FLORIDA DEPARTMENT OF Environmental Protection

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2600 Blair Stone Road
Tallahassee, FL 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

VIA EMAIL
Read receipt requested

February 20, 2024

Lin Sailers
St. John's River Water Management District
4049 Reid Street
Palatka, FL 32177
Email: LSAILERS@sjrwmd.com

Re: Final Audit Report for Laboratory Records Audit

Dear Mr. Sailers:

Thank you for responding to the preliminary audit report for the Laboratory Records Audit of the St. John's River Water Management District (SJRWMD), DOH ID E42206. The Florida Department of Environmental Protection (department or DEP) has reviewed your response and accepted the proposed corrective actions.

Attached is the final audit report detailing the audit procedure, audit findings, and the department's audit conclusions. This final audit report will be posted on the department's website at https://floridadep.gov/dear/florida-dep-laboratory/content/fdep-biological-and-audit-report-search. As noted in the report, the department concludes that the laboratory procedures and laboratory documentation used by SJRWMD have met quality control (QC) criteria required by the SJRWMD Quality Manual and laboratory SOPs, Chapter 62-160, Florida Administrative Code (F.A.C.), The NELAC Institute (TNI) 2016 standards and the relevant methods. The laboratory's implementation of corrective actions described in the final audit report will lead to an improved quality system. None of the findings in the audit were deemed critical to data usability for the Impaired Waters Rule, 62-303, F.A.C., and other DEAR uses.

NOTE: The audit evaluated the indicated data for the use(s) described in the final audit report. The usability of the audited data for other purposes or the usability of data produced by the audited organization for other analytes or other date ranges must be determined separately according to applicable requirements in Rule 62-160.670, F.A.C.

Under Chapter 120 of the Florida Statutes, SJRWMD, and any other person whose substantial interests are affected by the department's agency action, may challenge the attached final audit

report, including the corrective actions and the data usability analysis. The process to challenge any portion of this agency action is described below in the Notice of Rights section.

If you have any questions or concerns about this final audit report, please feel free to contact Ethan Wickline via phone (850-245-8682) or email (Ethan.Wickline@FloridaDEP.gov).

Notice of Rights

This action is final and effective on the date mailed (via e-mail) unless a sufficient petition for an administrative hearing is timely filed under sections 120.569 and 120.57 of the Florida Statutes as provided below. If a sufficient petition for an administrative hearing is timely filed, this agency action becomes only proposed agency action, subject to the result of the administrative review process. Therefore, on the filing of a timely and sufficient petition, this action will not be final and effective until further order of the department. Because an administrative hearing may result in the reversal or substantial modification of this action, the petitioner is advised not to proceed until the deadlines noted below for filing a petition for an administrative hearing or request for an extension of time have expired.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rules 28-106.201 and 28-106.301, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;
(b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;
(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us. Also, a copy of the petition shall be mailed to SJRWMD at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant and persons entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us, before the deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

This determination constitutes an order of the department. Subject to the provisions of paragraph 120.68(7)(a) of the Florida Statutes, which may require a remand for an administrative hearing, the applicant has the right to seek judicial review of the order under section 120.68 of the Florida Statutes, by the filing of a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

David Whiting, Deputy Director
Division of Environmental Assessment and Restoration
2600 Blair Stone Road
Tallahassee, FL 32399
Tel No.: (850) 245-8191

Attachments:
Final Audit Report

Copies furnished to:

Kenneth Hayman, FDEP Office of General Counsel
Kevin O'Donnell, Program Administrator, Water Quality Evaluation & TMDL Program
Jessica Mostyn, Environmental Administrator, Watershed Assessment Section
File

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this determination, including all copies, was e-mailed before the close of business on February 20, 2024 to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to 120.52(7)
Florida Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

Clerk

2/20/2024
Date

Final Audit Report
St. John's River Water Management District
DOH ID E42206
Laboratory Records Audit
Conducted May 2023

Florida Department of Environmental Protection
Division of Environmental Assessment and Restoration
February 1, 2024

Introduction

The Florida Department of Environmental Protection's (DEP or department) Division of Environmental Assessment and Restoration requested a laboratory records audit of St. Johns River Water Management District (SJRWMD), DOH ID E42206. The Aquatic Ecology and Quality Assurance Section (AEQAS) conducted the audit in accordance with Rules 62-160.650 and 62-160.670, Florida Administrative Code (F.A.C.). The purpose of this audit was to verify that SJRWMD is complying with the quality assurance (QA) requirements of the QA Rule, Chapter 62-160, F.A.C., and correctly implementing approved analytical methods, including acceptable quality control, and maintaining adequate laboratory documentation. The focus of the audit was water quality data used by DEP for impaired waters determinations through Chapter 62-303, F.A.C.

This final audit report lists the procedural and documentary deficiencies, as determined by the department auditors, responses from the audited party, and the department's responses to the corrective actions proposed by the laboratory.

Audit Description

AEQAS staff requested analytical and quality control records for samples representing the laboratory's analysis of silver, copper, chlorophyll-a, total phosphorus, total Kjeldahl nitrogen, and nitrate-nitrite. AEQAS audited 30 samples collected by SJRWMD from 3/13/2018 through 11/15/2022 for the metal samples and 4/12/2018 through 3/10/2022 for the nutrient and Chl-a samples (Table 1). All samples were analyzed by SJRWMD. Records were requested from SJRWMD on March 16, 2023, and received on April 20, 2023. AEQAS auditors reviewed records pertaining to the selected samples, which included the laboratory's certification information, Quality Manual and relevant SOPs, detection limit studies, sample chain of custody documents, check in logs, analytical runs, instrument test reports, lab quality assurance and quality control documentation, and laboratory electronic data files. The AEQAS auditing team met over video conference with SJRWMD's Quality Assurance Officer, Lin Sailers, as well as Charles Faulk, Curtis Frysinger, and David Hornsby for an audit overview and introductory meeting on May 8, 2023. Further correspondence was conducted via email. Additional records were requested on 5/11/2023 and 5/31/2023. These additional files were received on 5/19/2023 and 6/9/2023, respectively. The SJRWMD Quality Manuals and laboratory SOPs, Chapter 62-160, F.A.C., The NELAC Institute (TNI) 2016 standards, SM 10200 H, EPA 200.8, EPA 351.2, EPA 353.2, and EPA 365.4 provided the criteria for the audit and all findings. Personnel involved in the audit were Sarah Noble, Kristen Sapp, Jackie Krebs, Aaryn Letson, Jessica Patronis, and Ethan Wickline from AEQAS. Lin Sailers, the lab's Quality Assurance Officer, was the main contact for SJRWMD.

