06/04/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :R2501

ENVIRONS

PACKAGE DESCRIPTION
Follow-up Surveys

SURVEY AREA DESCRIPTION
Follow-up Sampling at Elevated Soil Sample Locations (north of Forebay and Proposed Dry Cask Storage Area)

GENERAL HISTORICAL INFORMATION (Operational history, etc.)

Package R2501 consists of follow-up evaluations of three locations that have exhibited plant derived radioactive materials in soil samples taken from these locations. Two of these locations were initially identified from gamma spectroscopic results of surface soil samples taken from grids #130 and #122 in survey packages R0900 and R1000, respectively. Limited follow-up soil samples were obtained under these two packages to confirm the initial analytical results and to expand the sampling area somewhat. Because of the findings of these follow-up surveys, i.e., the contamination was found to be more widespread than just at grid stakes #130 and #122, the evaluation of these two locations was broadened to include larger areas and this additional work was performed under Package R2501.

The third location, which is in the Proposed Dry Cask Storage Area, was initially identified by the drive-over gamma scanning surveys using a large plastic scintillator detector. Actually, two elevated areas were initially identified in this manner, but after follow-up surveys of these two flagged areas (areas #7 and 8 on Figure 3) were performed under Package R2500, only flagged location #8 required further investigation. Note that this location #8 corresponds to area #2 on Attachment R2500-6 in Package R2500. Because the evaluation of location #8 was to be broadened to encompass a larger area, given the results of the initial follow-up in Package R2500, this additional work was performed under Package R2501.

SUMMARY OF CHARACTERIZATION ACTIVITIES

(1) Three survey units were established; survey unit 01 consisted of sixteen 5-meter by 5-meter grids surrounding grid 130 from Package R0900, survey unit 02 consisted of twenty 5-meter by 5-meter grids surrounding grid 122 from package R1000, and survey unit 03 consisted of twenty-five 5-meter by 5-meter grids surrounding elevated area #2 in survey unit 06 in package R2500. Grid locations are provided in Figures 8 and 9.

(2) Surface soil samples were collected from the 16 grids established in survey unit 01 (grids 1-20, minus 13-16, on Figure 8). All 16 samples showed Cs-137 activity greater than 2 pCi/g. The proximity of the Forebay prevented extension of the survey to the south. The surveys were extended west along the fence line for 12 more 5-meter by 5-meter grids (grid numbers 21-33), and surface samples collected from each grid. Elevated Cs-137 activities were found in most of these grids, especially adjacent to the fence line. Four additional 5-meter by 5-meter grids were established (grids 33-36), and surface soil samples collected. Cs-137 activity fell to below 2 pCi/g in these grids.

(3) Surface soil samples were collected from the 20 grids established in survey unit 02 (grids 1-20 on Figure 8). Several of these grids showed Cs-137 activity greater than 2 pCi/g. Six more grids were established east along the fence line (grids 21-26), and surface soil samples collected. Cs-137 activity fell to or below 2 pCi/g in these grids.

(4) In order to determine the depth of contamination in survey units 01 and 02, subsurface (6-12 inch) samples were collected from 3 grids; grids 21, 11, and 15 in survey unit 01. Six to 12 inch depth samples from grids 21 and 11 both showed activity greater than 2 pCi/g. Bedrock was encountered at 12 inches under grid 21, a 12 to 18-inch sample collected from grid 11 showed Cs-137 activity was less than 2 pCi/g.

(5) Twenty-five surface and 2 subsurface soil samples were collected from survey unit 03 (grids 1-25 on Figure 9). Two of the surface, and both subsurface samples were adjacent to, and underneath the 2 samples (numbers 2 and 4) from package R2500 that showed elevated Co-60 activity. None of these samples showed any detectable activity from plant derived radionuclides.

CHARACTERIZATION SURVEY RESULTS

The findings and conclusions of the follow-up investigations of the three elevated locations addressed in this package are provided in the applicable R package.

REFERENCES (Documents, Interviews)

SUMMARY OF SURVEY UNIT(S)

06/04/98 OUTPUT BATCH SN = 237

PACKAGE R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT(S)	SURFACE(S)
01 - Area at Grid # 130 from package R0900	OA1 (Surface Soil Sample @ 0"-6" Depth) OB1 (Subsurface Soil Sample @ 6"-12" Depth)
02 - Area at Grid # 122 from package R1000	OA1 (Surface Soil Sample @ 0"-6" Depth) OB1 (Subsurface Soil Sample @ 6"-12" Depth)
03 - Area at location 06OA2 from package R2500 (Contractor Parking Lot)	OA1 (Surface Soil Sample @ 0"-6" Depth) OB1 (Subsurface Soil Sample @ 6"-12" Depth)

REASON(S) CHARACTERIZATION SURVEY (C01)

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 42

06/04/98 OUTPUT BATCH SN = 234

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1272	ENV00320	1,600.0	2400	Co-57	< .1	0.1	0.0
				Co-60	.05	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	17.80	0.1	1.2
				K-40	21.50	0.4	1.6
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00002

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1273	ENV00305	1,720.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	11.30	0.1	0.9
				K-40	19.60	0.5	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00003

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1274	ENV00314	1,760.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	8.80	0.1	0.6
				K-40	21.50	0.4	1.8
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00004

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1275	ENV00307	1,630.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	11.40	0.1	0.9
				K-40	19.00	0.4	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00005

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1276	ENV00319	1,790.0	10800	Co-57	< .0	0.0	0.0
				Co-60	.03	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	13.10	0.0	1.0
				K-40	19.50	0.2	1.5
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00006

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1277	ENV00327	1,793.0	10800	Co-57	< .0	0.0	0.0
				Co-60	.13	0.0	0.0
				Cs-134	.03	0.0	0.0
				Cs-137	56.80	0.1	3.9
				K-40	20.70	0.2	1.4
				Mn-54	< .0	0.0	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00007

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1278	H2O00316	1,380.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	11.80	0.1	0.8
				K-40	20.50	0.4	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00008

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1279	ENV00329	1,661.0	3600	Co-57	< .1	0.1	0.0
				Co-60	.10	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	33.00	0.1	2.3
				K-40	20.80	0.4	1.5
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00009

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1281	ENV00314	1,660.0	3600	Co-57	< .1	0.1	0.0
				Co-60	.12	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	38.70	0.1	2.8
				K-40	20.20	0.4	1.6
				Mn-54	< .0	0.0	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00010

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1282	ENV00323	1,620.0	1800	Co-57	< .1	0.1	0.0
				Co-60	.07	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	32.40	0.1	2.3
				K-40	20.70	0.3	1.7
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00011

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1283	ENV00322	1,610.0	3600	Co-57	< .1	0.1	0.0
				Co-60	.11	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	37.90	0.1	2.6
				K-40	20.90	0.3	1.5
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00012

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1285	ENV00324	1,730.0	1800	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	17.30	0.1	1.2
				K-40	20.00	0.3	1.6
				Mn-54	< .0	0.0	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00013

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1286	ENV00316	1,540.0	1800	Co-57	< .1	0.1	0.0
				Co-60	.07	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	16.50	0.1	1.2
				K-40	20.70	0.4	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00014

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1288	ENV00317	1,560.0	1800	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	12.30	0.1	0.9
				K-40	21.10	0.6	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00015

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1289	H2O00317	1.4	1800	Co-57	< .1	0.1	0.0
				Co-60	.12	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	45.50	0.2	2.9
				K-40	17.90	0.4	1.5
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500 Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00016

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1290	ENV00318	1.5	1800	Co-57	< .1	0.1	0.0
				Co-60	.09	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	17.20	0.1	1.3
				K-40	16.60	0.5	1.6
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00017

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1291	H2O00318	1,457.0	1800	Co-57	< .1	0.1	0.0
				Co-60	.08	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	17.00	0.1	1.1
				K-40	21.30	0.4	1.7
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00018

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1292	H2O00303	1,451.0	1800	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	6.44	0.1	0.4
				K-40	20.80	0.4	1.7
				Mn-54	< .0	0.0	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00019

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1293	ENV00326	1,514.0	1800	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.34	0.1	0.2
				K-40	23.20	0.5	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00020

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1294	ENV00320	1,565.0	2400	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.39	0.1	0.2
				K-40	21.60	0.4	1.8
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00021

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1296	ENV00361	1,910.0	10800	Co-57	< .1	0.1	0.0
				Co-60	.49	0.0	0.0
				Cs-134	.08	0.0	0.0
				Cs-137	145.00	0.1	10.0
				K-40	19.90	0.2	1.4
				Mn-54	< .0	0.0	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500 Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00022

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1297	ENV00349	1,716.0	10800	Co-57	< .1	0.1	0.0
				Co-60	.11	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	66.40	0.1	4.6
				K-40	20.80	0.2	1.4
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00023

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1298	ENV00338	1,674.0	2400	Co-57	< .1	0.1	0.0
				Co-60	.08	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	17.70	0.1	1.3
				K-40	20.70	0.4	1.8
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00024

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1299	ENV00330	1.9	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	5.40	0.1	0.4
				K-40	17.00	0.4	1.6
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00025

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1300	H2O00311	1.4	1800	Co-57	< .1	0.1	0.0
				Co-60	.10	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	8.07	0.1	0.5
				K-40	21.10	0.4	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00026

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1301	ENV00337	1,522.0	2400	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	12.60	0.1	0.9
				K-40	19.80	0.5	1.7
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00027

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1343	ENV00336	1,816.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	6.10	0.1	0.5
				K-40	20.50	0.4	1.7
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500 Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00028

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1344	ENV00337	1,757.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	5.39	0.1	0.4
				K-40	21.50	0.5	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00029

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1345	ENV00338	1,789.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.81	0.1	0.2
				K-40	20.20	0.5	1.7
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00030

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1347	ENV00339	1,552.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	4.17	0.1	0.3
				K-40	20.40	0.5	1.8
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00031

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1348	H2O00316	1,449.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.36	0.1	0.2
				K-40	19.50	0.6	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00032

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1349	ENV00340	1,643.0	1200	Co-57	< .1	0.1	0.0
				Co-60	.11	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.33	0.1	0.1
				K-40	21.00	0.4	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00033

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1359	ENV00352	1,668.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	1.53	0.1	0.1
				K-40	21.30	0.3	1.8
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00034

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1360	ENV00353	1,557.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.48	0.0	0.1
				K-40	22.40	0.1	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00035

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1361	ENV00354	1,590.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.67	0.1	0.1
				K-40	22.00	0.5	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00036

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1362	ENV00357	1,600.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	1.09	0.1	0.1
				K-40	21.00	0.2	1.8
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OB1 REASON : C01 ANALYSIS TYPE CODE : LABO6

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 6"-12" Depth
SAMPLE LOCATOR: 00011

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1351	ENV00349	1,861.0	3600	Co-57	< .0	0.0	0.0
				Co-60	< .0	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	5.95	0.1	0.4
				K-40	20.30	0.3	1.6
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 6"-12" Depth
SAMPLE LOCATOR: 00015

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1352	ENV00346	1,701.0	3600	Co-57	< .0	0.0	0.0
				Co-60	< .0	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	1.20	0.0	0.1
				K-40	21.30	0.3	1.5
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 6"-12" Depth
SAMPLE LOCATOR: 00021-00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1353	ENV00341	1,585.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	3.52	0.1	0.3
				K-40	23.80	0.6	2.0
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 01 SURFACE : OB1 REASON : C01 ANALYSIS TYPE CODE : LABO6

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 6"-12" Depth
SAMPLE LOCATOR: 00021-00002

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1354	ENV00347	1,851.0	3600	Co-57	< .0	0.0	0.0
				Co-60	< .0	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	1.06	0.0	0.1
				K-40	19.40	0.3	1.4
				Mn-54	< .0	0.0	0.0

UNIT : 01 SURFACE : OC1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 12"-18" Depth
SAMPLE LOCATOR: 00021

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1365	ENV00358	1,875.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.07	0.0	0.0
				K-40	22.50	0.5	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 12"-18" Depth
SAMPLE LOCATOR: 00015

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1366	ENV00359	1,785.0	1800	Co-57	< .0	0.0	0.0
				Co-60	< .0	0.0	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.25	0.1	0.0
				K-40	22.20	0.4	1.7
				Mn-54	< .0	0.0	0.0

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 26

06/04/98 OUTPUT BATCH SN = 235

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1250	ENV00319	1,780.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	1.45	0.0	0.1
				K-40	21.20	0.3	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00002

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1251	ENV00309	1,850.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.70	0.1	0.1
				K-40	19.80	0.4	1.7
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00003

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1252	ENV00303	1,660.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	1.93	0.1	0.2
				K-40	19.80	0.5	1.9
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00004

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1253	ENV00308	1,850.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	1.83	0.1	0.2
				K-40	20.20	0.4	1.7
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00005

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1254	ENV00301	1,740.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.70	0.1	0.1
				K-40	20.80	0.7	2.0
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00006

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1255	ENV00304	1,730.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.03	0.1	0.2
				K-40	20.80	0.5	1.8
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00007

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1256	ENV00303	1,580.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.98	0.1	0.1
				K-40	25.50	0.5	2.1
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00008

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1257	H2O00315	1,430.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.54	0.1	0.1
				K-40	23.60	0.6	2.0
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00009

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1258	ENV00318	1,730.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	3.86	0.1	0.3
				K-40	20.90	0.5	1.8
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00010

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1259	ENV00307	1,740.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	1.68	0.1	0.1
				K-40	21.70	0.5	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00011

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1260	H2O00302	1,340.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.20	0.1	0.1
				K-40	26.80	0.5	2.3
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00012

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1261	H2O00314	1,290.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	26.50	0.6	2.2
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00013

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1262	ENV00304	1,500.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	3.86	0.1	0.3
				K-40	22.50	0.7	2.2
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00014

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1263	ENV00311	1,610.0	3600	Co-57	< .0	0.0	0.0
				Co-60	.05	0.0	0.0
				Cs-134	< .0	0.0	0.0
				Cs-137	10.00	0.1	0.7
				K-40	21.50	0.3	1.6
				Mn-54	< .0	0.0	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00015

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1264	ENV00312	1,500.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.47	0.1	0.2
				K-40	25.10	0.5	2.1
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00016

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1265	H2O00300	1,460.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.61	0.1	0.2
				K-40	21.60	0.4	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00017

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1266	ENV00306	1,690.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	6.72	0.1	0.5
				K-40	20.70	0.4	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00018

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1267	ENV00302	1,730.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.51	0.1	0.2
				K-40	20.10	0.4	1.9
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00019

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1268	ENV00305	1,730.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	3.30	0.1	0.3
				K-40	20.80	0.5	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00020

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1269	ENV00306	1,660.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	5.60	0.1	0.4
				K-40	18.20	0.5	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00021

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1302	H2O00306	1,247.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	3.09	0.1	0.2
				K-40	22.90	0.7	2.1
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00022

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1303	H2O00312	1,280.0	1800	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	1.96	0.1	0.2
				K-40	21.00	0.6	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00023

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1305	H2O00331	1,622.0	1200	Co-57	< .1	0.1	0.0
				Co-60	.11	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	2.29	0.1	0.2
				K-40	19.00	0.6	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00024

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1306	H2O00309	1,294.0	2000	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	26.10	0.5	2.1
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 02 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00025

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1307	H2O00310	1,402.0	2000	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.34	0.1	0.0
				K-40	21.60	0.5	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00026

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1308	H2O00333	1,837.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.27	0.1	0.1
				K-40	19.50	0.5	1.8
				Mn-54	< .1	0.1	0.0

Maine Yankee Atomic Power Plant Site Characterization

GAMMA SPECTRAL ANALYSIS RESULTS LISTING

NUMBER OF SAMPLES REPORTED = 27

06/04/98 OUTPUT BATCH SN = 236

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00001

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1223	ENV00291	1,820.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	19.90	0.4	1.7
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00002

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1224	ENV00291	1,760.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	20.10	0.5	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00003

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1225	ENV00294	1,780.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	20.70	0.5	1.8
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00004

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1226	H2O00286	1,440.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	22.00	0.6	2.0
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00005

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1227	H2O00302	1,430.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	21.20	0.6	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00006

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1228	ENV00292	1,530.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	20.30	0.6	2.0
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00007

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1229	ENV00295	1,600.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	22.10	0.5	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00008

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1230	ENV00293	1,670.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	19.40	0.6	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00009

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1231	ENV00296	1,700.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.31	0.1	0.1
				K-40	19.90	0.5	1.7
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00010

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1232	ENV00294	1,990.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	20.30	0.3	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00011

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1234	ENV00296	1,860.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	21.00	0.5	2.0
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00012

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1235	H2O00309	1,370.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	23.30	0.5	2.0
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00013

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1236	H2O00293	1,440.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	20.70	0.5	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00014

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1237	ENV00299	1,780.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	21.20	0.6	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00015

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1238	ENV00297	1,810.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	19.60	0.3	1.9
				Mn-54	< .0	0.0	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00016

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1239	H2O00310	1,400.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.20	0.1	0.0
				K-40	19.10	0.3	1.7
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00017

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1240	H2O00294	1,490.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.15	0.1	0.0
				K-40	19.40	0.7	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00018

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1242	H2O00295	1,360.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	22.40	0.4	2.0
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00019

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1243	H2O00297	1,480.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	22.70	0.6	2.0
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00020

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1244	H2O00312	1,270.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	24.40	0.5	2.1
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00021

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1245	H2O00298	1,260.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	.15	0.1	0.0
				K-40	22.40	0.5	2.1
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00022

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1246	ENV00300	1,620.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	20.10	0.4	1.7
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00023

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1247	ENV00298	1,750.0	1200	Co-57	< .0	0.0	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	19.70	0.4	1.9
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00024

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1248	H2O00299	1,330.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	20.90	0.5	1.9
				Mn-54	< .1	0.1	0.0

Survey Package R2501 ENVIRONS
Soil Sample Evaluations for Elevated Areas: R0900, R1000 & R2500
Follow-up Surveys

UNIT : 03 SURFACE : OA1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Surface Soil Sample @ 0"-6" Depth
SAMPLE LOCATOR: 00025

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1249	H2O00313	1,390.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	23.00	0.5	2.0
				Mn-54	< .1	0.1	0.0

UNIT : 03 SURFACE : OB1 REASON : C01 ANALYSIS TYPE CODE : LAB06

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 6"-12" Depth
SAMPLE LOCATOR: 00002

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1221	ENV00293	1,790.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	21.90	0.4	1.8
				Mn-54	< .1	0.1	0.0

SAMPLE TYPE OR SURFACE SAMPLED: Subsurface Soil Sample @ 6"-12" Depth
SAMPLE LOCATOR: 00004

LAB ID	SPECTRUM	MASS (grams)	COUNT TIME (seconds)	NUCLIDE	ACTIVITY (pCi/g)	MDA (pCi/g)	ERROR (± pCi/g)
MY1222	H2O00283	1,460.0	1200	Co-57	< .1	0.1	0.0
				Co-60	< .1	0.1	0.0
				Cs-134	< .1	0.1	0.0
				Cs-137	< .1	0.1	0.0
				K-40	22.60	0.5	2.0
				Mn-54	< .1	0.1	0.0

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

05/14/98

CHARACTERIZATION SUMMARY

SURVEY PACKAGE NUMBER :R2800 ENVIRONS

PACKAGE DESCRIPTION

SURVEY AREA DESCRIPTION
Sampling for Part 61 Analysis

GENERAL HISTORICAL INFORMATION (Operational history, etc.)
The samples collected under this survey package were follow-up 10CFR Part61 radionuclide analysis.

SUMMARY OF CHARACTERIZATION ACTIVITIES

Samples were collected, selected and sent to Core Laboratories in accordance with existing sample collection and chain-of-custody procedures for 10CFR Part 61 analysis.

Core Laboratories maintained a current NRC or Agreement State licence for possessing radioactive material and were certified by the State of Utah. Core Laboratories was on GTS Duratek's QA approved suppliers list.

The selected samples were analyzed for the following radionuclides and associated Minimum Detectable Activities (except smears).

H-3	5 pCi/ml
C-14	5 pCi/g
Fe-55	5 pCi/g
Ni-63	2 pCi/g
I-129	10 pCi/g
Sr-90	1 pCi/g
Tc-99	3 pCi/g
Pu-238	0.1 pCi/g
Pu-239/240	0.1 pCi/g
Pu-241	10 pCi/g
Am-241	0.1 pCi/g
Cm-242	0.1 pCi/g
Cm-243/244	0.1 pCi/g
Isotopic Uranium	1 pCi/g (U-234, U-235, and U-238)
Gamma Emitters	0.1 pCi/g (Mn-54, Co-57, Co-58, Co-60, Sb-125, Eu-153, Eu-154, Eu-155, Cs-134, and Cs-137

The methods used for each analysis were specified on the Core Laboratories analysis report. The methods were in accordance with industry standards and/or EPA procedures whenever possible.

CHARACTERIZATION SURVEY RESULTS
The net activity and the 1.96 sigma error level was reported for each radionuclide identified.

Sample results for all analyses, except H-3, were reported on a dry weight basis.

REFERENCES (Documents, Interviews)

DURATEK

Maine Yankee Atomic Power Plant Site Characterization

SUMMARY OF SURVEY UNIT(S)

05/14/98

OUTPUT BATCH SN = 582

PACKAGE R2800 ENVIRONS

UNIT(S)	SURFACE(S)
01 - Surface Soil Sample from Package R2501	OA1 (Surface Soil Sample from Package R2501, location 01OA1, grid 21.)
02 - Surface Soil Sample from Package R0100	OA1 (Surface Soil Sample from Package R0100, location 01OA2, grid 103.)
03 - Surface Soil Sample from Package R0200	OA1 (Surface Soil Sample from Package R0200, location 01OA1, grid 05.)
04 - Reactor Coolant System	H01 (Bowl of S/G E-1-3)
05 - Waste Processing Systems	MC1 (Top slice from core sample from trench in Annulus. -2' elevation)

REASON(S) CHARACTERIZATION SURVEY (C01)

Version 3.0.8 - 4/3/98

JLM

DBACORR Documentation

:aProgDBACORR:R_TOC.RSL

Maine Yankee Atomic Power Plant Site Characterization

CHARACTERIZATION SUMMARY R2800

Survey Unit: 01 - Surface Soil Sample from Package R2501

Surface: OA1 - Location 01OA1, grid 21

Soil Sample Data (Sample MYX13)

Core Laboratory Analysis Results

Radionuclide	Activity (pCi/smear)	Error (+/- pCi/Smear)	MDA (pCi/Smear)
Am-241	2.0000E-01	1.0000E-01	1.0000E-01
C-14	1.0000E-01	1.0000E-01	1.0000E-01
Cm-243/244	< 0.1		1.0000E-01
Co-57	< 0.1		1.0000E-01
Co-58	< 0.4		4.0000E-01
Co-60	1.0000E+00	2.0000E-01	2.0000E-01
Cs-134	3.0000E-01	1.0000E-01	1.0000E-01
Cs-137	1.3200E+02	3.7000E+00	2.0000E-01
Eu-152	< 0.3		3.0000E-01
Eu-154	< 0.2		2.0000E-01
Fe-55	< 15.7		1.5700E+01
H-3	1.7000E+00	7.0000E-01	1.1000E+00
I-129	< 1.0		1.0000E+00
Mn-54	< 0.1		1.0000E-01
Ni-63	7.9000E+00	3.0000E+00	5.0000E+00
Pu-238	7.0000E-01	2.0000E-01	1.0000E-01
Pu-241	< 2.2		2.2000E+00
Pu239/240	1.0000E-01	1.0000E-01	1.0000E-01
Sb-125	< 0.9		9.0000E-01
Sr-90	1.1000E+00	4.0000E-01	1.0000E+00
Tc-99	< 0.4		4.0000E-01
U-234	4.0000E-01	2.0000E-01	2.0000E-01
U-235	1.0000E-01	1.0000E-01	1.0000E-01
U-238	5.0000E-01	2.0000E-01	1.0000E-01
Total Activity	**1.4610E+02**		

Maine Yankee Atomic Power Plant Site Characterization

CHARACTERIZATION SUMMARY R2800

Survey Package: R2800
Survey Unit: 02 - Surface Soil Sample from Package R0100
Surface: OA1 - Location 01OA2, grid 103
Soil Sample Data (MYX17)

Radionuclide	Activity (pCi/smear)	Error (+/- pCi/Smear)	MDA (pCi/Smear)
Am-241	< 0.3 pCi/g		3.0000e-01
C-14	1.0000e-01	1.0000e-01	1.0000e-01
Cm-243/244	1.0000e-01	1.0000e-01	1.0000e-01
Co-57	< 0.1 pCi/g		1.0000e-01
Co-58	< 0.3 pCi/g		3.0000e-01
Co-60	< 0.1 pCi/g		1.0000e-01
Cs-134	3.0000e-01	1.0000e-01	1.0000e-01
Cs-137	6.5000e+00	6.0000e-01	1.0000e-01
Eu-152	< 0.2 pCi/g		2.0000e-01
Eu-154	< 0.1 pCi/g		1.0000e-01
Fe-55	< 15.7 pCi/g		1.5700e+01
H-3	2.6000e+00	8.0000e-01	1.3000e+00
I-129	< 1.7 pCi/g		1.7000e+00
Mn-54	< 0.1 pCi/g		1.0000e-01
Ni-63	< 5 pCi/g		5.0000e+00
Pu-238	1.3000e+00	3.0000e-01	2.0000e-01
Pu-241	< 2.7 pCi/g		2.7000e+00
Pu239/240	4.0000e-01	2.0000e-01	2.0000e-01
Sb-125	< 0.2 pCi/g		2.0000e-01
Sr-90	1.9000e+00	5.0000e-01	1.0000e+00
Tc-99	< 0.4 pCi/g		4.0000e-01
U-234	3.0000e-01	2.0000e-01	2.0000e-01
U-235	< 0.2 pCi/g		2.0000e-01
U-238	4.0000e-01	2.0000e-01	2.0000e-01
Total Activity	**1.3900e+01**		

CHARACTERIZATION SUMMARY R2800

Survey Package: R2800
Survey Unit: 03 - Surface Soil Sample from Package R0200
Surface: OA1 - Location 01OA1, grid 05
Soil Sample Data (Sample MYX14)

Core Laboratory Analysis Results

Radionuclide	Activity (pCi/smear)	Error (+/- pCi/Smear)	MDA (pCi/Smear)
Am-241	2.0000E-01	1.0000E-01	1.0000E-01
C-14	2.0000E-01	1.0000E-01	1.0000E-01
Cm-243/244	< 0.1 pCi/g		1.0000E-01
Co-57	< 0.1 pCi/g		1.0000E-01
Co-58	< 0.3 pCi/g		3.0000E-01
Co-60	1.0000E+00	2.0000E-01	1.0000E-01
Cs-134	< 0.1 pCi/g		1.0000E-01
Cs-137	8.2500E+01	2.5000E+00	2.0000E-01
Eu-152	< 0.2 pCi/g		2.0000E-01
Eu-154	< 0.2 pCi/g		2.0000E-01
Fe-55	< 15.7 pCi/g		1.5700E+01
H-3	3.2000E+00	9.0000E-01	1.3000E+00
I-129	< 0.9 pCi/g		9.0000E-01
Mn-54	< 0.2 pCi/g		2.0000E-01
Ni-63	< 5 pCi/g		5.0000E+00
Pu-238	7.0000E-01	2.0000E-01	1.0000E-01
Pu-241	< 3.5 pCi/g		3.5000E+00
Pu239/240	1.0000E-01	1.0000E-01	1.0000E-01
Sb-125	< 0.7 pCi/g		7.0000E-01
Sr-90	1.6000E+00	5.0000E-01	1.0000E+00
Tc-99	< 0.5 pCi/g		5.0000E-01
U-234	6.0000E-01	2.0000E-01	1.0000E-01
U-235	1.0000E-01	1.0000E-01	1.0000E-01
U-238	6.0000E-01	2.0000E-01	1.0000E-01
Total Activity	**9.0800E+01**		

CHARACTERIZATION SUMMARY R2800

Survey Package: R2800
Survey Unit: 04 - Reactor Coolant System
Surface: H01 - Bowl of S/G E-1-3
Reactor Coolant Smear Data (Sample MYX100)

Core Laboratory Analysis Results

Radionuclide	Activity (pCi/smear)	Error (+/- pCi/Smear)	MDA (pCi/Smear)
Am-241	3.4000E+00	1.4000E+00	9.0000E-01
C-14	4.2700E+03	1.0000E+02	7.4400E+01
Cm-243/244	1.8000E+00	8.0000E-01	8.0000E-01
Co-57	< 45.7		4.5700E+01
Co-58	6.7400E+02	4.2900E+02	1.8100E+02
Co-60	1.4700E+05	4.1200E+03	1.0500E+03
Cs-134	< 93.3		9.3300E+01
Cs-137	< 116		1.1600E+02
Eu-152	< 106		1.0600E+02
Eu-154	< 69		6.8600E+01
Fe-55	1.6000E+05	2.0500E+03	1.5600E+03
H-3	1.5500E+04	5.4400E+02	3.8700E+02
I-129	< 829		8.2900E+02
Mn-54	1.2600E+03	4.8800E+02	1.9600E+02
Ni-63	1.8700E+04	2.6000E+02	2.3300E+02
Pu-238	6.9000E+00	2.6000E+00	2.3000E+00
Pu-241	3.1500E+02	2.0400E+01	2.4100E+01
Pu239/240	5.3000E+00	2.3000E+00	2.3000E+00
Sb-125	2.1100E+03	5.3000E+02	1.1500E+03
Sr-90	3.7000E+02	3.2700E+01	4.4000E+01
Tc-99	6.9200E+03	2.9300E+02	1.9600E+02
U-234	< 1.1		1.1000E+00
U-235	< 0.8		8.0000E-01
U-238	< 1.1		1.1000E+00

Total Activity **8.8742E+03**

CHARACTERIZATION SUMMARY R2800

Survey Package: R2800

Survey Unit: 05 - Waste Processing Systems

Surface: MC1 - Top Slice from Concrete Core Sample from Trench Annulus, -2 ft. elevation

Concrete Core Sample Data (MYX16)

Core Laboratory Analysis Results

Radionuclide	Activity (pCi/smear)	Error (+/- pCi/Smear)	MDA (pCi/Smear)
Am-241	1.0700E+01	4.3000E+00	3.5000E+00
C-14	8.43E+02	4.1.000E+00	4.0000E-01
Cm-243/244	< 3 pCi/g	2.0000E+00	3.0000E+00
Co-57	< 18.3 pCi/g		1.8300E+01
Co-58	< 59.2 pCi/g		5.9200E+01
Co-60	4.4500E+03	1.3000E+02	4.1700E+01
Cs-134	3.2900E+01	4.4000E+00	1.0200E+01
Cs-137	8.4900E+02	3.1300E+01	8.0000E+00
Eu-152	< 4.3 pCi/g		4.3000E+00
Eu-154	< 3 pCi/g		3.0000E+00
Fe-55	1.6200E+04	6.0700E+02	5.1000E+02
H-3	1.6000E+03	1.3000E+01	2.5000E+00
I-129	< 9 pCi/g		9.0000E+00
Mn-54	< 34.9 pCi/g		3.4900E+01
Ni-63	3.5600E+04	1.9800E+02	9.0900E+01
Pu-238	3.0100E+01	1.0600E+01	7.5000E+00
Pu-241	9.6600E+01	5.7000E+01	9.2000E+01
Pu239/240	1.1900E+01	6.6000E+00	6.8000E+00
Sb-125	1.7300E+02	2.0600E+01	5.2300E+01
Sr-90	5.1300E+01	9.4000E+00	1.7100E+01
Tc-99	2.3100E+03	9.1900E+01	5.7700E+01
U-234	< 4.6 pCi/g		4.6000E+00
U-235	< 3.7 pCi/g		3.7000E+00
U-238	< 3.7 pCi/g		3.7000E+00
Total Activity	**8.6342E+05**		

Maine Yankee Atomic Power Plant Site Characterization

CHARACTERIZATION SUMMARY R2800
ATTACHMENT

CORE LAB

ENVIRONMENTAL TESTING SERVICES

Sample Delivery Group Narrative

May 11, 1998

Customer: GTS Duratek
Project: Maine Yankee Characterization
Core Laboratories Job Number: 984624

The following information is pertinent to the interpretation of the results:

On April 14,1998, Core Laboratories – Casper received four solid samples. The samples were received in good condition.

The detection limits were exceeded for the following analyses:

> Am241, Cm243/244, Pu238, and Pu239/240 MDAs were exceeded due to reduced volume to limit matrix effect for analyte recovery. The Sb125, Cs137, Co58, Co60, Eu152, and Eu154 MDAs were exceeded for some samples. The primary reason seems to be because of one or two analytes being higher than the others, which elevates the gamma baseline which in turn means an elevated background. The Fe55 and Ni63 had elevated MDAs due to the presence of elemental Fe and Ni in the sample causing precipitation problems with the full aliquot; therefore less volume was used which elevates the MDA.

The MS for the Fe55 batch of samples excluding sample number one was low at 52.4%, due to the presence of elemental Fe interfering with the recovery of the Fe55. The MS and MSD for sample number one for Fe55 were elevated due to the activity of the sample being well above the amount of activity added for the spike. The Pu241 MS and MSD were low due to the method. The MS for Sr90 was low at 65%, but the MSD was acceptable.

If you have any questions concerning the data, please call Ronni Mull at (307)235-5741.

Debra Phillabaum
QA/QC Coordinator

Core Laboratories, Inc.
420 West First Street, Casper, Wyoming 82601, (307) 235-5741, (800) 666-0306, Fax (307) 266-1676

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 984624

Prepared For:

GTS DURATEK
628 GALLAHER RD
KINGSTON, TN 37763

Attention: MIKE BEACH

Date: 05/11/98

Rondalynn S. Mull
Signature

5/11/98
Date

Name: Rondalynn S. Mull

Title: Radiochemistry Supervisor

420 West First Street
Casper, WY 82601

PHONE: 307-235-5741
FAX: 307-266-1676

CORELAB

CORE LABORATORIES

SAMPLE INFORMATION
Date: 05/11/98

Number.: 984624
Customer ..: GTS DURATEK
Attn.....: MIKE BEACH

Project Number.....: 98000011
Customer Project ID....:
Project Description....: Maine Yankee Characterization

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
984624-1	MYX16, Concrete Soil Sample		03/27/98	09:00	04/14/98	11:55
984624-2	MYX13, Soil	Soil	03/28/98	12:00	04/14/98	11:55
984624-3	MYX14, Soil	Soil	03/28/98	12:00	04/14/98	11:55
984624-4	MYX17, Soil	Soil	03/28/98	12:00	04/14/98	11:55

CORE LAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624

Date: 05/14/98

CUSTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX16, Concrete Soil Sample
Date Sampled.....: 03/27/98
Time Sampled.....: 09:00
Sample Matrix.....:

Laboratory Sample ID: 984624-1
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
mod. HASL 300	Americium-241, Activity, Solid	10.7		pCi/g	05/08/98	nrf
mod. HASL 300	Americium-241, Error +/-, Solid	4.3		pCi/g	05/08/98	nrf
mod. HASL 300	Americium-241, MDA, Solid	3.5		pCi/g	05/08/98	nrf
EPA 901.1	Antimony-125, Activity, Solid	173		pCi/g	05/05/98	nrf
EPA 901.1	Antimony-125, Error, +/-, Solid	20.6		pCi/g	05/05/98	nrf
EPA 901.1	Antimony-125, MDA, Solid	52.3		pCi/g	05/05/98	nrf
	Carbon 14, Solid	843		pCi/g	05/14/98	nrf
	Carbon 14, Error +/-, Solid	4.1		pCi/g	05/14/98	nrf
	Carbon-14, MDA, Solid	0.4		pCi/g	05/14/98	nrf
901.1	Cesium-134, Activity, Solid	32.9		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-134, Error, +/-, Solid	4.4		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-134, MDA, Solid	10.2		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-137, Activity, Solid	849		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-137, Error +/-, Solid	31.3		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-137, MDA, Solid	8.0		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-57, Activity, Solid	3.1		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-57, Error +/-, Solid	1.3		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-57, MDA, Solid	18.3		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-58, Activity, Solid	<59.2		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-58, MDA, Solid	59.2		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-60, Activity, Solid	4450		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-60, Error +/-, Solid	130		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-60, MDA, Solid	41.7		pCi/g	05/05/98	nrf
mod. HASL 300	Curium-243/244, Activity, Solid	2.1		pCi/g	05/08/98	nrf
mod. HASL 300	Curium-243/244, Error +/-, Solid	2.0		pCi/g	05/08/98	nrf

CORE LAB

CORE LABORATORIES

L A B O R A T O R Y   T E S T   R E S U L T S

Job Number: 984624

Date: 05/11/98

TOMER: GTS DURATEK

PROJECT:

ATTN: MIKE BEACH

Customer Sample ID: MYX16, Concrete Soil Sample
Date Sampled......: 03/27/98
Time Sampled......: 09:00
Sample Matrix.....:

Laboratory Sample ID: 984624-1
Date Received.......: 04/14/98
Time Received.......: 11:55

ST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
I. HASL 300	Curium-243/244, MDA, Solid	3.0		pCi/g	05/08/98	nrf
PA 901.1	Europium-152, MDA, Solid	4.3		pCi/g	05/05/98	nrf
PA 901.1	Europium-152, activity, Solid	<4.3		pCi/g	05/05/98	nrf
PA 901.1	Europium-154, MDA, Solid	3.0		pCi/g	05/05/98	nrf
PA 901.1	Europium-154, activity, Solid	<3.0		pCi/g	05/05/98	nrf
PA 901.1	Iodine 129, Solid	<9.0		pCi/g	05/05/98	nrf
PA 901.1	Iodine-129, MDA, Solid	9.0		pCi/g	05/05/98	nrf
	Iron 55, Solid	16200		pCi/g	05/07/98	nrf
	Iron 55, Error +/-, Solid	510		pCi/g	05/07/98	nrf
	Iron-55, MDA, Solid	607		pCi/g	05/07/98	nrf
EPA [illegible].1	Mangananese 54, Solid	<34.9		pCi/g	05/05/98	nrf
EPA 901.1	Manganese-54, MDA, Solid	34.9		pCi/g	05/05/98	nrf
A-GLR-25.0	Nickel 63, Solid	35600		pCi/g	05/08/98	nrf
A-GLR-25.0	Nickel 63, Error +/-, Solid	198		pCi/g	05/08/98	nrf
A-GLR-25.0	Nickel-63, MDA, Solid	90.9		pCi/g	05/08/98	nrf
d. HASL 300	Plutonium-238, Activity, Solid	30.1		pCi/g	05/07/98	nrf
d. HASL 300	Plutonium-238, Error +/-, Solid	10.6		pCi/g	05/07/98	nrf
d. HASL 300	Plutonium-238, MDA, Solid	7.5		pCi/g	05/07/98	nrf
d. HASL 300	Plutonium-239/240, Solid	11.9		pCi/g	05/07/98	nrf
d. HASL 300	Plutonium-239/240, Error, Solid	6.6		pCi/g	05/07/98	nrf
d. HASL 300	Plutonium-239/240, MDA, Solid	6.8		pCi/g	05/07/98	nrf
d. HASL 300	Plutonium-241, Solid	96.6		pCi/g	05/08/98	nrf
d. HASL 300	Plutonium-241 Error +\-, Solid	57.0		pCi/g	05/08/98	nrf
d. HASL 300	Plutonium-241, MDA, Solid	92.0		pCi/g	05/08/98	nrf
EPA 905.0	Strontium-90, Solid	51.3		pCi/g	05/07/98	nrf

CORE LABORATORIES

L A B O R A T O R Y   T E S T   R E S U L T S

Job Number: 984624 Date: 05/11/98

TOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX16, Concrete Soil Sample
Date Sampled......: 03/27/98
Time Sampled......: 09:00
Sample Matrix.....:

Laboratory Sample ID: 984624-1
Date Received.......: 04/14/98
Time Received.......: 11:55

ST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
PA 905.0	Strontium-90, Error +/-, Solid	9.4		pCi/g	05/07/98	nrf
PA 905.0	Strontium-90, MDA, Solid	17.1		pCi/g	05/07/98	nrf
. HASL 300	Technetium 99, Solid	2310		pCi/g	05/07/98	nrf
. HASL 300	Technetium 99, Error +/-, Solid	91.1		pCi/g	05/07/98	nrf
. HASL 300	Technetium-99, MDA, Solid	57.7		pCi/g	05/07/98	nrf
-GLR-17.0	Tritium, Activity, Solid	1600		pCi/mL	05/06/98	nrf
-GLR-17.0	Tritium, Error +/-, Solid	13.0		pCi/mL	05/06/98	nrf
-GLR-17.0	Tritium, MDA, Solid	2.5		pCi/mL	05/06/98	nrf
HASL 300	Uranium-234, Activity, Solid	3.9		pCi/g	05/07/98	nrf
SL 300	Uranium-234, Error +/-, Solid	3.7		pCi/g	05/07/98	nrf
[illegible] 300	Uranium-234, MDA, Solid	4.6		pCi/g	05/07/98	nrf
I. HASL 300	Uranium-235, Activity, Solid	ND		pCi/g	05/07/98	nrf
I. HASL 300	Uranium-235, Error +/-, Solid	0.1		pCi/g	05/07/98	nrf
I. HASL 300	Uranium-235, MDA, Solid	3.7		pCi/g	05/07/98	nrf
I. HASL 300	Uranium-238, Activity, Solid	0.5		pCi/g	05/07/98	nrf
I. HASL 300	Uranium-238, Error +/-, Solid	1.4		pCi/g	05/07/98	nrf
I. HASL 300	Uranium-238, MDA, Solid	3.7		pCi/g	05/07/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624 Date: 05/11/98

CUSTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX13, Soil
Date Sampled.....: 03/28/98
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-2
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
nod. HASL 300	Americium-241, Activity, Solid	0.2		pCi/g	05/08/98	nrf
nod. HASL 300	Americium-241, Error +/-, Solid	0.1		pCi/g	05/08/98	nrf
nod. HASL 300	Americium-241, MDA, Solid	0.1		pCi/g	05/08/98	nrf
EPA 901.1	Antimony-125, Activity, Solid	<0.9		pCi/g	04/29/98	nrf
EPA 901.1	Antimony-125, MDA, Solid	0.9		pCi/g	04/29/98	nrf
	Carbon 14, Solid	0.1		pCi/g	05/09/98	nrf
	Carbon 14, Error +/-, Solid	0.1		pCi/g	05/09/98	nrf
	Carbon-14, MDA, Solid	0.1		pCi/g	05/09/98	nrf
EPA 901.1	Cesium-134, Activity, Solid	0.3		pCi/g	04/29/98	nrf
901.1	Cesium-134, Error, +/-, Solid	0.1		pCi/g	04/29/98	nrf
EPA 901.1	Cesium-134, MDA, Solid	0.1		pCi/g	04/29/98	nrf
EPA 901.1	Cesium-137, Activity, Solid	132		pCi/g	04/29/98	nrf
EPA 901.1	Cesium-137, Error +/-, Solid	3.7		pCi/g	04/29/98	nrf
EPA 901.1	Cesium-137, MDA, Solid	0.2		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-57, Activity, Solid	<0.1		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-57, MDA, Solid	0.1		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-58, Activity, Solid	<0.4		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-58, MDA, Solid	0.4		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-60, Activity, Solid	1.0		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-60, Error +/-, Solid	0.2		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-60, MDA, Solid	0.2		pCi/g	04/29/98	nrf
nod. HASL 300	Curium-243/244, Activity, Solid	ND		pCi/g	05/08/98	nrf
nod. HASL 300	Curium-243/244, Error +/-, Solid	0.1		pCi/g	05/08/98	nrf
nod. HASL 300	Curium-243/244, MDA, Solid	0.1		pCi/g	05/08/98	nrf
EPA 901.1	Europium-152, MDA, Solid	0.3		pCi/g	04/29/98	nrf

CORE LAB

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L A B O R A T O R Y   T E S T   R E S U L T S

Job Number: 984624   Date: 05/11/98

CUSTOMER: GTS DURATEK   PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX13, Soil
Date Sampled......: 03/28/98
Time Sampled......: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-2
Date Received.......: 04/14/98
Time Received.......: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 901.1	Europium-152, activity, Solid	<0.3		pCi/g	04/29/98	nrf
EPA 901.1	Europium-154, MDA, Solid	0.2		pCi/g	04/29/98	nrf
EPA 901.1	Europium-154, activity, Solid	<0.2		pCi/g	04/29/98	nrf
EPA 901.1	Iodine 129, Solid	<1.0		pCi/g	04/29/98	nrf
EPA 901.1	Iodine-129, MDA, Solid	1.0		pCi/g	04/29/98	nrf
	Iron 55, Solid	5.0		pCi/g	05/09/98	nrf
	Iron 55, Error +/-, Solid	9.4		pCi/g	05/09/98	nrf
	Iron-55, MDA, Solid	15.7		pCi/g	05/09/98	nrf
EPA 901.1	Mangananese 54, Solid	<0.1		pCi/g	04/29/98	nrf
901.1	Manganese-54, MDA, Solid	0.1		pCi/g	04/29/98	nrf
CA-GLR-25.0	Nickel 63, Solid	7.9		pCi/g	05/08/98	nrf
CA-GLR-25.0	Nickel 63, Error +/-, Solid	3.0		pCi/g	05/08/98	nrf
CA-GLR-25.0	Nickel-63, MDA, Solid	5.0		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-238, Activity, Solid	0.7		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-238, Error +/-, Solid	0.2		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-238, MDA, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Error, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, MDA, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-241, Solid	ND		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-241 Error +\-, Solid	1.3		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-241, MDA, Solid	2.2		pCi/g	05/08/98	nrf
EPA 905.0	Strontium-90, Solid	1.1		pCi/g	05/07/98	nrf
EPA 905.0	Strontium-90, Error +/-, Solid	0.4		pCi/g	05/07/98	nrf
EPA 905.0	Strontium-90, MDA, Solid	1.0		pCi/g	05/07/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624 Date: 05/11/98

CUSTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX13, Soil
Date Sampled.....: 03/28/98
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-2
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
mod. HASL 300	Technetium 99, Solid	ND		pCi/g	05/04/98	nrf
mod. HASL 300	Technetium 99, Error +/-, Solid	0.3		pCi/g	05/04/98	nrf
mod. HASL 300	Technetium-99, MDA, Solid	0.4		pCi/g	05/04/98	nrf
CA-GLR-17.0	Tritium, Activity, Solid	1.7		pCi/mL	05/06/98	nrf
CA-GLR-17.0	Tritium, Error +/-, Solid	0.7		pCi/mL	05/06/98	nrf
CA-GLR-17.0	Tritium, MDA, Solid	1.1		pCi/mL	05/06/98	nrf
mod. HASL 300	Uranium-234, Activity, Solid	0.4		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-234, Error +/-, Solid	0.2		pCi/g	05/06/98	nrf
d. HASL 300	Uranium-234, MDA, Solid	0.2		pCi/g	05/06/98	nrf
ASL 300	Uranium-235, Activity, Solid	0.1		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-235, Error +/-, Solid	0.1		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-235, MDA, Solid	0.1		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, Activity, Solid	0.5		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, Error +/-, Solid	0.2		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, MDA, Solid	0.1		pCi/g	05/06/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624 Date: 05/11/98

USTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX14, Soil
Date Sampled.....: 03/28/98
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-3
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
iod. HASL 300	Americium-241, Activity, Solid	0.2		pCi/g	05/08/98	nrf
iod. HASL 300	Americium-241, Error +/-, Solid	0.1		pCi/g	05/08/98	nrf
iod. HASL 300	Americium-241, MDA, Solid	0.1		pCi/g	05/08/98	nrf
EPA 901.1	Antimony-125, Activity, Solid	<0.7		pCi/g	04/29/98	nrf
EPA 901.1	Antimony-125, MDA, Solid	0.7		pCi/g	04/29/98	nrf
	Carbon 14, Solid	0.2		pCi/g	05/09/98	nrf
	Carbon 14, Error +/-, Solid	0.1		pCi/g	05/09/98	nrf
	Carbon-14, MDA, Solid	0.1		pCi/g	05/09/98	nrf
PA 901.1	Cesium-134, Activity, Solid	<0.1		pCi/g	04/29/98	nrf
01.1	Cesium-134, MDA, Solid	0.1		pCi/g	04/29/98	nrf
EPA 901.1	Cesium-137, Activity, Solid	82.5		pCi/g	04/29/98	nrf
EPA 901.1	Cesium-137, Error +/-, Solid	2.5		pCi/g	04/29/98	nrf
EPA 901.1	Cesium-137, MDA, Solid	0.2		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-57, Activity, Solid	<0.1		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-57, MDA, Solid	0.1		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-58, Activity, Solid	<0.3		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-58, MDA, Solid	0.3		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-60, Activity, Solid	1.0		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-60, Error +/-, Solid	0.2		pCi/g	04/29/98	nrf
EPA 901.1	Cobalt-60, MDA, Solid	0.1		pCi/g	04/29/98	nrf
nod. HASL 300	Curium-243/244, Activity, Solid	ND		pCi/g	05/08/98	nrf
nod. HASL 300	Curium-243/244, Error +/-, Solid	0.1		pCi/g	05/08/98	nrf
nod. HASL 300	Curium-243/244, MDA, Solid	0.1		pCi/g	05/08/98	nrf
EPA 901.1	Europium-152, MDA, Solid	0.2		pCi/g	04/29/98	nrf
EPA 901.1	Europium-152, activity, Solid	<0.2		pCi/g	04/29/98	nrf

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LABORATORY TEST RESULTS

Job Number: 984624

Date: 05/11/98

USTOMER: GTS DURATEK

PROJECT:

