APPENDIX B

QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN
FOR
CORRECTIVE MEASURES IMPLEMENTATION PROGRAM
PARTS AND REPAIR SERVICE CENTER
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TONAWANDA, NEW YORK

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ACRONYMS AND ABBREVIATIONS

ASP	Analytical Services Protocol
°C	degree centigrade
CLP	Contract Laboratory Program
CMI	Corrective Measure Implementation
COC	chain of custody
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EDD	electronic data deliverable
ELAP	Environmental Laboratory Approval Program
FSP	Field Sampling Plan
FD	field duplicate
IDL	instrument detection limit
ITR	independent technical review
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MD	matrix duplicate
MDL	method detection limit
mg/L	milligrams per liter
mg/kg	milligrams per kilograms
MS	matrix spike
MSB	matrix spike blank
MSD	matrix spike duplicate
NEIC	National Enforcement Investigations Center
NIST	National Institute of Standards and Technology
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	polychlorinated biphenyl
ppm	parts per million
PMWP	Project Management Work Plan
PQO	Project Quality Objective
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RCRA	Resource Conservation Recovery Act
RPD	relative percent difference
SVOC	semivolatile Organic Compounds
TA	TestAmerica Laboratories, Inc.
TCLP	toxicity characteristic leaching procedure
µg/kg	micrograms per kilograms
µg/L	micrograms per liter
URS	URS Corporation New York
USEPA	United States Environmental Protection Agency
VOC	volatile organic compounds
VTSR	validated time of sample receipt

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been prepared by URS Corporation New York (URS) for the General Electric International, Inc. (GE) Parts and Repair Service Center located at 175 Milens Road, Tonawanda, New York.

This QAPP provides an overview of quality assurance/quality control (QA/QC) procedures to be implemented during field and laboratory activities in support of the Corrective Measure Implementation (CMI) program that focuses on the excavation and removal of contaminated surface and subsurface soil, asphalt, and concrete. Site-specific sampling plans have not yet been prepared, so this QAPP has been prepared to incorporate the range of analyses and media types that may be sampled during the CMI program.

2.0 PROJECT/SITE DESCRIPTION

The GE Parts and Repair Service Center is at 175 Milens Road, Tonawanda, New York. GE has operated the service center since the late 1960s (see Figure 1 – Site Plan). The property comprises approximately 5.8 acres.

A Resource Conservation Recovery Act (RCRA) Facility Assessment, a RCRA Facility Investigation, and several supplemental investigations have been performed at the site since 1988. These investigations documented the presence of polychlorinated biphenyls (PCBs) and volatile organic compound (VOCs) contaminants in soil on the site. PCB impacts in soil are widespread along the eastern and southern sides of the shop building, and are within the concrete building slab. VOC impacts are limited to the vicinity of the former rinse tank excavation pit. The extent of impacts to site soil and groundwater has been limited by the clay underlying the site. Impacts are generally shallow, except in locations of fill, such as pipe bedding material and the filled pit that formerly held a rinse tank. Portions of the onsite storm and sanitary sewer systems have been impacted by PCBs. Offsite storm sewers have also been impacted by PCBs at significantly lower concentrations.

The facility recently received a permit from NYSDEC for CMI. The areas at and near the site where the permit requires corrective measures include:

- Former rinse water tank excavation
- Old oil/water separator
- Floor drains
- Sewers (storm and sanitary)
- Rail spur
- Truck bay
- Depressed dock
- Transportation corridor
- Two Mile Creek (work in this area is not included in the this QAPP)

The scope of the CMI program will include:

- Pre-design investigations of conditions at the site. These investigations will include collection of surface and subsurface soil samples. The investigations may also include groundwater sampling, collection of chip and core samples of asphalt and concrete, and collection of water and sediment samples from the sewer systems.

  - Completion of design for the corrective measures at the site.

  - Removal and off-site disposal of surface soil, asphalt, and concrete structures.

  - Excavation and off-site disposal of subsurface soil.

  - Collection of waste characterization samples and confirmatory samples from excavations.

  - Dewatering and management (treatment or off-site disposal) of impacted perched groundwater.

- Replacement or cleaning and lining of subsurface sewer lines.

- Backfilling excavations.

- Restoring asphalt and concrete structures.

- Installation and sampling of groundwater monitoring wells.

- Long-term monitoring, maintenance, and repair of surface coverings.

3.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

The following describes key URS personnel and their responsibilities for this CMI (see Figure 2 – Organizational Chart). Resumes of key individuals identified are included in Attachment A – Resumes of Key Personnel.

3.1 Project Manager

The URS Project Manager for this program will be responsible for technical and financial management of the project, and for overall coordination and review of component work activities. The URS Project Manager will serve as the initial and primary contact with NYSDEC throughout the project, and will be responsible for successful implementation of the project's QA/QC activities. The URS Project Manager may delegate a portion of the tasks required for successful implementation of the project to a qualified individual, the Site Manager, who will be on site during field activities (i.e., investigations, remedial action, O&M activities, etc.). The Site Manager will work under the direction of the URS Project Manager, and will be responsible for implementing applicable QC procedures in the field and verifying that all other URS field personnel adhere to these procedures and perform all activities as described in the project work plans.

3.2 Project Chemist

The URS Project Chemist is responsible for verifying that the analytical laboratory adhere to the QA/QC requirements specified in this QAPP. URS Project Chemist will be the point of contact for the Laboratory's Project Manager, and will personally communicate with the Laboratory's Project Manager to verify that all sample analyses are being performed such that the resulting data will be of sufficient quality for its intended purpose.

The laboratory providing analytical testing services to URS in support of this CMI program is TestAmerica Laboratories, Inc. (TA) located in Amherst, New York, which is New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified for all analyses to be performed. Copies of the applicable ELAP certifications for to be used during this

CMI program are provided in Attachment B – Copies of Laboratory NYSDOH ELAP Certifications. TA maintains its own QA/QC program and employs the required staff to implement this program. The QA Officer for TA is responsible for verifying that all sample analyses are performed in accordance the analytical methods, laboratory QA/QC procedures, and QAPP.

3.3 Independent Technical Reviewer

All work of a substantive nature or identified as a deliverable will undergo an independent technical review (ITR) by experienced and qualified personnel. The Project Manager is responsible for identifying and selecting reviewers that are independent from the actual work or decision making on the tasks or activities being reviewed and who possess technical qualifications sufficient for conducting an in depth review. A written record of the review and resolution of the review findings will be maintained in the project files.

The ITR is used as a management tool to assess:

- Compliance with referenced standards;
- The potential for erroneous assumptions, data, calculations, methods, or conclusions;
- Compliance with the standard of professional practice;
- The basis of and compliance with input and design requirements, design criteria, and design calculations;
- That the appropriate detail/or and calculation checks (i.e., QC) and internal project team reviews have been performed;
- The soundness of the technical approach and results; and,
- That the work was completed in compliance with the requirements of the Work Assignment.

4.0 PROJECT QUALITY OBJECTIVES

4.1 Background

Project quality objectives (PQOs), such as those described in the *Uniform Federal Policy for Quality Assurance Project Plans* (USEPA, 2005), define the type, quantity, and quality of data that are needed to answer specific environmental questions and support proper environmental decisions. More specifically, the PQOs:

- Define the environmental problem;
- Identify target analytes/contaminants of concern and concentration levels;
- Establish the analytical techniques to be used (field-screening, on-site, and/or off-site);
- Establish the appropriate sampling techniques to be used;
- Establish project sampling/analytical measurement performance criteria (where applicable) for precision, accuracy/bias, representativeness, comparability, completeness, and sensitivity; and
- Determine the number of samples needed for each analytical group/matrix/concentration level.

PQOs for this CMI program are divided into four phases. A project-specific sampling plans has not yet been prepared, therefore this QAPP includes the range of sample types and analyses that may or may not be undertaken. The CMI program may include:

Phase I – Design Investigation and Planning:

- Collection of surface and subsurface soil samples to determine the extent of PCB contamination;
- Collection of perched groundwater to characterize the water to determine how it will be managed during remediation;
- Collect concrete chip and core samples from depressed loading dock ramp to determine if impacted by PCB contamination;
- Collection of samples from railroad structures (ties, aggregate, wipes from rails) to determine if impacted by PCBs and waste management during remediation; and
- Gauging the thickness and collecting samples of wastewater and sediment in storm, sanitary, or other water collection structures (drains).

Phase II – Remediation:

- Collection of soil, sludge, wastewater, decontamination water, asphalt, concrete, and/or other debris samples for waste characterization;
- Collection of post-excavation samples to confirm sufficient soil removed;
- Collection of treated wastewater samples for discharge, if applicable; and
- Adequate removal of soil where boundaries have been defined.

Phase III – Restoration:

- Collection of clean backfill samples for unrestricted use in accordance with NYSDEC Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10);
- Replacement, cleaning, and/or lining of subsurface sewer lines;
- Backfilling excavations; and
- Restoring asphalt and concrete structures.

Phase IV – Long-Term Groundwater Monitoring (5 Years)

- Installation and sampling of groundwater monitoring wells.

A summary of the samples that may be collected and the analytical parameters for each phase is presented in Table 1. The proposed media to be sampled and analyses will be presented in project-specific work plans.

4.2 Project Quality Objectives For Chemical Data Measurement

The data quality indicators of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) will be measured (when applicable) from data collected from chemical analyses of samples collected during this CMI program.

4.2.1 Precision

Precision examines the distribution of the reported values about their mean. The distribution of reported values refers to how different the individual reported values are from the average reported value. Precision may be affected by the natural variation of the matrix or contamination within that matrix, as well as by errors made in the field and/or laboratory handling procedures. Precision is evaluated using analyses of matrix spike/matrix spike duplicate/matrix duplicate (MS/MSD/MD) and field duplicate (FD) samples. These provide a measure not only of sampling and analytical precision, but also of analytical precision based on the reproducibility of the analytical results. Relative percent difference (RPD) is used to evaluate precision. RPD criteria for all analyses being performed as part of this CMI program is presemted in Tables 2a and 2b.

4.2.2 Accuracy

Accuracy measures the analytical bias of a measurement system. Sources of measurement error may include the sampling process, field contamination, sample preservation and handling, sample matrix, and sample preparation and analysis techniques. Sampling accuracy may be assessed by evaluating the results of equipment rinsate blanks and trip blanks. These data help to assess the potential contamination contribution from various outside sources.

The laboratory objective for accuracy is to equal or exceed the accuracy demonstrated for the applied analytical methods on samples of the same matrix. Accuracy can be estimated based on the recovery of spiked analytes in the MS/MSD and laboratory control samples (LCS) [or matrix spike blanks (MSB)]. MS/MSD analyses, which will give an indication of matrix effects that may be affecting target compound identification and quantitation, are also a good gauge of method efficiency. Accuracy criteria for all analyses being performed as part of this CMI program is presented in Tables 2a and 2b.

4.2.3 Representativeness

Representativeness expresses the degree to which the sample data accurately and precisely represent the characteristics of a population of samples, parameter variations at a sampling point, or environmental conditions. Representativeness is a qualitative parameter that is most concerned with the proper design of the sampling program or subsampling of a given sample. Objectives for representativeness are defined for sampling and analysis tasks and are a function of the investigation objectives. The sampling procedures, which will be described in either the project Field Sampling Plan (FSP) or project work plans, will be selected with the goal of obtaining representative samples for the media of concern.

4.2.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. An objective for this program is to produce data with the greatest possible degree of comparability. This goal is achieved through using standard techniques to collect and analyze representative samples, and reporting analytical results in appropriate units. Complete field documentation using standardized data collection forms will support the assessment of comparability. Comparability is limited by the other parameters (e.g., precision, accuracy, representativeness, completeness, and sensitivity) because only when precision and accuracy are known can data sets be compared with confidence. For data sets to be comparable, it is imperative that the analytical methods and procedures be explicitly followed.

4.2.5 Completeness

Completeness is defined as a measure of the amount of valid data obtainable from a measurement system compared to the amount that were expected to be obtained under normal conditions. To meet project needs, it is important that appropriate QC procedures be maintained to verify that valid data are obtained. The completeness goal for data collected as part of this CMI program is 90%. If this goal is not met, then NYSDEC and URS project personnel will determine what, if any, further actions need to be taken.

4.2.6 Sensitivity

Sensitivity, as it pertains to analytical methods/instrumentation, is defined as the lowest concentration that can be distinguished from background noise. Sensitivity is measured by method detection limit (MDL) determinations, which are performed by laboratories for each analyte and matrix following procedures specified in 40 CFR Part 136, Appendix B. The MDL is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. Instrument detection limits (IDLs) are similar to MDLs although the analytical procedures used for IDL determinations do not include the preparation/extraction procedures that are used for MDL determinations and environmental sample analyses. Therefore, IDLs provide a measure of sensitivity under ideal conditions, and do not take into account effects of sample matrix and/or other factors that may affect sensitivity. MDLs (and/or IDLs) for the parameters to be analyzed as part of the work assignment are presented in Tables 2a and 2b.

5.0 SAMPLING LOCATIONS AND PROCEDURES

Proposed sampling locations and sampling procedures will be provided in either project work plans or a site-specific Field Sampling Plan.

6.0 SAMPLE CUSTODY AND HOLDING TIMES

Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody (COC) procedures. Chain-of-custody procedures are essential for presenting sample analytical results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in this work assignment will follow the COC guidelines of National Enforcement Investigations Center (NEIC) Policies and Procedures, prepared by the NEIC of the USEPA Office of Enforcement.

6.1 Custody Definitions

- Chain-of-Custody Officer - The employee responsible for oversight of all COC activities is the Site Manager (or his/her designee).
- Under Custody - A sample is "Under Custody" if:
  - It is in one's possession, or
  - It is in one's view, after being in one's possession, or
  - It was in one's possession and one placed it under lock, or
  - It is in a designated secure area.

6.2 Responsibilities

The Site Manager will be responsible for monitoring all COC activities and for collecting legally admissible COC documentation for the permanent project file, and will perform to following tasks:

- Review sample labels or tags, closure tapes, and COC records.

- Train all field sampling personnel in the methodologies for carrying out COC activities and the proper use of all COC and record documents.

- Monitor the implementation of COC procedures.

- Submit copies of the completed COC records to the Project Chemist.

6.3 Chain-of-Custody

Chain-of-custody is initiated in the laboratory when the empty sample containers are shipped for use in the field. When the empty containers are received from the laboratory, they will be checked for any breach of custody including, but not limited to, incomplete COC records, broken COC seals, or any evidence of tampering. Filled sample containers will be returned to the laboratory using appropriate COC procedures. Upon receipt of the samples, the laboratory sample custodian will check for any breach of custody. The Laboratory Project Manager shall notify the URS Project Chemist immediately if there are any problems with the COC documentation. Examples of COC records are provided in Attachment C.

6.4 Sample Containers and Holding Times

Sample container and preservation requirements and analytical holding times for the analytical methods being used for this CMI program presented in Table 3. All holding times begin with the validated time of sample receipt (VTSR) at the laboratory.

7.0 ANALYTICAL PROCEDURES

The specific analytical methods to be used for the analysis of samples collected during this CMI program, and the quality control criteria to be followed by the laboratory when performing the analyses, are presented in Tables 1, 2a, and 2b. The analytical methods and procedures to be used on samples are provided in the NYSDEC Analytical Services Protocol (ASP), July 2005 (or must current) document.

8.0 CALIBRATION PROCEDURES AND FREQUENCY

In order to obtain a high level of precision and accuracy during sample processing and analysis procedures, laboratory and field instruments must be calibrated properly. Several analytical support areas must be considered so the integrity of standards and reagents is upheld prior to instrument calibration. The following sections describe the analytical support areas and laboratory instrument calibration procedures.

8.1 Analytical Support Areas

Prior to generating quality data, several analytical support areas must be considered:

Standard/Reagent Preparation - Primary reference standards and secondary standard solutions shall be obtained from sources traceable to National Institute of Standards and Technology, or other reliable commercial sources to ensure the highest purity possible. The preparation and maintenance of standards and reagents will be accomplished as per the referenced methods referenced. All standards and standard solutions are to be formally documented (i.e., in a bound logbook) and should identify the supplier, lot number, purity/concentration, receipt/preparation date, preparer's name, method of preparation, expiration date, and any other pertinent information. All standard solutions shall be validated prior to use. Care shall be exercised in the proper storage and handling of standard solutions (e.g., separating volatile standards from nonvolatile standards). The laboratory shall continually monitor the quality of the standards and reagents through well-documented procedures.

Balances - The analytical balances shall be calibrated and maintained in accordance with manufacture specifications. Calibration is conducted with two American Society of Testing Materials Class 1 weights that bracket the expected balance use range. The laboratory shall check the accuracy of the balances daily and properly document results in permanently bound logbooks.

Refrigerators/Freezers - The temperature of the refrigerators and freezers within the laboratory shall be monitored and recorded daily. This will verify that the quality of the standards and reagents is not compromised and the integrity of the analytical samples is upheld. Appropriate acceptance ranges (e.g., 4°C ± 2°C for refrigerators) shall be clearly posted on each unit in service.

Water Supply System – The laboratory performing water/solid/waste sample analyses must maintain a sufficient supply of analyte-free water for all project needs. The grade of the water must be of the highest quality in order to eliminate false-positives from the analytical results. Ultraviolet cartridges or carbon absorption treatments are recommended for organic analyses, and ion-exchange treatment is recommended for inorganic tests. Appropriate documentation of the quality of the water supply system(s) will be performed on a regular basis by the laboratory.

Sample Containers - All sample containers supplied by the laboratory shall meet the requirements of the analytical methods being used and/or the requirements specified in the NYSDEC ASP July 2005 (or most current), whichever is more stringent. Pre-cleaned sample containers may be purchased by the laboratory and provided for sample collection as long as the containers meet the requirements of each analytical method and/or the NYSDEC ASP (most current), whichever is more stringent. Documentation of sample container cleaning procedures and/or certifications provided by vendors shall be maintained by the laboratory.

8.2 Laboratory Instruments

Calibration of laboratory instruments is required to verify that the analytical system is operating properly and at the sensitivity necessary to meet the project-required quantitation limits for each analytical method. Each instrument for organic analysis shall be calibrated with standards appropriate to the type of instrument and linear range established within the analytical method(s) and/or any additional requirements identified in this QAPP. Calibration of laboratory instruments will be performed according to the analytical methods required for this CMI program, as presented in Table 1.

Calibration of an instrument must be performed prior to the analysis of any samples (initial calibration) and then at periodic intervals (continuing calibration) during the sample analysis to verify that the instrument is still properly calibrated. If the contract laboratory cannot meet the method-required calibration requirements, corrective action shall be taken as discussed in Section 11.0. All corrective action procedures taken by the contract laboratory are to be documented, summarized within the report case narrative, and submitted with the analytical results.

8.3 Field Instruments

Various types of portable instruments may be used in the field during this CMI program, which may include one or more of the following: multi-purpose meters capable of measuring pH, conductivity, dissolved oxygen, oxidation/reduction (redox) potential, and/or temperature; photoionization detectors and/or flame ionization detectors used to monitor organic vapors; dust monitors to measure concentrations of particulates; multi-gas meters and analyte-specific devices (e.g. Drager tubes/chips) for health and safety purposes; and helium detectors used for leak-checking during soil vapor sample collection. Other instruments may also be used as needed based on the requirements of the work assignment. The instruments expected to be used in the field during this CMI program will be identified in either the site-specific FSP or project work plans. All calibration and maintenance of field instrumentation shall be performed according the manufacturer's requirements or as otherwise indicated in the project plans, and shall be documented by the Site Manager.

9.0 INTERNAL QUALITY CONTROL CHECKS

Internal QC checks are used to determine if analytical operations at the laboratory are in control, as well as determining the effect that sample matrix may have on data being generated. Two types of internal checks are performed - batch QC and matrix-specific QC procedures. The type and frequency of specific QC samples performed by the laboratory will be determined by the analytical methods. Acceptable criteria and/or target ranges for these QC samples are also identified in Tables 2a and 2b.

QC results that vary from acceptable ranges shall result in the implementation of appropriate corrective measures, potential application of qualifiers to the analytical data, and/or an assessment of the impact these corrective measures have on the established data quality objectives. Quality control samples, including any project-specific QC samples, will be analyzed as discussed below.

9.1 Batch QC

Method Blanks - A method blank is defined as laboratory demonstrated analyte-free water or solid that is carried through the entire analytical procedure. The method blank is used to determine the level of laboratory background contamination. Method blanks are analyzed at a frequency of one per analytical batch or as required by the analytical methods. Concentrations of all analytes in the method blanks should be below the quantitation limits identified in Tables 2a and 2b. The Laboratory Project Manager shall contact the URS Project Chemist to determine the appropriate course of action if analyte concentrations in any blank are greater than the quantitation limit.

