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Report - Vol - 1

**Lawler,
Matusky
& Skelly
Engineers**

Environmental Science & Engineering Consultants

JOHN P. LAWLER, P. E.
FELIX E. MATUSKY, P. E.
MICHAEL J. SKELLY, P. E.
KARIM A. ABOOD, P. E.
PATRICK J. LAWLER, P. E.
FRANCIS M. MCGOWAN, P. E.
THOMAS L. ENGLERT, P. E.
PETER M. MCGRODDY, P. E.

ONE BLUE HILL PLAZA
P. O. BOX 1509
PEARL RIVER, NEW YORK 10965
(914) 735-8300
FACSIMILE (914) 735-7468

12 January 1989
File No. 337-016

Mr. Paul R. Counterman, P.E.
NYS Dept. of Environmental Conservation
50 Wolf Road
Albany, NY 12233

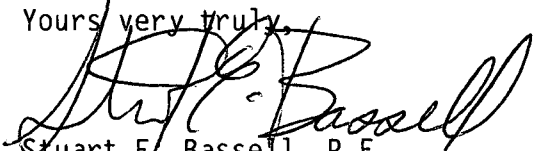
RE: GE BUFFALO SERVICE SHOP

EPA I.D. NO. NYD067539940

Dear Mr. Counterman:

I am submitting on behalf of GE the report on the RCRA Sampling Visit conducted at the above referenced site in September 1988. The issuance of this report had to be delayed to resolve several questions with the analytical laboratory.

Yours very truly,


Stuart E. Bassell, P.E.
Project Manager

SEB:cmr
encls.

cc: M. Ianniello, G.E.
E. Bellmore, NYSDEC, Buffalo
R. Fischer, NYSDEC, Buffalo
E. Dorering, EPA, Region 2

RECEIVED

Jan 18 1989

Bureau of Hazardous Waste
Facility Permitting
Division of Hazardous
Substances Regulation

GENERAL ELECTRIC COMPANY
1 River Road
Schenectady, New York 12345

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DEC 13 1989

Bureau of Hazardous Waste
Facility Permitting
Division of Hazardous
Substances Regulation

REPORT ON
RCRA FACILITY ASSESSMENT
SAMPLING VISIT
AT
GE BUFFALO SERVICE CENTER
175 Milens Road
TONAWANDA, NEW YORK
EPA I.D. No. NYD067539940

(Volume 1)

December 1988

LMSE-89/0021&337/016

LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

INTRODUCTION

The purpose of this document is to report on the results of a RCRA Facility Assessment Sampling Visit conducted at the General Electric Company (GE) Buffalo Service Center in Tonawanda, NY (Figure 1). Sampling was executed on 8 September 1988 by personnel from Lawler, Matusky & Skelly Engineers (LMS) under the supervision of representatives from New York State Department of Environmental Conservation (NYSDEC). A hollow stem auger drill rig was provided by Rochester Drilling Co. of Rochester, NY to advance split spoons during sampling. Laboratory analyses were conducted by Aquatec Inc. of Burlington, VT.

Except where noted in the following sections, sampling and analyses were conducted in conformance with the NYSDEC-approved sampling plan (hereinafter, the Sampling Plan) issued in August 1988 and revised in September 1988. For the sake of reader convenience, a copy of this plan is presented in Attachment A of this report.

Reference is made to the following additional attachments:

- Attachment B Field Data Sheets - These include the Crew Chief Report and Incident Sheet, Time Log, Field Data Sheet for Soil/Sediment Samples (and Field Blanks), Site Sketches, and Drilling Logs
- Attachment C Laboratory Summary Sheets
- Attachment D Chain of Custody Records
- Attachment E Aquatec QA/QC Report - (separately bound)

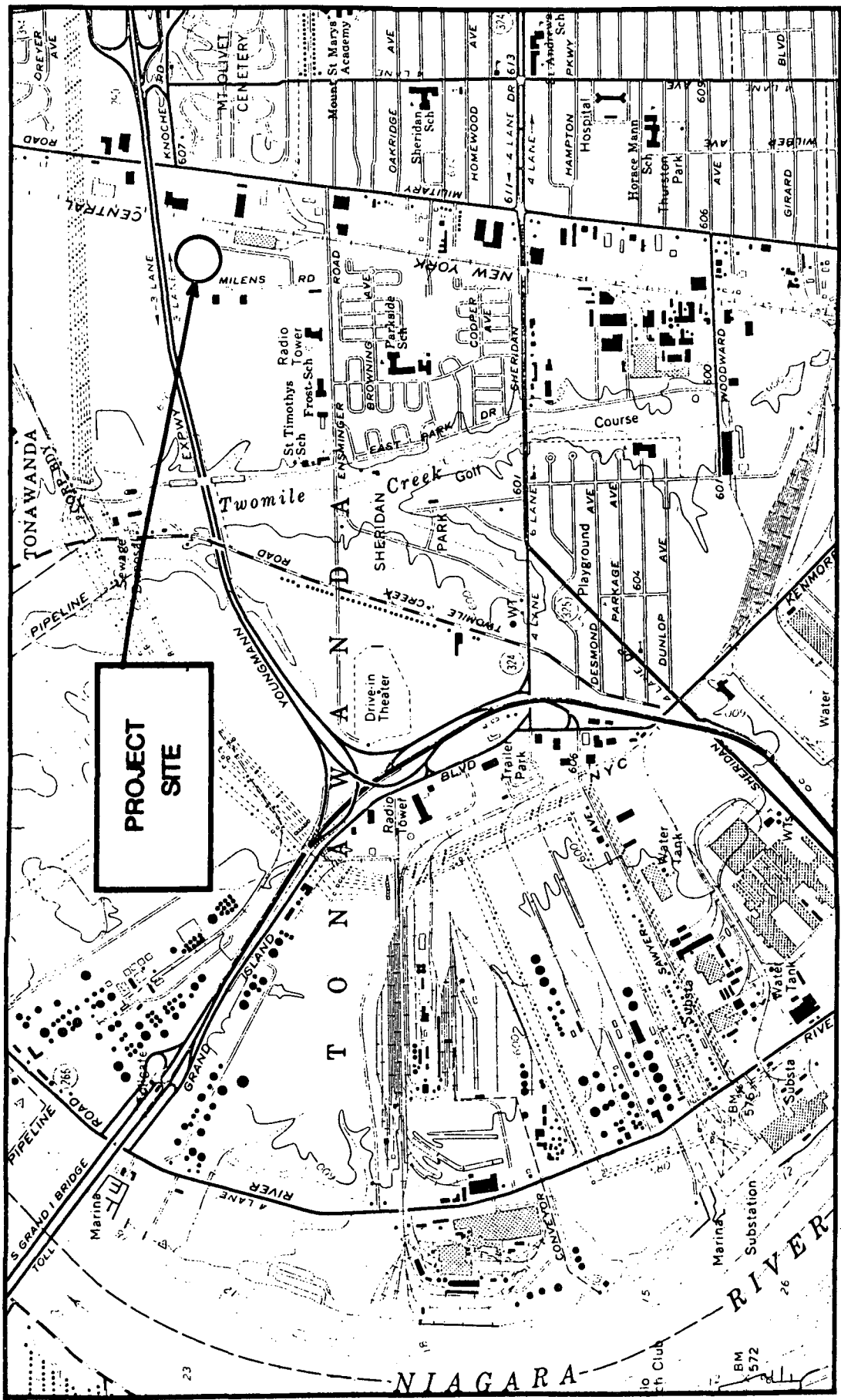


FIGURE 1

LOCATION OF BUFFALO SERVICE SHOP

UTM GRID AND 1965 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SAMPLING LOCATIONS AND DEPTHS

Locations

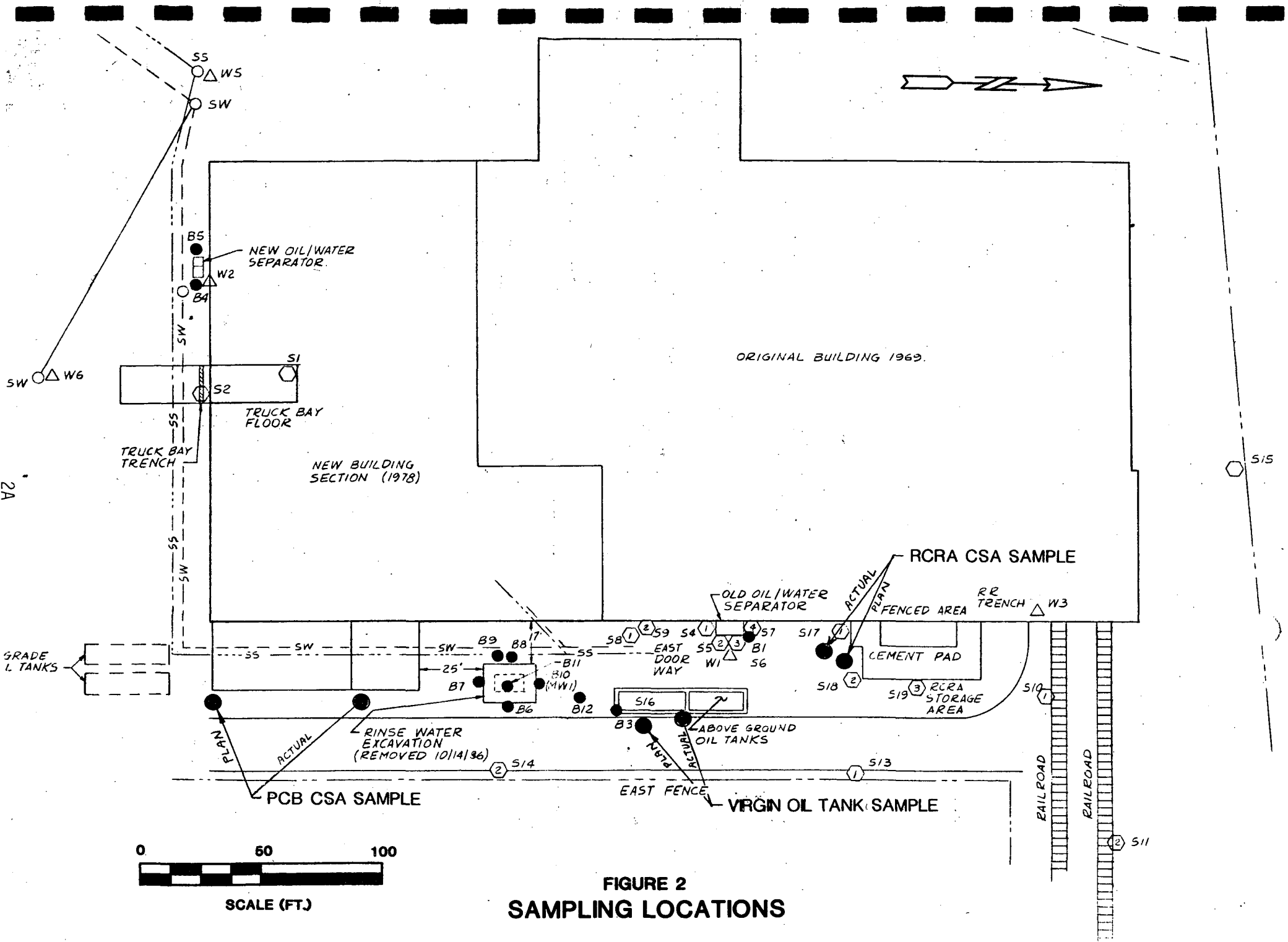
Samples were collected near three locations specified in the Sampling Plan. The locations specified in the Sampling Plan and the locations actually sampled are depicted in Figure 2. Reasons for the change in locations are presented below:

1. RCRA Container Storage Area. - The sampling location was moved approximately 10 ft southwest to a point accessible by the drill rig. The change was approved by on-site NYSDEC personnel.
2. PCB Container Storage Area - This sampling location was moved approximately 50 ft north to a bare earth area because of the recent placement of pavement. The change was approved by on-site NYSDEC personnel.
3. Virgin Oil Tank (VOT) - The sampling location was moved approximately 20 ft northeast to collect samples closer to the drainage outlet from the secondary containment. This change was made at the request of on-site NYSDEC personnel.

Depths

The three locations were sampled at the following depths:

1. RCRA Container Storage Area - Three samples were collected here by advancing split spoons to the depths specified in the Sampling Plan:
2.0 - 4.0 ft
4.0 - 6.0 ft
6.0 - 8.0 ft
2. PCB Container Storage Area - Sod was not present in this area and the sample was collected from an 100 cm² area 1 cm deep, as specified in the Sampling Plan.



**FIGURE 2
SAMPLING LOCATIONS**

3. VOT - There was approximately 1 ft of pavement and sub-base at this location. Therefore, the top sample was collected at a depth interval of 1.0-3.0 ft, rather than 0.0-2.0 ft, as specified in the Sampling Plan. Because of this deepening, the remaining samples were also offset by 1 ft:

<u>SAMPLING PLAN</u>	<u>ACTUAL</u>
2.0-4.0	3.0-5.0
4.0-6.0	5.0-7.0
6.0-8.0	*

*Not collected as 1 ft of the upper 5.0-7.0 ft sample fell within the planned 6.0-8.0 ft interval.

Therefore three samples were collected with split spoons. A 7.0-9.0 ft interval sample was not collected with the concurrence of the on-site NYSDEC personnel. At his request, an additional sample was collected at a depth interval of 0-3 in directly under the drain port.

Procedures

At the RCRA Container Storage Area and VOT locations, split spoons were advanced to the required depths without the need for augering. Because of difficulty in achieving sufficient recovery at the VOT location, a plastic retaining basket had to be inserted into the nose of the split spoon. (The drillers did not have a metal basket.)

Laboratory cleaned stainless steel spoons were used to collect the samples from the PCB Container Storage Area and from the 0-3 in sample at the VOT and to retrieve, mix, and containerize the samples collected with the split spoons.

The soil recovered from the split spoons were split longitudinally. Soil was removed at uniform intervals along the length of the split spoon so as to fill the sample container with soil representative of the full length of recovered soil. To guard against volatilization in the field, no attempt was made to mix the volatiles samples.

Decontamination

Fresh stainless steel spoons were used on each sample. Chemical decontamination was conducted in the LMS laboratory as specified in the Sampling Plan.

Split spoons were steam cleaned by the driller prior to mobilization. At the site, these devices were chemically cleaned as specified in the Sampling Plan, except for the plastic retainer basket needed at the VOT. Because of the uncertainty as to the impact of the cleaners on the plasticizers, the basket was not rinsed with methanol and acetone.

Sample Custody and Shipment

Except as noted below, chain-of-custody was initiated with the shipment of the empty sample containers from Aquatec, the analytical laboratory.

These containers were delivered with reagent field blank water by overnight delivery service from the laboratory to the site. Upon opening of the package of containers on the day of the sampling, LMS discovered that the laboratory had not shipped sufficient empty sample containers and field blank water. As detailed in the following sections, the shortfall of empty containers was made up by the use of new LMS glassware supplied by I-Chem. The shortfall of field blank water was made up by the use of some of the deionized

water brought to the site for decontamination. These changes were agreed to by on-site NYSDEC personnel.

