STATE OF ALABAMA
WATER QUALITY MANAGEMENT
CONTINUING PLANNING PROCESS

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SECTION 1 INTRODUCTION

1.1 Purpose of Continuing Planning Process (CPP) Document

§303(e) of the federal Clean Water Act (CWA) and 40 CFR §130.5 require that the Alabama Department of Environmental Management (ADEM) establish and maintain a continuing planning process (CPP) consistent with the federal CWA and the implementing regulations pertaining to all waters of the State. This CPP document describes ADEM's activities and procedures for maintaining waters of an acceptable quality throughout the State in a manner consistent with State and federal laws. Documents and rules specified in this CPP are incorporated by reference.

The Regional Administrator for the Environmental Protection Agency (EPA) may not approve any permit program under Title IV of the federal CWA for any state which does not have an approved CPP. Therefore, EPA must review ADEM's approved CPP from time to time to ensure that the planning processes are consistent with the federal CWA and 40 CFR §130.5. Alabama's previous CPP was published in May 2014.

1.2 Content of CPP Document - 40 CFR §130.5

The required elements for a CPP are found in §303(e)(3)(A)-(H) of the federal CWA and 40 CFR §130.5. ADEM may determine the format of its CPP as long as the minimum requirements of the federal CWA and 40 CFR §130.5 are met. The following processes must be described in the CPP, and ADEM may include other processes at its discretion.

(1) The process for developing effluent limitations and schedules of compliance at least as stringent as those required by §§301(b)(1) and (2), 306 and 307, and at least stringent as any requirements contained in applicable water quality standards (WQS) in effect under authority of §303 of the federal CWA.

(2) The process for incorporating elements of any applicable areawide waste treatment plans under §208 and applicable basin plans under §209 of the federal CWA.

(3) The process for developing total maximum daily loads (TMDLs) and individual water quality based effluent limitations for pollutants in accordance with §303(d) of the federal CWA and 40 CFR §130.7(a).

(4) The process for updating and maintaining Water Quality Management (WQM) plans, including schedules for revision.

(5) The process for assuring adequate authority for intergovernmental cooperation in the implementation of the State WQM program.

(6) The process for establishing and assuring adequate implementation of new or revised WQS, including schedules of compliance, under §303(c) of the federal CWA.

(7) The process for assuring adequate controls over the disposition of all residual waste from any water treatment processing.

(8) The process for developing an inventory and ranking, in order of priority of needs for construction of waste treatment works required to meet the applicable requirements of §§301 and 302 of the federal CWA.

(9) The process for determining the priority of permit issuance.

1.3 Water Quality Management Program Overview

ADEM maintains an integrated approach to water quality management through implementation of programs including:

- Surface water quality monitoring;
- Water quality assessment and reporting under the CWA:
  - CWA §305(b) Integrated Water Quality Monitoring and Assessment Report (hereafter, "§305(b) Integrated Report")
  - CWA §303(d) List;
- Water quality modeling and TMDL development;
- WQS development, review, and revision;
- Nonpoint source management;
- Watershed management planning;
- Funding of publicly-owned wastewater treatment plant construction via the State revolving loan fund (Clean Water SRF);
- Permitting and compliance for municipal, industrial, mining, and animal feeding operations (AFO)/concentrated animal feeding operations (CAFO) facilities;
- Stormwater permitting and compliance;
- Source water protection programs;
- Operator certification and training assistance; and
- Education and outreach activities.

1.4 Water Quality Management Program Authority and Administration

1.4.1 State Legislative Authority

The Alabama Water Pollution Control Act (AWPCA), as amended, and the rules and regulations promulgated thereunder, provide adequate authority to establish and maintain a

comprehensive State water quality management program. The AWPCA was passed in 1971 and has been amended several times since. The act, codified as Title 22, Section 22-22-1 et seq., Code of Alabama 1975, provides the foundation for ADEM's water quality program and includes as its purpose "…to conserve the waters of the State and to protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses; to provide for the prevention, abatement and control of new or existing water pollution; and to cooperate with other agencies of the State, agencies of other States, and the federal government in carrying out these objectives."

The Alabama Environmental Management Act (AEMA) was passed in 1982 and codified as Title 22, Section 22-22A-1 et seq., Code of Alabama 1975. In addition to creating ADEM to provide a comprehensive and coordinated program of environmental management, the AEMA created the Alabama Environmental Management Commission (AEMC). The act grants the AEMC the authority to develop the state's environmental policy; hear administrative appeals of permits, administrative orders and variances issued by the Department; adopt environmental regulations; and select an ADEM director. Acting through the AEMC, the act grants ADEM the authority to adopt and promulgate rules, regulations, and standards and to develop environmental policy for the State. The act also provides ADEM with its authorities to issue orders, notices of violation, certifications, or permits and to enforce provisions of the AEMA and the AWPCA through civil actions or administrative orders, including orders with penalties.

1.4.2 Organization

Alabama's water quality program is administered by ADEM's Water Division, Field Operations Division, and Permits and Services Division. Legal support is provided by the Office of General Counsel.

