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Kathleen H. Burgess
Secretary
New York State Public Service Commission
Three Empire State Plaza
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October 18, 2013

Re: Application of Champlain Hudson Power Express, Inc. for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII of the PSL for the Construction, Operation and Maintenance of a High Voltage Direct Current Circuit from the Canadian Border to New York City
Case 10-T-0139

On September 17, 2013, pursuant to the second paragraph of Attachment 1 of the Certificate Conditions approved by the Commission in its Order Granting Certificate of Environmental Compatibility and Public Need issued in this proceeding on April 18, 2013, and the Water Quality Certificate issued in this proceeding on January 18, 2013, Champlain Hudson Power Express, Inc. and CHPE Properties, Inc. (the "Certificate Holders") filed the Suspended Sediment/Water Quality Monitoring Plan (the "Plan").

During the month of September, the Certificate Holders received comments from the New York State Department of Public Service ("DPS") Staff and the New York State Department of Environmental Conservation ("NYSDEC") requesting certain changes to the Plan. Attached please find an updated version of the Plan, which has been revised to incorporate all of the comments received from DPS Staff and NYSDEC.

Thank you for your attention to this matter. If you have any further questions, please do not hesitate to contact the undersigned.

Very truly yours,

*Ekin Senlet*

Ekin Senlet
*Counsel for Champlain Hudson Power Express, Inc. and CHPE Properties, Inc.*

cc/
Active Parties in Case 10-T-0139 (via electronic delivery)

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# Champlain Hudson Power Express Project

# REVISION 2

# SUSPENDED SEDIMENT / WATER QUALITY MONITORING PLAN

## 1. Introduction

This Suspended Sediment/Water Quality Monitoring Plan (Plan) is developed pursuant to the to the Water Quality Certification (WQC) (NYSPSC 2013a) issued in connection with the Champlain Hudson Power Express Facility pursuant to section 401 of the Federal Water pollution Control Act, 33 USC 13441 and Article VII of the New York Public Service Law, Certificate Condition 159 and Attachment 1 of the Certificate (NYSPSC 2013b). This Plan describes the field activities to be conducted by the Certificate Holders. All suspended sediment/water quality monitoring field activities will be conducted in accordance with this Plan and the Quality Assurance Project Plan (QAPP) to be developed once this plan is approved.

The total suspended solids (TSS) and chemical characteristics of the ambient background water conditions and the sediment re-suspended by the installation equipment will be determined through water sampling at selected transects and subsequent laboratory analysis..

A combination of calibrated acoustic (ADCP) and optical backscatter sensor (OBS) instruments will be used to measure water column TSS and turbidity on selected transects. Companion water samples will be collected and analyzed for TSS and turbidity. The OBS will be mounted on a datasonde measuring conductivity (salinity), temperature, and depth.

Suspended sediment and water quality sampling and monitoring will be:

- Conducted pre-installation to develop an ambient project baseline in SB and I waters of New York State.
- Conducted during the jet plow and shear plow pre-installation trials to evaluate future cable installation activities; and
- Conducted during construction to monitor installation conditions to comply with the Certification.

Water quality sampling and monitoring will consist of collecting water samples for analysis of turbidity, TSS, and chemical constituents in conjunction with real-time current and turbidity monitoring. Water quality monitoring for physical and chemical constituents will take place over the entire in-water cable route in Lake Champlain, Hudson River, Harlem River, and East River.

# 2. Quality Assurance Project Plan

A QAPP including project standard operating procedures (SOPs) will be developed to document planned suspended sediment/water quality sampling activities and establish the criteria for performing these activities at a predetermined quality for the work to be conducted. The principal purpose of this document is to specify quality assurance/quality control (QA/QC) procedures for the collection, analysis, and evaluation of data that will be consistent with the requirements of the Certification (NYSPSC, 2013a).

The QAPP will provide general information and reference SOPs applicable to the analytical sampling program. This information includes definitions and generic goals for data quality and required types and quantities of QA/QC samples. The procedures address field documentation; sample handling, custody, and shipping; instrument calibration and maintenance; auditing; data reduction, validation, and reporting; recommended corrective action requirements; and QA reporting specific to the analyses performed by the laboratories. The QAPP will be developed and provided as a separate document for review and approval.

