01-0561

Corporate Environmental Programs
General Electric Company
100 Woodlawn Avenue, Pittsfield, MA 01201

SDMS 43587

April 11, 2003

Bryan Olson
EPA Project Coordinator
U.S. Environmental Protection Agency, Region 1
One Congress Street, Mail Code HBT
Boston, MA 02203-2201

Re: GE-Pittsfield/Housatonic River Site
30s Complex (GECD120)
Supplemental Soil Investigation Results – Building 33/34 Area

Dear Mr. Olson:

In a letter dated December 20, 2002, the General Electric Company (GE) presented a proposal to the United States Environmental Protection Agency (EPA) for supplemental building material and soil sampling related to Buildings 33, 33-A, 33-E, 33-X, and 34 (the Building 33/34 Area) at GE's Pittsfield, Massachusetts facility (Figure 1). The proposed investigations (conditionally approved by EPA in a letter dated January 13, 2002) were identified to support the Pittsfield Economic Development Authority (PEDA) in its re-development planning for the Building 33/34 Area and adjacent areas, once building demolition and land transfer activities are completed. Specifically, for the soils beneath the Building 33/34 Area, the proposed investigations were intended to supplement the existing data for soils present beneath the buildings, so as to allow, based on consideration of the overall soils data for the 30s Complex Removal Action Area (RAA), a reevaluation of the need for soil-related response actions at this RAA. For the building materials, the proposed activities were intended to further assess whether and to what extent certain building demolition debris could be used as backfill/grading materials within the Building 33/34 Area and possibly at other locations within the GE facility.

GE previously submitted a letter, dated March 10, 2003, presenting and evaluating the building material sampling results. The current letter presents the results of the recent supplemental soil sampling activities and an evaluation of those results as they pertain to the need for soil-related response actions within the 30s Complex.

Supplemental Soil Characterization Activities

To select supplemental sampling locations beneath the existing Building 33/34 Area floor slabs, the pre-design sampling requirements established in the Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site and the *Statement of Work for Removal Actions Outside the River* (SOW) (Appendix E to the CD) for unpaved areas within the GE Plant Area were used. Those requirements include the collection of soil samples for analysis of polychlorinated biphenyls (PCBs) from the 0- to 1-foot, 1- to 6-foot, and 6- to 15-foot depth intervals at locations on an approximate 100-foot grid. In addition to PCB sampling and analysis, approximately one-third of the number of PCB samples needed to satisfy the pre-design sampling requirements for PCBs must be analyzed for the constituents listed in Appendix IX of 40 CFR 264, plus benzidine, 2-chloroethyl, and 1,2-diphenylhydrazine (Appendix IX+3). Of these samples, approximately one

half are to be obtained from the 0- to 1-foot depth interval, while the remaining samples are to be collected from the remaining depth intervals. For the Building 33/34 Area, GE identified the existing pre-design PCB and Appendix IX+3 data that could be used to characterize soils beneath the Building 33/34 Area, and it proposed additional sampling and analysis for PCBs and Appendix IX+3 constituents to satisfy the pre-design PCB and Appendix IX+3 sampling requirements described above.

Between January 16 and February 3, 2003, a total of 34 soil samples from 14 locations were collected by BBL and analyzed by CT&E Environmental Services (CT&E) for (depending on location) PCBs and/or Appendix IX+3 constituents, excluding herbicides and pesticides. Prior to sample collection, the proposed locations (and additional locations provided by EPA in its January 13, 2003 approval letter) were field located. The locations at which these samples were collected (together with the prior soil sampling locations within the 30s Complex) are shown on Figure 2. During the recent sampling, soil samples were collected from beneath the existing floor slabs from the depth increments specified in Table 1 of GE's December 20, 2002 letter, except at boring location RAA2-B8. At this location, the soil boring was terminated at a depth of 3 feet below the bottom of the existing floor slab due to sampling equipment refusal. Two additional attempts were made within 5 feet of the original sample location; however, refusal was encountered at those locations at approximately the same depth.

Soil samples that were retrieved from each boring were screened using a photoionization detector (PID) and the PID results are provided in Table 1. The PCB soil results for the 34 supplemental soil samples are provided in Table 2, while the results from the soil samples collected for analysis of Appendix IX+3 constituents are presented in Table 3. Data from previous investigations at the 30s Complex were presented in the *Conceptual Removal Design/Removal Action Work Plan for the 20s, 30s, and 40s Complexes*, dated December 2001 (Conceptual RD/RA Work Plan).

Evaluation of Sample Results

The supplemental soil sampling data have been evaluated in accordance with the procedures described in GE's December 20, 2002 letter and approved by EPA. A summary of the evaluations conducted for PCBs and other Appendix IX+3 constituents is presented below.

Evaluation for PCBs

GE performed a screening-level review of the supplemental soil sampling results considering only the recent data from the Building 33/34 Area. Although that area represents only a portion of the 30s Complex, the previous evaluations set forth in the Conceptual RD/RA Work Plan indicated that the average PCB concentrations in soils within the overall 30s Complex RAA were well below the applicable Performance Standards. In these circumstances, it was considered that if the supplemental data were generally comparable to the prior data and/or if the combined prior and new data associated with for the Building 33/34 Area were well below the Performance Standards, the new data would not change the findings of the prior soil evaluations for the 30s Complex RAA (i.e., that no soil-related remediation actions are needed to achieve the applicable Performance Standards).

