REPORT

Sampling, Analysis, and Monitoring Plan Maestri Site Geddes, NY

Stauffer Management Company
Wilmington, DE

December 1995

O'BRIEN & GERE
ENGINEERS, INC.

5618.005

Report

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Maestri Site
Geddes, New York

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O'BRIEN & GERE ENGINEERS, INC.

5000 Brittonfield Parkway
Syracuse, NY 13221

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1. Introduction

1.1. General

This Sampling, Analysis, and Monitoring Plan is written in accordance with Section 3.3.7 of the Remedial Design/Remedial Action (RD/RA) Work Plan dated July 1995 and the Order on Consent. Presented herein are the tasks and analytical requirements for monitoring the effectiveness of the soil remediation project at the Maestri Site located in Geddes, New York (Figure 1). The plan identifies the matrices to be sampled, analytical methods to be used, sampling frequency, quality assurance and quality control measures, and reporting requirements.

Data collected during these efforts will be used for the following:

- To assess the pre-mechanical screening concentrations of volatile organic compounds (VOCs) and semi-VOCs (SVOCs) in the soils;
- To assess the concentrations of VOCs and SVOCs, if any, remaining in the excavation (verification sampling) following removal of soils exhibiting VOCs and SVOCs above the remedial action objectives (RAOs) established for the site;
- To evaluate the effectiveness of the mechanical screening component of the soil remediation activities for the removal of VOCs from the soils;
- To evaluate the effectiveness of the bioremediation/soil vapor extraction (BIO/SVE) soil pile component of the soil remediation activities for the removal of VOCs and SVOCs from the soils; and
- To document that the modifications to the ground water treatment system have not resulted in a release of VOCs or SVOCs above the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) effluent limits.

2. Soil sampling during construction

2.1. Excavated soils sampling

Sampling and analysis of excavated soils will involve initial screening at the excavator bucket for the upper four feet of the excavation using a photoionization detector (PID). Soils will be segregated based on PID concentrations and placed into 200 cubic yard (cy) stockpiles until more thorough testing can be performed. After the soil is placed in these stockpiles, four samples (three grab and one composite sample) per pile will be collected and analyzed for VOCs using EPA Method 8010/8020. If the concentrations of VOCs in the soils exceed the RAOs, the entire 200 cy soil stockpile will be processed through the mechanical screening system. However, if the concentrations of VOC in the soil are less than the RAOs for the site, the four soil samples will then be analyzed for SVOCs. If SVOC levels also meet the RAOs, the soil will be stockpiled for use as "clean" backfill within the excavation. However, if the soil VOC or SVOC concentrations in the soil exceed the RAOs, the soil pile will later be designated to require treatment in a bioremediation/soil vapor extraction pile (BIO/SVE) soil pile.

Soils below four feet will be excavated and treated on-site.

2.2. Excavation verification soils sampling

A 30 ft. grid pattern (as shown on the Contract Drawing G-8) will be established in the field and will be used in connection with excavation verification sampling. After excavating to the predetermined horizontal and vertical limits shown on the Contract Drawings, a photoionization detector will be used to assess the need for additional excavating. Once PID measurements indicate that the RAOs may have been achieved, a soil sample will be collected at each node of the grid which represents a soil

sampling point. The samples will be analyzed for VOCs using EPA Method 8010/8020, and SVOCs using EPA Method 8270. The purpose of this soil sampling and analyses is to document that the soils exhibiting VOCs and/or SVOCs above the RAOs have been removed to the extent practicable.

Following sampling and analyses at each of the grid nodes, the analytical results will be compared to the RAOs established for the Site and presented in Table 2. If any of the samples exhibit VOCs and/or SVOCs above the RAOs, the soils (in one to two feet lifts) at each of the grid nodes and extending 3/4 the distance to the next "clean" grid node will be removed. Following removal of the additional soils, soil sampling and analyses at the grid node will be re-performed as described above.

2.3. Mechanical screening soil sampling

Following processing of soils through the mechanical screening system, the soil stockpiles will be sampled and analyzed for VOCs and SVOCs using EPA Methods 8010/8020 and 8270, respectively. Two samples will be collected for every 200 cy pile processed to assess the concentration of VOCs/SVOCs within the soil pile. If the VOC concentrations exceed the RAOs for the Site, further mechanical screening of the soils will be performed. If the SVOC concentrations exceed the RAOs for the Site, the soils will be staged for treatment in a bioremediation/soil vapor extraction pile. Following processing, if the soils do not exhibit VOCs and SVOCs above the RAOs, the soils will be used later as backfill material.

2.4. Soils staged for bioremediation/soil vapor extraction treatment

Following mechanical screening, soils exhibiting VOC/SVOC concentrations above the RAOs will be stockpiled for treatment through bioremediation/soil vapor extraction (BIO/SVE) soil piles. The soils sampling and analyses to be performed to prepare the soils for BIO/SVE pile treatment are presented in Table 3.

3. Air sampling during construction

3.1. Health and safety plan sampling and analysis

The Contractor's Health and Safety Plan (HASP) will include specific air sampling and analysis, and monitoring procedures to be implemented during completion of the remedial actions. The Contractor will be required to, at a minimum, perform the following items and address these items in the HASP:

- Wind direction will be monitored each day that soil handling activities are occurring outside the environmental enclosures.
- Real-time monitoring (i.e. photoionization detector) for VOCs and particulates (minimum) will be performed at the Site within the enclosures, and along the perimeters of the work zone and Site.
- Verification sampling and analyses for VOCs and particulates (using Tedlar bags or charcoal tubes) will be performed at the Site within the enclosures, and along the perimeters of the work zone and Site.

