00	5.42 E+00
		Cs-137	* 8.35 E+00	5.33 E+00
		Ba-140	*-3.84 E+00	1.54 E+01
		La-140	*-2.12 E+00	5.38 E+00
9G Feed/Grass Meeker	05/25/99	K-40	4.28 E+03	1.62 E+02
		Cs-134	* 7.07 E-01	5.65 E+00
		Cs-137	* 1.25 E+00	5.74 E+00
		Ba-140	* 1.15 E+01	1.64 E+01
		La-140	*-3.69 E+00	5.69 E+00
9G Feed/Grass Meeker	06/22/99	K-40	6.53 E+03	2.16 E+02
		Cs-134	* 1.99 E+00	5.55 E+00
		Cs-137	* 3.21 E+00	5.83 E+00
		Ba-140	* 9.99 E+00	1.62 E+01
		La-140	* 4.94 E-01	5.85 E+00

* Denotes a result less than the detection limit.

TABLE A-14.1

GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9G Feed/Grass Meeker	07/27/99	K-40	7.51 E+03	1.71 E+02
		Cs-134	*-4.28 E-01	4.69 E+00
		Cs-137	*-1.54 E+00	4.58 E+00
		Ba-140	* 1.01 E+00	1.30 E+01
		La-140	* 2.43 E+00	4.61 E+00
9G Feed/Grass Meeker	08/24/99	K-40	6.88 E+03	2.12 E+02
		Cs-134	* 2.76 E+00	6.27 E+00
		Cs-137	* 1.61 E+00	5.97 E+00
		Ba-140	* 1.11 E+01	2.10 E+01
		La-140	*-5.58 E+00	7.53 E+00
9G Feed/Grass Meeker	09/28/99	K-40	7.21 E+03	2.35 E+02
		Cs-134	*-1.01 E+00	7.50 E+00
		Cs-137	* 4.23 E+00	7.63 E+00
		Ba-140	*-7.68 E+00	2.20 E+01
		La-140	* 3.31 E+00	7.52 E+00
9G Feed/Grass Meeker	10/12/99	K-40	9.42 E+03	2.25 E+02
		Cs-134	* 1.61 E+00	5.85 E+00
		Cs-137	* 1.18 E+01	5.95 E+00
		Ba-140	* 1.23 E+01	2.44 E+01
		La-140	*-3.31 E+00	8.75 E+00
9G Feed/Corn Meeker	11/09/99	K-40	2.68 E+03	1.12 E+02
		Cs-134	*-8.84 E-01	3.96 E+00
		Cs-137	*-9.72 E-01	3.84 E+00
		Ba-140	* 3.87 E+00	1.58 E+01
		La-140	*-8.15 E-01	5.35 E+00
9G Feed/Corn Meeker	12/14/99	K-40	3.33 E+03	1.01 E+02
		Cs-134	*-2.15 E+00	2.79 E+00
		Cs-137	* 2.64 E+00	2.88 E+00
		Ba-140	* 1.12 E+00	8.09 E+00
		La-140	* 2.09 E-01	3.05 E+00

* Denotes a result less than the detection limit.

TABLE A.14.2

GAMMA SPECTROMETRY OF BROADLEAF IN LIEU OF MILK - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
K-40	(C)	5.85E+03	2.68E+03	9.42E+03	12	12
Cs-134	(C)	2.28E-01	-2.49E+00	3.00E+00	12	0
Cs-137	(C)	2.91E+00	-1.54E+00	1.18E+01	12	0
Ba-140	(C)	3.15E+00	-7.68E+00	1.23E+01	12	0
La-140	(C)	-4.58E-01	-5.58E+00	3.31E+00	12	0

TABLE A-15.1

GAMMA SPECTROMETRY OF ROOTS

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C Beets	06/22/99	Cs-134	*-1.03 E+00	3.65 E+00
		Cs-137	* 2.24 E+00	3.52 E+00
		I-131	* 1.81 E+00	5.50 E+00
37 Onions	06/22/99	Cs-134	*-5.42 E-01	3.13 E+00
		Cs-137	* 3.49 E-01	3.17 E+00
		I-131	*-1.50 E+00	4.10 E+00
37 Onions	07/27/99	Cs-134	* 1.38 E+00	4.03 E+00
		Cs-137	*-6.78 E-02	3.92 E+00
		I-131	*-2.24 E+00	6.58 E+00
9C Onions	07/27/99	Cs-134	* 8.49 E-01	2.88 E+00
		Cs-137	* 1.90 E+00	2.89 E+00
		I-131	*-1.38 E-01	5.19 E+00
37 Potatoes	08/24/99	Cs-134	* 1.46 E+00	2.80 E+00
		Cs-137	* 8.89 E-01	2.67 E+00
		I-131	*-1.77 E+00	4.68 E+00
9C Potatoes	08/24/99	Cs-134	*-5.16 E-02	2.65 E+00
		Cs-137	* 2.34 E+00	2.49 E+00
		I-131	* 1.66 E+00	4.33 E+00
37 Potatoes	09/28/99	Cs-134	* 2.48 E-01	3.54 E+00
		Cs-137	* 3.77 E+00	3.54 E+00
		I-131	* 1.38 E+00	5.67 E+00
9C Potatoes	09/28/99	Cs-134	* 1.71 E-01	2.98 E+00
		Cs-137	* 3.91 E+00	2.84 E+00
		I-131	*-2.95 E+00	5.32 E+00

* Denotes a result less than the detection limit.

TABLE A-15.2

GAMMA SPECTROMETRY OF ROOTS - SUMMARY

Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
			Year to Date Summary			
Cs-134	(I)	6.37E-01	-5.42E+00	1.46E+00	4	0
Cs-134	(C)	-1.54E-02	-1.03E+00	8.49E-01	4	0
Cs-137	(I)	1.24E+00	-6.78E-02	3.77E+00	4	0
Cs-137	(C)	2.60E+00	1.90E+00	3.91E+00	4	0
I-131	(I)	-1.03E+00	-2.24E+00	1.38E+00	4	0
I-131	(C)	9.55E-02	-2.95E+00	1.81E+00	4	0

(I) Indicator Stations

TABLE A-16.1

GAMMA SPECTROMETRY OF FRUIT

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
37 Cherries	06/22/99	Cs-134	*-9.24 E-01	1.56 E+00
		Cs-137	* 1.28 E-01	1.51 E+00
		I-131	* 1.14 E+00	1.91 E+00
37 Apricots	07/27/99	Cs-134	* 3.90 E-01	2.50 E+00
		Cs-137	*-8.76 E-02	2.54 E+00
		I-131	* 1.38 E+00	4.10 E+00
9C Peaches	07/27/99	Cs-134	* 0.00 E+00	3.20 E+00
		Cs-137	* 3.40 E+00	3.17 E+00
		I-131	* 6.29 E-01	5.61 E+00
37 Pears	08/24/99	Cs-134	* 2.34 E+00	3.54 E+00
		Cs-137	*-1.29 E+00	3.39 E+00
		I-131	*-1.20 E+00	6.17 E+00
9C Pears	08/24/99	Cs-134	* 2.94 E-01	2.06 E+00
		Cs-137	* 1.93 E+00	2.02 E+00
		I-131	*-3.19 E-01	3.93 E+00
91 Apples	09/27/99	Cs-134	*-1.45 E+00	3.11 E+00
		Cs-137	* 1.98 E+00	3.07 E+00
		I-131	*-1.38 E+00	5.32 E+00
37 Apples	09/28/99	Cs-134	*-5.64 E-01	3.43 E+00
		Cs-137	* 1.99 E+00	3.48 E+00
		I-131	* 2.31 E+00	6.45 E+00
9C Apples	09/28/99	Cs-134	*-1.86 E+00	2.83 E+00
		Cs-137	* 1.56 E-01	2.72 E+00
		I-131	*-4.05 E+00	5.69 E+00

* Denotes a result less than the detection limit.

TABLE A-16.2

GAMMA SPECTROMETRY OF FRUIT - SUMMARY

Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
Cs-134	(I)	-4.16E-02	-1.45E+00	2.34E+00	5	0
Cs-134	(C)	-5.22E-01	-1.86E+00	2.94E-01	3	0
Cs-137	(I)	5.44E-01	-1.29E+00	1.99E+00	5	0
Cs-137	(C)	1.83E+00	1.56E-01	3.40E+00	3	0
I-131	(I)	4.50E-01	-1.38E+00	2.31E+00	5	0
I-131	(C)	-1.25E+00	-4.05E+00	6.29E-01	3	0

(I) Indicator Station
(C) Control Stations

TABLE A-17.1

GAMMA SPECTROMETRY OF VEGETABLES

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C Asparagus	04/27/99	Cs-134	*-5.98 E-01	3.46 E+00
		Cs-137	* 2.26 E+00	3.42 E+00
		I-131	*-3.98 E+00	4.39 E+00
37 Asparagus	04/27/99	Cs-134	*-1.85 E+00	3.22 E+00
		Cs-137	* 1.90 E+00	3.23 E+00
		I-131	* 6.97 E-02	5.42 E+00
9C Asparagus	05/25/99	Cs-134	*-7.49 E-01	3.80 E+00
		Cs-137	*-3.98 E-01	3.82 E+00
		I-131	* 1.61 E+00	4.66 E+00
37 Asparagus	05/25/99	Cs-134	*-1.80 E+00	3.53 E+00
		Cs-137	* 2.14 E+00	3.49 E+00
		I-131	*-2.84 E+00	4.07 E+00
9C Bok Choy	06/22/99	Cs-134	* 3.36 E-01	2.89 E+00
		Cs-137	* 2.78 E+00	2.88 E+00
		I-131	* 2.07 E+00	3.53 E+00
37 Cabbage	06/22/99	Cs-134	*-1.38 E-01	7.35 E+00
		Cs-137	* 7.30 E+00	7.26 E+00
		I-131	* 2.94 E+00	1.22 E+01
9C Peas	06/22/99	Cs-134	* 1.30 E+00	3.31 E+00
		Cs-137	* 2.21 E-01	3.21 E+00
		I-131	*-2.37 E+00	4.07 E+00
37 Beans	07/27/99	Cs-134	* 9.93 E-01	3.67 E+00
		Cs-137	* 1.55 E+00	3.57 E+00
		I-131	*-6.67 E-01	5.74 E+00
9C Beans	07/27/99	Cs-134	*-2.49 E-01	4.01 E+00
		Cs-137	* 5.23 E+00	4.03 E+00
		I-131	* 1.83 E+00	6.37 E+00
37 Peppers	08/24/99	Cs-134	*-2.97 E+00	3.60 E+00
		Cs-137	* 2.77 E+00	3.60 E+00
		I-131	* 2.65 E+00	6.14 E+00

* Denotes a result less than the detection limit.

TABLE A-17.1

GAMMA SPECTROMETRY OF VEGETABLES

Results in pCi/kilogram (wet)

LOCATION	COLLECTION DATE	NUCLIDE	RESULT	OVERALL UNCERTAINTY
9C Peppers	08/24/99	Cs-134	*-1.38 E+00	2.77 E+00
		Cs-137	*-1.11 E+00	2.72 E+00
		I-131	* 9.00 E-01	5.38 E+00
37 Peppers	09/28/99	Cs-134	* 5.00 E-01	2.81 E+00
		Cs-137	* 9.36 E-01	2.76 E+00
		I-131	*-2.11 E+00	4.88 E+00
9C Peppers	09/28/99	Cs-134	*-1.85 E+00	3.91 E+00
		Cs-137	* 1.22 E+00	4.18 E+00
		I-131	*-2.66 E+00	7.93 E+00

* Denotes a result less than the detection limit.

TABLE A-17.2

GAMMA SPECTROMETRY OF VEGETABLES- SUMMARY

Results in pCi/kilogram (wet)

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
Cs-134	(I)	-8.78E-01	-2.97E+00	9.93E-01	6	0
Cs-134	(C)	-4.56E-01	-1.85E+00	1.30E+00	7	0
Cs-137	(I)	2.77E+00	9.36E-01	7.30E+00	6	0
Cs-137	(C)	1.46E+00	-1.11E+00	5.23E+00	7	0
I-131	(I)	7.12E-03	-2.84E+00	2.94E+00	6	0
I-131	(C)	-3.71E-01	-3.98E+00	2.07E+00	7	0

(I) Indicator Station
(C) Control Stations

ENERGY NORTHWEST - 1999

SPECIAL INTEREST DATA TABLES

TABLE B-2.1

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	12/30/98-01/09/99	Be-7	* 5.32 E+00	1.99 E+01
		K-40	*-2.06 E+01	2.56 E+01
		Mn-54	* 8.10 E-01	2.01 E+00
		Co-58	*-1.14 E+00	1.92 E+00
		Fe-59	* 2.26 E+00	4.31 E+00
		Co-60	* 4.01 E-01	2.04 E+00
		Zn-65	* 5.20 E-01	4.61 E+00
		Zr-95	*-1.37 E+00	3.96 E+00
		Nb-95	* 1.63 E+00	2.16 E+00
		Cs-134	*-1.45 E-01	2.03 E+00
		Cs-137	* 8.25 E-01	2.15 E+00
		Ba-140	*-1.99 E+00	8.82 E+00
		La-140	*-2.05 E+00	3.75 E+00
		Ra-226	*-2.16 E+01	4.43 E+01
		Th-228	*-9.62 E+00	3.82 E+00
	01/13/99-01/21/99	Be-7	* 7.60 E+00	1.76 E+01
		K-40	*-6.08 E+00	2.23 E+01
		Mn-54	* 0.00 E-01	1.46 E+00
		Co-58	*-8.81 E-01	1.62 E+00
		Fe-59	*-1.28 E+00	3.51 E+00
		Co-60	* 3.14 E-01	1.65 E+00
		Zn-65	*-3.17 E+00	3.48 E+00
		Zr-95	* 3.40 E-01	3.20 E+00
		Nb-95	* 2.64 E+00	1.81 E+00
		Cs-134	* 1.29 E+00	1.70 E+00
		Cs-137	* 1.25 E+00	1.86 E+00
		Ba-140	*-4.05 E-01	7.54 E+00
		La-140	*-1.05 E+00	3.39 E+00
		Ra-226	*-6.12 E+01	4.05 E+01
		Th-228	* 4.11 E+00	3.48 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	01/26/99-02/04/99	Be-7	*-2.07 E+00	1.82 E+01
		K-40	*-4.56 E+01	2.43 E+01
		Mn-54	* 3.52 E+00	1.85 E+00
		Co-58	* 1.32 E+00	1.98 E+00
		Fe-59	* 6.29 E-01	3.87 E+00
		Co-60	* 9.40 E-01	2.04 E+00
		Zn-65	*-8.11 E-01	4.40 E+00
		Zr-95	*-3.80 E-01	3.82 E+00
		Nb-95	*-6.28 E-02	1.94 E+00
		Cs-134	*-6.22 E-01	1.99 E+00
		Cs-137	* 0.00 E-01	2.01 E+00
		Ba-140	* 5.46 E-01	7.30 E+00
		La-140	* 1.63 E-01	3.14 E+00
		Ra-226	*-4.17 E+01	4.80 E+01
		Th-228	*-1.15 E+00	3.85 E+00
	02/04/99-02/15/99	Be-7	* 9.78 E-01	1.26 E+01
		K-40	* 2.72 E+00	1.86 E+01
		Mn-54	* 3.78 E-01	1.23 E+00
		Co-58	*-1.16 E+00	1.31 E+00
		Fe-59	* 1.71 E+00	2.61 E+00
		Co-60	* 1.26 E+00	1.36 E+00
		Zn-65	*-7.59 E-01	2.53 E+00
		Zr-95	* 1.48 E-01	2.51 E+00
		Nb-95	* 2.09 E+00	1.41 E+00
		Cs-134	* 6.16 E-01	1.37 E+00
		Cs-137	* 2.15 E+00	1.48 E+00
		Ba-140	*-2.77 E+00	4.49 E+00
		La-140	*-1.62 E+00	1.79 E+00
		Ra-226	*-4.84 E+01	3.36 E+01
		Th-228	* 1.80 E+00	2.77 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	02/17/99-02/26/99	Be-7	*-1.60 E+01	1.72 E+01
		K-40	*-1.44 E+01	2.46 E+01
		Mn-54	*-4.54 E-01	1.74 E+00
		Co-58	*-1.64 E+00	1.90 E+00
		Fe-59	*-4.26 E-01	3.87 E+00
		Co-60	* 3.43 E-01	2.09 E+00
		Zn-65	*-5.86 E-01	4.11 E+00
		Zr-95	*-4.92 E+00	3.60 E+00
		Nb-95	* 0.00 E-01	1.98 E+00
		Cs-134	*-1.83 E+00	2.02 E+00
		Cs-137	* 1.28 E+00	2.03 E+00
		Ba-140	* 2.52 E+00	6.80 E+00
		La-140	*-1.05 E+00	3.20 E+00
		Ra-226	*-1.01 E+02	3.83 E+01
		Th-228	*-4.32 E+00	3.44 E+00
	02/26/99-03/03/99	Be-7	*-8.69 E+00	2.49 E+01
		K-40	*-1.40 E+02	3.00 E+01
		Mn-54	* 2.12 E-01	2.61 E+00
		Co-58	* 3.87 E-01	2.67 E+00
		Fe-59	* 6.61 E+00	5.95 E+00
		Co-60	* 7.75 E-01	2.74 E+00
		Zn-65	* 6.58 E+00	5.65 E+00
		Zr-95	*-1.27 E+00	5.40 E+00
		Nb-95	*-5.13 E+00	2.73 E+00
		Cs-134	* 2.28 E-01	2.90 E+00
		Cs-137	*-1.61 E+00	2.75 E+00
		Ba-140	*-2.08 E+00	1.07 E+01
		La-140	* 8.60 E-01	3.84 E+00
		Ra-226	*-1.05 E+02	4.89 E+01
		Th-228	*-6.17 E+00	4.27 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	03/08/99-03/17/99	Be-7	*-5.09 E+00	1.49 E+01
		K-40	*-4.12 E+01	2.16 E+01
		Mn-54	* 1.57 E+00	1.57 E+00
		Co-58	* 8.36 E-01	1.55 E+00
		Fe-59	*-4.37 E-01	3.19 E+00
		Co-60	* 8.32 E-01	1.64 E+00
		Zn-65	*-1.53 E+00	3.18 E+00
		Zr-95	* 2.65 E-01	3.30 E+00
		Nb-95	* 3.51 E-01	1.59 E+00
		Cs-134	*-7.51 E-01	1.70 E+00
		Cs-137	* 1.72 E+00	1.79 E+00
		Ba-140	* 2.15 E+00	5.03 E+00
		La-140	*-1.10 E+00	2.30 E+00
		Ra-226	*-3.03 E+01	3.66 E+01
		Th-228	*-3.26 E+00	3.26 E+00
	03/17/99-03/26/99	Be-7	* 6.48 E+00	1.51 E+01
		K-40	* 5.69 E+00	2.21 E+01
		Mn-54	* 4.28 E-01	1.53 E+00
		Co-58	*-1.02 E+00	1.58 E+00
		Fe-59	* 3.02 E+00	3.49 E+00
		Co-60	* 5.81 E-01	1.73 E+00
		Zn-65	* 8.84 E-01	3.38 E+00
		Zr-95	* 1.27 E+00	3.16 E+00
		Nb-95	* 1.93 E+00	1.73 E+00
		Cs-134	*-1.84 E-01	1.65 E+00
		Cs-137	* 6.83 E-01	1.79 E+00
		Ba-140	* 1.84 E+00	6.12 E+00
		La-140	* 3.52 E-01	2.56 E+00
		Ra-226	*-1.67 E+00	3.29 E+01
		Th-228	*-1.73 E+00	2.88 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	03/29/99-04/11/99	Be-7	* 8.75 E+00	1.66 E+01
		K-40	*-3.07 E+01	2.11 E+01
		Mn-54	* 1.26 E+00	1.58 E+00
		Co-58	*-4.70 E-01	1.72 E+00
		Fe-59	* 2.13 E+00	3.71 E+00
		Co-60	* 1.62 E+00	1.81 E+00
		Zn-65	* 2.92 E+00	3.62 E+00
		Zr-95	* 9.03 E-01	3.49 E+00
		Nb-95	* 1.12 E+00	1.78 E+00
		Cs-134	*-1.85 E-01	1.75 E+00
		Cs-137	* 2.57 E+00	1.79 E+00
		Ba-140	* 1.02 E+00	8.48 E+00
		La-140	*-4.85 E-01	3.93 E+00
		Ra-226	* 8.32 E+00	3.30 E+01
		Th-228	* 9.04 E-01	3.03 E+00
	04/20/99-04/21/99	Be-7	*-6.71 E+00	1.60 E+01
		K-40	*-9.95 E+01	3.47 E+01
		Mn-54	* 9.63 E-01	1.73 E+00
		Co-58	*-1.05 E-01	1.83 E+00
		Fe-59	* 1.63 E-01	3.67 E+00
		Co-60	* 5.08 E-02	1.91 E+00
		Zn-65	*-1.31 E+00	3.88 E+00
		Zr-95	* 3.99 E-01	3.60 E+00
		Nb-95	* 2.97 E-01	1.78 E+00
		Cs-134	* 2.24 E-01	1.95 E+00
		Cs-137	* 1.16 E+00	1.98 E+00
		Ba-140	* 0.00 E+00	5.56 E+00
		La-140	* 5.26 E-01	2.45 E+00
		Ra-226	* 4.39 E+00	3.35 E+01
		Th-228	* 7.77 E+00	2.94 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	04/21/99-04/26/99	Be-7	* 2.34 E+01	2.21 E+01
		K-40	* 8.96 E+00	4.61 E+01
		Mn-54	*-3.85 E-01	2.27 E+00
		Co-58	*-7.45 E-01	2.28 E+00
		Fe-59	* 3.97 E+00	5.31 E+00
		Co-60	* 2.66 E+00	2.42 E+00
		Zn-65	*-2.37 E+00	4.98 E+00
		Zr-95	* 4.06 E+00	4.72 E+00
		Nb-95	* 1.36 E+00	2.33 E+00
		Cs-134	*-1.60 E+00	2.49 E+00
		Cs-137	*-1.15 E+00	2.51 E+00
		Ba-140	* 0.00 E+00	8.85 E+00
		La-140	*-5.11 E+00	3.44 E+00
		Ra-226	*-5.16 E+01	4.22 E+01
		Th-228	* 3.97 E+00	3.64 E+00
	04/21/99-04/28/99	Be-7	* 2.86 E+01	2.53 E+01
		K-40	* 1.48 E+01	6.54 E+01
		Mn-54	* 2.48 E+00	2.71 E+00
		Co-58	* 2.55 E+00	2.69 E+00
		Fe-59	* 1.23 E+00	5.69 E+00
		Co-60	* 2.74 E+00	2.65 E+00
		Zn-65	*-8.08 E+00	5.72 E+00
		Zr-95	* 2.22 E+00	5.64 E+00
		Nb-95	* 3.68 E+00	2.81 E+00
		Cs-134	* 1.83 E+00	2.89 E+00
		Cs-137	* 1.40 E+00	3.04 E+00
		Ba-140	* 1.36 E+00	9.56 E+00
		La-140	*-1.35 E-01	3.63 E+00
		Ra-226	* 7.41 E+00	5.27 E+01
		Th-228	*-4.75 E+00	4.58 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	04/28/99-04/30/99	Be-7	*-8.85 E-01	1.68 E+01
		K-40	*-2.46 E+01	2.13 E+01
		Mn-54	* 1.13 E+00	1.59 E+00
		Co-58	* 9.97 E-01	1.75 E+00
		Fe-59	* 6.00 E-01	3.82 E+00
		Co-60	* 1.17 E+00	1.70 E+00
		Zn-65	*-2.25 E-01	3.39 E+00
		Zr-95	*-5.47 E-01	3.61 E+00
		Nb-95	* 1.58 E+00	1.78 E+00
		Cs-134	* 1.85 E+00	1.71 E+00
		Cs-137	* 2.53 E+00	1.84 E+00
		Ba-140	* 8.92 E-01	8.84 E+00
		La-140	* 0.00 E+00	3.99 E+00
		Ra-226	* 6.04 E-01	3.29 E+01
		Th-228	*-8.59 E+00	2.93 E+00
	05/11/99-05/20/99	Be-7	*-1.74 E+00	1.89 E+01
		K-40	*-1.53 E+02	4.96 E+01
		Mn-54	*-7.78 E-01	2.09 E+00
		Co-58	* 1.06 E-01	2.06 E+00
		Fe-59	*-1.64 E-01	4.27 E+00
		Co-60	*-5.25 E-02	2.22 E+00
		Zn-65	*-3.94 E+00	4.62 E+00
		Zr-95	* 5.39 E-01	4.17 E+00
		Nb-95	* 3.91 E+00	2.14 E+00
		Cs-134	* 2.58 E+00	2.29 E+00
		Cs-137	* 0.00 E+00	2.34 E+00
		Ba-140	*-1.81 E+00	6.15 E+00
		La-140	* 1.90 E+00	2.50 E+00
		Ra-226	*-8.89 E+01	4.15 E+01
		Th-228	*-2.12 E+00	3.61 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	05/20/99-05/29/99	Be-7	* 8.43 E+00	2.49 E+01
		K-40	*-1.27 E+02	5.71 E+01
		Mn-54	*-1.53 E+00	2.43 E+00
		Co-58	*-2.38 E+00	2.61 E+00
		Fe-59	* 1.62 E+00	5.70 E+00
		Co-60	* 1.28 E+00	2.37 E+00
		Zn-65	* 4.01 E+00	5.35 E+00
		Zr-95	*-1.46 E+00	5.42 E+00
		Nb-95	* 1.59 E+00	2.73 E+00
		Cs-134	* 1.14 E+00	2.59 E+00
		Cs-137	*-4.79 E-01	2.70 E+00
		Ba-140	* 1.01 E+01	1.37 E+01
		La-140	*-1.19 E+00	4.92 E+00
		Ra-226	*-4.52 E+01	4.71 E+01
		Th-228	*-4.95 E+00	4.07 E+00
	06/02/99-06/12/99	Be-7	* 8.21 E+00	1.41 E+01
		K-40	*-8.28 E+00	2.77 E+01
		Mn-54	*-7.84 E-02	1.48 E+00
		Co-58	*-2.98 E-01	1.50 E+00
		Fe-59	*-9.38 E-01	3.14 E+00
		Co-60	*-1.83 E-01	1.48 E+00
		Zn-65	* 2.58 E+00	2.96 E+00
		Zr-95	* 2.87 E+00	3.00 E+00
		Nb-95	* 1.96 E+00	1.52 E+00
		Cs-134	* 5.67 E-01	1.61 E+00
		Cs-137	* 1.27 E-01	1.63 E+00
		Ba-140	* 1.63 E+00	5.41 E+00
		La-140	* 1.31 E+00	2.15 E+00
		Ra-226	*-3.51 E+01	2.91 E+01
		Th-228	*-1.58 E+00	2.54 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	06/14/99-06/20/99	Be-7	* 1.25 E+01	1.66 E+01
		K-40	*-1.22 E+01	2.30 E+01
		Mn-54	* 6.60 E-01	1.60 E+00
		Co-58	* 6.12 E-01	1.68 E+00
		Fe-59	* 1.39 E+00	3.75 E+00
		Co-60	*-4.17 E-01	1.67 E+00
		Zn-65	* 9.70 E-01	3.51 E+00
		Zr-95	*-5.88 E-01	3.42 E+00
		Nb-95	* 1.80 E+00	1.76 E+00
		Cs-134	* 2.53 E-01	1.75 E+00
		Cs-137	* 2.16 E+00	1.84 E+00
		Ba-140	* 4.35 E+00	8.33 E+00
		La-140	*-1.51 E+00	3.51 E+00
		Ra-226	*-7.55 E+01	3.68 E+01
		Th-228	*-1.17 E+01	3.16 E+00
	06/23/99-06/30/99	Be-7	*-5.66 E-01	1.59 E+01
		K-40	*-6.07 E+01	2.13 E+01
		Mn-54	* 5.85 E-01	1.55 E+00
		Co-58	*-2.13 E-01	1.63 E+00
		Fe-59	*-3.11 E-01	3.56 E+00
		Co-60	* 1.04 E+00	1.67 E+00
		Zn-65	*-2.93 E-01	3.24 E+00
		Zr-95	*-3.31 E-01	3.48 E+00
		Nb-95	*-4.09 E-01	1.69 E+00
		Cs-134	*-9.21 E-01	1.64 E+00
		Cs-137	*-2.57 E+00	1.91 E+00
		Ba-140	*-5.31 E+00	8.48 E+00
		La-140	* 3.74 E+00	3.78 E+00
		Ra-226	*-6.01 E+01	3.53 E+01
		Th-228	* 5.38 E+00	2.95 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	06/30/99-07/06/99	Be-7	* 3.46 E+00	2.14 E+01
		K-40	*-7.57 E+01	5.13 E+01
		Mn-54	*-2.17 E-01	2.11 E+00
		Co-58	* 1.44 E+00	2.34 E+00
		Fe-59	* 1.52 E+00	4.93 E+00
		Co-60	* 1.00 E+00	2.14 E+00
		Zn-65	*-6.44 E-01	4.78 E+00
		Zr-95	* 0.00 E+00	4.63 E+00
		Nb-95	* 2.33 E+00	2.30 E+00
		Cs-134	*-8.16 E-01	2.34 E+00
		Cs-137	* 1.43 E+00	2.38 E+00
		Ba-140	*-1.60 E+00	1.07 E+01
		La-140	*-5.95 E-01	4.26 E+00
		Ra-226	*-6.40 E+01	4.23 E+01
		Th-228	* 4.53 E+00	3.62 E+00
	07/08/99-07/12/99	Be-7	* 8.05 E+00	1.56 E+01
		K-40	*-5.31 E+01	2.19 E+01
		Mn-54	* 5.75 E-01	1.48 E+00
		Co-58	* 7.54 E-01	1.55 E+00
		Fe-59	* 4.79 E-01	3.37 E+00
		Co-60	*-6.92 E-01	1.65 E+00
		Zn-65	*-1.21 E-01	3.25 E+00
		Zr-95	* 2.71 E+00	3.30 E+00
		Nb-95	*-1.15 E+00	1.60 E+00
		Cs-134	* 9.31 E-01	1.67 E+00
		Cs-137	* 5.95 E-01	1.72 E+00
		Ba-140	* 1.52 E-01	6.36 E+00
		La-140	*-6.58 E-01	2.62 E+00
		Ra-226	*-2.51 E+01	3.88 E+01
		Th-228	* 7.06 E+00	3.17 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	07/13/99-07/18/99	Be-7	* 5.33 E+00	2.00 E+01
		K-40	*-9.60 E+00	2.75 E+01
		Mn-54	*-1.35 E-01	1.90 E+00
		Co-58	*-7.15 E-02	1.89 E+00
		Fe-59	* 8.72 E-01	4.02 E+00
		Co-60	*-1.71 E+00	1.91 E+00
		Zn-65	* 1.04 E+00	4.58 E+00
		Zr-95	*-4.11 E-01	3.98 E+00
		Nb-95	* 6.11 E-01	2.03 E+00
		Cs-134	*-3.29 E+00	2.10 E+00
		Cs-137	* 3.43 E+00	2.25 E+00
		Ba-140	* 3.75 E+00	8.50 E+00
		La-140	*-1.02 E+00	3.69 E+00
		Ra-226	*-4.46 E+01	4.36 E+01
		Th-228	*-8.08 E+00	3.77 E+00
	07/19/99-07/25/99	Be-7	*-3.85 E+00	1.54 E+01
		K-40	*-1.35 E+01	2.35 E+01
		Mn-54	* 4.74 E-02	1.46 E+00
		Co-58	*-3.00 E-01	1.58 E+00
		Fe-59	*-9.55 E-01	3.25 E+00
		Co-60	*-4.78 E-01	1.54 E+00
		Zn-65	*-5.97 E+00	3.41 E+00
		Zr-95	*-6.73 E-01	3.00 E+00
		Nb-95	*-2.70 E+00	1.60 E+00
		Cs-134	*-5.11 E-01	1.72 E+00
		Cs-137	* 6.33 E-01	1.71 E+00
		Ba-140	* 0.00 E+00	6.60 E+00
		La-140	* 1.35 E+00	2.72 E+00
		Ra-226	* 2.21 E+00	3.83 E+01
		Th-228	* 5.06 E+00	3.19 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	07/28/99-08/03/99	Be-7	* 1.26 E+01	1.55 E+01
		K-40	*-5.52 E+01	2.33 E+01
		Mn-54	*-1.42 E-01	1.53 E+00
		Co-58	*-1.48 E-01	1.55 E+00
		Fe-59	* 1.76 E+00	3.09 E+00
		Co-60	* 0.00 E+00	1.63 E+00
		Zn-65	*-3.57 E-01	3.32 E+00
		Zr-95	* 1.90 E+00	3.14 E+00
		Nb-95	* 6.11 E-01	1.61 E+00
		Cs-134	* 2.20 E+00	1.76 E+00
		Cs-137	* 1.67 E+00	1.73 E+00
		Ba-140	*-2.89 E+00	6.22 E+00
		La-140	* 6.26 E-01	2.54 E+00
		Ra-226	* 5.02 E+00	3.80 E+01
		Th-228	*-9.03 E+00	3.13 E+00
	08/05/99-08/10/99	Be-7	* 7.17 E+00	1.82 E+01
		K-40	*-8.31 E+01	3.43 E+01
		Mn-54	* 1.22 E+00	1.96 E+00
		Co-58	* 3.78 E-01	1.90 E+00
		Fe-59	*-7.65 E-01	4.11 E+00
		Co-60	* 1.90 E-01	1.93 E+00
		Zn-65	* 6.70 E-01	4.17 E+00
		Zr-95	*-6.38 E-01	3.96 E+00
		Nb-95	* 9.01 E-01	2.07 E+00
		Cs-134	*-3.25 E+00	2.07 E+00
		Cs-137	* 1.76 E-01	2.16 E+00
		Ba-140	* 4.03 E+00	7.50 E+00
		La-140	*-1.23 E+00	2.93 E+00
		Ra-226	*-2.08 E+01	3.88 E+01
		Th-228	*-1.99 E+00	3.39 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	08/11/99-08/14/99	Be-7	* 2.38 E+00	1.59 E+01
		K-40	*-1.07 E+01	2.24 E+01
		Mn-54	*-1.41 E+00	1.46 E+00
		Co-58	*-3.05 E-01	1.52 E+00
		Fe-59	*-1.19 E+00	3.54 E+00
		Co-60	*-1.61 E-01	1.57 E+00
		Zn-65	* 2.42 E+00	3.37 E+00
		Zr-95	* 2.35 E-01	3.32 E+00
		Nb-95	* 8.16 E-01	1.70 E+00
		Cs-134	* 1.09 E+00	1.68 E+00
		Cs-137	*-1.12 E+00	1.76 E+00
		Ba-140	* 3.32 E+00	8.04 E+00
		La-140	*-2.67 E+00	3.34 E+00
		Ra-226	*-4.18 E+01	4.04 E+01
		Th-228	* 4.03 E-01	3.33 E+00
	08/19/99-08/26/99	Be-7	*-6.20 E+00	1.72 E+01
		K-40	*-3.14 E+01	2.73 E+01
		Mn-54	* 7.15 E-01	1.84 E+00
		Co-58	*-3.85 E-01	1.83 E+00
		Fe-59	* 0.00 E+00	4.04 E+00
		Co-60	*-3.92 E-01	2.19 E+00
		Zn-65	* 1.49 E+00	4.23 E+00
		Zr-95	*-2.20 E+00	3.85 E+00
		Nb-95	* 1.09 E+00	1.98 E+00
		Cs-134	*-3.54 E-01	2.19 E+00
		Cs-137	* 8.10 E-01	2.09 E+00
		Ba-140	* 6.63 E-01	5.24 E+00
		La-140	*-4.92 E-01	2.31 E+00
		Ra-226	*-1.42 E+01	4.31 E+00
		Th-228	*-8.68 E+00	3.64 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	08/27/99-09/03/99	Be-7	*-3.60 E+00	1.67 E+01
		K-40	*-4.28 E+01	3.59 E+01
		Mn-54	*-1.66 E-01	1.71 E+00
		Co-58	*-4.20 E-01	1.85 E+00
		Fe-59	* 1.08 E+00	3.76 E+00
		Co-60	* 4.30 E-01	1.78 E+00
		Zn-65	* 1.59 E+00	3.75 E+00
		Zr-95	* 1.48 E+00	3.73 E+00
		Nb-95	* 0.00 E+00	1.81 E+00
		Cs-134	* 7.19 E-01	1.99 E+00
		Cs-137	* 2.39 E+00	1.95 E+00
		Ba-140	*-3.10 E+00	7.40 E+00
		La-140	*-1.01 E+00	2.96 E+00
		Ra-226	*-3.13 E+01	3.23 E+01
		Th-228	* 2.65 E+00	2.93 E+00
	09/04/99-09/11/99	Be-7	* 5.72 E+00	1.66 E+01
		K-40	*-5.54 E+01	3.57 E+01
		Mn-54	* 9.61 E-01	1.74 E+00
		Co-58	*-5.16 E-01	1.76 E+00
		Fe-59	* 8.08 E-01	3.70 E+00
		Co-60	*-6.69 E-01	1.80 E+00
		Zn-65	*-6.65 E-01	3.74 E+00
		Zr-95	*-1.39 E+00	3.57 E+00
		Nb-95	* 1.14 E+00	1.80 E+00
		Cs-134	* 1.00 E+00	1.91 E+00
		Cs-137	* 1.08 E+00	1.94 E+00
		Ba-140	* 3.68 E+00	6.55 E+00
		La-140	*-3.32 E-01	2.74 E+00
		Ra-226	*-3.89 E+01	3.27 E+01
		Th-228	* 1.63 E+00	2.87 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	09/12/99-09/19/99	Be-7	*-3.55 E+00	1.39 E+01
		K-40	*-3.66 E+01	2.88 E+01
		Mn-54	*-4.42 E-01	1.49 E+00
		Co-58	*-2.85 E-02	1.50 E+00
		Fe-59	* 1.31 E+00	3.11 E+00
		Co-60	*-2.33 E-01	1.54 E+00
		Zn-65	* 2.11 E+00	3.10 E+00
		Zr-95	* 4.39 E-01	3.01 E+00
		Nb-95	* 3.53 E-01	1.52 E+00
		Cs-134	* 9.01 E-02	1.64 E+00
		Cs-137	*-5.94 E-01	1.69 E+00
		Ba-140	* 3.82 E+00	5.33 E+00
		La-140	*-1.07 E+00	2.00 E+00
		Ra-226	* 5.46 E+01	3.06 E+01
		Th-228	*-4.92 E-01	2.63 E+00
	09/20/99-09/24/99	Be-7	* 1.73 E+00	1.98 E+01
		K-40	*-1.06 E+00	2.73 E+01
		Mn-54	* 2.61 E-01	1.96 E+00
		Co-58	*-1.40 E-01	2.06 E+00
		Fe-59	*-3.49 E-01	4.22 E+00
		Co-60	* 4.89 E-01	2.15 E+00
		Zn-65	* 3.05 E+00	4.23 E+00
		Zr-95	*-2.01 E+00	4.21 E+00
		Nb-95	* 3.33 E-01	2.10 E+00
		Cs-134	* 1.19 E+00	2.06 E+00
		Cs-137	* 9.11 E-01	2.13 E+00
		Ba-140	*-3.05 E+00	9.53 E+00
		La-140	*-2.25 E-01	4.53 E+00
		Ra-226	* 2.42 E+01	4.06 E+01
		Th-228	*-1.06 E+01	3.59 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	09/24/99-09/27/99	Be-7	*-6.98 E+00	1.93 E+01
		K-40	*-2.53 E+01	2.89 E+01
		Mn-54	*-1.34 E-01	1.82 E+00
		Co-58	* 4.91 E-01	1.81 E+00
		Fe-59	* 1.01 E+00	4.27 E+00
		Co-60	*-4.96 E-01	1.98 E+00
		Zn-65	*-1.37 E+00	4.45 E+00
		Zr-95	* 1.21 E+00	3.88 E+00
		Nb-95	* 1.33 E+00	2.01 E+00
		Cs-134	*-1.45 E-01	2.04 E+00
		Cs-137	* 6.34 E-02	2.20 E+00
		Ba-140	*-3.05 E+00	7.47 E+00
		La-140	*-1.30 E+00	3.29 E+00
		Ra-226	* 4.55 E+01	4.62 E+01
		Th-228	* 3.67 E+00	3.80 E+00
	09/28/99-09/30/99	Be-7	* 1.70 E+01	1.97 E+01
		K-40	*-5.47 E+01	2.97 E+01
		Mn-54	*-6.26 E-01	1.91 E+00
		Co-58	*-2.63 E-01	2.07 E+00
		Fe-59	* 1.28 E+00	4.43 E+00
		Co-60	*-1.63 E+00	1.89 E+00
		Zn-65	* 1.21 E+00	4.10 E+00
		Zr-95	*-3.05 E+00	4.34 E+00
		Nb-95	* 2.07 E+00	2.20 E+00
		Cs-134	*-2.59 E-01	2.07 E+00
		Cs-137	* 1.19 E+00	1.99 E+00
		Ba-140	*-2.02 E-01	1.02 E+01
		La-140	* 1.69 E-01	4.29 E+00
		Ra-226	* 3.28 E+00	3.65 E+01
		Th-228	*-2.50 E+00	3.18 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	09/30/99-10/02/99	Be-7	*-1.02 E+01	1.74 E+01
		K-40	*-1.80 E+01	3.15 E+01
		Mn-54	* 1.66 E+00	1.84 E+00
		Co-58	*-1.46 E-01	1.96 E+00
		Fe-59	* 1.74 E+00	4.06 E+00
		Co-60	* 4.58 E-01	1.89 E+00
		Zn-65	* 2.07 E+00	4.06 E+00
		Zr-95	*-1.91 E+00	4.22 E+00
		Nb-95	* 1.86 E+00	2.06 E+00
		Cs-134	*-1.44 E+00	2.07 E+00
		Cs-137	* 2.92 E+00	2.09 E+00
		Ba-140	* 2.52 E+00	8.14 E+00
		La-140	* 4.22 E+00	3.16 E+00
		Ra-226	*-9.10 E+00	3.50 E+01
		Th-228	*-1.01 E+01	2.98 E+00
	10/04/99-10/07/99	Be-7	* 1.70 E+01	2.14 E+01
		K-40	*-2.09 E+01	3.94 E+01
		Mn-54	*-4.76 E-01	2.01 E+00
		Co-58	*-3.89 E-01	2.29 E+00
		Fe-59	*-2.21 E+00	4.95 E+00
		Co-60	*-1.87 E-01	2.03 E+00
		Zn-65	* 1.33 E+00	4.62 E+00
		Zr-95	* 3.29 E+00	4.55 E+00
		Nb-95	* 6.52 E-01	2.33 E+00
		Cs-134	* 5.07 E-01	2.20 E+00
		Cs-137	* 5.24 E-01	2.11 E+00
		Ba-140	* 6.93 E+00	1.34 E+01
		La-140	* 4.26 E+00	5.13 E+00
		Ra-226	*-3.93 E+01	3.69 E+01
		Th-228	* 5.10 E+00	3.24 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD		RESULT	OVERALL UNCERTAINTY
101	10/11/99-10/14/99	Be-7	*-6.05 E+00	1.95 E+01
		K-40	*-4.10 E+01	3.63 E+01
		Mn-54	* 9.90 E-01	1.83 E+00
		Co-58	* 5.09 E-01	2.04 E+00
		Fe-59	* 5.77 E+00	4.65 E+00
		Co-60	* 3.29 E-01	1.92 E+00
		Zn-65	*-2.43 E+00	4.28 E+00
		Zr-95	*-1.23 E+00	4.17 E+00
		Nb-95	* 8.95 E-01	2.12 E+00
		Cs-134	*-4.47 E-01	2.01 E+00
		Cs-137	*-2.49 E-01	1.99 E+00
		Ba-140	*-1.65 E+00	1.17 E+01
		La-140	* 2.12 E+00	4.60 E+00
		Ra-226	*-1.93 E+01	3.51 E+01
		Th-228	* 2.23 E+00	2.99 E+00
	10/18/99-10/19/99	Be-7	* 9.04 E+00	2.21 E+01
		K-40	*-1.76 E+02	5.32 E+01
		Mn-54	* 1.94 E-01	2.25 E+00
		Co-58	*-1.29 E+00	2.33 E+00
		Fe-59	* 5.11 E-01	5.32 E+00
		Co-60	*-7.91 E-01	2.19 E+00
		Zn-65	* 7.91 E-01	5.11 E+00
		Zr-95	* 2.65 E+00	4.80 E+00
		Nb-95	*-3.15 E+00	2.39 E+00
		Cs-134	* 1.38 E+00	2.46 E+00
		Cs-137	* 1.47 E+00	2.39 E+00
		Ba-140	* 5.18 E+00	1.11 E+01
		La-140	*-3.22 E+00	3.98 E+00
		Ra-226	* 3.88 E+01	4.35 E+01
		Th-228	*-9.51 E-01	3.70 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	10/19/99-10/24/99	Be-7	* 1.41 E+01	2.76 E+01
		K-40	*-6.93 E+01	6.49 E+01
		Mn-54	*-1.38 E+00	2.71 E+00
		Co-58	*-1.09 E+00	2.95 E+00
		Fe-59	* 7.02 E-01	6.18 E+00
		Co-60	* 1.22 E+00	3.06 E+00
		Zn-65	*-8.79 E-01	6.90 E+00
		Zr-95	* 2.93 E+00	6.24 E+00
		Nb-95	* 2.42 E+00	2.96 E+00
		Cs-134	* 1.04 E+00	3.24 E+00
		Cs-137	* 3.14 E+00	3.18 E+00
		Ba-140	* 0.00 E+00	1.23 E+01
		La-140	*-3.98 E-01	4.66 E+00
		Ra-226	*-4.27 E+01	5.41 E+01
		Th-228	* 2.71 E+00	4.64 E+00
101	10/25/99-10/28/99	Be-7	* 0.00 E+00	1.79 E+01
		K-40	*-1.56 E+00	2.44 E+01
		Mn-54	*-7.08 E-01	1.63 E+00
		Co-58	* 0.00 E+00	1.86 E+00
		Fe-59	* 0.00 E+00	3.92 E+00
		Co-60	* 2.90 E-01	1.85 E+00
		Zn-65	* 1.40 E+00	4.07 E+00
		Zr-95	*-2.64 E+00	3.68 E+00
		Nb-95	* 1.31 E+00	1.94 E+00
		Cs-134	* 1.41 E+00	2.00 E+00
		Cs-137	*-2.07 E+00	2.16 E+00
		Ba-140	* 8.15 E+00	9.04 E+00
		La-140	*-1.55 E+00	4.06 E+00
		Ra-226	* 3.68 E+00	4.10 E+01
		Th-228	* 4.08 E+00	3.39 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	10/28/99-11/09/99	Be-7	* 1.10 E+01	1.63 E+01
		K-40	*-2.35 E+01	1.95 E+01
		Mn-54	* 3.00 E-01	1.49 E+00
		Co-58	* 1.50 E+00	1.59 E+00
		Fe-59	* 9.91 E-01	3.68 E+00
		Co-60	*-2.20 E-01	1.43 E+00
		Zn-65	*-1.80 E+00	3.22 E+00
		Zr-95	* 2.79 E+00	3.32 E+00
		Nb-95	* 9.04 E-01	1.65 E+00
		Cs-134	* 3.19 E-01	1.59 E+00
		Cs-137	* 5.08 E-01	1.54 E+00
		Ba-140	* 0.00 E+00	9.16 E+00
		La-140	*-1.10 E+00	4.14 E+00
		Ra-226	* 2.12 E+01	3.33 E+01
		Th-228	*-7.06 E+00	2.90 E+00
	11/09/99-11/11/99	Be-7	* 3.23 E+00	1.49 E+01
		K-40	*-1.96 E+01	2.02 E+01
		Mn-54	*-3.12 E-01	1.43 E+00
		Co-58	*-4.57 E-01	1.53 E+00
		Fe-59	*-2.81 E-01	3.45 E+00
		Co-60	* 2.97 E-01	1.59 E+00
		Zn-65	* 4.38 E-01	3.07 E+00
		Zr-95	*-1.10 E+00	3.09 E+00
		Nb-95	*-6.20 E-01	1.56 E+00
		Cs-134	*-1.56 E+00	1.55 E+00
		Cs-137	*-4.11 E+00	1.85 E+00
		Ba-140	* 3.31 E+00	7.99 E+00
		La-140	*-1.04 E+00	3.67 E+00
		Ra-226	*-7.09 E+01	3.35 E+01
		Th-228	* 7.28 E-02	2.76 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	11/15/99-11/25/99	Be-7	*-8.72 E+00	1.85 E+01
		K-40	*-7.92 E+00	2.47 E+01
		Mn-54	* 8.26 E-01	1.79 E+00
		Co-58	*-1.24 E-01	1.80 E+00
		Fe-59	* 4.57 E-01	4.23 E+00
		Co-60	* 7.99 E-01	1.92 E+00
		Zn-65	*-5.47 E+00	3.86 E+00
		Zr-95	*-1.42 E+00	3.82 E+00
		Nb-95	* 5.29 E-01	1.88 E+00
		Cs-134	* 0.00 E+00	1.96 E+00
		Cs-137	*-6.07 E-01	2.09 E+00
		Ba-140	*-6.30 E+00	7.90 E+00
		La-140	* 0.00 E+00	3.25 E+00
		Ra-226	* 6.63 E+00	3.86 E+01
		Th-228	*-5.73 E+00	3.45 E+00
	11/28/99-12/07/99	Be-7	* 1.26 E+01	1.94 E+01
		K-40	*-4.74 E+01	2.94 E+01
		Mn-54	* 1.92 E-01	1.90 E+00
		Co-58	* 1.90 E+00	2.05 E+00
		Fe-59	*-2.71 E+00	4.64 E+00
		Co-60	* 5.40 E-01	1.81 E+00
		Zn-65	* 0.00 E+00	4.35 E+00
		Zr-95	* 1.33 E+00	4.26 E+00
		Nb-95	* 2.99 E+00	2.11 E+00
		Cs-134	*-1.85 E+00	2.05 E+00
		Cs-137	* 2.00 E+00	2.04 E+00
		Ba-140	* 5.13 E+00	1.07 E+01
		La-140	* 0.00 E+00	4.39 E+00
		Ra-226	*-7.31 E+01	3.43 E+01
		Th-228	*-1.02 E+01	2.97 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	12/08/99-12/17/99	Be-7	*-1.34 E+00	1.79 E+01
		K-40	*-3.76 E+01	3.34 E+01
		Mn-54	* 3.37 E-01	1.75 E+00
		Co-58	* 1.12 E+00	1.79 E+00
		Fe-59	* 3.22 E+00	3.80 E+00
		Co-60	* 1.04 E+00	1.76 E+00
		Zn-65	*-1.85 E+00	3.95 E+00
		Zr-95	*-3.88 E-01	3.75 E+00
		Nb-95	* 3.45 E-01	1.92 E+00
		Cs-134	* 1.21 E-01	1.97 E+00
		Cs-137	*-4.35 E-01	1.92 E+00
		Ba-140	*-6.86 E-01	8.21 E+00
		La-140	*-2.32 E+00	3.14 E+00
		Ra-226	* 3.67 E+00	3.46 E+01
		Th-228	*-4.91 E+00	3.09 E+00
	12/17/99-12/18/99	Be-7	*-2.80 E+00	2.90 E+01
		K-40	*-1.21 E+02	5.96 E+01
		Mn-54	* 5.35 E-02	2.67 E+00
		Co-58	*-6.11 E-02	3.03 E+00
		Fe-59	* 6.11 E+00	6.69 E+00
		Co-60	*-1.84 E+00	2.66 E+00
		Zn-65	*-5.47 E-01	5.63 E+00
		Zr-95	*-2.37 E+00	6.08 E+00
		Nb-95	* 3.88 E+00	3.12 E+00
		Cs-134	*-8.59 E-01	2.87 E+00
		Cs-137	* 2.97 E+00	2.79 E+00
		Ba-140	*-1.52 E+01	1.95 E+01
		La-140	*-6.24 E+00	7.07 E+00
		Ra-226	*-2.75 E+01	4.97 E+01
		Th-228	* 2.40 E+00	4.32 E+00