For the 34 samples analyzed for PCBs, total PCB concentrations ranged from non-detect (in 23 samples) to a maximum of 4.5 ppm (in the 6- to 15-foot depth sample from boring RAA2-C5). These individual PCB results are all well below the most stringent soil-related Performance Standard for the 30s Complex (i.e., 25 ppm for the top foot of soil). Moreover, the maximum

discrete sample results for each relevant depth increment are lower than or consistent with the spatial average PCB concentrations previously calculated for those depth increments within this RAA, as summarized in the table below:

Depth Increment (ft)	Supplemental Soil Data		Previously Calculated Spatial Average PCB Concentrations for 30s Complex (ppm)[1]	Applicable Performance Standard (ppm)
	No. of Samples	Maximum PCB Result (ppm)		
0 to 1	13	0.185	7.32 (overall area) 12.39 (unpaved areas)	25
1 to 6	11	1.60	2.64	200
0 to 15	34	4.50	4.05	100

1 – Spatial average PCB concentrations as presented in *Conceptual Removal Design/Removal Action Work Plan for the 20s, 30s, and 40s Complexes* (December 2001).

For these reasons, no further PCB evaluations are necessary and the findings of the previous RD/RA evaluations of PCBs for this RAA remain unchanged.

Evaluation for Other Appendix IX+3 Constituents

For the supplemental soil samples collected and analyzed for Appendix IX+3 constituents, the initial evaluation step consisted of a comparison of the maximum concentrations of all detected constituents – except for polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) – to the EPA Region 9 Preliminary Remediation Goals (PRGs) for such constituents in industrial areas. For such constituents for which Region 9 PRGs do not exist, surrogate PRGs (based on Region 9 PRGs for similar chemicals) were used. For PCDDs and PCDFs, a total Toxicity Equivalency Quotient (TEQ) concentration was calculated for each sample using the Toxicity Equivalency Factors published by the World Health Organization (WHO); and the maximum total TEQ concentration for each relevant depth was then compared to the depth-specific PRG established in the CD for industrial/commercial areas (i.e., 5 ppb for the top foot and 20 ppb for subsurface soil).

The results of these comparisons are presented in Table 4. As shown in that table, for the supplemental Appendix IX+3 samples, the maximum concentrations of all detected constituents are below the applicable PRGs, with the exception of arsenic. Therefore, consistent with the evaluation approach outlined in GE's December 20, 2002 letter, arsenic was evaluated in relation to the applicable Massachusetts Contingency Plan (MCP) Method 1 soil standard. Typically, for comparisons to the MCP Method 1 soil standards, the arithmetic average concentrations of the constituents for the relevant depth increments are used. For these supplemental soil samples, however, the maximum concentrations of arsenic for the relevant depth increments (8.3 ppm for the 0- to 1-foot depth and 9.3 ppm for the 1- to 6-foot and 0- to 15-foot depth increments) are well below the applicable MCP Method 1 soil standard for arsenic (30 ppm). They are also below the average arsenic levels previously calculated for the overall 30s Complex (10 ppm for the 0- to 1-foot depth increment, 19.3 ppm for the 1- to 6-foot depth increment, and 13.4 ppm for the 0- to 15-foot depth increment). In these circumstances, it is evident that the supplemental sampling results for arsenic do not change the findings of the prior RD/RA evaluations concerning Appendix IX+3 constituents.

Summary

Based on the evaluations of the analytical results from the supplemental soil sampling performed for the Building 33/34 Area, the conclusions previously presented in the Conceptual RD/RA Work Plan – i.e., that no soil-related remediation actions are necessary at this RAA – remain unchanged.

If you have any questions, please contact me.

Sincerely,

John F. Novotny, P.E.
Manager-Facilities and Brownfields Programs
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TABLE 1
PHOTOIONIZATION DETECTOR (PID) RESULTS
CHARACTERIZATION OF BUILDING 33/34 AREA SOIL
30's COMPLEX
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Sample ID	Date Collected	Depth (feet)	PID (ppm)
RAA2-A3	1/29/03	0-1	0.0
		1-4	0.0
		4-6	0.0
		6-8	0.0
		8-10	0.0
		10-12	0.0
		12-15	0.0
RAA2-A5	1/30/03	0-1	0.0
RAA2-B3	1/29/03	0-1	0.0
		1-4	0.0
		4-6	0.0
		6-8	0.0
		8-10	0.0
		10-12	0.0
		12-15	0.0
RAA2-B6	1/30/03	0-1	0.0
		1-3	0.0
		3-5	0.0
		5-7	0.0
		7-9	0.0
		9-11	0.0
		11-13	0.0
		13-15	0.0
RAA2-B8	1/30/03	0-1	0.0
		1-3 *	0.0
RAA2-C2	2/3/03	1-3	0.0
		3-4	0.0
		4-6	0.0
		6-8	0.0
		8-10	0.0
		10-12	0.0
		12-15	0.0
RAA2-C4	1/30/03	0-1	0.0
		1-3	0.0
		3-5	0.0
		5-7	0.0
		7-9	0.0
		9-11	0.0
		11-13	0.0
		13-15	0.0

Sample ID	Date Collected	Depth (feet)	PID (ppm)
RAA2-C5	1/30/03	0-1	0.0
		1-3	8.0
		3-5	12.1
		5-7	29.4
		7-9	72.3
		9-11	66.1
		11-13	112.0
		13-15	67.1
RAA2-C6	1/30/03	0-1	0.0
		1-3	0.0
		3-5	0.0
		5-7	0.0
		7-9	0.0
		9-11	0.0
		11-13	0.0
		13-15	0.0
RAA2-C7	1/30/03	0-1	0.0
		1-3	0.0
		3-5	0.8
		5-7	0.2
		7-9	0.0
		9-11	0.0
		11-13	0.0
		13-15	0.0
RAA2-D1	1/16/03	0-1	0.0
RAA2-D2	1/26/03	0-1	0.0
		1-4	0.0
		4-6	0.0
		6-8	0.0
		8-10	0.0
		10-12	0.0
		12-15	0.0
RAA2-D3	1/29/03	0-1	0.0
		1-4	0.0
		4-6	0.0
		6-8	0.0
		8-10	0.0
		10-12	8.6
		12-15	22.1
RAA2-D5	1/30/03	0-1	0.0