3.2. Air exhaust

The Contractor will be required to monitor air exhausted from the environmental enclosure to assess the effectiveness of the air treatment system and document that VOCs and air treatment system particulates are not being released above NYSDEC requirements established for the project. At a minimum, air sampling and analysis of the exhaust from these systems will be performed daily for the first week and then on a weekly basis during completion of the soil excavation and mechanical screening activities.

4. Ground water treatment system sampling

4.1. General

During construction, the Contractor will be required to sample and analyze the effluent from the ground water remediation system in compliance with the Monitoring Requirements established by the NYSDEC under the State Pollution Discharge Elimination System (SPDES) fact sheet. Present requirements are included in Appendix A. Analysis of pH will be performed in the field at the time of the effluent sample collection. The analytical results will be transmitted to the NYSDEC in accordance with the SPDES fact sheet reporting requirements. The Contractor will be responsible for operating the ground water remediation system so that the effluent complies with the Effluent Limitations established by the SPDES fact sheet.

5. Bioremediation/soil vapor extraction piles monitoring

5.1. General

This section presents the air, water, and soil sampling and analyses that will be required during the construction and operation of the (BIO/SVE) soil piles.

5.2. Air sampling and analysis

Air sampling and analysis, and monitoring will be performed to assess biological activity, and document VOC concentrations in the exhaust from the biopiles and air treatment system.

Specifically, the following air monitoring, sampling and analyses will be performed:

- Air flow rate extracted from each of the biopiles;
- Air sampling the soils within the biopiles for oxygen and carbon dioxide; and
- Air sampling the exhaust from the BIO/SVE soil pile and exhaust from the granular activated carbon canisters prior to discharge to the atmosphere.

Table 5 presents a summary of the air sampling to be performed during the BIO/SVE soil pile remediation.

5.3. Water sampling and analysis

Sampling of the BIO/SVE soil pile leachate will be performed periodically to assess the concentration of VOCs, SVOCs, and nutrients in the water, if any, derived from the piles. Table 5 presents a summary of the water sampling to be performed during the BIO/SVE soil pile remediation.

5.4. Soil sampling and analysis

Prior to placement of the soils in the BIO/SVE soil piles, two grab samples for each 200 cubic yards will be submitted for sieve analysis to determine if the soil meets gradation specified in the Technical Specification entitled Mechanical Screening of Contaminated Soils.

Soil sampling and analyses will be performed assess the conditions of the BIO/SVE soil piles for biological activity and after the results of the air and water analyses indicate that VOC/SVOC levels have been reduced to the RAOs. Five soil samples per BIO/SVE soil pile will be collected and analyzed for VOCs and SVOCs to determine if operation of the BIO/SVE soil piles can be terminated. Table 5 presents a summary of he BIO/SVE soil pile sampling.

6. Quality assurance/quality control

6.1. General

This section presents an overview of the quality assurance/quality control program that will be performed as part of this project.

6.2. Sampling handling

Samples for chemical analysis will be collected and placed in labeled containers provided by the laboratory. The laboratory will pre-label sample containers with the following information: project name, preservation if applicable, and analyses to be performed. Sample labels will have sufficient space for the sampling team to record the following information: sample identification, data and time of collection, and initials of sampling team. Sample containers for water analyses will be pre-preserved. Samples will be uniquely identified for each sample location. This numbering system will provide a tracking procedure to allow retrieval of information regarding a particular sample.

Prior to sample shipment, preserved samples (except volatile organics) will be checked with pH paper to verify sample preservation. Samples requiring refrigeration will be transferred to coolers packed with ice and ice packs to maintain the temperature inside the cooler at approximately 4 °C.

6.3. Field QA/QC samples

Quality control samples, consisting of trip blanks, equipment blanks, field duplicates, will be collected in the same type of sample containers and handled in the same manner as the environmental samples.

- **Field duplicates**. Field duplicate samples will be two samples collected at the same time from the same source, but submitted as separate samples. Field duplicate sample volumes will be collected by alternating filling sample containers for each parameter in the following order: volatile organics and semivolatile organics. These QA/QC samples are collected to measure the precision of field sampling procedures, as well as the laboratory's analytical methods. Duplicate samples will be identified on chain of custody records such that laboratory personnel cannot distinguish from other environmental samples. Field duplicate samples will be minimally collected at a frequency of one per matrix type and every ten samples of similar matrix.

- **Equipment blanks**. Equipment blanks will be collected by distilled water into or pumping distilled water through decontaminated sampling equipment used in the collection of soil and aqueous samples. Equipment blank samples were will be collected, handled, and analyzed in the same manner as the environmental samples collected. Equipment blanks will be used to measure contamination encountered during sampling. One equipment blank will be collected for each piece of sampling equipment used per site at a maximum frequency of ten percent.

- **Trip blanks**. Trip blanks will accompany every cooler of soil and water samples sent to the laboratory for VOC analysis. Trip blanks will be prepared by the laboratory, shipped with the sample containers to the field, handled like a sample and returned to the laboratory for analysis. Trip blanks will not be opened in the field.

- **Split samples**. If split samples are required that will be collected in the same manner as field duplicates.

6.4. Sample custody

Chain of custody procedures will be instituted and followed throughout this project. These procedures include field custody, laboratory custody. When the information has been gathered, the file will be inventoried, numbered, and stored for future reference.

Chain of custody records will be initiated in the field when sample collection has been completed. In the field notebook, samplers will note meteorological data, equipment employed for sample collection, well evacuation techniques, calculations, and information regarding collection of QA/QC samples. The following physical information will be recorded in the field notebook, on sample labels, and on chain of custody records by the field sampling team:

- project identification
- sampling location
- required analysis
- date and time of sample collection
- type of sample (matrix)
- sampling technique
- preservation used if applicable
- initials of the sampler.

