

LD 1000. LABORATORY DOCUMENTATION

1. INTRODUCTION: Adhere to these documentation requirements in support of the laboratory procedures described in the related DEP SOPs indicated below.
2. SCOPE AND APPLICABILITY: Use these SOPs only for the indicated laboratory component operations. These SOPs apply to documentation procedures *not* specified in the NELAC Quality Systems document.

LD 2000. (RESERVED)

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LD 6000. (RESERVED)

LD 7000. DOCUMENTATION OF BIOLOGICAL LABORATORY PROCEDURES

1. Document the following items for the indicated SOPs found in LQ 1000 – LQ 7420, Laboratory Quality Control and LT 7000 – LT 7500, Determination of Biological Indices.
 - 1.1. Record the minimum information summarized in the following SOPs. Refer to the corresponding LQ- or LT-series SOP for any chronological requirements for documentation sequence.
 - 1.2. Also refer to applicable portions of FD 1000 – FD 1300, FD 3000, FD 5420 and FD 7000 for additional documentation requirements.
2. Use these SOPs only for the indicated laboratory component operations. These SOPs apply to laboratory procedures *not* specified in the NELAC Quality Systems document.

LD 7100. Documentation of Laboratory Procedures for Determination of Biological Indices

LD 7110. REQUIRED DOCUMENTATION FOR LABORATORY PROCEDURES FOR BIORECON DETERMINATION (LT 7100)

- Sample receipt or log-in record
- Site, sample identification number, STORET station number, sample type, replicate number and date collected
- Tally of the number of each taxon

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- Name of any organism encountered in the laboratory for the first time
- Individual taxon names
- Numbers of each taxon counted
- Number of individual organisms counted
- Data entry into the Florida Statewide Biological Database (DEP staff only)
- Method and notes for counting and collapsing taxonomic data
- Collapsed taxa list
- Index calculations per LT 7100, section 5:
 - o Long-lived taxa score
 - o Sensitive taxa score
 - o Taxa richness (total taxa)
 - o Number of Ephemeroptera taxa
 - o Number of Trichoptera taxa
 - o Number of clinger taxa
- BioRecon index metrics and evaluation as scored per Tables LT 7100-1, LT 7100-2 and LT 7100-3

**LD 7120. REQUIRED DOCUMENTATION FOR LABORATORY PROCEDURES FOR STREAM
CONDITION INDEX (SCI) DETERMINATION (LT 7200)**

- Laboratory sample receipt or log-in record
- Site, sample identification number, STORET station number, sample type, replicate number and date collected
- Identification of sample collectors
- Total number of organisms sorted from each selected grid tray aliquot
- Number of grids, squares and aliquots selected and sorted (e.g., 8 grids out of 24 total sample grids)
- Date of sorting completion
- Total number of mounted microscope slides, mounting date for each slide, unique label identification for each slide and identification of mounter(s) for each slide for all sorted samples
- Total number of individuals for each taxon for each of the 150-organism aliquots
- Name of any organism removed from the sorted sample for reference collection
- Name of each taxon identified for each of the 150-organism aliquots
- Total number of taxa identified for each of the 150-organism aliquots
- Total number of individual organisms identified for each of the 150-organism aliquots
- Data entry into the Florida Statewide Biological Database (DEP staff only)

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- Method and notes for counting and collapsing taxonomic data for each of the 150-organism aliquots
- Collapsed taxa list for each of the 150-organism aliquots
- Index calculations per LT 7200, section 5 for each of the 150-organism aliquots:
 - o Long-lived taxa
 - o Sensitive taxa
 - o % Very tolerant taxa
 - o Taxa richness (total taxa)
 - o Number of Ephemeroptera taxa
 - o Number of Trichoptera taxa
 - o % Dominant taxa
 - o Number of Tanytarsini
 - o Number of clinger taxa
 - o % Filter feeders
- SCI metrics and evaluation as scored per Tables LT 7200-1 and LT 7200-2 for each of the 150-organism aliquots
- Final SCI score (average of 2 aliquots)
- Label identification of archived vials of sorted organisms linked to sample identification data required in this section
- Label identification of archived mounted slides (midges/worms/mites) linked to sample identification data required in this section

**LD 7130. REQUIRED DOCUMENTATION FOR LABORATORY PROCEDURES FOR LAKE
CONDITION INDEX (LCI) DETERMINATION (LT 7300)**

- Laboratory sample receipt or log-in record
- Site, sample identification number, STORET station number, sample type, replicate number and date collected
- Identification of sample collectors
- Total number of organisms sorted from each selected grid tray aliquot
- Number of grids, squares and aliquots selected and sorted (e.g., 8 grids out of 24 total sample grids)
- Date of sorting completion
- Total number of mounted microscope slides, mounting date for each slide, unique label identification for each slide and identification of mounter(s) for each slide for all sorted samples
- Total number of individuals for each taxon
- Name of any organism removed from the sorted sample for reference collection