# 3. Water Column Sampling - Pre-Installation Trials

## 3.1 Water Column Sampling

Prior to the start of the pre-installation trials, water column sampling will occur at stations distributed at 1-mile intervals within all SB and I waters (Mile Point 290.3 to 332.5). At each station, samples will be collected at near-surface, mid-depth, and near-bottom. Sampling will occur during the season where it is expected that cable installation will occur in these water bodies. All monitoring and sampling methods will be performed in accordance with the approved QAPP. Global Positioning System (GPS) coordinates will be collected for all samples shipped for analysis.

Water samples will be collected and analyzed for the chemical parameters identified in Condition 14 of the Certification (NYSPSC, 2013a). Mercury samples will be collected in accordance with EPA Method 1669. Samples will be sent to a New York State certified laboratory (New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program) for analysis in accordance with the methods prescribed in Section 6.

The sampling methodology may include use of a Kemmerer water sampler or use of a peristaltic or submersible pump.

## 3.2 Pre-Installation Trials

Pre-installation trials of the jet plow and shear plow equipment will be conducted to simulate cable installation and refine operating configurations to evaluate potential recommended

operational modifications including speed and pressure reduction and their influence on resuspension, to the extent possible given that operational changes will have different effects depending on sediment types and hydrodynamics.

Jet plow trials will be conducted in the Hudson River and Lake Champlain and shear plow trials will occur in the Narrows of Lake Champlain (south of Crown Point). The trials will be conducted in the field within representative sections or areas proximate to the proposed underwater cable route in Lake Champlain and the Hudson River. The trial will include approximately 1,000 feet of jet plow operations and 1,000 feet of shear plow operations within the dominant sediment types (e.g., sand and silt) to simulate actual cable installation to design burial depth. The trials will provide an opportunity to refine suspended sediment monitoring procedures including the calibration of acoustic, optical backscatter and water sampling equipment, as well as communication and safety protocols between the monitoring and installation crews.

Procedures for suspended sediment monitoring during construction may be modified based on the findings of the pre-installation trials. Modifications may include adjustment of transect locations, number of water samples collected, methods for deploying equipment, and the procedures for correlating water samples with instrument monitoring. Any modification to this monitoring plan will be coordinated with the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Public Service (NYSDPS) and then submitted to NYSDPS for approval.

The survey boat will be equipped with the CTD probe, an OBS sensor, and an ADCP, and will sweep across the up-current and down-current plume in a zig-zag pattern crossing the potential plume up to four times depending on the speed of the plow to locate the point of high suspended sediment concentrations. The backscatter data from the OBS will be used to identify the likely area of high re-suspended sediment for water quality sampling. The same boat will be used for conducting the required water quality sampling including mercury via EPA Method 1669. One chemical sampling event (up-current and down-current) will occur for each change in speed/operational condition during the trial.

Re-suspended sediment (i.e., the sediment plume) associated with the trials will be monitored using the ADCP, OBS and water samples. Along each transect, the ADCP will provide horizontal and vertical profiles of current velocities and acoustic backscatter intensity at the point of measurement. The OBS will be used to measure turbidity and suspended solids concentrations. The OBS will be mounted on a conductivity/temperature/depth CTD probe. The CTD will monitor conductivity (salinity), temperature, and depth.

During these trials within all SB and I waters, water quality samples will be collected and analyzed for the chemical parameters identified in Condition 14 of the 401 Water Quality Certification. In Lake Champlain, only re-suspended sediment (i.e., the sediment plume) associated with the trials will be monitored using the CTD, ADCP, OBS vertical profiles, and water samples analyzed for TSS. The laboratory derived TSS data will be used to calibrate the ADCP and OBS instrumentation during jet plow trials of selected operating conditions and to provide a calibration check during cable installation.

During the pre-installation trials, water samples will be collected for TSS analysis at multiple

points in the tidal cycle in the Hudson River to generate data required to develop curves for calibration of the ADCP and OBS sensors. Once calibration procedures have been completed, a calibration curve will be generated and provided to NYSDEC and NYSDPS prior to the commencement of cable installation. The calibration curves will be updated based on data collected during the cable installation (Section 5).