Laboratory Control Samples (or Matrix Spike Blanks) – An LCS (or MSB), is an aliquot of laboratory demonstrated analyte-free water or solid air spiked (fortified) with all, or a representative group, of the analytes being analyzed. The LCS (or MSB) recoveries and RPD are a measure of precision and accuracy that are used to verify that the analysis being performed is in control. LCS (or MSB) analyses shall be performed for each matrix as required by the methods. Acceptance criteria for LCS (or MSB) analyses are also specified in Tables 2a and 2b.

9.2 Matrix-Specific QC

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples – MS/MSD samples consist of an aliquot of a sample that is spiked (fortified) with known concentrations of specific compounds as stipulated by the methodology. The MS/MSD samples are subjected to the entire analytical procedure in order to assess both accuracy and precision of the method for the matrix by measuring the percent recovery (%R) for each analyte and the RPD between the concentrations of each analyte in the two spiked samples. The samples are used to assess matrix interference effects on the method, as well as to evaluate instrument performance. MS/MSD samples will be analyzed at a required frequency of 1 per 20 samples. MS/MSD samples are not required for waste characterization samples. Acceptance criteria for MS/MSD analyses are also specified in Tables 2a and 2b.

Matrix Duplicates (MD) - The MD is a second aliquot of a sample that is prepared and analyzed in a manner identical to that used for the parent sample. Collection of MD samples provides for the evaluation of precision both in the field and at the laboratory by comparing the analytical results of two samples taken from the same location. A MD may be performed instead of the MSD. Every effort will be made to obtain replicate samples; however, due to interferences, lack of homogeneity, and the nature of soil samples, the analytical results are not always reproducible.

9.3 Additional QC

Additional QC samples that may be collected as part of this CMI program are described in this section. The anticipated number and type of QC samples to be collected are identified in Table 1. In the event that the actual number of samples varies from the estimated quantity, the number of QC samples collected will be adjusted based on the frequency of collection specified in this QAPP.

Equipment/Rinsate Blanks – An equipment or rinsate blank is used to indicate potential contamination from sample instruments used to collect and transfer samples. When collecting solid or water samples, the equipment blank is a sample of laboratory demonstrated analyte-free water passed over and/or through cleaned sampling equipment. The water must originate from one common source within the laboratory and must be the same water used by the laboratory when performing the analyses (i.e., for method blanks). Equipment blanks should be collected, transported, and analyzed in the same manner as the samples acquired that day. Equipment blanks typically are not required when using dedicated and/or disposable sampling equipment. Equipment blank samples will be collected at a frequency of one equipment blank per sampling event per type of equipment.

Trip Blanks - Trip blanks are only required when collecting aqueous samples for volatile organics. They are not required for waste characterization samples. Trip blanks are not required for non-aqueous matrices or for analysis of any other parameters. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte-free water. Trip blanks accompany the empty sample containers that are shipped from the laboratory into the field, and then back to the laboratory along with the collected samples for analysis. Trip blank are required at the rate of one per each cooler containing aqueous volatile organic. These bottles are never opened in the field. Trip blanks must return to the laboratory with the same set of containers they accompanied to the field.

Field Duplicates – A field duplicate (FD) sample pair consists of two independent samples that are collected at approximately the same time and place, using the same collection methods. Field duplicate samples are not required for waste characterization samples. Both are containerized, handled, and analyzed in an identical manner. Field duplicates are useful in documenting the precision of the sampling process, and also provide a measure of analysis precision. Duplicate samples will be collected at a required frequency of 1 per 20 samples. Field duplicates are typically labeled so that the laboratory cannot determine or identify the location from which the field duplicate was collected.

10.0 CALCULATION OF DATA QUALITY INDICATORS

10.1 Precision

Precision is evaluated using results from field or matrix duplicate, MS/MSD, and/or LCS/LCSD (MSB/MSBD) analyses. The RPD between the concentrations detected in the above-listed sample pairs is calculated using the following formula:

$$RPD = \left| \frac{(X_1 - X_2)}{[(X_1 + X_2)/2]} \right| x\,100\%$$

where:

X_1 = *Measured value of sample, MS, or LCS (MSB)*

X_2 = *Measured value of field (or matrix) duplicate, MSD, or LCSD (MSBD)*

RPD criteria for this CMI program are specified in Tables 2a and 2b.

10.2 Accuracy

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. Analytical accuracy is expressed as the percent recovery (%R) of a compound or analyte that has been added to the environmental sample or laboratory demonstrated analyte-free matrix at known concentrations before analysis. Accuracy will be determined from MS, MSD, LCS (MSB) samples as well as from surrogate compounds that are added to samples prior to extraction and analysis (typically used for organic fractions only). Accuracy is calculated using the following formula:

$$\%R = \frac{(X_s - X_u)}{K} x\,100\%$$

where:

X_s - *Measured value of the spike sample*

X_u - *Measured value of the unspiked sample*

K - *Known amount of spike in the sample*

Accuracy criteria for this CMI program are specified in Tables 2a and 2b.

10.3 Completeness

Completeness is calculated on a per matrix basis for the project and is calculated as follows:

$$\% \, Completeness = \frac{(N - X_n)}{N} \, x \, 100\%$$

where:

N - *Number of valid measurements expected to be obtained*

X_n - *Number of invalid measurements*

11.0 CORRECTIVE ACTIONS

The Site Manager will discuss with and receive approval from the URS Project Manager or NYSDEC prior to taking any corrective actions in the field that may need to be implemented in order to meet project objectives. The Site Manager will document any corrective actions taken in the Field Log Book.

Laboratory corrective actions shall be implemented to resolve problems and restore proper functioning to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the case narrative. A discussion of the corrective actions to be taken is presented in the following sections.

11.1 Incoming Samples

The laboratory shall document problems noted during sample receipt. The Laboratory Project Manager will contact the URS Project Chemist as soon as possible if any problems are encountered. All corrective actions shall be documented thoroughly.

11.2 Sample Holding Times

If any sample extractions and/or analyses exceed method holding time requirements, the Laboratory Project Manager will contact the URS Project Chemist immediately for problem resolution. All corrective actions shall be documented thoroughly. Holding times for each analytical method and matrix are presented on Table 3.

11.3 Instrument Calibration

Sample analysis shall not be allowed until all laboratory instrumentation is properly calibrated in accordance with method requirements. If any initial/continuing calibration standards fail to meet the required criteria, recalibration must be performed and, if necessary, all samples going back to the previous acceptable continuing calibration standard must be reanalyzed.

11.4 Quantitation Limits

The laboratory must make every attempt to meet all quantitation limits identified in Tables 2a and 2b. It should be noted that these limits are based on undiluted samples analyses and are not adjusted for moisture content (soil/solid samples). Sample-specific quantitation limits may be affected by any dilution that is needed because of elevated analyte concentrations, moisture content (soil/solids), and/or matrix interferences. If difficulties arise in achieving the required quantitation limits due to a particular sample matrix, the Laboratory Project Manager will contact the URS Project Chemist for problem resolution. When any sample requires a secondary dilution due to high levels of target analytes, the laboratory shall report results from both the initial analyses and secondary dilution analyses. Dilution should only be used to bring target analytes within the linear range of calibration. If samples are analyzed at a dilution with no target analytes detected, the Laboratory Project Manager shall contact the URS Project Chemist so that appropriate corrective actions can be initiated.

11.5 Method QC

All QC samples, including blanks, matrix spikes, matrix spike duplicates, matrix duplicates, surrogate recoveries, laboratory control samples, and other method-specified QC samples, shall meet the acceptance criteria specified in this QAPP. Failure to these criteria will result in the possible qualification of all affected data. When the criteria are not met, the affected sample(s) should be reanalyzed within the required holding times to verify the presence or absence of matrix effects. It should be noted that reanalysis is not always required. The Laboratory Project Manager shall contact the URS Project Chemist to discuss possible corrective actions should unusually difficult sample matrices be encountered. The laboratory shall follow the requirements of the analytical methods and any instructions provided by the URS Project Chemist when determining if samples require reanalysis. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria as defined by the data validation guidelines identified in Section 12.2, or as otherwise identified for the work assignment.

11.6 Calculation Errors

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review, calculation and/or reporting errors exist, the laboratory will be requested to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

12.0 DATA REDUCTION, VALIDATION, AND USABILITY

NYSDEC ASP Category B deliverable requirements (or equivalent) will be required for documentation and reporting of all data, except waste characterization data. Where applicable, the standard NYSDEC Data Package Summary Forms should be completed by the analytical laboratories and included in the deliverable data packages. In addition, the sample results will also be reported in NYSDEC EQuIS electronic data deliverable (EDD) format.

12.1 Data Reduction

Laboratory analytical data are first generated in raw form at the instrument. These data may be either graphic or printed tabular form. Specific data generation procedures and calculations are found in each of the referenced methods. Analytical results must be reported consistently. Results for aqueous samples will be reported in concentration units of micrograms per liter (µg/L) or milligrams per liter (mg/L). Results for solid samples will be reported in concentration units of micrograms per kilogram (µg/Kg) or milligrams per kilogram (mg/Kg) and adjusted for moisture content.

Identification of all analytes must be accomplished with an authentic standard of the analyte traceable to NIST or other reliable commercial sources. Data reduction will be performed by individuals experienced with a particular analysis and knowledgeable of requirements.

12.2 Data Validation

Data validation is a systematic procedure of reviewing a body of data against a set of established criteria to provide a specified level of assurance of validity prior to its intended use. Data validation will not be required for waste characterization samples.

Data validation will be performed by the URS Project Chemist and/or an environmental chemist under his/her supervision. All analytical samples collected will receive a limited data review. This review will include a review of completeness of all required deliverables, holding times, review of QC results (blanks, instrument tunings, calibration standards, calibration verifications, surrogates recoveries, spike recoveries, replicate analyses, and laboratory controls) to determine if the data are within the protocol-required limits and specifications, a determination that all samples were analyzed using established and agreed upon analytical protocols, an evaluation of the raw data to confirm the results provided in the data summary sheets, and a review of laboratory data qualifiers. The methods identified in Table 1, as well as the general guidelines presented in one or more of the following USEPA Region II documents (or most current update), will be used to aide the chemist during the data review. The specific USEPA Region II validation guidelines to be followed will vary based on the required analytical parameters for each work assignment, and will be documented in the Data Usability Summary Report (Section 12.3).

- Validating Volatile Organic Compounds by SW-846 Method 8260B, SOP HW-24, Revision 2, August 2008 (or most current);
- Validating Semivolatile Organic Compounds by SW-846 Method 8270D, SOP HW-22, Revision 4, August 2008 (or most current);
- Validating Pesticide Compounds, Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, SOP HW-44, Revision 1, October 2006 (or most current);
- Validating PCB Compounds by SW-846 Method 8082A, SOP HW-45, Revision 1, October 2006 (or most current);
- Validating Chlorinated Herbicides by GC SW-846 Method 8151A, SOP HW-17, Revision 3, July 2008 (or most current);
- Contract Laboratory Program (CLP) Organics Data Review and Preliminary Review (CLP/SOW OLMO4.3), SOP HW-6, Revision 14, September 2006 (or most current);
- Validation of Metals Data for the CLP Program, based on SOW ILMO5.3, SOP HW-2, Revision 13, September 2006 (or most current); and

12.3 Data Usability

A Data Usability Summary Report (DUSR) (NYSDEC *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B*, Final, May 2010) will be submitted to NYSDEC, and will describe the samples and the analytical parameters. Data deficiencies, analytical protocol deviations, and quality control problems will be identified and their effect on the data will be discussed. The DUSR will also include recommendations on resampling/reanalysis. A copy of the NYSDEC DUSR requirements is provided in Attachment D. Waste characterization data will not be included in the DUSR.

13.0 PREVENTIVE MAINTENANCE

The laboratory is responsible for maintaining its analytical equipment. Preventive maintenance is provided on a regular basis to minimize down-time and the potential interruption of analytical work. Instruments are maintained in accordance with the manufacturer's recommendations. If instruments require maintenance, only trained laboratory personnel or manufacturer-authorized service specialists are permitted to do the work. Maintenance activities will be documented and kept in permanent logs. These logs will be available for inspection by auditing personnel.

Maintenance of field instrumentation will be performed as needed by the vendor and/or URS personnel according to the manufacturer’s requirements.

14.0 PERFORMANCE AND SYSTEMS AUDITS

Audits are evaluations of laboratory QA/QC procedures, and are performed before or shortly after systems are operational, and on an ongoing basis thereafter. Problems detected during these audits shall be reviewed by the Laboratory QA Manager and other laboratory management personnel, and corrective action shall be instituted as necessary.

14.1 <u>Performance Audits</u>

Performance audits are conducted by introducing control samples into the data measurement, reduction, and reporting processes. These control samples may include performance evaluation samples, or field samples spiked with known amounts of analytes. In addition to conducting internal reviews and performance audits as part of its established quality assurance program, the laboratory is required to take part in regularly-scheduled performance audits/evaluations from state and federal agencies. They are typically conducted as part of the certification process and to evaluate laboratory performance and analytical measurement systems. Acceptable performance on evaluation samples and audits is required for certification and accreditation. The laboratory shall use the information provided from these audits to monitor and assess the quality of its performance, and to take appropriate corrective actions as needed.

14.2 <u>Systems Audits</u>

Systems audits are thorough, on-site qualitative audits of facilities, equipment/instrumentation, personnel, training procedures, record keeping, data review/management, and reporting aspects of a system. They provide a qualitative measure of the data produced by one section of, or the entire, measurement process. The audits are performed against a set of requirements, which may include laboratory standard operating procedures, a quality assurance project plan or work plan, a standard method, and/or a project statement of work. The primary objective of the systems audits is to verify that all procedures are being performed according to the requirements specified above. Systems audits are performed internally by the Laboratory QA Manager, and also by external parties such as state and federal regulatory agencies and private-sector clients. Typically, state and federal agencies perform systems audits in conjunction with performance audits/evaluations during the laboratory certification process. As part of its QA program, the Laboratory QA Manager shall also conduct periodic checks and audits of the analytical, data reduction, and reporting systems. The purpose of these is to verify that the systems are operating properly, and that personnel are adhering to established procedures and documenting the required information. These checks and audits assist in determining or detecting where problems are occurring.

REFERENCES

New York State Department of Environmental Conservation (NYSDEC), 2005. *Analytical Services Protocol;* July.

NYSDEC, 2010. *DER-10, Technical Guidance for Site Investigation and Remediation*; Final. May.

United States Environmental Protection Agency (USEPA). 1983. *National Enforcement Investigations Center (NEIC) Office of Enforcement, NEIC Policies and Procedures EPA 330/9-78-001-R;*Denver CO, May.

USEPA. 2005. *Uniform Federal Policy for Quality Assurance Project Plans; Evaluating, Assessing, and Documenting Environmental Data Collection and Use Programs, Final, Version 1; EPA-505-B-04-900A*, March.

USEPA. 2006a. *CLP Organics Data Review and Preliminary Review (CLP/SOW OLMO4.3), HW-6, Revision 14;* Region II, September.

USEPA. 2006b. *Validation of Metals Data for the CLP Program, based on SOW ILMO5.3*, *SOP HW-2, Revision 13;* Region II, September.

USEPA. 2006d. *Validating PCB Compounds by SW-846 Method 8082A, SOP HW-45, Revision 1;* Region II, October.

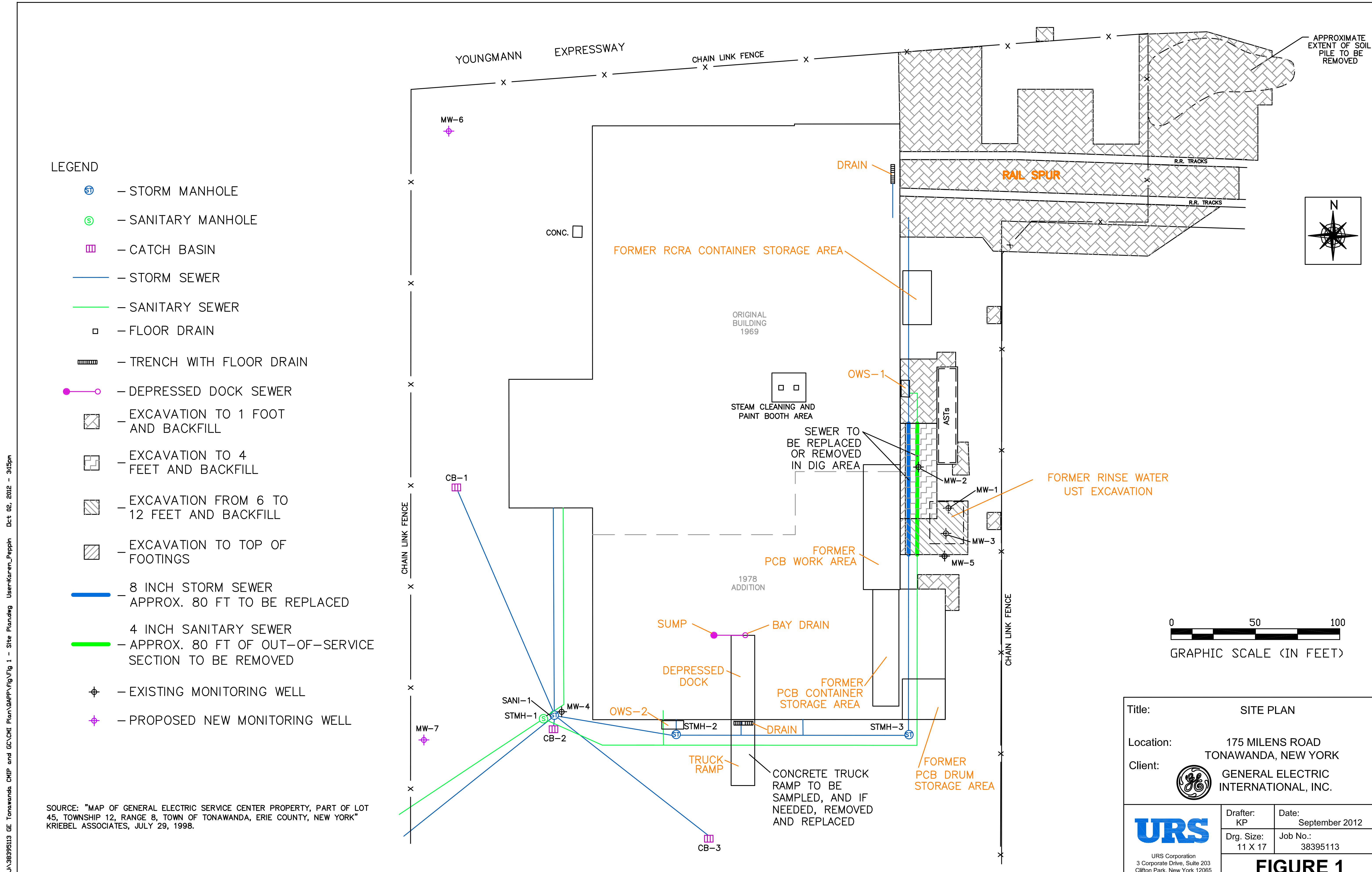
USEPA. 2006e. *Validating Pesticide Compounds, Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, SOP HW-44, Revision 1*, Region II, October.

USEPA. 2008a. *Validating Chlorinated Herbicides by Gas Chromatography* SW-846 Method 8151A*, HW-17, Revision 3;* Region II, July.

USEPA. 2008b. *Validating Semivolatile Organic Compounds by SW-846 Method 8270D, SOP HW-22, Revision 4;* Region II, August.

USEPA. 2008c. *Validating Volatile Organic Compounds by SW-846 Method 8260B, HW-24, Revision 2, Region II;* August.

FIGURES



Title: SITE PLAN

Location: 175 MILENS ROAD, TONAWANDA, NEW YORK

Client: GENERAL ELECTRIC INTERNATIONAL, INC.

