NYSDEC Prescribed Analytical Protocols – Volume 5
Requirements for Analyte Group 5 - Low-Level Analyses of Ambient Waters
Revision 3.0, January 2022

Exhibit A
Summary of Basic Requirements

I. Introduction

The New York State Department of Environmental Conservation (the Department) is tasked with conserving, improving, and protecting the State's natural resources and environment. One of the many tools the Department uses to fulfill our mission is the services of contracted environmental laboratories. Analyte Group 5 focuses on the Department's analytical needs related to monitoring ambient waters for low levels of nutrients and contaminants. A small number of sediment tests directly related to water column chemistry are also included in the scope of Analyte Group 5.

The NYSDEC "Prescribed Analytical Protocols - Volume 5" (PAP-5) is a comprehensive inventory of the analytical requirements for Contractors performing work under "Analyte Group 5 - Low-Level Analyses of Ambient Waters." It is intended to supplement the Invitation for Bids (IFB) and Contract documents associated with Analyte Group 5 by detailing and explaining certain procedural requirements. If requirements found in the IFB or Contract conflict with information found in PAP-5, the IFB and Contract requirements have precedence over PAP-5.

PAP-5 is divided into lettered exhibits detailing the specific aspects of work to be performed within the Analyte Group 5. The titles and descriptions of those exhibits are summarized below:

Exhibit A – Summary of Basic Requirements
Exhibit B – Reporting and Deliverables
Exhibit C – Detection and Quantitation Limits
Exhibit D – Approved Methods
Exhibit E – Quality Assurance and Quality Control
Exhibit F – Sample Handling and Maintenance
Exhibit G – Glossary

A. Analyte Group 5 Contract Manager

Any issue, problem, or question encountered during the performance of work under Analyte Group 5 must be brought to the attention of the Analyte Group 5 Contract Manager. Jason Fagel in the Division of Water will serve as the Analyte Group 5 Contract Manager. His contact information is:

Jason R. Fagel
Bureau of Water Assessment and Management, Division of Water
New York State Department of Environmental Conservation
625 Broadway, 4th Floor
Albany, NY 12233-3502
(518) 402-8156
(518) 402-9029 (fax)
jason.fagel@dec.ny.gov

B. Minimum Qualifications and Requirements

Contractors performing work under Analyte Group 5 must meet certain minimum requirements. The qualifications and requirements detailed in this section are reiterations from the invitation for bids (IFB) document issued during contract procurement, with some additional details added for clarity.

1. **Personnel** - The Contractor must employ persons in the following titles meeting the described qualifications.
    - **a.** Technical Director – Shall be a person with a bachelor's degree in the chemical, environmental, physical, or biological sciences, or engineering, with at least twenty-four (24) college semester credit hours in chemistry and at least two (2) years of appropriate experience in environmental analysis of representative inorganic and organic analytes for which the laboratory is seeking a contract. A masters or earned doctoral degree in one of the above disciplines may be substituted for one (1) year of experience.
    - **b.** QA/QC Officer (QAO) – Shall be a person with a bachelor's degree in the chemical, environmental, physical, or biological sciences, or engineering, with at least twenty-four (24) college semester credit hours in chemistry and at least two (2) years of appropriate experience in environmental analysis of representative inorganic and organic analytes for which the laboratory is seeking a contract. A masters or earned doctoral degree in one of the above disciplines may be substituted for one (1) year of experience. The QA/QC officer cannot serve any other managerial or supervisory roles at the laboratory and must report directly to the top level of management at the facility or to a corporate QA/QC officer.
    - **c.** Project Manager (PM) – A project manager specific to Analyte Group 5 work must be designated. No minimum qualifications are assigned to the PM title. The PM will serve as the centralized, primary point of contact between the Contractor and the Department for all work performed under Analyte Group 5, even if the bidder intends to perform work at multiple facilities/locations.
2. **Instrumentation**

a. One (1) multi-channel flow injection analyzer meeting, or configurable to, the instrument specifications of EPA Method 350.1/351.2/353.2/365.1. A discrete photometric analyzer may be substituted for the flow injection analyzer.

b. One (1) ion chromatography (IC) instrument meeting, or configurable to, the instrument specifications of EPA Method 300.0/300.1.

c. One (1) TOC analyzer meeting, or configurable to, the specifications of Standard Method 5310 C.

d. One (1) ICP-AES instrument meeting, or configurable to, the instrument specifications of EPA Method 200.7. Documentation of a subcontractor's instrument(s) is acceptable to satisfy this requirement.

e. One (1) ICP-MS instrument meeting, or configurable to, the instrument specifications of EPA Method 200.8. Documentation of a subcontractor's instrument(s) is acceptable to satisfy this requirement.

f. One (1) CVAFS instrument meeting, or configurable to, the instrument specifications of EPA Method 1631. Documentation of a subcontractor's instrument(s) is acceptable to satisfy this requirement.

3. **Certification** - All bidders for Analyte Groups 5 must hold proof of certification by New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). Proof of a proposed subcontractor's ELAP certification must also be held when applicable. The scope of certification must include all analyses in the Analyte Group for which ELAP offers certification, most of which are found under "Item # 180.2 – Non-Potable Water" in the ELAP Certification Manual. Additionally, some certifications from "Item # 180.3 - Solid and Hazardous Waste" will be required to perform sediment analyses. These certifications must be obtained prior to the final award of the Contract and any start of Contract covered work.

II. Sample Identifiers

The Department uses unique sample identifiers to track samples processed through the Analyte Group 5 Contracts. It is critical that the Contractor maintains and reports these identifiers on all documents related to a sample submission.

A. Case Codes

Case codes are alpha numeric identifiers, with a string length of 4 to 6 characters. The case code identifies specific projects and programs operated within the

Department. For most projects, the case code will be associated with an approved quality assurance project plan (QAPP) having specialized quality assurance and quality control (QA/QC) requirements. The last 2 characters of the case code string are numeric and indicate the State Fiscal Year. The case codes "year" does not advance until the start of a new State Fiscal Year on April 1.

B. Sample Delivery Group (SDG)

Department staff will assign a sample delivery group ID to all sample submittals. The SDG ID will not follow any predefined format but will generally be less than eight (8) alphanumeric characters.

C. Internal Laboratory Identifiers

The Contractor must also include their internal batch, submission, or project identifier on any correspondence related to Department samples under Analyte Group 5. This is referred to as the "Submission ID" on the weekly summary report (see Section V below).

III. Sample Characterization

The Department will make every effort to properly characterize the samples we collect and send them to the most appropriate contractor. Most samples collected for Analyte Group 5 will be ambient waters with very low levels of target analytes, but this cannot be guaranteed. The NYSDEC sample submitter will provide a written description of any non-standard matrix or potentially high-level samples when applicable, but the Contractor must realize our capacity to screen samples in the field is limited.

IV. Expedited Sample Processing

During the Contract term, the Department may have periodic needs for rush turnaround on certain analyses ordered. To accommodate this need, the Contract allows laboratories to bid a multiplier to be applied to the base sample price when expedited turnaround times are requested. We ask that these multipliers be bid generically to cover all analyses in the Analyte Group but realize certain tests cannot be completed with a 24- or 48-hour time period based on their prescribed methodology (e.g., BOD(5) and CBOD(5)).

V. Weekly Summary Reports

By close-of-business (C.O.B) Wednesday of every week during the Contract term, the Contractor must complete an MS Excel spreadsheet detailing the laboratories' activities during the previous week pertinent to Analyte Group 5. The reporting period is defined as a full calendar week, Sunday to Saturday. The weekly report format and requirements are defined in PAP-5 Exhibit B, Part III.

VI. Invoicing and Payments

A. Contractor Applications for Payment (CAP)

The Contractor shall submit requests for payment, together with supporting invoices, to the Department on standard State Contractor Application for Payment (CAP) forms provided by the Department. The CAP form must be certified by the Contractor's Authorized Representative or designee. Payment requests must be submitted in a form acceptable to the State Comptroller and in accordance with the Contract and other payment guidance received from the Department. CAPs will be reviewed and recommended for payment by the Department representatives. In addition, CAPS will be reviewed, and payment issued by the Office of the State Comptroller (OSC).

B. Responsible Party

The Analyte Group 5 Contract Manager (Jason Fagel) must be listed as the "Bill to:" or "Invoice to:" party on all CAPs and invoices generated under Analyte Group 5. The Analyte Group 5 Contract Manager will also serve as the primary point of contact for all issues related to billing and payments.

C. Invoice Format

The following informational items must be included on all invoices submitted with the CAPs. All listed items must be included on the front page of the invoice, unless marked with a "*." All "*" items are still required but may be included on an attachment.

- Invoice number
- Contract number
- Contractor's Employer Identification Number (EIN)
- Date issued
- Case code
- NYS DEC Sample Delivery Group (SDG)
- Internal laboratory SDG
- Date samples were received
- Analysis line items ordered
- Quantity of each analysis line item ordered
- Unit price for each analysis line item
- Total price for each line item
- Invoice grand total
- Sample ID's *
- Matrix for each sample ID *

- Analyses ordered for each sample ID *

Figure 5-A-1 is an example of an acceptable invoice containing all required elements. Figure 5-A-2 is an example of an acceptable invoice attachment summarizing analyses ordered by sample.

D. Invoice Distribution

Upon the completion of the work ordered, CAPs and supporting invoices must be distributed as follows:

- One (1) electronic copy of the complete CAP and supporting invoice package must be emailed or made available for download to the Analyte Group 5 Contract Manager.
- One (1) electronic copy of each invoice in the CAP must be emailed to the respective Project Managers as indicated on the Chain of Custody forms. A reference ID for the CAP must be included in the email for internal approval purposes.

E. Invoice Errors and Rejection

If a CAP/invoice does not meet all the requirements herein or of the contract itself, it will be rejected by the Department, with instructions for revision. Revision requests will come from the Analyte Group 5 Contract Manager via email and will include an electronic copy of the invoice in question. Revised invoices must have their "date issued" updated to reflect the date of revision.

Figure 5-A-1 – Example Invoice

Letterhead - ABC Laboratory

Bill To:
Jason Fagel
NYSDEC Division of Water
625 Broadway, 4th Floor
Albany, NY 12233-3502

Report To:
Sally Sampleswell
NYSDEC Division of Water
625 Broadway, 4th Floor
Albany, NY 12233-3502

Invoice Number: 123456
Invoice Date: 03/01/2012
Contract #: C009999
EIN: 01-0101010

DEC Case Code: HPS12
DEC SDG: 0201W
Laboratory SDG: 12-12345

Question regarding this invoice should be direct to: Name, Phone Number

Date(s) Sample(s) Received: 02/01/2012

Method	Description	Quantity	Unit Price	Extended Price
300.0	Chloride by Ion Chromatography	6	$15.00	$90.00
300.0	Fluoride by Ion Chromatography	6	$15.00	$90.00
200.7	Arsenic by ICP-AES	4	$8.00	$32.00
200.7	Lead by ICP-AES	4	$8.00	$32.00
245.1	Mercury by CVAA	5	$30.00	$150.00

Total Due: $394.00

Sample Summary Table Attached

Figure 5-A-2 – Example Invoice Attachment

Sample Summary Attachment for Invoice Number 123456					
Laboratory ID/ Job Number	**NYSDEC Sample ID**	**Matrix**	**Tests Ordered**	**Date Sampled**	**Date Received**
12-12345-001	NYWB022-01	Water	300.0(Chloride), 300.0(Flouride), 245.1(Hg)	01/30/2012	02/01/2012
12-12345-002	NYWB022-02	Water	300.0(Chloride), 300.0(Flouride), 245.1(Hg)	01/30/2012	02/01/2012
12-12345-003	NYWB025-01	Water	245.1(Hg)	01/30/2012	02/01/2012
12-12345-004	NYWB025-02	Water	245.1(Hg)	01/30/2012	02/01/2012
12-12345-005	NYWB025-04	Water	245.1(Hg)	01/30/2012	02/01/2012
12-12345-006	NYWB035-02	Water	300.0(Chloride), 300.0(Flouride), 200.7(As), 200.7(Pb)	01/31/2012	02/01/2012
12-12345-007	NYWB035-04	Water	300.0(Chloride), 300.0(Flouride), 200.7(As), 200.7(Pb)	01/31/2012	02/01/2012
12-12345-008	NYWB035-05	Water	300.0(Chloride), 300.0(Flouride), 200.7(As), 200.7(Pb)	01/31/2012	02/01/2012
12-12345-009	NYWB035-06	Water	300.0(Chloride), 300.0(Flouride), 200.7(As), 200.7(Pb)	01/31/2012	02/01/2012

VII. Refusal of Work

It is understood that under certain circumstances a Contractor may not be able to complete certain analyses requested by the Department. The Department does not maintain redundant contract services in many cases, and it is also very difficult to obtain services outside of the analytical service contracts. For these reasons, the Department needs to keep refusals of work to a minimum. The refusal clauses below apply to all analysis line items specified in Analyte Group 5.

A. Acceptable Conditions for Work Refusal

1. Capacity - The Contractor must have the capacity to perform analytical services at a volume of 3% of the total Contract value, during any calendar month. An exceedance of the 3% rate is acceptable grounds to refuse additional samples for that month.

2. Instrumentation - If the instrumentation required to perform a requested analysis is not available or inoperable, and no redundant instrumentation is available, work may be refused. If the instrument is only temporarily unavailable and applicable holding times and reporting deadlines can be met, samples must be accepted.

3. Conflict of Interest - If the Contractor already has as a client, a party regulated by the Department, and the Department is performing split sampling with that same regulated party, the Contractor must notify the Department upon receipt of such samples. Split samples with an existing client of the Contractor may be refused as the intent of split sampling is to use unique laboratories.

4. Contamination - If the Contractor has a contamination issue within a laboratory area or analytical system, defined by two (2) method blank failures in a 7-day period, the Department must be notified. If the contamination will affect the integrity or accuracy of samples analyzed for the Department, the Contractor must refuse potentially affected samples.

B. Notifications

If the Contractor chooses to exercise any of the above refusal clauses, the Department must be notified immediately (contract allows 24 hours maximum time) to ensure any applicable holding times can be met. Notifications must be made to the sample submitter and the Analyte Group 5 Contract Manager by phone or by email.

C. Subcontracting of Refused Work

1. Samples meeting refusal criteria - If the Contractor decides to rightfully refuse any samples submitted by the Department, and no redundant contractors are available to the Department in the applicable Analyte Group, the samples must be subcontracted by the Contractor to a third-party laboratory. The cost

for said analyses will be the line-item price previously specified in the Contract. No 10% up-charge for subcontracting shall apply under this scenario.

2. High-level Samples - The Contractor is not allowed to refuse samples based on a high-level of target or non-target analytes. The Contractor is also not allowed to refuse samples based on matrix, unless the matrix is outside the matrices defined in their awarded Analyte Groups. If the Contractor determines that the samples would contaminate their laboratory or analytical systems, such samples can be subcontracted by the Contractor to a third-party laboratory. The cost for said analyses will be the line-item price previously specified in the Contract. No 10% up-charge for subcontracting shall apply under this scenario.

VIII. Data Confidentiality

All data submitted and generated under the Analyte Group 5 Contracts must be treated as confidential. Any information released to the Contractor by the Department regarding sample origin and collection cannot be shared with outside parties, including subcontracted laboratories. Additionally, all data generated by the Contractor because of sample processing and analysis cannot be released to outside parties. Under no circumstances may data submitted to the Contractor by the Department, or data generated by the Contractor on the behalf of the Department be disseminated to outside parties without the written consent of the Department.

IX. Record Retention

All records submitted or generated under the Analyte Group 5 Contracts must be retained for a minimum of five (5) years from the date an acceptable data package was delivered to the Department. All information necessary for the historical reconstruction of data must be maintained by the Contractor for the five-year period. Records which are stored only on electronic media must be supported by the hardware and software necessary for their retrieval and reconstruction. This is a minimum retention period; contractors are encouraged to maintain archives on a longer term when practical and feasible.

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Exhibit B
Deliverables and Reporting Requirements

I. Introduction

The reporting requirements for Analyte Group 5 are detailed in PAP-5 Exhibit B. These requirements were derived based on the program needs that are served by Analyte Group 5. The reporting formats and deliverable requirements for Analyte Group 5 are based on USEPA Contract Laboratory Protocol (CLP) reporting. The "CLP-like" deliverables required for Analyte Group 5 are divided into two (2) categories.

- The "Category A" deliverable includes an abbreviated data package consisting of sample results and a QC summary with no calibration or raw data included. An electronic data deliverable (EDD) is also part of this deliverable.
- The "Category B" deliverable includes a full CLP-like data package consisting of sample results, QC, calibration, raw data, and all other supporting data. An electronic data deliverable (EDD) is also part of this deliverable.