Preliminary Audit Report and Implementation of Corrective Actions

A preliminary audit report of findings and deficiencies was sent to Lin Sailers of SJRWMD on August 4, 2023. Procedures or documentation that did not comply with audit criteria are identified in Table 2, along with the department's recommended or required corrective actions. Lin Sailers replied on September 18, 2023, with proposed corrective actions and implementation dates for the noted deficiencies, which have been included in Table 2. AEQAS auditors met with SJRWMD staff on October 23, 2023, via video conference to address clarifications and

remaining questions regarding findings and corrective actions for the audit. Lin Sailers, Charles Faulk, Curtis Frysinger, David Hornsby, and Christine Mundy were in attendance for SJRWMD while Sarah Noble, Kristen Sapp, Jessica Patronis, Jackie Krebs, Aaryn Letson, Tiffany Simpson, and Ethan Wickline attended from AEQAS. During this meeting, AEQAS auditors presented their questions and requests for clarification on SJRWMD's preliminary responses. A draft of the final report was sent with a request for additional documentation and revisions by the auditors on November 16, 2023. On December 22, 2023, SJRWMD responded to this draft by revising and clarifying lab responses and implementation dates for findings #1-5, 7-8, 21, 26, 29 and 43. SJRWMD sent additional clarifications on January 23, 2024.

Audit Conclusions

Based on the findings from this audit, DEP has determined that the corrective actions for the laboratory meet the department's minimum quality assurance standards. The laboratory's implementation of corrective actions described in this report will lead to an improved quality system. None of the findings in the audit were deemed critical to data usability for the Impaired Waters Rule, 62-303, F.A.C., and other DEAR uses.

Of note, findings 26 and 29 involve steeping time for the chlorophyll extract and freezer temperature for storage of chlorophyll filters. Requirements in DEP SOP Table FS 1000-5 are intended to produce repeatable and defensible data of known quality for department use. There is uncertainty surrounding the potential effects of altering those conditions or other less clearly defined conditions within the method. For example, filters held at higher freezer temperatures may cause degradation of chlorophyll a on the filter and prolonged steeping of the sample extract may increase the extraction of interfering pigments. Both of these conditions could result in errors in chlorophyll *a* values. DEP encourages SJRWMD to strive to attain the method and SOP requirements to the greatest extent possible. Please note, the latest revision of Standard Methods replaced method 10200 H with a new chapter number, 10150. Standard Methods 10150 Chlorophyll *a* now includes the requirement to store frozen filters in a standard laboratory freezer at -18 °C or below. Laboratories seeking renewal of DOH certification should use the latest valid version of the test method to comply with TNI 2016 Standards, Volume 1 Module 2, section 5.4.2.

NOTE: The audit evaluated the indicated data for the use(s) described in this report. The usability of the audited data for other purposes or the usability of data produced by the audited organization for other analytes or other date ranges must be determined separately according to applicable requirements in Rule 62-160.670, F.A.C.

Table 1. List of audited samples for the laboratory metals and nutrient analysis for a laboratory records audit of SJRWMD conducted by DEP, May 2023.

Sample ID	Collection Date, Time	Analyte[1]	Methods[2]
L20180315-001	03/13/2018 09:48	Ag, Cu	EPA 200.8
L20181070-001	05/17/2018 08:00	Ag, Cu	EPA 200.8
L20181096-003	07/26/2018 09:00	Ag, Cu	EPA 200.8
L20191367-006	04/03/2019 11:31	Ag, Cu	EPA 200.8
L20200757-006	10/02/2019 09:59	Ag, Cu	EPA 200.8
L20200733-002	12/03/2019 11:10	Ag, Cu	EPA 200.8
L20200647-005	12/18/2019 09:43	Ag, Cu	EPA 200.8
L20201957-002	02/13/2020 10:49	Ag, Cu	EPA 200.8
L20200788-004	03/03/2020 11:34	Ag, Cu	EPA 200.8
L20210478-002	12/15/2020 11:48	Ag, Cu	EPA 200.8
L20210408-004	02/03/2021 11:33	Ag, Cu	EPA 200.8
L20210091-004	07/19/2021 22:20	Ag, Cu	EPA 200.8
L20220898-004	10/05/2021 13:43	Ag, Cu	EPA 200.8
L20221480-004	11/04/2021 11:52	Ag, Cu	EPA 200.8
L20231031-004	11/15/2022 11:34	Ag, Cu	EPA 200.8
L20180868-003	8/28/2018 12:34	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20180913-004	4/12/2018 10:54	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20181165-002	4/17/2018 9:11	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20181722-001	9/25/2018 9:40	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20190660-004	8/7/2019 10:48	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20190783-001	6/5/2019 8:44	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20191379-009	4/3/2019 15:43	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20210087-004	3/15/2021 12:38	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20210319-001	9/29/2021 10:10	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20210397-007	3/2/2021 12:23	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20210703-003	2/24/2021 10:51	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20211544-001	9/14/2021 9:56	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20212048-002	10/14/2020 11:13	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4

L20221496-002	3/10/2022 9:36	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4
L20221564-001	10/20/2021 8:46	Chl-a, T-P, TKN, NOx	SM 10200 H, EPA 351.2, EPA 353.2, EPA 365.4

[1] Analytes: Silver (Ag), Copper (Cu), Chlorophyll-a (Chl-a), Total Phosphorus (T-P), Total Kjeldahl Nitrogen (TKN), Nitrate-Nitrite (NOx).

[2] Methods: EPA Method 200.8, Revision 5.4: Determination of Trace Elements in Waters and Wastes by Inductively Couple Plasma-Mass Spectrometry (1994). Standard Methods for the Examination of Water and Wastewater, Online Edition, 10200 H. Chlorophyll, Spectrophotometric Determination of Chlorophyll (2001). EPA Method 351.2, Revision 2.0: Determination of Total Kjeldahl Nitrogen by Semi-Automated Colorimetry (1993). EPA Method 353.2, Revision 2.0: Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry (1993). EPA Method 365.4: Phosphorous, Total (Colorimetric, Automated, Block Digester AA II) (1974).