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- Name of each taxon identified
- Total number of taxa identified
- Total number of individual organisms identified
- Data entry into the Florida Statewide Biological Database (DEP staff only)
- Method and notes for counting and collapsing taxonomic data
- Collapsed taxa list
- Shannon-Weaver Diversity Index score per LT 7300, section 5.1
- Hulbert Index score per LT 7300, section 5.2
- LCI metrics scores per LT 7300, section 5.3:
 - o LCI Taxa Score component
 - o LCI EOT Taxa Score component
 - o LCI % EOT Score component
 - o LCI % Diptera Score component
 - o LCI SWDI Score component
 - o LCI HI Score component
 - o LCI score
- Label identification of archived vials of sorted organisms linked to sample identification data required in this section
- Label identification of archived mounted slides (midges/worms/mites) linked to sample identification data required in this section

**LD 7140. REQUIRED DOCUMENTATION FOR LABORATORY PROCEDURES FOR LAKE
VEGETATION INDEX (LVI) DETERMINATION (LT 7500)**

- Laboratory sample receipt or log-in record
- Site, sample identification number (e.g., STORET station number, sample type, replicate number and date collected)
- Identification of sample collectors
- Total number of taxa identified from each selected section
- Name of each taxon identified from each selected section
- Total number of taxa identified from each selected section
- Total number of individual organisms identified from each selected section
- Data entry into the Florida Statewide Biological Database (DEP staff only)
- LVI metrics scores per LT 7500, section 5 for each selected section
 - o % native taxa
 - o % invasive taxa

- o % sensitive taxa
 - o Dominant C of C
- LVI score for each selected section
- Final LVI score (average of the 4 selected sections)

LD 7200. Documentation of Laboratory Quality Control for Biological Community Analysis

The following sections summarize required documentation items for the indicated biological laboratory quality control procedures.

LD 7210. REQUIRED DOCUMENTATION OF QUALITY CONTROL FOR ALGAL IDENTIFICATION

- Initial demonstration of proficiency for each analyst per LQ 7110
 - o Similarity values and % correct identifications for both soft algae and diatoms
 - o Notes regarding new analyst training to correct proficiency of identifications
 - o Results of senior staff QC re-analysis of samples analyzed by newly proficient analysts
- On-going quality control information per LQ 7120
 - o Identification of all wet samples or slides re-analyzed as QC samples
 - o Results of all QC sample analyses including taxa, counts and similarity values
 - o Results of analyst training to correct proficiency of identifications
 - o Results of any sample re-analyses due to QC failures
- Results of quarterly consistency identifications per LQ 7130
 - o Names of analysts participating in consistency identifications
 - o Identity of QC samples chosen for consistency identifications
 - o Results of consensus identifications for the QC samples
 - o % correct identifications for each analyst
 - o Corrective actions performed per consistency exercise results
 - o Cumulative taxa list derived from consistency identification exercises
- Corrective quality control information per LQ 7140
 - o Names of participating analysts
 - o Identity of samples chosen as QC samples
 - o Results of all analyses of QC samples performed by each analyst
 - o Results of intra-sample comparisons of the QC analyses
 - o Corrective actions performed

LD 7220. (RESERVED)

LD 7230. REQUIRED DOCUMENTATION OF QUALITY CONTROL FOR MACROINVERTEBRATE TAXONOMIC IDENTIFICATION

LD 7231. *Required Documentation of Quality Control for Macroinvertebrate Sorting (LQ 7410)*

- Total organisms as defined in LQ 7410, section 1.4
- QC organisms as defined in LQ 7410, section 1.4
- Original field sample identification
- Subsample aliquot identifications
- Cumulative sorting efficiency for each analyst

LD 7232. *Required Documentation of Quality Control for Macroinvertebrate Taxonomic Identification and Enumeration (LQ 7420)*

1. DOCUMENTATION OF QUALITY CONTROL FOR WET AND SLIDE-MOUNTED ENUMERATIONS

- 1.1. Single-analyst cumulative identification error rate for total number of organisms identified
- 1.2. Single-analyst cumulative identification error rate for total number of taxa identified
- 1.3. Identification of original field sample or subsample QC-checked (*QC sample*, as defined in LQ 7420, section 3.1)
- 1.4. Results for each original field sample or subsample, including number of organisms identified for each taxon
- 1.5. Results for each corresponding QC sample, including number of organisms identified for each taxon
- 1.6. Name of taxonomist identifying original sample or subsample
- 1.7. Name of taxonomist performing the QC sample analysis
- 1.8. Date of each original field sample or subsample analysis
- 1.9. Date of each QC sample analysis
- 1.10. Additional comments associated with the QC check, including noted discrepancies and resolutions with the original field sample or subsample enumeration

2. DOCUMENTATION FOR DEP TAXONOMIC QC ROUND-ROBIN SAMPLES

Document the following for all data generated under the DEP Taxonomic Round-Robin program (see LQ 7400, section 1.3).

- 2.1. Record relevant information for round-robin sample enumerations per section 1 above.
- 2.2. Retain all correspondence, data sheets, resolutions concerning discrepant results and all reports of results associated with round-robin samples.

2.3. Document and retain all correspondence and associated records for any corrective actions implemented pursuant to round-robin results.

LD 7300. References (*RESERVED*)

LD 8000. (RESERVED)