Notes
1. Sample locations correspond to grid nodes identified on Figure 2.
2. Soil samples were collected and screened by Blasland, Bouck & Lee, Inc.
3. * - Indicates that refusal was encountered at a depth of 3 feet below the bottom of the concrete floor slab.

TABLE 2
PCB DATA

BUILDING 33/34 AREA SOIL SAMPLING
20s, 30s, 40s COMPLEX
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Sample ID:	RAA2-A3	RAA2-A3	RAA2-A3	RAA2-A5	RAA2-B3	RAA2-B3	RAA2-B3	RAA2-B6	RAA2-B6	RAA2-B6
Sample Depth (Feet):	0-1	1-6	6-15	0-1	0-1	1-6	6-15	0-1	1-6	6-15
Parameter Date Collected:	1/29/03	1/29/03	1/29/03	1/30/03	1/29/03	1/29/03	1/29/03	1/30/03	1/30/03	1/30/03
Aroclor-1254	ND(0.035)	ND(0.035) [ND(0.035)]	ND(0.037)	ND(0.037)	ND(0.035)	ND(0.034)	ND(0.036)	0.090	0.12	ND(0.035) [ND(0.035)]
Aroclor-1260	ND(0.035)	ND(0.035) [ND(0.035)]	ND(0.037)	ND(0.037)	ND(0.035)	ND(0.034)	ND(0.036)	0.095	0.11	ND(0.035) [ND(0.035)]
Total PCBs	ND(0.035)	ND(0.035) [ND(0.035)]	ND(0.037)	ND(0.037)	ND(0.035)	ND(0.034)	ND(0.036)	0.185	0.23	ND(0.035) [ND(0.035)]

Sample ID:	RAA2-B8	RAA2-B8	RAA2-C2	RAA2-C2	RAA2-C4	RAA2-C4	RAA2-C4	RAA2-C5	RAA2-C5	RAA2-C5	RAA2-C6	RAA2-C6
Sample Depth (Feet):	0-1	1-3	1-6	6-15	0-1	1-6	6-15	0-1	1-6	6-15	0-1	1-6
Parameter Date Collected:	1/30/03	1/30/03	2/3/03	2/3/03	1/30/03	1/30/03	1/30/03	1/30/03	1/30/03	1/30/03	1/30/03	1/30/03
Aroclor-1254	0.040	ND(0.034)	ND(0.038)	0.032 J	ND(0.035)	ND(0.034)	ND(0.042)	ND(0.037)	ND(0.041)	ND(0.20)	0.025 J	ND(0.036)
Aroclor-1260	ND(0.034)	ND(0.034)	1.6	ND(0.039)	ND(0.035)	ND(0.034)	0.029 J	ND(0.037)	0.42	4.5	0.025 J	ND(0.036)
Total PCBs	0.040	ND(0.034)	1.6	0.032 J	ND(0.035)	ND(0.034)	0.029 J	ND(0.037)	0.42	4.5	0.050 J	ND(0.036)

Sample ID:	RAA2-C6	RAA2-C7	RAA2-C7	RAA2-C7	RAA2-D1	RAA2-D2	RAA2-D2	RAA2-D2	RAA2-D3	RAA2-D3	RAA2-D3	RAA2-D5
Sample Depth (Feet):	6-15	0-1	1-6	6-15	0-1	0-1	1-6	6-15	0-1	1-6	6-15	0-1
Parameter Date Collected:	1/30/03	1/30/03	1/30/03	1/30/03	1/16/03	1/29/03	1/29/03	1/29/03	1/29/03	1/29/03	1/29/03	1/30/03
Aroclor-1254	ND(0.040)	ND(0.036)	ND(0.035)	ND(0.039)	0.015 J	ND(0.045)	ND(0.036)	ND(0.039)	ND(0.046)	ND(0.041)	ND(0.038)	0.020 J
Aroclor-1260	ND(0.040)	ND(0.036)	ND(0.035)	ND(0.039)	0.014 J	ND(0.045)	ND(0.036)	ND(0.039)	ND(0.046)	ND(0.041)	ND(0.038)	ND(0.035)
Total PCBs	ND(0.040)	ND(0.036)	ND(0.035)	ND(0.039)	0.029 J	ND(0.045)	ND(0.036)	ND(0.039)	ND(0.046)	ND(0.041)	ND(0.038)	0.020 J

Notes

1. Samples were collected by Blasland Bouck & Lee, Inc., and were submitted to CT&E Environmental Services, Inc. for analysis of PCBs
2. Only those constituents detected in at least one sample are summarized.
3. Duplicate sample results are presented in brackets.

ND - Analyte was not detected. The number in parentheses is the associated detection limit.

Data Qualifiers:

J - Indicates an estimated value less than the practical quantitation limit (PQL).