The field sampler signs the chain of custody when relinquishing custody and includes the form in an air-tight plastic bag in the sample cooler with the associated samples. Sampling containers will be packed in styrofoam sheets, and put in plastic bags to help prevent breakage and cross-contamination. Samples will be shipped in coolers containing ice and ice packs to maintain inside temperature at approximately 4 °C. If commercial vendors are used, they will be required to document the transfer of the package within their organization.

7. Reporting

7.1. General

The Contractor will be required to present all analytical reports to the Engineer upon receipt. In addition, the Contractor will be required to prepare weekly reports that are to include the following information:

- Copies of laboratory reports and chain of custody records prepared since the last weekly report.
- A tabulation of results for each matrix sampled.
- A summary of the upcoming sampling and analysis, and monitoring activities to be completed over the next month.
- A summary of any violations/exceedences to the permit limits of other requirements established for the project, and description of actions taken to correct and/or remedy the violation.

Tables

Table 1
Data - 1995
Volatile Organic Compounds
Maestri Site
Geddes, New York

Sample ID Number:	B-12	B-12	B-13	B-14	B-15	B-16	B-16	B-17	B-17	B-18	B-18
Sample Depth (ft):	4-6'	22-24'	10-12'	6-8'	8-10'	8-10'	16-18'	8-10'	14-16'	6-8'	12-14'
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.1 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.11 U	0.001 U	0.11 U
Ethylbenzene	1.1 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.001 U	0.11 U	0.001 U	0.11 U
Toluene	1.1 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.11 U	0.001 U	0.11 U
Xylene	41	0.47	0.004 U	0.003 U	0.004 U	0.003	0.2	0.003 U	0.28	0.004 U	3.5

NOTES: All analytical values measured in mg/kg.
U - below detection limit.
Analytical quantitation limits are sample specific and may vary.
Quantitation limits for each sample and analyte are presented in laboratory reports.

Table 1
Data - 1995
Volatile Organic Compounds
Maestri Site
Geddes, New York

Sample ID Number:	B-19	B-20	B-21	B-21	B-22	B-23	B-23	B-24	B-25	B-25
Sample Depth (ft):	14-16'	10-12'	16-18'	20-22'	12-14'	12-14'	14-16'	8-10'	10-12'	18-20'
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.11 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	0.001 U	0.001 U	0.002	0.001 U	0.001 U	0.001 U	0.11 U	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.11 U	0.001 U	0.001 U	0.001 U
Xylene	0.004 U	0.003 U	0.21	0.004 U	0.003 U	0.003 U	0.37	0.003 U	0.004 U	0.003 U

NOTES: All analytical values measured in mg/kg.
U - below detection limit.
Analytical quantitation limits are sample specific and may vary.
Quantitation limits for each sample and analyte are presented in laboratory reports.

Table 1
Data - 1995
Semi-Volatile Organic Compounds
Maestri Site
Geddes, New York

Sample ID Number:	B-12	B-12	B-13	B-14	B-15	B-16	B-16	B-17	B-17	B-18	B-18
Sample Depth (ft):	4-6'	22-24'	10-12'	6-8'	8-10'	8-10'	16-18'	8-10'	14-16'	6-8'	12-14'
2-Methylphenol	0.36 U	0.36 U	0.43 U	0.35 U	0.39 U	0.38 U	0.4 U	0.34 U	0.37 U	0.4 U	0.36 U
4-Methylphenol	0.38 U	0.36 U	0.43 U	0.35 U	0.39 U	0.38 U	0.4 U	0.34 U	0.37 U	0.4 U	0.36 U
2,4-Dimethylphenol	0.36 U	0.36 U	0.43 U	0.35 U	0.39 U	0.38 U	0.4 U	0.34 U	0.37 U	0.4 U	0.36 U
Benzoic Acid	1.7 U	1.7 U	2.1 U	1.7 U	1.9 U	1.9 U	2 U	1.7 U	1.8 U	1.9 U	1.8 U
bis(2-Ethylhexyl)phthalate	0.36 U	0.36 U	0.43 U	0.48	0.39 U	0.53	0.4 U	0.34 U	0.37 U	0.4 U	0.36 U

NOTES: All analytical values measured in mg/kg.
U - below detection limit.
Analytical quantitation limits are sample specific and may vary.
Quantitation limits for each sample and analyte are presented in laboratory reports.

Table 1
Data - 1995
Semi-Volatile Organic Compounds
Maestri Site
Geddes, New York

Sample ID Number:	B-19	B-20	B-21	B-21	B-22	B-23	B-23	B-24	B-25	B-25
Sample Depth (ft):	14-16'	10-12'	16-18'	20-22'	12-14'	12-14'	14-16'	8-10'	10-12'	18-20'
2-Methylphenol	0.4 U	0.37 U	0.4 U	0.39 U	0.38 U	0.36 U	0.37 U	0.36 U	0.4 U	0.38 U
4-Methylphenol	0.4 U	0.37 U	0.4 U	0.39 U	0.38 U	0.36 U	0.37 U	0.36 U	0.4 U	0.38 U
2,4-Dimethylphenol	0.4 U	0.37 U	0.4 U	0.39 U	0.38 U	0.36 U	0.37 U	0.36 U	0.4 U	0.38 U
Benzoic Acid	1.9 U	1.8 U	1.9 U	1.9 U	1.8 U	1.7 U	1.8 U	1.8 U	2 U	1.8 U
bis(2-Ethylhexyl)phthalate	0.4 U	0.37 U	0.4 U	0.39 U	0.38 U	0.36 U	0.37 U	0.36 U	0.4 U	0.38 U

NOTES: All analytical values measured in mg/kg.
U - below detection limit.
Analytical quantitation limits are sample specific and may vary.
Quantitation limits for each sample and analyte are presented in laboratory reports.