* Denotes a result less than the detection limit.

TABLE B-2.1 (Cont.)

GAMMA SPECTROMETRY OF STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	12/27/99-01/03/00	Be-7	* 2.83 E+00	1.94 E+01
		K-40	*-4.52 E+01	4.05 E+01
		Mn-54	* 1.20 E+00	2.06 E+00
		Co-58	* 1.01 E-01	2.12 E+00
		Fe-59	* 2.37 E-01	4.43 E+00
		Co-60	*-4.42 E-01	2.14 E+00
		Zn-65	* 1.77 E+00	4.55 E+00
		Zr-95	* 0.00 E+00	4.15 E+00
		Nb-95	*-1.92 E-01	2.13 E+00
		Cs-134	*-2.71 E-01	2.34 E+00
		Cs-137	*-2.88 E-01	2.31 E+00
		Ba-140	* 4.91 E+00	6.72 E+00
		La-140	* 9.87 E-01	2.78 E+00
		Ra-226	*-3.03 E+01	3.98 E+01
		Th-228	* 2.83 E+00	3.46 E+00

* Denotes a result less than the detection limit.

TABLE B-2.2

GAMMA SPECTORMETRY OF STORM DRAIN WATER - SUMMARY

Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
		Station 101 - Outfall			
Be-7 (I)	3.30E+00	-1.60E+01	2.86E+01	45	0
K-40 (I)	-4.29E+01	-1.76E+02	1.48E+01	45	0
Mn-54 (I)	3.15E-01	-1.53E+00	3.52e+00	45	0
Co-58 (I)	-2.63E-02	-2.38E+00	2.55E+00	45	0
Fe-59 (I)	9.59E-01	-2.71E+00	6.61E+00	45	0
Co-60 (I)	2.78E-01	-1.84E+00	2.74E+00	45	0
Zn-65 (I)	-1.19E-01	-8.08E+00	6.58E+00	45	0
Zr-95 (I)	3.74E-01	-4.92E+00	4.06E+00	45	0
Nb-95 (I)	8.87E-01	-5.13E+00	3.91E+00	45	0
Cs-134 (I)	2.86E-02	-3.29E+00	2.58E+00	45	0
Cs-137 (I)	6.77E-01	-4.11E+00	3.43E+00	45	0
Ba-140 (I)	6.64E-01	-1.52E+01	1.01E+01	45	0
La-140 (I)	-4.26E-01	-6.24E+00	4.26E+00	45	0
Ra-226 (I)	-2.51E+01	-1.05E+02	5.46E+01	45	0
Th-228 (I)	-1.60E+00	-1.17E+01	7.77E+00	45	0

(I) Indicator Stations

TABLE B-3.1

GROSS BETA IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	12/30/98-01/09/99	* 2.6 E+00	1.97 E+00
	01/13/99-01/21/99	4.0 E+00	1.90 E+00
	01/26/99-02/04/99	2.6 E+00	1.70 E+00
	02/04/99-02/15/99	* 2.7 E+00	2.15 E+00
	02/17/99-02/26/99	6.3 E+00	2.70 E+00
	02/26/99-03/03/99	* 1.6 E+00	1.88 E+00
	03/08/99-03/17/99	4.4 E+00	2.60 E+00
	03/17/99-03/26/99	* 1.7 E+00	2.45 E+00
	03/29/99-04/11/99	4.6 E+00	2.20 E+00
	04/20/99-04/21/99	3.7 E+00	2.00 E+00
	04/21/99-04/26/99	8.5 E+00	2.60 E+00
	04/21/99-04/28/99	3.7 E+00	2.00 E+00
	04/28/99-04/30/99	* 3.0 E+00	2.26 E+00
	05/11/99-05/20/99	1.7 E+01	4.00 E+00
	05/20/99-05/29/99	2.7 E+00	1.90 E+00
	06/02/99-06/12/99	4.4 E+00	2.20 E+00
	06/14/99-06/20/99	* 2.3 E+00	1.92 E+00
	06/23/99-06/30/99	* 2.8 E+00	2.08 E+00
	06/30/99-07/06/99	* 1.7 E-01	1.95 E+00
	07/08/99-07/12/99	3.7 E+00	2.00 E+00
	07/13/99-07/18/99	4.2 E+00	2.10 E+00
	07/19/99-07/25/99	4.8 E+00	2.10 E+00
	07/28/99-08/03/99	3.8 E+00	2.00 E+00
	08/05/99-08/10/99	4.7 E+00	2.20 E+00
	08/11/99-08/14/99	* 2.3 E+00	2.12 E+00
	08/19/99-08/26/99	* 1.7 E+00	2.10 E+00
	08/27/99-09/03/99	* 2.0 E+00	2.05 E+00
	09/04/99-09/11/99	* 2.8 E+00	1.97 E+00
	09/12/99-09/19/99	4.7 E+00	2.60 E+00
	09/20/99-09/24/99	3.4 E+00	2.10 E+00
	09/24/99-09/27/99	* 2.4 E+00	1.95 E+00
	09/28/99-09/30/99	* 1.5 E+00	2.36 E+00
	09/30/99-10/02/99	* 2.2 E+00	1.88 E+00
	10/04/99-10/07/99	4.0 E+00	2.00 E+00
	10/11/99-10/14/99	* 1.8 E+00	2.43 E+00
	10/18/99-10/19/99	3.8 E+00	2.50 E+00
	10/19/99-10/24/99	6.0 E+00	2.20 E+00
	10/25/99-10/28/99	* 9.9 E-01	1.90 E+00
	10/28/99-11/09/99	* 2.5 E+00	1.97 E+00

* Denotes a result less than the detection limit.

TABLE B-3.1

GROSS BETA IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	11/09/99-11/11/99	3.2 E+00	1.80 E+00
	11/15/99-11/25/99	3.4 E+00	1.90 E+00
	11/28/99-12/07/99	* 2.1 E+00	2.18 E+00
	12/08/99-12/17/99	* 1.7 E+00	2.12 E+00
	12/17/99-12/18/99	8.2 E+00	2.70 E+00
	12/27/99-01/03/00	5.6 E+00	2.20 E+00

* Denotes a result less than the detection limit.

TABLE B-3.2

GROSS BETA IN STORM DRAIN WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Station 101 – Outfall						
Gross Beta	(I)	3.69E+00	1.7E-01	1.7E+01	45	25

(I) Indicator Stations

TABLE B-4.1

TRITIUM IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	12/30/98-01/09/99	* 1.1 E+02	1.11 E+02
	01/13/99-01/21/99	5.3 E+02	1.30 E+02
	01/26/99-02/04/99	*-4.2 E+02	4.40 E+01
	02/04/99-02/15/99	2.8 E+02	1.20 E+02
	02/17/99-02/26/99	3.1 E+02	1.20 E+02
	02/26/99-03/03/99	3.5 E+02	1.10 E+02
	03/08/99-03/17/99	* 5.7 E+01	1.01 E+02
	03/17/99-03/26/99	* 1.4 E+02	1.05 E+02
	03/29/99-04/11/99	* 7.0 E+01	1.14 E+02
	04/20/99-04/21/99	*-2.0 E+00	1.11 E+02
	04/21/99-04/26/99	*-3.3 E+01	1.04 E+02
	04/27/99-04/28/99	*-1.2 E+01	1.05 E+02
	04/28/99-04/30/99	* 0.0 E+00	1.05 E+02
	05/11/99-05/20/99	* 1.3 E+02	9.54 E+01
	05/20/99-05/29/99	* 4.3 E+01	9.69 E+01
	06/02/99-06/12/99	*-1.2 E+01	9.74 E+01
	06/14/99-06/20/99	* 3.9 E+00	9.12 E+01
	06/23/99-06/30/99	* 5.7 E+01	9.87 E+01
	06/30/99-07/06/99	* 3.3 E+01	9.78 E+01
	07/08/99-07/12/99	* 9.6 E+01	1.01 E+02
	07/13/99-07/18/99	* 4.9 E+01	9.89 E+01
	07/19/99-07/25/99	* 3.7 E+01	9.85 E+01
	07/28/99-08/03/99	2.2 E+02	1.00 E+02
	08/05/99-08/10/99	2.1 E+02	1.00 E+02
	08/11/99-08/14/99	* 1.1 E+02	9.99 E+01
	08/19/99-08/26/99	2.0 E+02	1.10 E+02
	08/27/99-09/03/99	1.6 E+02	1.00 E+02
	09/04/99-09/11/99	* 1.4 E+02	1.03 E+02
	09/12/99-09/19/99	1.4 E+03	2.00 E+02
	09/20/99-09/24/99	* 1.5 E+02	1.64 E+02
	09/24/99-09/27/99	* 1.2 E+02	1.63 E+02
	09/28/99-09/30/99	* 3.0 E+01	1.60 E+02
	09/30/99-10/02/99	* 1.5 E+02	1.70 E+02
	10/04/99-10/07/99	* 6.3 E+01	1.70 E+02
	10/11/99-10/14/99	*-1.0 E+01	1.67 E+02
	10/18/99-10/19/99	3.5 E+02	1.60 E+02
	10/19/99-10/24/99	* 1.5 E+02	1.65 E+02
	10/25/99-10/28/99	2.8 E+02	1.70 E+02

* Denotes a result less than the detection limit.

TABLE B-4.1 (Cont.)

TRITIUM IN STORM DRAIN WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
101	10/28/99-11/09/99	1.3 E+03	1.00 E+02
	11/09/99-11/11/99	3.2 E+02	1.10 E+02
	11/15/99-11/25/99	1.0 E+03	2.00 E+02
	11/28/99-12/07/99	1.2 E+03	1.0 E+02
	12/08/99-12/17/99	7.6 E+02	1.3 E+02
	12/17/99-12/18/99	2.6 E+03	2.0 E+02
	12/27/99-01/03/00	2.8 E+03	2.0 E+02

TABLE B-4.2

TRITIUM IN STORM DRAIN WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Station 101 - Outfall						
H-3	(I)	3.45E+02	-4.2E+02	2.8E+03	45	18

(I) Indicator Stations

TABLE B-5.1

GAMMA SPECTROMETRY OF STORM DRAIN SEDIMENT

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101	08/14/99	K-40	3.83 E+03	1.58 E+02
		Co-57	*-5.94 E+00	5.22 E+00
		Co-60	1.71 E+02	1.20 E+01
		Zn-65	* 5.37 E+00	1.20 E+01
		Co-58	*-8.15 E+00	5.54 E+00
		Mn-54	* 2.71 E+00	5.50 E+00
		Cs-134	* 1.86 E+01	6.05 E+00
		Cs-137	2.33 E+01	6.34 E+00
		Ce-141	* 1.16 E+01	1.08 E+01
		Ra-226	9.75 E+02	1.46 E+02
		Eu-152	* 4.13 E+01	2.69 E+01
		Th-228	4.47 E+02	1.52 E+01
101	09/14/99	K-40	2.89 E+03	1.40 E+02
		Co-57	*-8.10 E+00	5.16 E+00
		Co-60	8.84 E+01	9.59 E+00
		Zn-65	* 2.64 E+00	1.10 E+01
		Co-58	*-5.81 E+00	5.10 E+00
		Mn-54	* 8.96 E+00	5.26 E+00
		Cs-134	* 2.26 E+01	5.93 E+00
		Cs-137	1.42 E+01	6.44 E+00
		Ce-141	* 1.17 E+01	1.10 E+01
		Ra-226	1.05 E+03	1.55 E+02
		Eu-152	* 4.97 E+01	2.66 E+01
		Th-228	4.33 E+02	1.47 E+01

* Denotes a result less than the detection limit.

TABLE B-5.2

GAMMA SPECTROMETRY OF STORM DRAIN SEDIMENT - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
			Station 101 - Outfall			
K-40	(I)	3.36E+03	2.89E+03	3.83E+03	2	2
Mn-54	(I)	5.84E+00	2.71E+00	8.96E+00	2	0
Co-57	(I)	-7.02E+00	-8.10E+00	-5.94E+00	2	0
Co-58	(I)	-6.98E+00	-8.15E+00	-5.81E+00	2	0
Co-60	(I)	1.30E+02	8.84E+01	1.71E+02	2	2
Zn-65	(I)	4.01E+00	2.64E+00	5.37E+00	2	0
Cs-134	(I)	2.06E+01	1.86E+01	2.26E+01	2	0
Cs-137	(I)	1.88E+01	1.42E+01	2.33E+01	2	2
Ce-141	(I)	1.17E+01	1.16E+01	1.17E+01	2	0
Ra-226	(I)	1.01E+03	9.75E+02	1.05E+03	2	2
Eu-152	(I)	4.55E+01	4.13E+01	4.97E+01	2	0
Th-228	(I)	4.40E+02	4.33E+02	4.47E+02	2	2

(I) Indicator Stations

TABLE B-6.1

GAMMA SPECTROMETRY OF STORM DRAIN SOIL

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101A	03/30/99	Be-7	* 1.13 E+02	5.94 E+01
		K-40	1.56 E+04	3.15 E+02
		Mn-54	* 9.82 E+00	6.70 E+00
		Cs-134	* 2.18 E+01	7.54 E+00
		Cs-137	4.17 E+01	1.06 E+01
		Ra-226	7.88 E+02	1.62 E+02
		Th-228	5.86 E+02	1.67 E+01
101B	03/30/99	Be-7	* 6.03 E+01	5.05 E+01
		K-40	1.41 E+04	2.81 E+02
		Mn-54	* 6.68 E+00	5.72 E+00
		Cs-134	* 6.02 E+00	6.20 E+00
		Cs-137	2.82 E+01	6.84 E+00
		Ra-226	*-1.17 E+02	1.02 E+02
		Th-228	1.04 E+02	1.07 E+01
101A	06/08/99	Be-7	1.35 E+02	5.50 E+01
		K-40	1.43 E+04	2.32 E+02
		Mn-54	* 3.56 E+00	4.73 E+00
		Cs-134	* 2.45 E+01	5.34 E+00
		Cs-137	3.08 E+01	5.54 E+00
		Ra-226	8.48 E+02	1.35 E+02
		Th-228	5.31 E+02	1.31 E+01
101B	06/08/99	Be-7	* 2.91 E+01	4.12 E+01
		K-40	1.54 E+04	2.44 E+02
		Mn-54	* 7.54 E-01	4.83 E+00
		Cs-134	* 1.95 E+01	5.36 E+00
		Cs-137	4.16 E+01	5.74 E+00
		Ra-226	7.26 E+02	1.25 E+02
		Th-228	4.71 E+02	1.26 E+01

* Denotes a result less than the detection limit.

TABLE B-6.1

GAMMA SPECTROMETRY OF STORM DRAIN SOIL

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
101A	10/13/99	Be-7	* 8.40 E+01	5.51 E+01
		K-40	1.32 E+04	2.52 E+02
		Mn-54	* 1.40 E+00	5.40 E+00
		Cs-134	* 2.29 E+01	6.21 E+00
		Cs-137	2.94 E+01	6.45 E+00
		Ra-226	8.86 E+02	1.41 E+02
		Th-228	4.91 E+02	1.36 E+01
101B	10/13/99	Be-7	* 5.11 E+01	5.53 E+01
		K-40	1.37 E+04	2.66 E+02
		Mn-54	* 4.54 E+00	5.63 E+00
		Cs-134	* 2.58 E+01	6.32 E+00
		Cs-137	3.90 E+01	8.88 E+01
		Ra-226	6.70 E+02	1.41 E+02
		Th-228	4.48 E+02	1.34 E+01

* Denotes a result less than the detection limit.

TABLE B-6.2

GAMMA SPECTROMETRY OF STORM DRAIN SOIL - SUMMARY

Results in pCi/kilogram

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
Year to Date Summary						
Be-7	(I)	7.88E+01	2.91E+01	1.35E+02	6	1
K-40	(I)	1.44E+04	1.32E+04	1.56E+04	6	6
Mn-54	(I)	4.46E+00	7.54E-01	9.82E+00	6	0
Cs-134	(I)	2.01E+01	6.02E+00	2.58E+01	6	0
Cs-137	(I)	3.51E+01	2.82E+01	4.17E+01	6	6
Ra-226	(I)	6.34E+02	-1.17E+02	8.86E+02	6	5
Th-228	(I)	4.39E+02	1.04E+02	5.86E+02	6	6

(I) Indicator Stations

TABLE B-7.1

GAMMA SPECTROMETRY OF STORM DRAIN VEGETATION

Results in pCi/kilogram

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY

There were no Storm Drain Vegetation samples collected during 1999.