TABLE 3
SUMMARY OF APPENDIX IX+3 DATA

BUILDING 33/34 AREA SOIL SAMPLING
20s, 30s, 40s COMPLEX
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Constituent / Sample ID: / Sample Depth (Feet): / Date Collected:	RAA2-A3 1-6 1/29/03	RAA2-A3 4-6 1/29/03	RAA2-A5 0-1 1/30/03	RAA2-B3 0-1 1/29/03
Volatile Organics				
Ethylbenzene	NS	ND(0.0053) [ND(0.0052)]	ND(0.0055)	ND(0.0052)
Tetrachloroethene	NS	ND(0.0053) [ND(0.0052)]	ND(0.0055)	0.0030 J
Trichloroethene	NS	ND(0.0053) [ND(0.0052)]	ND(0.0055)	0.012
Xylenes (total)	NS	ND(0.0053) [ND(0.0052)]	ND(0.0055)	ND(0.0052)
Semivolatile Organics				
Acenaphthylene	0.080 J [ND(0.35)]	NS	ND(0.37)	ND(0.35)
Benzo(a)anthracene	0.28 J [0.099 J]	NS	ND(0.37)	ND(0.35)
Benzo(a)pyrene	0.30 J [0.13 J]	NS	ND(0.37)	ND(0.35)
Benzo(b)fluoranthene	0.45 [0.21 J]	NS	ND(0.37)	ND(0.35)
Benzo(g,h,i)perylene	0.27 J [0.12 J]	NS	ND(0.37)	ND(0.35)
Benzo(k)fluoranthene	0.16 J [0.078 J]	NS	ND(0.37)	ND(0.35)
Chrysene	0.27 J [0.10 J]	NS	ND(0.37)	ND(0.35)
Fluoranthene	0.36 [0.14 J]	NS	ND(0.37)	0.099 J
Indeno(1,2,3-cd)pyrene	0.22 J [0.087 J]	NS	ND(0.37)	ND(0.35)
Naphthalene	ND(0.35) [ND(0.35)]	NS	ND(0.37)	ND(0.35)
Phenanthrene	ND(0.35) [ND(0.35)]	NS	ND(0.37)	ND(0.35)
Pyrene	0.32 J [0.15 J]	NS	ND(0.37)	0.071 J
Furans				
2,3,7,8-TCDF	ND(0.00000034) [ND(0.00000066) X]	NS	0.00000023 J	0.00000045 J
TCDFs (total)	ND(0.00000034) [0.0000015]	NS	0.00000095	0.0000023 Q
1,2,3,7,8-PeCDF	0.00000028 J [0.00000026 J]	NS	ND(0.00000026) X	ND(0.00000028) X
2,3,4,7,8-PeCDF	ND(0.00000025) X [0.00000046 J]	NS	0.00000031 J	ND(0.00000040) X
PeCDFs (total)	0.0000013 Q [0.0000022 Q]	NS	0.00000078 Q	0.0000021 Q
1,2,3,4,7,8-HxCDF	ND(0.00000055) [0.00000031 J]	NS	ND(0.00000027) X	ND(0.00000025) X
1,2,3,6,7,8-HxCDF	0.00000028 J [0.00000037 J]	NS	0.00000029 J	0.00000029 J
1,2,3,7,8,9-HxCDF	ND(0.00000055) [0.00000028 J]	NS	0.00000033 J	ND(0.00000052)
2,3,4,6,7,8-HxCDF	ND(0.00000055) [0.00000051 J]	NS	0.00000027 J	0.00000033 J
HxCDFs (total)	0.0000011 [0.0000048]	NS	0.0000012	0.0000015
1,2,3,4,6,7,8-HpCDF	ND(0.00000033) X [0.00000059 J]	NS	0.00000037 J	0.00000055 J
1,2,3,4,7,8,9-HpCDF	0.00000015 J [ND(0.00000019) X]	NS	0.00000033 J	ND(0.00000052)
HpCDFs (total)	0.00000046 [0.0000013]	NS	0.00000070	0.00000087
OCDF	ND(0.00000047) X [0.00000063 J]	NS	0.00000074 J	ND(0.00000050) X
Dioxins				
2,3,7,8-TCDD	ND(0.00000042) [ND(0.00000031)]	NS	ND(0.00000018)	ND(0.00000028)
TCDDs (total)	ND(0.00000059) [ND(0.00000068)]	NS	ND(0.00000033)	ND(0.00000051)
1,2,3,7,8-PeCDD	ND(0.00000055) [ND(0.00000030) X]	NS	ND(0.00000032) X	ND(0.00000052)
PeCDDs (total)	ND(0.00000091) [ND(0.00000096)]	NS	ND(0.00000064) X	ND(0.0000010)
1,2,3,4,7,8-HxCDD	ND(0.00000055) [ND(0.00000060)]	NS	0.00000026 J	ND(0.00000052)
1,2,3,6,7,8-HxCDD	ND(0.00000055) [ND(0.00000055)]	NS	0.00000032 J	ND(0.00000052)
1,2,3,7,8,9-HxCDD	ND(0.00000055) [ND(0.00000056)]	NS	0.00000046 J	ND(0.00000052)
HxCDDs (total)	ND(0.00000054) [ND(0.00000099)]	NS	0.0000016	0.00000036
1,2,3,4,6,7,8-HpCDD	0.00000096 J [0.0000011 J]	NS	0.0000012 J	0.0000014 J
HpCDDs (total)	0.00000096 [0.0000018]	NS	0.0000021	0.0000025
OCDD	0.000010 J [0.000014]	NS	0.000014	0.000080
Total TEQs (WHO TEFs) Surface Soil	--	NS	0.00000066	0.00000076
Total TEQs (WHO TEFs) Sub-Surface Soil	0.00000079 [0.00000083]	NS	--	--
Inorganics				
Antimony	ND(6.00) [1.00 B]	NS	ND(6.00)	0.990 B
Arsenic	8.20 [9.30]	NS	7.40	8.30
Barium	ND(20.0) [23.0]	NS	22.0	ND(20.0)
Beryllium	ND(0.500) [ND(0.500)]	NS	ND(0.500)	ND(0.500)
Cadmium	ND(0.500) [ND(0.500)]	NS	ND(0.500)	ND(0.500)
Chromium	12.0 [12.0]	NS	7.20	10.0
Cobalt	14.0 [15.0]	NS	9.70	12.0
Copper	29.0 [33.0]	NS	27.0	30.0
Cyanide	ND(0.100) [0.140]	NS	ND(0.110)	ND(0.100)
Lead	14.0 [17.0]	NS	28.0	23.0
Nickel	23.0 [24.0]	NS	13.0	19.0
Selenium	1.50 [1.30]	NS	ND(1.00)	ND(1.00)
Sulfide	ND(5.20) [10.0]	NS	12.0	67.0
Thallium	ND(1.60) [1.00 B]	NS	ND(1.60)	ND(1.60)
Tin	4.50 B [4.40 B]	NS	3.80 B	ND(10.0)
Vanadium	9.60 [10.0]	NS	6.30	9.20
Zinc	75.0 [70.0]	NS	48.0	49.0