Table 2
Remedial Action Objectives
Maestri Site
Geddes, New York

Parameter	Soil Clean-up Objective (mg/kg, dry weight)	Ground water clean-up level (ug/l)
Volatile organic compounds (VOCs)		
benzene	0.06	5
ethylbenzene	5.5	5
t-1,2-dichloroethylene	0.3	5
tetrachloroethylene	1.4	5
toluene	1.5	5
xylene	1.2	5
Total VOCs	10	100
Semi-volatile organic compounds (SVOCs)		
benzoic acid	2.7	5
2,4-dimethylphenol	none established	none established
2-methylphenol	0.1	50
4-methylphenol	0.9	50
Total SVOCs	500	none established

DST/maest2.wk1

Table 3
Soil Sampling During Construction
Maestri Site
Geddes, New York

Location	Analysis/Method	Frequency	Action Level	Action
Excavated Soils	Photoionization Detector (PID) with 10.2 eV lamp	Continuous at excavator bucket	background	Soils with PID readings below background are placed in clean stockpile Soils with PID readings above background are placed in mechanical screening stockpile
	VOCs (EPA Method 8010/8020) SVOCs (EPA Method 8270)	Within top 4 ft. of excavation, 3 grab and 1-5 pt. composite per 200 cy excavated	RAOs	Soils with levels above action level are to be mechanical screened Soils with levels below action level will be used for backfill
Excavation	VOCs (EPA Method 8010/8020) SVOCs (EPA Method 8270)	at 30 ft. grid nodes as shown on Contract Drawing G-8	RAOs	If VOC/SVOC levels are below action level excavation can be backfilled If VOC/SVOC levels are above action level, soils in 1 to 2 ft. lifts at a distance 3/4 to the next clean grid node are to be removed to the extent practicable
Mechanical Screening	VOCs (EPA Method 8010/8020) SVOCs (EPA Method 8270)	2 grab samples per 200 cubic yards excavated and stockpiled	RAOs	If VOC/SVOC levels are below action level excavation can be backfilled If VOC levels are above action level, soils will be reprocessed through mechanical screening up to 2 times If SVOC levels are above action level, soils will be staged for treatment in a BIO/SVE soil pile
Soils Stockpiled for Placement in BIO/SVE Soil Pile	VOCs (EPA Method 8010/8020) SVOCs (EPA Method 8270) Moisture Content Moisture Holding Capacity Soil Texture Total Organic Carbon (SW846 9060) Total Kjeldahl Nitrogen Nitrate & Nitrite Nitrogen Ammonia Nitrogen Phosphate Phosphorus Soil pH Total Heterotrophs Petroleum Degraders	2 composite samples per 200 cubic yards stockpiled	none	utilize data to determine moisture and nutrient addition requirements

DST/maest3.wk1

Table 4
Air Sampling During Construction
Maestri Site
Geddes, New York

Location	Analysis/Method	Frequency	Action Level	Action
Within Environmental Enclosure over excavation and Mechanical Screening Operations	VOCs particulates/dust	Refer to HASP	Refer to HASP	Refer to HASP
Exhaust from Air Collection and Treatment System	benzene (NIOSH 1500/1501) ethylbenzene (NIOSH 1500/1501) t,1,2-dichloroethylene (NIOSH 1015) tetrachloroethylene (NIOSH 1019) toluene (NIOSH 1500/1501) xylene (NIOSH 1500/1501) particulates (miniram)	daily for first week weekly for balance of soil excavation and mechanical screening activities	Annual Guideline Concentrations (AGCs) in Air Guide 1	Change-out filters upon exceedence of action levels