URS Corporation
3 Corporate Drive, Suite 203
Clifton Park, New York 12065

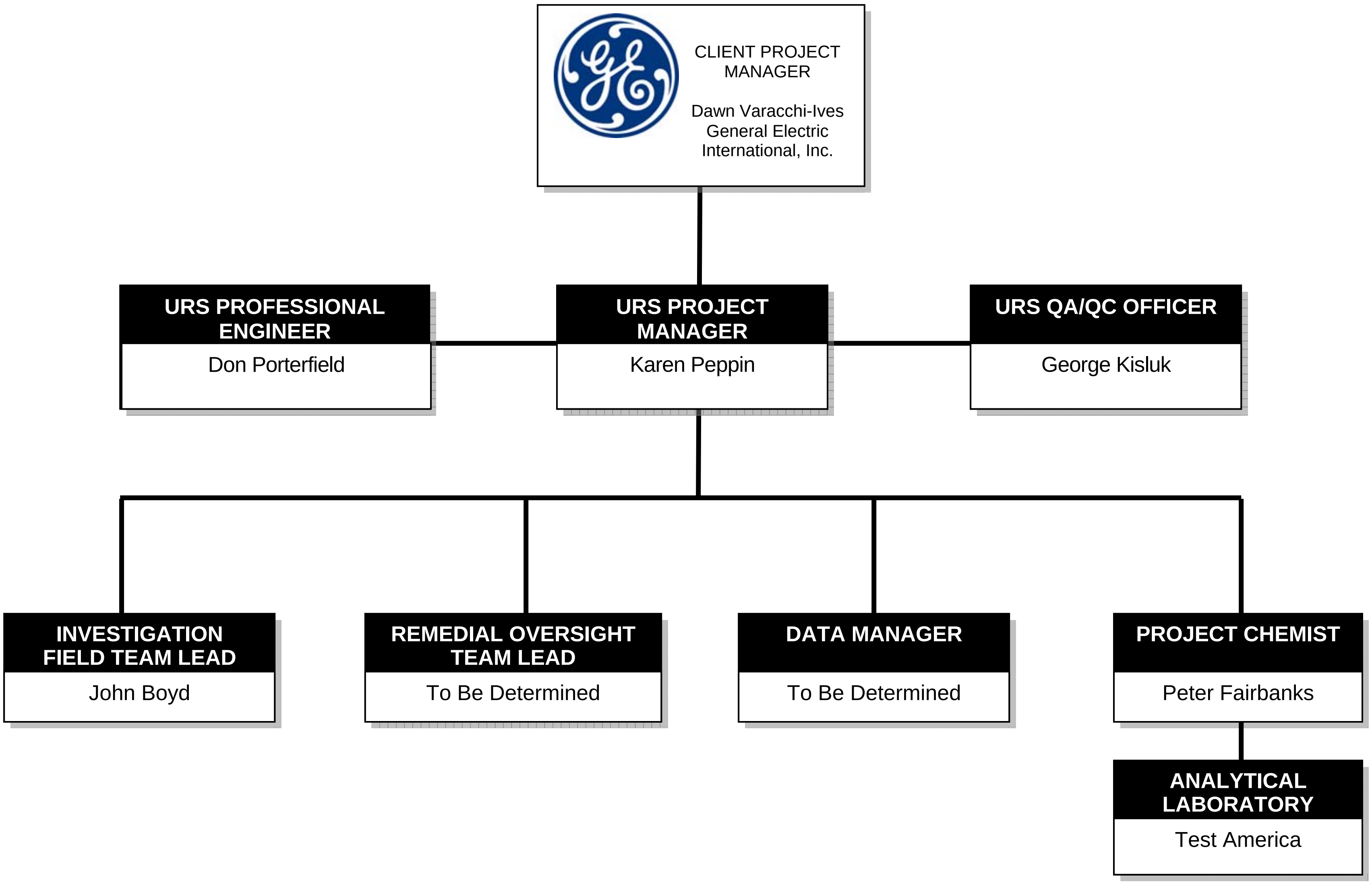
Drafter: KP | Date: September 2012

Drg. Size: 11 X 17 | Job No.: 38395113

FIGURE 1

FIGURE 2
ORGANIZATIONAL CHART

CORRECTIVE MEASURE IMPLEMENTATION
PARTS AND REPAIR SERVICE CENTER
GENERAL ELECTRIC INTERNATIONAL, INC.
TONAWANDA, NEW YORK



TABLES

TABLE 1

SUMMARY OF ANTICIPATED SAMPLES TO BE COLLECTED AND ANALYTICAL PARAMETERS

GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER

TONAWANDA, NEW YORK

Parameter	Analytical Method[1]	Matrix	Estimated Number of Samples	Estimated Field QC Samples[2]				Estimated Total No. of Samples
				Field Duplicates	MS/MSD/MD	Rinsate Blanks	Trip Blanks	
Phase I - Design Investigation and Planning								
Polychlorinated Biphenyls (PCBs)	EPA 8082	Soil	40	2	2	2	0	48
PCBs	EPA 8082	Groundwater	1	0	0	0	0	1
Volatile Organic Compounds (VOCs)	EPA 80260B	Groundwater	1	0	0	0	1	2
RCRA Metals (8)	EPA 6010B/7470A	Groundwater	1	0	0	0	0	1
PCBs	EPA 8082	Concrete	8	1	1	0	0	11
PCBs	EPA 8082	Asphalt	5	1	1	0	0	8
PCBs	EPA 8082	Wipes	4	1	1	0	0	7
PCBs	EPA 8082	RR Tie Chips	4	1	1	0	0	7
Toxicity Characterization Leaching Procedure (TCLP) VOCs	EPA 1311/8260B	Sediment	2	0	0	0	0	2
TCLP Semivolatile Organic Compounds (SVOCs)	EPA 1311/8270C	Sediment	2	0	0	0	0	2
TCLP Pesticides	EPA 1311/8081A	Sediment	2	0	0	0	0	2
TCLP Herbicides	EPA 1311/8151A	Sediment	2	0	0	0	0	2
TCLP Metals	EPA 1311/6010B/7470A	Sediment	2	0	0	0	0	2
Corrosivity (as pH)	EPA 9045C	Sediment	2	0	0	0	0	2
Ignitability	EPA 1030	Sediment	2	0	0	0	0	2
Reactive Cyanide	EPA SW-846 Sec 7.3	Sediment	2	0	0	0	0	2
Reactive Sulfide	EPA SW-846 Sec 7.3	Sediment	2	0	0	0	0	2
PCBs	EPA 8082	Sediment	2	0	0	0	0	2
TCLP VOCs	EPA 1311/8260B	Wastewater	2	0	0	0	0	2
TCLP SVOCs	EPA 1311/8270C	Wastewater	2	0	0	0	0	2
TCLP Pesticides	EPA 1311/8081A	Wastewater	2	0	0	0	0	2
TCLP Herbicides	EPA 1311/8151A	Wastewater	2	0	0	0	0	2
TCLP Metals	EPA 1311/6010B/7470A	Wastewater	2	0	0	0	0	2
Corrosivity (as pH)	EPA 9040B	Wastewater	2	0	0	0	0	2
Ignitability	EPA 1010	Wastewater	2	0	0	0	0	2
Reactive Cyanide	EPA SW-846 Sec 7.3	Wastewater	2	0	0	0	0	2
Reactive Sulfide	EPA SW-846 Sec 7.3	Wastewater	2	0	0	0	0	2
PCBs	EPA 8082	Wastewater	2	0	0	0	0	2

TABLE 1

SUMMARY OF ANTICIPATED SAMPLES TO BE COLLECTED AND ANALYTICAL PARAMETERS

GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER

TONAWANDA, NEW YORK

Parameter	Analytical Method[1]	Matrix	Estimated Number of Samples	Estimated Field QC Samples[2]				Estimated Total No. of Samples
				Field Duplicates	MS/MSD/MD	Rinsate Blanks	Trip Blanks	
Phase II - Remediation								
Toxicity Characterization Leaching Procedure (TCLP) VOCs	EPA 1311/8260B	Solid/Aqueous Waste	10	0	0	0	0	10
TCLP Semivolatile Organic Compounds (SVOCs)	EPA 1311/8270C	Solid/Aqueous Waste	10	0	0	0	0	10
TCLP Pesticides	EPA 1311/8081A	Solid/Aqueous Waste	10	0	0	0	0	10
TCLP Herbicides	EPA 1311/8151A	Solid/Aqueous Waste	10	0	0	0	0	10
TCLP Metals	EPA 1311/6010B/7470A	Solid/Aqueous Waste	10	0	0	0	0	10
Corrosivity (as pH)	EPA 9040B/9045C	Solid/Aqueous Waste	10	0	0	0	0	10
Ignitability	EPA 1010/1030	Solid/Aqueous Waste	10	0	0	0	0	10
Reactive Cyanide	EPA SW-846 Sec 7.3	Solid/Aqueous Waste	10	0	0	0	0	10
Reactive Sulfide	EPA SW-846 Sec 7.3	Solid/Aqueous Waste	10	0	0	0	0	10
PCBs	EPA 8082	Solid/Aqueous Waste	10	0	0	0	0	10
PCBs	EPA 8082	Post-Excavation Soil	43	2	2	4	0	53
VOCs	EPA 80260B	Post-Excavation Soil	7	1	1	1	0	11
TBD[3]	TBD	Treated Wastewater	0	0	0	0	0	0
Phase III - Restoration (Parameters per 6 NYCCR Part 375-6.8)								
VOCs	EPA 8260B	Backfill	8	0	0	0	0	8
SVOCs	EPA 8270C	Backfill	8	0	0	0	0	8
Pesticides	EPA 8081A	Backfill	8	0	0	0	0	8
PCBs	EPA 8082	Backfill	8	0	0	0	0	8
Herbicides	EPA 8151A	Backfill	8	0	0	0	0	8
Metals	EPA 6010B/7471A	Backfill	8	0	0	0	0	8
Hexavalent Chromium	EPA 7196A	Backfill	8	0	0	0	0	8
Total Cyanide	EPA 9010B/9012	Backfill	8	0	0	0	0	8
IV. Long-Term Groundwater Monitoring (3 samples per year x 5 years = 15 samples)								
PCBs	EPA 8082	Groundwater	15	5	5	5	0	30
VOCs	EPA 8260B	Groundwater	15	5	5	5	5	35

Notes:

1. NYSDEC Analytical Services Protocol (ASP), July 2005 Edition.
   For waste characterization samples, the parameters and anaytical methods will be determined based on the requirements of the disposal facility(ies).
2. Field duplicate sample frequency: 1 per 20 samples.
   MS/MSD/MD sample frequency: 1 per 20 samples.
   Rinsate Blank sample frequency: 1 per sampling event per type of non-dedicated, non-disposable equipment.
   Trip blank frequency: 1 per cooler.
3. TBD: If CMI program includes treating remedial wastewater and discharging treated water under the terms of a permit, the terms of the permit will specify the paramters analyzed and the required analytical methods.

MS/MSD/MD - Matrix spike/matrix spike duplicate/matrix duplicate
RR - Railroad

TABLE 2a
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory: TestAmerica Laboratories, Inc - Amherst, NY **Matrix:** Soil, Sediment, Concrete, Asphalt, RR Tie Chips, Solid Waste,and Backfill

Analytical Method	Parameter	Units	QL	MDL	LCS Accuracy Criteria (%R)		LCS Precision Criteria (RPD)	MS Accuracy Criteria (%R)		MS/MSD Precision Criteria (RPD)
					Lower Limit	Upper Limit		Lower Limit	Upper Limit	
8082 - PCBs	PCB-1016	ug/Kg	16.7	3.26	51	185	50	42	159	50
	PCB-1221	ug/Kg	16.7	3.26	NA	NA	NA	NA	NA	NA
	PCB-1232	ug/Kg	16.7	3.26	NA	NA	NA	NA	NA	NA
	PCB-1242	ug/Kg	16.7	3.26	NA	NA	NA	NA	NA	NA
	PCB-1248	ug/Kg	16.7	3.26	NA	NA	NA	NA	NA	NA
	PCB-1254	ug/Kg	16.7	7.82	NA	NA	NA	NA	NA	NA
	PCB-1260	ug/Kg	16.7	7.82	61	185	50	47	153	50
	DCB Decachlorobiphenyl (Surr)	NA	NA	NA	36	182	NA	NA	NA	NA
	Tetrachloro-m-xylene (Surr)	NA	NA	NA	24	172	NA	NA	NA	NA
8260B - VOCs	1,1,1-Trichloroethane	ug/Kg	5	0.363	77	121	20	77	121	30
	1,1,2,2-Tetrachloroethane	ug/Kg	5	0.811	80	120	20	80	120	30
	1,1,2-Trichloroethane	ug/Kg	5	0.65	78	122	20	78	122	30
	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/Kg	5	1.14	60	140	20	60	140	30
	1,1-Dichloroethane	ug/Kg	5	0.61	73	126	20	73	126	30
	1,1-Dichloroethene	ug/Kg	5	0.612	59	125	20	59	125	30
	1,2,4-Trichlorobenzene	ug/Kg	5	0.304	64	120	20	64	120	30
	1,2-Dibromo-3-Chloropropane	ug/Kg	5	2.5	63	124	20	63	124	30
	1,2-Dibromoethane	ug/Kg	5	0.642	78	120	20	78	120	30
	1,2-Dichlorobenzene	ug/Kg	5	0.391	75	120	20	75	120	30
	1,2-Dichloroethane	ug/Kg	5	0.251	77	122	20	77	122	30
	1,2-Dichloropropane	ug/Kg	5	2.5	75	124	20	75	124	30
	1,3-Dichlorobenzene	ug/Kg	5	0.257	74	120	20	74	120	30
	1,4-Dichlorobenzene	ug/Kg	5	0.7	73	120	20	73	120	30
	2-Hexanone	ug/Kg	25	2.5	59	130	20	59	130	30
	2-Butanone (MEK)	ug/Kg	25	1.83	70	134	20	70	134	30
	4-Methyl-2-pentanone (MIBK)	ug/Kg	25	1.64	65	133	20	65	133	30
	Acetone	ug/Kg	25	4.21	61	137	20	61	137	30
	Benzene	ug/Kg	5	0.245	79	127	20	79	127	30
	Bromodichloromethane	ug/Kg	5	0.67	80	122	20	80	122	30
	Bromoform	ug/Kg	5	2.5	68	126	20	68	126	30
	Bromomethane	ug/Kg	5	0.45	37	149	20	37	149	30
	Carbon disulfide	ug/Kg	5	2.5	64	131	20	64	131	30
	Carbon tetrachloride	ug/Kg	5	0.484	75	135	20	75	135	30
	Chlorobenzene	ug/Kg	5	0.66	76	124	20	76	124	30
	Dibromochloromethane	ug/Kg	5	0.64	76	125	20	76	125	30
	Chloroethane	ug/Kg	5	1.13	69	135	20	69	135	30
	Chloroform	ug/Kg	5	0.309	80	118	20	80	118	30
	Chloromethane	ug/Kg	5	0.302	63	127	20	63	127	30
	cis-1,2-Dichloroethene	ug/Kg	5	0.64	81	117	20	81	117	30
	cis-1,3-Dichloropropene	ug/Kg	5	0.72	82	120	20	82	120	30
	Cyclohexane	ug/Kg	5	0.7	70	130	20	70	130	30
	Dichlorodifluoromethane	ug/Kg	5	0.413	57	142	20	57	142	30
	Ethylbenzene	ug/Kg	5	0.345	80	120	20	80	120	30
	Isopropylbenzene	ug/Kg	5	0.754	72	120	20	72	120	30
	Methyl acetate	ug/Kg	5	0.93	60	140	20	60	140	30
	Methyl tert-butyl ether	ug/Kg	5	0.491	63	125	20	63	125	30
	Methylcyclohexane	ug/Kg	5	0.76	60	140	20	60	140	30
	Methylene Chloride	ug/Kg	5	2.3	61	127	20	61	127	30
	Styrene	ug/Kg	5	0.25	80	120	20	80	120	30
	Tetrachloroethene	ug/Kg	5	0.671	74	122	20	74	122	30
	Toluene	ug/Kg	5	0.378	74	128	20	74	128	30
	trans-1,2-Dichloroethene	ug/Kg	5	0.516	78	126	20	78	126	30
	trans-1,3-Dichloropropene	ug/Kg	5	2.2	73	123	20	73	123	30
	Trichloroethene	ug/Kg	5	1.1	77	129	20	77	129	30
	Trichlorofluoromethane	ug/Kg	5	0.473	65	146	20	65	146	30
	Vinyl chloride	ug/Kg	5	0.61	61	133	20	61	133	30
	Xylenes, Total	ug/Kg	10	0.84	70	130	20	80	120	30
	1,2-Dichloroethane-d4 (Surr)	NA	NA	NA	64	126	NA	NA	NA	NA
	Toluene-d8 (Surr)	NA	NA	NA	71	125	NA	NA	NA	NA
	4-Bromofluorobenzene (Surr)	NA	NA	NA	72	126	NA	NA	NA	NA

TABLE 2a
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory:	TestAmerica Laboratories, Inc - Amherst, NY			**Matrix:**	Soil, Sediment, Concrete, Asphalt, RR Tie Chips, Solid Waste,and Backfill					
Analytical Method	**Parameter**	**Units**	**QL**	**MDL**	**LCS Accuracy Criteria (%R)**		**LCS Precision Criteria (RPD)**	**MS Accuracy Criteria (%R)**		**MS/MSD Precision Criteria (RPD)**
					Lower Limit	**Upper Limit**		**Lower Limit**	**Upper Limit**	
8270C - SVOCs	Biphenyl	ug/Kg	170	10.51428	30	130	60	30	130	60
	bis (2-chloroisopropyl) ether	ug/Kg	170	17.64	34	130	44	34	130	44
	2,4,5-Trichlorophenol	ug/Kg	170	36.8149	33	130	45	33	130	45
	2,4,6-Trichlorophenol	ug/Kg	170	11.13659	39	130	53	39	130	53
	2,4-Dichlorophenol	ug/Kg	170	8.84975	22	130	52	22	130	52
	2,4-Dimethylphenol	ug/Kg	170	45.59644	10	130	60	10	130	60
	2,4-Dinitrophenol	ug/Kg	330	59.06137	40	130	32	40	130	32
	2,4-Dinitrotoluene	ug/Kg	170	26.13436	36	130	43	36	130	43
	2,6-Dinitrotoluene	ug/Kg	170	41.30373	46	130	30	46	130	30
	2-Chloronaphthalene	ug/Kg	170	11.32611	39	130	38	39	130	38
	2-Chlorophenol	ug/Kg	170	8.59328	43	130	35	43	130	35
	2-Methylnaphthalene	ug/Kg	170	2.04484	43	130	60	43	130	60
	2-Methylphenol	ug/Kg	170	5.19098	42	130	34	42	130	34
	2-Nitroaniline	ug/Kg	330	54.14509	34	130	48	34	130	48
	2-Nitrophenol	ug/Kg	170	7.71638	10	130	60	10	130	60
	3,3'-Dichlorobenzidine	ug/Kg	170	148	11	130	40	11	130	40
	3-Nitroaniline	ug/Kg	330	38.81322	13	130	60	13	130	60
	4,6-Dinitro-2-methylphenol	ug/Kg	330	58.29008	43	130	37	43	130	37
	4-Bromophenyl phenyl ether	ug/Kg	170	53.70538	38	130	30	38	130	30
	4-Chloro-3-methylphenol	ug/Kg	170	6.94446	10	130	48	10	130	48
	4-Chloroaniline	ug/Kg	170	49.54531	45	130	32	45	130	32
	4-Chlorophenyl phenyl ether	ug/Kg	170	3.59842	42	130	53	42	130	53
	4-Methylphenol	ug/Kg	330	9.4	23	130	37	23	130	37
	4-Nitroaniline	ug/Kg	330	18.8558	10	144	30	10	144	30
	4-Nitrophenol	ug/Kg	330	40.91715	43	130	30	43	130	30
	Acenaphthene	ug/Kg	170	1.98418	46	130	30	46	130	30
	Acenaphthylene	ug/Kg	170	1.38072	30	130	60	30	130	60
	Acetophenone	ug/Kg	170	8.66305	37	130	30	37	130	30
	Anthracene	ug/Kg	170	4.32194	30	130	60	30	130	60
	Atrazine	ug/Kg	170	7.51146	30	130	60	30	130	60
	Benzaldehyde	ug/Kg	170	18.51196	40	130	30	40	130	30
	Benzo(a)anthracene	ug/Kg	170	2.91388	44	130	30	44	130	30
	Benzo(a)pyrene	ug/Kg	170	4.06861	29	154	32	29	154	32
	Benzo(b)fluoranthene	ug/Kg	170	3.27501	10	130	30	10	130	30
	Benzo(g,h,i)perylene	ug/Kg	170	2.02566	35	143	30	35	143	30
	Benzo(k)fluoranthene	ug/Kg	170	1.85814	43	130	40	43	130	40
	Bis(2-chloroethoxy)methane	ug/Kg	170	9.18259	41	130	30	41	130	30
	Bis(2-chloroethyl)ether	ug/Kg	170	14.57441	34	130	30	34	130	30
	Bis(2-ethylhexyl) phthalate	ug/Kg	170	54.38616	42	154	36	42	154	36
	Butyl benzyl phthalate	ug/Kg	170	45.32835	34	160	37	34	160	37
	Caprolactam	ug/Kg	170	73.02415	30	130	60	30	130	60
	Carbazole	ug/Kg	170	1.95306	42	130	36	42	130	36
	Chrysene	ug/Kg	170	1.68779	43	130	30	43	130	30
	Di-n-butyl phthalate	ug/Kg	170	58.34917	50	133	39	50	133	39
	Di-n-octyl phthalate	ug/Kg	170	3.94792	48	146	31	48	146	31
	Dibenz(a,h)anthracene	ug/Kg	170	1.98543	16	135	30	16	135	30
	Dibenzofuran	ug/Kg	170	1.75662	45	130	30	45	130	30
	Diethyl phthalate	ug/Kg	170	5.09952	48	130	30	48	130	30
	Dimethyl phthalate	ug/Kg	170	4.40366	46	130	39	46	130	39
	Fluoranthene	ug/Kg	170	2.44588	45	130	30	45	130	30
	Fluorene	ug/Kg	170	3.88915	45	130	30	45	130	30
	Hexachlorobenzene	ug/Kg	170	8.38584	50	130	31	50	130	31
	Hexachlorobutadiene	ug/Kg	170	8.63759	37	130	41	37	130	41
	Hexachlorocyclopentadiene	ug/Kg	170	51.03698	10	130	58	10	130	58
	Hexachloroethane	ug/Kg	170	13.06357	23	130	37	23	130	37
	Indeno(1,2,3-cd)pyrene	ug/Kg	170	4.66924	10	134	30	10	134	30
	Isophorone	ug/Kg	170	8.43613	43	130	40	43	130	40
	N-Nitrosodi-n-propylamine	ug/Kg	170	13.36969	35	130	30	35	130	30
	N-Nitrosodiphenylamine	ug/Kg	170	9.22816	44	130	52	44	130	52
	Naphthalene	ug/Kg	170	2.80953	40	130	33	40	130	33
	Nitrobenzene	ug/Kg	170	7.48254	45	130	51	45	130	51
	Pentachlorophenol	ug/Kg	330	57.89626	10	130	53	10	130	53
	Phenanthrene	ug/Kg	170	3.54216	45	130	30	45	130	30
	Phenol	ug/Kg	170	17.76801	33	130	34	33	130	34
	Pyrene	ug/Kg	170	1.09282	18	164	30	18	164	30
	2,4,6-Tribromophenol (Surr)	NA	NA	NA	20	143	NA	20	143	NA
	2-Fluorobiphenyl (Surr)	NA	NA	NA	46	130	NA	46	130	NA
	2-Fluorophenol (Surr)	NA	NA	NA	22	130	NA	22	130	NA
	Nitrobenzene-d5 (Surr)	NA	NA	NA	39	130	NA	39	130	NA
	p-Terphenyl-d14 (Surr)	NA	NA	NA	33	130	NA	33	130	NA
	Phenol-d5 (Surr)	NA	NA	NA	36	146	NA	36	146	NA