TABLE B-8.1

GROSS ALPHA IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102A	01/05/99-02/03/99	* 7.8 E-01	1.92 E-00
	02/03/99-03/02/99	* 1.1 E+00	2.23 E+00
	03/02/99-04/06/99	* 2.9 E-01	1.31 E+00
	04/06/99-05/04/99	* 0.0 E+00	1.33 E+00
	05/04/99-06/02/99	* 1.2 E+00	1.71 E+00
	06/02/99-07/07/99	* 4.9 E-01	2.29 E+00
	07/07/99-08/03/99	* 1.6 E+00	2.08 E+00
	08/03/99-09/01/99	* 4.0 E-01	2.89 E+00
	09/01/99-10/05/99	* 1.5 E+00	1.91 E+00
	10/05/99-11/02/99	* 2.3 E+00	2.66 E+00
	11/02/99-12/01/99	* 1.9 E+00	1.90 E+00
	12/03/99-01/04/00	* 2.4 E-01	1.06 E+00

TABLE B-8.1 (Cont.)

GROSS ALPHA IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102C Prior to Discharge	03/17/99	* 2.1 E+00	2.43 E+00
	03/17/99	* 1.1 E+00	2.08 E+00
	06/23/99	* 0.0 E+00	1.94 E+00
	06/23/99	* 1.3 E+00	1.68 E+00
	08/18/99	* 1.1 E+00	1.80 E+00
	08/18/99	* 8.6 E-01	1.73 E+00
	10/20/99	* 0.0 E+00	1.56 E+00
	10/20/99	* 3.2 E-01	1.67 E+00

* Denotes a result less than the detection limit.

TABLE B-8.2

GROSS ALPHA IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
102A					
Year to Date Summary					
Gr-Alpha (I)	9.8E-01	0.0E+00	2.3E+00	12	0

(I) Indicator Stations

TABLE B-8.2

GROSS ALPHA IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE	AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
102C - Prior to Discharge					
Year to Date Summary					
Gr-Alpha (I)	8.48E-01	0.0E+00	2.1E+00	8	0

(I) Indicator Stations

TABLE B-9.1

GROSS BETA IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102A	01/05/99-02/03/99	3.2 E+01	3.0 E+00
	02/03/99-03/02/99	3.2 E+01	3.0 E+00
	03/02/99-04/06/99	4.1 E+01	3.0 E+00
	04/06/99-05/04/99	2.6 E+01	2.0 E+00
	05/04/99-06/02/99	3.4 E+01	3.0 E+00
	06/02/99-07/07/99	2.8 E+01	2.0 E+00
	07/07/99-08/03/99	3.9 E+01	3.0 E+00
	08/03/99-09/01/99	4.8 E+01	3.0 E+00
	09/01/99-10/05/99	3.5 E+01	3.0 E+00
	10/05/99-11/02/99	3.2 E+01	3.0 E+00
	11/02/99-12/01/99	3.0 E+01	2.0 E+00
	12/03/99-01/04/00	3.7 E+01	3.0 E+00

TABLE B-9.1 (Cont.)

GROSS BETA IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	RESULT	OVERALL UNCERTAINTY
102C	03/17/99	3.9 E+01	3.0 E+00
Prior to	03/17/99	3.6 E+01	3.0 E+00
Discharge	06/23/99	3.3 E+01	3.0 E+00
	06/23/99	1.7 E+01	2.0 E+00
	08/18/99	4.0 E+01	3.0 E+00
	08/18/99	4.0 E+01	3.0 E+00
	10/20/99	2.9 E+01	3.0 E+00
	10/20/99	3.1 E+01	3.0 E+00

* Denotes a result less than the detection limit.

TABLE B-9.2

GROSS BETA IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
102A						
Year to Date Summary						
Gr-Beta	(I)	3.45E+01	2.6E+01	4.8E+01	12	12

(I) Indicator Stations

TABLE B-9.2 (Cont.)

GROSS BETA IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
102C-Prior to Discharge						
Year to Date Summary						
Gr-Beta	(I)	3.31E+01	1.7E+01	4.0E+01	8	8

(I) Indicator Stations

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	01/05/99-02/03/99	Be-7	* 6.99 E+00	1.54 E+01
		K-40	*-4.20 E+00	2.33 E+01
		Mn-54	* 8.55 E-01	1.51 E+00
		Co-58	* 4.07 E-01	1.46 E+00
		Fe-59	*-5.27 E-01	3.12 E+00
		Co-60	* 7.33 E-01	1.77 E+00
		Zn-65	*-3.53 E+00	3.41 E+00
		Zr-95	* 6.05 E-01	3.07 E+00
		Nb-95	* 7.27 E-01	1.62 E+00
		Cs-134	* 1.32 E+00	1.71 E+00
		Cs-137	*-9.08 E-01	1.75 E+00
		Ba-140	*-4.31 E+00	4.82 E+00
		La-140	* 0.00 E-01	2.02 E+00
		Ra-226	*-5.10 E+01	4.00 E+01
		Th-228	*-4.17 E+00	3.16 E+00
	02/03/99-03/02/99	Be-7	*-7.81 E+00	1.87 E+01
		K-40	*-4.90 E+01	4.13 E+01
		Mn-54	*-3.19 E-01	1.99 E+00
		Co-58	*-8.71 E-01	1.97 E+00
		Fe-59	*-1.26 E+00	4.26 E+00
		Co-60	*-1.99 E-01	2.09 E+00
		Zn-65	* 1.94 E+00	4.32 E+00
		Zr-95	* 1.49 E+00	4.04 E+00
		Nb-95	* 1.13 E+00	2.01 E+00
		Cs-134	* 2.98 E-01	2.32 E+00
		Cs-137	* 6.19 E-01	2.25 E+00
		Ba-140	* 1.40 E+00	6.27 E+00
		La-140	*-2.22 E+00	2.38 E+00
		Ra-226	*-4.60 E+01	3.83 E+01
		Th-228	* 1.64 E+00	3.43 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	03/02/99-04/06/99	Be-7	*-8.36 E+00	1.35 E+01
		K-40	*-5.14 E+01	2.87 E+01
		Mn-54	* 6.68 E-01	1.47 E+00
		Co-58	*-3.92 E-01	1.48 E+00
		Fe-59	*-7.12 E-01	2.95 E+00
		Co-60	* 2.54 E-01	1.46 E+00
		Zn-65	* 2.60 E+00	3.01 E+00
		Zr-95	*-8.04 E-01	3.01 E+00
		Nb-95	* 2.19 E+00	1.53 E+00
		Cs-134	*-3.77 E+00	1.65 E+00
		Cs-137	* 8.57 E-01	1.61 E+00
		Ba-140	*-1.85 E+00	4.82 E+00
		La-140	* 5.32 E-02	1.74 E+00
		Ra-226	*-2.74 E+01	2.99 E+01
		Th-228	* 4.58 E+00	2.59 E+00
	04/06/99-05/04/99	Be-7	* 1.21 E+01	1.80 E+01
		K-40	*-1.95 E+01	2.99 E+01
		Mn-54	*-9.89 E-01	1.84 E+00
		Co-58	* 2.00 E-01	2.00 E+00
		Fe-59	*-1.90 E+00	4.15 E+00
		Co-60	*-1.81 E+00	1.96 E+00
		Zn-65	*-2.82 E+00	3.95 E+00
		Zr-95	* 2.89 E-01	4.11 E+00
		Nb-95	* 8.58 E-01	2.00 E+00
		Cs-134	*-1.22 E+00	2.10 E+00
		Cs-137	* 2.80 E+00	2.09 E+00
		Ba-140	*-9.66 E-01	8.08 E+00
		La-140	* 4.05 E-01	3.53 E+00
		Ra-226	*-2.53 E+01	3.52 E+01
		Th-228	*-7.14 E+00	3.11 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	05/04/99-06/02/99	Be-7	* 1.40 E+01	1.98 E+01
		K-40	*-6.34 E+01	3.90 E+01
		Mn-54	* 1.74 E+00	2.02 E+00
		Co-58	*-9.43 E-02	2.13 E+00
		Fe-59	*-2.05 E+00	4.37 E+00
		Co-60	* 1.30 E-01	2.08 E+00
		Zn-65	* 2.15 E+00	4.32 E+00
		Zr-95	* 4.53 E-01	4.30 E+00
		Nb-95	* 1.80 E-01	2.09 E+00
		Cs-134	* 4.79 E-01	2.19 E+00
		Cs-137	* 1.94 E+00	2.22 E+00
		Ba-140	* 2.84 E+00	8.80 E+00
		La-140	* 5.33 E-01	3.26 E+00
		Ra-226	*-2.97 E+01	3.74 E+01
		Th-228	* 5.24 E-01	3.27 E+00
	06/02/99-07/07/99	Be-7	*-3.01 E+00	1.98 E+01
		K-40	*-1.24 E+01	2.83 E+01
		Mn-54	*-4.01 E-01	1.92 E+00
		Co-58	* 6.97 E-02	1.91 E+00
		Fe-59	*-2.69 E+00	4.37 E+00
		Co-60	* 1.49 E+00	2.25 E+00
		Zn-65	* 2.40 E+00	4.31 E+00
		Zr-95	* 2.27 E+00	4.20 E+00
		Nb-95	*-4.62 E-01	1.96 E+00
		Cs-134	*-4.44 E+00	2.08 E+00
		Cs-137	* 2.52 E-01	2.13 E+00
		Ba-140	* 5.96 E-01	7.59 E+00
		La-140	*-1.10 E+00	3.27 E+00
		Ra-226	*-1.63 E+01	4.39 E+01
		Th-228	*-1.00 E+01	3.87 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	07/07/99-08/03/99	Be-7	* 8.06 E-01	1.49 E+01
		K-40	*-3.14 E+01	2.10 E+01
		Mn-54	*-8.70 E-01	1.55 E+00
		Co-58	*-1.82 E+00	1.60 E+00
		Fe-59	* 6.78 E-01	3.28 E+00
		Co-60	* 1.69 E-01	1.64 E+00
		Zn-65	* 4.24 E+00	3.48 E+00
		Zr-95	*-7.16 E-01	3.11 E+00
		Nb-95	* 1.69 E+00	1.65 E+00
		Cs-134	*-4.28 E-02	1.70 E+00
		Cs-137	*-3.72 E+00	1.93 E+00
		Ba-140	*-2.80 E+00	6.10 E+00
		La-140	* 0.00 E+00	2.70 E+00
		Ra-226	*-9.42 E+00	3.61 E+01
		Th-228	*-1.38 E+00	2.91 E+00
102A	08/03/99-09/01/99	Be-7	*-3.93 E+00	1.45 E+01
		K-40	*-4.79 E+01	2.79 E+01
		Mn-54	* 6.27 E-01	1.47 E+00
		Co-58	* 5.60 E-01	1.54 E+00
		Fe-59	* 8.61 E-01	3.21 E+00
		Co-60	*-6.55 E-01	1.42 E+00
		Zn-65	*-1.42 E+00	2.99 E+00
		Zr-95	*-8.68 E-01	3.04 E+00
		Nb-95	* 2.47 E+00	1.58 E+00
		Cs-134	*-3.29 E+00	1.61 E+00
		Cs-137	* 4.79 E-01	1.58 E+00
		Ba-140	* 3.21 E+00	6.78 E+00
		La-140	* 3.06 E+00	2.71 E+00
		Ra-226	*-2.83 E+01	2.90 E+01
		Th-228	*-1.49 E+00	2.55 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	09/01/99-10/05/99	Be-7	* 1.30 E+01	1.90 E+01
		K-40	* 3.96 E+00	3.03 E+01
		Mn-54	* 4.19 E-02	1.81 E+00
		Co-58	*-1.89 E-01	2.04 E+00
		Fe-59	*-8.20 E-01	4.53 E+00
		Co-60	*-9.97 E-01	1.91 E+00
		Zn-65	* 0.00 E+00	3.75 E+00
		Zr-95	* 2.57 E+00	4.18 E+00
		Nb-95	* 1.22 E+00	2.06 E+00
		Cs-134	*-6.71 E-01	1.97 E+00
		Cs-137	* 2.29 E+00	2.00 E+00
		Ba-140	* 8.47 E+00	1.23 E+01
		La-140	* 1.27 E+00	5.08 E+00
		Ra-226	* 1.64 E+00	3.36 E+01
		Th-228	* 6.28 E-01	2.90 E+00
	10/05/99-11/02/99	Be-7	* 4.90 E+00	2.84 E+01
		K-40	*-1.39 E+02	5.86 E+01
		Mn-54	* 9.10 E-01	2.51 E+00
		Co-58	* 1.73 E-01	2.87 E+00
		Fe-59	* 6.19 E+00	6.68 E+00
		Co-60	*-7.97 E-01	2.48 E+00
		Zn-65	*-6.46 E+00	5.84 E+00
		Zr-95	*-3.02 E+00	5.94 E+00
		Nb-95	* 7.20 E-01	3.05 E+00
		Cs-134	* 3.98 E+00	2.84 E+00
		Cs-137	* 4.83 E+00	2.81 E+00
		Ba-140	* 2.54 E+00	1.88 E+01
		La-140	*-2.53 E+00	7.19 E+00
		Ra-226	*-4.32 E+01	4.90 E+01
		Th-228	*-4.90 E+00	4.20 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102A	11/02/99-12/01/99	Be-7	*-3.57 E+00	1.73 E+01
		K-40	*-6.26 E+00	2.88 E+01
		Mn-54	* 1.21 E+00	1.72 E+00
		Co-58	*-4.19 E-01	1.76 E+00
		Fe-59	*-1.60 E+00	3.83 E+00
		Co-60	*-5.55 E-02	1.64 E+00
		Zn-65	* 3.72 E+00	3.88 E+00
		Zr-95	* 1.62 E+00	3.71 E+00
		Nb-95	* 7.61 E-01	1.88 E+00
		Cs-134	*-2.07 E+00	1.89 E+00
		Cs-137	* 3.75 E-01	1.89 E+00
		Ba-140	*-8.17 E+00	8.26 E+00
		La-140	*-1.20 E-01	3.18 E+00
		Ra-226	*-1.04 E+02	3.11 E+01
		Th-228	*-9.82 E+00	2.71 E+00
	12/03/99-01/04/00	Be-7	* 5.45 E+00	1.85 E+01
		K-40	* 3.41 E+00	2.88 E+01
		Mn-54	* 1.06 E+00	1.94 E+00
		Co-58	*-6.42 E-01	1.93 E+00
		Fe-59	* 1.40 E+00	4.07 E+00
		Co-60	* 3.76 E-01	2.09 E+00
		Zn-65	* 8.03 E-01	4.61 E+00
		Zr-95	*-1.96 E+00	3.92 E+00
		Nb-95	* 7.28 E-01	2.03 E+00
		Cs-134	*-1.27 E+00	1.96 E+00
		Cs-137	* 2.16 E+00	2.20 E+00
		Ba-140	* 2.76 E+00	7.44 E+00
		La-140	*-4.94 E-01	3.12 E+00
		Ra-226	* 3.21 E+01	4.13 E+01
		Th-228	* 1.56 E-01	3.61 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	01/20/99	Be-7	* 9.81 E+00	1.55 E+01
		K-40	*-2.85 E+01	3.27 E+01
		Mn-54	* 8.85 E-01	1.77 E+00
		Co-58	*-6.27 E-01	1.65 E+00
		Fe-59	* 1.16 E+00	3.40 E+00
		Co-60	* 6.80 E-01	1.66 E+00
		Zn-65	* 3.18 E+00	3.71 E+00
		Zr-95	*-2.83 E-01	3.34 E+00
		Nb-95	* 5.26 E-01	1.69 E+00
		Cs-134	*-2.22 E+00	1.89 E+00
		Cs-137	* 1.86 E+00	1.91 E+00
		Ba-140	*-1.02 E+00	5.02 E+00
		La-140	*-3.41 E-01	1.84 E+00
		Ra-226	* 3.39 E+00	3.51 E+01
		Th-228	*-9.29 E+00	2.94 E+00
	02/24/99	Be-7	* 3.00 E+00	1.18 E+01
		K-40	*-9.37 E+00	1.85 E+01
		Mn-54	* 3.27 E-01	1.25 E+00
		Co-58	* 5.51 E-01	1.24 E+00
		Fe-59	* 1.57 E+00	2.56 E+00
		Co-60	* 2.74 E-01	1.42 E+00
		Zn-65	* 1.49 E+00	2.65 E+00
		Zr-95	*-1.21 E+00	2.40 E+00
		Nb-95	* 1.62 E+00	1.30 E+00
		Cs-134	* 6.25 E-01	1.42 E+00
		Cs-137	* 1.12 E+00	1.69 E+00
		Ba-140	*-3.96 E-01	3.93 E+00
		La-140	*-3.86 E-01	1.74 E+00
		Ra-226	*-7.61 E+01	2.97 E+01
		Th-228	*-3.82 E+00	2.36 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	03/17/99	Be-7	* 7.47 E+00	2.36 E+01
		K-40	*-1.68 E+02	6.13 E+01
		Mn-54	* 1.00 E+00	2.52 E+00
		Co-58	*-1.42 E+00	2.59 E+00
		Fe-59	*-5.24 E+00	5.06 E+00
		Co-60	*-1.57 E-01	2.57 E+00
		Zn-65	* 4.01 E-01	5.50 E+00
		Zr-95	* 0.00 E-01	5.08 E+00
		Nb-95	* 1.05 E+00	2.67 E+00
		Cs-134	* 2.30 E-01	2.82 E+00
		Cs-137	* 3.82 E+00	2.90 E+00
		Ba-140	* 1.05 E+00	7.47 E+00
		La-140	*-1.14 E+00	2.67 E+00
		Ra-226	*-1.61 E+02	4.89 E+01
		Th-228	* 3.04 E-01	4.26 E+00
	04/21/99	Be-7	*-7.36 E+00	1.95 E+01
		K-40	*-2.77 E+01	5.14 E+01
		Mn-54	*-4.97 E-01	2.11 E+00
		Co-58	*-1.80 E-01	2.15 E+00
		Fe-59	*-5.04 E-01	4.33 E+00
		Co-60	*-5.77 E-01	2.08 E+00
		Zn-65	*-2.16 E+00	4.67 E+00
		Zr-95	* 2.75 E-01	4.21 E+00
		Nb-95	* 2.04 E+00	2.18 E+00
		Cs-134	* 1.93 E-01	2.32 E+00
		Cs-137	* 1.50 E+00	2.36 E+00
		Ba-140	* 2.61 E-01	6.98 E+00
		La-140	* 0.00 E+00	2.58 E+00
		Ra-226	*-1.39 E+02	4.03 E+01
		Th-228	*-9.27 E-01	3.50 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	05/19/99	Be-7	*-1.28 E+00	1.59 E+01
		K-40	*-1.36 E+01	3.55 E+01
		Mn-54	* 1.13 E+00	1.72 E+00
		Co-58	* 8.64 E-01	1.75 E+00
		Fe-59	* 1.21 E+00	3.65 E+00
		Co-60	*-5.08 E-02	1.88 E+00
		Zn-65	* 2.09 E+00	3.76 E+00
		Zr-95	* 1.25 E+00	3.58 E+00
		Nb-95	* 4.90 E-01	1.75 E+00
		Cs-134	* 1.38 E+00	1.98 E+00
		Cs-137	* 2.81 E+00	2.00 E+00
		Ba-140	* 4.42 E+00	5.44 E+00
		La-140	* 7.17 E-01	2.27 E+00
		Ra-226	*-1.19 E+01	3.34 E-01
		Th-228	* 5.55 E-01	2.84 E+00
	06/23/99	Be-7	*-1.89 E+01	1.80 E+01
		K-40	*-1.10 E+02	4.00 E+01
		Mn-54	* 9.02 E-02	1.95 E+00
		Co-58	* 2.18 E+00	2.04 E+00
		Fe-59	*-1.04 E+00	3.94 E+00
		Co-60	* 5.90 E-01	2.23 E+00
		Zn-65	*-9.04 E-01	4.46 E+00
		Zr-95	*-1.74 E+00	3.95 E+00
		Nb-95	* 1.42 E+00	2.03 E+00
		Cs-134	* 1.82 E+00	2.23 E+00
		Cs-137	* 0.00 E+00	2.33 E+00
		Ba-140	*-4.48 E+00	6.17 E+00
		La-140	*-8.63 E+00	2.42 E+00
		Ra-226	*-1.21 E+01	3.80 E+01
		TH-228	*-2.36 E+00	3.37 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	07/21/99	Be-7	* 3.06 E+00	1.64 E+01
		K-40	*-2.25 E+01	2.48 E+01
		Mn-54	*-7.36 E-01	1.65 E+00
		Co-58	*-6.25 E-01	1.70 E+00
		Fe-59	* 1.35 E+00	3.71 E+00
		Co-60	* 3.45 E-01	1.93 E+00
		Zn-65	* 2.19 E+00	4.05 E+00
		Zr-95	*-1.40 E+00	3.61 E+00
		Nb-95	*-3.75 E-01	1.77 E+00
		Cs-134	* 9.20 E-01	1.99 E+00
		Cs-137	* 0.00 E+00	1.94 E+00
		Ba-140	*-1.28 E+00	5.26 E+00
		La-140	* 4.90 E-01	2.61 E+00
		Ra-226	*-5.49 E+01	3.84 E+01
		Th-228	* 1.61 E+00	3.38 E+00
	08/18/99	Be-7	*-4.38 E+00	2.02 E+01
		K-40	*-7.46 E+00	2.64 E+01
		Mn-54	* 9.72 E-01	1.92 E+00
		Co-58	*-9.17 E-01	2.04 E+00
		Fe-59	* 2.13 E+00	4.60 E+00
		Co-60	* 9.66 E-02	2.05 E+00
		Zn-65	*-5.04 E+00	4.28 E+00
		Zr-95	*-9.48 E-01	4.19 E+00
		Nb-95	*-5.37 E-01	2.12 E+00
		Cs-134	*-2.77 E-01	2.13 E+00
		Cs-137	* 3.12 E+00	2.22 E+00
		Ba-140	* 3.89 E+00	1.06 E+01
		La-140	*-4.95 E-01	5.06 E+00
		Ra-226	*-5.30 E+01	3.95 E+01
		Th-228	*-2.05 E+00	3.57 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	09/22/99	Be-7	*-3.07 E+00	1.33 E+01
		K-40	*-7.31 E+01	2.71 E+01
		Mn-54	*-2.57 E-02	1.46 E+00
		Co-58	*-7.58 E-01	1.43 E+00
		Fe-59	*-7.72 E-01	2.91 E+00
		Co-60	*-8.71 E-01	1.45 E+00
		Zn-65	* 3.17 E-01	3.02 E+00
		Zr-95	*-3.01 E-01	2.78 E+00
		Nb-95	* 2.04 E+00	1.46 E+00
		Cs-134	*-3.64 E-01	1.59 E+00
		Cs-137	* 1.39 E+00	1.63 E+00
		Ba-140	* 1.98 E-01	4.65 E+00
		La-140	* 1.06 E-01	1.79 E+00
		Ra-226	* 1.42 E+01	2.87 E+01
		Th-228	*-2.13 E+00	2.54 E+00
	10/20/99	Be-7	* 2.25 E+00	1.50 E+01
		K-40	*-6.90 E+00	2.64 E+01
		Mn-54	*-1.95 E-01	1.57 E+00
		Co-58	*-5.52 E-01	1.61 E+00
		Fe-59	* 2.95 E+00	3.39 E+00
		Co-60	* 1.66 E+00	1.57 E+00
		Zn-65	*-4.87 E-01	3.37 E+00
		Zr-95	*-2.66 E-01	3.28 E+00
		Nb-95	* 1.61 E+00	1.65 E+00
		Cs-134	*-1.09 E+00	1.69 E+00
		Cs-137	* 1.28 E+00	1.68 E+00
		Ba-140	*-2.02 E+00	6.82 E+00
		La-140	* 3.38 E+00	2.72 E+00
		Ra-226	*-4.24 E+01	2.91 E+01
		Th-228	*-2.83 E-01	2.55 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102B Monthly Headworks	11/17/99	Be-7	* 3.70 E+00	1.40 E+01
		K-40	*-6.78 E+01	2.69 E+01
		Mn-54	* 0.00 E+00	1.45 E+00
		Co-58	*-3.91 E-01	1.51 E+00
		Fe-59	* 4.43 E+00	3.22 E+00
		Co-60	*-1.19 E+00	1.44 E+00
		Zn-65	*-1.25 E+00	3.14 E+00
		Zr-95	*-3.78 E-01	3.12 E+00
		Nb-95	* 4.80 E-01	1.57 E+00
		Cs-134	*-6.90 E-01	1.59 E+00
		Cs-137	* 9.53 E-01	1.61 E+00
		Ba-140	* 6.08 E+00	6.11 E+00
		La-140	*-9.79 E-01	2.29 E+00
		Ra-226	* 3.37 E+01	2.90 E+01
		Th-228	*-5.43 E+00	2.52 E+00
	12/15/99	Be-7	* 3.85 E+00	1.83 E+01
		K-40	*-5.18 E+01	3.82 E+01
		Mn-54	* 3.32 E-01	1.97 E+00
		Co-58	* 5.23 E-01	2.00 E+00
		Fe-59	* 1.99 E+00	4.33 E+00
		Co-60	* 6.67 E-01	1.90 E+00
		Zn-65	*-5.26 E-01	4.27 E+00
		Zr-95	* 1.17 E+00	4.03 E+00
		Nb-95	* 9.94 E-01	1.99 E+00
		Cs-134	* 6.71 E-01	2.11 E+00
		Cs-137	*-1.97 E-01	2.15 E+00
		Ba-140	*-1.18 E+00	7.80 E+00
		La-140	* 1.52 E+00	3.29 E+00
		Ra-226	*-6.65 E+01	3.61 E+01
		Th-228	* 4.58 E+00	3.15 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102C Prior to Discharge	03/17/99	Be-7	*-7.50 E-01	1.74 E+01
		K-40	*-6.78 E+00	2.65 E+01
		Mn-54	* 3.79 E-01	1.89 E+00
		Co-58	* 1.26 E-01	1.84 E+00
		Fe-59	* 2.96 E-01	3.83 E+00
		Co-60	*-5.78 E-01	2.11 E+00
		Zn-65	*-1.38 E+01	4.42 E+00
		Zr-95	*-2.39 E-01	3.70 E+00
		Nb-95	* 0.00 E-01	1.86 E+00
		Cs-134	* 6.85 E-02	2.12 E+00
		Cs-137	* 1.20 E+00	2.15 E+00
		Ba-140	*-1.22 E+00	5.66 E+00
		La-140	* 5.16 E-01	2.36 E+00
		Ra-226	*-1.09 E+01	4.06 E+01
		Th-228	* 6.09 E+00	3.65 E+00
	03/17/99	Be-7	*-8.50 E+00	1.91 E+01
		K-40	*-5.55 E+01	4.31 E+01
		Mn-54	* 6.15 E-01	2.17 E+00
		Co-58	* 2.35 E+00	2.16 E+00
		Fe-59	* 2.24 E+00	4.35 E+00
		Co-60	* 3.26 E+00	2.36 E+00
		Zn-65	* 5.44 E+00	4.69 E+00
		Zr-95	* 9.74 E-01	4.33 E+00
		Nb-95	* 1.06 E+00	2.19 E+00
		Cs-134	* 4.46 E-01	2.41 E+00
		Cs-137	* 1.53 E+00	2.40 E+00
		Ba-140	*-1.01 E+00	6.16 E+01
		La-140	* 1.11 E+00	2.53 E+00
		Ra-226	* 3.57 E+01	4.12 E+01
		Th-228	* 8.05 E+00	3.60 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102C Prior to Discharge	06/23/99	Be-7	* 3.27 E+00	1.45 E+01
		K-40	*-9.62 E+00	2.21 E+01
		Mn-54	* 6.72 E-01	1.47 E+00
		Co-58	*-1.56 E-01	1.47 E+00
		Fe-59	*-9.58 E-01	2.79 E+00
		Co-60	* 0.00 E+00	1.45 E+00
		Zn-65	*-9.08 E-01	3.10 E+00
		Zr-95	*-2.59 E+00	3.08 E+00
		Nb-95	* 7.88 E-01	1.55 E+00
		Cs-134	* 4.50 E-01	1.64 E+00
		Cs-137	* 2.00 E+00	1.81 E+00
		Ba-140	*-2.44 E-01	4.74 E+00
		La-140	*-1.26 E+00	2.19 E+00
		Ra-226	* 5.71 E+00	3.91 E+01
		Th-228	*-4.99 E+00	3.29 E+00
	06/23/99	Be-7	* 2.76 E+00	1.50 E+01
		K-40	* 1.92 E+01	2.44 E+01
		Mn-54	* 1.55 E-01	1.43 E+00
		Co-58	*-2.16 E-01	1.47 E+00
		Fe-59	*-6.38 E-01	3.10 E+00
		Co-60	* 1.56 E+00	1.61 E+00
		Zn-65	*-2.21 E+00	3.34 E+00
		Zr-95	* 1.97 E+00	3.08 E+00
		Nb-95	* 1.49 E+00	1.69 E+00
		Cs-134	* 2.23 E-01	1.61 E+00
		Cs-137	* 3.46 E-01	1.76 E+00
		Ba-140	* 1.10 E+00	6.15 E+00
		La-140	*-1.90 E+00	2.64 E+00
		Ra-226	*-4.73 E+01	3.94 E+01
		Th-228	*-3.55 E+00	3.21 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102C Prior to Discharge	08/18/99	Be-7	* 6.60 E+00	1.83 E+00
		K-40	* 2.42 E+01	2.77 E+01
		Mn-54	* 1.24 E-01	1.70 E+00
		Co-58	* 1.02 E+00	1.91 E+00
		Fe-59	* 4.65 E-01	3.99 E+00
		Co-60	* 1.12 E+00	1.96 E+00
		Zn-65	*-4.80 E-01	4.14 E+00
		Zr-95	* 1.71 E+00	3.89 E+00
		Nb-95	* 1.39 E+00	1.92 E+00
		Cs-134	* 1.00 E+00	2.04 E+00
		Cs-137	* 9.90 E-01	2.08 E+00
		Ba-140	*-4.31 E+00	7.21 E+00
		La-140	* 0.00 E+00	3.00 E+00
		Ra-226	*-5.10 E+01	3.93 E+01
		Th-228	*-8.48 E-01	3.58 E+00
	08/18/99	Be-7	* 8.21 E+00	1.79 E+01
		K-40	*-4.05 E+01	2.77 E+01
		Mn-54	* 3.84 E-01	1.74 E+00
		Co-58	*-9.28 E-01	1.86 E+00
		Fe-59	*-4.76 E-01	3.69 E+00
		Co-60	*-1.43 E+00	1.97 E+00
		Zn-65	* 9.82 E-01	3.76 E+00
		Zr-95	* 2.92 E+00	3.88 E+00
		Nb-95	*-8.80 E-01	1.81 E+00
		Cs-134	*-1.25 E+00	2.13 E+00
		Cs-137	* 1.88 E+00	2.07 E+00
		Ba-140	* 1.27 E+00	6.79 E+00
		La-140	*-1.33 E+00	2.83 E+00
		Ra-226	* 2.59 E+01	4.51 E+01
		Th-228	*-1.17 E+00	3.79 E+00

* Denotes a result less than the detection limit.

TABLE B-10.1 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION PERIOD	NUCLIDE	RESULT	OVERALL UNCERTAINTY
102C Prior to Discharge	10/20/99	Be-7	*-4.83 E-01	2.09 E+01
		K-40	*-1.92 E+02	5.06 E+01
		Mn-54	*-6.12 E-01	2.05 E+00
		Co-58	*-1.91 E-01	2.20 E+00
		Fe-59	* 4.62 E-01	4.82 E+00
		Co-60	* 5.26 E-01	2.16 E+00
		Zn-65	* 8.24 E-01	4.94 E+00
		Zr-95	* 0.00 E+00	4.56 E+00
		Nb-95	*-2.67 E+00	2.28 E+00
		Cs-134	* 3.10 E-01	2.25 E+00
		Cs-137	* 2.32 E+00	2.37 E+00
		Ba-140	*-2.54 E+00	9.44 E+00
		La-140	*-2.70 E+00	3.53 E+00
		Ra-226	* 5.72 E+01	4.16 E+01
		Th-228	*-2.14 E+00	3.56 E+00
	10/20/99	Be-7	*-1.11 E+00	1.42 E+01
		K-40	*-5.82 E+00	2.77 E+01
		Mn-54	* 3.65 E-01	1.42 E+00
		Co-58	*-3.32 E-01	1.44 E+00
		Fe-59	* 9.76 E-01	3.09 E+00
		Co-60	* 9.82 E-01	1.43 E+00
		Zn-65	* 3.22 E-01	3.12 E+00
		Zr-95	*-4.28 E-01	3.05 E+00
		Nb-95	* 9.80 E-01	1.57 E+00
		Cs-134	*-1.38 E+00	1.60 E+00
		Cs-137	*-5.80 E-01	1.54 E+00
		Ba-140	* 2.74 E-01	6.48 E+00
		La-140	*-1.62 E+00	2.39 E+00
		Ra-226	*-4.63 E+01	2.85 E+01
		Th-228	*-5.16 E+00	2.49 E+00

* Denotes a result less than the detection limit.

TABLE B-10.2

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
			102A			
Be-7	(I)	2.55E+00	-8.36E+00	1.40E+01	12	0
K-40	(I)	-3.48E+01	-1.39E+02	3.96E+00	12	0
Mn-54	(I)	3.78E-01	-9.89E-01	1.74E+00	12	0
Co-58	(I)	-2.51E-01	-1.82E+00	5.60E-01	12	0
Fe-59	(I)	-2.03E-01	-2.69E+00	6.19E+00	12	0
Co-60	(I)	-1.13E-01	-1.81E+00	1.49E+00	12	0
Zn-65	(I)	3.02E-01	-6.46E+00	4.24E+00	12	0
Zr-95	(I)	1.61E-01	-3.02E+00	2.57E+00	12	0
Nb-95	(I)	1.02E+00	-4.62E-01	2.47E+00	12	0
Cs-134	(I)	-8.91E-01	-4.44E+00	3.98E+00	12	0
Cs-137	(I)	9.98E-01	-3.72E+00	4.83E+00	12	0
Ba-140	(I)	3.10E-01	-8.17E+00	8.47E+00	12	0
La-140	(I)	-9.52E-02	-2.53E+00	3.06E+00	12	0
Ra-226	(I)	-2.89E+01	-1.04E+02	3.21E+01	12	0
Th-228	(I)	-2.61E+00	-1.00E+01	4.58E+00	12	0

(I) Indicator Stations

TABLE B-10.2 (Cont.)