Sampling methodology may include use of a Kemmerer water sampler or use of a peristaltic or submersible pump.

Global Positioning System (GPS) coordinates will be collected for all samples shipped for analysis. The survey boat will continually track its movements using GPS so a map of the survey route can be developed for the required reports.

# 4. Water Column Sampling – Cable Installation

During cable installation, assessments of water quality and the suspended sediment plume will be conducted continuously with real-time TSS monitoring and chemical sampling for laboratory analysis events occurring twice daily. In the tidal portion of the Hudson River, sampling will be conducted once during ebb tide and once during flood tide. In the non-tidal portions of the Hudson River and Lake Champlain sampling will occur once in the morning and once in the afternoon.

The survey boat will be equipped with the CTD probe, an OBS sensor, and an ADCP, and will sweep across the up-current and down-current plume in a zig-zag pattern crossing the potential plume up to four times depending on the speed of the plow to locate the point of high suspended sediment concentrations. The backscatter data from the OBS will be used to identify the likely area of high re-suspended sediment for water quality sampling. At each station, samples will be collected at near-surface, mid-depth, and near-bottom. The same boat will be used for conducting the required water quality sampling including mercury via EPA Method 1669.

Real-time monitoring of TSS will consist of ADCP measurement and a CTD-OBS profile measurement taken approximately 500 feet up-current of the operating jet plow/shear plow (or at reasonable safe survey distance up-current of the plow) to measure ambient TSS conditions. The down-current transect will be conducted 500 feet down-current of the installation device (or at reasonable safe survey distance down-current of the plow).

During construction, water quality and suspended sediment field monitoring will be conducted throughout cable installation in Lake Champlain, the Hudson River, and Harlem River, as appropriate during hours of operation. The ADCP and CTD-OBS instruments will be calibrated to measure suspended sediment concentrations during embedment through quantitative relationships between the ADCP, CTD-OBS, and TSS established during pre-installation trials and updated and refined throughout the embedment monitoring.

Sampling methodology may include the use of a Kemmerer water sampler or through the use of a Peristaltic or submersible pump.

Global Positioning System (GPS) coordinates will be collected for all samples shipped for analysis. The survey boat will continually track its movements using GPS so a map of the survey route can be developed for the required reports.

Based on a review of the methodology and results of the installation monitoring program, a monitoring program for potential cable repair in the future will be developed.

# 5. Water Quality Analysis

Water samples will be sent to a New York State Certified Laboratory for analysis for the required parameters and in accordance with the methods prescribed in Table 5-1, which is taken from Condition 14 of the Certification (NYSPSC 2013a).

Concentrations of metals will be reported as both dissolved and total fractions except for mercury, which shall be reported as total mercury. Water samples will be delivered to the laboratory within 24 hours or in accordance with allowable holding times of the applicable method, whichever is shorter. Laboratory analysis and reporting will be completed in 72 hours from laboratory receipt. Laboratory TSS results will be available 24 hours after receipt by the laboratory.

The analytical results will be submitted to NYSDEC, New York State Department of State (NYSDOS), NYSDOH, and NYSDPS within one day of receipt from the laboratory via email. The Certificate Holders will provide quality control analysis to the NYSDEC, NYSDOS, NYSDOH, and NYSDPS via email within 14 days of laboratory receipt.

# 6. Regulatory Compliance

In the Hudson River and northern portion of Lake Champlain, if the jet plow or shear plow demonstrate that the preferred operating conditions result in real-time TSS concentrations (measured 500 feet down-current of the jet plow) that exceed the TSS concentrations at an up-current background station by more than 200 mg/L, the Certificate Holders will report such conditions to the aquatic inspector and work with the NYSDPS and NYSDEC to evaluate modifications to the plow operating conditions in order to further reduce in situ sediment suspension associated with the single pass installation procedure and implement such modifications once approved by NYSDPS.