TABLE 2a
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory:	TestAmerica Laboratories, Inc - Amherst, NY			**Matrix:**	Soil, Sediment, Concrete, Asphalt, RR Tie Chips, Solid Waste,and Backfill					
Analytical Method	**Parameter**	**Units**	**QL**	**MDL**	**LCS Accuracy Criteria (%R)**		**LCS Precision Criteria (RPD)**	**MS Accuracy Criteria (%R)**		**MS/MSD Precision Criteria (RPD)**
					Lower Limit	**Upper Limit**		**Lower Limit**	**Upper Limit**	
8081A - Pesticides	4,4'-DDD	ug/Kg	1.67	0.324	45	129	18	53	124	21
	4,4'-DDE	ug/Kg	1.67	0.25	49	120	16	44	123	18
	4,4'-DDT	ug/Kg	1.67	0.17	47	145	17	36	132	25
	Aldrin	ug/Kg	1.67	0.41	35	120	24	35	120	12
	alpha-BHC	ug/Kg	1.67	0.3	49	120	19	35	114	15
	alpha-Chlordane	ug/Kg	1.67	0.83	44	127	13	47	121	23
	beta-BHC	ug/Kg	1.67	0.18	58	123	17	50	121	19
	delta-BHC	ug/Kg	1.67	0.22	45	123	14	45	123	14
	Dieldrin	ug/Kg	1.67	0.4	53	128	13	47	120	12
	Endosulfan I	ug/Kg	1.67	0.21	29	125	16	29	125	18
	Endosulfan II	ug/Kg	1.67	0.3	56	127	17	21	137	26
	Endosulfan sulfate	ug/Kg	1.67	0.311	53	135	14	34	136	35
	Endrin	ug/Kg	1.67	0.23	58	129	19	53	120	20
	Endrin aldehyde	ug/Kg	1.67	0.426	39	133	23	33	120	47
	Endrin ketone	ug/Kg	1.67	0.41	61	133	14	49	131	37
	gamma-BHC (Lindane)	ug/Kg	1.67	1.206	50	120	20	50	120	12
	gamma-Chlordane	ug/Kg	1.67	0.53	54	124	14	51	120	15
	Heptachlor	ug/Kg	1.67	0.261	49	122	16	47	120	22
	Heptachlor epoxide	ug/Kg	1.67	0.43	47	128	17	44	122	15
	Methoxychlor	ug/Kg	1.67	0.23	61	146	14	53	143	24
	Toxaphene	ug/Kg	16.7	9.7	NA	NA	NA	NA	NA	NA
	DCB Decachlorobiphenyl (Surr)	NA	NA	NA	62	137	NA	NA	NA	NA
	Tetrachloro-m-xylene (Surr)	NA	NA	NA	30	124	NA	NA	NA	NA
8051A - Herbicides	2,4,5-T	ug/Kg	16.7	5.33	55	120	50	55	120	50
	2,4-D	ug/Kg	16.7	10.5	55	122	50	55	122	50
	Dinoseb	ug/Kg	16.7	5.29	10	130	50	10	130	50
	Silvex (2,4,5-TP)	ug/Kg	16.7	6	54	121	50	54	121	50
	2,4-Dichlorophenylacetic acid (Surr)	NA	NA	NA	39	120	NA	NA	NA	NA
6010B - Metals	Aluminum	mg/Kg	10	4.4	41	160	20	75	125	20
	Antimony	mg/Kg	15	0.54	25	272	20	75	125	20
	Arsenic	mg/Kg	2	0.4	69	131	20	75	125	20
	Barium	mg/Kg	0.5	0.11	72	127	20	75	125	20
	Beryllium	mg/Kg	0.2	0.028	73	127	20	75	125	20
	Cadmium	mg/Kg	0.2	0.03	73	127	20	75	125	20
	Calcium	mg/Kg	50	3.3	74	126	20	75	125	20
	Chromium	mg/Kg	0.5	0.2	68	132	20	75	125	20
	Cobalt	mg/Kg	0.5	0.05	75	125	20	75	125	20
	Copper	mg/Kg	1	0.21	74	126	20	75	125	20
	Iron	mg/Kg	10	1.1	31	169	20	75	125	20
	Lead	mg/Kg	1	0.24	70	130	20	75	125	20
	Magnesium	mg/Kg	20	0.927	64	136	20	75	125	20
	Manganese	mg/Kg	0.2	0.032	74	125	20	75	125	20
	Nickel	mg/Kg	5	0.23	70	130	20	75	125	20
	Potassium	mg/Kg	30	20	61	139	20	75	125	20
	Selenium	mg/Kg	4	0.57	64	137	20	75	125	20
	Silver	mg/Kg	0.5	0.2	66	135	20	75	125	20
	Sodium	mg/Kg	140	13	27	174	20	75	125	20
	Thallium	mg/Kg	6	0.3	67	132	20	75	125	20
	Vanadium	mg/Kg	0.5	0.11	54	146	20	75	125	20
	Zinc	mg/Kg	2	0.153	67	133	20	75	125	20
7471A - Mercury	Mercury	mg/Kg	0.02	0.0081	51	149	20	75	125	20
7196A - Cr^{+6}	Hexavalent Chromium (Cr^{+6})	mg/Kg	2	0.75	85	115	20	75	125	20
9012A - T-CN	Cyanide, Total (T-CN)	mg/Kg	1	0.483	29	122	15	85	115	15
1311/8260B - TCLP VOCs	Benzene	mg/L	0.001	0.00041	71	124	13	71	124	13
	Carbon tetrachloride	mg/L	0.001	0.00027	72	134	15	72	134	15
	Chlorobenzene	mg/L	0.001	0.00075	72	120	25	72	120	25
	Chloroform	mg/L	0.001	0.00034	73	127	20	73	127	20
	1,2-Dichloroethane	mg/L	0.001	0.00021	75	127	20	75	127	20
	1,1-Dichloroethene	mg/L	0.001	0.00029	58	121	16	58	121	16
	2-Butanone (MEK)	mg/L	0.005	0.00132	57	140	20	57	140	20
	Tetrachloroethene	mg/L	0.001	0.00036	74	122	20	74	122	20
	Trichloroethene	mg/L	0.001	0.00046	74	123	16	74	123	16
	Vinyl chloride	mg/L	0.001	0.0009	65	133	15	65	133	15
	1,2-Dichloroethane-d4 (Surr)	NA	NA	NA	66	137	NA	NA	NA	NA
	Toluene-d8 (Surr)	NA	NA	NA	71	126	NA	NA	NA	NA
	4-Bromofluorobenzene (Surr)	NA	NA	NA	73	120	NA	NA	NA	NA

TABLE 2a
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory:	TestAmerica Laboratories, Inc - Amherst, NY			**Matrix:**	Soil, Sediment, Concrete, Asphalt, RR Tie Chips, Solid Waste,and Backfill					
Analytical Method	**Parameter**	**Units**	**QL**	**MDL**	**LCS Accuracy Criteria (%R)**		**LCS Precision Criteria (RPD)**	**MS Accuracy Criteria (%R)**		**MS/MSD Precision Criteria (RPD)**
					Lower Limit	**Upper Limit**		**Lower Limit**	**Upper Limit**	
1311/8270C - TCLP SVOCs	1,4-Dichlorobenzene	mg/L	0.01	0.00046	32	120	36	32	120	36
	2,4-Dinitrotoluene	mg/L	0.005	0.000447	59	125	20	59	125	20
	Hexachlorobenzene	mg/L	0.005	0.00051	38	131	15	38	131	15
	Hexachlorobutadiene	mg/L	0.005	0.00068	30	120	44	30	120	44
	Hexachloroethane	mg/L	0.005	0.00059	25	120	46	25	120	46
	3-Methylphenol	mg/L	0.01	0.0004	39	120	30	39	120	30
	2-Methylphenol	mg/L	0.005	0.0004	39	120	27	39	120	27
	4-Methylphenol	mg/L	0.01	0.00036	39	120	24	36	120	24
	Nitrobenzene	mg/L	0.005	0.00029	52	120	24	52	120	24
	Pentachlorophenol	mg/L	0.01	0.0022	39	136	37	39	136	37
	Pyridine	mg/L	0.025	0.00041	10	120	49	10	120	49
	2,4,5-Trichlorophenol	mg/L	0.005	0.00048	65	126	18	65	126	18
	2,4,6-Trichlorophenol	mg/L	0.005	0.00061	64	120	19	64	120	19
	2,4,6-Tribromophenol (Surr)	mg/L	NA	NA	52	132	NA	NA	NA	NA
	2-Fluorobiphenyl (Surr)	mg/L	NA	NA	48	120	NA	NA	NA	NA
	2-Fluorophenol (Surr)	mg/L	NA	NA	20	120	NA	NA	NA	NA
	Nitrobenzene-d5 (Surr)	mg/L	NA	NA	46	120	NA	NA	NA	NA
	p-Terphenyl-d14 (Surr)	mg/L	NA	NA	67	150	NA	NA	NA	NA
	Phenol-d5 (Surr)	mg/L	NA	NA	16	120	NA	NA	NA	NA
1311/8081A - TCLP Pesticides	gamma-BHC (Lindane)	mg/L	0.0002	0.000006	57	128	24	53	120	15
	Chlordane (technical)	mg/L	0.002	0.000029	NA	NA	NA	NA	NA	NA
	Endrin	mg/L	0.0002	0.0000138	57	130	24	44	129	13
	Heptachlor	mg/L	0.0002	0.0000085	46	121	25	31	122	10
	Heptachlor epoxide	mg/L	0.0002	0.0000053	53	120	23	27	138	11
	Methoxychlor	mg/L	0.0002	0.0000141	48	165	26	31	160	10
	Toxaphene	mg/L	0.002	0.00012	NA	NA	NA	NA	NA	NA
	DCB Decachlorobiphenyl (Surr)	NA	NA	NA	16	120	NA	NA	NA	NA
	Tetrachloro-m-xylene (Surr)	NA	NA	NA	35	120	NA	NA	NA	NA
1311/8151A - TCLP Herbicides	Silvex (2,4,5-TP)	mg/L	0.002	0.00036	44	147	50	44	147	50
	2,4-D	mg/L	0.002	0.0004	45	149	50	45	149	50
	2,4-Dichlorophenylacetic acid	mg/L	NA	NA	32	132	NA	NA	NA	NA
1311/6010B - TCLP Metals	Arsenic	mg/L	0.01	0.00555	80	120	20	75	125	20
	Barium	mg/L	0.002	0.0007	80	120	20	75	125	20
	Cadmium	mg/L	0.001	0.0005	80	120	20	75	125	20
	Chromium	mg/L	0.004	0.001	80	120	20	75	125	20
	Lead	mg/L	0.005	0.003	80	120	20	75	125	20
	Selenium	mg/L	0.015	0.0087	80	120	20	75	125	20
	Silver	mg/L	0.003	0.0017	80	120	20	75	125	20
1311/7470A - TCLP Mercury	Mercury	mg/L	0.0002	0.00012	80	120	20	75	125	20
9045C - pH	Corrosivity (as pH)	S.U.	0.1	NA	99	101	NA	NA	NA	NA
1030	Ignitability	mm/sec	50	NA	97.5	102.5	NA	NA	NA	NA
SW-846, Sec. 7.3	Reactive Cyanide	mg/Kg	10	0.003	10	100	20	NA	NA	NA
SW-846, Sec. 7.3	Reactive Sulfide	mg/Kg	10	0.57	10	100	20	NA	NA	NA

TABLE 2a
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory:	TestAmerica Laboratories, Inc - Amherst, NY			**Matrix:**	Soil, Sediment, Concrete, Asphalt, RR Tie Chips, Solid Waste,and Backfill					
Analytical Method	**Parameter**	**Units**	**QL**	**MDL**	**LCS Accuracy Criteria (%R)**		**LCS Precision Criteria (RPD)**	**MS Accuracy Criteria (%R)**		**MS/MSD Precision Criteria (RPD)**
					Lower Limit	**Upper Limit**		**Lower Limit**	**Upper Limit**	
8082 - PCBs	PCB-1016	ug/wipe	1	1	46	191	50	46	191	50
	PCB-1221	ug/wipe	1	1	NA	NA	NA	NA	NA	NA
	PCB-1232	ug/wipe	1	1	NA	NA	NA	NA	NA	NA
	PCB-1242	ug/wipe	1	1	NA	NA	NA	NA	NA	NA
	PCB-1248	ug/wipe	1	1	NA	NA	NA	NA	NA	NA
	PCB-1254	ug/wipe	1	1	NA	NA	NA	NA	NA	NA
	PCB-1260	ug/wipe	1	1	57	174	50	57	174	50
	DCB Decachlorobiphenyl (Surr)	NA	NA	NA	55	168	NA	NA	NA	NA
	Tetrachloro-m-xylene (Surr)	NA	NA	NA	41	172	NA	NA	NA	NA

1 - Analytical Services Protocol (ASP), NYSDEC, July 2005.

VOCs - Volatile organic compounds
SVOCs - Semivolatile organic compounds
QL - Quantitation limit
LCS - Laboratory control sample
MDL - Method detection limit
mg/Kg - Milligram per kilogram
mg/L - Milligram per liter
mm/sec - Millimeter per second
MS/MSD - Matrix spike/matrix spike duplicate
ug/Kg - Microgram per kilogram
%R - Percent recovery
RPD - Relative percent difference
Surr - Surrogate
S.U. - Standard Units
NA - Not applicable

TABLE 2b
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory:	TestAmerica Laboratories, Inc - Amherst, NY			**Matrix:**	Groundwater, Wastewater, and Aqueous Waste					
Analytical Method	**Parameter**	**Units**	**QL**	**MDL**	**LCS Accuracy Criteria (%R)**		**LCS Precision Criteria (RPD)**	**MS Accuracy Criteria (%R)**		**MS/MSD Precision Criteria (RPD)**
					Lower Limit	**Upper Limit**		**Lower Limit**	**Upper Limit**	
8082 - PCBs	PCB-1016	ug/L	0.5	0.176	61	137	50	52	134	50
	PCB-1221	ug/L	0.5	0.176	NA	NA	NA	NA	NA	NA
	PCB-1232	ug/L	0.5	0.176	NA	NA	NA	NA	NA	NA
	PCB-1242	ug/L	0.5	0.176	NA	NA	NA	NA	NA	NA
	PCB-1248	ug/L	0.5	0.176	NA	NA	NA	NA	NA	NA
	PCB-1254	ug/L	0.5	0.25	NA	NA	NA	NA	NA	NA
	PCB-1260	ug/L	0.5	0.25	45	139	50	19	136	50
	DCB Decachlorobiphenyl (Surr)	NA	NA	NA	19	126	NA	NA	NA	NA
	Tetrachloro-m-xylene (Surr)	NA	NA	NA	23	127	NA	NA	NA	NA
8260B - VOCs	1,1,1-Trichloroethane	ug/L	1	0.82	73	126	15	73	126	15
	1,1,2,2-Tetrachloroethane	ug/L	1	0.21	70	126	15	70	126	15
	1,1,2-Trichloroethane	ug/L	1	0.23	76	122	15	76	122	15
	1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	0.31	60	140	20	60	140	20
	1,1-Dichloroethane	ug/L	1	0.38	71	129	20	71	129	20
	1,1-Dichloroethene	ug/L	1	0.29	58	121	16	58	121	16
	1,2,4-Trichlorobenzene	ug/L	1	0.41	70	122	20	70	122	20
	1,2-Dibromo-3-Chloropropane	ug/L	1	0.39	56	134	15	56	134	15
	1,2-Dibromoethane	ug/L	1	0.73	77	120	15	77	120	15
	1,2-Dichlorobenzene	ug/L	1	0.79	80	124	20	80	124	20
	1,2-Dichloroethane	ug/L	1	0.21	75	127	20	75	127	20
	1,2-Dichloropropane	ug/L	1	0.72	76	120	20	76	120	20
	1,3-Dichlorobenzene	ug/L	1	0.78	77	120	20	77	120	20
	1,4-Dichlorobenzene	ug/L	1	0.84	75	120	20	75	120	20
	2-Hexanone	ug/L	5	1.24	65	127	15	65	127	15
	2-Butanone (MEK)	ug/L	10	1.32	57	140	20	57	140	20
	4-Methyl-2-pentanone (MIBK)	ug/L	5	2.1	71	125	35	71	125	35
	Acetone	ug/L	10	3	56	142	15	56	142	15
	Benzene	ug/L	1	0.41	71	124	13	71	124	13
	Bromodichloromethane	ug/L	1	0.39	80	122	15	80	122	15
	Bromoform	ug/L	1	0.26	66	128	15	66	128	15
	Bromomethane	ug/L	1	0.69	55	144	15	55	144	15
	Carbon disulfide	ug/L	1	0.19	59	134	15	59	134	15
	Carbon tetrachloride	ug/L	1	0.27	72	134	15	72	134	15
	Chlorobenzene	ug/L	1	0.75	72	120	25	72	120	25
	Dibromochloromethane	ug/L	1	0.32	75	125	15	75	125	15
	Chloroethane	ug/L	1	0.32	69	136	15	69	136	15
	Chloroform	ug/L	1	0.34	73	127	20	73	127	20
	Chloromethane	ug/L	1	0.35	68	124	15	68	124	15
	cis-1,2-Dichloroethene	ug/L	1	0.81	74	124	15	74	124	15
	cis-1,3-Dichloropropene	ug/L	1	0.36	74	124	15	74	124	15
	Cyclohexane	ug/L	1	0.18	65	126	20	65	126	20
	Dichlorodifluoromethane	ug/L	1	0.68	59	135	20	59	135	20
	Ethylbenzene	ug/L	1	0.74	77	123	15	77	123	15
	Isopropylbenzene	ug/L	1	0.79	77	122	20	77	122	20
	Methyl acetate	ug/L	1	0.5	60	140	20	60	140	20
	Methyl tert-butyl ether	ug/L	1	0.16	64	127	37	64	127	37
	Methylcyclohexane	ug/L	1	0.16	60	140	20	60	140	20
	Methylene Chloride	ug/L	1	0.44	57	132	15	57	132	15
	Styrene	ug/L	1	0.73	70	130	20	70	130	20
	Tetrachloroethene	ug/L	1	0.36	74	122	20	74	122	20
	Toluene	ug/L	1	0.51	80	122	15	80	122	15
	trans-1,2-Dichloroethene	ug/L	1	0.9	73	127	20	73	127	20
	trans-1,3-Dichloropropene	ug/L	1	0.37	72	123	15	72	123	15
	Trichloroethene	ug/L	1	0.46	74	123	16	74	123	16
	Trichlorofluoromethane	ug/L	1	0.88	62	152	20	62	152	20
	Vinyl chloride	ug/L	1	0.9	65	133	15	65	133	15
	Xylenes, Total	ug/L	2	0.66	76	122	16	76	122	16
	1,2-Dichloroethane-d4 (Surr)	NA	NA	NA	66	137	NA	NA	NA	NA
	Toluene-d8 (Surr)	NA	NA	NA	71	126	NA	NA	NA	NA
	4-Bromofluorobenzene (Surr)	NA	NA	NA	73	120	NA	NA	NA	NA