Table 2. Audit findings for the laboratory metals and nutrient records audit of SJRWMD conducted by DEP, May 2023.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
1.	Ag/Cu, Chl-a, NOx, TKN, TP	TNI V1M2-2016-Rev2.1 sections 4.13.3 a) and 5.8.7.3 a)	Chain of custodies (CoC) are not completed with a received date, time and signature.	All samples	**Required:** Implement procedures to ensure all CoC entries are checked and completed upon sample receipt.	SJRWMD will remove annotation of signature on paper form and continue to record sample receipt date and time in LIMS. **Implementation Date**: 12/6/23	Acceptable.
2.	Ag/Cu, Chl-a, NOx, TKN, TP	Rule 62-160.240(3)(c)3. and 4.; DEP SOP FD 5000 sections 2.7 and 2.14	Number of containers for each unique field ID code and each container's required preservation are not recorded on CoC.	All samples	**Required:** Revise CoC or other field documentation to include the number of containers per unique field sample ID and each container's required preservation.	Preservation and/or filtration required for each container is indicated by the bottle type code of each bottle shown in the "Containers Required" field of the form. SJRWMD will add a legend explaining the preservation required for the various bottle types. SJRWMD will add a total number field showing the sum of the bottle types listed in the "Containers Required" field of the form. **Implementation Date**: 12/6/23	Acceptable.
3.	Ag/Cu	DEP SOP FD 5100 section 1.5	Filtering information for dissolved metals analytes not provided.	L20191367-006, L20200757-006, L20200733-002	**Required:** Record the filtration of the sample.	SJRWMD will share final audit report with field staff with recommendation to amend field forms to include documentation of filtration for individual sample containers.	Acceptable. Please share outcome of discussion with field staff and/or amended field forms with auditors upon completion.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						Implementation Date: Upon completion of final audit report.	
4.	Ag/Cu	TNI V1M2-2016-Rev2.1 section 5.7.3; EPA 200.8 section 8.3; DEP SOP FD 5100 section 1.5	Surface Water Field Data Report documents all samples as "Filtered." It is unclear which specific Ag and Cu samples were filtered. Ag and Cu samples analyzed as "totals" should not be filtered for analysis.	All samples	**Required:** Clearly document all preservation, including filtration, of each sample container. If the sample is filtered, the analysis result must be reported as dissolved or filtered. Correct and reissue data for the affected samples where it is determined that the sample fraction is dissolved rather than total.	Preservation and/or filtration required for each container is indicated by the bottle type code of each bottle shown in the "Containers Required" field of the COC. SJRWMD will add a legend explaining the preservation re-quired for the various bottle types. SJRWMD will share final audit report with field staff with recommendation to amend field forms to include documentation of filtration for individual sample containers. **Implementation Date**: Upon completion of final audit report.	Acceptable. Please share outcome of discussion with field staff and/or amended field forms with auditors upon completion.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
5.	Ag/Cu, Chl-a, NOx, TKN, TP	TNI V1M2-2016-Rev2.1 sections 5.8.5 a) and 5.8.7.3 b) i.; Rule 62-160.340(1)(a), F.A.C.; DEP SOP FD 1100 section 2.6	Pre-printed sample ID suffix (-00X) on CoC label does not follow the sample upon receipt. Sample information and analytical result is associated with a hand-written number assigned on the CoC. It is unknown whether the barcode information on the label is incorrectly associated with the original printed ID.	Ag/Cu: L20181070-001, L20181096-003, L20191367-006, L20210478-002, L20210408-004, L20210091-004, L20220898-004, L20231031-004 Chl-a: L20180868-003, L20181165-002, L20190660-004, L20191379-009, L20210087-004, L20210397-007, L20210703-003, L20211544-001, L20221564-001 NOx, TKN, TP: L20181165-002 L20180868-003 L20191379-009 L20190660-004 L20210703-003 L20210397-007 L20210087-004 L20211544-001 L20221564-001	**Required:** Explain the linkage between the pre-printed Sample ID and the re-assigned hand-written ID. Clearly indicate any change in sample ID on the CoC and ensure all information associated with the original ID is transferred to the new ID. Review affected data to ensure appropriate information is associated with the re-assigned sample ID. Correct and reissue all data affected by this issue.	SJRWMD will share final audit report with field staff and request that field staff clearly mark out and initial pre-printed sample ID suffix (-00#) and record correct suffix on COC labels as needed at the time samples are collected. **Implementation Date**: Upon completion of final audit report.	Acceptable.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
6.	Ag/Cu	TNI V1M4-2017-Rev 2.2 section 1.7.1.2 d).; EPA 200.8 section 9.3.4; SOP QID 772 sections 12.4, 14.6 and 19.5	A continuing calibration verification (MRCS) was not performed at the start of the analytical batch.	L20181070-001, L20200757-006, L20181096-003, L20191367-006, L20200733-002, L20200647-005, L20201957-002	**Required:** Ensure that all analytical batches are bracketed by calibration verifications. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	Clarify that SOP allows TNI V1M4-2017-Rev 2.2 section 1.7.1.2 d) ii.; L20181070-001 See Copy of L-QC20181376-ICPpost-060618-3047-C.xls; L20200757-006 see Copy of L-QC20200450-ICPpost-022020-3047-B.xls; L20181096-003 see Copy of L-QC20181685-ICPpost-072718-3047-C.xls; L20191367-006 see Copy of L-QC20191288-ICPpost-052919-3047-B.xls begins with QCCS; L20200733-002 see Copy of L-QC20200765-ICPpost-031020-3047-A.xls; L20200647-005 see Copy of L-QC20200467-ICPpost-010320-3047-A.xls; L20201957-002 see Copy of L-QC20200701-ICPpost-021920-3047-A.xls and Copy of L-QC20200701-ICPpost-022820-3047-A.xls **Implementation Date**: 1/2/24	Acceptable. SJRWMD provided additional documentation with laboratory response.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
7.	Ag/Cu, NOx	TNI V1M4-2017-Rev 2.2 section 1.7.1.1 n); EPA 200.8 9.2.3; SOP QID 772 sections 12.8, 14.6, 19.8 and 20.3; SOP QID 780 sections 12.9 and 19.8	Second source standard (QCCS) was not analyzed in the analytical run or with associated calibration (QC Batch).	Ag/Cu: L20181070-001, L20200733-002, L20200647-005 NOx: L20210087-004	**Required:** Analyze at least one set of QCCS at the beginning of each analytical run for all QC batches. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	Clarify that SOP QID 772 allows EPA 200.8 9.2.3 (on a quarterly basis); L20181070-001 see Copy of L-QC20181376-ICPpost-060618-3047-I.xls; L20200733-002 see Copy of L-QC20200701-ICPpost-021920-3047-P.xls; L20200647-005 see L-QC20200467-ICPpost-010320-3047-B.xls; NOx: L20210087-004 analyst inadvertently did not upload QCCS data to LIMS upload file. Created supplemental upload file and uploaded QCCS data to LIMS. See Copy of R-QC20210782-PO4_NOX_QUAATRO-031621-3096-A.xls; Copy of L-QC20210782-PO4_NOX_QUAATRO-031621-3096-B.xls in Additional Records. **Laboratory Response (Revised):** L20200733-002 see Copy of L-QC20200765-ICPpost-022020-3047-	Acceptable. SJRWMD provided additional documentation with laboratory response. Upon review of additional documentation, auditors determined requirements were met. Data do not need "J" qualifier.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						E.xls in folder Additional Records (2) **Implementation Date**: 1/2/24 NOx: L20210087-004 9/9/23	
8.	Ag/Cu	TNI V1M4-2017-Rev2.2 sections 1.5.2.2.2 and 1.5.2.4; SOP QID 772 sections 12.3, 14.1 and 19.4	No PQL verification (LRCS) observed with the analysis.	L20181070-001, L20200733-002, L20200647-005, L20210478-002	**Required**: Analyze at least one digested LRCS with each run. Digest one LRCS with each digestion process including up to three sample digestion batches per block. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	L20181070-001 see Copy of L-QC20181376-ICPpost-060618-3047-I.xls; L20200733-002 see Copy of L-QC20200701-ICPpost-021920-3047-P.xls; L20210478-002 see Copy of L-QC20210681-ICPpost-021821-3047-A.xls **Laboratory Response (Revised):** L20200733-002 see Copy of L-QC20200765-ICPpost-022020-3047-E.xls in folder Additional Records (2);	Acceptable. SJRWMD provided additional documentation with laboratory response.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						L20200647-005 see L-QC20200467-ICPpost-010320-3047-B.xls; Cannot locate LRCS associated with L20210478-002. SJRWMD will reissue data for the affected samples and include a J-qualifier and a comment indicating that appropriate QC did not accompany samples. **Implementation Date**: Upon completion of final audit report.	
9.	Ag/Cu	EPA 200.8 section 9.3.4; SOP QID 772 sections 12.1, 14.6 and 19.2	No calibration blank (method blank) was analyzed before the sample batch for samples L20181070-001 and L20200757-006. No calibration blank (method blank) was analyzed after the sample batch for sample L20200788-004 (Ag-D and Cu-D).	L20181070-001, L20200757-006, L20200788-004 (Ag-D and Cu-D)	**Required:** Analyze a calibration blank (method blank) immediately following each calibration routine, after every ten analyses and at the end of the sample run. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	L20181070-001 See Copy of L-QC20181376-ICPpost-060618-3047-C.xls; L20200757-006 see Copy of L-QC20200450-ICPpost-022020-3047-B.xls; L20200788-004 see Copy of L-QC20201112-ICPpost-051520-3047-C.xls **Implementation Date**: NA	Acceptable. SJRWMD provided additional documentation with laboratory response. Upon review of additional documentation, auditors determined requirements were met. Data do not need "J" qualifier.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
10.	Ag/Cu	TNI V1M4-2017-Rev2.2 section 1.7.3.3 a); EPA 200.8 section 9.4.3; SOP QID 772 sections 12.7 and 19.7	Auditors were unable to verify calculation used for matrix spike recovery.	All samples	**Required:** Review calculations for matrix spike recovery. Correct any errors in calculations and reissue data for affected samples. When matrix spike percent recovery is out of the expected range, the associated sample shall be qualified with a "J" and accompanied by a detailed explanation to justify the reason for designating the value as estimated.	See QC Criteria files in System Audit Records/ QC Criteria folder. **Implementation Date**: NA	Acceptable. Auditors had an incorrect calculation for matrix spike recovery.
11.	Ag/Cu	TNI V1M4-2017-Rev2.2 1.5.4; SOP QID 772 section 12.10	Interference checks (ICS/ICSSP) were not analyzed with all sample batches as per SOP QID 772.	L20180315-001, L20181070-001, L20200733-002, L20200757-006, L20200647-005, L20200788-004, L20210478-002, L20210408-004, L20210091-004, L20220898-004	**Required:** Revise SOP to clarify frequency of interference check samples. **Recommended:** Analyze one set of interference check samples for each sample batch.	Use of inter-element interference checks are not specified in EPA 200.8. The Interferents A and Analytes C standards purchased for these checks are designed to be used to check for spectral interference in ICP-OES, not isobaric interferences in ICP-MS. Remove ICS/ICSSP from sample analysis protocol and in SOP QID 772. L20180315-001 see Copy of L-QC20180820-ICPpost-030918-3047-A.xls; L20181070-001 see	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
						Copy of L-QC20181376-ICPpost-060618-3047-I.xls; L20200733-002 see Copy of L-QC20200701-ICPpost-021920-3047-P.xls; L20200757-006 see Copy of L-QC20200450-ICPpost-022020-3047-D.xls; L20200647-005 see Copy of L-QC20200467-ICPpost-010320-3047-C.xls; L20200788-004 see L-QC20201112-ICPpost-051520-3047-A.xls; L20210478-002 see Copy of L-QC20210517-ICPpost-012921-3047-E.xls; L20210408-004 see Copy of L-QC20210783-ICPpost-031721-3047-B.xls; L20210091-004 see Copy of L-QC20220087-ICPpost-102221-3047-B.xls; L20220898-004 see Copy of L-QC20220545-ICPpost-010622-3047-A.xls. **Implementation Date**: 1/2/24	