## Table 5-1

## Water Quality Analytical Parameters

| Water Body Class (Mile Post) | Contaminant | Standard | Unit | Method | Reporting Limit |
|---|---|---|---|---|---|
| **AA (MP 0 to 73.5)** | Dissolved/Total Arsenic | 340 | µg/l | EPA 200.7 | 10 |
| | Dissolved/Total Copper | Calculate using measured hardness and (0.96)exp (0.9422[ln(ppm hardness)]-1.7) | µg/l | EPA 200.7 | 2 |
| | Dissolved/Total Zinc | Calculate using measured hardness and 0.978 exp (0.8473[ln( ppm hardness)]+0.884) | µg/l | EPA 200.7 | 2 |
| | TSS | N/A | mg/l | EPA 160.2 | N/A |
| | Hardness | N/A | mg/l | EPA 130.2 | N/A |
| **B (MP 73.5 to 101.7)** | Dissolved/Total Arsenic | 340 | µg/l | EPA 200.7 | 10 |
| | Dissolved/Total Copper | Calculate using measured hardness and (0.96)exp (0.9422[ln(ppm hardness)]-1.7) | µg/l | EPA 200.7 | 0.1 |
| | Dissolved/Total Zinc | Calculate using measured hardness and 0.978 exp (0.8473[ln( ppm hardness)]+0.884) | µg/l | EPA 200.7 | 2 |
| | TSS | N/A | mg/l | EPA 160.2 | N/A |
| | Hardness | N/A | mg/l | EPA 130.2 | N/A |
| **A (MP 228.5 to 272.3)** | Phenanthrene | 45 | µg/l | EPA 8270C | 0.02 |
| | Dissolved/Total Cadmium | 5 | µg/l | EPA 200.7 | 0.02 |
| | Dissolved/Total Copper | 200 | µg/l | EPA 200.7 | 0.1 |
| | Dissolved/Total Lead | 50 | µg/l | EPA 200.7 | 0.02 |
| | Total Mercury | 0.7 | µg/l | EPA 1669 | 0.001 |

| Water Body Class (Mile Post) | Contaminant | Standard | Unit | Method | Reporting Limit |
|---|---|---|---|---|---|
| | Total PCBs | 0.09 | µg/l | EPA 8082 | 0.005 |
| | TSS | N/A | mg/l | EPA 160.2 | N/A |
| | Hardness | N/A | mg/L | EPA 130.2 | N/A |
| **B (MP 272.3 to 290.3)** | Dissolved/Total Arsenic | 340 | µg/l | EPA 200.7 | 10 |
| | Dissolved/Total Cadmium | Calculate using measured hardness and (0.85)exp (1.128[ln(ppm hardness)]-3.6867) | µg/l | EPA 200.7 | 0.02 |
| | Dissolved/Total Copper | Calculate using measured hardness and (0.96)exp (0.9422[ln(ppm hardness)]-1.7) | µg/l | EPA 200.7 | 0.1 |
| | Dissolved/Total Lead | Calculate using measured hardness and {1.46203-[ln(hardness)(0.145712]} exp (1.273[ln(hardness)]-1.052) | µg/l | EPA 200.7 | 0.02 |
| | Phenanthrene | 45 | µg/l | EPA 8270C | 0.02 |
| | Total Mercury | 1.4 | µg/l | EPA 1669 | 0.001 |
| | Total PCBs | 0.2 per Aroclor | µg/l | EPA 8082 | 0.005 |
| | TSS | N/A | mg/l | EPA 160.2 | N/A |
| | Hardness | N/A | mg/l | EPA 130.2 | N/A |
| **SB(MP 290.3 to 324.0)** | Dissolved/Total Arsenic | 63 | µg/l | EPA 200.7 | 10 |
| | Dissolved/Total Cadmium | 7.7 | µg/l | EPA 200.7 | 0.02 |
| | Dissolved/Total Copper | 7.9 | µg/l | EPA 200.7 | 0.1 |
| | Dissolved/Total Lead | 204 | µg/l | EPA 200.7 | 0.02 |
| | Phenanthrene | 14 | µg/l | EPA 8270C | 0.02 |

