A   Program management and information/data quality objectives

A1.   Title Page

Quality Assurance Project Plan for Reporting of Pennsylvania NPDES Point Source Data to EPA's Chesapeake Bay Program

Effective Date: **September 1, 2024 version 3**

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Period of Applicability	July 1, 2023 – June 30, 2024
Revision/version control information	DCN240350

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A2.   Approval page

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Note: This approval action represents EPA's determination that the document(s) under review comply with applicable requirements of the EPA Region 3 Quality Management Plan and other applicable requirements in EPA quality regulations and policies. This approval action does not represent EPA's verification of the accuracy or completeness of document(s) under review and is not intended to constitute EPA direction of work by contractors, grantees or subgrantees, or other non-EPA parties.

A3. Table of Contents, Document Format, and Document Control

Document Format

This Quality Assurance Project Plan (QAPP) was developed in accordance with the U.S. EPA Quality Assurance Project Plan Standard. The order of the elements in this QAPP follows the Standard, as seen in the Table of Contents. The QAPP is also in accordance with the U.S. EPA Region 3 Quality Management Plan, DCN R3QMP001-20200601.

Document Control

This table shows changes to this controlled document over time. The most recent version is presented in the top row of the table. Previous versions of the document are maintained by a Quality Manager.

Table 1 QAPP Versions

DCN Version	Changes	Effective Date
DCN240350	Realigned with EPA's QA/R-5 requirements. Updated personnel for the approval sheet and distribution list. Changed dataset processing to smaller subsets.	September 1, 2024
DCN220053	2023 QAPP Submission - Final	February 1, 2024
DCN220053	2022 QAPP Submission - Final	February 1, 2023
DCN220053	2021 QAPP Submission - Final	November 18, 2021
DCN220053	2020 QAPP Submission - Final	December 2020
DCN220053	N/A- Original Document - QAPP for Reporting of Pennsylvania NPDES Point Source Data to EPA's Chesapeake Bay Program	July 2008

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A4. Project Purpose, Problem Definition, and Background

Purpose and Problem Definition

PADEP's point source data collection focuses on collecting data from NPDES-permitted industrial and municipal facilities within the Chesapeake Bay watershed in Pennsylvania. Data are collected by the permitted facilities or authorized contracted laboratories that use methods approved through 40 CFR Part 136, as required by the facilities' NPDES permits. Data are reported electronically by permittees using the electronic Discharge Monitoring Report (eDMR) online reporting system. eDMRs are reports that provide analytical results of chemicals and nutrients being discharged by NPDES-permitted facilities (point sources) into the waterways of Pennsylvania. The data are entered into PADEP's online reporting eDMR system (eDMR WMS) by the permittees themselves, or their designees (consultants). The reports are then sent by batch upload to EPA's Integrated Compliance Information System (ICIS).

These data submitted by permittees are compiled annually into a report to be used by the EPA's Chesapeake Bay Program's Chesapeake Bay Watershed Model to assess trends in nutrient and sediment loading in the Chesapeake Bay and its tributaries. The report, due December 1st each year, analyzes data collected over the period from July 1st of the previous year to June 30th of the reporting year. To compile these data and generate a report, data are first pulled from ICIS into the Chesapeake Bay Program Office's (CBPO's) Point Source Data Submission Web Application (henceforth referenced as the "App"), and evaluated and corrected for accuracy as necessary within the App. The App can be found at **HTTPS://POINTSOURCE.CHESAPEAKEBAY.NET/.** As a product of the process, a final dataset and trend report are generated by the App and downloaded. Then EPA is notified by email that the process is complete.

Background

The CBPO's Grant Guidance requires a Quality Assurance Project Plan (QAPP) for the collection and use of environmental data. PADEP's Chesapeake Bay Point Source program utilizes data collected and reported from permittees. Therefore, PADEP has created a QAPP that describes methods by which PADEP staff verify that data are collected and reported accurately and thoroughly. This QAPP describes the data verification and data cleanup process that PADEP staff perform using the EPA CBPO's Point Source App.

Other QA Documents

Other quality assurance documents that may be related to this project are listed in Table A4-1.