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE POSITIVE	LOW	HIGH	NUMBER SAMPLES	
102B - Monthly Headworks						
Year to Date Summary						
Be-7	(I)	-1.54E-01	-1.89E+01	9.81E+00	12	0
K-40	(I)	-4.89E+01	-1.68E+02	-6.90E+00	12	0
Mn-54	(I)	2.74E-01	-7.36E-01	1.13E+00	12	0
Co-58	(I)	-1.13E-01	-1.42E+00	2.18E+00	12	0
Fe-59	(I)	7.70E-01	-5.24E+00	4.43E+00	12	0
Co-60	(I)	1.22E-01	-1.19E+00	1.66E+00	12	0
Zn-65	(I)	-5.83E-02	-5.04E+00	3.18E+00	12	0
Zr-95	(I)	-3.19E-01	-1.74E+00	1.25E+00	12	0
Nb-95	(I)	9.47E-01	-5.37E-01	2.04E+00	12	0
Cs-134	(I	9.98E-02	-2.22E+00	1.82E+00	12	0
Cs-137	(I)	1.47E+00	-1.97E-01	3.82E+00	12	0
Ba-140	(I)	4.60E-01	-4.48E+00	6.08E+00	12	0
La-140	(I)	-4.80E-01	-8.63E+00	3.38E+00	12	0
Ra-226	(I)	-4.71E+01	-1.61E+02	3.37E+01	12	0
Th-228	(I)	-1.60E+00	-9.29E+00	4.58E+00	12	0

(I) Indicator Stations

TABLE B-10.2

GAMMA SPECTROMETRY OF SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
102C - Prior to Discharge						
Be-7	(I)	1.25E+00	-8.50E+00	8.21E+00	8	0
K-40	(I)	-3.34E+01	-1.92E+02	2.42E+01	8	0
Mn-54	(I)	2.60E-01	-6.12E-01	6.72E-01	8	0
Co-58	(I)	2.09E-01	-9.28E-01	2.35E+00	8	0
Fe-59	(I)	2.96E-01	-9.58E-01	2.24E+00	8	0
Co-60	(I)	6.80E-01	-1.43E+00	3.26E+00	8	0
Zn-65	(I)	-1.23E+00	-1.38E+01	5.44E+00	8	0
Zr-95	(I)	5.40E-01	-2.59E+00	2.92E+00	8	0
Nb-95	(I)	2.70E-01	-2.67E+00	1.49E+00	8	0
Cs-134	(I)	-1.66E-02	-1.38E+00	1.00E+00	8	0
Cs-137	(I)	1.21E+00	-5.80E-01	2.32E+00	8	0
Ba-140	(I)	-8.35E-01	-4.31E+00	1.27E+00	8	0
La-140	(I)	-8.98E-01	-2.70E+00	1.11E+00	8	0
Ra-226	(I)	-3.87E+00	-5.10E+01	5.72E+01	8	0
Th-228	(I)	-4.65E-01	-5.16E+00	8.05E+00	8	0

(I) Indicator Stations

TABLE B-11.1

TRITIUM IN SANITARY WASTE TREATMENT WATER

Results in pCi/liter

LOCATION	COLLECTION DATE	RESULT	OVERALL UNCERTAINTY
	FFTF-Effluent		
H-3 102A	01/05/99-02/03/99	4.9 E+03	2.0 E+02
	02/03/99-03/02/99	4.3 E+03	2.0 E+02
	03/02/99-04/06/99	4.8 E+03	2.0 E+02
	04/06/99-05/04/99	4.7 E+03	2.0 E+02
	05/04/99-06/02/99	4.4 E+03	2.0 E+02
	06/02/99-07/07/99	4.1 E+03	2.0 E+02
	07/07/99-08/03/99	4.1 E+03	2.0 E+02
	08/03/99-09/01/99	3.8 E+03	2.0 E+02
	09/01/99-10/05/99	4.5 E+03	3.0 E+02
	10/05/99-11/02/99	4.8 E+03	3.0 E+02
	11/02/99-12/01/99	4.4 E+03	3.0 E+02
	12/03/99-01/04/00	4.3 E+03	2.0 E+02
	Monthly Headworks		
H-3 102B	01/20/99	5.5 E+02	1.3 E+02
	02/24/99	1.1 E+03	1.0 E+02
	03/17/99	4.1 E+02	1.1 E+02
	04/21/99	* 1.1 E+02	1.2 E+02
	05/19/99	1.9 E+02	1.0 E+02
	06/23/99	2.4 E+02	1.0 E+02
	07/21/99	2.1 E+02	1.0 E+02
	08/18/99	* 1.2 E+02	1.0 E+02
	09/22/99	1.8 E+03	2.0 E+02
	10/20/99	4.8 E+02	1.7 E+02
	11/17/99	2.7 E+02	1.0 E+02
	12/15/99	2.3 E+03	2.0 E+02
	Prior to Discharge		
H-3 102C	03/17/99	9.4 E+02	1.4 E+02
	03/17/99	8.6 E+02	1.3 E+02
	06/23/99	9.2 E+02	1.2 E+02
	06/23/99	8.0 E+02	1.2 E+02
	08/18/99	4.2 E+02	1.2 E+02
	08/18/99	3.8 E+02	1.1 E+02
	10/20/99	5.5 E+02	1.8 E+02
	10/20/99	5.1 E+02	1.7 E+02

* Denotes a result less than the detection limit.

TABLE B-11.2 (Cont.)

TRITIUM IN SANITARY WASTE TREATMENT WATER - SUMMARY

Results in pCi/liter

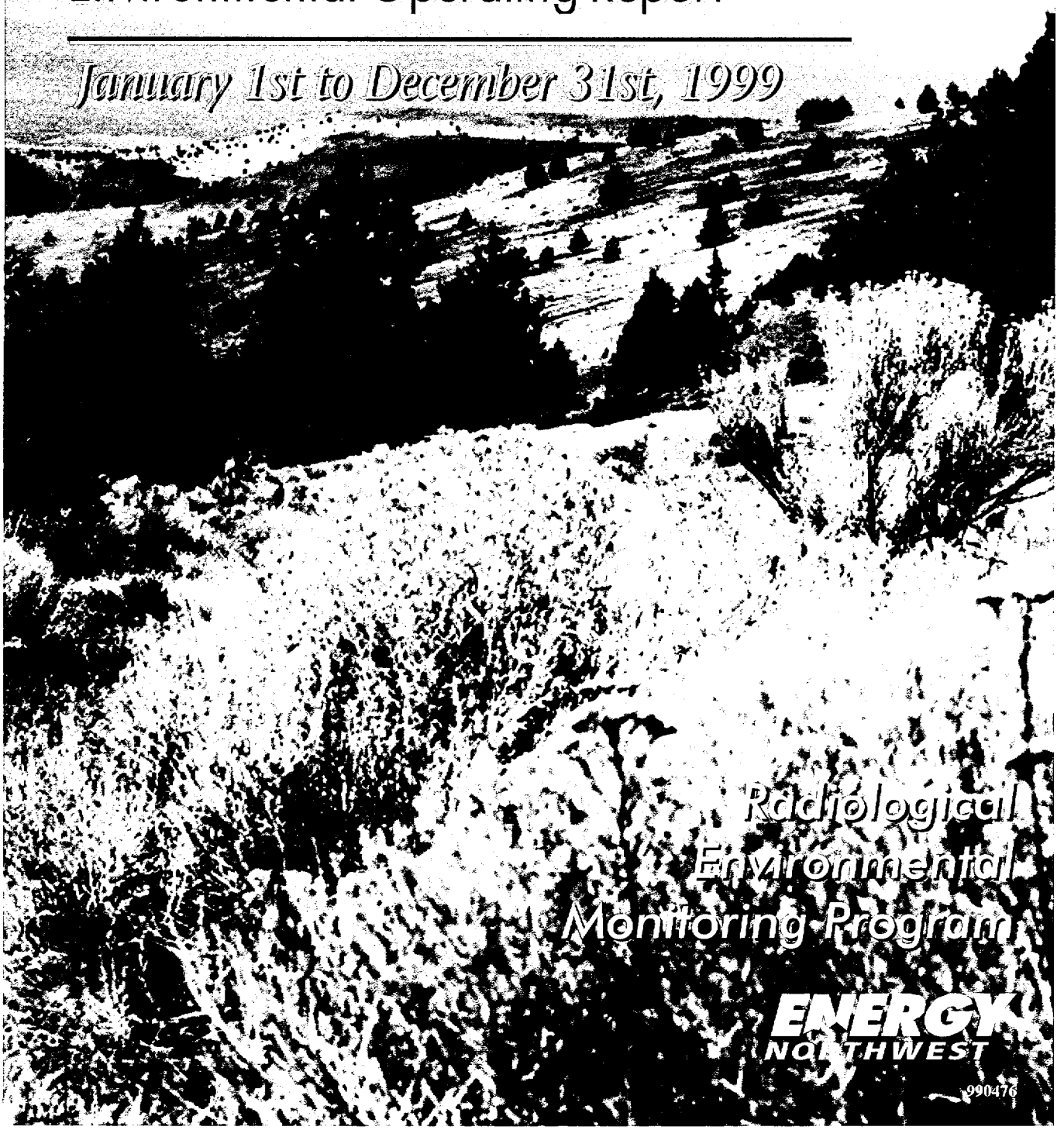
NUCLIDE		AVERAGE	LOW	HIGH	NUMBER SAMPLES	NUMBER POSITIVE
All Samples						
H-3	(I)	2.07E+03	1.1E+02	4.9E+03	32	30
FFTF Effluent						
H-3 102-A	(I)	4.43E+03	3.8E+03	4.9E+03	12	12
Monthly Headworks						
H-3 102-B	(I)	6.48E+02	1.1E+02	2.3E+03	12	10
Prior to Discharge						
H-3 102-C	(I)	6.73E+02	3.8E+02	9.4E+02	8	8

(I) Indicator Stations

ENERGY NORTHWEST
NUCLEAR PLANT 2

1999 Annual Radiological Environmental Operating Report

January 1st to December 31st, 1999



ENERGY NORTHWEST

NUCLEAR PLANT 2

1999 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

JANUARY 1 to DECEMBER 31, 1999

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Prepared by

J.E. McDonald and L.S. Schleder
Energy Northwest
Richland, WA

and

C.A. Mendola
Teledyne Brown Engineering Environmental Services
Westwood, NJ

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

1.0 EXECUTIVE SUMMARY

The Energy Northwest Radiological Environmental Monitoring Program (REMP) evaluates the radiological impact of Plant 2 operations on the environment in the Airborne, Direct Radiation, Waterborne, and Ingestion pathways as specified in the Offsite Dose Calculation Manual (ODCM). Samples are also collected at locations specified by the Site Certification Agreement (SCA) with the State of Washington Energy Facility Site Evaluation Council (EFSEC). Energy Northwest's Plant 2 is a 1200 MW commercial nuclear power plant that achieved initial criticality on January 19, 1984*.

Prior to 1999, Plant 2 was on an annual refueling cycle. The outages usually occurred from the middle of April to early June. In 1999, the decision was made to transition to a 24 month refueling cycle. To make the transition, Plant 2 experienced two outage periods in 1999. The first outage was a dispatch/maintenance outage in the April to June period. The second outage was the one-month refueling outage in September and October. The next refueling outage is scheduled for spring of 2001 and then biennially afterwards.

Samples of air, water, milk, soil, sediment, fish and garden produce were collected throughout the year and analyzed for radionuclides specific to plant operations. Radiation levels were also monitored continuously during 1999 with thermoluminescent dosimeters (TLDs).

The samples were collected in established areas near the plant and at other locations that could be affected by Plant 2 effluents. This information was compared to samples taken in areas that were unlikely to be affected by plant operations. The 1999 REMP data was also compared to data collected during previous years of plant operation and to the data collected prior to initial plant operation.

Most of the results of samples collected by the REMP during 1999 were below detection levels. Some analyses, such as gross beta in air and water, were above the detection level for nearly all samples. This is due to the low detection limit for the gross beta analysis and to the abundance of beta-emitting radionuclides that occur naturally in the environment. Other results above detection levels, such as cesium-137 in soil and sediment, reflect the effect of past Hanford activities or fallout from Chernobyl and past nuclear weapons testing.

Tritium and other radionuclides in river/drinking, well and discharge water were in concentrations below detectable levels. During 1999, Plant 2 did not have a liquid radwaste discharge to the Columbia River.

The REMP analytical results and TLD results were demonstrated to be accurate through intercomparison programs, which are provided as part of the quality assurance activities, conducted during 1999. Such intercomparisons tested the performance of Energy Northwest's monitoring program to other monitoring programs using known radioactive standards. Energy Northwest's

* In April 2000, Energy Northwest changed the name of the power plant to Columbia Generating Station. Future reports will use the new name.

REMP analytical contractor performed well in the Environmental Measurements Laboratory (EML) Quality Assessment Program, the Analytics, Inc. Cross Check Comparison Program and other intercomparison studies conducted during 1999.

The analytical results from samples collected by the REMP in 1999 remained consistent with the results of environmental samples collected during the preoperational period and prior operational years. Based on the data, no significant new trends or changes in the environmental radiological levels around the plant were observed.

2.0 DEFINITIONS

2.0 DEFINITIONS

Airborne Activity Sampling: Continuous sampling of air through the collection of particulates and radionuclides on filter media.

Periodic soil samples are collected for gamma isotopic analysis to provide information on deposition to the soil from airborne releases.

Alpha Particle (α): A charged particle emitted from the nucleus of an atom having a mass and charge equal in magnitude of a helium nucleus.

Becquerel (Bq): One disintegration per second. One picocurie (pCi) equals 0.037 becquerel.

Beta Particle (β): Charged particle emitted from the nucleus of an atom, with a mass and charge equal in magnitude to that of an electron.

Blank Sample: A sample of the same media as the field sample being analyzed but without the radionuclide(s) being measured. It enables correction for the inherent sample background.

Composite Sample: A series of single collected portions (aliquots) analyzed as one sample. The aliquots making up the sample are collected at time intervals that are very short compared to the composite period.

Control Station: A background sampling location, i.e., a location not likely to be affected by plant effluents due to its distance and/or direction from Plant 2.

Counting Error: An estimate of the two-sigma uncertainty associated with the sample results based on respective count times.

$$+/-2\sqrt{(SampleCPM\ /\ CountTime + BkgCpm\ /\ CountTime)}$$

Curie (Ci): 3.7×10^{10} disintegrations per second, or 2.22×10^{12} disintegrations per minute.

Direct Radiation Monitoring: The measurement of radiation dose at various distances from the plant is assessed using thermoluminescent dosimeters and pressurized ionization chambers.

DOE: U.S. Department of Energy

DOH: Washington State Department of Health.

EFSEC: Energy Facility Site Evaluation Council.

FFTF: U.S. Department of Energy's Fast Flux Test Facility near Plant 2. Also known as the 400 Area.

Flow Proportional Sampling: Sample collection volume or frequency determined as a function of the flow rate of the water being sampled.

Grab Sample: A single discrete sample drawn at one point in time.

Indicator Station: A sampling location that could be affected by plant effluents due to its proximity and/or direction from Plant 2.

Ingestion Pathway Monitoring: The ingestion pathway includes milk, soil, fish, and garden produce. Also sampled (under special circumstances) are other media such as vegetation and animal products such as eggs and meat when additional information about particular radionuclides is needed.

Lower Limit of Detection (LLD): The smallest concentration of radioactive material in a sample that will yield a net count (above system background) that will be detected with 95% probability with a 5% probability of a false conclusion that a blank observation represents "real" signal.

Mean: The average, i.e., the sum of results divided by the number of results.

Microcurie: 3.7×10^4 disintegrations per second, or 2.22×10^6 disintegrations per minute.

Milliroentgen (mR): 1/1000 Roentgen; a unit of exposure to X or gamma radiation.

NIST: National Institute of Standards and Technology.

NPDES: National Pollutant Discharge Elimination System

NRC: U.S. Nuclear Regulatory Commission.

ODCM: Offsite Dose Calculation Manual. Licensing document that contains the program

requirements formerly contained in the Technical Specifications.

Picocurie (pCi): 1 x 10^{-12} Curie or 2.22 disintegrations per minute; one millionth of a microcurie.

REMP: Radiological Environmental Monitoring Program.

Range: The difference between the smallest and largest results.

Restricted Area: Any area to which access is controlled for purposes of protection of individuals from exposure to radiation and radioactive materials.

Results: The results of sample collection are discussed and interpreted by comparing them to similar measurements made during the preoperational and previous operational periods and to the detection capabilities associated with the current methods of analysis.

Roentgen: Unit of exposure to X or gamma (γ) radiation in air.

Site Certification Agreement (SCA): The Plant 2 licensing agreement with the State of Washington.

Spike Sample: A sample containing a known concentration of the radionuclide(s) being measured.

Standard Deviation: A measure of the scatter of a set of observations (or samples) around their mean value. Indicated by "σ".

Standard Error of the Mean: An estimate of the uncertainty associated with the mean of observation (or sample) averages.

$$SE = \sqrt{\frac{S^2}{n}}$$

where S^2, the variance is

$$S_m^2 = \frac{1}{(n-1)} \sum^n (Xi - X)^2$$

SWTF: Sanitary Waste Treatment Facility; sanitary waste processing facility for Plant 2, WNP-1 and Department of Energy's 400 area.

TEDA: triethylene diamine

Thermoluminescent Dosimeter (TLD): A TLD contains a phosphor that stores energy from exposure to radiation and emits that energy in the form of light when heated.

3.0 INTRODUCTION

3.0 INTRODUCTION

3.1 Site Description

Energy Northwest's Nuclear Plant 2 is located in a sparsely populated shrub-steppe region within the Department of Energy's Hanford Site in southeastern Washington. The plant is approximately three miles west of the Columbia River and is surrounded on all sides by uninhabited desert land. The nearest population centers are Richland, Pasco and Kennewick, which are 12 miles south, 18 miles southeast, and 21 miles southeast, respectively. The nearest privately owned lands are located approximately four miles ENE of the plant, across the Columbia River. Given the prevailing wind directions, shown in the 1999 wind frequency distribution in Figure 3-1, the focus of REMP sampling is the farming region east of the plant site.

Because Plant 2 is located on the Hanford Site, other potential sources of radioactive materials are in close proximity to Plant 2. For this reason, sampling locations near the plant provide useful information for separating the potential effects of Plant 2 from those of the other sources on the Hanford Site.

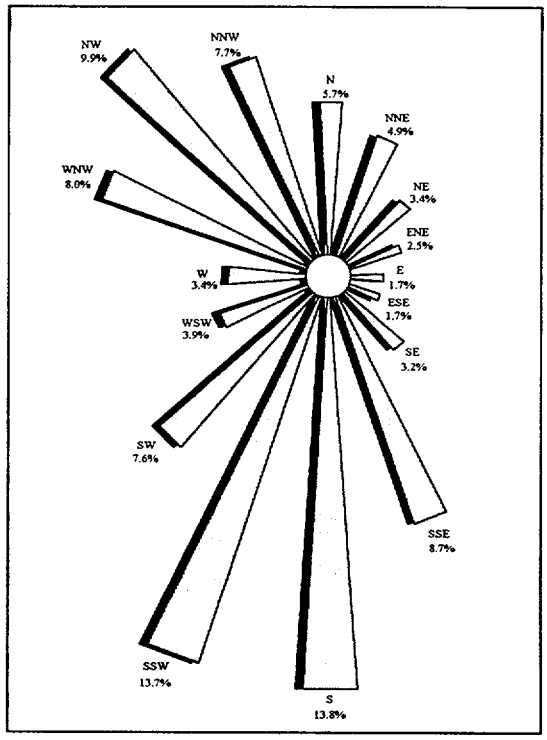


Figure 3-1 Average Wind Direction During 1999

3.2 Program Background

The REMP is designed to conform to the regulatory guidance of the Nuclear Regulatory Commission (NRC) as provided by Regulatory Guides 4.1[1] and 4.8[2], including the Radiological Assessment Branch Technical Position[3].

The quality assurance aspects of the program and the thermoluminescent dosimetry are conducted in accordance with Regulatory Guides 4.15[4] and 4.13[5]. The REMP also must adhere to the requirements of the Washington Energy Facility Site Evaluation Council (EFSEC)[6], the Plant 2 Technical Specifications[7] and the Offsite Dose Calculation Manual (ODCM)[8]. These requirements cover not only the environmental sampling and sample analysis aspects of the program, but also the reporting and quality assurance requirements of the program.

The preoperational phase of the program, which lasted from March 1978 until initial criticality in January 1984, provided a baseline of background environmental data. The variability in the background levels of radioactivity is due to differences in geologic composition, Chernobyl and nuclear weapons test fallout, meteorological conditions and seasonal changes.

REMP environmental samples are analyzed by a contract analytical laboratory. Teledyne Brown Engineering Environmental Services in Westwood, New Jersey has performed the analysis of REMP samples since June 1986. The thermoluminescent dosimeters used in the REMP to assess the direct radiation were processed in the past by Energy Northwest. In 1996, the processing of the environmental TLDs was contracted to ThermoNUtech. In 1997, Battelle Pacific Northwest Division became the environmental TLD processor. The TLDs are processed at their Richland, Washington laboratory.

Any radiological effect of Plant 2 on the environment must be distinguished from the normal variation in background radiation levels and from the effects of other sources of radioactive effluents in the area. The monitoring results obtained during each year of the plant's operation are compared to the preoperational data and to data from previous operating years to determine whether a significant accumulation of plant-produced radionuclides has occurred in the environment.

Quarterly averages of the results are also compared to the NRC non-routine reporting levels listed in the ODCM. In addition to evaluating the environmental concentrations against federal standards or limits, the REMP also compares the results to state standards[11, 12, 13]. The results are discussed and interpreted by comparing them to similar measurements made during the preoperational and previous operational periods and to the detection capabilities associated with the current methods of analysis. The quality assurance and quality control aspects of the program are also discussed in this report.

3.3 Program Objectives

The REMP provides a mechanism for determining whether the levels of radioactivity in the plant environs are within established limits and to ensure that the accumulation of radionuclides in the environment will not become significant as a result of plant operations.

While in-plant monitoring programs are used to ensure that 10CFR20[9] and 10CFR50[10] criteria for releases of radioactive effluents are met, the REMP provides supplemental verification that the concentrations of radionuclides in the environment are not greater than anticipated.

4.0 PROGRAM DESCRIPTION

4.0 PROGRAM DESCRIPTION

The requirement for the Radiological Environmental Monitoring Program (REMP) is defined by the WNP-2 Offsite Dose Calculation Manual (ODCM). The sampling plan presented in Table 4-1 in this report shows which samples are required by the ODCM and the Site Certification Agreement (SCA). The table also provides a summary of the sample locations, collection frequency, and types of analyses performed. The methods of sampling and sampling frequencies utilized in the program have been determined by such factors as the half-lives and major exposure pathways for the radionuclides potentially released from the plant to the surrounding environment.

4.1 Sample Locations

Eighty-three sample locations were included in the 1999 monitoring program. Seventy-eight indicator and two control (i.e. background) stations were located within 10 miles (16 kilometers) of Plant 2. Three additional control stations and two indicator stations were outside the 10-mile radius from the plant. Sample stations are listed in Table 4-2 by meteorological sector, sample media and approximate distance from the plant. The numbers and locations of sample stations are based primarily on factors such as population distribution and meteorological conditions and also on station accessibility, security, and the requirements of applicable regulations. Other factors, such as the need to monitor locations which could be impacted by Plant 2 operations, influence the location of REMP sampling sites.

The REMP sampling locations listed in Tables 4-1 and 4-2 are shown in Figures 4-1 and 4-2. Figure 4-3 provides a more detailed map of sampling locations in the Sunnyside/Grandview area. Figure 4-4 shows the relative locations of the storm drain outfall and pond (Station 101) and the Sanitary Waste Treatment Facility (Station 102). Also shown are the cooling tower landfill (Station 119B and Station 119-Control), and the spray pond drainfield (Station 120) which are special interest stations.

4.2 Land Use Census

The land use census for areas within 5 miles of Plant 2 was performed in August. The objectives of the land use census are to identify the locations of the nearest milk animal, residence, and garden greater than 50 m^2 (500 ft^2) producing broadleaf vegetation. This information is used to determine whether any site located during the census has a calculated dose or dose commitment greater than the sites currently monitored for the same exposure pathway. If a new location with a higher dose commitment is found, routine sampling of that dose pathway would be initiated at that new site.

The results of the 1999 land use census within 5 miles of Plant 2 are given in Table 4-3. No changes from the 1998 land use census were observed. No milk animals are located within the 5-mile radius. The nearest milk location is located 7.2 miles east-southeast of Plant 2.

4.3 Sampling Methods

Energy Northwest personnel collected environmental samples in accordance to the program plan in Table 4-1. Documented procedures for sample collection and TLD handling are contained in the departmental instruction manual. The analytical contractor prepares and maintains the sample analyses procedures. Energy Northwest receives copies of the analytical procedures used.

The following sections describe the sampling and preparation methods.

4.3.1 Direct Radiation

During 1999, thermoluminescent dosimeters (TLDs) were used to determine the direct radiation levels at sixty (60) monitoring locations listed in Table 4-1. Control station TLDs (background) are located at Station 9A in Sunnyside and Station 119-Control, 0.2-mile south-southeast of the plant. The remaining TLDs served as indicator TLDs throughout the year.

Two sets of TLDs placed approximately three feet above ground were employed at each location. One set of TLDs were exchanged on a quarterly basis (Quarterly TLDs) and the other exchanged on an annual basis (Annual TLDs). Exposure received by the field TLDs during transport to the TLD sites was monitored by a set of trip control dosimeters that accompanied the field dosimeters to and from the field locations. Another set of TLDs was used as building controls that were used to determine the exposure of the TLDs at the controlled storage location. The TLD exposure during transport to and from the field was determined by subtracting the difference between the building control results and the trip control results.

Since 1995, the REMP has used Harshaw Model 8807 TLDs. Battelle Pacific Northwest Division took over the program in 1997 and processes the environmental dosimeters on a Harshaw Model 8800 Hot Gas TLD Reader. This reader is calibrated weekly and immediately prior (same day) to processing environmental TLDs. The reader is calibrated in generic units (gU) using calibration dosimeters irradiated to known exposures of Cs-137. Each group of environmental TLDs that is processed includes "blank" unirradiated TLDs and processing control dosimeters irradiated by Battelle to a known quantity of Cs-137. In addition, "blind spiked" irradiated TLDs are submitted by Energy Northwest for processing along with the environmental TLDs. The processing results from these QA TLDs are used to demonstrate reader performance during environmental TLD processing and to trend reader performance over time.

A file containing "raw" element readings in gU is generated when the Harshaw TLD reader processes the environmental TLDs. This file is used by Energy Northwest to calculate environmental doses. "Relative response" factors (gU/R) are applied to convert the element 3 and 4 TLD readings to the Roentgen equivalent reading, then subtracting background and transit doses measured by control TLDs. Since the TLD reader is calibrated to provide 1 gU = 1 mR, reported doses are the background corrected average of the element 3 and 4 readings for each station. Doses are reported in mR, no correction to dose equivalent is applied.

The exposure values determined for calibration dosimeters, as well as the exposures of QA dosimeters (processing control dosimeters), are based on a National Institute of Standards and Technology (NIST) traceable Cs-137 source. The exposure values for the audit dosimeters (spiked

dosimeters) are based on the calculated field strength of an Energy Northwest Cs-137 source. Ionization chamber measurements made during TLD exposure are used to confirm the calculated exposure. If the calculated exposure and the ionization chamber reading differ by 5% or more, an investigation is performed to resolve the difference.

Two Reuter Stokes pressurized ionization chambers (PICs) provided additional capability for measuring direct radiation exposure. These units are no longer part of the routine monitoring program, but they are used in special monitoring situations and maintained as back-up monitoring systems.

4.3.2 Airborne Particulate/Iodine

Air particulate and air iodine (I-131) samples were obtained through the use of portable, low volume (1.5 cfm) constant flow-rate sampling units at each of twelve locations. The samples drawn at Station 9A (Figure 4-3) were considered control samples; the ones drawn at the other locations (Figure 4-1) were indicator samples. Air particulate samples were collected by drawing air through a 47mm diameter glass fiber filter. Air iodine samples were collected by drawing air through a 57mm diameter TEDA impregnated charcoal cartridge. The particulate air filter and charcoal cartridge were placed in tandem, particulate filter first, in a holder that attached to the air inlet of the sampler unit. The sampler units were placed in ventilated metal weatherproof housings mounted on elevated platforms at each air sample location. The filter media are changed weekly and shipped to the analytical contractor for analysis within one or two days of collection.

4.3.3 Water

There were eight locations for water sampling in 1999: two for the evaluation of river/drinking water, one for plant discharge water, three for groundwater, one for the storm drain water, and one for sanitary waste water. One river/drinking water location, Station 26, was used for evaluation of the plant intake water. This sample location is also used for a drinking water sample since Plant 2 draws its drinking water from the intake water. It is the river/drinking water control sample because of its location upstream of the plant discharge. Station 29, was used to evaluate the water at the nearest drinking water location, the Richland Water Treatment Plant. This station is the indicator station for river/drinking water. Sampling of Station 28, another river/drinking water station located at DOE's 300 Area, was terminated in January after drinking water for the 300 Area began to be supplied by the City of Richland.

The ODCM requirement for a downstream water sample "near but beyond the mixing zone" was met by sampling water from Station 27, the plant discharge line to the Columbia River. This sample reflects the radioactivity present in the plant discharge prior to any river dilution, rather than the concentrations that would be found after dilution in the mixing zone. Water is drawn at this location because it was not feasible to perform flow-proportional composite sampling in the mixing zone area of the river downstream from the plant discharge point. The Station 27 sample is also an indicator sample.

Composite samplers are installed at the Columbia River pumphouse to monitor the plant intake water (Control Station 26), and the cooling tower discharge line (Station 27). There is also a composite sampler at the other drinking water location (Stations 29). The samplers collect 25-ml

aliquots of water at regular intervals of time or flow. Non-routine analyses of the drinking water samples include strontium-90 and iodine-131 analysis. Strontium-90 analysis is required when the gross beta activity exceeds either 8 pCi/liter or ten times the mean of the previous three months' activity for a specific location. Iodine-131 analysis is required when the dose calculated for the consumption of water exceeds one millirem per year. During 1999, neither of these analyses was required.

There are three wells within the vicinity of Plant 2 that are used as groundwater sampling locations. These are a deep well on the Plant 2 site (0.1 mile north of the Reactor Building) and two wells on the WNP-1 site (1.2 miles downgradient from Plant 2). Water from the Plant 2 well can be used as a backup source for drinking and fire protection. Water from the WNP-1 wells supplies the drinking and fire protection water for the WNP-1 site. Although none of these wells draw from the unconfined aquifer, they are considered indicator samples. Quarterly grab samples were collected from each of these wells. One gallon (3.8 liters) was collected from each well for gamma analysis and one liter was drawn for tritium analysis.

Water samples were collected from the storm drain outfall (Station 101) using a flow proportional composite sampler. These samples were analyzed for gross beta, gamma and tritium. EFSEC Resolution No. 259[15] for the Sanitary Waste Treatment Facility (SWTF; Station 102) requires a monthly sample to be collected at the headworks (102B) which was analyzed for gamma and tritium and two samples prior to discharge (102C) which were collected at the discharge weir of the south pond. Those samples were analyzed for gross alpha, gross beta, gamma and tritium. Grab samples were taken from the west end of the ponds until 1999, when it was discontinued due to the monthly sampling at the headworks.

Since April of 1997, the SWTF has been receiving sanitary waste from the DOE's 400 Area. Energy Northwest installed a flow meter and composite sampler on the 400 Area sewer line just above where the 400 Area/Plant Support Facility (PSF) intertie is located. This sampler (Station 102A) takes a flow-proportional composite sample that is collected and analyzed monthly. Gross alpha and beta analysis, tritium analysis, and gamma analysis were performed on each sample.

4.3.4 Soil

As required by the Site Certification Agreement (EFSEC Resolution No. 260[6]), annual soil sample collection was done at the indicator stations, Stations 1, 7, 21 and 23. One sample was collected at the control location, Station 9A (Figure 4-3). Soil samples were also collected at Station 101 as shown in Figures 4-4.

Each sample was collected from an area of approximately one square foot to a depth of approximately one-inch. Approximately two kilograms of soil were collected in each sample. Soil samples were shipped to the analytical contractor after collection and analyzed for gamma activity.

If the gamma isotopic analysis indicates that cesium levels in any of the indicator samples exceeds ten (10) times the level in the control sample, a strontium analysis is performed on the sample(s). No strontium analysis was required during 1999.

4.3.5 Sediment

The collection of river sediment samples occurred in October. The collection of the upstream sediment sample (Station 33) was from a location approximately two miles upriver from the plant discharge. The downstream sample (Station 34) was collected approximately one mile downstream of the plant discharge. Each sample consisted of approximately two kilograms of the shallow surface sediment scooped from below the waterline. The samples were shipped to the analytical contractor.

Sediment samples were also collected from the storm drain (Station 101) outfall and pond and the SWTF (Station 102) north stabilization pond. Sediment sampling in these locations was performed in a manner similar to river sediment sampling. Special care was taken to prevent loss of the fine particulates in the sediment. In addition, formalin was added to the sanitary pond sediment prior to shipping, to inhibit gas formation within the sample container.

A 2-kilogram sample of dried cooling tower sediment was collected from the sediment disposal cell (Station 119) within thirty days of the completion of cleaning the cooling towers. In 1999, the cooling towers were cleaned once, hence, only one sample was collected for gamma spectrometry analysis.

4.3.6 Fish

The annual fish sampling was performed in late September and early October. Fish samples collected from the Columbia River (Station 30 in Figure 4-1) were indicator samples, whereas the fish collected on the Snake River (Stations 38 and 38A in Figure 4-2) were control samples.

Three separate fish samples, consisting of an anadromous species and two other species generally considered edible or potentially edible (such as carp, catfish and whitefish) were collected at each location. The fish were collected using electro-shocking except the samples of the anadromous species, which were collected from the Ringold hatchery on the Columbia River and at the Lyons Ferry Fish Hatchery on the Snake River. The fish were filleted to obtain approximately one kilogram of edible flesh per sample. The fillets were placed in clean plastic bags and frozen until shipment to the analytical contractor. Fish are sampled annually unless elevated radiation levels related to plant operations are observed, in which case sampling is conducted semiannually.

4.3.7 Milk

Milk samples were collected monthly January through March and October through December and twice a month during the spring and summer months when the cows were likely to be grazing or on fresh feed. Enough raw milk was collected from each sampling location to obtain a one-gallon sample after the cream had been skimmed off. The samples were refrigerated overnight and the cream skimmed off the next morning. The milk samples were chilled and shipped to the analytical contractor within a day of collection.