1.4.3 Funding

Sources of funding for administration of the water quality program include the State General Fund, fees and fines, and federal CWA grants under §§104(b), 106, 319, and 604.

SECTION 2 PROCESSES REQUIRED IN THE CPP

2.1 Permitting and Effluent Limitations – 40 CFR §130.5(b)(1)

ADEM's processes for developing effluent limitations and schedules of compliance, which are at least as stringent as those required by the federal CWA, are set forth in the AWPCA and the rules and regulations promulgated thereunder. Section 22-22-9 addresses the setting of WQS, establishes the requirements for wastewater permitting, and provides for penalties. The following rules and regulations for the water quality program are included in Division 6 of the ADEM Admin. Code.

- Chapter 335-6-5 sets out indirect discharge permit and pretreatment rules.

- Chapter 335-6-6 covers wastewater permitting under the National Pollutant Discharge Elimination System (NPDES).
- Chapter 335-6-7 provides requirements associated with AFOs and CAFOs.
- Chapter 335-6-9 provides requirements associated with surface mining operations.
- Chapter 335-6-12 provides stormwater management requirements under NPDES for construction activities, noncoal/nonmetallic mining and dry processing less than five acres, other land disturbance activities, and areas associated with these activities.

The establishment of limitations (to include water quality-based limitations), standards and other permit conditions is addressed in ADEM Admin. Code r. 335-6-6-.14; the requirement for stormwater general permits is found in ADEM Admin. Code r. 335-6-6-.23. Alabama's Wasteload Allocation Agreement with EPA can be found on ADEM's Water Quality webpage at adem.alabama.gov/programs/water/waterquality.cnt. In accordance with ADEM Admin. Code r. 335-6-6-.21, the public, other affected dischargers, and local, State, and federal agencies are afforded an opportunity to comment on NPDES permit issuance, reissuance, denial, revocation, termination (except if there is permanent termination of flow or connection to a POTW), and modifications to existing permits (except minor modifications as defined by ADEM Admin. Code r. 335-6-6-.17). Copies of the public notice are provided to State and federal agencies, and local governments identified by ADEM Admin. Code r. 335-6-6-.21, unless otherwise waived by the agency. ADEM also maintains a general mailing list to which notice of NPDES permit actions are sent.

2.2 Areawide Waste Treatment Plans – 40 CFR §130.5(b)(2)

A number of communities and regional authorities in Alabama developed areawide wastewater treatment plans and/or basin plans under §§208 and 209 of the federal CWA during the late 1970s and early 1980s. Those plans, referred to as 208/209 plans, have served as a guide to providing wastewater collection and treatment in Alabama's more populous areas and statewide watershed planning. As a part of EPA's Construction Grants Program[1], facility plans were prepared as a requisite to obtain funding for construction of wastewater treatment facilities for cities throughout Alabama. Similar plans for smaller communities have been, and continue to be, developed using funding provided under §205(j) of the federal CWA. These plans are usually developed by regional planning agencies using funds provided to the State by EPA. Areawide wastewater treatment plans are reviewed by the State to ensure consistency with water quality goals and objectives.

2.3 Assessment, Listing, and Total Maximum Daily Loads (TMDLs) - 40 CFR §130.5(3)

§303(d) of the federal CWA and implementing regulations at 40 CFR §130.7(b) require ADEM to identify waters within Alabama's boundaries that do not fully support designated uses. Specific requirements include the following:

[1] In accordance with the 1987 amendments to the CWA, this program ended in 1990 and was replaced by the Clean Water State Revolving Fund (CWSRF).

§130.7(b)(1) ADEM must identify those water quality-limited segments still requiring TMDLs within Alabama's boundaries for which:

(i) Technology-based effluent limitations required by §§301(b), 306, 307, or other sections of the federal CWA;

(ii) More stringent effluent limitations (including prohibitions) required by either State or local authority preserved by §510 of the federal CWA, or federal authority (law, regulation, or treaty); and

(iii) Other pollution control requirements (e.g., best management practices) required by local, State, or federal authority are not stringent enough to implement any WQS applicable to such waters.

§130.7(b)(2) ADEM must also identify on the same list developed under 40 CFR §130.7(b)(1) those water quality-limited segments still requiring TMDLs or parts thereof within Alabama's boundaries for which controls on thermal discharges under §301 or State or local requirements are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish and wildlife.

§130.7(b)(3) For the purposes of listing waters under 40 CFR §130.7(b), the term "water quality standard applicable to such waters" and "applicable water quality standards" refer to those WQS established under §303 of the federal CWA, including numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements.

§130.7(b)(4) ADEM's list required under 40 CFR §130.7(b)(1) and (2) must include a priority ranking for all listed water quality-limited segments still requiring TMDLs, taking into account the severity of the pollution and the uses to be made of such waters and must identify the pollutants causing or expected to cause violations of the applicable WQS. The priority ranking must specifically include the identification of waters targeted for TMDL development in the next two years.