TABLE 2b
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory: TestAmerica Laboratories, Inc - Amherst, NY **Matrix:** Groundwater, Wastewater, and Aqueous Waste

Analytical Method	Parameter	Units	QL	MDL	LCS Accuracy Criteria (%R)		LCS Precision Criteria (RPD)	MS Accuracy Criteria (%R)		MS/MSD Precision Criteria (RPD)
					Lower Limit	Upper Limit		Lower Limit	Upper Limit	
6010B - RCRA Metals	Arsenic	mg/L	0.01	0.00555	80	120	20	75	125	20
	Barium	mg/L	0.002	0.0007	80	120	20	75	125	20
	Cadmium	mg/L	0.001	0.0005	80	120	20	75	125	20
	Chromium	mg/L	0.004	0.001	80	120	20	75	125	20
	Lead	mg/L	0.005	0.003	80	120	20	75	125	20
	Selenium	mg/L	0.015	0.0087	80	120	20	75	125	20
	Silver	mg/L	0.003	0.0017	80	120	20	75	125	20
7471A - Mercury	Mercury	mg/L	0.0002	0.00012	80	120	20	75	125	20
1311/8260B - TCLP VOCs	Benzene	mg/L	0.001	0.00041	71	124	13	71	124	13
	Carbon tetrachloride	mg/L	0.001	0.00027	72	134	15	72	134	15
	Chlorobenzene	mg/L	0.001	0.00075	72	120	25	72	120	25
	Chloroform	mg/L	0.001	0.00034	73	127	20	73	127	20
	1,2-Dichloroethane	mg/L	0.001	0.00021	75	127	20	75	127	20
	1,1-Dichloroethene	mg/L	0.001	0.00029	58	121	16	58	121	16
	2-Butanone (MEK)	mg/L	0.005	0.00132	57	140	20	57	140	20
	Tetrachloroethene	mg/L	0.001	0.00036	74	122	20	74	122	20
	Trichloroethene	mg/L	0.001	0.00046	74	123	16	74	123	16
	Vinyl chloride	mg/L	0.001	0.0009	65	133	15	65	133	15
	1,2-Dichloroethane-d4 (Surr)	NA	NA	NA	66	137	NA	NA	NA	NA
	Toluene-d8 (Surr)	NA	NA	NA	71	126	NA	NA	NA	NA
	4-Bromofluorobenzene (Surr)	NA	NA	NA	73	120	NA	NA	NA	NA
1311/8270C - TCLP SVOCs	1,4-Dichlorobenzene	mg/L	0.01	0.00046	32	120	36	32	120	36
	2,4-Dinitrotoluene	mg/L	0.005	0.000447	59	125	20	59	125	20
	Hexachlorobenzene	mg/L	0.005	0.00051	38	131	15	38	131	15
	Hexachlorobutadiene	mg/L	0.005	0.00068	30	120	44	30	120	44
	Hexachloroethane	mg/L	0.005	0.00059	25	120	46	25	120	46
	3-Methylphenol	mg/L	0.01	0.0004	39	120	30	39	120	30
	2-Methylphenol	mg/L	0.005	0.0004	39	120	27	39	120	27
	4-Methylphenol	mg/L	0.01	0.00036	39	120	24	36	120	24
	Nitrobenzene	mg/L	0.005	0.00029	52	120	24	52	120	24
	Pentachlorophenol	mg/L	0.01	0.0022	39	136	37	39	136	37
	Pyridine	mg/L	0.025	0.00041	10	120	49	10	120	49
	2,4,5-Trichlorophenol	mg/L	0.005	0.00048	65	126	18	65	126	18
	2,4,6-Trichlorophenol	mg/L	0.005	0.00061	64	120	19	64	120	19
	2,4,6-Tribromophenol (Surr)	mg/L	NA	NA	52	132	NA	NA	NA	NA
	2-Fluorobiphenyl (Surr)	mg/L	NA	NA	48	120	NA	NA	NA	NA
	2-Fluorophenol (Surr)	mg/L	NA	NA	20	120	NA	NA	NA	NA
	Nitrobenzene-d5 (Surr)	mg/L	NA	NA	46	120	NA	NA	NA	NA
	p-Terphenyl-d14 (Surr)	mg/L	NA	NA	67	150	NA	NA	NA	NA
	Phenol-d5 (Surr)	mg/L	NA	NA	16	120	NA	NA	NA	NA
1311/8081A - TCLP Pesticides	gamma-BHC (Lindane)	mg/L	0.0002	0.000006	57	128	24	53	120	15
	Chlordane (technical)	mg/L	0.002	0.000029	NA	NA	NA	NA	NA	NA
	Endrin	mg/L	0.0002	0.0000138	57	130	24	44	129	13
	Heptachlor	mg/L	0.0002	0.0000085	46	121	25	31	122	10
	Heptachlor epoxide	mg/L	0.0002	0.0000053	53	120	23	27	138	11
	Methoxychlor	mg/L	0.0002	0.0000141	48	165	26	31	160	10
	Toxaphene	mg/L	0.002	0.00012	NA	NA	NA	NA	NA	NA
	DCB Decachlorobiphenyl (Surr)	NA	NA	NA	16	120	NA	NA	NA	NA
	Tetrachloro-m-xylene (Surr)	NA	NA	NA	35	120	NA	NA	NA	NA
1311/8151A - TCLP Herbicides	Silvex (2,4,5-TP)	mg/L	0.002	0.00036	44	147	50	44	147	50
	2,4-D	mg/L	0.002	0.0004	45	149	50	45	149	50
	2,4-Dichlorophenylacetic acid	mg/L	NA	NA	32	132	NA	NA	NA	NA

TABLE 2b
ANALYTICAL LABORATORY QUANTITATION AND DETECTION LIMITS
AND PRECISION AND ACCURACY CRITERIA
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Laboratory:	TestAmerica Laboratories, Inc - Amherst, NY			**Matrix:**	Groundwater, Wastewater, and Aqueous Waste					
Analytical Method	**Parameter**	**Units**	**QL**	**MDL**	**LCS Accuracy Criteria (%R)**		**LCS Precision Criteria (RPD)**	**MS Accuracy Criteria (%R)**		**MS/MSD Precision Criteria (RPD)**
					Lower Limit	**Upper Limit**		**Lower Limit**	**Upper Limit**	
1311/6010B - TCLP Metals	Arsenic	mg/L	0.01	0.00555	80	120	20	75	125	20
	Barium	mg/L	0.002	0.0007	80	120	20	75	125	20
	Cadmium	mg/L	0.001	0.0005	80	120	20	75	125	20
	Chromium	mg/L	0.004	0.001	80	120	20	75	125	20
	Lead	mg/L	0.005	0.003	80	120	20	75	125	20
	Selenium	mg/L	0.015	0.0087	80	120	20	75	125	20
	Silver	mg/L	0.003	0.0017	80	120	20	75	125	20
1311/7470A - TCLP Mercury	Mercury	mg/L	0.0002	0.00012	80	120	20	75	125	20
9040B - pH	Corrosivity (as pH)	S.U.	0.1	NA	99	101	NA	NA	NA	NA
1010	Ignitability	°F	50	NA	97.5	102.5	NA	NA	NA	NA
SW-846, Sec. 7.3	Reactive Cyanide	mg/L	10	0.003	10	100	20	NA	NA	NA
SW-846, Sec. 7.3	Reactive Sulfide	mg/L	10	0.57	10	100	20	NA	NA	NA

1 - Analytical Services Protocol (ASP), NYSDEC, July 2005.

VOCs - Volatile organic compounds
SVOCs - Semivolatile organic compounds
QL - Quantitation limit
°F - Degrees Fahrenheit
LCS - Laboratory control sample
MDL - Method detection limit
mg/L - Milligram per liter
MS/MSD - Matrix spike/matrix spike duplicate
ug/L - Micrograms per liter
%R - Percent recovery
RPD - Relative percent difference
Surr - Surrogate
S.U. - Standard Units
NA - Not applicable

TABLE 3
SAMPLE CONTAINER, PRESERVATION, AND HOLDING TIME REQUIREMENTS
GENERAL ELECTRIC PARTS AND REPAIR SERVICE CENTER
TONAWANDA, NEW YORK

Analytical Method/Parameter	Container Size/Type*	Number of Containers to Be Collected	Preservation	Maximum Holding Time (from VTSR)
Aqueous Samples (Groundwater, Wastewater, and/or Aqueous Waste)				
Volatile Organic Compounds (VOCs)	40 mL glass VOC vial	3	HCl to pH<2, 4 °C	Analysis: 12 days (5 days if not preserved to pH<2)
Polychlorinated Biphenyls (PCBs)	1L amber glass	2	4 °C	Extraction: 5 days; Analysis: 40 days
RCRA Metals	1L plastic	1	HNO_3 to pH < 2	Analysis: 180 days
Toxicity Characterization Leaching Procedure (TCLP) VOCs	40 mL glass VOC vial	3	4 °C	TCLP Extaction: 7 days; Analysis: 7 days
TCLP Semivolatile Organic Compounds (SVOCs)	1L amber glass	3		TCLP Extaction: 5 days; Prep Extraction: 7 days; Analysis: 40 days
TCLP Pesticides				TCLP Extaction: 5 days; Prep Extraction: 7 days; Analysis: 40 days
TCLP Herbicides				TCLP Extaction: 5 days; Prep Extraction: 7 days; Analysis: 40 days
TCLP Metals				TCLP Extaction: 180 days/28 days (Hg); Analysis: 180 days/28 days (Hg)
Corrosivity (as pH)	100 mL plastic	1		Analyze immediately
Ignitability	250 mL plastic	1		Analysis: 14 days
Reactive Cyanide	250 mL plastic	1		Analysis: 14 days
Reactive Sulfide	250 mL plastic	1		Analysis: 14 days
Solid Samples (Soil, Concrete, Asphalt, RR Tie Chips, Sediment, Solid Waste, and/or Backfill)				
PCBs	4 oz. glass jar	1	4 °C	Extraction: 5 days; Analysis: 40 days
TCLP VOCs	4 oz. glass jar with Teflon septa	2		TCLP Extaction: 7 days; Analysis: 7 days
TCLP SVOCs	8 oz. amber glass jar	2		TCLP Extaction: 5 days; Prep Extraction: 7 days; Analysis: 40 days
TCLP Pesticides				TCLP Extaction: 5 days; Prep Extraction: 7 days; Analysis: 40 days
TCLP Herbicides				TCLP Extaction: 5 days; Prep Extraction: 7 days; Analysis: 40 days
TCLP Metals				TCLP Extaction: 180 days/28 days (Hg); Analysis: 180 days/28 days (Hg)
Corrosivity (as pH)	8 oz. glass jar	1		Analysis: 14 days
Ignitability				Analysis: 14 days
Reactive Cyanide				Analysis: 14 days
Reactive Sulfide				Analysis: 14 days
VOCs	2 oz. glass jars with Teflon septa	3	4 °C	Analysis: 12 days
SVOCs	8 oz. amber glass jar	1	4 °C	Extraction: 5 days; Analysis: 40 days
Pesticides	8 oz. amber glass jar	1	4 °C	Extraction: 5 days; Analysis: 40 days
PCBs	8 oz. amber glass jar	1	4 °C	Extraction: 5 days; Analysis: 40 days
Herbicides	8 oz. amber glass jar	1	4 °C	Extraction: 5 days; Analysis: 40 days
Metals	4 oz. glass jar	1	4 °C	Analysis: 180 days
Hexavalent Chromium	4 oz. glass jar	1	4 °C	Analysis: 24 hours
Total Cyanide	4 oz. glass jar	1	4 °C	Analysis: 12 days
Wipe Samples				
PCBs	16 oz. glass; filter soaked in hexane	1	4 °C	Extraction: 5 days Analysis: 40 days

* Number and size of containers may vary based on laboratory sample volume requirements.

VTSR - Validated time of sample receipt

ATTACHMENT A

RESUMES OF KEY PERSONNEL

URS

George Kisluk

Senior Environmental Chemist

Areas of Expertise

Environmental Chemistry

Years of Experience

With URS: 17 Years

With Other Firms: 13 Years

Education

MBA/ Organizational Management/ Syracuse University/ 1991

BS/ Biology/ Alliance College Minor, Polish/ 1980

Registration/Certification

40 Hr. OSHA Site Worker Protection Training

Overview

Mr. Kisluk is a Senior Environmental Chemist with broad experience in environmental chemistry ranging from the analytical laboratory to onsite hazardous waste remediation projects. Responsibilities have included remedial investigation coordination, preparations of work plans, budgets, implementation of sampling and analytical procedures, onsite supervision of technical activities, qualitative health risk assessments, data validation and data usability for remedial investigations and activities. Mr. Kisluk has also performed quality assurance (QA) reviews for technical issues relating to chemistry on reports, plans, and correspondence and has also performed on-site laboratory audits. In addition to chemistry related activities, Mr. Kisluk has also performed construction inspection services at several landfill remediation and closure projects.

He has experience in the operation, maintenance, and troubleshooting of analytical instrumentation including Hewlett Packard, Perkin Elmer, Tracor, and SRI Gas Chromatographs, Perkin Elmer Atomic Absorption Spectrometers, and Hewlett Packard and Finnegan Gas Chromatographs/Mass Spectrometers. He has experience with portable analytical equipment including the Photovac Voyager and the Photovac PetroPro. He is also computer literate and knowledgeable in the use of word processing, spreadsheet and database programs including Word, WordPerfect, Excel, QuatroPro, FoxPro, and Access software.

Project Specific Experience

New York State Department of Environmental Conservation Projects: Remedial Investigation (RI) Coordinator for 12 year/$20 million Standby Contract and 7 year $7 million Standby Contract which includes Meeker Avenue Plume Trackdown Site; Site Characterization, Kink Cosmo Cleaners Site RI/Feasibility Study (FS), Former Spic and Span Cleaners and Dyers Site RI/FS, College Point 2 and 3 Site Characterizations and RI, Camp Summit Remedial Design (RD), Camp Georgetown RD, Camp Pharsalia RD, 93 Main Street RI, American Cleaners RI/FS, Busy Bee Disposal Site, Kliegman Brothers Operable Unit (OU) 1 and OU2 RI/FS, Chatham Woods Immediate Investigation Work Assignment (IIWA), North of Brush Avenue IIWA, South of Home Depot IIWA, Home Depot OU 2 IIWA, White Sun Cleaners IIWA, 1st Ave. and East 90th St. IIWA and Site Characterization, North of 720 Melrose Ave. IIWA and Site Characterization, Bronxchester Urban Renewal Agency Site Characterization, College Point 2 Plume Trackdown IIWA, Polymer Applications Operations & Maintenance (O&M), and Hillcrest Site Investigation. His duties and responsibilities on these projects included the review of project specific scopes of work and the subsequent development of work plans and budget estimates. As RI coordinator, he is responsible for the coordination of field investigation activities such as drilling, geoprobe boring, heavy equipment, mobile laboratories, and surveying subcontractors, as well as data interpretation and preparation of RI, Site Characterization and IIWA reports. He also has duties and the project chemist, performing data validation and preparing Data Usability Summary Reports (DUSR) on multiple work assignments.

New York State Department of Transportation Projects: Project Chemist for the NYSDOT HMARD Contracts which includes but is not limited to the following sites: Southtowns Connector, Vulcan Street Reconstruction Buffalo, Rt 104 JRD Property, Route 286 Penfield Pembroke, Rt 63&262 Oakland, Rt 5 at Beach Road Evans, I-690 over CSX Syracuse, Rt 63 Peoria Curve, I-81, Butternut Syracuse, Rt 104 Scriba, Rt 695 at Rt 5 Camillus, Rt 16 Ishua, Rt 78&31 Lockport, I-81 Drainage Syracuse, Rt 20A East Aurora, Rt 174 Marcellus, Rt 96 Spencer, Watkins Glenn Residency, Fredonia Sub-Residency, Rt 240 Colden UST removal, Rt 62 Niagara Falls, Campbell Blvd Bridge, I-81 Destiny Drum Removal, Rt 5&20 Avon, Rt 62 Hamburg Former Sunoco Environmental Investigation, Rt 39 Arcade RR Crossing, Limestone Plaza, Rt 5 Outer Harbor Buffalo, North Syracuse Residency Waste Paint removal, Rt 250 Fairport Crossing, Rt 281 Cortland, Erie Blvd over West Street Syracuse, Rt 15A Rochester Farm DSI, Rt 5&20 Seneca Falls, Oak Street Maintenance Facility. His duties and responsibilities on these types of projects include the review of project specific scopes of work and the subsequent development of analytical programs and analytical budget estimates. As Senior Chemist, he is responsible for the coordination of analytical laboratory services as well as analytical data management and data review. He assists with fieldwork as needed. Mr. Kisluk contributes to the preparation of reports to the NYSDOT.

New York State Electric & Gas (NYSEG) Former MGP Sites: Senior Chemist during remediation phase at multiple NYSEG Former MGP sites in Plattsburgh, Lockport, Ithaca, Geneva and Rochester, New York. Acting as liaison between URS and the laboratories to coordinate field sampling events and ensure all program requirements are met, coordinating and performing data validation for compliance with method and project guidelines, and preparing data for inclusion into remediation reports. He also was responsible coordinating between site personnel and the appropriate agencies in the submission of analytical data for wastewater discharge/monitoring. Performed on-site analysis of air samples using PhotoVac Voyager for community air monitoring.

Meeker Avenue Plume Trackdown: Technical Coordinator responsible for all facets of the site characterization work including budget estimates, work plans, health and safety plans, subcontractor procurement, project planning and tracking, coordination with subcontractors and report writing. This $1.6 million project for the identification of sources of trichloroethene (TCE) and tetrachloroethene (PCE) contamination in groundwater and soil included monitoring well installations and sampling, direct push soil boring, membrane interface probe (MIP) borings, soil gas conduit installation and sampling, screen point groundwater sampling, dense non-aqueous phase liquid (DNAPL) sampling and analysis,

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compound specific isotope analysis (CSIA) analysis and interpretation, and soil vapor intrusion (SVI) sampling of residential properties. The SVI program consisted of community outreach, scheduling with building owners, coordination with the NYSDEC and NYS Department of Health and report preparation. Mr. Kisluk also served a translator for the Polish speaking residents of the neighborhood. The NYSDEC subsequently awarded URS a $7 million Single Source Standby Contract for the Meeker Avenue Area Plume Trackdown to perform additional Site Characterizations and RI/FS'.

College Point Site: Technical Coordinator responsible for all facets of the site multi-phase investigation which includes site characterization, interim remedial measures and remedial investigation work including budget estimates, work plans, health and safety plans, subcontractor procurement, project planning and tracking, coordination with subcontractors and report writing. This project for the identification of sources of polychlorinated biphenyl (PCB) and petroleum product contamination in soil included monitoring well installations and sampling, direct push soil boring, soil gas conduit installation and sampling, light non-aqueous phase liquid (LNAPL) sampling and analysis.

Consolidated Edison – Various Sites: Senior Chemist responsible for coordinating between the field and laboratory for field sampling events and to ensure all program requirements are met, coordinating and performing data validation for compliance with method and project guidelines, and preparing data for inclusion into remediation reports.