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
12.	Ag/Cu	SOP QID 772 section 14.6	Samples are not analyzed in the order described in the Qualtrax ID 772.	All samples	**Required:** Analyze samples in the appropriate order within each batch to meet the placement and frequency requirements of the internal laboratory SOP.	Clarify in SOP QID 772 that sample analysis protocol lists required components and frequencies but not specific order. **Implementation Date**: 1/2/24	Acceptable.
13.	Ag/Cu	TNI V1M4-2017-Rev2.2 section 1.7.2.3.1; EPA 200.8 section 9.4.2; SOP QID 772 sections 12.7 and 14.1	Matrix spikes are not digested and analyzed at the rate of 10% of sample throughout the analytical batch.	L20191367-006, L20200647-005, L20201957-002	**Required:** Analyze digested matrix spikes for at least 10% of samples with all sample batches. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	Matrix spikes are digested and analyzed at a fraction greater than the 10% minimum required by the method. Matrix spikes are defined as sample specific controls in both TNI and the method. **TNI V1M4-2017-Rev2.2 section 1.7.2.3 Sample Specific Controls**; "TNI V1M4-2017-Rev2.2 section 1.7.2.3.1 a) Matrix-specific QC samples indicate the effect of the sample matrix on the precision and	Acceptable. SJRWMD provided additional documentation with laboratory response. Matrix spikes are digested and analyzed at the required rate for the number of samples processed.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						accuracy of the results generated using the selected method. The information from these controls is sample/matrix specific and would **not normally be used to determine the validity of the entire batch."**; "EPA 200.8 section 9.4.2 The laboratory must **add a known amount of analyte to a minimum of 10% of the routine samples."** (Note that, since spikes are Sample Specific Controls, this language intentionally avoids specifying relative timing placement, expressly differing from language regarding control of the batch, such as section 9.3.4. "Instrument performance - For all determinations the laboratory must check instrument performance and verify that the instrument is properly calibrated on a continuing basis. To verify calibration run the calibration blank and calibration standards as surrogate samples immediately following each	

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
						calibration routine, after every ten analyses and at the end of the sample run."); Section 9.4.4 "If recovery of any analyte falls outside the designated range and laboratory performance for that analyte is shown to be in control (Section 9.3), the recovery problem encountered with the fortified sample is judged to be matrix related, not system related. The data user should be informed that **the result for that analyte in the unfortified sample is suspect** due to either the heterogeneous nature of the sample or an uncorrected matrix effect."; In LIMS Load Files - Contains Reagents (additional records) for L20191367-006 see sample count for QC20191288 of 76 and spike count of 9 (11.8%); L20200647-005 see sample count for QC20200467 of 264 and spike count of 30 (11.4%); L20201957-002 see sample count for QC20200701	