§130.7(b)(5) ADEM must assemble and evaluate all existing and readily available water quality-related data and information to develop the list required by 40 CFR §130.7(b)(1) and (2). At a minimum "all existing and readily available water quality-related data and information" includes but is not limited to all of the existing and readily available data and information about the following categories of waters:

(i) Waters identified by ADEM in its most recent §305(b) report as "partially meeting" or "not meeting" designated uses or as "threatened";

(ii) Waters for which dilution calculations or predictive models indicate nonattainment of applicable WQS;

(iii) Waters for which water quality problems have been reported by local, State, or federal agencies; members of the public; or academic institutions. These organizations and groups should be actively solicited for research they may be conducting or reporting. For example, university researchers, the United

States Department of Agriculture, the National Oceanic and Atmospheric Administration, the United States Geological Survey, and the United States Fish and Wildlife Service are good sources of field data; and

(iv) Waters identified by ADEM as impaired or threatened in a nonpoint assessment submitted to EPA under §319 of the federal CWA or in any updates of the assessment.

§130.7(b)(6) ADEM must provide documentation to the Regional Administrator to support its determination to list or not to list Alabama's waters as required by 40 CFR §130.7(b)(1) and (2). This documentation must be submitted to the Regional Administrator together with the list required by 40 CFR §130.7(b)(1) and (2) and must include at a minimum:

(i) A description of the methodology used to develop the list;

(ii) A description of the data and information used to identify waters, including a description of the data and information used by ADEM as required by 40 CFR §130.7(b)(5); and

(iii) A rationale for any decision to not use any existing and readily available data and information for any one of the categories of waters as described in 40 CFR §130.7(b)(5); and

(iv) Any other reasonable information requested by the Regional Administrator. Upon request by the Regional Administrator, ADEM must demonstrate good cause for not including a water or waters on the list. Good cause includes, but is not limited to, more recent or accurate data; more sophisticated water quality modeling; flaws in the original analysis that led to the water being listed in the categories in 40 CFR §130.7(b)(5); or changes in conditions, e.g., new control equipment, or elimination of discharges.

ADEM's water quality assessment and listing process begins with the collection, compilation and evaluation of water quality data and information for the purpose of determining if a waterbody is supporting all of its designated uses. It is imperative that the data and information ADEM uses in the process be of adequate quality and provide an accurate indication of the water quality conditions in the waterbody since decisions arising from the assessment process may have long-term consequences. Issues of data sufficiency and data quality must be addressed to ensure that use support decisions are based on accurate data and information. However, the minimum data requirements are not intended to exclude data and information from the assessment process but are a guide for designing monitoring activities to assess Alabama's surface waters and to ensure that decisions are made using the best available data. The goal is to accurately describe the status of surface waters where possible and to identify waters where more information is needed to make use support decisions. ADEM evaluates waterbody data and information using Alabama's Water Quality Assessment and Listing Methodology (available on ADEM's website at

adem.alabama.gov/programs/water/303d.cnt) and assigns a waterbody to a specific category based on available data and the waterbody's use support status.

Designated uses for Alabama's waterbodies include: OAW (Outstanding Alabama Water); PWS (Public Water Supply); S (Swimming and Other Whole Body Water-Contact Sports); SH (Shellfish Harvesting); F&W (Fish and Wildlife); LWF (Limited Warmwater Fishery); and A&I (Agricultural and Industrial Water Supply). A complete description of these uses and the specific criteria to protect such uses can be found in ADEM Admin. Code r. 335-6-10-.09. ADEM's water quality assessment process is different for each of Alabama's seven designated uses because each use is protected by specific numeric and narrative water quality criteria. As such, the methodology for assigning a given waterbody to one of the five assessment categories may have different data requirements and thresholds for determining the waterbody's use support status. In addition, interpretation of narrative criteria may differ by classified use and waterbody type. Data and information that may be considered when assessing State waters could include: water chemistry data such as chemical specific concentration data; land use or land cover data; physical data such as water temperature, conductivity, and habitat evaluations; biological data such as macroinvertebrate and fish community assessments; and bacteriological data such as *E. coli* or enterococci counts. Waters classified as F&W or higher (or LWF on a seasonal basis) must provide protection of the aquatic life use. All classifications must provide protection of the human health use.

Alabama's designated uses embody a tiered approach to aquatic life protection. ADEM's assessment process recognizes this by allowing for different minimum data requirements and varying criteria exceedance thresholds. For example, in waters classified as OAW, Alabama's highest designated use, the assessment methodology requires less data and allows for fewer exceedances of a toxic criterion to be considered for inclusion in Category 5 (§303(d) List). The assessment process for waters classified as A&I, Alabama's lowest designated use, require more data and allows for slightly more exceedances of toxic criteria. This sliding scale assessment approach provides for existing differences in the aquatic communities and habitat conditions represented by streams within Alabama's various designated uses.