Unless otherwise directed by the Department, all Analyte Group 5 data packages must be generated as an Adobe PDF files.

Both Category A and Category B data packages must include an appropriate EQuIS™ compliant electronic data deliverable (EDD).

PDF data packages and EDDs generated under the contract must be emailed, delivered via file transfer protocol (ftp), or made available for download using a secure web-based portal. A yearly archive of all data reported by the laboratory must be compiled by project onto portable media (flash drive or similar) and sent to the Analyte Group 5 Contract Manager via USPS First Class Mail or a commercial courier of the Contractor's choice.

The standard turn-around time for reporting of Analyte Group 5 data is 30-days from the date the sample delivery group (SDG) was submitted to the Contractor.

Detailed reporting specification for Analyte Group 5 data packages and EDD's can be found in Section II of this document. Routine reporting (not related to sample results) requirements for Analyte Group 5 can be found in Section III.

A. Inspection and Acceptance of Reports

The Department has a period of thirty (30) days to inspect Contract work products submitted by the Contractor. Within that 30-day period, the Department can reject the data package and/or EDD if they do not comply with the prescribed method, the Contract, or PAP-5. Upon rejection of any Contract work products, the Department will issue a written notice to the Contractor which details specifics of the deficiencies. The Contractor will have ten (10) business days to correct the noncompliant work product(s) and resubmit the report and/or EDD to the Department. Any invoices associated with deficient work will be held while deficient work is being corrected.

If the Contract work products meet all acceptance criteria, invoice payments will be processed in accordance with the Contract requirements.

If non-compliant work product(s) are discovered outside of the Department's 30-day inspection period, the Contractor is still obligated to correct the data package and/or EDD. The turnaround time for such corrections will be negotiated with the Department but will never exceed forty-five (45) days.

Reissued reports must have the same distribution as the original report/deliverable.

B. Data/Report Distribution

All PAP-5 reporting must be performed electronically, no hard copies. Electronic reports must be sent to the attention of the appropriate NYSDEC Project Manager and Analyte Group 5 Contract Manager. Additional recipients of the electronic reporting may be specified by the project manager for certain projects. A yearly archive of all data reported by the laboratory must be compiled by project onto portable media (flash drive or similar) and sent to the Analyte Group 5 Contract Manager via USPS First Class Mail or a commercial courier of the Contractor's choice. The contact information for the current Analyte Group 5 Contract Manager is found below:

Jason R. Fagel
Bureau of Water Assessment and Management, Division of Water
New York State Department of Environmental Conservation
625 Broadway, 4th Floor
Albany, NY 12233-3502
(518) 402-8156
(518) 402-9029 (fax)
jason.fagel@dec.ny.gov

II. Data Deliverable Format and Contents

A. Case Narrative

1. Regardless of deliverable Category (A or B), all samples submitted for analysis under Analyte Group 5 will require a case narrative be provided with the data package.

2. This section of the data package shall be clearly labeled "Case Narrative."

3. The header or opening paragraph of the narrative must contain the following details:
   - **a)** Contractor's Business Name;
   - **b)** Contract Number;
   - **c)** NYSDEC Case Code;
   - **d)** NYSDEC SDG Identifier;
   - **e)** Laboratory's internal SDG ID or "Submission ID".

4. The first section of the narrative must describe general anomalies experienced and observed with the physical submission of samples for analysis. Examples of items that must be summarized in this section of the narrative include:
   - **a)** Sample labels or custody documents that are, or appear to be, erroneous and the actions taken to confirm/correct them. This includes errors related to field weights and measurements that will affect final reported values.
   - **b)** Broken, damaged, or missing sample containers.
   - **c)** Problems with or lack of sample preservation, including cooler temperatures. Describe how cooler/sample temperatures were measured upon receipt.

5. The remaining sections of the narrative must be parsed by laboratory section (organics, inorganics, wet chemistry, etc.), then sub-sectioned by individual analyses within those areas. The Contractor must provide a detailed documentation of any anomalies encountered during the analysis of the samples and/or performance of the methods. Examples of items that must be summarized include:
   - **a)** Certain analytical methods allow the laboratory/analyst to choose among multiple procedures and/or equipment. The narrative must summarize which options within the method have been used, including extraction procedures, clean-ups, calibration levels, volatile traps, GC columns, etc.

b) Summarize and explain all manual integrations and overrides of data system calculations.

c) Failures to meet quality control limits and the associated corrective actions taken.

d) Adjustments to sample volume/mass that affect the final detection and reporting limits.

e) Dilutions performed and the justification for those dilutions.

f) Re-analyses performed on Department samples and the justification for such re-analyses. When both sets of data are reported, provide a statement asserting which set of results is believed to be more accurate and/or representative. If the lab cannot assert which set of reported results (original or re-analyzed) are most representative of the sample, then the reporting of multiple result sets should be noted to the data user. Re-analyses are generally not billable unless specifically requested by the Department. If the Contractor believes a re-analysis should be billable, an explanation must be provided.

g) Summarize any method modifications performed, as requested or as necessary.

6. **Certification** – At the conclusion of the narrative the Contractor must provide a certification statement signed and dated by the technical director or project manager. Included printed name and title of signor. The statement must read as follows, verbatim:

   "I certify that this Sample Data Deliverable is in compliance with the terms and conditions of the Contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature."

7. Because the final data package will be reported electronically the signed original must be kept on file with the Contractor and submitted to the Department upon request.

B. Sample Summary Table

Regardless of deliverable Category (A or B), the Contractor must provide a summary table detailing all the samples contained in the SDG. The header information for the table must at minimum include the NYSDEC Case Code, the NYSDEC SDG Identifier, and the Contractor's internal SDG identifier. Each line of the table must include the following:

- NYSDEC Sample ID
- Sample ID assigned by Contractor

- Date sampled
- Date received
- All tests ordered on the sample

All samples submitted for analysis under Analyte Group 5 will require a Sample Summary Table be provided with the report. This table can also be used as an attachment to Contract invoices to summarize the sample analyses being billed.

C. Qualifiers and Flagging

1. Regardless of deliverable Category (A or B), the qualifiers and flagging used in PAP-5 data packages must follow the applicable USEPA CLP organic and inorganic requirements. An approved NYSDEC QAPP may specify additional or alternate data qualifiers and would be provided to the Contractor as necessary.

a) Qualifiers/flags used in the EDD will be defined by the valid values for that EDD and may be differ from the qualifiers/flags used in the data package.

b) "Qualifier/Flag Summary Table" – The Contractor must provide a table summarizing all flagging used in the data package, even if the value for those flags have been previously described by the Department and/or USEPA CLP. The table must only summarize flags used in the PDF data package, as EDD flags are predefined. All samples submitted for analysis under Analyte Group 5 will require a Qualifier/Flag Summary Table be provided with the report.

D. PAP Forms

The Department does not provide form templates for PAP-5 reporting. The Contractor may use CLP form templates for reporting, or they may use custom CLP-like forms provided all the necessary PAP-5 reporting elements are included.

1. **General Rules for Adapting CLP Forms for NYSDEC PAP-5 Use** – The PAP-5 forms and reporting format are designated "CLP-like." Many of the same elements required in the CLP forms are required in the analogous PAP-5 forms, but the primary differences are highlighted below:

a) Method ID – Certain CLP forms are purposed for reporting specific methods found in the CLP, and therefore the method may not be identified on the form. The PAP-5 reports must be adaptable for reporting results from Standard Methods, MCAWW, SW-846, ASTM and other method sources, so the methods cannot be assumed. The analytical method associated with a PAP-5 form must always be clearly labeled on the form itself. The method identification may be contained in the header, body, or footer of the page.

b) Layout – The physical layout of PAP-5 compliant forms does not need to match that of their CLP counterparts. If all the required data

elements are present on the form or report, it will be considered compliant. Although no layout is prescribed for the PAP-5 forms, the layout used by the Contractor must be logical (i.e., common elements grouped together) and consistent (i.e., reoccurring information must have a similar layout among all the forms). Single page CLP forms may be expanded into multiple pages if the Contractor can convey the data more effectively in such a format.

c) Applicability – The CLP forms were designed to go along with the CLP methods and the requirements associated with those methods. When alternate methods are selected by the Department, certain CLP forms or elements of those forms may not be applicable and would not be required in the PAP-5 data package.

   1) When a form has multiple pages or parts, the Contractor is expected to complete all pages applicable to the requested analysis method**.**

   2) Certain cleanup procedures are mandatory parts of the CLP methods and references to these cleanups are contained in the CLP forms. If the method requested by the Department does not require these cleanups, or if the cleanups were not specifically ordered by the Department, these sections of the PAP forms may be left blank or omitted.

d) CLP Limits – In some CLP forms, the QC acceptance limits are part of the form boilerplate. The CLP acceptance limits do not apply to PAP-5 reports, but the acceptance limits from the method requested by the Department or the project's QAPP would be applicable. The Contractor has three options in dealing with acceptance limits found on the standard forms, listed below in order of the Department's preference:

   1) Replace the CLP acceptance limits with the limits from the requested method.

   2) Redact or remove the boilerplate CLP acceptance limits and summarize the acceptance limits for the requested method in a separate area within the form.

   3) Redact or remove the boilerplate CLP acceptance limits and summarize the acceptance limits for the requested method on a separate form.

e) Global Substitutions – the following items are found on most CLP Forms and must be substituted using the instructions below (italicized text is directly from the CLP Form):

   1) *"Case No."* must be replaced with the Case Code assigned by the Department to the samples at the time of submittal.

2) *"SDG No."* must be replaced with the identifier assigned by the Department to the sample delivery group (SDG) at the time of submittal.

3) *"EPA SAMPLE NO."* must be replaced with the sample ID assigned by the Department.

f) Units – Most of the CLP Forms are coded to use either µg/L (for all waters), µg/kg (for organic solids), or mg/kg (for inorganic solids). The PAP forms must use the most appropriate units for the method requested.

g) Corrections – When possible, the Contractor should generate their PAP-5 forms directly from instrument output or their laboratory information management system (LIMS). Directly generating PAP forms from these data systems may not always be possible and copies of handwritten forms of logbooks may need to be used. Corrections to handwritten item are permitted, providing the following procedures are used.

1) A single line is drawn through the incorrect piece of information. The original information must still be legible.

2) The correct information is written directly adjacent to the incorrect information, preferably above.

3) The person making the correction dates and initials the correction.

4) Correction fluid or tape must never be used to correct laboratory data.

5) Data system outputs may be manually corrected in the same manner if and as necessary, but this practice should be avoided whenever possible.

2. **Organics Data** – Forms and associated instructions included in SOM02.3 Exhibit B should be directly adaptable to NYSDEC PAP-5 inorganic reporting. Any exception to SOM02.3 Exhibit B reporting rules or forms are listed below:

a) General modifications for form headers:

(1) The "MA No." field may be left blank or omitted.

(2) The "Lab Code" field may be left blank or omitted.

b) The "SDG Cover Page" detailed in SOM02.3 is optional. The SDG Narrative requirements of this Exhibit handle the signed certification of the sample results.

c) Form 1B-OR – Tentatively Identified Compounds – This form may be omitted as Analyte Group 5 does not require Tentatively Identified Compounds (TICs) to be reported.

d) Form 2(A, B, C)-OR – Deuterated Monitoring Compound Recovery/Surrogate Recovery – The Headers in the table must be modified to display the spiked monitoring compounds applicable to the requested contract method. Alternately, a 'key' may be developed that relates the boilerplate labels (DCM1, DCM2, SUR 1-1, SUR 1-2, etc.) to the spiked monitoring compounds used in the method.

e) Form DC-1 – Sample Log-In Sheet – Use of the DC-1 Form is not mandated, but the lab must have a similar form that reports the condition of samples upon receipt.

f) Form DC-2 - Full Organics Complete SDG File (CSF) Inventory Sheet – This form is optional.

3. **Inorganic Data (Metals & Cyanide)** – Forms and associated instructions included in ISM02.3 Exhibit B should be directly adaptable to NYSDEC PAP-5 inorganic reporting. Any exception to ISM02.3 Exhibit B reporting rules or forms are listed below:

   a) General modifications for form headers:

      (1) The "SOW No." field may be left blank or omitted.

      (2) The "MA No." field may be left blank or omitted.

      (3) The "Lab Code" field may be left blank or omitted.

   b) The "SDG Cover Page" detailed in ISM02.3 is optional. The SDG Narrative requirements of this Exhibit handle the signed certification of the sample results.

   c) Form 7-IN – CRQL Check Standard –In cases where a CRQL Check Standard or other low-level blank spike is required, please use the Form 7-IN to report the results of the QC sample. Adding header labeling to the form to differentiate it from the form used to report the laboratory control sample (LCS) is the only modification required. The lower levels used for spiking the CRQL Check Standard are populated into the "True" column of the form. Form 7-IN is still used to report the basic LCS results and is required for this purpose.

      1) If the spiking level of the LCS is less than or equal to two (2) times the applicable quantitation limit, a separate form to report the CRQL Check Standard is not required.

   d) Form DC-1 – Sample Log-In Sheet - Use of the DC-1 Form is not mandated, but the lab must have a similar form that reports the condition of samples upon receipt.

e) Form DC-2 - Full Inorganics Complete SDG File (CSF) Inventory Sheet – This form is optional.

4. <u>Wet Chemistry Data</u> – The CLP currently does not have any templates for the reporting of wet chemistry data. The forms used for PAP-5 wet chemistry reporting must be modified versions of the CLP forms for inorganics. The rules for these modifications, on a form-by-form basis, are explained below. All form references below are based on USEPA ISM02.3, Exhibit B, except where noted.

a) General modifications for form headers:

(1) The "SOW No." field may be left blank or omitted.

(2) The "MA No." field may be left blank or omitted.

(3) The "Lab Code" field may be left blank or omitted.

b) <u>Form 1-IN</u> – Inorganic Analysis Data Sheet – Use this form to report the results of wet chemistry analyses. A single form must be used for each wet chemistry analytical method performed. Some wet chemistry analytes do not have a CAS number, and in those cases, the CAS number field may be left blank.

c) <u>Form 2-IN</u> - Initial and Continuing Calibration Verification – Use this form to report Initial Calibration Verification (ICV) and Continuing Calibration Verification (CCV) results for wet chemistry methods where such checks are required.

d) <u>Form 3-IN</u> – Blanks – Use this form to report Initial Calibration Blank (ICB), Continuing Calibration Blanks (CCB), and Method/Preparation Blanks for wet chemistry analyses. Some wet chemistry methods may not require all types of blanks reported through the form.

e) <u>Form 4-IN</u> – ICP Interference Check Sample – This form is not applicable to wet chemistry reporting and may be omitted.

f) <u>Form 5A-IN</u> – Matrix Spike Sample Recovery – Use this form to report matrix spike (MS) and matrix spike duplicate (MSD) wet chemistry sample results.

g) Form 5B-IN – Post-Digest/Distillation Spike Sample Recovery - This form is not applicable to wet chemistry reporting and may be omitted.

h) Form 6-IN – Duplicates – Use this form to report duplicate wet chemistry sample results.

i) Form 7-IN – Laboratory Control Sample – Use this form to report laboratory control sample (LCS) wet chemistry sample results. Also, in cases where a CRQL Check Standard or other low-level blank spike is required, please use the Form 7-IN to report the results of the QC sample. Adding header labeling to the form to differentiate it from the form used to report the laboratory control sample (LCS) is the only modification

required. The lower levels used for spiking the CRQL Check Standard are populated into the "True" column of the form. Form 7-IN is still used to report the basic LCS results and is required for this purpose.

j) Form 8-IN – ICP-AES and ICP-MS Serial Dilutions - This form is not applicable to wet chemistry reporting and may be omitted.

k) Form 9-IN – Method Detection Limit - Use this form to report method detection limits (MDLs) for wet chemistry analysis methods.

l) Form 10A-IN and 10B-IN – ICP-AES Interelement Correction Factors - These forms are not applicable to wet chemistry reporting and may be omitted.

m) Form 11-IN – ICP-MS Internal Standard Association - This form is not applicable to wet chemistry reporting and may be omitted.

n) Form 12-IN – Analysis Log – This form is not required for wet chemistry reporting but, analogous forms/worksheets used to set up instrument runs or analytical batches must be included in the wet chemistry raw data.

o) Form 13-IN – ICP-MS Tune - This form is not applicable to wet chemistry reporting and may be omitted.

p) Form 14-IN – ICP-MS Internal Standards Relative Intensity Summary - This form is not applicable to wet chemistry reporting and may be omitted.

q) Form 15-IN – Initial Calibration - This form is not applicable to wet chemistry reporting and may be omitted.

r) Form 16-IN – Initial Calibration Summary - This form is not applicable to wet chemistry reporting and may be omitted.

s) Form DC-1 – Sample Log-In Sheet - This form is optional, but the lab must have an analogous form that reports the condition of samples upon receipt.

t) Form DC-2 - Full Inorganics Complete SDG File (CSF) Inventory Sheet – This form is optional.