| Water Body Class (Mile Post) | Contaminant | Standard | Unit | Method | Reporting Limit |
|---|---|---|---|---|---|
| | Total Mercury | 0.05 | µg/l | EPA 1669 | 0.001 |
| | Total PCBs | 0.2 per Aroclor | µg/l | EPA 8082 | 0.005 |
| | TSS | N/A | mg/l | EPA 160.2 | N/A |
| | Hardness | N/A | mg/l | EPA 130.2 | N/A |
| **I (MP 324.1 to 332.5)** | Dissolved/Total Arsenic | 36 | µg/l | EPA 200.7 | 10 |
| | Dissolved/Total Cadmium | 7.7 | µg/l | EPA 200.7 | 0.02 |
| | Dissolved/Total Copper | 7.9 | µg/l | EPA 200.7 | 0.1 |
| | Dissolved/Total Lead | 204 | µg/l | EPA 200.7 | 0.02 |
| | Phenanthrene | 14 | µg/l | EPA 8270C | 0.02 |
| | Total Mercury | 0.05 | µg/l | EPA 1669 | 0.001 |
| | Total PCBs | 0.2 per Aroclor | µg/l | EPA 8082 | 0.005 |
| | TSS | N/A | mg/l | EPA 160.2 | N/A |
| | Hardness | N/A | mg/l | EPA 130.2 | N/A |

In the Narrows of Lake Champlain, if the shear plow demonstrates that the preferred operating conditions result in real-time TSS concentrations (measured 500 feet down-current of the Shear Plow) that exceed the TSS concentrations at an up-current background station by more than 100 mg/L, the Certificate Holders will report such conditions to the aquatic inspector immediately and will attempt to notify NYSDPS and NYSDEC within 24 hours. The Certificate Holders will immediately employ one or more of the mitigation techniques identified in Condition 14c of the Certificate (NYSPSC 2013a). If the Certificate Holders propose to employ alternative mitigation techniques, they shall consult with NYSDPS and NYSDEC to evaluate modifications to the plow operating conditions to further reduce in situ sediment suspension associated with the single pass installation procedure and implement such modifications once approved by NYSDPS.

During cable installation the concentrations of chemical constituents listed in Table 6-1, measured 500 feet down current, shall not exceed greater of: a) the levels set forth in Table 6-1 or b) 1.3 times the highest background level measured during the prior 24-hour sampling period up-current of the installation at the same depth as the down current sample. If these levels are exceeded, the Certificate Holders will report such conditions to the aquatic inspector and work with the NYSDPS and NYSDEC to evaluate modifications to the plow operating conditions to further reduce in situ sediment suspension associated with the single pass installation procedure and implement such modifications once approved by NYSDPS.

The Certificate Holders will not utilize the jet plow or shear plow until they have successfully demonstrated their ability to achieve the TSS standards established in the Certification (NYSPSC 2013a) as approved by NYSDPS. Review of this information by NYSDPS and NYSDEC will not unreasonably delay the commencement of installation of the underwater cable system. Nothing in this subsection is intended to require that cable installation methods be modified in a manner that would inhibit the cable installer from burying the cable to the depths specified herein through a single installation pass.

# 7. Equipment Decontamination

To avoid cross contamination, sampling equipment (defined as any piece of equipment that may contact a sample) will be decontaminated prior to the collection of each sample according to the following procedures. Field equipment rinsate blanks will be prepared and analyzed to monitor the effectiveness of field decontamination procedures.

Sampling personnel will wear disposable nitrile or latex gloves when collecting and handling samples. Gloves will be changed between the collection of individual samples.

Cross contamination will be minimized by the use of vendor-decontaminated, dedicated, disposable equipment to the extent practical.

Small equipment decontamination for non-disposable equipment such as a Kemmerer sampler will be accomplished using the following procedures:

- Alconox (or equivalent) and potable water wash;
- Potable water rinse; and,
- Distilled/deionized water rinse.

Solvents will not be used in the field decontamination of such equipment. Decontamination will include washing with a laboratory grade detergent (e.g., Alconox) to remove visible contamination, followed by potable (tap) water and analyte-free water rinses. Tap water may be used from any treated municipal water system; the use of an untreated potable water supply is not an acceptable substitute. Equipment will be allowed to dry prior to use.