To ensure consistent and accurate assessment of a waterbody's support status and proper categorization of the waterbody, minimum data requirements are defined that address data quality and data quantity. Data requirements are not only dictated by the designated use of the waterbody, but also by the waterbody type to account for the different monitoring strategies that may be used. The minimum data requirements are expected to guide future water quality monitoring activities and provide the basis for making use support decisions. However, in those cases where a data set may not include all of the elements specified by the minimum data requirements, a decision to include the water in Category 5 (§303(d) List) can still be made provided the available data indicates a clear impairment and the cause of the impairment is evident. ADEM's decisions will be made on a case-by-case basis and will be documented.

§303(d)(1) of the federal CWA requires ADEM to establish a priority ranking for waters it identifies on the 303(d) List (i.e. Category 5 waters), taking into account the severity of pollution and the designated uses of such waters.

ADEM establishes TMDLs in accordance with its priority ranking strategy; however, ADEM has considerable flexibility in establishing its ranking method based on its particular circumstances and available resources. ADEM implements a basin rotation approach to monitoring waters and establishing TMDLs. In general, the development of TMDLs follows the basin rotation monitoring schedule because the availability of water quality data is the primary driver in the TMDL development process.

All waters ADEM places on the §303(d) List are given a priority ranking (high, medium, or low) for TMDL development. This ranking is determined based on criteria which can include:

- TMDL complexity
- Pollutants of concern
- Need for additional data and information
- Sources of the pollutants
- Severity of the impairment
- Pending rules and regulations
- Spatial extent of impairment
- General watershed management activities (e.g., §319 grant activities and watershed management planning)
- Existence of endangered and sensitive aquatic species
- Degree of public interest and support for particular waterbodies.

ADEM typically develops TMDLs for waters currently listed in Category 5 within 8 to 13 years unless they become eligible for delisting.

In addition to the assessment and listing requirements in 40 CFR §130.7(b), ADEM calculates the TMDL for each pollutant identified as causing impairment in the listed waters. The TMDL is defined in 40 CFR §130.2 as the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent LAs practicable, then WLAs can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.

Point sources include all sources subject to regulation under the NPDES program. Nonpoint sources include all remaining sources of the pollutant as well as anthropogenic and natural background sources. For pollutants other than heat, ADEM establishes TMDLs at levels necessary to attain and maintain applicable narrative and numerical WQS, taking into account seasonal variations in water quality and including a margin of safety (MOS) to account for

uncertainty in the predicted pollutant reductions necessary to meet WQS. The TMDL calculates the maximum amount of a pollutant that a waterbody can receive and still meet applicable WQS.

ADEM utilizes the following TMDL calculation:

$$TMDL = \sum WLA + \sum LA + MOS$$

where:

WLA = the sum of wasteload allocations (point sources)

LA = the sum of load allocations for nonpoint sources and background

MOS = the margin of safety

ADEM typically uses the following general methodologies or approaches for development of TMDLs:

- Dynamic and steady-state water quality models for organic enrichment [carbonaceous biochemical oxygen demand (CBOD) and nitrogenous biochemical oxygen demand (NBOD)].
- Dynamic and steady-state water quality models for nutrients and siltation.
- Mass-balance approach for toxic pollutants and pathogens.

ADEM develops TMDLs in accordance with the following requirements specified in 40 CFR §130.7(c).

(1) Establish TMDLs for the water quality limited segments identified in 40 CFR §130.7(b)(1), and in accordance with the priority ranking. For pollutants other than heat, TMDLs must be established at levels necessary to attain and maintain the applicable narrative and numerical WQS with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. Determinations of TMDLs must take into account critical conditions for stream flow, loading, and water quality parameters.

(i) Establish TMDLs using a pollutant-by-pollutant or biomonitoring approach. In many cases, both techniques may be needed. Site-specific information is used wherever possible.

(ii) Establish TMDLs for all pollutants preventing or expected to prevent attainment of WQS as identified pursuant to 40 CFR §130.7(b)(1). Calculations to establish TMDLs are subject to public review.

(2) Estimate for the water quality-limited segments still requiring TMDLs identified in 40 CFR §130.7(b)(2), the total maximum daily thermal load which cannot be

exceeded in order to assure protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in the identified waters or parts thereof.

The information used in development of the TMDL consists primarily of chemical, physical and biological data of the impaired waterbody to include its watershed characteristics such as land use/cover, soil types, elevation data, point and nonpoint sources, census data, meteorological data, water withdrawals, flow data and various other types of information. Most data and information are stored in ADEM and/or EPA databases and can also be managed, analyzed and displayed using ArcView Geographic Information System (GIS), Microsoft Access, Microsoft Excel, Water Resources Database (WRDB) or other software. This information is collected and evaluated by the Water Quality Branch through planned water quality studies with ADEM's Field Operations Division (FOD) or is gathered from other sources (e.g. Federal Agencies, Universities, Other State Agencies, Volunteer Monitoring Groups) for evaluation by the Water Quality Branch.

ADEM provides documentation of the TMDL in the form of a written draft report to the EPA, and the report includes, at a minimum, the elements required by 40 CFR §130.7. In conjunction with or following review by the EPA, the draft TMDL is made available for public review and comment. ADEM publishes the notice of availability of the draft TMDL report and request for comment on ADEM's website. In addition, ADEM distributes the notice electronically to any person wishing to receive public notices from ADEM. Following public review and comment, ADEM prepares the final TMDLs, incorporating any necessary changes as a result of information and comments received during the comment period. ADEM submits the final TMDLs to EPA for formal approval.