Following completion of the field work, samples were shipped to Aquatec by an overnight delivery service. The chain of custody documentation is presented in Attachment D. This documentation shows that all samples were received on 9 September intact and inside the cooler with ice. The cooler was intact as were the custody seals on the outside of the cooler. The chain-of-custody was present.

Sample Containers - Soil

In accordance with the Sampling Plan, the RCRA Container Storage Area (volatiles) samples were placed in pairs of 40-ml with Teflon-lined septums, supplied by Aquatec, the analytical laboratory. The PCB sample was placed in an Aquatec 250-ml wide mouth amber jar with a Teflon lid. As mentioned previously, the VOT (petroleum hydrocarbons) samples were placed in LMS' 100 g wide mouth amber jars supplied by I-Chem, as agreed to by on-site NYSDEC personnel.

Field (Equipment) Blanks

Aquatec supplied only enough reagent water to generate equipment blanks for the volatiles (RCRA Container Storage Area) and PCB samples. LMS deionized water had to be used for the petroleum hydrocarbon blank at the VOT sampling location. Additionally, three LMS supplied I-Chem containers had to be used to collect sufficient sample as Aquatec did not provide sufficient empty containers. As no contamination was detected by the laboratory in the blank, these were satisfactory substitutes. Additionally, Aquatec did not provide sulfuric acid with the containers, so the petroleum hydrocarbon blank was not preserved.

The volatiles equipment blank was collected as specified in the Sampling Plan, except that the procedure was not conducted just prior to sampling. Rather, it was conducted following collection of the RCRA Container Storage Area samples and subsequent decontamination of the split spoons. Trace (0.8 ug/l 1,1,1-trichloroethane) contamination was found in this blank.

The PCB equipment blank was collected as specified in the Sampling Plan.

All sampling was conducted in one day. Therefore only one set of blanks was collected.

Record Keeping

In accordance with the Sampling Plan, sampling date, time, parameter group, sample type, depth interval, project, sample collector, sampling organization (LMS) and inventory number were recorded on the sample label, chain-of-custody and field notes. Field notes also included drill logs that summarized soil type, color, odors, recovery (split spoons) and other relevant notes (weather, personnel on-site, drilling contractor, incidents, purpose of sampling, name and address of site and sampling organization, description of sampling point and references to maps, etc.). This information is provided in Attachment B.

LABORATORY RESULTS

Samples were analyzed by Aquatec Inc. of Burlington, VT. The laboratory summary sheets are presented in Attachment C and summarized in the following tables:

Table 1 - Results for RCRA Container Storage Area

Table 2 - Results for PCB Container Storage Area

Table 3 - Results for Virgin Oil Tanks

These tables present results only for compounds that were detected in the equipment or method blanks and soil samples. Compounds not identified under their respective fraction in these tables were analyzed for, but not detected.

The QA/QC documents are presented in Attachment E which is bound separately from this volume.

Except as noted below, the laboratory conducted the analyses within the specifications of the Sampling Plan.

Analytical Methods

Volatiles

Volatiles samples were analyzed by gas chromatography (GC) EPA Methods 8010 (halogenated volatile organics), 8015 (non halogenated volatile organics) and 8020 (aromatic volatile organics).

Aquatec did not analyze for the following Method 8010 chemicals for which SW-846 does not offer method retention times:

- benzyl chloride
- bis(2-chloroethoxy)methane
- bis(2-chloroisopropyl)ether
- bromobenzene
- bromomethane
- chloroacetaldehyde
- 1-chlorohexane
- chloromethylmethyl ether
- chlorotoluene
- dichlorodifluoromethane
- dichloromethane
- 1,1,1,2-tetrachloroethane
- trichlorofluoromethane

TABLE 1

RESULTS FOR RCRA CONTAINER STORAGE AREA

SAMPLE ID		LOCATION	SOLIDS (%)	CONCENTRATION (ug/Kg) ^a					
LMS	AQUATEC			METHYLENE CHLORIDE	1,1,1-TRICHLOROETHANE	1,1-DICHLOROETHANE	1,1-DICHLOROETHENE	1,2-DICHLOROETHANE	TOLUENE
-	Method Blank	Field Blank	-	0.9	-	-	-	-	-
4471	88885	Field Blank	-	8.4B	0.8				
4475									
4476									
-	Method Blank	RCRA CSA 2-4	-	4.6	-	-	-	-	-
7332	88892	RCRA CSA 2-4	84.16	100B;290B	1300;1000	58;46	17;12*	-	-
7347									
-	Method Blank	RCRA CSA 4-6/6-8	-	-	-	-	-	-	-
7342	88893	RCRA CSA 4-6	85.50	4L	20000	290	170	29	18
7252									
7423	88894	RCRA CSA 6-8	87.50	3L	20000	48	120	61	120
7344									

^aWet weight.^bSample and replicate concentrations are shown.

- Less than (see summary sheets in Attachment C for applicable detection limits).

* - BMDL.

L - Suspected laboratory contamination.

B - Analyte found in blank.

CSA - Container storage area.

TABLE 2

RESULTS FOR PCB CONTAINER STORAGE AREA

SAMPLE ID		LOCATION	SOLIDS (%)	CONCENTRATION (mg/Kg) ^a
LMS	AQUATEC			PCB-1260
-	Method Blank	PCB Field Blank	-	U
4474	88886	PCB Field Blank	-	U
4477				
7262	88891	PCB CSA	88.03	175

^aWet weight.

U - no PCBs detected (see summary sheets in Attachment C for applicable detection limits).

- Not analyzed.

CSA - Continue storage area.

ainer

TABLE 3
RESULTS FOR VIRGIN OIL TANKS

SAMPLE ID		LOCATION	SOLIDS (%)	PHC CONCENTRATION (mg/Kg) ^a
LMS	AQUATEC			
4471				
4475	88885	PHC Field Blank	-	<5
4476				
7261	88890	VOT: 0-3"	70.39	2200
7258	88887	VOT: 1-3'	80.06	380
7259 ^b	88888	VOT: 3-5'	84.61	500;360
7260	88889	VOT: 5-7'	86.89	<50

^awet weight.

^bSample and replicate values shown.

- Not analyzed.

VOT - Virgin Oil Tanks.

As the list of chemicals that Aquatec did analyze for comprised the Method 601 equivalent, these deletions were verbally approved by NYSDEC personnel prior to sampling.

Aquatec analyzed for two chemicals not specified by Method 8010:

cis - 1,2-dichloroethylene
cis - 1,3-dichloropropylene

Samples were initially analyzed without digestion by purge and trap. The concentration of 1,1,1-trichloroethane in the 4-6 ft and 6-8 ft RCRA container storage area samples necessitated reanalysis of these samples by direct injection following methanol extraction.

PCBs and Petroleum Hydrocarbons

These fractions were analyzed by the methods specified in the Sampling Plan.

Detection Limits

Volatiles - Method 8015

Method 8015 detection limits achieved on the soil samples were 5 ug/kg, except for diethyl ether and acrylamide for which the limits were 10 ug/kg. Detection limits achieved on the equipment blank were 1 ug/l, except for diethyl ether and acrylamide for which the limits were 2 ug/l. Sw-846 does not specify detection limits this method.

Volatiles - Methods 8010/8020

Methods 8010/8020 detection limits were 2 ug/kg for the 4-6 ft and 6-8 ft RCRA container storage area samples (those analyzed following methanol extraction), and 8 ug/kg and 19 ug/kg for the 2-4 ft

sample and replicate, respectively. For all of the Method 8010 and the 2-4 ft Method 8020 analyses, these limits are higher than the practical quantitation limits (PQL) for low level soil, but well within the PQL for high level soil. The remainder of the Method 8020 soil analyses are within the low level soil PDL. The method and field blank detection limits ranged between 0.5 and 2.0 ug/l, which are above SW-846 method detection limits.

PCBs

Because the concentration of Aroclor 1260 required a 100 fold dilution, the detection limit for the soil sample was 40 mg/kg. This limit is above the PQL for high level soil by a factor of about 100 (Aroclor 1242). The method blank for this sample, diluted 5 fold, had detection limits of 2-4 mg/l, depending on the Aroclor, which is above the SW-846 method detection limit. The detection limits for the field blank and the method blank for the field blank were 0.0005-0.0010 mg/l and 0.0025-0.00050 mg/l, respectively, which exceed SW-846 method detection limits.

Petroleum Hydrocarbons

Petroleum hydrocarbons were detected in all soil samples, but not in the equipment blank (detection limit 5 mg/l). SW-846 does not specify a detection limit for petroleum hydrocarbons.

Holding Times

Samples were collected by LMS on 8 September and received by Aquatec on 9 September. Though alerted by LMS of NYSDEC RCRA sampling visit requirements, Aquatec did not analyze any of the samples within the seven day holding specified in the Sampling Plan. Most, though not all, of the holding time requirements in SW-846 were achieved. The Method 8010/8020 (halogenated/aromatic

volatile organics) analyses were conducted on 20 September, 11 days after receipt of samples. Because of the higher than anticipated concentration of 1,1,1-trichloroethane, two RCRA Container Storage Area samples (4-6 and 6-8 ft) had to be reanalyzed. The reanalysis was conducted after methanol digestion on 29 September after the SW-846 maximum holding time had expired.

SW-846 requires that the Method 8015 (non-halogenated volatile organics) extractions be conducted within 14 days (23 September). The field blank was extracted and analyzed on 24 September (diethyl ether, methyl ethyl ketone, methyl isobutyl ketone, and paraldehyde) and 12 October (ethanol and acrylamide). Both days were late. The soil samples were extracted and analyzed on 23 September and 12 October (the second is late).

SW-846 requires that Method 8080 (PCBs) samples be extracted within 14 days of receipt and analyzed within 40 days after extraction. Extractions were conducted on 20 September. Analyses were conducted during 20 September to 6 October.

There are no SW-846 requirements for petroleum hydrocarbons. Extractions were conducted on 17 September (8 days after receipt of samples) and analyses were conducted on 21 September 12 days after receipt).

Precision

Volatiles

Replicate samples were analyzed on the 2-4 ft RCRA container storage area Method 8010/8020 sample, as indicated in Table 1. Four compounds were detected. Only the replicate results for methylene chloride, which was also present in the laboratory blanks, exceeded EPA acceptance limits.

Replicate Method 8015 samples were analyzed for the 6-8 ft sample. However none of these compounds were detected.

PCBs

The initial version of the Sampling Plan called for collecting soil over a 0-6 in. depth. Response to NYSDEC comments on that version required changing the depth interval to 1 cm. As only one soil sample was collected, this change resulted in insufficient sample to provide duplicate and spiked matrix samples. Because the spiked results are considered more useful by LMS, the laboratory was directed to conduct the matrix spike, and not the sample duplicate, analysis. NYSDEC personnel verbally approved these instructions. Because the spike was conducted with pesticides, not PCBs, the PCB results for the matrix spike (200 mg/kg) can be considered a duplicate in assessing the precision of the sample results (175 mg/kg-within EPA acceptance criteria).

Petroleum Hydrocarbons

Duplicate analyses were conducted on the 3-5 ft VOT sample (see Table 3). SW-846 and Method 418.1 do not specifying an acceptance range.

Accuracy

Volatiles

According to Aquatec's narrative, spiked recoveries for Methods 8010 and 8020 were good. However, component loss was indicated (probably 1,1,1-trichloroethane) and Aquatec rejected the results for publication.

A Method 8015 matrix spike and matrix spike duplicate were analyzed for the 6-8 ft RCRA container storage area sample. SW-846 does not specify recovery acceptance limits for this method.

SW-846 does not specify surrogate recovery acceptance limits for Method 8010/8020 though Aquatec's internal quality control criteria require reanalysis if the surrogate recoveries are outside the 70-130% range. Surrogate recoveries for the aqueous samples (equipment and method blanks) were in the 81-97% and 77-99% ranges for Methods 8010 and 8020, respectively.

Surrogate recoveries for the 4-6 ft and 6-8 ft RCRA Container Storage Area samples were 87-90% and 88-89% for Methods 8010 and 8020. The Methods 8010/8020 surrogate recoveries for the 2-4 ft sample were 65% and 59% respectively. Therefore, a replicate for this sample was analyzed with recoveries of 83% and 129% for the two methods. Though the surrogate recoveries for the replicate were higher than for the sample, the concentrations of the chemicals in the replicate were lower (except for methylene chloride, a laboratory contaminant).

The Method 8015 matrix spike and duplicate matrix spike were within the range of 71-96% and 66-99%, respectively. There are no SW-846 acceptance ranges for this method.

PCBs

As indicated previously the matrix was spiked with pesticides. Only the heptachlor recovery was published (122% recovery, within EPA acceptance criteria). A supplement to the laboratory's narrative indicates that the sample PCB concentrations was too high to obtain a meaningful assessment of the spiked recoveries for most of the analytes. The surrogate recovery for the soil samples were in the 80-84%, whereas the recoveries for the various blanks were in

the 82-129% range. Aquatec's internal quality control criteria specify an acceptance range of 50-130% for Method 8080 surrogate recoveries.

Petroleum Hydrocarbon

No spiked samples were analyzed.

ATTACHMENT A
SAMPLING PLAN

GENERAL ELECTRIC COMPANY
1 River Road
Schenectady, New York 12345

WORK PLAN FOR
RCRA FACILITY ASSESSMENT
SAMPLING VISIT

AT
GE BUFFALO SERVICE CENTER
175 Milens Road
TONAWANDA, NEW YORK
EPA I.D. No. NYD067539940

August 1988
Revised September 1988

LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965

Project No. 337-016

**Lawler,
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26 August 1988
File No. 337-016

New York State Department of
Environmental Conservation
50 Wolf Road
Albany, NY 12233

Attn: Mr. Paul R. Counterman, P.E.

RE: GE Buffalo Service Shop

EPA I.D. No. NYD067539940

Dear Mr. Counterman:

I am submitting on behalf of GE a RCRA Sampling Visit work plan for your approval. This plan reflects correspondence between GE and NYSDEC:

15 Jul 1987	Ianniello (GE) to Heitzman (NYSDEC)
21 Jul 1987	Ianniello to Nevel (NYSDEC)
18 Aug 1987	Ianniello to Nevel
21 Aug 1987	Hejmanowski (GE) to Belmore (NYSDEC)
17 Sep 1987	Heitzman to Ianniello
24 Sep 1987	Counterman to Ianniello
7 Oct 1987	Ianniello to Heitzman
1 Oct 1987	Counterman to Woods (GE)
11 Oct 1987	Ianniello to Counterman
13 Oct 1987	Ianniello to Counterman
22 Apr 1988	Counterman to Woods
28 Apr 1988	Counterman to Ianniello
12 Aug 1988	Ianniello to Counterman

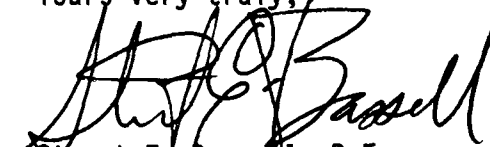
and telephone communications between Ianniello and Nevel.

Mr. Paul R. Counterman
New York State Department of
Environmental Conservation

26 August 1988
Page 2

The sampling is tentatively scheduled for 8-9 Sep 1988, depending on availability of a driller. Therefore, your review comments will be appreciated.