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						of 178 and spike count of 20 (11.2%). **Implementation Date**: NA	
14.	Ag/Cu	TNI V1M4-2017-Rev2.2 section 1.7.2.2.2; EPA 200.8 section 9.3.2; SOP QID 772 sections 12.11 and 14.1	Digested lab control spike/lab fortified blanks (LCS) are not analyzed with each analytical batch (1-20 samples).	All samples	**Required:** Analyze one digested LCS for each analytical batch. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	See SJR_FDEP Audit - Metals - QCBatch and PrepBatch.xls; Copy of L-QC20180820-ICPpost-030918-3047-F.xls; Copy of L-QC20181376-ICPpost-060618-3047-C.xls; Copy of L-QC20181685-ICPpost-072718-3047-I.xls; Copy of L-QC20191288-ICPpost-052919-3047-B.xls; Copy of L-QC20200450-ICPpost-022020-3047-B.xls; L-QC20200467-ICPpost-010320-3047-B.xls; L-	Acceptable. Per meeting on 10/23/23 and correspondence with FDOH, there is no requirement to limit an analytical batch to 20 samples or less, only preparatory batches. QC samples included in each preparatory batch as required.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
						QC20200701-ICPpost-021920-3047-P.xls; Copy of L-QC20200765-ICPpost-031020-3047-A.xls; L-QC20201112-ICPpost-051520-3047-B.xls; Copy of L-QC20210517-ICPpost-012921-3047-D.xls; Copy of L-QC20210783-ICPpost-031721-3047-B.xls; Copy of L-QC20220087-ICPpost-081921-3047-C.xls; Copy of L-QC20220545-ICPpost-010622-3047-A.xls; Copy of L-QC20220866-ICPpost-031522-3047-A.xls; copy of L-QC20230395-ICPpost-121422-0523-A.xls **Implementation Date**: NA	
15.	Ag/Cu	TNI V1M4-2017-Rev 2.2 section 1.7.2.1 a) and b); EPA 200.8 section 9.3.1; SOP QID 772 sections	There are no digested method blanks associated with the sample analysis.	L20180315-001, L20210408-004, L20220898-004	**Required:** Analyze one digested method blank per sample digestion batch. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that	See SJR_FDEP Audit - Metals - QCBatch and PrepBatch.xls; Copy of L-QC20180820-ICPpost-030918-3047-F.xls; Copy of L-QC20210783-ICPpost-031721-3047-B.xls; Copy of L-QC20220545-ICPpost-010622-3047-A.xls	Acceptable. Per meeting on 10/23/23 and correspondence with FDOH, there is no requirement to limit an analytical batch to 20 samples or less, only preparatory batches. QC samples included in

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
		12.5, 14.1 and 14.6			appropriate QC did not accompany samples.	**Implementation Date**: NA	each preparatory batch as required.
16.	Ag/Cu, NOx, TKN, TP	TNI V1M2-2016-Rev2.1 section 4.13.3 f) vi.; EPA MDL Rev 2 section (3)(a)	No instrument ID associated with the MDL study.	Ag/Cu: All samples before 06/2018 (PrepFast [PF], FastFIAS [FIAS]) NOx, TKN, TP: All samples	**Required:** Record the instrument ID(s) for all instruments included in the MDL study.	Add instrument ID to MDL study spreadsheets. **Implementation Date**: 1/2/24	Acceptable.
17.	Ag/Cu	EPA MDL Rev 2 section (4)(a)	The MDL was not re-calculated in the last 13 months.	All samples before 06/2018 (PF, FIAS)	**Required:** Ensure the MDL is verified at least once every 13 months.	Plan for MDL calculation has been instituted. **Implementation Date**: 8/13/20	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
18.	Ag/Cu	EPA MDL Rev 2 sec-tion (4)(b)	The MDL study did not include data generated within the last 24 months.	All samples be-fore 06/2018 (PF, FIAS)	**Required:** Ensure the data included in the MDL studies are no greater than 24 months old.	Plan for MDL calculation has been instituted. **Implementation Date**: 8/13/20	Acceptable.
19.	Ag/Cu	EPA MDL Rev 2 sec-tion (3)(a)	The MDL study did not include at least two spiked samples from each quarter in which samples were analyzed, and the MDL study did not include samples analyzed in sepa-rate batches.	All samples be-fore 09/05/2018 (PF, FIAS)	**Required:** Include at least two spiked samples in different batches from each quarter in the MDLs calculation. For MDL determination, ensure that samples in at least three batches on three separate calendar dates and analyzed on three separate calendar dates for all quarters samples are included.	Plan for MDL calculation has been instituted. **Implementation Date**: 8/13/20	Acceptable.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
20.	Ag/Cu	TNI V1M2-2016-Rev2.1 sections 5.5.5 h) and 5.5.13.1 c)	Digestion log states "The system could not fill the vial in position ##." No corrective action indicated.	L20200788-004, L20210091-004, L20220898-004	**Required:** Document corrective action(s) and maintenance procedures to ensure proper functioning of equipment to maintain the integrity of the data. If this error affected sample data quality, reissue data for the affected samples. Include a J-qualifier and a comment indicating the digestion error.	The system commands include a step to ensure all vials are full to begin digestion. Any vials that are already full are reported as "The system could not fill the vial in position ##." This is normal operation. **Implementation Date**: NA	Acceptable.
21.	Ag/Cu	TNI V1M2-2016-Rev2.1 section 4.2.8.5; EPA 200.8 sections 11.23 and 11.24	Digestion log recorded temperatures are variable and are not held at the EPA 200.8 specified temperature, 85°C, which allows the temperature of the sample to reach 95°C. Digestion times and acceptable temperature ranges are not	All samples	**Required:** If temperatures recorded during digestion are outside of acceptable range, reissue data for the affected samples. Include a J-qualifier and a comment indicating the digestion temperature error. Document required digestion times and acceptable digestion temperature ranges in internal laboratory SOP(s).	The automated hot block temperature is set to achieve the approximate temperature described in the method for a full vial of blank solution, approximately 95°C without boiling, as stated in EPA 200.8 section 11.2.3. The digestion time is as necessary to reduce the volume to 20% of original, as stated in EPA 200.8 section 11.2.4. The digestion time is recorded in the digestion log. The efficacy of each digestion is monitored by	Acceptable.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
			documented in SJRWMD SOPs.			the inclusion of QC blanks and QC standards in the digestion process. **Laboratory Response (Revised):** The range of 95C +/- 3C was to be used for comparing probe response to NIST thermometer. SJRWMD will include acceptable digestion temperature ranges in internal laboratory SOP(s) to be determined by study. **Implementation Date**: 4/1/24	
22.	Ag/Cu	TNI V1M4-2017-Rev2.2 section 1.7.1.1 f)	For Linear Fit calibration curves, the minimum number of non-zero calibration standards is 5. Four non-zero calibration standards are used (2, 10, 50, and 100).	All samples	**Required:** Use a minimum of 5 non-zero calibration standards for calibration.	Increase the number of non-zero calibration standards to a minimum of 5. **Implementation Date**: 1/2/24	Acceptable.
23.	Chl-a	TNI V1M2-2016-Rev.2.1 sections 5.4.1 and 5.8.9 b); SM 10200H section 1.; Rule 62-	Sample pH check is not documented upon sample receipt. The laboratory SOP states that it does not distinguish between acidic or basic	All samples	**Required:** Check and document sample pH upon sample receipt. Filters taken from water with pH<6 must be processed promptly after filtration. Please provide a demonstration	SJRWMD allows a duplicate range of +/- 20% for Chl-a. A query of chlorophyll data since 2018 with pH checks below 6 shows that Chl-a/pheophytin ratios have not been significantly lower than	For all audited samples except for L20190660-004, the field-testing measurement of pH for the waterbody was above pH 6. Because of this,