DST/maest4.wk1

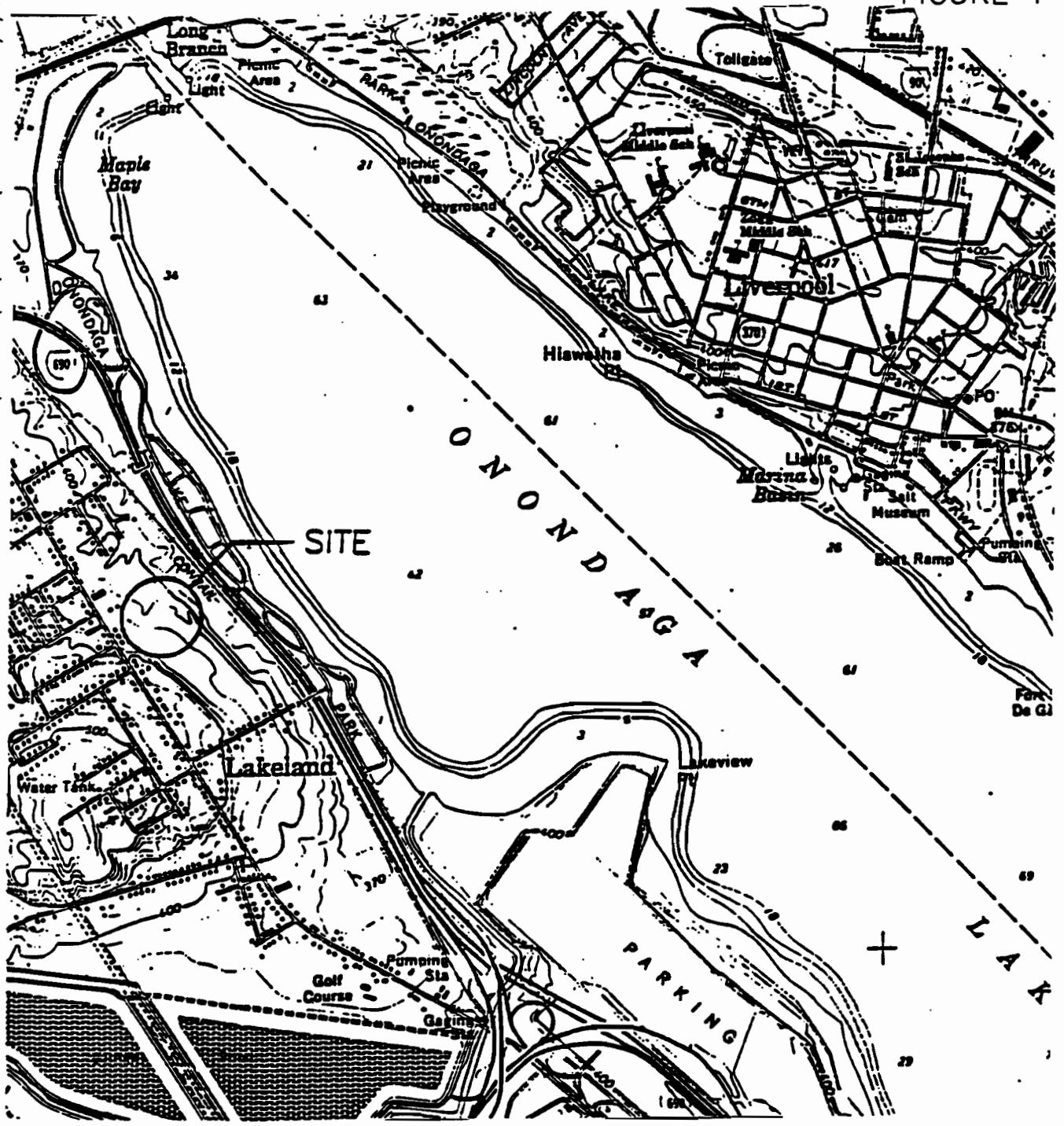
Table 5
Bioremediation/soil vapor extraction
soil pile remediation monitoring
Maestri Site
Geddes, New York

Location	Analysis/Method	Frequency	Action Level	Action
Exhaust from BIO/SVE soil pile air collection and treatment system	benzene (NIOSH 1500/1501) ethylbenzene (NIOSH 1500/1501) t,1,2-dichloroethylene (NIOSH 1015) tetrachloroethylene (NIOSH 1019) toluene (NIOSH 1500/1501) xylene (NIOSH 1500/1501) particulates (miniram)	daily for first week weekly for balance of BIO/SVE soil pile remediation activities at exhaust from each pile, and exhaust from treatment system	none for soil piles Annual Guideline Concentrations (AGCs) in Air Guide 1 for exhaust from treatment system	use data to make system adjustments Change-out filters upon exceedence of action levels
BIO/SVE soil pile leachate	VOCs (EPA Method 8010/8020) SVOCs (EPA Method 8270) Total Kjeldahl Nitrogen Nitrate & Nitrite Nitrogen Ammonia Nitrogen Phosphate Phosphorus	upon occurrence of leachate from BIO/SVE soil piles	upon occurrence of leachate from BIO/SVE soil piles	use data to make system adjustments
BIO/SVE soil pile soil samples	Moisture content Moisture holding capacity Total Kjeldahl Nitrogen Nitrate & Nitrite Nitrogen Ammonia Nitrogen Phosphate Phosphorus soil pH Total Heterotrophs Petroleum Degraders	weekly for first month monthly thereafter	none	use data to make system adjustments
	VOCs (EPA Method 8010/8020) SVOCs (EPA Method 8270)	monthly at five locations per BIO/SVE soil pile	RAOs	use data to make system adjustments, or to make determination that remediation is complete

DST/maest5.wk1

Figures

FIGURE 1



MWH H:\DIVISION\71\MAESTRI\04F.DWG SF:1 6/1/95

ADAPTED FROM 7.5 MIN. U.S.G.S. SYRACUSE WEST QUAD MAP, SYRACUSE, NEW YORK

MAESTRI SITE
GEDDES, NEW YORK

SITE LOCATION PLAN

0 2000 4000

APPROX. SCALE IN FEET

FILE NO. 5618.005-04F

O'BRIEN & GERE ENGINEERS INC.

Appendices

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

Thomas C. Jorling
Commissioner

July 23, 1992

Mr. Vincent A. D'Ippolito
Environmental Services & Operations
ICI Americas Inc.
Wilmington, DE 19897

Re: Maestri Site
Groundwater IRM

Dear Mr. D'Ippolito:

Per our discussion, please find enclosed a corrected set of Effluent Limitations and Monitoring Requirements for the Maestri Site groundwater treatment system.