Table A4-1. Other QA Planning Documents that have Relevant Requirements

Document Title	Directive #, DCN, or Revision	Effective Date	Pertinence to this QAPP
QAPP FOR TRACKING, VERIFYING AND REPORTING NUTRIENT AND SEDIMENT POLLUTANT LOAD REDUCING PRACTICES, TREATMENTS AND TECHNOLOGIES	DCN220065	February 9, 2023	QAPP developed in accordance with EPA standards
U.S. EPA QUALITY ASSURANCE PROJECT PLAN STANDARD		July 18, 2023	QAPP developed in accordance with EPA standards
U.S. EPA RECORDS MANAGEMENT POLICY	CIO 2155.5	June 9, 2020	Records managed in accordance with EPA standards
U.S. EPA REGION 3 QUALITY MANAGEMENT PLAN	R3QMP001-20200601	June 1, 2020	QAPP developed in accordance with EPA standards
U.S. Environmental Protection Agency Chesapeake Bay Program Office 2024 Grant and Cooperative Agreement Guidance		May 2024	CBPO grant and cooperative agreement developed in accordance with EPA standards
PENNSYLVANIA PHASE 3 CHESAPEAKE BAY WATERSHED IMPLEMENTATION PLAN (WIP)- WASTEWATER SUPPLEMENT		July 2022	Plan to reduce nutrient and sediment pollution within the Chesapeake Bay watershed
Quality Management Plan for Pennsylvania Department of Environmental Protection	210121.1	October 12, 2021	Defines organizational quality system instituted by PAFEP to ensure project deliverables meet data quality objectives.
Chesapeake Bay Total Maximum Daily Load (TMDL)		December 29, 2010	Focus to restore the Chesapeake Bay Watershed

A5.   Project Task Description

The project described in this QAPP entails collecting, compiling, assessing, and summarizing permitted discharge monitoring data and analytical results, and performing a series of QA/QC

checks that are contained within the App. This project does not require primary data collection through direct environmental measurement or generation of laboratory data but solely involves the use of data generated by permittees. No original DMR data collection takes place as part of this project. Accordingly, the most relevant QA/QC procedure for this project is the review of secondary data.

Municipal and industrial wastewater discharge facilities are typically categorized as Significant Bay Dischargers ("significant") or Non-Significant Bay Dischargers ("insignificant") based on permitted or existing flow characteristics (or comparable loads, in the case of industrial discharge facilities). In accordance with Pennsylvania's Chesapeake Bay Watershed Implementation Plan (WIP), that flow designation for municipal facilities is an existing flow ≥ 0.4 million gallons per day (MGD), or for industrial wastewater facilities, ≥ 9125 total phosphorus or ≥ 27000 total nitrogen (estimated pounds per year). Specific facilities may also be identified as significant in Pennsylvania's WIP. Facilities not meeting the above criteria, and not otherwise identified in the WIP, are considered insignificant facilities. The App also distinguishes between these significant and insignificant facilities in the data check processes.

PADEP Bureau of Clean Water (BCW) monitors NPDES permits issued by the DEP regional offices, and updates the list of Significant Bay Dischargers as necessary in its Phase 3 WIP Wastewater Supplement document, available on DEP's website (**PHASE 3 WIP**) and provided to EPA in Section 106 Grant Semi-Annual Status Reports.

PADEP adds newly permitted facilities into the App each year before work on the data begins. The location of each facility outfall, or discharge point, is reported by county based on latitude/longitude coordinates. Any facilities that are newly added to the data report are set to "Active/Inactive" during the initial facility update. Permits terminated during the progress year are updated using the "Active/Inactive" status in the App once the final data submission is completed. Any changes for a facility between significant and insignificant status are also included.

The App allows the user to divide the data into smaller datasets: significant industrial (SIG-IND), significant municipal (SIG-MUNI), insignificant industrial (INSIG-IND) insignificant municipal (SIG-MUNI). It further allows users to create county-based subsets. For ease of processing, PADEP will utilize this functionality as needed. Each dataset is processed through the App individually and merged into one large dataset for final submission. The App walks the datasets through a step-by-step review of flow and nutrient data with the option to correct suspect values. Outliers are reviewed against permittee-submitted DMR data and corrected with the help of attached supplemental reports. For insignificant facilities, there is also an option to fill in gaps with the previous year's data. A spreadsheet of all data errors is maintained by PADEP Central Office and sent to the regional offices. Regions then follow up with individual facilities to make sure all errors are corrected in PADEP's online database Water Management System (eDMR/WMS) via permittee-submitted revisions to the eDMRs. Once all datasets are

completed, the App provides a trend report, which is reviewed by the NPDES permitting section. Staff from the permitting section might select facilities for a rerun, after issues with the data are identified and corrected. The rerun dataset is then merged with the final dataset.