ATTN: MIKE BEACH

Customer Sample ID: MYX14, Soil
Date Sampled.....: 03/28/98
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-3
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 901.1	Europium-154, MDA, Solid	0.2		pCi/g	04/29/98	nrf
EPA 901.1	Europium-154, activity, Solid	<0.2		pCi/g	04/29/98	nrf
EPA 901.1	Iodine 129, Solid	<0.9		pCi/g	04/29/98	nrf
EPA 901.1	Iodine-129, MDA, Solid	0.9		pCi/g	04/29/98	nrf
	Iron 55, Solid	3.4		pCi/g	05/09/98	nrf
	Iron 55, Error +/-, Solid	9.4		pCi/g	05/09/98	nrf
	Iron-55, MDA, Solid	15.7		pCi/g	05/09/98	nrf
EPA 901.1	Mangananese 54, Solid	<0.2		pCi/g	04/29/98	nrf
EPA 901.1	Manganese-54, MDA, Solid	0.2		pCi/g	04/29/98	nrf
R-25.0	Nickel 63, Solid	1.2		pCi/g	05/08/98	nrf
CA-GLR-25.0	Nickel 63, Error +/-, Solid	3.0		pCi/g	05/08/98	nrf
CA-GLR-25.0	Nickel-63, MDA, Solid	5.0		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-238, Activity, Solid	0.7		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-238, Error +/-, Solid	0.2		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-238, MDA, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Error, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, MDA, Solid	0.1		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-241, Solid	ND		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-241 Error +\-, Solid	2.1		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-241, MDA, Solid	3.5		pCi/g	05/08/98	nrf
EPA 905.0	Strontium-90, Solid	1.6		pCi/g	05/07/98	nrf
EPA 905.0	Strontium-90, Error +/-, Solid	0.5		pCi/g	05/07/98	nrf
EPA 905.0	Strontium-90, MDA, Solid	1.0		pCi/g	05/07/98	nrf
mod. HASL 300	Technetium 99, Solid	ND		pCi/g	05/04/98	nrf

CORE LAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624

Date: 05/11/98

CUSTOMER: GTS DURATEK   PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX14, Soil
Date Sampled......: 03/28/98
Time Sampled......: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-3
Date Received.......: 04/14/98
Time Received.......: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
mod. HASL 300	Technetium 99, Error +/-, Solid	0.3		pCi/g	05/04/98	nrf
mod. HASL 300	Technetium-99, MDA, Solid	0.5		pCi/g	05/04/98	nrf
CA-GLR-17.0	Tritium, Activity, Solid	3.2		pCi/mL	05/06/98	nrf
CA-GLR-17.0	Tritium, Error +/-, Solid	0.9		pCi/mL	05/06/98	nrf
CA-GLR-17.0	Tritium, MDA, Solid	1.3		pCi/mL	05/06/98	nrf
mod. HASL 300	Uranium-234, Activity, Solid	0.6		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-234, Error +/-, Solid	0.2		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-234, MDA, Solid	0.1		pCi/g	05/06/98	nrf
d. HASL 300	Uranium-235, Activity, Solid	0.1		pCi/g	05/06/98	nrf
ASL 300	Uranium-235, Error +/-, Solid	0.1		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-235, MDA, Solid	0.1		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, Activity, Solid	0.6		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, Error +/-, Solid	0.2		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, MDA, Solid	0.1		pCi/g	05/06/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624 Date: 05/11/98

USTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MYX17, Soil
Date Sampled.....: 03/28/98
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-4
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
iod. HASL 300	Americium-241, Activity, Solid	0.2		pCi/g	05/08/98	nrf
iod. HASL 300	Americium-241, Error +/-, Solid	0.2		pCi/g	05/08/98	nrf
iod. HASL 300	Americium-241, MDA, Solid	0.3		pCi/g	05/08/98	nrf
EPA 901.1	Antimony-125, Activity, Solid	<0.2		pCi/g	05/05/98	nrf
EPA 901.1	Antimony-125, MDA, Solid	0.2		pCi/g	05/05/98	nrf
	Carbon 14, Solid	0.1		pCi/g	05/09/98	nrf
	Carbon 14, Error +/-, Solid	0.1		pCi/g	05/09/98	nrf
	Carbon-14, MDA, Solid	0.1		pCi/g	05/09/98	nrf
PA 901.1	Cesium-134, Activity, Solid	0.3		pCi/g	05/05/98	nrf
01.1	Cesium-134, Error, +/-, Solid	0.1		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-134, MDA, Solid	0.1		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-137, Activity, Solid	6.5		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-137, Error +/-, Solid	0.6		pCi/g	05/05/98	nrf
EPA 901.1	Cesium-137, MDA, Solid	0.1		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-57, Activity, Solid	<0.1		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-57, MDA, Solid	0.1		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-58, Activity, Solid	<0.3		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-58, MDA, Solid	0.3		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-60, Activity, Solid	<0.1		pCi/g	05/05/98	nrf
EPA 901.1	Cobalt-60, MDA, Solid	0.1		pCi/g	05/05/98	nrf
nod. HASL 300	Curium-243/244, Activity, Solid	0.1		pCi/g	05/08/98	nrf
nod. HASL 300	Curium-243/244, Error +/-, Solid	0.1		pCi/g	05/08/98	nrf
nod. HASL 300	Curium-243/244, MDA, Solid	0.1		pCi/g	05/08/98	nrf
EPA 901.1	Europium-152, MDA, Solid	0.2		pCi/g	05/05/98	nrf
EPA 901.1	Europium-152, activity, Solid	<0.2		pCi/g	05/05/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624

Date: 05/11/98

USTOMER: GTS DURATEK

PROJECT:

ATTN: MIKE BEACH

Customer Sample ID: MYX17, Soil
Date Sampled.....: 03/28/98
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-4
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 901.1	Europium-154, MDA, Solid	0.1		pCi/g	05/05/98	nrf
EPA 901.1	Europium-154, activity, Solid	<0.1		pCi/g	05/05/98	nrf
EPA 901.1	Iodine 129, Solid	<1.7		pCi/g	05/05/98	nrf
EPA 901.1	Iodine-129, MDA, Solid	1.7		pCi/g	05/05/98	nrf
	Iron 55, Solid	ND		pCi/g	05/09/98	nrf
	Iron 55, Error +/-, Solid	9.2		pCi/g	05/09/98	nrf
	Iron-55, MDA, Solid	15.7		pCi/g	05/09/98	nrf
EPA 901.1	Mangananese 54, Solid	<0.1		pCi/g	05/05/98	nrf
EPA 901.1	Manganese-54, MDA, Solid	0.1		pCi/g	05/05/98	nrf
?-25.0	Nickel 63, Solid	3.0		pCi/g	05/08/98	nrf
CA-GLR-25.0	Nickel 63, Error +/-, Solid	3.0		pCi/g	05/08/98	nrf
CA-GLR-25.0	Nickel-63, MDA, Solid	5.0		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-238, Activity, Solid	1.3		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-238, Error +/-, Solid	0.3		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-238, MDA, Solid	0.2		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Solid	0.4		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Error, Solid	0.2		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, MDA, Solid	0.2		pCi/g	05/07/98	nrf
mod. HASL 300	Plutonium-241, Solid	ND		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-241 Error +\-, Solid	1.6		pCi/g	05/08/98	nrf
mod. HASL 300	Plutonium-241, MDA, Solid	2.7		pCi/g	05/08/98	nrf
EPA 905.0	Strontium-90, Solid	1.9		pCi/g	05/07/98	nrf
EPA 905.0	Strontium-90, Error +/-, Solid	0.5		pCi/g	05/07/98	nrf
EPA 905.0	Strontium-90, MDA, Solid	1.0		pCi/g	05/07/98	nrf
mod. HASL 300	Technetium 99, Solid	ND		pCi/g	05/04/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984624

Date: 05/11/98

CUSTOMER: GTS DURATEK

PROJECT:

ATTN: MIKE BEACH

Customer Sample ID: MYX17, Soil
Date Sampled.....: 03/28/98
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 984624-4
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
mod. HASL 300	Technetium 99, Error +/-, Solid	0.3		pCi/g	05/04/98	nrf
mod. HASL 300	Technetium-99, MDA, Solid	0.4		pCi/g	05/04/98	nrf
CA-GLR-17.0	Tritium, Activity, Solid	2.6		pCi/mL	05/06/98	nrf
CA-GLR-17.0	Tritium, Error +/-, Solid	0.8		pCi/mL	05/06/98	nrf
CA-GLR-17.0	Tritium, MDA, Solid	1.3		pCi/mL	05/06/98	nrf
mod. HASL 300	Uranium-234, Activity, Solid	0.3		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-234, Error +/-, Solid	0.2		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-234, MDA, Solid	0.2		pCi/g	05/06/98	nrf
d. HASL 300	Uranium-235, Activity, Solid	0.1		pCi/g	05/06/98	nrf
ASL 300	Uranium-235, Error +/-, Solid	0.2		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-235, MDA, Solid	0.2		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, Activity, Solid	0.4		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, Error +/-, Solid	0.2		pCi/g	05/06/98	nrf
mod. HASL 300	Uranium-238, MDA, Solid	0.2		pCi/g	05/06/98	nrf

CORE LABORATORIES

QUALITY CONTROL FOOTER

METHOD REFERENCES

1) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
2) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86), Update I (7/92), Update II (9/94), Update IIA (8/93), Update IIB (1/95), Update III (6/97)
3) Standard Methods for the Examination of Water and Wastewater, 18th, 1992
4) EPA 600/4-80-032, Prescribed Procedures for Measurement of Radioactivity in Drinking Water, August 1980
5) Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
6) EPA 600/8-78-017, Microbiological Methods for Monitoring the Environment, December 1978

COMMENTS

1) The data in the Laboratory Test Results Report may differ from the data in the QC Report due to calculations for sample preparation and/or dilutions.
2) The "Time Analyzed" in the QC Report may not reflect the actual time of each analysis. The "Date Analyzed" is the actual date of analysis.
3) Soil and sludge samples are reported on a wet basis or on an "as received" basis unless otherwise indicated.
4) The data in this report are within the limits of uncertainty specified in the referenced method unless otherwise indicated.
5) Analyses performed by a subcontract laboratory are indicated with an asterisk and associated code in the "Technician" data field.

Subcontract Laboratories	Code	Subcontract Laboratories	Code
Core Laboratories - Anaheim, CA	AN	Core Laboratories - Houston, TX (Pet)	HP
Core Laboratories - Aurora, CO	AU	Core Laboratories - Houston, TX (Env)	HR
Core Laboratories - Casper, WY	CA	Core Laboratories - Indianapolis, IN	IN
Core Laboratories - Corpus Christi, TX	CC	Core Laboratories - Lake Charles, LA	LC
Core Laboratories - Carson, CA	CR	Core Laboratories - Valparaiso, IN	VP
Core Laboratories - Edison, NJ	ED	Other Subcontract Laboratories	XX

TTIONS

1) NC = Not Calculable due to values lower than the reporting limit.
2) ND = Not Detected above the reporting limit.

QC SAMPLE IDENTIFICATIONS

BLANKS

MB = Method Blank (also referred to as a preparation blank)
RB = Reagent Blank
IB = Instrument Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
HB = Holding Blank (also referred to as a storage blank)

DUPLICATES

MSD = Matrix Spike Duplicate
MD = Method Duplicate

SPIKES

MS = Matrix Spike
MSD = Matrix Spike Duplicate
PDS = Post Digestion Spike
BS = Blank Spike (also referred to as a method spike)
SS = Surrogate Spike

REFERENCE STANDARDS

CS = Calibration Standard
RS = Reference Standard (also referred to as an external reference standard)
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
LCS = Laboratory Control Sample

420 West First Street
Casper, WY 82601
(307) 235-5741

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984624 Date: 05/11/98

TOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

t Method.....: mod. HASL 300 Batch.....: 8123 Analyst...: nrf
hod Description.: Isotopic Uranium Reporting Limit...: 0.1
ameter.....: Uranium-234, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		0.5			0.4	0.1	ABS Diff.	05/06/98 1334
984624-3	984624MSU	6.1		5.4	0.6	101.9	% REC	05/06/98 1334
	MBAU0428	0.1						05/06/98 1334
	LCSAU0428	4.5		5.4		83.3	% REC	05/06/98 1334

t Method.....: mod. HASL 300 Batch.....: 8123 Analyst...: nrf
hod Description.: Isotopic Uranium Reporting Limit...: 0.1
ameter.....: Uranium-235, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		ND			0.1	0.1	ABS Diff.	05/06/98 1334
	MBAU0428	ND						05/06/98 1334

t Method.....: mod. HASL 300 Batch.....: 8123 Analyst...: nrf
hod Description.: Isotopic Uranium Reporting Limit...: 0.1
meter.....: Uranium-238, Activity Units.....: pCi/L

ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		0.4			0.5	0.1	ABS Diff.	05/06/98 1334
984624-3	984624MSU	5.9		5.0	0.6	106.0	% REC	05/06/98 1334
	MBAU0428	ND						05/06/98 1334
	LCSAU0428	4.9		5.0		98.0	% REC	05/06/98 1334

t Method.....: mod. HASL 300 Batch.....: 8126 Analyst...: nrf
hod Description.: Isotopic Plutonium Reporting Limit...: 0.1
ameter.....: Plutonium-238, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		0.6			0.7	15.4	RPD	05/07/98 1705
	MBAP0428	0.8						05/07/98 1705

t Method.....: mod. HASL 300 Batch.....: 8126 Analyst...: nrf
hod Description.: Isotopic Plutonium Reporting Limit...: 0.1
ameter.....: Plutonium-239/240 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		0.1			0.1	0.0	ABS Diff.	05/07/98 1705
984624-3	984624MSPU	5.5		4.8	0.1	112.5	% REC	05/07/98 1705
	MBAP0428	0.1						05/07/98 1705
	LCSAP0428	4.7		4.8		97.9	% REC	05/07/98 1705

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984624 Date: 05/11/98

STOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

st Method.....: mod. HASL 300 Batch.....: 8130 Analyst...: nrf
thod Description.: Technetium-99 Reporting Limit...: 0.1
rameter.....: Technetium 99 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		ND			ND	0	ABS Diff.	05/04/98 1714
984624-3	984624MSTC	10.0		10.2	ND	98.0	% REC	05/04/98 1714
984624-3	984624MSTC	10.5		10.2	ND	102.9	% REC	05/04/98 1714
	MB2TC0504	ND						05/04/98 1714
	ST1TC0504	48.1		51.2		93.9	% REC	05/04/98 1714
	LC1TC0504	44.6		51.2		87.1	% REC	05/04/98 1714

st Method.....: mod. HASL 300 Batch.....: 8142 Analyst...: nrf
thod Description.: Technetium-99 Reporting Limit...: 0.1
rameter.....: Technetium 99 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		6680			6920	3.5	RPD	05/07/98 0410
984624-1	984624TCMS	3910		1990	2310	80.4	% REC	05/07/98 0410
984624-1	984624TCMS	4700		1990	2310	120.1	% REC	05/07/98 0410
	MB2TC0506	ND						05/07/98 0410
	ST1TC0506	61.6		51.2		120.3	% REC	05/07/98 0410
	LC1TC0506	57.4		51.2		112.1	% REC	05/07/98 0410

st od.....: EPA 905.0 Batch.....: 8149 Analyst...: nrf
th escription.: Strontium-90 Reporting Limit...: 1.0
rameter.....: Strontium-90 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
	MBASR0428	1.0						05/07/98 0917
	LCSASR0428	22.4		23.0		97.4	% REC	05/07/98 0917
984676-2	984676MSSR	38.1		46.0	2.2	78.0	% REC	05/07/98 0917
984676-3		1.5			0.3	1.2	ABS Diff.	05/07/98 0917

st Method.....: EPA 905.0 Batch.....: 8150 Analyst...: nrf
thod Description.: Strontium-90 Reporting Limit...: 1.0
rameter.....: Strontium-90 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		277			370	28.7	RPD	05/07/98 1329
984624-1	984623MSSR	636		895	51.3	65.3	% REC	05/07/98 1329
984624-1	984623MSSR	882		895	51.3	92.8	% REC	05/07/98 1329
	MB2SR0506	0.1						05/07/98 1329
	LC1SR0506	22.2		23.0		96.5	% REC	05/07/98 1329

QUALITY CONTROL RESULTS

Job Number: 984624 Date: 05/11/98

JSTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

est Method.....: CA-GLR-17.0 Batch.....: 8151 Analyst...: nrf
ethod Description.: Tritium Reporting Limit...: 1.1
arameter.....: Tritium, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		3120			1670	1450	ABS Diff.	05/06/98 0613
984624-2	984624MSH3	74600		98300	1670	74.2	% REC	05/06/98 0613
) 984624-2	984624MSH3	74900		98300	1670	74.5	% REC	05/06/98 0613
	MB2H30504	1.1						05/06/98 0613
S	ST1H30504	73.5		98.3		74.8	% REC	05/06/98 0613
S	LC1H30504	73.7		98.3		75.0	% REC	05/06/98 0613

est Method.....: mod. HASL 300 Batch.....: 8152 Analyst...: nrf
ethod Description.: Isotopic Uranium Reporting Limit...: 0.1
arameter.....: Uranium-234, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		1.3			0.7	0.6	ABS Diff.	05/07/98 1431
984624-1	984624MSHU	210		210	3.9	98.1	% REC	05/07/98 1431
) 984624-1	984624MSHU	175		210	3.9	81.5	% REC	05/07/98 1431
	MBAU0506	ND						05/07/98 1431
	LCAU0506	4.5		5.4		83.3	% REC	05/07/98 1431

hod.....: mod. HASL 300 Batch.....: 8152 Analyst...: nrf
eth Description.: Isotopic Uranium Reporting Limit...: 0.1
arameter.....: Uranium-235, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		0.9			0.2	0.7	ABS Diff.	05/07/98 1431
	MBAU0506	ND						05/07/98 1431

est Method.....: mod. HASL 300 Batch.....: 8152 Analyst...: nrf
ethod Description.: Isotopic Uranium Reporting Limit...: 0.1
arameter.....: Uranium-238, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		0.5			0.5	0.0	ABS Diff.	05/07/98 1431
984624-1	984624MSHU	218		194	0.5	112.1	% REC	05/07/98 1431
) 984624-1	984624MSHU	176		194	0.5	90.5	% REC	05/07/98 1431
	MBAU0506	0.1						05/07/98 1431
S	LCAU0506	4.7		5.0		94.0	% REC	05/07/98 1431

est Method.....: mod. HASL 300 Batch.....: 8153 Analyst...: nrf
ethod Description.: Isotopic Plutonium Reporting Limit...: 0.7
arameter.....: Plutonium-238, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		8.9			6.9	2.0	ABS Diff.	05/07/98 1711
	MBAP0506	0.7						05/07/98 1711

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984624 Date: 05/11/98

OMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Method.....: mod. HASL 300 Batch.....: 8153 Analyst...: nrf
iod Description.: Isotopic Plutonium Reporting Limit...: 0.1
ameter.....: Plutonium-239/240 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
84623-1		5.5			5.3	3.7	RPD	05/07/98 1711
84624-1	984624MSPH	184		187	11.9	92.0	% REC	05/07/98 1711
84624-1	984624MSPH	183		187	11.9	91.5	% REC	05/07/98 1711
	MBAP0506	0.1						05/07/98 1711
	LCAP0506	4.8		-.8		100.0	% REC	05/07/98 1711

Method.....: Batch.....: 8154 Analyst...: nrf
iod Description.: Carbon-14 Reporting Limit...: 1.0
ameter.....: Carbon 14 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
84624-2		602			732	19.5	RPD	05/07/98 1048
84624-3	984624MSC4	108000		112000	623	95.9	% REC	05/07/98 1048
84624-3	984624MSC4	108000		112000	623	95.9	% REC	05/07/98 1048
	MB2C140504	0.9						05/07/98 1048
	ST1C140504	110		112		98.2	% REC	05/07/98 1048
	LC1C140504	106		112		94.6	% REC	05/07/98 1048

d.....: mod. HASL 300 Batch.....: 8159 Analyst...: nrf
Description.: Isotopic Curium Reporting Limit...: 0.1
ameter.....: Curium-243/244, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
84624-2		ND			ND	0	ABS Diff.	05/08/98 1121
	MBAC0428	ND						05/08/98 1121

Method.....: mod. HASL 300 Batch.....: 8160 Analyst...: nrf
iod Description.: Americium-241 Reporting Limit...: 0.1
ameter.....: Americium-241, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
84624-2		0.1			0.2	0.1	ABS Diff.	05/08/98 1121
84624-3	984624MSAM	5.6		5.1	0.2	105.9	% REC	05/08/98 1121
	MBAA0428	0.1						05/08/98 1121
	LCSAA0428	5.3		5.1		103.9	% REC	05/08/98 1121

Method.....: mod. HASL 300 Batch.....: 8162 Analyst...: nrf
iod Description.: Isotopic Curium Reporting Limit...: 0.1
ameter.....: Curium-243/244, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
	MBAAC0506	ND						05/08/98 1121

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984624 Date: 05/11/98

OMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Method.....: mod. HASL 300 Batch.....: 8163 Analyst...: nrf
od Description.: Americium-241 Reporting Limit...: 0.1
meter.....: Americium-241, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
'84623-1		3.6			3.4	5.7	RPD	05/08/98 1121
'84624-1	984624MSAC	197		198	10.7	94.1	% REC	05/08/98 1121
'84624-1	984624MSAC	210	197	198	10.7	100.7	% REC	05/08/98 1121
						6.4	RPD	
	MBAAC0506	0.1						05/08/98 1121
	LCSAAC0506	5.0		5.1		98.0	% REC	05/08/98 1121

: Method.....: Batch.....: 8166 Analyst...: nrf
iod Description.: Carbon-14 Reporting Limit...: 0.1
imeter.....: Carbon 14 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
)84624-3	984624MSC1	7.8		7.5	0.2	101.3	% REC	05/09/98 1612
)84624-3	984624MSC1	7.7	7.8	7.5	0.2	100.0	% REC	05/09/98 1612
	MB2C140508	ND						05/09/98 1612
	ST1C140508	110		112		98.2	% REC	05/09/98 1612
	LC1C140508	110		112		98.2	% REC	05/09/98 1612

: od.....: mod. HASL 300 Batch.....: 8169 Analyst...: nrf
iod Description.: Plutonium-241 Reporting Limit...: 0.1
ameter.....: Plutonium-241 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
)84624-2		ND			ND	0	ABS Diff.	05/08/98 0620
)84624-3	984624MSIP	226		435	ND	52.0	% REC	05/08/98 0620
)84624-3	984624MSIP	181		435	ND	41.6	% REC	05/08/98 0620
	MBAPU0505	ND						05/08/98 0620
	LCSAPU0505	334		435		76.8	% REC	05/08/98 0620

: Method.....: Batch.....: 8170 Analyst...: nrf
iod Description.: Iron-55 Reporting Limit...: 7.9
ameter.....: Iron 55 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
	MBAFE0428	4.6						05/09/98 1730
	LCAFE0428	42.5		45.2		94.0	% REC	05/09/98 1730
)84624-2		24.1			5.0	19.1	ABS Diff.	05/09/98 1730
)84624-3	984624MSFE	50.8		90.4	3.4	52.4	% REC	05/09/98 1730

t Method.....: Batch.....: 8171 Analyst...: nrf
iod Description.: Iron-55 Reporting Limit...: 1.8
ameter.....: Iron 55 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
.4623-1		166000			160000	3.7	RPD	05/07/98 1358

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984624 Date: 05/11/98

JSTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

est Method.....:
ethod Description.: Iron-55
arameter.....: Iron 55
Batch.....: 8171
Reporting Limit...: 1.8
Units.....: pCi/L
Analyst...: nrf

	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
	984624-1	984624MSPH	20200		1760	16200	227.3	% REC	05/07/98 1358
)	984624-1	984624MSPH	19600		1760	16200	193.2	% REC	05/07/98 1358
		MB2FE0506	1.8						05/07/98 1358
S		LC1FE0506	35.3		45.2		78.1	% REC	05/07/98 1358

est Method.....: CA-GLR-25.0
ethod Description.: Nickel-63
arameter.....: Nickel 63
Batch.....: 8172
Reporting Limit...: 2.3
Units.....: pCi/L
Analyst...: nrf

	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
	984623-1		19100			18700	2.1	RPD	05/08/98 0242
	984624-1	984624MSNH	38000		1930	35600	124.4	% REC	05/08/98 0242
)	984624-1	984624MSNH	37100		1930	35600	77.7	% REC	05/08/98 0242
		MB2NI0506	0.3						05/08/98 0242
S		LC1NI0506	50.8		49.5		102.6	% REC	05/08/98 0242

t Method.....: CA-GLR-25.0
' Description.: Nickel-63
er.....: Nickel 63
Batch.....: 8173
Reporting Limit...: 0.1
Units.....: pCi/L
Analyst...: nrf

	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
	984624-2		7.1			7.9	10.7	RPD	05/08/98 1116
	984624-3	984624MSNI	91.6		99.0	1.2	91.3	% REC	05/08/98 1116
		MBBNI0428	ND						05/08/98 1116
S		LCANI0428	49.1		49.5		99.2	% REC	05/08/98 1116

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 984623

Prepared For:

GTS DURATEK
628 GALLAHER RD
KINGSTON, TN 37763

Attention: MIKE BEACH

Date: 05/11/98

Rondalynn S. Mull
Signature

5/11/98
Date

Name: Rondalynn S. Mull

Title: Radiochemistry Supervisor

420 West First Street
Casper, WY 82601

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CORELAB

CORE LABORATORIES

S A M P L E I N F O R M A T I O N
Date: 05/11/98

Job Number.: 984623
Customer ..: GTS DURATEK
Attn.....: MIKE BEACH

Project Number.....: 98000011
Customer Project ID....:
Project Description....: Maine Yankee Characterization

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
984623-1	MTP100, Reactor Coolant Smears	Smear	03/27/98	08:00	04/14/98	11:55

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984623 Date: 05/11/98

CUSTOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

Customer Sample ID: MTP100, Reactor Coolant Smears
Date Sampled.....: 03/27/98
Time Sampled.....: 08:00
Sample Matrix.....: Smear

Laboratory Sample ID: 984623-1
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
mod. HASL 300	Americium-241, Activity, Filter	3.4		pCi/Smear	05/08/98	nrf
mod. HASL 300	Americium-241, Error +/-, Filter	1.4		pCi/Smear	05/08/98	nrf
mod. HASL 300	Americium-241, MDA, Filter	0.9		pCi/Smear	05/08/98	nrf
EPA 901.1	Antimony-125, Activity, Filter	2110		pCi/Smear	05/06/98	nrf
EPA 901.1	Antimony-125, Error, +/-, Filter	530		pCi/Smear	05/06/98	nrf
EPA 901.1	Antimony-125, MDA, Filter	1150		pCi/Smear	05/06/98	nrf
	Carbon 14, Filter	4270		pCi/Smear	05/07/98	nrf
	Carbon 14, Error +/-, Filter	100		pCi/Smear	05/07/98	nrf
	Carbon-14, MDA, Filter	74.4		pCi/Smear	05/07/98	nrf
[illegible] 901.1	Cesium-134, Activity, Filter	<93.3		pCi/Smear	05/06/98	nrf
901.1	Cesium-134, MDA, Filter	93.3		pCi/Smear	05/06/98	nrf
EPA 901.1	Cesium-137, Activity, Filter	<116		pCi/Smear	05/06/98	nrf
EPA 901.1	Cesium-137, MDA, Filter	116		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-57, Activity, Filter	<45.7		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-57, MDA, Filter	45.7		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-58, Activity, Filter	674		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-58, Error, +/-, Filter	429		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-58, MDA, Filter	181		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-60, Activity, Filter	147000		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-60, Error +/-, Filter	4120		pCi/Smear	05/06/98	nrf
EPA 901.1	Cobalt-60, MDA, Filter	1050		pCi/Smear	05/06/98	nrf
mod. HASL 300	Curium-243/244, Activity, Filter	1.8		pCi/Smear	05/08/98	nrf
mod. HASL 300	Curium-243/244, Error +/-, Filter	0.8		pCi/Smear	05/08/98	nrf
mod. HASL 300	Curium-243/244, MDA, Filter	0.8		pCi/Smear	05/08/98	nrf
EPA 901.1	Europium-152, MDA, Filter	106		pCi/Smear	05/06/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984623

Date: 05/11/98

CUSTOMER: GTS DURATEK

PROJECT:

ATTN: MIKE BEACH

Customer Sample ID: MTP100, Reactor Coolant Smears
Date Sampled.....: 03/27/98
Time Sampled.....: 08:00
Sample Matrix.....: Smear

Laboratory Sample ID: 984623-1
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 901.1	Europium-152, activity, Filter	<106		pCi/Smear	05/06/98	nrf
EPA 901.1	Europium-154, MDA, Filter	68.6		pCi/Smear	05/06/98	nrf
EPA 901.1	Europium-154, activity, Filter	<68.6		pCi/Smear	05/06/98	nrf
EPA 901.1	Iodine 129, Filter	<829		pCi/Smear	05/06/98	nrf
EPA 901.1	Iodine-129, MDA, Filter	829		pCi/Smear	05/06/98	nrf
	Iron 55, Filter	160000		pCi/Smear	05/07/98	nrf
	Iron 55, Error +/-, Filter	2050		pCi/Smear	05/07/98	nrf
	Iron-55, MDA, Filter	1560		pCi/Smear	05/07/98	nrf
EPA 901.1	Mangananese 54, Filter	1260		pCi/Smear	05/06/98	nrf
901.1	Manganese 54 +/- error, Filter	488		pCi/Smear	05/06/98	nrf
EPA 901.1	Manganese-54, MDA, Filter	196		pCi/Smear	05/06/98	nrf
CA-GLR-25.0	Nickel 63, Filter	18700		pCi/Smear	05/08/98	nrf
CA-GLR-25.0	Nickel 63, Error +/-, Filter	260		pCi/Smear	05/08/98	nrf
CA-GLR-25.0	Nickel-63, MDA, Filter	233		pCi/Smear	05/08/98	nrf
mod. HASL 300	Plutonium-238, Activity, Filter	6.9		pCi/Smear	05/07/98	nrf
mod. HASL 300	Plutonium-238, Error +/-, Filter	2.6		pCi/Smear	05/07/98	nrf
mod. HASL 300	Plutonium-238, MDA, Filter	2.3		pCi/Smear	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Filter	5.3		pCi/Smear	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, Error, Filter	2.3		pCi/Smear	05/07/98	nrf
mod. HASL 300	Plutonium-239/240, MDA, Filter	2.3		pCi/Smear	05/07/98	nrf
mod. HASL 300	Plutonium-241, Filter	315		pCi/Smear	05/08/98	nrf
mod. HASL 300	Plutonium-241 Error +\-, Filter	20.4		pCi/Smear	05/08/98	nrf
mod. HASL 300	Plutonium-241, MDA, Filter	24.1		pCi/Smear	05/08/98	nrf
EPA 905.0	Strontium-90, Filter	370		pCi/Smear	05/07/98	nrf
EPA 905.0	Strontium-90, Error +/-, Filter	32.7		pCi/Smear	05/07/98	nrf

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 984623

Date: 05/11/98

CUSTOMER: GTS DURATEK

PROJECT:

ATTN: MIKE BEACH

Customer Sample ID: MTP100, Reactor Coolant Smears
Date Sampled.....: 03/27/98
Time Sampled.....: 08:00
Sample Matrix.....: Smear

Laboratory Sample ID: 984623-1
Date Received.....: 04/14/98
Time Received.....: 11:55

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 905.0	Strontium-90, MDA, Filter	44.0		pCi/Smear	05/07/98	nrf
mod. HASL 300	Technetium 99, Filter	6920		pCi/Smear	05/07/98	nrf
mod. HASL 300	Technetium 99, Error +/-, Filter	293		pCi/Smear	05/07/98	nrf
mod. HASL 300	Technetium-99, MDA, Filter	196		pCi/Smear	05/07/98	nrf
CA-GLR-17.0	Tritium, Activity, Filter	15500		pCi/Smear	05/06/98	nrf
CA-GLR-17.0	Tritium, Error +/-, Filter	544		pCi/Smear	05/06/98	nrf
CA-GLR-17.0	Tritium, MDA, Filter	387		pCi/Smear	05/06/98	nrf
mod. HASL 300	Uranium-234, Activity, Filter	0.7		pCi/Smear	05/07/98	nrf
od. HASL 300	Uranium-234, Error +/-, Filter	0.8		pCi/Smear	05/07/98	nrf
HASL 300	Uranium-234, MDA, Filter	1.1		pCi/Smear	05/07/98	nrf
HASL 300	Uranium-235, Activity, Filter	0.2		pCi/Smear	05/07/98	nrf
mod. HASL 300	Uranium-235, Error +/-, Filter	0.4		pCi/Smear	05/07/98	nrf
mod. HASL 300	Uranium-235, MDA, Filter	0.8		pCi/Smear	05/07/98	nrf
mod. HASL 300	Uranium-238, Activity, Filter	0.5		pCi/Smear	05/07/98	nrf
mod. HASL 300	Uranium-238, Error +/-, Filter	0.7		pCi/Smear	05/07/98	nrf
mod. HASL 300	Uranium-238, MDA, Filter	1.1		pCi/Smear	05/07/98	nrf

CORE LABORATORIES

QUALITY CONTROL FOOTER

IETHOD REFERENCES

) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983
) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86), Update I (7/92), Update II (9/94), Update IIA (8/93), Update IIB (1/95), Update III (6/97)
) Standard Methods for the Examination of Water and Wastewater, 18th, 1992
) EPA 600/4-80-032, Prescribed Procedures for Measurement of Radioactivity in Drinking Water, August 1980
) Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
) EPA 600/8-78-017, Microbiological Methods for Monitoring the Environment, December 1978

OMMENTS

) The data in the Laboratory Test Results Report may differ from the data in the QC Report due to calculations for sample preparation and/or dilutions.
) The "Time Analyzed" in the QC Report may not reflect the actual time of each analysis. The "Date Analyzed" is the actual date of analysis.
) Soil and sludge samples are reported on a wet basis or on an "as received" basis unless otherwise indicated.
) The data in this report are within the limits of uncertainty specified in the referenced method unless otherwise indicated.
) Analyses performed by a subcontract laboratory are indicated with an asterisk and associated code in the "Technician" data field.

Subcontract Laboratories	Code	Subcontract Laboratories	Code
Core Laboratories - Anaheim, CA	AN	Core Laboratories - Houston, TX (Pet)	HP
Core Laboratories - Aurora, CO	AU	Core Laboratories - Houston, TX (Env)	HR
Core Laboratories - Casper, WY	CA	Core Laboratories - Indianapolis, IN	IN
Core Laboratories - Corpus Christi, TX	CC	Core Laboratories - Lake Charles, LA	LC
Core Laboratories - Carson, CA	CR	Core Laboratories - Valparaiso, IN	VP
Core Laboratories - Edison, NJ	ED	Other Subcontract Laboratories	XX

TIONS

NC = Not Calculable due to values lower than the reporting limit.
ND = Not Detected above the reporting limit.

QC SAMPLE IDENTIFICATIONS

ANKS

= Method Blank (also referred to as a preparation blank)
= Reagent Blank
= Instrument Blank
= Initial Calibration Blank
B = Continuing Calibration Blank
= Holding Blank (also referred to as a storage blank)

IPLICATES

D = Matrix Spike Duplicate
= Method Duplicate

SPIKES

MS = Matrix Spike
MSD = Matrix Spike Duplicate
PDS = Post Digestion Spike
BS = Blank Spike (also referred to as a method spike)
SS = Surrogate Spike

REFERENCE STANDARDS

CS = Calibration Standard
RS = Reference Standard (also referred to as an external reference standard)
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
LCS = Laboratory Control Sample

420 West First Street
Casper, WY 82601
(307) 235-5741

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984623

Date: 05/11/98

CUSTOMER: GTS DURATEK

PROJECT:

ATTN: MIKE BEACH

Test Method.....: mod. HASL 300
Method Description.: Technetium-99
Parameter.....: Technetium 99

Batch.....: 8142
Reporting Limit...: 0.1
Units.....: pCi/L

Analyst...: nrf

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		6680			6920	3.5	RPD	05/07/98 0410
984624-1	984624TCMS	3910		1990	2310	80.4	% REC	05/07/98 0410
984624-1	984624TCMS	4700		1990	2310	120.1	% REC	05/07/98 0410
	MB2TC0506	ND						05/07/98 0410
	ST1TC0506	61.6		51.2		120.3	% REC	05/07/98 0410
	LC1TC0506	57.4		51.2		112.1	% REC	05/07/98 0410

Test Method.....: EPA 905.0
Method Description.: Strontium-90
Parameter.....: Strontium-90

Batch.....: 8150
Reporting Limit...: 1.0
Units.....: pCi/L

Analyst...: nrf

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		277			370	28.7	RPD	05/07/98 1329
984624-1	984623MSSR	636		895	51.3	65.3	% REC	05/07/98 1329
984624-1	984623MSSR	882		895	51.3	92.8	% REC	05/07/98 1329
	MB2SR0506	0.1						05/07/98 1329
	LC1SR0506	22.2		23.0		96.5	% REC	05/07/98 1329

Method.....: CA-GLR-17.0
Description.: Tritium
Parameter.....: Tritium, Activity

Batch.....: 8151
Reporting Limit...: 1.1
Units.....: pCi/L

Analyst...: nrf

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		3120			1670	1450	ABS Diff.	05/06/98 0613
984624-2	984624MSH3	74600		98300	1670	74.2	% REC	05/06/98 0613
984624-2	984624MSH3	74900		98300	1670	74.5	% REC	05/06/98 0613
	MB2H30504	1.1						05/06/98 0613
	ST1H30504	73.5		98.3		74.8	% REC	05/06/98 0613
	LC1H30504	73.7		98.3		75.0	% REC	05/06/98 0613

Test Method.....: mod. HASL 300
Method Description.: Isotopic Uranium
Parameter.....: Uranium-234, Activity

Batch.....: 8152
Reporting Limit...: 0.1
Units.....: pCi/L

Analyst...: nrf

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		1.3			0.7	0.6	ABS Diff.	05/07/98 1431
984624-1	984624MSHU	210		210	3.9	98.1	% REC	05/07/98 1431
984624-1	984624MSHU	175		210	3.9	81.5	% REC	05/07/98 1431
	MBAU0506	ND						05/07/98 1431
	LCAU0506	4.5		5.4		83.3	% REC	05/07/98 1431

QUALITY CONTROL RESULTS

Job Number: 984623 Date: 05/11/98

STO... GTS DURATEK PROJECT: ATTN: MIKE BEACH

st Method.....: mod. HASL 300 Batch.....: 8152 Analyst...: nrf
thod Description.: Isotopic Uranium Reporting Limit...: 0.1
rameter.....: Uranium-235, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		0.9			0.2	0.7	ABS Diff.	05/07/98 1431
	MBAU0506	ND						05/07/98 1431

st Method.....: mod. HASL 300 Batch.....: 8152 Analyst...: nrf
thod Description.: Isotopic Uranium Reporting Limit...: 0.1
rameter.....: Uranium-238, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		0.5			0.5	0.0	ABS Diff.	05/07/98 1431
984624-1	984624MSHU	218		194	0.5	112.1	% REC	05/07/98 1431
984624-1	984624MSHU	176		194	0.5	90.5	% REC	05/07/98 1431
	MBAU0506	0.1						05/07/98 1431
	LCAU0506	4.7		5.0		94.0	% REC	05/07/98 1431

st Method.....: mod. HASL 300 Batch.....: 8153 Analyst...: nrf
od Description.: Isotopic Plutonium Reporting Limit...: 0.7
meter.....: Plutonium-238, Activity Units.....: pCi/L

ab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
3-1		8.9			6.9	2.0	ABS Diff.	05/07/98 1711
	MBAP0506	0.7						05/07/98 1711

st Method.....: mod. HASL 300 Batch.....: 8153 Analyst...: nrf
thod Description.: Isotopic Plutonium Reporting Limit...: 0.1
rameter.....: Plutonium-239/240 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		5.5			5.3	3.7	RPD	05/07/98 1711
984624-1	984624MSPH	184		187	11.9	92.0	% REC	05/07/98 1711
984624-1	984624MSPH	183		187	11.9	91.5	% REC	05/07/98 1711
	MBAP0506	0.1						05/07/98 1711
	LCAP0506	4.8		4.8		100.0	% REC	05/07/98 1711

est Method.....: Batch.....: 8154 Analyst...: nrf
ethod Description.: Carbon-14 Reporting Limit...: 1.0
arameter.....: Carbon 14 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		602			732	19.5	RPD	05/07/98 1048
984624-3	984624MSC4	108000		112000	623	95.9	% REC	05/07/98 1048
984624-3	984624MSC4	108000		112000	623	95.9	% REC	05/07/98 1048
	MB2C140504	0.9						05/07/98 1048
	ST1C140504	110		112		98.2	% REC	05/07/98 1048
	LC1C140504	106		112		94.6	% REC	05/07/98 1048

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984623 Date: 05/11/98

TOMER: GTS DURATEK PROJECT: ATTN: MIKE BEACH

t Method.....: mod. HASL 300 Batch.....: 8162 Analyst...: nrf
hod Description.: Isotopic Curium Reporting Limit...: 0.1
ameter.....: Curium-243/244, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
	MBAAC0506	ND						05/08/98 1121

t Method.....: mod. HASL 300 Batch.....: 8163 Analyst...: nrf
hod Description.: Americium-241 Reporting Limit...: 0.1
ameter.....: Americium-241, Activity Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		3.6			3.4	5.7	RPD	05/08/98 1121
984624-1	984624MSAC	197		198	10.7	94.1	% REC	05/08/98 1121
984624-1	984624MSAC	210	197	198	10.7	100.7	% REC	05/08/98 1121
						6.4	RPD	
	MBAAC0506	0.1						05/08/98 1121
	LCSAAC0506	5.0		5.1		98.0	% REC	05/08/98 1121

t Method.....: mod. HASL 300 Batch.....: 8169 Analyst...: nrf
d Description.: Plutonium-241 Reporting Limit...: 0.1
eter.....: Plutonium-241 Units.....: pCi/L

ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984624-2		ND			ND	0	ABS Diff.	05/08/98 0620
984624-3	984624MSIP	226		435	ND	52.0	% REC	05/08/98 0620
984624-3	984624MSIP	181		435	ND	41.6	% REC	05/08/98 0620
	MBAPU0505	ND						05/08/98 0620
	LCSAPU0505	334		435		76.8	% REC	05/08/98 0620

t Method.....: Batch.....: 8171 Analyst...: nrf
hod Description.: Iron-55 Reporting Limit...: 1.8
ameter.....: Iron 55 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		166000			160000	3.7	RPD	05/07/98 1358
984624-1	984624MSPH	20200		1760	16200	227.3	% REC	05/07/98 1358
984624-1	984624MSPH	19600		1760	16200	193.2	% REC	05/07/98 1358
	MB2FE0506	1.8						05/07/98 1358
	LC1FE0506	35.3		45.2		78.1	% REC	05/07/98 1358

t Method.....: CA-GLR-25.0 Batch.....: 8172 Analyst...: nrf
hod Description.: Nickel-63 Reporting Limit...: 2.3
ameter.....: Nickel 63 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
984623-1		19100			18700	2.1	RPD	05/08/98 0242
984624-1	984624MSNH	38000		1930	35600	124.4	% REC	05/08/98 0242
984624-1	984624MSNH	37100		1930	35600	77.7	% REC	05/08/98 0242
	MB2NI0506	0.3						05/08/98 0242

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 984623 Date: 05/11/98

JST[illegible]. GTS DURATEK PROJECT: ATTN: MIKE BEACH

est Method.....: CA-GLR-25.0 Batch.....: 8172 Analyst...: nrf
ethod Description.: Nickel-63 Reporting Limit...: 2.3
arameter.....: Nickel 63 Units.....: pCi/L

Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	Units	Date/Time
5	LC1NI0506	50.8		49.5		102.6	% REC	05/08/98 0242

APPENDIX B

MAINE YANKEE ATOMIC POWER PLANT RADIOLOGICAL DRIVE-OVER SURVEY OF OWNER CONTROLLED PROPERTY

Maine Yankee Atomic Power Plant Radiological Drive-Over Survey of Owner Controlled Property

Prepared for
Maine Yankee Atomic Power Co
and
GTS Duratek

Prepared by
Stephen W. Duce, CHP
IT Corporation
Knoxville, Tennessee

April 3, 1998

Abstract

Maine Yankee Atomic Power Plant, a pressurized water reactor owned and operated by Maine Yankee Atomic Power Co., began commercial operation in December, 1972. On August 1, 1997 Maine Yankee Atomic Power Co. decided to terminate power production at the site and decontaminate and decommission the facility. Maine Yankee Atomic Power Co. contracted with GTS Duratek and IT Corporation to perform a radiological and hazardous materials characterization of the site structures and environs. This characterization was to determine the nature and extent of contaminants within existing facility structures and the environs within the owner controlled property. The resulting data would be used to determine what areas within facility structures and in the environs, if any, would require further cleanup. A drive-over survey, using a large area plastic scintillator, was conducted in the owner controlled area as part of the radiological environmental study. This report describes the methods used to conduct this survey and the survey results.

NOTE

GTS Duratek had not received the MDA calculations described in this Appendix as of the volume issue date. This report should be considered "DRAFT" pending our review and concurrence with these calculations.

TABLE OF CONTENTS

1.0 INTRODUCTION

Maine Yankee Atomic Power Plant, owned and operated by Maine Yankee Atomic Power Co., a pressurized water reactor located near Wiscasset, Maine on approximately 820 acres, began commercial operation in December of 1972. In the summer of 1997, after nearly 25 years of commercial power production, Maine Yankee Atomic Power Co. decided to terminate power production at the site and decontaminate and decommission the facility. Maine Yankee Atomic Power Co. contracted with GTS Duratek and IT Corporation to perform a radiological and hazardous materials characterization of the site structures and environs. This characterization was to determine the nature and extent of contaminants within the existing facilities and the environs within the owner controlled property. The resulting data would be used to determine what areas within facility structures and the environs, if any, would require radiological or hazardous materials cleanup.

A systematic radiological survey protocol was developed to assess the impact of the facility operations on the environment. This protocol involved gamma scanning, radiation measurements and soil sampling, with soil samples to be taken at randomly selected areas within grids that encompassed the owner controlled area. A drive-over survey with a large area plastic scintillator provided some of the gamma scanning activities. Survey results were to be used to identify locations of elevated readings for making radiation measurements and collecting soil samples. Survey density was to be approximately 100 percent on all vehicle accessible owner controlled areas, with reduced survey density on areas that were difficult to survey such as heavily wooded areas, transmission line easements, railroad easements, etc. This report describes the methods used to conduct the drive-over gamma scanning performed.

2.0 METHODS

2.1 Equipment

Radiological surveys of the surface and near surface soils were accomplished using a vehicle- mounted, large area plastic scintillator detector. A global positioning system (GPS) supplied positional information for the survey data points. TSA Systems Limited manufactured the large area plastic scintillator detector, known as a TSA Vehicle Mounted Monitor VRM-1X. A 1.5-inch thick by 3-inch wide by 33-inch long block of scintillator-impregnated plastic makes up the body of the detector. The original configuration for the detector and housing was modified to allow for enhanced detectability of mid- to high-energy beta particles. This was accomplished by mounting the detector and associated electronics in a stainless-steel and fiberglass box with a mylar covered open window. Expanded metal was used to protect the mylar against damage from environmental factors such as twigs, grass, metal, wires, etc. Attached to both ends of the detector housing are mounting clamps to facilitate attachment of the detector to a vehicle bumper. A second hand-held detector, an HHD-440A, functions as a controller unit for the VRM-1X. This detector can be used independent of the VRM-1X to survey an area to pinpoint the location of a source once the VRM-1X has isolated the source within its field of view.

It is reported that a 10-microcurie (μCi) cesium-137 (^{137}Cs) point source will result in a VRM-1X detector alarm at 7 ft (Shaw 89). Vendor stated sensitivity of the HHD-440A is 10 nCi of special nuclear material or 20 nCi of mixed fission products (TSA 94). IT Corporation's Nuclear Services personnel have determined minimum detectable activity (MDA) values for several radionuclides for the VRM-1X through direct measurement of button sources and specially prepared large area sources. MDA values for ^{137}Cs at Maine Yankee were established as part of the scope of work. MDAs, using the ambient background counts observed on the owner controlled property, were 0.57 μCi for a point source and 5.6 picocuries per gram (pCi/g) for uniformly dispersed material in soil. Determination of these MDAs is described in this section on page 5.

Detector count rate is displayed on the HHD-440A. Count rates are updated every second and are captured to a computer data base file. A modified Toshiba Satellite Pro 420CDS laptop computer is used to run the software and store data. Count rates and GPS data are captured to two separate files.

As the detector is driven over the survey area, positional information is transmitted from the GPS antenna to the laptop computer, where it is saved in a GPS database file. The GPS system utilizes 8 channel technology, which means the device is capable of tracking eight satellites simultaneously and transmitting positional data. A custom designed, sophisticated software package is used to capture and merge the detector and GPS outputs.

A specially designed feature of the software is a split screen display track map. One side of the screen shows an overall view of the survey path, while the second screen expands the view, allowing the user to view finer detail. Movement of the detector is tracked by creating a "bread crumb trail" with "crumbs" being displayed every 5 m of travel. Direction of travel is indicated by a large dot with a pointer. This feature allows the user to visually determine that the system is working properly, and to track the progress of the survey.

A second display screen allows the user to identify critical operational parameters such as current latitude and longitude, number of data records saved, computer memory remaining, number of satellites being tracked along with satellite position and lock time, and detector count rate. This information also allows the user to determine operational status of the equipment. Therefore, this and the previously described display provide a real-time quality assurance (QA) function for correct system operation.