ADEM implements the final TMDLs through its NPDES programs for regulated point sources, which address WLAs, and through its §319 Nonpoint Source Management Program (NPSMP) for nonpoint sources, which address the LAs. When the TMDL contains a WLA for point sources, ADEM writes any affected NPDES permit at issuance, reissuance, or major modification to be consistent with the WLA contained in the TMDL. Any schedules of compliance to achieve the TMDL are provided consistent with ADEM Admin. Code r. 335-6-6-.16. The NPSMP uses a voluntary approach to address nonpoint source pollution. The program relies on best management practices, education and outreach, technology transfer, monitoring and assessments and resource assistance using a balanced Statewide and watershed focused restoration approach. Local partnerships and citizen input are the primary implementation components.

2.4 Water Quality Management Approach – 40 CFR §130.5(4)

ADEM uses a watershed management approach as an integral component of its efforts to manage water quality and to protect and restore Alabama's water resources. ADEM uses

cost-effective, non-regulatory, and integrated processes designed to protect, restore, and maintain aquatic ecosystems, supported by sound science that views watersheds as dynamic systems, to restore impaired waters and ensure WQS are achieved.

ADEM's rotational, three-year river basin assessment and monitoring strategy supports the federal CWA §§305(b), 319(a), 303(d), 314(a) and 320. Factors to progressively implement the watershed management approach include a variety of relevant environmental, economic, and administrative considerations:

- Protection of public health
- Ecosystem health along with a safe, healthy environment
- Anthropogenic causes and essential quality-of-life benefits
- Designated uses of water resources
- Value of the watershed or waterbody area to the public including water quality protection and economic costs and benefits of mitigating the causes of degradation
- Pollutant cause, source, ecological risk, or mitigation need and complexity
- Vulnerability of stream segments and waterbodies or infrastructure to degradation
- Demonstrable water quality results including aquatic biological resources and their habitat
- Watershed management plan and TMDL development and implementation
- Coordination of watershed management plan actions and sustainable partnerships
- Leveraging of human and financial capital from both the public and private sectors

ADEM implements the nonpoint source components of its watershed management approach in accordance with the goals and objectives of the federal CWA, §319(h) grant program guidelines, the Alabama NPSMP, and through the development and implementation of specific watershed management plans. Other federal, interstate, regional, State, and local groups have also developed, or are developing, watershed management plans and strategies at varying levels of scale, scope, and specificity. Those actions are currently supporting ADEM's watershed restoration and protection efforts.

ADEM continues to partner with these and other entities to coordinate efforts to adequately address §319 priority pollutant load reductions (nitrogen, phosphorus, and sedimentation), nonpoint source TMDL pollutants of concern, or other natural resource issues as practicable and as resources allow. ADEM's iterative and adaptive scenarios for prioritizing watershed management activities include:

- Watersheds with unique and valuable natural resources
- Waters and watershed areas that serve as source water for a public drinking water supply
- Restoration of impaired watersheds
- Waters near geographic areas where rapid land use development is occurring

- Waters where data trends indicate water quality degradation is occurring
- Restored waters requiring continued water quality assessment and maintenance of best management practices to assure unimpaired status
- Protection of defined categories of unimpaired or high quality waters
- Watersheds contributing high nutrient loads to downstream waters

ADEM's watershed management approach is commonly characterized by diverse and well-integrated partnerships; a specific geographic focus with actions driven by quality data; and coordinated priority-setting solutions. Watershed management plans provide roadmaps to guide cost-effective efforts to address the water quality needs of each watershed. ADEM tracks its watershed management implementation progress and success and makes the information accessible to the public in ADEM reports and newsletters, ADEM NPSMP Annual Reports, the EPA Grants Reporting and Tracking System, EPA/ADEM Performance Partnership Grant reports and other documentation systems.

2.5 Intergovernmental Cooperation – 40 CFR §130.5(5)

ADEM's processes for assuring adequate authority for intergovernmental cooperation in the implementation of State water quality management programs involves authorization of federal authority to the State, coordination with local pollution control programs and other State/federal agencies, the Clearinghouse-like process for review of grant applications, and public participation in accordance with §101(e) of the federal CWA.

2.6 Water Quality Standards – 40 CFR §130.5(6)

Alabama's WQS are found in Chapters 335-6-10 and 335-6-11 of the ADEM Administrative Code. ADEM conducts a comprehensive review of WQS at least once every three years. Proposed changes to Chapters 335-6-10 and 335-6-11 are subject to a public notice/comment period and public hearing. After adoption by the EMC, ADEM submits changes to EPA for review and approval.

The process for establishing and assuring adequate implementation of new or revised WQS is addressed in ADEM Admin. Code rs. 335-6-6-.16, 335-6-6-.17, and 335-6-10-.05. These rules together provide for modification or reissuance of permits, including schedules of compliance, where necessary to attain compliance with a new water quality standard.