E. Data Package Assembly

1. **General Rules for Data Package Assembly** – Contractors must observe the general rules listed below in assembling PAP-5 compliant data package (Category A and Category B) for Analyte Group 5.

   a) Assembly Order - All numbered PAP-5 Forms (Form 1, 2, 3, etc.) associated with a particular analysis/method must be grouped together in sections within the data package. The forms grouped from a common analysis/ method must be ordered sequentially within that section.

(a) Forms that have a NYSDEC Sample ID in the heading must be ordered by that NYSDEC Sample ID per the order detailed on the chain of custody (COC) document(s). When multiple COCs are associated with an SDG the samples from the first COC received will be listed first. With samples from other COCs following chronologically.

(b) When re-analyses are necessary and multiple versions of a common form with the same NYSDEC Sample ID are generated, forms associated with the original analysis must be ordered first and subsequent re-analyses following chronologically.

b) Adobe PDF Requirements – All data packages must be generated as an Adobe PDF file for electronic delivery. Submittal of hard copy (paper) data packages is prohibited.

1) The Department prefers PDF files that are directly generated from the reporting/instrument software over those generated by scanning. Directly generated PDF files must be formatted to have searchable text within the file.

2) Realizing that not all software and instruments can be configured to directly generate PDF output, the Department will accept PDFs created from scanned hard copy. Scanner generated PDFs must be clear and legible. Scan based PDF files that cannot be read or understood will be rejected by the Department. Rejected PDFs must be corrected/regenerated and resubmitted to the Department within 5 business days.

c) Bookmarking – The final PDF file must be bookmarked for easy navigation from section to section. Sections II.E.2 and II.E.3 below detail the assembly specifications for the Category A and Category B data packages, respectively. Within Sections II.E.2 and II.E.3, certain subsections are marked with the following annotations:

1) [B-1] – This section of the data package must be marked with a parent-level (primary) PDF bookmark.

2) [B-2] – This section of the data package must be marked with a child-level (secondary) PDF bookmark.

d) Page Numbering – All pages in the data package must be numbered sequentially.

e) Extraneous Data - Extraneous information in the data package must be kept to a minimum. Raw data and prep logs that do not pertain to Department samples or their QC should be excluded from the data package. The Contractor should refrain from including multiple copies of the same supporting data. For example, if the same standard

prep log pages are relevant to multiple analyses in the data package, include only one copy of the pages and link to it from the appropriate sections.

2. **Category A Data Package** – Listed below are the required contents and assembly order for a PAP- 5 Category A Data Package.

   a) SDG Case Narrative **[B-1]** (See Section II.A)

   b) Sample Summary Table **[B-1]** (See Section II.B)

   c) Qualifier/Flag Summary Table **[B-1]** (See Section II.C)

   d) Organics Data **[B-1]** (The formatting instructions for all forms listed below can be found in Section II.D.1 and II.D.2)

      1) QC Summary **[B-2]**

         (a) Form 2(A, B, C)-OR – Deuterated Monitoring Compound Recovery /Surrogate Recovery

         (b) Form 3A-OR – Matrix Spike/Matrix Spike Duplicate Recovery

         (c) Form 3B-OR – Laboratory Control Sample Recovery

         (d) Form 4-OR – Method Blank Summary

      2) Sample Data **[B-2]**

         (a) Form 1A-OR – Organic Analysis Data Sheet Target Analyte List – Ordered by sample ID with re-analysis reports bundled chronologically with initial runs.

   e) Inorganic Data (Metals & Cyanide) **[B-1]** (The formatting instructions for all forms listed below can be found in Section II.D.1 and II.D.3)

      1) QC Summary **[B-2]**

         (a) Form 3-IN – Blanks

         (b) Form 5A-IN – Matrix Spike Sample Recovery

         (c) Form 6-IN – Duplicates

         (d) Form 7-IN – Laboratory Control Sample

      2) Sample Data **[B-2]**

         (a) Form 1-IN – Inorganic Analysis Data Sheet – (See Section D.3) Ordered by sample ID with re-analysis reports bundled chronologically with initial runs.

   f) Wet Chemistry Data **[B-1]** – When multiple wet chemistry tests are requested, the order of data reporting must be as follows: ion chromatography data, nitrogen-series data, phosphorus-series data, gravimetric data, all other wet chemistry data. (The formatting

instructions for all forms listed below can be found in Section II.D.1 and II.D.4)

1) QC Summary **[B-2]**

(a) Form 3-IN – Blanks

(b) Form 5A-IN – Matrix Spike Sample Recovery

(c) Form 6-IN – Duplicates

(d) Form 7-IN – Laboratory Control Sample

2) Sample Data **[B-2]**

(a) Form 1-IN – Inorganic Analysis Data Sheet – (See Section D.4) Ordered by sample ID with re-analysis reports bundled chronologically with initial runs.

g) Shipping & Receiving Documents **[B-1]**

1) Airbills/Shipping Labels

2) COCs

3) Sample Log-in Sheets

3. Category B Data Package – Listed below are the required contents and assembly order for a PAP-5 Category B Data Package.

a) SDG Case Narrative **[B-1]** (See Section II.A)

b) Sample Summary Table **[B-1]** (See Section II.B)

c) Qualifier/Flag Summary Table **[B-1]** (See Section II.C)

d) Organics Data **[B-1]** (The formatting instructions for all forms listed below can be found in Section II.D.1 and II.D.2)

1) QC Summary **[B-2]**

(a) Form 2A/B-OR – Deuterated Monitoring Compound Recovery

(b) Form 2C-OR - Surrogate Recovery

(c) Form 3A-OR – Matrix Spike/Matrix Spike Duplicate Recovery

(d) Form 3B-OR - Laboratory Control Sample Recovery

(e) Form 4-OR – Method Blank Summary

(f) Form 5-OR – GC/MS Instrument Performance Check

(g) Form 8A-OR - Internal Standard Area and Retention Time Summary Sample Data

2) Form 1A-OR – Organic Analysis Data Sheet Target Analyte List – Ordered by NYSDEC sample ID with re-analysis reports bundled chronologically after the initial runs. **[B-2]**

(a) Chromatogram – assembled immediately after the corresponding Form 1A-OR.

(b) For each sample submitted:

(i) Copies of raw spectra and background-subtracted mass spectra of target compounds identified (GCMS only)

(ii) Quantitation reports generated by the instrument; include example calculations as necessary

3) Standards/Calibration Data **[B-2]**

(a) Form 6A-OR – GC/MS Initial Calibration Data

(i) Chromatograms and quantitation reports for applicable initial calibration standards

(b) Form 6B/C-OR - Initial Calibration of Single Component Analytes

(i) Chromatograms and quantitation reports for applicable initial calibration standards

(c) Form 6D/E-OR - Initial Calibration of Multicomponent Analytes

(i) Chromatograms and quantitation reports for applicable initial calibration standards

(d) Form 6F-OR - Initial Calibration (Single Point) of Multicomponent Analytes

(i) Chromatograms and quantitation reports for applicable initial calibration standards

(e) Form 6G-OR - Resolution Check Summary

(i) Chromatograms and quantitation reports for applicable resolution check runs

(f) Form 7A-OR - Continuing Calibration Verification for GC/MS

(i) Chromatograms and quantitation reports for applicable calibration check standards

(g) Form 7B-OR - Pesticide Performance Evaluation Mixture Calibration Verification Summary

(i) Chromatograms and quantitation reports for applicable calibration check standards

(h) Form 7C-OR - Continuing Calibration Verification Summary

(i) Chromatograms and quantitation reports for applicable calibration check standards

(i) Form 7D-OR - Multicomponent Continuing Calibration Verification Summary

(i) Chromatograms and quantitation reports for applicable calibration check standards

(j) Form 8B-OR - Analytical Sequence

(k) Form 10A-OR - Identification Summary for Single Component Analytes

(l) Form 10B-OR - Identification Summary for Multicomponent Analytes

4) Raw QC Data **[B-2]**

(a) Instrument tune raw data

(b) Blank raw data – Chromatograms and quantitation reports

(c) MS/MSD raw data – Chromatograms and quantitation reports

(d) LCS raw data - Chromatograms and quantitation reports

5) Other Raw Data **[B-2]**

(a) Sample preparation and/or extraction logs

(b) Standard preparation logs

(c) Screening records

e) Inorganic Data (Metals & Cyanide) **[B-1]** (The formatting instructions for all forms listed below can be found in Section II.D.1 and II.D.3)

1) Form 1-IN – Inorganic Analysis Data Sheet **[B-2]**

2) Form 2-IN – Initial and Continuing Calibration Verification

3) Form 3-IN – Blanks

4) Form 4-IN – ICP Interference Check Sample

5) Form 5A-IN – Matrix Spike Sample Recovery

6) Form 5B-IN – Post-Digestion/Distillation Spike Sample Recovery

7) Form 6-IN – Duplicates

8) Form 7-IN – Laboratory Control Sample (and CRQL Check Standard if required)

9) Form 8-IN – ICP-AES and ICP-MS Serial Dilutions

10) Form 9-IN – Method Detection Limits

11) Form 10A/B-IN – ICP-AES Interelement Correction Factors

12) Form 12-IN – Analysis Log

13) Form 15-IN – Initial Calibration

14) Form 16-IN – Initial Calibration Summary

15) ICP-AES Raw Data (with example calculations as necessary) **[B-2]**

16) ICP-MS Raw Data (with example calculations as necessary) **[B-2]**

17) Mercury Raw Data (with example calculations as necessary) **[B-2]**

18) Cyanide Raw Data (with example calculations as necessary) **[B-2]**

19) Other Raw Data **[B-2]**

(a) Sample preparation logs and associated raw data

(b) Standard preparation logs and associated raw data

(c) Screening records

f) Wet Chemistry Data **[B-1]** – When multiple wet chemistry tests are requested, the order of data reporting must be as follows: ion chromatography data, nitrogen-series data, phosphorus-series data, gravimetric data, all other wet chemistry data. Within the results/data for each method, reports must be ordered by NYSDEC sample ID with re-analysis reports bundled chronologically after the corresponding initial runs. (The formatting instructions for all forms listed below can be found in Section II.D.1 and II.D.4)

(1) Form 1-IN – Inorganic Analysis Data Sheet **[B-2]**

(2) Form 2-IN – Initial and Continuing Calibration Verification

(3) Form 3-IN – Blanks

(4) Form 5A-IN – Matrix Spike Sample Recovery

(5) Form 6-IN – Duplicates

(6) Form 7-IN – Laboratory Control Sample (and CRQL Check Standard if required)

(7) Form 9-IN – Method Detection Limits

(8) Form 12-IN – Analysis Log

(9) Form 15-IN – Initial Calibration

(10) Form 16-IN – Initial Calibration Summary

(11) Instrument Raw Data (with example calculations as necessary) **[B-2]**

(12) Other Raw Data **[B-2]**

(a) Sample Preparation Logs and associated raw data

(b) Standard Preparation Logs and associated raw data

(c) Screening records

g) Miscellaneous Data **[B-1]**

1) Sample pH and % solids determination data (include this data here when these tests have not been specifically ordered but are required to be determined for the analysis/reporting of other ordered parameters.)

2) Internal COCs

h) NYSDEC Shipping & Receiving Documents **[B-1]**

1) Airbills/Shipping Labels

2) COCs

3) Sample Tags

4) Sample Log-in Sheets

5) Misc. Shipping/Receiving Records

i) Other Records **[B-1]**

1) Telephone communication logs

j) Comments **[B-1]**

F. Electronic Data Deliverable (EDD) Requirements

All data submittals, regardless of Category (A or B), must include an EDD. The default EDD specified by the Department for Analyte Group 5 are based on "EQuIS™" environmental data management software produced by Earthsoft, Inc. The EDD format specified allows for the efficient flow of sample results into databases used by the Department. Analyte Group 5 will rely mostly on a single EDD format, but the Department reserves the right to request alternate formats or direct submittals through a data portal for work performed under Analyte Group 5. The Contractor will be notified at project start up if an alternate EDD format or submission process is required.

During the contract term, the Contractor may be required to submit data to DECs electronic data interchange (EDI) platform. Contractors will initially be required to work with New York State Office of Information and Technology staff to establish a username and password for the EDI platform and establish a submission process.

1. "NYSDEC EDD" – This name of the default EDD for use in the Department's ambient water monitoring programs. The EDD format includes all sample analysis data plus select QC results. The specifications and instructions for the NYSDEC EDD format can be found at http://www.dec.ny.gov/chemical/62440.html. The instructions found at that URL are focused on EDD needs of the Division of Environmental Remediation (DER). DER EDD specifications can be carried over to Analyte Group 5 EDDs with the following exceptions:

a) Any communication regarding Analyte Group 5 EDDs must be directed to the Analyte Group 5 Contract Manager (Jason Fagel) and not NYENVDATA@dec.ny.gov.

b) All reporting of completed Analyte Group 5 EDDs must be to the applicable Division of Water Project Manager and the Analyte Group 5 Contract Manager, not to NYENVDATA@dec.ny.gov.

G. Quick Turn-Around Reporting Requirements

When sample analyses are ordered for quick turn-around analyses, abbreviated reporting can be performed to meet the required quick turn-around analyses ordered at the 24-hour and 72-hour levels. Once the abbreviated reporting has been performed, the Contractor will have the standard 30-days from the date of sample submittal to produce a PAP Category A or Category B Data Package and EDD, as requested. Sample analyses ordered for 10-day turn-around will require an initial Category A report, followed up with a Category B report within the standard 30-day reporting period, if a Category B report is required/ordered.

1. Abbreviated Report Requirements – Abbreviated reports for the purpose of conveying quick turn-around analysis requests (24-hr & 72-hr.) must consist of the following:

a. A cover letter that explains any major problems encountered during the processing or analysis of the samples. Emphasis must be placed on any anomalies or problems that could potentially invalidate the sample results being submitted. The letter must certify the sample results being presented and must be signed by the laboratory director or a representative of similar authority.

b. All applicable Form 1's for the analyses requested. If Form 1's cannot be created on an expedited basis, certificates of analysis must be created that list all the following information: NYSDEC Sample ID, NYSDEC Case Code, NYSDEC SDG ID, Laboratory SDG, Sample Collection Date, Sample Submittal Date, Matrix, Analyte, Method,

Result, Unit, Dilution, PQL, and Analysis Date. If a certificate of analysis is being used, it must be on the Contractor's official letterhead. A label or stamp indicating the data provided are "PRELIMINARY RESULTS" must also be present on the forms.

c. Copies of the chain of custody (COC) documents associated with the samples.

2. Report Distribution – Quick turn-around result must be reported according to the instructions on the COC submitted with the samples. Instructions on the COC should include who the expedited reports must go to and a delivery method (email to _____, fax to _____, or other). If the Contractor receives samples designated for quick turn-around processing without any reporting instructions, the sample submitter must be contacted immediately to obtain this information.

III. Routine Reporting

Laboratories in Analyte Group 5 are required to submit certain routine reports and documents to satisfy their Contract requirements. These reports are not associated with the results of submitted samples. Routine reports are generated by the Contractor and submitted to the Department on a prescribed or requested basis, as detailed below. All items listed below may be requested and distributed by email.

A. Weekly Summary Report

All Contract laboratories in Analyte Group 5 must submit a Weekly Summary Report to summarize Contract samples received the week prior. The weekly report must also summarize adverse conditions and situations being experienced by the Contractor that may affect Contract work products. This report must be specific to Analyte Group 5 and may not contain data for other Analyte Groups that the Contractor may also perform work in. If the Contractor uses multiple laboratory locations or subcontractor/partner laboratories to satisfy Analyte Group requirements, the activities of all laboratories must be contained in a single report.

1. The report must cover a full calendar week, Sunday to Saturday.

2. The report must be received by the Department by C.O.B. Wednesday immediately following the conclusion of the prior calendar week.

3. The report must be delivered via email to the Analyte Group 5 Contract Manager or designee. The Analyte Group 5 Contract Manager at the time of this writing is Jason Fagel, jason.fagel@dec.ny.gov. The subject line of the email must read as follows, "**AG5 Week of *mmddyy* Summary – C00*xxxx,***" where "mmddyy" is the date the week began on and "xxxx" is the Contract number.