Use of a single GPS antenna allows for the placement of each recorded data point to within $\pm$ 100 feet of the location where the count was measured. However, the total survey/GPS package relies on the use of a base station that is located at a known position (latitude and longitude). This base station records satellite positional information independently of, but concurrently with, the drive-over survey. Recorded data are used to post process the mobile detector system's positional data. Use of this technology allows for locating each measured count rate at the site to within $\pm$3 feet. The base station at Maine Yankee was located near the meteorological tower. Latitude and longitude for this location was provided by MaineYankee personnel.

Three different methods were used to convey the detector over the owner controlled area. Two of the methods were vehicles, one being a four wheel drive General Motors Corporation Jimmy, and the second being a Polaris 350 All Terrain Vehicle (ATV). The third method of conveyance was a jogger cart that was pushed over some of the landscaped areas near the administrative buildings and parking areas. Most of the surveys utilized the GMC Jimmy, as this platform seemed to be the best overall platform.

Vehicle operators tried to maintain the driving speed to approximately 5 miles per hour (mph). In most cases the terrain became the limiting condition, making it difficult to drive at least 5 mph. The 5 mph limit was arbitrarily established by IT personnel in 1995 and had as its basis a desire to keep a one-second surveyed grid to 7 feet by 7 feet. This dimension was based on initial characterization data which indicated a field of view of 7-foot width for a 1-μCi cobalt-60 source, and that 5 mph is 7.3 feet per second. Thus 5 mph met this arbitrary requirement. Field tests performed at Maine Yankee demonstrated the field of view to be 13 feet for a 9.6- μCi ^{137}Cs source. Therefore, the 7-foot field of view was conservative. TSA recommends <10 mph (TSA 94) for performing reconnaissance scanning, which is the type of survey performed at Maine Yankee.

The following discussion provides further evidence that use of a 5-mph upper limit for conduct of the survey was reasonable but not critical. IT's VRM-1X detector is designed to measure the beta and gamma-ray fluence, (particles and rays per cubic centimeter per second). As such, the driving speed for this detector is only a concern when trying to find small discrete "hot spots," as large, uniformly contaminated areas have the same fluence everywhere within the contaminated area. Therefore, as long as the detector is resident within the fluence of a contaminated area for at least one second, the data logging rate for the system, an elevated count rate will be recorded. This has been observed for background areas where the detector registers the same count rate regardless of the rate of speed the detector is moving. This was firmly established within the drive-over survey data base when driving from the Maine Yankee site to the background location. The operators left the system on while driving to the background area. Rate of speed varied from stationary to 65 mph. For similar substrates the detector registered similar count rates regardless of vehicle speed.

For detection of point sources or "hot spots" the rate of speed becomes more important as the detector must be resident within the elevated fluence long enough to cause an elevated (above background) count rate within the detector. Note, that the detector does not have to be within the elevated fluence long enough to measure the maximum count rate, only that the count rate be high enough to cause an alarm. As the issue of detector response-versus-survey speed was a concern at Maine Yankee, field tests were performed to establish how fast the detector could be driven over a source and the detector still alarm. A ^{137}Cs button source of approximately 6 μCi was provided by facility personnel. This source was placed on the east most entrance road and the vehicle mounted detector was driven over the source at various speeds ranging from idling up to 23 mph. At all speeds an audible alarm was registered. Figure 1 depicts the detector response versus rate of speed. As can be seen from the figure, maximum observed net count rates did not vary statistically from idling to 5 mph. At 7 mph the net count rate was approximately 70 percent of that measured at 5 mph. At 10 mph the net response was approximately 50 percent of that measured at 5 mph. At 23 mph the response was approximately 27 percent of that measured at 5 mph. These test show that the detector would alarm with this source at speeds up to 23 mph, that the detector response varied only a factor of 2 up to 10 mph, and varied a factor of 4 up to 23 mph. Thus, use of 5 mph $\pm$ 2 mph would not affect the quality of the data collected.

Another concern was the response parameters of the detector to ^{137}Cs. These parameters were minimum detectable activity for both a point source and general area contamination, and a calibration factor ($cps/\mu Ci \cdot g^{-1}$) for general dispersed radioactivity. Prior to the conduct of any field surveys at Maine Yankee these values were determined using IT's procedure RPP VRM01 *Calibration of VRM-1X Large Area Detector* and a facility supplied calibrated ^{137}Cs source. The source strength was 10.6 μCi on August 12, 1993, which was decay corrected to the date of the calibration October 12, 1997. Reported source activity was traceable to the National Institute of Science and Technology through the source vendor. Calculated ^{137}Cs MDAs for a point source and large area dispersed source were 0.57 μCi and 5.6 pCi/g (assuming uniform contamination from 0-3 inches in the soil). The calculated calibration factors were 0.0058 cps/dps and 53.3 $cps \cdot cm^{-3}/pCi/g$ for a point source and dispersed source, respectively.

2.2 Area Coverage

As previously discussed, the survey objective was to cover 100 percent of all vehicle accessible areas and to cover other non-vehicle accessible areas at lesser densities. With few exceptions this goal was accomplished. The driving pattern varied to meet the field conditions. The operator's objective in selecting a driving pattern was to overlap the detector field of view with the last driving path.

2.3 Conduct of the Survey

Several routine checks were performed on a daily basis to ensure that the data collected were of high quality and that the equipment was operating properly. One quality check was a visual inspection of the equipment to ensure that it was in good repair and properly assembled. A second check consisted of verifying that the GPS equipment and software were operating properly. A last QA check was a background and source response check for the VRM-1X detector.

Background and source response checks were performed at the start and close of each day of survey. GTS provided a ^{137}Cs button source, (source ID 119311). As the IT personnel were not trained to Maine Yankee's requirements for handling sources, GTS health physics personnel assisted IT personnel by handling the source for each source response check. There were two exceptions to the twice daily source response check "rule." One was in the evening of November 13, 1997 when all GTS health physics personnel had left the site and no source response check could be performed. However, the background check was within allowed parameters. The other instance was on November 14, 1997 when the system was setup, but no surveys were conducted as the ambient temperature (23° F) prevented operation of the equipment. A copy of the Source and Background Check Log is provided in Attachment 1.

Criteria for judging correct operation of the detector was that both the background and source count rates had to be within $\pm$ 20 percent of the reference values established the first day onsite. The reference values were established by recording a minimum of 10 count rates for background and for the source, and then finding the average count rate value and standard deviation for the background and the source. In all cases, the daily background and source response checks were well within the $\pm$20 percent value, and in all cases were within three standard deviations of the initial value. Initial source values were determined on both November 6 and 7, 1997. The reason for the two source values was that on 11/6/ 97 the source was not held in an easily reproducible geometry. This fact was determined on 11/7/97 when a second health physics technician was assisting with the source check, and the measured source value was three times as high as the 11/6/97 value. After discovering the situation, an easily reproduced geometry was determined and a new source average value was established.

If all the equipment was found to be operational, and the detector response within allowed limits, then a survey was conducted. Normally, three data files were acquired daily during the conduct of the survey activities. One base station file was acquired for the day, and one mobile file was acquired in the morning and one in the afternoon.

3.0 RESULTS AND DISCUSSION

Survey results are graphically presented in Figures 2 and 3 of Volume 6. Figure 2 shows the entire survey area including some local roads and an enlarged insert of the background area. In this figure one can observe that the count rates on Highway 144 and Highway 1 are similar to those observed when surveying the site's east and west access roads. As a note, the survey system was left on during the drive up to the background area. During this drive it was observed that there were several areas on Highway 1 where the count rates exceed 1000 cps. In each case, these higher count rates were associated with driving through granite cuts.

Figure 3 shows the area where 24 elevated counts were observed. The area is bounded on the north by Old Ferry Road, on the east by Ready Point Road, and on east and south by water. The elevated areas are denoted by a dark circle and a number.

The background area was located within the transmission line easement near the Merrymeeting Airfield. Count rates varied from 600 to 750 cps in this area. The higher count rates were associated with visible granite rock.

The survey conducted on the owner controlled property resulted in 24 locations being identified as "areas for further investigation." These areas are noted on Figure 3 by numbers 1 through 24. Table 1 lists each number and associated latitude and longitude. Of the identified areas, those most likely to be associated with man-made radioactivity are 3, 7, and 8. The count rates observed during conduct of the survey at these locations were higher than those observed when passing over native granite. Native granite had count rates that were consistently 100 to 250 cps above the soil count rate. This elevated count rate is caused by the uranium and thorium that has been slightly concentrated during rock formation.

Other areas of elevated count rate are observed on Figure 3 which are not numbered. These areas were not identified as areas for further investigation as the field survey team observed consistent patterns in the count rate that were correlated to either buildings where radioactive materials were known to be present or the observed count rate and variation in count rate were typical of induced signals. Count rates induced by radio frequency or other intermittent signals do not hold steady but vary widely, at times over several orders of magnitude, while the detector is stationary. This pattern is a clear indication that the observed count rate is not due to the presence of radioactive materials. Count rates that were indicative of induced signals were observed to the north of the Career Center building on the grass area and just to the east, in the same area. These spurious count rates were not displayed, but were retained within the electronic data base for the site.

The following discussion describes the areas that were not identified for further investigation. The large yellow and red coded area at the southwest side of the property is probably attributed to direct radiation from the containment building and associated outside storage tanks. Those areas west of the administration building are likely due to direct shine from the containment and service buildings. A second area, identified by a yellow outline on the west access road just to the east of the 345 KV switchyard, was probably the result of direct radiation from the low-level radioactive waste storage building. These areas should be further investigated by soil sampling and/or shielded gamma scanning using hand held equipment.

Table 1
Areas For Further Investigation

Area No.	North Latitude	West Longitude
1	43.94710	69.69689
2	43.94769	69.69707
3	43.94896	69.69465
4	43.95209	69.69362
5	43.95280	69.69293
6	43.95289	69.69282
7	43.95488	69.69270
8	43.95470	69.69241
9	43.95546	69.69255
10	43.95553	69.69215
11	43.95611	69.69199
12	43.95617	69.69186
13	43.95531	69.69426
14	43.95678	69.69373
15	43.95751	69.69383
16	43.95802	69.69464
17	43.95811	69.69446
18	43.95850	69.69446
19	43.95877	69.69493
20	43.95880	69.69536
21	43.95736	69.69584
22	43.95623	69.69585
23	43.95605	69.69549
24	43.96036	69.69865

4.0 CONCLUSIONS

Results of the drive-over survey show there are three areas where the count rates are high enough that they probably are not associated with native soils or granite. These areas are noted as 3, 7, and 8 on Figure 3. Count rates for near surface granite and granite rocks normally ranged from 100 to 250 cps above background, depending on size of the area and depth to the rock. The location of the three suspect areas are: one on the grassy area on Bailey Point (Area R5), and two spots located near the north edge of the gravel parking lot (Area R13). Count rates associated with the Bailey Point location were greater than 4000 cps. Count rates associated with the two locations in Area R13 were in the 1100 to 1400 cps range. These count rates were significantly higher than those observed for native granite. The in-situ gamma spectral measurement conducted by GTS at the Bailey Point location confirmed that this area was associated with man-made radioactivity.

Survey results also show large areas of above background count rates located on the north, and west, and south side of the reactor building and other associated buildings and to the south and west of the radioactive waste storage building. These elevated counts are probably due to the gamma-ray flux coming from the buildings and/or storage tanks. One should not draw any conclusions from these data concerning the presence of radioactive materials in the soil in these areas. Therefore, it is suggested that gamma-scan surveys using shielded probes and/or soil samples be acquired in these areas.

Count rates associated with the access roads off of Old Ferry Road are consistent with those observed at other areas along Old Ferry Road and Highway 1. This indicates that the elevated counts are associated with the granite in the asphalt and roadbed, and not due to spilled radioactive materials

Quality control measurements show that the equipment was operating consistently and within required parameters during the conduct of all surveys. The only day that a lower source count rate was observed resulted from an inability to match the source/detector geometry used on all other days. This was anticipated. However, even though there was a lower source count rate the rate was within allowed parameters. Therefore, all of the survey data are of acceptable quality.

Ephemeral high count rates were observed while pushing the detector on the jogger cart on the southeastern side of the property. When the area was resurveyed with the detector vehicle mounted the high count rates were not observed. These counts were attributed to radio frequency induced signals in the detector. This is not an uncommon occurrence with this detector, having observed this phenomenon at other facilities. The source of the radio frequency signal was not investigated.

All other elevated count rates are most likely the result of uranium- or thorium-bearing rock.

Figure 1

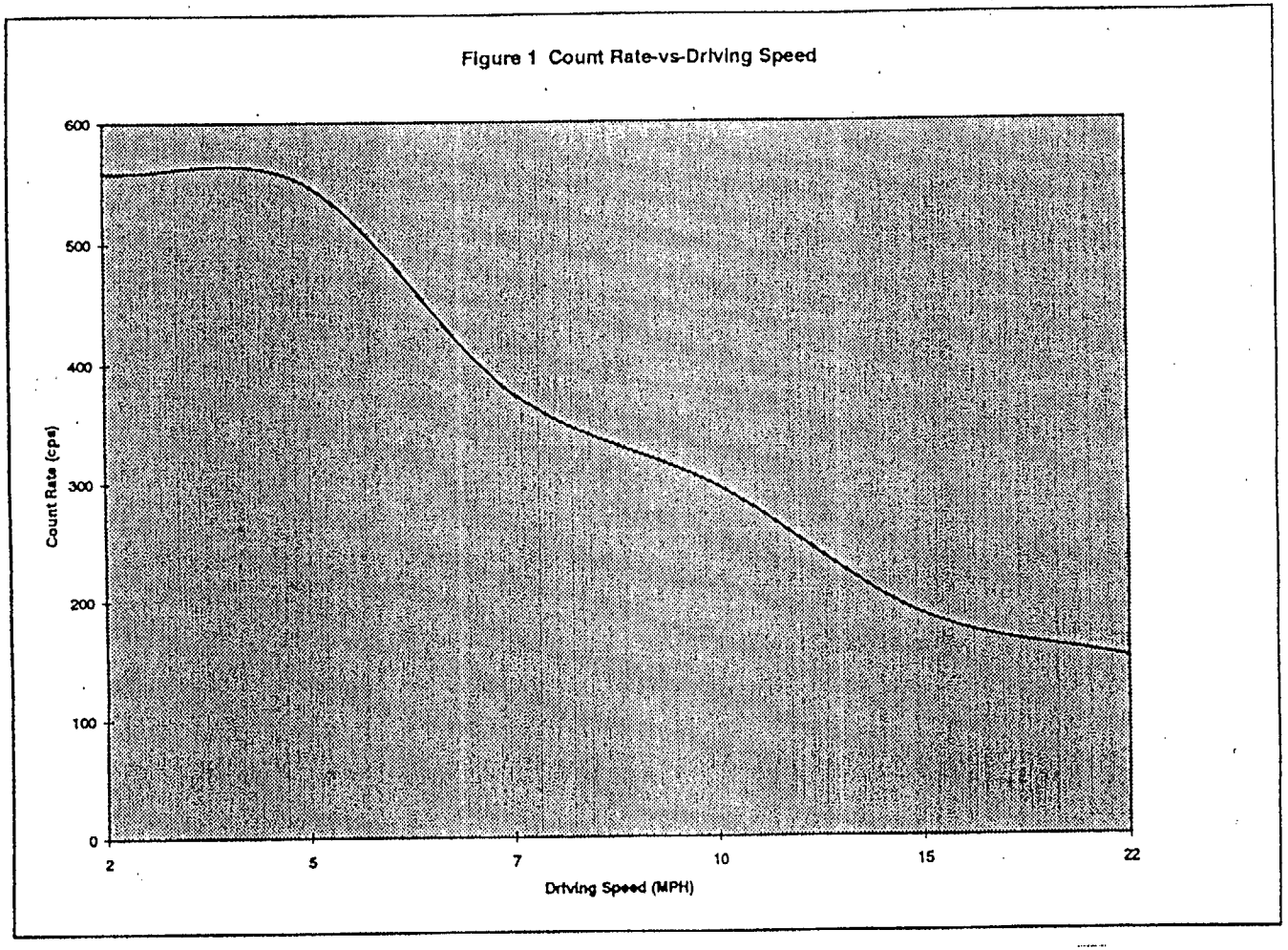
Figure 1 Count Rate-vs-Driving Speed
Count Rate (cps)
600
500
400
300
200
100
0
2
5
7
10
15
22
Driving Speed (MPH)

5.0 REFERENCES

5.1 Shaw 89 P. G. Shaw, A. L. Freeman, S. W. Duce, *1989 Testing and Calibration of the TSA Vehicle Roadway Monitor*, July 1989, ST-PHY-89-04, EG&G Idaho, Inc.

5.2 TSA 94 TSA Systems Limited, *Vehicle Mounted Monitors*, information sheet.

ATTACHMENT 1

SOURCE AND BACKGROUND CHECK LOG

ATTACHMENT 1

SOURCE AND BACKGROUND CHECK LOG SHEET

INTERNATIONAL TECHNOLOGY CORPORATION

SOURCE AND BACKGROUND CHECK LOG

Instrument ID VRM-1X2 11-7-97 Source ID 119311 Cs-137

DATE	INITIALS OF FIELD TECHNICIAN		BAT. OK (Y-N)	ZERO (Y-N)	AUDIBLE (Y-N)	SOURCE COUNT RATE	BACKGROUND COUNT RATE
11/6/97		1015	Y	NA	Y	6494±597	639±17
11/6/97		1635	Y	NA	Y	7016	615
11/7/97		0710	Y	NA	Y	18842 ± 155 *	627
11/7/97		1624	Y	NA	Y	18988	594
11/8/97		0709	Y	NA	Y	18240	612
11/8/97		1639	Y	NA	Y	18450	604
11/9/97		0646	Y	NA	Y	18787	623
11/9/97	KHF	13:25	Y	NA	Y	18643 KHF 11/9/97	610
11/10/97	KHF	06:40	Y	NA	Y	18343	597
11/10/97		16:50	Y	NA	Y	18396	607
11/11/97	KHF	06:45	Y	NA	Y	18437	605
11/11/97		1633	Y	NA	Y	18513	615
11/12/97		0713	Y	NA	Y	19155	655
11/12/97		1627	Y	NA	Y	19077	610
11/13/97		0710	Y	NA	Y	18867	659
11/13/97		1720	Y	NA		**	622
11/14/97		0713	Y	NA	Y	18827	650

* - See FADL

** No source/HP to perform source check.

APPENDIX C

SODIUM IODIDE DETECTOR VERSUS PRESSURIZED ION CHAMBER RESULTS

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
1	640	44	00003	1	2029	60	1.008e+10	12.08	8.7	1.4
2	640	45	00003	00002	2081	60	1.008e+10	12.39	8.6	1.4
3	640	46	00003	00003	1989	60	1.008e+10	11.84	8.8	1.3
4	640	47	00003	00004	2053	60	1.008e+10	12.22	8.2	1.5
5	640	48	00003	00005	2048	60	1.008e+10	12.19	8.5	1.4
6	640	49	00003	00006	2100	60	1.008e+10	12.50	8.4	1.5
7	640	50	00003	00007	2060	60	1.008e+10	12.26	8.7	1.4
8	640	51	00003	00008	2052	60	1.008e+10	12.22	8.5	1.4
9	640	52	00003	00009	2082	60	1.008e+10	12.40	8.4	1.5
10	640	53	00003	00010	1958	60	1.008e+10	11.66	8.7	1.3
1	640	54	00004	00001	1966	60	1.008e+10	11.70	8.8	1.3
2	640	55	00004	00002	1949	60	1.008e+10	11.60	8.6	1.3
3	640	56	00004	00003	1959	60	1.008e+10	11.66	8.6	1.4
4	640	57	00004	00004	1913	60	1.008e+10	11.39	8.4	1.4
5	640	58	00004	00005	1892	60	1.008e+10	11.26	8.6	1.3
6	640	59	00004	00006	1987	60	1.008e+10	11.83	9.0	1.3
7	640	60	00004	00007	1985	60	1.008e+10	11.82	8.4	1.4
8	640	61	00004	00008	1912	60	1.008e+10	11.38	8.4	1.4
9	640	62	00004	00009	2032	60	1.008e+10	12.10	8.5	1.4
10	640	63	00004	00010	1952	60	1.008e+10	11.62	8.6	1.4
1	644	74	00008	00001	2119	60	1.008e+10	12.62	8.7	1.5
2	644	75	00008	00002	2105	60	1.008e+10	12.53	8.7	1.4
3	644	76	00008	00003	1998	60	1.008e+10	11.90	8.7	1.4
4	644	77	00008	00004	2068	60	1.008e+10	12.31	8.8	1.4
5	644	78	00008	00005	2087	60	1.008e+10	12.43	8.7	1.4
6	644	79	00008	00006	2050	60	1.008e+10	12.20	9.0	1.4
7	644	80	00008	00007	2004	60	1.008e+10	11.93	8.8	1.4
8	644	81	00008	00008	2072	60	1.008e+10	12.34	8.4	1.5
9	644	82	00008	00009	2041	60	1.008e+10	12.15	8.8	1.4
10	644	83	00008	00010	2039	60	1.008e+10	12.14	9.0	1.3

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
1	640	114	00009	00001	1842	60	1.008e+10	10.97	8.0	1.4
2	640	115	00009	00002	1965	60	1.008e+10	11.70	7.8	1.5
3	640	116	00009	00003	1874	60	1.008e+10	11.16	7.8	1.4
4	640	117	00009	00004	1949	60	1.008e+10	11.60	7.5	1.5
5	640	118	00009	00005	1937	60	1.008e+10	11.53	7.5	1.5
6	640	119	00009	00006	1815	60	1.008e+10	10.81	7.6	1.4
7	640	120	00009	00007	1915	60	1.008e+10	11.40	8.2	1.4
8	640	121	00009	00008	1912	60	1.008e+10	11.38	7.7	1.5
9	640	122	00009	00009	1807	60	1.008e+10	10.76	7.6	1.4
10	640	123	00009	00010	1912	60	1.008e+10	11.38	7.6	1.5
1	640	124	00010	00001	1894	60	1.008e+10	11.28	8.0	1.4
2	640	125	00010	00002	1873	60	1.008e+10	11.15	7.9	1.4
3	640	126	00010	00003	1924	60	1.008e+10	11.45	8.1	1.4
4	640	127	00010	00004	1865	60	1.008e+10	11.10	7.9	1.4
5	640	128	00010	00005	1928	60	1.008e+10	11.48	8.0	1.4
6	640	129	00010	00006	1893	60	1.008e+10	11.27	7.6	1.5
7	640	130	00010	00007	1881	60	1.008e+10	11.20	7.6	1.5
8	640	131	00010	00008	1854	60	1.008e+10	11.04	8.2	1.3
9	640	132	00010	00009	1819	60	1.008e+10	10.83	8.0	1.4
10	640	133	00010	00010	1910	60	1.008e+10	11.37	8.2	1.4
1	640	134	00011	00001	1846	60	1.008e+10	10.99	8.1	1.4
2	640	135	00011	00002	1875	60	1.008e+10	11.16	7.9	1.4
3	640	136	00011	00003	1849	60	1.008e+10	11.01	8.0	1.4
4	640	137	00011	00004	1936	60	1.008e+10	11.53	7.9	1.5
5	640	138	00011	00005	1806	60	1.008e+10	10.75	7.9	1.4
6	640	139	00011	00006	1801	60	1.008e+10	10.72	7.8	1.4
7	640	140	00011	00007	1808	60	1.008e+10	10.76	8.1	1.3
8	640	141	00011	00008	1889	60	1.008e+10	11.25	7.7	1.5
9	640	142	00011	00009	1919	60	1.008e+10	11.42	8.1	1.4
10	640	143	00011	00010	1891	60	1.008e+10	11.26	7.7	1.5
1	640	144	00012	00001	1742	60	1.008e+10	10.37	7.2	1.4
2	640	145	00012	00002	1725	60	1.008e+10	10.27	7.1	1.4
3	640	146	00012	00003	1761	60	1.008e+10	10.48	7.2	1.5
4	640	147	00012	00004	1754	60	1.008e+10	10.44	7.3	1.4
5	640	148	00012	00005	1804	60	1.008e+10	10.74	7.1	1.5
6	640	149	00012	00006	1776	60	1.008e+10	10.57	7.0	1.5

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
7	640	150	00012	00007	1829	60	1.008e+10	10.89	7.2	1.5
8	640	151	00012	00008	1695	60	1.008e+10	10.09	7.3	1.4
9	640	152	00012	00009	1716	60	1.008e+10	10.22	7.1	1.4
10	640	153	00012	00010	1803	60	1.008e+10	10.73	7.3	1.5
1	640	154	00013	00001	1791	60	1.008e+10	10.66	7.3	1.5
2	640	155	00013	00002	1763	60	1.008e+10	10.50	7.5	1.4
3	640	156	00013	00003	1721	60	1.008e+10	10.25	7.3	1.4
4	640	157	00013	00004	1729	60	1.008e+10	10.29	7.5	1.4
5	640	158	00013	00005	1764	60	1.008e+10	10.50	7.1	1.5
6	640	159	00013	00006	1733	60	1.008e+10	10.32	7.2	1.4
7	640	160	00013	00007	1756	60	1.008e+10	10.45	7.0	1.5
8	640	161	00013	00008	1685	60	1.008e+10	10.03	7.2	1.4
9	640	162	00013	00009	1806	60	1.008e+10	10.75	7.6	1.4
10	640	163	00013	00010	1752	60	1.008e+10	10.43	6.9	1.5
1	640	4	00015	00001	1906	60	1.008e+10	11.35	8.0	1.4
2	640	5	00015	00002	1914	60	1.008e+10	11.40	8.1	1.4
3	640	6	00015	00003	1968	60	1.008e+10	11.72	8.0	1.5
4	640	7	00015	00004	1944	60	1.008e+10	11.57	7.9	1.5
5	640	8	00015	00005	1852	60	1.008e+10	11.03	7.9	1.4
6	640	9	00015	00006	1966	60	1.008e+10	11.70	7.8	1.5
7	640	10	00015	00007	1962	60	1.008e+10	11.68	7.9	1.5
8	640	11	00015	00008	1980	60	1.008e+10	11.79	8.2	1.4
9	640	12	00015	00009	2010	60	1.008e+10	11.97	8.1	1.5
10	640	13	00015	00010	1937	60	1.008e+10	11.53	8.2	1.4
1	640	34	00016	00001	1943	60	1.008e+10	11.57	8.5	1.4
2	640	35	00016	00002	1988	60	1.008e+10	11.84	8.2	1.4
3	640	36	00016	00003	2113	60	1.008e+10	12.58	8.4	1.5
4	640	37	00016	00004	1970	60	1.008e+10	11.73	8.0	1.5
5	640	38	00016	00005	1934	60	1.008e+10	11.51	8.5	1.4
6	640	39	00016	00006	1951	60	1.008e+10	11.62	8.5	1.4
7	640	40	00016	00007	1995	60	1.008e+10	11.88	8.2	1.4
8	640	41	00016	00008	2007	60	1.008e+10	11.95	8.7	1.4
9	640	42	00016	00009	2043	60	1.008e+10	12.16	8.4	1.4
10	640	43	00016	00010	2028	60	1.008e+10	12.07	8.7	1.4

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
1	644	84	00021	00001	2268	60	1.008e+10	13.50	9.1	1.5
2	644	85	00021	00002	2247	60	1.008e+10	13.38	9.3	1.4
3	644	86	00021	00003	2249	60	1.008e+10	13.39	9.2	1.5
4	644	87	00021	00004	2127	60	1.008e+10	12.66	9.4	1.3
5	644	88	00021	00005	2184	60	1.008e+10	13.00	9.3	1.4
6	644	89	00021	00006	2227	60	1.008e+10	13.26	8.8	1.5
7	644	90	00021	00007	2188	60	1.008e+10	13.03	9.7	1.3
8	644	91	00021	00008	2282	60	1.008e+10	13.59	9.4	1.4
9	644	92	00021	00009	2192	60	1.008e+10	13.05	9.4	1.4
10	644	93	00021	00010	2269	60	1.008e+10	13.51	9.8	1.4
1	640	104	00024	00001	1797	60	1.008e+10	10.70	7.4	1.4
2	640	105	00024	00002	1801	60	1.008e+10	10.72	7.5	1.4
3	640	106	00024	00003	1804	60	1.008e+10	10.74	7.9	1.4
4	640	107	00024	00004	1844	60	1.008e+10	10.98	7.9	1.4
5	640	108	00024	00005	1755	60	1.008e+10	10.45	7.9	1.3
6	640	109	00024	00006	1823	60	1.008e+10	10.85	7.8	1.4
7	640	110	00024	00007	1836	60	1.008e+10	10.93	8.0	1.4
8	640	111	00024	00008	1851	60	1.008e+10	11.02	7.6	1.5
9	640	112	00024	00009	1778	60	1.008e+10	10.59	8.0	1.3
10	640	113	00024	00010	1912	60	1.008e+10	11.38	7.9	1.4
1	644	4	00025	00001	1907	60	1.008e+10	11.35	7.9	1.4
2	644	5	00025	00002	2054	60	1.008e+10	12.23	8.4	1.5
3	644	6	00025	00003	1964	60	1.008e+10	11.69	8.1	1.4
4	644	7	00025	00004	1985	60	1.008e+10	11.82	8.5	1.4
5	644	8	00025	00005	1941	60	1.008e+10	11.56	8.5	1.4
6	644	9	00025	00006	2007	60	1.008e+10	11.95	8.3	1.4
7	644	10	00025	00007	1990	60	1.008e+10	11.85	7.9	1.5
8	644	11	00025	00008	1964	60	1.008e+10	11.69	8.3	1.4
9	644	12	00025	00009	1983	60	1.008e+10	11.81	8.4	1.4
10	644	13	00025	00010	1926	60	1.008e+10	11.47	8.3	1.4
1	644	14	00026	00001	1987	60	1.008e+10	11.83	8.4	1.4
2	644	15	00026	00002	2097	60	1.008e+10	12.48	8.4	1.5
3	644	16	00026	00003	1980	60	1.008e+10	11.79	8.6	1.4
4	644	17	00026	00004	1995	60	1.008e+10	11.88	8.4	1.4
5	644	18	00026	00005	2015	60	1.008e+10	12.00	8.5	1.4
6	644	19	00026	00006	1958	60	1.008e+10	11.66	8.4	1.4

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
7	644	20	00026	00007	2082	60	1.008e+10	12.40	8.4	1.5
8	644	21	00026	00008	1977	60	1.008e+10	11.77	8.2	1.4
9	644	22	00026	00009	2017	60	1.008e+10	12.01	8.2	1.5
10	644	23	00026	00010	1982	60	1.008e+10	11.80	8.8	1.3
1	640	164	00027	00001	1986	60	1.008e+10	11.82	7.4	1.6
2	640	165	00027	00002	1804	60	1.008e+10	10.74	7.4	1.5
3	640	166	00027	00003	1780	60	1.008e+10	10.60	7.3	1.5
4	640	167	00027	00004	1748	60	1.008e+10	10.41	7.5	1.4
5	640	168	00027	00005	1814	60	1.008e+10	10.80	8.0	1.3
6	640	169	00027	00006	1861	60	1.008e+10	11.08	7.6	1.5
7	640	170	00027	00007	1816	60	1.008e+10	10.81	7.9	1.4
8	640	171	00027	00008	1858	60	1.008e+10	11.06	7.2	1.5
9	640	172	00027	00009	1896	60	1.008e+10	11.29	7.7	1.5
10	640	173	00027	00010	1795	60	1.008e+10	10.69	7.6	1.4
1	640	14	00029	00001	1965	60	1.008e+10	11.70	8.8	1.3
2	640	15	00029	00002	2039	60	1.008e+10	12.14	8.3	1.5
3	640	16	00029	00003	2062	60	1.008e+10	12.28	8.4	1.5
4	640	17	00029	00004	1928	60	1.008e+10	11.48	8.1	1.4
5	640	18	00029	00005	2019	60	1.008e+10	12.02	8.7	1.4
6	640	19	00029	00006	1997	60	1.008e+10	11.89	7.8	1.5
7	640	20	00029	00007	1978	60	1.008e+10	11.78	7.8	1.5
8	640	21	00029	00008	1933	60	1.008e+10	11.51	8.1	1.4
9	640	22	00029	00009	1935	60	1.008e+10	11.52	7.8	1.5
10	640	23	00029	00010	1936	60	1.008e+10	11.53	7.8	1.5
1	640	64	00032	00001	1963	60	1.008e+10	11.69	8.2	1.4
2	640	65	00032	00002	1955	60	1.008e+10	11.64	8.0	1.5
3	640	66	00032	00003	1978	60	1.008e+10	11.78	8.6	1.4
4	640	67	00032	00004	1954	60	1.008e+10	11.63	8.3	1.4
5	640	68	00032	00005	1994	60	1.008e+10	11.87	8.4	1.4
6	640	69	00032	00006	1978	60	1.008e+10	11.78	8.3	1.4
7	640	70	00032	00007	1887	60	1.008e+10	11.23	8.4	1.3
8	640	71	00032	00008	2007	60	1.008e+10	11.95	8.2	1.5
9	640	72	00032	00009	1928	60	1.008e+10	11.48	8.1	1.4
10	640	73	00032	00010	1948	60	1.008e+10	11.60	8.3	1.4
1	640	74	00033	00001	1892	60	1.008e+10	11.26	8.0	1.4
2	640	75	00033	00002	1755	60	1.008e+10	10.45	8.3	1.3

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
3	640	76	00033	00003	1885	60	1.008e+10	11.22	8.0	1.4
4	640	77	00033	00004	1865	60	1.008e+10	11.10	8.2	1.4
5	640	78	00033	00005	1833	60	1.008e+10	10.91	8.1	1.3
6	640	79	00033	00006	1765	60	1.008e+10	10.51	8.1	1.3
7	640	80	00033	00007	1752	60	1.008e+10	10.43	8.0	1.3
8	640	81	00033	00008	1899	60	1.008e+10	11.31	8.3	1.4
9	640	82	00033	00009	1885	60	1.008e+10	11.22	7.8	1.4
10	640	83	00033	00010	1954	60	1.008e+10	11.63	7.8	1.5
1	644	64	00038	00001	2002	60	1.008e+10	11.92	8.8	1.4
2	644	65	00038	00002	2026	60	1.008e+10	12.06	8.5	1.4
3	644	66	00038	00003	2025	60	1.008e+10	12.06	8.7	1.4
4	644	67	00038	00004	1990	60	1.008e+10	11.85	8.5	1.4
5	644	68	00038	00005	1970	60	1.008e+10	11.73	8.6	1.4
6	644	69	00038	00006	2021	60	1.008e+10	12.03	8.5	1.4
7	644	70	00038	00007	1983	60	1.008e+10	11.81	8.8	1.3
8	644	71	00038	00008	1967	60	1.008e+10	11.71	8.5	1.4
9	644	72	00038	00009	1966	60	1.008e+10	11.70	8.1	1.4
10	644	73	00038	00010	1973	60	1.008e+10	11.75	8.5	1.4
1	644	24	00040	00001	2023	60	1.008e+10	12.04	8.6	1.4
2	644	25	00040	00002	1936	60	1.008e+10	11.53	8.7	1.3
3	644	26	00040	00003	1991	60	1.008e+10	11.85	8.3	1.4
4	644	27	00040	00004	1964	60	1.008e+10	11.69	8.4	1.4
5	644	28	00040	00005	1999	60	1.008e+10	11.90	8.6	1.4
6	644	29	00040	00006	2011	60	1.008e+10	11.97	8.5	1.4
7	644	30	00040	00007	2011	60	1.008e+10	11.97	8.5	1.4
8	644	31	00040	00008	2015	60	1.008e+10	12.00	8.4	1.4
9	644	32	00040	00009	2015	60	1.008e+10	12.00	8.8	1.4
10	644	33	00040	00010	2005	60	1.008e+10	11.94	8.4	1.4
1	640	174	00041	00001	1909	60	1.008e+10	11.37	8.1	1.4
2	640	175	00041	00002	1932	60	1.008e+10	11.50	7.9	1.5
3	640	176	00041	00003	1892	60	1.008e+10	11.26	7.8	1.4
4	640	177	00041	00004	1875	60	1.008e+10	11.16	7.7	1.4
5	640	178	00041	00005	1911	60	1.008e+10	11.38	8.3	1.4
6	640	179	00041	00006	1865	60	1.008e+10	11.10	7.6	1.5
7	640	180	00041	00007	1923	60	1.008e+10	11.45	8.0	1.4
8	640	181	00041	00008	1899	60	1.008e+10	11.31	8.5	1.3

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
9	640	182	00041	00009	1897	60	1.008e+10	11.29	8.1	1.4
10	640	183	00041	00010	1901	60	1.008e+10	11.32	8.2	1.4
1	640	24	00043	00001	2005	60	1.008e+10	11.94	8.2	1.5
2	640	25	00043	00002	1988	60	1.008e+10	11.84	7.8	1.5
3	640	26	00043	00003	1931	60	1.008e+10	11.50	7.8	1.5
4	640	27	00043	00004	2085	60	1.008e+10	12.41	7.7	1.6
5	640	28	00043	00005	1918	60	1.008e+10	11.42	8.2	1.4
6	640	29	00043	00006	1969	60	1.008e+10	11.72	8.3	1.4
7	640	30	00043	00007	1984	60	1.008e+10	11.81	8.5	1.4
8	640	31	00043	00008	1950	60	1.008e+10	11.61	8.1	1.4
9	640	32	00043	00009	1894	60	1.008e+10	11.28	8.1	1.4
10	640	33	00043	00010	2015	60	1.008e+10	12.00	8.1	1.5
1	640	84	00046	00001	1890	60	1.008e+10	11.25	7.8	1.4
2	640	85	00046	00002	1911	60	1.008e+10	11.38	8.1	1.4
3	640	86	00046	00003	1898	60	1.008e+10	11.30	8.1	1.4
4	640	87	00046	00004	1980	60	1.008e+10	11.79	7.8	1.5
5	640	88	00046	00005	2011	60	1.008e+10	11.97	8.2	1.5
6	640	89	00046	00006	1868	60	1.008e+10	11.12	8.3	1.3
7	640	90	00046	00007	1893	60	1.008e+10	11.27	8.1	1.4
8	640	91	00046	00008	1943	60	1.008e+10	11.57	8.1	1.4
9	640	92	00046	00009	1902	60	1.008e+10	11.32	8.0	1.4
10	640	93	00046	00010	1876	60	1.008e+10	11.17	8.0	1.4
1	644	94	00051	00001	1903	60	1.008e+10	11.33	8.4	1.3
2	644	95	00051	00002	1933	60	1.008e+10	11.51	8.1	1.4
3	644	96	00051	00003	1959	60	1.008e+10	11.66	8.2	1.4
4	644	97	00051	00004	1933	60	1.008e+10	11.51	8.8	1.3
5	644	98	00051	00005	2004	60	1.008e+10	11.93	8.6	1.4
6	644	99	00051	00006	1997	60	1.008e+10	11.89	8.1	1.5
7	644	100	00051	00007	2006	60	1.008e+10	11.94	8.7	1.4
8	644	101	00051	00008	1930	60	1.008e+10	11.49	8.2	1.4
9	644	102	00051	00009	1894	60	1.008e+10	11.28	8.3	1.4
10	644	103	00051	00010	2056	60	1.008e+10	12.24	8.3	1.5

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
1	644	54	00053	00001	2020	60	1.008e+10	12.03	8.7	1.4
2	644	55	00053	00002	1984	60	1.008e+10	11.81	8.8	1.3
3	644	56	00053	00003	2039	60	1.008e+10	12.14	8.5	1.4
4	644	57	00053	00004	2011	60	1.008e+10	11.97	8.5	1.4
5	644	58	00053	00005	1985	60	1.008e+10	11.82	8.2	1.4
6	644	59	00053	00006	2001	60	1.008e+10	11.91	8.6	1.4
7	644	60	00053	00007	1966	60	1.008e+10	11.70	8.4	1.4
8	644	61	00053	00008	2092	60	1.008e+10	12.45	8.4	1.5
9	644	62	00053	00009	1981	60	1.008e+10	11.79	8.4	1.4
10	644	63	00053	00010	2084	60	1.008e+10	12.41	8.5	1.5
1	644	34	00055	00001	2018	60	1.008e+10	12.01	8.8	1.4
2	644	35	00055	00002	2000	60	1.008e+10	11.91	8.5	1.4
3	644	36	00055	00003	1948	60	1.008e+10	11.60	8.8	1.3
4	644	37	00055	00004	1986	60	1.008e+10	11.82	8.8	1.3
5	644	38	00055	00005	2011	60	1.008e+10	11.97	8.3	1.4
6	644	39	00055	00006	2030	60	1.008e+10	12.09	8.7	1.4
7	644	40	00055	00007	1997	60	1.008e+10	11.89	8.4	1.4
8	644	41	00055	00008	2016	60	1.008e+10	12.00	8.3	1.4
9	644	42	00055	00009	2005	60	1.008e+10	11.94	8.8	1.4
10	644	43	00055	00010	2026	60	1.008e+10	12.06	8.7	1.4
1	644	44	00056	00001	2125	60	1.008e+10	12.65	8.8	1.4
2	644	45	00056	00002	2214	60	1.008e+10	13.18	8.8	1.5
3	644	46	00056	00003	2210	60	1.008e+10	13.16	8.6	1.5
4	644	47	00056	00004	2085	60	1.008e+10	12.41	8.8	1.4
5	644	48	00056	00005	2016	60	1.008e+10	12.00	8.8	1.4
6	644	49	00056	00006	2120	60	1.008e+10	12.62	9.0	1.4
7	644	50	00056	00007	2131	60	1.008e+10	12.69	8.8	1.4
8	644	51	00056	00008	2092	60	1.008e+10	12.45	8.7	1.4
9	644	52	00056	00009	2102	60	1.008e+10	12.51	8.8	1.4
10	644	53	00056	00010	2157	60	1.008e+10	12.84	8.6	1.5
1	640	94	00059	00001	1947	60	1.008e+10	11.59	8.0	1.4
2	640	95	00059	00002	1901	60	1.008e+10	11.32	7.8	1.5
3	640	96	00059	00003	1935	60	1.008e+10	11.52	7.9	1.5
4	640	97	00059	00004	1898	60	1.008e+10	11.30	7.9	1.4
5	640	98	00059	00005	1907	60	1.008e+10	11.35	7.9	1.4
6	640	99	00059	00006	1911	60	1.008e+10	11.38	7.6	1.5

Table 4-3 Sodium Iodide Detector versus Pressurized Ion Chamber Results

Survey Point	File Number	Sample Number	Grid Number	Survey Number	Sample Counts	Count Time (sec)	Na(I) Cal Constant	Na(I) uR/hr	PIC Avg uR/hr	Ratio Na(I):PIC
7	640	100	00059	00007	1887	60	1.008e+10	11.23	7.9	1.4
8	640	101	00059	00008	1944	60	1.008e+10	11.57	8.1	1.4
9	640	102	00059	00009	1912	60	1.008e+10	11.38	7.6	1.5
10	640	103	00059	00010	1801	60	1.008e+10	10.72	7.8	1.4
1	644	114	00061	00001	1994	60	1.008e+10	11.87	8.3	1.4
2	644	115	00061	00002	2065	60	1.008e+10	12.29	8.6	1.4
3	644	116	00061	00003	1916	60	1.008e+10	11.41	8.3	1.4
4	644	117	00061	00004	1978	60	1.008e+10	11.78	8.6	1.4
5	644	118	00061	00005	2070	60	1.008e+10	12.32	8.5	1.4
6	644	119	00061	00006	2029	60	1.008e+10	12.08	8.6	1.4
7	644	120	00061	00007	1989	60	1.008e+10	11.84	8.6	1.4
8	644	121	00061	00008	2033	60	1.008e+10	12.10	8.4	1.4
9	644	122	00061	00009	2032	60	1.008e+10	12.10	8.4	1.4
10	644	123	00061	00010	2030	60	1.008e+10	12.09	8.3	1.5
1	644	104	00062	00001	2065	60	1.008e+10	12.29	8.6	1.4
2	644	105	00062	00002	2108	60	1.008e+10	12.55	8.5	1.5
3	644	106	00062	00003	2150	60	1.008e+10	12.80	8.4	1.5
4	644	107	00062	00004	2067	60	1.008e+10	12.31	8.7	1.4
5	644	108	00062	00005	2044	60	1.008e+10	12.17	9.2	1.3
6	644	109	00062	00006	2055	60	1.008e+10	12.23	8.7	1.4
7	644	110	00062	00007	2157	60	1.008e+10	12.84	8.6	1.5
8	644	111	00062	00008	2040	60	1.008e+10	12.15	8.6	1.4
9	644	112	00062	00009	2105	60	1.008e+10	12.53	9.0	1.4
10	644	113	00062	00010	2032	60	1.008e+10	12.10	8.6	1.4

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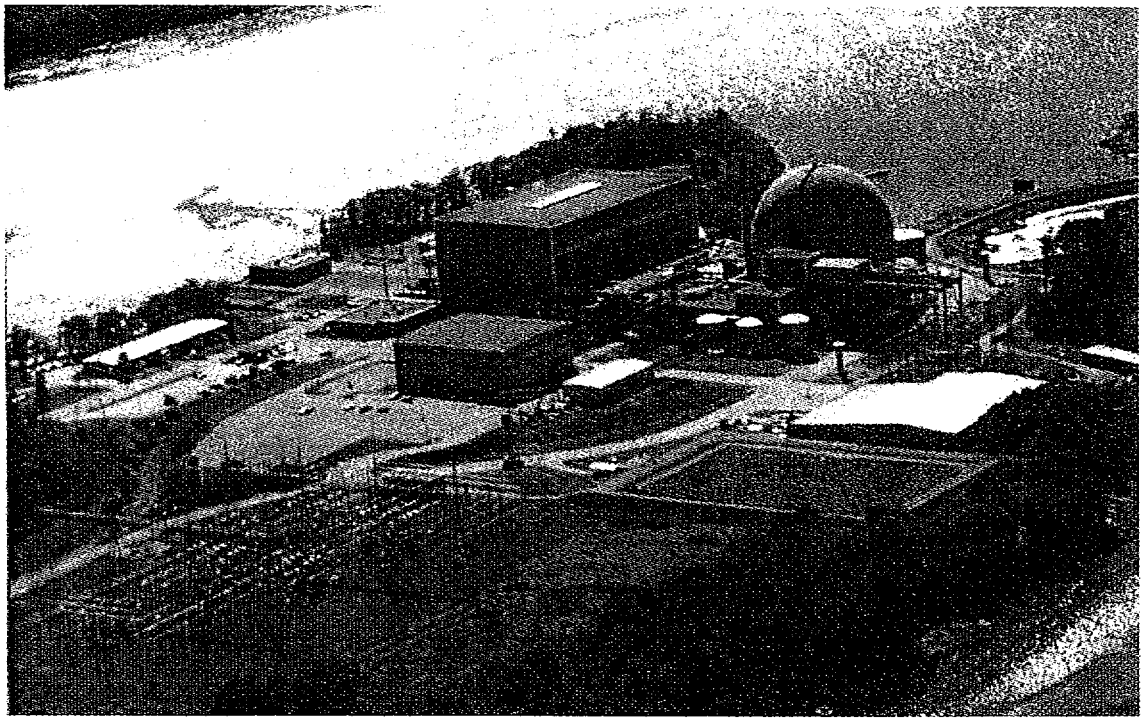
CHARACTERIZATION SURVEY REPORT
for the
MAINE YANKEE ATOMIC POWER PLANT

VOLUME 7
HAZARDOUS MATERIALS CHARACTERIZATION



JUNE 1998
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CHARACTERIZATION SURVEY REPORT

for the

MAINE YANKEE ATOMIC POWER PLANT

APRIL 1998

REVISION 1

VOLUME 7: HAZARDOUS MATERIALS CHARACTERIZATION

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HAZARDOUS MATERIALS CHARACTERIZATION

for the

Maine Yankee Atomic Power Plant

REVISION 2

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ACM	Asbestos-containing materials
BIW	Boston Insulated Wire & Cable
CA	Chromate abatement
CLP	Contract Laboratory Program
CRDL	Contract Required Detection Limits
CS	Containment sump
DOC	Decommissioning Operation Contractor
DRO	Diesel Range Organics
GTS	GTS Duratek
HMCSP	Hazardous Materials Characterization Survey Package
HID	High intensity discharge
IT	IT Corporation
LP	Low pressure
MCL	Maximum Contaminant Level
MDEP	Maine Department of Environmental Protection
MDL	Method Detection Limits
MEG	Maximum Exposure Guideline
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MY	Maine Yankee Atomic Power Plant
PAB	Primary Auxiliary Building
PACM	Potential asbestos-containing materials
PAH	Polyaromatic hydrocarbons
PARCC	Precision, Accuracy, Representativeness, Completeness, and Comparability
PCB	Polychlorinated biphenyls
PCC	Primary component cooling
PID	Photoionization detector
ppb	parts per billion
ppm	parts per million
PVC	Polyvinyl chloride
QA	Quality assurance
QC	Quality control
RAG	Remedial Action Guidelines
RCA	Radiation control area
RCRA	Resource Conservation and Recovery Act
RWST	Refueling water storage tank
SADMP	Sampling, Analysis, and Data Management Plan
SCC	Secondary component cooling
SE	Schedule electric
SOP	Standard Operating Procedure
SVOC	Semivolatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TOX	Total organic halides
TPH	Total Petroleum Hydrocarbons

USEPA	U.S. Environmental Protection Agency
UST	Underground storage tank
VOC	Volatile organic compounds

1.0 INTRODUCTION

This report presents the results of the sampling and analysis activities performed by IT Corporation (IT) at the Maine Yankee Atomic Power Plant (MY). This report is a requirement of the Site Characterization Management Plan developed for the MY.