PADEP uses the App to collect wastewater facility DMR data from all applicable facilities in the Chesapeake Bay Watershed. Monthly concentration and flow data for all parameters for each discharging facility are stored in WMS and ICIS. Data for the following parameters are submitted to the App: Flow and concentrations of Ammonia (NH3), Total Kjedahl Nitrogen (TKN), Nitrite-Nitrate (NO23), Total Nitrogen (TN), Phosphate (PO4), Total Phosphorous (TP), Biological Oxygen Demand (BOD5), Dissolved Oxygen (DO), and Total Suspended Solids (TSS). PADEP performs all QA/QC procedures within the App. For any missing concentration data, PADEP submits default concentration data or estimates.

In addition to the wastewater facility Point-Source Data, there are also certain non-wastewater data that are collected via the App, including Biosolids, CSO, Flow Splits, Large Onsite Septic and Spray Irrigation. Currently, PA is only submitting CSO and Flow Splits Data. PADEP reports current flow reductions and acres reduced achieved by permitted CSO facilities by land river segment. The CSO data is updated annually based on the construction of CSO controls and separation of CSO systems. Flow splits are reported for treatment facilities that serve communities across more than one county. For these facilities, annual loads are divided between the different applicable land river segments based on the facility service area.

Table A5-1. Task Schedule and Products

Task	Schedule	Product
Planning	July 1, 2024 – September 1, 2024	QAPP
Processing data through the App	September 1, 2024 – December 1, 2024	Chesapeake Bay Point Source Data QA/QC
Submit Final Report	December 1, 2024	Final Report

A6. Information/Data Quality Objectives and Performance/Acceptance Criteria

As specified in the EPA CBPO 2024 Grant and Cooperative Agreement Guidance, Attachment 4 Chesapeake Bay Program Wastewater Facility and BMP Implementation Data Submission Specifications and Requirements, each jurisdictional agency must review all wastewater facility data prior to submission to EPA CBPO to ensure the adequacy of data in relation to their intended use. To meet this requirement, PADEP reviews the existing data collected by

permitted facilities for accuracy and completeness using the Data Quality Objectives described below:

Data Quality Objectives
- DMR data collected from July 1, 2023 through June 30, 2024 is used by EPA for the Chesapeake Assessment and Scenario Tool (CAST).

Performance and Acceptance Criteria
- PADEP will perform a series of procedures to assure consistency and integrity in the list of NPDES facilities and their reported point source data. PADEP utilizes the App to gather all available monitoring data from ICIS for the period of record. The resulting report is run through the App data checks to ensure the validity and completeness of the data.

Performance Criteria
- Ensure data are within normal variation range compared with current and previous years' data.
  ° In cases where outliers are found, the questionable value will be verified or replaced with a modified value.

Acceptance Criteria
- Existing DMR data collected for this project, their intended uses and their limitations/acceptance criteria are described in Table A6-1. When appropriate, data will be uploaded or manually entered into the App using the same quality protocols described for primary data.

Table A6-1. Existing Data

Existing Data Type	Source	Intended Use	Limitations/ Acceptance Criteria
eDMR/WMS data	eDMR Website – **PA.GOV	Department of Environmental Protection** WMS Website - **Water Management System**	For permittees to enter point source data to be uploaded into ICIS	Permittees are required to submit certified results.

Existing Data Type	Source	Intended Use	Limitations/ Acceptance Criteria
ICIS/ECHO data	ICIS Website- **Integrated Compliance Information System (epa.gov)** ECHO Website- **Enforcement and Compliance History Online | US EPA**	To provide point source data for the annual Chesapeake Bay Report	Limited to data gathered from ICIS and uploaded from state data systems.

Data Quality Indicators
Does not apply.

Precision
Does not apply.

Accuracy (Bias)
Does not apply.

Representativeness
Does not apply.

Comparability
- Ensure data are in correct units and comparable methods (e.g., nutrients as nitrate or total nitrogen, dissolved vs. total oxygen).
- Any data that appears to be outside the predominant data pattern for an individual facility will be highlighted for further evaluation. Expected seasonal variations as well as high and low flow trends will be considered.