4. The weekly summary report must be an MS Excel file. The Excel file must have two (2) worksheet pages. Figures 5-B-1 and 5-B-2 show screen shots for the worksheet pages in an example report. All items in quotes below must be used as the titles and headings of the weekly reports generated by the Contractor.

a) Worksheet Page 1 – "Samples Received" – Each sample received during the week will populate a row in the worksheet and the rows from previous weeks do not carry over to the current week's report. The worksheet will have a column for each of the following pieces of information related to that sample:

- "Report Date" – the date the weekly report is issued on, always the Tuesday following the conclusion of the previous calendar week.
- NYSDEC "Case Code" – case code assigned to the sample by Department staff.
- NYSDEC "SDG ID" – sample delivery group identifier assigned by Department staff.
- NYSDEC "Sample ID" – sample identifier assigned by Department staff.
- "Collection Date" – the date the sample was collected.
- "Submittal Date" – the date the sample was submitted to the Contractor.
- "Contract Number" – the Contract number the analyses are being performed under.
- "Submission ID" or Laboratory SDG ID – internal identifier assigned to the SDG by the Contractor.
- "Sample Submitter" – the first and last name of the Department staff person submitting the samples or the project manager designated by the Department.
- "Matrix" – the sample matrix. Only the following valid values are allowed: AIR, FILTER, OIL, OTHER, SOIL, TISSUE, WASTE, and WATER.
- "Estimated Price" – the total cost to perform all analyses ordered on that sample, including any billable QC associated with that sample.
- "Tests Ordered" – list all the tests ordered on the sample, abbreviate as necessary, no valid values assigned, limit to 255 characters.

b) Worksheet Page 2 – "Laboratory Status" – Any adverse conditions that the Contractor is experiencing, or has experienced, that could potentially affect their work product under the Contract must be summarized here. The summary need not be exhaustive, but anything that will, or potentially could affect, Department samples must be detailed. This portion of the weekly report will be primarily narrative. Each adverse condition will be summarized on a separate row and the rows will carry over from week to week until 30 days has passed since the corrective action date. The headings of the columns will be as follows:

- "Adverse Condition" – list the adverse condition or situation the Contractor is currently experiencing. The adverse conditions and situations that must be detailed here include, but are not limited to the following:
  - Instruments or equipment that are failing or inoperable,
  - Staffing issues such as departures, reassignments, and long-term absences
  - Reduction in capacities due to outside workloads,
  - Relocation or remodeling of workspaces,
  - Contamination issues,
  - Changes to Contract required certifications (voluntary or imposed)
  - Holiday closures and changes to basic operating schedule.
- "Tests Affected" – list the tests, sections, and/or departments that are affected by the adverse condition.
- "Date Discovered" – list the date the adverse condition was discovered by or brought to the attention of the Contractor.
- "Date Corrected" – list the date the adverse condition was corrected.
- "Corrective Action" – briefly describe the corrective action taken.
- NYSDEC "Samples Affected" – list by case code and SDG any samples that could potentially be affected by the adverse condition or situation.

5. Weekly reports must be in the format detailed above. If a submitted Weekly Summary Report does not conform to the prescribed format, it will be rejected by the Department. When a report is deemed noncompliant, the Contractor's designated Project Manager will be notified via email. Upon rejection, the

Contractor will have 24 hours to correct errors and submit a compliant Weekly Summary Report.

6. Each Weekly Summary Report is uploaded to a contract management database maintained by the Department. Accurate and complete Weekly Summary Reports allow the Department to quickly verify work products prior to invoice payments. An incomplete Weekly Summary Report (a report that fails to list all samples received or all anomalies) can disrupt the Department's contract management activities. Incomplete or inaccurate Weekly Summary Reports could cause delays in payment approvals and processing.

B. Organizational Charts

Each Analyte Group 5 Contractor must submit a copy of their staff organizational structure as of March 15th of the given Contract year. Laboratories operating multiple facilities to perform work under Analyte Group 5 must submit a corporate organizational chart annually, in addition to the charts for each facility.

1. Reporting of Staff Changes and Vacancies - The Analyte Group 5 Contract Manager must be notified in writing if any of the required staff positions (Technical Director, Quality Assurance Officer, or Project Manager, see PAP-5 Exhibit A) are reassigned, vacated, and/or backfilled.

C. Detection and Quantitation Studies

As a basic requirement, the Contractor does not need to submit results of any annually or semi-annually performed MDL/LOD studies. Statistical determinations of detection levels must still be performed at the intervals required by the method or certification body. The Contractor must provide copies of detection/quantitation studies to the Department within five (5) business days of a written request. See PAP-5 Exhibit C for details on reporting detection and quantitation studies.

D. Proficiency Results

The results of proficiency samples performed as part of the Contractor's certification requirements do not need to be routinely submitted to the Department. The Contractor must provide copies of proficiency sample results to the Department within five (5) business days of a written request.

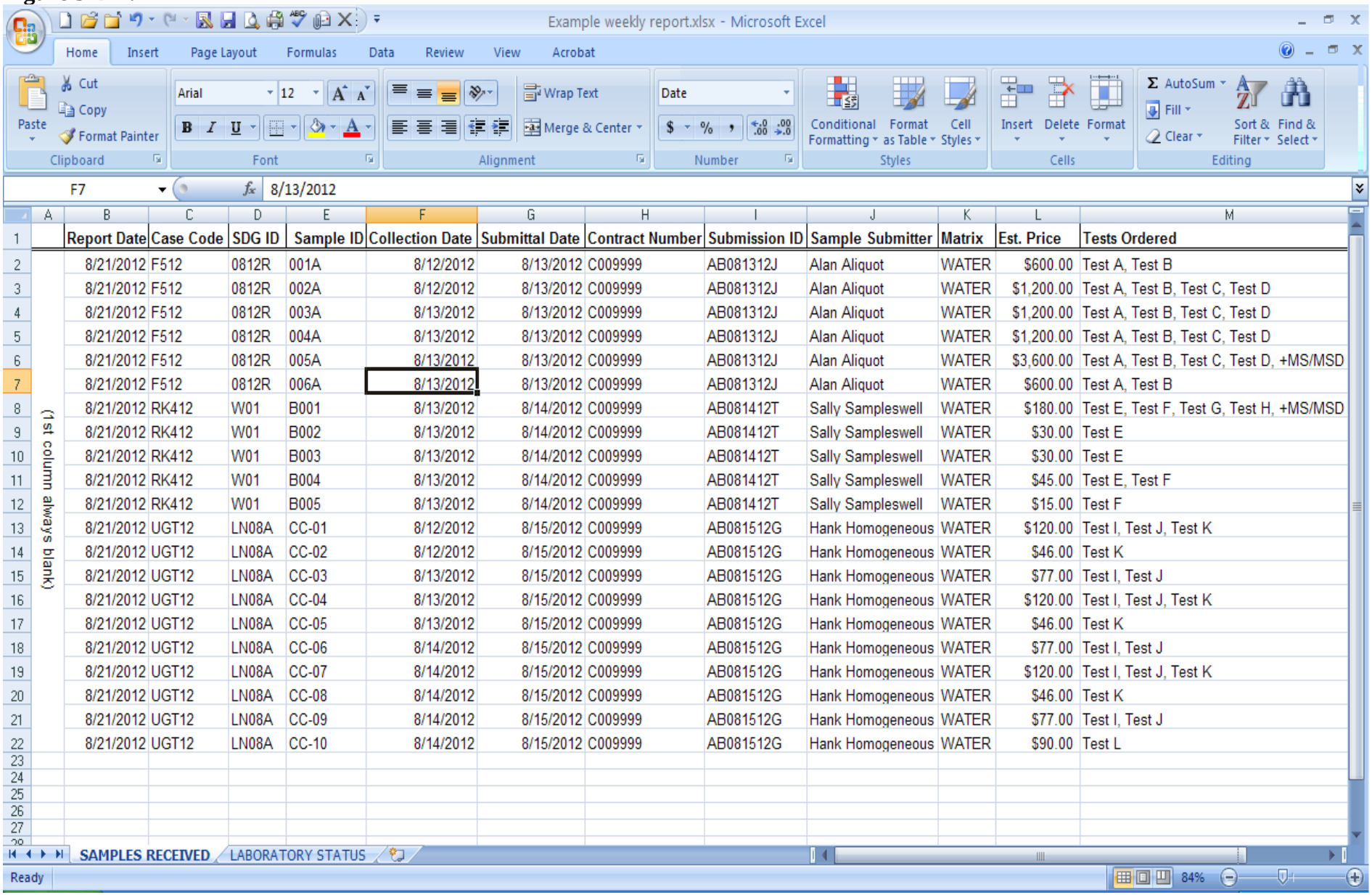
E. Standard Operating Procedures (SOPs)

The Contractor must maintain SOPs for all analyses and functions they perform. The Contractor is not required to provide SOPs or revised SOPs on a prescribed basis but must provide copies of any SOP to the Department within five (5) business days of a written request. Requirements for SOP format and content can be found in PAP-5 Exhibit E.

F. Quality Assurance Management Plan (QAMP)

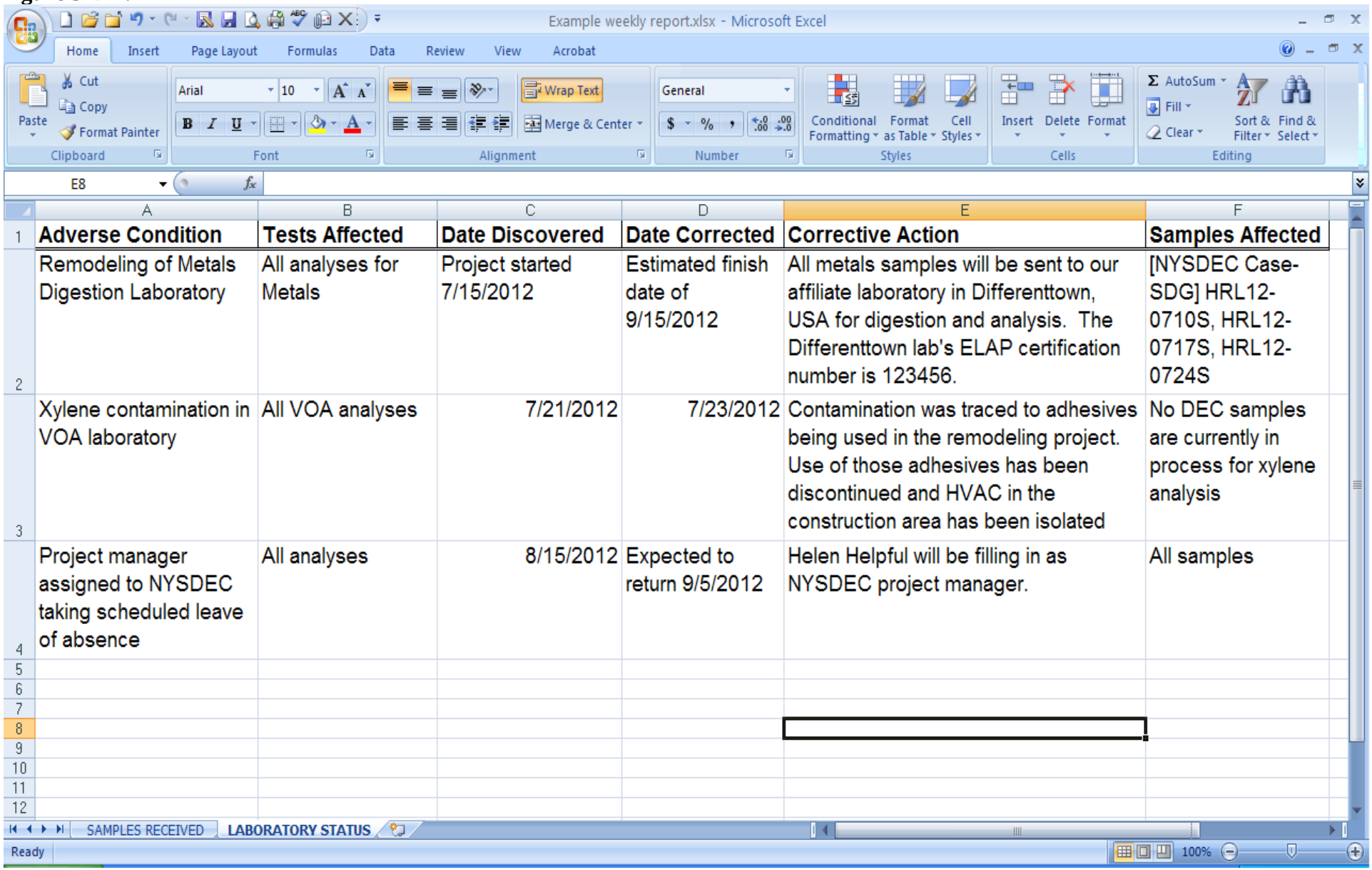
The Contractor must maintain a QAMP to define their quality assurance management structure and practices. The Contractor is not required to provide their QAMP or revised QAMPs on a prescribed basis but must provide a copy of the QAMP to the Department within five (5) business days of a written request. Requirements for QAMP format and content can be found in PAP-5 Exhibit E.

Figure 5-B-1:



Report Date	Case Code	SDG ID	Sample ID	Collection Date	Submittal Date	Contract Number	Submission ID	Sample Submitter	Matrix	Est. Price	Tests Ordered
8/21/2012	F512	0812R	001A	8/12/2012	8/13/2012	C009999	AB081312J	Alan Aliquot	WATER	$600.00	Test A, Test B
8/21/2012	F512	0812R	002A	8/12/2012	8/13/2012	C009999	AB081312J	Alan Aliquot	WATER	$1,200.00	Test A, Test B, Test C, Test D
8/21/2012	F512	0812R	003A	8/13/2012	8/13/2012	C009999	AB081312J	Alan Aliquot	WATER	$1,200.00	Test A, Test B, Test C, Test D
8/21/2012	F512	0812R	004A	8/13/2012	8/13/2012	C009999	AB081312J	Alan Aliquot	WATER	$1,200.00	Test A, Test B, Test C, Test D
8/21/2012	F512	0812R	005A	8/13/2012	8/13/2012	C009999	AB081312J	Alan Aliquot	WATER	$3,600.00	Test A, Test B, Test C, Test D, +MS/MSD
8/21/2012	F512	0812R	006A	8/13/2012	8/13/2012	C009999	AB081312J	Alan Aliquot	WATER	$600.00	Test A, Test B
8/21/2012	RK412	W01	B001	8/13/2012	8/14/2012	C009999	AB081412T	Sally Sampleswell	WATER	$180.00	Test E, Test F, Test G, Test H, +MS/MSD
8/21/2012	RK412	W01	B002	8/13/2012	8/14/2012	C009999	AB081412T	Sally Sampleswell	WATER	$30.00	Test E
8/21/2012	RK412	W01	B003	8/13/2012	8/14/2012	C009999	AB081412T	Sally Sampleswell	WATER	$30.00	Test E
8/21/2012	RK412	W01	B004	8/13/2012	8/14/2012	C009999	AB081412T	Sally Sampleswell	WATER	$45.00	Test E, Test F
8/21/2012	RK412	W01	B005	8/13/2012	8/14/2012	C009999	AB081412T	Sally Sampleswell	WATER	$15.00	Test F
8/21/2012	UGT12	LN08A	CC-01	8/12/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$120.00	Test I, Test J, Test K
8/21/2012	UGT12	LN08A	CC-02	8/12/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$46.00	Test K
8/21/2012	UGT12	LN08A	CC-03	8/13/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$77.00	Test I, Test J
8/21/2012	UGT12	LN08A	CC-04	8/13/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$120.00	Test I, Test J, Test K
8/21/2012	UGT12	LN08A	CC-05	8/13/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$46.00	Test K
8/21/2012	UGT12	LN08A	CC-06	8/14/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$77.00	Test I, Test J
8/21/2012	UGT12	LN08A	CC-07	8/14/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$120.00	Test I, Test J, Test K
8/21/2012	UGT12	LN08A	CC-08	8/14/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$46.00	Test K
8/21/2012	UGT12	LN08A	CC-09	8/14/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$77.00	Test I, Test J
8/21/2012	UGT12	LN08A	CC-10	8/14/2012	8/15/2012	C009999	AB081512G	Hank Homogeneous	WATER	$90.00	Test L

Figure 5-B-2:



	A	B	C	D	E	F
1	**Adverse Condition**	**Tests Affected**	**Date Discovered**	**Date Corrected**	**Corrective Action**	**Samples Affected**
2	Remodeling of Metals Digestion Laboratory	All analyses for Metals	Project started 7/15/2012	Estimated finish date of 9/15/2012	All metals samples will be sent to our affiliate laboratory in Differenttown, USA for digestion and analysis. The Differenttown lab's ELAP certification number is 123456.	[NYSDEC Case-SDG] HRL12-0710S, HRL12-0717S, HRL12-0724S
3	Xylene contamination in VOA laboratory	All VOA analyses	7/21/2012	7/23/2012	Contamination was traced to adhesives being used in the remodeling project. Use of those adhesives has been discontinued and HVAC in the construction area has been isolated	No DEC samples are currently in process for xylene analysis
4	Project manager assigned to NYSDEC taking scheduled leave of absence	All analyses	8/15/2012	Expected to return 9/5/2012	Helen Helpful will be filling in as NYSDEC project manager.	All samples
5						
6						
7						
8						
9						
10						
11						
12						

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Exhibit C
Contract Required Detection and Quantitation Limits

I. Introduction

Certain ambient monitoring programs and projects require very sensitive measurements of environmental contaminants. To accomplish goals related to low-level detection and quantitation, the Department has specified Contract Required Quantitation Limits (CRQL) for certain analyses in Analyte Group 5. These CRQLs are listed with their applicable analysis line items in the Price Tables for Analyte Group 5. PAP-5 Exhibit C does not contain numeric CRQLs, but details the Contract protocols related to detection and quantitation specific to Analyte Group 5.