TABLE 3
SUMMARY OF APPENDIX IX+3 DATA

BUILDING 33/34 AREA SOIL SAMPLING
20s, 30s, 40s COMPLEX
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Sample ID: / Sample Depth (Feet): / Parameter / Date Collected:	RAA2-C5 0-1 1/30/03	RAA2-C5 6-15 1/30/03	RAA2-C5 11-13 1/30/03	RAA2-C7 1-6 1/30/03	RAA2-C7 3-5 1/30/03	RAA2-D1 0-1 1/16/03
Volatile Organics						
Ethylbenzene	ND(0.0055)	NS	2.1	NS	ND(0.0052)	ND(0.0050)
Tetrachloroethene	ND(0.0055)	NS	ND(1.6)	NS	ND(0.0052)	ND(0.0050)
Trichloroethene	ND(0.0055)	NS	ND(1.6)	NS	ND(0.0052)	ND(0.0050)
Xylenes (total)	ND(0.0055)	NS	36	NS	ND(0.0052)	ND(0.0050)
Semivolatile Organics						
Acenaphthylene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Benzo(a)anthracene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Benzo(a)pyrene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Benzo(b)fluoranthene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Benzo(g,h,i)perylene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Benzo(k)fluoranthene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Chrysene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Fluoranthene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Indeno(1,2,3-cd)pyrene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Naphthalene	ND(0.37)	12	NS	ND(0.35)	NS	ND(0.33)
Phenanthrene	ND(0.37)	0.39 J	NS	ND(0.35)	NS	ND(0.33)
Pyrene	ND(0.37)	ND(0.40)	NS	ND(0.35)	NS	ND(0.33)
Furans						
2,3,7,8-TCDF	ND(0.00000033)	0.0000030 J	NS	ND(0.00000033) X	NS	0.00000063 J
TCDFs (total)	ND(0.00000033)	0.000019	NS	0.0000030	NS	0.0000047 Q
1,2,3,7,8-PeCDF	ND(0.00000056)	0.0000015 J	NS	0.00000066 J	NS	0.00000044 J
2,3,4,7,8-PeCDF	ND(0.00000056)	0.0000031 J	NS	0.00000045 J	NS	0.00000041 J
PeCDFs (total)	ND(0.00000056)	0.000020	NS	0.0000038	NS	0.0000048
1,2,3,4,7,8-HxCDF	ND(0.00000056)	0.000013 J	NS	0.00000047 J	NS	0.00000058 J
1,2,3,6,7,8-HxCDF	ND(0.00000056)	0.0000025 J	NS	0.00000038 J	NS	0.00000036 J
1,2,3,7,8,9-HxCDF	ND(0.00000056)	0.0000021 J	NS	0.00000020 J	NS	ND(0.00000048)
2,3,4,6,7,8-HxCDF	ND(0.00000056)	0.0000028 J	NS	0.00000049 J	NS	0.00000030 J
HxCDFs (total)	ND(0.00000056)	0.000040	NS	0.0000032	NS	0.0000041
1,2,3,4,6,7,8-HpCDF	ND(0.00000056)	0.000013 J	NS	0.00000081 J	NS	0.0000011 J
1,2,3,4,7,8,9-HpCDF	ND(0.00000056)	0.0000074 J	NS	0.00000021 J	NS	0.00000020 J
HpCDFs (total)	ND(0.00000056)	0.000037	NS	0.0000012	NS	0.0000019
OCDF	ND(0.0000011)	0.000043	NS	0.00000070 J	NS	0.0000024 J
Dioxins						
2,3,7,8-TCDD	ND(0.00000038)	ND(0.00000093)	NS	ND(0.00000024) X	NS	ND(0.00000017) X
TCDDs (total)	ND(0.00000070)	ND(0.0000021)	NS	0.00000022	NS	ND(0.00000019)
1,2,3,7,8-PeCDD	ND(0.00000056)	0.00000069 J	NS	0.00000018 J	NS	ND(0.00000019) X
PeCDDs (total)	ND(0.00000095)	0.0000021	NS	0.00000018	NS	0.00000013
1,2,3,4,7,8-HxCDD	ND(0.00000056)	ND(0.00000044) X	NS	ND(0.00000050)	NS	ND(0.00000048)
1,2,3,6,7,8-HxCDD	ND(0.00000056)	0.0000012 J	NS	ND(0.00000050)	NS	0.00000024 J
1,2,3,7,8,9-HxCDD	ND(0.00000056)	ND(0.0000017)	NS	ND(0.00000050)	NS	0.00000017 J
HxCDDs (total)	ND(0.0000011)	0.0000053	NS	ND(0.00000064)	NS	0.0000011
1,2,3,4,6,7,8-HpCDD	ND(0.0000013)	0.0000050 J	NS	0.00000059 J	NS	0.0000020 J
HpCDDs (total)	ND(0.0000013)	0.0000050	NS	0.00000059	NS	0.0000020
OCDD	0.0000024 J	0.000022 J	NS	0.0000022 J	NS	0.000012
Total TEQs (WHO TEFs) Surface Soil	0.00000085	–	NS	–	NS	0.00000072
Total TEQs (WHO TEFs) Sub-Surface Soil	–	0.0000056	NS	0.00000082	NS	–
Inorganics						
Antimony	ND(6.00)	1.40 B	NS	ND(6.00)	NS	ND(6.00)
Arsenic	7.00	5.30	NS	8.60	NS	2.60
Barium	ND(20.0)	ND(20.0)	NS	23.0	NS	21.0
Beryllium	ND(0.500)	0.0990 B	NS	ND(0.500)	NS	ND(0.500)
Cadmium	ND(0.500)	0.560	NS	ND(0.500)	NS	ND(0.500)
Chromium	8.50	7.90	NS	7.50	NS	6.50
Cobalt	11.0	9.60	NS	11.0	NS	8.30
Copper	25.0	21.0	NS	78.0	NS	13.0
Cyanide	ND(0.110)	ND(0.240)	NS	0.150	NS	0.100 B
Lead	9.70	6.60	NS	44.0	NS	19.0
Nickel	17.0	16.0	NS	18.0	NS	9.60
Selenium	0.780 B	ND(1.00)	NS	0.630 B	NS	1.20
Sulfide	13.0	37.0	NS	13.0	NS	22.0
Thallium	ND(1.60)	ND(1.80)	NS	ND(1.60)	NS	ND(1.60)
Tin	ND(10.0)	ND(10.0)	NS	3.60 B	NS	5.10 B
Vanadium	6.60	5.90	NS	5.70	NS	8.80
Zinc	49.0	44.0	NS	71.0	NS	32.0