Completeness
- Ensure all submitted data have been uploaded to ICIS and pulled into the App.
- Identify data gaps.
  - Update the data set with corrected and/or verified data.
  - Insert a data value of zero for months of no discharge.

° Use annual averages, previous year's data, or default values to fill in gaps.

Sensitivity
Does not apply.

A7.   Distribution List

This Quality Assurance Project Plan (QAPP) will be distributed to the following staff:

Table A7-1. QAPP Distribution List and Project Roles

Name	Project Role	Organizational Affiliation
Victor Landis	Environmental Program Manager	Data Management Division, BCW
Robert Kachonik	Environmental Group Manager	Data Management Section, BCW
Kristi Cannon	Water Program Specialist	Data Management Section, BCW
Tami Opila	Water Program Specialist	Data Management Section, BCW
Sarah Ryan	Water Program Specialist	Data Management Section, BCW
Wanda Rios Martinez	Water Program Specialist	Data Management Section, BCW
Maria Schumack	Quality Assurance Manager (QAM)	NPDES Permitting Division, BCW
Zachary Steckler	Project Manager	NPDES Permitting Section, BCW
Durga Ghosh (dghosh@chesapeakebay.net)		EPA
Autumn Rose (rose.autumn@epa.gov)		EPA
Ruth Cassilly (rcassilly@chesapeakebay.net)		UMD CBPO
Auston Smith (smith.auston@epa.gov)		EPA
Jeff Sweeney (sweeney.jeff@epa.gov)		EPA

A8.　Project Organization

PADEP BCW Data Management Section Water Program Specialist staff are responsible for data processing through the Point Source Data Submission Web Application (App) and for maintaining this QAPP. They also alert regional offices about data errors and follow up to ensure revised eDMRs are submitted.

PADEP BCW NPDES Permitting Section Engineering staff are responsible for updating facilities in the App and providing estimates and default data when eDMR data is not available.

The PADEP BCW Data Management Section Manager provides overall oversight for the project.

A9.　Project Quality Assurance Manager Independence

The PADEP BCW NPDES Permitting Section Manager is the QA Manager for this project. This staff member reviews the final trend reports.

A10. Project Organization Chart and Communications Project Organization Chart

The project organization chart, below, includes relationships and lines of communication among all participants and data users at PADEP. The responsibilities of these persons are described below.

Figure A10-1. Project Organization Chart
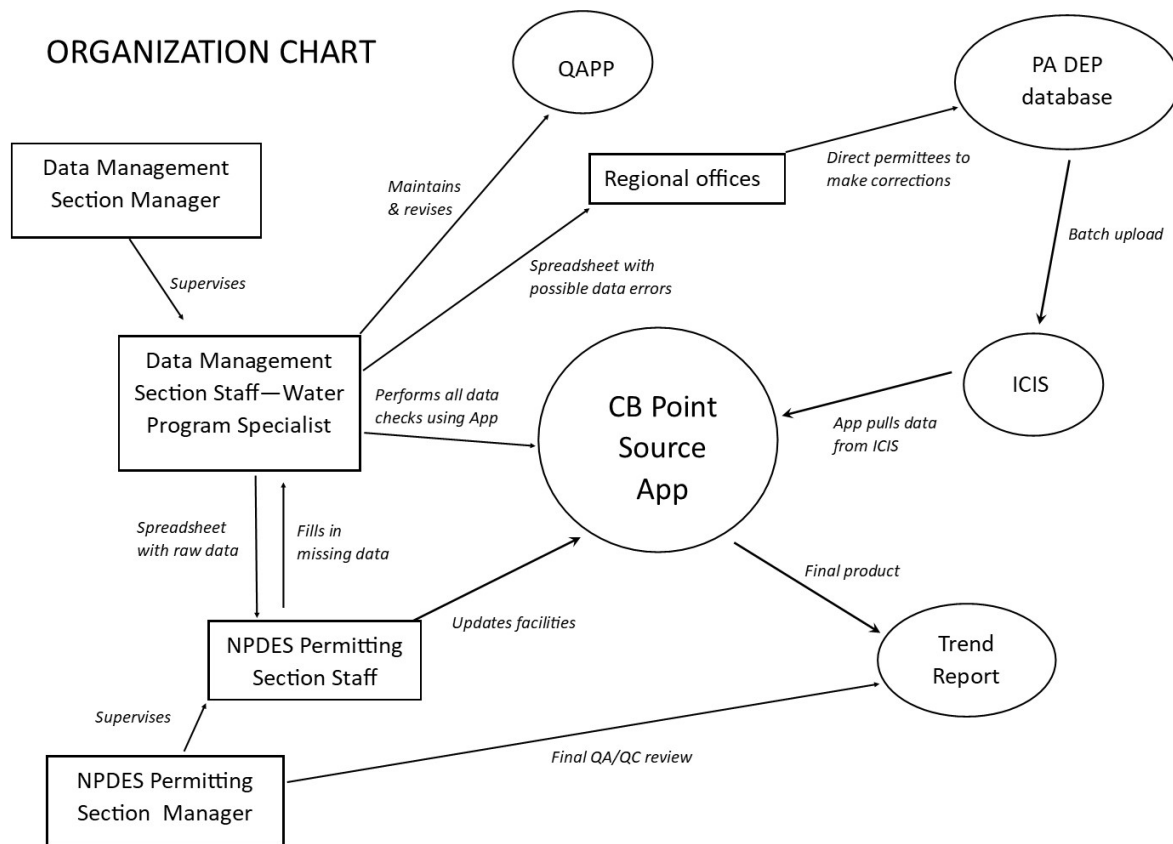
Communication