Routine samples were collected from two indicator locations (Stations 36 and 64) across the Columbia River in Franklin County. Milk samples were also collected at one indicator station

(Station 9B) in the Sunnyside/Grandview area (in Figure 4-3). Station 9B in Sunnyside serves as an indicator station because a portion of the feed for the cows at that location is hay from Franklin County north of Pasco. That factor makes it unsuitable for use as a control location. Beginning in August 1998, samples of feed grown at Station 9B were collected monthly as a substitute for the lost control station, which ceased operation in March 1998. Other dairies in the area have been checked for suitability as a new control location and were eliminated due to their use of feed grown in the Franklin County area, which is downwind from Plant 2.

4.3.8 Garden Produce

Samples of local garden produce were collected monthly from April to September when the produce was readily available. When possible, three types of produce samples (a root crop, fruit, and a leafy vegetable) were collected at each location. The indicator samples were collected from a region in a predominant downwind direction (Station 37 in Figure 4-2) where crops are irrigated with Columbia River water. The control samples were obtained from produce stands in the Sunnyside area (Station 9C in Figure 4-3), the direction least likely to be affected by plant effluents. Apples were collected in September from Station 91, the Rio Vista Farms orchard, which is irrigated with Columbia River water.

4.4 Analytical Procedures

Described below are the analytical procedures used for analysis of the 1999 REMP samples. Teledyne Brown Engineering Environmental Services performed all routine analyses of REMP samples during 1999.

4.4.1 Gross Beta Activity on Particulate Filters

The particulate filters were counted in a gas flow-proportional counter after a delay of five or more days to allow for the radon-222 and radon-220 (thoron) daughter products to decay. An unused air particulate filter was counted as the blank with each weekly set of filters.

4.4.2 Measurement of Gamma Emitters

A shielded Ge(Li) detector system was coupled to a computer-based data acquisition system which performed pulse height and gamma energy analysis. The information collected about each peak was compared to a library of known peaks. Isotopic identification was performed, as was the radioactivity calculation, using the appropriate fractional gamma ray abundance, half-life, detector efficiency, and net counts in the peak region.

Milk and Water

A 1-liter Marinelli beaker was filled with a representative aliquot of the sample. The sample was then counted for at least 1000 minutes (16.7 hours).

Foodstuff

As much of the edible portion of the sample as possible was loaded into a tared Marinelli beaker and weighed. The sample was then counted for at least 1000 minutes (16.7 hours).

Vegetation

As much sample as possible was placed in a 1-liter Marinelli beaker and counted for approximately 1000 minutes (16.7 hours). The sample was not dried prior to counting, so the results are given in terms of wet weight.

Soils and Sediments

A large quantity of the sample was dried at a temperature below 100°C. As much sample as possible was loaded into a tared 1-liter Marinelli beaker and weighed. The sample was then counted for at least 360 minutes (6 hours).

Charcoal Cartridges (Air Iodine)

Charcoal filters were counted up to five at a time, with one positioned on the face and up to four on the side of the calibrated Ge(Li) detector. The detection limit for a charcoal cartridge was uniquely determined for each filter and by using its position. In the event that iodine-131 would have been observed in the initial counting of a set, each charcoal cartridge in the set was then positioned separately on the face of the detector and counted.

Air Particulate Filters

Four air particulate filters for a quarterly composite from each field station were aligned one in front of another and counted for at least 360 minutes (6 hours).

4.4.3 Gross Beta Activity in Water

A one-liter aliquot of each sample was evaporated to a small volume and transferred to a stainless steel planchet. The sample was dried under heat lamps, cooled, then counted on an automatic beta proportional counter. The results were calculated using empirical self-absorption curves, which enabled the correction of effective counting efficiency, based on the sample residue mass.

4.4.4 Iodine-131 in Water

Two liters of sample were first equilibrated with a stable iodide carrier. A batch treatment with anion exchange resin was used to remove iodine from the sample. The iodine was then stripped from the resin with sodium hypochlorite solution, reduced with hydroxylamine hydrochloride, and extracted into carbon tetrachloride as free iodine. It was then back-extracted as iodide into a sodium bisulfite solution and precipitated as palladium iodide. The precipitate was weighed for chemical yield and mounted on a nylon planchet for low-level beta counting. The chemical yield was corrected by measuring the stable iodide content of the water with a specific ion electrode. During 1999, this procedure was used only on intercomparison samples, since the doses calculated via ODCM methodology for the consumption of drinking water did not exceed one millirem per year.

4.4.5 Tritium in Water

The analysis of tritium in water was performed utilizing liquid scintillation. Liquid scintillation requires 10 milliliters of water mixed with 10 milliliters of liquid scintillation "cocktail." The mixture was then counted in an automatic liquid scintillation detector.

4.4.6 Strontium-89 and 90 in Water, Milk and Soil

During 1999, strontium analyses were not required for any routine REMP water, milk or soil samples. It was used for intercomparison water and sediment analyses. The techniques used to analyze for strontium in the various media are described below.

Water

Stable strontium carrier was added to one liter of sample and the volume is reduced by evaporation. Strontium was precipitated as $Sr(NO_3)_2$ using fuming (90%) nitric acid.

Milk

Stable strontium carrier was added to one liter of sample. The sample was then evaporated and ashed in a muffle furnace. The ash was dissolved and strontium precipitated as a phosphate. The sample was then redissolved and strontium precipitated as $Sr(NO_3)_2$ using fuming (90%) nitric acid.

Soil and Sediment

The sample was first dried under heat lamps and a 10-gram aliquot was taken. Stable strontium carrier was added and the sample was leached in hydrochloric acid. After filtering the mixture, phosphates were then precipitated, collected by filtration, and dissolved in nitric acid. Strontium was precipitated as $Sr(NO_3)_2$ using fuming (90%) nitric acid. A barium chromate scavenge and an iron (ferric hydroxide) scavenge were then performed. Stable yttrium carrier was added and the sample was allowed to stand for five days or more for yttrium ingrowth. Yttrium was then precipitated as hydroxide, dissolved and reprecipitated as oxalate. The yttrium oxalate was mounted on a nylon planchet and counted in a low-level beta counter to infer strontium-90 activity. Strontium-89 activity was determined by precipitating $SrCO_3$ from the sample after yttrium separation. This precipitate was mounted on a nylon planchet and covered with an 80 mg/cm^2 aluminum absorber for low-level beta counting.

4.4.7 Iodine-131 in Milk

Two liters of sample were first equilibrated with stable iodide carrier. A batch treatment with anion exchange resin was used to remove iodine from the sample. The iodine was then stripped from the resin with sodium hypochlorite solution, reduced with hydroxylamine hydrochloride, and extracted into carbon tetrachloride as free iodine. It was then back-extracted as iodide into sodium bisulfite solution and precipitated as palladium iodide. The precipitate was weighed for chemical yield and mounted on a nylon planchet for low-level beta counting. The chemical yield was corrected by measuring the stable iodide content of the milk with a specific ion electrode.

4.5 Data Analysis Methods

Since mid-1984, the results of the REMP analyses have been presented as net results calculated from the gross or total counts determined for each radionuclide minus the background counts of the counting or detection instrument. Consequently, for several sample types, the results range from negative to positive numbers. This manner of presenting environmental data prevents the bias and loss of individual results inherent in the use of "less than" (<) values, where the "less than" numbers can have a variety of meanings, such as "less than the lower limit of detection (LLD)." A listing of the LLDs determined for each analysis is provided in Table 4-4 as a reference when reviewing the sample results.

Plots of the sample results versus time are used to represent the results for analyses such as gross beta on air particulate filters, where the results are normally above the lower limits of detection. In such cases, the indicator station results are plotted with the control station results for easy comparison. Other data analysis techniques, such as frequency distributions, are also used to represent the data and to determine whether trends that could be attributed to Plant 2 operations are evident. Thermoluminescent dosimeter (TLD) data is presented in terms of the net mR/day exposure rate. These results are determined from the total exposure (in mR) calculated for each TLD from its total thermoluminescent output minus the TLD background, minus any transit (or trip) exposure received during distribution and retrieval, and divided by the number of days the TLD was in the field. Frequency distributions and graphs of TLD data by meteorological sector and distance from the plant are used to interpret trends in the results.

TLD data summaries include the term "standard error." The standard error, which is the estimate of the precision of the mean, is used for the means of quarterly and annual data and is an indicator of the uncertainty associated with the results. The mean results of the quarterly TLDs are compared with the results of annual TLDs and expressed as a ratio by dividing the quarterly results by the annual result.

TABLE 4-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM PLAN

SAMPLE TYPE[a]	SAMPLE STATION [b] NUMBER	SAMPLING AND COLLECTION FREQUENCY[c]	TYPE AND FREQUENCY OF ANALYSIS
1. AIRBORNE			
Particulates and radioiodine (6/12)[d]	1, 4-8, 9A, 21, 23, 40, 48, and 57	Continuous sampling; weekly collection	Particulate: Weekly gross beta[e]; gamma isotopic[f] of quarterly composite (by location) Iodine: Weekly gamma analysis.
Soil[g](0/7)	9A, 1, 7, 21 and 23	Annually Quarterly or more often as needed.	Gamma isotopic[f]; strontium-90[h] Gamma isotopic
2. DIRECT RADIATION			
TLD[i](34/60)	1-8, 9A, 10-25, 40-47, 49-51, 53-56, 65, 71-86 (1S-16S)[j], 119B, 119-Control, 120-East	Quarterly, annually	Thermoluminescent output; quarterly and annual processing.
PIC	Various locations, as needed [k]	Continuous recording, as needed	Exposure rate accumulated on mag card and in internal memory
3. WATERBORNE			
River/Drinking Water[l] (3/4)	26, 27 and 29	Composite aliquots[m]; monthly collection	Gamma isotopic[f], gross beta, quarterly; tritium composite; strontium-90[n]; I-131[o]
Storm Drain Water	101	Composite aliquots[m], weekly collection; grab samples	Gamma isotopic[f], tritium, gross beta
Sanitary Waste Treatment Facility Water	102	Monthly, annually, pre-discharge and as needed.	Gamma isotopic[f], gross beta, gross alpha, tritium
Ground Water (2/3)[p]	31, 32, and 52	Quarterly	Gamma isotopic[f]; tritium
River Sediment (1/2)[q]	33 and 34	Semiannually	Gamma isotopic[f]
Sanitary Waste Treatment Facility Sediment	102	Monthly or more often as needed	Gamma Isotopic[f]
Cooling Tower Sediment Disposal Area	119	Within 30 days following Cooling Tower cleaning event	Gamma Isotopic[f]
4. INGESTION			
Milk[r] (3/3)	9B, 9G[s] 36, 64	Semimonthly during grazing season, monthly at other times	Gamma isotopic[f]; iodine-131; strontium-90[t]
Fish[u]	30, 38	Annually [v]	Gamma isotopic[f]
Garden Produce[w](1/3)	9C, 91[x] and 37	Monthly during growing season in the Riverview area of Pasco and a control near Grandview; annual collection at Station 91.	Gamma isotopic[f]
Vegetation	101	Annually	Gamma isotopic[f]

TABLE 4-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM PLAN

(a) The fraction in parentheses for each sample type indicates the ratio of ODCM-required sample locations to the total number of sample locations currently being monitored in the surveillance program. The SCA also requires certain numbers of sampling stations for each type of media.

(b) The underlined sample location designates a control station.

(c) Deviations are permitted if samples are unobtainable due to hazardous conditions, seasonal availability, malfunction of automatic sampling equipment, or other legitimate reasons. Such deviations are documented in Section 5.

(d) The SCA requires nine or more air sampling stations.

(e) Particulate sample filters will be analyzed for gross beta after at least 24 to 48 hours to allow for the decay of radon daughter products. If gross beta activity is greater than 10 times the mean of the result for the control, Station 9A, gamma isotopic analysis shall be performed on the individual sample.

(f) Gamma isotopic means identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents of Plant 2.

(g) Soil samples are collected to satisfy the requirements of the SCA for Plant 2. The SCA requires that soil samples be collected at five air sampling locations.

(h) Strontium-90 analysis shall be performed on any indicator soil sample having cesium results greater than ten times the results for the control location.

(i) TLD refers to thermoluminescent dosimeter. For purposes of the REMP, a TLD is a phosphor card with multiple read-out areas in each badge case. TLDs used in the REMP meet the requirements of Reg Guide 4.13[5] and ANSI N545-1975, except for specified energy-dependence response. Correlation factors are available for energy ranges with response outside of specified tolerances.

(j) TLD Stations 71-86 are special interest stations and are not included among the 34 routine TLD stations required by the ODCM Table 6.3.1.1-1 (3.12-1). Their alternate designations are 1S-16S. The SCA requires that 25 or more TLD stations are located within a 10-mile radius of the plant.

(k) Pressurized ion chambers (PICs) are not required as part of the routine monitoring program, but they are required by the SCA to be maintained as a supplemental or backup system. PICs were used routinely at various locations during 1999 to provide supplemental information.

(l) The term "river/drinking water," instead of "surface/drinking water," is used throughout this report because the surface water is taken from the Columbia River. Station 26, Plant 2 makeup water intake from the Columbia River is both an upstream surface, or river, water sample and the drinking water control sample location. The Station 29 sample is a downstream drinking water sample. The Station 27 sample, which is drawn from the plant discharge line, is taken in place of a "downstream" water sample near but beyond the mixing zone. It reflects the radioactivity present in the plant discharge prior to any river dilution. The SCA requires two drinking water locations downstream from the plant discharge and requires sampling from the plant intake and discharge water. Station 101, the storm drain pond, and Station 102, the Sanitary Waste Treatment Facility, are represented individually because they are unique sampling locations requiring special attention.

TABLE 4-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM PLAN

(m) Composite (integrated grab) samples are collected with equipment that collects an aliquot at time intervals that are short relative to the compositing period.

(n) When the gross beta activity in drinking water exceeds 8 pCi/liter, a strontium-90 analysis is performed.

(o) When the dose calculated via ODCM methodology for consumption of water exceeds 1 mrem per year, iodine-131 analyses are performed on the drinking water samples.

(p) The SCA requires sampling from wells used for fire protection and as backup drinking water sources.

(q) The SCA requires sediment sample collection upstream and downstream of the plant discharge.

(r) Milk samples will be obtained from farms or individual milk animals which are located in the most prevalent wind directions from Plant 2. Routine milk samples are collected in areas of high dose potential instead of within 5 kilometers, due to the locations of milk animals. The SCA requires at least three milk locations within the 10-mile radius of the plant and one in a control location.

(s) Samples of feed for dairy animals are collected at Station 9G in lieu of milk at a control station. The dairy cattle at Station 9B are not suitable for use as a control due to the fact that a portion of their feed comes from hay grown in the Franklin County area across the Columbia River from WNP-2.

(t) If cesium-134 or cesium-137 is measured in an individual milk sample in excess of 30 pCi/1, then the strontium-90 analysis will be performed.

(u) There are no species fished commercially while in the Hanford Reach of the Columbia River. The most recreationally and commercially important species in the area are anadromous (primarily salmonids), which ascend rivers from the sea for breeding. Three fish species will normally be collected by the electroshock technique in the vicinity of the plant discharge (Station 30) and from the Snake River (Station 38). If electro-shocking produces insufficient anadromous fish samples from the Snake River, samples may be obtained from the Lyons Ferry Fish Hatchery. If insufficient anadromous fish samples are produced through electro-shocking on the Columbia River, samples may be obtained at the Ringold Fish Hatchery.

(v) If an impact is indicated, sampling will be conducted semiannually.

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

(X) Station 91 is an apple orchard irrigated with Columbia River water. The apple crop from Station 91 is sampled annually.

TABLE 4-2
REMP SAMPLE STATIONS AND REQUIREMENTS

SECTOR[a]	STATION[b] NUMBER	DISTANCE[c]	ODCM[d]	STATE[e]	OTHER[f]
N (1)	52	0.1	GW		
	71(1S)	0.3			TLD
	47	0.9		TLD	
	57	0.9	AP/AI		
	18	1.1	TLD	TLD	
	53	7.5	TLD		
NNE (2)	72(2S)	0.4			TLD
	2	1.8	TLD	TLD	
	54	6.5	TLD		
NE (3)	73(3S)	0.5			TLD
	19	1.8	TLD	TLD	
	48	4.5	AP/AI		
	46	5.0	TLD		
ENE (4)	101	0.3			SW[g], SE, SO, VE
	74(4S)	0.4			TLD
	21	1.5		TLD,AP/AI, SO	
	20	1.9	TLD	TLD	
	11	3.1		TLD	
	33	3.6		SE	
	45	4.3	TLD		
	44	5.8	TLD		
E (5)	75(5S)	0.4			TLD
	22	2.1	TLD		
	10	3.1	TLD	TLD	
	26	3.2	SW, DW	SW	
	27	3.2		DIS W	
	30	3.3	FI	FI	
	43	5.8	TLD		
ESE (6)	76(6S)	0.4			TLD
	31	1.1	GW	GW	
	32	1.2		GW	
	51	2.1	TLD		
	23	3.0		TLD,AP/AI, SO	
	34	3.5	SE	SE	
	91	4.4		GP	
	8	4.5	TLD, AP/AI	TLD, AP/AI	
	42	5.6	TLD		
	36[h]	7.2	MI	MI	

TABLE 4-2 (cont.)
REMP SAMPLE STATIONS AND REQUIREMENTS

SECTOR[a]	STATION[b] NUMBER	DISTANCE[c]	ODCM[d]	STATE[e]	OTHER[f]
ESE (6)	5	7.7	TLD	AP/AI	
	64	9.7	MI	MI	
	38	26.5	FI	FI	
SE (7)	118	0.3			SO
	77(7S)	0.5			TLD
	24	1.9	TLD	TLD	
	3	2.0		TLD	
	41	5.8	TLD		
	40	6.4	TLD, AP/AI		
SSE (8)	119-Control	0.2		TLD	
	120	0.3			TLD, SE
	102A	0.4		SFW	
	102B	0.4		SFW	
	102C	0.4		SFW	
	102D	0.4			SFW, SE
	102E	0.4			SFW
	78(8S)	0.7			TLD
	25	1.6	TLD	TLD	
	55	6.2	TLD		
	4	9.3	TLD, AP/AI	TLD,AP/AI	
	29	11.0	DW	DW	
	37B	16.0	GP	GP	
	37A	17.0		GP	
S (9)	119B	0.2		TLD, SE, PIC	
	79(9S)	0.7			TLD
	1	1.3	TLD	TLD,AP/AI, SO	
	6	7.7	TLD	AP/AI	
	65	8.7			TLD
SSW (10)	80(10S)	0.8			TLD
	50	1.2	TLD	TLD	
	56	7.0	TLD		
SW (11)	81(11S)	0.7			TLD
	13	1.4	TLD	TLD	
WSW (12)	82(12S)	0.5			TLD
	14	1.4	TLD	TLD	
	9A,	30.0	TLD,AP/AI	TLD, AI/AP	
	9C,	35.0	GP	GP	
	9B, 9G	33.0	MI, VE[i]	MI, VE[i]	

TABLE 4-2 (cont.)
REMP SAMPLE STATIONS AND REQUIREMENTS

SECTOR[a]	STATION[b] NUMBER	DISTANCE[c]	ODCM[d]	STATE[e]	OTHER[f]
W (13)	83(13S)	0.5			TLD
	15	1.4	TLD	TLD	
WNW (14)	84(14S)	0.5			TLD
	16	1.4	TLD	TLD	
	7	2.7	TLD	TLD, AP/AI, SO	
NW (15)	85 (15S)	0.5			TLD
	49	1.2	TLD	TLD	
NNW (16)	86(16S)	0.4			TLD
	17	1.2	TLD	TLD	
	12	6.1		TLD	

FOOTNOTES:

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

(b) The alternate designations for TLD Stations 71-86 are given in parentheses, i.e., 1S-16S.

(c) Distances are estimated from map positions for each location as a radial distance from Plant 2 containment.

(d) ODCM - Offsite Dose Calculation Manual Table 6.3.1.1-1 requirement.

(e) State of Washington Site Certification Agreement requirements.

(f) OTHER – NPDES and special study stations.

(g) The NPDES Permit only requires sampling for tritium.

(h) Duplicate samples, i.e., samples drawn at the same time as the routine samples and submitted for analysis as a quality control check, are collected at this location. The station designation for the duplicate of Station 36 is Station 37.

(i) Broadleaf vegetation collected in lieu of milk from a control station.

Sample Type Key:

AI/AP	-Air Iodine	DW	-Drinking Water
FI	-Fish	GP	-Garden/Orchard Produce
GW	-Ground Water	MI	-Milk
PIC	-Pressurized Ion Chamber	SE	-Sediment
SFW	-Sanitation Facility Water	SO	-Soil
SW	-Surface Water	TLD	-Thermoluminescent Dosimeter
VE	-Vegetation	Dis W	-Discharge Water

TABLE 4-3
1999 FIVE MILE LAND USE CENSUS RESULTS

SECTOR[a]	NEAREST RESIDENT[b]	GARDEN (>50M^2)	DAIRY[c] ANIMALS	LIVESTOCK
NE	4.3	none	none	none
ENE	4.1	4.1[d]	none	none
E	4.5	none	none	none
ESE	4.2	4.3[d]	none	none
SE	none	none	none	none

(a) Within a five-mile radius of the plant, only 4.5 sq. miles of the land in the sixteen meteorological sectors is privately owned farmland. The remainder of the land is on the federally owned Hanford Site. Only those sectors containing points of interest are presented here.

(b) Estimated distances in miles from Plant 2 Reactor Building.

(c) The closest dairy animal locations are at 8.3 miles SE and 7.2 and 9.7 miles ESE. The dairy at 8.3 miles SE is not used for milk sample collection due to the owner's reluctance to participate in the sampling program.

(d) Small garden with broadleaf; samples were not available due to the small amounts grown.

TABLE 4-4
COMPARISON OF TELEDYNE NOMINAL LOWER LIMITS OF DETECTION WITH OFFSITE DOSE CALCULATION MANUAL[8] REQUIRMENTS

MEDIA (UNITS)	ANALYSIS	TELEDYNE LLDs[a]	BTP REQUIRED LLDs
Air	Gross Beta	0.003	0.01
(pCi/m³)	Gamma Spectrometry		
	Cs-134	0.001	0.05
	Cs-137	0.001	0.06
	I-131	0.01	0.07
Water:	Gross Beta	4	4
(pCi/l)	Tritium	300	2000[b]
	I-131	1	---
	Sr-90	1	---
	Gamma Spectrometry		
	Mn-54	10	15
	Fe-59	20	30
	Co-58	10	15
	Co-60	10	15
	Zn-65	20	30
	Zr-95	20	30
	Nb-95	10	15
	Cs-134	10	15
	Cs-137	10	18
	Ba-140	20	60
	La-140	10	15
Soil/Sediment:	Gamma Spectrometry		
(pCi/kg dry)	Co-57	120	---
	Co-60	30	---
	Zn-65	100	---
	Cs-134	30	150
	Cs-137	40	180
	Sr-90	10	---
Fish:	Gamma Spectrometry		
(pCi/kg wet)	Mn-54	20	130
	Fe-59	30	260
	Co-58	20	130
	Co-60	20	130
	Zn-65	30	260
	Cs-134	20	130
	Cs-137	20	150
Milk:	I-131	0.5	1
(pCi/l)	Gamma Spectrometry		
	Cs-134	10	15
	Cs-137	10	18
	Ba-140	20	60
	La-140	10	15
	Sr-90	1	---
Garden Produce:	Gamma Spectrometry		
(pCi/kg wet)	Cs-134	20	60
	Cs-137	20	80
	I-131	30	60

[a] These are the contract LLDs. Actual LLDs may be lower for specific samples.

[b] If no drinking water pathway exists, a value of 3,000 pCi/l may be used.

THIS PAGE INTENTIONALLY BLANK

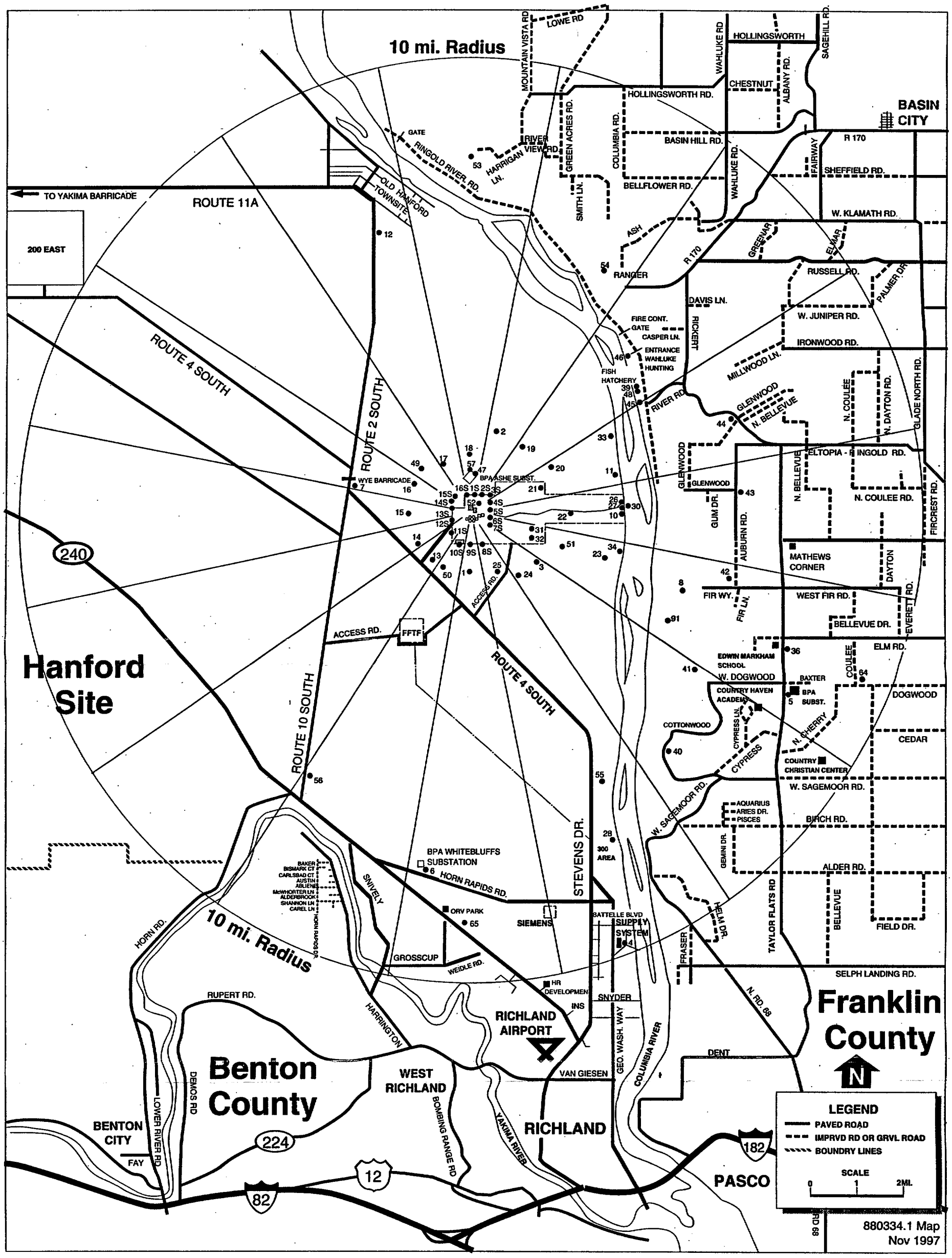
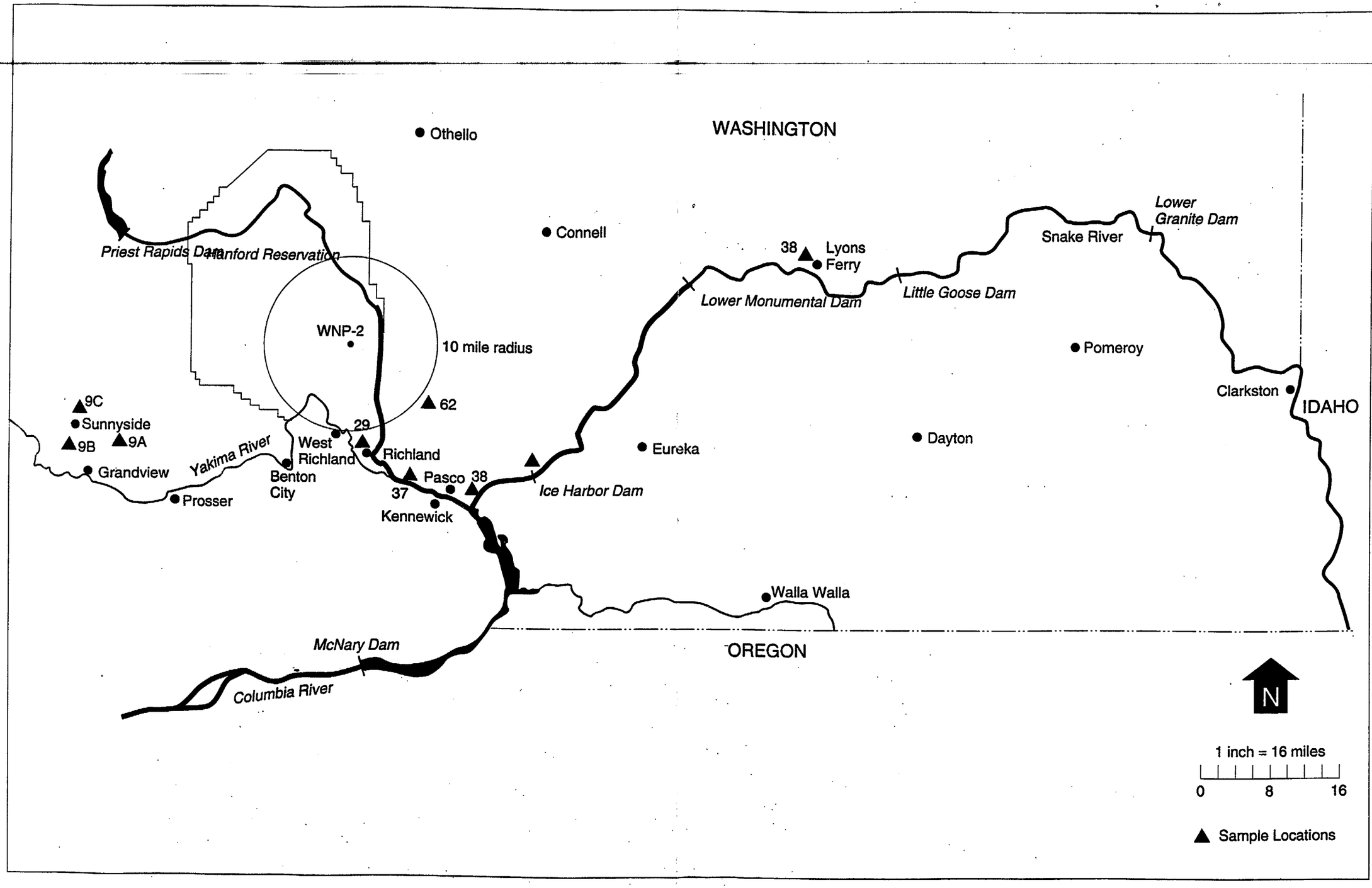


FIGURE 4-1 REMP SAMPLING LOCATIONS WITHIN THE 10-MILE RADIUS



900286A1
Jan 1999

FIGURE 4-2 REMP SAMPLING LOCATIONS OUTSIDE THE 10-MILE RADIUS

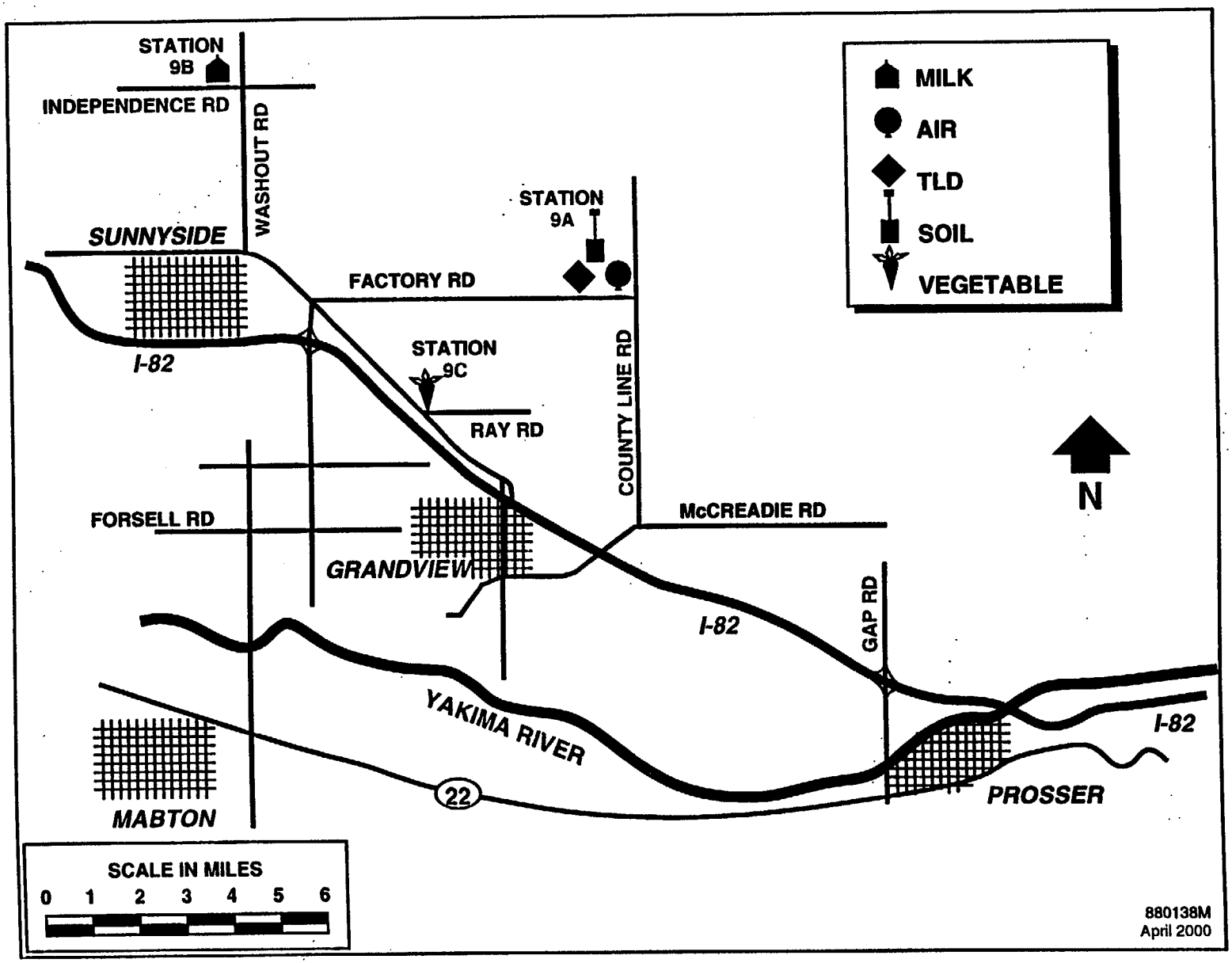


FIGURE 4-3 REMP SAMPLING LOCATIONS SUNNYSIDE/GRANGER AREA

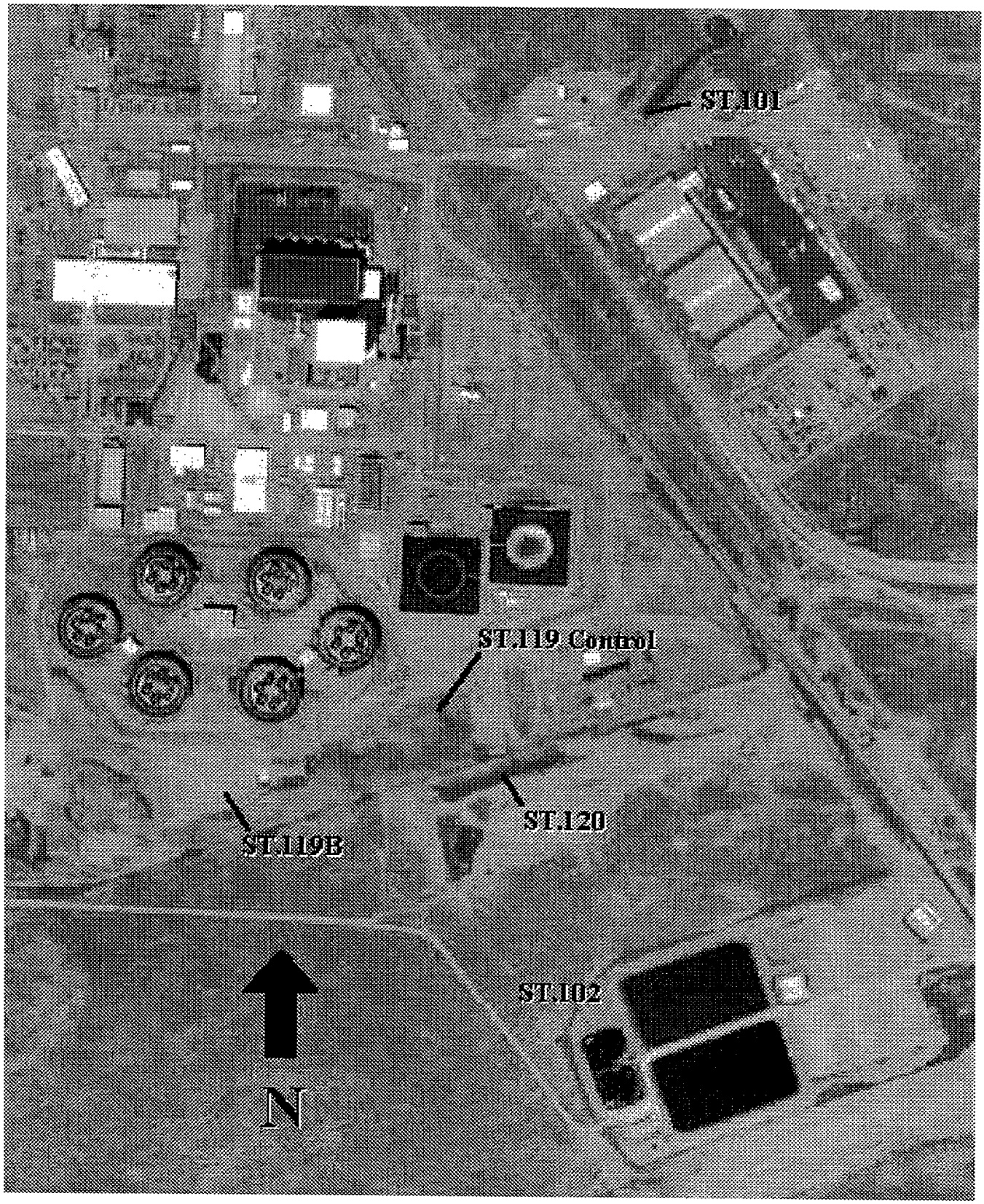


FIGURE 4-4 REMP NEAR PLANT SAMPLING LOCATIONS

5.0 RESULTS AND DISCUSSION

5.0 RESULTS AND DISCUSSION

During 1999, the analyses of REMP samples were performed by Teledyne Brown Engineering Environmental Services in Westwood, New Jersey. Battelle Northwest in Richland, Washington processed the environmental TLDs. Table 5-1 presents the means and ranges of selected 1999 results for each type of sample collected and Table 5-3 provides a summary of detectable results. The means and ranges of the preoperational and the previous operational data are also included in the table for comparison. The data tables of 1999 results comprise a separate volume that is available to interested parties.