Sincerely,

Gary E. Kline, P.E.
Project Manager
Maestri Site
Div. of Hazardous Waste Remediation

GEK/slh

Enclosure

cc, w/enc.: C. Branagh - DEC Region 7

SPDES PERMIT FACT SHEET

Prepared by: Robert Wither Date: 01/28/92

Company: ICI Americas Inc. Site No.: 7-34-025

Location: Geddes (T), Onondaga County Industrial Code No.: 9511

Industrial Segment: N/A Part No.: N/A

Type of Processing & Production Rate:

Groundwater Remdiation

Basis for Technology Effluent Limitations:

N/A

PARAMETER	BASIS FOR PERMIT CONDITION
Outfall No.: 001 ; Treated Groundwater Discharge; Nominal Flow: 8 gpm	
Flow	Monitor
Benzene	6NYCRR Part 703.6
Methylene Chloride	6NYCRR Part 703.6
Toluene	6NYCRR Part 703.6
1,2-(trans)-Dichloroethylene	6NYCRR Part 703.6
Vinyl Chloride	6NYCRR Part 703.6
Ethylbenzene	6NYCRR Part 703.6
o-Xylene	6NYCRR Part 703.6
m-Xylene	6NYCRR Part 703.6
p-Xylene	6NYCRR Part 703.6
Phenolics, Total	6NYCRR Part 703.6/Detection Limit
Bis (2-Ethylhexyl) Phthalate	6NYCRR Part 703.6
Di (N-Butyl) Phthalate	6NYCRR Part 703.6
Aluminum, Total	6NYCRR Part 703.6
Arsenic, Total	6NYCRR Part 703.6
Barium, Total	6NYCRR Part 703.6
Cadmium, Total	6NYCRR Part 703.6
Chromium, Total	6NYCRR Part 703.6
Copper, Total	6NYCRR Part 703.6
Iron, Total	6NYCRR Part 703.6
Manganese, Total	6NYCRR Part 703.6
Nickel, Total	6NYCRR Part 703.6
Silver, Total	6NYCRR Part 703.6
Zinc, Total	6NYCRR Part 703.6

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning with the start up of groundwater remediation and treatme system and lasting until 5 years from date of startup of groundwater remediation and treatment system. The discharges from the treatment facility shall be limited and monitored by the operator as specified below:

Outfall Number & Effluent Parameter	Discharge Limitations Daily Avg.	Daily Max.	Units	Minimum Monitoring Requirements Measurement Frequency	Sam Ty
001 - Treated Groundwater					
Flow	Monitor	Monitor	gpd	Continuous	Recorder
Benzene	Monitor	0.7	ug/l	Weekly	Grab
Methylene Chloride	Monitor	5.0	ug/l	Weekly	Grab
Toluene	Monitor	5.0	ug/l	Weekly	Grab
1,2-(trans)-Dichloroethylene	Monitor	5.0	ug/l	Weekly	Grab
Vinyl Chloride	Monitor	5.0	ug/l	Weekly	Grab
Ethylbenzene	Monitor	5.0	ug/l	Weekly	Grab
o-Xylene	Monitor	5.0	ug/l	Weekly	Grab
m-Xylene	Monitor	5.0	ug/l	Weekly	Grab
p-Xylene	Monitor	5.0	ug/l	Weekly	Grab
Phenolics, Total	Monitor	2.0	ug/l	Weekly	Grab
Bis(2-Ethylhexyl) Phthalate	Monitor	4.2	mg/l	Weekly	Grab
Di-(N-Butyl) Phthalate	Monitor	0.77	mg/l	Weekly	Grab
Aluminum, Total	Monitor	2.0	mg/l	Monthly	Grab
Arsenic, Total	Monitor	0.05	mg/l	Monthly	Grab
Barium, Total	Monitor	2.0	mg/l	Monthly	Grab
Cadmium, Total	Monitor	0.02	mg/l	Monthly	Grab
Chromium, Total	Monitor	0.1	mg/l	Monthly	Grab

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning with the start up of grundwater remediation and treatment system and lasting until 5 years from date of startup of groundwater remediation and treatment system. The discharges from the treatment facility shall be limited and monitored by the operator as specified below:

Outfall Number & Effluent Parameter	Discharge Limitations Daily Avg.	Daily Max.	Units	Minimum Monitoring Requirements Measurement Frequency	Sample Type
001 - Treated Groundwater:					
Copper, Total	Monitor	1.0	mg/l	Monthly	Grab
Iron Total[1]	Monitor	0.6	mg/l	Monthly	Grab
Manganese, Total[1]	Monitor	0.6	mg/l	Monthly	Grab
Nickel, Total	Monitor	2.0	mg/l	Monthly	Grab
Silver, Total	Monitor	0.1	mg/l	Monthly	Grab
Zinc, Total	Monitor	5.0	mg/l	Monthly	Grab

1. The combined concentration of iron, total and manganese, total shall not exceed 1.0 mg/l.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPENDIX A

GENERAL CONDITIONS (Consent Orders)*

* This version of General Conditions is intended to be incorporated as Appendix A of all Consent Orders for site remediation projects where a State Pollutant Discharge Elimination System permit is not required but where the order authorizes the treatment and discharge of wastewaters to the surface or groundwaters of New York State.

1. GENERAL PROVISIONS

a. This order, or a true copy, shall be kept readily available for reference at the wastewater treatment facility.

b. A determination has been made on the basis of a submitted plans, or other available information, that compliance with the provisions specified in this order will reasonably protect classified water use and assure compliance with applicable water quality standards. Satisfaction of these provisions notwithstanding, if operation pursuant to the order causes or contributes to a condition in contravention of State water quality standards, or if the Department determines, on the basis of notice provided by the operator and any related investigation, inspection or sampling, that a modification of the order is necessary to prevent impairment of the best use of the waters or to assure maintenance of water quality standards or compliance with other provisions of ECL, the Department may require such a modification and may require abatement action to be taken by the operator and may also prohibit the noticed act until the order has been modified.