2.7 Disposal of Residual Waste from Any Water Treatment Processing – 40 CFR §130.5(7)

In Alabama, the EPA administers the regulations for the use or disposal of sewage sludge under 40 CFR Part 503. The disposition of residuals from other sources, including water treatment processes, are addressed by ADEM's solid waste regulations under Division 13 of the ADEM Admin. Code.

2.8 Wastewater Construction Needs and Priorities – 40 CFR §130.5(8)

ADEM's process for developing an inventory and ranking, in order of priority needs, for construction of waste treatment required to meet the applicable requirements of §301 and §302 of the federal CWA is set out in Chapter 335-11-1 of the ADEM Admin. Code. Specifically, ADEM Admin. Code r. 335-11-1-.04 describes the annual preparation of a project priority list and ADEM Admin. Code r. 335-11-1-.05 covers the criteria for ranking.

2.9 Priority for Permit Issuance - §130.5(9)

The priority for NPDES permit issuance is determined by the Industrial/Municipal and Stormwater Management Branches such that applications for permit reissuance received in accordance with ADEM Admin. Code r. 335-6-6-.08 are processed and permits are finalized, if practicable, before the current permit expires. Applications for new NPDES permits submitted in accordance with ADEM Admin. Code r. 335-6-6-.08 are processed as received such that, if practicable, the permit is issued prior to the proposed date for commencement of the proposed discharge. ADEM uses EPA backlog metrics and internal databases to prioritize backlogged permits.

SECTION 3 WATER QUALITY PROGRAM COMPONENTS

3.1 Water Quality Monitoring

ADEM's water quality monitoring program is managed by its Field Operations Division (FOD) and includes the following:

- Coastal Waters Monitoring Program
- Rivers and Reservoirs Monitoring Program
- Rivers and Streams Monitoring Program
- Wetland Monitoring Program
- Fish Tissue Monitoring Program
- Compliance Monitoring Program

ADEM uses the information collected by these programs to prepare ADEM reports and the §305(b) Integrated Report, to update the §303(d) List, to establish water quality-based effluent limits, and to determine NPDES permit compliance.

3.1.1 Coastal Waters Monitoring Program

ADEM's Coastal Waters Monitoring Program (CWMP) provides data to develop indicators and assessment criteria that link chemical, physical, and biological conditions for estuaries and coastal rivers within Alabama's coastal area. ADEM uses this data to identify long-term trends in water quality, provide data for the development of TMDLs, develop nutrient

criteria, and update or revise protocols and methodologies to more accurately assess related water quality conditions for designated estuaries and coastal rivers and streams.

The CWMP also incorporates monitoring in priority watersheds identified by ADEM's NPSMP to provide corroborating data concerning the effectiveness of BMPs implemented using §319 funds. Depending on available resources, ADEM samples approximately 50 stations for the CWMP each year, to include historical trend monitoring sites and new stations added as resources allow.

Objectives of the program are to:

- Determine trends in water quality;
- Provide data that can be used to categorize estuaries and coastal rivers in Alabama's §305(b) Integrated Report;
- Collect biological, chemical, and physical data within the estuaries, coastal rivers and streams to support development of reference conditions and nutrient criteria;
- Collect biological, chemical, and physical data at existing §303(d)/TMDL stream segments;
- Conduct monitoring in priority watersheds identified by ADEM's NPSMP to assess effectiveness of implemented BMPs and watershed management plans; and
- Provide data that can be used by other programs, including the Gulf of Mexico Alliance (GOMA) Priority Issue Teams, to answer questions and to complete tasks identified in GOMA Action Plans.

The CWMP is designed to complement these ongoing programs that also provide water quality data from the coastal area:

a. **Coastal Alabama Recreational Waters Program** involves the collection of water samples from 25 public recreational sites in Alabama's coastal waters. Samples are analyzed for the indicator bacteria, *Enterococci*. The objective of this program is to increase public awareness and provide valuable water quality information to help the public make more informed decisions concerning their recreational use of Alabama's natural coastal waters.

b. **Alabama Coastal Non-Point Pollution Control Program (ACNPCP)** implements Coastal Alabama Targeted Water Quality Studies that are designed to locate sites and identify and document baseline water quality conditions that exist within the two coastal counties. These studies are designed to correlate BMPs as they relate to land uses and potential nonpoint source impacts in close proximity to waterbodies within the Mobile and Baldwin County sub-watershed areas.

c. **Gulf of Mexico Alliance (GOMA)** is a partnership of the States of Alabama, Florida, Louisiana, Mississippi, and Texas, with the goal of significantly increasing regional

collaboration to enhance the ecological and economic health of the Gulf of Mexico. Supported by 13 federal agencies, academia, businesses and non-governmental organizations in the region, GOMA has identified priority issues that are regionally significant and can be effectively addressed through increased collaboration at local, State, and federal levels.