The purpose of the hazardous material characterization was to determine the environmental setting, characterize source areas, and determine the nature and extent of contamination, if any. To achieve these objectives, information gathered during the discovery period was used to prepare the survey packages. The Sampling, Analysis, and Data Management Plan (SADMP) outlined data quality objectives, investigative and sampling programs, and data management and analysis. The results of the hazardous materials characterization will be utilized by MY to plan the demolition work, estimate costs, and evaluate potential hazards that might be encountered during decommissioning activities. The sample collection program, which was developed during the discovery period, was initiated January 26, 1998 and completed April 8, 1998.

1.1 General Facility Description

The MY is a three-loop pressurized water reactor that occupies an 820-acre site in Wiscasset, Maine. The plant began commercial operation in December of 1972 and was taken off line in December of 1996. The decision to decommission the plant was made in August 1997. Over its operating lifetime, the plant accumulated approximately 16 effective full-power years based on its rated thermal power. The plant used small quantities of hazardous materials, mostly solvents, for cleaning purposes. Its underground storage tanks (UST) for petroleum products were removed and remediated to meet state guidelines in the early 1990s.

1.2 General Project Overview

Prior to implementation of field sampling activities, the SADMP was developed for characterizing hazardous materials in the environs and plant at the MY. This plan supplemented the Site Characterization Management Plan developed for the Maine Yankee characterization project. A key aspect of the development of this hazardous materials characterization program was a planning decision by Maine Yankee regarding the probable future land uses of the 820-acre site. Based on MY direction, the characterization and data evaluation program was implemented with the Bailey Point Peninsula designated for continued industrial use and the remaining two areas of the site (wooded area north of Old Ferry Road and the Eaton Farm area) designated for potential commercial and residential use, respectively. The intent of the characterization and data evaluation program was to bound the "nature and extent" of hazardous materials contamination at all three areas rather than develop "due diligence level" data to support future use scenarios.

The SADMP was also developed to supplement the hazardous materials characterization survey packages (HMCSP) and standard operating procedures (SOP) previously

approved for site activities. The SADMP, HMCSPs and SOPs were used, as appropriate, to collect and analyze hazardous materials samples, e.g., asbestos, paint chips, and oils, taken from components, systems, and structures at various locations around the site. A list of the approved procedures is as follows:

- SOP FP-3, *Surface Water Sampling*
- SOP FP-11, *Groundwater Sampling*
- SOP 2.1, *Sample Handling, Packaging, and Shipping*
- SOP 3.1, *Surface and Shallow Subsurface Soil Sampling*
- SOP 6.1, *Sampling Equipment and Well Material Decontamination*
- SOP 6.2, *Drilling, Development and Heavy Equipment Decontamination*
- SOP 8.3, *Borehole and Well Abandonment*
- SOP 10.2, *Cone Penetration Testing and Hydropunch Groundwater Sampling*
- SOP 17.1, *Sample Labeling*
- SOP 17.2, *Sample Numbering*
- SOP 19.1, *On-Site Sample Storage*
- MYAP-CHM-101, *Sample Identification and Chain of Custody*
- MYAP-CHM-108, *Data Quality Management Guidelines for Off-Site Laboratories*
- Maine Yankee Procedure No. 24-105-2, *Asbestos Program*
- MYAP-CHR-101, *Radiological Characterization of Structures*
- MYAP-CHR-102, *Radiological Characterization of Systems*
- MYAP-CHR-103, *Radiological Characterization of Environs*

1.3 General Project Objectives

The objectives of the field investigation were to collect soil, sediment, surface water, and groundwater samples for hazardous materials characterization of the MY site. The HMCSPs and SOPs served as the work plan documents for all of these activities. The results of the hazardous materials characterization are summarized and reported in this document.

2.0 PHYSICAL SETTING

2.1 Location

The MY is located in the town of Wiscasset, Lincoln County, Maine. Site coordinates are approximately 43 degrees 57 minutes 5 seconds north latitude and 69 degrees 41 minutes 45 seconds west longitude. The immediate plant site is bounded by the Back River on the east, mainland on the north, and Bailey Cove on the west. Maine Yankee purchased this land in fee. It also purchased Foxbird Island and Little Oak Island. The plant is located on a peninsula known as Bailey Point which extends towards the south to Montsweag Bay, as shown by the site location map in Figure 1.

Since lands within the site boundaries are owned in fee by Maine Yankee, they are subject to its control. The immediate plant area is enclosed on all sides by a chain link fence. Guard service is maintained at all times to prevent unauthorized entry into this fenced area (MYAPCO, 1998).

The plant site itself is located on a ridge of bedrock running northeast to southwest to form Bailey Point. The maximum elevation of this rock is a knob 75 feet above mean sea level located about 700 feet northeast of the plant. The general elevation of Bailey Point varies from sea level to 40 feet above mean sea level. The plant area is graded to elevation 20 feet. A layer of glacial till has been deposited above the bedrock and has an average depth of 15 to 20 feet (MYAPCO, 1998).

2.2 Site and Surrounding Area Characteristics

The Bailey Point site is located in the midcoastal region of Maine. This coastal region is characterized by many inlets, bays, channels, harbors, rocky islands, and promontories. The area adjacent to the site has many small forested hills (MYAPCO, 1998).

2.2.1 Climate and Temperature

The temperature of the coastal region tempered by the Atlantic Ocean is not subject to the wider extremes of the inland areas. The average annual temperature is about 45 degrees Fahrenheit (°F), with the frequency of days with temperatures above 90°F being very few. The average January temperature is about 22°F with between 10 and 20 days of subzero temperatures occurring yearly (MYAPCO, 1998).

The general climatic regime is maritime with its cool air moving in from the North Atlantic. Of special importance, from an engineering standpoint, are the extremes in annual snowfall for the coastal region varying from the occasional heavy rains, the coastal storm or "nor'easter" with its resultant strong winds and heavy rain or snow, and sometimes glaze or "ice storms" (MYAPCO, 1998).

2.2.2 Precipitation

Precipitation along the Maine coast is influenced by the Atlantic Ocean. Summer thunderstorm activity is somewhat suppressed by the effects of the cool ocean, while winter precipitation is increased by coastal storms or "nor'easters." These combined effects give this area more precipitation in the winter months than in the summer months. Monthly totals are about four inches during the winter as compared to three inches in summer. Total precipitation averages nearly 46 inches for the coastal areas. Winter precipitation occurs mostly as rain or wet snow. Also, this area, more than further inland, is subject to occasional glazing or "ice storm" conditions (MYAPCO, 1998).

2.3 Property Use

Within five miles of the site, land use is largely home sites, small businesses, summer houses, idle farmland, and forest. There is one small dairy within this area, with several other locations having a few milk cows for private use. Housing is scattered along principal roads and is concentrated only in the center of Wiscasset (MYAPCO, 1998).

The waters near the plant are reported to be relatively low in productivity of fish and shellfish. Some lobstering is carried out in Montsweag Bay and the Back River. The primary type of boating in the Montsweag Bay/Back river area is shallow craft pleasure boats (MYAPCO, 1998).

The land use within a 10-mile radius of the MY is also mainly farm land, with recreational activities taking place on a series of peninsulas jutting into the Gulf of Maine. Because of its unique coastal terrain and many bays, the area is a summer recreational center for boating and other water-related activities. This summer recreation and its supportive businesses, motels, restaurants, shops, etc., provide much of the economic base for the area (MYAPCO, 1998).

2.4 Identified Past Uses of Property

Prior to Maine Yankee's acquisition of the site, the property was utilized as family farms. Both the Eaton and Bailey farm homesteads were located on the site.

3.0 SITE RECONNAISSANCE AND DISCOVERY PERIOD

MY site records were reviewed, staff interviews were conducted, and plant walkdowns performed to determine the nature and extent of contamination from hazardous materials during the discovery period. Additionally, soil, sediment, and water sampling and analysis was recommended based on the results of the discovery program.

3.1 Purpose and Objectives of Discovery Period

Understanding the plant history, process knowledge, and other background information provided a foundation for the hazardous materials characterization. This information, which was obtained during the Discovery Period, was used to identify sampling locations and the analytes of potential concern at each location. The discovery effort included interviews of past and present Maine Yankee employees, reviews of plant records, and walkdowns of the site. The walkdowns covered all areas of potential interest within the Protected Area; administrative, warehouse, environmental laboratory (Bailey house and barn), and Eaton Farm house and barn; parking lots, roof and yard drain systems, and transformers; and other areas within the 820 acre site, including roads, railroad tracks and portions of the transmission corridors.

The systems, structures, and environs at MY were subject to walkdown, discovery, and investigation for hazardous materials. Walkdowns for indications of hazardous materials in the plant, service buildings, warehouses, and the environs provided useful information. For example, the absence of evidence of spills at the diesel oil loading area, transformer yards, and inside and outside warehouses was apparent. The discovery period was used to collect known information regarding the presence and concentrations of polychlorinated biphenyls (PCB), particularly in transformer oils, and the potential presence of Resource Conservation and Recovery Act (RCRA) metals, semivolatile organic compounds (SVOC), and volatile organic compounds (VOC). The results of the discovery period background reviews, interviews, and plant walkdowns were documented in various survey packages (Chapter 5.0). Additional data collection was also recommended based on the results of the discovery activities. The recommended additional data collection was also documented in the survey packages.

The specific objectives of the surveys covered under this plan were to collect soil, sediment, surface water, and groundwater samples for hazardous materials characterization of the MY site. The SADMP, SOPs, and survey packages served as the work plan documents for all of these activities. The results of the hazardous materials characterization will be utilized to plan the demolition work, estimate costs, and evaluate potential hazards which might be encountered during decommissioning activities.

3.2 General Criteria for Deciding on Sampling and Analysis

Additional sampling was performed at MY based on the results of site data reviews, employee interviews, and site inspections to supplement existing data or to collect new information not available for an area. If records reviews, interviews, and walkdowns indicated for an area that no spills had occurred or were not suspected, then no sampling was performed in that area. In some cases, sampling was proposed based on concerns raised by MY employees during the interview process. The results of the discovery activities and recommended sampling were documented in the various site area survey packages.

Decisions regarding what to test for, i.e., to identify the appropriate analytes, where to sample, and in what medium, were based on the results of the Discovery Period. If an area a) had a history of significant spills, b) was the location of frequent handling of hazardous materials, c) was reported to possibly contain construction debris, or d) had the appearance of a possible landfill, it was included as an area to be investigated. The prior removal of underground petroleum product tanks and the corresponding cleanup of those areas to State of Maine standards reduced the level of effort that would normally be anticipated. Unless there were physical indications observed on the ground during walkdowns, or other plant evidence from records, interviews, or process knowledge, an area was not designated for further investigation.

3.3 Identification of Analytes by Sample Location

The identified analytes varied by sample location depending on past plant related activities that occurred in the area. The specific analytes for each location are identified in the HMCSPs.

4.0 INVESTIGATIVE AND SAMPLING PROGRAM

An appropriate technique of obtaining a sample, e.g., using Geoprobe equipment and miniflow pumping for groundwater, was identified depending on the sample location, medium, and analytes of potential concern. These techniques are described in procedures prepared by GTS/Duratek and in SOPs prepared by IT. A listing of these procedures by Analyte/Parameter is provided in Attachment 5.1 of SADMP. Attachments 5.1 through 5.4 of the SADMP have been provided in Appendix A. All groundwater samples, except background, were collected utilizing a peristaltic pump. These techniques are also identified in each of the HMCSPs. Surface water and groundwater samples were filtered for RCRA metals analytes and samples for all other analytes were unfiltered. The existing groundwater monitoring wells were redeveloped to the extent practicable to reduce silt levels from the samples.

Methods used to collect, preserve, handle, and transport samples were also defined in the SADMP. These topics are also addressed in SOP 2.1, "Sampling Handling, Packaging and Shipping," and in MYAP-CHM-101, "Sample Identification and Chain of Custody." Additional information such as sample size, holding time, container type and preservation requirements were provided in Attachment 5.2 of the SADMP (Appendix A).

The following sections discuss the procedures utilized to conduct sampling activities at MY.

4.1 Surface Water and Sediment Sampling

Surface water and sediment samples were collected at the planned sample locations identified in the HMCSPs. The HMCSPs provided the rationale for the number and locations of surface water samples. All surface water sampling activities were conducted in accordance with SOP FP-3. Surface water and sediment sampling locations are further discussed by survey package in Section 5.0 of this report. Surface water and sediment sample collection logs are provided in Appendix B.

4.2 Surface, Shallow Subsurface, and Geoprobe Soil Sampling

Surface, shallow subsurface, and Geoprobe soil samples were collected at the sample locations depicted in Figure 2. All surface and shallow subsurface soil sampling was conducted according to SOP 3.1. Geoprobe samples were collected according to SOP 10.2. Soil collected from below the vegetation to 6 inches was considered as surface soil. Soil collected from 6 inches to 6 feet was considered shallow subsurface soil and soil collected below 6 feet was considered deep subsurface soil.

Geoprobe sampling was conducted to bedrock, groundwater, or refusal, whichever occurred first, or as otherwise outlined in the SADMP. In the event that refusal occurred at a depth known not to be caused by bedrock, additional borings were attempted in the proximity of the original proposed location. Boring logs for the Geoprobe borings are given in Appendix C. Sample collection logs are provided in Appendix D.

4.2.1 Sampling Equipment and Decontamination

The bulk of the surface, shallow subsurface, and subsurface soil samples was collected using a Geoprobe 9600 Powerprobe and 2-inch-diameter split-spoon sampler lined with plastic tubes. Prior to the initiation of the Geoprobe activities, local utility companies were contacted. Each utility company contacted, including MY, identified their respective underground lines to avoid possible damage during boring activities.

Soil samples not collected via the Geoprobe were surface soil samples labeled with the prefix T-SS or NWY. At these sampling locations, heavy equipment was used to break apart the frozen ballast of gravel allowing the soil to be exposed. Once the soil was exposed, a soil sample was collected using a small decontaminated shovel or chisel.

Prior to sampling and between sampling locations, all equipment associated with the Geoprobe and other soil sampling was decontaminated to the extent practicable according to SOP 6.1.

4.2.2 Application of Photoionization Detector (PID) Techniques

All soil samples collected were screened for VOCs using a PID. In accordance with the Maine Department of Environmental Protection (MDEP) "Chapter 691, Rules for Underground Oil Storage Facilities," a measured volume of soil was placed in a polyethylene bag and allowed to equilibrate to near room temperature (15 to 20 degrees Celsius). Once the soil had reached the desired temperature, a calibrated HNU DL-101, with a 11.7 eV lamp was used to conduct a VOC headspace test.

If the headspace test did not record a positive VOC concentration, a VOC sample was not submitted for laboratory analysis. If several soil samples from a given borehole demonstrated elevated PID readings, the sample with the highest reading was submitted for VOC laboratory analysis.

4.2.3 Borehole Abandonment

After drilling, logging, and sampling, the Geoprobe boreholes were properly abandoned using Volclay CS Granular Bentonite. The dry granular bentonite mixture was poured into the open borehole to approximately one foot below the ground surface. Potable water was then added to hydrate the bentonite, sealing the borehole.

4.3 Groundwater Sampling

The following sections discuss the methodology employed during groundwater sampling activities during the Maine Yankee site characterization. The objectives of the groundwater sampling program were to obtain representative samples of the groundwater quality from the existing monitoring well network within the protected area. In addition to groundwater samples collected from the existing monitoring wells, groundwater quality data was obtained from the Geoprobe soil sample investigation, where encountered. However, only one partial groundwater sample was obtained in this manner, because groundwater did not recharge at a rate conducive for groundwater sample collection.

4.3.1 Sampling Equipment and Decontamination

During monitoring well redevelopment activities, decontamination of the field equipment and meters occurred either by spraying the equipment with methanol followed by a distilled water rinse, or by wiping down the equipment with paper towels soaked with methanol and distilled water. Equipment decontaminated in this manner included the water level meter and the Horiba water quality meter. The submersible pump used for monitoring well redevelopment was decontaminated by submersing the pump in a tub which contained water with Alconox. The pump was powered on to circulate the decontamination fluid through the pump and tubing. The pump was shut down and the exterior was wiped clean with a paper towel soaked with distilled water. The pump was then submersed in another tub which contained distilled water. The pump was powered on to allow distilled water to circulate through the pump and tubing. The pump was then turned off and the discharge tubing was drained.

Decontamination of equipment for groundwater sampling was less involved because sampling was conducted with a peristaltic pump. The water level meter and the Horiba water quality meter were decontaminated as described above. All tubing inserted down the well and all discharge tubing utilized to transfer the sample from the well to the sampling bottles was dedicated to the specific location and was changed out and discarded after each use, making decontamination of the pump and tubing unnecessary.

4.3.2 Monitoring Well Redevelopment

Prior to groundwater sample collection, existing monitoring wells were redeveloped. At each monitoring well, the depth to water and the total depth of the well were measured to determine the height of the water column. From this information, the volume of water present in the well was calculated. Redevelopment of the wells began once the submersible pump had been installed in the well and continued until 3 to 5 well volumes of water had been removed from the well and stabilization of general chemistry parameters (temperature,

specific conductance, pH, dissolved oxygen, and turbidity) was obtained, or until the well was pumped dry. A Grundfos Redi-Flo 2 submersible pump was utilized during redevelopment of the 2-inch-diameter wells. For the smaller 3/4-inch-diameter wells, the peristaltic pump was utilized. Once the wells were redeveloped, each was allowed to stand undisturbed for a period of at least 48 hours. Information collected during the redevelopment activities was recorded on monitoring well development forms for each well. Completed forms have been provided in Appendix E.

With the exception of Monitoring Wells B-201 and CA-1, all monitoring wells were redeveloped utilizing the methods described above. However, when attempts were made to measure the water level and total depth at Monitoring Well B-201, the water level meter probe would not advance farther than 11.25 feet because of an obstruction in the well casing. Consequently, the well was not sampled. The chromate abatement well, CA-1, is an 8-inch polyvinyl chloride (PVC) well. Because of the large amount of water that would have been generated by redevelopment and the fact that time did not permit the well to be redeveloped and sampled, it was decided that the well would not be redeveloped prior to purging and sampling the well.

4.3.3 Groundwater Sampling

Groundwater samples were obtained by low-flow or minimal-flow sampling techniques as outlined in SOP FP-11 and discussed by Puls and Barcelona, 1995. Monitoring wells were purged at low-flow pumping rates ranging from approximately 0.13 to 0.17 gallons per minute. Temperature, specific conductivity, pH, turbidity, and dissolved oxygen levels in groundwater were measured and recorded. The precise sampling time was determined when stabilization (temperature plus or minus 1 degree Centigrade, pH plus or minus 0.1 units, conductivity plus or minus 5 percent, as defined in SOP FP-11) of these parameters occurred indicated by three to four consecutive readings. Individual purging times ranged from 9 to 49 minutes. The pump rate was lowered to collect the VOC vials first. Once the VOC vials were filled, the pumping rate was raised back to the rate at which purging was conducted to collect the remaining organic containers. Once all containers for organic analyses had been filled, an in-line filter was installed at the end of the discharge tubing to obtain the sample for metals analyses. For all samples which required preservatives, i.e, VOC, total petroleum hydrocarbons (TPH) diesel range organics (DRO), and metals samples, bottles were preserved in the field or supplied by the laboratory with the appropriate volume of preservative. VOC and TPH/DRO samples were preserved with hydrochloric acid and the metals bottles were preserved with nitric acid. All sample bottles were labeled and placed in an iced cooler to ensure that the samples were properly cooled to 4 degrees Celsius. Appendix F contains the groundwater purge records and sample collection logs.

4.4 Sampling of Systems and Structures

Because each of the hazardous materials samples taken from components, systems and structures were checked for radioactivity as an aspect of the site characterization, these samples were obtained under MY procedures MY 24-105-2, MYAP-CHR-101, MYAP-CHR-102, and MYAP-CHR-103. These samples were split for hazardous materials analytes as soon as practicable after the samples were obtained in order to comply with the requirements specified in SOP 2.1 and the miscellaneous requirements given in Attachment 5.2 of the SADMP (Appendix A). Such samples were handled, analyzed and evaluated following the guidance provided in the SADMP for other hazardous materials samples. Survey packages for the systems and structures have been discussed in more detail in Sections 5.1 through 5.14 of this report.

4.5 Analytical Methods

All sample analyses were conducted by standard U.S. Environmental Protection Agency (USEPA) SW-846 methods except for TPH/DRO, for which the Maine Method 4.1.25 was used. Copies of the laboratory chromatograms were provided for each DRO analysis.

4.5.1 Analytical Levels

Five levels of analytical support (analytical levels) are defined in "Data Quality Objectives For Remedial Response Activities," USEPA, March, 1987. As applied to this project, these five DQOs are summarized as follows:

- Level I - Analysis is performed on site. This level provides most rapid results, but data are of limited use. Quality control (QC) procedures are few to none. Level I is usually used to determine analyte presence, but may provide gross quantification. Examples of Level I include using pH paper and taking LEL readings. This level of analysis was used at Maine Yankee to confirm the preservation of aqueous samples, if the sample was preserved.

- Level II - Analysis is performed on site. This level provides quick results, but data are of limited use. QC procedures are minimal, and data are qualitative, semi-quantitative, or quantitative. Data may be used to make decisions of limited scope. Analytical methodology is based on standard industry methods, but may be modified to provide quick results. Examples of Level II include pH, conductivity, temperature, dissolved oxygen and headspace PID readings, which were performed at Maine Yankee.

- Level III - Analyses are performed at an established laboratory in accordance with accepted methodology and internal laboratory Quality Assurance (QA) program procedures. Analyses are designed to provide results within the accuracy of routine laboratory procedures. This level provides a good degree

of confidence in the data, and may be used to make engineering design decisions. Reporting is done on a certificate of analysis and normally does not include QC sample data or analytical raw data.

For the Maine Yankee project, project and matrix specific QC sample results were provided. VOCs, SVOCs, PCBs, TPH/DROs, and RCRA metals were performed at Level III. TPH/DRO chromatograms were provided with the certificates of analysis.

- Level IV - This level provides the highest level of confidence in analytical data. Analyses are performed at an established laboratory in accordance with USEPA Contract Laboratory Program (CLP) requirements and industry accepted methods. For analytes not covered by the format specified by the USEPA CLP, CLP-like data packages will be created and include all QC samples and raw data. Analyses are performed according to the laboratory QA program procedures. Data may be validated according USEPA requirements. No samples were analyzed under Level IV for the MY Project.

- Level V - Analyses are performed according to nonstandard methods. QC procedures are specific to the procedure used. Level V may also include physical property analyses. Paint chip analysis for lead and insulation sample analysis for asbestos were performed at this level.

4.5.2 Data Precision, Accuracy, Representativeness, Completeness, and Comparability

Data precision, accuracy, representativeness, completeness, and comparability (PARCC) requirements are the standard against which chemical analysis data are judged. PARCC requirements, except comparability, have been set for Level III analyses. There were no requirements for data comparability.

- **Precision.** Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value. Precision is estimated by means of duplicate/replicate analyses. Precision is set at the laboratory specific levels which are determined by the analytical method used.

- **Accuracy.** Accuracy is the closeness of agreement between an observed value and an accepted reference value. When applied to a set of observed values, accuracy will be a combination of a random component and a common systematic error component.

  Accuracy is set at the laboratory specific levels which are determined by the analytical method used.

- **Completeness**. Completeness is the ratio of the number of measurements taken that meet QA objectives for precision and accuracy to the total number of measurements. Completeness is set at 80 percent for all data.

- **Representativeness**. Representativeness is the degree to which a sample or a group of samples is indicative of the population being studied.

Precision and accuracy requirements do not apply to Analytical Level I, II, V, or physical property analyses. Analytical Level III chemical analysis data PARCC requirements were consistent with SW-846 methods.

4.6 Method Detection Limits

The method detection limits (MDL), reporting limits, and contract required detection limits (CRDL) to be provided by Quanterra Environmental Services are listed in Attachment 5.3 of the SADMP. These limits are for normal operations under ideal conditions. Actual, reported detection levels may vary due to Matrix interference or elevated levels of contaminants. MDLs reported at 10 times the levels identified in Attachment 5.3 of the SADMP (Appendix A) triggered an evaluation of the data and a determination of alternative analytical methods.

4.7 QA/QC for Field Activities and Laboratory

The number and kinds of QC samples to be taken and the frequency and nature of the laboratory QC checks are presented in Attachment 5.4 of the SADMP (Appendix A). Field activities were conducted in accordance with the Quality Assurance Project Plan developed for this project.

5.0 DESCRIPTION OF SYSTEMS, STRUCTURES, AND ENVIRONS SURVEYS

Survey packages were prepared by GTS Duratek (GTS) outlining areas of potential concern based on information gathered during the discovery period. Site walks covered all areas of potential concern within the protected area; administrative, warehouse, environmental laboratory (Bailey house and barn), Eaton farmhouse and barn, parking lots, roof and yard drain systems, and transformers. The following sections summarize activities performed during the field investigation. The "E" survey packages represent surveys associated with plant systems and structures, while the "H" survey packages represent the surveys associated with the plant environs.

5.1 Survey Package E01 - Protected Area Paint

During a meeting on February 5, 1998, attended by Maine Yankee representative (S. Dahlgren, D. Asherman, J. Arnold and P. Coughlin), several Decommissioning Operations Contractors (DOC), and GTS, it was decided by Maine Yankee that the DOCs should assume that all paint on site contains lead and that sampling for lead during the characterization is unnecessary.

With regard to PCBs in paint and coatings, it was noted during the meeting that essentially all of the paints and coatings were supplied by Keeler & Long, Inc. A letter from Keeler & Long documents that formulations of their paints and coatings never included PCBs (Appendix G).

A copy of the Stone & Webster "Specification for Finish Painting," J.O. No. 11550, March 23, 1971, identified four paint and coating manufacturers in addition to Keeler & Long. Three of these companies were contacted regarding PCBs in their formulations. These companies and their products of interest are as follows:

- Carboline Company, (314) 644-1000, Mr. Jim Fleck
  Containment liner: Carbozinc No. 11

- DuPont, (800) 572-1568
  Containment: Corlar Epoxy No. 823-8022
  Activator No. VG-8339

- Ameron International, (714) 529-1951, Ms. Margaret Coon
  Refueling cavity (carbon steel walls): Amercoat No. 71 primer
  Amercoat No. 66 topcoat

Letters from these three companies document that their products used at Maine Yankee did not contain PCBs (Appendix G). The fourth company, Burgess Fobes, could not be located for questioning. This company produced a primer, S8250 white, that was apparently used on structural steel in containment. Samples were taken to specifically check for this vendor's product.

Sixteen representative samples were taken throughout the plant to confirm the absence of PCBs in paints and coatings installed on site. In addition, eleven vendor skids (components) painted off site were sampled. Samples included shavings/chips of both topcoat and primer.

5.2 Survey Package E02 - Plant Electrical

Plant electrical cable insulation and jacketing should not contain PCBs, but some electrical components, such as circuit breakers and lighting ballasts, are expected to contain PCBs. Representative samples of cable insulation and jackets were taken to show the absence of PCBs in these materials. As discussed during a February 5, 1998 meeting attended by Maine Yankee representatives (S. Dahlgren, D. Asherman, J. Arnold and P. Coughlin), several DOCs, and GTS, it was decided by Maine Yankee that the DOCs should assume that PCBs will be present in common electrical components normally containing PCBs and that no sampling of such components was necessary.

A review of the Schedule Electrical (SE) schedule engineering drawings showed that the most frequently listed cable types/vendors were as follows:

1. Rockbestos, (978) 365-1482, Mr. T.S. Bhat
   a. triplex, 3 conductor #12, XLPE
      RSS-3-021 (special order)
   b. triplex, 3 conductor #6, XLPE
      RSS-3-021
   c. 500MCM, 600v, rated 90°C
   d. 3 conductor #12, P&R, x90 600v
   e. Firewall III (frequent use)

2. Belden, (800) 235-3364, Mr. Gary Tong
   a. #82259
   b. #8762
   c. #9344
   d. #9494
   e. #9553

3. Boston Insulated Wire & Cable (BIW), (800) 666-7580, Mr. Tom Reno x2322
   a. 7 conductor #12
      600v #13308-R-007

4. Brand-Rex Company, (860) 456-8000, Mr. Jeff Wilson x253

Telephone contact with each of these four vendors confirmed that PCBs were not used in their insulation and jacketing materials. This finding was documented by each of these vendors in writing (Appendix H). This finding was also in agreement with the understanding of Ms. S. Litchfield of Yankee Atomic, (413) 424-5261, Extension 2229, regarding PCBs in cable insulation and jacketing.

A total of 18 cable (insulation and jacketing) samples were obtained from the following locations for PCB analysis:

1. Steel boxes containing cables removed from the plant.
2. Abandoned, tagged-out cables that remain in the plant.
3. Selected cables, such as Femco and power cables.

High intensity discharge (HID) light fixtures are expected to have ballasts containing PCBs. The number of these fixtures by area are as follows (taken from Asbestos Quantity Survey [Pryor and Burnham, 1997]):

Location	Quantity
Containment Building	30
Spray Building	81
PAB	86
Fuel Building	36
Service Building (cold side)	30
Turbine Building	333
Buildings outside Protected Area	68
	664

Fluorescent lights are expected to have ballasts containing PCBs and lamps containing phosphorous gas. The number of these fixtures and lamps by area are as follows (taken from Asbestos Quantity Survey [Pryor and Burnham, 1997]:

Location	Quantity	
	Ballast	Lamp
Containment Building	10	20
PAB	58	116
Fuel Building	16	32
Service Building (hot side)	48	156
Service Building (cold side)	140	384
Turbine Building	388	776
Other Building Inside Protected Area	170	340
Other Building Outside Protected Area	1,355	4,586
Tunnels	30	60
Field Pumphouse	12	24
Total	2,227	6,494

5.3 Survey Package E03 - Survey Area: Transformer Oils

Transformer oils in the Main, North, Spare and Shutdown Transformers have been changed out to comply with state of Maine and USEPA PCB concentration limitations. There is a transformer in the Maintenance Yard (stockyard) next to the spare generator building that is unmarked regarding its PCB status. The transformer oil level gage indicates about 325 gallons of oil. There is no evidence of leakage from the transformer. A sample of this oil was obtained for PCB analysis.

5.4 Survey Package E04 - Survey Area: Plant Pump Oils

Lubricating oils in plant pumps and other rotating machinery may contain RCRA metals. Plant practice has been to routinely dispose of these oils. The radiological characterization of systems has shown that lubrication oil tanks contain very little sludge, if any. None of the sludge samples taken for radiological analysis are large enough to be submitted for RCRA metals Toxicity Characteristic Leaching Procedure (TCLP) analysis. These radiological samples were taken from water, lubricating oil and the turbine (EHC) systems. Generally, sludges from sumps should be sampled for hazardous materials after removal of the sumps from service to avoid uncertainty regarding postsampling additions to the sumps.

Because the hazardous waste handling and storage permit for the lubricating oil storage room in the Turbine Building will be terminated, the sludge from the sump in that room was sampled and analyzed for RCRA metals TCLP, methylene chloride, 1,1,1-trichloroethane, total organic halides (TOX), flash point, and pH.

5.5 Survey Package E05 - Survey Area: Various Plant Fluids

Plant components utilize a variety of organic-based fluids such as hydraulic fluids. Several chlorofluorocarbons have also been used on site. Some of the systems containing such materials have already been drained, e.g., turbine EHC. A list of representative fluids and their locations is as follows:

Fluid	Location
Turbine EHC	turbine-drained
Freon 12	computer room AC heat pumps station AC-1,-2,-3 cardox compressor
Freon 22	new AC at Gatehouse
Freon 134a	unknown
Freon 113 trichlorotrifluoroethane	chemistry laboratory
Genetron II (trichlorofluoromethane)	none on site
Halon 1301	career center Vault cable vault simulator

No sampling was required to characterize these fluids.

5.6 Survey Package E06 - Survey Area: Component Cooling Water

The cooling systems of the emergency diesel generators, DG 1 and DG 2, still use chromates. Before the last antifreeze change out for the fire pump diesel, the chromate concentration was about 30 parts per million (ppm). The neutron shield tank presently contains about 2,000 ppm chromate. In 1991, the Primary Component Cooling (PCC) and Secondary Component Cooling (SCC) were converted from chromates to Sodium molybdate tolyltriazole (Moly/TTA) protection. Residual chromate concentrations in these systems should range between 3 to 500 parts per billion (ppb). These systems were dechromated at the time of conversion, and since, no spiking of chromate concentration has been observed. Pipe and component internal surfaces visually appear clean with no scale.

The fire pump diesel cooling system was sampled for chromium (VI).

5.7 Survey Package E07 - Brass, Bronze, and Cadmium Plated Components

The plant is known to contain brass or bronze, silver and possibly other metal-plated components. During a February 5, 1998 meeting attended by Maine Yankee representatives (S. Dahlgren, D. Asherman, P. Coughlin, and J. Arnold), several DOCs, and GTS, these materials were discussed. It was pointed out that many systems contain brass or bronze components, such as fire protection and circulating water. The reactor vessel O-ring is silver plated. Because such materials will be apparent during dismantlement, it was decided by this group that no additional investigation was warranted.

Silver and lead solder may have been used on copper tubing joints in the following locations, given in linear feet of tubing, as taken from the Asbestos Quantity Survey (Pryor and Burnham, 1997):

Location	Quantity
Containment Building	100
PAB (Primary Auxiliary Building)	100
Service Building	100
Turbine Building	1,060
Building outside Protected Area	10
	1,370

Although newer Hilti anchors do not contain lead, according to Ms. S. Litchfield of Yankee Atomic, the original anchors do. It is best to assume all installed anchors are a lead alloy for personnel protection purposes. The anchors can be readily distinguished once removed.

Lead containing rupture disks are installed on the Low Pressure (LP) turbine.

No sampling was required.

5.8 Survey Package E08 - Plant Batteries

Lead-acid, nickel-cadmium, and other types of batteries are used for a variety of purposes, such as emergency lighting and exit fixtures and emergency power. A representative listing of plant batteries is as follows:

Location	Purpose	Quantity	Type
Containment	light	4	Pb-acid
Spray Building	light	3	Pb-acid
PAB	light	7	Pb-acid
Fuel Building	light	2	Pb-acid
Service Building (cold side)	light	16	Pb-acid
Bus 1,2,3,4	power	240	calcium
Bus 5A,B	power	120	calcium
Telephone	power	20	Pb-acid
Appendix R	power	60	calcium
Diesel generator # 2	start	2	Pb-acid
Turbine Building	light	16	Pb-acid
Circulating Water Building	light	2	Pb-acid
Other Buildings in Protected Area	light	16	Pb-acid
Buildings outside Protected Area	light	39	Pb-acid
Fire Pumphouse	light	1	Pb-acid
	diesel start	4	Pb-acid

No sampling was required.

5.9 Survey Package E09 - Mercury Components

The plant is known to have mercury-containing components in the Gatehouse and Containment, Primary Auxiliary, and Turbine Buildings. A representative listing of these plant components is as follows:

Location	Item	Quantity
Gatehouse	thermostat ampule	4
Containment	temperature gage (-2' elevation)	2
	HID lamp (Hg gas)	30
PAB	temperature gage (11' elevation)	2
	HID lamp (Hg gas)	86
	manometer	2
Turbine Building	temperature gage (turbine deck)	2
	HID lamp (Hg gas)	333
	manometer (61' elevation)	1
Spray Building	HID lamp (Hg gas)	81
Fuel Building	HID lamp (Hg gas)	36
Buildings Outside Protected Area	HID lamp (Hg gas)	68
Service Building (cold side)	HID lamp (Hg gas)	30
Bailey House	manometer	1

There was a reported 14-pound mercury spill in the Auxiliary Boiler Room, UOR 005-85, in August 1985, which was immediately cleaned up. Cabinets in this room may contain residual mercury from earlier storage of transmitters. Mercury-containing components were also handled in the cold- and hot-side instrumentation and controls shops and the chemistry laboratory. The cabinets, floors and floor drains in the Auxiliary Boiler Room, cold- and hot-side instrumentation and controls shops, and chemistry laboratory were surveyed using the Jerome 411 instrument for residual mercury.

5.10 Survey Package E10 - Asbestos, Insulation, and Other Potential Asbestos-Containing Materials (PACM)

The plant is known to contain both asbestos-containing materials (ACM) and non-ACM insulation and paint. The ACM insulation has been partially remediated over the years with a nonhazardous insulation replacement material. With a few exceptions, this replacement material was color coded blue. Exceptions are generally marked "asbestos." Paint on the inside and outside of the exterior turbine building wall is ACM. A similar paint is present at the Circulating Water Pumphouse.

Refer to the investigation, Asbestos Quantity Survey (Pryor and Burnham, 1997), for an approximation of the asbestos insulation inside the Protected Area.

No sampling was required inside the Protected Area.

Samples from various structures outside the Protected Area were obtained.

5.11 Survey Package E11 - Asbestos-Containing Components

The plant is known to have used ACM components in a variety of uses, e.g., gaskets. Such components are addressed in the Asbestos Quantity Survey (Pryor and Burnham, 1997). Other than pipe gaskets, ropes and electrical cables, the other ACMs, such as asbestos blankets, asbestos paint, asbestos-containing brakes on large cranes, gaskets on "jelly-jar" type vaporite incandescent fixtures in the diesel generator rooms and Containment Building, and roof flashing and felt, are given below by location in cubic feet:

Location	Quantity
Containment Building	67
Spray Building	3
PAB	1
Service Building (cold side)	9
Turbine Building	524
Circulating Water Pumphouse	38
Other Buildings inside Protected Area	7
Building Outside Protected Area	152
	801

Power cable from the pressurizer to Motor Control Center is ACM. Many cable penetrations have not been abated and still contain ACM.

No sampling was required.

5.12 Survey Package E12 - Lead Shielding

The plant is known to have used lead bricks, sheets, and blankets for radiation shielding purposes. The quantity of temporarily installed lead was estimated by Rick Adams (MY ALARA), File: RWA-97-031, to be about 1,500 blankets, which he estimated corresponds to 62,000 pounds. There are also a relatively minor number of "clam-shell" shields in place.

The quantity of permanently installed lead is not available, but it is known to be installed around Tanks 85 and 109, as well as numerous installed detectors. Lead sheet is also installed in cable trays for separation purposes.

Except for new lead shielding materials that may be identified and considered to be clean (none is on the warehouse inventory list), lead shielding should be considered contaminated.

No sampling was required.

5.13 Survey Package E13 - Paint Outside Protected Area

During a February 5, 1998 meeting attended by Maine Yankee representatives (S. Dahlgren, D. Asherman, J. Arnold and P. Coughlin), several DOCs, and GTS, it was decided that the DOCs should assume all paint outside the Protected Area contains lead and that sampling for lead during the characterization is unnecessary.

5.14 Survey Package E14 - Chemistry Laboratory

The chemistry laboratory uses hazardous substances in accordance with state of Maine regulations. If any hazardous materials contamination in the laboratory exists, it should predate environmental regulations of the mid-1980s. VOCs and SVOCs, and PCBs would not be expected. Document reviews did not identify any significant spills or residual hazardous materials contamination in the laboratory. However, from discussions with Mr. Larry Thornberg, mercury may be present in the floor trenches. Analysis for mercury vapor in the laboratory cabinets and floor trenches was performed under Package E09.

Most of the chemicals used in the laboratory were acids, which would be neutralized and present as nonhazardous salts. Although some RCRA metals were used in the laboratory for instrument calibration purposes, they were used in very dilute and minor amounts. All of the sinks and drains, hot side and cold side, have received more or less similar use. It was decided during a February 5, 1998 meeting attended by Maine Yankee representatives (S. Dahlgren, D. Asherman, J. Arnold and P. Coughlin), several DOCs, and GTS, that the DOCs should assume the sinks and drains contain small quantities of RCRA metals and that sampling for characterization would not be necessary.

The Larrette Tank receives waste streams from many sources, including the laboratory and various Primary Auxiliary Building sampling sinks. Dose rates on the lower portion (sludge) of the tank typically exceed 1 rem per hour. Discussions with D. Asherman, J. Arnold and P. Coughlin indicate that Maine Yankee will likely clean out the tank and dispose of its contents before turning it over to the DOCs. In consideration of this and the high dose rates, the tank sludge was not sampled.

5.15 Survey Package H01 - Oil and Hazardous Materials Transfer and Handling Areas

These areas were located within the protected area on the south side of the plant and outside the Radiation Control Area (RCA). The areas were paved with or covered with concrete. Sampling requirements consisted of collecting surface and subsurface soil samples at each of the three locations.

Surface and subsurface soil samples were collected from three boreholes and labeled OH-GP01, OH-GP02, and OH-GP03. Surface and subsurface samples were submitted to the laboratory for PCBs, RCRA metals, TPH/DRO, VOC, and SVOC substances. Results of the laboratory analysis are presented in Table H01. Refusal occurred in all three borings before groundwater was encountered; subsequently groundwater samples were not collected. Additional Geoprobe borings were performed adjacent to each original boring in order to provide split samples for GTS. Sample locations are shown in Figure 3.

5.16 Survey Package H02 - Diesel Oil Tank Unloading Areas

Diesel fuel is unloaded at the Diesel Fuel unloading area and stored in aboveground tanks 167A, B, and 126. All former USTs were closed out per state of Maine regulations. The new tanker truck unloading area of Tanks 167A and B is concrete with a spill collection sump. No significant spillage has occurred at this unloading area, and no sampling was determined to be required. Sampling for Tank 126 was conducted under Package No. H01. No sampling was required at the diesel fuel unloading area.

5.17 Survey Package H03 - Main, North, Spare, and Shut-Down Transformers

Approximately 200 gallons of transformer oil was spilled at the main transformer in 1991. Oil stains were noted on the soil near the shut-down transformers. As a result,

sampling instructions were to collect surface water, soil, and groundwater (if encountered) samples adjacent to the power plant's electrical transformers.

The survey packages for Main Transformers 1A, 1B, X24, X25, and X26 required a surface water sample from the corresponding containment sump (CS) labeled T-SW01 for PCBs, RCRA metals, and TPH/DRO. A Geoprobe boring, MT-GP01, was also required to obtain surface, subsurface, and groundwater samples from the paved area just east of Main Transformer 1B. Geoprobe Boring MT-GP01 reached refusal at less than two feet below the ground surface and changes in the survey packages were provided by GTS. An additional soil boring, MT-GP02, was performed in the grassy area east of the first boring location as displayed in Figure 4. Groundwater was encountered in MT-GP02 and a partial sample was collected and submitted to the laboratory for TPH/DRO analysis.

All soil samples collected in association with MT-GP02 were submitted to the laboratory for PCBs and TPH/DRO analyses. Supplementary Geoprobe borings were performed adjacent to MT-GP02 in order to provide split samples for GTS. The addition of MT-GP02 replaced the three surface soil locations proposed in the adjacent grassy area. Water samples were also collected for PCBs, RCRA metals, and TPH/DROs from the containment sumps adjacent to the Main and North Transformers and submitted to the laboratory for analysis.

Shut-Down Transformers X5, X6A, X6B, and X6C each required three surface soil samples. Surface soil samples associated with Transformer X5 were labeled T-SS04, T-SS05, and T-SS06. Soil samples associated with X6A, X6B, and X6C were labeled T-SS14-17-01, T-SS14-17-02, and T-SS14-17-03. Soil samples associated with the transformers were submitted to the laboratory for PCB and TPH/DRO analysis. A complete list of laboratory results for the Main, North, Spare and Shut-Down Transformers, as well as all other sampling locations in this survey package are presented in Table H03 and Figure 4, respectively.

5.18 Survey Package H04 - Roof and Yard Drains, Outfalls Nos. 006, No. 007, and No. 008

Areas of interest under this package include drainage lines from the roofs and the yards within the RCA and the refueling water storage tank (RWST) areas of the power plant. Drainage Ditch No. 005 that services the north side of Bailey Point is neither lined nor tiled, and due to contamination on Bailey Point, it was investigated under this package. The exact sample locations for the Forebay, Outfalls Nos. 006 and 008, as well as Catch Basins 6A and 7A, are shown in Figure 5.

Survey package sampling protocol included collecting water and sediment samples from the end of the pipes or ditches associated with roof and yard drainage systems. A water sample, OF06-SW01, was collected from the outfall pipe at Outfall No. 006 including a duplicate and matrix spike/matrix spike duplicate (MS/MSD) sample. The water sample

was submitted to the laboratory and analyzed for PCBs, RCRA metals, TPH/DROs, and VOCs and SVOCs. Due to the size of Bailey Cove and the proximity of Outfall No. 006 to Outfall No. 005, a sediment sample was not collected for Outfall No. 006 under this package. Sediment samples collected for Outfalls No. 005 and No. 006 under package H16 (as described in Section 5.30), were used to characterize the extent of PCB, RCRA metals, and TPH/DRO levels in the sediments of Bailey Cove.

At Catch Basins 6A and 7A, sediment samples were to be collected. However, no sediment was present in Catch Basins 6A and 7A. Since sampling at Outfall 007 was difficult due to accessibility, the outfall water sample was collected from Catch Basin 7A and labeled CB-7A. This sample was analyzed for PCBs, RCRA metals, TPH/DROs, VOCs, and SVOCs. A sediment sample was collected from the Forebay, FB-SD01, and from Outfall No. 008, OF08-SD01, both of which were analyzed for PCBs, RCRA metals, TPH/DROs, VOCs, and SVOCs. The sediment sample from Outfall No. 008 included a duplicate sample as well as a MS/MSD sample. Table H04 displays all samples collected and their corresponding analytical results.

5.19 Survey Package H05 - Solid Waste Storage Area

This area is a storage area located at the south end of the plant. The area was used to store wood, paper, and metal in dumpsters. The dumpsters were used for storing only nonhazardous solid wastes and required no hazardous materials investigation.

5.20 Survey Package H06 - Primary and Secondary Side Waste Storage Building Yard Areas

The primary and secondary side waste areas are skid-mounted sheds that contain hazardous materials. There were no reported spills or physical evidence of spills, thus required no hazardous materials investigation.

5.21 Survey Package H07 - Drumming/Decontamination Waste Accumulation Area

There have been no reported spills or physical evidence of spills associated with this waste handling area. Therefore, no sampling was conducted under this survey package.

5.22 Survey Package H08 - Diffuser Forebay

Sampling requirements for this package were covered in Package H04 - Roof and Yard Drains, Outfalls No. 006, No. 007, and No. 008 as described in Section 5.18.

5.23 Survey Package H09 - Refueling Water Storage Tank Area

A number of spills and leaks have occurred in the area near the RWST. This area is drained by Roof and Yard Drain #007 and the groundwater is monitored by several wells

in the vicinity of the RWST. No sampling was required under this package since this tank did not contain chemical constituents.

5.24 Survey Package H10 - Protected Area Groundwater

A network of existing monitoring wells at the Maine Yankee site was installed to monitor groundwater in the vicinity of the RWST, the Wiscasset Wall, and the ferrous sulfate tank. Data obtained from these wells, however, is useful and appropriate to characterize the groundwater quality in the plant area. This package provided guidance for the collection of groundwater at the existing monitoring wells. Groundwater samples were obtained from seven monitoring wells (B-202, B-203A, B-204A, B-205, B-206, BK-1, and MW-100), one chromate abatement well (CA-1), and the containment sump (CS-1), all located within the protected area. One monitoring well, B-201, could not be sampled because the well was damaged.

Groundwater sampling activities were conducted as discussed in Section 4.3. Results of the sampling activities are discussed in Section 6.10. Groundwater samples were submitted for VOC, SVOC, TPH/DRO, PCB, and dissolved metals analyses. A field duplicate sample was collected from Monitoring Well BK-1 and submitted to the laboratory as Sample BK2-980203. Additional sample volume was collected from Monitoring Well MW-100 and submitted for laboratory QC. Monitoring well locations are shown in Figure 6.

5.25 Survey Package H11 - Warehouse and Maintenance Yards

An area within the maintenance yard was discovered to have been leaking oil from various electrical components. As a result, this package required that two surface soil samples be collected from both the soil under the suspected leaking transformer and the white boxes containing electrical bushings. Soil collected from under the transformer was labeled NWY-SS01 and soil collected from the soil under the white boxes was labeled NWY-SS02. All soil collected was submitted to the laboratory for PCB analysis. Sample locations are depicted in Figure 7.

5.26 Survey Package H12 - Fire Pond And Yard Area

The fire pond had previously been sampled by GTS for radiological analyses. Based on the information gathered at that time, very little sediment was present in the fire pond. During the field portion of the hazardous materials investigation, the fire pond was frozen over, making it inaccessible for sediment sample collection. Since GTS had previously sampled the fire pond sediments and a portion of the sample could be obtained for the metals analysis, IT collected the fire pond sample from the GTS sample and submitted it to the laboratory for RCRA metals analysis. The fire pond sediment sample was labeled as Sample FP-SD01. The sample location is shown in Figure 10.

5.27 Survey Package H13 - Construction Debris Landfill and Ball Field

The construction debris landfill area received fill and debris generated during original plant construction, Silt from the cooling water intake structures has been spread over the surface of the landfill. The ball field located adjacent to the landfill may have also been used as a fill area.

The survey package sampling protocol was to perform seven Geoprobe borings throughout the two areas; collecting surface soil, subsurface soil, and groundwater (if encountered) samples from locations CF-GP01 through CF-GP07. Duplicate samples were collected at Locations CF-GP01, CF-GP02, and CF-GP03. All samples were submitted to the laboratory for PCBs, RCRA metals, TPH/DROs, VOCs, and SVOCs.

Although encountered at a few of these locations, groundwater was not recoverable with a peristaltic pump due to reduced viscosity caused by the high percentage of silt and clay. No groundwater samples were collected. Table H13 presents the analytical results for all soil collected within package H13. Sample locations are shown in Figure 8.