Yours very truly,



Stuart E. Bassell, P.E.
Project Manager

cc: M. Ianniello
D. Nevel (Federal Express)
EPA
NYSDEC Region 8

INTRODUCTION

General Electric Company operates an apparatus service shop at 175 Milens Road in Tonawanda, New York (Figure 1). A RCRA Facility Assessment Report Preliminary Review and Visual Site Inspection report were prepared in July 1987 by NYSDEC. Twelve SWMUs were identified and reviewed. Sampling was recommended at four of these SWMUs (Figure 2):

1. RCRA Container Storage Area (CSA)
2. PCB CSA
3. Virgin Oil Tanks (VOT)
4. Rail Spur

GE was then directed by NYSDEC to prepare this work plan for conducting the sampling. Subsequent telephone discussions between GE and NYSDEC resulted in elimination of the need at the present time for sampling in the Rail Spur Area.

SAMPLING LOCATIONS AND DEPTHS

RCRA Container Storage Area

Soil samples will be collected by boring with a drilling rig as close as possible to the south side of the concrete pad. Three soil samples will be collected from split spoons advanced to the following depths below grade:

- 2.0 - 4.0 ft
- 4.0 - 6.0 ft
- 6.0 - 8.0 ft

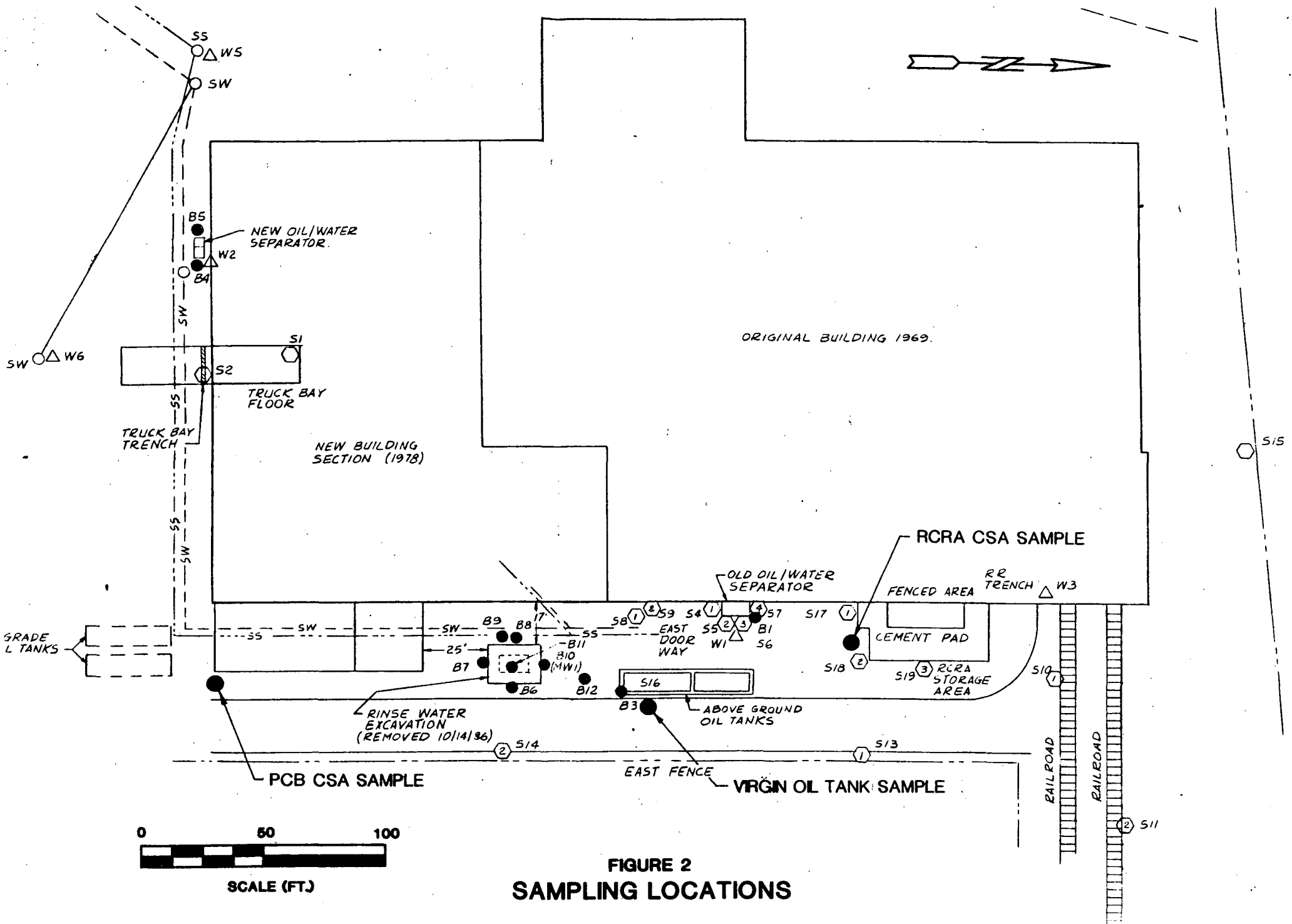


FIGURE 2
SAMPLING LOCATIONS

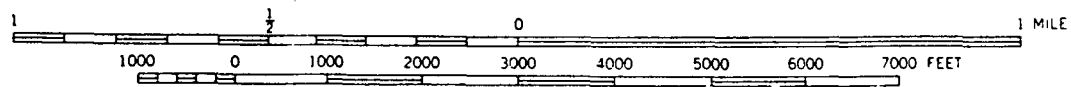
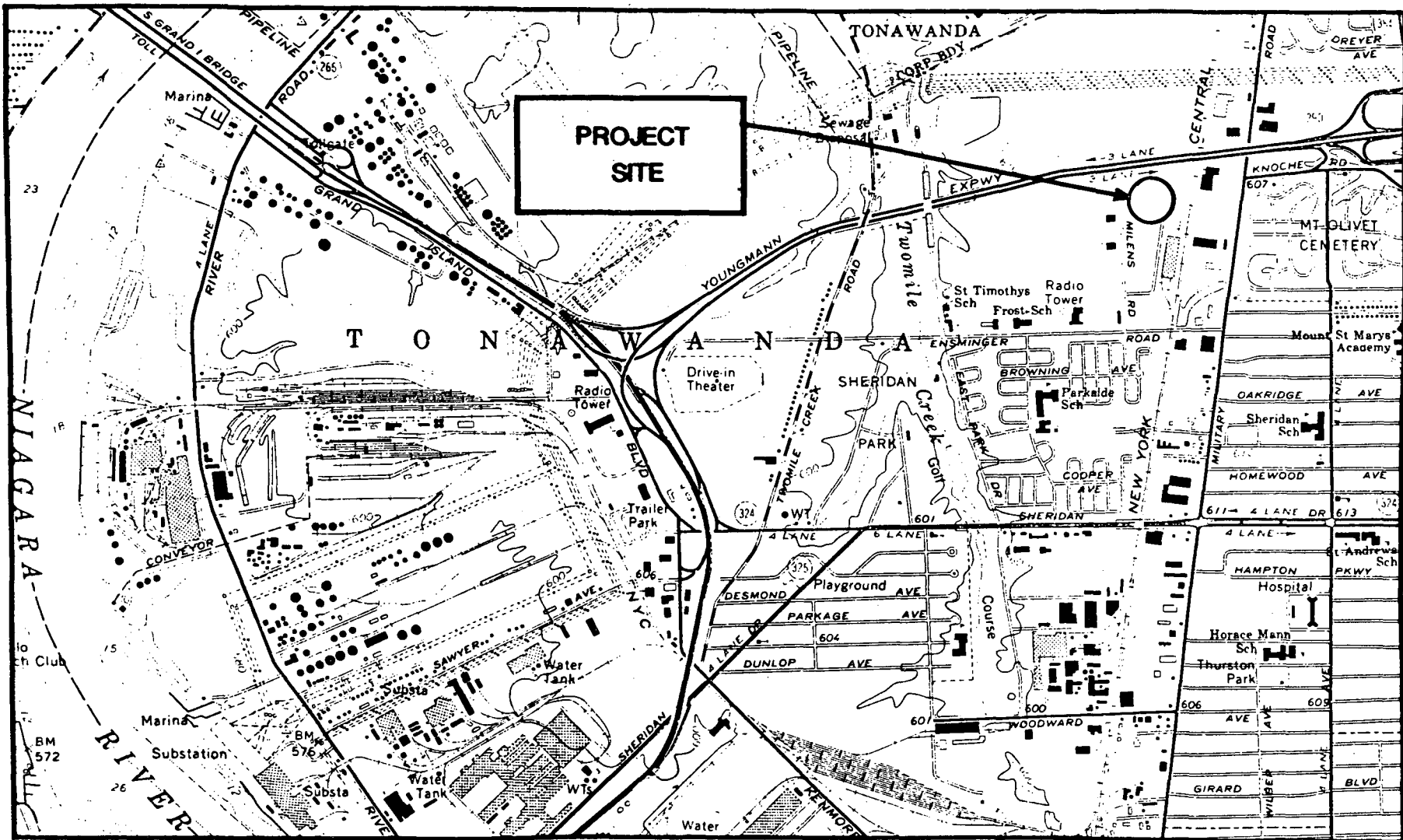
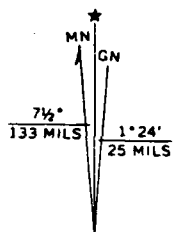


FIGURE 1

LOCATION OF BUFFALO SERVICE SHOP



UTM GRID AND 1965 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

PCB Container Storage Area

One surficial soil sample will be collected near the southeast corner of the storage area. If sod is present, the sample depth will be representative of the following depth below grade:

0.25 - 0.50 ft

The 0.25 ft depth is assumed representative of the bottom of the sod root zone.

If sod is not present, the sample will be collected from an area 16 in.² by 0.4 in. deep (100 cm² by 1 cm). The sample will be collected within the top 1 in. (2.5 cm) of the ground surface.

Virgin Oil Tanks

Soil samples will be collected by boring with a drill rig 1.0 ft (or as close as possible if the rig cannot be brought that close) east of the containment wall drainage outlet. Four soil samples will be collected from split spoons advanced to the following depths below grade:

0.0 - 2.0 ft
2.0 - 4.0 ft
4.0 - 6.0 ft
6.0 - 8.0 ft

SAMPLING PROCEDURES

Split Spoons

Split spoons will be advanced to the required depth with a drill rig. Because of the clay soil, the 2 in. borehole will probably remain open to allow sampling without the need for augers. How-

ever, if hole collapse is encountered, the split spoons will be advanced ahead of hollow stem augers. Upon opening of the split spoon, the soil characteristics (type, color, odor) will be recorded and the soil will be placed on clean aluminum foil. Fresh aluminum foil will be used for each and every sample. The soil core will be cut in half longitudinally with a dedicated laboratory cleaned stainless steel spoon. The longitudinal cut will be sliced or scrapped so as to allow collection of a soil composite representative of the depth zone of the recovered material. This soil will then be mixed and placed in sample containers.

Surficial

If sod is present, a hole will be advanced with a clean trowel to a depth of 0.25 ft (assumed representative of the bottom of the sod root zone); a dedicated, laboratory cleaned, stainless steel spoon will then be used to advance the hole to 0.5 ft. If sod is not present, the trowel will be used to remove surficial stones and vegetative matter; the stainless steel spoon will then be used to scrape the soil sample from the 100 cm² by 1 cm region, as previously specified. The cuttings will be placed on clean aluminum foil, mixed and then placed into sample containers. Alternatively, if only one container is to be filled, the cuttings may be placed directly into the sample container.

DECONTAMINATION

Prior to mobilization, the driller will clean the split spoons as follows: (1) scrub with tap water and detergent (2) rinse with tap water (3) clean with steam (4) air dry.

Stainless steel spoons will be laboratory cleaned as follows:

1. Scrub with tap water and detergent

2. Rinse with tap water
3. Rinse with methanol
4. Rinse with hexane
5. Rinse with reagent water
6. Air dry

Stainless steel spoons will not be reused. Each split spoon will be field cleaned before use according to the above protocol for the stainless steel spoons.

ANALYTICAL REQUIREMENTS

Requirements articulated by NYSDEC for the sampling visit are summarized below:

LOCATION	DEPTH (ft)	PARAMETER GROUP	HOLDING TIME (days)
1. RCRA CSA	2.0 - 4.0	VOA	7
	4.0 - 6.0	VOA	7
	6.0 - 8.0	VOA	7
	Equipment Blank*	VOA	7
2. PCB CSA	Surficial**	PCB	7
	Equipment Blank*	PCB	7
3. VOT	0.0 - 2.0	PHC	7
	2.0 - 4.0	PHC	7
	4.0 - 6.0	PHC	7
	6.0 - 8.0	PHC	7
	Equipment Blank*	PHC	7

*See text on blanks.

**Surficial soil sample. See text on depth.

The analytical methods for each parameters are summarized as follows:

PARAMETER GROUP	SW-846 METHOD	
	ANALYTICAL	PREPARATION
VOA		
Halogenated volatile organics	8010	5030
Nonhalogenated volatile organics	8015	5030
Aromatic volatile organics	8020	5030
PCB	8080*	3550
PHC	EPA Method 418.1 Modified for Soil	EPA Method 418.1 Modified for Soil

*No pesticides.

SW-846 method detection limits (or better) will be achieved unless interferences require otherwise.

QA/QC

Personnel

Sampling will be conducted by qualified personnel from Lawler, Matusky and Skelly Engineers and a geologist from GE.

Laboratories

One of the follow NYSDEC-approved laboratories will provide the needed analyses:

1. Huntington Environmental Services
2. Aquatech, Inc.
3. Adirondack Environmental Services

Final selection will be made when a firm field schedule is established and the laboratories can commit to conducting the analyses within SW-846 holding times and providing timely reports.

Data Validation

The selected laboratory will be issued a copy of Table I to ensure that the laboratory can satisfactorily document that SW-846 QA/QC procedures have been achieved. Sample holding times will be achieved per NYSDEC's RCRA Sample Visit Workplan Guidance (20 July 1988).

Sample Custody and Shipment

The attached specifications detail the procedures for sample custody and shipment. Chain-of-custody will be initiated with the shipment of the empty sample containers from the analytical laboratory. An example chain-of-custody form that will be used during the program is attached. Shipment to the laboratory will be either by direct delivery or overnight courier. Iced-coolers designed to maintain a sample temperature of 4°C will be used.

ADDITIONAL SAMPLING PROCEDURES

Containers

VOA samples will be placed in pairs of 40-ml vials with Teflon-lined septums. PHC and PCB soil samples will be placed in 125 ml amber, wide-mouthed jars with PTFE (Teflon) lids. 1-l jars will be used for PHC and PCB blanks. PHC blanks will be preserved with sulfuric acid to achieve a pH of 2 SU. Containers will be supplied by the analytical laboratory.

Blanks

VOA and PHC equipment blanks (one each) will be collected by pouring reagent water through a split spoon, allowing the drainage to pass over a stainless steel spoon, and then finally collecting the water in the appropriate sample container. The VOA equipment blank will be collected with one of the split spoons that will be used for the VOA soil sampling at the RCRA CSA location. Likewise, the PHC equipment blank will be collected with one of the split spoons that will be used for the sampling at the VOT location.