3.1.2 Rivers and Reservoirs Monitoring Program

ADEM's Rivers and Reservoirs Monitoring Program (RRMP) assesses the water quality and trophic status of nonwadeable rivers and publicly-owned lakes/reservoirs in the State, with monitoring in the Tennessee River system conducted through a collaborative monitoring effort between ADEM and the Tennessee Valley Authority (TVA). ADEM has defined publicly-owned lakes/reservoirs as those that are of a multiple-use nature, publicly-accessible, and exhibit physical/chemical characteristics typical of impounded waters. Privately owned lakes or lakes managed by the Alabama Department of Conservation and Natural Resources (ADCNR) strictly for fish production are not included in this definition. Currently, fifty-five lakes/reservoirs meet this definition of being publicly-owned. Initiated in 1990 as the Reservoir Water Quality Monitoring Program, the program was given the name Rivers and Reservoirs Monitoring Program in 2004 with the addition of free-flowing river reaches.

Objectives of the program are to:

- Develop and maintain a water quality database for all rivers and publicly-accessible lakes in the State sufficient to conduct comprehensive assessments of water quality, categorize waters for the §305(b) Integrated Report, develop criteria, and determine criteria compliance;

- Establish trends in river and lake trophic status that are only established through long-term, consistent monitoring efforts; and

- Conduct biennial assessments of water quality for all publicly-accessible lakes as required by §314 of the federal CWA.

Lakes monitored for the program range in size from 54 to 45,200 acres. Smaller lakes have a minimum of one station, typically in the dam forebay. In larger reservoirs, additional stations are added in the mid-reservoir and upper reservoir (transition area) as needed. Tributary embayment stations are established in larger embayments and/or those with larger inflows, with selection of embayments distributed throughout the range of human disturbance. River stations are located along the length of the flowing reach to the extent that resources allow, with stations partitioned according to tributaries and point/nonpoint sources.

Under the RRMP, ADEM conducts intensive monitoring of river, mainstem reservoir, and tributary embayment stations on a three-year rotating basin schedule to ensure that all major rivers and lakes in the state are sampled once every three years. Monitoring stations are sampled for in-situ parameters and various water chemistry parameters, including nutrients and chlorophyll *a,* monthly, April-October. The goal of this intensive monitoring approach is two-fold:

1. to provide a comprehensive determination of water quality throughout the algal growing season for each waterbody sampled, and

2. to conduct compliance monitoring of reservoirs with established waterbody-specific nutrient criteria on a repeating, regular basis.

3.1.3 Rivers and Streams Monitoring Program

ADEM's Rivers and Streams Monitoring Program (RSMP) assesses the chemical, physical, and biological conditions of non-navigable, flowing waters in the State. It is a watershed-based monitoring program designed to provide data that links watershed condition and assessment results. In 2004, ADEM developed a Watershed Disturbance Gradient (WDG), based on land use and other factors, to classify each potential monitoring location by the level of disturbance within its watershed. The RSMP uses this information to plan biological monitoring activities along a full disturbance gradient to produce a dataset representing both the full stressor gradient and the full biological condition gradient.

The RSMP incorporates a combination of fixed, targeted, and probabilistic monitoring sites to meet State monitoring goals and objectives. A primary goal of this monitoring design was to provide stressor-response data that can be used to develop criteria and indicators. The objectives of the RSMP are to provide data to:

- Develop or revise WQS;
- Identify impaired waters;
- Identify the causes and sources of impairment;
- Identify and protect high-quality waters;
- Evaluate trends in water quality;
- Evaluate program effectiveness;
- Support management decisions; and
- Estimate overall water quality.

3.1.4 Wetland Monitoring Program

In August of 2011, ADEM outlined its Wetland Monitoring Program Plan: 2011-2015. The objective of the plan was to develop a five-year Wetlands Monitoring Strategy that can be included in Alabama's overall surface water monitoring strategy. Based on EPA's 2008 "Core Elements of an Effective State or Tribal Wetland Program Framework" ("Core Elements Framework") document, the activities outlined in the plan were structured to develop a Wetlands Monitoring Program (WMP) that will meet ADEM's monitoring needs outlined in the 2015-2019 Monitoring Strategy. The WMP Plan was updated in 2015 to reflect ADEM's current focus on connected wetlands in high-quality wadeable stream and river watersheds.

3.1.5 Fish Tissue Monitoring Program

ADEM's Fish Tissue Monitoring Program was initiated in 1991 and is a cooperative effort between ADEM, the Alabama Department of Public Health (ADPH), the Alabama Department of Conservation and Natural Resources (ADCNR) and the Tennessee Valley Authority (TVA). Utilizing ADEM's watershed management approach (five-year basin rotation), the program is designed to provide a Statewide screening of bioaccumulative contaminants in fish tissue, and to provide the ADPH with data needed for determination of potential risk to those who consume fish from Alabama waters.

ADEM's annual fish tissue monitoring is multi-faceted and directed toward accomplishing three objectives:

- sampling locations throughout the focus basin;
- repetitive sampling of sites where the ADPH has determined that EPA/FDA action levels have been exceeded; and,
- sampling remaining areas across Alabama where fish have not been collected for the FTMP.

The program also maintains the capacity to sample sites outside the focus basin as needed or when requested by cooperating agencies.

Following completion of analyses, ADEM compiles all data and provides it to the ADPH for the issuance or modification of fish consumption advisories. Following the ADPH analysis, ADEM distributes all data to cooperating agencies and produces an annual report to provide analytical results to the public.

3.1.6 Compliance Monitoring Program

FOD's Compliance Monitoring Program includes compliance sampling inspections (CSIs). During a CSI, representative samples required by a facility's NPDES permit are obtained. Chemical and bacteriological analyses are performed, and the results are forwarded to the appropriate ADEM permitting entity, where they are used to verify the accuracy of the permittee's self-monitoring program and reports, determine compliance with discharge limitations, determine the quantity and quality of effluents, and provide evidence for enforcement proceedings where appropriate.

For selected municipal facilities, FOD performs inspections/audits on their sanitary sewer overflow (SSO) program to assess the effectiveness of their monitoring, documentation, and reporting procedures.

FOD also conducts Compliance Biomonitoring Inspections (CBIs), which include the collection of effluent samples to evaluate the biological effect of a permittee's effluent on test organisms (i.e., bioassays).

3.2 Alabama's Point Source Control Program

Discharges that enter surface waters at well-defined points are referred to as point sources. These discharges usually enter the surface waters through a pipe or ditch and include municipal (city and county) and private/semi-private wastewater treatment systems; industrial wastewater treatment systems and/or stormwater; municipal separate storm sewer systems (MS4s); mining wastewater treatment systems and/or stormwater; and construction stormwater. ADEM's rules and procedures that enable the State to administer the NPDES program are in Chapter 335-6-6 of the ADEM Admin. Code.

Point source dischargers covered under the NPDES program must operate under a permit issued by the State. Each discharge is determined to have either major or minor status. The status of a municipal discharge is determined by the design flow. For a municipal discharger, a design flow of greater than or equal to 1 million gallons per day (1 MGD) is classified as major. The status of an industrial discharger is determined by flow amount, characteristics of wastewater, type of industrial activity, and the characteristics and classification of the receiving waters. The status of a mining discharger is determined by the level of historical compliance.

NPDES permit limits are generally set by federal guidelines to protect the stream during low-flow conditions. If the permit limits are seasonal, the summer limits are typically determined using the annual $7Q_{10}$[2] flow, and the winter limits are determined using the winter $7Q_{10}$ flow (or alternately, the $7Q_2$[3] flow) of the receiving waters (where appropriate) as addressed in Chapters 335-6-6 and 335-6-10 of the ADEM Admin. Code.

Self-monitoring is the major method of collecting data on the permitted dischargers. ADEM requires permitted facilities to monitor the pollutants for which they have limits and submit the data to ADEM. ADEM also collects point source effluent information during inspections and special studies.

3.3 Nonpoint Source Management Programs

Nonpoint source pollution, also known as stormwater runoff, is a primary contributor to water quality degradation in Alabama waterways. ADEM's efforts to address nonpoint sources in Alabama include education/outreach regarding the implementation of on-the-ground BMPs that are designed to improve water quality while also maintaining the economic and environmental significance of the State's natural resources.

ADEM's NPSMP focuses its resources on not only preventing negative water quality impacts caused by nonpoint source pollution but also on improving water quality in waterways that are identified as being impaired by nonpoint source pollution and not meeting WQS. Through the development of small-scale watershed management plans that contain the nine (9) key elements outlined by the EPA, ADEM can encourage local landowners and local stakeholders to participate in playing an active role in improving water quality.

[2] The minimum 7-day low flow that occurs once every 10 years.

[3] The minimum 7-day low flow that occurs once in 2 years.

The installation of on-the-ground BMPs that achieve pollutant load reductions is one nonpoint source management measure that is implemented using the non-regulatory, or voluntary, approach. In addition, education/outreach, technology transfer, water quality monitoring, habitat assessment, and resource assistance are all utilized to support a balanced, statewide effort to address nonpoint source pollution in Alabama.

As Alabama's population continues to grow, societal demands on limited water resources also continue to increase. A primary focus in Alabama is maintaining local, "grass-roots" watershed partnerships and giving local citizens a vested interest in protecting water quality at the local level. Through the work that is done with groups like the Alabama Watershed Stewards and Alabama Water Watch, as well as utilizing financial and technical resources from other resource agencies, ADEM can support a holistic approach to watershed protection that includes planning, development, implementation, assessment, and restoration strategies. These partnerships are indispensable in providing input and are critical to nonpoint source pollution abatement program success.

ADEM maintains an Alabama Nonpoint Source Management document that provides extensive details and information on efforts to address the negative water quality impacts that are caused by nonpoint source pollution. This plan highlights efforts to work with local stakeholders and address nonpoint source pollution in specific categories such as agriculture, silviculture, construction, urban development, resource extraction, land disposal, and hydrologic modification. This document is available on ADEM's website at adem.alabama.gov/programs/water/nps/npsMgmt.cnt.