DMR point source data, uploaded to ICIS, from permitted facilities is used for the Chesapeake Bay Point Source Report due December 1st. BCW staff maintain communication with EPA to address any necessary corrective action(s).

A11. Personnel Training/Certification

Staff performing this task must be at least a Water Program Specialist, Environmental Engineer, or equivalent. They need to understand discharge parameter data and be familiar with NPDES permits and reporting requirements. No other special training is required, beyond a proficiency in Excel and a familiarity with WMS and ICIS.

A12. Documents and Records

The current QAPP and previous revisions are stored electronically in an internal PADEP shared folder.

Materials related to the Point Source Data submission are stored electronically in an internal PADEP shared folder as well.

Project-Specific Documents and Records
Project records will be managed in accordance with the current DEP policies. The Project Manager will be responsible for saving electronic files on the shared drive to ensure they are automatically backed up. Documents and records will include, but not limited to:
1. QAPP
2. DMRs stored in ICIS and WMS
3. Final Chesapeake Bay annual report as submitted to EPA

QAPP Preparation and Distribution
This QAPP conforms to the format described in the U.S. Environmental Protection Agency publication Quality Assurance Project Plan Standard [Directive No: CIO 2105-S-02.0]. The QAPP shall always govern the operation of the project and must be accessible during operations.

Field Documentation
Does not apply.

Storage
All eDMR data are stored electronically in WMS and ICIS. The App also retains historical records of all data starting from 1975.

Table A12-1. Records Schedule and Disposition

Record Type and Closure	Schedule	Items	Disposal
Project Records Close when activity, project, or topic is complete	Environmental Programs and Projects	**Ongoing Operational Value;** not required for the history of project but have operational value throughout the life of the project, e.g., QAPPs	Destroy 20 years after file closure.
Electronic DMR Records Close when activity, project, or topic is complete	Integrated Compliance Information System	**Electronic data**	Permanent, Transfer to the National Archives after each major version change.
Final Chesapeake Bay annual report as submitted to EPA Close when activity, project, or topic is complete		**Final report as submitted**	Retain on file in perpetuity
DEP Paper DMR Records Close when activity, project, or topic is complete	Discharge Reports (BCW Records Retention and Disposition Schedule)	**NPDES DMR**	**Paper DMR:** 3 years retention in the PADEP regional office buildings followed by 7 years retention at the PA State Records Center.

B   Implementing Environmental Operations

The tasks described in this QAPP do not involve primary data generation, acquisition, and management. Permitted facilities (or their contracted laboratories) are responsible for acquiring, analyzing, and submitting reports on the primary data. This QAPP focuses solely on secondary data collection, analysis, and compilation.

B1. Identification of Project Environmental Information Operations

Reference U.S. Environmental Protection Agency Chesapeake Bay Program Office 2024 Grant and Cooperative Agreement Guidance.