5.28 Survey Package H14 - Bailey Point

Historical records and site photographs show that Bailey Point was an open grass field prior to plant construction. It is documented that radioactive-contaminated gravel and asphalt were placed in this area, and then was later moved back to the protected area.

Two Geoprobe borings, BP-GP01 and BP-GP02, were conducted on Bailey Point to collect surface soil, subsurface soil, and groundwater (if encountered) samples for PCB, TPH/DRO, RCRA metals, VOC, and SVOC analysis.

Groundwater was encountered at both Geoprobe boring locations; however, attempts to recover groundwater failed. Silt and clay clogged the peristaltic pump tubing as it did the check valve of a disposable bailer; consequently groundwater sampling was aborted. Figure 9 displays the Bailey Point sampling locations and Table H14 contains soil sample analytical results.

5.29 Survey Package H15 - Administration and Parking Areas

Spill logs and related drawings identified a number of minor events that have involved gasoline, diesel oil, and antifreeze. The records show these spills were cleaned up at the time of the event. A gasoline UST near the Information Center was removed from the site in accordance with state requirements. Walkdowns of these areas found no evidence of any significant spills, suspect excavations/landfills, or waste storage areas. Normal spots of minor leakage from vehicles in the parking lots were noted. No sampling was required under this package.

5.30 Survey Package H16 - Roof and Yard Drain Outfall Nos. 005, 009-012, and N12

These outfalls serve as discharge points from the plant building and grounds drainage systems. There were no documented issues related to Drain 005, but due to its proximity to Transformer X5 and the warehouses, this outfall was investigated. Outfalls 009-012 and N12 were also investigated and sediment samples were collected for characterization.

Sediment Samples OF05-SD01 and OF05-SD02 were collected in the area of Outfalls No. 005 and No. 006 to characterize the extent of PCB, RCRA metals, and TPH/DRO levels in the sediments of Bailey Cove. Sample OF05-SD01 was collected nearest to Outfall No. 006, while Sample OF05-SD02 was collected nearest to Outfall No. 005.

Sediment Samples OF-SD09, OF-SD10, and OF-SD11 from Outfalls Nos. 009, 010, and 011, located on the banks of the Back River, were collected for PCBs, RCRA metals TPH/DROs, VOCs, and SVOCs. At Outfall No. 012, a sediment sample, OF-SD12, was collected for TPH/DROs, and at Outfall No. N12, a sediment sample, OF-SDN12, was collected for TPH/DROs and VOCs. All outfall locations and analytical results are provided in Figure 10 and Table H16, respectively.

5.31 Survey Package H17 - Surface Flow Drainage Ditch 005

The west warehouse yard areas are drained by surface flow Drainage Ditch 005 to Outfall 005. No evidence of spills or leaks was identified during site walkovers, but because the warehouses are used for storage of hazardous materials, a surface soil sample, SF05-SD05, was collected for TPH/DROs and VOCs. Figure 10 depicts the location of Ditch 005 with respect to the warehouse and Table H17 contains analytical data for the soil sample.

5.32 Survey Package H18 - Roof and Yard Drain Catch Basins 9A-12A

Records indicate minor hazardous materials spills have occurred on the east side of the power plant. In April of 1991, a 200-gallon oil spill occurred adjacent to the Main Transformer. Other small spills have also been recorded on the paved and grassy areas on the east side of the power plant. As a result, storm water runoff and sediment that accumulate in Catch Basins 9A-12A were sampled.

Surface water samples collected from Catch Basins 9A-12A were labeled CB-SW03 through CB-SW06, respectively. Water samples collected from Catch Basins 9A and 10A were collected for PCB, RCRA metals, TPH/DRO, and VOC and SVOC analyses. Samples from Catch Basins 11A and 12A were collected for TPH/DRO analyses. Sediments were only encountered in Catch Basin 9A, 11A, and 12A. Sediment collected from Catch Basin 9A was submitted for PCB, RCRA metals, TPH/DRO, and VOC and SVOC analyses. Sediment samples from Catch Basins 11A and 12A were collected for TPH/DRO analyses. A complete list of samples and analytical results for Package H18 is presented in Table H18. Catch basin locations are displayed in Figure 11.

5.33 Survey Package H19 - Foxbird Island

Condenser cooling water and liquid effluents are discharged through two 9-foot-diameter fiberglass pipes that are buried on Foxbird Island. The diffusers extend from beyond Foxbird Island into the deep water of the Back River. No evidence was discovered that these pipes would have leaked nor was there any evidence that hazardous materials were spilled, stored, or disposed of on Foxbird Island. Sampling for hazardous materials was not required under this package.

5.34 Survey Package H20 - Low Level Waste Storage Yard

The yard around the LLW Storage Building is fenced. A walkdown of the yard found no evidence of any past hazardous material spills, storage, or leads. Therefore, sampling for hazardous materials was not required under this package.

A review of documents (Gerber drawing dated September 1997 showing spill locations) suggests that a kerosene tank located adjacent to the LLW Storage Building leaked, but this tank is actually located in a shed adjacent to the spare generator storage building. This spill was cleaned up at the time of the event and there is no evidence that the tank shed area is contaminated. Therefore, sampling for hazardous materials was not required under this package.

5.35 Survey Package H21 - Potential Dry Cask Storage Area

This area is a potential location for a future dry cask storage facility. It has been and is currently used as a parking lot. Although the gravel lot shows some staining typical of parking areas, the area walkdown did not reveal any evidence of a significant hazardous material spills. Discussions with the plant maintenance department indicate that the southwest corner of the area was once used as a plant equipment tear-down area. The survey packages required the collection of soil and groundwater samples.

Two Geoprobe borings were installed in the dirt parking lot, DCA-GP01 and DCA-GP02, to collect surface and subsurface soil samples for PCB, RCRA metals, TPH/DRO, VOC, and SVOC analyses. Groundwater was encountered at approximately nine feet in each of two borings; however, the formation did not yield adequate water to sample groundwater in a timely manner. Figure 12 shows the dry cask area sampling locations. Soil analytical data are presented in Table H21.

5.36 Survey Package H22 -Balance of Owner Controlled Area

Record searches, site walks, and interviews discovered that small quantities of hazardous materials may have been disposed of in the sanitary drain at the Environmental Services Laboratory at the old Bailey farm. Geoprobe borings were conducted to collect soil and groundwater samples near the depth of the leach fields.

At Geoprobe Location EL-GP02, located on the back side of the environmental laboratory, surface and subsurface soil samples were collected for PCBs, RCRA metals, TPH/DROs, VOCs, and SVOCs. At Location EL-GP01 only a subsurface soil sample was collected. Groundwater was not encountered at the depth of the leach field in either boring. A summary of the detected analytical data is presented in Table H22 and Geoprobe boring locations are plotted in Figure 13.

5.37 Survey Package H23 - Switchyard

The 115KV switchyard has live electrical equipment that may contain oils with PCBs. There are physical signs of small spills or leaks within the switchyard. Under the supervision of Central Maine Power, an IT representative and an equipment operator entered the active electrical switchyard. A small backhoe was utilized to remove the frozen gravel ballast to gain access to the surface soil.

Four surface soil samples were collected adjacent to Switches BK207-1, H69-1, KC1, and KBT. All four of the surface soil samples were collected for PCBs and TPH/DROs. Table H23 summarizes the detected analytical data and Figure 14 shows switchyard and sample locations.

5.38 Survey Package H24 - Background

To assess environmental conditions outside of the influence of plant activities, background sampling on MY property was conducted to characterize soil and groundwater. Additionally, two off-site marine sediment samples were collected to yield analytical data for marine sediments taken from the Darmariscotta River near Dodge Point and the New Meadows River near Prince Point Road. These locations are approximately ten miles from MY and correspond with radiological sediment sampling points. Background and off-site samples were analyzed for RCRA metals only. Analytical results were used to compare against the analytical results obtained from the survey packages, as appropriate. Figure 15 shows the location of these samples, with the exceptions of the background groundwater sample from the town of Edgecomb, and the off-site sediment samples. These sampling locations could not be plotted on the map because of their distance from the site. Table H24 provides a summary of detected analytical results.

6.0 SUMMARY OF SURVEY PACKAGE ANALYTICAL RESULTS

The following sections discuss the rationale employed for comparison of the analytical results and present the actual results by survey package.

Trigger Values. Trigger values were established to compare soil, marine sediment, surface water, and groundwater analytical data. These values were developed for the project in an effort to help determine whether or not further delineation was necessary for decommissioning. For ease of review, the trigger values have been provided in each summary table. Guideline values used to establish trigger values as they appear in various state of Maine publications have been provided in Appendix I.

For certain constituents detected in samples, no Maine guideline values exist from which a trigger value can be derived. In these cases, the MDL was used as the trigger value. Since the MDLs are much lower than the laboratory CRDL, many concentrations which exceed the MDL-based trigger values are estimated quantities.

For soil and marine sediment data, Remedial Action Guidelines (RAG) for contaminated soils developed by the MDEP were utilized to develop the trigger values. Specifically, the adult worker guidelines were used for soils comparison and the trespasser guidelines were used for marine sediments comparison. Soil and marine sediment concentrations exceeding the MDL or 50 percent of the respective guideline values (whichever was higher) triggered additional evaluation of the data and a resolution as to the need for additional sampling to bound the extent or source of contamination.

For groundwater sample data, maximum contaminant levels (MCL) and state of Maine Maximum Exposure Guidelines (MEG) were used for comparison of the groundwater data and development of trigger values. Groundwater constituent concentrations exceeding the MDL, or 50 percent of the MCL or MEG (whichever was lowest), triggered additional evaluation of the data and a resolution as to the need for additional sampling to bound the extent or source of contamination. The higher of the MDL or MCL/MEG values was used.

For surface water and sediment samples collected from catch basins and outfalls, no specific guideline values or standards exist for comparison to analytical results. For these samples, no comparisons to guideline values are presented. Constituents detected are considered an indication of the contamination in the systems, which could lead to further investigation to delineate the source of the identified substance of potential concern.

Background. Background soil and groundwater samples were collected near the MY site. Marine sediment samples were collected from two locations off site. These samples were analyzed for RCRA metals and the results were utilized to determine if concentrations of metals exceeding the guideline values were indicative of locally higher concentrations in the native soils or nearby sediments. If sample results that exceeded the guideline concentrations were within the background range or slightly above the range, then it was determined that no further evaluation was warranted.

6.1 E01 - Protected Area Paint

The identification of the 21 paint samples and the analytical data collected under this package for PCBs are as follows:

Table E01
Summary of Detected PCBs from Paint Chip Samples

Area	MY Sample No.	Location	PCB Results (ppm)
1. Turbine Building	E01-01	Interior of exterior wall with asbestos-containing paint	3.8
	E01-02	Structural steel (topcoat and primer)	3.7
	E01-03	Component (pipe or pump)	5.3
	E01-04	Interior wall without asbestos-containing paint	1.9
2. Containment Building	E01-05	Liner above asbestos (46' elevation) north	30.0
	E01-06	Liner above asbestos (46' elevation) south	38.5
	E01-07	Liner above asbestos (46' elevation) east	36.3
	E01-08	Liner above asbestos (46' elevation) west	41.4
	E01-09	Structural steel (topcoat and primer)	108.0
	E01-10	Component (pipe or pump)	32.4
3. Fuel Building	E01-11	Interior of exterior wall	4.8
	E01-12	Structural steel (topcoat and primer)	1.0
	E01-13	Component (pipe or pump)	2.2
4. PAB	E01-14	Interior or exterior wall	0.7
	E01-15	Structural steel (topcoat and primer)	7.5
	E01-16	Component (pipe or pump)	7.0
5. Vendor skids	E01-17	Neutron shield tank cooler	(a)
	E01-18	High pressure drain cooler	(a)
	E01-19	Quench tank cooler	85.0
	E01-20	CMNT air recirc. motor housing	109.0
	E01-21	Rx coolant pump motor housing	41.0
	E01-22	Charging pump	11.4
	E01-23	Auxiliary charging pump (18' elevation)	9.5
	E01-24	BAC component or platform	5.9
	E01-25	Fills trailer component	ND (440)
	E01-26	Degas effluent cooler (11' PAB)	7.4
	E01-27	Comsip hydrogen (21' PAB)	5.6
	E01-28	MCC PAB (21' PAB)	7.2
	E01-29	Fan filter bank upper level (PAB)	5.3

(a)Sample not taken because of inaccessibility of component.

6.2 E02 - Plant Electrical

The identification of the 18 cable samples (insulation and jacketing composite) and the analytical results for PCBs are as follows:

Table E02
Summary of Detected PCBs in Electrical Cable Samples

Sample No.	Description	Location	PCB Results (ppm)
E02-01	From LSA box	K. Nuzzo/M. Readinger	140
E02-02	From LSA box	K. Nuzzo/M. Readinger	90
E02-03	From LSA box	K. Nuzzo/M. Readinger	9.1
E02-04	From LSA box	K. Nuzzo/M. Readinger	ND
E02-05	From LSA box	K. Nuzzo/M. Readinger	0.2
E02-06	From LSA box	K. Nuzzo/M. Readinger	4.9
E02-07	X-16 low side cable	K. Nuzzo	0.5
E02-08	LAN-248	21' TB, south of P-2B, east of TR-9	120
E02-09	LIDD-361	Unprotected cable spreading room, NW area	2.7
E02-10	LIDD-383	Unprotected cable spreading room, NW area	0.9
E02-11	LIDD-399	Unprotected cable spreading room, NW area	1.7
E02-12	161 PL 137, C-8 power cable	Supply tool crib	0.9
E02-13	161 PL 141 C-8 control cable	Supply tool crib	3.7
E02-14	CUH-2B power cable	North end of TB, mezz. level, above P-28s	2.4
E02-15	P-27C power cable	21' TB	13.0
E02-16	P-62B power cable	21' TB	2.5
E02-17	P-24B, 149 PLH power cable	11' PAB northwest corner, PW pump area	ND
E02-18	Generator loop test cable	North end TB mezz. level under generator around Femco	ND

6.3 E03 - Survey Area: Transformer Oils

A sample of the oil from the transformer in the maintenance yard was collected and submitted for PCBs. PCBs were not detected in the sample; therefore, a summary table has not been provided.

6.4 E04 - Survey Area: Plant Pump

The turbine building lubricating oil storage room sump was sampled at the request of MY to support closure plans for a hazardous waste storage facility permit based on the solvents that were previously stored in this facility. Results obtained from the sludge sample collected from the lube oil storage room sump are summarized below.

Table E04
Summary of Detected Constituents in Sludge
from the Lube Oil Storage Room Sump

IT Sample ID: **Laboratory Sample ID:** **Sample Location:** **Collection Date:**	**E04-1** **17013-003** **Lube Oil** **Storage Room Sump** **2/18/98**
Constituent **Volatiles (Method 8260)** Methylene Chloride 1,1,1-Trichloroethane	(ug/kg)[a] 590 BJ 610 J
Total Organic Halides (TOX) (EPA 450.1)	(ug/g)[b] 66.0
Constituent Flash point (Method (1010)	 >60 degrees Celsius
pH (Method 9045)	(Unitless) 6.08
TCLP Metals (Methods 6010/7470) Arsenic Barium Cadmium Chromium Lead Selenium Silver Mercury	(mg/L)[c] 0.011 B 1.1 0.0027 B 0.014 B 0.043 B 0.012 B ND (0.04) ND (0.0008)

[a]ug/kg = micrograms per kilogram
[b]ug/g = micrograms per gram
[c]mg/L = milligrams per liter

6.5 E05 - Survey Area: Various Plant Fluids

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.6 E06 - Survey Area: Component Cooling Water

One water sample was collected from the fire pump diesel cooling system and analyzed for hexavalent chromium. Results of the analysis are provided below.

Table E06
Detected Hexavalent Chromium Results
from the Fire Pump Diesel Cooling System

Sample I.D.	Chromium VI (Concentration (ug/L)
E06-1	11.3

6.7 E07 - Brass, Bronze, and Cadmium Plated Components

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.8 E08 - Plant Batteries

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.9 E09 - Mercury Components

Results from the mercury-containing components survey are provided below.

Table E09
Summary of Mercury Vapor Measurement Results (mg Hg/cu meter) (a)

Location	Floor	Floor	Cabinet/Equipment Storage	Floor Drain	Floor Trench
Auxiliary Boiler Rm	.007		.002	.002	
	.003		.000	.000	
	.000		.007	.002	
	.001		.000	.000	
Chemistry Lab. (hot)	.000		.004		.000
	.004		.001		.002
	.008		.003		.000
	.003		.001		.003
I&C Shop (WART Bldg)	.005	.000	.009		
	.000	.000	.000		
	.000	.000	.010		
	.000	.000	.009		
	.001	.006			
	.000	.003			
	.000	.000			
	.000	.000			
	.003	.000			
	.000	.003			
	.004	.004			
	.000	.010			
I&C Shop (PAB 21')	.000	.011	.003		
	.003	.011	.006		
	.022	.019	.005		
	.015	.000	.000		
	.021	.000			
	.000	.000			
	.000	.001			
	.000	.000			
	.004	.000			
	.005	.001			

(a) Ten second exposure time with Jerome Model 411 Mercury Vapor Analyzer.

6.10 E10 - Asbestos, Insulation, and Other Potential Asbestos-Containing Materials

For the purpose of identifying construction materials with an asbestos constituent, 74 samples were obtained from a variety of structures outside the Protected Area. The structures inside the Protected Area were the subject of a separate investigation prepared by Dennis Pryor and Al Burnham, which is entitled "Asbestos Quantity Survey." The 74 bulk samples were analyzed by Environmental Management, Inc., using Polarized Light

Microscopy, EPA Test Method #600/M4-82-020. The two samples described below showed a 5% asbestos content. The locations and analytical results of all 74 samples are provided in Appendix J.

Table E10
Summary of Detected Asbestos Constituents from Survey Package E10

Laboratory # Sample #	Sample Date	Sample Location	Results
CB-4829 98-34-07	2-3-98	Eaton Farm House - small room opposite kitchen	5% chrysotile 45% cellulose 10% fiberglass 40% calcium carbonate
CB-4879 98-41-27	2-10-98	Eaton Farm House - front bathroom floor tile	5% chrysotile 5% fiberglass 70% calcium carbonate 20% quartz

6.11 E11 - Asbestos-Containing Components

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.12 E12 - Lead Shielding

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.13 E13 - Paint Outside Protected Area

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.14 E14 - Chemistry Laboratory

No sampling was conducted for this survey package; therefore, no sample results are summarized. Mercury vapor results from the laboratory drains are provided in Table E09.

6.15 H01 - Oil and Hazardous Materials Transfer and Handling Areas

Results. Five soil samples were collected from three Geoprobe sampling locations shown in Figure 3. All samples were analyzed for VOCs, SVOCs, TPH/DROs, PCBs, and RCRA metals. Four VOCs, including methylene chloride, acetone, acetonitrile, and toluene were detected. Eighteen SVOCs, most of which are polyaromatic hydrocarbons (PAH), were detected. DROs were detected in one sample. Five metals, including arsenic, barium, chromium, lead, and selenium were detected. No PCB constituents were detected. A summary of detected constituents has been provided in Table H01.

Concentrations Exceeding Trigger Values. Trigger values for samples collected in Survey Package H01 were derived from RAGs for the adult worker published by MDEP. If a constituent did not have an established RAG, the laboratory MDL was utilized for comparison of the analytical results.

One detected VOC, acetonitrile in the surface soil sample collected from Location OH-GP03, exceeded the trigger value. This concentration (110 micrograms per kilogram [ug/kg]) was detected at the CRDL for acetonitrile of 110 ug/kg. Acetonitrile was not detected in other samples from this survey package indicating that its occurrence is limited to this specific location.

Butyl benzyl phthalate was detected in the laboratory blanks and in four of the five soil samples. All sample results are estimated concentrations below the laboratory RL. Phthalated compounds are common laboratory contaminants utilized in various stages of sample preparation. Every reported detection of butyl benzyl phthalate corresponds to its detection in the associated laboratory method blank for these samples, in which it was detected at a concentration of 150 ug/kg. Since all of the concentrations are near the blank concentration, the occurrence of butyl benzyl phthalate in the soil samples is related to laboratory cross contamination and butyl benzyl phthalate is believed to not be present in the environment.

Concentrations of DRO and metals in the soil samples did not exceed the trigger values for the respective constituents.

6.16 H02 - Diesel Oil Tank Unloading Areas

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.17 H03 - Main, North, Spare, and Shut-Down Transformers

Results. Three soil samples were collected from two Geoprobe sampling locations. MT-GP01 and MT-GP02 are shown in Figure 4. Samples were analyzed for PCBs and DROs. In addition to the soil samples, a partial groundwater sample was collected from Location MT-GP02. The partial groundwater sample was analyzed for DROs only.

Six surface soil samples were collected in the area of the Shut-Down Transformers also shown in Figure 4. In addition to the soil samples, water samples were obtained from two transformer sumps (T-SW01 and T-SW02) and analyzed for PCBs and DROs.

Geoprobe soil samples collected did not show the presence of any constituents tested for. Two surface soil samples had detectable quantities of PCBs while three samples contained DROs.

Concentrations Exceeding Trigger Values. No PCB concentrations exceeded trigger values, with the highest concentration being 120 ug/kg for Aroclor-1254 in the sample from location T-SS05. The concentration of DROs in the sample from T-SS14-17-08 contained DROs (67 milligrams per kilogram [mg/kg]) which exceeded the trigger value. However, this concentration is below the adult worker RAG concentration.

6.18 H04 - Roof and Yard Drains, Outfalls Nos. 006, No. 007, and No. 008

Results. Three water samples were collected from two sampling locations (Outfall 006 and Catch Basin CB-7A) shown in Figure 5. These water samples are associated with the plant sewer system and were not compared with guideline values. Water samples were analyzed for VOCs, SVOCs, DROs, PCBs, and RCRA metals. Detected constituents are summarized in Table H04.

Three marine sediment samples were collected from two locations (FB-SD01 and OF08-SD01) also shown in Figure 5. Sediment samples were analyzed for VOCs, SVOCs, DROs, PCBs, and metals. Detected constituents are summarized in Table H04.

Concentrations Exceeding Trigger Values. Trigger values for marine sediment samples collected in Survey Package H04 were derived from RAGs for the trespasser published by MDEP. If a constituent did not have an established RAG, the laboratory MDL was utilized for comparison of the analytical results.

One detected VOC, carbon disulfide in the sediment sample collected from Location Outfall 008, exceeded the trigger value. The estimated concentration (4 ug/kg) was detected below the RL for carbon disulfide of 14 ug/kg. Carbon disulfide was not detected in other samples from this survey package indicating that its occurrence is limited to this specific location.

No DRO concentrations in sediment samples exceeded the trigger values.

Arsenic concentrations in all sediment samples exceeded the trigger value. However, the concentrations were all below the MDEP trespasser concentration of 30 mg/kg.

6.19 H05 - Solid Waste Storage Area

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.20 H06 - Primary and Secondary Side Waste Storage Building Yard Areas

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.21 H07 - Drumming/Decontamination Waste Accumulation Area

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.22 H08 - Diffuser Forebay

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.23 H09 - Refueling Water Storage Tank Area

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.24 H10 - Protected Area Groundwater

Results. Ten groundwater samples were collected from nine sampling locations within the protected area (Figure 6). All samples were analyzed for VOCs, SVOCs, TPH/DROs, PCBs, and RCRA metals. Metals samples were filtered. Ten VOCs, including dichlorodifluoromethane, chloromethene, methylene chloride, trichlorofluoromethane, carbon disulfide, chloroform, 1,1,1-trichloroethane, trichloroethene, tetrachloroethene, and toluene were detected. Detected SVOCs included diethylphthalate, butyl benzyl phthalate, and bis(2-ethylhexyl)phthalate. Six metals (arsenic, barium, cadmium, chromium, lead, and selenium) were detected. DROs and PCBs were not detected in groundwater samples. A summary of detected constituents is provided in Table H10.

Concentrations Exceeding Trigger Values. Trigger values for groundwater samples were derived from federal MCLs and Maine MEG concentrations. If an MCL or MEG did not exist for a constituent, then the MDL was utilized for comparison.

Only SVOC concentrations for butyl benzyl phthalate and bis(2-ethylhexyl)phthalate exceeded trigger levels. Phthalate compounds are common laboratory contaminants utilized in various stages of sample preparation. Every reported detection of butyl benzyl phthalate corresponds to its detection in the associated laboratory method blanks for these

samples except for the detection in BK-1 duplicate. Since all but the BK-1 duplicate sample result concentrations are near the blank concentration, the occurrence of butyl benzyl phthalate in the groundwater samples is related to laboratory cross contamination and butyl benzyl phthalate is believed to not be present in the groundwater. Bis(2-ethylhexyl)phthalate concentrations were also observed in corresponding method blanks; therefore, its occurrence is also attributable to laboratory contamination and it also is believed to not be present in groundwater.

6.25 H11 - Warehouse and Maintenance Yards

Results. Four soil samples were collected and submitted for PCB analysis. No PCBs were detected in these samples.

6.26 H12 - Fire Pond and Yard Area

Results. One sediment sample (FP-SD01-971211) was collected from the fire pond and submitted for RCRA metals analysis. Results of the detected constituents are as follows:

Constituent	Result (mg/kg)
Arsenic	9.3
Barium	120
Chromium	16.5
Lead	12.7
Silver	0.53 B

Since the fire pond is a system and not a natural feature, sediment concentrations were not compared against trigger values. The detected constituents are considered an indication of the constituents in the system.

6.27 H13 - Construction Debris Landfill and Ball Field

Results. Seventeen soil samples were obtained from seven Geoprobe sampling locations shown in Figure 8. All samples, with the exception of one duplicate sample, were analyzed for VOCs, SVOCs, TPH/DROs, PCBs, and metals. Nine VOCs, sixteen SVOCs, and six metals were detected. A summary of detected constituents is provided in Table H13. No DRO or PCB constituents were detected in soils from this survey package.

Concentrations Exceeding Trigger Values. Three VOCs were detected at concentrations that exceeded trigger values: carbon disulfide, acetonitrile, and methyl methacrylate. Constituents that exceeded trigger values were constituents where trigger values were MDL based. MDLs for VOCs are generally much lower than RAG concentrations.

Two SVOC constituent concentrations exceeded the trigger values: 4-methyl phenol and butyl benzyl phthalate. 4-methyl phenol exceeded the trigger value in one sample, slightly above the MDL for the constituent. Butyl benzyl phthalate was detected in seven samples. Phthalate compounds are common laboratory contaminants utilized in various stages of sample preparation. Every reported detection of butyl benzyl phthalate corresponds to its detection in the associated laboratory method blanks for these samples. Since all of the concentrations are near the blank concentration, the occurrence of butyl benzyl phthalate in the soil samples is related to laboratory cross contamination, and butyl benzyl phthalate is believed to not be present in the environment.

Arsenic concentrations in two samples exceeded the trigger value. However, the concentrations were not significantly higher than the trigger value and both were lower than the applicable RAG worker standard. The arsenic concentrations slightly exceeded the background concentration range.

6.28 H14 - Bailey Point

Results. Four soil samples were collected from two Geoprobe soil sampling locations shown in Figure 9. All samples were analyzed for VOCs, SVOCs, TPH/DROs, PCBs, and RCRA metals. VOCs, including methylene chloride, acetone, 2-butanone, trichloroethene, and toluene, were detected. Methylene chloride and acetone were detected in the associated method blanks and are attributable to laboratory cross contamination. These VOCs are believed to not be present in the environment.

SVOCs detected were butyl benzyl phthalate and bis(2-ethylhexyl)phthalate. All SVOC detections were attributable to method blank cross contamination and are believed to not be present in the environment.

Metals detected included arsenic, barium, chromium, lead, and selenium.

Concentrations Exceeding Trigger Values. Trigger values for samples collected in Survey Package H14 were derived from RAGs for the adult worker published by MDEP. If a constituent did not have an established RAG, the laboratory MDL was utilized for comparison of the analytical results

No VOCs exceeded the trigger values. One detection of butyl benzyl phthalate in a sample from BP-GP02 location exceeded the trigger value. Butyl benzyl phthalate was also detected in the associated method blank. Arsenic in a sample from Location BP-

GP01 was slightly over the trigger value. This same concentration was within the range of concentrations for arsenic in background samples.

Generally, metals concentrations were within the range of background, although two out of four barium concentrations exceeded the background range and one lead concentration exceeded the background range.

6.29 H15 - Administration and Parking Areas

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.30 H16 - Roof and Yard Drain Outfalls Nos. 005, 009-012, and N12

Results. Seven sediment samples were collected from the outfall locations shown in Figure 10. All samples, except for those samples collected from Outfalls 012 and N12, were analyzed for VOCs, SVOCs, TPH/DROs, PCBs, and RCRA metals. Five VOCs, including methylene chloride, acetone, carbon disulfide, 2-butanone, and toluene were detected. Nineteen SVOCs, most of which were PAH constituents, were detected. DRO was detected in four of the seven samples. Metals detected included arsenic, barium, chromium, lead, selenium, and mercury. No PCB constituents were detected. A summary of detected constituents is provided in Table H16.

Concentrations Exceeding Trigger Values. Trigger values for samples collected in Survey Package H16 were derived from RAGs for the trespasser published by MDEP. If a constituent did not have an established RAG, the laboratory MDL was utilized for comparison of the analytical results.

One detected VOC, carbon disulfide, in the sediment sample collected from location Outfall 006, exceeded the trigger value. This estimated concentration (2 ug/kg) exceeded the MDL-based trigger value and MDLs for VOCs are generally much lower than RAG concentrations. Carbon disulfide was not detected in other samples from this survey package indicating that its occurrence is limited to this specific location.

SVOCs exceeding the trigger values were dibenzofuran, benzo(a)anthracene, chrysene, benzo(b) fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h) anthracene. Samples with the highest concentrations of PAHs also showed that DRO was present in the samples and three samples had concentrations of DRO which exceeded the trigger values.

Concentrations of metals in the sediment samples did not exceed the trigger values for the respective constituents.

6.31 H17 - Surface Flow Drainage Ditch 005

Results. One soil sample along drainage ditch 005 was collected and submitted for VOCs and TPH/DRO analyses. VOCs detected included methylene chloride, acetone, and toluene. DRO was detected at a concentration of 9 mg/kg. Table H17 provides a summary of detected constituents.

Concentrations Exceeding Trigger Values. No detected constituent concentrations exceeded the trigger values.

6.32 H18 - Roof and Yard Drain Catch Basins 9A-12A

Results. Three water samples were collected from three sampling locations (Catch Basins 9A, 10A, and 11A) shown in Figure 11. These water samples are associated with plant storm drain system and were not compared with trigger values as discussed in Section 6.0. Water samples were analyzed for VOCs, SVOCs, DROs, PCBs, and RCRA metals. Detected constituents are summarized in Table H18.

Three sediment samples were collected from three locations (Catch Basins 9A, 11A, and 12A) shown in Figure 11. The sediment samples are associated with plant storm drain system and, therefore, were not compared with trigger values. Sediment samples were analyzed for VOCs, SVOCs, DROs, PCBs, and metals. Detected constituents are summarized in Table H18.

6.33 H19 - Foxbird Island

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.34 H20 - Low Level Waste Storage Yard

No sampling was conducted for this survey package; therefore, no sample results are summarized.

6.35 H21 - Potential Dry Cask Storage Area

Results. Four soil samples were collected from two sampling locations (DCA-GP01 and DCA-GP02) shown in Figure 12. All samples were analyzed for VOCs, SVOCs, DROs, PCBs, and RCRA metals. Detected constituents are summarized in Table H21.

Four VOCs, including methylene chloride, acetone, 2-butanone, and toluene, were detected. Detected SVOCs included pyrene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, and butyl benzyl phthalate. Arsenic, barium, chromium, lead, and selenium were each detected in soil samples.

Concentrations Exceeding Trigger Values. Trigger values for samples collected in Survey Package H21 were derived from RAGs for the adult worker published by MDEP. If a constituent did not have an established RAG, the laboratory MDL was utilized for comparison of the analytical results.

No detected VOCs exceeded the trigger values.

Butyl benzyl phthalate was detected in one of the four soil samples at an estimated concentration below the laboratory RL. Phthalated compounds are common laboratory contaminants utilized in various stages of sample preparation and their presence is attributable to laboratory cross contamination. The reported detection of butyl benzyl phthalate corresponds to its detection in the associated laboratory method blank for this sample in which it was detected at a concentration of 150 ug/kg. The occurrence of phthalate compounds in the soil samples is related to laboratory cross contamination and phthalates are not believed to be present in the environment.

One detected concentration of arsenic (16.3 mg/kg in the sample from DCA-GP01) exceeded the trigger value. This concentration was below the adult worker RAG for arsenic, and within the range of background samples.

6.36 H22 - Balance of Owner Controlled Area

Results. Three soil samples were collected from three Geoprobe sampling locations shown in Figure 13. All samples were analyzed for VOCs, SVOCs, TPH/DROs, PCBs, and RCRA metals. Six VOCs, including methylene chloride, acetone, 2-butanone, trichloroethene, tetrachloroethene, and toluene were detected. Two SVOCs were detected. Six metals, including arsenic, barium, chromium, lead, selenium, and mercury were detected. No PCB or DRO constituents were detected. A summary of detected constituents has been provided in Table H22.

Concentrations Exceeding Trigger Values. Trigger values for samples collected in Survey Package H22 were derived from RAGs for the adult worker published by MDEP. If a constituent did not have an established RAG, the laboratory MDL was utilized for comparison of the analytical results.

No detected VOCs exceeded the trigger values.

Butyl benzyl phthalate was detected in two of the three soil samples, all at estimated concentrations below the laboratory RL. Phthalated compounds are common laboratory contaminants utilized in various stages of sample preparation and their presence is attributable to laboratory cross contamination. Every reported detection of butyl benzyl phthalate corresponds to its detection in the associated laboratory method blank for these samples, in which it was detected at a concentration of 150 ug/kg. Since all of the concentrations are near the blank concentration, the occurrence of phthalate compounds

in the soil samples is related to laboratory cross contamination and phthalates are not believed to be present in the environment.

Arsenic (21.9 mg/kg) exceeded the trigger value in one sample from EL-GP01. This concentration is below the adult worker guideline of 30 mg/kg for arsenic, and slightly above the range of concentrations in background samples.

6.37 H23 - Switchyard

Results. Four soil samples were collected from four surface soil sampling locations shown in Figure 14. All samples were analyzed for TPH/DROs and PCBs. Only DROs were detected in two samples. A summary of detected constituents has been provided in Table H23.

Concentrations Exceeding Trigger Values. Trigger values for samples collected in Survey Package H23 were derived from RAGs for the adult worker published by MDEP. If a constituent did not have an established RAG, the laboratory MDL was utilized for comparison of the analytical results.

A concentrations of DRO in the soil sample from T-SS10-13-K207-1 was reported at 89 mg/kg which exceeded the trigger value. However, this concentration was below MDEP concentrations for contaminated soil.

6.38 H24 - Background Sampling

Background soil samples were collected from three locations (BG-GP01, BG-GP02, and BG-GP03) shown in Figure 15.

Background groundwater samples were collected at Locations BG-GW01 (Bailey house well water), BG-GW02 (Eaton Farm well water), and BG-GW03 (Edgecomb Inn well water) in the town of Edgecomb. The sampling locations for Eaton Farm and Bailey Farm, are shown in Figure 15.

Off-site sediment samples were collected approximately ten miles northeast and ten miles southwest of the site from the Damariscotta River and New Meadows River. All samples collected were analyzed for RCRA metals. Since results from these samples were utilized to establish representative background concentrations in soil and groundwater and representative concentrations of metals in marine sediments, no screening was performed on these samples. Sample results are reported in Table H24.

7.0 FINDINGS AND CONCLUSIONS

Water Samples. Water samples were collected from various sumps and outfall discharge pipes from around the MY site. Surface water samples were not screened against trigger values. The sample results obtained provide an indication of the composition of the waste or runoff waters handled by these systems.

Two water samples were collected from transformer sumps (Locations T-SW01 and T-SW02). Trace PCBs and DRO constituents were identified in these samples. A summary of detected constituents is provided in Table H03.

Six water samples were collected from four catch basins and one outfall, which included one duplicate sample. Locations are as follows: OF06-SW01, CB-7A, CB-SW03, CB-SW04, and CB-SW05. VOCs, SVOCs, DRO, and metals were detected in these samples. A summary of detected constituents is provided in Tables H04 and H18.

No further sampling is necessary to delineate constituents in water samples. Detected concentrations were low and the detected constituents represent an indication of the waste or runoff waters handled by these systems.

Sediment Samples. Sediment samples were collected at various storm drain outfall locations and catch basins at the MY site. Marine sediment samples collected at outfalls were compared to trigger values while sediments collected from catch basins were not compared to trigger values, since no specific guidelines or standards exist for on-site systems.

Several VOC constituents were detected in sediment samples. Only two detections of carbon disulfide exceeded the MDL-based trigger value. Since the MDLs are much lower than the RAG concentrations and the detected concentrations were estimated, no further sampling is required to delineate VOCs.

SVOCs, mainly PAH constituents, were detected above trigger values in marine sediments near outfalls generally located in the Back River sediments from the site. No further sampling to define the extent of PAH contamination is necessary, as samples collected provide adequate delineation and the marine sediments are not anticipated to be disturbed during decommissioning activities.

DRO concentrations that exceeded trigger values are associated with samples where PAH constituents also exceeded trigger values.

The only metal to exceed trigger values for marine sediments was arsenic. Arsenic concentrations were all below the state of Maine RAGs for arsenic; therefore, no further sampling is necessary to delineate arsenic in sediments at the site.

Soil Samples. Soil Samples were collected at various Geoprobe sampling locations and surface sampling locations. VOCs exceeding the MDL-based trigger values include acetonitrile, carbon

disulfide, and methyl methacrylate. Many of these concentrations exceeding the trigger values are estimated or are low concentrations detected slightly above the detection limit. No further sampling is necessary to delineate VOCs because the concentrations that exceeded trigger values are constituents with MDL-based trigger values.

Butyl benzyl phthalate and 4-methyl phenol are the only SVOCs to exceed MDL-based trigger levels in soil samples. All butyl benzyl phthalate concentrations exceeding trigger values are attributed to blank contamination and are believed to not be present in soils. The only concentration of 4-methyl phenol which exceeds the trigger values was slightly above the trigger level. Since concentrations are low and all but one concentration are associated with laboratory cross contamination, no further sampling is necessary to delineate SVOCs in soil.

The only metal to exceed trigger values for soil samples was arsenic. Arsenic concentrations were below the state of Maine RAGs for arsenic; therefore, no further sampling is necessary to delineate arsenic in soils at the site.

Groundwater. The only constituent exceeding trigger levels in groundwater samples was butyl benzyl phthalate found in the duplicate sample of Well BK-1. Most of the remaining constituents detected are attributable to laboratory contamination as they were observed in the method blanks associated with the samples or were estimated by the laboratory since the reported concentration fell between the CRDL and the MDL. No further sampling is necessary to delineate these constituents in groundwater due to the low number of detections and the low concentrations re ported by the laboratory.

Appendix I contains the following tables:

1. Table 4 Remedial Action Guidelines for Contaminated soils from Maine DEP

2. Table 1 Summary of Remediation Standards for Oil Contaminated Soil and Ground/Water from Maine DEP

3. Summary of State and Federal Drinking Water Guidelines from the Maine Bureau of Health

REFERENCES

LIST OF REFERENCES

R.1 Maine Yankee Atomic Power Company (MYAPCO), January 1998, Defueled Safety Analysis Report.

R.2 Puls, Robert W. and Michael J. Barcelona, December 1995, Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.

R.3 GTS Duratek, January 1998, Hazardous Materials Sampling, Analysis, and Data Management Plan.

R.4 Pryor, Dennis and A. Burnham, December, 1997, "Asbestos Quantity Survey," Team Associates.

R.5 USEPA, 1987, "Data Quality Objectives for Remedial Response Activities."

TABLES

Table H01
Summary of Detected Constituents in Soil Samples from Survey Package H01
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 1 of 2)

IT Sample ID:	OH-GP0198012900	OH-GP0198012904	OH-GP0298012900	OH-GP0398012900	OH-GP0398012908	Remedial Action Guidelines Adult Worker Guideline or MDL	Trigger Values	Background Concentration Range
Lab Sample ID:	16824-008	16824-009	16824-007	16824-005	16824-006			
Sample Location:	OH-GP01	OH-GP01	OH-GP02	OH-GP03	OH-GP03			
Sample Depth:	0 - 6 inches	4 - 5 feet	0 - 6 inches	0 - 6 inches	8 - 10 feet			
Collection Date:	1/29/98	1/29/98	12/29/98	12/29/98	12/29/98			
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent								
Volatiles (Method 8260A)								
Methylene chloride	**5 B**[b]	**6 B**	**5 BJ**[c]	**3 BJ**	**4 BJ**	28,000	14,000	NA[d]
Acetone	**17 BJ**	**14 BJ**	**22 B**	**25 B**	**14 BJ**	635,000	317,500	NA
Acetonitrile	ND (110)[e]	ND(120)	ND (100)	**110**	ND (120)	23.5 (MDL)	23.5	NA
Toluene	**520 D**[f]	**94**	**460 D**	**630 D**	**100**	3,190,000	1,595,000	NA
Semivolatiles (Method 8270)								
Acenaphthylene	ND (350)	ND (380)	ND (690)	ND (350)	**200 J**	325,000	162,500	NA
Dibenzofuran	ND (350)	ND (380)	ND (690)	ND (350)	**73 J**	129 (MDL)	129	NA
Flourene	ND (350)	ND (380)	ND (690)	ND (350)	**140 J**	325,000	162,500	NA
Phenanthrene	ND (350)	ND (380)	ND (690)	ND (350)	**1,000**	325,000	162,500	NA
Anthracene	ND (350)	ND (380)	ND (690)	ND (350)	**190 J**	325,000	162,500	NA
Carbazole	ND (350)	ND (380)	ND (690)	ND (350)	**98 J**	NA	NA	NA
Fluoranthene	**76 J**	ND (380)	**190 J**	ND (350)	**1,300**	325,000	162,500	NA
Pryene	**140 J**	ND (380)	**310 J**	ND (350)	**1,200**	325,000	162,500	NA
Butyl benzyl phthalate	**170 BJ**	**200 BJ**	**310 BJ**	ND (350)	**180 BJ**	82.8 (MDL)	82.8	NA
Benzo(a)anthracene	**96 J**	ND (380)	**210 J**	ND (350)	**560**	7,000	3,500	NA
Chrysene	**110 J**	ND (380)	**240 J**	ND (350)	**600**	7,000	3,500	NA
bis(2-Ethylhexyl)phthalate	**200 BJ**	**290 BJ**	**380 J**	**190 BJ**	**240 BJ**	3,970,000	1,985,000	NA
Benzo(b)fluoranthene	**230 J**	ND (380)	**480 J**	ND (350)	**600**	7,000	3,500	NA
Benzo(k)fluoranthene	ND (350)	ND (380)	ND (690)	ND (350)	**61 J**	7,000	3,500	NA
Benzo(a)pyrene	ND (350)	ND (380)	**200 J**	ND (350)	**490**	7,000	3,500	NA
Indeno(1,2,3,-cd)pyrene	**180 J**	ND (380)	**360 J**	ND (350)	**400**	7,000	3,500	NA
Dibenz(a,h)anthracene	ND (350)	ND (380)	ND (690)	ND (350)	**90 J**	7,000	3,500	NA
Benzo(g,h,i)perylene	ND (350)	ND (380)	ND (690)	ND (350)	**280 J**	325,000	162,500	NA
TPH (Maine Method 4.1.25)	(mg/kg)[g]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	ND (5.3)	ND (5.8)	ND (5.3)	ND (5.3)	**12**	100	50	NA
Metals (EPA Method 6010/7470)								
Arsenic	**12.0**	**10.9**	**9.8**	**10.7**	**7.4**	30	15	10.5 - 16.9
Barium	**153**	**73.5**	**55.9**	**47.9**	**32.5**	10,000	5,000	64.2 - 88.0
Chromium	**22.2**	**32.5**	**22.3**	**19.1**	**20.5**	10,000	5,000	26.1 - 58.1
Lead	**14.7**	**7.6**	**13.5**	**12.2**	**8.3**	700	350	5.2 - 14.1
Selenium	**0.47**	**0.52**	**0.46 B**	**0.53 B**	**0.36**	10,000	5,000	0.33 - 0.95

Table H01

Summary of Detected Constituents in Soil Samples from Survey Package H01

Maine Yankee Atomic Power Plant

Wiscasset, Maine

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value. Guideline values for non-carcinogenic PAH constituents with no remedial action guideline are based on the values available for naphthalene. Guideline values for carcinogenic PAH constituents with no remedial action guideline are based on the values available for benzo(a)pyrene.
3. Background values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.

[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).

[c] J = Estimated value.

[d] NA = Constituents were not analyzed.

[e] ND (110) = indicates that the constituent was not detected at the detection limit in parentheses.

[f] Constituents were detected in a diluted sample.

[g] (mg/kg) = milligrams per kilogram or parts per million.

Summary of Detected Constituents in Soil and Water Samples from Survey Package H03
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 1 of 3)

IT Sample ID:	MTGP01980128	MTGP0298012909	MTGP0298012903	TSS04980205	TSS05980205	TSS06980205	**Remedial Action Guidelines Adult Worker Guideline or MDL**	**Trigger Values**
Lab Sample ID:	16824-001	16824-011	16824-012	16882-006	16882-007	16882-008		
Sample Location:	MT-GP01	MT-GP02	MT-GP02	T-SS04	T-SS05	T-SS06		
Sample Depth:	0 - 6 inches	3 - 4 feet	9 - 10 feet	0 - 6 inches	0 - 6 inches	0 - 6 inches		
Collection Date:	1/28/98	1/29/98	1/29/98	2/5/98	2/5/98	2/5/98		
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent								
PCBs (EPA Method 8080)								
Aroclor-1016	ND (36)[b]	ND (41)	ND (36)	ND (50)	ND (42)	ND (41)	400	200
Aroclor-1221	ND (36)	ND (41)	ND (36)	ND (50)	ND (42)	ND (41)	7200	3600
Aroclor-1232	ND (36)	ND (41)	ND (36)	ND (50)	ND (42)	ND (41)	7200	3600
Aroclor-1242	ND (36)	ND (41)	ND (36)	ND (50)	ND (42)	ND (41)	7200	3600
Aroclor-1248	ND (36)	ND (41)	ND (36)	ND (50)	ND (42)	ND (41)	7200	3600
Aroclor-1254	ND (36)	ND (41)	ND (36)	ND (50)	**120**	ND (41)	7200	3600
Aroclor-1260	ND (36)	ND (41)	ND (36)	ND (50)	ND (42)	ND (41)	7200	3600
TPH (Maine Method 4.1.25)	(mg/kg)[c]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	NA[d]	ND (6.1)	ND (5.3)	NA	NA	NA	100	50

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value.
3. Water samples collected from the transformer sumps do not require comparison to guideline values, however, the values have been provided for the Geoprobe groundwater sample collected. Groundwater guideline values are based on federal Maximum Contaminant Levels (MCL) and state of Maine Maximum Exposure Guidelines (MEG), when available. If an MCL or MEG was not available for a constituent, the method detection limit (MDL) was utilized for comparison.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] ND (36) = indicates that the constituent was not detected at the detection limit in parentheses.
[c] (mg/kg) = milligrams per kilogram or parts per million.
[d] NA = Constituents were not analyzed.
[e] (µg/L) = micrograms per liter or parts per billion.
[f] (mg/L) = milligrams per liter or parts per million.

Summary of Detected Constituents in Soil and Water Samples from Survey Package H03
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	TSS141701	TSS141702	TSS141703	**Remedial Action Guidelines Adult Worker Guideline or MDL**	**Trigger Values**
Lab Sample ID:	16882-013	16882-014	16882-015		
Sample Location:	T-SS14-17-01	T-SS14-17-02	T-SS14-17-03		
Sample Depth:	0 - 6 inches	0 - 6 inches	0 - 6 inches		
Collection Date:	2/5/98	2/5/98	2/5/98		
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent					
PCBs (EPA Method 8080)					
Aroclor-1016	ND (40)	ND (42)	ND (42)	400	200
Aroclor-1221	ND (40)	ND (42)	ND (42)	7200	3600
Aroclor-1232	ND (40)	ND (42)	ND (42)	7200	3600
Aroclor-1242	ND (40)	ND (42)	ND (42)	7200	3600
Aroclor-1248	ND (40)	ND (42)	ND (42)	7200	3600
Aroclor-1254	ND (40)	ND (42)	ND (42)	7200	3600
Aroclor-1260	ND (40)	ND (42)	**47**	7200	3600
TPH (Maine Method 4.1.25)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	**6.1**	**5**	**67**	100	50

Summary of Detected Constituents in Soil and Water Samples from Survey Package H03
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 3 of 3)

IT Sample ID:	TSW01980204	TSW02980204	MTGP02980129GW	MCL, MEG or MDL	Trigger Values
Lab Sample ID:	16882-028	16882-030	16824-010		
Sample Location:	T-SW01	T-SW02	MT-GP02		
Sample Depth:	NA	NA	NA		
Collection Date:	2/5/98	2/5/98	1/29/98		
Units:	(µg/L)[e]	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Constituent					
PCBs (EPA Method 8080)					
Aroclor-1016	ND (1.0)	ND (1.0)	NA	NA	NA
Aroclor-1221	ND (1.0)	ND (1.0)	NA	NA	NA
Aroclor-1232	ND (1.0)	ND (1.0)	NA	NA	NA
Aroclor-1242	ND (1.0)	ND (1.0)	NA	NA	NA
Aroclor-1248	ND (1.0)	3.7	NA	NA	NA
Aroclor-1254	ND (1.0)	4.1	NA	NA	NA
Aroclor-1260	ND (1.0)	2.2	NA	NA	NA
TPH (Maine Method 4.1.25)	(mg/L)[f]	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Diesel Range Organics	**220**	**3.6**	ND (0.05)	0.05 (MEG)	0.05

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value.
3. Water samples collected from the transformer sumps do not require comparison to guideline values, however, the values have been provided for the Geoprobe groundwater sample collected. Groundwater guideline values are based on federal Maximum Contaminant Levels (MCL) and state of Maine Maximum Exposure Guidelines (MEG), when available. If an MCL or MEG was not available for a constituent, the method detection limit (MDL) was utilized for comparison.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] ND (36) = indicates that the constituent was not detected at the detection limit in parentheses.
[c] (mg/kg) = milligrams per kilogram or parts per million.
[d] NA = Constituents were not analyzed.
[e] (µg/L) = micrograms per liter or parts per billion.
[f] (mg/L) = milligrams per liter or parts per million.