1st Avenue & East 90th Street and North of 720 Melrose Avenue Site Characterizations: Technical Coordinator responsible for all facets of the site characterization work including budget estimates, work plans, health and safety plans, subcontractor procurement, project planning and tracking, coordination with subcontractors and report writing. The two similar projects have a combined budget of over $1.1 million and included monitoring well installations and sampling using low flow and passive diffusion bag (PDB) sampling procedures, direct push soil borings soil gas conduit installation and sampling, screen point groundwater sampling, slug testing and rock coring for the identification of source(s) of PCE contamination in groundwater.

Polymer Applications: Senior Chemist as part of the team for the investigation and remediation of a former chemical processing facility in Tonawanda, NY. Duties included monthly O&M monitoring of effluent discharge from the onsite water treatment system and vapor recovery system. Mr. Kisluk was also responsible for the analytical program during the Interim Remedial Measures (IRM) phase of work at the site.

Hamburg Former Sunoco Environmental Investigation: Senior Chemist Responsible for the on site inspection and sampling of potentially hazardous waste remaining at this former automobile service station site prior to NYSDOT acquisition of the property.

Fredonia Sub-Residency: Senior chemist responsible for the analytical aspect of the site work for this in-situ bioremediation treatability study at this sub residency. The site is approximately two acres in size and is used by the NYSDOT for offices and storage of their truck fleet and equipment. The Fredonia Sub-Residency has a history of petroleum contamination. Groundwater is monitored quarterly for the presence of petroleum products and bacterial viability.

East Ferry Street: Senior Chemist responsible for the onsite testing for carcinogenic polynuclear aromatic hydrocarbons (PAHs) using immunoassay testing procedures with confirmation analysis by an offsite laboratory.

93 Main Street: Senior Chemist responsible for the onsite testing for pesticides and polychlorinated biphenyls (PCBs) using immunoassay testing procedures with confirmation analysis by an offsite laboratory.

Brownfield Redevelopment: Senior Chemist for several brownfield redevelopment projects located in the cities of Buffalo and Niagara Falls, New York for public and private sector clients. Duties and responsibilities on these projects included the review of project specific scopes of work and assisting with the development of work plans and budget estimates. Additionally, performed immunoassay testing for PCBs and PAHs for quick turnaround of results to identify areas of contamination with confirmation analysis by an offsite laboratory. As senior chemist, he was responsible for data validation and preparation of Data Usability Summary Reports.

Plattsburgh AFB, NY: Senior Environmental Chemist responsible for implementing current AFCEE QAPP requirements into the existing sampling and analysis plans for an RCRA facility closure plan and groundwater impact study. Performed onsite testing for several parameters using immunoassay with confirmation analysis by an offsite laboratory and Hach titration-based test kits for quick turnaround to identify areas of contamination.

New York Power Authority: Senior Chemist responsible for the preparation of the Sampling and Analysis Plan for the Niagara Power Project relicensing. Assisted with groundwater and surface water sampling, data validation, and data validation reports.

US Army Corps of Engineers Projects: Omaha District and Baltimore District projects including Pope Air Force Base and Roebling Steel Superfund Site. Senior Chemist responsible for preparation of Sampling and Analysis Plans, data validation, Quality Control Summary Reports (QCSR), Analytical Data Packages (ADP), and Quality Assurance Summary Data (QASD). Also responsible for preparation of chemical quality assurance reports (CQAR) comparing primary and split sample data.

153 Fillmore Avenue Voluntary Cleanup: Senior Chemist as part of the team for the investigation and remediation of former paint/roofing materials manufacturing facility in the City of Tonawanda. Following cessation of manufacturing operations the site was utilized for solvent recycling and subsequently abandoned. Included removal and disposal of underground storage tanks and 2,000 tons of solvent-contaminated soils, investigation of the remaining portions of site, asbestos survey and development of remedial alternatives to allow site redevelopment.

Former Dowell Facility Voluntary Cleanup: Senior Chemist as part of the team for the investigation and remediation of a former oil-field services facility in Cheektowaga, NY. This industrial facility prepared and supplied various types of cements and drilling fluids/muds to the oil drilling industry in western New York.

Union Ship Canal Voluntary Cleanup: Senior Chemist as part of the team for the investigation of Subparcel 3 associated with the former Hanna Furnace and Union Ship Canal site in Lackawanna, NY. This "High-Profile" Brownfields project is being performed under the NYSDEC Voluntary Cleanup Program and involves City, County, State and Federal agencies as well as local attorneys and developers. Responsibilities included laboratory procurement, coordination, data validation, and preparation of the Data Usability Summary Report.

Pope AFB, NC: Senior Chemist responsible for ensuring all historical analytical data previously generated from long-term operation and maintenance, and long-term monitoring is entered into and compliant with the IRPIMS data base requirements. Also responsible for the data validation of accuracy of chemical data in the site-wide database maintained in the ERPIMS format.

Bethlehem Steel Corporation, Lackawanna, NY: Senior Chemist responsible for laboratory procurement, coordination with laboratory, data validation, analytical quality control reports and accuracy of chemical data in electronic database of site-wide remedial investigation activities. Also assisted with the preparation of solid waste management unit (SWMU) reports.

Reich Farm Superfund Site: Senior Chemist responsible for data validation and data validation reports for operation, maintenance, and monitoring samples from the site located in Dover Township, NJ.

Hampton Roads Transit: Senior Chemist responsible for data validation and data validation report in accordance with USEPA Region III requirements for samples collected for the Norfolk Light Rail Transit project in the city of Norfolk VA.

Aberdeen Proving Grounds: Senior Chemist as part of the third party data validation team. Responsibilities included data validation, preparation and QA/QC review of data validation reports.

New York City Department of Design and Construction (NYCDDC) UST Project: Assist project manager with the preparation of a monthly financial report for 65 tank and remediation sites. Responsible for compiling and summarizing labor, construction management, subcontractor, and construction cost on a site by site basis in a monthly report to the NYCDDC. Also responsible for the quality control/quality assurance review of analytical data and the maintenance of the project-wide analytical database.

F.E. Warren AFB, WY: Senior Chemist responsible for updating, reviewing and correcting all base-wide historical chemical data in the electronic database for accuracy and compliance with IRPIMS requirements.

Lake RI, Data Validation: Senior Chemist performing QA review of data validation and validation reports.

Wegmans, Buffalo, NY: Senior Chemist responsible for reviewing groundwater monitoring data and preparing the quarterly monitoring reports for this former brownfield restored for use as a supermarket.

Searsport Pipeline, ME: Senior Chemist responsible for sampling activities in the field during the site assessment, which utilized methanol preservation techniques for volatile organic analyses. Also participated in data validation and preparation of quality control reports.

Roebling Steel, NJ: Senior Chemist responsible for updating the chemical data acquisition plan (CDAP) as part of the wharf restoration project. Also responsible for procuring the analytical laboratories, coordination of laboratory bottle shipment with the field in order to comply with the State of New Jersey's sample container 48 hour holding time requirements, data validation, preparation on the QCSR, QASD, and ADP.

Salem Acres, Salem, MA: Senior Environmental Chemist responsible for performing on-site ignitability screening test. Assisted in preparing the preconstruction survey report. Provided inspection services during semi-annual monitoring of groundwater and sediments along with data validation and preparing the preconstruction monitoring report. Also provided inspection services assisting the resident engineer during the remediation phase of the project.

Dublin Road Project, Medina, NY: PRP Inspector responsible for observing and reviewing construction activities as a representative for NYSDEC during the final phase of remediation activities at this landfill remediation and wetlands restoration project.

BFGSI, Cheektowaga, NY: Site Inspector during the installation of a gas vent and leachate collection trench system, as part of the landfill closure plan.

LiPari Landfill, NJ: Senior Environmental Chemist responsible for reviewing historical data and assisted in updating the electronic database using FoxPro to include all available historical analytical data for the site as part of litigation activities.

McGuire AFB, NJ: Senior Environmental Chemist responsible for the preparation of the quality assurance project plan, preparing cost proposals for analytical services and subcontract specifications. Summarized data usability of previous analytical work. Also responsible for performing data validation services and preparing data validation reports for samples collected at the base.

Greenbrook Flood Control Project, NJ: Senior Environmental Chemist responsible to the USACE - New York District for coordination of laboratory and field activities during the field investigation phase. Responsibilities also include data validation and preparing the quality control summary report (QCSR). Data validation parameters included radiation, wet chemistry and dioxin analyses.

Fort Edward Landfill, NY: Senior Environmental Chemist responsible for coordination of laboratory and field activities data validation using Region II validation guidelines and NYSDEC ASP methodologies. Also prepared a data usability report for initial two rounds of sampling as part of the remedial design and construction project as a part of a NYSDEC State Superfund Work Assignment.

Gentile AFB, OH: Environmental Chemist assisting the Senior Chemist during the data validation phase of the project.

PAS Oswego, NY: Senior Environmental Chemist responsible for coordination of laboratory and field activities during the semi-annual monitoring event. Also responsible for data validation and preparation of the environmental monitoring report.

Fort Eustis, VA: Senior Environmental Chemist for USACE Baltimore District. Member of data validation team responsible for auditing non-conventional methods such as radiological and wet chemistry parameters in addition to conventional organic and inorganic analyses.

Bailey Creek, Ft. Eustis, VA: Senior Environmental Chemist for USACE Baltimore District. Responsible for data validation and determining data usability in accordance with USEPA Region III data validation guidelines and USEPA methodologies. Parameters audited included wet chemistry analyses.

Loring AFB, ME: Senior Environmental Chemist responsible for coordination of laboratory and field activities during for the Test Pit Program. Also responsible for the data audit and data usability report in compliance with the AFCEE Handbook.

North Franklin Street Site, NY: Senior Environmental Chemist responsible for a quality assurance review of a quality assurance project plan for the remediation activities at the site.

Nike Battery PH 58: Senior Environmental Chemist responsible for the preparation of the chemical data acquisition plan (CDAP).

Nike Battery PH 41/43 NY 78: Senior Environmental Chemist responsible for the coordination of laboratory and field activities during the field investigation phase of the project.

Hyatt Clark Industries Facility, NJ: Assisted in updating the electronic database to include all historical analytical data for the site as part of the remedial investigation of the site.

Baird & McGuire Site, MA: Project Chemist on a Superfund site utilizing a mobile incinerator for the cleanup of over 400,000 tons of contaminated soil. Responsible for USACE certification and operation of an onsite analytical laboratory for quick turnaround analysis of soil and water for organic and inorganic parameters. Prepared analytical reports for onsite samples, performed data validation on offsite analytical data. Reviewed and revised sampling and analytical work plans. Member of team coordinating sampling activities of soil and air matrices for the trial burn.

EPA Region I ERCS Site, NH: Project Chemist responsible for the sampling and haz-cat analytical of over 750 drums and containers at chemical facility abandoned after a fire.

York Oil Site, NY: Project Chemist/Team Member at an EPA-NPL site involving a remedial investigation, as part of a rapid site assessment for the delineation of waste oils containing PCBs. Responsible for the analytical group utilizing an onsite laboratory.

EPA Region II ERCS Site, Lockport, NY: Project Chemist responsible for the sampling and haz-cat analysis of over 1,500 drums at an abandoned site. Coordinated offsite analytical work for disposal analysis.

EPA Region II ERCS Site, Tuckahoe, NY: Project Chemist responsible for the identification and segregation of potentially unstable chemicals stored at a vitamin manufacturing facility. Also responsible for the sampling and haz-cat analysis of over 500 drums and containers. Assisted the T&D coordinator in inventory and lab-packing of small chemical containers.

Pfohl Brothers Landfill, NY: Project Chemist responsible for preparing work plan for onsite sampling and analytical activities for this NYSDEC project. Responsible for the sampling and haz-cat analysis teams. Coordinated offsite analytical work with laboratories. Prepared waste profiles, manifest, and coordinated disposal of wastewater generated from on-site activities. Member of the post remediation sampling team as part of the O&M activities at this site.

Conrail, Jamestown Rail Yard, NY: Project Chemist responsible for coordinating activities in the cleanup of diesel contaminated soils. Acted as client representative for meetings with NYSDEC officials. Also responsible for coordinating the disposal of over 500 cu. yd. of soil and several waste drums.

Conrail Rail Yard, Geneva, NY: Project Chemist responsible for coordinating activities for the disposal of over 300 cu. yd. of diesel contaminated soil. Prepared and implemented work plan in the determination whether previous clean-up activities performed by Conrail were sufficient in achieving state mandated clean up levels for diesel fuel releases. Prepared final report for NYSDEC and Conrail.

Conrail Rail Yard, Lyons, NY: Project Chemist responsible for the sampling, analysis, and coordinating disposal of 20 drums at this site.

Fike Chemical, WV: Lead Chemist at a Region III ERCS site. Responsible for the onsite sample analysis and data interpretation. Participated in T&D management, including waste profiles and manifest documentation. Responsible for maintaining accurate database information. The project utilized a mobile laboratory for the analysis and ultimate disposal in excess of 5,500 drums and 250 storage tanks.

Bettendorf, IA: Chemist as member of an on-site analysis team utilizing a mobile laboratory for PCB contamination in the cleanup of a major manufacturing facility involved in a real estate transaction.

Lancaster, PA: Chemist as member of a team performing an investigative site evaluation for the presence of contamination from industrial activity at a facility involved in a real estate transaction.

Sun Pipeline Co., OH: Chemist as a member of a team responsible for the analysis of water for toluene contamination utilizing a mobile laboratory to determine its suitability for municipal use after a major spill resulting from pipeline damage. Also assisted the engineer responsible for designing the air stripping mechanism made specifically for the project. Duties included monitoring the performance of the unit.

Ashland Petroleum, PA: Chemist as a member of a team responsible for the analysis of water for diesel fuel contamination utilizing a mobile laboratory to determine its suitability for municipal use after a major spill resulting from a holding tank collapse. His suggestion on improving the analytical method for determining contamination levels from the original proposal proved valuable in reducing analysis and turnaround time.

Ciba Geigy, NJ: Lead Chemist responsible for all onsite analytical data and instrumentation. Responsible for method development, participated in waste characterization and report preparation in a landfill remediation project utilizing three mobile laboratories in the analysis and ultimate disposal in excess of 15,000 drums.

Swartz Creek, MI: Senior Chemist responsible for all onsite data and instrumentation. Responsible for method development and report writing in the analysis of air and soil samples utilizing two mobile laboratories. Also responsible for site mobilization and demobilization of the analytical unit and a team of two chemists in the removal of 75,000 tons of waste and contaminated soil.

Lehigh Electric Site, PA: Chemist responsible for data generated on air, soil, oil, and water samples for PCB analysis at this early Superfund project in 1983. Responsible for the collection and distribution of samples for analysis. Responsible for the mobilization and demobilization of company's first mobile laboratory, utilized in the decommissioning and removal of electrical transformers containing PCB fluid.

Organic Preparations Supervisor responsible for day-to-day operations of the Organic Preparations Department. Duties included assigning proper EPA-approved methods to the appropriate organic analysis, including quality control requirements, scheduling to meet holding times, training personnel, equipment, inventory, and maintenance.

URS

Karen Peppin

Project Engineer

Overview

Ms. Peppin has over fourteen years experience in conducting feasibility studies, conducting design level investigations, preparing bid documents, performing oversight of remedial activities, and preparing remedial work plans and reports documenting remedial activities. Prior to joining URS (Dames & Moore) in 1998, Ms. Peppin served as Assistant Manager Construction Materials Testing, Maxim Technologies of New York (Empire Soils).

Years of Experience

With URS: 14 Years

With Other Firms: 3 Years

Education

B.S./Civil Engineering, with concentration in Environmental Engineering/Rensselaer Polytechnic Institute, Troy, New York/1995

A.S./Engineering Science, Adirondack Community College/ Queensbury, New York/1993

Registration/Certification

40-hr OSHA HAZWOER
OSHA Supervisor
Confined Space

Expired - NICET II: Construction Materials Testing (Soils)

Expired - NICET I: Construction Materials Testing (Concrete)

Expired - Troxler

Project Specific Experience

Parts and Repair Service Center, Tonawanda, New York. Project Manager for an apparatus service shop in Tonawanda, New York through the Corrective Measure process, including revision of the Corrective Measurers Study (CMS) final report and preparation of monthly progress reports. Prepared work plans, coordinated implementation, evaluated data, and prepared summary reports for additional investigation of soil along the building foundation and evaluation of storm sewer and creek sediments.

New Bedford Superfund Site, New Bedford, Massachusetts. Engineer for design level investigation, specification preparation, and contractor selection for a former capacitor manufacturing facility in New Bedford, Massachusetts. Supported oversight of accelerated schedule for hazardous material removal and building demolition by servings as Interim Site Safety Officer and providing sampling support for perimeter air monitoring and storm water discharge monitoring.

Containment Cell, Whitehall, New York. Resident Engineer for the construction of a containment cell comprised of a sheet pile wall and cap system. Reviewed contractor submittals, documented construction activities, and prepared Final Engineering Report.

MGP Site Remediation, Plattsburgh, New York. Project Coordinator for remediation of an 11-acre former manufactured gas plant. Responsibilities included providing remedial oversight, collecting waste characterization and wastewater treatment plant effluent samples, coordinating waste disposal, and coordinating remedial work with utility relocation activities. Prepared Final Report+-.

Feasibility Study, Schenectady, New York. Project Engineer for a Feasibility Study (FS) for a 628-acre active manufacturing facility in Schenectady, New York. The FS included evaluation of remedial alternatives for onsite landfills, VOC-impacted groundwater, the presence of free-product, and nearby drinking water supplies.

CMS Report and Corrective Measure Implementation Work Plan, Albuquerque, New Mexico. Project Engineer for the CMS Report and Corrective Measure Implementation Work Plan, and assisted with design investigations and preparation of bid documents for a former apparatus service shop in Albuquerque, New Mexico.

RCRA Container Storage Area, Tonawanda, New York. Project Manager for closure of a RCRA container storage area at a facility in Tonawanda, New York. Tasks include evaluating the option of closing the storage unit, preparing a *Revised Closure Plan*, coordinating implementation, and preparing the *Closure Certification Report*.

Commercial PCB Storage Area, Tonawanda, New York. Project Manager for closure of an EPA-approved Commercial PCB Storage Area at a RCRA permitted facility in Tonawanda, New York. Tasks included evaluating the option of closing the storage unit, preparing a revised *Closure Plan*, and coordinating implementation. Project work included multi-phase investigation to delineate impacts adjacent to the storage area and resulted in epoxy coating of this active facility's concrete floor in accordance with the procedures specified under TSCA for continued use of PCB-impacted porous surfaces.

Remedial Design and Project Management, Medford, Massachusetts. Project Engineer for remedial engineering support for projects implemented under the Massachusetts Contingency Program at for a transformer repair facility in Medford, Massachusetts. Ms. Peppin prepared a Release Abatement Measure (RAM) Plan for upgrading a consumptive-use fuel oil tank, prepared a RAM Plan for removing PCB containing sediments from storm sewers, provided field oversight for a Utility-Related Abatement Measure (URAM), prepared a URAM Completion Report, prepared a Phase III Remedial Action Plan for evaluating remedial alternatives for PCB-impacted soil, PCB-impacted sediment in storm sewers, and an offsite surface water body, designed and conducted design level investigations for the storm sewers and surface water body, evaluated different excavation scenarios for surface water sediments, and incorporated the remedial design into a Phase IV Remedy Implementation Plan for submission to the Massachusetts Department of Environmental Protection. Ms. Peppin provided engineering support for obtaining the ten permits and agreements from seven federal, state, or local entities necessary to conduct the remedial work. Ms. Peppin served as Project Manager and Project Engineer through contracting, remedial action implementation, and preparing Response Action Outcome Statements (RAOs) phases of the project, as wells as the final stages of obtaining the permits. Contracting support included preparing the bid specifications and assisting in evaluating contractor bids. Remedial actions for the off-site storm sewers and surface water body were performed from 2006 to 2007 with full time oversight and Environmental Inspector Services performed by URS. Wetland restoration monitoring was successfully completed in 2009. Ms. Peppin prepared the Response Action Outcome Statements for the four portions of this site where permanent or temporary remedies have been achieved. Inspections of the cap at the facility, groundwater monitoring, and semi-annual reporting activities are ongoing.

Interim Remedial Measure, Schenectady, New York. Project Engineer for an Interim Remedial Measure (IRM) to address seepage from an inactive industrial landfill at a facility in Schenectady, New York. Ms. Peppin assisted with the IRM design, prepared a bid package and specifications for implementation of the IRM, and provided field oversight for implementation of the IRM.