The data for the preoperational period and the first six months of 1984 included "less than" (<) designations for results below the actual LLD, the contractual LLD, or the two-sigma error, depending upon the convention employed by the analytical contractor. Consequently, the data averages using "less than" values are biased high. The use of the "less than" values was discontinued in mid-1984. Since then, REMP data have been reported as net (total results minus the detector counting background).

Since the primary focus of the REMP is to determine whether Plant 2 operations had an impact on the environment, the 1999 results are compared in this report to the results during the preoperational period and the results obtained during the previous years of Plant 2 operation. They are also compared to state and federal regulatory limits. Because of the use of "less than" values, rather than net results, during the preoperational period and during the first year of operation, and because of the impact of the 1986 Chernobyl accident on environmental radiation levels, the interpretation of the 1999 measurements relative to previous measurements must bear this in mind. Some of the parameters considered in the evaluations discussed in this report are the means, ranges and standard deviations or standard errors of the results. Comparative plots and frequency distributions of the data are some of the tools that have been employed in the interpretation of the 1999 REMP data.

The 1999 analytical results for the REMP sampling locations established since the preoperational period are very similar to the results reported for previous years. The 1999 annual and quarterly TLD results were also very much like those observed previously. No significant trends indicating an environmental impact or unexpected change in the environmental concentrations or exposure rates at REMP monitoring stations were observed.

5.1 Direct Radiation

Environmental radiation exposure rates at near plant and remote stations, as determined by thermoluminescent dosimeters (TLDs), remained consistent with data from previous years.

Figure 5-1 presents a plot of the 1999 mean quarterly TLD results for each of the sixteen meteorological sectors at the property boundary of the plant ("S" stations). The chart also includes the high, low and mean result in each sector for 1984 through 1998.

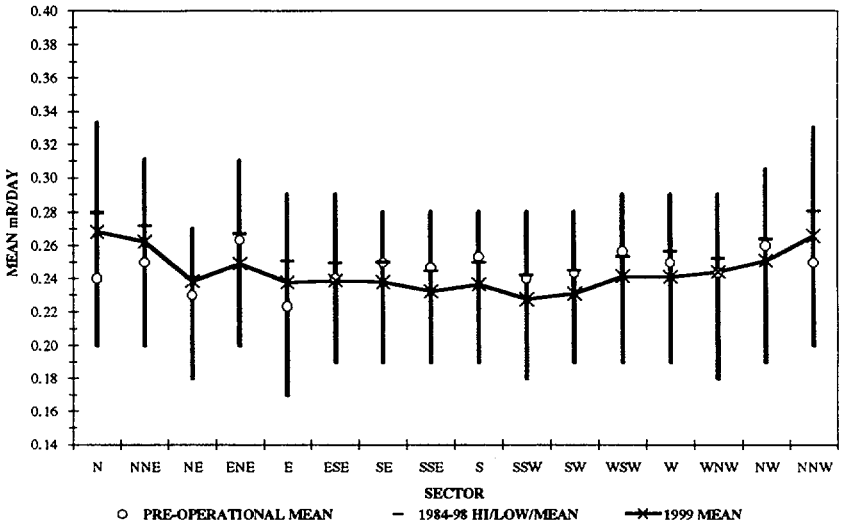


Figure 5-1 Site Boundary Quarterly TLDs 1984-98 Hi/Low/Mean vs. 1999 Mean by Sector

The relationship of the mean 1999 results to the results for the previous operational periods is very similar for each sector. This indicates that there were no significant directional effects observed in the 1999 TLD results.

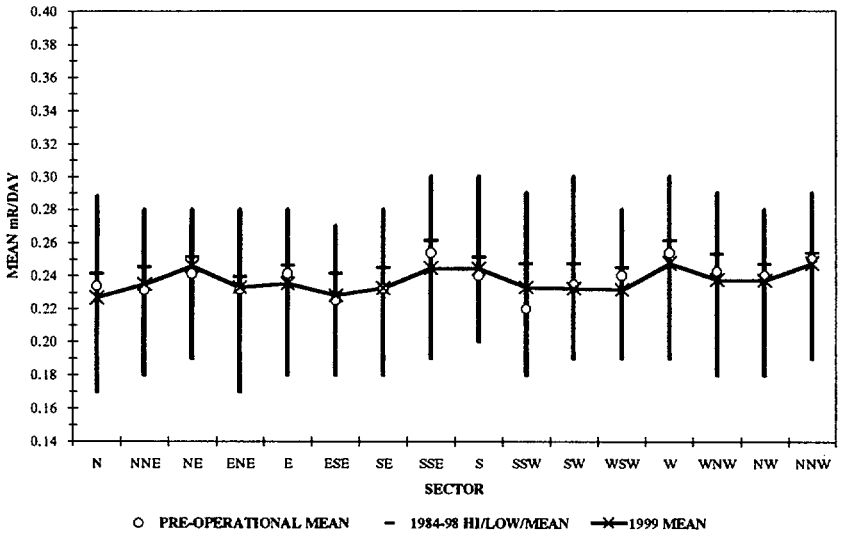


Figure 5-2 Near-Plant Quarterly TLDs - 1984-98 Hi/Low/Mean vs. 1999 Mean by Sector

The N, NNE, and NNW sectors for the "S" stations show a higher exposure as a result of being physically closer to the plant than the TLDs of the other "S" station TLDs. Compare Figure 5-1 with the data presented in Figure 5-2, where the near-plant TLDs are more of an evenly placed distance from the plant.

Summaries of the environmental radiation exposure rates, determined by thermoluminescent dosimeters (TLDs) are presented in Tables 5-4 and 5-5.

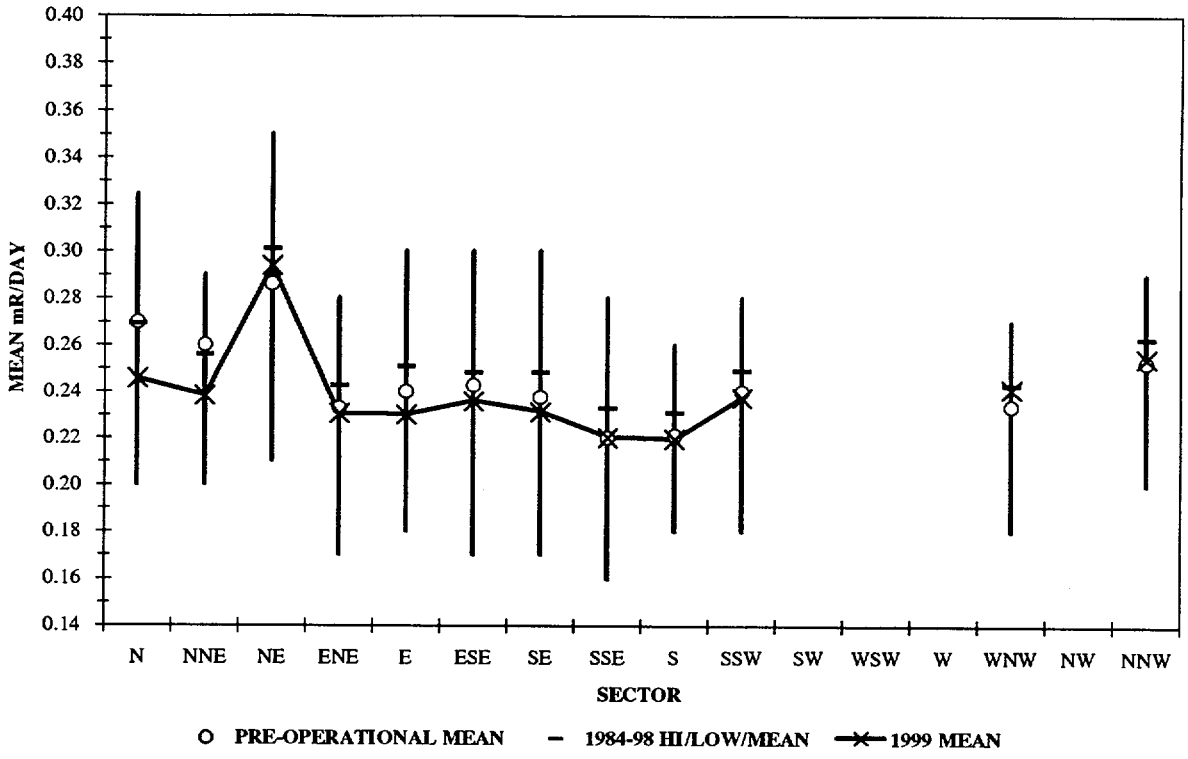


Figure 5-3 Remote Quarterly TLDs 1984-98 Hi/Low/Mean vs. 1999 Mean by Sector

For the remote TLDs, Station 46 in the Wahluke Reserve (NE sector) remained the location with the highest mean exposure rate, as shown in Figure 5-3. Since the preoperational measurement phase, the results for this location have exceeded the results for all other locations. Variations in the soil and underlying rock composition most likely account for localized differences such as shown in the TLD results for Station 46. The quarterly mean of the four quarterly results for Station 46 was 0.29 mR/day, with a range of 0.28 mR/day to 0.30 mR/day.

Frequency distribution plots of the 1999 quarterly TLD results are presented in Figure 5-4. The plots varied slightly from quarter to quarter, with 0.24 mR/day being the most frequent result, followed by 0.25 mR/day, 0.23 mR/day and 0.26 mR/day. The most frequent result for the period 1984 to 1998 was 0.26 mR/day, followed by 0.25 mR/day, 0.24 mR/day and 0.27 mR/day. The frequency distributions for the previous operational TLD results are shown in Figure 5-5.

Presented in Table 5-6 is a comparison of the 1999 annual and mean quarterly TLD results. The 1999 annual TLD results are generally 5-10% lower than the mean quarterly results because of signal fade. This difference is not significant, in light of the variability commonly observed in TLD results. In most cases, the annual result is within the uncertainty associated with the quarterly TLD results.

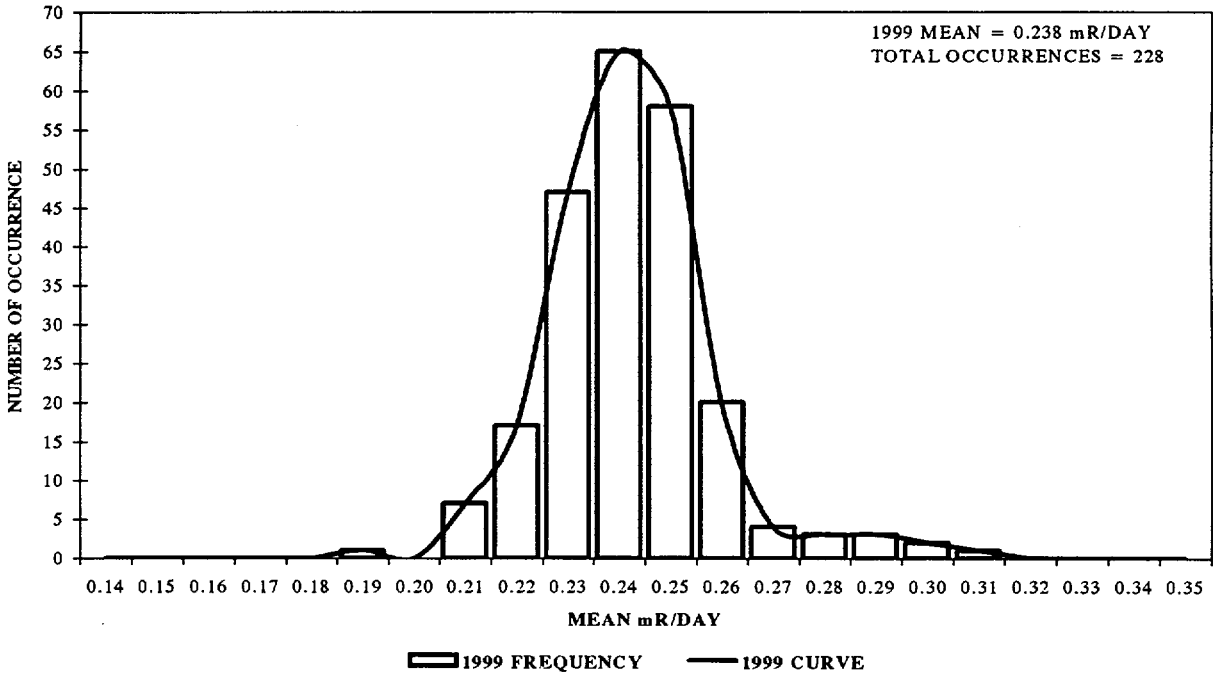


Figure 5-4 Frequency Distribution for 1999 Quarterly TLDs

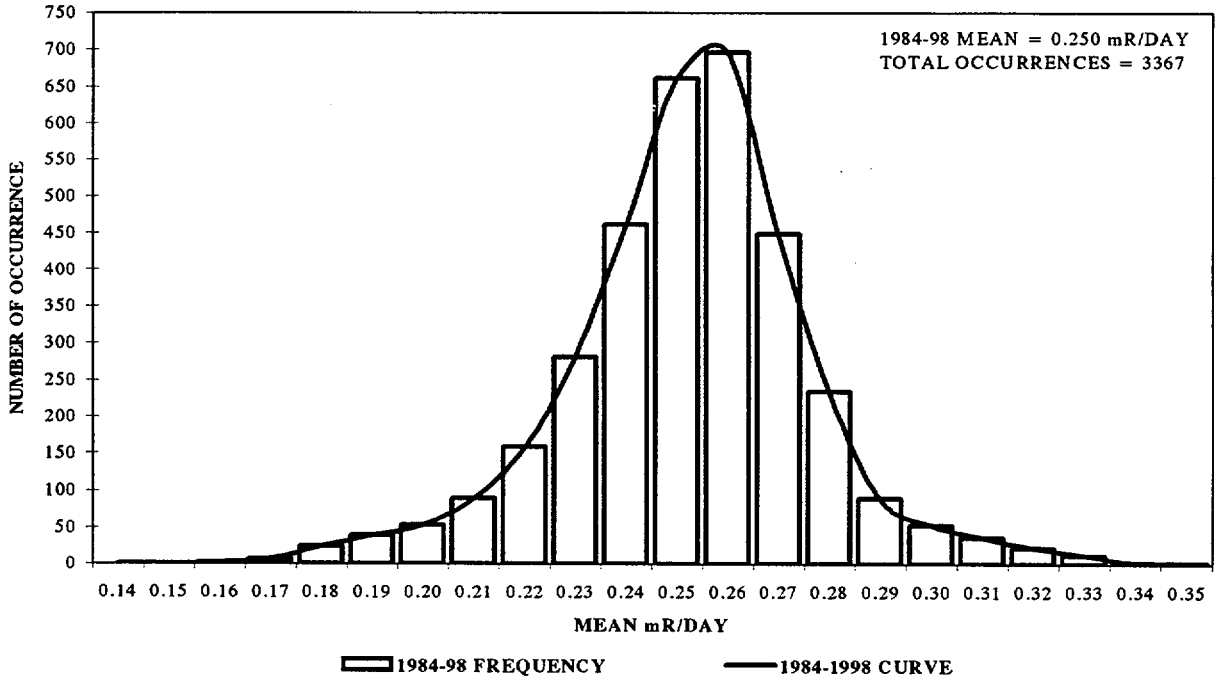


Figure 5-5 Frequency Distribution for 1984-98 Quarterly TLDs

5.2 Airborne Particulate/Iodine

The 1999 mean weekly gross beta on particulate filter results for indicator stations near (within 3 miles) Plant 2 are plotted in Figure 5-6. The gross beta in air results for 1999 were within the ranges observed during the preoperational period and during previous operational periods, as shown in Table 5-1. In Figure 5-7, the similarity between results from near-plant locations and those from remote locations can be seen. The control location (Station 9A) results follow a very similar pattern to the remote and near-plant indicator locations. As observed previously, gross beta levels increased during periods of inversion occurring in the fall and winter months. Gross beta results plotted over a period of several years show a cyclic pattern of fall and winter increases. The increase, which was evident in the results of all the air sampling locations, is due to an increase in radon and radon daughter concentrations during the inversions.

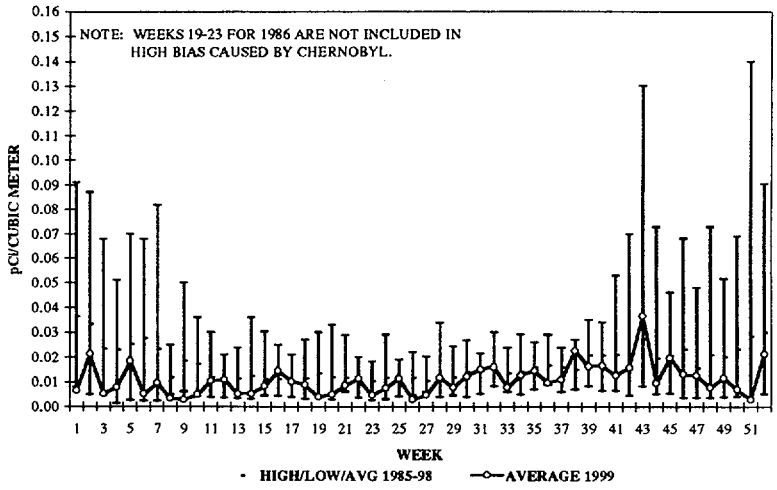


Figure 5-6 1985-98 Weekly Hi/Low/Mean vs. 1999 Weekly Mean Gross Beta in Air - Near Plant Stations

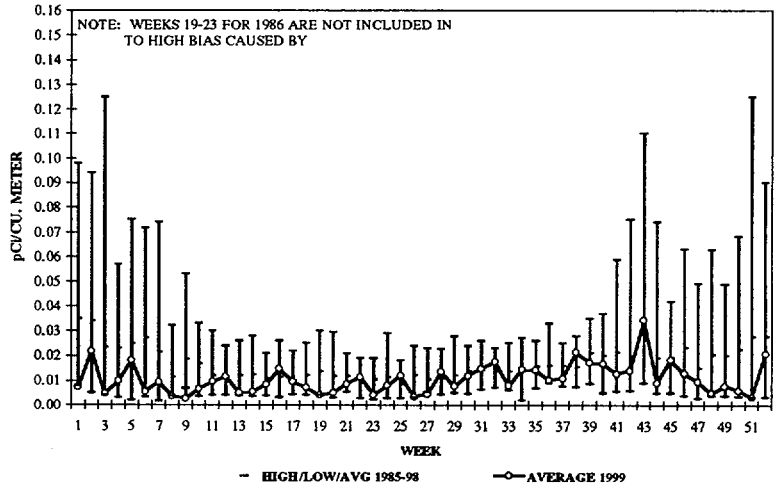


Figure 5-7 1985-98 Weekly Hi/Low/Mean vs. 1999 Weekly Mean Gross Beta in Air - Remote Stations

The quarterly gamma analyses of the particulate filter composites indicated only the presence of two naturally-occurring radionuclides, beryllium-7 and potassium-40, at levels above detection limits at indicator locations and the control location. All iodine-131 in air results for 1999 were less than the 0.02 picocuries/cubic meter (pCi/m^3) LLD.

No evidence of any impact of plant operations on the environment was apparent in the particulate filter and charcoal cartridge results for 1999.

5.3 River/Drinking, Discharge and Ground Water

The gross beta results for river/drinking were within the normally observed ranges during February through December. These results were less than the 8 picocuries/liter (pCi/l) level at which a strontium analysis is performed to verify compliance with the Washington State drinking water standard for strontium-90. The Richland sample (Station 29) taken in January had an activity of 16 pCi/l. The contractor laboratory could not confirm this result, but a split sample taken for the Washington Department of Health showed a gross beta activity of 1.0 pCi/l. Discussions with contractor laboratory staff made it appear likely that there was an error in the analysis.

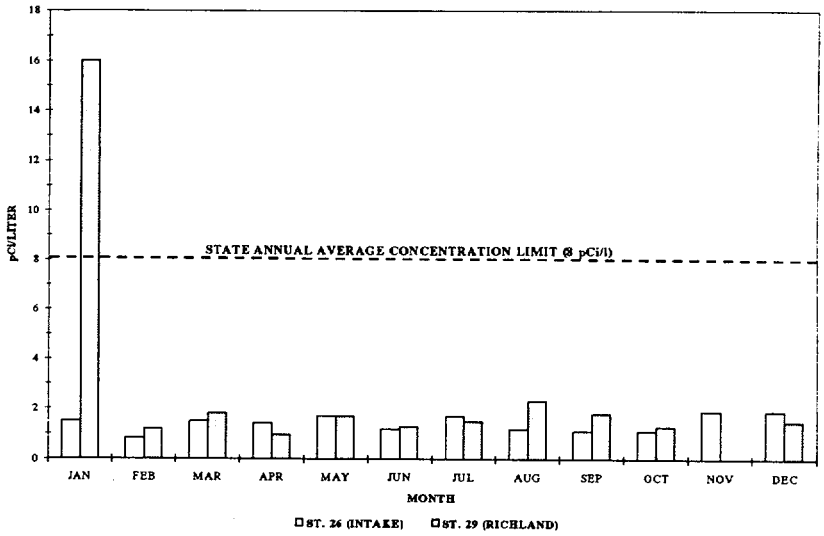


Figure 5-8 Gross Beta in River/Drinking Water-1999

The 1999 gross beta concentrations in river/drinking water, relative to the state annual average concentration limit[11], are presented in Figure 5-8. Presented in Figure 5-9 are the mean gross beta results in discharge water for 1999. The average results compare well to the averages from previous periods.

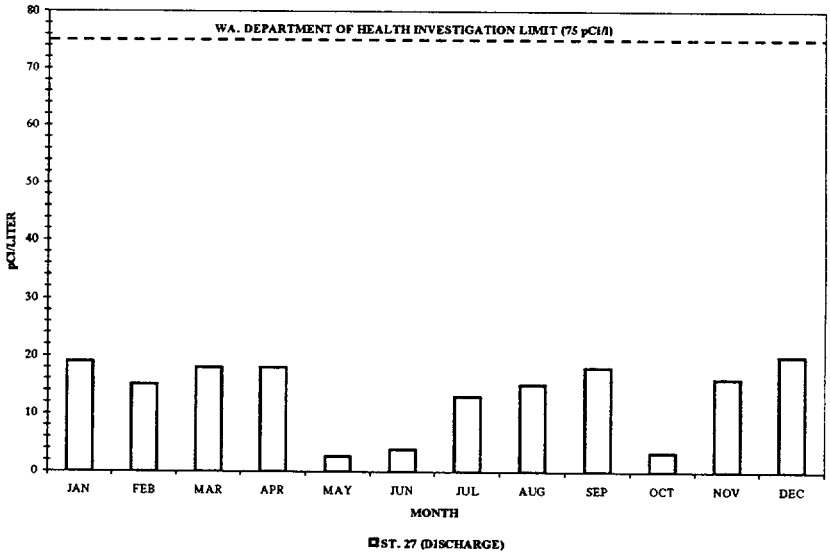


Figure 5-9 Gross Beta in Discharge Water-1999

The gross beta levels in the discharge sample reflect the concentrations of radionuclides that occur naturally in the environment. These are principally potassium-40, and any radionuclides from upstream sources of past Hanford activities present in the makeup water, in addition to radionuclides from Plant 2 discharges. The water discharged from Plant 2 is typically concentrated 8 to 10 cycles. The discharge sample results are representative of the radioactivity present in plant

discharges before any mixing with river water occurs. All results were below the Washington Department of Health's (WDOH) investigation level, the concentration at which Energy Northwest would notify WDOH of the result.

The tritium levels in the river/drinking water and groundwater for 1999 were comparable with results obtained for prior years. As shown in Figure 5-10, the annual mean for the 1999 tritium concentration was the lowest observed in the 1989 to 1999 period. This reduction is due to an overall reduction in the volume of radwaste discharges from a high of over three million gallons in 1993. There were no liquid radwaste discharges into the river in 1999.

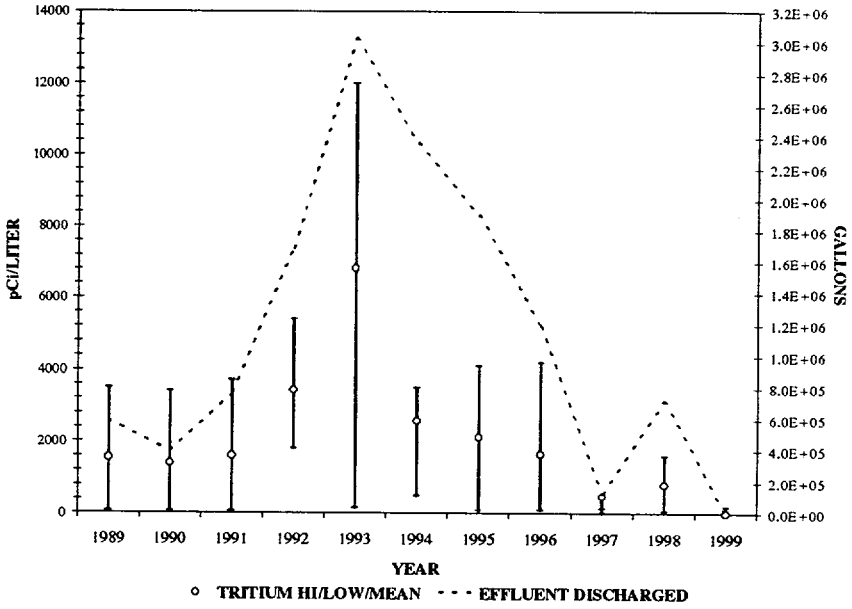


Figure 5-10 Tritium in Discharge Water and Effluent Discharged 1989-99

Tritium concentrations in the discharge water for 1999 were all below the detection level of 300 pCi/l. The NRC reporting level is 20,000 pCi/l for a quarterly average concentration in drinking water. There were no detectable nuclides in the river/drinking, discharge or ground water samples during 1999.

5.4 Soil

The results of the gamma spectrometry performed on soil samples in 1999 indicated detectable cesium-137. The cesium-137 results ranged from 19 picocuries/kilogram (pCi/kg) to 304 pCi/kg at the indicator stations and a result of 89 pCi/kg at the control station. As shown in Table 5-1, the cesium-137 levels in

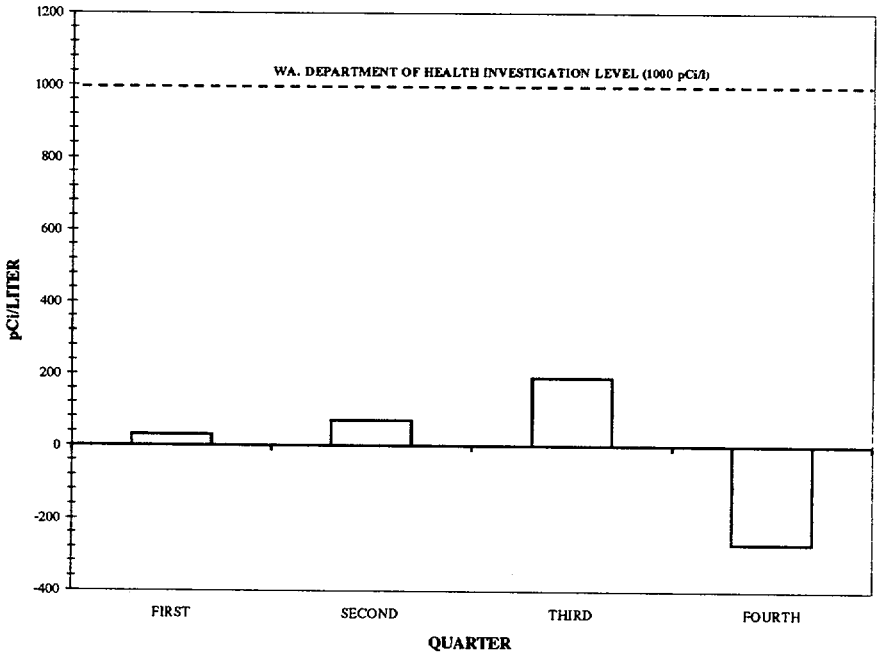


Figure 5-11 Tritium in Discharge Water - 1999

the soil samples were well within the range observed during preoperational and previous operational sampling. The gamma spectrometry results for the soil samples did not indicate any impact from Plant 2 operations on the environment.

None of the samples required strontium analysis in 1999. Aside from cesium-137, the only radionuclides detected in the samples were beryllium-7, potassium-40, radium-226 and thorium-228. These are part of the natural radioactivity typically found in soils.

5.5 River Sediment

The results of gamma spectrometry of river sediment indicated that aside from the naturally occurring radionuclides (potassium-40, radium-226 and thorium-228), manganese-54 and cesium-137 were detected both upstream (Station 33) and downstream (Station 34) of the plant. The cesium-137 concentration in the upstream sample was 52 pCi/kg dry weight. The concentration of cesium-137 in the downstream sample was 168 pCi/kg dry weight. The manganese-54 level in both the upstream and downstream samples was 20 pCi/kg. These radionuclides have been detected in similar quantities in preoperational samples and operational samples. They have also been previously identified as components of the Columbia River sediment originating from the operation of the old Hanford Reservation reactors. [14]

5.6 Fish

The gamma spectrometry results of fish samples collected in the vicinity of the Plant 2 discharge and at the control location on the Snake River were below detection limits, except for potassium-40, a naturally-occurring radionuclide.

5.7 Milk

There were no detectable iodine-131 results in 1999. All gamma spectrometry milk sample results were less than the detection limits, except for potassium-40, which is naturally occurring.

Because of the loss of the control dairy in 1998, broadleaf vegetation was used as a substitute. No dairy in the area of the control was located that didn't use feed grown downwind of the. In August 1998, the REMP began collecting samples of feed grown by the owners of the dairy at Station 9. No radionuclides were detected in these samples other than the naturally occurring beryllium-7 and potassium-40.