II. Detection Limits

There are no numeric detection limits prescribed for Analyte Group 5 and consequently no numeric detection limits have been specified in the associated Price Tables. Detection limits are still an important component in many environmental analyses and subsequently many Department programs. The procedures below must be used by the Contractor to determine and report detection limits as necessary.

A. Method Detection Limit (MDL) Procedures

For work associated with SPDES/NPDES monitoring and ambient water monitoring, the Contractor must perform method detection limit (MDL) studies using the procedures and frequency prescribed in 40 CFR Part 136, Appendix B. MDL studies must be performed using a matrix that mimics the test matrix to the greatest extent possible. The derived MDL must not exceed the prescribed CRQL (from Price Tables, if prescribed) under any circumstances.

The results of MDL studies do not require stand-alone reporting, but MDL reporting may be a required as a component of certain sample data packages. Copies of MDL study results along with the associated raw data must be made available to the Department upon written request. See Section IV.B.

B. Limit of Detection (LOD) Procedures

In cases where the MDL procedure in 40 CFR Part 136, Appendix B do not apply (non-water methods/matrices) the Contractor may use the LOD procedures specified by The NELAC Institute's (TNI) 2016 Standard.

III. Quantitation Limits

In cases where the Department has determined the sensitivity of a particular analysis is critical to our monitoring efforts, a numeric Contract Required Quantitation Limit (CRQL) has been specified and listed in the Analyte Group 5 Price Tables. The process used by the Department to prescribe CRQLs is detailed in Section III.A below. In cases where the Department has not prescribed a CRQL, the Contractor must establish a default quantitation limit using the process described in Section III.B below. Section III.C discusses procedures that must be followed when the lab fails to meet a prescribed CRQL. Section III.D discussed the procedures that the lab must follow to dispute a prescribed CRQL that they believe is not routinely or practically achievable.

Laboratories must review the CRQLs prior to bidding on the Contract and assess if they have the abilities and resources to meet them. The laboratory must not bid on work in an Analyte Group if they cannot routinely achieve the prescribed CRQLs. The Contractor may be asked to confirm their Limit of Quantitation (LOQ) meets the CRQL by performing LOQ confirmation per the TNI 2016 Standard (TNI Standard. Volume 1, Module 4. EL-V1M4-2016, February 2017).

A. How Contract Required Quantitation Limits (CRQL) are Prescribed

The CRQLs prescribed in the Contract Price Tables were derived by the Department using a combination of the following procedures:

1. Experience with Past Projects – The Department may set CRQLs based upon past experience with contract laboratories performing work on analogous projects. In most cases, data will be compiled over multiple project years to insure the level of sensitivity specified can be consistently achieved.

2. Method Defined Quantitation Limits – The method documentation may directly or indirectly specify a quantitation limit. That quantitation limit, however specified, may be used by the Department as a CRQL.

    a) Quantitation limits, defined in a method as the PQL, MQL, LOQ, ML, or otherwise, may be used by the Department as the CRQL.

    b) If the method uses prescribed concentrations to establish a concentration curve, the low standard may be used by the Department as the CRQL.

    c) If the method defines a working range for the analysis, the lower limit of that range may be used by the Department as the CRQL.

3. Documented Accounts of Method Performance - CRQLs can be set using third party documented accounts of method or instrument performance. Documented accounts include those found in peer reviewed scientific journals and/or performance studies published by instrument manufacturers.

B. Determining a Quantitation Limit in Absence of a Prescribed CRQL

When the Department has not specified a CRQL for a given method or analyte, the Contractor must determine a practical quantitation limit (PQL) as a substitute. The PQL may be determined using one of the following techniques.

1. The PQL can be set to equal the concentration value of the lowest calibration standard. In cases where the method allows use of a single-point calibration, setting the PQL to the calibration standard is not allowed.

2. The Contractor may apply a multiplier to their annually determined MDL/LOQ to set the PQL. The multiplier must be a whole number greater than 3, but less than 10.

3. In either case (using the low calibration standard or a multiple of the MDL/LOQ), the Contractor must be able to confirm their PQL using TNI 2016 Standard LOQ procedures.

C. Failure to Meet CRQLs

When a CRQL is specified in the Price Tables, the Contractor is expected to meet that CRQL for all Department samples submitted under the Contract. If the Contractor fails to meet the Department's prescribed CRQL, the Contractor must clearly document in the sample narrative which CRQLs they have failed to meet and the reasons for these failures. The following are routine exceptions where the Department will allow the Contractor to deviate from the prescribed CRQL:

1. The sample contains a high level of target analyte, which requires the sample to be diluted for those target analytes to be in range.

2. The sample contains a high level of interferants, which requires the sample to be diluted to minimize noise effects caused by said interferants.

3. Due to difficulties with the sample matrix, full concentration of the sample extract or digestate cannot be completed to the method specifications, resulting in a dilution of the sample.

4. The sample is a solid or semi-solid matrix, and is required to be reported on a dry weight basis, the CRQL can be adjusted up to compensate for moisture in the sample.

5. The Department has failed to provide an adequate volume or mass of sample to the Contractor. This includes cases where the sample container has broken or failed.

D. Documenting and Disputing Problematic CRQLs

The Department has purposely set the CRQLs for certain tests to be very low, as the water quality standards associated with these test's analytes are also very low. The

Department has made every effort to research these CRQLs to ensure they maximize sensitivity, but are also practical for routine use.

1. After Contract start-up, through the analysis of Contract samples or through verifying the LOQ/CRQL, there may be cases where a Department CRQL is not feasible or cannot be routinely achieved. The Contractor may request that the Department adjust the CRQL by following the steps below:

a) Notify the Analyte Group 5 Contract Manager by email that the Contractor is having difficulty meeting the CRQL. Provide documentation of such difficulties by using examples of CRQL failures on submitted samples and/or failed LOQ confirmations.

b) Propose an alternate CRQL and run a LOQ verification per TNI 2016 Standard requirements. The alternate CRQL and supporting data must be emailed to the Analyte Group 5 Contract Manager. The submission of this data must be within thirty (30) days of the notification described in Section III.D.3.a.

c) The Department will review all data submitted regarding the CRQL and the alternate CRQL. The Department will advise the Contractor by email on which CRQL to use for future work, within ten (10) business days. The actions taken in response to a request to adjust the CRQL may include, but are not limited to the following:

1) Adopting the Contractor's alternate CRQL for future Department work.

2) Increasing the volume or mass of sample provided to the Contractor for analysis.

3) Asking the Contractor to perform additional clean-ups and treatments on the samples to remove interferants. Contract amendments may be required to incorporate some clean-up techniques and treatments.

4) Asking the Contractor to perform an alternate method that may be more sensitive. Contract amendments may be required to incorporate some alternate methods.

5) Contacting other laboratories that are contracted to perform work in the Analyte Group to confirm the feasibility of the Department's original CRQL. If other laboratories can achieve the original CRQL with acceptable precision and accuracy, work may be shifted to an alternate Contractor.

f) CRQL spikes and any other QC/supplemental samples performed to prove or disprove a Department CRQL are not billable under the Contract.

IV. Reporting of MDL/LOD and CRQL/LOQ

A. Sample Data Packages

The sample specific CRQL/LOQ, adjusted for sample size, dilution, and/or % solids, for each requested analyte must be reported in the PAP-5 data deliverables along with the associated sample results. The baseline MDLs and CRQLs must also be summarized for all tests ordered in a sample delivery group (SDG), as part of the sample data package.

B. Annual MDL Determinations

The Contractor is not required to perform stand-alone reporting of the results of their annual MDL/LOD determinations. The results of these determinations studies must be kept on file with the associated raw data and provided to the Department upon request within five (5) business days. A listing of MDLs is required to be included in the Category B data package for most analytes (Form 9-IN or equivalent).

C. Annual LOQ Verification

The Contractor is not required to perform standalone reporting of the results of their CRQL/LOQ confirmations. The results of these confirmation studies must be kept on file with the associated raw data and provided to the Department upon request within five (5) business days.

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Exhibit D
Approved Methods

I. Introduction

All the methods approved by the Department for use in Analyte Group 5 have been listed in the applicable Price Tables. Those methods specified in the Price Tables are referred to as "Designated Contract Methods" within PAP-5. The Contractor must use Designated Contract Methods from the Price Tables whenever performing work under the Contract unless the Department has granted them written permission to do otherwise.

The majority of the Designated Contract Methods in Analyte Group 5 are dictated by the requirements of 40 CFR Part 136. Part 136 approved methods are required for all SPDES/ NPDES compliance sampling. In the interest of consistency and comparability, the Department also uses 40 CFR Part 136 approved methods for most ambient water sampling programs, when the sensitivity of those methods is sufficient. The remainder of the Designated Contract Methods in Analyte Group 5 not originating from 40 CFR Part 136 were chosen based upon the Department's past experiences and projects monitoring ambient waters.

II. Method Documentation

Unless otherwise specified, copies of the Designated Contract Methods for Analyte Group 5 will not be distributed to bidders or Contractors. The cost of obtaining any Designated Contract Method is the responsibility of the Contractor and cannot be billed back to the Department. The sources detailed below can be used to obtain copies of the Designated Contract Methods.

A. Clean Water Act (CWA) Methods

These methods are drafted and distributed by USEPA and approved for use in 40 CFR Part 136. Copies of the methods are free for download and can be found at the following address: https://www.epa.gov/cwa-methods

B. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)

These methods are drafted and distributed by USEPA. For the scope of Analyte Group 5 and most ambient water monitoring, SW-846 methods are of limited use.

Copies of the methods are free for download and can be found at the following address: https://www.epa.gov/hw-sw846/sw-846-compendium

C. Standard Methods for the Examination of Water and Wastewater (Standard Methods)

This is a joint publication of the American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF). It is currently in its 22nd edition of publishing. Copies of the Standard Methods book can be ordered in hard copy or for download from their website at: http://www.standardmethods.org. Copies of individual methods may be downloaded for a fee at the same address.

D. The American Society for Testing and Materials (ASTM)

Copies of ASTM methods can be downloaded for a fee at the following address: https://www.astm.org/products-services/astm-bos-11.html

III. Requests for Method Substitutions

If the Contractor wishes to substitute an alternate method for a Designated Contract Method, they must first obtain written permission from the Department to do so. Requests to use an alternate method must be directed to the Analyte Group 5 Contract Manager. To the greatest extent possible, Contractors should anticipate the need to use alternate methods and submit requests well ahead of any anticipated sample receipts.

A. Review Criteria for Method Substitutions

The Department's decision to accept or reject an alternate method will be based on any or all of the following factors:

1. Is the alternate method approved per regulations applicable to the analyses being performed? (i.e., SPDES/NPDES work must use methods approved in 40 CFR Part 136)

2. Are the techniques, materials, and equipment employed in the alternate method comparable to those used in the Designated Contract Method?

3. Is certification for the alternate method offered by ELAP? Does the laboratory carry that certification?

4. Is the performance of the alternate method, in terms of precision, bias, and sensitivity, equal to or better than the performance of the method being replaced?

5. Are there other contributing factors that make the alternate method a more appropriate choice compared to the Designated Contract Method? (i.e., "Method A" is approved under the Contract, yet it is susceptible to

interference from “Compound XYZ.” “Compound XYZ” is a known component of the sample matrix under test. “Method B” is an alternate method unaffected by the presence of “Compound XYZ” and is possibly a better choice.)

6. Is there a cost saving to be realized using the alternate method? Can those cost saving be passed directly onto the Department?

B. Acceptance/Rejection of Method Substitutions

1. The Department will review and respond to all alternate method requests within 10 business days. A written response will be issued by the Department either granting or denying the alternate method requests**.**

2. Once permission to use an alternate test method is granted by the Department, that permission is good for the life of the Contract but can be revoked by written notice from the Department. The Department may revoke permission to use an alternate method for any or all of the following reasons:

   a) Over time, the alternate method is found to consistently generate poor QC results and substandard data quality when applied to Department samples.

   b) An update to 40 CFR Part 136 was issued and the alternate method is no longer approved for use by USEPA.

   c) A more appropriate or better performing substitute method becomes available and/or is approved for use by USEPA.

   d) A particular project has data quality objectives that do not align with the alternate test method, the alternative test method may be disallowed.

C. SDG Specific, Expedited Approval of Method Substitutions

If the analysis of a submitted sample(s) by the requested method cannot be completed due to matrix, contamination, or target analyte level, the Contractor must notify the Department Project Manager immediately. If an alternate method can be agreed upon between the Project Manager and the Contractor for the analysis of the sample(s), analysis can proceed with the alternate method. The Contractor must document how they characterized the sample and why it could not be analyzed by the method initially request and include such information in the Case Narrative for the sample(s). Approval of an alternate method by the Project Manager is for a single use, only applicable to the sample delivery group (SDG) with the problematic sample(s). If an alternate method cannot be agreed upon by the Contractor and the Department, the Department Project Manager will instruct the Contractor on the deposition of the sample, including but not limited to disposal, return, or subcontracting.

IV. Regulated Method Substitutions

If during the term of the Contract, the methods approved in 40 CFR Part 136 are changed and/or a new Method Update Rule (MUR) is issued, the Contractor must conform to these changes. Conformance to these changes may require the Contractor to use methods other than the Designated Contract Methods or to use newer version of the Designated Contract Methods.

A. Revocation

If the approval of a Designated Contract Method is revoked through USEPA regulation (40 CFR Part 136 or other), the use of that method must be discontinued upon the effective date of the regulation. The Contractor must select an alternate method approved by USEPA and apply to the Department to use that alternate method under the Contract.

1. If USEPA revokes approval for a method that is commonly used within the Contract or critical to certain projects, the Department may preemptively designate an alternate method and notify all applicable Contractors.

B. Replacement

If a Designated Contract Method is replaced through USEPA regulation (40 CFR Part 136 or other), then the Contractor must use the replacement method for all applicable Department samples. A replacement method is defined as a method from one source (e.g., CWA) is replaced with a method from a different source (e.g., Standard Methods), and both the original and replacement method employ the same materials, technology, and analytical techniques. In the case of an approved method being replaced by USEPA, the Contractor may switch over to the replacement method without written permission from the Department, but obtaining such consent is encouraged.

C. New Methods

If new methods for a parameter are approved by USEPA through regulation (40 CFR Part 136 or other) without affecting the approval status of any previously Designated Contract Methods, a Contractor may use the newly approved methods provided the procedures in Section III (Requests for Method Substitutions) are followed.

V. Method Development and Hourly Testing Fees

Within the "Multipliers and Pricing of Supplemental Services" section of the Price Tables is a pair of line items under the heading "Hourly Testing Fees." While the Department's prefers to order and pay for sample analyses on a line-item basis, it is not feasible to predict and prescribe all the necessary line items needed in the Contract over a 5-year term. To cover emerging testing needs and tests we could not predict a need for, we have asked each laboratory to provide a generalized per hour rate to set up and perform tests not previously specified in the Contract. Requests to use hourly pricing and perform tests

not previously specified in the Contract are expected to be limited; mostly to satisfy short-term program needs. If a non-contract testing need is expected to have a frequent or long-term demand, the Contract will be modified through amendment to accommodate the new test method.

A. Estimation of Hours/Fees

To initiate a request for a non-contract method at the "Hourly Testing Fees" rate, the Department will provide the Contractor with the method and/or parameter of interest and ask for a good faith estimate, in hours, for the performance of the test. The Contractor must research the requested method/parameter and provide two estimates of time related to the request.

1. The first estimate of time to be submitted is for set-up. This is the amount of time the Contractor believes it will take to perform all the steps associated with the method up to the point of running environmental samples. The set-up hours shall include time required for instrument configuration, calibration, and verification. The number of set-up hours performed will be multiplied by the hourly "Set-up of new non-contract method" bid by the Contractor in the Price Tables to establish the final cost for setting up the new non-contract method. This cost can only be billed one time. If portions of the set-up need to be performed again for subsequent submittals, the Contractor must contact the Department for guidance.