B2. Methods for Environmental Information Acquisition

Existing Information

Non-direct measurements (also referred to as secondary data) are data that were previously collected under an effort outside this project. All data relevant for this QAPP are secondary data. Data are collected by permittees and entered into eDMR/WMS, then batch uploaded to ICIS. The EPA Chesapeake Bay Program released the App in 2018, and PADEP has used the App thereafter to perform all the facility/data checks and fixes. The parameter (referred to as "species" in the App) checks and fixes are built into the App.

As a first step in the data collection process, PADEP utilizes the App to gather all available monitoring data for the period of record. PADEP is only responsible for collecting the data the facilities have submitted using accredited labs that utilize approved methods. The resulting report is run through the App data checks to ensure the validity and completeness of the data. Data for the following parameters are imported   from ICIS or calculated by the App:

- Ammonia (NH3)
- Carbonaceous Biochemical Oxygen Demand/Biochemical Oxygen Demand (CBOD5/BOD5)
- Dissolved Oxygen (DO)
- Flow
- Nitrite/Nitrate (NO23)
- Phosphate (PO4)
- Total Kjeldahl Nitrogen (TKN)
- Total Nitrogen (TN)
- Total Organic Nitrogen (TON)
- Total Organic Phosphorus (TOP)
- Total Phosphorus (TP)
- Total Suspended Solids (TSS)

Modeling

The App requires data for Flow to be in units of million gallons per day (MGD) and all other parameter data to be in concentrations of milligrams per liter (mg/L). DMR data is reported according to the permit requirements. When necessary, the App automatically converts reported units to MGD or mg/L.

At this time, most of the Significant Bay Dischargers have monitoring requirements in their

NPDES permits for the full suite of parameters that must be reported to EPA. The effluent limits and DMRs for all past and current significant Bay Dischargers are coded in ICIS. Therefore, with few exceptions, all reported data needed to construct the annual Bay report should be available in ICIS.

There are still permits (insignificant facilities) in PA that do not have the full suite of monitoring requirements. When no data are available due to lack of monitoring, the App fills in the missing data with estimates. Facilities with an average annual design flow of 0.002 to 0.2 MGD may not be required to monitor and report TN and TP after conducting at least two years of nutrient monitoring, assuming there are no changes to facility operations. In these cases, the most recent monitoring data is used to estimate the facility's load. For many Small Flow or Single Residence facilities that do not require nutrient or flow monitoring, data values are estimated based on the permitted design flow (typically 0.0004 MGD for Single Residences) and average estimated insignificant sewage facility concentrations of 25 mg/L TN, 4 mg/L TP, and 10 mg/L TSS. These values are taken from Pennsylvania's Phase 3 WIP Wastewater Supplement and are also used to develop CAP loads and estimate TMDL performance values for Phase 4 and 5 facilities that do not have discharge monitoring requirements. For facilities that only report data on a quarterly basis or less, data values are estimated for the entire year based on the reported data.

B3. Integrity of Environmental Information

Reference U.S. Environmental Protection Agency Chesapeake Bay Program Office 2024 Grant and Cooperative Agreement Guidance.

B4. Quality Control

Reference U.S. Environmental Protection Agency Chesapeake Bay Program Office 2024 Grant and Cooperative Agreement Guidance.

B5. Instrument/Equipment Calibration, Testing, Inspection, and Maintenance

Reference U.S. Environmental Protection Agency Chesapeake Bay Program Office 2024 Grant and Cooperative Agreement Guidance.

B6. Inspection/Acceptance of Supplies and Services

Reference U.S. Environmental Protection Agency Chesapeake Bay Program Office 2024 Grant and Cooperative Agreement Guidance.

B7. Environmental Information Management

Detail

Primary data is collected by NPDES permitted facilities, then reported electronically in the form of an eDMR that is entered via PADEP's eDMR application. Regulations and permits require that records of monitoring activities be retained by the permittee for a certain time, a minimum of three years for NPDES data and five years for CSO data. Flow splits are determined based on facility service areas and permit applications. PADEP's electronic submission systems (eDMR/WMS), however, retain the submitted electronic DMRs indefinitely; the reports can be retrieved anytime for verification purposes. After submitting eDMRs, the facility may either print a copy of the report and file it or save the report electronically to an on-site computer to satisfy retention requirements.

PADEP's electronic submission systems (eDMR/WMS) are maintained by internal information technology (IT) staff.