5.8 Garden Produce

The gamma isotopic analysis results for all root crops, fruit and leafy vegetables collected in 1999 were below detection limits other than potassium-40, which occurs naturally.

5.9 Special Interest Stations

The storm drain pond and the Sanitary Waste Treatment Facility (SWTF) incorporated into the routine sampling schedule in 1992. The cooling tower sediment disposal area was added in 1995. Thermoluminescent dosimeters were placed around the spray pond drainfield (Station 120) in June 1995 and an annual sediment sample taken from that location since 1996. Discussions of the results from each of the locations are given in the following sections.

Until incorporated into the REMP, the sediment samples collected during previous years at the storm drain and SWTF were analyzed by Energy Northwest. The storm drain and SWTF sediment samples were analyzed wet, so the results were in terms of wet weight instead of the dry weight concentrations determined by Teledyne. Consequently, direct comparison of the wet sample results with the dried sample results is difficult since the percent solids can vary from sample to sample.

5.9.1 Storm Drain Pond (Station 101)

The storm drain pond is located approximately 1500 feet northeast of Plant 2. Water is conveyed to the pond via an 18-inch diameter pipe, which discharges into a 300-foot long earthen channel that leads to a 100-foot diameter pond. The pond is a shallow, unlined percolation/evaporation basin.

REMP personnel collected water, sediment, and soil samples at the outfall during 1999. Monthly water grab samples and sediment samples were taken from the pond area beginning in July of 1994 and were discontinued in July 1996. At the outfall, an automatic sampler collected flow proportional composite water samples. Sediment sampling at the outfall was changed from monthly to biannually in July of 1996. Vegetation was sampled annually near the outfall until 1998.

Tritium was the only isotope detected during 1999. The range for positive tritium results at the outfall was from 160 pCi/l to 2800 pCi/l and averaged 793 pCi/l. Detectable gross beta activity at the outfall averaged 5 pCi/l with a range of 2.6 to 17 pCi/l.

Sediment at Station 101 was sampled biannually at the outfall. In the sediment samples, cobalt-60 and cesium-137 were detected, along with the natural-occurring nuclides potassium-40, radium-226 and thorium-228. Detectable cobalt-60 averaged 130 pCi/kg dry and ranged from 88 pCi/kg dry to 171 pCi/kg dry. The detectable cesium-137 ranged from 14 pCi/kg dry to 23 pCi/kg dry and averaged 19 pCi/kg dry.

All six soil samples, taken on the east and west banks, had detectable amounts of cesium-137 in them. The natural radionuclides of beryllium-7 potassium-40, radium-226 and thorium-228 were also detected. Cesium-137 averaged 35 pCi/kg and ranged from 28 pCi/kg to 42 pCi/kg. These results are within the ranges observed in previous years.

5.9.2 Sanitary Waste Treatment Facility (Station 102)

The Sanitary Waste Treatment Facility (SWTF) located approximately 0.4-mile south-southeast of Plant 2. The SWTF processes the sanitary waste from Plant 2, the WNP-1 and WNP-4 sites, the Plant Support Facility (PSF) and the Department of Energy's 400 Area (since April 1997). Discharge standards and monitoring requirements for the SWTF are established in EFSEC Resolution No. 259[15]. Sediment is sampled in the north pond due to the presence in past samples of detectable quantities of some radionuclides.

Gross beta results for wastewater sampled prior to discharge to the percolation beds averaged 33 pCi/l and ranged from 17 pCi/l to 40 pCi/l. Monthly composite water samples of the 400 Area effluent had gross beta results ranging from 26 pCi/l to 48 pCi/l and averaged 34.5 pCi/l.

Prior to discharge samples and 400 Area effluent samples were also analyzed for gross alpha. There were no detectable gross alpha results for 1999.

Tritium results at the headworks (Station 102B) continued to be higher due to the influx of FFTF effluent. The mean at the headworks was 648 pCi/l and ranged from 110 pCi/l to 2300 pCi/l. The annual average for tritium at the FFTF/SWTF intertie (Station 102A) was 4425 pCi/l and ranged from 3800 pCi/l to 4900 pCi/l. Tritium in the prior to discharge samples (Station 102C) averaged 720 pCi/l and ranged from 380 pCi/l to 940 pCi/l.

Gamma analysis of the sediment sample collected from the north stabilization pond revealed detectable quantities of cobalt-60 and cesium-137 in addition to naturally occurring nuclides. Detectable cobalt-60 had an activity of 189 pCi/kg dry weight. The cesium-137 result was 110 pCi/kg dry weight.

5.9.3 Cooling Tower Sediment Disposal Area (Station 119)

On May 8, 1995, EFSEC approved Resolution No. 278[16] that authorized the onsite disposal of cooling tower sediments containing low levels of radionuclides. This area is located just south of the cooling towers. The REMP monitor's the area's direct radiation exposure rate with annual pressurized ion chamber measurements. Direct radiation dose is measured by quarterly and annual TLDs. A dry composite sediment sample is taken from the disposal cell within thirty days following each cleaning to confirm that the disposal criteria outlined in the resolution have not been exceeded.

An estimated 47 cubic yards of material was disposed of during the May 1999 cleaning. Using the volume and an average measured dry density of 1.0 g/cm^3, along with the activity, it is calculated that the following quantities of nuclides were placed in the disposal area:

Cobalt-60	1.49E-06 curies
Manganese-54	5.97E-07 curies
Zinc-65	1.25E-06 curies
Cesium-134	1.19E-06 curies
Cesium-137	7.40E-06 curies

Of those nuclides listed, only manganese-54, cobalt-60 and cesium-137 were above detection levels. The result for manganese-54 was 17 pCi/kg dry. The cobalt-60 result was 41 pCi/kg dry and the cesium-137 result was 206 pCi/kg dry. Since the results for zinc-65 and cesium-134 were lower than the detection limit, only estimates of the maximum possible concentration are possible for those nuclides calculated quantities.

Measurements of direct radiation were taken using TLDs and a Reuter Stokes pressurized ion chamber. The TLDs were collected quarterly and annually. Two locations were used, one next to the collection area (Station 119B) and the other approximately 100 yards to the east as the control (Station 119-Control). The mean quarterly TLD result for Station 119B was 0.24 mR/day and Station 119-Control had a mean quarterly result of 0.23 mR/day. The annual TLD results were 0.21 mR/day for Station 119B and 0.23 mR/day for Station 119-Control. The annual pressurized ion chamber reading was taken in May. The reading, taken soon after the sediment was disposed of, was 0.0091 mR/hr. This reading agrees well with the TLD results.

5.9.4 Spray Pond Filter Backwash Trench (Station 120)

Sediment from spray pond cleanings had been discharged to a trench located approximately 500 feet south of the spray ponds. In 1995, soil samples taken in the trench indicated detectable amounts of cesium-137 and cobalt-60. In 1996, the deposited sediment was removed to a disposal cell south of the cooling towers. The trench has continued to be the discharge location for spray pond filter backwash water.

In 1997, the decision was made to remove the west TLD station inside the trench, and the control TLD station on the south bank. The Station 119-Control TLD would also act as the control location for Station 120. In 1999, the mean for the quarterly TLD inside the trench was 0.24 mR/day. The quarterly mean for the control location was 0.23 mR/day. The annual results were 0.22 mR/day for ST.120 and 0.23 mR/day for Station 119-Control.

A composite sample was taken from several areas inside the trench. The sample continued to show that no new radionuclides had been deposited in the trench since the previously deposited sediment was relocated in 1996. Along with the naturally occurring nuclides of beryllium-7, potassium-40, radium-226 and thorium-228, the only other detectable nuclides were manganese-54, cobalt-60 and cesium-137. Manganese-54 had an activity of 18 pCi/kg. The cobalt-60 result was 29 pCi/kg and the cesium-137 result was 21 pCi/kg. These results were far below the pre-cleaning results are and comparable to results of samples taken immediately after the sediment had been removed in August of 1996.

5.10 1999 Sample Deviations

Air sampler outages made up the majority of sample deviations for 1999. Problems ranged from unit failure to power outages. The one water sample deviation was due to the plant refueling outage. High river flows again caused the cancellation of the spring sediment sampling. In an effort to avoid the high spring flows, the sample will be scheduled one month earlier. Deviations are listed in Table 5-2.

TABLE 5-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARATIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL[a] MEAN	(RANGE)	PREVIOUS OPERATIONAL[b][c] MEAN	(RANGE)	1999[d] MEAN	(RANGE)
Air: pCi/m^3						
Gross Beta	<0.02	(<0.003 - 0.130)	0.020	(0.001 - 0.741)	0.011	(0.001 - 0.042)
I-131[e]	<0.05	(<0.01 - 0.11)	0.00	(-0.07 - 0.82)	0.00	(-0.02 - 0.01)
Gamma						
Cs-134	<0.01	(<0.001 - 0.040)	0.0002	(-0.0021 - 0.0149)	0.0000	(-0.0009 - 0.0003)
Cs-137	<0.01	(<0.001 - 0.040)	0.0006	(-0.0011 - 0.0356)	0.0000	(-0.0008 - 0.0003)
River/Drinking Water: pCi/l						
Gross Beta	<3	(<1 - <6)	1.9	(-0.2 - 9.1)	1.4	(0.0 – 2.3)
Gamma						
Cs-134	<3.8	(<1 - <12)	0.1	(-8.2 - 5.2)	-0.1	(-1.7 – 0.8)
Cs-137	<4.1	(<1 - <13)	1	(-5.7 - 6.2)	1.5	(0.6 - 3.6)
Co-58	<5.1	(<1 - <25)	-0.1	(-3.3 - 2.9)	-0.2	(-1.5 – 1.6)
Co-60	<4.7	(<1 - <13)	0.7	(-4.9 - 7.1)	0.5	(-2.9 – 2.4)
Fe-59	<13.3	(<2 - <93)	0.8	(-8.9 - 6.9)	1.3	(-3.9 – 4.9)
Zn-65	<8.3	(<2 - <27)	-0.8	(-16.2 - 10.5)	0.6	(-3.9 – 4)
H-3	<481.7	(220 - <820)	109.3	(-500 - 596)	95.3	(49 – 130)
Groundwater: pCi/l						
Gamma						
Cs-134	<4	(<1 - <12)	0.4	(-4.1 - 5.4)	0.4	(-0.7 – 1.9)
Cs-137	<3.8	(0.8 - <8)	0.9	(-6 - 4.9)	1.4	(-0.6 – 4.4)
Co-58	<4.7	(<1 - <12)	-0.4	(-3.3 – 2.5)	-0.6	(-1.4 - 0.7)
Co-60	<4.1	(0.1 - <9)	0.8	(-2.4 - 8.4)	0.6	(-0.7 – 2.1)
Fe-59	<11.6	(<2 - <33)	0.7	(-4.5 - 5.7)	0.1	(-3.5 – 4.9)
Zn-65	<8.6	(<2 - 17)	-0.5	(-46.8 - 15)	2.2	(-3.1 – 11.4)
H-3	<467.8	(<10 - 2600)	18.9	(-516 - 324)	37.3	(-140 - 180)

(a) All stations, all years.
(b) Indicator stations only for the years 1984 to 1998. Some of the data means and ranges are biased high due to Chernobyl in 1986.
(c) The data used for these averages does not include the "less than" values reported in 1984.
(d) Indicator stations only.
(e) Charcoal cartridge results.

TABLE 5-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARATIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL[a] MEAN	(RANGE)	PREVIOUS OPERATIONAL[b][c] MEAN	(RANGE)	1999[d] MEAN	(RANGE)
Discharge Water: pCi/l						
Gross Beta	<2.8	(<1.9 - 4)	16.4	(0.6 - 56)	13.5	(2.7 – 20)
Gamma						
Cs-134	<3.7	(<1 - <8)	0.5	(-3.9 - 10.1)	1.4	(-1.9 – 6.4)
Cs-137	<4.7	(<1 - 16)	1.9	(-5.3 - 23.1)	-0.2	(-7.6 – 6)
Co-58	<1.4	(1 - 13)	0.0	(-2.6 - 4.6)	0.7	(-2.5 – 3.2)
Co-60	<5	(<1.9 - <13)	4.9	(-8.7 - 57.6)	1.6	(-2.5 – 9.3)
Fe-59	<11.9	(<3 - <38)	1	(-5.9 - 13)	1	(0.1 – 2.6)
Zn-65	<8.6	(<2 - 27)	3.6	(-8.2 - 86.7)	0.9	(-1.6 – 3.5)
H-3	<420	(<80 - 700)	1831	(55 - 12000)	5.3	(-270 - 190)
Sr-90	<3		0.8	(0.5 - 1.1)	Analysis Not Performed	
Storm Drain Water: pCi/l						
Gross Beta	Analysis Not Performed		8.4	(0.2 - 1100)	3.7	(0.2 – 17)
Gamma	Analysis Not Performed					
Cs-134			0.0	(-9.6 - 8.1)	0.0	(-3.3 – 2.6)
Cs-137			1.3	(-11 - 252)	0.7	(-4.1 – 3.4)
Co-58			-0.4	(-7.6 - 3.4)	0.0	(-2.4 - 2.6)
Co-60			0.9	(-11 - 125)	0.4	(-1.8 – 2.7)
Fe-59			0.8	(-14 - 12)	1	(-2.7 – 6.6)
Zn-65			0.8	(-13 - 53)	-0.1	(-8.1 – 6.6)
Mn-54			0.5	(-6.2 - 6.7)	0.3	(-1.5 – 3.5)
I-131			0.0	(-17 - 21.1)	0.0	(-6 – 5.5)
Ce-141			-1.1	(-441 - 707)	-1.1	(-8.4 – 3.1)
I-131[e]			0.4	(-0.2 - 8.3)	Analysis Not Performed	
H-3	Analysis Not Performed		5297	(-330 - 270000)	345	(-420 - 2800)
Sanitary Waste Water: pCi/l						
Gross Alpha	Analysis Not Performed		0.5	(-1 -.3)	0.9	(0 – 2.3)
Gross Beta	Analysis Not Performed		35	(5.9 - 61)	34	(17 – 48)
Cs-134			0.1	(-2.6 - 4.9)	-0.3	(-4.4 - 4)
Cs-137			1	(-5.1 - 4.2)	1.2	(-3.7 – 4.8)
Co-58			-0.3	(-2.9 - 1.8)	-0.1	(-1.8 – 2.4)
Co-60			0.3	(-12.9 - 4)	0.2	(-1.8 – 3.3)
H-3	Analyses Not Performed		1051	(-170 - 20000)	2071	(110 - 4900)

(a) All stations, all years.
(b) Indicator stations only for the years 1984 to 1998. Some of the data means and ranges are biased high due to Chernobyl in 1986
(c) The data used for these averages does not include the "less than" values reported in 1984.
(d) Indicator stations only.
(e) Resin method

TABLE 5-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARATIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL[a] MEAN	(RANGE)	PREVIOUS OPERATIONAL[b][c] MEAN	(RANGE)	1999[d] MEAN	(RANGE)
River Sediment: pCi/kg (dry)						
Gamma						
Cs-134	<112.5	(<50 - <150)	50.1	(7 - 172)	32.5	
Cs-137	<287	(<50 - <560)	312.8	(136.5 - 1890)	167.7	
Co-60	<254.6	(130 - 610)	36.2	(9 - 129)	1.4	
Storm Drain Sediment: pCi/kg (dry)						
Gamma:	Analysis Not Performed[e]					
Cs-134			61.1	(4.1 - 1140)	20.6	(18.6 – 22.6)
Cs-137			159.5	(-3.6 - 2900)	18.8	(14.2 – 23.3)
Co-58			-1.9	(-27 - 58)	-7	(-8.2 - -5.8)
Co-60			745.3	(-6.4 - 25400)	129.8	(88.4 - 171.1)
Zn-65			115.2	(-34.5 - 4650)	4	(2.6 – 5.4)
Mn-54			22.6	(-9.6 - 670)	5.8	(2.7 – 9)
Ce-141			34.9	(-28.8 - 3740)	11.7	(11.6 – 11.7)
Sanitary Waste Sediment: pCi/kg (dry)						
Gamma:	Analysis Not Performed[e]					
Cs-134			28.1	(-15.6 - 55.2)	21.6	
Cs-137			145.2	(0 - 255.1)	109.9	
Co-60			253	(-3.4 - 2110)	189.1	
Zn-65			11.6	(-106 - 125)	-10.4	
Mn-54			6.3	(-26 - 95)	14.5	
Annual Soil: pCi/kg (dry)						
Gamma						
Cs-134	<65.3	(<20 - <150)	25.4	(1 - 53.2)	28.5	(29.3 – 37.1)
Cs-137	364.3	(<20 - <1880)	214.2	(-7.3 - 735)	162.7	(18.7 – 303.8)
Sr-90	Analysis Not Performed		178.8	(0.2 - 455)	Analysis Not Performed	
Storm Drain Soil: pCi/kg (dry)						
Gamma	Analysis Not Performed					
Cs-134			22.6	(-1.4 - 38)	20.1	(6 – 25.8)
Cs-137			40.5	(12.5 - 77.3)	35.1	(28.2 – 41.7)

(a) All stations all years.
(b) Indicator stations only for the years 1984 to 1998. Some of the data means and ranges are biased high due to Chernobyl in 1986
(c) The data used for these averages does not include the "less the" values reported in 1984.
(d) Indicator stations only.
(e) Prior to February 1992, these samples were analyzed as wet weight. These numbers are for the samples analyzed as dry weight.

TABLE 5-1 (cont.)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM
COMPARATIVE SUMMARY

MEDIA/ ANALYSIS	PREOPERATIONAL[a] MEAN	(RANGE)	PREVIOUS OPERATIONAL[b][c] MEAN	(RANGE)	1999[d] MEAN	(RANGE)
Milk: pCi/l						
Gamma						
Cs-134	<3.7	(<0.9 - <14)	0.6	(-8.7 - 22.6)	-0.1	(-2.8 – 1.9)
Cs-137	<3.8	(<1 - <12)	2.2	(-6.6 - 47.3)	1.4	(-2.7 – 3.4)
Ba-140	<72.1	(<6 - <2000)	0.2	(-44.3 - 55)	0.1	(-8.8 – 6.1)
La-140	<33.3	(<5 - 1000)	-0.4	(-24.2 - 9.7)	-0.7	(-10.7 - 2.5)
I-131[e]	<0.5	(<0.1 - <1)	0.6	(-0.8 - 143.6)	0.1	(-0.2 - 0.3)
Sr-90	Analysis Not Performed		1.9	(1.3 - 3.9)	Analysis Not Performed	
Fish: pCi/kg (wet)						
Gamma						
Cs-134	<61.2	(<6 - <130)	1.7	(-20.4 - 24)	-2	(-4.7 – 2.9)
Cs-137	<88.8	(<10 - <130)	14	(-35.1 - 57)	4.5	(-2.2 – 8.7)
Co-58	<87.7	(<9 - <130)	0.6	(-16.8 - 25.8)	-0.1	(-0.9 – 0.6)
Co-60	<80.6	(<9 - <130)	1.6	(-18.4 - 21)	-5	(-7.1 – -3.8)
Fe-59	<130	(<30 - <260)	0.2	(-34.2 - 30)	1.6	(-7.1 – 7.4)
Mn-54	<88.3	(<8 - <130)	1.5	(-20 - 30.9)	2.8	(-0.8 – 4.8)
Produce: pCi/kg (wet)						
Gamma						
Cs-134	<49.1	(<10 - <140)	0.5	(-24.8 - 19.8)	-0.4	(-3 – 2.3)
Cs-137	<69.8	(<10 - <140)	2.9	(-9.8 - 20.9)	1.6	(-1.3 – 7.3)
I-131	<105.6	(<10 - <1000)	-0.3	(-26 - 59)	-0.1	(-2.8 – 2.9)
Cooling Tower Sediment: pCi/kg (dry)						
Gamma	Analysis Not Performed					
Mn-54			9.1	(2.8 - 14.9)	16.6	
Co-60			64.2	(32.8 - 92.3)	41.4	
Zn-65			14	(4.5 - 27.8)	34.7	
Cs-134			34.3	(28 - 43.2)	33.2	
Cs-137			228.2	(211 - 236.9)	206	
TLD: mR/day						
Quarterly	0.24	(0.17 - 0.31)	0.25	(0.16 - 0.35)	0.24	(0.19- 0.30)
Annual	0.24	(0.20 - 0.29)	0.24	(0.18 - 0.34)	0.22	(0.19 - 0.27)

(a) All stations, all years.
(b) Indicator stations only for the years 1984 to 1998. Some of the data means and ranges are biased high due to Chernobyl in 1986.
(c) The data used for these averages does not include the "less than" values reported in 1984.
(d) Indicator stations only.
(e) Resin method.

TABLE 5-2
1999 SAMPLE DEVIATIONS

SAMPLE MEDIA	DATE	LOCATION	PROBLEM
Air Particulate/Iodine	02/16-03/29	Station 40	Power shut off by landowner.
	03/08-03/15	Station 4	Power to unit shut off for short time. Sample volume acceptable.
	03/22-03/29	Station 4	Power to unit shut off for short time. Sample volume acceptable.
	04/19-04/26	Station 7	Power off. Sample volume acceptable
	06/21-06/28	Station 21	Unit failure. Sample volume acceptable.
	08/02-08/09	Station 1	Unit failure. Sample volume acceptable.
	08/02-08/09	Station 40	Unit failure. Sample volume acceptable.
	08/11-08/16	Station 1	Unit returned to operation. Low hours. Sample volume acceptable.
	08/12-08/16	Station 40	Unit returned to operation. Low Hours. Sample volume acceptable.
	09/20-09/27	Station 1	Power off due to plant outage work. Sample volume acceptable.
	11/22-11/29	Station 40	Unit failure. Sample volume acceptable.
	11/29-12/06	Station 7	Power off. Sample volume acceptable.
	11/30-12/06	Station 40	Unit returned to operation. Low hours. Sample volume acceptable.
Water	R-14 Outage	Station 27	Sampler in Timed mode for plant outage.
Sediment	Spring	Stations 33 and 34	No sample due to high water.
TLD	2nd Quarter	Station 23	Quarterly and annual TLD burned. Quarterly replaced. Annual not replaced.
Vegetable	2nd Quarter	9C and 37	Asparagus substituted for leafy vegetable.

TABLE 5-3

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2
HANFORD WASHINGTON

DOCKET NO. 50-397
JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of All Indicator Locations Detection[b] (LLD)	Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Mean Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Air Particulates (pCi/m3)	Gross Beta 629	0.003	0.011(566/576) (0.002-0.042)	57 0.9 mi N	0.013(53/53) (0.004-0.042)	0.010(52/53) (0.003-0.028)	0
	Gamma (Quarterly) 48						
	Be-7	0.01	0.113(44/44) (0.057-0.658)	5 7.7 mi ESE	0.259(4/4) (0.098-0.658)	0.088(4/4) (0.062-0.131)	0
	K-40	0.01	0.007(7/44) (0.003-0.012)	40 6.4 mi SE	0.010(2/4) (0.006-0.012)	-(0/4)	0
Air Iodine (pCi/m3)	I-131 629	0.01	-(0/576)			-(0/53)	0
Soil (pCi/kg dry)	Gamma 5						
	K-40	700	13400(4/4) (11800-14100)	1 1.3 mi S	14100(1/1)	12300(1/1)	0
	Cs-137	40	163(4/4) (18.7-304)	1 1.3 mi S	304(1/1)	89.1(1/1)	0
	Ra-226	400	759(4/4) (606-852)	9 30 mi WSW	891(1/1)	891(1/1)	0
	Th-228	50	574(4/4) (481-713)	1 1.3 mi S	713(1/1)	658(1/1)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2 — DOCKET NO. 50-397
HANFORD WASHINGTON — JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of All Indicator Locations Detection[b] (LLD)		Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Water (River/Drinking) (pCi/liter)	Gross Beta	24	4	1.54(10/12) (0.96-2.3)	29 11 mi SSE	1.54(10/12) (0.96-2.3)	1.47(11/12) (1.1-1.9)	0
	Tritium	8	300	-(0/4)			-(0/4)	0
	Gamma	24		-(0/12)			-(0/12)	0
Water (Discharge) (pCi/liter)	Gross Beta	12	12	13.5(12/12) (2.7-20)	27 3.2 mi E	13.5(12/12) (2.7-20)	-(0/0)	0
	Tritium	4		-(0/4)	27 3.2 mi E	-(0/4)	-(0/0)	0
	Gamma	12		-(0/12)			-(0/0)	0)
Water (Ground) (pCi/liter)	Tritium	12	300	180(1/12)	52 0.1 mi N	180(1/4)	-(0/0)	0
	Gamma	12		-(0/12)			-(0/0)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2
HANFORD WASHINGTON

DOCKET NO. 50-397
JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of All Indicator Locations Detection[b] (LLD)	All Indicator Locations Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Sediment (pCi/kg dry)	Gamma 2						
	K-40	700	14400(1/1)	33 3.6 mi ENE	15300(1/1)	15300(1/1)	0
	Cs-137	40	168(1/1)	34 3.5 mi ESE	168(1/1)	51.6(1/1)	0
	Ra-226	400	1380(1/1)	34 3.5 mi ESE	1380(1/1)	1250(1/1)	0
	Th-228	50	1190(1/1)	34 3.5 mi ESE	1190(1/1)	1020(1/1)	0
Fish (pCi/kg wet)	Gamma 6						
	K-40	1000	3250(3/3) (3000-3680)	30 3.3 mi E	3250(3/3) (3000-3680)	3070(3/3) (2980-3220)	0
Milk (pCi/liter)	I-131 54	0.5	-(0/54)			-(0/0)	0
	Gamma 54						
	K-40	200	1380(54/54) (1160-1860)	64 9.7 mi ESE	1410(3/3) (1320-1530)	-(0/0)	0
Broadleaf In Lieu of Milk (pCi/kg wet)	Gamma 12						
	K-40	200	-(0/0)	9G 36 mi SW	5850(12/12) (2680-9420)	5850(12/12) (2680-9420)	0
	I-131		-(0/7)				0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2
HANFORD WASHINGTON

DOCKET NO. 50-397
JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of All Indicator Locations Detection[b] (LLD)	Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Roots (pCi/kg wet)	Gamma 8						
	K-40		2440(4/4) (1220-4010)	9C 36 mi SW	3650(4/4) (1210-4690)	3650(4/4) (1210-4690)	0
Fruits (pCi/kg wet)	Gamma 8						
	K-40		1620(5/5) (1010-2450)	37 16 mi SSE	1780(4/4) (1050-2450)	1470(3/3) (1080-1960)	0
Vegetables (pCi/kg wet)	Gamma 13						
	K-40		1970(6/6) (1360-2450)	9C 36 mi SW	2150((7/7) (1550-3210)	2150(7/7) (1550-3210)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2
HANFORD WASHINGTON

DOCKET NO. 50-397
JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed		Lower Limit of Detection[b] (LLD)	All Indicator Locations Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Storm Drain Water Station 101 (pCi/liter)	Gr-Beta	45	4	5.0(25/45) (2.6-17)	101 0.3 mi ENE	5.0(25/45) (2.6-17)	-(0/0)	0
	Tritium	45	300	793(18/45) (160-2800)	101 0.3 mi ENE	793(18/45) (160-2800)	-(0/0)	0
	Gamma	45		-(0/45)			-(0/0)	0
Storm Drain Sediment Station 101-Outfall (pCi/kg)	Gamma	2						
	Be-7			544(2/2) (190-900)	101 0.3 mi ENE	544(2/2) (190-900)	-(0/0)	0
	K-40		700	3360(2/2) (2890-3830)	101 0.3 mi ENE	3360(2/2) (2890-3830)	-(0/0)	0
	Co-60		30	130(2/2) (88-171)	101 0.3 mi ENE	130(2/2) (88-171)	-(0/0)	0
	Cs-137		40	19(2/2) (14-23)	101 0.3 mi ENE	19(2/2) (14-23)	-(0/0)	0
	Ra-226		400	1010(2/2) (975-1050)	101 0.3 mi ENE	1010(2/2) (975-1050)	-(0/0)	0
	Th-228		50	440(2/2) (433-447)	101 0.3 mi ENE	440(2/2) (433-447)	-(0/0)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2
HANFORD WASHINGTON

DOCKET NO. 50-397
JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed		Lower Limit of All Indicator Locations Detection[b] (LLD)	Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Storm Drain Soil (pCi/kg)	Gamma	6						
	Be-7			135(1/6)	101 0.3 mi ENE	135(1/6)	-(0/0)	0
	K-40		700	14400(6/6) (13200-15600)	101 0.3 mi ENE	14400(6/6) (13200-15600)	-(0/0)	0
	Cs-137		40	35.1(6/6) (28.2-41.7)	101 0.3 mi ENE	35.1(6/6) (28.2-41.7)	-(0/0)	0
	Ra-226		400	784(5/6) (670-886)	101 0.3 mi ENE	784(5/6) (670-886)	-(0/0)	0
	Th-228		50	439(6/6) (104-586)	101 0.3 mi ENE	439(6/6) (104-586)	-(0/0)	0
Sanitary Waste Treatment Facility Water (pCi/l)	Gross Alpha	20		-(0/20)			-(0/0)	0
	Gross Beta	20	1	34.0(20/20) (17-48)	102A 0.4 mi SSE	34.5(12/12) (26-48)	-(0/0)	0
	Tritium	32	200	2201(30/32) (190-4900)	102A 0.4 mi SSE	4425(12/12) (3800-4900)	-(0/0)	0
	Gamma	32		-(0/32)			-(0/0)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2 — DOCKET NO. 50-397
HANFORD WASHINGTON — JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of All Indicator Locations Detection[b] (LLD)	All Indicator Locations Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Location With Highest Mean Mean (Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Sanitary Waste Treatment Facility Sediment (pCi/kg)	Gamma	1					
	K-40	700	7450(1/1) -	102 0.4 mi SSE	7450(1/1) -	-(0/0)	0
	Co-60	30	189(1/1) -	102 0.4 mi SSE	189(1/1) -	-(0/0)	0
	Cs-137	40	110(1/1) -	102 0.4 mi SSE	110(1/1) -	-(0/0)	0
	Ra-226	400	1450(1/1) -	102 0.4 mi SSE	1450(1/1) -	-(0/0)	0
	Th-228	50	402(1/1) -	102 0.4 mi SSE	402(1/1) -	-(0/0)	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-3 (Cont.)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

ENERGY NORTHWEST WNP-2
HANFORD WASHINGTON

DOCKET NO. 50-397
JANUARY 1 to DECEMBER 31, 1999

Medium Or Pathway Sampled (Unit of Measurement)	Analysis and Total Number of Analyses Performed	Lower Limit of Detection[b] (LLD)	All Indicator Locations Mean (Ratio)[a] (Range)	Location With Highest Mean Name Distance and Direction	Mean (Ratio)[a] (Range)	Control Location Mean (Ratio)[a] (Range)	Number of Nonroutine Reported Measurements
Direct Radiation Quarterly TLD's (mR/day)	TLD 240	-	0.238(224/224) (0.188-0.301)	46 5 mi NE	0.294(4/4) (0.285-0.301)	0.211(4/4) (0.203-0.219)	0
Direct Radiation Annual TLD's (mR/day)	TLD 60	-	0.219(55/55) (0.191-0.271)	46 5 mi NE	0.271(1/1)	0.199(1/1)	0
St 119 Direct Radiation Quarterly TLD's (mR/day)	TLD 8	-	0.239(4/4) (0.219-0.251)	119 0.2 mi SSE	0.239(4/4) (0.219-0.251)	0.232(4/4) (0.222-0.243)	0
St 119 Direct Radiation Annual TLD's (mR/day)	TLD 2	-	0.209(1/1)	119 0.2 mi SSE	0.225(1/1)	0.225(1/1)	0
St 120 Direct Radiation Quarterly TLD's (mR/day)	TLD 4	-	0.240(4/4) (0.231-0.245)	120 0.2 mi S	0.240(4/4) (0.231-0.245)	-	0
St 120 Direct Radiation Annual TLD's (mR/day)	TLD 1	-	0.223(1/1)	120 0.2 mi S	0.223(1/1)	-	0

(a) The mean of positive results above the LLD and ratio of those results to the number of samples analyzed for the parameter of interest.
(b) Contract LLDs. Actual LLDs may be lower for specific samples.

TABLE 5-4
MEAN QUARTERLY TLD DATA SUMMARY FOR THE PREOPERATIONAL AND OPERATIONAL PERIODS

Results in mR/day

	PREOPERATIONAL		1984 - 1998 OPERATIONAL		1999 OPERATIONAL	
STATION	MEAN[a]	STANDARD ERROR	MEAN	STANDARD ERROR	MEAN	STANDARD ERROR
1	0.24	0.02	0.25	0.00	0.24	0.01
2	0.23	0.02	0.25	0.00	0.24	0.01
3	0.22	0.01	0.24	0.00	0.23	0.00
4	0.22	0.02	0.22	0.01	0.20	0.01
5	0.23	0.01	0.23	0.00	0.22	0.01
6	0.22	0.01	0.23	0.00	0.22	0.01
7	0.23	0.01	0.24	0.00	0.23	0.01
8	0.26	0.01	0.27	0.01	0.25	0.01
9	0.22	0.02	0.23	0.00	0.21	0.01
10	0.23	0.01	0.24	0.00	0.23	0.01
11	0.24	0.01	0.24	0.00	0.23	0.00
12	0.25	0.01	0.26	0.01	0.25	0.01
13	0.24	0.01	0.25	0.00	0.23	0.01
14	0.24	0.02	0.24	0.00	0.23	0.01
15	0.25	0.01	0.26	0.01	0.25	0.01
16	0.24	0.01	0.25	0.00	0.24	0.01
17	0.25	0.01	0.25	0.01	0.25	0.01
18	0.24	0.01	0.25	0.00	0.24	0.01
19	0.24	0.01	0.25	0.00	0.25	0.01
20	0.24	0.01	0.25	0.00	0.24	0.00
21	0.23	0.01	0.23	0.00	0.22	0.00
22	0.24	0.01	0.25	0.00	0.24	0.01
23	0.24	0.01	0.24	0.00	0.24	0.01
24	0.24	0.01	0.25	0.00	0.24	0.01
25	0.25	0.01	0.26	0.01	0.25	0.00
40	0.22	0.01	0.23	0.00	0.22	0.01
41	0.26	0.02	0.26	0.01	0.24	0.01
42	0.25	0.01	0.25	0.00	0.24	0.01
43	0.25	0.01	0.26	0.01	0.23	0.01
44	0.23	0.01	0.24	0.00	0.23	0.01
45	0.23	0.01	0.24	0.00	0.23	0.01
46	0.29	0.02	0.30	0.01	0.29	0.01
47	0.22	0.02	0.23	0.00	0.21	0.01
49	0.24	0.00	0.25	0.00	0.24	0.01
50	0.22	0.00	0.25	0.00	0.23	0.01
51	0.23	0.01	0.24	0.00	0.23	0.01

(a) This preoperational mean is for the 1982-1983 data only.