2. The second estimate of time to be submitted is for performance of the new test on a submitted sample. This is the amount of time the Contractor believes it will take to perform all the steps associated with preparation, extraction/digestion, analysis, data reduction, and reporting of **each** sample submitted using the new test. The number of hours required to perform the new test on each sample will be multiplied by the hourly "Performance of new non-contract method" bid by the Contractor in the Price Tables, to establish the **final cost of the analysis per sample**. The cost to perform the analysis per sample can then be multiplied out by the number of samples tested, to establish a final price for analyzing the samples.

    a) Laboratories are not expected to estimate or measure the exact time required to analyze each sample but are encouraged to establish analysis time by batch. Individual analysis times can be determined by measuring the overall time it takes, or would take, to analyze a full batch of samples (typically 20) by the subject test method, then dividing by the number of samples in the batch.

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Exhibit E
Quality Assurance and Quality Control

I. Introduction

Quality Assurance (QA) and Quality Control (QC) are integral parts of the New York State Department of Environmental Conservation's (NYSDEC or the Department) data collection efforts. USEPA requires the Department to implement and maintain a robust quality system to govern our internal operations and projects. We require our Contractors to have equally robust quality systems in place to insure they provide data of a known and documented quality. Having inherent weaknesses or chronic failures in any quality system, used directly or indirectly by the Department, could adversely affect critical decisions regarding public health and natural resource protection. Exhibit E of PAP-5 defines the QA/QC protocols applicable to work performed under Analyte Group 5.

Certain requirements in PAP-5 Exhibit E may be superseded or modified by a Quality Assurance Project Plan (QAPP) produced and approved by the Department. When project requirements, as defined by the QAPP, deviate from the requirements found in PAP-5 Exhibit E, a copy of the QAPP will be provided to the Contractor. For larger projects or projects that have large deviations from this Exhibit, the Contractor will be included in the development and approval process for the QAPP. QAPP requirements that create an undue burden on the Contractor will be addressed through the contract amendment process.

II. Quality Assurance (QA) Protocols

A. Quality System Requirements

Effective QA is best accomplished through a comprehensive quality system. The quality system operated by the Contractor and their subcontractors must follow all the requirements of the "The NELAC Institute Standard" (2016), Volume 1, Modules 2 and 4 (herein referred to as "the TNI Standard"), or the most current version of said standard. Additionally, any subcontractors chosen for bacteriological tests must adhere to the requirements in Module 5 of the TNI Standard. Although particular sections of the TNI Standard are emphasized below, all sections and requirements found in the Standard are in effect for this Contract.

B. Quality Assurance Officer (QAO)

The individual serving as the laboratory's QAO (or "Quality Manager") must ensure that all required components of the Contractor's quality system are in place and

followed. The duties of the Quality Manager are outlined in the TNI Standard, Volume 1, Module 2 (2016).

1. For Analyte Group 5 Contracts, the QAO must report directly to the top level of laboratory management and cannot have any additional responsibilities or titles within the laboratory that directly involve sample analysis (analyst, section supervisor, etc.). The QAO may serve additional administrative titles not related to sample analysis, such as health and safety officer.
    a. The education and experience requirements for the QAO are found in Exhibit A.
    b. The Analyte Group 5 Contract Manager must be notified by email within 14 days of any personnel changes involving the QAO or their responsibilities.

C. Data Integrity System

The Contractor must have in place a documented data integrity system meeting the requirements of the TNI Standard, Volume 1, Module 2 (2016).

D. Quality Manual

The Contractor is required to maintain a Quality Manual (or other alternately named, similarly purposed document, such as a Quality Assurance Management Plan (QAMP)) meeting the specifications of the TNI Standard, Volume 1, Module 2 (2016). Where the TNI Standard refers to "accredited testing," the Contractor must assure that all accredited and contracted testing is accounted for in the listing of methods within the Quality Manual.

1. The Department does not require any scheduled distribution of the Contractor's Quality Manual, but copies of the document must be made available to Department staff within 5 days of a written request.

E. Standard Operating Procedures (SOPs)

The Contractor is required to maintain SOPs (or other alternately named, similarly purposed documents) meeting the specifications of the TNI Standard, Volume 1, Module 2 (2016). All methods performed under the Contract must have a signed SOP associated with them. That SOP must accurately reflect the practices and techniques currently employed by the Contractor in the performance of that particular method or test. All operations performed in the laboratory in support of the sample analysis (sample log-in, reporting, glassware cleaning, sample storage, etc.) must have an associated SOP.

1. The Department does not require any scheduled distribution of the Contractor's SOPs, but copies of the document(s) must be made available to Department staff within 5 days of a written request.

F. Training

The Contractor must have in place a training program where all staff can be educated on the tasks they are required to perform, and the completion of such training is documented. For tasks directly related to the analysis of samples, the Contractor must have an in-house proficiency testing program that allows recently trained staff to demonstrate understanding and application of trained subject matter through the processing and analysis of mock samples.

G. Record Retention Requirements

Please refer to PAP-5 Exhibit A for the record retention requirements applicable to Analyte Group 5.

III. Quality Control (QC) Requirements

An effective laboratory QC system will measure the bias and precision of the analyses performed. The QC system also serves as a check on the effectiveness of the Contractor's QA system. The following items are the minimum requirements and procedures that the Department deems necessary to establish an effective QC program.

A. QC Samples

In general, the analytical method should dictate the type and frequency of QC samples to be run. The approved Department QAPP may also specify the type and frequency of QC samples required for a certain project. QC regiments found in the QAPP will generally be more rigorous than the method defaults. The QAPP will also specify the type and frequency of QC samples when the method fails to do so. If neither the method nor the QAPP has specified a regiment for QC samples, the following guidance must be used for Contract analyses.

1. **Types and Frequency of QC Samples**

   a. **Organic Analyses**

      1) Calibration – All analyses of known concentration standards and/or checks required to establish or confirm calibration of the analytical system must be performed. Calibrations must be based on multiple points unless otherwise specified by the method. Calibrations must be performed daily unless an alternate frequency is specified in the applicable method or if the method-prescribed acceptance criteria allow use of a calibration curve for a longer period is met.

      2) Method Blank – Must be an aliquot of clean material representative of the matrix under examination. Must be processed through all the same steps as the samples. Surrogates and internal standards must be added at the same levels as in the samples. Frequency shall be one (1) method blank per analytical batch, as defined in Section III.B.

3) Laboratory Control Sample (LCS) **–** Must be an aliquot of clean material representative of the matrix under examination. The aliquot must be spiked with target compounds sourced separately from the calibration standards. The spiking levels must be in the lower third of the calibration range. The spike aliquot must be processed through all the same steps as the samples. Surrogates and internal standards must be added at the same levels as in the samples. Frequency shall be one (1) LCS per analytical batch, as defined in Section III.B.

4) Matrix Spike/Matrix Spike Duplicates (MS/MSD) **–** MS/MSD samples are optional and should be performed as requested by the Department using the sample(s) designated. When a MS/MSD sample is required, yet no sample has been designated, the laboratory must select a sample per the requirements in Section III.A.4 below. Depending on case and project requirements, the Department may request only an MS sample be performed or the MS/MSD pair. The required MS and MSD aliquots must be spiked with target compounds sourced separately from the calibration standards. The spiking level must be at or near the middle of the calibration range. The spike aliquots must be processed through all the same steps as the other environmental samples. Surrogates and internal standards must be added at the same levels as in the samples.

5) Duplicates **–** Laboratory duplicate samples are optional and should be performed as requested by the Department on the sample(s) designated. When a laboratory duplicate sample is required, yet no sample has been designated, the laboratory must select a sample per the requirements in Section III.A.4 below. Must be an aliquot of homogenized sample, representative of the other samples in the SDG or batch. The duplicate aliquot must be processed through all the same steps as the other environmental samples.

a. Inorganic/Wet Chemistry Analyses – Listed below is the standard QC regiment for inorganic and wet chemistry analytes. Certain inorganic/wet chemistry analytes may not be amenable to spiking, and any spike-based QC associated with those analyses may be omitted.

1) Calibration **–** All standards and/or checks required to establish or confirm calibration of the analytical system must be performed. Calibrations must be based on multiple points unless otherwise specified by the method. Calibrations must be performed daily unless an alternate frequency is specified in the applicable method or if the method-prescribed acceptance criteria allow use of a calibration curve for a longer period is met.

2) Method Blank **–** Must be an aliquot of clean material representative of the matrix under examination. Must be processed through all the same steps as the samples. Frequency shall be one (1) method blank per analytical batch, as defined in Section III.B.

3) Laboratory Control Sample (LCS) **–** Must be an aliquot of clean material representative of the matrix under examination. The aliquot must be spiked with target compounds sourced separate from the calibration standards. The spiking levels must be no more than two (2) times the applicable CRQL/PQL concentration. The spike aliquot must be processed through all the same steps as the samples. Frequency shall be one (1) LCS per analytical batch, as defined in Section III.B. If the spiking level of the LCS is not less than or equal to two (2) times the CRQL/PQL, a separate CRQL verification spike must be performed with a spiking level equal to the CRQL/PQL.

4) Matrix Spike/Matrix Spike Duplicates (MS/MSD) **–** MS/MSD samples are optional and should be performed as requested by the Department using the sample(s) designated. When a MS/MSD sample is required, yet no sample has been designated, the laboratory must select a sample per the requirements in Section III.A.4 below. Depending on case and project requirements, the Department may request only an MS sample be performed or the MS/MSD pair. The required MS and MSD aliquots must be spiked with target compounds sourced separate from the calibration standards. The spiking level must be at or near the middle of the calibration range. The spike aliquots must be processed through all the same steps as the other environmental samples.

5) Duplicates **–** Laboratory duplicate samples are optional and should be performed as requested by the Department on the sample(s) designated. When a laboratory duplicate sample is required, yet no sample has been designated, the laboratory must select a sample per the requirements in Section III.A.4 below. Must be an aliquot of homogenized sample, representative of the other samples in the SDG or batch. The duplicate aliquot must be processed through all the same steps as the other environmental samples.

2. Spiking of QC Samples – Certain QC samples can only be effective when they are spiked with relevant target analytes at appropriate levels.

a. Organic Analyses - The analysis method shall provide the default spike analyte lists and concentration levels for all Contract organic analyses. If the method fails to specify a spiking protocol, the spike

analyte list and spiking level must mimic the analytes and concentration levels expected to be found in the samples under examination. Certain Department projects may have special spiking list or spike concentrations which will be documented in the approved QAPP. The QAPP may also specify spiking lists and levels when the method documentation fails to do so. Any QAPP with special spiking requirements will be shared with the Contractor prior to project start-up.

b. Inorganic and Wet Chemistry Analyses - All inorganic/wet chemistry analytes are subject to spiking requirements; there are no select "lists" of analytes uniquely subject to spiking requirements. The exception would be analytes or parameters such as pH, dissolved oxygen, and coliform bacteria which are not amenable to spiking and therefore do not require spike-based QC.

1) Laboratory Control Sample (LCS) **–** All LCSs performed under the Contract for inorganic and wet chemistry parameters must be spiked at a level no greater than two (2) times the CRQL/PQL/LOQ concentration.

2) All Other Inorganic/Wet Chemistry Spikes **-** Spiking levels for all other inorganic and wet chemistry Contract analyses shall be those specified in the applicable method. If the method fails to specify a spiking level, the spiking level must mimic the concentration levels expected to be found in the samples under examination. Certain Department QAPPs may require specific spiking levels or analytes which will be shared with the Contractor prior to project start-up.

3. Designated QC Samples – For certain projects and sampling events, the Department may designate a specific sample within the SDG for spiking and or duplicate analysis. Whenever possible, additional mass/volume of sample for QC will be collected and submitted. The sample designated for QC will be identified on the chain of custody, along with any additional instructions on the types of QC test that must be performed.

a. If the Contractor determines that the chosen sample is not suitable for QC, the Contractor must contact the NYSDEC Project Manager immediately.

b. The designation of a sample for QC must not affect the overall integrity and sensitivity of the ordered analysis. If there is not sufficient volume or mass to analyze the requested QC, the Contractor must contact the NYSDEC Project Manager immediately. The Contractor must not reduce the volume or mass of sample analyzed to satisfy QC requests unless prior permission has been granted by the Department.

c. When an SDG must be split into multiple QC batches, the Contractor must contact the NYSDEC Project Manager immediately to establish if supplemental QC samples need to be designated for the added batch.

4. **Selecting Samples for QC** – In cases where the Department has not designated a QC sample, but one is required per the method or project requirements, the Contractor must select a sample for QC analyses. The Contractor must select a QC sample using the following guidelines:

   a. The sample chosen for QC must have sufficient volume or mass to complete its base analysis in addition to the required QC.

   b. The sample chosen for QC must be representative of the other samples in the SDG (e.g., if most samples in an SDG are significantly turbid, and one sample is decidedly clear, one of the turbid samples must be used for QC as opposed to the clear sample.) The sample selected for QC testing cannot be a field blank, equipment blank, or trip blank.

   c. If feasible, the sample chosen for QC should have low to medium concentrations of target analytes. If a particular sample in the SDG, either through sample screening or site-specific knowledge, is suspected to have very high concentrations of target analyte, it must not be used for QC.

   d. If no samples in the SDG are suitable for use as QC, the Contractor must contact the NYSDEC Project Manager immediately.

B. QC Batching

QC samples are only effective when they are systematically associated and run with environmental samples. The Contractor should make every effort to establish QC batches that align with and/or preserve the groupings of the sample delivery groups (SDGs) established by the Department. Preserving the SDGs for QC purposes is especially important when the Department has designated an MS/MSD or other QC samples within the SDG. If an SDG with a designated QC sample must be split into multiple QC batches, the Contractor must contact the NYSDEC Project Manager immediately. Realizing that creating QC batches that align with SDGs is not always practical, the Contractor will be allowed to establish alternate QC batches if the following conditions apply:

1. The minimum QC batch established by the method is less than 20 samples. A full 20 sample SDG would need to be split into multiple QC batches to satisfy method requirements.
2. The Department has submitted more than 20 samples in a particular SDG and running the full SDG as a batch would violate the batching requirements of the method.
3. The samples have short holding times and require analysis prior to full receipt of all other samples in the SDG. The SDG may be broken up to meet holding times**.**

4. The SDG contains samples of different matrices. The SDG may be split, and QC batches can be assembled for each matrix.
5. If re-analysis is required for a sample or set of samples, a new QC batch may be required due to time elapsed (since the original analysis) and/or method requirements.

C. QC Acceptance Limits

Defining global QC acceptance criteria for a contract such as this is a problematic due to the wide array of needs the laboratories under it must fulfill. Most Department projects operate under their own individual quality assurance project plan (QAPP), each of which may have unique QC limits associated with it. The issue is further confused when the method documentation also defines criteria for QC acceptance/rejection. The hierarchy described below must be used by the Contractor to determine the appropriate QC limits.

1. **Primary Source of QC Limits –** The QAPP shall serve as the primary source of QC limits and acceptance criteria when such a document is approved and in effect.
    - **a.** All major ambient water sampling efforts conducted within the Department will have an approved QAPP, which governs the data quality objectives for the project. Prior to the start of the sampling season, these QAPPs will be shared with the Contractor's Project Manager and/or QAO. The QC acceptance limits will be written into the QAPP, and the Contractor will be expected to meet these limits when performing work on this project.
    - **b.** Whenever possible, the Contractor will be allowed comment on draft QAPPs applicable to their work and provide feedback. When the Contractor feels the QC, requirements set in the QAPP are not feasible or practical, alternate limits should be suggested. Alternate limits must be supported by historical control charts.
    - **c.** If the Contractor believes the QC limits set in a QAPP are not practical or lie beyond the scope of their Contract, they must contact the Analyte Group 5 Contract Manager immediately. The Department will work with the Contractor to develop new limits that fit the Contractor's capabilities and satisfy the project's data quality objective. In cases where a compromise on QC limits cannot be reached the Department reserves the right to take any of the following actions:
        - Use an alternate Contractor that can satisfy the more stringent limits.
        - Amend the Contract to accommodate extra work associated with meeting the more stringent limits.

- Designate certain limits as advisory and only require flagging for failures to meet those limits.

2. **Secondary Source of QC Limits –** In cases where the applicable QAPP has omitted QC acceptance limits for a parameter or when no QAPP is in place, the Contractor must refer to the method documentation for QC limits. Limits found in the designated contract methods are not negotiable nor open for amendment. The Contractor must be able to meet such limits as a baseline requirement.

3. **Tertiary Source of QC Limits –** In cases where both the QAPP and the method have failed to specify QC acceptance limits, the Contractor must refer to the generic limits set in Table 5-1(below).

4. **Consult with Department** – If the Contractor cannot determine the applicable QC limits from any of the above listed sources or if the generic limits listed in Table 5-1 cannot be met, please contact the Analyte Group 5 Contract Manager.