c. All discharges authorized by this order shall be consistent with the terms and conditions of this order. Facility expansion or other modifications, treatment and disposal system changes which will result in new or increased discharges of pollutants into the waters of the state must be reported by submission of a formal request for modification of this order. The discharge of any pollutant, not identified and authorized, or the discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this order shall constitute a violation of the terms and conditions of this order. Facility modifications which result in decreased discharges of pollutants must be reported by submission of written notice to the Department.

d. Where the operator becomes aware that he/she failed to submit any relevant facts or submitted incorrect information prior to or in pursuit of this order or in any report to the Department, the operator shall promptly submit such facts or information.

e. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the authorized activity in order to maintain compliance with the conditions of this order, unless directed by the Department to continue the activity.

f. The filing of a request for a modification of this order, or a notification of planned changes or anticipated noncompliance, does not stay any condition of this order.

g. The operator shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, suspending, or revoking this order, or to determine compliance with this order. The operator shall also furnish to the Department, upon request, copies of records required to be kept by this order.

2. SPECIAL REPORTING REQUIREMENTS

Dischargers must notify the Department as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant (USEPA Priority Pollutants plus phenols, total) which is not specifically controlled in the order, pursuant to General Provision 1 (c) herein. For the purposes of this section, recurrent accidental or unintentional spills or releases on a frequent basis shall be considered to be a discharge.

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the order, if that discharge will exceed five times the maximum concentration value reported for that pollutant in the information submitted prior to this order; or the level established by the Department.

c. That they will begin to use any toxic pollutant which was not reported prior to this order and which is being or may be discharged to waters of the state.

3. EXCLUSIONS

a. The issuance of this order by the Department and the receipt thereof by the operator does not supersede, revoke or rescind an order or modification thereof on consent or determination by the Commissioner issued heretofore by the Department or any of the terms, conditions or requirements contained in such order or modification thereof unless specifically intended by said order.

b. The issuance of this order does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations; nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the discharge authorized.

c. Unless specifically authorized in this order, the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters is not approved.

4. REPORTING NONCOMPLIANCE

a. Anticipated noncompliance. The operator shall give advance notice to the Department of any planned changes in the authorized facility or activity which may result in noncompliance with this order as soon as the operator becomes aware that non-compliance will be unavoidable.

b. Immediate and twenty-four hour reporting. The operator shall report any noncompliance which may endanger health or the environment. Any unusual situation, caused by a deviation from normal operation or experience (e.g. upsets, bypasses, inoperative treatment process units, spills or illegal chemical discharges or releases to the collection system) which create a potentially hazardous condition shall be orally reported immediately. Other information shall be provided orally within 24 hours from the time he or she becomes aware of the circumstances. A written noncompliance report shall also be provided within five (5) days of the time the operator becomes aware of the circumstances. The written noncompliance report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent the noncompliance and its reoccurrence.

(1) The following shall be included as information which must be reported within 24 hours under paragraph (b) above:

(i) any unanticipated bypass which violates any effluent limitation in the order;

(ii) any upset which violates any effluent limitation in the order;

(iii) violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the order to be reported within 24 hours.

(2) The Department may waive, at their discretion, the written report on a case-by-case basis if the oral report has been received within 24 hours.

(3) Reports required by this section shall be filed with the Department's regional office having jurisdiction over the facility. During weekends and holidays, oral noncompliance reports, required by this paragraph, may be made at (518) 457-7362.

c. Duty to mitigate. The operator shall take all reasonable steps to minimize or prevent any discharge in violation of this order which has a reasonable likelihood of adversely affecting human health or the environment.

5. INSPECTION AND ENTRY

The operator shall allow the Commissioner of the Department, the New York State Department of Health, the County Health Department, or their authorized representatives, upon the presentation of credentials and other documents as may be required by law, to:

a. enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this order;

b. have access to and copy, at reasonable times, any records that must be kept under the conditions of this order, including records maintained for purposes of operation and maintenance;

c. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this order, and

d. sample or monitor at reasonable times, for the purposes of assuring compliance with this order or as otherwise authorized by the Environmental Conservation Law, any substances or parameters at any location.

6. SPECIAL PROVISIONS - NEW OR MODIFIED DISPOSAL SYSTEMS

a. Prior to construction of any new or modified waste disposal system or modification of a facility generating wastewater which could alter the design volume of, or the method or effect of treatment or disposing of the wastes from an existing waste disposal system, the operator shall submit to the Department or its designated field office for review, an approvable engineering report, plans, and specifications which have been prepared by a person or firm licensed to practice Professional Engineering in the State of New York.

b. The construction of the above new or modified disposal system shall not start until the operator receives written approval of the system from the Department or its designated field office.

c. The construction of the above new or modified disposal system shall be under the general supervision of a person or firm licensed to practice Professional Engineering in New York State. Upon completion of construction, that person or firm shall certify to the Department or its designated field office that the system has been fully completed in accordance with the approved engineering report, plans and specifications and letter of approval; and the operator shall receive written acceptance of such certificate from the Department or designated field agency prior to commencing discharge.

d. The Department and its designated field offices review wastewater disposal system reports, plans, and specifications for treatment process capability only, and approval by either office does not constitute approval of the system's structural integrity.