Summary of Detected Constituents in Surface Water and Sediment Samples
from Survey Package H04
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	OF06SW01980205	OF06SW01980205-DUP	CB7A980204
Lab Sample ID:	16882-031	16882-032	16882-024
Sample Location:	OF06-SW01	OF06-SW01	CB-7A
Location Description:	Outfall 006	Outfall 006	Catch Basin 7A
Sample Depth:	NA	NA	NA
Collection Date:	2/5/98	2/5/98	2/4/98
Units:	(µg/L)[a]	(µg/L)	(µg/L)
Constituent			
Volatiles (Method 8260)			
Methylene chloride	**0.6 B[b]J[c]**	**0.5 BJ**	**0.9 BJ**
1,1-Dichloroethene	**2**	**3**	ND (1)[d]
1,1-Dichloroethane	**4**	**4**	ND (1)
Chloroform	ND (1)	**0.7 J**	ND (1)
1,1,1-Trichloroethane	**38**	**40**	ND (1)
Carbon tetrachloride	ND (1)	**.05 J**	ND (1)
Trichloroethene	ND (1)	**.05 J**	ND (1)
Benzene	ND (1)	**.05 J**	ND (1)
Tetrachloroethene	ND (1)	**.05 J**	ND (1)
Toluene	**0.8 J**	**3**	**0.9 BJ**
Chlorobenzene	ND (1)	**0.6 J**	ND (1)
Metals (EPA Method 6010/7470)			
Barium	**16.0 B**	**16.3 B**	**15.9 B**
Chromium	ND (10)	ND (10)	**0.87 B**

See notes on Page 3

Table H04
Summary of Detected Constituents in Surface Water and Sediment Samples
from Survey Package H04
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	FBSD01980205	OF08SD01980205	OF08SD01980205	**Remedial Action Guidelines Trespasser Guideline or MDL**	**Trigger Values**	**Offsite Marine Sediment Sample Concentration Range**
Lab Sample ID:	16882-041	16882-039	16882-040			
Sample Location:	FB-SD01	OF08-SD01	OF08-SD01			
Location Description:	Forebay	Outfall 008	Outfall 008			
Sample Depth:	0 - 6 inches	0 - 6 inches	0 - 6 inches			
Collection Date:	2/5/98	2/5/98	2/5/98			
Units:	(µg/kg)[e]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(mg/kg)
Constituent						
Volatiles (Method 8260A)						
Methylene chloride	**2 BJ**	**3 BJ**	**3 BJ**	275,000	137,500	NA[f]
Acetone	**27 BJ**	**48 BJ**	**34 BJ**	3,330,000	1,665,000	NA
Carbon disulfide	ND (7)	**4J**	ND (14)	0.74 (MDL)	0.74	NA
2-Butanone (MEK)	ND (7)	ND (14)	**3 J**	10,000,000	5,000,000	NA
Toluene	**3 J**	ND (14)	**4 J**	10,000,000	5,000,000	NA
TPH (Maine Method 4.1.25)	(mg/kg)[g]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	**40**	**21**	**23**	100	50	NA
Metals (EPA Method 6010/7470)						
Arsenic	**20.0**	**17.8**	**28.9**	30	15	2.1 - 6.5
Barium	**54.4**	**44.3**	**47.9 B**	10,000	5,000	60.3 - 76.2
Chromium	**45.0**	**52.4**	**60.0**	5,350	2,675	7.6 - 37.4
Lead	**19.5**	**36.2**	**43.5**	700	350	3.2 - 26.4
Selenium	**1.1**	**1.0**	**1.7**	5,350	2,675	ND[h]
Mercury	**0.11 B**	**0.2 B**	**0.29 B**	320	160	ND

See notes on Page 3

Table H04

Summary of Detected Constituents in Surface Water and Sediment Samples
from Survey Package H04
Maine Yankee Atomic Power Plant
Wiscasset, Maine

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Trespasser Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value. Guideline values for non-carcinogenic PAH constituents with no remedial action guideline are based on the values available for naphthalene. Guideline values for carcinogenic PAH constituents with no remedial action guideline are based on the values available for benzo(a)pyrene.
3. Offsite sediment values are taken from data obtained under Survey Package H024.

[a] (µg/L) = micrograms per liter or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] ND (1) = indicates that the constituent was not detected at the detection limit in parentheses
[e] (µg/kg) = micrograms per kilogram or parts per billion.
[f] NA = Constituents were not analyzed.
[g] (mg/kg) = milligrams per kilogram or parts per million.
[h] ND = The constituent was not detected in off-site sediment samples.

Table H10

Summary of Detected Constituents in Groundwater Samples from Survey Package H10
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	B202-980201	B203A-980202	B204A980205	B205-980202	B206-980202	BK1-980203	BK2-980203	MCL, MEG or MDL Guideline Value		Trigger Value	Background Concentration Range
Lab Sample ID:	16838-029	16842-003	16882-021	16842-001	16842-002	16865-001	16865-002				
Monitoring Well:	B-202	B-203A	B-204A	B-205	B-206	BK-1	BK-1				
Collection Date:	2/1/98	2/2/98	2/5/98	2/2/98	2/2/98	2/3/98	2/3/98				
Units:	(µg/L)[a]	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)	(µg/L)
Constituent											
Volatiles (Method EPA 8260)											
Dichlorodifluoromethane	ND (2)[b]	ND (2)	ND (2)	ND (2)	ND (2)	**1.0 J**[c]	**1.0 J**	1000	(MEG)	500	NA[d]
Chloromethane	ND (2)	ND (2)	ND (2)	ND (2)	**0.3 J**	ND (2)	ND (2)	3	(MEG)	1.5	NA
Methylene chloride	**0.8 B[c]J**	**0.9 BJ**	**1.0**	**0.8 J**	**0.9 BJ**	**1.0 B**	**1.0 B**	5	(MCL)	2.5	NA
Trichlorofluoromethane	**0.6 J**	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	2	(MDL)	2	NA
Carbon disulfide	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	**0.2 J**	ND (1)	0.74	(MDL)	0.74	NA
Chloroform	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	100	(MCL)	50	NA
1,1,1-Trichloroethane	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	200	(MEG)/(MCL)	100	NA
Trichloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	5	(MEG)/(MCL)	2.5	NA
Tetrachloroethene	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	3	(MEG)	1.5	NA
Toluene	**1.0**	**2.0**	**2.0**	**2.0**	**4.0**	ND (1)	ND (1)	1000	(MCL)	500	NA
Semi-volatiles (Method EPA 8270)											
Diethylphthalate	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	5000	(MEG)	2500	NA
Butyl benzyl phthalate	ND (10)	ND (10)	**2 J**	ND (10)	**13 B**	ND (10)	**13**	2.2	(MDL)	2.2	NA
Bis(2-ethylhexyl)phthalate	**12 B**	**12 B**	**4 BJ**	ND (10)	**13 B**	ND (10)	**12 B**	6	(MCL)	3	NA
Metals (EPA 6010/7470)											
Arsenic	ND (10.0)	ND (10.0)	**4.1 B**	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	50	(MCL)	25	ND[f]
Barium	**37.4 B**	**16.9 B**	**24.0 B**	**3.2 B**	**4.7 B**	**19.8 B**	**20 B**	1500	(MEG)	750	2.6 - 21.3
Cadmium	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	**0.41 B**	5	(MEG)/(MCL)	2.5	ND
Chromium	ND (10.0)	**0.79 B**	ND (10.0)	**0.82 B**	**0.79 B**	ND (10)	**0.67 B**	100	(MEG)/(MCL)	50	ND
Lead	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	**1.1 B**	ND (3.0)	ND (3.0)	15	(MCL)	7.5	ND (3.0) - 1.8
Selenium	ND (5.0)	ND (5.0)	**2.4 B**	ND (5.0)	ND (5.0)	**2.4 B**	ND (5.0)	10	(MEG)	5	ND

See notes on Page 3.

Table H10

Summary of Detected Constituents in Groundwater Samples from Survey Package H10
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	MW100980205	CA1980204	CS1980204	MCL, MEG or MDL Guideline Value		Trigger Value	Background Concentration Range
Lab Sample ID:	16882-033	16882-025	16882-026/-049				
Monitoring Well:	MW-100	Chromate Abatement Well (CA-1)	Containment Sump (CS-1)				
Collection Date:	2/5/98	2/4/98	2/4/98				
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)	(µg/L)
Constituent							
Volatiles (Method EPA 8260)							
Dichlorodifluoromethane	ND (2)	ND (2)	ND (2)	1000	(MEG)	500	NA[d]
Chloromethane	ND (2)	ND (2)	ND (2)	3	(MEG)	1.5	NA
Methylene chloride	**0.5 BJ**	**0.9 BJ**	**0.9 BJ**	5	(MCL)	2.5	NA
Trichlorofluoromethane	ND (2)	ND (2)	ND (2)	2	(MDL)	2	NA
Carbon disulfide	ND (1)	ND (1)	ND (1)	0.74	(MDL)	0.74	NA
Chloroform	ND (1)	**0.3 J**	ND (1)	100	(MCL)	50	NA
1,1,1-Trichloroethane	**0.5 J**	ND (1)	ND (1)	200	(MEG)/(MCL)	100	NA
Trichloroethene	ND (1)	**0.3 J**	ND (1)	5	(MEG)/(MCL)	2.5	NA
Tetrachloroethene	ND (1)	**0.3 J**	ND (1)	3	(MEG)	1.5	NA
Toluene	**1.0**	**1.0**	**2.0**	1000	(MCL)	500	NA
Semi-volatiles (Method EPA 8270)							
Diethylphthalate	ND (10)	ND (10)	**1 J**	5000	(MEG)	2500	NA
Butyl benzyl phthalate	ND (10)	ND (10)	ND (10)	2.2	(MDL)	2.2	NA
Bis(2-ethylhexyl)phthalate	ND (10)	ND (10)	**13 B**	6	(MCL)	3	NA
Metals (EPA 6010/7470)							
Arsenic	ND (10.0)	ND (10.0)	ND (10)	50	(MCL)	25	ND[f]
Barium	**39.6 B**	**5.5 B**	**11.5 B**	1500	(MEG)	750	2.6 - 21.3
Cadmium	ND (5.0)	ND (5.0)	ND (5.0)	5	(MEG)/(MCL)	2.5	ND
Chromium	ND (10.0)	**1.3 B**	**0.75 B**	100	(MEG)/(MCL)	50	ND
Lead	ND (3.0)	ND (3.0)	ND (3.0)	15	(MCL)	7.5	ND (3.0) - 1.8
Selenium	ND (5.0)	ND (5.0)	ND (5.0)	10	(MEG)	5	ND

See notes on Page 3.

Summary of Detected Constituents in Groundwater Samples from Survey Package H10
Maine Yankee Atomic Power Plant
Wiscasset, Maine

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value. The guideline value for chromium is the value given for hexavalent chromium.
3. Samples analyzed for metals were filtered in the field. Metal constituent concentrations reported are dissolved phase concentrations.
4. Background values are taken from data obtained under Survey Package H024.

[a] (µg/L) = micrograms per liter or parts per billion.
[b] ND (20) = indicates that the constituent was not detected at the detection limit in parentheses
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[f] ND = The constituents were not detected in the background samples.

Table H13
Summary of Detected Constituents in Soil Samples from Survey Package H13
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 1 of 5)

IT Sample ID:	CFGP0198020100	CFGP0198020100-DUP	CFGP0198020108	CFGP0298020100	CFGP0298020109	Remedial Action Guidelines Adult Worker Guideline or MDL	Trigger Values	Background Concentration Range
Lab Sample ID:	16838-022	16838-028	16838-023	16838-019	16838-020			
Sample Location:	CFGP01	CFGP01	CFGP01	CFGP02	CFGP02			
Sample Depth:	0 - 6 inches	0 - 6 inches	8 - 9 feet	0 - 6 inches	9 - 10 feet			
Collection Date:	2/1/98	2/1/98	2/1/98	2/1/98	2/1/98			
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent								
Volatiles (Method 8260A)								
Methylene chloride	**14 B**[b]	NA[c]	**10 B**	**7 B**	**6 BJ**[d]	28,000	14,000	NA
Acetone	**38 B**	NA	**23 BJ**	**16 BJ**	**31 B**	635,000	317,500	NA
Carbon disulfide	ND (8)[e]	NA	**1 J**	ND (7)	ND (6)	0.74 (MDL)	0.74	NA
Acetonitrile	**42 J**	NA	**26 J**	ND (140)	ND (130)	23.5 (MDL)	23.5	NA
2- Butanone (MEK)	ND (31)	NA	ND (24)	**2 J**	**3 J**	10,000,000	5,000,000	NA
Methyl methacrylate	ND (8)	NA	ND (6)	ND (7)	ND (6)	0.92 (MDL)	0.92	NA
Trichloroethene	**6 BJ**	NA	**5 BJ**	ND (7)	ND (6)	40,000	20,000	NA
Tetrachloroethene	**2 J**	NA	**3 J**	ND (7)	ND (6)	7,000	3,500	NA
Toluene	**100**	NA	**30**	**98**	**2 J**	3,190,000	1,595,000	NA
Semivolatiles (Method 8270)								
4-Methylphenol	**190 J**	NA	ND (400)	ND (440)	ND (420)	170 (MDL)	170	NA
Fluoranthene	ND (520)	NA	ND (400)	ND (440)	ND (420)	325,000	162,500	NA
Anthracene	ND (520)	NA	ND (400)	ND (440)	ND (420)	325,000	162,500	NA
Phenanthrene	ND (520)	NA	ND (400)	ND (440)	ND (420)	325,000	162,500	NA
2-Methylphenol	ND (520)	NA	ND (400)	ND (440)	ND (420)	160 (MDL)	160	NA
Acenaphthylene	ND (520)	NA	ND (400)	ND (440)	ND (420)	325,000	162,500	NA
Benzo(a)anthracene	**120 J**	NA	ND (400)	**56 J**	ND (420)	7,000	3,500	NA
Butylbenzylphthalate	**220 BJ**	NA	**230 BJ**	ND (440)	**180 BJ**	82.8 (MDL)	82.8	NA
Chrysene	**140 J**	NA	ND (400)	ND (440)	ND (420)	7,000	3,500	NA
bis(2-ethylhexyl)phthalate	**370 BJ**	NA	**400 B**	**220 BJ**	**220 BJ**	3,970,000	1,985,000	NA
Benzo(b)fluoranthene	**330 J**	NA	ND (400)	ND (440)	ND (420)	7,000	3,500	NA
Pyrene	**220 J**	NA	ND (400)	**98 J**	ND (420)	325,000	162,500	NA
Benzo(a)pyrene	**110 J**	NA	**49 J**	**46 J**	ND (420)	7,000	3,500	NA
Indeno(1,2,3-cd)pyrene	ND (520)	NA	ND (400)	ND (440)	ND (420)	7,000	3,500	NA
Dibenz(a,h)anthracene	ND (520)	NA	ND (400)	ND (440)	ND (420)	7,000	3,500	NA
Benzo(g,h,i)perylene	**95 J**	NA	ND (400)	ND (440)	ND (420)	325,000	162,500	NA
Metals (EPA Method 6010/7470)	(mg/kg)[f]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	**7.6**	**8.3**	**5.7**	**10.8**	**9.5**	30	15	10.5 - 16.9
Barium	**51.8**	**52.8**	**62.6**	**70.7**	**74.8**	10,000	5,000	64.2 - 88.0
Chromium	**30.5**	**30**	**24**	**39**	**36.4**	10,000	5,000	26.1 - 58.1
Lead	**9.6**	**9.9**	**6.5**	**10.6**	**9.1**	700	350	5.2 - 14.1
Selenium	**0.60 B**	ND (0.70)	**0.48 B**	**0.42 B**	ND (0.64)	10,000	5,000	0.33 - 0.95
Silver	ND (1.6)	ND (1.4)	ND (1.2)	ND (1.4)	ND (1.3)	10,000	5,000	ND[g]

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Table H13
Summary of Detected Constituents in Soil Samples from Survey Package H13
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	CFGP0298020109-DUP	CFGP0398020100	CFGP0398020109	CFGP0398020109-DUP	CFGP0498013100	Remedial Action Guidelines Adult Worker Guideline or MDL	Trigger Values	Background Concentration Range
Lab Sample ID:	16838-021	16838-016	16838-017	16838-018	16838-008			
Sample Location:	CFGP02	CFGP03	CFGP03	CFGP03	CFGP04			
Sample Depth:	9 - 10 feet	0 - 6 inches	9 - 10 feet	9 - 10 feet	0 - 6 inches			
Collection Date:	2/1/98	2/1/98	2/1/98	2/1/98	1/31/98			
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent								
Volatiles (Method 8260A)								
Methylene chloride	**14 B**	**3 BJ**	**5 BJ**	**6 BJ**	**5 BJ**	28,000	14,000	NA
Acetone	**22 BJ**	**23 BJ**	**30 B**	**33 B**	**58 B**	635,000	317,500	NA
Carbon disulfide	ND (6)	ND (6)	ND (6)	ND (7)	ND (6)	0.74 (MDL)	0.74	NA
Acetonitrile	**55 J**	ND (120)	ND (110)	ND (7)	ND (6)	23.5 (MDL)	23.5	NA
2- Butanone (MEK)	ND (6)	ND (6)	**2 J**	**4 J**	**2 J**	10,000,000	5,000,000	NA
Methyl methacrylate	**4 J**	ND (6)	ND (6)	ND (7)	ND (6)	0.92 (MDL)	0.92	NA
Trichloroethene	**6 B**	ND (6)	ND (6)	ND (7)	ND (6)	40,000	20,000	NA
Tetrachloroethene	**2 J**	ND (6)	ND (6)	ND (7)	ND(6)	7,000	3,500	NA
Toluene	**32.0**	ND (6)	**4 J**	**92**	**35**	3,190,000	1,595,000	NA
Semivolatiles (Method 8270)								
4-Methylphenol	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	170 (MDL)	170	NA
Fluoranthene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	325,000	162,500	NA
Anthracene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	325,000	162,500	NA
Phenanthrene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	325,000	162,500	NA
2-Methylphenol	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	160 (MDL)	160	NA
Acenaphthylene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	325,000	162,500	NA
Benzo(a)anthracene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	7,000	3,500	NA
Butylbenzylphthalate	**170 BJ**	ND (400)	ND (380)	**180 BJ**	ND (370)	82.8 (MDL)	82.8	NA
Chrysene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	7,000	3,500	NA
bis(2-ethylhexyl)phthalate	**220 BJ**	ND (400)	**170 BJ**	**220 BJ**	**220 BJ**	3,970,000	1,985,000	NA
Benzo(b)fluoranthene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	7,000	3,500	NA
Pyrene	ND (390)	ND (400)	ND (380)	ND (430)	**120 J**	325,000	162,500	NA
Benzo(a)pyrene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	7,000	3,500	NA
Indeno(1,2,3-cd)pyrene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	7,000	3,500	NA
Dibenz(a,h)anthracene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	7,000	3,500	NA
Benzo(g,h,i)perylene	ND (390)	ND (400)	ND (380)	ND (430)	ND (370)	325,000	162,500	NA
Metals (EPA Method 6010/7470)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	**8.6**	**8.8**	**9**	**17.7**	**9.1**	30	15	10.5 - 16.9
Barium	**62.7**	**84.7**	**68**	**100**	**56**	10,000	5,000	64.2 - 88.0
Chromium	**32.6**	**19.2**	**38.2**	**66.7**	**24.6**	10,000	5,000	26.1 - 58.1
Lead	**9.8**	**6.9**	**8.8**	**12.8**	**9.9**	700	350	5.2 - 14.1
Selenium	**0.43 B**	**0.34**	**0.42 B**	**0.47 B**	**0.29**	10,000	5,000	0.33 - 0.95
Silver	ND (1.2)	ND (1.2)	ND (1.1)	**0.13 B**	ND (1.1)	10,000	5,000	ND

Summary of Detected Constituents in Soil Samples from Survey Package H13
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	CFGP0498013104	CFGP0598013100	CFGP0598013111	CFGP0698020100	CFGP0698020104	Remedial Action Guidelines Adult Worker Guideline or MDL	Trigger Values	Background Concentration Range
Lab Sample ID:	16838-009	16838-006	16838-007	16838-026	16838-027			
Sample Location:	CFGP04	CFGP05	CFGP05	CFGP06	CFGP06			
Sample Depth:	9 - 10 feet	0 - 6 inches	11 - 12 feet	0 - 6 inches	4 - 5 feet			
Collection Date:	1/31/98	1/31/98	1/31/98	2/1/98	2/1/98			
Units:	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent								
Volatiles (Method 8260A)								
Methylene chloride	**10 B**	**10 B**	**10 B**	**10 B**	**8 B**	28,000	14,000	NA
Acetone	**58 B**	**20 BJ**	**99 B**	**20 BJ**	**72 B**	635,000	317,500	NA
Carbon disulfide	**3 J**	ND (5.9)	**12**	ND (8)	**7**	0.74 (MDL)	0.74	NA
Acetonitrile	ND (7)	ND (120)	ND (170)	**25 J**	**33 J**	23.5 (MDL)	23.5	NA
2- Butanone (MEK)	**9 J**	ND(24)	**25 J**	ND (32)	**18 J**	10,000,000	5,000,000	NA
Methyl methacrylate	ND (7)	ND (5.9)	ND (9)	ND (8)	ND (6)	0.92 (MDL)	0.92	NA
Trichloroethene	ND (7)	ND (5.9)	**5 BJ**	**2 BJ**	**2 BJ**	40,000	20,000	NA
Tetrachloroethene	ND (7)	ND (5.9)	**3 J**	ND (8)	ND (6)	7,000	3,500	NA
Toluene	**9**	ND (5.9)	**17**	**120**	**260 D**	3,190,000	1,595,000	NA
Semivolatiles (Method 8270)								
4-Methylphenol	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	170 (MDL)	170	NA
Fluoranthene	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	325,000	162,500	NA
Anthracene	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	325,000	162,500	NA
Phenanthrene	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	325,000	162,500	NA
2-Methylphenol	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	160 (MDL)	160	NA
Acenaphthylene	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	325,000	162,500	NA
Benzo(a)anthracene	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	7,000	3,500	NA
Butylbenzylphthalate	ND (460)	ND (390)	**280 BJ**	ND (520)	ND (420)	82.8 (MDL)	82.8	NA
Chrysene	ND (460)	ND (390)	ND (570)	**560**	ND (420)	7,000	3,500	NA
bis(2-ethylhexyl)phthalate	**320 BJ**	**190 BJ**	**290 BJ**	**680 B**	**530 B**	3,970,000	1,985,000	NA
Benzo(b)fluoranthene	ND (460)	ND (390)	ND (570)	**230 J**	ND (420)	7,000	3,500	NA
Pyrene	ND (460)	ND (390)	ND (570)	**610**	ND (420)	325,000	162,500	NA
Benzo(a)pyrene	ND (460)	ND (390)	ND (570)	**63 J**	**690**	7,000	3,500	NA
Indeno(1,2,3-cd)pyrene	ND (460)	ND (390)	ND (570)	**290 J**	ND (420)	7,000	3,500	NA
Dibenz(a,h)anthracene	ND (460)	ND (390)	ND (570)	ND (520)	ND (420)	7,000	3,500	NA
Benzo(g,h,i)perylene	ND (460)	ND (390)	ND (570)	**79 J**	ND (420)	325,000	162,500	NA
Metals (EPA Method 6010/7470)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	**23.3**	**12.3**	**14**	**10.2**	**1.9**	30	15	10.5 - 16.9
Barium	**59.8**	**78.9**	**59.7**	**60.9**	**15.5**	10,000	5,000	64.2 - 88.0
Chromium	**48.6**	**44**	**55.7**	**36.1**	**10.7**	10,000	5,000	26.1 - 58.1
Lead	**12.1**	**10.4**	**14.6**	**11.5**	**2.5**	700	350	5.2 - 14.1
Selenium	**0.99**	**0.38 B**	**1.1**	**0.87**	ND (0.64)	10,000	5,000	0.33 - 0.95
Silver	ND (1.4)	ND (1.2)	ND (1.7)	ND (1.6)	ND (1.3)	10,000	5,000	ND

Table H13
Summary of Detected Constituents in Soil Samples from Survey Package H13
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 4 of 5)

IT Sample ID: Lab Sample ID: Sample Location: Sample Depth: Collection Date: Units:	CFGP0798020100 16838-024 CFGP07 0 - 6 inches 2/1/98 (µg/kg)	CFGP0798020108 16838-025 CFGP07 8 - 9 feet 2/1/98 (µg/kg)	**Remedial Action Guidelines Adult Worker Guideline or MDL** (µg/kg)	**Trigger Values** (µg/kg)	**Background Concentration Range** (µg/kg)
Constituent					
Volatiles (Method 8260A)					
Methylene chloride	**9 B**	**10 B**	28,000	14,000	NA
Acetone	ND (24)	**37 B**	635,000	317,500	NA
Carbon disulfide	ND (6)	ND (6)	0.74 (MDL)	0.74	NA
Acetonitrile	ND (120)	ND (120)	23.5 (MDL)	23.5	NA
2- Butanone (MEK)	ND (24)	**4 J**	10,000,000	5,000,000	NA
Methyl methacrylate	ND (6)	ND (6)	0.92 (MDL)	0.92	NA
Trichloroethene	**2 BJ**	ND (6)	40,000	20,000	NA
Tetrachloroethene	ND (6)	ND (6)	7,000	3,500	NA
Toluene	**500 DJ**	**5 J**	3,190,000	1,595,000	NA
Semivolatiles (Method 8270)					
4-Methylphenol	ND (780)	ND (390)	170 (MDL)	170	NA
Fluoranthene	**1600**	ND (390)	325,000	162,500	NA
Anthracene	**300 J**	ND (390)	325,000	162,500	NA
Phenanthrene	**1100**	ND (390)	325,000	162,500	NA
2-Methylphenol	ND (780)	**80 J**	160 (MDL)	160	NA
Acenaphthylene	**220 J**	ND (390)	325,000	162,500	NA
Benzo(a)anthracene	**1400**	ND (390)	7,000	3,500	NA
Butylbenzylphthalate	**1000 B**	ND (390)	82.8 (MDL)	82.8	NA
Chrysene	**1300**	ND (390)	7,000	3,500	NA
bis(2-ethylhexyl)phthalate	**1000 B**	**510 B**	3,970,000	1,985,000	NA
Benzo(b)fluoranthene	**1300**	ND (390)	7,000	3,500	NA
Pyrene	**1900**	ND (390)	325,000	162,500	NA
Benzo(a)pyrene	**910**	ND (390)	7,000	3,500	NA
Indeno(1,2,3-cd)pyrene	**700 J**	ND (390)	7,000	3,500	NA
Dibenz(a,h)anthracene	**120 J**	ND (390)	7,000	3,500	NA
Benzo(g,h,i)perylene	**400 J**	ND (390)	325,000	162,500	NA
Metals (EPA Method 6010/7470)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	**5.8**	**9.3**	30	15	10.5 - 16.9
Barium	**66.6**	**62.6**	10,000	5,000	64.2 - 88.0
Chromium	**37.4**	**34.2**	10,000	5,000	26.1 - 58.1
Lead	**10.3**	**8.0**	700	350	5.2 - 14.1
Selenium	**0.43 B**	**0.41**	10,000	5,000	0.33 - 0.95
Silver	ND (1.2)	ND (1.2)	10,000	5,000	ND

Table H13
Summary of Detected Constituents in Soil Samples from Survey Package H13
Maine Yankee Atomic Power Plant
Wiscasset, Maine

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value. Guideline values for non-carcinogenic PAH constituents with no remedial action guideline are based on the values available for naphthalene. Guideline values for carcinogenic PAH constituents with no remedial action guideline are based on the values available for benzo(a)pyrene.
3. Background values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] NA = Constituents were not analyzed.
[d] J = Estimated value.
[e] ND (24) = indicates that the constituent was not detected at the detection limit in parentheses
[f] (mg/kg) = milligrams per kilogram or parts per million.
[g] ND = The constituents were not detected in the background samples.

Table H14

Summary of Detected Constituents in Soil Samples from Survey Package H14
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 1 of 1)

IT Sample ID:	BPGP019801300	BPGP0198013009	BPGP029801300	BPGP0298013014	**Remedial Action Guidelines Adult Worker Guideline or MDL**	**Trigger Value**	**Backgroud Concentration Range**
Lab Sample ID:	16838-010	16838-011	16838-012	16838-013			
Sample Location:	BP-GP01	BP-GP01	BP-GP02	BP-GP02			
Sample Depth:	0 - 6 inches	9 - 10 feet	0 - 6 inches	14 - 15 feet			
Collection Date:	1/30/98	1/30/98	1/30/98	1/30/98			
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent							
Volatiles (Method 8260A)							
Methylene chloride	**4 B[b]J[c]**	**3 BJ**	**9 B**	**8 B**	28,000	14,000	NA[d]
Acetone	**22 BJ**	**22 BJ**	**95 B**	**16 BJ**	635,000	317,500	NA
2-Butanone (MEK)	ND (24)[e]	ND (24)	**10 J**	ND (25)	10,000,000	5,000,000	NA
Trichloroethene	**4 J**	ND (6)	ND (6)	ND (6)	40,000	20,000	NA
Toluene	**20**	**4 J**	**44**	**54**	3,190,000	1,595,000	NA
Semivolatiles (Method 8270)							
Butylbenzylphthalate	ND (390)	ND (390)	ND (410)	**170 BJ**	82.8 (MDL)	82.8	NA
bis(2-Ethylhexyl)phthalate	ND (390)	**200 BJ**	**200 BJ**	**210 BJ**	3,970,000	1,985,000	NA
Metals (EPA Method 6010/7470)	(mg/kg)[f]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	**15.3**	**12.6**	**10.7**	**14.2**	30	15	10.5-16.9
Barium	**102.0**	**70.3**	**75.8**	**94.4**	10,000	5,000	64.2-88.0
Chromium	**56.7**	**38.5**	**43.4**	**57.9**	10,000	5,000	26.1-58.1
Lead	**12.5**	**9.7**	**16.1**	**12.1**	700	350	5.2-14.1
Selenium	**1**	**0.29 B**	**0.75**	**0.90**	10,000	5,000	0.33-0.95

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value.
3. Background values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] ND (24) = indicates that the constituent was not detected at the detection limit in parentheses
[f] (mg/kg) = milligrams per kilogram or parts per million.

Table H16

Summary of Detected Constituents in Sediment Samples from Survey Package H16

Maine Yankee Atomic Power Plant

Wiscasset, Maine

IT Sample ID:	OF05SD01980205	OF05SD02980205	OF09SD01980205	OF10SD01980205	OF11SD01980205	Remedial Action Guidelines Trespasser Guideline or MDL	Trigger Values	Offsite Sample Concentration Range
Lab Sample ID:	16882-042	16882-043	16882-038	16882-037	16882-036			
Sample Location:	OF05-SD01	OF05-SD02	OF09-SD01	OF10-SD01	OF11-SD01			
Location Description:	Outfall No. 006	Outfall No. 005	Outfall No. 009	Outfall No. 010	Outfall No. 011			
Sample Depth:	0 - 6 inches	0 - 6 inches	0 - 6 inches	0 - 6 inches	0 - 6 inches			
Collection Date:	2/5/98	2/5/98	2/5/98	2/5/98	2/5/98			
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent								
Volatiles (Method 8260A)								
Methylene chloride	2 B[b]J[c]	40 B	1 BJ	1 BJ	4 BJ	275,000	137,500	NA[d]
Acetone	20 BJ	7 BJ	18 BJ	11 BJ	11 BJ	3,330,000	1,665,000	NA
Carbon disulfide	2 J	ND (6)[e]	ND (6)	ND (5)	ND (6)	0.74 (MDL)	0.74	NA
2-Butanone (MEK)	ND (29)	4 J	2 J	ND (22)	ND (26)	10,000,000	5,000,000	NA
Toluene	2 J	4 J	6 J	47	2 J	10,000,000	5,000,000	NA
Semivolatiles (Method 8270)								
Naphthalene	ND (480)	ND (410)	4300	510	ND (430)	1,710,000	855,000	NA
2-Methylnaphthalene	ND (480)	ND (410)	4200	340 J	ND (430)	1,710,000	855,000	NA
Acenaphthene	ND (480)	ND (410)	16000	640	220 J	1,710,000	855,000	NA
Dibenzofuran	ND (480)	ND (410)	11000	620	81 J	129 (MDL)	129	NA
Fluorene	ND (480)	ND (410)	17000	800	240 J	1,710,000	855,000	NA
Phenanthrene	ND (480)	210 J	140000 D[f]	6900 D	5000 E[g]	1,710,000	855,000	NA
Anthracene	ND (480)	ND (410)	27000	930	520	1,710,000	855,000	NA
Carbazole	ND (480)	ND (410)	19000	930	730	NA	NA	NA
Fluoranthene	ND (480)	270 J	190000 D	7600 D	9500 D	1,710,000	855,000	NA
Pyrene	550	580	130000 D	5000 D	6600 D	1,710,000	855,000	NA
Benzo(a)anthracene	ND (480)	530	63000 D	3100 D	2500	9,000	4,500	NA
Chrysene	ND (480)	490	63000 D	3100 D	2700	9,000	4,500	NA
bis(2-Ethylhexyl)phthalate	ND (480)	520	5300	ND (360)	800	4,460,000	2,230,000	NA
Benzo(b)fluoranthene	ND (480)	250 J	56000 D	2800	5200 D	9,000	4,500	NA
Benzo(k)fluoranthene	ND (480)	ND (410)	19000	1100	1500	9,000	4,500	NA
Benzo(a)pyrene	ND (480)	120 J	68000	2200	3900 D	9,000	4,500	NA
Indeno(1,2,3-cd)pyrene	ND (480)	250 J	21000	1100	1900	9,000	4,500	NA
Dibenz(a,h)anthracene	ND (480)	ND (410)	5700	270 J	400 J	9,000	4,500	NA
Benzo(g,h,i)perylene	ND (480)	85 J	17000	800	1900	1,710,000	855,000	NA
TPH (Maine Method 4.1.25)	(mg/kg)[h]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	8.7	ND (6.2)	1500	250	80	100	50	NA
Metals (EPA Method 6010/7470)								
Arsenic	4.5	5.4	6.9	13.1	11.4	30	15	2.1 - 6.5
Barium	12.6 B	27.5	43.4	71.3	43.9	10,000	5,000	60.3 - 76.2
Chromium	14.6	19.2	34.7	42.4	21.9	5,350	2,675	7.6 - 37.4
Lead	7.7	14.2	20.9	11.0	26.2	700	350	3.2 - 26.4
Selenium	ND (0.73)	ND (0.62)	0.31 B	0.4	ND (0.66)	5,350	2,675	ND[i]
Mercury	ND (0.15)	ND (0.12)	0.12 B	ND (0.11)	ND (0.13)	320	160	ND

Table H16

Summary of Detected Constituents in Sediment Samples from Survey Package H16
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 2 of 3)

IT Sample ID: Lab Sample ID: Sample Location: Location Description: Sample Depth: Collection Date: Units:	OF12SD01980205 16882-046 OF12-SD01 Outfall No. 012 0 - 6 inches 2/5/98 (µg/kg)	OFN12SD01980205 16882-045 OFN12-SD01 Outfall No. N12 0 - 6 inches 2/5/98 (µg/kg)	**Remedial Action Guidelines Trespasser Guideline or MDL** (µg/kg)	**Trigger Values** (µg/kg)	**Offsite Sample Concentration Range** (µg/kg)
Constituent					
Volatiles (Method 8260A)					
Methylene chloride	NA	**6 BJ**	275,000	137,500	NA
Acetone	NA	**16 BJ**	3,330,000	1,665,000	NA
Carbon disulfide	NA	ND (6)	0.74 (MDL)	0.74	NA
2-Butanone (MEK)	NA	ND (25)	10,000,000	5,000,000	NA
Toluene	NA	ND (6)	10,000,000	5,000,000	NA
Semivolatiles (Method 8270)					
Naphthalene	NA	NA	1,710,000	855,000	NA
2-Methylnaphthalene	NA	NA	1,710,000	855,000	NA
Acenaphthene	NA	NA	1,710,000	855,000	NA
Dibenzofuran	NA	NA	129 (MDL)	129	NA
Fluorene	NA	NA	1,710,000	855,000	NA
Phenanthrene	NA	NA	1,710,000	855,000	NA
Anthracene	NA	NA	1,710,000	855,000	NA
Carbazole	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	1,710,000	855,000	NA
Pyrene	NA	NA	1,710,000	855,000	NA
Benzo(a)anthracene	NA	NA	9,000	4,500	NA
Chrysene	NA	NA	9,000	4,500	NA
bis(2-Ethylhexyl)phthalate	NA	NA	4,460,000	2,230,000	NA
Benzo(b)fluoranthene	NA	NA	9,000	4,500	NA
Benzo(k)fluoranthene	NA	NA	9,000	4,500	NA
Benzo(a)pyrene	NA	NA	9,000	4,500	NA
Indeno(1,2,3-cd)pyrene	NA	NA	9,000	4,500	NA
Dibenz(a,h)anthracene	NA	NA	9,000	4,500	NA
Benzo(g,h,i)perylene	NA	NA	1,710,000	855,000	NA
TPH (Maine Method 4.1.25)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	ND (5.1)	ND (53)	NA	NA	NA
Metals (EPA Method 6010/7470)					
Arsenic	NA	NA	30	15	2.1 - 6.5
Barium	NA	NA	10,000	5,000	60.3 - 76.2
Chromium	NA	NA	5,350	2,675	7.6 - 37.4
Lead	NA	NA	700	350	3.2 - 26.4
Selenium	NA	NA	5,350	2,675	ND
Mercury	NA	NA	320	160	ND

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Summary of Detected Constituents in Sediment Samples from Survey Package H16
Maine Yankee Atomic Power Plant
Wiscasset, Maine
(Page 3 of 3)

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Trespasser Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value. Guideline values for non-carcinogenic PAH constituents with no remedial action guideline are based on the values available for naphthalene. Guideline values for carcinogenic PAH constituents with no remedial action guideline are based on the values available for benzo(a)pyrene.
3. Offsite sediment values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] ND (6) = indicates that the constituent was not detected at the detection limit in parentheses
[f] D = Constituents were detected in a diluted sample.
[g] E = Constituent concentration exceeded the acceptable calibration range.
[h] (mg/kg) = milligrams per kilogram or parts per million.
[i] ND = The constituents were not detected in the background samples.

Table H17
Summary of Detected Constituents in Soil Samples from Survey Package H17
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID: Lab Sample ID: Sample Location: Sample Depth: Collection Date: Units:	SF05-SD01980206 16882-016 SF05-SD01 0 - 6 inches 2/6/98 (µg/kg)[a]	**Remedial Action Guidelines Adult Worker Guideline or MDL** (µg/kg)	**Trigger Value** (µg/kg)	**Backgroud Concentration Range** (µg/kg)
Constituent				
Volatiles (Method 8260A)				
Methylene chloride	**2 B[b]J[c]**	28,000	14,000	NA[d]
Acetone	**22 BJ**	635,000	317,500	NA
Toluene	**3 J**	3,190,000	1,595,000	NA
TPH (Maine Method 4.1.25)	(mg/kg)[e]	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	**9**	10,000	5,000	NA

Notes:
1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value.
3. Background values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] (mg/kg) = milligrams per kilogram or parts per million.

Table H18
Summary of Detected Constituents in Surface Water and Sediment Samples
from Survey Package H18
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	CBSW03980204	CBSW04980204	CBSW05980204
Lab Sample ID:	16882-023	16882-022	16882-029
Sample Location:	CB-SW03	CB-SW04	CB-SW05
Location Description:	Catch Basin 9A	Catch Basin 10A	Catch Basin 11A
Sample Depth:	NA	NA	NA
Collection Date:	2/4/98	2/4/98	2/4/98
Units:	(µg/L)[a]	(µg/L)	(µg/L)
Constituent			
Volatiles (Method 8260)			
Methylene chloride	**1 B[b]J[c]**	**0.7 BJ**	NA[d]
Acetone	**3 BJ**	ND (10)[e]	NA
1,1-Dichloroethane	**1**	ND (1)	NA
Toluene	**0.2 J**	**3**	NA
Semivolatiles (Method 8270)			
Butyl benzyl phthalate	**13**	**13**	NA
Bis(2-ethylhexyl)phthalate	**22 B**	**13 B**	NA
Di-n-octylphthalate	**2 J**	ND (10)	NA
TPH (Maine Method 4.1.25)	(mg/L)[f]	(mg/L)	(mg/L)
Diesel Range Organics	**0.08**	**1.3**	**0.3**
Metals (EPA Method 6010/7470)	(unfiltered)	(filtered)	
Arsenic	**15.2**	ND (10.0)	NA
Barium	**135 B**	**40.8 B**	NA
Cadmium	**6.2**	**0.90 B**	NA
Chromium	**27.3**	ND (10.0)	NA
Lead	**16.5**	ND (3.0)	NA

Notes:
1. Detected constituents are indicated by bold print.

[a] (µg/L) = micrograms per liter or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] ND (10) = The constituent was not detected at the detection limit in parentheses.
[f] (mg/L) = milligrams per liter or parts per million.
[g] (µg/kg) = micrograms per kilogram or parts per billion.
[h] D = Constituents were detected in a diluted sample.
[i] (mg/kg) = milligrams per kilogram or parts per million.

Table H18
Summary of Detected Constituents in Surface Water and Sediment Samples
from Survey Package H18
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	CBSD03980204	CBSD05980204	CBSD06980204
Lab Sample ID:	16882-044	16882-048	16882-047
Sample Location:	CB-SD03	CB-SD05	CB-SD06
Location Description:	Catch Basin 9A	Catch Basin 11A	Catch Basin 12A
Sample Depth:	NA	NA	NA
Collection Date:	2/4/98	2/4/98	2/4/98
Units:	(µg/kg)[g]	(µg/kg)	(µg/kg)
Constituent			
Volatiles (Method 8260A)			
Methylene chloride	**4 BJ**	NA	NA
Acetone	**43 B**	NA	NA
2-Butanone (MEK)	**7 J**	NA	NA
Semivolatiles (Method 8270)			
Naphthalene	**220 J**	NA	NA
2-Methylnaphthalene	**190 J**	NA	NA
Acenaphthene	**1100**	NA	NA
Dibenzofuran	**590**	NA	NA
Fluorene	**1000**	NA	NA
Phenanthrene	**9700 D[h]**	NA	NA
Anthracene	**1800**	NA	NA
Carbazole	**1400**	NA	NA
Fluoranthene	**18000 D**	NA	NA
Pyrene	**12000 D**	NA	NA
Butyl benzyl phthalate	**540**	NA	NA
Benzo(a)anthracene	**6600 D**	NA	NA
Chrysene	**3200**	NA	NA
Bis(2-ethylhexyl)phthalate	**730**	NA	NA
Di-n-octylphthalate	**110 J**	NA	NA
Benzo(b)fluoranthene	**6200 D**	NA	NA
Benzo(k)fluoranthene	**2300**	NA	NA
Benzo(a)pyrene	**5400**	NA	NA
Indeno(1,2,3-cd)pyrene	**1900**	NA	NA
Dibenz(a,h)anthracene	**530**	NA	NA
Benzo(g,h,i)perylene	**1600**	NA	NA
TPH (Maine Method 4.1.25)	(mg/kg)[i]	(mg/kg)	(mg/kg)
Diesel Range Organics	**320**	ND (53)	ND (53)
Metals (EPA Method 6010/7470)			
Arsenic	**3.6**	NA	NA
Barium	**73.8**	NA	NA
Chromium	**62.5**	NA	NA
Lead	**18.7**	NA	NA
Silver	**0.47 B**	NA	NA
Mercury	**0.09 B**	NA	NA

Notes:
1. Detected constituents are indicated by bold print.

[a] (µg/L) = micrograms per liter or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] ND (10) = The constituent was not detected at the detection limit in parentheses.
[f] (mg/L) = milligrams per liter or parts per million.
[g] (µg/kg) = micrograms per kilogram or parts per billion.
[h] D = Constituents were detected in a diluted sample.
[i] (mg/kg) = milligrams per kilogram or parts per million.

Table H21

Summary of Detected Constituents in Soil Samples from Survey Package H21
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	DCAGPO198013100	DCAGPO198013108	DCAGPO298013100	DCAGPO298013114	**Remedial Action Guidelines Adult Worker Guideline or MDL**	**Trigger Values**	**Background Concentration Range**
Lab Sample ID:	16838-002	16838-003	16838-004	16838-005			
Sample Location:	DCA-GP01	DCA-GP01	DCA-GP02	DCA-GP02			
Sample Depth:	0 - 6 inches	8 - 9 feet	0 - 6 inches	14 - 15 feet			
Collection Date:	1/31/98	1/31/98	1/31/98	1/31/98			
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent							
Volatiles (Method 8260A)							
Methylene chloride	**5 B[b]J[c]**	**6 BJ**	**6 B**	**10 B**	28,000	14,000	NA[d]
Acetone	**22 B**	**17 BJ**	**18 B J**	**130 B**	635,000	317,500	NA
2-Butanone (MEK)	ND (20)[e]	ND (30)	ND (22)	**14 J**	10,000,000	5,000,000	NA
Toluene	**8**	**2 J**	**2 J**	**2 J**	3,190,000	1,595,000	NA
Semivolatiles (Method 8270)							
Pyrene	**92 J**	ND (420)	ND (350)	**88 J**	325,000	162,500	NA
bis(2-Ethylhexyl) phthalate	**180 BJ**	**210 BJ**	**180 BJ**	**250 BJ**	3,970,000	1,985,000	NA
Benzo(b)fluoranthene	**200 J**	ND (420)	ND (350)	ND (410)	7,000	3,500	NA
ButylBenzylPhthalate	**150 BJ**	ND (420)	ND (350)	ND (410)	82.8 (MDL)	82.8	NA
Metals (EPA Method 6010/7470)	(mg/kg)[f]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	**10.2**	**16.3**	**11.5**	**10**	30	15	10.5 - 16.9
Barium	**54.3**	**88.6**	**53.8**	**75.8**	10,000	5,000	64.2 - 88.0
Chromium	**17.1**	**59.3**	**25.2**	**42.7**	10,000	5,000	26.1 - 58.1
Lead	**14.8**	**16.9**	**9.4**	**15.1**	700	350	5.2 - 14.1
Selenium	**0.33 B**	**0.84**	**0.36 B**	**0.61 B**	10,000	5,000	0.33 - 0.95

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the guideline values.
2. Guideline Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value. Guideline values for non-carcinogenic PAH constituents with no remedial action guideline are based on the values available for naphthalene. Guideline values for carcinogenic PAH constituents with no remedial action guideline are based on the values available for benzo(a)pyrene.
3. Background values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] ND (20) = indicates that the constituent was not detected at the detection limit in parentheses
[f] (mg/kg) = milligrams per kilogram or parts per million.

Table H22

Summary of Detected Constituents in Soil from Survey Package H22
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	ELGP0198013106	ELGP0298013000	ELGP0298013005	**Remedial Action Guidelines Adult Worker Guideline or MDL**	**Trigger Values**	**Background Concentration Range**
Lab Sample ID:	16838-001	16838-014	16838-015			
Sample Location:	EL-GP01	EL-GP02	EL-GP02			
Collection Date:	1/31/98	1/30/98	1/30/98			
Depth:	6 - 7 feet	0 - 6 inches	4 - 5 feet			
Location:	Bailey Farm frontyard	Bailey Farm backyard	Bailey Farm backyard			
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent						
Volatiles (Method EPA 8260A)						
Methylene chloride	**1 B[b]J[c]**	**7 B**	**5 BJ**	28,000	14,000	NA[d]
Acetone	**27 B**	**16 BJ**	**12 BJ**	635,000	317,500	NA
2-Butanone (MEK)	ND (25)	ND (23)	**3 J**	10,000,000	5,000,000	NA
Trichloroethene	**13 B**	**4 J**	**5 BJ**	40,000	20,000	NA
Tetrachloroethene	**5 BJ**	ND (6.0)	**4 J**	7,000	3,500	NA
Toluene	**17**	**2 J**	**6 J**	3,190,000	1,595,000	NA
Semi-volatiles (Method EPA 8270)						
Butyl benzyl phthalate	ND (410)	**160 BJ**	**170 BJ**	82.8 (MDL)	82.8	NA
Bis(2-ethylhexyl)phthalate	**200 BJ**	**190 BJ**	**220 BJ**	3,970,000	1,985,000	NA
Metals (EPA 6010/7470) (mg/kg)	(mg/kg)[f]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	**21.9**	**9.4**	**12.8**	30	15	10.5 - 16.9
Barium	**97.8**	**52.9**	**57.6**	10,000	5,000	64.2 - 88.0
Chromium	**61.0**	**30.1**	**27.6**	10,000	5,000	26.1 - 58.1
Lead	**13.7**	**7.1**	**7.7**	700	350	5.2 - 14.1
Selenium	**0.99**	**0.36 B**	ND (0.60)	10,000	5,000	0.33 - 0.95
Mercury	ND (0.13)	ND (0.11)	**0.12**	610	305	ND (0.20)

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the method detection limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value.
3. Background values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] B = For organic constituents, the analyte was detected in the blank. For metals, the value was greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).
[c] J = Estimated value.
[d] NA = Constituents were not analyzed.
[e] ND (25) = indicates that the constituent was not detected at the detection limit in parentheses.
[f] (mg/kg) = milligrams per kilogram or parts per million.