Table 5-1:

Parameter Category	ICB/ CCB/ Method/ Preparation Blanks	ICV/ CCV (% Recovery)	LCS/ LFB/MSB (% Recovery)	Surrogates /SMCs (% Recovery)	MS/ MSD (% Recovery)	Duplicate/ MS-MSD (RPD)
Organics	<PQL/LOQ[1]	N/A	75-125%	65-135%	65-135%	20% [2]
Metals	<PQL/LOQ	90-110%	80-120%[3]	N/A	75-125%	20% [2]
Wet Chemistry	<PQL/LOQ	85-115%	80-120%[3]	N/A	75-125%	20% [2]

[1]For VOA Blanks, the concentration of Methylene Chloride, Acetone, and 2-Butanone may be as high as 2 times the CRQL/PQL in an acceptable blank.
[2]RPD limits are only valid when the original sample concentration is greater than 5 times the CRQL/PQL. If the sample concentration is less than 5 times the CRQL/PQL, a control limit of plus or minus the value of the CRQL/PQL shall be used to evaluate duplicate precision.
[3]The spike level for any metals or wet chemistry LCS/LFB/MSB must be no more than two times the concentration of the CRQL/PQL.

D. Application of QC Limits

All QC limits associated with this Contract will be designated as either "required" or "advisory." These designations will be made through the approved QAPP, the method documentation, or this protocol.

1. Any QC limits designated as "required" must be met for the analysis to be considered valid. Any failures to meet required QC limits must be documented in the case narrative and the associated samples must be reanalyzed with new QC. If the samples cannot be re-analyzed due to volume/mass limitations, the original results must be reported and appropriately qualified. If re-analysis is required due to failure to meet required QC and the samples have exceeded their holding times, the re-analysis must be performed out of holding time. In all cases both sets of results must be reported, identified with the appropriate data qualifiers.

2. The Contractor should take all necessary steps to see that "advisory" QC limits are met, but the failure to meet advisory limits does not necessitate re-analysis. Samples failing to meet advisory limits must be identified with the appropriate flagging and noted in the SDG narrative.

3. Meeting the required limits takes precedence over meeting any advisory limits applicable to a QC sample. If a QC sample fails to meet required limits, yet passes all applicable advisory limits, it still must be re-analyzed with all associated samples in the batch.

E. Included and Billable QC Samples

1. **Included QC** - The cost of any quality control (QC), as prescribed by the required method shall be included in the proposed price for analysis and is not billable to the Department. The analysis of method required calibration standards, blanks, spikes, tunes, and checks are not separate billable items under the Contract. All the included QC samples and procedures must be performed at the frequency documented in the applicable method and reported with the associated environmental samples. Generally, any QC test performed on a "sample" that originates in the laboratory is not billable under the Contract.

    a. Typical item that are considered included QC under this Contract are as follows:

        - Calibration Standards
        - Calibration Checks
        - Calibration Blanks
        - Method Blanks
        - Preparation Blanks
        - Instrument Blanks
        - Laboratory Control Samples
        - CRQL Check Standards
        - Laboratory Fortified Blanks

- Matrix Spike Blanks
- Ongoing Precision and Recovery Samples

b. When a designated contract method dictates that each sample must be run in replicate, with either averaging of results or selection of a single result that meets acceptance criteria, it will be considered a single billable analysis. Billing for each replicate performed is prohibited.

c. When a designated contract method dictates that each sample be run at multiple dilutions to arrive at a single result that meets acceptance criteria, such will be considered a single billable analysis. Billing for each method required dilution and analysis performed is prohibited.

2. **Billable QC** – All special and/or requested QC samples/runs are billable under the contract. The billing rate for QC samples is established by multiplying the number of QC samples ordered by the analysis base price from the price tables. Billable QC items are typically deemed optional in the method requirements or their frequency is not specified in the method. Department projects may require optional QC at unique frequencies; therefore, it is important that we can order as little or as much QC as project requirements dictate. In general, billable QC is always performed on a sample, or portions of sample, submitted by the Department to the Contractor. The following items are considered billable QC under the Contract:

   - Matrix Spikes
   - Matrix Spike Duplicates
   - Field Duplicates
   - Field Blanks
   - Rinse Blanks
   - Equipment Blanks
   - Trip Blanks

IV. QA/QC Oversight and Direction

The Department reserves the right to oversee and direct certain aspects of QA/QC at the Contractor's laboratory as described below.

A. Performance Evaluation Samples

Performance evaluation (PE) samples can be submitted at any time during the term of the Contract. All PE samples will be billable analyses and therefore there is no limit on how many may be submitted during the term of the Contract or a given Contract year. Depending on program/project needs, PE samples may be single- or double-blind submittals. Contract PE samples must be handled as routine environmental samples without any additional QC or specialized treatment. Scoring results will be

shared with the Contractor if a PE sample generates corrective actions for the Contractor; otherwise scoring results will be shared at the Department's discretion.

B. On-Site Assessments

The Department reserves the right to perform on-site inspections of the laboratory's facility, staff, and day-to-day operations. Such inspection will assess compliance with the Contract, the required methods, and this protocol. The frequency of on-site assessments cannot be predetermined, but unless there are frequent problems with the Contractor's work product the Department does not anticipate a need to visit the Contractor more than once per year.

C. Corrective Actions

If the Contractor is found to be out of compliance with any of the requirements in this Exhibit, they will be required to demonstrate proper corrective actions to remedy their deficiencies. If the Contractor fails to correct deficiencies or to meet the requirements set forth in the PAP or elsewhere in the Contract, the Department may take, but is not limited to, the following actions: reduction in the number of samples sent under the Contract; rejection of submitted data; suspension of sample shipments; contract sanctions; data package audit(s); electronic data audit(s); on-site laboratory evaluation(s); and/or remedial PE sample(s).

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Exhibit F
Sample Handling and Maintenance

I. Introduction

All environmental samples and data generated under Analyte Group 5 have the potential to be used as physical evidence in a court of law. The protocols in PAP-5 Exhibit F have been prescribed to ensure that the Department's data and records supporting sampling activities are admissible and have weight as evidence in a potential litigation. This includes, but is not limited to, maintaining and insuring sample traceability, custody, and integrity for all Department samples while in possession of the Contractor.

II. Standard Operating Procedures

In addition to any other standard operating procedures (SOPs) maintained by the Contractor to document sample processing and analysis procedures as required by PAP-5 Exhibit E, the Contractor must have SOPs to describe how samples are handled and maintained before, during, and after analysis. These SOPs must be accurate and reflect current practices performed in the laboratory. All the procedures below must be covered by an SOP, but a single SOP may cover more than one procedure.

A. Sample Receipt

Describe the Contractor's full process for sample receipt. Include the following topics in the SOP as a minimum:

- Titles and roles of staff involved with sample receipt
- How samples are received from couriers/customers
- How coolers/deliveries are inventoried
- How new samples are inspected, and conditions documented; include an overview of any checklists used
- How receipt temperature is verified
- How chemical preservation is verified
- How samples are logged into the Contractor's LIMS or similar sample database
- How samples and SDGs are internally identified within the laboratory

- How problems/discrepancies with samples are communicated back to the client
- How samples are transferred into the laboratory workflow and/or to sample storage.

B. Chain-of-custody

Describe the Contractor's full process for sample chain-of-custody. Include the following topics in the SOP as a minimum:

- How sample custody is transferred from outside parties (couriers/customers) to the Contractor
- How sample custody is transferred from the Contractor to outside parties (subcontractors)
- How internal sample custody is maintained within the laboratory for all standard samples
- How internal sample custody is maintained for samples specifically identified as evidence in an environmental enforcement case, including adherence to ASTM D4840-99(2018)e1.

C. Sample Storage

Describe the Contractor's full process for sample storage. Include the following topics in the SOP as a minimum:

- An overview of all the Contractor's sample storage areas; detailing the types of samples stored in each area.
- How sample storage temperatures are monitored (staff responsible, frequency, documentation)
- How storage areas are secured
- How staff transfers samples in and out of storage
- How long samples remain in storage and the procedures to remove old samples from storage
- Procedures for sample archive/long-term storage.

D. Sample Disposal

Describe the Contractor's full process for sample disposal. Include the following topics in the SOP as a minimum:

- How samples are accumulated for disposal
- How other potentially hazardous waste items (solvents, acids, etc.) in the laboratory are accumulated for disposal

- How samples with high levels of analytes are segregated for special handling/disposal
- How waste samples are batched and containerized for disposal
- How sample waste is removed from the laboratory
- How the Contractor meets their RCRA requirements for disposal.

E. Sample Containers

Describe the Contractor's full process for sample bottle/container preparation and distribution. Include the following topics in the SOP as a minimum:

- How new containers are received, inventoried, and tracked
- How new containers are cleaned and verified to be free of contamination. Alternately, if sample containers are purchased pre-cleaned and certified, how said certificates are cataloged
- How containers are stored/organized
- How preservatives are received, inventoried, and tracked
- If applicable, how working solutions of preservatives are made-up/diluted
- How new containers are preserved
- How bottle orders are received and fulfilled
- How bottle orders are shipped
- If applicable, how custody is established and transferred for unused containers.

III. Sample Containers, Preservation, and Holding Times

The sample handling requirements for Analyte Group 5 are dictated by the requirements in 40 CFR Part 136, Table II. For SPDES/NPDES water samples and ambient water samples, the requirements in Table II will always have precedence over any requirements specified by an outside source. If a parameter or test is not addressed in Table II, the Contractor must refer to the container, preservation, and holding time requirements set forth in the method documentation. In addition to the raw sample holding times, the prescribed preservation, storage, and holding time requirements for sample extracts/digestates must also be followed.

A. Containers

Beyond using containers of the appropriate size, composition, and construction as specified in 40 CFR Part 136, Table II or as prescribed in the designated contract method, the Contractor must make every effort to ensure containers are clean and free of contamination.

1. If containers are purchased pre-cleaned, the Contractor must keep on file any manufacturer provided certification detailing their cleaning process and/or post-cleaning test results. These documents must be kept on file at the laboratory and must be indexed or searchable by container lot number.
2. If containers are not purchased pre-cleaned or cannot be certified as clean, they must be cleaned by the Contractor and tested to verify no contaminants are present. The techniques and process used to clean containers must follow the decontamination requirements prescribed in the applicable method(s). Containers must be cleaned in identifiable batches and "bottle blanks" must be collected at the conclusion of the cleaning process. The bottle blanks must be analyzed for the full suite of tests that are be applicable to the container type and size. The bottle blank results must be kept on file at the laboratory and must be indexed or searchable by the cleaning batch number or date.

B. Chemical Preservation

Beyond using preservatives of the type and quantity specified in 40 CFR Part 136, Table II or as prescribed in the designated contract method, the Contractor must make every effort to ensure the chemical preservatives used are pure and free of contamination.

1. Preservation chemicals may be purchased from a supplier with a certificate documenting their purity or composition. Any documentation of the preservative's purity or composition must be kept on file at the laboratory and must be indexed or searchable by lot number.
2. Preservation chemicals that are not purchased certified and ready-to-use, or preservation chemicals that are mixed by the Contractor, must be tested to verify they are free from contamination. The preservation chemical must be assigned a batch number and spiked into a clean matrix at the concentration prescribed to properly preserve an environmental sample. The spiked sample must then be analyzed for any parameters applicable to that preservative. Once tested, any test results related to that batch of preservative must be kept on file at the laboratory and must be indexed or searchable by batch number or date.
3. The Contractor must have a system in place to trace preservation chemicals to the samples/sample bottles they are used in. A logbook noting container lot numbers and preservation batch numbers is typically sufficient.

C. Thermal Preservation

The Contractor must follow the thermal preservation requirements specified in 40 CFR Part 136, Table II or as prescribed in the designated contract method.

1. Once the Contractor has taken custody of the samples, maintaining thermal preservation requirements of samples is solely the responsibility of the Contractor. Thermal preservation must be maintained while the samples are stored at the Contractor's facility and must be maintained for the full duration

of the sample's holding time or 60 days after the delivery of a complete reconciled data deliverable to the Department, whichever is longer. If the Contractor must ship samples to a subcontractor or third party, thermal preservation of the samples must be maintained.

2. Although it is not the Contractor's responsibility to maintain thermal preservation of samples prior to their receipt, they must document if samples are received out of temperature specifications. If samples are received out of temperature specifications the Contractor must notify the Department by phone and immediately resume thermal preservation.
3. If the Department requests samples to be returned, the Contractor will be instructed if thermal preservation is required or not for the return shipment.

D. Holding Times

Samples should always be analyzed as soon as reasonably possible, and the holding times prescribed should be considered maximums. For both raw samples and extracts, the Contractor must follow the holding time requirements specified in 40 CFR Part 136, Table II or as prescribed in the designated contract method.

1. The "start time" for the holding time clock is the time the sample is collected, as listed on the chain-of-custody. The "stop time" for the holding time clock is dictated by Table II or the designated contract method.
2. Holding times and the turn-around times for sample reporting (Exhibit B) are independent requirements; both must be met to satisfy the Contract. If the reporting time exceeds the holding time, the shorter holding time still must be met. If the holding time exceeds the reporting time, the shorter reporting time still must be met.

IV. Sample Maintenance

A. Sample Security

1. Routine Department samples submitted under Analyte Group 5 must be stored in a secure, access-controlled area from the time of receipt until the time of disposal.
2. For Analyte Group 5 samples specifically identified as evidence in an environmental enforcement case, the chain-of-custody and secure storage requirements of ASTM D4840-99(2018)e1 must be followed.

B. Sample Storage

All Analyte Group 5 samples must be stored in manner where all preservation requirements are met and maintained from the time they are received until 60 days after delivery of a complete, reconciled data deliverable to the Department. The sample storage space must be temperature controlled and protect samples from undue light exposure. Sample storage spaces must also be free of contamination,

atmospheric or otherwise, that could adversely affect sample or QC results. Beyond the reporting date plus 60 days period, the following storage requirements must be met:

1. For samples with holding times beyond the reporting date plus 60 days, the samples must be stored in a manner where all preservation requirements are maintained until expiration of the holding time. Once the holding time has expired, the samples may be transferred to alternate storage space for the remainder of the 12-month retention period.
2. When the holding time has expired during the reporting date plus 60 days' period, the samples may be transferred alternate storage space for the remainder of the 12-month retention period.
3. Under all cases, if temperature-controlled storage space is available; Department samples should be thermally preserved for the entire 12-month retention period. Samples should only be moved out of temperature-controlled storage when space is restricted.
4. The Department reserves the right to designate select samples for temperature-controlled storage beyond expiration of the holding time.

C. Sample Retention

All Analyte Group 5 samples must be retained for twelve (12) months from the date of delivery of a complete, reconciled data deliverable to the Department. The Department may request that samples be retained beyond the 12-month period and the Contractor can charge the extended storage rate bid in the price tables. At the conclusion of the retention period, if return of the samples has not been requested by the Department, samples may be disposed of by the Contractor.

D. Sample Disposal

All Analyte Group 5 samples must be properly disposed of at the conclusion of the retention period. It is the Contractor's responsibility to know and follow the applicable regulation covering the disposal of environmental samples. The Contractor must cover all costs associated with the proper disposal of Department samples; billing the Department for these costs is prohibited.

1. Except in the case of evidentiary samples, if a sample is fully consumed during analysis, the empty container may be disposed of immediately. For select evidentiary samples the Department may request the retention or return of empty sample containers.

E. Sample Return

The Department may elect to have certain Analyte Group 5 samples returned or shipped to a third party at the conclusion of the retention period. The Contractor will be notified prior to the expiration of the retention period with sample return instructions when samples must be returned.

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Exhibit G
Glossary of Terms

I. Introduction

The terms and abbreviations found below are used throughout the exhibits of Prescribed Analytical Protocols-Volume 5 (PAP-5). PAP-5 Exhibit G defines and/or clarifies said terms and abbreviations.

II. Terms and Definitions

40 CFR Part 136 – Title and section of the Federal Register where the methods approved for SPDES/NPDES compliance monitoring are maintained.

Abbreviated Report – The shortened data package required for quick turn-around analyses ordered on a 24-hour or 72-hour basis.

Acceptance Criteria – The specifications sample and QC results must meet in order to be considered an acceptable work product under the Analyte Group 5 Contract.

Acceptance Limits – see "Acceptance Criteria"

Accuracy - The degree of agreement between an observed value and an accepted reference value. Accuracy includes a combination of random error (precision) and systematic error (bias) components, which are due to sampling and analytical operations; a data quality indicator.

Adobe PDF File – A portable document file created using software tools from Adobe Systems Incorporated or similar vendor which allows the file to be accessed and viewed using free downloadable "Acrobat Reader" software.

Ambient Waters – Aqueous matrix found in lakes, reservoirs, ponds, rivers and streams.