TABLE 3
SUMMARY OF APPENDIX IX+3 DATA

BUILDING 33/34 AREA SOIL SAMPLING
20s, 30s, 40s COMPLEX
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Notes

1. Samples were collected by Blasland Bouck & Lee, Inc., and were submitted to CT&E Environmental Services, Inc. for analysis of volatile organics, semivolatile organics, dioxins/furans, and inorganics.
2. With the exception of dioxin/furans, only those constituents detected in at least one sample are summarized.
3. Total 2,3,7,8-TCDD toxicity equivalents (TEQs) were calculated using Toxicity Equivalency Factors (TEFs) derived by the World Health Organization (WHO) and published by Van den Berg et al. In Environmental Health Perspectives 8.106(2), December 1998.
4. Duplicate sample results are presented in brackets.

ND - Analyte was not detected. The number in parentheses is the associated detection limit.
NS - Not Sampled - Parameter was not requested on sample chain of custody form.

Data Qualifiers:

Organics (Volatiles, Semivolatiles, Dioxin/Furans)

J - Indicates an estimated value less than the practical quantitation limit (PQL).
Q - Indicates the presence of quantitative interferences.
X - Estimated maximum possible concentration.

Inorganics

B - Indicates an estimated value between the instrument detection limit (IDL) and practical quantitation limit (PQL).

TABLE 4
COMPARISON OF DETECTED CONSTITUENTS WITH PRELIMINARY REMEDIATION GOALS

BUILDING 33/34 AREA SOIL SAMPLING
20s, 30s, 40s COMPLEX
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Constituent	EPA INDUSTRIAL PRG	MAXIMUM DETECTED CONCENTRATION	CONSTITUENT EXCEEDS PRG
Volatile Organics			
Ethylbenzene	230	2.10	NO
Tetrachloroethene	16	0.0030 J	NO
Trichloroethene	520	0.012	NO
Xylenes (total)	210	36.0	NO
Semivolatile Organics			
Acenaphthylene	190 (1)	0.080 J	NO
Benzo(a)anthracene	3.6	0.28 J	NO
Benzo(a)pyrene	0.36	0.30 J	NO
Benzo(b)fluoranthene	3.6	0.45	NO
Benzo(g,h,i)perylene	190 (1)	0.27 J	NO
Benzo(k)fluoranthene	36	0.16 J	NO
Chrysene	360	0.27 J	NO
Fluoranthene	37,000	0.36	NO
Indeno(1,2,3-cd)pyrene	3.6	0.22 J	NO
Naphthalene	190	12.0	NO
Phenanthrene	190 (1)	0.39 J	NO
Pyrene	26,000	0.32 J	NO
Dioxins/Furans			
Total TEQs (WHO TEFs) Surface Soil	0.005	0.00000085	NO
Total TEQs (WHO TEFs) Sub-Surface Soil	0.02	0.0000056	NO
Inorganics			
Antimony	750	1.40 B	NO
Arsenic	3	9.30	YES (2)
Barium	100,000	23.0	NO
Beryllium	3,400	0.099 B	NO
Cadmium	930	0.56	NO
Chromium	450	12.0	NO
Cobalt	29,000	15.0	NO
Copper	70,000	78.0	NO
Cyanide	35 (1)	0.15	NO
Lead	1,000	44.0	NO
Nickel	37,000	24.0	NO
Selenium	9,400	1.50	NO
Sulfide	1,200 (1)	67.0	NO
Thallium	150 (1)	1.00 B	NO
Tin	100,000	4.50 B	NO
Vanadium	13,000	10.0	NO
Zinc	100,000	75.0	NO

Notes:

1. In the absence of an EPA Region 9 PRG for these constituents, a surrogate PRG was used. The surrogate PRGs are provided below.