Tubing for submersible or peristaltic pumps will not be reused. Submersible pumps and supporting lines and cables will be placed in a large clean plastic container filled with potable water and then run for several minutes (to decontaminate both exterior and interior parts); submersible pumps will also be given a final analyte-free water rinse of both interior and exterior parts.

# 8. Field Records and Documentation

The objective of this subsection is to provide consistent procedures and formats by which field records will be kept and activities documented, and a methodology by which field records will be managed. Field records and documentation to be used during field activities include field log books and chain-of-custody (COC) forms.

### 8.1 Field Log Books

Field log books will be prepared and maintained throughout the course of the investigation. Only bound, weatherproof field log books will be used. Log book entries will be recorded in indelible, waterproof ink. If errors are made in any field log book, field record (form), COC records, or any other field record document, corrections will be made by crossing a single line through the error, entering the correct information, and initialing and dating the correction.

Entries will be made in the following format. Documentation and reporting of events and activities will be made in chronological order on the right page of an open log book. The left page of the log book will be used for extemporaneous reporting, such as sketches, tables, providing details or comments on events reported sequentially, or interpretations, and notes identifying use of any other field documentation such as COCs.

The date will be placed at the top of every page in the left-hand corner of the right page. The time of entry recordings will be in columnar form down the left-hand side of the right page. If an entry is made in a non-dedicated log book, then the date, project name, and project number will be entered left to right, respectively, along the top of the right page. Entries will be dated, and time of entry recorded.

At the beginning of each day, the first two entries will be “Personnel/Contractors on Site” and “Weather.” At the end of each day's entry or particular event, if appropriate, the person entering the field notes will draw a diagonal line originating from the bottom left corner of the page to the conclusion of the entry and sign along the line indicating the conclusion of the entry or the day's activity.

Entries in field log books will be legible (printing is preferable) and will contain accurate and inclusive documentation of project activities (e.g., surface water monitoring). Information pertaining to health and safety aspects, personnel on site, visitor’s names, association, and time of arrival/departure, etc., should also be recorded. Language should be objective, factual, and free of personal feelings or other terminology that might prove inappropriate, since field records

are the basis for later written reports. Once completed, these field log books become accountable documents and must be maintained as part of the project files.

Sample collection and handling activities, as well as visual observations, will be documented in the field log books and applicable field records (forms) (e.g., calibration logs). The sample collection equipment (where appropriate), field analytical equipment, and equipment used to make physical measurements will be identified in the field log books. Calculations, results, and calibration data for field sampling, field analytical, and field physical measurement equipment will also be recorded in the field log books applicable field records. Field analyses and measurements must be traceable to the specific piece of field equipment utilized and to the field investigator collecting the sample, making the measurement, or conducting analyses. Log books will be updated as field work progresses.

When an individual log book is full, the log book will be submitted to the project manager for final cataloging and filing. The log books will be stored in the project file. Copies of specific sections will be made available to personnel upon request.

### 8.2 Sample Identification

During this project, a unique sample identifier will designate each sample collected. Field blanks will be labeled for the day of collection. For MS/MSD samples, the MS/MSD will be added to the sample ID and included on the COC as a note.

### 8.3 Sample Labeling

A non-removable label will be affixed to each sample container except for containers used for low level mercury analysis which will be coded by the laboratory providing the certified clean sampling equipment. Labels will be either computer generated or hand marked with permanent marker pens.

### 8.4 Sample Chain of Custody

At the time of the sampling, a field team member will record the sample information in the field log book and on a COC form. The sample information recorded in the log books will be at least as detailed as that recorded on labels, and should indicate the type of sample (e.g., surface water), sample preservation, and sampling location, in sufficient detail as to allow re-sampling at the same location.

After samples are collected, the field team member will immediately place the filled containers in coolers and iced to $4^{o}$ C. Samples will be preserved as required and specified in the QAPP. The field team will maintain custody of the samples until they are shipped to the laboratory. The entries on the COC form will correspond to the field log book, standard forms, and sample labels.