The PCB field blank collection procedure will be the same except that the split spoon will not be used.

Each parameter group will be sampled in one day. Therefore there will be only one set of equipment blanks.

Record Keeping

Sampling date, time, parameter group, sample type, depth interval, project, sample collector, sampling organization (LMS) and inventory number will be recorded on the sample label, chain-of-custody and field notes. Field notes will also include drill logs that summarize soil type, color, odors, recovery (split spoons) and other relevant notes (weather, personnel on-site, drilling contractor, incidents, purpose of sampling, name and address of site and sampling organization, description of sampling point and references to maps, etc.).

REPORT

A sampling visit report will be prepared to provide the following:

1. Description of sampling program

2. Drill logs
3. Deviations from the work plan and justification
4. Tabular summary of analytical data
5. Laboratory report (per Table I specifications)

HEALTH AND SAFETY

LMS employees have received the OSHA hazardous waste training, annual training updates and medical surveillance. Previous LMS soil testing indicates that hazardous materials will either not be encountered in the soil, or be encountered at trace levels. Therefore, the field work will proceed with Level D protection: hard-hats, safety shoes, latex gloves and optional tyvek suit.

TABLE I

COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED
TO
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION*

- A. Parameter requested.
- B. Sample Number or Numbers, Matrix, and:
 - 1. Date collected
 - 2. Date extracted and/or digested
 - 3. Date analyzed.
 - 4. Chain of custody report and/or form, including confirmation of unbroken chain of custody, intact sample packaging and container seals and adequate temperature and/or other preservation.
- C. Results b,e,f,
 - 1. Sample Results
 - 2. Duplicate
 - 3. Blank^a
 - 4. Spike; spike duplicate
 - 5. Surrogate recoveries, if applicable.
- D. Supporting QA/QC^b
 - 1. Methodology
 - 2. Method detection limits, instrument detection limits^c
 - 3. Linear curves
 - 4. Percent Solids^d
 - 5. Calculations
 - 6. Cleanup procedures.
 - 7. Data validation procedures and completed data validation checklist.
 - 8. Documentation which illustrates how blank water is determined to be analyte-free.

In addition to submitting the above, all sample data and its QA/QC data as specified in SW-846, 3rd edition, Chapter 1, must be maintained accessible to NYSDEC either in hard copy or on magnetic tape or disk (computer data files). The data, if requested by NYSDEC, should be formatted as described in SW-846, 3rd edition, Chapter 1, This requirement may be changed in the future to mandate computer data files, accessible to NYSDEC on request.

This does not obviate the requirement to do the QA/QC specified in each individual EPA-approved method.

- * Components for RCRA submissions for non-Contract Lab Protocols. If CLP, then CLP deliverables are required, unless otherwise stated in the approved plan.

A Report Narrative should accompany each submission, summarizing the contents, results and all relevant circumstances of the work.

^aThe data should include all blanks (trip, equipment rinse, method and instrument blanks) as specified in the sampling and analysis plan, guidance and regulation.

^bSupporting QA/QC should be specific to the RCRA samples analyzed.

^cEvery effort practicable must be made to achieve optimal detection limits below regulatory limits and comparable to the Practical Quantitation Limits specified in the EPA-approved methods.

^dAlternatively, include QA/QC summaries validating the data, including calibration control charts, coefficients, etc. The Report Narrative should describe the data validation and explain discrepancies. The supporting data should be provided to NYSDEC upon request.

^eFrequency of blanks, duplicates, spikes, surrogates, calibrations, standard reference materials, etc., should be as stated in the approved sampling and analysis plan, the approved analytical methods and the SW-846 3rd edition, Chapter 1, requirements. If there are any perceived conflicts, these should be resolved with NYSDEC in advance of sampling.

^fSpiking for metals, organics or other parameters must be done before sample preparation (i.e. before digestions, extractions etc.) unless otherwise stated in the approved plan.

LAWLER, MATUSKY & SKELLY ENGINEERS
CHAIN OF CUSTODY RECORD

PROJECT NUMBER: _____

PROJECT TITLE: _____

LMS FACILITY: _____

FIELD PERSONNEL: _____

SAMPLE TYPE (Circle): Drinking Water Monitoring wells
 Industrial Waste Treatment Facility
 Bottom Sediment Soil Leachate
 River/Ocean Stream/Pond
 Other _____

SAMPLE ID NUMBER	DATE	TIME	STATION	PARAMETERS	REMARKS
Relinquished By:		Date/Time:	Received By:		Comments:
Relinquished By:		Date/Time:	Received By:		Comments:
Relinquished By:		Date/Time:	Received By:		Comments:
Method of Shipment:		Shipped By:		Received By:	
Received at Laboratory By:			Date/Time:	Comments:	

Chain-of-Custody

I. Documentation

An essential part of any sampling/analytical scheme is ensuring the integrity of the sample from collection to data reporting. This includes the ability to trace the possession and handling of samples from the time of collection through analysis and final disposition. This documentation of the history of the sample is referred to as the chain-of-custody. Each field worker must keep detailed records of inspections, investigations, photographs taken, and thoroughly review all notes before leaving the site.

A sample is considered to be under a person's custody if (1) it is in the person's physical possession, (2) in view of the person after he has taken possession, (3) secured by that person so that no one can tamper with the sample, or (4) secured by that person in an area which is restricted to authorized personnel. A person who has samples under this custody must comply with the procedures described in the following paragraphs.

A. Field Log Book

All information pertinent to a field activity must be entered in a bound book with consecutively numbered pages. Entries in the log book must include at least the following:

- Date and time of entry
- Purpose of Sampling
- Name and address of field contact (Federal, State, local representative)
- Name of owner/operator
- Type of process producing waste (if known)
- Type of waste (sludge, wastewater, soils, etc.)
- Description of sample
- Date and time of collection
- Waste components and concentrations (if known)
- Number and size of sample taken
- Description of sampling point
- Date and time of collection of sample
- Collector's sample identification number(s) and/or name
- References such as maps or photographs of the sampling site
- Field observations

Because sampling situations vary widely, notes should be as descriptive and inclusive as possible. Someone reading the

entries should be able to reconstruct the sampling situation from the recorded information. Language must be objective, factual, and free of personal feelings or any other inappropriate terminology. If anyone other than the person to whom the log book was assigned makes an entry, he/she must date and sign it.

B. Sample Labels

Sample labels are necessary to prevent misidentification of samples. Gummed paper labels or tags are adequate and should include at least the following information:

- Sample number
- Name of collector
- Date and time of collection
- Place of collection

Labels should be affixed to sample containers prior to or at the time of sampling. The labels should be filled out at the time of collection.

C. Sample Seals

Sample seals are used to detect unauthorized tampering of samples following sample collection up to the time of analysis. Gummed paper seals may be used for this purpose. The paper seal includes, at least, the following information:

- Sample number (this number must be identical with the number on the sample label)
- Collector's name
- Date and time of sampling

The seal must be attached in such a way that it is necessary to break it in order to open the sample container. Seals must be affixed to containers before the samples leave the custody of personnel.

II. Chain-of-Custody Procedures

Written procedures must be available and followed whenever samples are collected, transferred, stored, analyzed, or destroyed. The primary objective of these procedures is to create an accurate record which can be used to trace the possession and handling of the sample from the moment of its collection through analysis and its introduction as evidence, if necessary.

A. Sample Collection, Handling and Identification

The number of persons involved in collecting and handling samples should be kept to a minimum. Guidelines established in this document for sample collection, preservation and handling should be used. Field records should be completed at the time the sample is collected and should be signed or initialed, including date and time, by the sample collector(s). Field records should contain the following information:

- Unique sampling or log number
- Date and time
- Source of sample (including name, location, and sample type)
- Preservative used (if required)
- Analyses required
- Name of collector(s)
- Pertinent field data (pH, DO, chlorine residual, etc.)
- Serial numbers on seals and transportation cases

One member of the sampling team is to be appointed field custodian--the documentation recorder is a good choice. Samples are turned over to the field custodian by the team members who collected the samples. The field custodian documents each transaction and the sample remains in his/her custody until it is shipped to the laboratory.

The sample container should be placed in a transportation case, along with the chain-of-custody record, pertinent field records, and analysis request form if needed. The transportation case should be sealed or locked. A locked or sealed chest eliminates the need for close control of individual samples. However, on those occasions when the use of a chest is inconvenient, the collector should seal the cap of the individual sample container in a way that tampering would be easy to detect.

Composite samples, collected over a period during which a change in sampling crew occurs, may be transferred unsealed to the next sampling crew. The sample coordinator of the crew transferring the samples creates a sample transfer list which must be signed by the sample coordinator of the crew receiving the samples. The receiving crew either transfers the samples to another crew or, if the composite is complete, delivers them sealed to the laboratory. The laboratory sample custodian or his designee must sign for the samples upon receipt.

It is desirable to photograph the sample location or any visible pollution to facilitate identification later. At the time the photo is taken, the photographer should record time, date, site of location, and a brief written description of the subject on the back of the photo. Photographs and written records that may be used as evidence should be handled in a way that chain-of-custody can be established.

B. Chain-of-Custody Record

To establish the documentation necessary to trace sample possession from the time of container issuance or cleaning, a chain-of-custody record should be filled out and accompany every sample. If the record is to begin from sample collection, rather than container issuance, the reason for the lack of need of such coverage must be documented. The record must contain the following minimum information:

- Site name and address
- Sample number
- Sample type (composite or grab) and Matrix
- Date and time of collection
- Number of containers
- Parameters for which analysis are requested
- Signature of collector
- Signatures of persons involved in chain of possession
- Inclusive dates of possession
- Condition of sample upon arrival at laboratory

C. Sample Analysis Request Sheet

The sample analysis request sheet is intended to accompany the sample on delivery to the laboratory. The field portion of this form is completed by the person collecting the sample and should include most of the pertinent information noted in the log book. The laboratory portion of this form is intended to be completed by laboratory personnel and to include at a minimum:

- Name of person receiving the sample
- Laboratory sample number
- Date of sample receipt
- Sample allocation
- Analyses to be performed

D. Transfer of Custody and Shipment

When transferring samples, the transferee must sign and record the date and time on the chain-of-custody record. Custody transfers made to a sample custodian in the field should account for each sample, although samples may be transferred as a group. Every person who takes custody must fill in the appropriate section of the chain-of-custody record. To minimize custody records, the number of custodians in the chain-of-possession should be minimized.

The field custodian is responsible for properly packaging and dispatching samples to the laboratory. This responsibility includes filling out, dating and signing the appropriate portion of the chain-of-custody record.

All packages sent to the laboratory should be accompanied by the chain-of-custody record and other pertinent forms. A copy of these forms should be retained by the originating office (either carbon or photocopy). Mailed packages can be registered with return receipt requested. For packages sent by common carrier, receipts should be retained as part of the permanent chain-of-custody documentation. All samples shall be transported to the off-site laboratory in an insulated ice chest filled with ice, and appropriate packaging material. The chest must be drained of water then taped closed with evidence tape prior to shipment. Appropriate chain-of-custody documents filled out in the field shall be placed in a manilla envelope and taped into the chest.

III. Packaging, Marking, Labeling, and Shipping Hazardous Material Samples

A. Environmental Samples

Environmental samples must be packaged and shipped according to the following procedures:

Packaging

Environmental samples may be packaged following the procedures for flammable liquids or solid outlined in 49 CFR 173.118 and 173.153. Requirements for marking, labeling, and shipping do not apply.

Environmental samples may also be packaged without being placed inside metal cans as required for flammable liquids and solids.

- Place sample container, properly identified and with sealed lid, in a polyethylene bag, and seal bag.
- Place sample in a fiberboard container or metal picnic cooler which has been lined with a large polyethylene bag.
- Pack with enough noncombustible, absorbent material to minimize the possibility of the container breaking.

Marking/Labeling

Sample containers must have a completed sample identification label tag and the outside container must be marked "Environmental Samples". The appropriate side of the container should be marked "This End Up" and arrows placed accordingly. No DOT markings or labeling are required.

Shipping Papers

No DOT shipping papers are required.

Transportation

There are no DOT restrictions on mode of transportation.

ATTACHMENT B
FIELD DATA SHEETS

SB

Crew Chief: JM Guzewich Survey(s): GE Buffalo Service Shop Job No. 337-016

Survey Date(s): 9/7-9/88 Vehicle: Avis Wagon Crew Members: Soil Samples - /Mike Ianiello

SURVEY INFORMATION

1100 2300
0730 1830
0800 / 1700

1. Survey start/end time
2. Equipment prepared for survey/safety equipment present? Yes
3. Sampling gear working properly? Yes
4. Physical/chemical meters functioning properly/ID numbers recorded? Yes
5. Any incidents or mishaps? No
6. Any unusual or important observations/time lost? No
7. Weather observations/marine radiotelephone log/boat and vehicle logs/incident sheet completed? Yes
8. Equipment usage sheet completed and submitted to Warehouse Coordinator? Yes
9. Boat fluids, equipment, etc. checked? Yes
10. Vehicle fluids, equipment, etc. checked? Yes
11. Boat(s) Used _____ Engine Hours _____ to _____

* only used 2 rolls P.Ts.
10 5/8 spoons
(No Equip sheet included)

Radio Log: Boat _____ From _____ to _____ Location _____

9-8-88

INCIDENT REPORT AND COMMENTS (Include number and explanation): At 0800 I arrived at the GE site. I met Mike Ianiello of GE @ 0815. We then took a look at the sampling sites. Mike went to the Hardware store to get some chalk so we could measure the water level in MW-1. At 0915 Stu Bassell called to inform us that Aquatic called him to tell that they had not sent enough water or sample bottles to do a complete set of Field Blanks. We noticed the drillers were outside the property fence when Mike returned from the store (~0850) I went out to talk with them. Steve Kuehn (sp.?) the crew chief and Kevin Busch told me that their muffler stack almost fell off and were repairing it. The water level in MW-1 was ~45" below grade level. At 1005 I called Stu Bassell to go through the bottles. We decided to use some of the LMS supplied I-Chem bottles that were in a sealed box, to complete the sampling. We decided to use the Aquatic supplied Field Blank water for the UOA + PCB field blanks. We used LMS supplied DI water to do the PHC Field Blank. We had to use 3 LMS supplied bottles for 3 of the PHC samples and 1 LMS supplied bottle for 1 of the 3 bottles used for the PCB field blank. From 1030 to 1100 I chemically cleaned the 4 split spoons while the drillers got set up on the RCRA CSA #1 site. Doug Nevel of the DEC arrived while I was cleaning the spoons. He said his plane was delayed. The location of RCRA CSA #1 was not exactly where it was indicated on the sampling plan map. Doug Nevel said it fine where the drillers were able to place the rig (see map). At 1113 we began taking split spoons at RCRA CSA #1. I took 2 UOA samples from the
(use reverse or additional sheet if necessary)

Rochester
Drilling
Inc.