7. MONITORING, RECORDING, AND REPORTING

7.1 GENERAL

a. The operator shall comply with all recording, reporting, monitoring and sampling requirements specified in this order and such other additional terms, provisions, requirements or conditions that the Department may deem to be reasonably necessary to achieve the purposes of the Environmental Conservation Law, or rules and regulations adopted pursuant thereto.

b. Samples and measurements taken to meet the monitoring requirements specified in this order shall be representative of the quantity and character of the monitored discharges. Composite samples shall be composed of a minimum of 8 grab samples, collected over the specified collection period, either at a constant sample volume for a constant flow interval or at a flow-proportioned sample volume for a constant time interval, unless otherwise specified in this order. For GC/MS Volatile Organic Analysis (VOA), aliquots must be combined in the laboratory immediately before analysis. At least 4 (rather than 8) aliquots or grab samples should be collected over the specified collection period. Grab sample means a single sample, taken over a period not exceeding 15 minutes.

c. Accessable sampling locations must be provided, maintained and identified by the operator. New sampling locations shall be provided if proposed or existing locations are deemed unsuitable by the Department or its designated field agency.

d. Actual measured values of all positive analytical results obtained above the Practical Quantitation Limit (PQL)[1] for all monitored parameters shall be recorded and reported, as required by this order; except, for parameters which are limited in this order to values below the PQL, actual measured values for all positive analytical results above the Method Detection Limit (MDL)[2] shall be reported.

e. The operator shall periodically calibrate and perform manufacturer's recommended maintenance procedures on all monitoring and analytical instrumentation to insure accuracy of measurements. Verification of maintenance shall be logged into the daily record book(s) of the facility. The operator shall notify the Department's regional office immediately if any required instrumentation becomes inoperable. In addition, the operator shall verify the accuracy of their measuring equipment to the Department's Regional Office annually.

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1 Practical Quantitation Limit (PQL) is the lowest level that can be measured within specified limits of precision and accuracy during routine laboratory operations on most effluent matrices.

2 Method Detection Limit (MDL) is the level at which the analytical procedure referenced is capable of determining with a 99% probability that the substance is present. This value is determined in distilled water with no interfering substances present. The precision at this level is +/- 100%.

7.2 SIGNATORIES AND CERTIFICATION

a. All reports required by this order shall be signed as follows:

(1) for a corporation: by a responsible corporate officer. For the purposes of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or a vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making function for the corporation, or

(ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars),if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) for a municipality, state, federal, or other public agency: by either a principal or executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or

(4) a duly authorized representative of the person described in items (1), (2), or (3). A person is a duly authorized representative only if:

(i) the authorization is made in writing by a person described in paragraph (a)(1), (2), or (3) of this section;

(ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(iii) the written authorization is submitted to the Department.

b. Changes to authorization: If an authorization under subparagraph (a)(4) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of subparagrapph (a)(4) of this section must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

c. Certification: Any person signing a report shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision, in accordance with a system, designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the order or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

7.3 RECORDING OF MONITORING ACTIVITIES AND RESULTS

a. The operator shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this order, and records of all data used to complete the application for this order, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

b. Records of monitoring information shall include:

(1) the date, exact place, and time of sampling or measurements;

(2) the individual(s) who performed the sampling or measurements;

(3) the date(s) analyses were performed;

(4) the individual(s) who performed the analyses;

(5) the analytical techniques or methods used; and

(6) the results of such analyses.

7.4 TEST AND ANALYTICAL PROCEDURES

a. Monitoring and analysis must be conducted using test procedures promulgated, pursuar Part 136, except:

(1) should the Department require the use of a particular test procedure, such test proc specified in this order.

(2) should the operator desire to use a test method not approved herein, prior Departm is required, pursuant to paragraph (b) of this section.

b. Application for approval of test procedures shall be made to the Director of DEC's Divisi and shall contain:

(1) the name and address of the applicant or the responsible person making th identification of this particular order and the telephone number of applicant's contac

(2) the names of the pollutants or parameters for which an alternate testing proce requested, and the monitoring location(s) at which each testing procedure will be u

(3) justification for using test procedures, other than those approved in paragraph (a) c and

(4) a detailed description of the alternate procedure, together with:

(i) references to published studies, if any, of the applicability of the alternate test the effluent in question;

(ii) information on known interferences, if any; and

(5) a comparability study, using both approved and proposed methods. The study sh replicates of 3 samples from a well mixed waste stream for each outfall if less thar involved, or from 5 outfalls if 5 or more outfalls are involved. Four (4) replicates fr samples must be analyzed using a method approved in paragraph (a) of this se replicates of each sample must be analyzed using the proposed method. Thi analyses per outfall up to a maximum of 120 analyses. A statistical analysis of th submitted that shall include, as a minimum:

(i) calculated statistical mean and standard deviation;

(ii) a test for outliers at the mean ± 3 standard deviations level. Where an out an additional sample must be collected and 8 replicates of the sample m as specified above;

(iii) a plot distribution with frequency counts and histogram;

(iv) a test for equality among with-in sample standard deviation;

(v) a check for equality of pooled with-in sample variance with an F-Test;

(vi) a t-Test to determine equality of method means; and

copies of all data generated in the study.

Additional information can be obtained by contacting the Bureau of Technical Servic (NYSDEC, 50 Wolf Road, Albany, New York 12233 - 3502).

CHAIN OF CUSTODY RECORD

SURVEY:				SAMPLED BY:			
LOCATION:				ORGANIZATION:			
STATION NUMBER	SAMPLE LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	COMP. OR GRAB	NO. OF CONTAINERS	ANALYSIS REQUIRED

Relinquished By:	DATE	TIME	Received By:	DATE	TIME
Relinquished By:	DATE	TIME	Received By:	DATE	TIME
Relinquished By:	DATE	TIME	Received by Laboratory:	DATE	TIME

COMMENTS:

METHOD OF SHIPMENT:

OBG Laboratories, Inc., an O'Brien & Gere Limited Company
5000 Brittonfield Parkway / Suite 300 / PO Box 4942 / Syracuse, NY 13221 / (315) 437-0200