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
		160.340(2)(b); SOP QID 777, Appendix A Method Deviations/Modifications	samples and permits any sample to be stored frozen up to 28 days.		supporting the method modification.	expected. %RSD values were not significantly greater than the +/- 20% allowed for duplicates. This also represents a worst-case scenario since it does not reflect the contribution to the ratio from pheophytin already present in the sample. See Query873 - Chl-a and Ratio_pH comparison.xls. **Laboratory Response (Revised):** SJRWMD will perform extraction of all Chl-a samples promptly after filtration. SJRWMD will remove the requirement from the SOP of a maximum steep time. **Implementation Date**: 4/1/24	auditors do not believe sample results were affected. It is undetermined whether the chlorophyll result was affected for L20190660-004 which had a field measured pH of 5.45. Lab response is acceptable; however auditors suggest following the method by verifying pH <6 of samples upon receipt to avoid the possibility of chlorophyll degradation on the filter.
24.	Chl-a	TNI V1M2-2016-Rev2.1 section 4.13.3 f) xviii; SOP QID 797, "Continuing DOC" section	An analyst without DOC certification performed the analysis.	(IDOC) L20212048-002 (CDOC) L20190660-004, L20190783-001, L20191379-009	**Required:** Ensure staff acquire IDOC certification before performing analysis. Ensure staff acquire annual CDOC certification before performing analysis.	(IDOC) At the time of this occurrence, LIMS required the analyst to have entered DOC analytical batch information before being allowed to upload data to LIMS. It appears that L20212048-002 was performed as a mentored run with J Neis mentored by C Martinez and should have been uploaded to LIMS by	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
						C Martinez (see Addi-tional Records IDOCs). It appears the analysis in question was run on a date prior to the run containing the analyst's (J Neis) DOC but was not uploaded until after the run containing the analysts DOC was up-loaded and the analytical batch information for the DOC had been entered into LIMS. Although the analysis was monitored by a capable analyst in this case, the upload process subverted the intended re-strictions in LIMS. Modified LIMS to require DOC date to precede, or be equal to, analysis date for any data uploaded to LIMS. Limited access to DOC Entry/Review Form in LIMS to QAO, Lab Manager or LIMS Admin-istrator. (CDOC) Only IDOCs were requested. See Additional Records for CDOCs.	

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						Implementation Date: 9/1/23	
25.	Chl-a	TNI V1M2-2016-Rev2.1 section 4.13.3 f) ix.	Did not record manufacturer lot number of glass filters used for sample filtration. Porosity of glass fiber filters used during sample filtration was not recorded.	All samples	**Required:** Record glass filter manufacturer lot number and maintain records indicating porosity of glass fiber filters used.	Added programming to LIMS to collect and store manufacturer lot number of filters used. **Implementation Date**: 9/8/23	Acceptable.
26.	Chl-a	TNI V1M2-2016-Rev2.1 section 4.13.3 f) ix; SOP QID 778 section 3.13.	Did not record date and time of sample extractions. Sample steep start time and steep end time not recorded. Auditors were unable to determine how long samples were steeped. SOP QID 778 revisions prior to	All samples	**Required:** Record dates and times of sample extractions. Ensure samples steep within the timeframe of 2-24 hours. Note: SOP QID 778 revisions effective on or after 9/2/2021 specify a maximum steep time of 24 hours.	Added programming to LIMS to record steep start and end date/times. Added programing in LIMS to ensure steep times at least 2 hours. SJRWMD will re-move the requirement from the SOP of a maximum steep time. **Implementation Date**: 4/1/24	Acceptable. However, every effort should be made to analyze samples immediately and not allow sample extracts to steep for a prolonged period of time. Where it becomes impractical to analyze samples immediately, DEP recommends freezing sample filters at -18 °C or below rather