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS

INTEROFFICE MEMO

TO File DATE 9-8-88 JOB NO 337-016

FROM JMGuzewich RE GE Buffalo Service Shop Soil Samples

2-4' spoon, 4-6' spoon + 6-8' spoon. The drillers, Mike and Doug went to lunch @ ~1200 while I stayed to complete the sample bottle labels, chain-of-custodies, and decon the split-spoons for the next hole. When everyone returned, the drillers took a look at the next site (VOT #1) and indicated that they couldn't get as close to the retaining as the map showed. Doug also said he wanted the sample taken closer to the drain port that come through the wall between the 2 tanks. (see map) The drillers had to auger through the asphalt. At 1355 I did a field blank through a field-cleared split spoon, over a s/s spoon and into the jars. I used Aquatex FB water to fill 2 VOAs and LMS DI water to fill a 500ml bottle (Aquatex) for PHC's. Aquatex did not supply any H_2SO_4 preservative for this. Doug Nevel said I should have done a VOA FB before the RCRA CSA #1 sample and the PHC FB before the VOT #1 sampling. I indicated that one FB was usually done on each sampling device for all the parameters sampled for with that device. He said this was fine, but to write it in the notes that it was done this way. The drillers had to auger 1' through the asphalt and fill @ VOT #1. At 1400 when they took a 1-3' split spoon sample we got no recovery. The drillers said they did not use a basket, but had one available. We decided to move the hole over and begin again so we could get a 1-3' sample. The drillers were not sure of the material the basket was made of. It looked like it was polyethylene or maybe lexan. We decided to clean it with only detergent + DI water because the methanol + hexane would have affected the plasticisers^{sp?}. At 1415 we began the VOT #1 hole again. We were able to retain the 1-3' sample and then obtained the 3-5' and 5-7' samples. I asked Doug if he wanted the 7-9' sample. He indicated he would rather have a surface sample. He had me take a 0-3" sample directly under the drain port. The soil here was black and had a musty-dirt odor. This VOT #1 sample was completed at ~1540. At 1555 we did a PCB field blank, Aquatex supplied FB was poured over a s/s spoon and into 3 250ml jars for 1 PCB FB sample. The same spoon was used to take the PCB CSA #1 surficial sample. This site had

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS

INTEROFFICE MEMO

TO File DATE 9-8-88 JOB NO 337-016

FROM Jim Guzewich RE GE Buffalo Service Shop Soil Samples

to be moved. Where the map showed the sample the area was all paved over. We moved the sample to the dirt area just north of the overhead door. (see map.) This sample was taken from a 100 cm² area approximately 1 cm deep. I then worked on the paperwork and the proper shuttle (cooler) preparation while Mike worked with the drillers to take some additional samples (non RCRA work) along the east side of the building behind the rinse water excavation area. We left the site around 1730. I then located the Federal Express office (corner of Sheridan Dr + Niagara Falls Blvd.) and had the RCRA CSA #1, VOT #1 + PCB CSA #1 samples shipped to Aquatic. The next day I returned to the site and measured out the sampling points + then returned to Nyack.

ROUTE	

LAWLER, MATUSKY & SKELLY ENGINEERS

INTEROFFICE MEMO

TO	File	DATE	9-8-88	JOB NO	337-016
FROM	JMG	RE	E-E Buffalo Service Shop Soil Samples		

0800 Arrived on site

0815 Met Mike Taniello, Mr. Conway

0910 Drillers arrive. Rochester Drilling: Steve ^{Kuhn}~~Kuhn~~ + Kevin ^{Busch}~~Bush~~

0915 Stu Bassell called to inform us that Aquatex did not send enough field blank water or containers

0955 MW-1: SWL is ~ 45" below grade

1005 Called Stu Bassell to go through the bottles. Decided to use some of the I-Chem bottles from LMS

1030-1100 Chemically cleaned 4 split spoons
Doug Nevels of DEC arrived

1113 Began Drilling RCRA CSA #1 ^{Hammers}
10/6/7/10 0-2'

1150 Ended RCRA CSA #1
Drillers, Mike + Doug went to lunch. I stayed to decon spoons, complete CoC + labels etc.

1355 Did Field Blank for VOAs + PHC through ^{field cleaned} split spoon and over a s/s spoon.

1400 Drillers went 1' through asphalt then tried a split spoon from 1-3'. No recovery

ROUTE	

TO File DATE 9-8-88 JOB NO 337-016
FROM JMG RE GE / Buffalo

1400 We decided to try a "bucket" in split spoon & move the hole over and begin again

1415 Began VOT #1 again

1455 Completed VOT #1 to 5-7' depth

1520 Decided to take a surface sample at VOT #1 rather than go any deeper. Doug Newels wanted me to take the sample under the drain port. The soil looked rather black & stained. I took a 0-3" sample

1555 I did a field blank for PCB's. I used Aquatex supplied water and filled 3-250ml bottles. We were not supplied with the correct # of sample jars

1610 We looked at the proposed PCB CSA site. It was covered with asphalt. Doug Newels said it could be moved north to the north side of the loading dock door. Mike was working with drillers taking samples along east side of building

1630 Worked on paper work & bottles while Mike finished up

1730 Left site

Date: 9-8-88
 Crew: Jmg Mike Ianniello
 Site: GE Buffalo Service Shop
175 Mileus RD
Tonawanda NY

LAWLER, MATUSKY & SKELLY ENGINEERS
 FIELD DATA SHEET FOR SOIL/SEDIMENT SAMPLES + Field Blanks
 Job No: 337-016

Oper: GE Buffalo Soil Samples
 Thermometer No:

STA. NO.	TIME	SMPL DPTH	METHOD	TEXT.	CLR.	ODOR	SAMPLE BOTTLES				COMMENTS
							SAMPLE PARAMETERS	BOT. Nos.	SAMPLE PARAMETERS	BOT. Nos.	
Field Blank	1355	-	Split Spoon s/s spoon	-	-	-	VOCs v.	4471	2-40ml UOA vials		Aquatic Supplied FB water
							VOCs v.	4475			
↓	↓		↓	-	-	-	PHCs	4476	500ml Bottle		LMS supplied DI water
VOT #1 0-3"	1535	0-3"	S/S Spoon	-	Black	Musty, Dirt	PHCs	7261	250ml Amber		Sample taken in area under drain of VOT's
Field Blank	1555	-	Poured over s/s spoon	-	-	-	PCBs	4474	3-250ml Amber x not provided w/ enough bottles. Had to put samples in 3 jars to be analyzed as 1 sample		Aquatic supplied FB water
							PCBs	4477			
							PCBs	7263			
											→ from LMS Bottles (other 2 from Aquatic)
PCB CSA #1	1610	0-1cm	S/S Spoon	-	Brown	Dirt	PCBs	7262	1-250ml Amber		4" x 4" square (~100cm ²)

For Field Blank c. 1355 we poured FBlank water through field cleaned split spoon, over s/s spoon, into sample jars
 For Field Blank c. 1555 we poured FBlank water over s/s spoon into jar

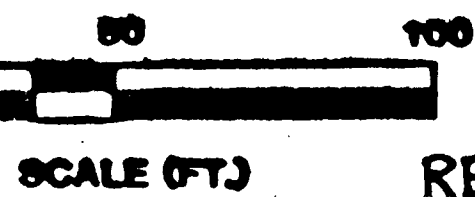
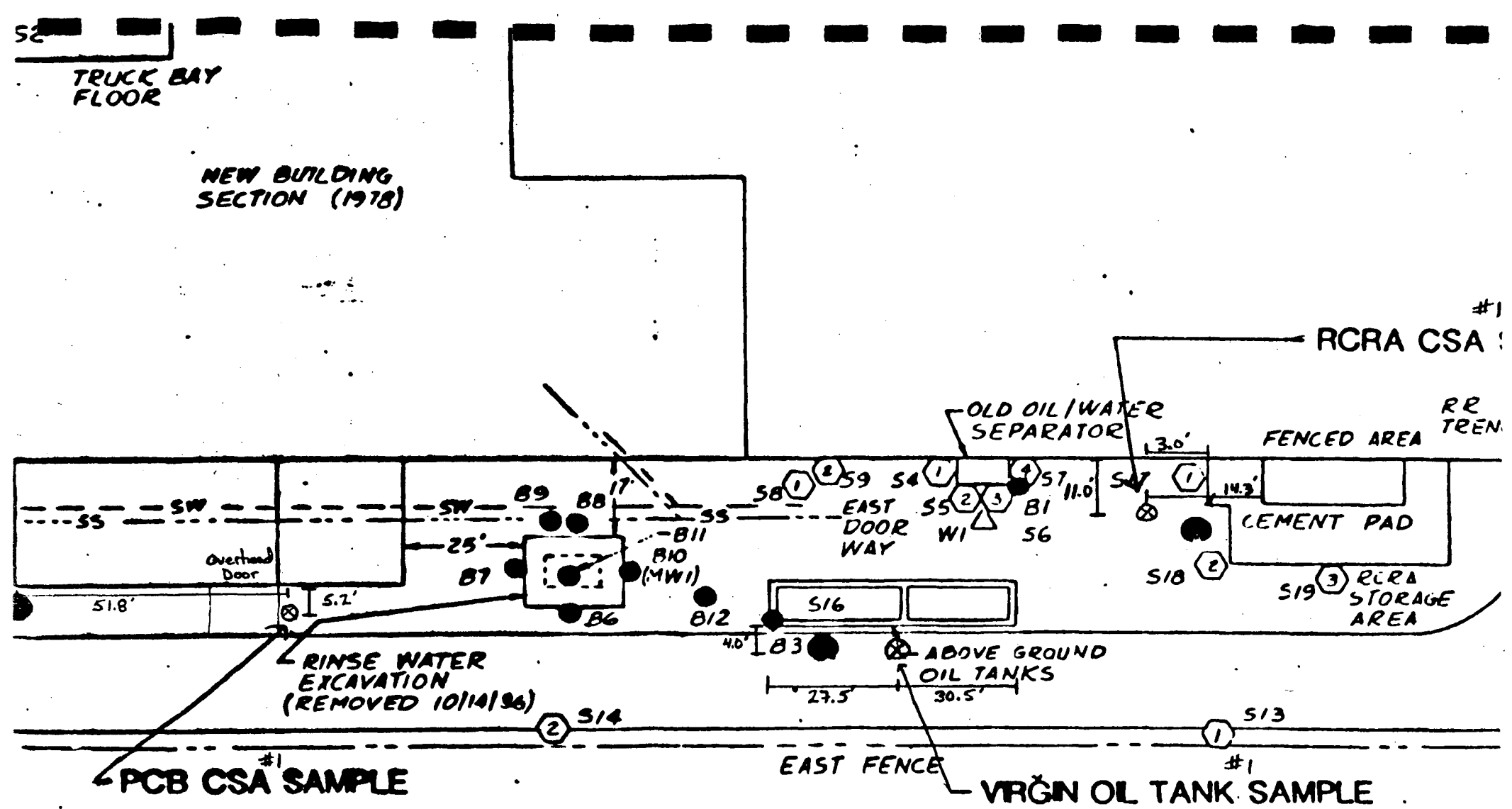


FIGURE 2
 REVISED SAMPLING LOCATIONS
 G.E. BUFFALO SERVICE SHOP
 09/08/88

JMG



aquatec INC. ENVIRONMENTAL SERVICES

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074
CONTENTS

No Preservatives Have Been Added to These Bottles

15 40 ml glass vials, Lot No. W8200013

1 ^{500ml amber} ~~16 oz~~ glass jars, Lot No. 8077123. Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on soil, Metals in soil, Oil & Grease, COD, TOC, Phosphate, Nitrate-Nitrite, Total Nitrogen, Mercury on soil, Cyanide on soil, Phenols, Trihalomethanes on soil.

4 liter glass jugs, Lot No. _____. Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on water.

X ^{see 8/21} 16 oz. polyethylene bottles, Lot No. _____. Provide the proper preservative is used, these bottles are recommended for use in the analysis of: Metals, Cyanide, Sulfide, Ammonia, Fluoride, Mercury, Nitrogen, TOC, Total Nitrogen & COD.

4 250 ml amber glass bottles, Lot No. 8068313.

Sample tags, No.'s 003068 through 003087 inclusive.

Trip Blanks

3 40 ml vials; Lot No. W8200013
Sample tag numbers 003088 + 003090, inclusive
(do not open; trip blank to accompany samples at all times throughout the sampling process)

Chain-of-Custody Record for Sample Containers

Sample Containers Prepared and Sealed by: Janine L. Banks
Sample Custodian, Aquatec, Inc.

9/6/88 @ 1200hrs
Date and Time

Sample Container Seal Broken By:

John M. Geyenich
Signature

Hazmat Field Coordinator / LMS Engineers
Position and Affiliation

9-8-88 / 0830
Date and Time

Opened
Cooler &
GE/Bufflo
Service Shop
before sampling
JMS



aquatec INC. ENVIRONMENTAL SERVICES

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074
CONTENTS

No Preservatives Have Been Added to These Bottles

_____ 40 ml glass vials, Lot No. _____

_____ 16 oz. glass jars, Lot No. _____. Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on soil, Metals in soil, Oil & Grease, COD, TOC, Phosphate, Nitrate-Nitrite, Total Nitrogen, Mercury on soil, Cyanide on soil, Phenols, Trihalomethanes on soil.

_____ 4 liter glass jugs, Lot No. _____. Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on water.

_____ 16 oz. polyethylene bottles, Lot No. _____. Provide the proper preservative is used, these bottles are recommended for use in the analysis of: Metals, Cyanide, Sulfide, Ammonia, Fluoride, Mercury, Nitrogen, TOC, Total Nitrogen & COD.

1 ⁹⁵⁰ 250 ml amber glass bottles, Lot No. 8135243. FIELD BLANK
^{See 9348}
Sample tags, No.'s _____ through _____ inclusive.