Analysis Run Log – A listing of samples and/or sample batches processed through a specific instrument during a specific time frame (typically 24-hours).

Analyte Group – A collection of analyses having similar scope and purpose bundled together by the Department for the purpose of analytical services contracting.

Analyte Group 5 Contract Manager – The individual charged with overseeing all Contractors performing work under Analyte Group 5. Also serves as the main point of contact for issues related to that Group.

ASTM – Abbreviation for the "American Society for Testing and Materials," developer and publisher of standards and analytical methods.

Batch – Environmental samples that are prepared and/or analyzed together with the same process and personnel, associated with common QC samples, using the same lot(s) of reagents.

Bias - The constant or systematic distortion of a measurement process, different from random error, which manifests itself as a persistent positive or negative deviation from the known or true value.

Blind sample - A sample submitted with a composition and identity known to the submitter but unknown to the lab

Bookmarking – A function within the Adobe Acrobat software that allows navigation points to be set within a document.

Business Days – Any day of the week, excluding Saturdays, Sundays, and legal holidays. Used for the purpose of calculating turn-around times for certain correspondence and reports.

Calibration Blank – A control sample run prior to, or at the conclusion of, calibration to confirm "zero" on the instrument. Also run after a calibration check to confirm the instrument's "zero" has been maintained.

Calibration Check – A standardized aliquot of target analyte(s) with a known concentration used to determine if an instruments calibration curve is still valid.

Calibration Standard – A standardized aliquot of target analyte(s) with a known concentration used to establish the calibration curve of an instrument.

Category A Deliverable – The basic data package and EDD product for analyses performed under Analyte Group 5. Contains results and a QC summary.

Category B Deliverable – The full data package and EDD product for analyses performed under Analyte Group 5. Contains results, all QC data, and raw data.

Case Code - An alpha numeric identifier, with a string length of 4 to 6 characters, used to identify Department programs and project accessing contracted services under Analyte Group 5.

Case Narrative – A description of the problems and anomalies encounters during the analysis of a sample delivery group.

Chain of Custody – Paperwork that allows for recording of who has legal possession of a sample or samples at any one time. The paperwork is transferred from party to party along with the samples.

Chemical Preservation – Compounds or mixtures added to environmental samples that act to stabilize target analytes in the samples so their concentrations are not magnified or degraded prior to analysis.

Cleanup Procedures – Treatments applied to a sample, sample extract, or sample digestate that reduce the amount or effects of interferents in that sample.

CLP – see "Contract Laboratory Protocol"

CLP Limits – Acceptance criteria specific to analyses performed to the USEPA Contract Laboratory Protocol.

C.O.B – Abbreviation for "Close of Business," a time of day. 17:00 Eastern time will be consider the C.O.B. time for Analyte Group 5.

COC – see "Chain of Custody"

Collection Date – The date a sample is gathered and placed into a designated sample container.

Confidential – Data or information known or conveyed only to a limited number of people, not to be shared with any outside parties unless permission is given by the data/information generator.

Conflict of Interest – The circumstance of a person or party who finds that one of their activities, interests, etc., can be advanced only at the expense of another of them.

Contamination – The circumstance where additional target analytes from non-environmental sources are introduced into a sample, causing a false positive results.

Continuing Calibration – The process of recalibrating an analytical system based on the results of a single point calibration standard meeting acceptance criteria. Continuing calibration is not allowed under PAP-5.

Contract Laboratory Protocol – A compilation of requirements issued by USEPA for laboratory contractors working in the Superfund program.

Contract Number – The unique identifier assigned by the Department to each contract executed. Follows the format of "C0xxxxx" where "xxxxx" is a unique sequence of numeric characters.

Contract Required Quantitation Limit – The numeric concentration level set by the Department which defines the minimum level of sensitivity for a contracted analysis. The Contractor must be able to quantify target analytes at or below this level.

Corrective Actions – Steps taken by a Contractor to remedy failures in their analytical or quality control systems. Corrective actions can be self imposed or imposed by the Department.

CRQL – see "Contract Required Quantitation Limit"

CRQL Check Standard – A control sample spiked at a concentration level equal to the CRQL value to assess precision and accuracy at or near the CRQL for a particular analysis.

Custody Documents – see "Chain of Custody"

Data Deliverable – The final Contract product consisting of a PAP-5 compliant data package and electronic data deliverable (EDD).

Data Package – A systematically assembled report using specified formats to convey the analysis results of environmental samples, quality control, and their supporting data.

Deficient Work – Data generated or actions performed by a Contractor that does not meet the specifications of the Contract and/or PAP-5.

Deliverable – The work product, detailing sample analysis results, provided to the Department under the Contract.

Department, The – see "New York State Department of Environmental Conservation"

Designated Contract Methods – Analytical procedures approved for use under Analyte Group 5 and PAP-5, as listed in the Analyte Group 5 price tables of the IFB.

Detection Limits – The numeric concentration level at which a given analysis method can determine if an analyte is present or not present.

Deuterated Monitoring Compound – Isotopically labeled surrogate compounds.

Digestate – The end product of a sample digestion.

Duplicate – A sample collected and analyzed twice over and/or analyzed twice over to assess precision in an analytical system.

EDD – see "Electronic Data Deliverable"

EDP – see "EQuIS Data Processor"

ELAP – see "Environmental Laboratory Approval Program"

Electronic Data Deliverable – A compilation of the Contractor's results for an SDG; formatted to allow for direct upload into a specific database.

Environmental Laboratory Approval Program – The environmental laboratory certification branch of NYSDOH. All environmental samples collected within the borders of New York State must be analyzed by an ELAP certified laboratory per Public Health Law 502.

Equipment Blank – An aliquot of deionized or analyte-free water poured on or through sample collection apparatus and collected for later analysis.

EQuIS – The trade name of the software package produced by Earthsoft, Inc. for the storage and management of environmental data.

EQuIS Data Processor – A component of the EQuIS software package that can be downloaded for free by the Contractor. The software tool allows the Contractor to check their EDDs for compliance with the Department's data standards.

Extract – The aliquot of solvent matrix produced during the sample extraction process.

Field Blanks – A control sample that originates in the field and is submitted as a sample to the Contractor

Field Duplicates – A pair of samples collected individually from the same location and subjected to the same analyses as a means to assess the precision of the collection effort.

Field Sample – A portion of material obtained from an assigned site or location to be analyzed under the Analyte Group 5 Contract. It may be contained in single or multiple containers and is identified by a unique NYSDEC Sample ID.

Flagging – A letter or character with a predetermined definition used to identify a sample result that may be nonnumeric, abnormal, or suspect.

Holding Time – The maximum amount of time that may elapse between a sample's collection date/time and the date/time analysis is initiated on that sample.

GC – Abbreviation for "Gas Chromatogram."

ICP-AES – Abbreviation for "Inductively Coupled Plasma-Atomic Emission Spectroscopy"

ICP-MS – Abbreviation for "Inductively Coupled Plasma-Mass Spectrometry"

IFB – see "Invitation for Bids"

Initial Calibration – Processing a set of standards (with known concentration) through an analytical system to establish a signal-to-concentration relationship for the system.

Instrument Blank – A control sample run through an analytical system or part of a system to assess possible contamination from previously analyzed samples.

Interferents – Non-target analytes in a sample that can amplify or degrade the signal in an analytical detector, causing erroneous results.

Interference – The observed effects from interferents in an analytical system.

Internal Standards – Non-target analog compounds or elements added to all samples and QC at a known concentration prior to analysis. Instrument responses to internal standards are used as the basis for quantitation of the target compounds.

Invitation for Bids – The document used to announce and provide specifications for the analytical services procurement.

Invoice – A request for payment under the Contract that provides an itemized accounting of the work performed.

Laboratory Control Sample – A control sample of known composition and concentration processed along with environmental samples through all analytical steps. Its recovery is a gauge of the analytical system's accuracy.

Laboratory Fortified Blank – see "Laboratory Control Sample"

Laboratory Section – A distinct work group and/or area in a laboratory tasked to perform analyses of similar scope and technique. Typical laboratory sections include, but are not limited to: VOA, organics (non-VOA), inorganics/metals, and wet chemistry.

LCS – see "Laboratory Control Sample"

Limit of Detection – (from TNI Standard, 2009) A laboratory's estimate of the minimum amount of an analyte in a given matrix that an analytical process can reliably detect in their facility.

Limit of Quantitation – (from TNI Standard, 2009) The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence.

LIMS – Abbreviation for "Laboratory Information Management System."

LOD – see "Limit of Detection"

LOQ – see "Limit of Quantitation"

Matrix - The predominant material of which the sample to be analyzed is composed. Water is the predominate matrix for samples covered by PAP-5.

Matrix Spike Blanks – see "Laboratory Fortified Blank"

Matrix Spike – Aliquot of a sample taken from one of the field samples to be analyzed within an SDG, spiked with known quantities of specific compounds, and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for the matrix by measuring recovery.

Matrix Spike Duplicate – A second aliquot of the same sample as the Matrix Spike that is spiked in order to determine the precision of the method.

MCAWW – Abbreviation for the "Methods for Chemical Analysis of Water and Wastes."

MDL – see "Method Detection Limit"

Method Blank – An analytical control consisting of all reagents, internal standards, and surrogate standards that is carried throughout the entire analytical procedure. The method blank is used to define the level of laboratory, background, and reagent contamination.

Method Detection Limits – The concentration of a target analyte that, when a sample is processed through the complete method, produces a signal with 99 percent probability that it is different from the blank. For 7 replicates of the sample, the mean value must be 3.14*s above the blank, where "s" is the standard deviation of the 7 replicates.

Method Update Rule – A modification to 40 CFR Part 136 issued by USEPA that changes the methods approved for SPDES/NPDES compliance monitoring.

Minimum Level - The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed. The ML is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to (1, 2, or 5) x 10^n, where n is an integer.

ML – see "Minimum Level"

MS/MSD – see "Matrix Spike" and/or "Matrix Spike Duplicate"

Multiplier – A decimal bid provided in the price tables that allows for the calculation of quick turn-around and Category B deliverable pricing.

Non-compliant Work Product – Laboratory data deliverable or sample results that do not meet the specifications of the Contract and/or PAP-5.

NELAC – Abbreviation for the "National Environmental Laboratory Accreditation Conference."

NELAP – Abbreviation for the "National Environmental Laboratory Accreditation Program."

New York State Department of Environmental Conservation – The Agency charged with procuring Analytical Service Contracts associated with PAP-5. Also the primary user of said Contracts.

NPDES – Abbreviation for "National Pollutant Discharge Elimination System."

NYSDOH – Abbreviation for "New York State Department of Health."

NYSDEC – see "New York State Department of Environmental Conservation"

On-Site Assessments – An inspection of the Contract's facility or facilities, purposed to judge compliance with the Contract and/or PAP-5.

Ongoing Precision and Recovery Samples – A control sample analogous to the LCS or LFB that is statistically tracked by individual analytical system and/or analyst.

OPR – see "Ongoing Precision and Recovery Samples"

PAP – see "Prescribed Analytical Protocol"

PAP-5 Forms – The "CLP-like" Forms used to report sample and quality control results produced under Analyte Group 5.

PDF file – see "Adobe .PDF file"

Portable Media – a flash drive or similar digital storage media that can be used to transfer and archive a large volume of contractor produced files. Portable media should not require dedicated hardware or drives to access contents.

Practical Quantitation Limit – see "Limit of Quantitation"

Performance Evaluation Sample – A fortified matrix sample submitted by the Department to the Contractor for the purpose of assessing overall precision, accuracy, and contract compliance.

PM – see "Project Manager"

PQL – see "Practical Quantitation Limit"

Precision - The consistency of measurement values quantified by measures of dispersion such as the sample standard deviation.

Preparation Blank – An analytical control that contains reagent water and reagents, which is carried through the entire preparation and analytical procedure.

Preparation Log – An official record of the sample preparation (extract, digestion, or distillation).

Prescribed Analytical Protocols – A compilation of instructions and requirements for analytical service providers working under contract with the Department.

Preservation – see "Chemical Preservation" and/or "Thermal Preservation"

Price Tables – A line-item listing of tests and functions specific to each Analyte Group where bidders provide their specific bid prices to perform each line item. Blank price tables are included as Attachment 1 to the General Analytical Laboratory Service IFB. Completed price tables become part of the executed Contract.

Proficiency Sample – A sample issued by the certification body or an agent of, to periodically assess the laboratories ability to perform their certified parameters.

Project Manager – A staff person designated as the main point of contact between the Contractor and the Department for all matters pertaining to Analyte Group 5 and the work performed under it.

QAMP – see "Quality Assurance Management Plan"

QAO – see "Quality Assurance Officer"

QAPP – see "Quality Assurance Project Plan"

Quality Assurance – An integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the client.

Quality Assurance Management Plan – A document stating the management policies, objectives, principles, organizational structure and authority, responsibilities, accountability, and implementation of a laboratory, to ensure the quality of its product and the utility of its product to its users.

QA/QC Officer – see "Quality Assurance Officer"

Quality Assurance Officer – The staff person who oversees and advises on all aspects of quality assurance and quality control with the Contractor's laboratory.

Quality Assurance Project Plan – A formal document describing in comprehensive detail the necessary quality assurance procedures, quality control activities, and other technical activities that need to be implemented to ensure that the results of the work performed will satisfy the stated performance or acceptance criteria.

Quality Control – The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer; operational techniques and activities that are used to fulfill requirements for quality; also the system of activities and checks used to ensure that measurement systems are maintained within prescribed limits, providing protection against "out of control" conditions and ensuring that the results are of acceptable quality.

Quality Manager – see "Quality Assurance Officer"

Quality Manual – see "Quality Assurance Management Plan"

Qualifier – A letter or character with a predetermined definition used to identify a sample result that is found to be abnormal or suspect during a data review.

Quantitation Limit – see "Limit of Quantitation"

Quantitation Reports – The output of an analytical instrument that details the signal response observed in a sample and equates that signal response to a concentration value.

RL – see "Reporting Limit"

Reporting Limit – see "Contract Required Quantitation Limit"

Retention Period – The duration of time that the Contractor is required to store samples and/or data prior to their return and/or disposal.

Rinse Blank – see "Equipment Blank"

Sample Delivery Group – A batch of samples established and uniquely identified by the Department for quality control purposes.

Sample ID – A unique identifier assigned to an environmental matrix collected at a specific point and time by the Department.

Sample Log-in Sheets – A document used by the Contractor to inventory and assess the contents of a sample delivery group upon receipt.

Sample Receipt – The act of the Contractor taking custody of samples submitted to them.

Sample Submitter – The last Department staff person to have custody of the samples prior to release to the courier and/or Contractor.

Sample Summary Table – A document that summarizes all samples contained in a sample delivery group, including their collection times, submittal times, Contractor assigned IDs, matrix, and analyses ordered.

SDG – see "Sample Delivery Group"

SOP – see "Standard Operating Procedures"

SPDES – Abbreviation for "State Pollutant Discharge Elimination System."

Standard Methods – see "Standard Methods for the Examination of Water and Wastewater"

Standard Methods for the Examination of Water and Wastewater – A collection of analysis methods issued by a joint committee of the American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF).

Standard Operating Procedures – A document that details the method for an operation, analysis, or action with thoroughly prescribed techniques and steps to be followed. It is officially approved as the method for performing certain routine or repetitive tasks.

Subcontracting – The act of sending samples to a qualified third party for analysis when the primary Contractor is unable to perform the requested analysis directly.

Submission ID – The identifier assigned by the Contractor to an internal sample delivery group.

Submittal Date – The date a sample is received at the Contractor's facility.

Surrogate – For certain organic analyses, compounds added to every field sample, blank, Matrix Spike and Matrix Spike Duplicate (MS/MSDs), and standard. Surrogates are used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in environmental media.

SW-846 – Abbreviation for the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," a collection of methods issued by USEPA.

Target Analytes – The elements and compounds subject to concentration measurement in the testing of an environmental sample.

Technical Director – The individual overseeing and managing all analysis activities being performed at the Contractor's laboratory or laboratories.

Thermal Preservation – The act of storing samples at a specific temperature to insure that target analytes and interferents in the sample are stabilized (i.e. their concentrations do not increase or decrease prior to analysis).

TNI – see "NELAC Institute, The"

Trip Blank – A control sample transported along with empty sample containers and/or field samples that is analyzed to assess contamination effect due to sample transport and handling.

Tuning – The act of adjusting and verifying the setting on a mass spectrometer to insure mass fractions are correctly detected and quantified.

Turn-around Time – The period of time allowed to the Contractor for analyzing and reporting a sample or samples. Measured from the submittal time to the time the data deliverable is received by the Department.

USEPA CLP – see "Contract Laboratory Protocol"

VOA – Abbreviation for "Volatile Organic Analysis" or "Volatile Organic Analytes"