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
			9/2/2021 do not specify a maximum steep time.				than significantly increasing extract steep time.
27.	Chl-a	SM10200 H section 1.b.1); DEP SOP Table FS 1000-5 footnote 8; SOP QID 778 section 2.7	SOP QID 778 revisions prior to 8/18/2020 do not specify the addition of $MgCO_3$ during the filtration process.	L20180868-003, L20180913-004, L20181165-002, L20181722-001, L20190660-004, L20190783-001, L20191379-009	**Required:** Ensure approximately 2 mL of $MgCO_3$ solution is added to the sample just before the filtering process is completed. Note: SOP QID 778 revisions effective on or after 8/18/2020 specify the addition of $MgCO_3$ during the filtration process.	This was discovered and corrected in response to a later NELAC assessment. **Implementation Date**: 8/18/20	Acceptable.
28.	Chl-a	TNI V1M2-2016-Rev2.1 section 4.13.3 f) ix; SM 10200 H, section 1.b.4; SOP QID 778 section 3.15.	Lab SOP QID 778 does not state sufficient centrifuge speed (SOP states an RPM of 2700 is used, but this is insufficient per SM 10200 H). Lab SOP QID 778 revisions prior to 1/18/2019 do not	(Centrifuge speed) All samples (Centrifugation time) L20180868-003, L20180913-004, L20181165-002, L20181722-001	**Required:** Email correspondence (dated 6/9/23) with lab confirmed their centrifuge is spun at 500g even though not documented in SOP. Revise lab SOP to specify the centrifuge must be spun at 500g or 3000rpm.	2700 RPMs for our rotor is 500 G. Previously added language to the WI (QID 778) to indicate centrifuge 20 minutes at 3000 RPMs. Section 3.15. **Implementation Date**: 2/22/23	Acceptable.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
			meet required centrifugation time (Affected samples were centrifuged for 15 minutes instead of the required 20).		Note: SOP QID 778 revisions effective on or after 1/18/2019 specify a 20-minute centrifugation time.		
29.	Chl-a	TNI V1M2-2016-Rev2.1 section 5.5.13.1 a) i.; DEP SOP Table FS 1000-5	Freezer does not achieve temperature of ≤ -20°C for storage of sample filters (Audited sample freezer temperatures ranged from 0°C to -16°C). Lab SOP does not include maximum holding time for frozen sample filters.	All samples	**Required:** Store frozen filters at -20°C or colder. Revise lab SOP to include required temperature for frozen sample filters. Ensure sample filters are only kept frozen for a maximum holding time of 28 days after filtration. Revise lab SOP to include maximum holding time requirements.	Freezer temperature range is only specified in the Standard Methods microbiology section part 9000 and is not specified in the part 10000 biology section. SM 10200 H does not specify freezer temperature. Filters are stored frozen until extraction process is begun. Lab SOP (QID 777) specifies max hold time for analysis and frozen filters in Sections 16.4 and 19.2. **Laboratory Response (Revised):** SJRWMD will perform extraction of all Chl-a samples promptly after filtration eliminating storage of frozen filters. SJRWMD will remove the	Acceptable. However, temperature for storage of frozen filters is a requirement of DEP SOP Table FS 1000-5, not the method. Every effort should be made to analyze samples immediately and not allow sample extracts to steep for a prolonged period of time. Where it becomes impractical to analyze samples immediately, DEP recommends freezing sample filters at -18 °C or below rather than significantly increasing extract steep time.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						requirement from the SOP of a maximum steep time. **Implementation Date**: 4/1/24	
30.	Chl-a	TNI V1M2-2016-Rev2.1 sections 5.4.1, 5.9.2 and 5.9.3 a) viii and c); SM 10200 H, section 2.b.; SOP QID 777, Appendix A Method Deviations/Modifications	The absorbance 664 before acidification is below the range specified in SM 10200 H (0.1 - 1.0 AU). Standard Methods states absorbances below this range indicate a dilute extract and the sample should have a cuvette with a longer path than the 1 cm used. The laboratory SOP states "samples with OD664 below 0.1 are treated in the same manner as samples between 0.1 and 1.0."	L20180868-003, L20180913-004, L20181165-002, L20181722-001, L20190660-004, L20190783-001, L20191379-009, L20210087-004, L20210319-001, L20210397-007, L20210703-003, L20212048-002, L20221496-002, L20221564-001	**Required:** Evaluate absorbance readings to determine the appropriate path length for the sample cuvette. Add the procedure to the lab SOP. Explain why samples with absorbance below 0.1 AU for wavelength 664 are treated the same as samples with absorbance between 0.1 and 1.0 AU. Please provide a demonstration supporting the method modification.	The reported MDL and PQL were determined using a 1-cm cuvette and data is qualified based on these criteria. These MDL and PQL criteria meet the requirements of our primary customer. Our primary customer does not require the lower MDL and PQL afforded by the longer pathlength cell. **Implementation Date**: August 2024	Acceptable. It is undetermined if dilute extracts contributed to any erroneous results. However, since this range is specified in Standard Methods and all but one audited sample fell below the range, DEP advises following the method as written and also suggests switching to a 4 cm pathlength cuvette. In a meeting on 10/23/23, lab staff stated they would look into this, but their machine is not set up to accommodate a 4 cm path cuvette. They also stated the lab is currently considering switching their

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
							chlorophyll analysis to HPLC, so this finding may no longer be an issue. In additional email correspondence on 10/27/23, lab staff stated they intend to begin using HPLC for chlorophyll samples in August of 2024.
31.	Chl-a	TNI V1M2-2016-Rev2.1 sections 5.9.2 and 5.9.3 a) viii and c); SM 10200 H section 1.b.4) and 2.b.; SOP QID 778 section 5.22	Absorption at 750 nm before acidification is ≥ 0.005 AU, indicating a poorly clarified extract solution which should be recentrifuged (or filtered).	L20181722-001, L20210087-004, L20210397-007, L20210703-003, L20221496-002	**Required:** Explain how the laboratory evaluates clarity of the extract at 750 nm and how analysts determine whether a sample should be recentrifuged or filtered. Develop a procedure for evaluating 750 nm readings for extract clarity during analysis including an upper limit for samples to be clarified. Add this procedure to the lab SOP and retrain analysts on proper method procedures.	SM 10200 H does not specify a process or criteria for this procedure. FDEP laboratory SOP used criteria of >= 0.007 AU requires re-centrifuging. We agree that the criteria chosen by the FDEP laboratory of 0.007 AU is acceptable. Added a check to the Chlorophyll program to notify the analyst if the 0.007 AU criteria are met on the 750 nm line for re-centrifuging. **Implementation Date**: 9/9/23	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
32.	NOx, TKN, TP	EPA 351.2 Rev 2 section 8.2; Rule 62-160.340(2)(b)(3) F.A.C.	The pH check on CoC and Preservation Checks logs do not denote pH < 2.	L20180913-004 L20181165-002 L20180868-003	**Required:** Check pH of preserved samples using narrow-range pH paper and record to ensure pH < 2. Document acceptable range (pH >2) on CoC and/or Preservation Checks logs.	This was discovered and corrected in response to a later NELAC assessment. Preservation Checks log now indicates pH < 2. **Implementation Date**: 9/12/18	Acceptable.
33.	TKN, TP	Rule 62-160.340(1)(a), F.A.C	The analysis date recorded in LIMS does not match analysis date recorded in Sample Prep file.	L20210319-001 L20221496-002	**Required:** Review affected sample records to ensure analysis dates are correct and consistent across records.	Analysis date / time was not updated on the batch sheet after digestion. The analysis date / time is entered into the LIMS with each sample result. Removed the "Analysis Date" field from the digestion sheet template. **Implementation Date**: 9/9/23	Acceptable.
34.	TKN, TP NOx	EPA 351.2 Rev 2 section 8.2; EPA 353.2 Rev 2 section 8.2; DEP SOP Table FS 1000-4	The pH check in the Preservation Log indicates that the acid preservation was not acceptable for container type N1.	L20180913-004	**Required:** Reissue data for the affected samples. Include a Y-qualifier for improperly preserved samples.	The N1 bottle is used for metals analysis. The results for the metals analytes associated with this bottle have a "Y" qualifier and a narrative analyte comment. **Implementation Date**: NA	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
35.	NOx	TNI V1M2-2016-Rev2.1 section 4.13.2.; EPA Method 351.2 Rev 2 section 10.2	There was no initial calibration recorded in the Instrument Export file.	L20191379-009	**Required:** Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	This run was appended to an earlier run, QC20191036, from earlier in the day. See Additional Records "QC20191036-PO4_NOX_QUAATRO-041019-0523-A.TXT" for initial calibration done that day. **Implementation Date**: NA	Acceptable.
36.	TKN, TP	TNI V1M4-2017-Rev2.2 section 1.7	The equation used to calculate average concentrations for calibration not recorded in QC Criteria files or SOP.	All Samples	**Required:** Document all relevant equations used for calibration calculations in the QC Criteria file and/or SOP.	The average peak height and average concentration are directly reported by the vendor certified software. The calculation and the equation used are not available to the user. Raw data is retained as instrument result files produced by the instrument which includes all the information associated with each run, including the calibration. **Implementation Date**: NA	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
37.	NOx	TNI V1M2-2016-Rev2.1 section 4.13.2.1; Rule 62-160.340 (2)(e), F.A.C.	The calibration standards information (including description, lot number (CID), and expiration date) is not recorded with Reagent and Standard Prep in the L files.	L20210703-003 L20221564-001	**Required:** Document calibration standards information in the appropriate files. Perform a second-level review of data entries for electronic records to verify complete entries.	Missing calibration standard entries were not caught on original second level review. Reviewed several batches before and after affected sample batched and found all required entries were present. Performed review of affected batches and all required reagent/calibrant entries were found to be present in the LIMS tables. See Finding_no37_L20210703-003_QC20210695.xlsx; Finding_no37_L20221564-001_QC20220105.xlsx in Additional Records / Nutrients/ NOx/Calibration standards information. **Implementation Date**: 9/15/23	Acceptable.
38.	TKN, NOx	Rule 62-160.340(2)(c)(2), F.A.C	Sample results are accompanied by incorrect data qualifiers in WIN. For sample L20180913-004 (TKN-D), the result value recorded in	L20180913-004 (TKN-D); L20180913-004 (TKN-T); L20210319-001 (NOx)	**Required**: Reissue data for the affected samples without qualifiers, respectively.	L20180913-004 (TKN-D) – mdl = 0.2 and there is a 4x dilution so "0.2 U" is correct in WIN. L20180913-004 (TKN-T); mdl = 0.2 / PQL = 0.6 and there is a 4x dilution so "0.2786 I" is correct in WIN.	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
			WIN (0.2 mg/L) is not less than or equal to the MDL (0.05). The result value is incorrectly qualified with a "U" qualifier in WIN. For sample L20180913-004 (TKN-T), the result value recorded in WIN (0.2786 mg/L) is greater than the PQL (0.15). The result value is incorrectly qualified with an "I" qualifier. For sample L20210319-001 (NOx), the sample was analyzed separately from the rest of the analytical batch; however, the sample was still analyzed within the holding time. The			(Both data points listed above were modified by a non-SJRWMD employee, "SANKURATRI_L, on 4/1/20 @ 17:41) L20210319-001 (NOx); Collected on 9/29/2021 10:10 Analyzed on 10/4/2021 12:08. Analysis - Collection is > 48 hrs. Result is correctly qualified with a "Q" qualifier. **Implementation Date**: NA	

