

Protocol P-13-58

Tracking of Algal Sample Analysis

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1. PURPOSE

1.1. There are numerous stages in the analysis of samples and reporting of data in the PCER Phycology Section. For example, see Figure 1 “Sample Analysis and Data Flow,” depicting stages in analysis of U.S. Geological Survey’s (USGS) National Water-Quality Assessment Program (NAWQA) samples. It is often important to know, for a given set of samples, which stages have been completed—What is the status of samples in the overall sample analysis process? This information is necessary to estimate realistic delivery dates, have sample data complete by these dates, revise scheduling if necessary, and/or gather requested information at any given time. This protocol describes the systems in place to check the status of sample analysis from receipt of the samples at ANSP to data review.

2. SCOPE

- 2.1. This protocol is applicable to instances when it is necessary to determine the status of sample analysis.
- 2.2. This protocol is for any staff member of the Phycology Section who may need to know the status of a particular sample.

3. REFERENCE

- 3.1. PCER, ANSP. 2002. Preparation of Algal Data Files and Reports for Submission to the USGS NAWQA Program. Protocol No. P-13-53.

4. APPARATUS/EQUIPMENT

- 4.1. Personal computer connected to the ANSP network server, and access to the Phycology Section databases.

5. METHODS

- 5.1. Data documenting completion of sample analysis steps are recorded in two places. One, in Phycology Section databases at the time data are entered. Two, on paper forms in a set of three folders that are prepared at the time samples are logged-in and which are circulated with the samples: “Sample Tracking and Subsampling” folder, “Diatom Analysis” folder and “Soft-Algae Analysis” folder. The “Tracking Folders Checklist” (Table 1) lists the forms and other materials that each of the three folders might include. The Phycology Section Project Manager or project leader specifies on the checklist which forms are to be completed.

There are two methods to check the status of sample analysis. Each accesses information in one of the two places data are stored. Both are designed to obtain information on all the samples in a subproject. One method is to run a Microsoft Access query in the PHYCLGY database which returns values for key fields in various tables that store data on the sample analysis process. The other method is to check the respective “Tracking Folders Checklist” included in each of the three folders described above. The computer query method is faster and easier, but information retrieved may be incomplete because some information on forms may not yet have been entered into the database. The method of examining tracking folders may be slower, but information found will be up to date.

- 5.1.1. **Run computer query.** Run the Microsoft Access query “Data Entry Check 0: Sample Tracking” in the PHYCLGY database. This query reports values in key fields of tables that contain data on specific stages in the sample preparation and analysis process (e.g., see Figure 1). The fields included in the query will change as tracking procedures evolve. They are currently as follows:

<u>Field Name</u>	<u>Typical Value</u>	<u>Meaning</u>
“Logged In”	-1	Samples were logged-in/checked in, assigned to a subproject, and (should be) scheduled for analysis.
“Sample Volumes”	(Sample ID)	The ANS Sample Volume (a critical value for biovolume calculation) was entered.
“Sub-Sampled”	PRx or DTx	Subsamples were made.
“Diatom Slides”	h, l, a or b	Diatom slides were prepared.
“PM Fractions”	a or q	Palmer-Maloney (soft algae) fractions were prepared
“Diatom Counts”	(1)	Diatom analysis data have been entered.
“Non-Diatom Count”	(1)	Soft-algae analysis data have been entered.

Fields with null or “0” values indicate that a step has not been fully completed, or that it was completed, but data resulting from the step have not yet been entered. This query should be run weekly by the Phycology Project Manager to track sample progress and update scheduling.

- 5.1.2 **Examine tracking folders.** Locate the “Sample Tracking and Subsampling,” “Diatom Analysis,” and “Soft-Algae Analysis” folders. Look at forms required by the Tracking Folders Checklists to see what steps are completed. When all analyses are complete, all relevant forms should be initialed, and dated.

Table 1. Tracking Folders Checklist. “*” denotes forms or printouts that may not be needed if Tabulator or other applications are used.

Sample Tracking and Subsampling Folder
<input type="checkbox"/> Bottle Shipping List from NAWQA SU Biologist or other transmittal forms
<input type="checkbox"/> “NAWQA Algae Sample Check” form
<input type="checkbox"/> “Non-Conformance” form and/or E-mails documenting any discrepancies and resolutions with data or samples (not including QA/QC issues)
<input type="checkbox"/> “NAWQA Sample volume/Subsample” form
<input type="checkbox"/> “NAWQA DTH Subsampling Data Sheet”
<input type="checkbox"/> “Data Entry Check: ANS Sample Volume” query printout
<input type="checkbox"/> “Data Entry Check: Field Volumes/Areas” query printout
<input type="checkbox"/> “Data Entry Check: Subsample Information” query printout