C   Assessment, Response Actions, and Oversight

C1. Assessments and Response Actions

PADEP staff conduct routine data quality assessments throughout the project to ensure data are suitable for their intended use and identify that project specifications were met. As the scope of work described in this QAPP usually takes only 1-2 months to complete, there is no need for interim assessments. As each of the datasets (SIG-IND, SIG-MUNI, INSIG-IND, and INSIG-MUNI) is completed, the permitting section reviews the trend report generated from that dataset to look for any questionable results. Facilities identified during this review are evaluated for a potential rerun of the data. The rerun dataset is merged with the other data into the final dataset.

C2. Oversight and Reports to Management

Communication with EPA generally occurs by email. If there are no problems with the App, the only communication is the notification that data submission through the App has been completed. If there are technical issues with the App, such as malfunctioning or questionable calculations, PADEP staff notify EPA immediately so that a resolution can be achieved before the submission deadline.

Internal DEP communication occurs by email and in person. Supervisors and the Bureau Director are regularly updated on progress.

D   Environmental Information Review and Useability Determination

D1. Environmental Information Review

Describe

PADEP has multiple systems in place to reject data prior to it entering the electronic databases used to compile and report information. eDMR data can be rejected in eDMR/WMS and ICIS if it does not pass automated validations put in place to ensure accurate and complete data. After the data is uploaded into the App from ICIS, it is reviewed by PADEP staff with the help of QA/QC checks embedded within the App. Any questionable values are identified and corrected. Data anomalies may include incorrect reporting units, incorrect load calculations, and typographical errors, such as misplaced decimal points.

After all checks in the App are completed, trend reports and final data sets are downloaded and reviewed. Any errors found during this process are corrected by rerunning data for selected facilities in the App and merging with the final report.

After data are collected from ICIS using the App, they are reviewed and corrected through various checks in the App. Any data errors found during this process are compiled by PADEP staff in a spreadsheet which is sent to PADEP regional offices shortly after December 1st of each year. Regional offices have until a set deadline (usually mid-January) to contact permittees and make sure that questionable data are reviewed, and revised eDMR reports submitted where necessary.

Any data that appear to be outside the predominant data pattern for an individual facility is highlighted by the App for further evaluation. For each check, the App generates "errors" and "warnings." All errors need to be addressed before moving to the next step. Warnings can be either addressed or ignored. For significant facilities, all errors and warnings are individually investigated and corrected, if applicable. For insignificant facilities, errors are addressed individually, and warnings are evaluated, with the biggest outliers investigated as needed. It is also possible to apply a filter to the warnings to catch the most extreme outliers. Flow values and warnings are investigated most thoroughly, as flow values impact all load calculations and trend reports.

The App will guide the user through a series of checks in the order listed in the table below. Most checks have 2 parts:

- Part 1: Data check – missing data can be filled in or set to zero.
- Part 2: Out-of-range check – The App looks for unusual patterns and creates errors and warnings. The user will make corrections directly in the App (and make a note in the errors spreadsheet that is sent to the regions) or ignore the warning.

Checks contained in the App:
- Facility Check
- Insig Missing Data Check
- Flow Data Check
- Flow – Out of Range Check

- DO Data Check
- DO – Out of Range Check
- Nutrient Data Check
- Nutrients – Out of Range Check
- Nutrient Species Data Check
- Species Ratio Check
- Species Out-of-range Check

If data gaps are identified by the App, PADEP assigns values to each field using functions embedded in the App as described below. If there are no flow data available for a particular month, that month can be set within the App as a "No Discharge Month" and all parameter values will be set to zero. For months with flow, missing data are filled in using average values, estimates, or ratios (in the case of nitrogen or phosphorus species). For insignificant facilities, the App also allows the option to fill all data gaps with last year's data. Where parameter value data have been required on a quarterly basis rather than monthly or more frequently, the quarterly value will be applied to the other months in that monitoring period. If parameter value data exist for a facility for six or more months during the reporting period but not others, average data for available months for that facility will be used to populate blank fields. Where no data exist because the facility does not monitor for that parameter, PADEP will use values based on estimated performance or accepted defaults. If no estimate is possible, a value of "zero" may also be entered for missing parameters.