TABLE 5-4 (cont.)
MEAN QUARTERLY TLD DATA SUMMARY FOR THE PREOPERATIONAL AND OPERATIONAL PERIODS

Results in mR/day

	PREOPERATIONAL		1984 - 1998 OPERATIONAL		1999 OPERATIONAL	
STATION	MEAN[a]	STANDARD ERROR	MEAN	STANDARD ERROR	MEAN	STANDARD ERROR
53	0.27	0.00	0.27	0.01	0.25	0.02
54	0.26	0.00	0.26	0.00	0.24	0.01
55	0.23	0.00	0.24	0.00	0.24	0.01
56	0.24	0.00	0.25	0.00	0.24	0.01
61	(b)		0.27	0.01	(b)	
65	(c)		0.23	0.01	0.23	0.01
71(1S)	0.24	0.02	0.28	0.01	0.27	0.02
72(2S)	0.25	0.01	0.27	0.01	0.26	0.01
73(3S)	0.23	0.01	0.24	0.00	0.24	0.01
74(4S)	0.26	0.01	0.27	0.01	0.25	0.01
75(5S)	0.22	0.02	0.25	0.01	0.24	0.01
76(6S)	0.24	0.01	0.25	0.00	0.24	0.01
77(7S)	0.25	0.01	0.25	0.00	0.24	0.01
78(8S)	0.25	0.01	0.24	0.00	0.23	0.01
79(9S)	0.25	0.01	0.25	0.00	0.24	0.01
80(10S)	0.24	0.01	0.24	0.00	0.23	0.01
81(11S)	0.24	0.02	0.24	0.00	0.23	0.01
82(12S)	0.26	0.02	0.25	0.00	0.24	0.01
83(13S)	0.25	0.01	0.26	0.00	0.24	0.01
84(14S)	0.24	0.01	0.25	0.01	0.24	0.01
85(15S)	0.26	0.02	0.26	0.01	0.25	0.01
86(16S)	0.25	0.01	0.28	0.01	0.27	0.01
119B	(d)		0.25	0.01	0.24	0.01
119Ctrl	(d)		0.25	0.01	0.23	0.01
120East	(d)		0.27	0.02	0.24	0.01
120West	(d)				(d)	
120Ctrl	(d)				(d)	
All	0.25	0.00	0.25	0.00	0.24	0.00

(a) This preoperational mean is for 1982-1983 data only.
(b) Station 61 was added in 1989 and discontinued in 1992.
(c) Station 65 added in 1997.
(d) Stations 119B, 119Ctrl, 120East, 120West and 120Ctrl added in 1995. Stations 120West and 120Ctrl discontinued in 1997.

TABLE 5-5
ANNUAL TLD DATA SUMMARY FOR THE PREOPERATIONAL AND OPERATIONAL PERIODS

Results in mR/day

	PREOPERATIONAL		1984 - 1998 OPERATIONAL		1999 OPERATIONAL
STATION	MEAN[a]	STANDARD ERROR	MEAN	STANDARD ERROR	RESULT
1	0.25	0.04	0.24	0.01	0.22
2	0.23	0.00	0.23	0.01	0.21
3	0.23	0.01	0.22	0.01	0.20
4	0.24	0.07	0.21	0.01	0.19
5	0.24	0.03	0.22	0.01	0.21
6	0.22	0.01	0.22	0.01	0.20
7	0.23	0.01	0.23	0.01	0.21
8	0.26	0.01	0.26	0.01	0.23
9	0.22	0.01	0.21	0.01	0.20
10	0.23	0.01	0.22	0.01	0.21
11	0.24	0.01	0.23	0.01	0.22
12	0.26	0.00	0.25	0.01	0.24
13	0.24	0.01	0.23	0.01	0.22
14	0.23	0.00	0.23	0.01	0.22
15	0.25	0.03	0.25	0.01	0.23
16	0.25	0.01	0.24	0.01	0.22
17	0.24	0.02	0.24	0.01	0.23
18	0.25	0.03	0.24	0.01	0.22
19	0.24[b]		0.24	0.01	0.22
20	0.24	0.01	0.24	0.01	0.23
21	0.22	0.01	0.22	0.01	0.20
22	0.24	0.01	0.23	0.01	0.22
23	0.23	0.01	0.23	0.01	(d)
24	0.24	0.01	0.24	0.01	0.22
25	0.25	0.01	0.25	0.01	0.24
40	0.21[b]		0.22	0.01	0.20
41	0.26	0.01	0.25	0.01	0.22
42	0.24[b]		0.24	0.01	0.22
43	0.24[b]		0.25	0.01	0.21
44	0.24	0.02	0.23	0.01	0.21
45	0.23	0.01	0.23	0.01	0.21
46	0.29	0.01	0.29	0.01	0.27
47	0.22[b]		0.22	0.01	0.20
49	(c)		0.23	0.01	0.21

(a) This preoperational mean is for 1982 - 1983 data only.

(b) There was only one annual exchange during the preoperational period.

(c) Stations 49-56 were first monitored during Fourth Quarter 1983.

(d) TLD burned in late April and not replaced.

TABLE 5-5 (cont.)
ANNUAL TLD DATA SUMMARY FOR THE PREOPERATIONAL AND OPERATIONAL PERIODS

Results in mR/day

	PREOPERATIONAL		1984 - 1998 OPERATIONAL		1999 OPERATIONAL
STATION	MEAN[a]	STANDARD ERROR	MEAN	STANDARD ERROR	RESULT
50	(c)		0.23	0.01	0.21
51	(c)		0.23	0.01	0.21
53	(c)		0.26	0.01	0.23
54	(c)		0.24	0.01	0.22
55	(c)		0.23	0.01	0.21
56	(c)		0.24	0.01	0.22
61	(c)		0.26[c]	0.01	(d)
71 (1S)	0.24[b]		0.27	0.01	0.25
72 (2S)	0.25[b]		0.26	0.01	0.24
73 (3S)	0.23[b]		0.23	0.01	0.21
74 (4S)	0.24[b]		0.25	0.01	0.24
75(5S)	0.24[b]		0.24	0.01	0.22
76(6S)	0.24[b]		0.24	0.01	0.23
77 (7S)	0.25[b]		0.24	0.01	0.22
78 (8S)	0.25[b]		0.23	0.01	0.22
79 (9S)	0.25[b]		0.23	0.01	0.22
80 (10S)	0.23[b]		0.23	0.01	0.21
81 (11S)	0.23[b]		0.23	0.01	0.21
82 (12S)	0.25[b]		0.24	0.01	0.22
83 (13S)	0.25[b]		0.24	0.01	0.22
84 (14S)	0.23[b]		0.24	0.01	0.22
85 (15S)	0.25[b]		0.25	0.01	0.24
86 (16S)	0.24[b]		0.27	0.01	0.25
119B			0.26	0.04	0.22
119Ctrl			0.26	0.03	0.23
120East			0.28	0.05	0.22
120West			0.33		(e)
120Ctrl			0.29		(e)
All	0.24	0.00	0.24	0.00	0.22

(a) This preoperational mean is for 1982 - 1983 data only.
(b) There was only one annual exchange during the preoperational period.
(c) Stations 49-56 were first monitored during Fourth Quarter 1983. Station 61 was added in 1989.
(d) Station 61 discontinued on June 29, 1992
(e) Stations 120West and 120Ctrl were discontinued in 1997

TABLE 5-6
1999 MEAN QUARTERLY VERSUS ANNUAL TLD DATA
Results in mR/day

STATION	1984-98 TLDs QUARTERLY MEAN[a]	1984-98 TLDs ANNUAL MEAN	1984-98 TLDs RATIO[b]	1999 TLDs QUARTERLY MEAN[a]	1999 TLDs ANNUAL RESULTS	1999 TLDs RATIO[b]
1	0.25	0.24	1.05	0.24	0.22	1.10
2	0.25	0.23	1.06	0.24	0.21	1.10
3	0.24	0.22	1.07	0.23	0.20	1.11
4	0.22	0.21	1.06	0.20	0.19	1.07
5	0.23	0.22	1.07	0.22	0.21	1.06
6	0.23	0.22	1.07	0.22	0.20	1.09
7	0.24	0.23	1.05	0.23	0.21	1.10
8	0.27	0.26	1.03	0.25	0.23	1.08
9	0.23	0.21	1.07	0.21	0.20	1.06
10	0.24	0.22	1.07	0.23	0.21	1.08
11	0.24	0.23	1.06	0.23	0.22	1.05
12	0.26	0.25	1.06	0.25	0.24	1.07
13	0.25	0.23	1.06	0.23	0.22	1.07
14	0.25	0.23	1.07	0.23	0.22	1.06
15	0.26	0.25	1.05	0.25	0.23	1.07
16	0.25	0.24	1.06	0.24	0.22	1.07
17	0.25	0.24	1.05	0.25	0.23	1.08
18	0.25	0.24	1.05	0.24	0.22	1.09
19	0.25	0.24	1.06	0.25	0.22	1.11
20	0.25	0.24	1.05	0.24	0.23	1.08
21	0.23	0.22	1.07	0.22	0.20	1.13
22	0.25	0.23	1.06	0.24	0.22	1.09
23	0.24	0.23	1.06	0.24	(c)	
24	0.25	0.24	1.06	0.24	0.22	1.08
25	0.26	0.25	1.06	0.25	0.24	1.04
40	0.23	0.22	1.07	0.22	0.20	1.11
41	0.26	0.25	1.06	0.24	0.22	1.13
42	0.26	0.24	1.07	0.24	0.22	1.11
43	0.26	0.25	1.07	0.23	0.21	1.12
44	0.24	0.23	1.06	0.23	0.21	1.08
45	0.24	0.23	1.07	0.23	0.21	1.09
46	0.30	0.29	1.04	0.29	0.27	1.08
47	0.23	0.22	1.05	0.21	0.20	1.08
49	0.25	0.23	1.06	0.24	0.21	1.12
50	0.25	0.23	1.07	0.23	000.21	1.11

(a) Mean of the quarterly results.
(b) Quarterly result/Annual result
(c) TLD burned in late April.

TABLE 5-6 (cont.)
1999 MEAN QUARTERLY VERSUS ANNUAL TLD DATA

Results in mR/day

STATION	1984-98 TLDs QUARTERLY MEAN[a]	1984-98 TLDs ANNUAL MEAN	1984-98 TLDs RATIO[b]	1999 TLDs QUARTERLY MEAN[a]	1999 TLDs ANNUAL RESULTS	1999 TLDs RATIO[b]
51	0.24	0.23	1.07	0.24	0.21	1.16
53	0.27	0.26	1.05	0.25	0.23	1.05
54	0.26	0.24	1.05	0.24	0.22	1.09
55	0.24	0.23	1.07	0.24	0.21	1.16
56	0.25	0.24	1.06	0.24	0.22	1.07
61[c]	0.27	0.26	1.06			
65[d]	0.24	0.23	1.04	0.23	0.21	1.12
71 (1S)	0.28	0.27	1.05	0.27	0.25	1.08
72 (2S)	0.27	0.26	1.04	0.26	0.24	1.09
73 (3S)	0.24	0.23	1.07	0.24	0.21	1.16
74 (4S)	0.27	0.25	1.06	0.25	0.24	1.05
75 (5S)	0.25	0.24	1.06	0.24	0.22	1.08
76 (6S)	0.25	0.24	1.06	0.24	0.23	1.06
77 (7S)	0.25	0.24	1.06	0.24	0.22	1.08
78 (8S)	0.25	0.23	1.05	0.23	0.22	1.08
79 (9S)	0.25	0.23	1.07	0.24	0.22	1.08
80 (10S)	0.24	0.23	1.06	0.23	0.21	1.08
81 (11S)	0.25	0.23	1.06	0.23	0.21	1.09
82 (12S)	0.25	0.24	1.05	0.24	0.22	1.10
83 (13S)	0.26	0.25	1.05	0.24	0.22	1.12
84 (14S)	0.25	0.24	1.06	0.24	0.22	1.11
85 (15S)	0.26	0.25	1.05	0.25	0.24	1.06
86 (16S)	0.28	0.27	1.04	0.27	0.25	1.07
119B	0.26	0.26	0.99	0.24	0.22	1.11
119Ctrl	0.26	0.26	0.99	0.23	0.23	1.03
120East	0.27	0.28	0.97	0.24	0.22	1.08
120West	0.28	0.33	0.86	(e)	(e)	
120Ctrl	0.25	0.29	0.86	(e)	(e)	
ALL	0.25	0.24	1.05	0.24	0.22	1.09

(a) Mean of the quarterly results.
(b) Quarterly result/Annual result.
(c) Station 61 was added in 1989 and discontinued in 1992.
(d) Station 65 added in 1997.
(e) Stations discontinued in 1997.

6.0 QUALITY ASSURANCE AND QUALITY CONTROL

6.0 QUALITY ASSURANCE AND QUALITY CONTROL

The REMP is designed to meet the quality assurance and quality control criteria of Regulatory Guide 4.15[4]. To accomplish this, the REMP requires that its analytical contractors meet these criteria also. In-depth audits are performed of the REMP records and activities and the records and activities of its support organizations at least annually by the Energy Northwest Quality Assurance group.

Quality assurance and technical audits of the analytical contractor (Teledyne Brown Engineering) are also conducted periodically to verify their compliance to regulatory and contractual requirements. The adequacy of their quality assurance program is also assessed during the audits.

Intercomparison programs, which involve the comparison of Energy Northwest analytical results of samples containing known concentrations of various radionuclides, to the known values and also with the results reported by other monitoring programs, are a major component of the quality assurance activities of the REMP. The program participates in Environmental Measurements Laboratory (EML) intercomparison program. It also participates in local and regional intercomparison studies. The following sections summarize the quality assurance and quality control aspects of the TLD and analytical components of the REMP.

6.1 Quality Control For the Energy Northwest Environmental TLD Program

The Quality Control Program includes the preparation, processing and evaluation of environmental TLDs. To begin with, all environmental TLDs, including controls, which are to be used in the same quarter (or year for annuals), are annealed at the same time. This allows for uniform accumulation of and correction for background radiation. From the time the TLDs are annealed to the time they are placed in the field, they are stored and transported together. Once the field TLDs are collected, they are again stored together with the controls until processed.

Reader QC dosimeters are prepared by the TLD processor and serve as indicators that the reader calibration is satisfactory and that the TLDs were processed correctly. These TLDs are annealed just prior to being given a known exposure (typically 100 mR) to cesium-137 and processed among the field dosimeters. The number of QA dosimeters used during each processing is generally 10% of the number of field dosimeters.

If the mean reader QC dosimeter results vary by more than $\pm$ 5% from the given exposure, the processor is contacted and an investigation into the source of the discrepancy is initiated. Evaluation of the 1999 reader QC dosimeter results indicated satisfactory agreement for all four quarters and the annual processing results.

Control dosimeters (trip controls) are used for each set of field dosimeters to monitor the contribution of the exposure received by the field TLDs while in transit. The radiation background in the storage area is also monitored by a separate set of control dosimeters (building controls). If the trip control results are greater than the building control results, the difference between the two is subtracted from the field dosimeters.

Spiked dosimeters, which are exposed by Energy Northwest, are irradiated 25 mR cesium-137 for quarterly dosimeters or 85 mR for annual dosimeters. These spiked dosimeters are also processed with the field dosimeters during each run to verify the accuracy and consistency of the environmental TLD evaluations. All results were within ±5% of the known exposure and are provided in Table 6-1.

Extra sets of control dosimeters, known as zero dose dosimeters, are also included with the field dosimeters for processing. These zero dose TLDs are stored in a shielded container throughout the quarter (or year for annuals) and are used as an additional indication of reader performance. These TLDs may also be used as substitutes if a field TLD is lost.

6.2 Quality Control For the Analytical Program

Quality control for the analytical program involves two components: the quality control activities performed by Energy Northwest and the quality control program of the analytical contractor, Teledyne Brown Engineering. Both of these components are described in the following sections.

6.2.1 Energy Northwest Quality Control Activities

Energy Northwest has participated in the U.S. Department of Energy's Environmental Measurements Laboratory (EML) Quality Assessment Program since 1987. In general, the Teledyne Brown results agreed with the EML values as seen in Table 6-2. All results were either acceptable or acceptable with warning.

Duplicate samples were submitted to Teledyne Brown for analysis during 1999. These duplicates consisted of two sets of milk samples and one set of air filters from EML. The milk duplicates were marked Station 37 and were submitted for analysis at the same time as the milk samples from Station 36.

6.2.2 Teledyne Brown Engineering Quality Control Program

The goal of the quality control program at Teledyne Brown Engineering - Environmental Services is to produce analytical results which are accurate, precise and supported by adequate documentation. The program is based on the requirements of 10CFR50, Appendix B, Nuclear Regulatory Guide 4.15 and the program, as described in Teledyne's Quality Assurance Manual (IWL-0032-395) and Quality Control Manual (IWL-0032-365).

All measuring equipment is calibrated for efficiency at least annually using standard reference material traceable to the National Institute of Standards and Technology (NIST). For alpha and beta counting, check sources are prepared and counted each weekday the counter is in use. Control charts are maintained with three-sigma limits specified. Backgrounds are usually measured at least once per week.[17]

The gamma spectrometers are calibrated annually with a NIST-traceable standard reference material selected to cover the energy range of the nuclides to be monitored for all of the geometries measured. Backgrounds are determined every other week and check sources are counted weekly. The energy resolution and efficiency are plotted at two energy levels (59.5 and 1332 KeV) and held within three-sigma control limits.[18]

The efficiency of the liquid scintillation counters is determined at least annually by counting NIST traceable standards which have been diluted in a known amount of distilled water and various amounts of quenching agent.[19] The background of each counter is measured with each batch of samples. A control chart is maintained for the background and check source measurements as a stability check.

Results are reviewed before being entered into the data system by the Quality Assurance and/or the Department Manager for reasonableness of the parameters (background, efficiency, decay, etc.). Any results that are suspect, being higher or lower than results in the past, are returned to the laboratory for recount. If a longer count, decay check, recount on another system or recalculation does not give acceptable results based on experience, a new aliquot is analyzed. The complete information about the sample is contained on the worksheets accompanying the sample results.

The U.S. Environmental Protection Agency (EPA) discontinued its Interlaboratory Comparison Program in December 1998. Consequently, there are no "approved" laboratories for Intercomparison Studies; however, Teledyne participates in the Analytics, Inc. and Environmental Resource Associates (ERA) programs to the fullest extent possible. Teledyne's participation in the programs is for all radioactive isotopes prepared and at the maximum frequency of availability.

NIST is the approval authority for laboratory providers participating in Intercomparison Study programs. At this time, there are no approved laboratories for environmental and/or radiochemical isotope analyses.

Tables 6-3 and 6-4 present the Teledyne Brown quality control data results for blanks and spikes, respectively. Table 6-5 presents the results of the 1999 ERA Intercomparison as reported to Energy Northwest. Footnotes in the table refer to investigations of problems encountered in a few cases and the steps taken by Teledyne Brown to prevent recurrence. Table 6-6 presents the Analytics Cross Check Comparison results for 1999.

No deviations from written procedures occurred during 1999. A summary of the quality control blank and spiked sample results follow.

Iodine-131 Cartridges

A blank charcoal filter was analyzed with each group of samples assayed. Forty-nine blanks were analyzed in 1999. The average activity was 9.08E-01 total pCi. Activities were calculated without considering detection limits.

Gross-Beta - Filters

One blank filter was measured with each set of filters assayed. Fifty-three blanks were counted for 1999. The average activity 1.28E+00 total pCi, which indicated a relatively stable background for the filter and the gross beta proportional counters.

I-131 - Milk

A blank milk was analyzed with each group of samples assayed. The results showed that there was no contamination in the laboratory or counting area. The measurements of the blank samples indicated that there was no bias on the low background counters. The average activity for fourteen samples in 1999 was 7.59E+00 pCi/liter without considering detection limits. In addition seven blanks were analyzed as part of the Teledyne Brown Engineering - Environmental Services' quality control program. The average result for 1999 was -1.57E-01 pCi/liter.

Sr-90 - Milk and Water

Eleven blank water samples were analyzed during 1999. The average result, without considering the detection limits, was -8.19E+00 pCi/liter. Eleven spiked water samples were analyzed during 1999. The average value of the samples was 3.20E+00 pCi/l compared with a spike level of 4.11E+00 pCi/l. During 1999, a total of eleven spiked milk samples were analyzed. The average value of the samples was 3.18E+00 pCi/l compared with a spike value of 3.18E+00 pCi/l. These results were within the limits as specified by the EPA Intercomparison Studies Program. Eleven blank milk samples were analyzed with an average activity of 7.33E-01 pCi/l of Sr-90, which is the natural content of milk.

Gross Beta - Water

Eleven blanks were prepared from distilled water. The average result without considering detection limits for 1999 was 2.02E-00 pCi/l. Eleven gross beta samples with a spike level of 2.02E+00 pCi/l were analyzed during 1999. The average result was 2.02E+00 pCi/l. The results were well within the guidelines outlined in Table 2 of the document, "Environmental Radioactivity Laboratory Intercomparison Studies Program," EPA-600/4-81-004.

Tritium in Water

Six blank samples were analyzed during 1999. The average result, without considering detection levels, was 7.5E+01 pCi/l. Eleven tritium samples with a spike level of 1.62E+04 pCi/l were analyzed by liquid scintillation counting during 1999. The average result was 1.57E+04 pCi/l.

Gamma Spectroscopy

A blank water sample was analyzed weekly in the gamma spectroscopy laboratory. All nuclides were less than the normal level of detection indicating no contamination. Spike samples were measured weekly using the Cs-137 peak at 662 KeV. The average activity of eleven measurements during 1999 was 1.84E+00 pCi/l as compared with a spike level of 2.11E+00 pCi/l.

TABLE 6-1
1999 ENVIRONMENTAL SPIKED DOSIMETER RESULTS

DISTRIBUTION PERIOD	GIVEN EXPOSURE (mR)	REPORTED EXPOSURE (mR)	BIAS (%)
First Quarter	25.0	25.7	+2.9
		26.3	+5.2
		27.1	+8.3
Second Quarter	25.0	25.0	+0.2
		24.5	-2.0
		24.5	-2.2
Third Quarter	23.0	21.5	-6.7
		22.5	-2.0
		21.9	-4.9
Fourth Quarter	22.6	23.6	+4.4
		23.3	+3.1
		23.2	+2.7
Annual	85.0	77.1	-9.3
		75.8	-10.8
		74.8	-12.0

TABLE 6-2
1999 ENVIRONMENTAL MEASUREMENTS LABORATORY (EML)
QUALITY ASSESSMENT PROGRAM RESULTS

DATE	SAMPLE TYPE[a]	NUCLIDE	REPORTED RESULT	ERROR	EML VALUE	EML ERROR	RATIO REPORTED/EML
09/99	Air	Mn-54	1.01E+01	1.0E+00	7.91E+00	4.5E-01	1.28
	(Bq/filter)	Co-57	8.21E+00	8.1E-01	7.73E+00	3.3E-02	1.06
		Co-60	7.07E+00	7.0E-01	6.35E+00	4.1E-01	1.11
		Ru-106	6.51E+00	9.6E-01	5.50E+00	1.8E+00	1.18
		Cs-137	8.07E+00	8.1E-01	6.43E+00	4.2E-01	1.26
09/99	Soil	K-40	3.89E+02	1.4E+01	3.14E+02	1.0E+01	1.24
	(Bq/kg)	Mn-54	2.24E+00	6.4E-01	*	*	*
		Cs-137	2.24E+02	2.3E+01	2.04E+02	5.0E+00	1.10
		Ra-226	2.40E+02	2.4E+01	*	*	*
		Th-228	1.27E+02	1.3E+01	*	*	*
09/99	Vegetation	K-40	5.59E+02	5.6E+01	5.13E+02	2.0E+01	1.09
	(Bq/kg)	Co-60	2.03E+01	2.0E+00	17.6E+01	1.0E+00	1.15
		Cs-137	5.14E+02	5.2E+01	4.40E+02	2.0E+01	1.17
09/99	Water	H-3	9.30E+01	7.4E+00	8.07E+01	3.7E+00	1.15
	(Bq/l)	Co-60	5.03E+01	1.7E+00	5.24E+01	2.2E+00	0.96
		Cs-137	7.54E+01	1.7E+00	7.60E+01	3.4E+00	0.99

Bq = becquerel; the EML results are reported in becquerel instead of picocuries. One picocurie equals 0.037 becquerel

* - EML activity value not available at this time.

TABLE 6-3
1999 TELEDYNE BROWN QUALITY CONTROL DATA - BLANKS

NUCLIDE	MEDIUM	NUMBER	AVERAGE RESULT	UNITS
I-131	Milk	14[a]	1.89E-01	pCi/l
		7	7.59E+00	pCi/l
Sr-90	Milk	11[d]	3.18E+00	pCi/l
Sr-90	Water	11	3.20E+00	pCi/l
H-3 (10 ml)	Water	11	7.50E+01	pCi/l
Gross Beta	Water	11	2.02E+00	pCi/l
Gamma	Water	3	*2.11E+00	pCi/l
Gross Beta	AP Filter	53[b][c]	1.28E+00	Total pCi
I-131	Charcoal	49[a][b]	9.08E-01	Total pCi

Footnotes:

* All nuclides less than minimum detection level

a) This average is calculated from the Energy Northwest quality control samples without considering detection limits.

b) The in-house weekly quality control blanks for AP filters and charcoals are calculated in total pCi.

c) This average includes only the blank AP filters analyzed for Energy Northwest. A blank planchette (counter background) and a blank filter are counted with each set of filters analyzed (approximately 10 sets per week).

d) This is the natural Sr-90 content in milk.

TABLE 6-4
1999 TELEDYNE BROWN QUALITY CONTROL DATA - SPIKES

NUCLIDE	MEDIUM	NUMBER	AVERAGE RESULT	SPIKE LEVEL
Gross Beta	Water	11	2.02E+00	3.18E+00
H-3 (10 ml)	Water	11	1.57E+04	1.62E+04
Sr-90	Water	11	3.20E+00	4.11E+00
Sr-90	Milk	11	3.18E+00	3.18E+00
Gamma*	Water	3	1.84E+00	2.11E+00

Footnotes:

* - Measured Cs-137 peak at 662 KeV.

TABLE 6-5
1999 ERA INTERCOMPARISON PROGRAM RESULTS

TI #s	DATE	NUCLIDE	ERA Known Value[a] (pCi/l)	TBE Result[b] (pCi/l)	Expected Dev. Known[c] (pCi/l)	Control Limits[d] (pCi/l)	Warning Limits[e] (pCi/l)	Performance Evaluation[f]
11811-11813	8/23/99	U(NAT)	12.4	13.0	3.00	7.20-17.6	8.94-15.9	A
11811-11813	8/20/99	Ra-226	7.21	7.37	1.08	5.34-9.08	5.96-8.46	A
11811-11813	8/23/99	Ra-228	4.51	7.17	1.13	2.57-6.45	3.21-5.81	NA[g]
11808-11810	8/24/99	Sr-89	26.6	25.0	5.00	17.9-35.3	20.8-32.4	A
11808-11810	8/24/99	Sr-90	40.2	39.7	5.00	31.5-48.9	34.4-46.0	A
13058-13060	9/15/99	Gr-A	48.6	30.3	12.2	27.7-69.5	34.6-62.6	CE[h]
13061-13063	9/14/99	Gr-B	20.0	22.0	5.00	11.3-28.7	14.2-25.8	A
14425-14427	9/01/99	H-3	6130	5530	613	5090-7170	5420-6840	A

Footnotes:

(a) The ERA Known Value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(b) Average $\pm$ 1 sigma.

(c) Established per the guidelines contained in the EPA's National Standards for Water Proficiency Testing Criteria Document, December 1998, as applicable.

(d) Established per the guidelines contained in the EPA's National Standards for Water Proficiency Testing Criteria Document, December 1998, as applicable.

(e) Established per the guidelines contained in the EPA's National Standards for Water Proficiency Testing Criteria Document, December 1998, as applicable.

(f) A= Acceptable. Reported Result falls within the Warning Limits.
NA = Not Acceptable. Reported Result falls outside of the Control Limits.
CE = Check for Error. Reported Result falls within the Control Limits and outside of the Warning Limits.

(g) A calculation error was made by not correcting for Ra-226 content. If this correction is made, an average result of 5.7 pCi/l is obtained which is in the acceptance region.

(h) The low value is attributed to greater self-absorption characteristics of the sample matrix compared to those of the calibration matrix. This source of bias is often observed in gross alpha measurements, nevertheless, the average result is within the control region (but also in the warning region).

TABLE 6-6
1999 ANALYTICS, INC. CROSS CHECK COMPARISON PROGRAM

Sample ID	Media	Nuclide	Teledyne Brown Engineering Result[a]	Analytics Result[b]	Ratio[c]
E1823-396	Water	Sr-89	60 ± 5	69 ± 3	0.87
TI #09576		Sr-90	35 ± 2	46 ± 2	0.76
06/24/99					
E1824-396	Water	Gr-A	160 ± 10	98 ± 5	1.63 (d)
TI #09577		Gr-B	300 ± 10	290 ± 15	1.03
06/24/99					
E1825-396	Water	I-131	77 ± 13	68 ± 3	1.13
TI #09578		Ce-141	139 ± 14	134 ± 7	1.04
06/24/99		Cr-51	162 ± 42	172 ± 9	0.94
		Cs-134	86 ± 9	92 ± 5	0.93
		Cs-137	167 ± 17	151 ± 8	1.11
		Mn-54	77 ± 8	68 ± 3	1.13
		Fe-59	40 ± 9	38 ± 2	1.05
		Zn-65	113 ± 12	98 ± 5	1.15
		Co-60	179 ± 18	171 ± 9	1.05
E1826-396	Filter	Ce-141	169 ± 17	162 ± 8	1.04
TI #09579		Cr-51	241 ± 24	208 ± 10	1.16
06/24/99		Cs-134	105 ± 10	111 ± 6	0.95
		Cs-137	211 ± 21	182 ± 9	1.16
		Mn-54	96 ± 10	82 ± 4	1.17
		Fe-59	55 ± 8	46 ± 2	1.20
		Zn-65	144 ± 14	118 ± 6	1.22
		Co-60	214 ± 21	206 ± 10	1.04
E1827-396	Soil	Ce-141	0.274 ± 0.027	0.269 ± 0.013	1.02
TI #09580		Cr-51	0.374 ± 0.103	0.345 ± 0.017	1.08
06/24/99		Cs-134	0.200 ± 0.020	0.184 ± 0.009	1.09
		Cs-137	0.450 ± 0.045	0.429 ± 0.021	1.05
		Mn-54	0.153 ± 0.015	0.136 ± 0.007	1.13
		Fe-59	0.118 ± 0.022	0.077 ± 0.004	1.53 (e)
		Zn-65	0.206 ± 0.021	0.196 ± 0.010	1.05
		Co-60	0.351 ± 0.035	0.343 ± 0.017	1.02

Footnotes:

(a) Teledyne Results - counting error is two standard deviations. Units are pCi/liter for water and milk. For gamma results, if two standard deviations are less than 10%, then a 10% error is reported. Units are total pCi for air particulate filters. Units are pCi/gram for soil, which has been added to the program for 1999.

(b) Analytics Result - Average ± 3 sigma

(c) Ratio of Teledyne Brown Engineering to Analytics results. Acceptance criteria are based on NRC acceptance criteria described in NRC Procedure 84750 dated March 15, 1994.

(d) A high Gross Alpha result was obtained because the calculation was mistakenly performed using Th-230 counting efficiency. If Teledyne's normal Am-241 calibration were used, Teledyne would have reported 110 ± 10 pCi/L, which is an acceptable value.

(e) Random or coincidental summing caused the problem. Two other energy lines can sum a peak on the same energy band causing more counts to be thrown in. The key line was changed and the resulting value was 0.079, which is in agreement with Analytics.

7.0 REFERENCES

7.0 REFERENCES

1. U.S. Nuclear Regulatory Commission, "Programs For Monitoring Radioactivity in the Environs of Nuclear Power Plants," Regulatory Guide 4.1, Revision 1, April 1975.

2. U.S. Nuclear Regulatory Commission, "Environmental Technical Specifications For Nuclear Power Plants," Regulatory Guide 4.8, December 1975.

3. U.S. Nuclear Regulatory Commission, "An Acceptable Radiological Environmental Monitoring Program," Assessment Branch Technical Position Revision 1, November 1979.

4. U.S. Nuclear Regulatory Commission, "Quality Assurance For Radiological Environmental Monitoring Program (Normal Operations), Effluent Streams and the Environment," Regulatory Guide 4.15, Revision 1, February 1979.

5. U.S. Nuclear Regulatory Commission, "Performance, Testing and Procedural Specifications For Thermoluminescence Dosimetry-Environmental Applications," Regulatory Guide 4.13, Revision 1, July 1977.

6. Energy Facility Site Evaluation Council, Resolution No. 260, January 1992.

7. Energy Northwest Nuclear Plant No. 2, Operating License NSF-21, Technical Specifications Section 5.5.1, 5.5.4, and 5.6.2

8. WNP-2 Offsite Dose Calculation Manual (ODCM).

9. Code of Federal Regulations, Title 10 Part 20, "Standards for Protection against Radiation."

10. Code of Federal Regulations, Title 10 Part 50, "Domestic Licensing of Production and Utilization Facilities."

11. Washington Administrative Code 246-290, "Group A Public Water Systems."

12. Washington Administrative Code 173-200, "Water Quality Standards for Ground Water of the State of Washington."

13. Washington Administrative Code 173-201A, "Water Quality Standards for Surface Waters of the State of Washington."

14. Robertson, D. E., and J. J. Fix, "Association of Hanford Origin Radionuclides With Columbia River Sediment", BNWL-2305, August 1977.

15. Energy Facility Site Evaluation Council, Resolution No. 259, amended November 1994.

16. Energy Facility Site Evaluation Council, Resolution No. 278, approved May 8, 1995.

17. Teledyne Brown Engineering - Environmental Services PRO-032-27, "Calibration and Control of Alpha/Beta Counters."

18. Teledyne Brown Engineering - Environmental Services PRO-042-44, "Calibration and Control of Gamma Ray Spectrometers."

19. Teledyne Brown Engineering - Environmental Services PRO-052-35, "Determination of Tritium by Liquid Scintillation."