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
			result value is incorrectly qualified with a "Q" qualifier.				
39.	TKN, TP	TNI V1M2-2016-Rev2.1 section 4.13.2.3; Rule 62-160.340(1)(a), F.A.C.	The digestion date recorded for sample L20212048-002 in the Sample Prep file is incorrect (year reported as 2030). The analysis date recorded for sample L20180913-004 in the Sample Prep file is incorrect (10/10/78). The preparation date recorded in Sample Prep file is 10/18/18.	L20212048-002 L20180913-004	**Required**: Ensure digestion dates are recorded accurately. Perform a second-level review of data entries for electronic records to verify correct entries for the affected samples including the correct digestion, preparation, and analysis dates.	The digestion date/time and analysis date/time are recorded in the LIMS and LIMS is the official repository for this the data. Removed the digestion date/time and analysis date/time fields on the digestion sheets. **Implementation Date**: 9/9/23	Acceptable.
40.	NOx	Rule 62-160.340(1)(a), F.A.C.	The data reported in the instrument export file is inconsistent with the values reported in WIN and LIMS.	L20191379-009	**Required:** Review instrument export file and explain the discrepancy between LIMS and the	Two different runs performed: Original run on 4/4/19 – NOx used, PO4 failed and not used.	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
			All result values included in this run after the initial QC recorded in the instrument export file are reported as the same value (-0.1785). These values are all inconsistent with those reported in WIN and LIMS. Additionally, the Instrument Export does not include record any initial calibration.		instrument export records. If applicable, reissue data for the affected samples and include appropriate qualifier(s).	Rerun on 4/10/19. - Reran only one channel (PO4) to conserve reagents. - All Results on the NOx channel (-0.1785) because no reagents in system. - Original run was inadvertently not supplied to the assessor. See Original Instrument file for NOx Results – Additional Records "QC20191009-PO4_NOX_QUAATRO-040419-0523-A.TXT". **Implementation Date**: NA	
41.	TKN	EPA MDL Rev 2 section (2)(a)	The spiking level used in MDL studies (0.08) is not optimal (>2x MDL (0.05)).	All samples	**Recommended:** Implement use of a spiking solution 2-10x the MDL.	The spiking solution is prepared from a combined reagent containing both TKN and TP. The spike level was chosen to be at or below the PQL to also serve as a PQL check. Setting the spike level at the PQL of TP (0.04) gives the TKN level of 0.08. Setting the TKN spike level to a greater value would give a TP	Acceptable.

Finding #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Required Corrective Action	Laboratory Response	AEQAS Response
						spike value to high to be used for the PQL check. **Implementation Date**: NA	
42.	TKN, TP	TNI V1M4-2017-Rev2.2 section 1.7.2; SOP QID 2631 section 14.1	An LRCS, HRCS, LCSD, and QCCS were not analyzed at the beginning of each batch.	L20221496-002	**Required:** Ensure all appropriate QC is included in each batch. Reissue data for the affected samples. Include a J-qualifier and a comment indicating that appropriate QC did not accompany samples.	SOP was not updated after a change to the digestion pour sheet template. Update SOP to reflect changes to the pour sheet template. **Implementation Date**: 1/2/24	Acceptable. Per meeting on 10/23/23 and correspondence with FDOH, there is no requirement to limit an analytical batch to 20 samples or less, only preparatory batches. QC samples included in each preparatory batch as required.
43.	TKN, TP	TNI V1M2-2016-Rev2.1 section 4.13.3 a); EPA 351.2 Rev 2 sections 11.4-11.6; EPA 365.4 section 6.3	The digestor temperatures and times are not retained for the digestor. The records are insufficient to verify TKN samples were preheated at 160°C for one hour, set to 380°C for 1.5	All samples	**Required:** Implement acceptance criteria and procedure for recording digestor block temperature and times (i.e., continuous temperature datalogger). Ensure temperature probe is randomly placed at the beginning of each digestion.	SJRWMD is investigating the acquisition of probes/dataloggers to verify that 380°C is maintained for the time specified in the method. **Implementation Date**: August 2024	Acceptable.

Find-ing #	Analyte	Requirement Reference	Finding	Sample(s) Affected	Recommended or Re-quired Corrective Action	Laboratory Response	AEQAS Response
			hours, and digested at 380°C for 30 minutes. The records are insufficient to verify TP samples were preheated at 160°C for one hour, set to 380°C and digested at 380°C for 2.5 hours. The block digestion times and acceptable temperature ranges are not documented in SJRWMD SOPs.		Record procedure and acceptance criteria in lab SOP.		

References:

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EPA Method 200.8, Revision 5.4: Determination of Trace Elements in Waters and Wastes by Inductively Couple Plasma-Mass Spectrometry (1994).

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EPA Method 365.4: Phosphorous, Total (Colorimetric, Automated, Block Digester AA II) (1974).

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