If an outlier is identified, the questionable value will be replaced with a modified value. Individual data values might be in error because of transcription errors or equipment malfunctions. If the error results in an anomalous or unrealistic value, it can be detected and excluded from analysis. PADEP examines the data for anomalous values and corrects values that are beyond the range of observed variability. In cases where the correct value can be obtained from supplemental reports attached to the eDMR data submission, that number is used. If the correct value can be inferred from comparison with other submitted data (in the case of obvious typos or decimal misplacement), that value is used. Otherwise, a historical mean value or estimate is used.

As time allows, where data discrepancies are discovered for users of PADEP's eDMR system, the eDMR submission will be examined for inclusion of DMR supplemental forms where raw sampling data are recorded. The permittee's calculation method and their reporting accuracy will be evaluated. The value in question may be recalculated using the raw data. Data errors will be corrected on the final data set in the App and a spreadsheet will be sent to the regions with possible data errors. Regions will then direct permittees to make the appropriate revisions to their eDMR reports.

Pennsylvania facilities typically do not monitor for phosphates (PO4) or Total Organic Phosphorus (TOP), but rather Total Phosphorus (TP). For missing TOP and PO4 values, PADEP uses the "percent of other measured value" data fix to calculate TOP as 15% of TP and PO_4 as

85% of TP.

PADEP will use its best professional judgment in identifying data entry errors and make appropriate corrections. For example, if average monthly TP concentrations are 1.2, 1.5, 1.8, 1.8, 1.4, and 0.18 mg/L, PADEP will evaluate eDMR supplemental reports to investigate the validity of the 0.18 mg/L entry. Based on the overall pattern, it will be assumed that the correct value is 1.8 (decimal entry error). The error is then corrected within the App and noted in the data errors spreadsheet.

PADEP will also use its technical judgment for replacing data that appear to be grossly miscalculated. For example, if the reported Total Nitrogen (TN) monthly load is significantly lower (e.g., less than half) than its expected level based on flows and TN concentrations, a DEP-calculated TN total load may replace the reported value in the App. The original value and suggested value are noted on the error spreadsheet. For facilities where these types of gross miscalculations are prevalent, the PADEP regional office will contact the permittee to discuss the correct calculation procedures.

After each data set is considered QA/QC complete by the App, a trend report will be generated and made available for download. This is the final check of the process. This trend report is reviewed by the project QA manager for anomalies. If necessary, a subset of data is re-processed, and the corrected data merged into a final dataset and a revised trend report is generated.

D2. Useability Determination

After all data have been processed with the App and the final merged report generated, EPA is notified via email and the final report is submitted within the App. EPA reviews the data and contacts PADEP if any adjustments are needed.
The above-mentioned errors spreadsheet is distributed to regional offices who contact the permittees to correct data errors in a timely manner.

References

See Table A4-1.

APPENDIX A: ACRONYMS AND ABBREVIATIONS

App	Chesapeake Bay Point Source Application
BCW	PADEP Bureau of Clean Water
BOD5	Biochemical Oxygen Demand
CBOD5	Carbonaceous Biochemical Oxygen Demand
CBP	Chesapeake Bay Program
CBPO	U.S. Environmental Protection Agency's Chesapeake Bay Program Office
DMR	Discharge Monitoring Report
eDMR	electronic Discharge Monitoring Report system
DO	Dissolved Oxygen
DQO	Data Quality Objectives
ECHO	Enforcement and Compliance History Online
EPA	US Environmental Protection Agency
ICIS	Integrated Compliance Information System
INSIG-IND	Insignificant Industrial
INSIG-MUNI	Insignificant Municipal
MGD	Million Gallons per Day
NH3	Ammonia
NO23	Nitrite -Nitrate
NPDES	National Pollutant Discharge Elimination System
PADEP	Pennsylvania Department of Environmental Protection
PM	Project Manager
PO4	Phosphate
QA/QC	Quality Assurance / Quality Control
QAM	Quality Assurance Manager
QAPP	Quality Assurance Project Plan
QNCR	Quarterly Non-compliance Reports
SIG-IND	Significant Industrial
SIG-MUNI	Significant Municipal
SOP	Standard Operating Procedure
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TON	Total Organic Nitrogen
TOP	Total Organic Phosphorus
TP	Total Phosphorus
TSS	Total Suspended Solids
WIP	Watershed Implementation Plan
WMS	Water Management System
WWTP	Wastewater Treatment Plant