Diatom Analysis Folder
<input type="checkbox"/> “Diatom Slide Preparation” form
<input type="checkbox"/> “Diatom Lab – Slide Preparation Notes”
<input type="checkbox"/> “Diatom Slide Analysis” form
<input type="checkbox"/> Diatom Count Sheets (“Diatom Count Reports” from Tabulator)
<input type="checkbox"/> “Diatom Count Benchsheet” *
<input type="checkbox"/> “Algal Biovolume Measurements” *
<input type="checkbox"/> “Data Entry Check: Diatom Slide Information” query printout
<input type="checkbox"/> “Data Entry Check: Diatom Count Info”* query printout
<input type="checkbox"/> “Data Entry Check: Diatom Count”* query printout
<input type="checkbox"/> “Data Entry Check: Diatom Count Qualitative”* query printout
<input type="checkbox"/> “QA/QC Count” forms and written report

Soft Algae Analyses Folder
<input type="checkbox"/> “Periphyton analysis” form
<input type="checkbox"/> “NAWQA Periphyton Sample Dilution/Concentration” forms
<input type="checkbox"/> “Algal Biovolume Measurements”
<input type="checkbox"/> “Data Entry Check: Palmer-Maloney Fractions” query printout
<input type="checkbox"/> “Data Entry Check: Non Diatom Count Information” query printout
<input type="checkbox"/> “Data Entry Check: Non Diatom Count” query printout
<input type="checkbox"/> “Data Entry Check: Non Diatom Count Qualitative” query printout
<input type="checkbox"/> “Periphyton Community Composition Bench Sheets” for RTH, DTH & QMH.
<input type="checkbox"/> “QA/QC Count” forms and written report

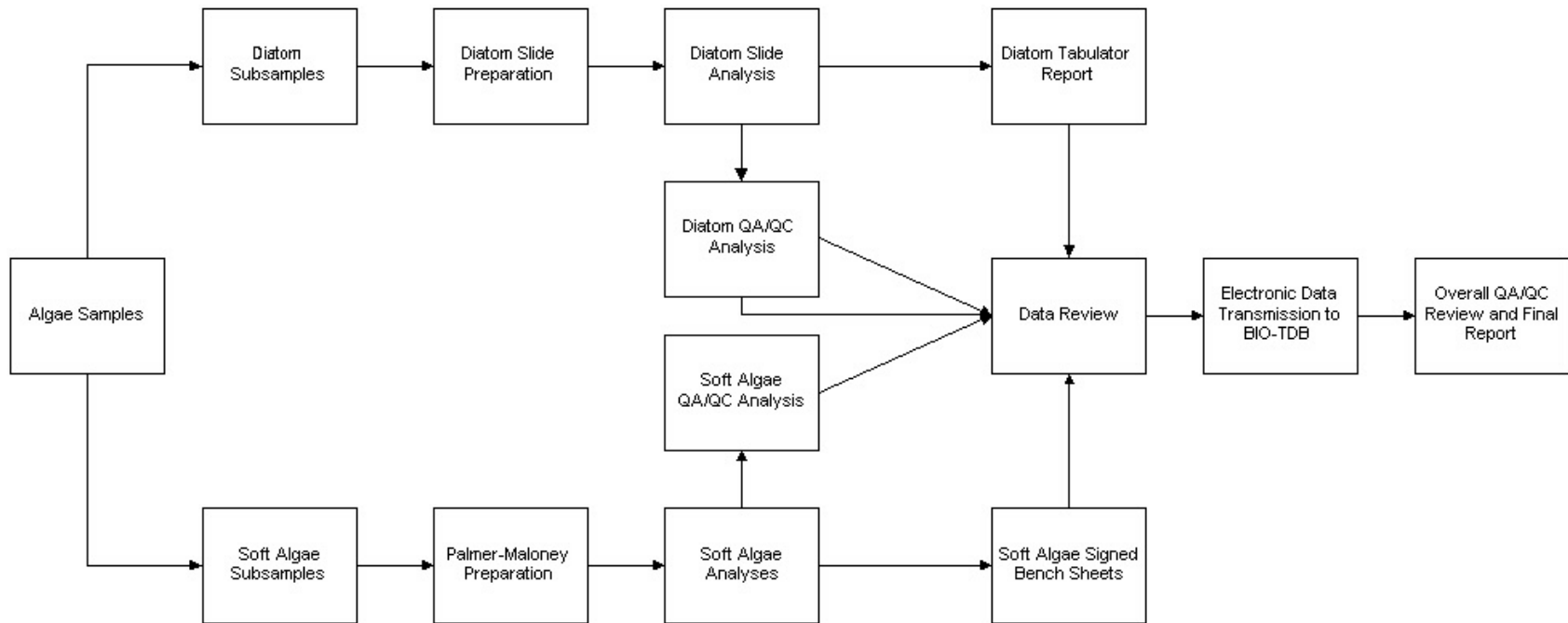


Figure 1. Sample process and analytical flow.