Constituent	Surrogate PRG
Acenaphthylene	Naphthalene - 190
Benzo(g,h,i)perylene	Naphthalene - 190
Phenanthrene	Naphthalene - 190
Cyanide	Hydrogen Cyanide - 35
Sulfide	Carbon Disulfide - 1,200
Thallium	Most Stringent for any Thallium Comound - 150

2. The maximum detected concentration is well below the Massachusetts Contingency Plan (MCP) Method 1 soil standard of 30 ppm.

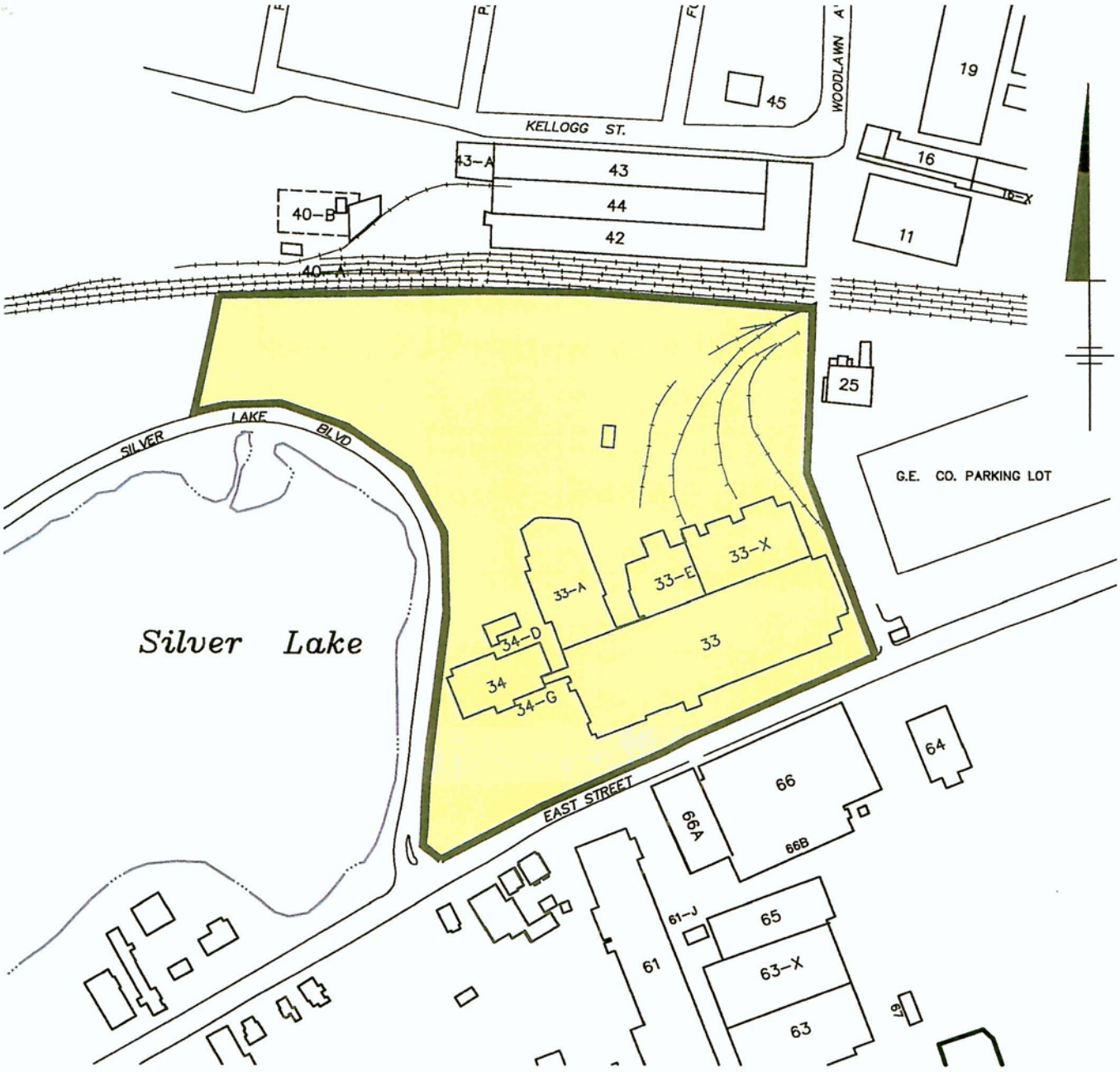
Data Qualifiers:

Organics

J - Indicates an estimated value less than the practical quantitation limit (PQL).

Inorganics

B - Indicates an estimated value between the instrument detection limit (IDL) and practical quantitation limit (PQL).



NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND AND BOUCK ENGINEERS, P.C. P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARIES/LIMITS ARE APPROXIMATE.

REMOVAL ACTION AREA:

30s COMPLEX REMOVAL ACTION AREA (APPROXIMATE)

0 300' 600'

GRAPHIC SCALE

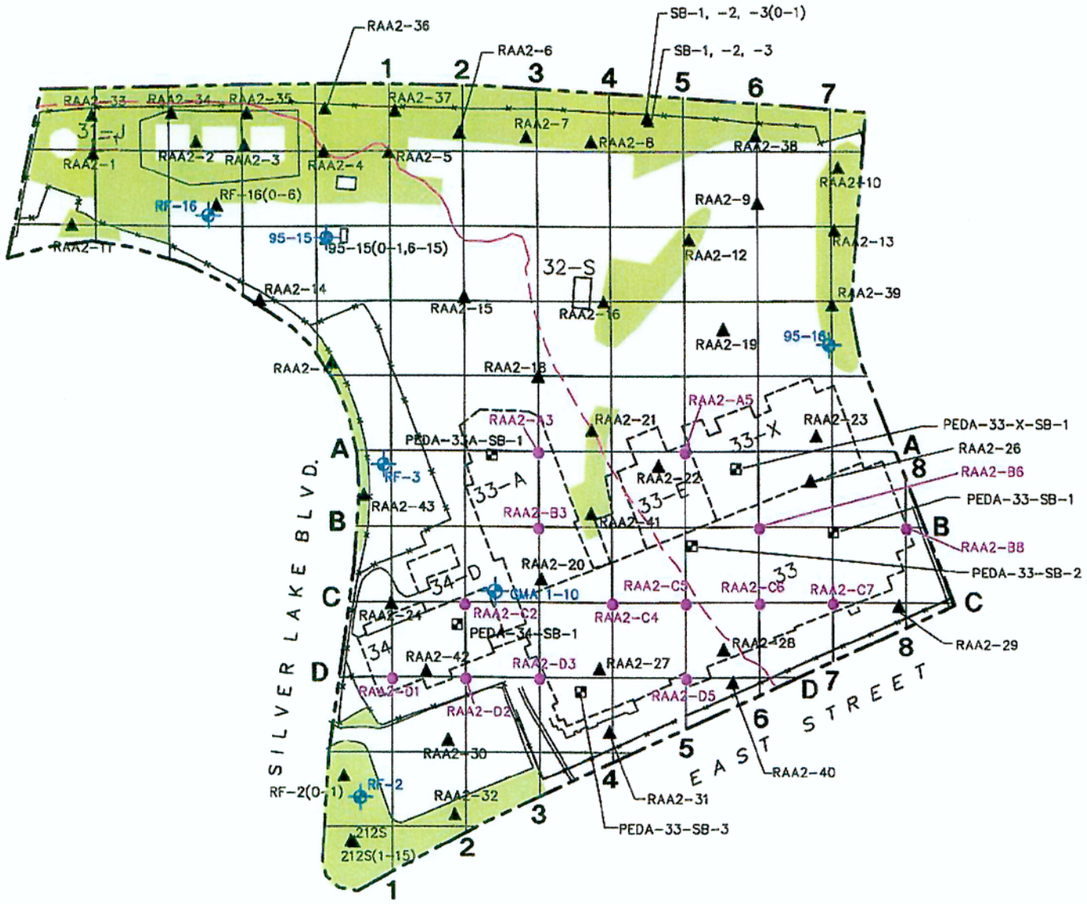
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
SUPPLEMENTAL SOIL
INVESTIGATION – 30's COMPLEX

LOCATION MAP

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE 1

L: ON=*, OFF=*REF*
P: PAGESET/PLT-AP
4/1/03 SYR-54-RCB LAF LAF
C/20191001/20191B03.DWG



LEGEND:

- APPROXIMATE LIMITS OF 30'S COMPLEX
- FENCE
- APPROXIMATE 100-YEAR FLOODPLAIN BOUNDARY (DASHED WHERE INFERRED)
- UNPAVED (GRASS/DIRT/GRAVEL)
- PAVED (ASPHALT/CONCRETE)
- BUILDING TO BE DEMOLISHED/FLOOR SLAB TO BE REMOVED
- 100 FOOT GRID
- 95-16 — EXISTING MONITORING WELL
- 212S — EXISTING PRE-DESIGN INVESTIGATION SOIL SAMPLING LOCATION
- PEDA-33-SB-2 — EXISTING PEDA INVESTIGATION SOIL SAMPLING LOCATION
- RAA2-C2 — SUPPLEMENTAL SOIL INVESTIGATION SAMPLING LOCATION

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. - FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY, AND BLASLAND AND BOUCK ENGINEERS, P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. ALL SAMPLING LOCATIONS ARE APPROXIMATE.
5. EXTENT OF VARIOUS SURFACE COVERS IS APPROXIMATE.
6. 100-YEAR FLOODPLAIN BOUNDARY IS BASED ON ELEVATIONS PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY: "FLOOD INSURANCE STUDY" - CITY OF PITTSFIELD, MASSACHUSETTS" JANUARY 16, 1987; AND "FLOOD INSURANCE RATE MAP - CITY OF PITTSFIELD, MASSACHUSETTS" (PANELS 250037 0010C AND 25037 0020C), FEBRUARY 19, 1982, AND TWO-FOOT CONTOUR TOPOGRAPHIC MAPPING GENERATED PHOTOGRAMETRICALLY IN 1990 AT A BASE SCALE OF 1:2,400.

0 200' 400'

APPROXIMATE SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
SUPPLEMENTAL SOIL INVESTIGATION - 30's COMPLEX

EXISTING SOIL SAMPLE LOCATIONS

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 2

L: ON=*, OFF=*REF*
P: PAGESET/PLT-BL
4/10/03 SYR-54-RCA NES LAF
C/20191001/20191B02.DWG