Table H23

Summary of Detected Constituents in Soil Samples from Survey Package H23
Maine Yankee Atomic Power Plant
Wiscasset, Maine

IT Sample ID:	TSS1013K69-1	TSS101KCL	TSS1013KBT	TSS1013K207-1	**Remedial Action Adult Worker Guideline or MDL**	**Trigger Value** (ug/kg)
Lab Sample ID:	16882-009	16882-010	16882-011	16882-012		
Sample Location:	T-SS10-13-K69-1	T-SS10-13-KC1	T-SS10-13-KBT	T-SS10-13-K207-1		
Sample Depth:	0 - 6 inches	0 - 6 inches	0 - 6 inches	0 - 6 inches		
Collection Date:	2/6/98	2/6/98	2/6/98	2/6/98		
Units:	(µg/kg)[a]	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Constituent						
PCBs (EPA Method 8080)						
Aroclor-1016	ND (39)[b]	ND (36)	ND (39)	ND (38)	400	200
Aroclor-1221	ND (39)	ND (36)	ND (39)	ND (38)	7,200	3,600
Aroclor-1232	ND (39)	ND (36)	ND (39)	ND (38)	7,200	3,600
Aroclor-1242	ND (39)	ND (36)	ND (39)	ND (38)	7,200	3,600
Aroclor-1248	ND (39)	ND (36)	ND (39)	ND (38)	7,200	3,600
Aroclor-1254	ND (39)	ND (36)	ND (39)	ND (38)	7,200	3,600
Aroclor-1260	ND (39)	ND (36)	ND (39)	ND (38)	7,200	3,600
TPH (Maine Method 4.1.25)	(mg/kg)[c]	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Diesel Range Organics	ND (4.9)	ND (4.5)	**6.3**	**89**	100	50

Notes:

1. Detected constituents are indicated by bold print. Shaded values indicate a concentration which exceeded the trigger values.
2. Trigger Values are based on Remedial Action Guideline Adult Worker Values as published by Maine Department of Environmental Resources or the Method Detection Limit for the given parameter. If a guideline value was available from Maine DEP, one-half of the value was used for comparison. If a guideline value was not available, the method detection limit (MDL) was used for the guideline value. Guideline values for non-carcinogenic PAH constituents with no remedial action guideline are based on the values available for naphthalene. Guideline values for carcinogenic PAH constituents with no remedial action guideline are based on the values available for benzo(a)pyrene.
3. Background values are taken from data obtained under Survey Package H024.

[a] (µg/kg) = micrograms per kilogram or parts per billion.
[b] ND (39) = indicates that the constituent was not detected at the detection limit in parentheses
[c] (mg/kg) = milligrams per kilogram or parts per million.

Table H24

Summary of Detected Constituents in Background and Offsite Samples from Survey Package H24

Maine Yankee Atomic Power Plant

Wiscasset, Maine

IT Sample ID:	BG-GP01980127	BG-GP02980127	BG-GP03980127	BGGW01980206	BGGW02980203	BGGW03980206	BGSD01	BGSD02
Lab Sample ID:	16824-002	16824-003	16824-004	16882-018	16882-017	16882-019	16824-013	16824-014
Sample Location:	BG-GP01	BG-GP02	BG-GP03	BG-GW01	BG-GW02	BG-GW03	BG-SD01	BG-SD02
Collection Date:	1/27/98	1/27/98	1/27/98	2/6/98	2/3/98	2/6/98	1/28/98	1/28/98
Units:	(mg/kg)[a]	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)[b]	(µg/L)	(mg/kg)	(mg/kg)
	Background Soil Samples			Background Groundwater Samples (filtered samples)			Offsite Sediment Samples	
Constituent								
Metals (EPA 6010/7470)								
Arsenic	**10.5**	**16.9**	**14.1**	ND (10)[c]	ND (10)	ND (10)	**6.5**	**2.1**
Barium	**64.2**	**81.8**	**88.0**	**2.6 B**[d]	**10.9 B**	**21.3 B**	**60.3**	**76.2**
Cadmium	ND (0.56)	ND (0.60)	ND (0.63)	ND (5.0)	ND (5.0)	ND (5.0)	ND (0.74)	ND (0.69)
Chromium	**26.1**	**51.3**	**58.1**	ND (10)	ND (10)	ND (10)	**37.4**	**7.6**
Lead	**5.2**	**11.3**	**14.1**	**1.8 B**	**1.8 B**	ND (3.0)	**26.4**	**3.2**
Selenium	**0.33 B**	**0.95**	**0.79**	ND (5.0)	ND (5.0)	ND (5.0)	**0.41 B**	ND (0.69)
Silver	ND (1.1)	ND (1.2)	ND (1.3)	ND (10)	ND (10)	ND (10)	ND (1.5)	ND (1.4)

Notes:

1. Detected constituents are indicated by bold print.

[a] (µg/kg) = micrograms per kilogram or parts per billion.

[b] (µg/L) = micrograms per liter or parts per billion.

[c] ND (10) = The constituent was not detected at the detection limit in parentheses.

[d] B = The concentration is greater than the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).

REFERENCES

LIST OF REFERENCES

R.1 Maine Yankee Atomic Power Company (MYAPCO), January 1998, Defueled Safety Analysis Report.

R.2 Puls, Robert W. and Michael J. Barcelona, December 1995, Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.

R.3 GTS Duratek, January 1998, Hazardous Materials Sampling, Analysis, and Data Management Plan.

R.4 Pryor, Dennis and A. Burnham, December, 1997, "Asbestos Quantity Survey," Team Associates.

R.5 USEPA, 1987, "Data Quality Objectives for Remedial Response Activities."

FIGURES

DRAWN BY	CHECKED BY	DRAWING NUMBER
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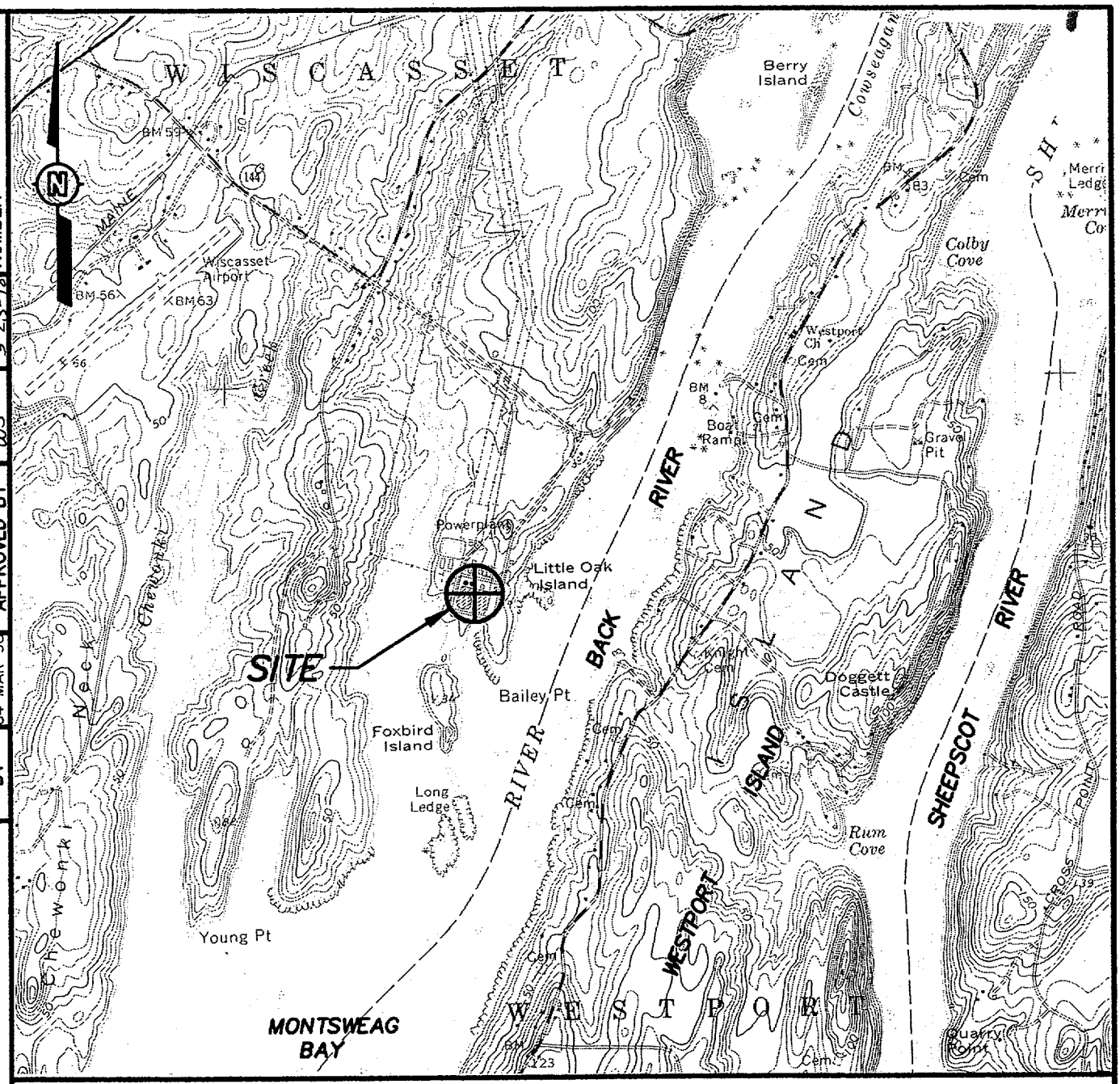
	APPROVED BY	3-25-98



REFERENCE:

7.5 MIN. USGS TOPOGRAPHIC MAP OF WESTPORT, MAINE QUADRANGLE
DATED: 1970, SCALE: 1=24,000

SCALE

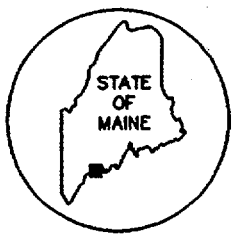
0 2000 4000 FEET

FIGURE 1

SITE LOCATON MAP

PREPARED FOR

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE



INTERNATIONAL TECHNOLOGY CORPORATION

DURATEK

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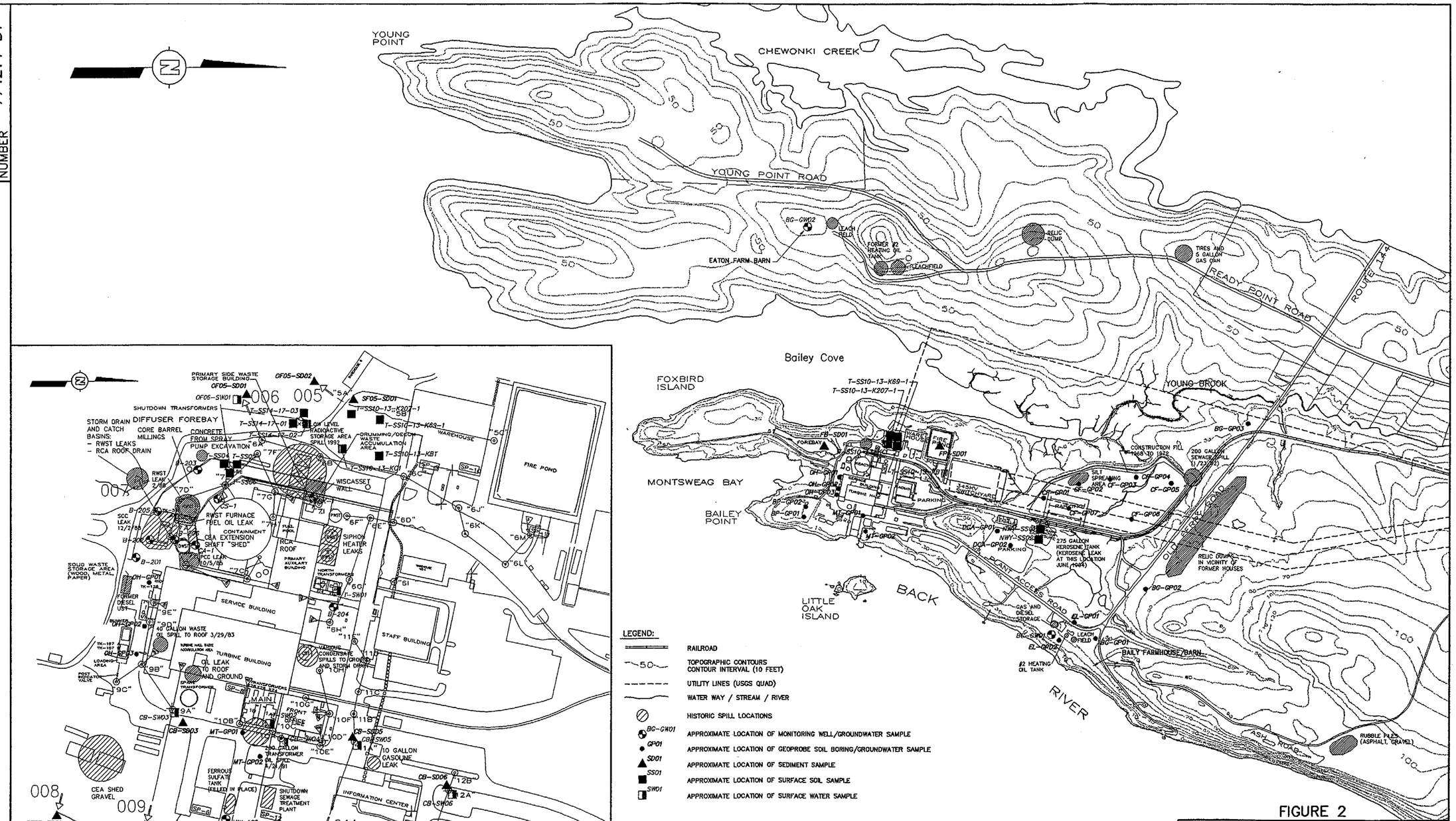

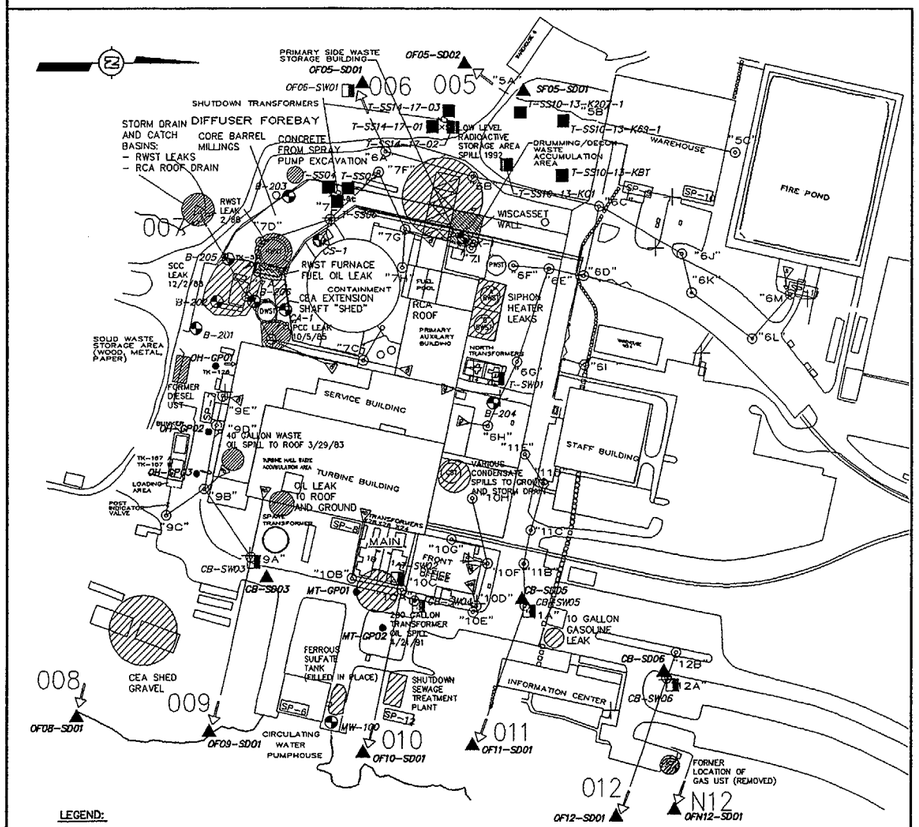

LEGEND:

- RAILROAD
- TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

FIGURE 2

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE
SAMPLE LOCATION MAP

INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

DESIGNED BY	G. GAILLOT	CHECKED BY	MJO 3/25/98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3/25/98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B1	

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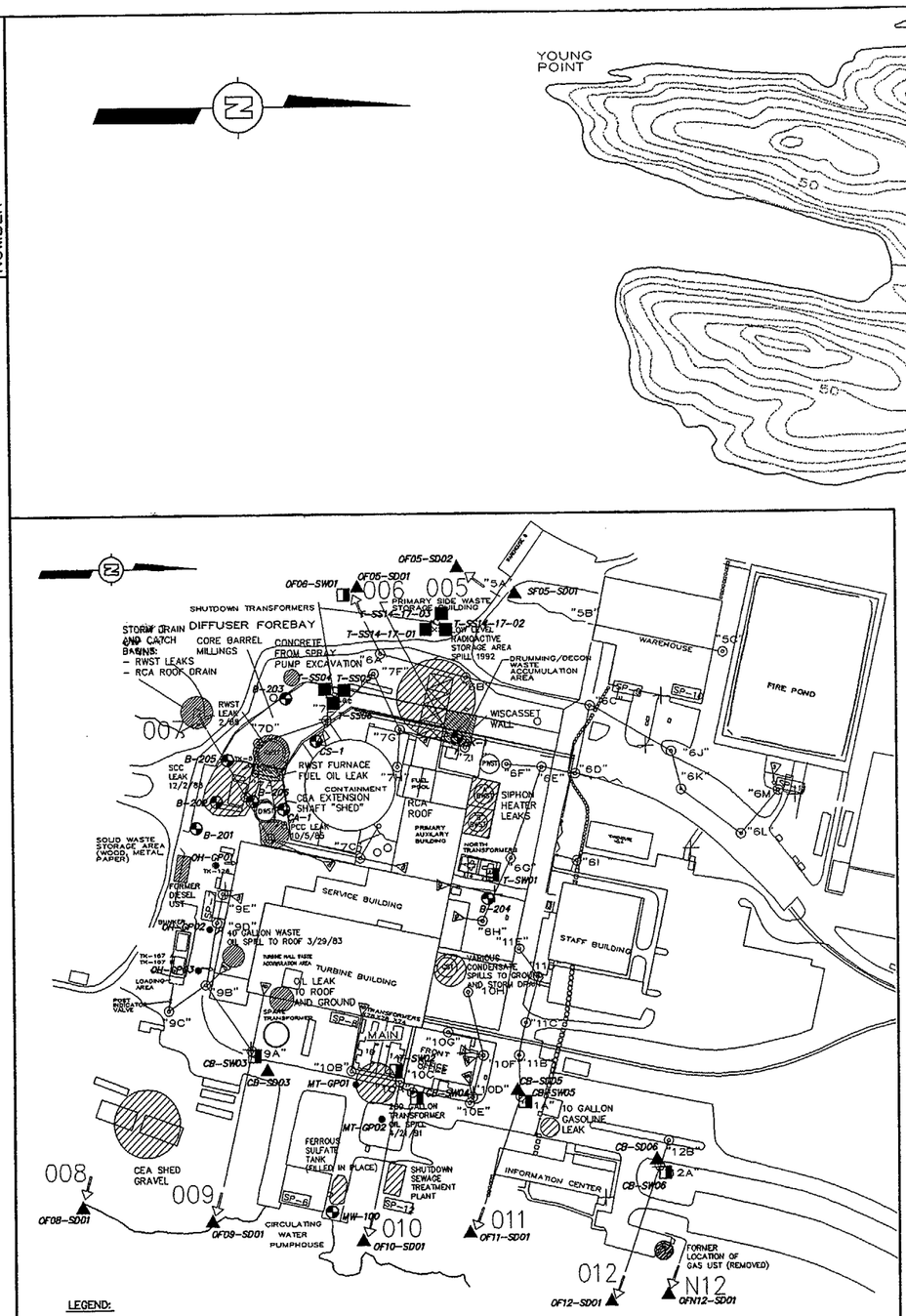
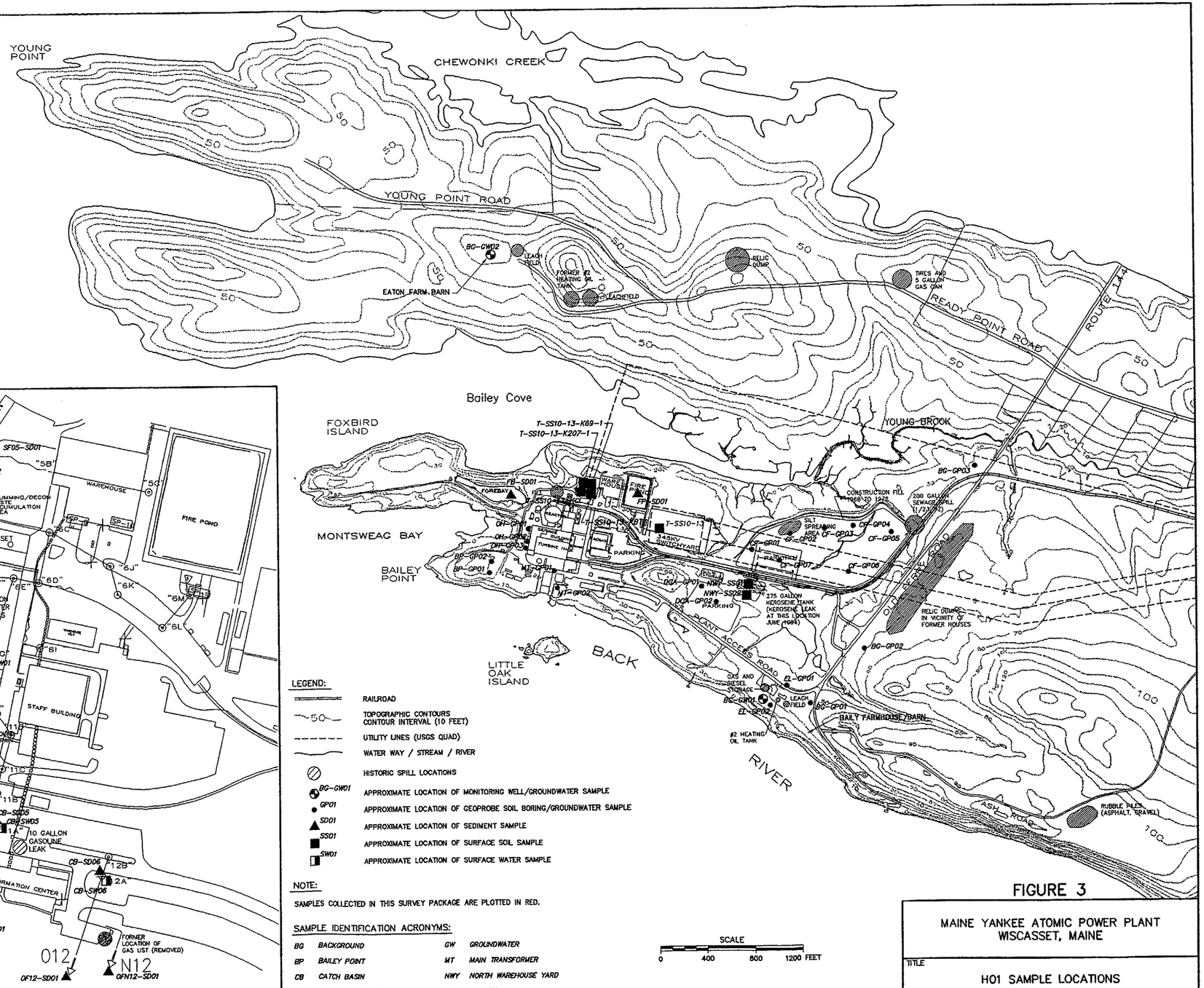
DRAWING NUMBER 774214-B2



LEGEND:

005	DRAINAGE AREA OUTFALL
"7D"	CATCH BASIN OR CULVERT IDENTIFICATION
◎	CATCH BASIN
⏚	FLOOR DRAIN SYSTEM
▽	SUMP SYSTEM
▽	ROOF DRAIN SYSTEM
⧖	POST INDICATOR VALVE
—	CULVERT
—	DOOR
~	SURFACE FLOW
⇨	OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
▫▫▫▫	VEHICLE BARRIER SYSTEM
SP-3	SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
⊘	HISTORIC SPILL LOCATION
⊘	REMEDIATED SPILL LOCATION



LEGEND:

	RAILROAD
50	TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
	UTILITY LINES (USGS QUAD)
	WATER WAY / STREAM / RIVER
⊘	HISTORIC SPILL LOCATIONS
BC-GW01	APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
GP01	APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
SD01	APPROXIMATE LOCATION OF SEDIMENT SAMPLE
SS01	APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
SW01	APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

SCALE
0 400 800 1200 FEET

FIGURE 3

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE
H01 SAMPLE LOCATIONS

INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

DESIGNED BY	G. GAILLOT	CHECKED BY	MJO 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	INS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B2	

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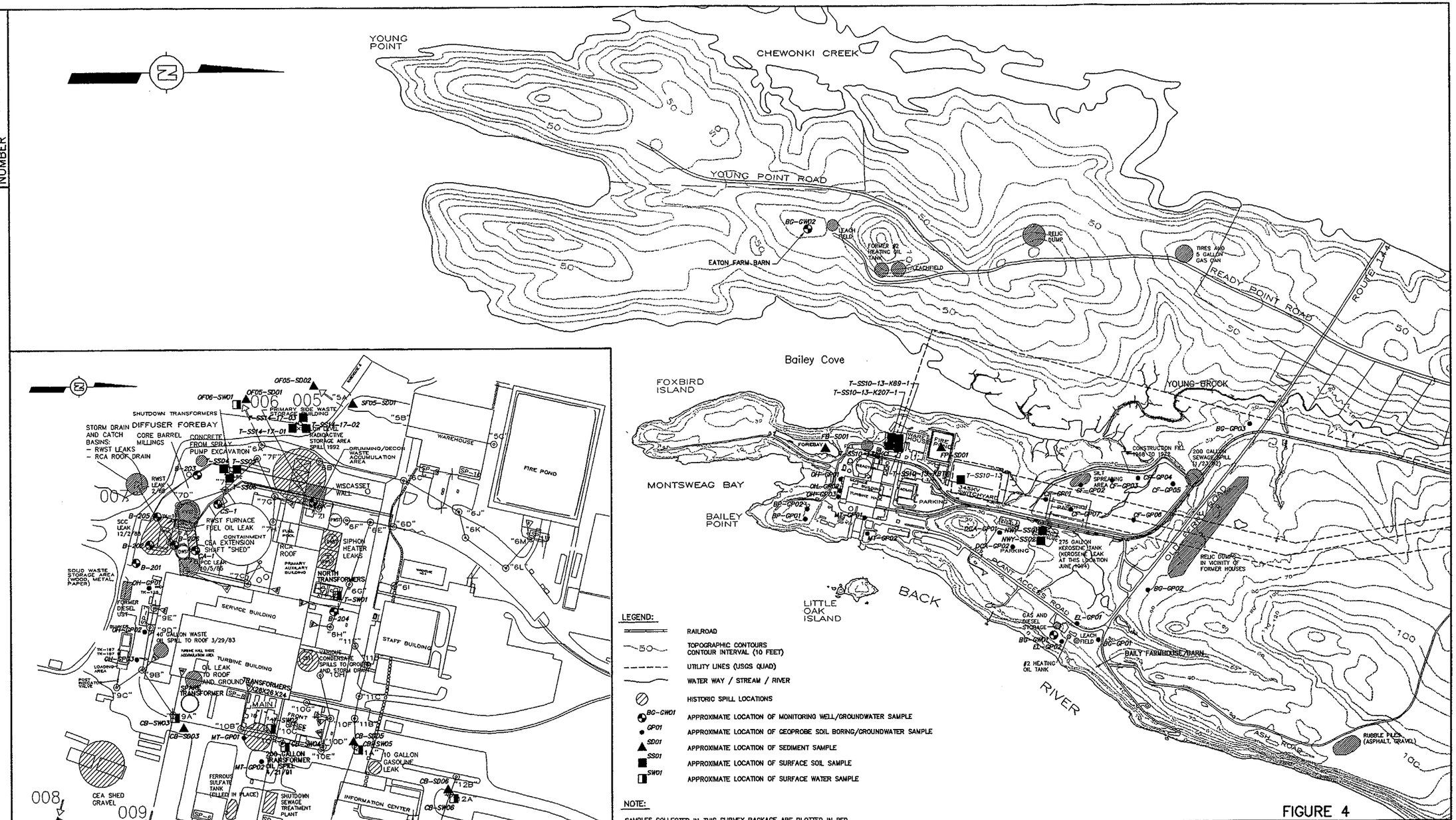
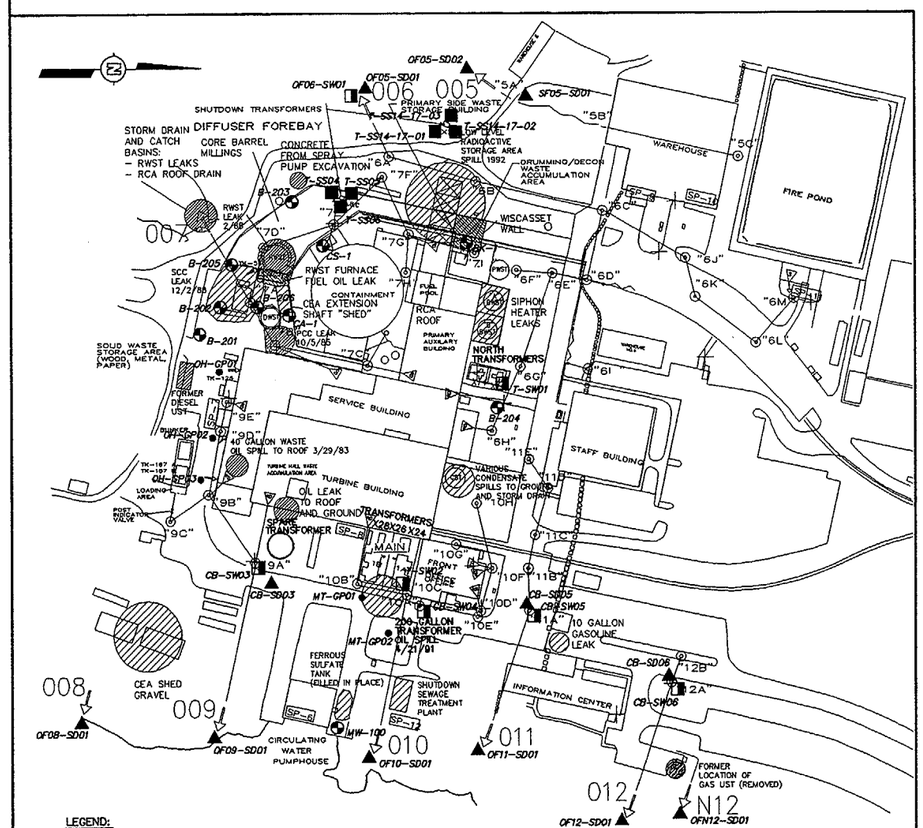
DRAWING NUMBER 774214-B3





LEGEND:

- RAILROAD
- 50 TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

SCALE
0 400 800 1200 FEET

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

FIGURE 4

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE
H03 SAMPLE LOCATIONS

INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

DESIGNED BY	G. GAILLOT	CHECKED BY	MJO 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B3	

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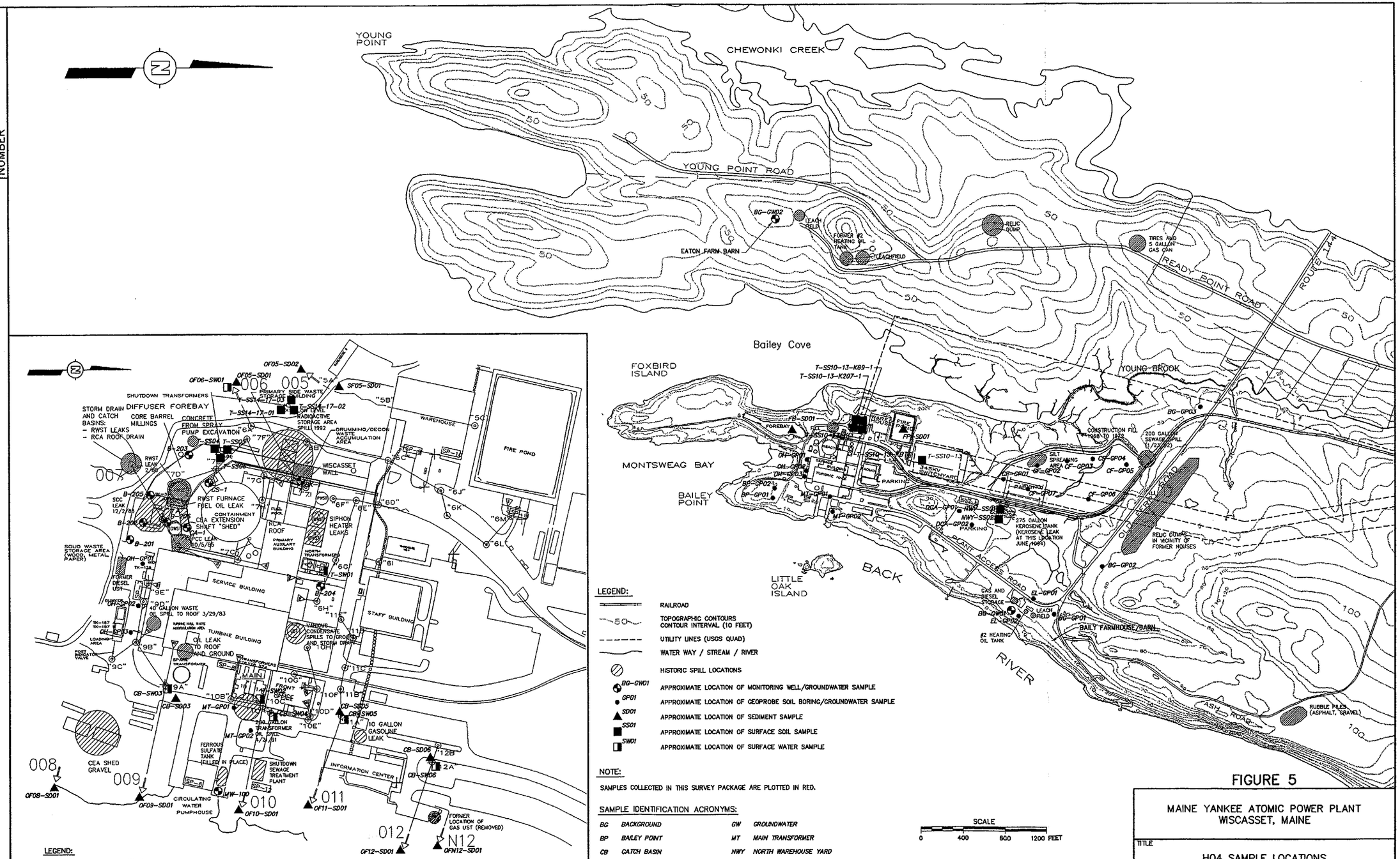
DRAWING NUMBER 774214-B4



LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

SCALE 0 100 200 FEET

LEGEND:

- RAILROAD
- 50 TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

SCALE 0 400 800 1200 FEET

FIGURE 5

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

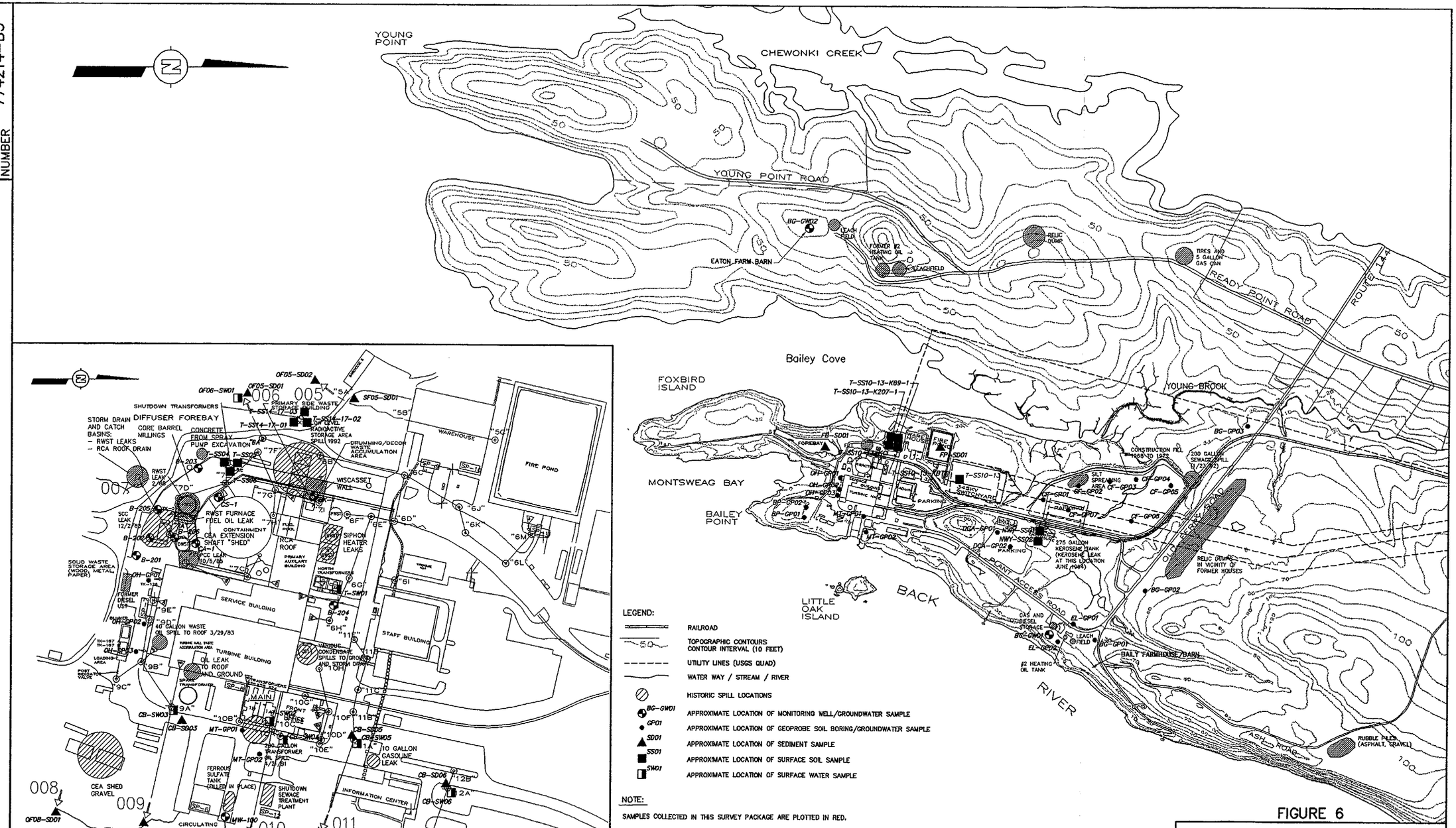
TITLE
H04 SAMPLE LOCATIONS

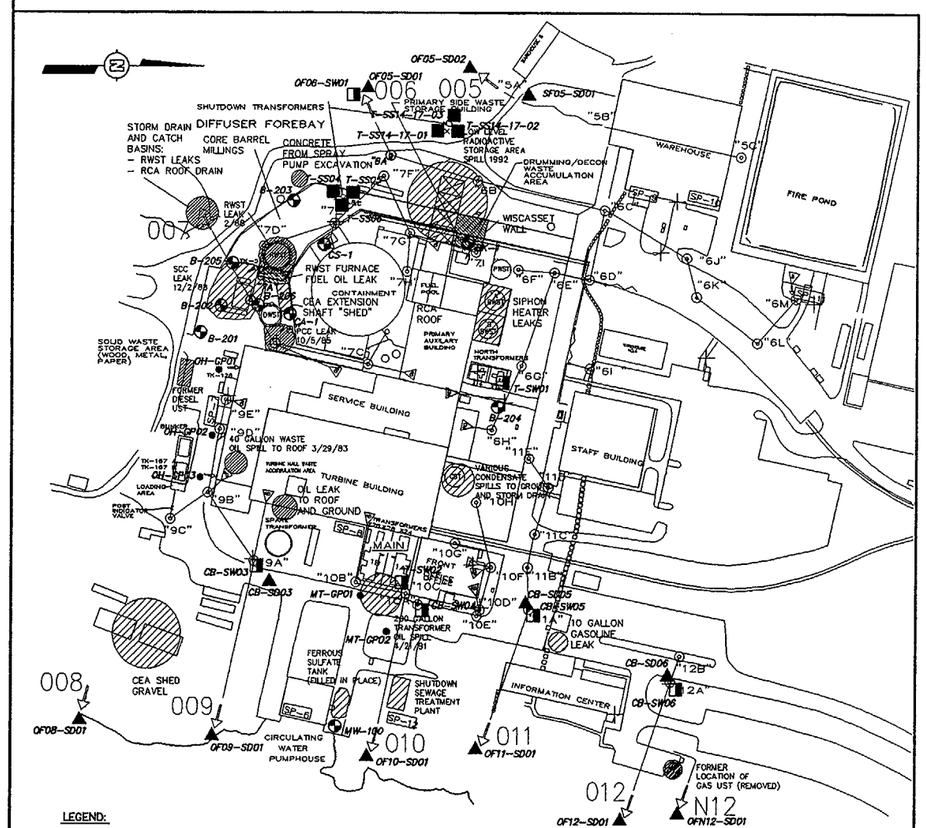
INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

REVISION	DATE	BY	CHK'D	APPV'D	DESCRIPTION

DESIGNED BY	G. GAILLOT	CHECKED BY	MTO 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WJS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B4	

DRAWING NUMBER 774214-B5





LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

LEGEND:

- RAILROAD
- 50 TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

SCALE
0 400 800 1200 FEET

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

FIGURE 6

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE

H10 SAMPLE LOCATIONS

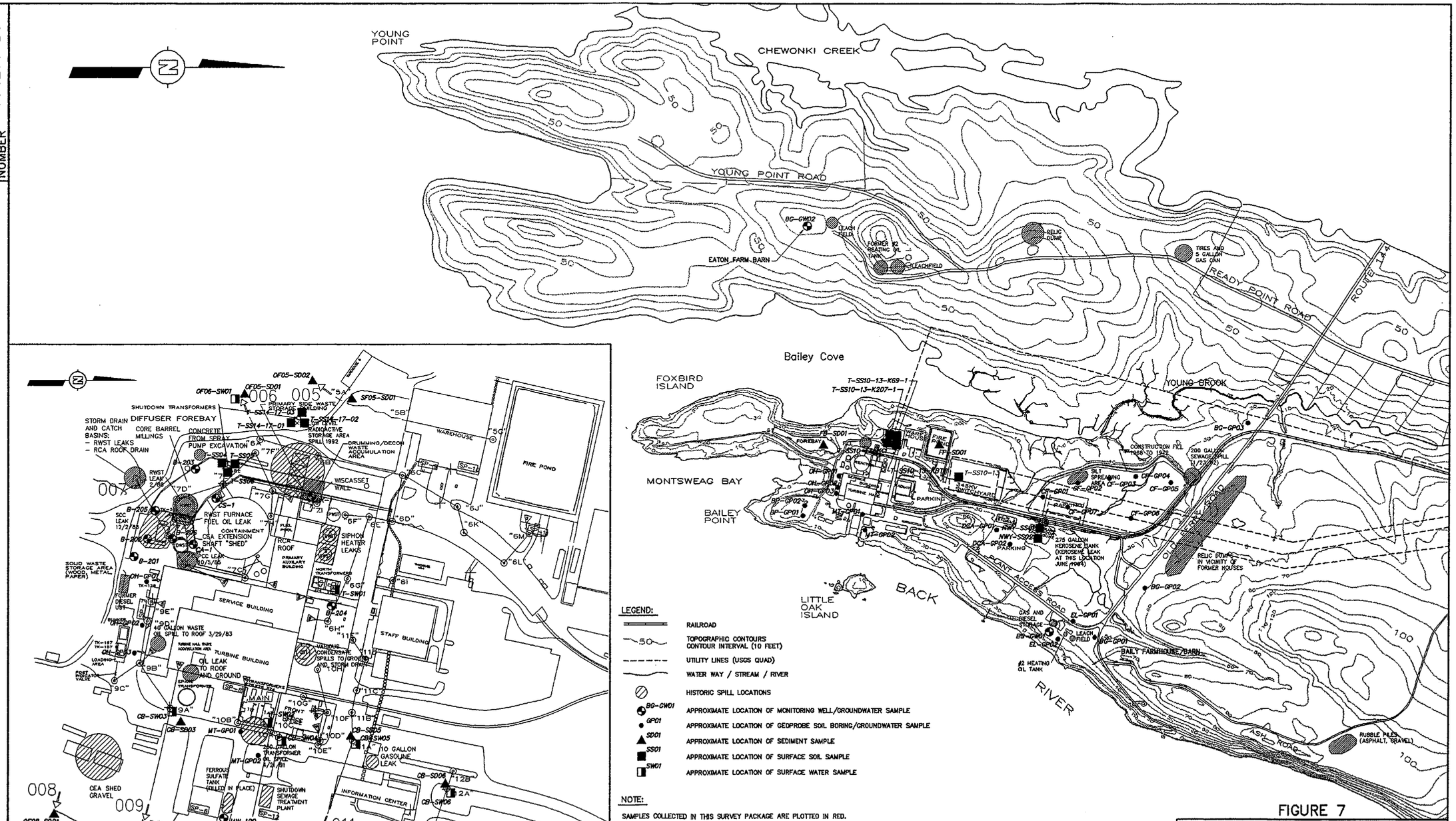
INTERNATIONAL TECHNOLOGY CORPORATION

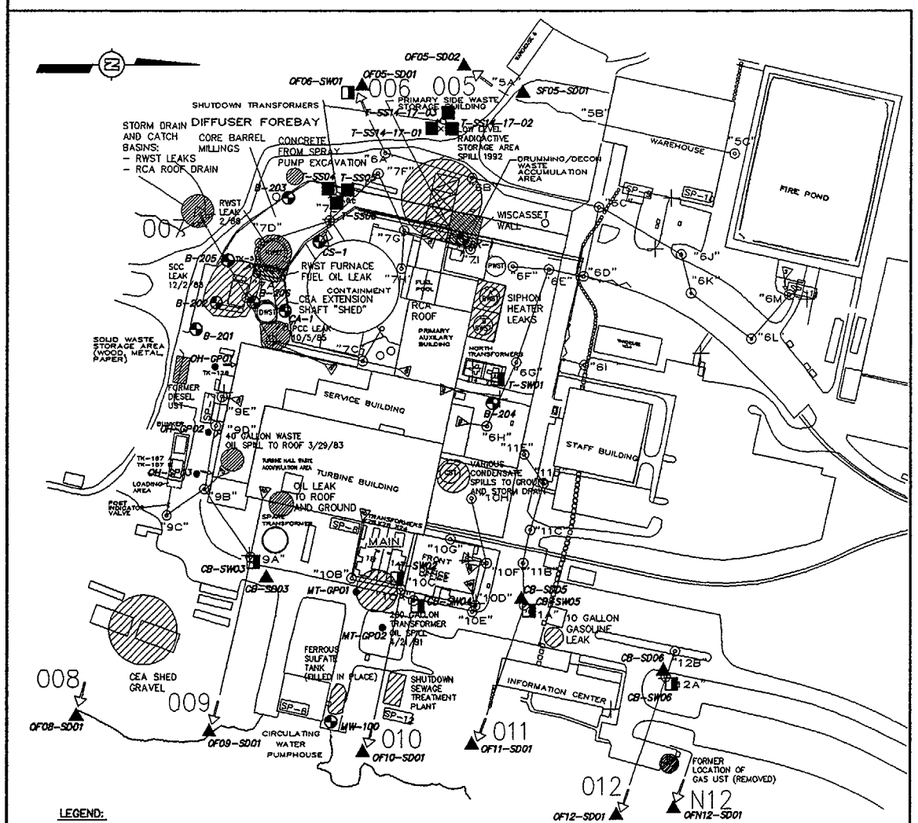
DURATEK

DESIGNED BY	G. GAILLOT	CHECKED BY	MTD 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B5	

3-19-98 10:25 AM

DRAWING NUMBER 774214-B6





LEGEND:

- RAILROAD
- 50 TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

SCALE
0 100 200 FEET

SCALE
0 400 800 1200 FEET

FIGURE 7

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

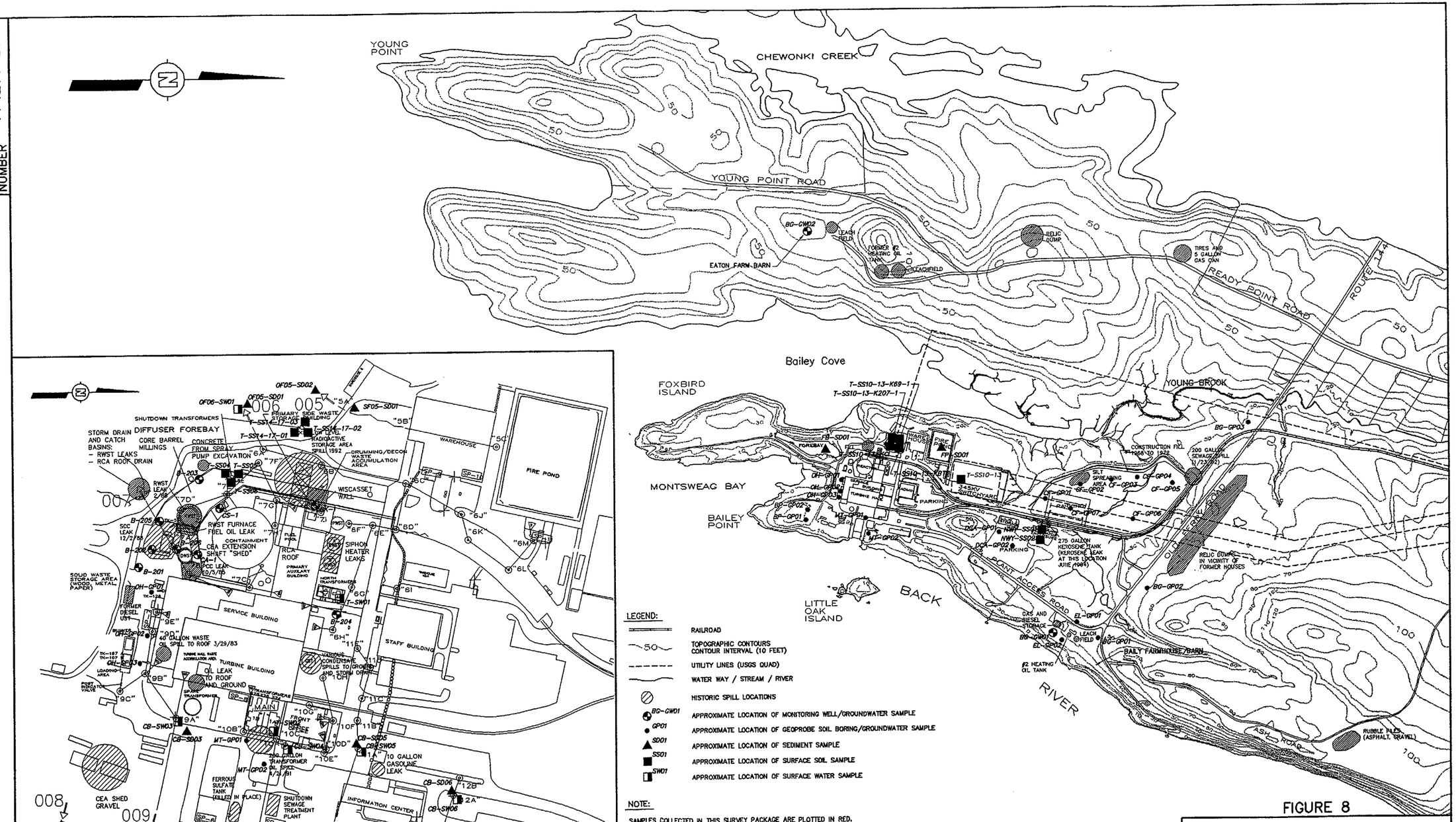
TITLE
H11 SAMPLE LOCATIONS

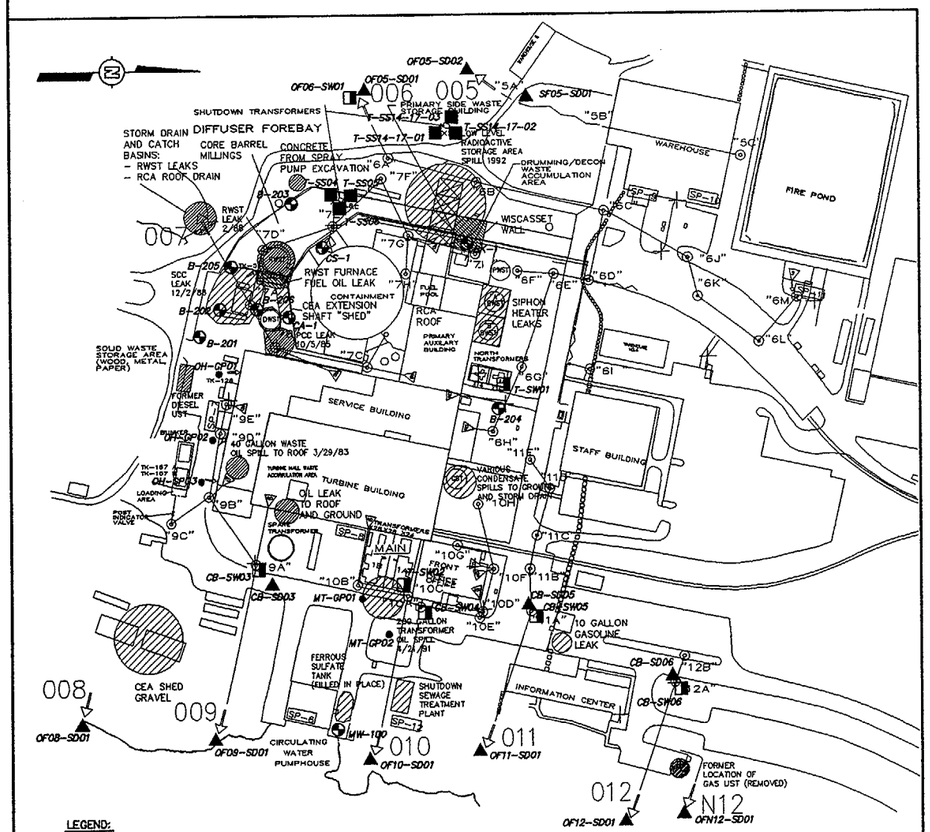
INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

DESIGNED BY	G. GAILLOT	CHECKED BY	MTO 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3/25/98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B6	

DRAWING NUMBER 774214-B7





LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

LEGEND:

- RAILROAD
- 50 TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

SCALE
0 400 800 1200 FEET

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

FIGURE 8

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

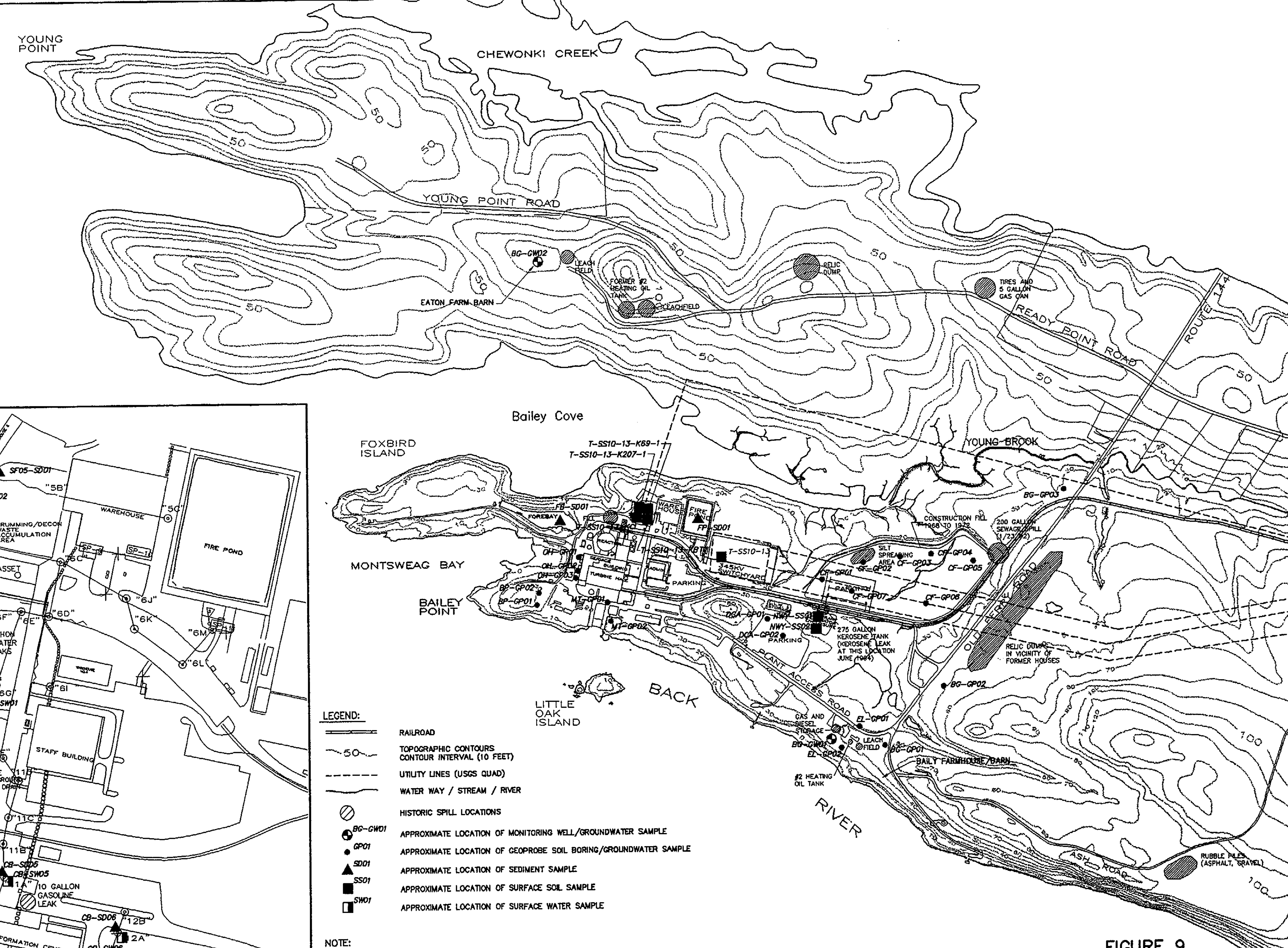
TITLE
H13 SAMPLE LOCATIONS

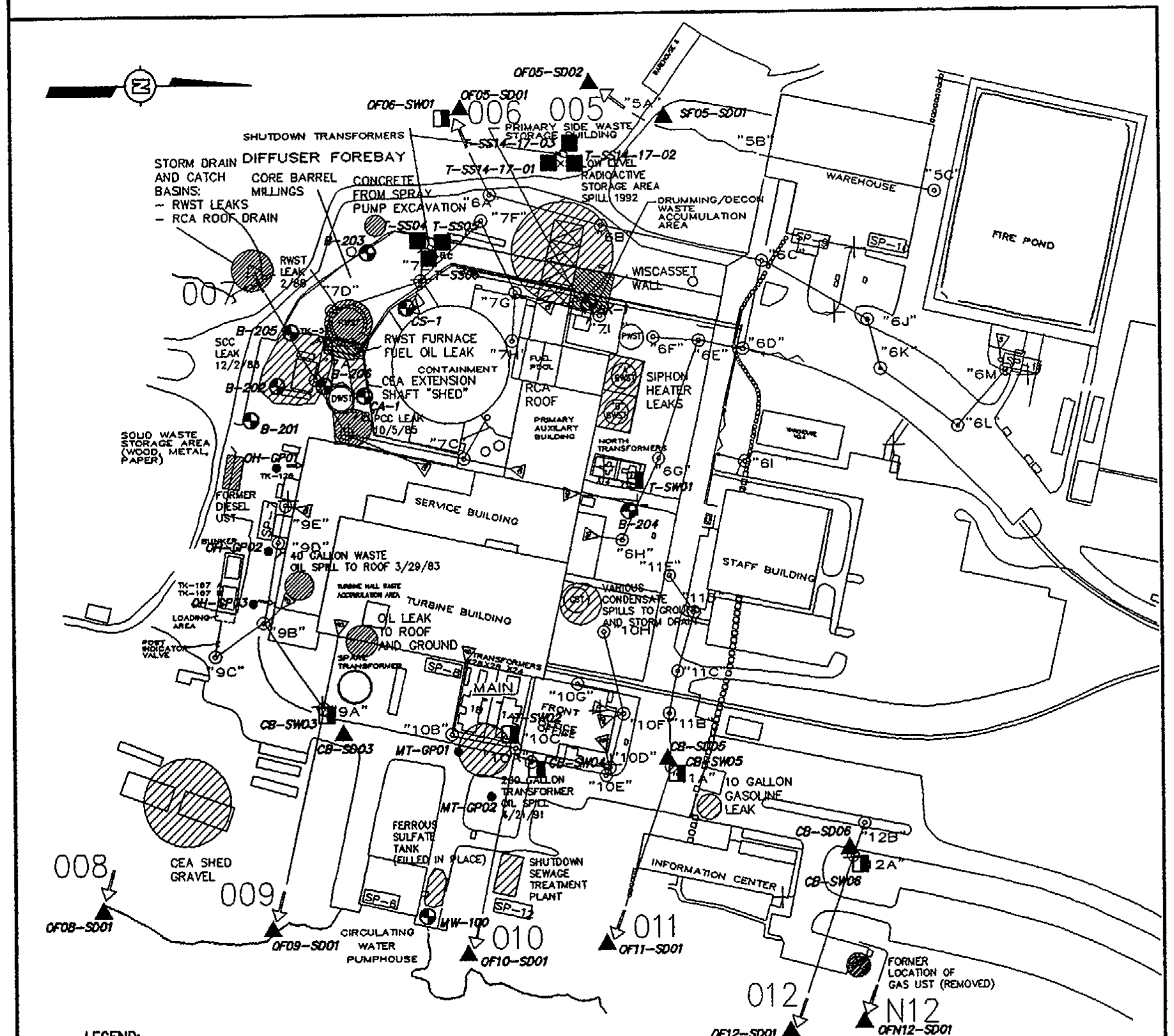
INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

DESIGNED BY	G. GAILLOT	CHECKED BY	MJO 3/25/98	SHEET
DRAWN BY	R. WEBBLE	APPROVED BY	WJS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B7	

3-25-98 10:38 AM

DRAWING NUMBER 774214-B8





LEGEND:

005	DRAINAGE AREA OUTFALL
"7D"	CATCH BASIN OR CULVERT IDENTIFICATION
	CATCH BASIN
	FLOOR DRAIN SYSTEM
	SUMP SYSTEM
	ROOF DRAIN SYSTEM
	POST INDICATOR VALVE
	CULVERT
	DOOR
	SURFACE FLOW
	OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
	VEHICLE BARRIER SYSTEM
SP-3	SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
	HISTORIC SPILL LOCATION
	REMEDIATED SPILL LOCATION

SCALE 0 100 200 FEET

LEGEND:

	RAILROAD
50	TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
	UTILITY LINES (USGS QUAD)
	WATER WAY / STREAM / RIVER
	HISTORIC SPILL LOCATIONS
BG-GW01	APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
GP01	APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
SD01	APPROXIMATE LOCATION OF SEDIMENT SAMPLE
SS01	APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
SW01	APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

SCALE 0 400 800 1200 FEET

FIGURE 9

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE

H14 SAMPLE LOCATIONS

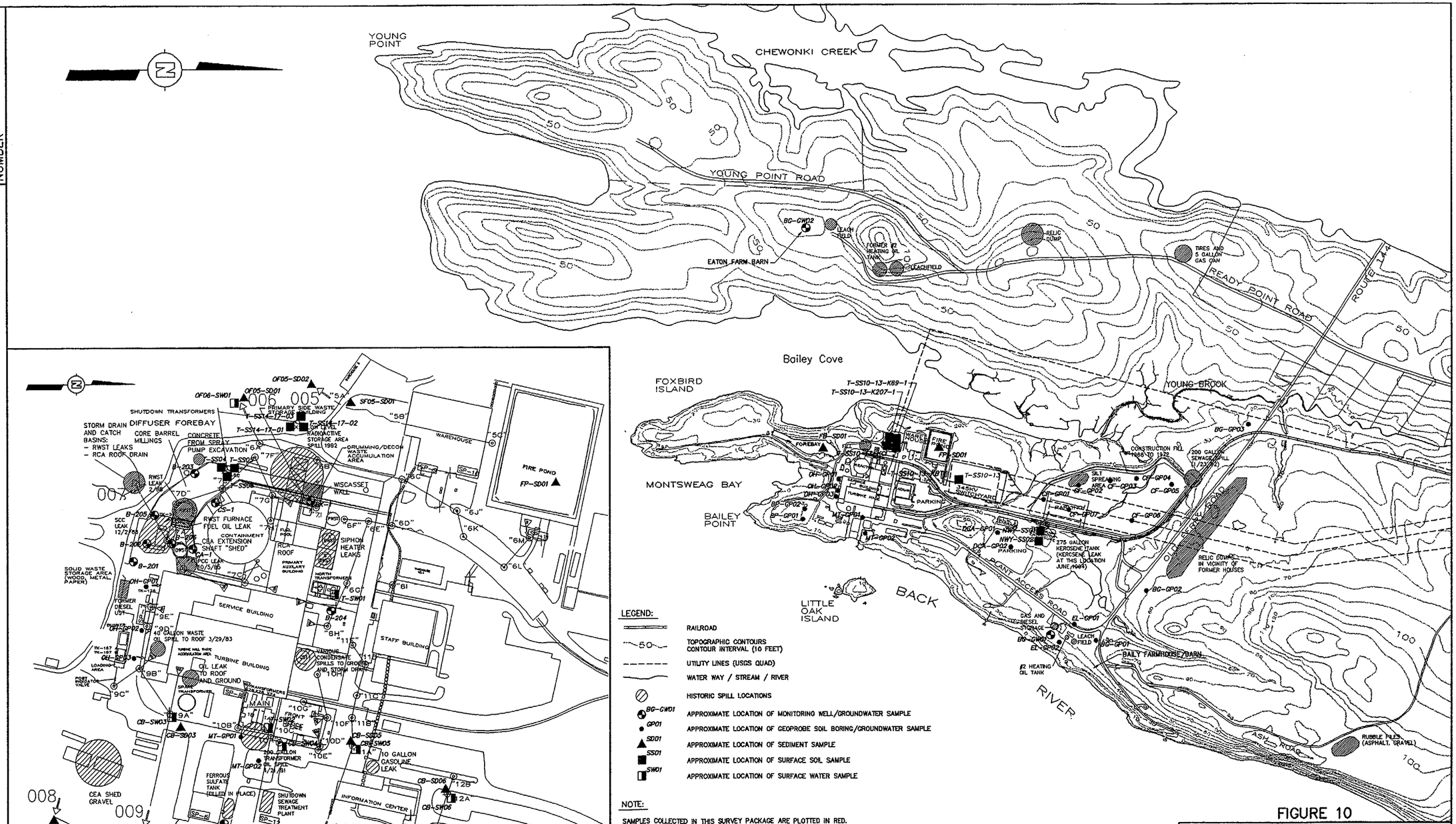
INTERNATIONAL TECHNOLOGY CORPORATION

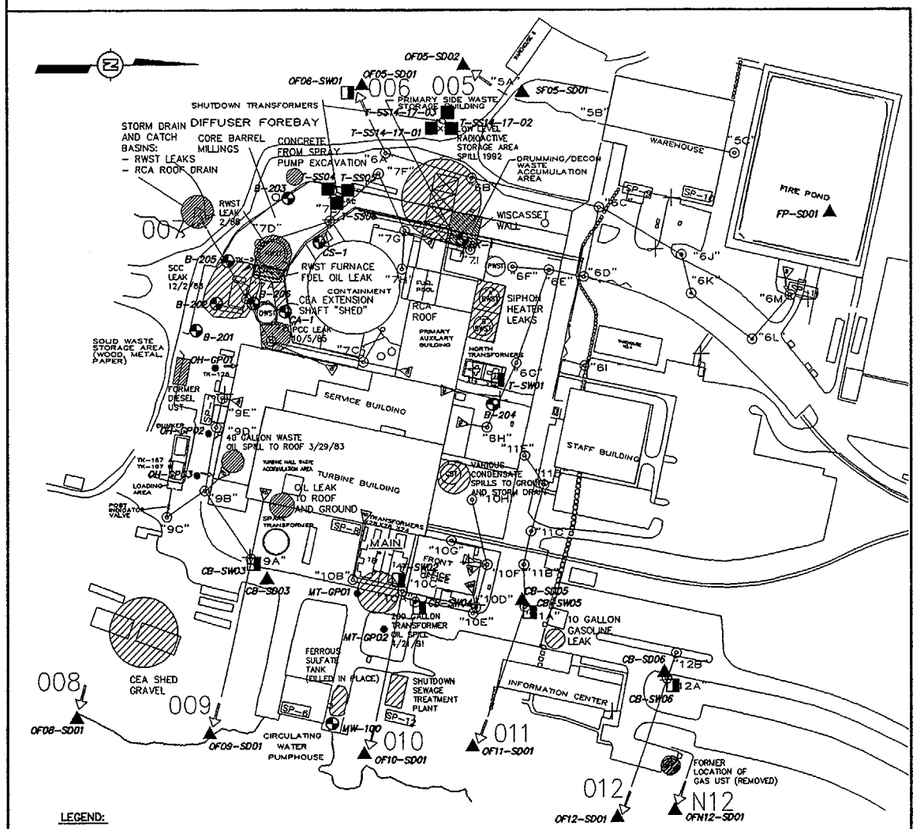
DURATEK

DESIGNED BY	G. GAILLOT	CHECKED BY	MJO 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B8	

3-18-98 11:33 AM

DRAWING NUMBER 774214-B9





LEGEND:

- RAILROAD
- 50 TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

SCALE
0 400 800 1200 FEET

FIGURE 10

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE
H15, H16 AND H17 SAMPLE LOCATIONS

INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

DESIGNED BY	G. GAILLOT	CHECKED BY	MJD 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3/25/98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B9	

3-18-98 11:27 AM

DRAWING NUMBER 774214-B10

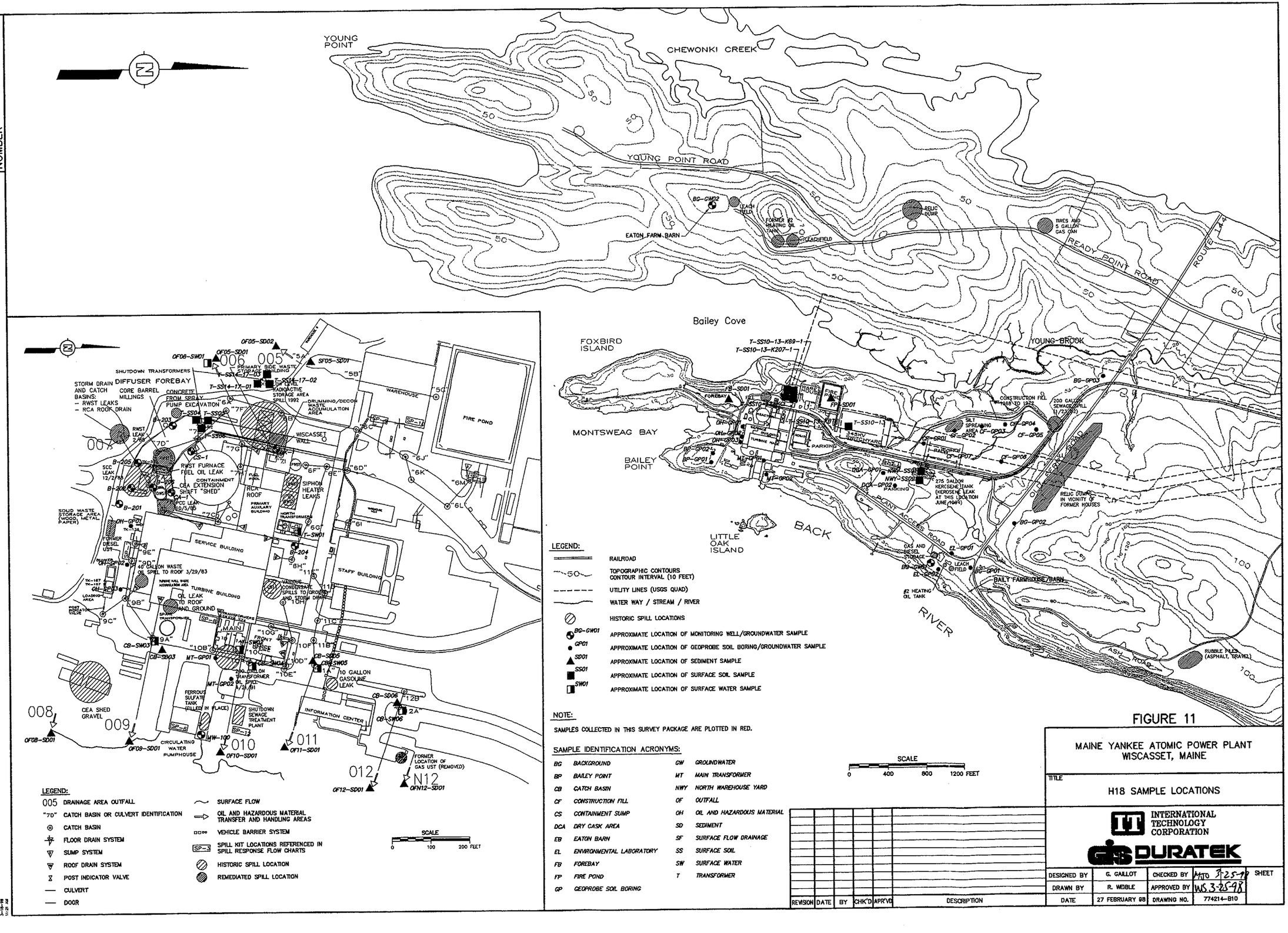


FIGURE 11

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

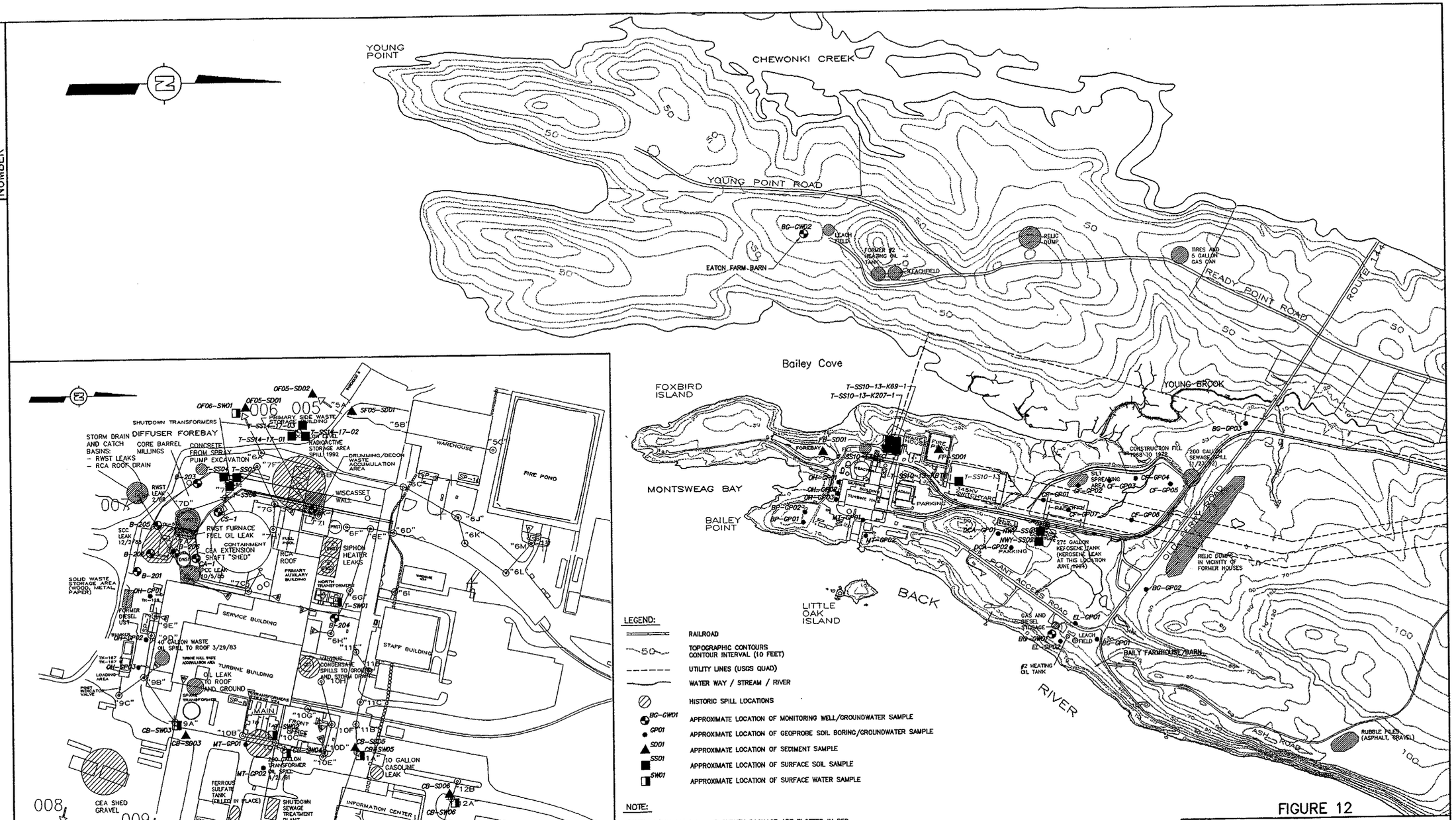
TITLE
H18 SAMPLE LOCATIONS

INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

DESIGNED BY	G. GAILLOT	CHECKED BY	MJTO 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B10	

DRAWING NUMBER 774214-B11



NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

FIGURE 12

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE

H21 SAMPLE LOCATIONS

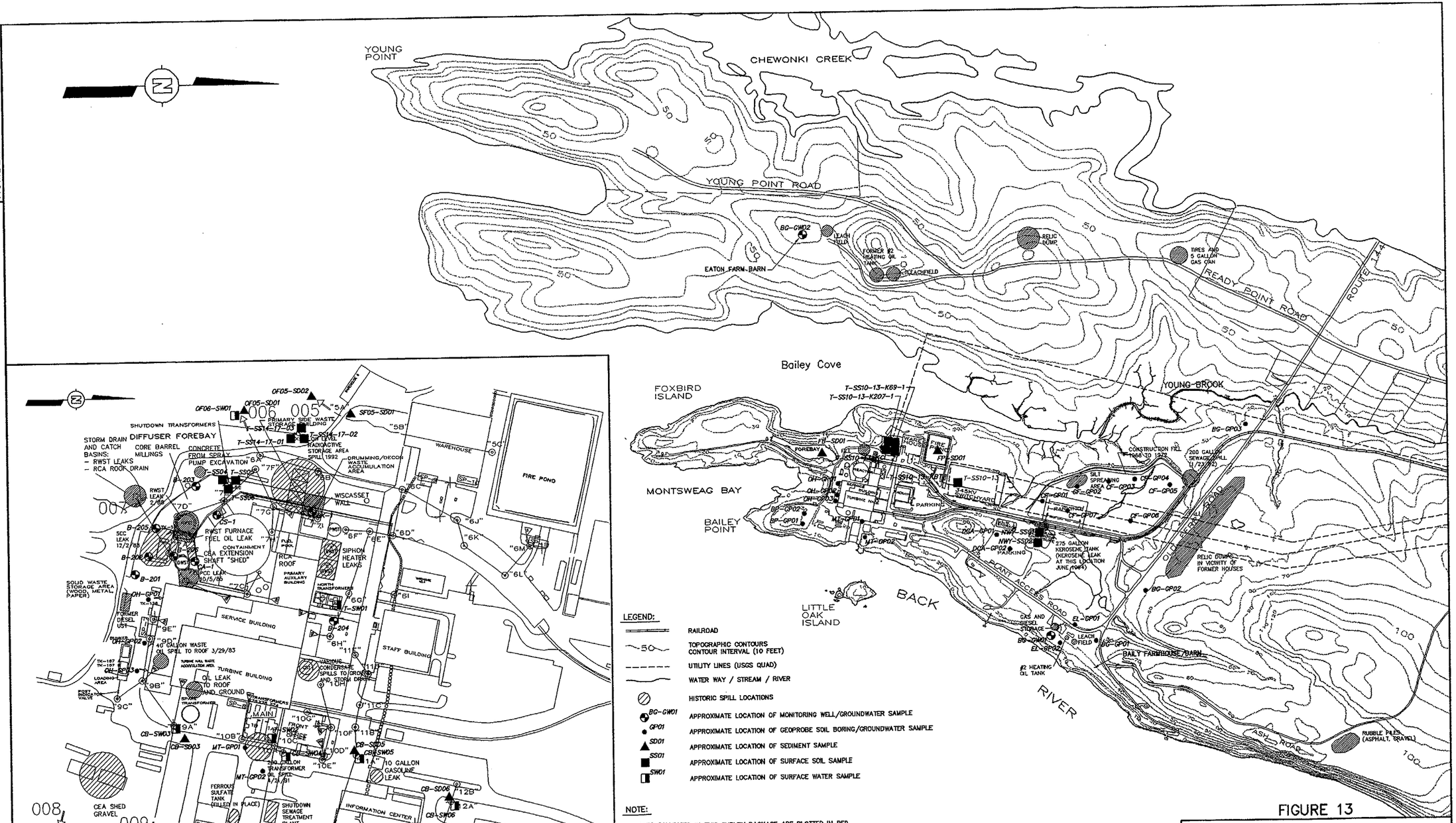
INTERNATIONAL TECHNOLOGY CORPORATION

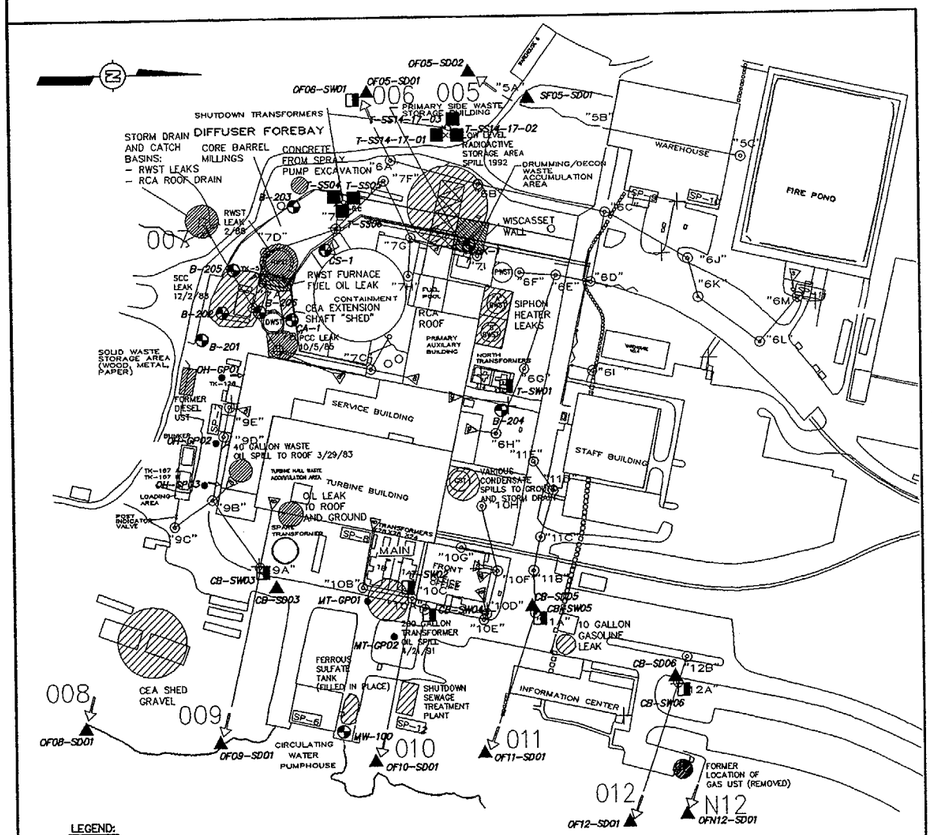
DURATEK

DESIGNED BY	G. GAILLOT	CHECKED BY	MTG 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B11	

3-19-98 11:14 AM

DRAWING NUMBER 774214-B12





LEGEND:

- RAILROAD
- TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

SCALE 0 100 200 FEET

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

FIGURE 13

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE

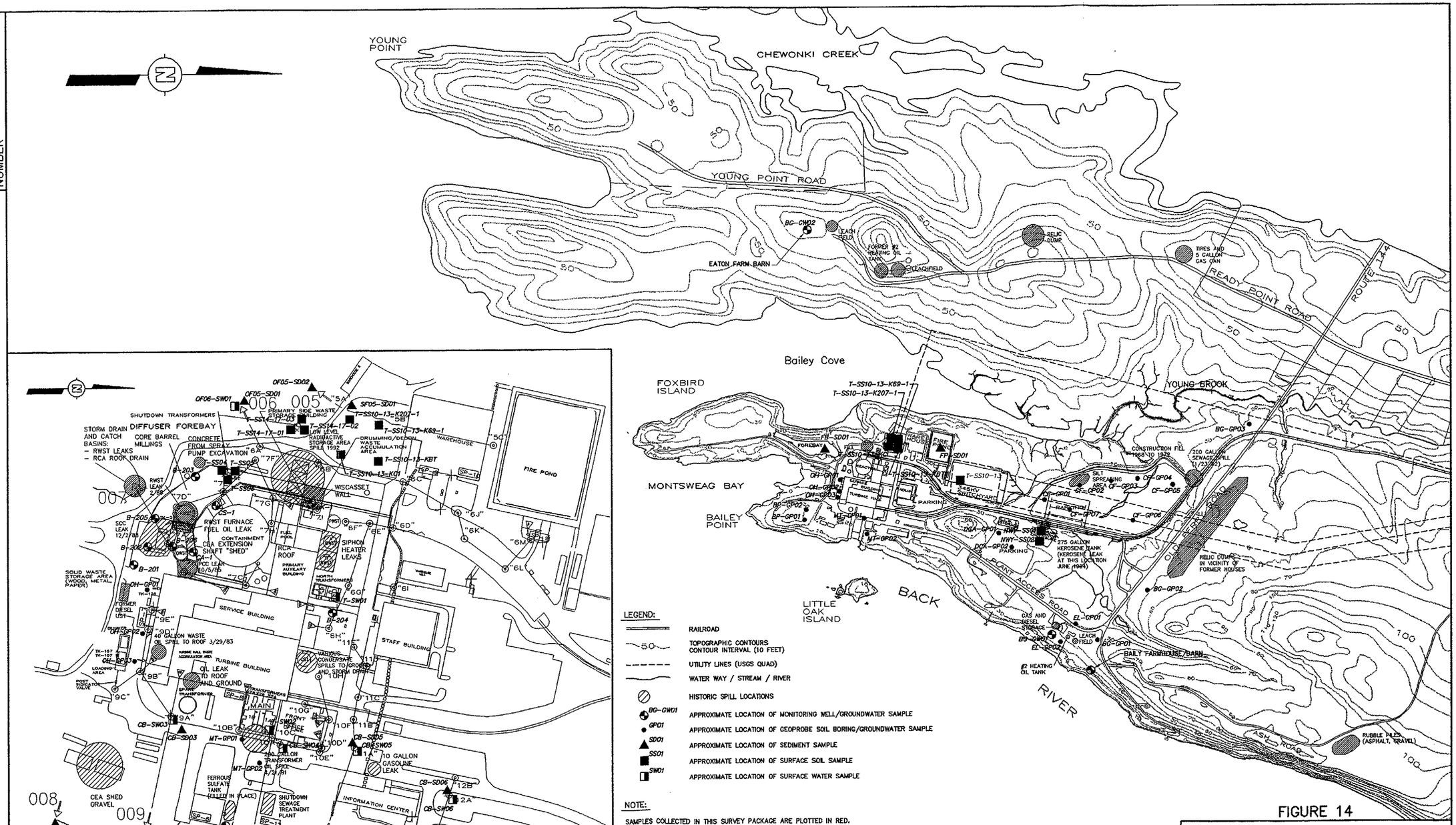
H22 SAMPLE LOCATIONS

INTERNATIONAL TECHNOLOGY CORPORATION

DURATEK

DESIGNED BY	G. GAILLOT	CHECKED BY	MTO-3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B12	

DRAWING NUMBER 774214-B13



NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

FIGURE 14

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE

H23 SAMPLE LOCATIONS

INTERNATIONAL TECHNOLOGY CORPORATION

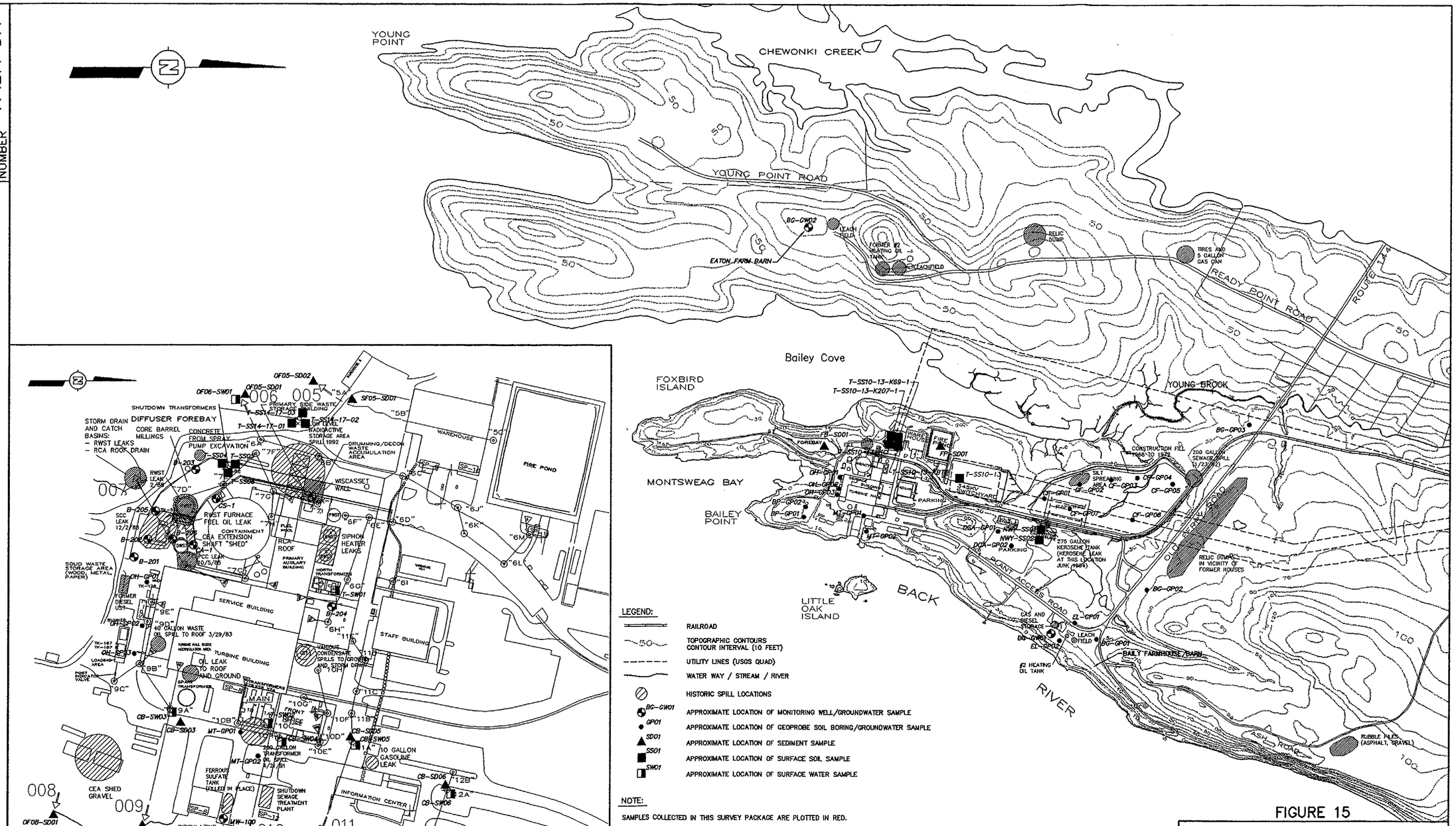
DURATEK

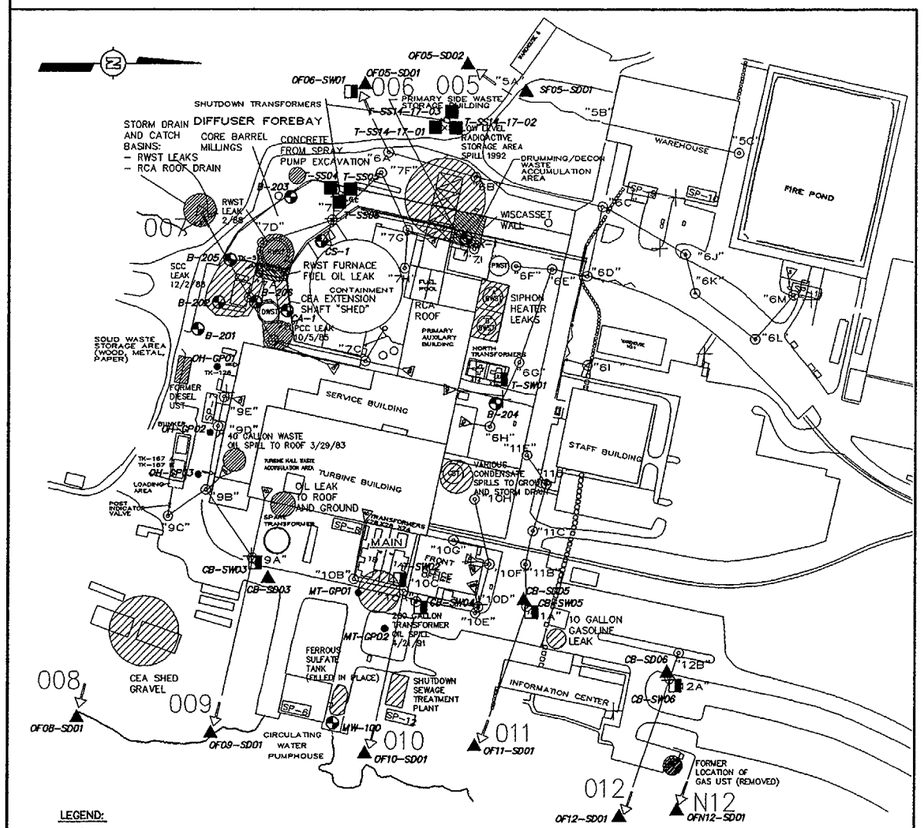
REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

DESIGNED BY	G. GAILLOT	CHECKED BY	WJU 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B13	

3-26-98 10:57 AM

DRAWING NUMBER 774214-B14





LEGEND:

- 005 DRAINAGE AREA OUTFALL
- "7D" CATCH BASIN OR CULVERT IDENTIFICATION
- CATCH BASIN
- FLOOR DRAIN SYSTEM
- SUMP SYSTEM
- ROOF DRAIN SYSTEM
- POST INDICATOR VALVE
- CULVERT
- DOOR
- SURFACE FLOW
- OIL AND HAZARDOUS MATERIAL TRANSFER AND HANDLING AREAS
- VEHICLE BARRIER SYSTEM
- SP-3 SPILL KIT LOCATIONS REFERENCED IN SPILL RESPONSE FLOW CHARTS
- HISTORIC SPILL LOCATION
- REMEDIATED SPILL LOCATION

SCALE 0 100 200 FEET

LEGEND:

- RAILROAD
- 50 TOPOGRAPHIC CONTOURS CONTOUR INTERVAL (10 FEET)
- UTILITY LINES (USGS QUAD)
- WATER WAY / STREAM / RIVER
- HISTORIC SPILL LOCATIONS
- BG-GW01 APPROXIMATE LOCATION OF MONITORING WELL/GROUNDWATER SAMPLE
- GP01 APPROXIMATE LOCATION OF GEOPROBE SOIL BORING/GROUNDWATER SAMPLE
- SD01 APPROXIMATE LOCATION OF SEDIMENT SAMPLE
- SS01 APPROXIMATE LOCATION OF SURFACE SOIL SAMPLE
- SW01 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE

NOTE:

SAMPLES COLLECTED IN THIS SURVEY PACKAGE ARE PLOTTED IN RED.

SAMPLE IDENTIFICATION ACRONYMS:

BG	BACKGROUND	GW	GROUNDWATER
BP	BAILEY POINT	MT	MAIN TRANSFORMER
CB	CATCH BASIN	NWY	NORTH WAREHOUSE YARD
CF	CONSTRUCTION FILL	OF	OUTFALL
CS	CONTAINMENT SUMP	OH	OIL AND HAZARDOUS MATERIAL
DCA	DRY CASK AREA	SD	SEDIMENT
EB	EATON BARN	SF	SURFACE FLOW DRAINAGE
EL	ENVIRONMENTAL LABORATORY	SS	SURFACE SOIL
FB	FOREBAY	SW	SURFACE WATER
FP	FIRE POND	T	TRANSFORMER
GP	GEOPROBE SOIL BORING		

SCALE 0 400 800 1200 FEET

FIGURE 15

MAINE YANKEE ATOMIC POWER PLANT
WISCASSET, MAINE

TITLE
H24 SAMPLE LOCATIONS

INTERNATIONAL TECHNOLOGY CORPORATION
DURATEK

REVISION	DATE	BY	CHK'D	APR'VD	DESCRIPTION

DESIGNED BY	G. GAILLOT	CHECKED BY	MSD 3-25-98	SHEET
DRAWN BY	R. WEIBLE	APPROVED BY	WS 3-25-98	
DATE	27 FEBRUARY 98	DRAWING NO.	774214-B14	

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