Industrial Landfill, Schenectady, New York. Project Engineer for developing and evaluating alternatives to minimize the environmental impact of remediating an inactive 100-acre industrial landfill at a facility in Schenectady, New York. The efforts included evaluation of innovative technologies including a phytoremediation system for the passive treatment of seeping groundwater and a phytocover system to reduce infiltration into the landfill by maximizing evapotranspiration.

Multi-State UST Evaluation. Project manager for evaluating the presence of underground storage tanks at multiple active and inactive facilities. Coordinated efforts of local staff in six states to perform site visits and record reviews, developed recommendations, and prepared summary reports.

Release Abatement Measure, Fitchburg, Massachusetts. Project Engineer for a Release Abatement Measure (RAM) Plan to recover turbine oil from beneath a former turbine manufacturing plant in Fitchburg, Massachusetts. Ms. Peppin prepared the bid package and specifications for implementation of the RAM Plan. She also assisted in the preparation of a pilot program for recovery of light non-aqueous phase liquids (LNAPL) at the site.

Several Environmental Remediation Projects, Connecticut, Massachusetts, and New York. Project Engineer for conceptual engineering design and cost estimates for environmental remediation projects in Connecticut, Massachusetts, and New York.

Groundwater Recovery Systems, Hudson Falls, New York. Project Engineer for DNAPL and PCB, VOC, and B/N SVOC contaminated groundwater recovery systems at an inactive hazardous waste site at a former capacitor manufacturing facility in Hudson Falls, New York. Ms. Peppin oversaw two full-time environmental technicians who maintained 37 recovery systems consisting of 15 dual-phase recovery systems, nine groundwater recovery wells, three DNAPL recovery systems and ten sumps. Specified and ordered all groundwater and pneumatic pumps, and controllers, and appurtences. Maintained records on all systems. Informed client of operational status of recovery systems on a weekly basis and monthly basis.

Feasibility Study, Hudson Falls, New York. Project Engineer for evaluating the feasibility of thermal desorption wells for remediation of PCB containing soils at an inactive hazardous waste site at a former capacitor manufacturing facility in Hudson Falls, New York.

SPCC Plans, Several Sites, New York. Assisted in collecting site data for 52 electrical substations throughout New York for preparation of SPCC Plans.

Interim Remedial Measure Work Plan, Schenectady, New York. Assisted in preparing an Interim Remedial Measure (IRM) Work Plan and bid specifications for removing PCB and metal containing sediment from a storm water collection pond at a manufacturing facility in Schenectady, New York.

Work Plan for AST Closures, Missouri. Assisted in preparing a work plan and bid specifications for removal of four above ground storage tanks at a former apparatus service shop in Missouri.

Vapor Extraction System Operation and Maintenance, Michigan. Prepared monthly progress reports to update the Michigan Department of Environmental Quality on the status of two soil vapor extraction (SVE) systems at a site in northern Michigan with groundwater contamination. Prepared quarterly air and water discharge reports for the SVE systems.

Remedial Action Work Plan, South Carolina. Assisted in revising a Remedial Action Work Plan under the South Carolina Voluntary Cleanup Program to address PCB contamination at a former apparatus service center. Assisted with the preparation of monthly progress reports.

Corrective Measures Evaluation, Central New York. Assisted in the preparation of a report documenting the evaluation of corrective measures for exceedences of metals at three State Pollution Discharge Elimination System (SPDES) Outfalls from a manufacturing plant in Central New York.

UST Closure, Waterford, New York. Provided field oversight for the in-place closure of one underground storage tank (UST), and the removal of five USTs at an industrial facility in Waterford, New York. Prepared tank closure reports for these tanks as well as six other USTs for submission to the NYSDEC.

Air Sparging Pilot Test, Michigan. Evaluated results and prepared report for an Air Sparging Pilot Test at a site in northern Michigan with groundwater contamination.

Groundwater Treatment System, New York. Assisted in maintaining a float controlled groundwater treatment system in Rensselaer, New York. Duties included sampling groundwater and system effluent, air monitoring, electrical and plumbing up-grades, troubleshooting, pump maintenance, overseeing carbon change-outs, and managing waste disposal.

Professional Societies/Affiliates

Associate Member, American Society of Civil Engineers
Member, Chi Epsilon

ATTACHMENT B

COPIES OF LABORATORY NYSDOH ELAP CERTIFICATIONS

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2013
Issued April 02, 2012
Revised June 19, 2012

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER SPENCER
TESTAMERICA BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Dissolved Gases

Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175

Drinking Water Metals I

Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Drinking Water Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Drinking Water Metals III

Boron, Total	EPA 200.7 Rev. 4.4
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4

Drinking Water Miscellaneous

Endothall	EPA 548.1
Organic Carbon, Dissolved	SM 18-21 5310D (00)
Organic Carbon, Total	SM 18-21 5310D (00)
Turbidity	EPA 180.1 Rev. 2.0

Drinking Water Non-Metals

Alkalinity	EPA 310.2

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Drinking Water Non-Metals

Alkalinity	SM 18-21 2320B (97)
Calcium Hardness	EPA 200.7 Rev. 4.4
	SM 18-21 2340B (97)
Chloride	EPA 300.0 Rev. 2.1
	SM 18-21 4110B (00)
	SM 18-21 4500-Cl- E (97)
Color	SM 18-21 2120B (01)
Cyanide	EPA 335.4 Rev. 1.0
	SM 18-21 4500-CN E (99)
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 18-21 4110B (00)
Nitrate (as N)	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 353.2 Rev. 2.0
Orthophosphate (as P)	SM 18-21 4500-P E
Solids, Total Dissolved	SM 18-21 2540C (97)
Specific Conductance	EPA 120.1 Rev. 1982
Sulfate (as SO4)	ASTM D516-90 02 & 07
	EPA 300.0 Rev. 2.1
	SM 18-21 4110B (00)

Drinking Water Trihalomethanes

Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2

Fuel Additives

Methyl tert-butyl ether	EPA 524.2

Microextractibles

1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1

Volatile Aromatics

1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2

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All approved analytes are listed below:

Volatile Aromatics

tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2

Volatile Halocarbons

Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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Acrylates	
Acrolein (Propenal)	EPA 624
	EPA 8260B
Acrylonitrile	EPA 624
	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B
Amines	
1,4-Phenylenediamine	EPA 8270C
	EPA 8270D
1-Naphthylamine	EPA 8270C
	EPA 8270D
2-Naphthylamine	EPA 8270C
	EPA 8270D
2-Nitroaniline	EPA 8270C
	EPA 8270D
3-Nitroaniline	EPA 8270C
	EPA 8270D
4-Chloroaniline	EPA 8270C
	EPA 8270D
4-Nitroaniline	EPA 8270C
	EPA 8270D
5-Nitro-o-toluidine	EPA 8270C
	EPA 8270D
Aniline	EPA 8270C

Amines	
Aniline	EPA 8270D
Carbazole	EPA 8270C
	EPA 8270D
Diphenylamine	EPA 8270C
	EPA 8270D
Methapyrilene	EPA 8270C
	EPA 8270D
Pronamide	EPA 8270C
	EPA 8270D
Propionitrile	EPA 8260B
Pyridine	EPA 625
	EPA 8270C
	EPA 8270D
Benzidines	
3,3'-Dichlorobenzidine	EPA 625
	EPA 8270C
	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270C
	EPA 8270D
Benzidine	EPA 625
	EPA 8270C
	EPA 8270D
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 608
	EPA 8081A

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Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 608
	EPA 8081A
	EPA 8081B
4,4'-DDT	EPA 608
	EPA 8081A
	EPA 8081B
Aldrin	EPA 608
	EPA 8081A
	EPA 8081B
alpha-BHC	EPA 608
	EPA 8081A
	EPA 8081B
alpha-Chlordane	EPA 8081A
	EPA 8081B
beta-BHC	EPA 608
	EPA 8081A
	EPA 8081B
Chlordane Total	EPA 608
	EPA 8081A
	EPA 8081B
Chlorobenzilate	EPA 8270C
	EPA 8270D
delta-BHC	EPA 608
	EPA 8081A

Chlorinated Hydrocarbon Pesticides

delta-BHC	EPA 8081B
Diallate	EPA 8270C
	EPA 8270D
Dieldrin	EPA 608
	EPA 8081A
	EPA 8081B
Endosulfan I	EPA 608
	EPA 8081A
	EPA 8081B
Endosulfan II	EPA 608
	EPA 8081A
	EPA 8081B
Endosulfan sulfate	EPA 608
	EPA 8081A
	EPA 8081B
Endrin	EPA 608
	EPA 8081A
	EPA 8081B
Endrin aldehyde	EPA 608
	EPA 8081A
	EPA 8081B
Endrin Ketone	EPA 8081A
	EPA 8081B
gamma-Chlordane	EPA 8081A
	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

Heptachlor	EPA 608
	EPA 8081A
	EPA 8081B
Heptachlor epoxide	EPA 608
	EPA 8081A
	EPA 8081B
Isodrin	EPA 8270C
	EPA 8270D
Kepone	EPA 8270C
	EPA 8270D
Lindane	EPA 608
	EPA 8081A
	EPA 8081B
Methoxychlor	EPA 608
	EPA 8081A
	EPA 8081B
Mirex	EPA 8081A
	EPA 8081B
	SM 18-20 6630C
PCNB	EPA 8270C
	EPA 8270D
Toxaphene	EPA 608
	EPA 8081A
	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260B
1,2,4,5-Tetrachlorobenzene	EPA 8270C
	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625
	EPA 8270C
	EPA 8270D
2-Chloronaphthalene	EPA 625
	EPA 8270C
	EPA 8270D
Hexachlorobenzene	EPA 625
	EPA 8270C
	EPA 8270D
Hexachlorobutadiene	EPA 625
	EPA 8270C
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625
	EPA 8270C
	EPA 8270D
Hexachloroethane	EPA 625
	EPA 8270C
	EPA 8270D
Hexachloropropene	EPA 8270C
	EPA 8270D
Pentachlorobenzene	EPA 8270C
	EPA 8270D

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MR. CHRISTOPHER SPENCER
TESTAMERICA BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
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is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
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Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A

Demand

Biochemical Oxygen Demand	SM 18-21 5210B (01)
Carbonaceous BOD	SM 18-21 5210B (01)
Chemical Oxygen Demand	EPA 410.4 Rev. 2.0
	HACH 8000

Dissolved Gases

Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175

Fuel Oxygenates

Di-isopropyl ether	EPA 8260B
Ethanol	EPA 8015 B
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
tert-amyl methyl ether (TAME)	EPA 8260B
tert-butyl alcohol	EPA 8015 B

Fuel Oxygenates

tert-butyl alcohol	EPA 8260B
tert-butyl ethyl ether (ETBE)	EPA 8260B

Haloethers

4-Bromophenylphenyl ether	EPA 625
	EPA 8270C
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270C
	EPA 8270D
Bis (2-chloroisopropyl) ether	EPA 625
	EPA 8270C
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270C
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270C
	EPA 8270D

Mineral

Alkalinity	EPA 310.2
	SM 18-21 2320B (97)
Chloride	EPA 300.0 Rev. 2.1
	EPA 9056A
	SM 18-21 4110B (00)
	SM 18-21 4500-Cl- E (97)

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Mineral

Fluoride, Total	EPA 300.0 Rev. 2.1
	EPA 9056A
	SM 18-21 4110B (00)
	SM 18-21 4500-F C (97)
Hardness, Total	SM 18-21 2340B (97)
	SM 18-21 2340C (97)
Sulfate (as SO4)	ASTM D516-90 02 & 07
	EPA 300.0 Rev. 2.1
	EPA 9056A
	SM 18-21 4110B (00)

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270C
	EPA 8270D
1,3-Dinitrobenzene	EPA 8270C
	EPA 8270D
1,4-Naphthoquinone	EPA 8270C
	EPA 8270D
2,4-Dinitrotoluene	EPA 625
	EPA 8270C
	EPA 8270D
2,6-Dinitrotoluene	EPA 625
	EPA 8270C
	EPA 8270D
Isophorone	EPA 625
	EPA 8270C

Nitroaromatics and Isophorone

Isophorone	EPA 8270D
Nitrobenzene	EPA 625
	EPA 8270C
	EPA 8270D

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270C
	EPA 8270D
N-Nitrosodimethylamine	EPA 625
	EPA 8270C
	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270C
	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270C
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625
	EPA 8270C
	EPA 8270D
N-nitrosopiperidine	EPA 8270C
	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270C
	EPA 8270D

Nutrient

Ammonia (as N)	EPA 350.1 Rev. 2.0
Kjeldahl Nitrogen, Total	EPA 351.2 Rev. 2.0

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Nutrient	
Nitrate (as N)	EPA 353.2 Rev. 2.0
	SM 18-21 4500-NO3 F (00)
Nitrite (as N)	EPA 353.2 Rev. 2.0
	SM 18-21 4500-NO3 F (00)
Orthophosphate (as P)	SM 18-21 4500-P E
Phosphorus, Total	SM 18-21 4500-P E
Organophosphate Pesticides	
Atrazine	EPA 8270C
	EPA 8270D
Dimethoate	EPA 8270C
	EPA 8270D
Disulfoton	EPA 8270C
	EPA 8270D
Famphur	EPA 8270C
	EPA 8270D
Parathion ethyl	EPA 8270C
	EPA 8270D
Parathion methyl	EPA 8270C
	EPA 8270D
Phorate	EPA 8270C
	EPA 8270D
Simazine	EPA 8270C
	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015 B
Petroleum Hydrocarbons	
Gasoline Range Organics	EPA 8015 B
Phthalate Esters	
Benzyl butyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Diethyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Dimethyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Di-n-butyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Di-n-octyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Polychlorinated Biphenyls	
PCB-1016	EPA 608
	EPA 8082
	EPA 8082A
PCB-1221	EPA 608

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Polychlorinated Biphenyls

PCB-1221	EPA 8082
	EPA 8082A
PCB-1232	EPA 608
	EPA 8082
	EPA 8082A
PCB-1242	EPA 608
	EPA 8082
	EPA 8082A
PCB-1248	EPA 608
	EPA 8082
	EPA 8082A
PCB-1254	EPA 608
	EPA 8082
	EPA 8082A
PCB-1260	EPA 608
	EPA 8082
	EPA 8082A
PCB-1262	EPA 8082
	EPA 8082A
PCB-1268	EPA 8082
	EPA 8082A

Polynuclear Aromatics

3-Methylcholanthrene	EPA 8270C
	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270C

Polynuclear Aromatics

7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 625
	EPA 8270C
	EPA 8270D
Acenaphthylene	EPA 625
	EPA 8270C
	EPA 8270D
Anthracene	EPA 625
	EPA 8270C
	EPA 8270D
Benzo(a)anthracene	EPA 625
	EPA 8270C
	EPA 8270D
Benzo(a)pyrene	EPA 625
	EPA 8270C
	EPA 8270D
Benzo(b)fluoranthene	EPA 625
	EPA 8270C
	EPA 8270D
Benzo(ghi)perylene	EPA 625
	EPA 8270C
	EPA 8270D
Benzo(k)fluoranthene	EPA 625
	EPA 8270C
	EPA 8270D

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Polynuclear Aromatics

Chrysene	EPA 625
	EPA 8270C
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 625
	EPA 8270C
	EPA 8270D
Fluoranthene	EPA 625
	EPA 8270C
	EPA 8270D
Fluorene	EPA 625
	EPA 8270C
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270C
	EPA 8270D
Naphthalene	EPA 625
	EPA 8270C
	EPA 8270D
Phenanthrene	EPA 625
	EPA 8270C
	EPA 8270D
Pyrene	EPA 625
	EPA 8270C
	EPA 8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270C
	EPA 8270D
2,4,5-Trichlorophenol	EPA 625
	EPA 8270C
	EPA 8270D
2,4,6-Trichlorophenol	EPA 625
	EPA 8270C
	EPA 8270D
2,4-Dichlorophenol	EPA 625
	EPA 8270C
	EPA 8270D
2,4-Dimethylphenol	EPA 625
	EPA 8270C
	EPA 8270D
2,4-Dinitrophenol	EPA 625
	EPA 8270C
	EPA 8270D
2,6-Dichlorophenol	EPA 8270C
	EPA 8270D
2-Chlorophenol	EPA 625
	EPA 8270C
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625
	EPA 8270C
	EPA 8270D

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Priority Pollutant Phenols

2-Methylphenol	EPA 8270C
	EPA 8270D
2-Nitrophenol	EPA 625
	EPA 8270C
	EPA 8270D
3-Methylphenol	EPA 8270C
	EPA 8270D
4-Chloro-3-methylphenol	EPA 625
	EPA 8270C
	EPA 8270D
4-Methylphenol	EPA 8270C
	EPA 8270D
4-Nitrophenol	EPA 625
	EPA 8270C
	EPA 8270D
Cresols, Total	EPA 625
	EPA 8270C
	EPA 8270D
Pentachlorophenol	EPA 625
	EPA 8151A
	EPA 8270C
	EPA 8270D
Phenol	EPA 625
	EPA 8270C
	EPA 8270D

Residue

Settleable Solids	SM 18-21 2540 F (97)
Solids, Total	SM 18-21 2540B (97)
Solids, Total Dissolved	SM 18-21 2540C (97)
Solids, Total Suspended	SM 18-21 2540D (97)

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270C
	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270C
	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270C
	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270C
	EPA 8270D
2-Methylnaphthalene	EPA 8270C
	EPA 8270D
4-Amino biphenyl	EPA 8270C
	EPA 8270D
Acetophenone	EPA 8270C
	EPA 8270D
Benzaldehyde	EPA 8270C
	EPA 8270D
Benzoic Acid	EPA 8270C
	EPA 8270D
Benzyl alcohol	EPA 8270C
	EPA 8270D

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Semi-Volatile Organics

Caprolactam	EPA 8270C
	EPA 8270D
Dibenzofuran	EPA 8270C
	EPA 8270D
Ethyl methanesulfonate	EPA 8270C
	EPA 8270D
Isosafrole	EPA 8270C
	EPA 8270D
Methyl methanesulfonate	EPA 8270C
	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270C
	EPA 8270D
p-Dimethylaminoazobenzene	EPA 8270C
	EPA 8270D
Phenacetin	EPA 8270C
	EPA 8270D
Safrole	EPA 8270C
	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260B
1,2,4-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,2-Dichlorobenzene	EPA 624
	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8021B

Volatile Aromatics

1,3,5-Trimethylbenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 624
	EPA 8260B
1,4-Dichlorobenzene	EPA 624
	EPA 8260B
Benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 624
	EPA 8260B
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8021B
	EPA 8260B
Naphthalene, Volatile	EPA 8260B
n-Butylbenzene	EPA 8021B
	EPA 8260B
n-Propylbenzene	EPA 8021B
	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8021B
	EPA 8260B
sec-Butylbenzene	EPA 8021B

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Volatile Aromatics

sec-Butylbenzene	EPA 8260B
Styrene	EPA 624
	EPA 8260B
tert-Butylbenzene	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B

Volatile Chlorinated Organics

Epichlorohydrin	EPA 8260B

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 624
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 624
	EPA 8260B
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 624
	EPA 8260B
1,1-Dichloroethane	EPA 624
	EPA 8260B

Volatile Halocarbons

1,1-Dichloroethene	EPA 624
	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8011
	EPA 8260B
1,2-Dibromoethane	EPA 8011
	EPA 8260B
1,2-Dichloroethane	EPA 624
	EPA 8260B
1,2-Dichloropropane	EPA 624
	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 624
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 624
	EPA 8260B
Bromoform	EPA 624
	EPA 8260B
Bromomethane	EPA 624
	EPA 8260B

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Volatile Halocarbons

Carbon tetrachloride	EPA 624
	EPA 8260B
Chloroethane	EPA 624
	EPA 8260B
Chloroform	EPA 624
	EPA 8260B
Chloromethane	EPA 624
	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 624
	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 624
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 624
	EPA 8260B
Hexachlorobutadiene, Volatile	EPA 8260B
Methyl iodide	EPA 8260B
Methylene chloride	EPA 624
	EPA 8260B
Tetrachloroethene	EPA 624
	EPA 8260B
trans-1,2-Dichloroethene	EPA 624
	EPA 8260B

Volatile Halocarbons

trans-1,3-Dichloropropene	EPA 624
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 624
	EPA 8260B
Trichlorofluoromethane	EPA 624
	EPA 8260B
Vinyl chloride	EPA 624
	EPA 8260B

Volatiles Organics

1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Cyclohexane	EPA 8260B
Isobutyl alcohol	EPA 8015 B
	EPA 8015C
	EPA 8260B
Methyl acetate	EPA 8260B
Methyl cyclohexane	EPA 8260B
o-Toluidine	EPA 8270C
Vinyl acetate	EPA 8260B