Trip Blanks

_____ 40 ml vials; Lot No. _____
Sample tag numbers _____, _____, inclusive
(do not open; trip blank to accompany samples at all times throughout the sampling process)

Chain-of-Custody Record for Sample Containers

Sample Containers Prepared and Sealed by: Janine A. Banks
Sample Custodian, Aquatec, Inc.
9/10/88 D1200hrs
Date and Time

Sample Container Seal Broken By: _____

Signature

Position and Affiliation

Date and Time

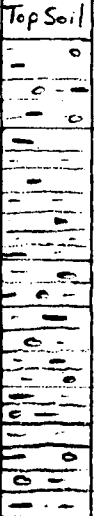
* See LMS CofC for individual sample inventory #'s
* See enclosed Analytical Requirements Sheets

LMS DRILLING LOG

Project No: 337-016
 Client: General Electric / Buffalo Service Shop
 Drilling Began: 9/8/88 / 1113-1150
 Drilling Completed: —
 Well Construction Completed: No Well Constructed
 Development Method/Completed: —
 Yield: —
 Total Depth: —
 Depth to Refusal: —
 Screened Interval: —
 Aquifer: —

Boring No.: RCRA CSA #1
 Permit No.: —
 SWL (date): —
 Elevation, Ground Surface: —
 Elevation, Top of Casing: —
 Latitude: —
 Longitude: —
 Hole Dia.: —
 Monitoring Tube: —

Depth in feet	Blows on Sampler				Retained Sample	Recovery (ft.)	Sample No.*	Instrument Reading
	0' 6"	6' 12"	12' 18"	18' 24"				
0	10							None taken
	6							
		7						
2			10		No	0'	—	
	7							
	6							
		7					7332	
4			10		Yes	0.9'	7347	
	18							
	20							
		19					7342	
6			20		Yes	1.2'	7252	
	18							
	26							
		33					7423	
8			40		Yes	0.5'	7344	↓

Strati- graphic Column	Description
Top Soil	Hit a piece of wood, drove it down 2' We got no recovery
	Compact Dry Red-Brown silty clay, some lenses of gray silty clay, some CF sand
	Same as above - a few small pebbles
	Same as above
	Boring Terminated at 8'
	* Samples collected for VOC's analysis

GE Personnel: Mike Ianiello
 LMS Personnel: John M Gozewich
 DEC Personnel: Doug Newel

LMS DRILLING LOG

Project No: 337-016
 Client: General Electric / Buffalo Service Shop
 Drilling Began: 9-8-88 / 1400-1500
 Drilling Completed: _____
 Well Construction Completed: No Well Constructed
 Development Method/Completed: _____
 Yield: _____
 Total Depth: _____
 Depth to Refusal: _____
 Screened Interval: _____
 Aquifer: _____

Boring No.: VOT #1
 Permit No.: -
 SWL (date): -
 Elevation, Ground Surface: -
 Elevation, Top of Casing: -
 Latitude: -
 Longitude: -
 Hole Dia.: -
 Monitoring Tube: -

Depth in feet	Blows on Sampler				Retained Sample	Recovery (ft.)	Sample No.	Instrument Reading
	0" 6"	6" 12"	12" 18"	18" 24"				
0								None Taken
1		3						
			4					
				5				
3				6	Yes	0.3	7258	
		6						
			10					
				15				
5				19	Yes	1.6	7259	
		12						
			31					
				25				
7				37	Yes	1.5	7260	↓

Stratigraphic Column	Description
	Asphalt Pavement - Augered Through
	Moist Gray Pea Gravel Fill Material
	Moist Gray Pea Gravel Fill Material
	Gray Silty Clay and CF Gray Gravel
	Compact Dry Red-Brown Silty Clay with some lenses of gray silty clay, CF Gravel and CF sand
	Same as Above
	Boring Terminated at 7'
	* Samples collected for PHCs analysis (A 0-3" surficial sample was also taken in the area under the drain port)

GE Personnel: Mike Janiello
 LMS Personnel: John M Guzewich
 DEC Personnel: Doug Newel

PROJECT No. 277-010

PROJECT CU PCCIC

LMS FACILITY Nyack

COLLECTION SITE see above

FIELD

SAMPLE TYPE (Circle):

- Drinking Water
- Industrial Waste
- Coliform (T / F)
- Stream/Pond
- River/Ocean
- Leachate
- Monitoring Wells
- Treatment Facility
- Other
- Bottom Sediment
- Soil**

PERSONNEL John M. Guenzel

SAMPLE ID NUMBER	DATE	TIME	SAMPLE SITE	PARAMETERS	SAMPLE PREP	
					PRESERVATIVE	FILTER (Y/N)
7232	9-8-88	1120	PCRA CSA #1 2-0'	See Analytical	4°C	
7247						
7247		1130	PCRA CSA #1 4-0'			
7252						
7223		1145	PCRA CSA #1 6-0'			
7244						
4471	9-8-88	1200	Field Blank	VOCs	See Analytical	Aquatic Supply
4475						Field Blank
4476			Field Blank	PHCs		LMS supplied
7258	9-8-88	1425	VOT #1 1-3'	PHCs	See Analytical	Requirements State
7259		1436	VOT #1 3-5'	PHCs		LMS supplied
7260		1455	VOT #1 5-7'	PHCs		analyze as one sample
7261		1535	VOT #1 0-3"	PHCs	See Analytical	Requirements State
4474 4477 7263	9-8-88	1555	Field Blank	PCBs		
7262	9-8-88	1610	PCB CSA #1	PCBs		

LMS supplied bottles

LMS supplied bottle

Relinquished By: _____ Date/Time: _____ No. Bottles: _____ Received By: _____

Relinquished By: John M. Guenzel Date/Time: 9-8-88/1720 Received By: _____

Relinquished By: _____ Date/Time: _____ Received By: _____

Messenger: _____ Shipped To: _____ Received at Laboratory By: _____

Remarks: Sealed and shipped Fed-X

Sample Container Size:

- a) VOCs: 40 ml vials
- b) PHC soil: 250ml Amber bottle
- c) PHC water: 200ml Amber bottle

One Blue Hill Plaza, Pearl River, New York 10965
(914) 735-8300
Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960

* For 4476 PHC Field Blank sample, no H₂SO₄ was provided to preserve it

Sealed w/ seal #'s: 001, 002, 003, 004, 005

ATTACHMENT C
LABORATORY SUMMARY SHEETS



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Lawler, Matusky and Skelly Engineers

Date: 10/18/88

Project No: 88400

ETR No: 14944

Sample(s) Received On: 9 September 1988

Page of

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Parameter	88885	88887	88888	88888	88889	88890		
Petroleum Hydrocarbons (mg/l)	<5			REP				
Petroleum Hydrocarbons (mg/Kg as received)		380	500	360	<50	2200		
% Solids		80.06	84.61		86.89	70.39		

Lab No.

Sample Description

- 88885. Water sample labeled 4471, 4475, 4476 field blank.
- 88887. Soil sample labeled 7258.
- 88888. Soil sample labeled 7259.
- 88888REP. Replicate of soil sample labeled 7259.
- 88889. Soil sample labeled 7260.
- 88890. Soil sample labeled 7261.

Submitted By:

Joseph Cornea

Aquatec Inc.

000003



ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Lawler, Matusky & Skelly Engineers

Date: 4 November 1988

Project No: 88400

ETR No: 14944

Sample(s) Received On: 9 September 1988

Page 1 of 1

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Parameter	88885							
Results by Method 8015								
Diethyl ether	<2							
Methyl ethyl ketone	<1							
Methyl isobutyl ketone	<1							
Paraldehyde	<1							
Ethanol	<1							
Acrylamide	<2							

Lab No.	Sample Description
88885	Lawler, Matusky & Skelly Engineers, water sample labeled 4471, 4475, 4476 field blank.

Submitted By: *Joseph Comee*

Aquatec Inc.
000004



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ANALYTICAL REPORT

Lawler, Matusky & Skelly Engineers

Date: 4 November 1988

Project No: 88400

ETR No: 14944

Sample(s) Received On: 9 September 1988

Page 1 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Parameter	88892	88893	88894	88894R	88894MS	Spike	
						Added	% Recovery
Results by Method 8015 (mg/Kg as Received)							
Diethyl ether	<10	<10	<10	<10	296.4	394.9	75%
Methyl ethyl ketone	<5	<5	<5	<5	128.3	179.9	71%
Methyl isobutyl ketone	<5	<5	<5	<5	160.4	183.2	88%
Paraldehyde	<5	<5	<5	<5	240.4	249.5	96%
Ethanol	<5	<5	<5	<5	205.6	283.2	73%
Acrylamide	<10	<10	<10	<10	65.1	91.6	71%

Lab No.

Sample Description

88892 Lawler, Matusky & Skelly Engineers, soil sample labeled 7332, 7347.

88893 Lawler, Matusky & Skelly Engineers, soil sample labeled 7342, 7252.

88894 Lawler, Matusky & Skelly Engineers, soil sample labeled 7423, 7344.

88894R Replicate of Lawler, Matusky & Skelly Engineers, soil sample labeled 7423, 7344.

88894MS Matrix spike of Lawler, Matusky & Skelly Engineers, soil sample labeled 7423, 7344.

% Recovery = % Matrix Spike Recovery.

Submitted By:

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000005



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75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Lawler, Matusky & Skelly Engineers

Date: 4 November 1988

Project No: 88400

ETR No: 14944

Sample(s) Received On: 9 September 1988

Page 2 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Parameter	88894MSD	Spike						
		Added	Recovery					
Results by Method 8015 *								
Diethyl ether	296.4	418.3	71%					
Methyl ethyl ketone	125.9	190.6	66%					
Methyl isobutyl ketone	136.8	194.1	70%					
Paraldehyde	194.8	264.4	74%					
Ethanol	196.9	300.0	66%					
Acrylamide	96.2	97.0	99%					
* = Results in mg/Kg as received.								

Lab No.

Sample Description

88894MSD Matrix spike duplicate of Lawler, Matusky & Skelly Engineers, soil sample labeled 7423, 7344.

% Recovery = % Matrix Spike Recovery.

Submitted By:

Aquatec Inc.

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75 Green Mountain Drive, So. Burlington, VT 05403
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ANALYTICAL REPORT

Aquatec Lab No.: B092088W6P

ETR No.: 14944

Sample Received On: 9 September 1988

Sample Identification: Method blank for Lawler, Matusky & Skelly
Engineers, water sample labeled 4474,
4477, 7263 field blank.

PCB's in ug/l

<u>PCB-1242</u>	<u>0.50 U</u>
<u>PCB-1254</u>	<u>1.00 U</u>
<u>PCB-1221</u>	<u>0.50 U</u>
<u>PCB-1232</u>	<u>0.50 U</u>
<u>PCB-1248</u>	<u>0.50 U</u>
<u>PCB-1260</u>	<u>1.00 U</u>
<u>PCB-1016</u>	<u>0.50 U</u>

Percent Dibutyl Chloroendate Recovery = 82

Key to the letters used to qualify the results of the analysis:

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- C - The result has been corrected for the presence of the compound in the blank.
- LCB - Compound was found at low concentration, comparable to that in the blank. Quantitation is not possible.

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ANALYTICAL REPORT

Aquatec Lab No.: 88886

ETR No.: 14944

Sample Received On: 9 September 1988

Sample Identification: Lawler, Matusky & Skelly Engineers, water
sample labeled 4474, 4477, 7263 field
blank.

PCB's in ug/l

PCB-1242	2.50	U
PCB-1254	5.00	U
PCB-1221	2.50	U
PCB-1232	2.50	U
PCB-1248	2.50	U
PCB-1260	5.00	U
PCB-1016	2.50	U

Percent Dibutyl Chlorendate Recovery = 129

Key to the letters used to qualify the results of the analysis:

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- C - The result has been corrected for the presence of the compound in the blank.
- LCB - Compound was found at low concentration, comparable to that in the blank. Quantitation is not possible.

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ANALYTICAL REPORT

Aquatec Lab No.: B092188S1

ETR No.: 14944

Sample Received On: 9 September 1988

Sample Identification: Method blank for Lawler, Matusky & Skelly
Engineers, soil sample labeled 7262 and
matrix spike of soil sample labeled 7262.

PCB's in ug/Kg

PCB-1242	2000	U
PCB-1254	4000	U
PCB-1221	2000	U
PCB-1232	2000	U
PCB-1248	2000	U
PCB-1260	4000	U
PCB-1016	2000	U

Note: Sample was diluted 5 fold for
analysis.

Percent Dibutyl Chloroendate Recovery = 91

Key to the letters used to qualify the results of the analysis:

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- C - The result has been corrected for the presence of the compound in the blank.
- LCB - Compound was found at low concentration, comparable to that in the blank. Quantitation is not possible.

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75 Green Mountain Drive, So. Burlington, VT 05403
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ANALYTICAL REPORT

Aquatec Lab No.: 88891

ETR No.: 14944

Sample Received On: 9 September 1988

Sample Identification: Lawler, Matusky & Skelly Engineers, soil
sample labeled 7262.

PCB's in ug/Kg

<u>PCB-1242</u>	<u>40000 U</u>
<u>PCB-1254</u>	<u>80000 U</u>
<u>PCB-1221</u>	<u>40000 U</u>
<u>PCB-1232</u>	<u>40000 U</u>
<u>PCB-1248</u>	<u>40000 U</u>
<u>PCB-1260</u>	<u>175000</u>
<u>PCB-1016</u>	<u>40000 U</u>

Note: Sample was diluted 100 fold
for analysis.

Percent Dibutyl Chlorendate Recovery = 84

Key to the letters used to qualify the results of the analysis:

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- C - The result has been corrected for the presence of the compound in the blank.
- LCB - Compound was found at low concentration, comparable to that in the blank. Quantitation is not possible.

000010



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ANALYTICAL REPORT

Aquatec Lab No.: M88891

ETR No.: 14944

Sample Received On: 9 September 1988

Sample Identification: Matrix spike of Lawler, Matusky & Skelly
Engineers, soil sample labeled 7262.

PCB's in ug/Kg

<u>PCB-1242</u>	<u>40000 U</u>
<u>PCB-1254</u>	<u>80000 U</u>
<u>PCB-1221</u>	<u>40000 U</u>
<u>PCB-1232</u>	<u>40000 U</u>
<u>PCB-1248</u>	<u>40000 U</u>
<u>PCB-1260</u>	<u>200000</u>
<u>PCB-1016</u>	<u>40000 U</u>

Note: Sample was diluted 100 fold
for analysis.

Percent Dibutyl Chloroendate Recovery = 80

Key to the letters used to qualify the results of the analysis:

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- C - The result has been corrected for the presence of the compound in the blank.
- LCB - Compound was found at low concentration, comparable to that in the blank. Quantitation is not possible.

000011



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ANALYTICAL REPORT

Aquatec Lab No.: AA092006

ETR No.: 14944, Project 88400

Sample Received On: N/A

Sample Identification: Method Blank for Lawler, Matusky & Skelly Engineers,
water sample labeled 4471, 4475, 4476 field blank.

Volatile Organic Compounds (Method 8010/8020) in ug/l

benzene	<0.5
bromodichloromethane	<0.5
bromoform	<0.5
bromomethane	<0.5
carbon tetrachloride	<0.5
chlorobenzene	<0.5
chloroethane	<0.5
chloroform	<0.5
chloromethane	<0.5
dibromochloromethane	<0.5
1,2-dichlorobenzene	<0.5
1,3-dichlorobenzene	<0.5
1,4-dichlorobenzene	<0.5
1,1-dichloroethane	<0.5
1,2-dichloroethane	<0.5
1,1-dichloroethene	<0.5
cis-1,2-dichloroethene	<0.5
trans-1,2-dichloroethene	<0.5
1,2-dichloropropane	<0.5
cis-1,3-dichloropropene	<0.5
trans-1,3-dichloropropene	<0.5
ethylbenzene	<0.5
methylene chloride	0.9
1,1,2,2-tetrachloroethane	<0.5
tetrachloroethene	<0.5
toluene	<0.5
1,1,1-trichloroethane	<0.5
1,1,2-trichloroethane	<0.5
trichloroethene	<0.5
trichlorofluoromethane	<0.5
vinyl chloride	<0.5
xylenes	<0.5

Percent Surrogate Standard Recoveries

Method 8010 94%

Method 8020 99%

B = Analyte was found in blank.

L = Suspected laboratory contamination.

* = Result below method detection limit.

E = Concentration exceeds calibration range. See appropriate dilution.

D = Secondary dilution. See primary dilution for most accurate results.

000012



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75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Aquatec Lab No.: AA092006

ETR No.: 14944, Project 88400

Sample Received On: N/A

Sample Identification: Method Blank for Lawler Matusky & Skelly Engineers,
soil sample labeled 7332, 7347 and replicate of soil
sample labeled 7332, 7347.

Volatile Organic Compounds (Method 8010/8020) in ug/Kg

benzene	<2.0
bromodichloromethane	<2.0
bromoform	<2.0
bromomethane	<2.0
carbon tetrachloride	<2.0
chlorobenzene	<2.0
chloroethane	<2.0
chloroform	<2.0
chloromethane	<2.0
dibromochloromethane	<2.0
1,2-dichlorobenzene	<2.0
1,3-dichlorobenzene	<2.0
1,4-dichlorobenzene	<2.0
1,1-dichloroethane	<2.0
1,2-dichloroethane	<2.0
1,1-dichloroethene	<2.0
cis-1,2-dichloroethene	<2.0
trans-1,2-dichloroethene	<2.0
1,2-dichloropropane	<2.0
cis-1,3-dichloropropene	<2.0
trans-1,3-dichloropropene	<2.0
ethylbenzene	<2.0
methylene chloride	4.6
1,1,2,2-tetrachloroethane	<2.0
tetrachloroethene	<2.0
toluene	<2.0
1,1,1-trichloroethane	<2.0
1,1,2-trichloroethane	<2.0
trichloroethene	<2.0
trichlorofluoromethane	<2.0
vinyl chloride	<2.0
xylene	<2.0

Percent Surrogate Standard Recoveries

Method 8010 94%

Method 8020 99%

B = Analyte was found in blank.

L = Suspected Laboratory contamination.

* = Result below method detection limit.

E = Concentration exceeds calibration range. See appropriate
dilution.

D = Secondary dilution. See primary dilution for most accurate
results.

000013



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75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Aquatec Lab No.: AA092807

ETR No.: 14944, Project 88400

Sample Received On: N/A

Sample Identification: Method Blank for Lawler, Matusky & Skelly Engineers,
soil sample labeled 7342, 7252, and soil sample
labeled 7423, 7344.

Volatile Organic Compounds (Method 8010/8020) in ug/Kg

benzene	<2.0
bromodichloromethane	<2.0
bromoform	<2.0
bromomethane	<2.0
carbon tetrachloride	<2.0
chlorobenzene	<2.0
chloroethane	<2.0
chloroform	<2.0
chloromethane	<2.0
dibromochloromethane	<2.0
1,2-dichlorobenzene	<2.0
1,3-dichlorobenzene	<2.0
1,4-dichlorobenzene	<2.0
1,1-dichloroethane	<2.0
1,2-dichloroethane	<2.0
1,1-dichloroethene	<2.0
cis-1,2-dichloroethene	<2.0
trans-1,2-dichloroethene	<2.0
1,2-dichloropropane	<2.0
cis-1,3-dichloropropene	<2.0
trans-1,3-dichloropropene	<2.0
ethylbenzene	<2.0
methylene chloride	<2.0
1,1,2,2-tetrachloroethane	<2.0
tetrachloroethene	<2.0
toluene	<2.0
1,1,1-trichloroethane	<2.0
1,1,2-trichloroethane	<2.0
trichloroethene	<2.0
trichlorofluoromethane	<2.0
vinyl chloride	<2.0
xylenes	<2.0

Percent Surrogate Standard Recoveries

Method 8010 97%

Method 8020 92%

B = Analyte was found in blank.

L = Suspected laboratory contamination.

* = Result below method detection limit.

E = Concentration exceeds calibration range. See appropriate dilution.

D = Secondary dilution. See primary dilution for most accurate results.

000014



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75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Aquatec Lab No.: 88885
ETR No.: 14944, Project 88400
Sample Received On: 9 September 1988
Sample Identification: Lawler, Matusky & Skelly Engineers, water
sample labeled 4471, 4475, 4476 field blank.

Volatile Organic Compounds (Method 8010/8020) in ug/l

benzene	<0.5
bromodichloromethane	<0.5
bromoform	<0.5
bromomethane	<0.5
carbon tetrachloride	<0.5
chlorobenzene	<0.5
chloroethane	<0.5
chloroform	<0.5
chloromethane	<0.5
dibromochloromethane	<0.5
1,2-dichlorobenzene	<0.5
1,3-dichlorobenzene	<0.5
1,4-dichlorobenzene	<0.5
1,1-dichloroethane	<0.5
1,2-dichloroethane	<0.5
1,1-dichloroethene	<0.5
cis-1,2-dichloroethene	<0.5
trans-1,2-dichloroethene	<0.5
1,2-dichloropropane	<0.5
cis-1,3-dichloropropene	<0.5
trans-1,3-dichloropropene	<0.5
ethylbenzene	<0.5
methylene chloride	8.4B
1,1,2,2-tetrachloroethane	<0.5
tetrachloroethene	<0.5
toluene	<0.5
1,1,1-trichloroethane	0.8
1,1,2-trichloroethane	<0.5
trichloroethene	<0.5
trichlorofluoromethane	<0.5
vinyl chloride	<0.5
xylenes	<0.5

Percent Surrogate Standard Recoveries

Method 8010 81%

Method 8020 77%

- B - Analyte was found in blank.
- L - Suspected laboratory contamination.
- * - Result below method detection limit.
- E - Concentration exceeds calibration range. See appropriate dilution.
- D - Secondary dilution. See primary dilution for most accurate results

000015



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Aquatec Lab No.: 88892
ETR No.: 14944 Project 88400
Sample Received On: 9 September 1988
Sample Identification: Lawler, Matusky, & Skelly Engineers soil
sample labeled, 7332, 7347.

Volatile Organic Compounds (Method 8010/8020) in ug/Kg as Received

benzene	<8.0
bromodichloromethane	<8.0
bromoform	<8.0
bromomethane	<8.0
carbon tetrachloride	<8.0
chlorobenzene	<8.0
chloroethane	<8.0
chloroform	<8.0
chloromethane	<8.0
dibromochloromethane	<8.0
1,2-dichlorobenzene	<8.0
1,3-dichlorobenzene	<8.0
1,4-dichlorobenzene	<8.0
1,1-dichloroethane	58
1,2-dichloroethane	<8.0
1,1-dichloroethene	17
cis-1,2-dichloroethene	<8.0
trans-1,2-dichloroethene	<8.0
1,2-dichloropropane	<8.0
cis-1,3-dichloropropene	<8.0
trans-1,3-dichloropropene	<8.0
ethylbenzene	<8.0
methylene chloride	100B
1,1,2,2-tetrachloroethane	<8.0
tetrachloroethene	<8.0
toluene	<8.0
1,1,1-trichloroethane	1300
1,1,2-trichloroethane	<8.0
trichloroethene	<8.0
trichlorofluoromethane	<8.0
vinyl chloride	<8.0
xylene	<8.0

Percent Surrogate Standard Recoveries

Method 8010 65%
Method 8020 59%

- B - Analyte was found in blank.
- L - Suspected laboratory contamination.
- * - Result below method detection limit.
- E - Concentration exceeds calibration range. See appropriate dilution.
- D - Secondary dilution. See primary dilution for more accurate results.

000016



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Aquatec Lab No.: 88892R
ETR No.: 14944 Project 88400
Sample Received On: 9 September 1988
Sample Identification: Replicate of Lawler, Matusky, & Skelly
Engineers soil sample labeled, 7332, 7347.

Volatile Organic Compounds (Method 8010/8020) in ug/Kg as Received

benzene	<19
bromodichloromethane	<19
bromoform	<19
bromomethane	<19
carbon tetrachloride	<19
chlorobenzene	<19
chloroethane	<19
chloroform	<19
chloromethane	<19
dibromochloromethane	<19
1,2-dichlorobenzene	<19
1,3-dichlorobenzene	<19
1,4-dichlorobenzene	<19
1,1-dichloroethane	46
1,2-dichloroethane	<19
1,1-dichloroethene	12*
cis-1,2-dichloroethene	<19
trans-1,2-dichloroethene	<19
1,2-dichloropropane	<19
cis-1,3-dichloropropene	<19
trans-1,3-dichloropropene	<19
ethylbenzene	<19
methylene chloride	290B
1,1,2,2-tetrachloroethane	<19
tetrachloroethene	<19
toluene	<19
1,1,1-trichloroethane	1000
1,1,2-trichloroethane	<19
trichloroethene	<19
trichlorofluoromethane	<19
vinyl chloride	<19
xylenes	<19

Percent Surrogate Standard Recoveries

Method 8010 83%
Method 8020 129%

- B - Analyte was found in blank.
- L - Suspected laboratory contamination.
- * - Result below method detection limit.
- E - Concentration exceeds calibration range. See appropriate dilution.
- D - Secondary dilution. See primary dilution for more accurate results.

000017



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Aquatec Lab No.: 88893
ETR No.: 14944, Project 88400
Sample Received On: 9 September 1988
Sample Identification: Lawler, Matusky & Skelly Engineers, soil
sample labeled, 7342, 7252.

Volatile Organic Compounds (Method 8010/8020) in ug/Kg as Received

benzene	<2.0
bromodichloromethane	<2.0
bromoform	<2.0
bromomethane	<2.0
carbon tetrachloride	<2.0
chlorobenzene	<2.0
chloroethane	<2.0
chloroform	<2.0
chloromethane	<2.0
dibromochloromethane	<2.0
1,2-dichlorobenzene	<2.0
1,3-dichlorobenzene	<2.0
1,4-dichlorobenzene	<2.0
1,1-dichloroethane	290
1,2-dichloroethane	29
1,1-dichloroethene	170
cis-1,2-dichloroethene	<2.0
trans-1,2-dichloroethene	<2.0
1,2-dichloropropane	<2.0
cis-1,3-dichloropropene	<2.0
trans-1,3-dichloropropene	<2.0
ethylbenzene	<2.0
methylene chloride	4L
1,1,2,2-tetrachloroethane	<2.0
tetrachloroethene	<2.0
toluene	18
1,1,1-trichloroethane	20000
1,1,2-trichloroethane	<2.0
trichloroethene	<2.0
trichlorofluoromethane	<2.0
vinyl chloride	<2.0
xylenes	<2.0

Percent Surrogate Standard Recoveries

Method 8010 87%

Method 8020 89%

- B - Analyte was found in blank.
- L - Suspected laboratory contamination
- * - Result below method detection limit.
- E - Concentration exceeds calibration range. See appropriate dilution.
- D - Secondary dilution. See primary dilution for most accurate results.

000013



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Aquatec Lab No.: 88894

ETR No.: 14944, Project 88400

Sample Received On: 9 September 1988

Sample Identification: Lawler, Matusky & Skelly Engineers, soil sample labeled, 7423, 7344.

Volatile Organic Compounds (Method 8010/8020) in ug/Kg as Received

benzene	<2.0
bromodichloromethane	<2.0
bromoform	<2.0
bromomethane	<2.0
carbon tetrachloride	<2.0
chlorobenzene	<2.0
chloroethane	<2.0
chloroform	<2.0
chloromethane	<2.0
dibromochloromethane	<2.0
1,2-dichlorobenzene	<2.0
1,3-dichlorobenzene	<2.0
1,4-dichlorobenzene	<2.0
1,1-dichloroethane	48
1,2-dichloroethane	61
1,1-dichloroethene	120
cis-1,2-dichloroethene	<2.0
trans-1,2-dichloroethene	<2.0
1,2-dichloropropane	<2.0
cis-1,3-dichloropropene	<2.0
trans-1,3-dichloropropene	<2.0
ethylbenzene	<2.0
methylene chloride	3L
1,1,2,2-tetrachloroethane	<2.0
tetrachloroethene	<2.0
toluene	120
1,1,1-trichloroethane	20000
1,1,2-trichloroethane	<2.0
trichloroethene	<2.0
trichlorofluoromethane	<2.0
vinyl chloride	<2.0
xylenes	<2.0

Percent Surrogate Standard Recoveries

Method 8010 90%

Method 8020 88%

B - Analyte was found in blank.

L - Suspected laboratory contamination.

* - Result below method detection limit.

E - Concentration exceeds calibration range. See appropriate dilution.

D - Secondary dilution. See primary dilution for most accurate results.

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aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Lawler, Matusky and Skelly Engineers

Date: 11/07/88

Project No: 88400

ETR No: 14944

Sample(s) Received On: 9 September 1988

Page of

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Parameter	88892	88893	88894					
% Solids	84.16	85.50	87.50					

Lab No.

Sample Description

88892 Lawler, Matusky & Skelly Engineers soil sample labeled 7332,7347.

88893 Lawler, Matusky & Skelly Engineers soil sample labeled 7342,7252.

88894 Lawler, Matusky & Skelly Engineers soil sample labeled 7423,7344.

Submitted By:

Aquatec Inc.

000023

QC SUMMARY



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

Soil Pesticide Matrix Spike Recovery

Client: Lawler, Matusky & Skelly Engineers
 ETR No.: 14944
 Lab Sample No.: 88891
 Client Sample No.: LMS soil sample labeled 7262

<u>Compound</u>	<u>Spike Added (ug/kg)</u>	<u>Sample Concentration (ug/kg)</u>	<u>MS Concentration (ug/kg)</u>	<u>MS % Rec</u>
lindane	60.4	*	*	-
heptachlor	60.4	0.0	73.8	122
aldrin	60.4	*	*	-
dieldrin	151.0	*	*	-
endrin	151.0	*	*	-
p,p'-DDT	151.0	*	*	-

* Sample concentration precludes quantitation of matrix spike compounds.

DUPLICATE ANALYSIS
METHODS: 8010 and 8020

ETR no. 14944

Client sample ID : 7332,7347

Aquatec sample ID : 88892

<u>COMPOUND</u>	<u>SAMPLE RESULTS (ug/Kg)</u>	<u>REPLICATE RESULTS (ug/Kg)</u>	<u>RPD</u>
1,1-dichloroethane	17	12	34
methylene chloride	100 L	290 L	97
1,1-dichloroethane	58	46	23
1,1,1-trichloroethane	1300	1000	26

L= Suspected laboratory contaminant.

000025
~~000023~~cc

ATTACHMENT D
CHAIN OF CUSTODY RECORDS

SAMPLE HANDLING



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL NUMBER 3855

DATE 9-8-86

000579

From (Your Name) John M Guasich
Your Phone Number (Very Important) (719) 735 8300
Company LMS Energy Services
Department/Floor No.
Street Address 53 Hudson Ave
City New York **State** NY **ZIP** 10014

To (Recipient's Name) Janine L Banks
Recipient's Phone Number (Very Important) (803) 658-1074
Company Aquatic Inc
Department/Floor No.
Exact Street Address (Use of P.O. Boxes or P.O. Zip Codes Will Delay Delivery And Result In Extra Charge.) 75 Green Mountain Drive
City South Burlington **State** VT **ZIP** 05403

YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.) 331-00

HOLD FOR PICK-UP AT THIS FEDERAL EXPRESS LOCATION: Street Address (See Service Guide or Call 800-238-5355)

PAYMENT Bill Sender Bill Recipient's FedEx Acct. No. Bill Credit Card Cash

Federal Express Use
 Base Charges
 Declared Value Charge
 Origin Agent Charge

SERVICES CHECK ONLY ONE BOX

1 **PRIORITY** **OVERNIGHT DELIVERY**
 LETTER
 OVERNIGHT DELIVERY USING OUR PACKAGING
 OVERNIGHT BOX
 OVERNIGHT TUBE
 STANDARD AIR
 SERVICE COMMITMENT

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED

2 **HOLD FOR PICK-UP**
 DELIVER WEEKDAY
 DELIVER SATURDAY
 RESTRICTED ARTICLES SERVICE
 CONSTANT SURVEILLANCE SERVICE (CSS)
 DRY ICE
 OTHER SPECIAL SERVICE
 SATURDAY PICK-UP

PACKAGES	WEIGHT	YOUR DECLARED VALUE	OTHER SIZE
1	26	300	
	LBS		
	LBS		
	LBS		
Total	26	300	

Received At:
 Regular Stop
 On-Call Stop
 Drop Box
 Station

Federal Express Corp. Employee No. 64211

Date/Time For Federal Express Use 9-8 1810

ZIP Zip Code of Street Address Required

Emp. No. Date

Cash Received
 Return Shipment
 Third Party

Street Address City State Zip

Received By: Laureen L Henry
 Date/Time Received 9988e 105h
 FedEx Employee Number

Other Total Charges

PART #2041738900
 FEC-S-750-25
 REVISION DATE 7/86
 PRINTED U.S.A. NCRE

RECIPIENT'S COPY

PROJECT No. 337-016

PROJECT GE Buffalo Service Shop

LMS FACILITY Nyack

COLLECTION SITE see above

SAMPLE TYPE (Circle):

Drinking Water Stream/Pond Monitoring Wells
Industrial Waste River/Ocean Treatment Facility
Coliform (T / F) Leachate Other

FIELD PERSONNEL Jung, Mike Ianniello
Bottom Sediment Soil

SAMPLE ID NUMBER	DATE	TIME	SAMPLE SITE	PARAMETERS	SAMPLE PREP	
					PRESERVATIVE	FILTER (Y/N)
7332	9-8-88	1120	RCRA CSA #1 2-4'	V ₁ VOC's: See Analytical Requirements Sheet	4°C	
7347		↓	↓	V ₂		
7342		1130	RCRA CSA #1 4-6'	V ₁		
7252		↓	↓	V ₂		
7423		1148	RCRA CSA #1 6-8'	V ₁		
7344		↓	↓	V ₂		
4471	9-8-88	1355	Field Blank	V ₁ VOC's: See Analytical Requirements Sheet	Aquatic Supplied Field Blank H ₂ O	
4475		↓	↓	V ₂		
* 4476		↓	Field Blank	PHC's	LMS supplied Field Blank (DI) water	
7258	9-8-88	1425	VOT #1 1-3'	PHC's: See Analytical Requirements Sheet		
7259		1436	VOT #1 3-5'	PHC's:		LMS supplied bottles
7260		1455	VOT #1 5-7'	PHC's:		
7261		1535	VOT #1 0-3"	PHC's: See Analytical Requirements Sheet		
4474 4477 7263	9-8-88	1555	Field Blank	PHC's ^{and} PCB's		analyze as one sample
7262	9-8-88	1610	PCB CSA #1	PCB's		

LMS supplied Bottles

LMS supplied bottle

Relinquished By: _____ Date/Time: _____ No. Bottles: _____ Received By: _____
 Relinquished By: John M. Dugan Date/Time: 9-8-88/1720 Received By: _____
 Relinquished By: _____ Date/Time: _____ Received By: _____
 Messenger: _____ Shipped To: _____ Received at Laboratory By: Maureen R. Henry 9-9-88 1015h.

Remarks: Sealed and shipped Fed-X 000580

- Sample Container Size:
- a) VOC's: 40 ml Vials
 - b) PHC soil: 250ml Amber bottle
 - c) PHC water 500ml Amber bottle

One Blue Hill Plaza, Pearl River, New York 10965
(914) 735-8300
Sample Drop-Off: 53 Hudson Avenue, Nyack, New York 10960

* For 4476 PHC Field Blank sample, no H₂SO₄ was provide to preserve it

Sealed w/ Seal #'s: 001, 002, 003, 004, 005



aquatec INC. ENVIRONMENTAL SERVICES

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074

CONTENTS

No Preservatives Have Been Added to These Bottles

15 40 ml glass vials, Lot No. W8200013

1 ^{500ml amber} ~~16 oz~~ glass jars, Lot No. 8077103. Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on soil, Metals in soil, Oil & Grease, COD, TOC, Phosphate, Nitrate-Nitrite, Total Nitrogen, Mercury on soil, Cyanide on soil, Phenols, Trihalomethanes on soil.

4 liter glass jugs, Lot No. . Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on water.

X ^{small} 16 oz. polyethylene bottles, Lot No. . Provide the proper preservative is used, these bottles are recommended for use in the analysis of: Metals, Cyanide, Sulfide, Ammonia, Fluoride, Mercury, Nitrogen, TOC, Total Nitrogen & COD.

4 250 ml amber glass bottles, Lot No. 8068313.

Sample tags, No.'s 003068 through 003087 inclusive.

Trip Blanks

3 40 ml vials; Lot No. W8200013
Sample tag numbers 003088 - 003090, inclusive
(do not open; trip blank to accompany samples at all times throughout the sampling process)

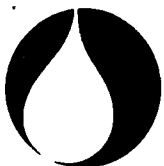
Chain-of-Custody Record for Sample Containers

Sample Containers Prepared and Sealed by: Janine L. Banks
Sample Custodian, Aquatec, Inc.
9/6/88 @ 1200hrs.
Date and Time

Sample Container Seal Broken By: John M. Gugenich
Signature
Hazmat Field Coordinator / LMS Engineers
Position and Affiliation
9-8-88 / 0830
Date and Time

Opened
Cooler @
GE/B.P.C. Co
Service Shop
before sampling
JMG

000581



aquatec INC. ENVIRONMENTAL SERVICES

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074

CONTENTS

No Preservatives Have Been Added to These Bottles

_____ 40 ml glass vials, Lot No. _____

_____ 16 oz. glass jars, Lot No. _____. Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on soil, Metals in soil, Oil & Grease, COD, TOC, Phosphate, Nitrate-Nitrite, Total Nitrogen, Mercury on soil, Cyanide on soil, Phenols, Trihalomethanes on soil.

_____ 4 liter glass jugs, Lot No. _____. Provided the proper preservative is used, these bottles are recommended for use in the analysis of: Extractable Organics on water.

_____ 16 oz. polyethylene bottles, Lot No. _____. Provide the proper preservative is used, these bottles are recommended for use in the analysis of: Metals, Cyanide, Sulfide, Ammonia, Fluoride, Mercury, Nitrogen, TOC, Total Nitrogen & COD.

1 ⁹⁵⁰ _____ 250 ml amber glass bottles, Lot No. 8135243. Field BLANK

See 9388

_____ Sample tags, No.'s _____ through _____ inclusive.

Trip Blanks

_____ 40 ml vials; Lot No. _____
Sample tag numbers _____, _____, inclusive
(do not open; trip blank to accompany samples at all times throughout the sampling process)

Chain-of-Custody Record for Sample Containers

Sample Containers Prepared and Sealed by: Janine A. Banks
Sample Custodian, Aquatec, Inc.

9/6/88 D1200hms
Date and Time

Sample Container Seal Broken By: _____

Signature

Position and Affiliation

Date and Time

* see LMS CoC for individual sample inventory #'s

* see enclosed Analytical Requirements Sheets

000582

Project No. 88400

ETR No. 14944

Date 9-9-88 10:15 hrs.

Sample Custodian Signature Maurice R. Henry

SDG No. _____

CIRCLE THE APPROPRIATE RESPONSE

- 1. Custody Seal present/~~absent~~
~~intact~~/~~not intact~~
- 2. Chain-of-Custody present/~~absent~~
- 3. Sample Tags
Sample Numbers present/~~absent~~
listed/~~not listed~~ on chain-of-custody *N/A*
- 4. SMO Forms present/~~absent~~
- 5. Fullness of V.O. Bottles no air space/~~air space~~

custody seals #'s:
001, 002, 003, 004, 005

Case No. _____

Airbill No. 1673855606

QA Review Signature _____

Date _____

000583

Sample Received		Chain-of-Custody Record Number	Client Sample Numbers	Corresponding		No. Vials Rec'd	No. Vials w/Air	Agreement of Information on Custody Records, Traffic Reports, and Sample Tags/Labels	Remarks: Condition of Sample Shipment, etc.
Date	Time			Sample Tag Numbers	Assigned Lab Numbers				
9-9-88	10:15 hrs	NONE	4471, 4475, 4476	NONE	88885	2	0	Yes, all	All samples
"	"	"	4474, 4477, 7263	"	88886	0	0	Information was	received intact
"	"	"	7258	"	88887	0	0	int. agreement.	inside cooler.
"	"	"	7259	"	88888	0	0		w/ice. Cooler
"	"	"	7260	"	88889	0	0		was intact as
"	"	"	7261	"	88890	0	0		were custody
"	"	"	7262	"	88891	0	0		seals on outside
"	"	"	7332, 7347	"	88892	2	0		of cooler.
"	"	"	7342, 7252	"	88893	2	0		Chain of custody
"	"	"	7423, 7344	"	88894	2	0		was present,
									but no sample
									tags were present

In Reference to Case No(s):

14924^{2B} / 14944

REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: September 9, 1988

Laboratory Name: Aquatec Inc

Lab Contact: RICHARD GOMEZ

Region: Lawler, Matusky, and Skelley

Regional Contact: Craig Caldwell

Call Initiated By: Laboratory Region

In reference to data for the following sample number(s):

Aquatec Lab Nos. 88885 - 88894

Summary of Questions/Issues Discussed:

Phone call from Craig Caldwell with resolution on
Method 8010, 8015, and 8020 analytes to be analyzed
for.
Do method 8010 but analyze for Method 601 compounds. Do Purge & Trap.
Do Method 8015 - direct injection. Do 8015 Compounds.
Do Method 8020 - do 8020 compounds, Purge and Trap analysis.

Summary of Resolution:

Richard Gomez
Signature

9/9/88
Date

000585

In Reference to Case No(s):

14944

REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: September 12, 1988
Laboratory Name: Aquatec, Inc.
Lab Contact: Richard Gomez
Region: Lawler, Matusky, Skelley Eng.
Regional Contact: Mr. Craig Caldwell
Call Initiated By: Laboratory Region

In reference to data for the following sample number(s):

Aquatec Lab No. 88885-88894

Summary of Questions/Issues Discussed:

- 1) I assume there is no external QC analysis to be performed on submitted field blanks. Is this correct?
- 2) Are there special holding time requirements on the Volatiles as this is a NYS/DEC job site (ie NYS involved)?
- 3) Is it correct that only PCBs is required (not pesticide)? Use the matrix spike in the method, and not PCB matrix spike?

Summary of Resolution:

- 1) yes
- 2) 7 day holding time on VOA. LMS will pay premium price for this per Craig Caldwell.
- 3) VDO PCBs only. Use normal matrix spike, not PCB matrix spike.

[Signature]
Signature

9/13/88
Date

000586



aquatec INC.

ENVIRONMENTAL SERVICES

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074
January 9, 1989

Mr. Craig Caldwell
Lawler, Matusky & Skelly Engineers
53 Hudson Avenue
Nyack, NY 10960

LAWLER, MATUSKY & SKELLY
ENGINEERS

JAN 09 1989

Re: Aquatec Project No. 89000; ETR 14944

Dear Mr. Caldwell:

This is written in response to your questions concerning the analytical data that was contained in our submittal of November 18, 1988.

The attached is a tabulation of bench mark dates in the analysis of samples for volatile organics, polychlorinated biphenyls and petroleum hydrocarbons.

As for the quality control criteria that the laboratory normally applies for chlorotoluene recovery in the Methods 8010/8020 analyses, recoveries outside the range of 70 to 130 percent initiate a reanalysis. For the recovery of dibutyl chlorendate in the Method 8080 analysis, the acceptance range is 50 to 130 percent.

Based on the instructions that were received shortly after sample log-in, pesticides were used as matrix spike analytes in the Method 8080 analysis. The high concentrations of polychlorinated biphenyls in the sample precluded a meaningful assessment of spike recovery for most of the spiked analytes.

In addition, I have reviewed the analytical work and the analyses that were performed within the context of the invoice that was submitted. The charges are consistent with the services that were provided. The reference and application of a "rush" fee was applied only to the shipment of sample containers by Federal Express.

Sincerely,


Kirk F. Young, P.E.

KFY/lam

Enclosures

89000B9JAN89

Hydrographic Studies and Analyses
Ecological Studies

• Water Quality Studies
• Computer Simulations

• Analytical Laboratories
• Industrial Waste Surveys

<u>Aquatec Identification</u>	<u>LMS Identification</u>	<u>Date Received</u>	<u>Extraction Date Petroleum H.C.</u>	<u>Acquisition Date Petroleum H.C.</u>
88885	4471, 4475, 4476 field blank	9 Sept 88	17 Sept 88	21 Sept 88
88887	7258	9 Sept 88	17 Sept 88	21 Sept 88
88888	7259	9 Sept 88	17 Sept 88	21 Sept 88
88888R	7259REP	9 Sept 88	17 Sept 88	21 Sept 88
88889	7260	9 Sept 88	17 Sept 88	21 Sept 88
88890	7261	9 Sept 88	17 Sept 88	21 Sept 88

<u>Aquatec Identification</u>	<u>LMS Identification</u>	<u>Date Received</u>	<u>Acquisition Dates 8015</u>
88885	4471, 4475, 4476 field blank	9 Sept 88	24 Sept, 12 Oct 88
88892	7332, 7347	9 Sept 88	23 Sept, 12 Oct 88
88893	7342, 7252	9 Sept 88	23 Sept, 12 Oct 88
88894	7423, 7344	9 Sept 88	23 Sept, 12 Oct 88
88894R	7432, 7344REP	9 Sept 88	23 Sept, 12 Oct 88
88894MS	7423, 7344MS	9 Sept 88	23 Sept, 12 Oct 88
88894MSD	7423, 7344MSD	9 Sept 88	23 Sept, 12 Oct 88

<u>Aquatec Identification</u>	<u>LMS Identification</u>	<u>Date Received</u>	<u>Acquisition Dates 8010/8020</u>	
			<u>Initial</u>	<u>Secondary</u>
88885	4471, 4475, 4476 field blank	9 Sept 88	20 Sept 88	20 Sept 88
88892	7332, 7347	9 Sept 88	20 Sept 88	20 Sept 88
88892R	7332, 7347REP	9 Sept 88	20 Sept 88	20 Sept 88
88893	7342, 7252	9 Sept 88	20 Sept 88	28 Sept 88 29 Sept 88*
88894	7423, 7344	9 Sept 88	20 Sept 88	28 Sept 88 29 Sept 88*

* Analysis of methanol extract, extraction occurred and the date of acquisition.

<u>Aquatec Identification</u>	<u>LMS Identification</u>	<u>Date Received</u>	<u>Extraction Date for 8080</u>	<u>Acquisition Date 8080</u>
88886	4474, 4477, 7263 field blank	9 Sept 88	20 Sept 88	4 Oct 88
88891	7262	9 Sept 88	20 Sept 88	6 Oct 88
M88891	7262MS	9 Sept 88	20 Sept 88	6 Oct 88