Original copies of COC forms will be forwarded to the laboratory. Copies and associated shipping air bills will be maintained by the field supervisor with all other documentation until provided to the project manager. COC forms will be copied to the field file weekly or as

otherwise specified. A copy of the COC forms will be filed by the project manager or designated representative on a weekly basis (at a minimum) in the project file for permanent storage.

### 8.5 Sample Packaging and Shipping

Samples collected for laboratory analysis will be delivered to the laboratory within 24 hours or in accordance with allowable holding times of the applicable method, whichever is shorter, following proper identification, COC, preservation, and packaging procedures. Samples which require maintenance at 4º C (essentially all aqueous and non-aqueous samples submitted for chemical analysis) which are collected and shipped on a Friday must be delivered to, and accepted by, the laboratory on Saturday; note that it may be necessary to arrange this in advance.

Sample packaging and shipping procedures are summarized as follows: a properly completed COC form will accompany each sample shipment. The sample identifiers will be listed on the COC form. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents transfer of custody of samples from the sampler to another person, to the laboratory, or to/from a secure storage area.

Samples will be properly packaged to avoid breakage, stored on ice at 4° C for shipment and dispatched to the appropriate laboratory for analysis. (In the event that samples must be held overnight prior to shipment, the temperature of the cooler and presence of sufficient ice will be checked and new ice added prior to shipment.) A signed COC form will be enclosed and secured to the inside top of each sample box or cooler. The original COC, a cooler receipt form (if applicable), and any additional documentation will be placed in a plastic bag to prevent them from getting wet, and one copy will be retained by the field supervisor.

Shipping containers will be secured with strapping tape and custody seals for shipment to the laboratory. Signed custody seals will be covered with clear plastic tape. The cooler will be taped shut with strapping tape in at least two locations.

Samples will be transported to the laboratory by a commercial overnight carrier (e.g., FedEx) unless other arrangements are made on a project-specific basis (e.g., laboratory courier sample pickup; or hand delivery of samples to the laboratory by AECOM personnel).

## 9. Reporting

Results of the pre-installation trials will be summarized along with any findings or recommendations for procedures to be followed during cable installation. These results will be summarized in a brief draft letter report and provided to the NYSDEC, NYSDOS, NYSDOH, and NYSDPS for comment prior to in-water installation of the cables. The final report will include the correlations between optical and acoustical backscatter data and corresponding TSS results from water samples.

A report of the results of the pre-installation water quality sampling will be provided with the applicable Segment EM&CP. The report will include any recommendations for modifying the action levels contained in Condition 14 of the Certification (NYSPSC 2013a).

Once cable installation activities begin, available monitoring data results will be reported daily. After completion of cable installation activities, a draft and final report will be prepared that will include a description of procedures followed during the monitoring program, field data results, analytical testing data results, and accompanying QA/QC data. The final report will include the correlations between optical and acoustical backscatter data and corresponding TSS results from water samples. The report will also include a comparison of TSS results to Certification required thresholds and a comparison of water quality results to relevant water quality standards. The final report summarizing the results of the suspended sediment/water quality monitoring program will be submitted to the Secretary of the New York State Public Service Commission (PSC), NYSDEC, NYSDOS, NYSDOH, and NYSDPS within one year of the completion of installation.

Within 1 year of project completion, an analysis comparing the actual TSS results obtained during installation to the previous modeled TSS concentration predictions will be submitted to the Secretary of the PSC, NYSDEC, NYSDOS, NYSDOH, and NYSDPS. This analysis will include a table and a quantitative analysis (statistical analysis if possible) comparing the actual and predicted results. This comparison will be conducted using data collected from a section of Lake Champlain and the Hudson River for jet plow operations and in the southern portion of Lake Champlain for shear plow operations.

# 10. References

NYS Public Service Commission (NYSPSC). New York State Public Service Commission 401 Water Quality Certification. January 18, 2013.

NYS Public Service Commission (NYSPSC) (2013b). Revised Appendix C. Champlain Hudson Power Express, Inc. Proposed Certificate Conditions. January 18, 2013.