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Wastewater Metals I

Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Calcium, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C

Wastewater Metals I

Copper, Total	EPA 6020
	EPA 6020A
Iron, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Lead, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Magnesium, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020

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Wastewater Metals I

Nickel, Total	EPA 6020A
Potassium, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Sodium, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Strontium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6020
	EPA 6020A

Wastewater Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Antimony, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B

Wastewater Metals II

Antimony, Total	EPA 6010C
	EPA 6020
	EPA 6020A
Arsenic, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Chromium VI	EPA 7196A
	SM 18-19 3500-Cr D
	SM 20-21 3500-Cr B (01)
Mercury, Total	EPA 245.1 Rev. 3.0
	EPA 7470A
Selenium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020

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All approved analytes are listed below:

Wastewater Metals II

Selenium, Total	EPA 6020A
Vanadium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A

Wastewater Metals III

Cobalt, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Molybdenum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020

Wastewater Metals III

Molybdenum, Total	EPA 6020A
Thallium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Tin, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Titanium, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C

Wastewater Miscellaneous

Boron, Total	EPA 200.7 Rev. 4.4
	EPA 6010B
	EPA 6010C
Bromide	EPA 300.0 Rev. 2.1
	EPA 9056A
	SM 18-21 4110B (00)
Color	SM 18-21 2120B (01)
Cyanide, Total	EPA 335.4 Rev. 1.0
	EPA 9012A
	LACHAT 10-204-00-1-X
	SM 18-21 4500-CN E (99)

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Wastewater Miscellaneous

Cyanide, Total	SM 18-21 4500-CN G (99)
Oil & Grease Total Recoverable (HEM)	EPA 1664A
	EPA 9070 (Solvent:Hexane)
Organic Carbon, Total	EPA 9060
	SM 18-21 5310D (00)
Phenols	EPA 420.4 Rev. 1.0
	EPA 9065
	EPA 9066
Specific Conductance	EPA 120.1 Rev. 1982
	EPA 9050
	SM 18-21 2510B (97)
Sulfide (as S)	SM 18-21 4500-S D (00)
	SM 19-21 4500-S F (00)
Surfactant (MBAS)	SM 18-21 5540C (00)
Total Organic Halides	EPA 9020
Total Petroleum Hydrocarbons	EPA 1664A
Turbidity	EPA 180.1 Rev. 2.0

Sample Preparation Methods

EPA 200.2
EPA 3005A
EPA 3010A
EPA 3020A
EPA 3510C
EPA 3520C
EPA 5030B

Sample Preparation Methods

EPA 9010B
SM 18-20 4500-P b.5

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Acrylates

Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B

Amines

1,2-Diphenylhydrazine	EPA 8270C
	EPA 8270D
1,4-Phenylenediamine	EPA 8270C
	EPA 8270D
1-Naphthylamine	EPA 8270C
	EPA 8270D
2-Naphthylamine	EPA 8270C
	EPA 8270D
2-Nitroaniline	EPA 8270C
	EPA 8270D
3-Nitroaniline	EPA 8270C
	EPA 8270D
4-Chloroaniline	EPA 8270C
	EPA 8270D
4-Nitroaniline	EPA 8270C
	EPA 8270D
5-Nitro-o-toluidine	EPA 8270C
	EPA 8270D
Aniline	EPA 8270C

Amines

Aniline	EPA 8270D
Carbazole	EPA 8270C
	EPA 8270D
Diphenylamine	EPA 8270C
	EPA 8270D
Methapyrilene	EPA 8270C
	EPA 8270D
Pronamide	EPA 8270C
	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 8270C
	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270C
	EPA 8270D
Benzidine	EPA 8270C
	EPA 8270D

Characteristic Testing

Corrosivity	EPA 9040B
	EPA 9045C
Free Liquids	EPA 9095A
Ignitability	EPA 1010
Reactivity	SW-846 Ch7 Sec. 7.3

Chlorinated Hydrocarbon Pesticides

2,4'-DDD (Mitotane)	EPA 8081A

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Chlorinated Hydrocarbon Pesticides

2,4'-DDD (Mitotane)	EPA 8081B
4,4'-DDD	EPA 8081A
	EPA 8081B
4,4'-DDE	EPA 8081A
	EPA 8081B
4,4'-DDT	EPA 8081A
	EPA 8081B
Aldrin	EPA 8081A
	EPA 8081B
alpha-BHC	EPA 8081A
	EPA 8081B
alpha-Chlordane	EPA 8081A
	EPA 8081B
Atrazine	EPA 8270C
	EPA 8270D
beta-BHC	EPA 8081A
	EPA 8081B
Chlordane Total	EPA 8081A
	EPA 8081B
Chlorobenzilate	EPA 8270C
	EPA 8270D
delta-BHC	EPA 8081A
	EPA 8081B
Diallate	EPA 8270C
	EPA 8270D

Chlorinated Hydrocarbon Pesticides

Dieldrin	EPA 8081A
	EPA 8081B
Endosulfan I	EPA 8081A
	EPA 8081B
Endosulfan II	EPA 8081A
	EPA 8081B
Endosulfan sulfate	EPA 8081A
	EPA 8081B
Endrin	EPA 8081A
	EPA 8081B
Endrin aldehyde	EPA 8081A
	EPA 8081B
Endrin Ketone	EPA 8081A
	EPA 8081B
gamma-Chlordane	EPA 8081A
	EPA 8081B
Heptachlor	EPA 8081A
	EPA 8081B
Heptachlor epoxide	EPA 8081A
	EPA 8081B
Kepone	EPA 8270C
	EPA 8270D
Lindane	EPA 8081A
	EPA 8081B
Methoxychlor	EPA 8081A

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Chlorinated Hydrocarbon Pesticides

Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270C
	EPA 8270D
Toxaphene	EPA 8081A
	EPA 8081B

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270C
	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270C
	EPA 8270D
2-Chloronaphthalene	EPA 8270C
	EPA 8270D
Hexachlorobenzene	EPA 8270C
	EPA 8270D
Hexachlorobutadiene	EPA 8270C
	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270C
	EPA 8270D
Hexachloroethane	EPA 8270C
	EPA 8270D
Hexachlorophene	EPA 8270C
	EPA 8270D
Hexachloropropene	EPA 8270C
	EPA 8270D
Pentachlorobenzene	EPA 8270C

Chlorinated Hydrocarbons

Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A
Pentachlorophenol	EPA 8151A

Haloethers

4-Bromophenylphenyl ether	EPA 8270C
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270C
	EPA 8270D
Bis (2-chloroisopropyl) ether	EPA 8270C
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270C
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 8270C
	EPA 8270D

Metals I

Barium, Total	EPA 6010B
	EPA 6010C
	EPA 6020

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Metals I	
Barium, Total	EPA 6020A
Cadmium, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Calcium, Total	EPA 6010B
	EPA 6010C
Chromium, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Copper, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Iron, Total	EPA 6010B
	EPA 6010C
Lead, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Magnesium, Total	EPA 6010B
	EPA 6010C
Manganese, Total	EPA 6010B
	EPA 6010C

Metals I	
Manganese, Total	EPA 6020
	EPA 6020A
Nickel, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Potassium, Total	EPA 6010B
	EPA 6010C
Silver, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Sodium, Total	EPA 6010B
	EPA 6010C
Strontium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
	EPA 6010C
Antimony, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Arsenic, Total	EPA 6010B
	EPA 6010C
	EPA 6020

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Metals II

Arsenic, Total	EPA 6020A
Beryllium, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Lithium, Total	EPA 6010B
	EPA 6010C
Mercury, Total	EPA 7471A
	EPA 7471B
Selenium, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Vanadium, Total	EPA 6010B
	EPA 6010C
Zinc, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A

Metals III

Cobalt, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Molybdenum, Total	EPA 6010B

Metals III

Molybdenum, Total	EPA 6010C
	EPA 6020
	EPA 6020A
Thallium, Total	EPA 6010B
	EPA 6010C
	EPA 6020
	EPA 6020A
Tin, Total	EPA 6010B
	EPA 6010C
Titanium, Total	EPA 6010B
	EPA 6010C

Minerals

Bromide	EPA 9056A
Chloride	EPA 9056A
	EPA 9251
Fluoride, Total	EPA 9056A
Sulfate (as SO4)	EPA 9038
	EPA 9056A

Miscellaneous

Boron, Total	EPA 6010B
	EPA 6010C
Cyanide, Total	EPA 9012A
Phenols	EPA 9066
Specific Conductance	EPA 9050
Total Organic Halides	EPA 9020

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Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270C
	EPA 8270D
1,4-Dinitrobenzene	EPA 8270C
	EPA 8270D
1,4-Naphthoquinone	EPA 8270C
	EPA 8270D
2,4-Dinitrotoluene	EPA 8270C
	EPA 8270D
2,6-Dinitrotoluene	EPA 8270C
	EPA 8270D
4-Dimethylaminoazobenzene	EPA 8270C
	EPA 8270D
Hydroquinone	EPA 8270C
	EPA 8270D
Isophorone	EPA 8270C
	EPA 8270D
Nitrobenzene	EPA 8270C
	EPA 8270D
Pyridine	EPA 8270C
	EPA 8270D

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270C
	EPA 8270D
N-Nitrosodimethylamine	EPA 8270C
	EPA 8270D

Nitrosoamines

N-Nitrosodi-n-butylamine	EPA 8270C
	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270C
	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270C
	EPA 8270D
N-nitrosomethylethylamine	EPA 8270C
	EPA 8270D
N-nitrosomorpholine	EPA 8270C
	EPA 8270D
N-nitrosopiperidine	EPA 8270C
	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270C
	EPA 8270D

Nutrients

Nitrate (as N)	EPA 9056A

Organophosphate Pesticides

Dimethoate	EPA 8270C
	EPA 8270D
Disulfoton	EPA 8270C
	EPA 8270D
Famphur	EPA 8270C
	EPA 8270D
Parathion ethyl	EPA 8270C
	EPA 8270D

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Organophosphate Pesticides

Parathion methyl	EPA 8270C
	EPA 8270D
Phorate	EPA 8270C
	EPA 8270D
Sulfotepp	EPA 8270C
	EPA 8270D

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015 B
	EPA 8015C
Gasoline Range Organics	EPA 8015 B
	EPA 8015C

Phthalate Esters

Benzyl butyl phthalate	EPA 8270C
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270C
	EPA 8270D
Diethyl phthalate	EPA 8270C
	EPA 8270D
Dimethyl phthalate	EPA 8270C
	EPA 8270D
Di-n-butyl phthalate	EPA 8270C
	EPA 8270D
Di-n-octyl phthalate	EPA 8270C
	EPA 8270D

Polychlorinated Biphenyls

PCB-1016	EPA 8082
	EPA 8082A
PCB-1221	EPA 8082
	EPA 8082A
PCB-1232	EPA 8082
	EPA 8082A
PCB-1242	EPA 8082
	EPA 8082A
PCB-1248	EPA 8082
	EPA 8082A
PCB-1254	EPA 8082
	EPA 8082A
PCB-1260	EPA 8082
	EPA 8082A
PCB-1262	EPA 8082
PCB-1268	EPA 8082

Polynuclear Aromatic Hydrocarbons

3-Methylcholanthrene	EPA 8270C
	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270C
	EPA 8270D
Acenaphthene	EPA 8270C
	EPA 8270D
Acenaphthylene	EPA 8270C
	EPA 8270D

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Polynuclear Aromatic Hydrocarbons

Anthracene	EPA 8270C
	EPA 8270D
Benzo(a)anthracene	EPA 8270C
	EPA 8270D
Benzo(a)pyrene	EPA 8270C
	EPA 8270D
Benzo(b)fluoranthene	EPA 8270C
	EPA 8270D
Benzo(ghi)perylene	EPA 8270C
	EPA 8270D
Benzo(k)fluoranthene	EPA 8270C
	EPA 8270D
Chrysene	EPA 8270C
	EPA 8270D
Dibenzo(a,e)pyrene	EPA 8270C
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270C
	EPA 8270D
Fluoranthene	EPA 8270C
	EPA 8270D
Fluorene	EPA 8270C
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270C
	EPA 8270D
Phenanthrene	EPA 8270C

Polynuclear Aromatic Hydrocarbons

Phenanthrene	EPA 8270D
Pyrene	EPA 8270C
	EPA 8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270C
	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270C
	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270C
	EPA 8270D
2,4-Dichlorophenol	EPA 8270C
	EPA 8270D
2,4-Dimethylphenol	EPA 8270C
	EPA 8270D
2,4-Dinitrophenol	EPA 8270C
	EPA 8270D
2,6-Dichlorophenol	EPA 8270C
	EPA 8270D
2-Chlorophenol	EPA 8270C
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270C
	EPA 8270D
2-Methylphenol	EPA 8270C
	EPA 8270D
2-Nitrophenol	EPA 8270C

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Priority Pollutant Phenols

2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270C
	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270C
	EPA 8270D
4-Methylphenol	EPA 8270C
	EPA 8270D
4-Nitrophenol	EPA 8270C
	EPA 8270D
Pentachlorophenol	EPA 8270C
	EPA 8270D
Phenol	EPA 8270C
	EPA 8270D

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270C
	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270C
	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270C
	EPA 8270D
2-Methylnaphthalene	EPA 8270C
	EPA 8270D
4-Amino biphenyl	EPA 8270C
	EPA 8270D
Acetophenone	EPA 8270C

Semi-Volatile Organics

Acetophenone	EPA 8270D
Benzaldehyde	EPA 8270C
	EPA 8270D
Benzoic Acid	EPA 8270C
	EPA 8270D
Benzyl alcohol	EPA 8270C
	EPA 8270D
Caprolactam	EPA 8270C
	EPA 8270D
Dibenzofuran	EPA 8270C
	EPA 8270D
Ethyl methanesulfonate	EPA 8270C
	EPA 8270D
Isosafrole	EPA 8270C
	EPA 8270D
Methyl methanesulfonate	EPA 8270C
	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270C
	EPA 8270D
Phenacetin	EPA 8270C
	EPA 8270D
Safrole	EPA 8270C
	EPA 8270D

Volatile Aromatics

1,2,4-Trimethylbenzene	EPA 8021B

Serial No.: 47127

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2013
Issued April 02, 2012
Revised June 12, 2012

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER SPENCER
TESTAMERICA BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Volatile Aromatics

1,2,4-Trimethylbenzene	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B
2-Chlorotoluene	EPA 8021B
	EPA 8260B
4-Chlorotoluene	EPA 8021B
	EPA 8260B
Benzene	EPA 8021B
	EPA 8260B
Bromobenzene	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8021B
	EPA 8260B
n-Butylbenzene	EPA 8021B
	EPA 8260B
n-Propylbenzene	EPA 8021B
	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8021B
	EPA 8260B

Volatile Aromatics

sec-Butylbenzene	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8021B
	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B

Volatile Chlorinated Organics

Epichlorohydrin	EPA 8260B

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dibromoethane	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B

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Volatile Halocarbons

1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B
Bromoform	EPA 8260B
Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 8260B
Dibromomethane	EPA 8021B
	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
Hexachlorobutadiene, Volatile	EPA 8260B
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B

Volatile Halocarbons

trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B

Volatile Organics

1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Cyclohexane	EPA 8260B
Ethyl Acetate	EPA 8260B
Ethylene Glycol	EPA 8015 B
	EPA 8015C
Isobutyl alcohol	EPA 8015 B
	EPA 8015C
	EPA 8260B
Methyl acetate	EPA 8260B
Methyl cyclohexane	EPA 8260B
Methyl tert-butyl ether	EPA 8260B
o-Toluidine	EPA 8260B
Propionitrile	EPA 8260B
tert-butyl alcohol	EPA 8015 B

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All approved analytes are listed below:

Volatile Organics

tert-butyl alcohol	EPA 8015C
Vinyl acetate	EPA 8260B

Sample Preparation Methods

EPA 1311
EPA 1312
EPA 3005A
EPA 3010A
EPA 3020A
EPA 3050B
EPA 3060A
EPA 3550B
EPA 3550C
EPA 3580
EPA 5030B
EPA 5035
EPA 5035A-H
EPA 5035A-L
EPA 9010B

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Lead in Paint	EPA 6010B

Sample Preparation Methods

	EPA 3050B

Serial No.: 45934

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

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All approved analytes are listed below:

Polynuclear Aromatics

Benzo(a)pyrene	NIOSH 5515
Naphthalene	NIOSH 5515

Purgeable Aromatics

Benzene	NIOSH 1501
Ethyl benzene	NIOSH 1501
m/p-Xylenes	NIOSH 1501
o-Xylene	NIOSH 1501
Toluene	NIOSH 1501
Total Xylenes	NIOSH 1501

Serial No.: 45935

ATTACHMENT C

EXAMPLE CHAIN-OF-CUSTODY RECORDS

CHAIN OF CUSTODY RECORD

URS

PROJECT NO. | SITE NAME

SAMPLERS (PRINT/SIGNATURE)

LAB ____________

COOLER ________ of ________

PAGE ________ of ________

DELIVERY SERVICE: ____________ AIRBILL NO.: ____________

LOCATION IDENTIFIER	DATE	TIME	COMP/ GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	TESTS / BOTTLE TYPE AND PRESERVATIVE								REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (ERPIMS)

MATRIX CODES
AA - AMBIENT AIR
SE - SEDIMENT
SH - HAZARDOUS SOLID WASTE
SL - SLUDGE
WP - DRINKING WATER
WW - WASTE WATER
WG - GROUND WATER
SO - SOIL
DC - DRILL CUTTINGS
WL - LEACHATE
GS - SOIL GAS
WC - DRILLING WATER
WO - OCEAN WATER
WS - SURFACE WATER
WQ - WATER FIELD QC
LH - HAZARDOUS LIQUID WASTE
LF - FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES
TB# - TRIP BLANK
SD# - MATRIX SPIKE DUPLICATE
RB# - RINSE BLANK
FR# - FIELD REPLICATE
N# - NORMAL ENVIRONMENTAL SAMPLE
MS# - MATRIX SPIKE
(# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS

Distribution: Original accompanies shipment, copy to coordinator field files

ATTACHMENT D

DATA USABILITY SUMMARY REPORT REQUIREMENTS

Appendix 2B
Guidance for Data Deliverables and the Development of Data Usability Summary Reports

1.0 Data Deliverables

(a) DEC Analytical Services Protocol Category A Data Deliverables:

1. A Category A Data Deliverable as described in the most current DEC Analytical Services Protocol (ASP) includes:

i. a Sample Delivery Group Narrative;

ii. contract Lab Sample Information sheets;

iii. DEC Data Package Summary Forms;

iv. chain-of-custody forms; and,

v. test analyses results (including tentatively identified compounds for analysis of volatile and semi-volatile organic compounds)

2. For a DEC Category A Data Deliverable, a data applicability report may be requested, in which case it will be prepared, to the extent possible, in accordance with the DUSR guidance detailed below.

(b) DEC Analytical Services Protocol Category B Data Deliverables

1. A Category B Data Deliverable is includes the information provided for the Category A Data Deliverable, identified in subdivision (a) above, plus related QA/QC information and documentation consisting of:

i. calibration standards;

ii. surrogate recoveries;

iii. blank results;

iv. spike recoveries;

v. duplicate results;

vi. confirmation (lab check/QC) samples;

vii. internal standard area and retention time summary;

viii. chromatograms;

ix. raw data files; and

x. other specific information as described in the most current DEC ASP.

2. A DEC Category B Data Deliverable is required for the development of a Data Usability Summary Report (DUSR).

2.0 Data Usability Summary Reports (DUSRs)

(a) Background. The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data with the primary objective to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

1. The development of the DUSR must be carried out by an experienced environmental scientist, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. The DUSR is developed from:

i. a DEC ASP Category B Data Deliverable; or

ii. the *USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation*.

2. The DUSR and the data deliverables package will be reviewed by DER staff. If full third party data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later date on the same data package used for the development of the DUSR.

(b) Personnel Requirements. The person preparing the DUSR must be pre-approved by DER. The person must submit their qualifications to DER documenting experience in analysis and data validation. Data validator qualifications are available on DEC's website identified in the table of contents.

(c) Preparation of a DUSR. The DUSR is developed by reviewing and evaluating the analytical data package. In order for the DUSR to be acceptable, during the course of this review the following questions applicable to the analysis being reviewed must be answered in the affirmative.

1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?

2. Have all holding times been met?

3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?

7. Have any quality control (QC) exceedances been specifically noted in the DUSR and have the corresponding QC summary sheets from the data package been attached to the DUSR?

(d) Documenting the validation process in the DUSR. Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters, including data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed.