2012 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT

Water Quality in Alabama
2010-2012

2012 Alabama Integrated Water Quality Monitoring and Assessment Report

April 1, 2012

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This report was prepared by the Alabama Department of Environmental Management as required by Section 305(b) (the Clean Water Act). Comments or questions related to the content of the report should be addressed to:

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Executive Summary

Alabama's 2012 Integrated Water Quality Assessment and Monitoring Report combines information about Alabama's surface and ground water resource management programs with a comprehensive listing of State waters consistent with EPA's 2006 Integrated Reporting Guidance (which is supplemented by EPA's 2008 and 2010 IR memos). The guidance requests that states report on the condition of all surface waters by categorizing rivers, streams, lakes, estuaries, and coastal waters according to their designated uses and the degree to which water quality is supporting those uses. State waters have been segmented using the high resolution National Hydrography Dataset (NHD) and assigned a unique identification number called an assessment unit ID (AU-ID). The AU-IDs are based on the twelve-digit Watershed Boundary Dataset (WBD). Waterbody data and information are evaluated using the use support assessment methodology and the waterbody is assigned to one of the following categories.

Category1

Waters that are attaining all applicable water quality standards.

Category 2

Waters for which readily available data, which meets the State's requirements as described in Section 4.9, supports a determination that some water quality standards are met and there is insufficient data to determine if remaining water quality standards are met. Attainment status of the remaining standards is unknown because data is insufficient. Waters for which the minimum data requirements (as described later) have not been met will be placed in Category 2.

Category 2A

For these waters available data does not satisfy minimum data requirements but there is a high potential for use impairment based on the limited data. These waters will be given a higher priority for additional data collection.

Category 2B

For these waters available data does not satisfy minimum data requirements but there is a low potential for use impairment based on the limited data. These waters will be included in future basin monitoring rotations as resources allow.

Category 3

Waters for which there is no data or information to determine if any applicable water quality standard is attained or impaired. These waters will be considered unassessed.

Category 4

Waters in which one or more applicable water quality standards are not met but establishment of a TMDL is not required.

Category 4A

Waters for which all TMDLs needed to result in attainment of all applicable WQSs have been approved or established by EPA.

Category 4B

Waters for which other required control measures are expected to attain applicable water quality standards in a reasonable period of time. Adequate documentation is required to indicate that the proposed control mechanisms will address all major pollutant sources and should result in the issuance of more stringent effluent limitations required by either Federal, State, or local authority or the implementation of "other pollution control requirements (e.g., best management practices) required by local, state, or federal authority" that are stringent enough to implement applicable water quality standards. Waters will be evaluated on a case by case basis to determine if the proposed control measures or activities under another program can be expected to address the cause of use impairment within a reasonable time period. A reasonable time period may vary depending on the degree of technical difficulty or extent of the modifications to existing measures needed to achieve water quality standards. EPA's 2006 assessment and listing guidance offers additional clarification of what might be expected of waters placed in Category 4b.

Category 4C

Waters in which the impairment is not caused by a pollutant. This would include waters which are impaired due to natural causes or pollution. A pollutant is defined in Section 502(6) of the Clean Water Act (CWA) as "spoil, solid waste, incinerator residue, sewerage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water." Pollution is defined as "the man-made or man-induced alteration of the chemical, physical, or radiological integrity of a waterbody." Invasive plants and animal species are considered pollution.

Category 5

Waters in which a pollutant has caused or is suspected of causing impairment. If the impairment is caused by an identified pollutant the water should be placed in Category 5. All "readily available data and information" will be used to determine when a water should be placed in Category 5. Waters in this category comprise the State's list of impaired waters or §303(d) list. When the information used to assess the waterbody consist primarily of observed conditions, (limited water quality data, water quality data older than six years, or estimated impacts from observed or suspected activities), the assessment is generally referred to as an evaluated assessment (Category 2). Evaluated assessments usually require the use of some degree of professional judgment by the person making the assessment and these assessments are not considered sufficient to place waters in or to remove waters from the impaired category (Category 5) or the fully supporting category (Category 1).

Monitored assessments (Categories 1 and 5) are based on readily available chemical, physical, and/or biological data collected during the previous six years, using commonly accepted and well-documented methods. Readily available data are data that have been collected or assembled by the Department or other groups or agencies and are available to the public. Data older than six years old may be used on a case-by-case basis when assessing waters that are not currently included in Category 1 or Category 5. (For example, older data could be used if conditions, such as land use, have not changed.) The 2012 §303(d) list was developed by using data collected by the Department and various other sources. The data assessed to categorize Alabama's waters ranged October 1 2005 thru September 30, 2011. For example, the Department collected over 300,000 samples at 1138 stations during an estimated 14,000 site visits. 0 samples at 1138 nd rt to demonstrate trends in water quality.s in an ongoing effort to demMuch of the remainder of this document will pertain to the use of monitoring data to make use support determinations.

Categorizing Alabama's surface waters represents a significant effort. With approximately 47,072 miles of perennial rivers and streams and approximately 30,170 miles of intermittent streams, this process will be ongoing and will require substantial resources and time. Table ES-3 shows the River Basin Rotation schedule from 2011-2015.

Table ES-1 River Basins

Alabama River Basin
Black Warrior River Basin
Cahaba River Basin
Chattahoochee River Basin
Chipola River Basin
Choctawhatchee River Basin
Coosa River Basin
Escatawpa River Basin
Lower Tombigbee River Basin
Mobile River Basin
Perdido - Escambia River Basin
Tallapoosa River Basin
Tennessee River Basin
Upper Tombigbee River Basin

Alabama's Draft 2012 Water Quality Monitoring Strategy describes the Department's comprehensive strategy for monitoring Alabama's vast surface water resources and has resulted in a significant increase in data available for assessing the designated use support of surface waters in Alabama. The five part list included in the appendix of this report represents the categorization based on information currently available. As new information becomes available the list will be updated and placed on the Department's web site to give the public the most complete and accurate picture of the water quality status of Alabama's surface water resources.

A summary of Alabama's Active Trend Stations (Ambient Monitoring) can be found in the Appendix of this report. This information was not found in previous integrated reports, but will be included in future reports in an ongoing effort to demonstrate trends in water quality. Ambient Trend sites are sampled to identify long-term trends in water quality statewide and to provide data for the development of Total Maximum Daily Loads (TMDLs) and water quality criteria. Sampling frequency presently occurs 3 times a year during the months of June, August, and October at most trend stations and are sampled statewide annually. Selected sites are sampled more frequently. Sampling frequency and parameters collected at these sites vary from other station types. Currently, one-hundred and three trend stations are sampled statewide annually.

Table ES-2 Atlas

Topics	Value
State population	4,447,100
State surface area	51,609
Number of river basins	14
Total miles of rivers and streams	77,274
Miles of perennial rivers/streams	47,072
Miles of intermittent (nonperennial) streams	30,170
Miles of ditches and canals	32
Border miles of shared rivers/streams	210
Number of lakes/reservoirs/ponds	7,694
Number of significant publicly-owned lakes/reservoirs/ponds	43
Acres of lakes/reservoirs/ponds	490,472
Acres of significant publicly-owned lakes/reservoirs/ponds	425,748
Square miles of estuaries/harbors/ponds	610
Miles of ocean coast (includes bays and inlets)	337
Acres of freshwater wetlands*	3,600,000
Acres of tidal wetlands*	27,600

*historic National Wetland Inventory estimates

In 2010 Alabama had a population 4,779,736, a 7.5% increase in population from the 2010 census, and covers a surface area of 51,609 square miles. The cities of Birmingham, Huntsville, Montgomery, Mobile, and their surrounding suburbs contain approximately half of Alabama's population. The state is comprised of sixty-seven (67) counties. A large percentage of Alabama's industries are related to forestry, agriculture, and mining. The State is divided into fourteen (14) major river basins (Table ES-1) containing 77,272 miles of rivers and streams (Table ES-2). Table ES-4 shows Size of Surface Waters Assigned to Reporting Categories. Table ES-5 shows the size of Rivers/Streams, Lakes/Reservoirs, and Esturary/Ocean impaired by Causes.

Alabama has ponds, lakes, and reservoirs in excess of 490,472 acres. Freshwater wetlands occupy an estimated 3,600,000 acres. Alabama's coastal wetlands are estimated at 27,600 acres (National Wetland Inventory estimates). Coastal Alabama also contains an estimated 610 square miles of estuaries and a coastal shoreline that is 337 miles long (includes Mobile Bay and island shorelines).

Assessing the State's abundant surface water resources requires a major effort and sizeable resources. These watersheds, ranging in size from approximately 10 square miles up to more than 100 square miles, were randomly selected to incorporate a range of human disturbances. In addition to the probabilistic watershed monitoring, the Department continued its more traditional monitoring of §303(d) listed streams, ambient trend monitoring, and the rivers and reservoirs monitoring programs. This monitoring strategy continues to be used to gather the data necessary to assess the state's surface waters.

Alabama's surface water is of generally high quality. An indication of full support of rivers and streams can be determined by analyzing Alabama's Category 4 and 5 waters. The total mileage for rivers and streams not supporting designated uses is 3,164.20 miles. This total is 4% of the 77,272 total rivers and streams miles. Approximately 71% of Alabama's publicly accessible lakes and reservoirs are fully supporting their designated uses. Much of the non-support acreage is related to historic as well as recent PCB contamination and eutrophic conditions in the Coosa River Basin reservoirs. Naturally higher nutrients in the soils of the Coosa River Basin, to a large extent, dictate its reservoirs' eutrophic conditions. In an effort to manage eutrophic conditions more directly, the Department has developed nutrient criteria for 29 reservoirs (Weiss Lake, Lake Harris, West Point Lake, Walter F. George Lake, Lake Martin, Yates Lake, Thurlow Lake, Lake Guntersville, Wheeler Lake, Wilson Lake, Pickwick Lake, Little Bear Creek Lake, Cedar Creek Lake, Claiborne Lake, Dannelly Lake, Bankhead Lake, Holt Lake, Lewis Smith Lake, Oliver Lake, Lake Tuscaloosa, Warrior Lake, Lake Harding, Gantt Lake, Point A Lake, Inland Lake, Jackson Lake, Coffeeville Lake, Demopolis Lake, and Gainesville Lake).

Alabama's estuaries enjoy overall good health, but pathogens and mercury are pollutants of concern in many coastal watersheds. The Department's coastal water quality monitoring program has participated in several monitoring initiatives with partners such as the Mobile Bay National Estuary Program, the National Oceanic and Atmospheric Administration, the Gulf of Mexico Alliance, the U.S. Environmental Protection Agency, and other local groups and institutions to provide comprehensive assessments of Alabama's coastal waters.

Alabama has initiated a Wetlands Identification Program in coastal Alabama (Baldwin County) and has completed an extensive study of the possible wetland restoration locations for 5 areas of the State (Alabama River Watershed, Lower Black Warrior River Watershed, Sipsey River Watershed, and Baldwin and Mobile Counties). Statewide wetland estimates derived from EPA landuse data are also included in the wetlands section. ADEM and the US Army Corps of Engineers continue to partner in the management and mitigation of impacts to wetlands in the water quality certification processes of Section 401 and 404 of the Clean Water Act. Alabama has one of the best preserved major river deltas in the U.S., that being the Mobile-Tensaw River Delta. To preserve such a valuable national resource the Alabama Department of Natural Resources and Conservation - State Lands Division has purchased a very large percentage of the Delta through the US Department of Interior's North American Wetlands Conservation Act (NAWCA) funding. The coastal section contains a map of wetland tracts purchased through NAWCA. Wetlands have also been purchased at Weeks Bay, a National Estuarine Reserve.

Alabama's ground water continues to be managed effectively through efforts under the Underground Storage Tank (UST) Program, the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Underground Injection Control (UIC) Program, as well as the Wellhead Protection Program (WHPP). The lack of chronic detections of pollutants in public water

Table ES-3 ADEM's current Basin Rotation Schedule for Surface Water Quality Monitoring

River Basin Group	Year to be Monitored
Escatawpa / Mobile / Lower Tombigbee / Upper Tombigbee	2011
Black Warrior / Cahaba	2012
Chattahoochee / Chipola / Choctawhatchee / Perdido-Escambia	2013
Tennessee	2014
Alabama / Coosa / Tallapoosa	2015

supply groundwater sources is a good indication of Alabama's high ground water quality and effective management of the resource.

Approximately 850,000,000 gallons of drinking water are taken from ground and surface sources each day, provided with treatment, and made available to approximately four million citizens in Alabama. Six hundred and seven (607) community systems, seventy-two (72) transient non-community systems and thirty-two (32) non-transient non-community systems are permitted by the ADEM. Approximately sixty-five (65) percent of the water used is obtained from surface sources such as lakes, rivers, and streams and provided with full treatment to include coagulation, sedimentation, filtration, and disinfection. One hundred (100) percent of these systems meet turbidity requirements, ninety-seven (97) percent meet trihalomethane standards, one hundred (100) percent meet haloacetic acid standards and one hundred (100) percent meet inorganic and radiological drinking water standards.

Despite significant progress, much work remains to be done regarding water quality management with the 303(d) process and implementation of Total Maximum Daily Loads (TMDLs) in Alabama and the recent management efforts of the Source Water Protection Program and the Wellhead Protection Program. Management efforts continue in the UST, RCRA, CERCLA, and UIC Programs and through National Pollutant Discharge Elimination System (NPDES) permitting. Continuing watershed coordination efforts in Alabama are vital to the effective use of limited resources for surface and ground water management. Implementation of controls for nonpoint source runoff is an integral component of watershed management in Alabama. Water quality monitoring will be crucial in demonstrating the effectiveness of these implementation activities.

Table ES-4 Size of Surface Waters Assigned to Reporting Categories

Waterbody Type	Category								Total Assessed
	1	2A	2B	3	4A	4B	4C	5	
River/Stream (miles)	5,008.21	1,155.66	2,482.04	3,384.19	1,029.66	67.61	22.77	2,044.16	11,810.11
Reservoir/Lake (acres)	306,445.83	1,128.44	2,597.57	1,673.18	43,141.36	-	-	80,568.98	433,882.18
Estuary/Ocean (square	92.17	-	18.20	-	8.72	-	-	655.92	766.29

*category 3 not included in total assessed waters

Table ES-5 Size of Rivers/Streams, Lakes/Reservoirs, and Estuary/Ocean impaired by Causes

Cause	Category 5			Category 4			Totals		
	River/ Stream (miles)	Reservoir/ Lake (acres)	Ocean/ Estuary (square miles)	River/Stream (miles)	Reservoir/ Lake (acres)	Ocean/ Estuary (square miles)	River/ Stream (miles)	Reservoir/ Lake (acres)	Ocean/ Estuary (square miles)
FLOW ALTERATIONS							**3.15**		
Other flow regime alterations				3.15			3.15		
METALS							**1,211.46**	**41,180.69**	**294.74**
Aluminum	25.13			48.22			73.35		
Arsenic	19.56						19.56		
Chromium	14.65						14.65		
Copper	1.54			10.19			11.73		
Cyanide	12.43			44.57			57.00		
Iron	26.71			48.22			74.93		
Lead	35.58			3.30			38.88		
Mercury	859.70	41,180.69	201.02				859.70	41,180.69	201.02
Thallium			93.72						93.72
Zinc	0.22			61.44			61.66		
MINERALIZATION							**154.21**		
Total dissolved solids	34.31						34.31		
Turbidity	32.02			87.88			119.90		
NUTRIENTS							**1,118.35**	**85,451.86**	
Ammonia	3.44			270.60	577.25		274.04	577.25	
Nitrogen				192.65	2,291.85		192.65	2,291.85	
Phosphorus	274.67	7,981.21		376.99	74,601.55		651.66	82,582.76	
OXYGEN DEPLETION							**1,474.56**	**10,888.55**	
BOD, carbonaceous	154.95	3,669.21		691.13	3,022.88		846.08	6,692.09	
BOD, nitrogenous	154.95	3,669.21		453.91	527.25		608.86	4,196.46	
Dissolved oxygen				19.62			19.62		
PATHOGENS							**943.74**		**463.62**
Enterococcus bacteria	36.39		454.90	23.93		8.72	60.32		463.62
E. coli	167.00			716.42			883.42		
PESTICIDES							**191.36**	**85.73**	
Atrazine				23.42			23.42		
Chlorpyrifos				23.42			23.42		
DDT		85.73		18.77			18.77	85.73	
Dieldrin	24.29						24.29		
Endosulfan				50.73			50.73		
Methyl Parathion				50.73			50.73		
pH							**53.78**	**1,569.21**	
pH	36.25	1,569.21		17.53			53.78	1,569.21	
SEDIMENTATION							**1,224.25**	**2,840.48**	
Sedimentation/Siltation	875.83			348.42	2,840.48		1,224.25	2,840.48	
TOXIC INORGANICS							**0.22**		
Chlorides	0.22						0.22		
TOXIC ORGANICS							**86.79**	**57,715.13**	
Benzo(a)pyrene (PAHs)				44.57			44.57		
Polychlorinated biphenyls (PCBs)	42.22	32,196.15			25,518.98		42.22	57,715.13	
UNKNOWN							**20.34**		
Unknown toxicity	20.34						20.34		

List of Acronyms

A&I	Agriculture and Industry water supply use classification
AAES	Alabama Agricultural Experiment Station
ACES	Alabama Cooperative Extension Service
ACT/ACF	Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee-Flint River Basins study
ACWI	Alabama Coastal Waters Initiative
ADAI	Alabama Department of Agriculture and Industries
ADCNR	Alabama Department of Conservation and Natural Resources
ADCNR-MRD	Alabama Department of Conservation and Natural Resources-Marine Resources Division
ADE	Alabama Department of Education
ADEM	Alabama Department of Environmental Management
ADPH	Alabama Department of Public Health
AEEI	Alabama Environmental Education Initiative
AEMA	Alabama Emergency Management Agency
AEMC	Alabama Environmental Management Commission
AFC	Alabama Forestry Commission
AGPT	Algal Growth Potential Test
ALAMAP	Alabama Monitoring and Assessment Program
ALUS	Aquatic Life Use Assessment
ANHP	Alabama Natural Heritage Program
ASCS	Agricultural Stabilization & Conservation Service
ASMC	Alabama Surface Mining Commission
ASSESS	ADEM's Strategy for Sampling Environmental indicators of Surface water Quality Status
ASWCC	Alabama Soil and Water Conservation Committee
AUC	Assessment Unit Code
AWPCA	Alabama Water Pollution Control Act
B/H	Biological/Habitat data
BMP	Best Management Practices
CBEP	Community-Based Environmental Protection
CERS	Center for Environmental Research and Service at Troy State University
CLP	Clean Lakes Program
CNPCP	Coastal Nonpoint Pollution Control Program
CPYRWMA	Choctawhatchee-Pea and Yellow Rivers Watershed Management Authority
CSO	Combined Sewer Overflow
CWA	Clean Water Act
CWP	Clean Water Partnership
DA	Drainage Area
DIZ	Discharge Information Zone for NPDES Coastal Permits
DO	Dissolved Oxygen

List of Acronyms

EMAP	Environmental Monitoring Assessment Program
EPA	U.S. Environmental Protection Agency
ERL-A	EPA's Environmental Research Laboratory at Athens, GA
ERL-C	EPA's Environmental Research Laboratory at Corvallis, OR
F&W	Fish and Wildlife use classification
FDA	U.S. Food and Drug Administration
FDER	Florida Department of Environmental Regulation
GDNR	Georgia Department of Natural Resources
GIS	Geographical Information System
GPS	Global Positioning System
GSA	Geological Survey of Alabama
HDG	Human Disturbance Gradient
HUC	Hydrologic Unit Code
IO	Industrial Operations
LDI	Landscape Development Index
MBP	Multihabitat Bioassessment Protocol
MCL	Maximum Contaminant Level
MESC	Marine Environmental Sciences Consortium of Dauphin Island, AL
MGD	Million Gallons per Day
MOPC	Mississippi Office of Pollution Control
MOU	Memorandum of Understanding
MPSs	Hester-Dendy Multiplate Samplers
MRD	Marine Resources Division of the ADCNR
MU	Monitoring Unit
NEP	National Estuary Program
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	Superfund National Priority Listed Sites
NRCS	Natural Resource Conservation Service of the USDA
NWI	National Wetland Inventory of the USFWS
OAW	Outstanding Alabama Water use classification
OEO	Office of Education and Outreach
ONRW	Outstanding National Resource Water designation
P/C	Physical/Chemical data
PACE	Pollution Abatement Costs and Expenditures
PCB	Polychlorinated Biphenyls

List of Acronyms

PFOA	Perfluorooctanoic Acid
PWS	Public Water Supply use classification
RBP	Rapid Bioassessment Protocol
RC&D	Resource Conservation and Development Councils of the USDA
RM	River Mile
RPS	Rapid Periphyton Surveys
RSMP	Rivers and Streams Monitoring Program
RWC	Receiving Water Concentration
S	Swimming and Other Whole Body Water contact Sports use classification
SH	Shellfish Harvesting use classification
SM/LG	Sand Mountain/Lake Guntersville watershed study
SMZ	Streamside Management Zone
SOC	Synthetic Organic Compound
SOD/NR	Sediment Oxygen Demand/Nutrient Release studies
SOP	Standard Operating Procedures
SRF	State Revolving Fund of Alabama
SSO	Sanitary Sewer Overflow
STP	Sewage Treatment Plant
SWCD	Soil and Water Conservation District
SWCP	State Wetland Conservation Plan
TAL	Treasured Alabama Lake
TMDL	Total Maximum Daily Loads
TOT	Time-of-travel studies
TRE	Toxicity Reduction Evaluation
TSI	Trophic State Index
UAA	Use Attainability Analysis
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USCG	United States Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service of the Department of the Interior
USGS	U.S. Geological Survey
VOC	Volatile Organic Compound
WCAMI	Wetlands Conservation and Management Initiative
WLA	Wasteload Allocation
WQB	Water Quality Branch
WWTP	Wastewater Treatment Plant

Chapter 1 Water Quality Standards

1.1 Water Quality Standards Program

For information pertaining to Water Quality Standards, contact Jennifer Haslbauer in ADEM's Montgomery Office at (334) 274-4250 or jhaslbauer@adem.state.al.us.

1.2 Water Quality Rule Changes

Changes made to previous **Chapter 335-6-10 Water Quality Criteria**:

- Changed bacterial indicator organisms and associated criteria for non-coastal waters from fecal coliform to E. coli. (Date: January 19, 2010, Section: 335-6-10-.09)

- Update reference to National Shellfish Sanitation Program Model Ordinance, 1999, Chapter IV, to National Shellfish Sanitation Program (NSSP) Guide for the Control of Molluscan Shellfish: 2007 Revision. (Date: January 18, 2011, Section: 335-6-10-.09)

- Amended the sequence of the river basins and added numeric nutrient criteria in the form of growing season mean chlorophyll *a* for eight reservoirs. (Date: January 18, 2011, Section 335-6-10-.11)

- Deleted the embodiment of forms 311, 312, and 313. (Date: January 18, 2011, Section: 335-6-10-.12)

- Add a special designation to be called Treasured Alabama Lake. (Date: May 23, 2011, Section: 335-6-10-.10)

Changes made to previous **Chapter 335-6-11 Water Use Classifications for Interstate and Intrastate Waters:**

- Upgraded Hurtsboro Creek within the Chattahoochee River Basin from Agricultural and Industrial Water Supply (A&I) to Fish and Wildlife (F&W). (Date: January 19, 2010, Section 335-6-11-.02(3))
- Added Outstanding Alabama Water (OAW) to Magnolia River within the Mobile River-Mobile Bay Basin. (Date: January 19, 2010, Section 335-6-11-.02(9).

- Changed the location of Little River Lake from Valley Creek State Park to Little River State Forest in Monroe County within the Alabama River Basin. (Date: January 18, 2011, Section 335-6-11-.02)

- Added Swimming and Other Whole Body Water-Contact Sports (S) use classification to portions of Choctawhatchee River, East Fork Choctawhatchee River, and West Fork Choctawhatchee River in the Choctawhatchee River Basin, and added Public Water Supply (PWS) use classification to Tuscumbia Spring in the Tennessee River Basin. (Date: January 18, 2011, Section 335-6-11-.02)

- Added Treasured Alabama Lake special designation to Lake Martin. (Date: May 23, 2011, Section: 335-6-11-.02)

- Added Outstanding Alabama Water use classification to a portion of the Tallapoosa River in the Tallapoosa River Basin. (Date: May 23, 2011, Section 335-6-11-.02)

1.3 Conceptual Approach to Nutrient Criteria Development

In developing nutrient criteria, the Department's objective is to determine nutrient levels that are protective of the beneficial uses designated for each reservoir. Keeping in mind that these reservoirs serve a variety of uses, including swimming and recreation, sport-fishing, and public water supply, while also supporting a wide diversity of aquatic life, nutrient criteria are targeted that support the designated uses and are protective of aquatic communities. Thus, the Department's rationale is to establish nutrient criteria consistent with the "fishable/swimmable" goal of the Clean Water Act.

Located within 14 major river basins and 25 different sub-ecoregions, Alabama's surface waters represent some of the most biologically diverse aquatic ecosystems in the United States. Because of the large diversity in geographic and climatic conditions from one region to another, as well as the significant variability in dam operations between reservoirs, the Department used best professional judgment to develop nutrient criteria on a lake-specific basis rather than on a more aggregate basis such as an ecoregional approach. The lake-specific approach captures the large variability inherent in man-made reservoirs, where chlorophyll a concentrations are typically affected by such factors as reservoir depth, reservoir retention time, and scheduling of power generation. Figure 1-1 and Figure 1-2 depicts Alabama's General Soils and Ecoregions respectively.

During the criteria development process, historical data are studied to provide an overall perspective of the condition of each reservoir. This information is analyzed to determine trends in trophic conditions, the degree to which reservoir conditions remained stable over time, and whether any impairment has occurred due to nutrient over-enrichment. From this data, nutrient levels (expressed as seasonal means of chlorophyll a concentrations) are targeted that correlate with reservoir conditions that support the designated beneficial uses. The historical data depicts the diversity of reservoir conditions in Alabama, from lakes in the Tallapoosa River Basin that are naturally oligotrophic-mesotrophic, such as lakes Martin, Yates and Thurlow, to lakes that tend to be more eutrophic in nature, such as the mainstem reservoirs on the Tennessee and Coosa Rivers.

The Department recognizes that using reference condition analysis to establish nutrient criteria in reservoirs can be limited due to the fact that there is uncertainty regarding what constitutes "natural" conditions in a man-made water body. Therefore, in developing nutrient criteria, the Department has selected to analyze historical ambient data on an individual reservoir basis to determine if each reservoir continues to support its designated uses. If so, the nutrient concentrations that have historically corresponded to that reservoir's use support are evaluated

Figure 1-1 Alabama's General Soils

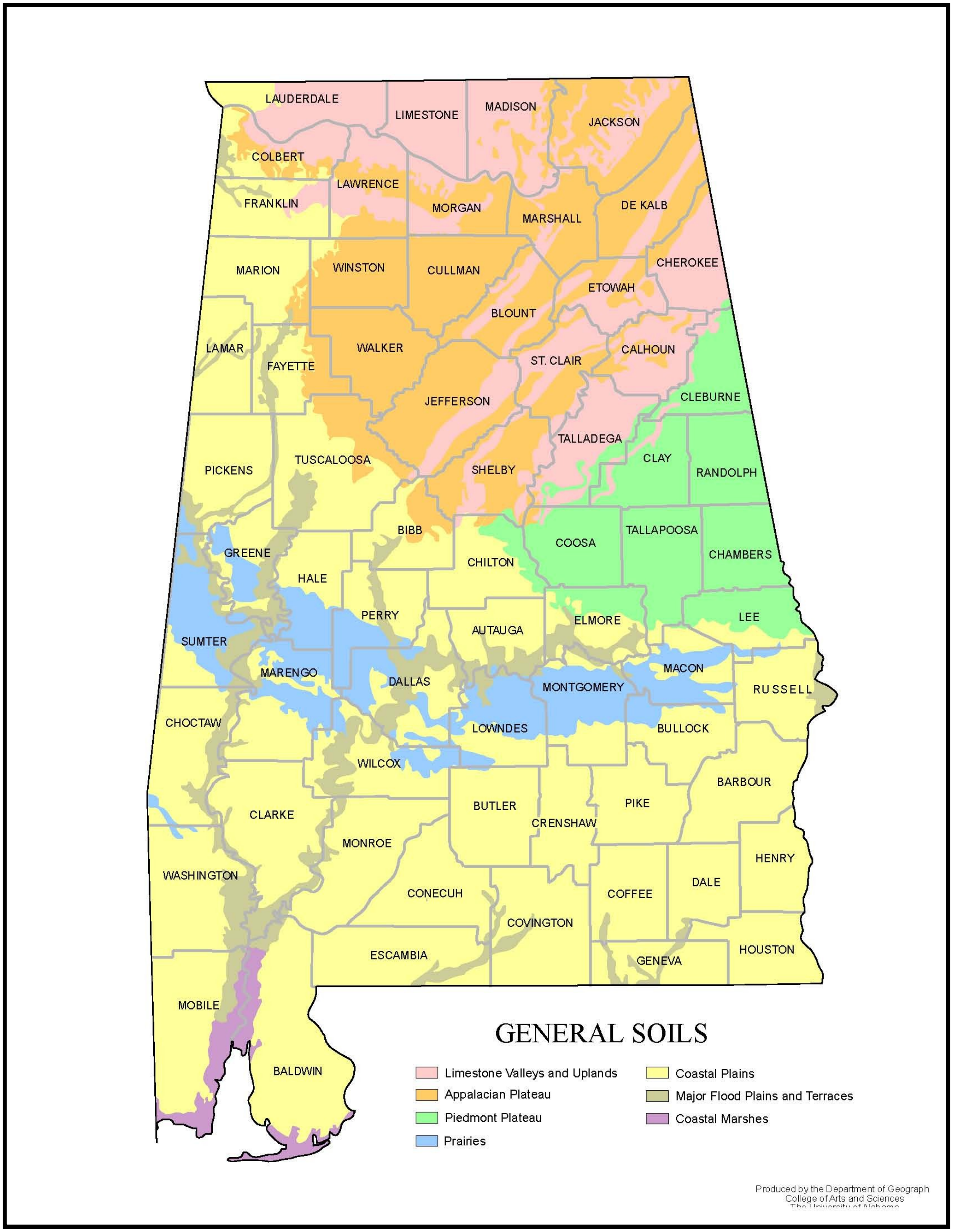
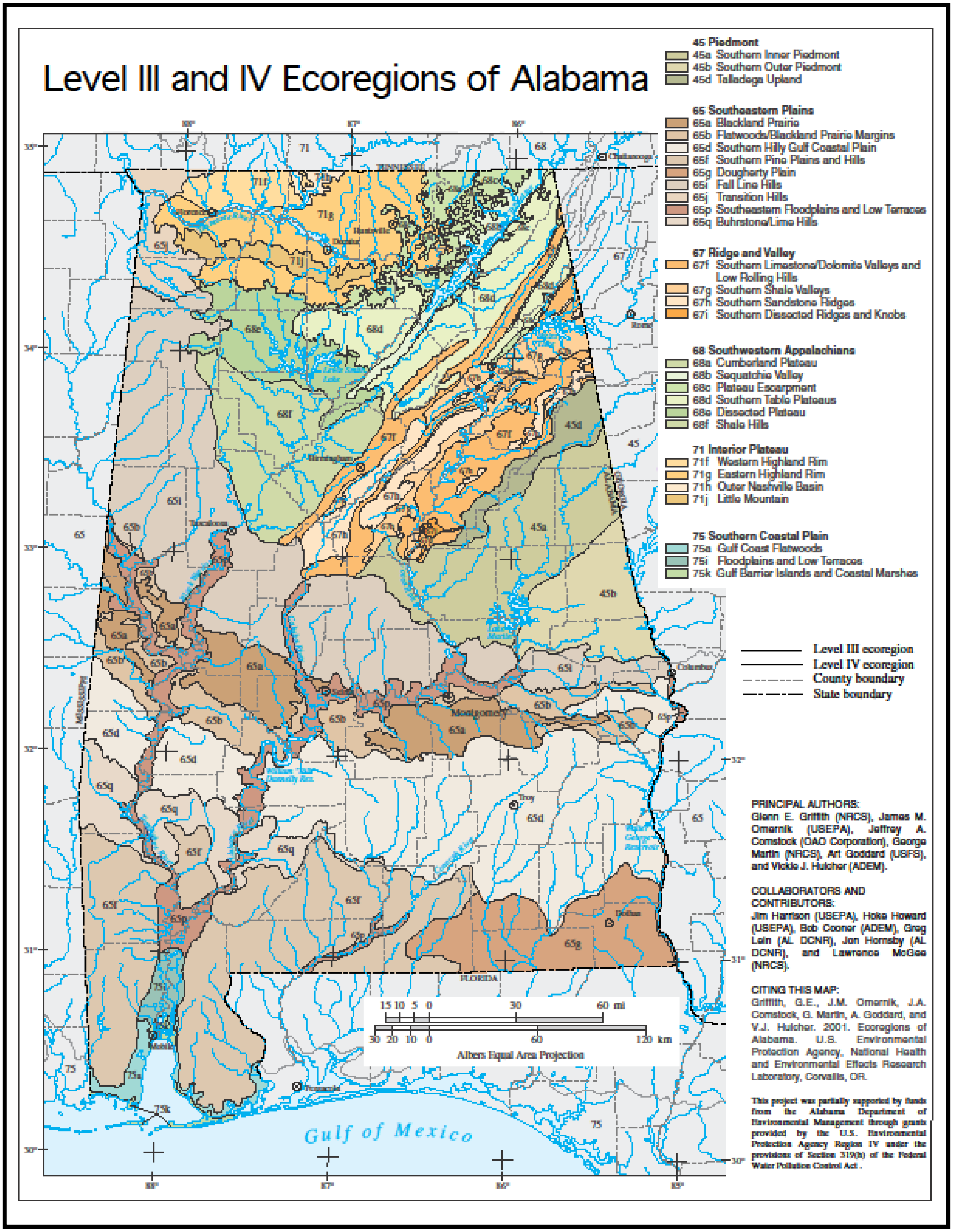


Figure 1-2 Alabama's Ecoregions



to determine a chlorophyll a target specific to that reservoir. This same approach is used regardless of the reservoir's trophic state (i.e. eutrophic, oligotrophic, or mesotrophic). Thus, the intent is that the selected chlorophyll a criteria values are specifically associated with a condition of full use support in each respective reservoir, taking into account the factors unique to various trophic conditions.

Nutrient criteria are developed to support the existing uses that define each reservoir system and protect the aquatic communities that inhabit them. Data are analyzed to determine the ranges of chlorophyll a and total phosphorus concentrations historically occurring in each reservoir. To maintain nutrient levels within the ranges associated with full use-support conditions, best professional judgment is used to derive criteria values that "cap" each reservoir system with a protective chlorophyll a concentration. In establishing chlorophyll a targets, the variability occurring within the growing season was taken into account. The cooler months are generally less productive and lower chlorophyll a values are usually recorded while the warmer months are generally more productive with higher chlorophyll a values typically recorded.

To determine what constitutes healthy conditions in various types of reservoirs and how trophic gradients relate to use attainment, the Department utilizes research conducted by Dr. David Bayne at Auburn University. This research examines how the quality of fisheries correlates to varying trophic conditions in Alabama reservoirs. The study assesses the potential impacts of reverse eutrophication and nutrient reduction on reservoir fisheries and calculates target levels of primary production that provide both quality fishing and satisfactory water clarity for other recreational users, while protecting all aquatic communities. This research ("Compatibility between Water Clarity and Quality Black Bass and Crappie Fisheries in Alabama"; American Fisheries Society Symposium 16:296-305. 1996) provides substantial evidence that fish biomass and sport-fish harvesting are positively correlated to algal production in reservoirs.

The research by Dr. Bayne demonstrates that the size, growth rates, and condition of certain species of sports fish are generally higher in eutrophic than in oligo-mesotrophic reservoirs. This study, along with case studies of reservoirs in other regions, raises the concern that the reversal of eutrophication and improvement in water clarity in some reservoirs can be deleterious to its warm-water sports fisheries by reducing fish production and biomass. The Department, therefore, believes that when establishing nutrient criteria it is vital to set water quality standards that adequately consider all the beneficial uses of the reservoir, fishing and swimming alike. Thus, caution is warranted when regulatory actions can potentially result in an undesirable shift in fish species. If, historically, a reservoir has supported all of its uses, including high-quality fisheries and other aquatic communities, nutrient criteria were targeted to preserve these reservoir conditions.

The typical hydraulic regime and flow characteristics of each reservoir are other key factors considered during criteria development. The relationship between water quality, biomass accumulation, and hydraulic residence time (or retention time), which is the average amount of time required to completely renew a reservoir's water volume, was taken into account when establishing the chlorophyll a criteria. For example, reservoirs associated with "run-of-the-river" dams typically have small hydraulic head, limited storage area and short retention times and are less likely to be susceptible to conditions that can lead to eutrophication or promote

Table 1-1 Nutrient Criteria Implementation Schedule for Alabama Reservoirs

Year	Number of Reservoirs	Major Basin(s)	Name of Reservoirs
2001	4	Chattahoochee, Coosa, Tallapoosa	West Point, W.F. George, Weiss, R.L. Harris
2002	9	Tallapoosa, Tennessee	Martin, Yates, Thurlow, Guntersville, Wheeler, Wilson, Pickwick, Little Bear, Cedar
2004	11	Alabama Black Warrior Chattahoochee Perdido-Escambia	Claiborne, Dannelly Bankhead, Holt, Lewis Smith, Oliver, Tuscaloosa, Warrior Harding Gantt, Point A
2005	5	Black Warrior Perdido-Escambia Lower Tombigbee Upper Tombigbee	Inland Jackson Coffeeville Demopolis, Gainsville
2010	8	Cahaba Coosa Escatawpa Upper Tombigbee	Purdy Jordan, Lay, Logan Martin, Mitchell, Neely Henry Big Creek Aliceville
2012	1	Perdido-Escambia	Frank Jackson
2013	3	Alabama Tennessee	Woodruff Bear Creek, Upper Bear Creek

excessive algal growth. In contrast, reservoirs associated with larger dams, such as storage or hydroelectric dams, are more likely to have longer retention times, providing a greater potential for incoming nutrients to stimulate increased algal production. Increased algal biomass can potentially deplete dissolved oxygen levels within the reservoir through bacterial decomposition and photosynthetic respiration.

A study by Dr. Bayne examined the relationship between reservoir water retention times and phytoplankton algae production on Weiss Lake during the summer of 2001. Dr. Bayne, along with Auburn University professor Dr. Mike Maceina, assessed the potential water quality effects on Weiss Lake of the draft Coosa River water-sharing agreement between Alabama and Georgia. Their study showed that reservoirs with typically short retention times, such as reservoirs on the Coosa River, are more susceptible to hypereutrohic effects and higher chlorophyll a concentrations when retention times are increased even moderately. Historical data shows that higher chlorophyll a concentrations in Weiss Lake have consistently corresponded to longer retention times. Hydrologic models in their study indicated that longer retention times in the reservoir would likely increase phytoplankton algae production and algal biomass accumulation, assuming that other factors remain unchanged. This result is particularly evident during drought periods, such as occurred in 2000, 2006, and 2007.

In addition, the nutrient criteria were developed to reflect downstream transport of nutrients and the processes by which nutrient uptake occurs in streams. Nutrient concentrations generally tend to decrease as they move downstream. This attenuation occurs as nutrients are absorbed by microorganisms and plants (biotic uptake) or as they adsorb onto sediment particles (abiotic uptake) and settle out of the water column. Thus, in developing nutrient criteria, the chlorophyll a targets were set so that along certain stretches of river, each successive reservoir has a lower criteria value as you move downstream. This approach takes into account natural processes that determine nutrient concentrations and is protective of downstream water quality.

1.4 Implementation of Alabama's Antidegradation Policy

On June 25, 2002, the Alabama Environmental Management Commission adopted Rule 335-6-10-.12, Implementation of the Antidegradation Policy. This rule codifies procedures for implementing the Department's antidegradation policy (contained in Rule 335-6-10-.04) which was last amended in 1991 and approved that same year by the U.S. Environmental Protection Agency (EPA), Region 4. In response to a petition from the Legal Environmental Assistance Foundation (LEAF), in 1997 EPA requested that ADEM develop written procedures for implementing the state's antidegradation policy. Final written implementation procedures were submitted to EPA in December 1998 and approved by EPA in August 1999. In November 1999, LEAF sued ADEM alleging that the Department's use of the EPA-approved implementation procedures in the NPDES permitting process was improper because these procedures were, in fact, "rules" that had not been adopted through the formal rulemaking process. The Montgomery Circuit Court found in favor of ADEM; a decision later affirmed by the Court of Civil Appeals.

LEAF then applied for a writ of certiorari to the Alabama Supreme Court, which was granted, and thereafter the Alabama Supreme Court concluded in a decision dated March 1, 2002, that the implementation procedures are "rules" within the context of the Alabama Administrative Procedure Act, reversed the judgment of the Court of Civil Appeals and remanded the case to the lower courts.

As a result of the Supreme Court decision, the Department ceased the review of permit applications for new or expanded discharges of treated wastewater to those waters affected by the Supreme Court decision until April 10, 2002, following adoption by the Alabama Environmental Management Commission of emergency rule (335-6-10-.12-.01ER) establishing implementation procedures. As adopted, the emergency rule procedures incorporate suggestions made by EPA and are essentially equivalent to the written procedures utilized by the Department prior to the Supreme Court decision. The provisions of the permanent rule adopted on June 25, 2002, are the same as those of the emergency rule and, as such, have been determined by EPA to be consistent with the federal requirement for implementation procedures included in EPA's water quality standards regulation. The final implementation procedures rule became effective on August 1, 2002.

The Department's antidegradation policy serves to conserve and protect the waters of Alabama and their beneficial uses and to prevent the deterioration of a water body even when its water quality surpasses the level necessary to meet the fishable and swimmable goals of the Clean Water Act. The antidegradation implementation policy addresses three categories of waters and beneficial uses: High-quality waters that constitute an outstanding national resource (Tier 3 waters);

Waters where the quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife as well as recreation in and on the water (Tier 2 waters); and

Existing instream water uses and the level of water quality necessary to protect the existing uses (Tier 1 waters).

The implementation policy codifies procedures for reviewing applications for new or expanded discharges to waters designated as Tier 2 waters. The two basic components of the implementation policy involve:

The Departments determination, based on the applicant's demonstration, that the proposed discharge is necessary for important economic or social development in the area in which the waters are located; and

An evaluation, by the applicant, of alternatives other than the proposed discharge to Tier 2 water.

The antidegradation implementation procedures comply with federal law and provides ADEM with adequate guidelines for making environmentally and economically sound decisions, industries with the predictability needed to operate and the public with the assurances needed to guarantee clean water.

1.5 Surface Water Use Classification Maps

The following maps depict Outstanding Alabama Waters and Outstanding National Resource Waters. Alabama's classified surface waters are listed in *ADEM Water Division-Water Quality Program-Chapter 335-6-11-Water Use Classifications for Interstate and Intrastate Waters (effective 05/29/2007)*. Table 1-2 shows Surface Water Classifications and Designations. Figures and Tables 1-3 through 1-10 show waters classified as Outstanding Alabama Waters (OAW) and waters with the special designation of Outstanding National Resource Waters (ONRW).

Table 1-2 Surface Water Classifications and Special Designations

Use Classifications	
Outstanding Alabama Water	OAW
Public Water Supply	PWS
Swimming and Other Whole Body and Water Contact Sports	S
Shellfish Harvesting	SH
Fish and Wildlife	F&W
Limited Warmwater Fishery	LWF
Agricultural and Industrial Water Supply	A&I
Special Designations	
Outstanding National Resource Water	ONRW
Treasured Alabama Lake	TAL

Figure 1-3 Wolf Bay and Tributaries

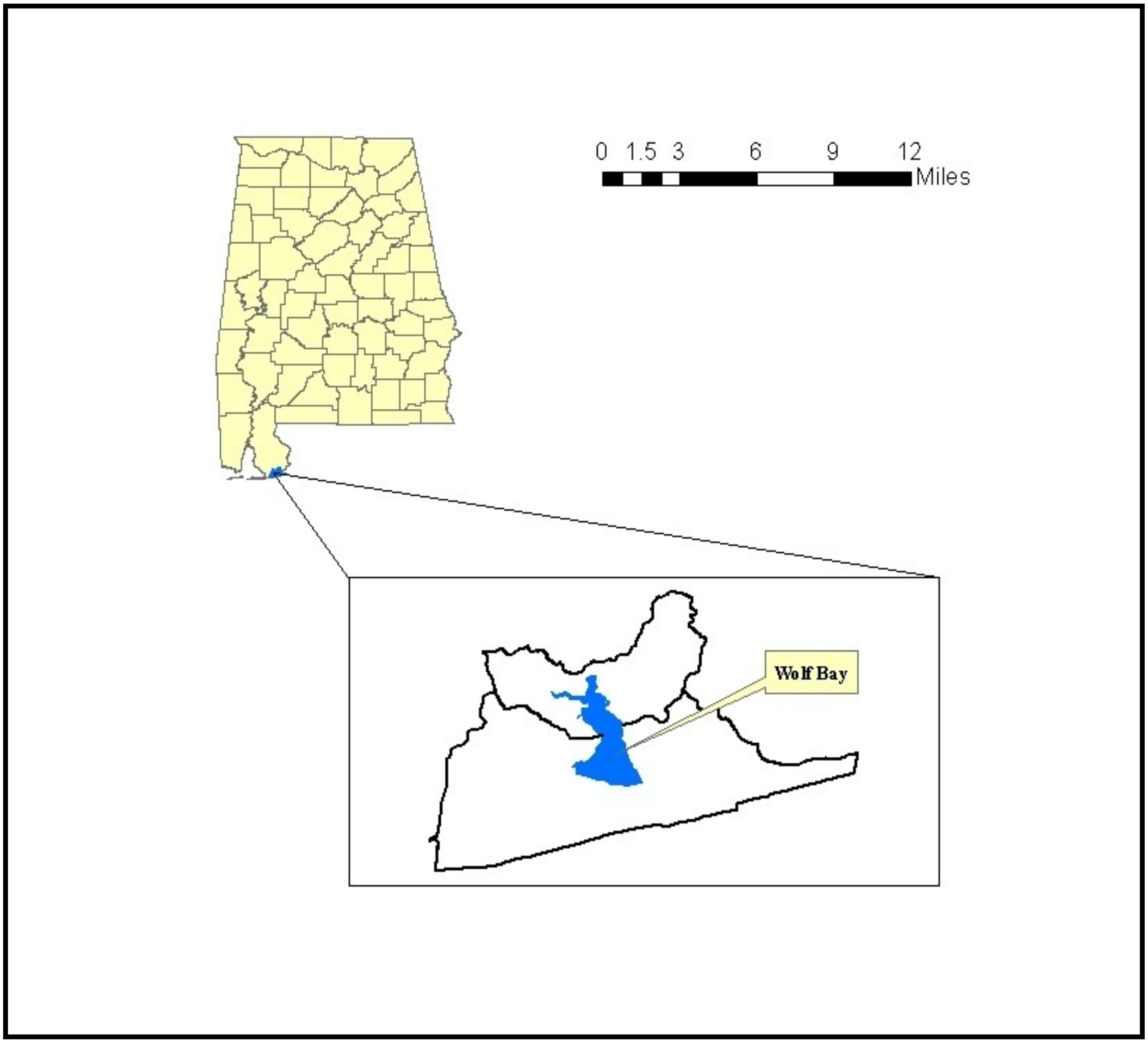


Table 1-3 Wolf Bay and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Square Miles
1	AL03140107-0204-600	Wolf Bay	Bay la Launch	Moccasin Bayou	OAW/SH/S/F&W	4.65
					Total Square Miles	4.65

Figure 1-4 Cahaba River and Tributaries

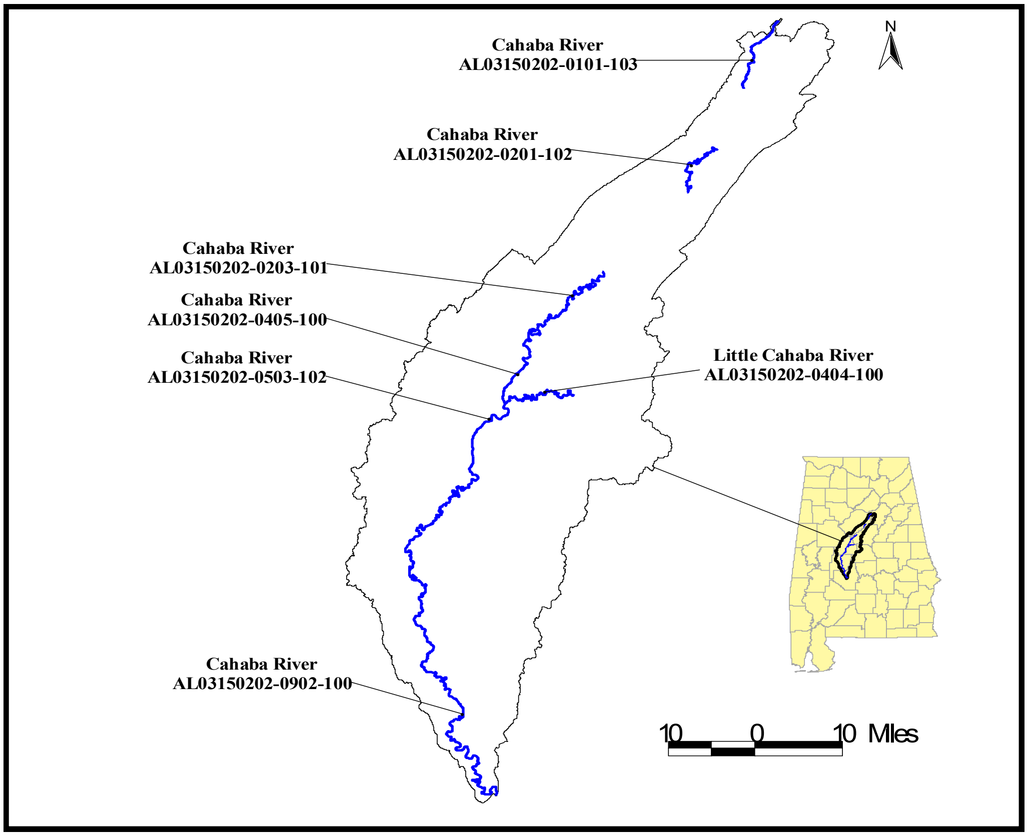


Figure 1-5 Hatchet Creek and Tributaries

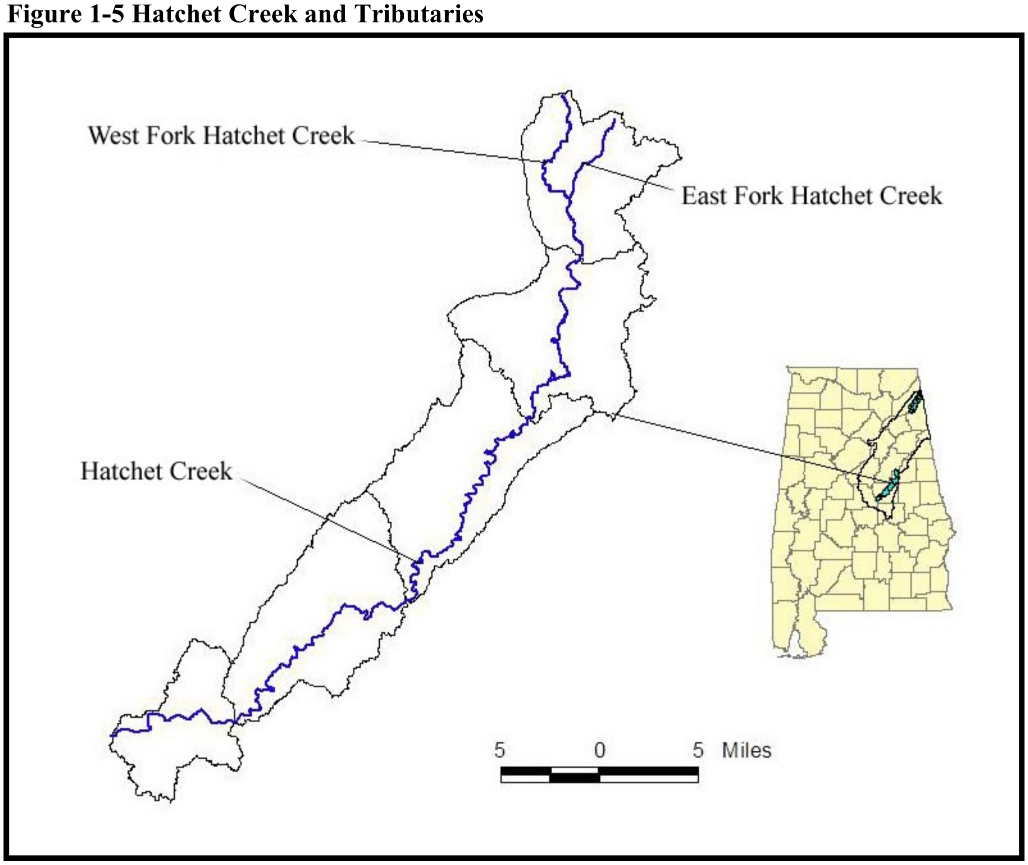


Table 1-4 Cahaba River and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Miles
1	AL03150202-0902-100	Cahaba River	Alabama River	Alabama High-way 82	OAW/S	89.50
2	AL03150202-0503-102	Cahaba River	Alabama Highway 82	Lower Little Cahaba River	OAW/S	10.58
3	AL03150202-0407-100	Cahaba River	Lower Little Cahaba River	Shades Creek	OAW/F&W	13.51
4	AL03150202-0206-101	Cahaba River	Shades Creek	Shelby County Road 52	OAW/F&W	23.61
5	AL03150202-0204-102	Cahaba River	Dam near U.S. High-way 280	Grant's Mill Road	OAW/PWS	13.45
6	AL03150202-0101-102	Cahaba River	US Highway 11	I-59	OAW/F&W	3.13
7	AL03150202-0101-103	Cahaba River	I-59	Its source	OAW/F&W	2.22
8	AL03150202-0405-100	Little Cahaba River	Cahaba River	Its source	OAW/F&W	16.54
					Total Miles	**172.54**

Table 1-5 Hatchet Creek and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Miles
1	AL03150107-0709-100	Hatchet Creek	Coosa River	Wildcat Creek	OAW/S/F&W	43.20
2	AL03150107-0706-102	Hatchet Creek	Wildcat Creek	Its source	OAW/PWS/S/F&W	18.87
3	AL03150107-0701-300	East Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W	5.30
4	AL03150107-0701-400	West Fork Hatchet Creek	Hatchet Creek	Its source	OAW/F&W	7.71
					Total Miles	75.08

Figure 1-6 Lake Martin – Treasured Alabama Lake

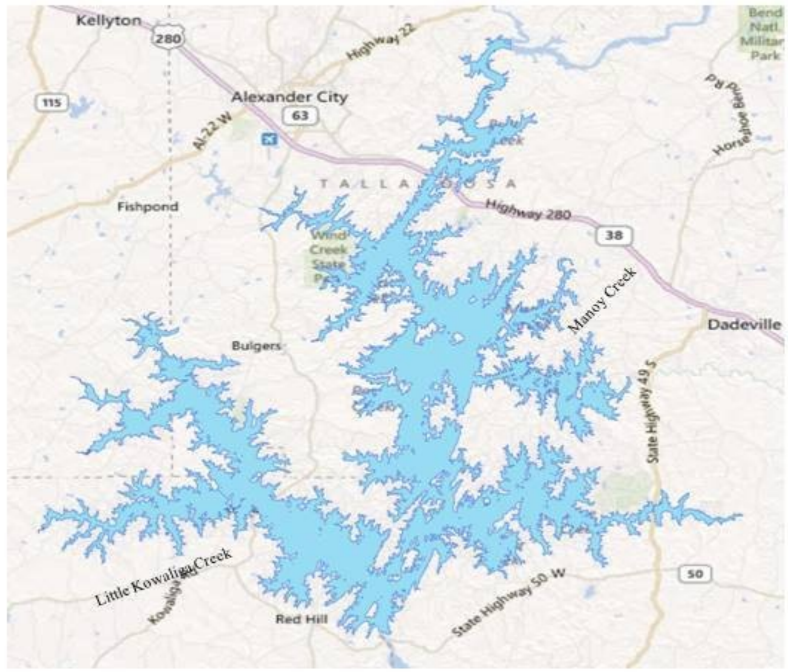


Figure 1-7 Little River and Tributaries

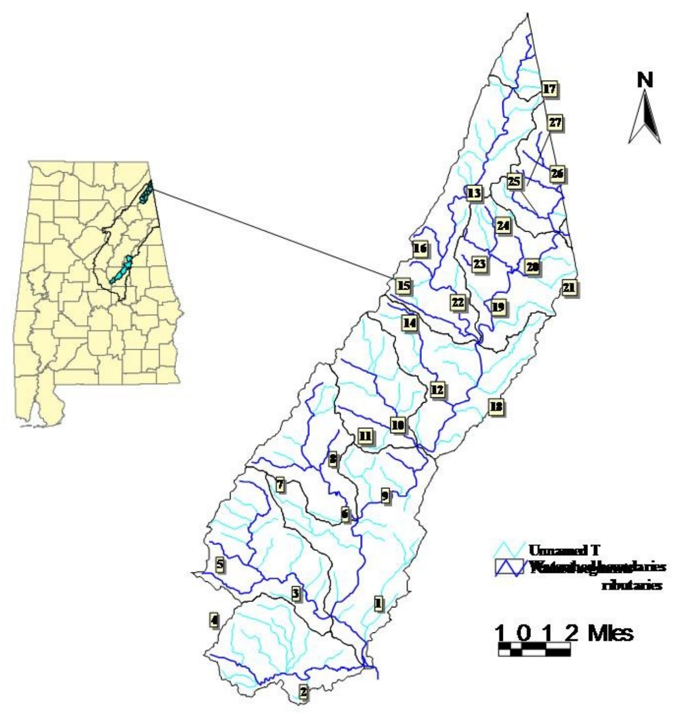


Table 1-6 Lake Martin – Treasured Alabama Lake

#	Assessment Unit #	Name	From	To	Use Classification	Acres
1	AL03150109-0502-102	Tallapoosa River (Lake Martin)	US Highway 280	Hillabee Creek	PWS/S/F&W	2,025.57
2	AL03150109-0504-201	Manoy Creek (Lake Martin)	Tallapoosa River	End of embayment	PWS/S/F&W	618.88
3	AL03150109-0505-100	Tallapoosa River (Lake Martin)	Martin Dam	US Highway 280	S/F&W	34,400.04
4	AL03150109-0702-201	Little Kowaliga Creek Lake Martin)	Big Kowaliga Creek	End of embayment	PWS/S/F&W	2,634.38
					Total Acres:	**39,678.87**

Table 1-7 Little River and Tributaries

#	Assessment Unit #	Name	From	To	Use classification	Miles
1	AL03150105-0806-100	Little River	Coosa River	Its source	PWS/S/F&W (ONRW)	22.19
2	AL03150105-0805-100	Wolf Creek	Little River	Its source	PWS/S/F&W (ONRW)	9.51
3	AL03150105-0804-100	Johnnies Creek	Little River	Its source	PWS/S/F&W (ONRW)	11.63
4	AL03150105-0804-200	Camprock Creek	Johnnies Creek	Its source	PWS/S/F&W (ONRW)	3.40
5	AL03150105-0804-300	Dry Creek	Johnnies Creek	Its source	PWS/S/F&W (ONRW)	2.37
6	AL03150105-0803-100	Bear Creek	Little River	Its source	PWS/S/F&W (ONRW)	8.67
7	AL03150105-0803-300	Hicks Creek	Bear Creek	Its source	PWS/S/F&W (ONRW)	3.42
8	AL03150105-0803-200	Falls Branch	Bear Creek	Its source	PWS/S/F&W (ONRW)	2.47
9	AL03150105-0806-200	Brooks Branch	Little River	Its source	PWS/S/F&W (ONRW)	1.68
10	AL03150105-0801-100	Yellow Creek	Little River	Its source	PWS/S/F&W (ONRW)	7.06
11	AL03150105-0801-200	Straight Creek	Yellow Creek	Its source	PWS/S/F&W (ONRW)	3.03
12	AL03150105-0802-200	Hurricane Creek	Little River	Its source	PWS/S/F&W (ONRW)	6.67
13	AL03150105-0705-100	West Fork Little River	Little River	AL-GA state line	PWS/S/F&W (ONRW)	18.87
14	AL03150105-0705-200	Straight Creek	West Fork of Little River	Its source	PWS/S/F&W (ONRW)	4.45
15	AL03150105-0705-300	Sharp Branch	West Fork of Little River	Its source	PWS/S/F&W (ONRW)	1.39
16	AL03150105-0705-400	Seymour Branch	West Fork of Little River	Its source	PWS/S/F&W (ONRW)	2.48
17	AL03150105-0703-201	East Fork West Fork Little River	West Fork of Little River	AL-GA state line	PWS/S/F&W (ONRW)	0.47
18	AL03150105-0704-100	East Fork Little River	Little River	AL-GA state line	PWS/S/F&W (ONRW)	9.55
19	AL03150105-0704-200	Laurel Creek	East Fork of Little River	Its source	PWS/S/F&W (ONRW)	3.97
20	AL03150105-0704-300	Gilbert Branch	East Fork of Little River	Its source	PWS/S/F&W (ONRW)	1.83
21	AL03150105-0702-101	Middle Fork Little River	East Fork of Little River	AL-GA state line	PWS/S/F&W (ONRW)	2.44
22	AL03150105-0704-400	Shrader Branch	Laurel Creek	Its source	PWS/S/F&W (ONRW)	1.95
23	AL03150105-0705-500	Armstrong Branch	Laurel Creek	Its source	PWS/S/F&W (ONRW)	1.75
24	AL03150105-0702-200	Brush Creek	Middle Fork of Little River	Its source	PWS/S/F&W (ONRW)	3.04
25	AL03150105-0702-300	Anna Branch	Middle Fork of Little River	Its source	PWS/S/F&W (ONRW)	2.18
26	AL03150105-0702-400	Blalock Branch	Anna Branch	Its source	PWS/S/F&W (ONRW)	3.46
27	AL03150105-0702-500	Stillhouse Branch	Blalock Branch	Its source	PWS/S/F&W (ONRW)	1.09
		Unnamed Tributaries				277.20
					Total Miles	**418.22**

Figure 1-8 Magnolia River - OAW

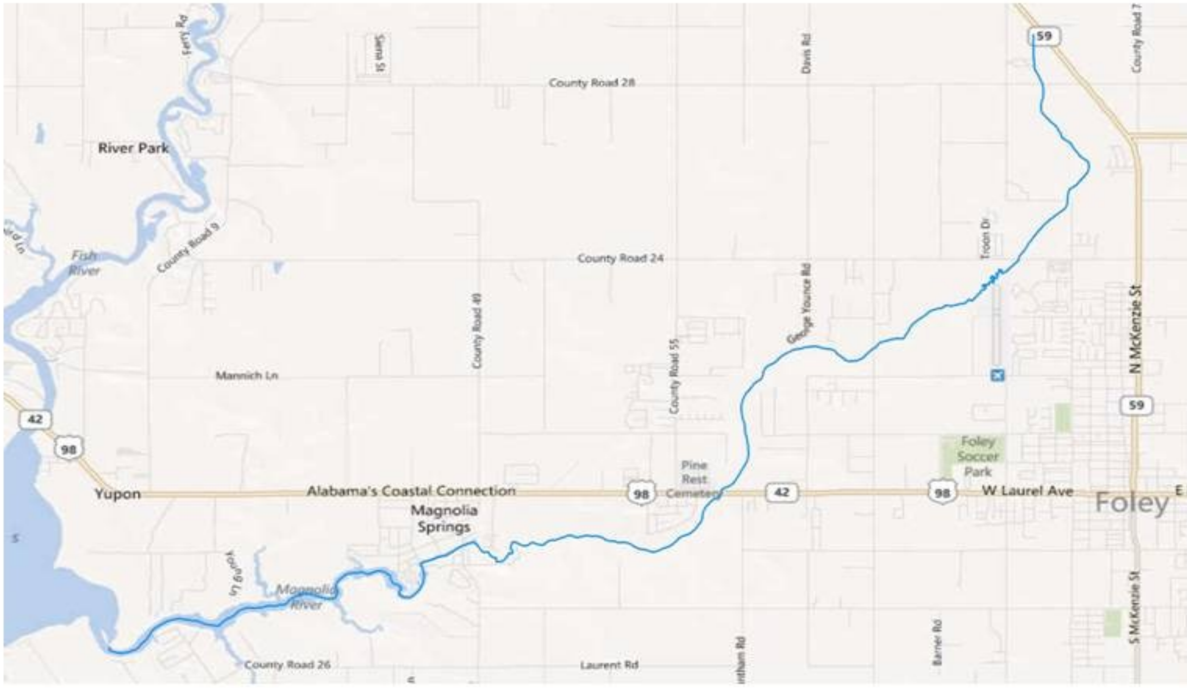


Table 1-8 Magnolia River - OAW

#	Assessment Unit #	Name	From	To	Use Classification	miles
1	AL03160205-0203-110	Magnolia River	Weeks Bay	Its source	OAW/S/F&W	12.41
					Total Square Miles	12.41

Figure 1-9 Tensaw River, Weeks Bay and Tributaries

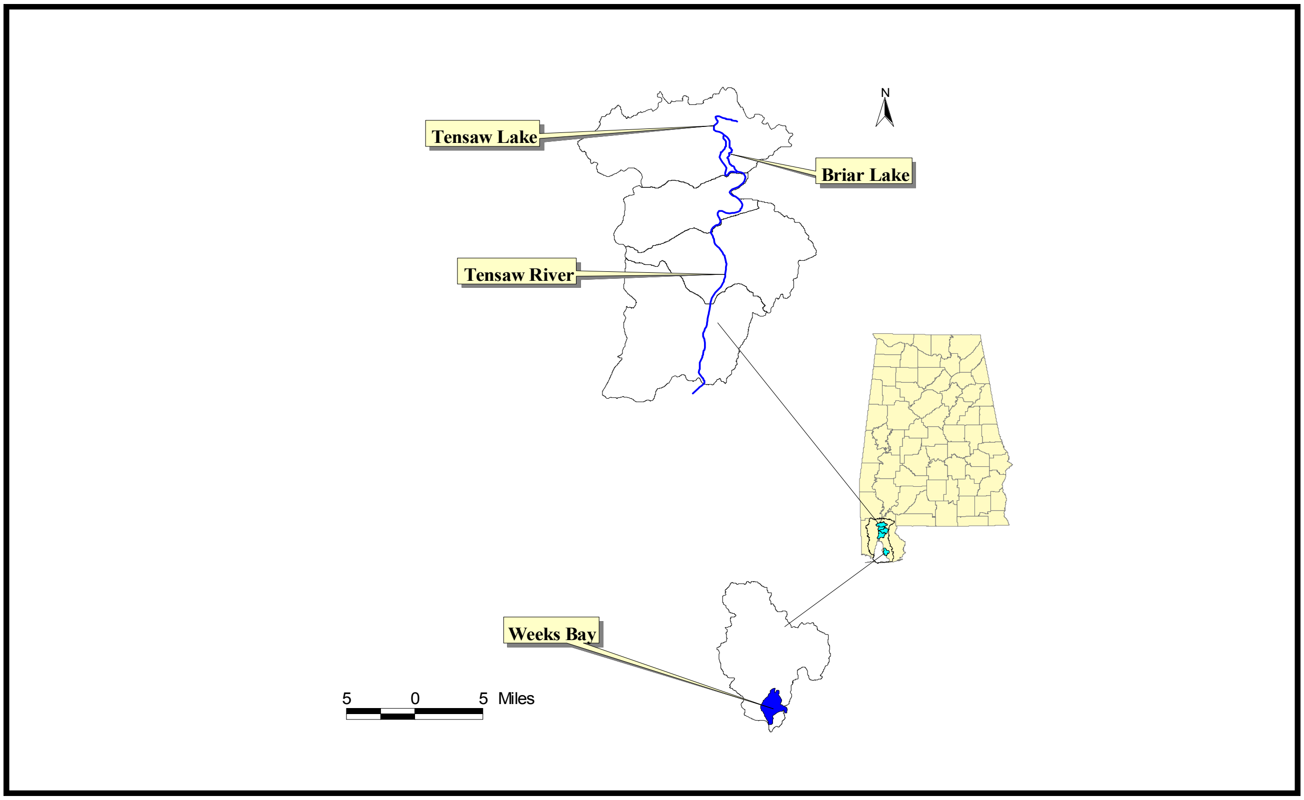


Table 1-9 Tensaw River, Weeks Bay and Tributaries

Tensaw River and Tributaries						
#	**Assessment Unit #**	**Name**	**From**	**To**	**Use Classification**	**Miles**
1	AL03160204-0505-202	Tensaw River	Junction of Tensaw and Apalachee Rivers	Junction of Briar Lake	OAW/S/F&W	21.73
2	AL03160204-0106-302	Tensaw River	Junction of Briar Lake	Junction of Tensaw Lake	OAW/F&W	2.93
					Total Miles	24.66
#	**Assessment Unit #**	**Name**	**From**	**To**	**Use Classification**	**Acres**
3	AL03160204-0106-400	Briar Lake	Junction of Tensaw River	Junction of Tensaw Lake	OAW/F&W	169.36
4	AL03160204-0106-500	Tensaw Lake	Junction of Tensaw River	Bryant Landing	OAW/F&W	436.74
					Total Acres	655.42
Weeks Bay and Tributaries						
#	**Assessment Unit #**	**Name**	**From**	**To**	**Use Classification**	**Square Miles**
1	AL03160205-0204-101	Weeks Bay	Bon Secour Bay	Fish River	S/F&W (ONRW)	3.04
					Total Sq Miles	2.70

Figure 1-10 Sipsey Fork and Tributaries

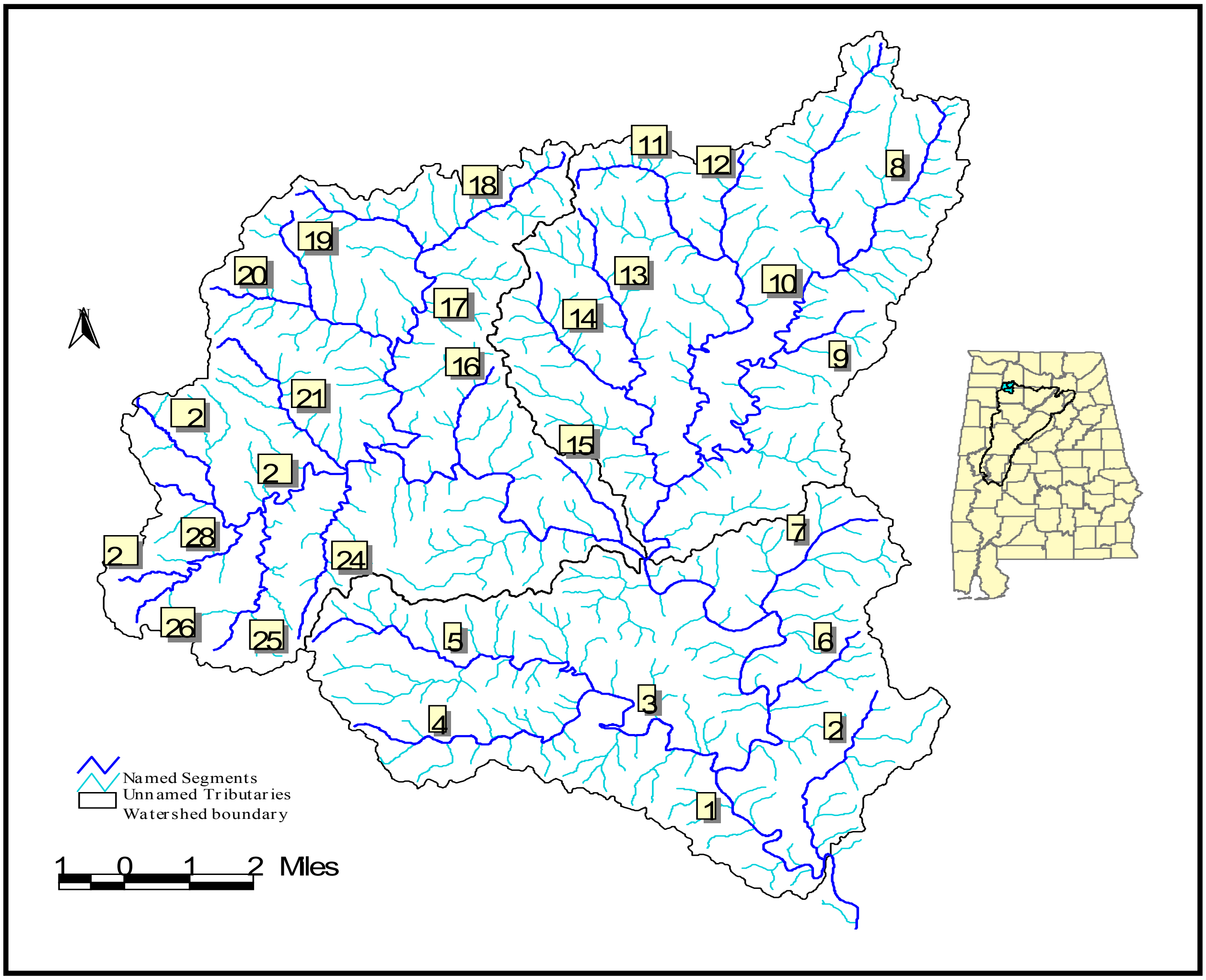


Table 1-10 Sipsey Fork and Tributaries

#	Assessment Unit #	Name	From	To	Use Classification	Miles
1	AL03160110-0104-103	Sipsey Fork	Sandy Creek	Its source	F&W (ONRW)	21.23
2	AL03160110-0101-100	Borden Creek	Sipsey Fork	Its source	F&W (ONRW)	16.61
3	AL03160110-0101-200	Braziel Creek	Borden Creek	Its source	F&W (ONRW)	5.69
4	AL03160110-0101-300	Flannagin Creek	Borden Creek	Its source	F&W (ONRW)	9.99
5	AL03160110-0101-400	Horse Creek	Borden Creek	Its source	F&W (ONRW)	1.76
6	AL03160110-0101-500	Montgomery Creek	Borden Creek	Its source	F&W (ONRW)	3.99
7	AL03160110-0101-600	Hagood Creek	Braziel Creek	Its source	F&W (ONRW)	4.23
8	AL03160110-0101-700	Dry Creek	Flannagin Creek	Its source	F&W (ONRW)	2.17
9	AL03160110-0102-110	Parker Branch	Hubbard Creek	Its source	F&W (ONRW)	3.82
10	AL03160110-0102-120	Whitman Creek	Hubbard Creek	Its source	F&W (ONRW)	3.73
11	AL03160110-0102-130	Maxwell Creek	Hubbard Creek	Its source	F&W (ONRW)	2.02
12	AL03160110-0102-140	Basin Creek	Hubbard Creek	Its source	F&W (ONRW)	2.81
13	AL03160110-0102-150	Dunn Branch	Maxwell Creek	Its source	F&W (ONRW)	1.33
14	AL03160110-0102-160	Natural Well Branch	Maxwell Creek	Its source	F&W (ONRW)	1.45
15	AL03160110-0102-170	White Oak Branch	Thompson Creek	Its source	F&W (ONRW)	1.69
16	AL03160110-0102-180	Wolf Pen Branch	Sipsey Fork	Its source	F&W (ONRW)	1.00
17	AL03160110-0102-190	Ugly Creek	Sipsey Fork	Its source	F&W (ONRW)	3.05
18	AL03160110-0102-200	Fall Creek	Sipsey Fork	Its source	F&W (ONRW)	2.06
19	AL03160110-0102-300	Bee Branch	Sipsey Fork	Its source	F&W (ONRW)	2.09
20	AL03160110-0102-400	Thompson Creek	Sipsey Fork	Its source	F&W (ONRW)	8.59
21	AL03160110-0102-500	Hubbard Creek	Sipsey Fork	Its source	F&W (ONRW)	6.59
22	AL03160110-0102-600	Tedford Creek	Thompson Creek	Its source	F&W (ONRW)	3.68
23	AL03160110-0102-700	Mattox Creek	Thompson Creek	Its source	F&W (ONRW)	3.26
24	AL03160110-0102-800	Ross Branch	Tedford Creek	Its source	F&W (ONRW)	2.06
25	AL03160110-0102-900	Quillan Creek	Hubbard Creek	Its source	F&W (ONRW)	3.77
26	AL03160110-0103-200	Payne Creek	Sipsey Fork	Its source	F&W (ONRW)	3.89
27	AL03160110-0103-300	Caney Creek	Sipsey Fork	Its source	F&W (ONRW)	4.66
28	AL03160110-0103-400	Hurricane Creek	Sipsey Fork	Its source	F&W (ONRW)	2.29
29	AL03160110-0103-500	Davis Creek	Sipsey Fork	Its source	F&W (ONRW)	2.83
30	AL03160110-0103-600	North Fork Caney Creek	Caney Creek	Its source	F&W (ONRW)	6.38
31	AL03160110-0103-700	South Fork Caney Creek	Caney Creek	Its source	F&W (ONRW)	5.04
32	AL03160110-0103-800	Lloyds Creek	Sipsey Fork	Its source	F&W (ONRW)	1.11
33	AL03160110-0103-900	Sweetwater Creek	Caney Creek	Its source	F&W (ONRW)	1.23
		Unnamed Tributaries				240.37
					Total Miles	386.47

Chapter 2 Rivers and Streams

2.1 Wadeable Rivers and Streams Monitoring Program (RSMP

ADEM's monitoring strategy is designed to characterize water quality, to identify impacts from a variety of sources, and to provide a systematic and integrated framework for gathering necessary information to support the decision-making process. It is implemented on a 5-year basin rotation and incorporates specific protocols and methodologies to ensure that monitoring activities provide the highest quality information and make the most efficient use of available resources.

2.1.2 Objectives

The objectives of ADEM's Wadeable Rivers and Streams Program are to provide data:

- Develop, adopt, or revise water quality standards;
- Develop criteria & indicators;
- Estimate water quality trends;
- Evaluate program effectiveness;
- Categorize waters in Alabama's Biennial Integrated Assessment Report;
- Support management decisions; and,
- Estimate overall water quality.

2.1.3 Monitoring Strategy

One of the key aspects of ADEM's Monitoring Strategy is to define a given monitoring station as being either wadeable or nonwadeable. This is important because the minimum data requirements for Alabama's Assessment and Listing Methodology vary based on waterbody type and wadeability. The four monitoring protocols included in the RSMP are as follows:
<u>Wadeable-BIO (BIO-W)</u>: A station is classified as wadeable-bio if the 300-foot sampling reach is completely wadeable (~≤ 3 feet) and the 300-foot reaches upstream and downstream of the sampling location are also completely wadeable. This is to help ensure that the reach is representative of the watershed.
<u>Wadeable-Water (H20-W):</u> A station is classified as wadeable-H20 if water samples can be collected instream, but the sampling reach is not completely wadeable (~≤ 3 feet) or the 300-foot reaches upstream or downstream of the sampling location are not completely wadeable.
<u>Nonwadeable Bridge Stations (NWG)</u>: Sub-surface grab samples are collected from a bridge if a nonwadeable station is not accessible by boat. A vertical profile of field parameters (temp., pH, cond., D.O.) is collected. This information is used to document that the stream is well-mixed and collection of a grab sample is appropriate. Once a protocol is established, the protocol used to collect the vertical profile should be consistent (i.e, if a full vertical profile is

collected in the spring, a full vertical profile should be collected throughout the sampling period; if in situ measurements are measured at surface, mid-, and bottom in the spring, the crew leader should continue to do so throughout the sampling period). By contrast, every attempt should be made to collect water samples at mid-depth. During the year, if the reach can be waded, water samples should be collected from in stream rather than from the bridge, if it is safe to do so. However, sub-surface grab samples can be collected from the bridge over fast flowing water when conditions are truly non-wadeable.

NWG-Deep: These stations are ≥ 10 ft. in depth. Full vertical profiles are measured at these stations.

NWG-Shallow: These stations are < 10 ft. in depth. A minimum of 3 measurements are collected at the surface (0.2 m), mid-depth, and the bottom.

ADEM's 2010 monitoring strategy is implemented by basin on a 5-year rotation. It incorporates a combination of fixed, targeted, and probabilistic monitoring sites and projects to meet state monitoring goals and objectives. Four types of non-navigable, flowing sites are included in the RSMP:

- **Probabilistic sites** are located at the downstream-most pour points of randomly-selected watersheds that reflect both overall water quality conditions within a basin group, as well as the complete gradient of potential human disturbances. They are sampled in accordance with ADEM's five year rotating basin cycle.

- **Targeted sites** are selected by ADEM's Water Quality Branch, Office of Education and Outreach, one of the Clean Water Partnerships of Alabama, or the Environmental Indicators Section to provide data for use support and assessment, TMDL development, Use Attainability Analyses, and education and outreach. Where possible, targeted sampling is conducted in accordance with ADEM's five year rotating basin cycle.

- Long term **ecoregional reference reaches,** established to reflect the best attainable conditions present within a specific ecoregion, are sampled to provide baseline data for comparison to other streams within the ecoregion. Ecoregional reference reaches sampled each year are selected to compliment the Level IV Ecoregions within any given basin group. A list of ADEM's ecoregional reference reaches is provided in Appendix D.

- Long term **ambient trend sites** are sampled to identify long-term trends in water quality statewide and to provide data for the development of TMDLs and water quality criteria. Sampling frequency and parameters collected at these sites vary from other station types. Currently, one-hundred and three trend sites are samples statewide annually.

The strategy incorporates a watershed-based monitoring program. A Watershed Disturbance Gradient (HDG) was developed to classify each wadeable, flowing monitoring location by its potential level of disturbance within its watershed. With this information, the monitoring strategy provides an estimate of overall water quality throughout the basin. Additionally, by ensuring that the entire gradient of watershed conditions within the basin group is sampled, the monitoring strategy increases ADEM's monitoring capacity by providing data to develop indicators and criteria appropriate for wadeable rivers and streams statewide. Because the HDG provides disturbance and landuse information for all stations assessed within the basin group, it enables ADEM to document the "least-impaired" landuse characteristics to set criteria for reference reach status in each Ecoregion or Bioregion. It also assists ADEM in stressor identification for §303(d) listing and TMDL development.

2.1.4 Monitoring Design

Indicator selection and sampling frequency: Core indicators and sampling frequency are selected to meet minimum data requirements as outlined in Alabama's Listing and Assessment Methodology so that the majority of waterbodies monitored can be categorized in Alabama's Integrated Report and listing/delisting decisions can be made to prioritize sites for §319 funding and BMP implementation.

Monitoring Units: As recommended in the Integrated Water Quality Monitoring and Assessment Guidance, ADEM delineated the wadeable, flowing portions of the 2004 12-digit hydrologic unit codes (HUCs) into smaller monitoring units (MUs) that represent true watersheds. This system limits the variability in drainage area and waterbody type associated with the 12-digit HUCs. Since 2005, a total of 1,071 wadeable, flowing MUs have been delineated in the ACT (374), the EMT (126), the BWC (183), the TN (179), and the SEAL (209) basin groups.

Watershed Disturbance Gradient: Monitoring watersheds in proportion to an environmental index or Watershed Disturbance Gradient (WDG) can limit error or bias associated with targeted sampling, a weakness of *ASSESS* identified during the review of the first monitoring cycle. The use of an HDG has also been recommended by the EPA to develop Tiered Aquatic Life Uses, to correlate suspected stressors to known levels of impairment, and consequently improve the overall assessment of water quality. Sampling MUs with relatively low and high potentials of impairment also provides a method of identifying the least- and most-impaired sites in support of the Ecoregional Reference Reach and §303(d) Monitoring Programs.

The Landscape Development Intensity Index (LDI) or disturbance gradient, used by the Florida Department of Environmental Protection, relates water quality conditions (physical, chemical, and biological) to human activity within a watershed (Fore 2004) using landuse data and a development-intensity measure derived from energy use per unit area (Brown and Vivas 2004). The Florida LDI was applied to the ACT flowing, wadeable MUs using the 2000 USEPA MRLC dataset, Departmental permit databases, population estimates, and the number of road crossings to place each MU into one of 8 Human Disturbance Gradient (HDG) categories (1=least potential for disturbance and 8=greatest potential for disturbance).

Watershed and Reach Selection: Stations targeted for sampling by ADEM's Water Quality Branch, the Office of Education and Outreach, or one of Alabama's Clean Water Partnerships are prioritized for monitoring to meet the multiple objectives and goals of the CWA. In addition, approximately 50 MUs are sampled each year to estimate overall water quality throughout the basin group. Using an HDG to categorize watersheds enables ADEM to coordinate targeted and probabilistic monitoring to maximize the efficiency and effectiveness of both monitoring designs and increase the accuracy of all assessments. Sixty-five targeted sites were incorporated into the basin assessment projects conducted during 2005-2007. Data from basin assessment stations is used for use support assessments, TMDL and criteria development, Use Attainability Analyses, NPS Intensive Watershed Surveys, and education and outreach. A total of 387 MUs have monitored since 2005.

2.1.5 Core and Supplemental Indicators

Core indicators and sampling frequency were selected to meet data requirements as outlined in Alabama's Listing and Assessment Methodology so that the majority of waterbodies monitored each year can be categorized in Alabama's Integrated Report. The Ambient Monitoring Program was designed to provide the required data over the five year monitoring cycle. Sampling frequency and indicators collected at these sites differ from the other wadeable rivers and streams programs.

2.1.6 Data Analysis and Assessment

The development of indicators and assessment criteria was a primary objective of ADEM's Monitoring Strategy. Therefore, a very significant part of Monitoring Strategy is to link results from chemical, physical, and biological indicator sampling to conditions throughout each stream's watershed. These analyses will include the following:

Methods analysis, including optimal sampling frequencies, timing and number of samples collected, and redundancy among parameters;

Calculation of method performance characteristics based on duplicate samples, samples collected at reference sites, and known levels of watershed disturbance;

Development of stream classification (bioregions) based on biological community data; and,

Development of indicators, criteria, and assessment indices based on correlations among chemical, physical, and biological indicators, and watershed conditions.

2.1.7 Reporting

Results of data analysis will be compiled and documented in a Methods Development Document. All necessary changes to sampling methods, protocols, and assessment indices and criteria will be incorporated into the next revision of the appropriate standard operating procedures manual and the Alabama Listing and Assessment Methodology document.

Once appropriate indicators have been selected and criteria and assessment indices have been established, RSMP data is used to categorize and report water quality status in Alabama's Integrated Assessment Report. Biological assessment results are also documented in ADEM's RSMP Monitoring Summary Reports, which summarize data and assessment results on the basis of watershed or monitoring unit.

2.1.8 Programmatic Evaluation

An important component of ADEM's Monitoring Strategy is a thorough review of data and

Figure 2-1 Subregions of Alabama's Ecoregions

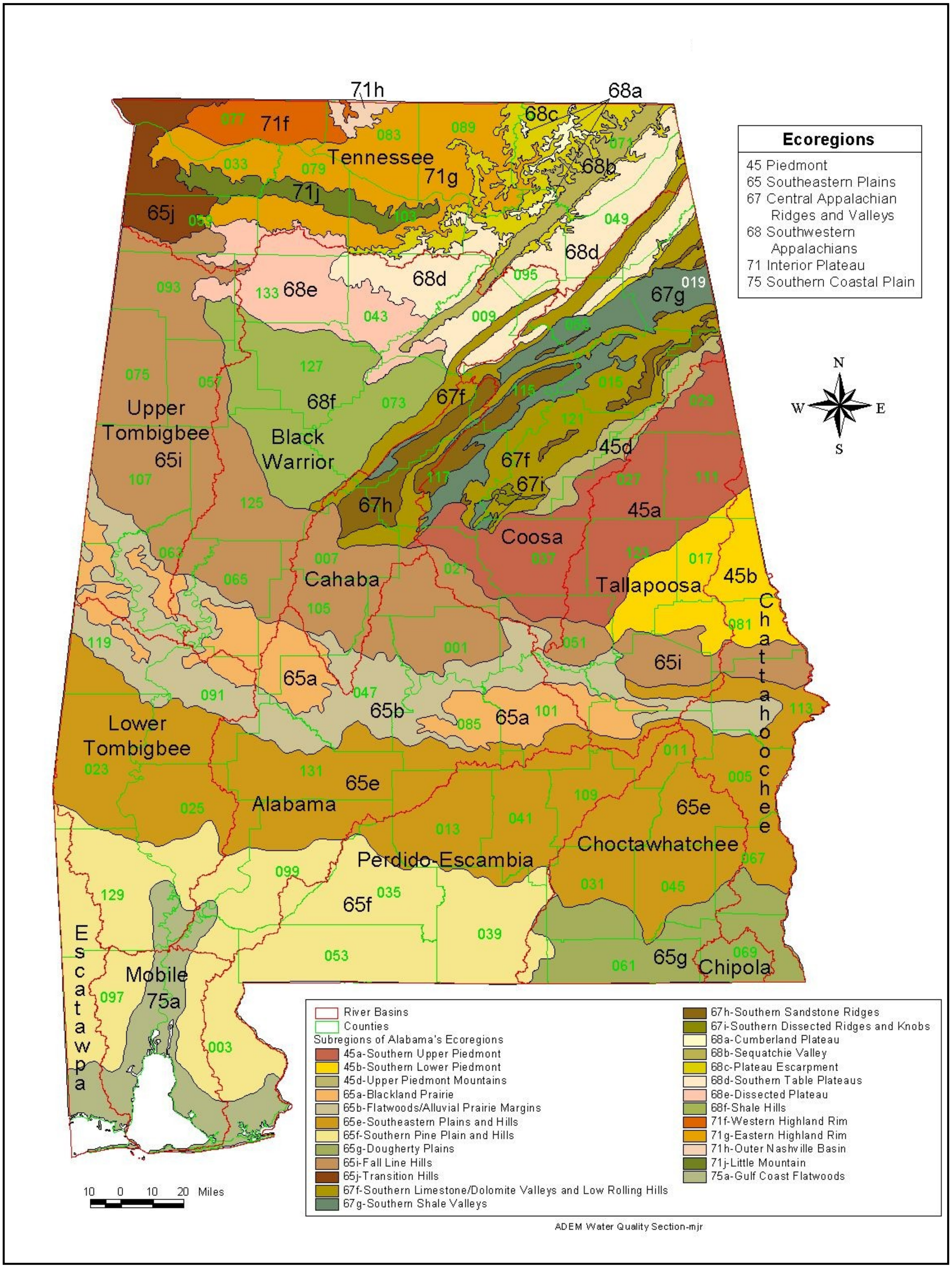


Table 2-1 Alabama Ecoregional Reference Stations

Station	Stream Name	County	Ecoregion	River Basin	Latitude	Longitude
CYD-1	Chaney Creek	Dallas	65a	Alabama River	32.35439	-87.28939
SPD-1	Soapstone Creek	Dallas	65b	Alabama River	32.32220	-86.90630
SRC-1	Silver Creek	Clarke	65q	Alabama River	31.69517	-87.58156
SWFC-1	Swift Creek	Chilton	65i	Alabama River	32.72145	-86.69159
VLYD-1	Valley Creek	Dallas	65i	Alabama River	32.57499	-86.98474
WASP-1	Washington Creek	Perry	65a	Alabama River	32.56997	-87.39136
BLVC-1	Blevens Creek	Cullman	68d	Black Warrior River	34.26736	-87.07761
BRSL-3	Brushy Creek	Lawrence	68e	Black Warrior River	34.33068	-87.28578
HNMB-4	Hendrick Mill	Blount	67f	Black Warrior River	33.87612	-86.56885
INMW-1	Inman Creek	Winston	68e	Black Warrior River	34.21525	-87.22447
MRTC-1	Marriott Creek	Cullman	68e	Black Warrior River	34.04211	-86.86283
SSB-1	South Sandy Creek	Bibb	65i	Black Warrior River	32.96994	-87.39775
TPSL-1	Thompson Creek	Lawrence	68e	Black Warrior River	34.34092	-87.47108
MAYB-1	Mayberry Creek	Bibb	67h	Cahaba River	33.07125	-86.93853
BCR-1	Adams Branch	Russell	65i	Chattahoochee River	32.42469	-85.26067
IHGR-1	Ihagee Creek	Russell	65d	Chattahoochee River	32.23850	-84.98069
BRH-1	Bear Creek	Houston	65g	Choctawhatchee River	31.20769	-85.54619
DRYB-1	Dry Creek	Barbour	65d	Choctawhatchee River	31.93467	-85.61036
PATC-1	Patrick Creek	Coffee	65d	Choctawhatchee River	31.43840	-86.11210
BERD-9	Bear Creek	DeKalb	68d	Coosa River	34.38094	-85.69789
CHEC-6	Cheaha Creek	Clay	45d	Coosa River	33.45275	-85.90273
CHOC-2	Choccolocco Creek	Cleburne	45d	Coosa River	33.82946	-85.58173
DRYC-2	Dry Creek	Calhoun	67h	Coosa River	33.84240	-85.59422
FRMS-9	Fourmile Creek	Shelby	67f	Coosa River	33.25649	-86.48980
JNSC-16	Jones Creek	Coosa	45a	Coosa River	32.90492	-86.29758
LCNE-1	Little Canoe Creek	Etowah	67f	Coosa River	33.97006	-86.17892
PNTC-11	Paint Creek	Coosa	45a	Coosa River	33.01838	-86.44741
SHLC-3	Shoal Creek	Cleburne	45d	Coosa River	33.72529	-85.60115
TCT-5	Talladega Creek	Talladega	45d	Coosa River	33.37847	-86.03008
WGFC-1	Weogufka Creek	Coosa	45a	Coosa River	33.07288	-86.24847
WLFS-9	Wolf Creek	St. Clair	67g	Coosa River	33.56883	-86.33817
ULCC-1	Ulcanush Creek	Clarke	65q	Lower Tombigbee River	31.78408	-88.10808
PPM-1	Poplar Creek	Marengo	65b	Lower Tombigbee River	32.27733	-87.60669
HLB-1	Halls Creek	Baldwin	65f	Mobile Bay Area	31.05264	-87.83701
BRE-1	Bear Creek	Escambia	65f	Perdido-Escambia River	31.03334	-86.70961
CLC-1	Clear Creek	Covington	65g	Perdido-Escambia River	31.12153	-86.37575
PYW-1	Pineywoods Creek	Crehshaw	65d	Perdido-Escambia River	31.58378	-86.46186
CHNE-18	Channahatchee Creek	Elmore	45a	Tallapoosa River	32.65024	-85.95085
CRHR-9	Cornhouse Creek	Randolph	45a	Tallapoosa River	33.21195	-85.51806
EMKT-14	Emuckfaw Creek	Tallapoosa	45a	Tallapoosa River	33.05527	-85.69489
HCR-1	Hurricane Creek	Randolph	45a	Tallapoosa River	33.17546	-85.59829
LBM-1	Long Branch	Macon	65i	Tallapoosa River	32.41319	-85.48119
LCC-1	Little Chattahospee Creek	Chambers	45b	Tallapoosa River	32.90761	-85.51100
LINB-1	Line Creek	Bullock	65a	Tallapoosa River	32.20881	-85.89750
BYTJ-1	Bryant Creek	Jackson	68d	Tennessee River	34.64658	-85.84303
INCL-1	Indiancamp Creek	Lauderdale	71f	Tennessee River	34.92425	-87.62108
BLBP-1	Blubber Creek	Pickens	65i	Upper Tombigbee River	33.14725	-88.17053
BRP-1	Bear Creek	Pickens	65i	Upper Tombigbee River	33.36961	-87.90364
CLKM-4	Clark Creek	Marion	65i	Upper Tombigbee River	34.08091	-88.02659
CTML-6	Cantrell Mill Creek	Lamar	65i	Upper Tombigbee River	34.04098	-88.03327
JNS-1	Jones Creek	Sumter	65a	Upper Tombigbee River	32.70161	-88.14775

assessment results from ADEM's five year monitoring cycle to address program weaknesses and changing data needs. Further program evaluation will be conducted in 2010, after the five year monitoring cycle is complete. Annual status reports on methods development will be completed and provided to USEPA Region 4 to document interim progress during the monitoring cycle.

For more information on the Wadeable Rivers and Streams Monitoring Program contact Ms. Lisa Huff in ADEM's Montgomery Office at (334) 260-2752 or ehh@adem.state.al.us.

2.2 Ecoregions

Innate regional differences exist in climate, landform, soil, natural vegetation, and hydrology. These factors, in turn, affect nutrient regime, substrate characteristics, and the composition of biological communities within aquatic ecosystems. By defining relatively homogeneous ecological areas, ecoregions provide a geographic framework for more efficient management of aquatic ecosystems and their components (Hughes et al. 1986, Hughes 1985, and Hughes and Larsen 1988). The USEPA has recommended the development of ecoregional reference conditions as a scientifically defensible method of defining expected habitat, biotic, and chemical conditions within streams, rivers, reservoirs, and wetlands. Level IV ecoregions have been developed or are under development in 37 states nationwide. Griffith et al. (2001) delineated six Level III ecoregions in Alabama: Piedmont, Southeastern Plains, Ridge and Valley, Southwestern Appalachians, Interior Plateau, and the Southern Coastal Plain. Within these, they delineated 27 Level IV ecoregions.

ADEM has maintained an Ecoregional Reference Reach Monitoring Program since 1991 (ADEM 2001b). Intensive monitoring assessments, including chemical, physical, habitat, and biological data, are collected to develop baseline reference conditions for each of Alabama's 29 Level IV subecoregions (Griffith et al. 2001). ADEM's ecoregional reference database was analyzed during 2003 to develop assessment guidelines for ADEM's habitat assessments, screening-level macroinvertebrate assessments, and chemical parameters, including nutrient concentrations for 10 of the 29 subecoregions.

2.2.1 ADEM's Ecoregional Reference Reach Program: 1992-2004

Specific selection criteria were used to ensure that reference reaches were typical of the subecoregion and relatively unimpaired. Watersheds containing the highest percentage of natural vegetation were first located using topographic maps and land use information compiled by USEPA and local Soil and Water Conservation Districts. Departmental databases were used to ensure that potential reference watersheds do not contain any point source discharges, mining, or urban runoff, and minimal agricultural sources. Improved GIS capabilities have enhanced ADEM's ability to more accurately quantify land use within each of the reference reach watersheds. Field reconnaissance was then conducted to ground truth land use estimates. In situ field parameters were collected and visual macroinvertebrate surveys were conducted to screen for obvious impacts to chemical and biological conditions. Substrate composition, gradient, canopy cover, sinuosity, and habitat quality and availability were estimated to assess stream condition and comparability to other streams in the subecoregion. Intensive site assessments were then conducted to verify that the reaches were in relatively good condition.

Through this process, a total of 594 locations have been investigated as potential reference reaches statewide. Information from these site visits identified 53 ecoregional reference reaches across the state. An additional 13 candidate reaches are currently being monitored to validate their selection. The program concentrated on wadeable streams and rivers, for which the USEPA and ADEM have developed rapid bioassessment protocols (Plafkin et al. 1989, Barbour et al. 1999, ADEM 1996, ADEM 1999, ADEM in press). Large river ecoregional reference reaches have been established on Sipsey Fork and Hatchet Creek to assess specific impacts to Locust Fork, Mulberry Fork, and the Cahaba River.

2.2.2 ADEM's Monitoring Strategy: Identifying Ecoregional Reference Reaches

In 2005, ADEM revised its monitoring strategy to assess wadeable rivers and streams using a watershed-based probabilistic monitoring design. A WDG was developed to classify each watershed by its potential level of disturbance. By monitoring the watersheds in proportion to the number of watersheds in each WDG category, the monitoring strategy provides an estimate of overall water quality throughout the basin. Habitat assessments, biological assessments (macroinvertebrates, fish, and periphyton), and monthly water quality data collected at all sites are used to verify the high quality of sites within the least-impaired HDG categories. Additionally, because the WDG provides disturbance and landuse information for all stations assessed within the basin group, it will enable ADEM to document the "least-impaired" landuse characteristics to set criteria for reference reach status in each Ecoregion or Bioregion. Figure 2 -1, shows Subregions of Alabama's Ecoregions, and Table 2-1 provides a list of Alabama's Ecoregional Reference Stations.

For more information on Alabama's Ecoregions, contact Ms. Lisa Huff in ADEM's Montgomery Office at (334) 260-2752 or esh@adem.state.al.us

2.3 Trend Stations

Sampling frequency presently occurs 3 times a year during the months of May, August, and October at most trend stations. Selected sites are sampled more Frequently. , and Table 2-2 shows Alabama's Active Trend Stations (Ambient Monitoring). A list of water quality survey reports can be found at: http://adem.alabama.gov/programs/water/wqsurvey.cnt

For more information on Alabama's Trend Monitoring Sites, contact should be WQ program manager in ADEM's Montgomery Office at (334) 260-2752 or esh@adem.state.al.us

2.4 Summaries of Designated Use Support for Rivers /Streams

Table 2-6 and Table 2-7 show the Size of Rivers and Streams Impaired by causes and sources respectively. For more information about Designated Use Support contact Mr. John Pate in ADEM's Montgomery Office at (334) 270-5662 or jtp@adem.state.al.us

Table 2-2 Size of Rivers and Streams Impaired by Causes

	Category 5	Category 4
Cause	River/Stream (miles)	River/Stream (miles)
Other flow regime alterations		3.15
Aluminum	25.13	48.22
Arsenic	19.56	
Chromium	14.65	
Copper	1.54	10.19
Cyanide	12.43	44.57
Iron	26.71	48.22
Lead	35.58	3.3
Mercury	859.70	
Zinc	0.22	61.44
Total dissolved solids	34.31	
Turbidity	32.02	87.88
Ammonia	3.44	270.60
Nitrogen		192.65
Phosphorus	274.67	376.99
BOD, carbonaceous	154.95	691.13
BOD, nitrogenous	154.95	453.91
Dissolved oxygen		19.62
Enterococcus bacteria	36.39	23.93
E. coli	167.00	716.42
Atrazine		23.42
Chlorpyrifos		23.42
DDT		18.77
Dieldrin	24.29	
Endosulfan		50.73
Methyl Parathion		50.73
pH	36.25	17.53
Sedimentation/Siltation	875.83	348.42
Chlorides	0.22	
Benzo(a)pyrene (PAHs)		44.57
Polychlorinated biphenyls (PCBs)	42.22	
Unknown toxicity	20.34	

Table 2-3 Size of Rivers and Streams Impaired by Sources

Sources	(miles)
Agriculture	515.16
Atmospheric deposition	837.85
Collection system failure	46.68
Contaminated sediments	46.43
Feedlots	8.46
Industrial	113.83
Land development	220.48
Municipal	459.06
Natural	71.31
Non-irrigated crop production	131.79
Pasture grazing	398.23
Sources outside state	30.78
Surface mining	127.62
Surface mining-abandoned	475.83
Unknown source	160.14
Urban development	90.75
Urban runoff/storm sewers	401.26

2.5 Industrial River Monitoring

The Industrial River Monitoring Program is a water quality monitoring program with the participation of twenty-one (21) facilities located within various river basins. The purpose of the river monitoring program is to inform operational decisions at the facilities which discharge to the receiving streams this agency and the public it serves and to assess the impact of a facility's discharge on water quality. Each facility's NPDES permit contains specific monitoring requirements which may include parameters such as pH, DO, Water Temperature, BOD_5, etc. Most of the facilities which collect this information are pulp and paper mills, although, other types of industries are included. Much of the sampling takes place during the months May through September when critical water quality conditions are anticipated. This information was particularly useful in assessing the effects of the drought during the summer and fall of 2011. Table 2-8 and Figure 2-4 show industrial facilities that conduct river monitoring. Table 2-9 show Industrial River Monitoring Ambient Dissolved Oxygen Summaries for 2010 through 2011.

For more information about Industrial River Monitoring contact Ms. Carla Crews in ADEM's Water Division at (334) 271-7804 or ccrews@adem.state.al.us

Figure 2-2 Industrial River Monitoring

Table 2-4 Industrial River Monitoring

Facility Name	NPDES #	Facility Type	Parameters Sampled	Receiving Stream Name	Number of Stations	River Basin	City	County
ABC Coke	AL0003417	Iron and Steel Manufacturer	Stream Temperature, pH, Turbidity, Total Cyanide, Available Cyanide, Stream Depth	Five Mile Creek	2	Warrior	Birmingham	Jefferson
AbitibiBowater Alabama, Inc.	AL0003158	Paper Mill	D.O. (at 5 foot depth),Sample Time, Stream Temperature and pH	Coosa River	17	Coosa	Coosa Pines	Talladega
Alabama River Pulp Co., Inc.	AL0025968	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Alabama River	5	Alabama	Claiborne	Monroe
Boise White Paper LLC	AL0002755	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tombigbee River	6	Lower Tom-bigbee	Jackson	Clarke
Bon Secour Fisheries	AL0003298	Seafood Proc-essing	Stream Temperature, pH, DO, Salinity	Bon Secour River	3	Mobile Bay	Bon Secour	Baldwin
Carson & Company, Inc.	AL0048194	Seafood Proc-essing	Stream Temperature, pH, DO, Salinity	Bon Secour River	3	Mobile Bay	Bon Secour	Baldwin
Ciba Specialty Chemical	AL0003093	Chemical Plant	Stream Temperature, pH, DO, Chloride,	Tombigbee River	6	Lower Tom-bigbee	McIntosh	Washington
Evonik Degussa Corporation	AL0023272	Chemical Plant	D.O. (at half -meter increments from 0.5 to a depth of 4.5 meters), Salinity, Con-ductivity, BOD5, Stream Temperature and pH	Theodore Industrial Barge Canal or Middle Fork Deer River	8	Mobile	Theodore	Mobile
Georgia Pacific Corporation Brewton Mill, Inc.	AL0002682	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature, Color and pH	Conecuh River	3	Perdido-Escambia	Brewton	Escambia
Georgia Pacific Naheola Mill	AL0003301	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tombigbee River	2	Lower Tom-bigbee	Pennington	Choctaw
International Paper-Courtland Mill	AL0000396	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tennessee River	5	Tennessee	Courtland	Lawrence
International Paper-Pine Hill Mill	AL0002674	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Alabama River	8	Alabama	Pine Hill	Wilcox
International Paper- Prattville Mill	AL0003115	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Alabama River	10	Alabama	Prattville	Autauga
International Paper-Riverdale Mill	AL0003018	Paper Mill	D.O. (at 5 foot depth)	Alabama River	1	Alabama	Selma	Dallas
Kimberly-Clark Corporation Mobile Mill	AL0002801	Paper Mill	D.O. (at 5 foot depth), Conductivity, pH and Temperature (both ambient & stream)	Mobile River	5	Mobile	Mobile	Mobile
MeadWestvaco Coated Board (non-continuous)	AL0000817	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Chattahoochee River	12	Chattahoochee	Cottonton	Russell
MeadWestvaco Coated Board (continuous)	AL0000817	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Chattahoochee River	4			
Rock-Tenn CompanyDemopolis	AL0002828	Paper Mill	D.O. (at 5 foot depth), BOD5, Stream Temperature and pH	Tombigbee River	2	Lower Tom-bigbee	Demopolis	Marengo
Rock-Tenn Company-Stevenson	AL0022314	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Tennessee River	6	Tennessee	Stevenson	Jackson
SCA Tissue NA LLC (Barton Opera-tions)	AL0074667	Paper Mill	D.O. (at 5 foot depth), Stream Tempera-ture and pH	Tennessee River	3	Tennessee	Cherokee	Colbert
Sloss Industries	AL0003247	Iron and Steel Manufacturer	Stream Depth, Stream Temperature, pH, Hardness, Turbidity, Total Cyanide, Avail-able Cyanide	Five Mile Creek	2	Warrior	Birmingham	Jefferson
ThyssenKrupp Steel and Stainless USA, LLC	AL0079901	Steel Manu-facturer	D.O. (at 1 meter increments from 0.2 meters until you reach the bottom) Stream Temperature, pH, Conductivity and Tur-bidity.	Tombigbee River	4	Lower Tom-bigbee	Calvert	Washington

Table 2-5 Industrial River Monitoring Ambient Dissolved Oxygen Summary 2010-2011

Facility Name	NPDES #	Total Samples	# of Samples < 5.0 mg/l	%DO < 5	# of Samples < 4.0 mg/l	%DO <4
ABC Coke	AL0003417	0	*	*	*	*
AbitibiBowater Alabama, Inc.	AL0003158	**	**	**	**	**
Alabama River Pulp Co., Inc.	AL0025968	88	1	1.14	1	1.14
Boise White Paper LLC	AL0002755	55	0	0.00	0	0.00
Bon Secour Fisheries	AL0003298	**	**	**	**	**
Carson & Company, Inc.	AL0048194	**	**	**	**	**
Ciba Specialty Chemical	AL0003093	36	7	19.44	0	0.00
Evonik Degussa Corporation	AL0023272	**	**	**	**	**
Georgia Pacific Corporation Brewton Mill, Inc.	AL0002682	30	0	0.00	0	0.00
Georgia Pacific Naheola Mill	AL0003301	251	0	0.00	0	0.00
International Paper-Courtland Mill	AL0000396	51	0	0.00	0	0.00
International Paper-Pine Hill Mill	AL0002674	1028	88	8.56	1	0.10
International Paper- Prattville Mill	AL0003115	**	**	**	**	**
International Paper-Riverdale Mill	AL0003018	949	0	0.00	0	0.00
Kimberly-Clark Corporation Mobile Mill	AL0002801	**	**	**	**	**
MeadWestvaco Coated Board (non-continuous)	AL0000817	378	26	6.88	0	0.00
MeadWestvaco Coated Board (continuous)	AL0000817	61	3	4.92	0	0.00
Rock-Tenn Company-Demopolis	AL0002828	22	0	0.00	0	0.00
Rock-Tenn Company-Stevenson	AL0022314	54	18	33.33	0	0.00
SCA Tissue NA LLC (Barton Operations)	AL0074667	51	15	29.41	3	5.88
Sloss Industries	AL0003247	**	**	**	**	**
ThyssenKrupp Steel and Stainless USA, LLC	AL0079901	9	0	0.00	0	0.00

Table prepared with incomplete data received

*Facilities ambient sampling parameters do not include Dissolved Oxygen

**Data not reported

Chapter 3 Lakes and Reservoirs

3.1 Lake Water Quality Assessment

3.1.1 Background

Section 314 (a) (2) of the Clean Water Act, as amended by the Water Quality Act of 1987, requires states to conduct assessments of publicly-owned lake water quality and report the findings as part of the biennial §305(b) Water Quality Report to Congress. The assessment process is conducted through the use of federal and matching funding, including that available pursuant to Sections 106 and 319 of the Act.

The Department 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. Lakes designated strictly for public water supply, 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. Lakes currently meeting the above definition are included in the tables that follow.

In 1985, the need for information on the trophic state of Alabama's publicly-owned lakes led to the initial survey, conducted by the ADEM with the assistance of the U.S. Environmental Protection Agency Region IV. During the survey, limited baseline data was collected and used to rank the lakes according to trophic condition.

In 1989, Clean Lakes Program funds enabled the ADEM to conduct required water quality assessments of thirty-four (34) publicly-owned lakes in the State and submit collected information as part of the 1990 Water Quality Report to Congress. Trophic state index (TSI) values calculated from data gathered for the water quality assessments indicated potentially significant increases when compared to the TSI values derived from the study conducted in 1985.

Initiated in 1990 as the Reservoir Water Quality Monitoring Program, the program was given the name Rivers and Reservoirs Monitoring Program (RRMP) in 2004 with the addition of free-flowing river reaches:

Objectives of the program are: to develop an adequate water quality database for all rivers and publicly-accessible lakes in the state; to establish trends in river and lake trophic status that are only established through long-term monitoring efforts; and, to satisfy Section 314 (a) (2) of the Clean Water Act.

Acquiring this information enables the ADEM to determine lake water quality and identify lakes in which water quality may be deteriorating. Should deterioration in water quality be indicated by collected data, more intensive study of the lake can be instituted to establish the causes and extent of the deterioration.

From 1990-1992, thirty-one publicly-owned lakes in the State were monitored at least once. Lakes indicated to be use-threatened or impaired from previously collected data were monitored annually. Additional funding received in 1991 through the Clean Lakes Program allowed the expansion of the Program to include all of the thirty-two (32) publicly-owned lakes in the State, with the exception of those in the Tennessee River system. These reservoirs are monitored through the TVA Reservoir Vital Signs Program.

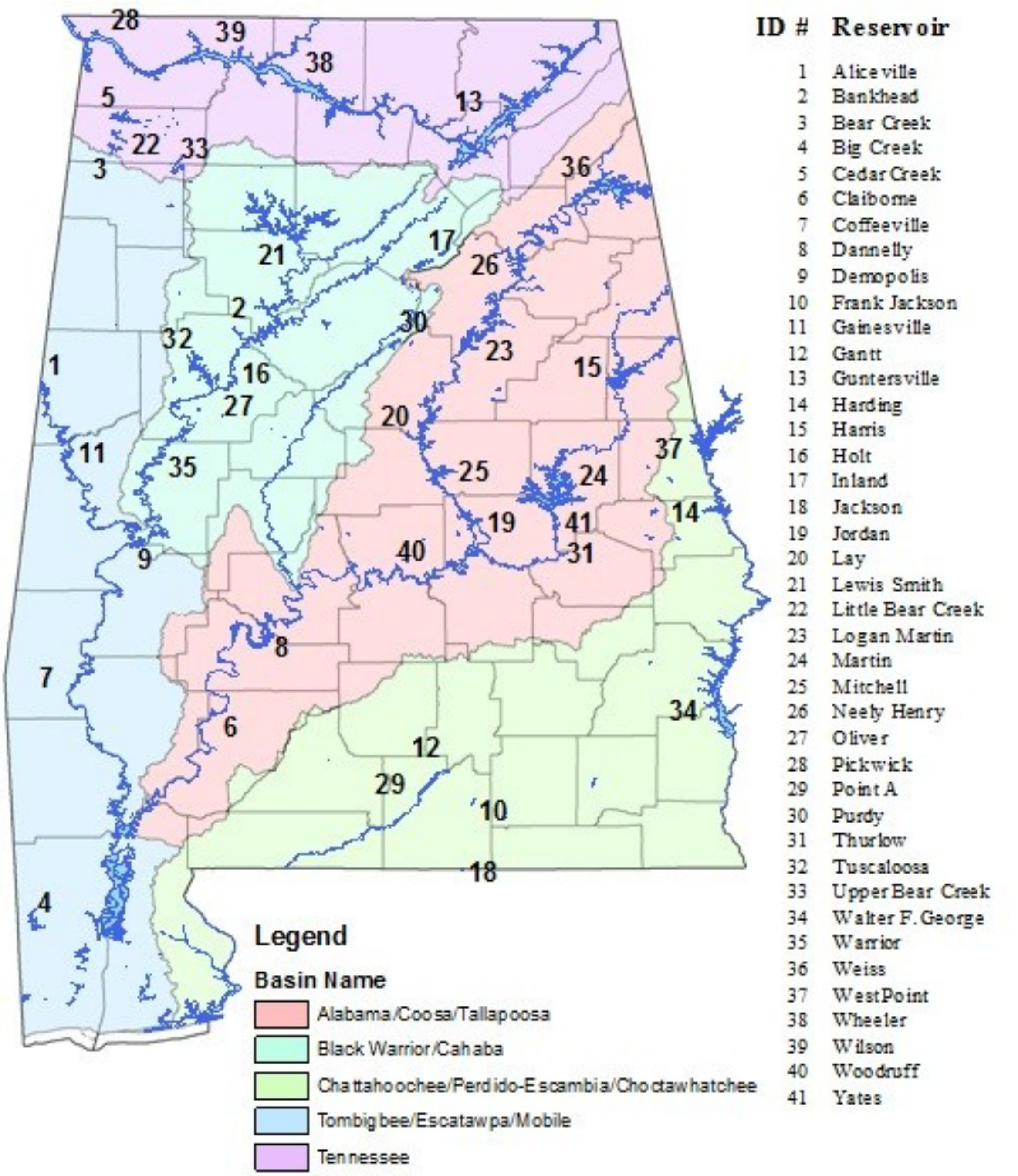
Beginning in 1994, the frequency of reservoir monitoring in the RRMP was increased to a minimum of once every two years so that the water quality database and trends in trophic status could be more rapidly developed. Lakes indicated to be use-threatened or impaired continued to be monitored annually. Realignment of the reservoir sampling schedule was also initiated in 1994 so that reservoir sampling by basin could be instituted.

In 1997, intensive monitoring of reservoirs by basin was initiated, with spring season sampling for the RRMP discontinued to allow allocation of resources toward this effort. Intensive monitoring consists of monthly sampling of multiple mainstem, tributary embayment and main river stations in each reservoir from April-October. Reservoirs intensively monitored to date are as follows:

a) Coosa and Tallapoosa River Basin reservoirs, 1997;
b) Black Warrior River Basin reservoirs, 1998;
c) Chattahoochee and Conecuh River Basin reservoirs, 1999;
d) Coosa, Tallapoosa, and Alabama River Basin reservoirs, 2000;
e) Tombigbee and Escatawpa River Basin reservoirs, 2001;
f) Black Warrior and Cahaba River Basin reservoirs, 2002;
g) Tennessee River Basin tributary embayments, 2003;
h) Chattahoochee, Perdido-Escambia, and Choctawhatchee River Basins, 2004;
i) Coosa, Tallapoosa, and Alabama River Basins, 2005;
j) Tombigbee and Escatawpa River Basins, 2006;
k) Black Warrior and Cahaba River Basins, 2007;
L) Chattahoochee, Perdido-Escambia, and Choctawhatchee River Basins, 2008;
m) Tennessee River Basin tributary embayments, 2009;
n) Coosa, Tallapoosa, and Alabama River Basins, 2010;
o) Tombigbee, Mobile and Escatawpa River Basins, 2011; and,
p) Black Warrior and Cahaba River Basins, 2012.

Initiated in 1989, water quality monitoring of lakes of the Tennessee River system continues through the Tennessee Valley Authority (TVA) Reservoir Vital Signs Monitoring Program. The Program provides results of its monitoring activities to the ADEM on an annual basis through Program reports. Activities of the Program are based on the examination of appropriate physical, chemical, and biological indicators in the forebay, mid-region, and headwater areas of each lake. Objectives of the Program are to provide basic information on the "health" or

Figure 3-1 Publicly Accessible Reservoirs of Alabama



integrity of the aquatic ecosystem in each TVA lake and to provide screening level information describing how well each reservoir meets the "fishable" and "swimmable" goals of the Clean Water Act. Figure 3-1 shows Publicly Accessible Reservoirs of Alabama.

For more information about Lakes and Reservoirs, contact Ms. Gina Curvin in ADEM's Montgomery Office at (334) 260-2783 or GCurvin@adem.state.al.us

3.2.1. Trophic Status

In the RRMP, the ADEM uses Carlson's trophic state index (TSI) for determination of the trophic state of Alabama lakes. Carlson suggests the use of corrected chlorophyll a concentrations in calculations of the trophic state of lakes during the summer months. Using corrected chlorophyll a concentrations to determine trophic state is considered to give the best estimate of the biotic response of lakes to nutrient enrichment when phytoplankton is the dominant plant community. In previous reporting due to limited data availability, the ADEM used the yearly August TSI value to characterize the reservoir's trophic state and determine long-term trends. Beginning with the 2012 report, the ADEM evaluated each reservoir using the season mean TSI value which is a better indicator for trophic status and trends, Carlson's TSI provides the limnologist and the public with a single number that serves as an indicator of trophic status of a lake but does not necessarily define it. Lakes with a TSI of 70 or greater are generally considered to be hypereutrophic and in need of regulatory action appropriate for protection and restoration. A TSI of 50 to 70 indicates eutrophic conditions in a lake. Trophic state index values from 40 to 50 indicate mesotrophic conditions. Oligotrophic conditions are indicated by TSI values less than 40.

The number and surface area of lakes for each trophic classification appear in Table 3-1, which was developed using current monitoring data. A trophic state ranking of Alabama lakes appears in Table 3-2. TSI graphs for Alabama reservoirs are found in Figures 3-2 thru 3-41.

Table 3-1 Trophic Status of Significant Publicly Owned Lakes

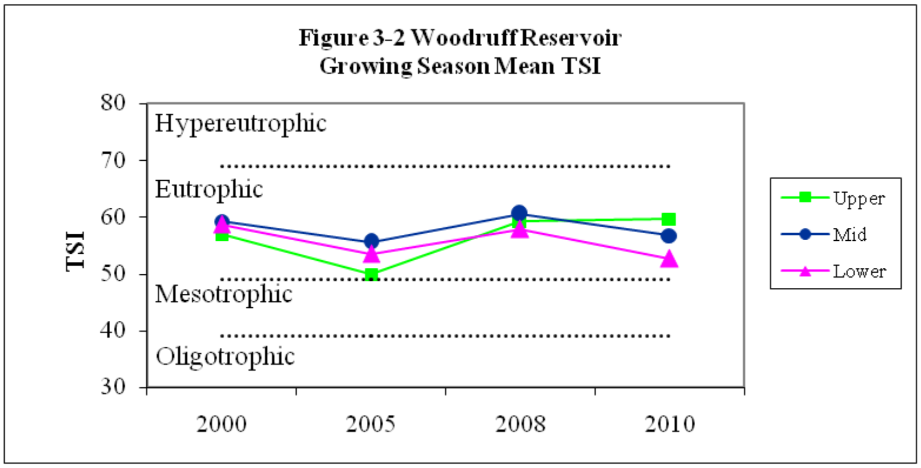
	Number of Lakes	Acreage of Lakes
Total	41	479,470
Assessed	41	479,470
Oligotrophic	2	40,350
Mesotrophic	13	62,582
Eutrophic	26	376,538
Hypereutrophic	0	0
Dystrophic	0	0
Unknown	0	0

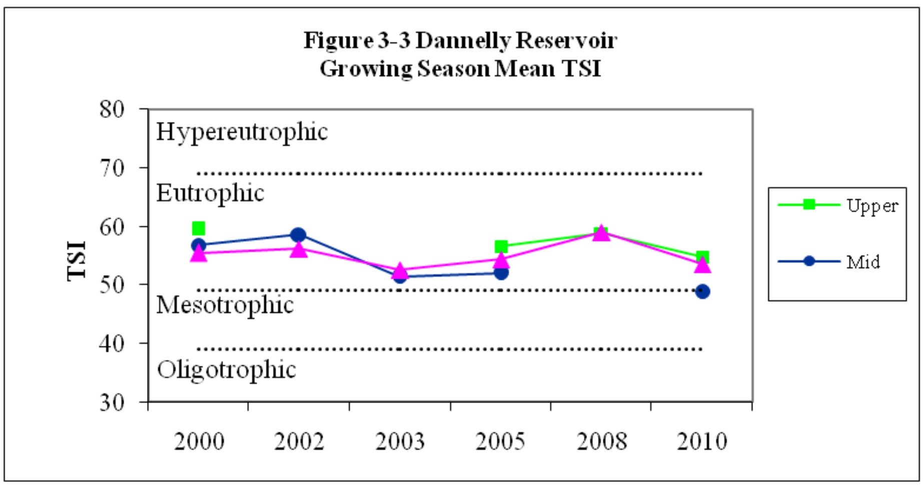
Table 3-2 Reservoir and Lake Trophic Status

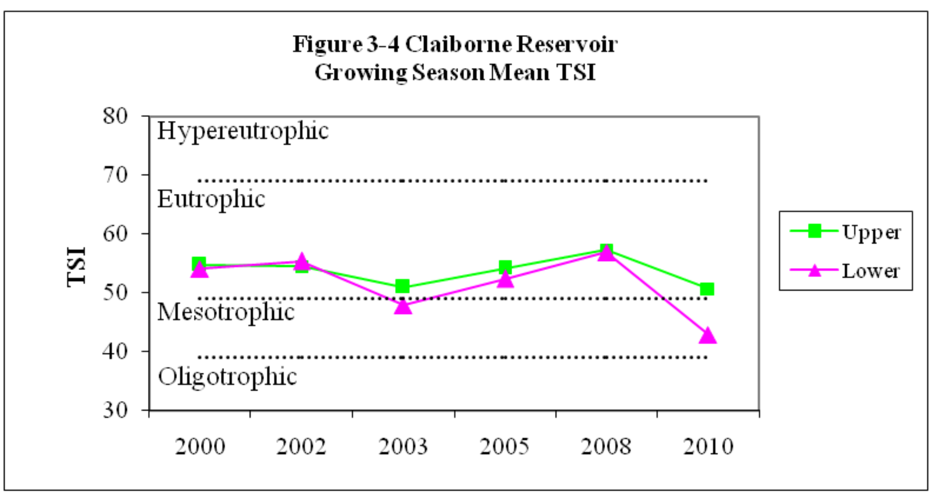
Trophic State Designation	Index	Reservoir	River Basin	Growing Season TSI Value	Growing Season TSI Year	*Average TSI Value
Eutrophic	1	Neely Henry	Coosa	63	2010	64
(50-69)	2	Weiss	Coosa	61	2010	62
	3	Wilson	Tennessee	59	2009	57
	4	Wheeler	Tennessee	58	2009	58
	5	Logan Martin	Coosa	57	2010	59
	6	Upper Bear	Tennessee	57	2009	57
	7	Purdy	Cahaba	56	2011	58
	8	Guntersville	Tennessee	56	2009	54
	9	Aliceville	Tombigbee	55	2009	57
	10	Pickwick	Tennessee	55	2009	56
	11	Gainesville	Tombigbee	55	2009	53
	12	Frank Jackson	Perdido Escambia	55	2009	50
	13	Lay	Coosa	54	2010	58
	14	Mitchell	Coosa	54	2010	58
	15	W.F. George	Chattahoochee	54	2008	56
	16	Dannelly	Alabama	54	2010	55
	17	West Point	Chattahoochee	54	2008	55
	18	Bear	Tennessee	53	2009	57
	19	Woodruff	Alabama	53	2010	56
	20	Jordan	Coosa	52	2010	55
	21	Bankhead	Warrior	52	2011	54
	22	Warrior	Warrior	52	2011	53
	23	Demopolis	Tombigbee	51	2009	50
	24	Oliver	Warrior	51	2011	50
	25	Holt	Warrior	50	2011	53
	26	Coffeeville	Tombigbee	50	2009	50
Mesotrophic	27	Little Bear	Tennessee	49	2009	49
(40-49)	28	Point A	Perdido Escambia	49	2008	46
	29	Harris	Tallapoosa	48	2010	50
	30	Cedar	Tennessee	48	2009	46
	31	Big Creek	Escatawpa	46	2009	49
	32	Gantt	Perdido Escambia	46	2008	48
	33	Thurlow	Tallapoosa	46	2010	41
	34	Harding	Chattahoochee	45	2008	50
	35	Yates	Tallapoosa	44	2010	45
	36	Claiborne	Alabama	43	2010	52
	37	Smith	Warrior	41	2011	40
	38	Inland	Warrior	40	2011	43
	39	Tuscaloosa	Warrior	40	2011	40
Oligotrophic	40	Martin	Tallapoosa	39	2010	40
(< 40)	41	Jackson	Perdido Escambia	37	2008	42

*Average cumulative mean growing season values (1997-present) from dam forebay stations and may not reflect a lake's current trophic state.

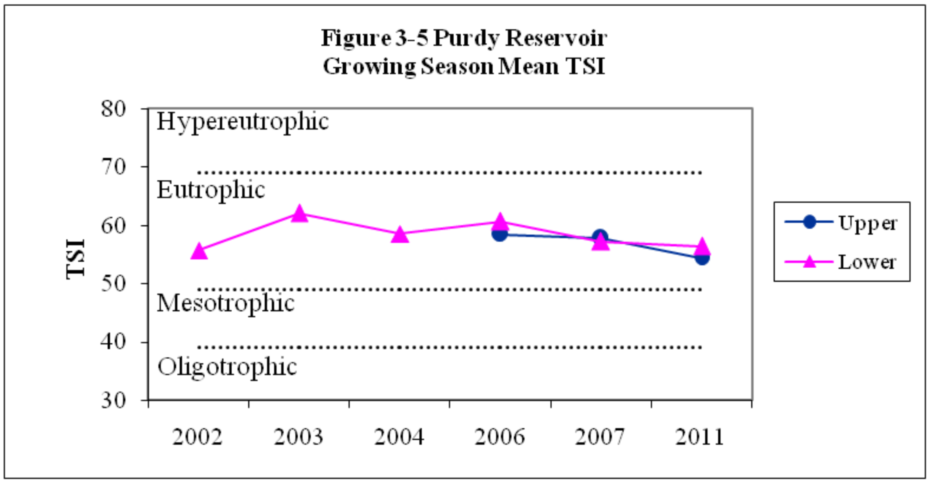
Alabama River Basin



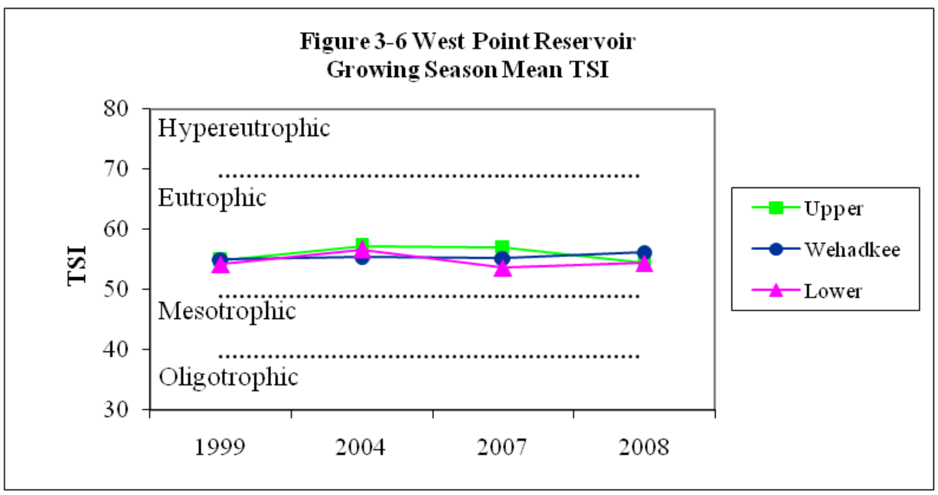


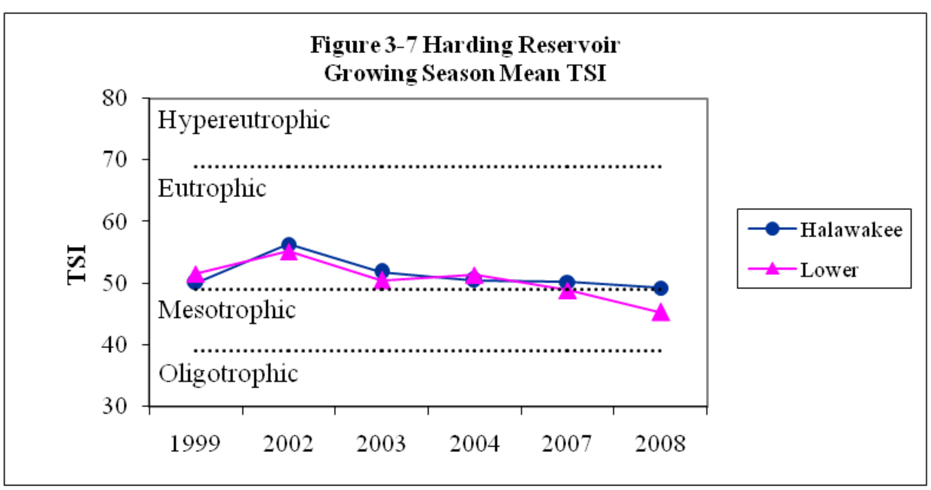


Cahaba River Basin

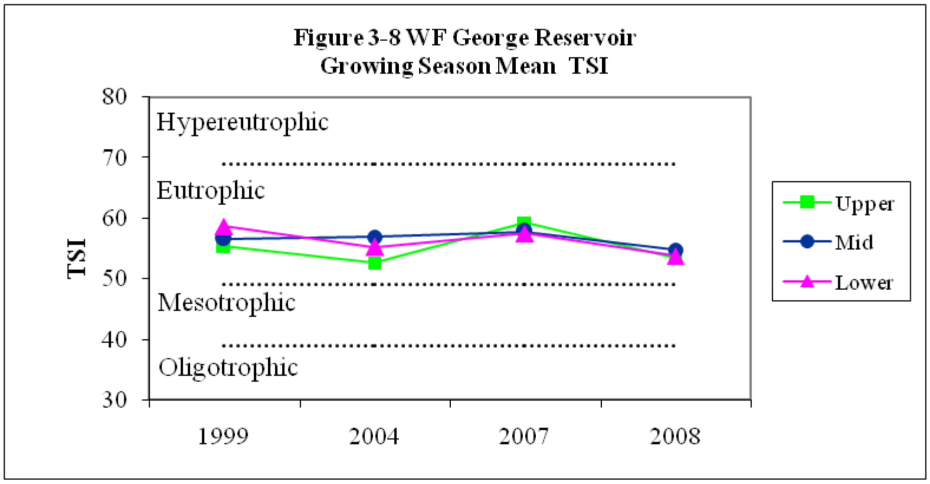


Chattahoochee River Basin

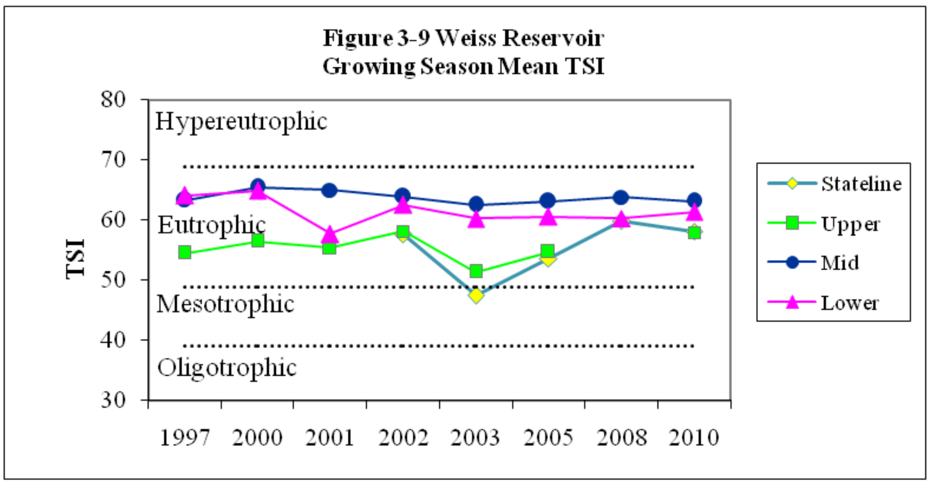


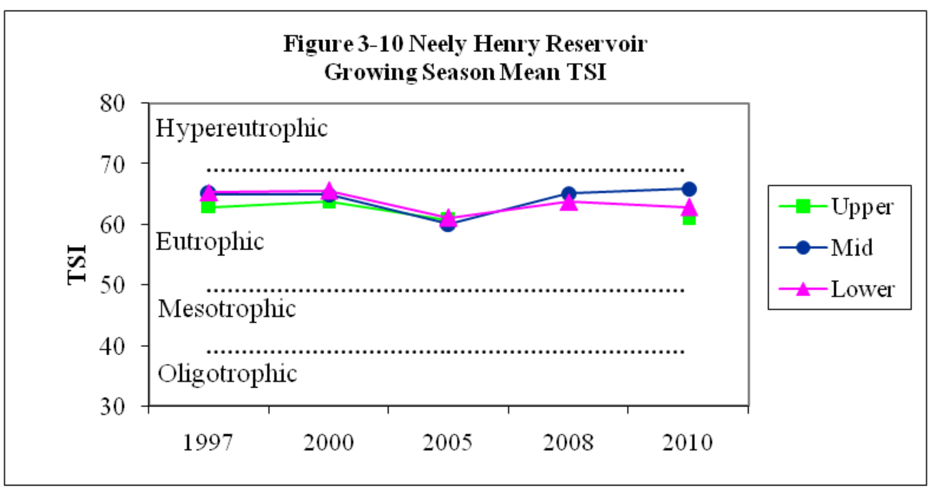


Chattahoochee River Basin

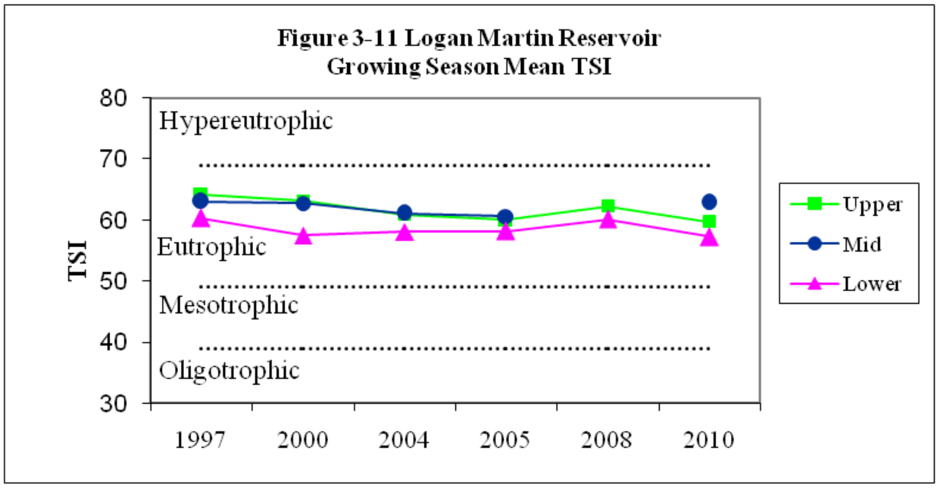


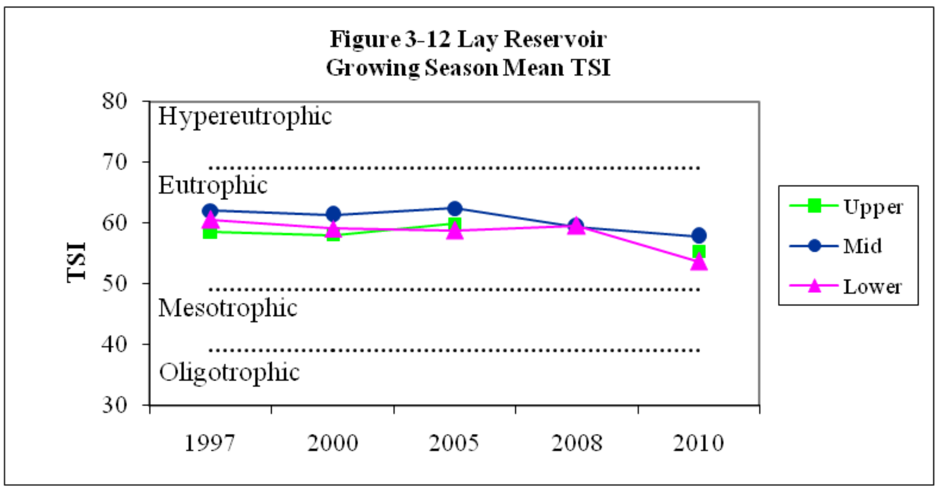
Coosa River Basin

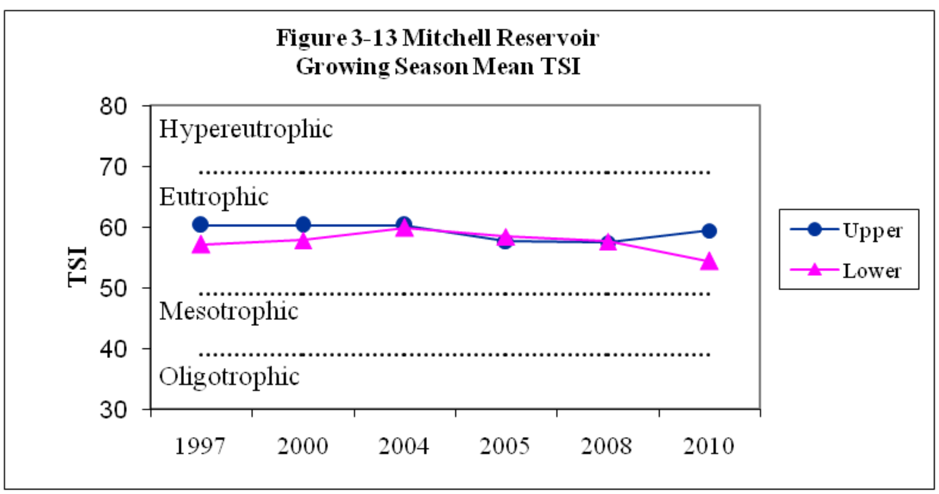




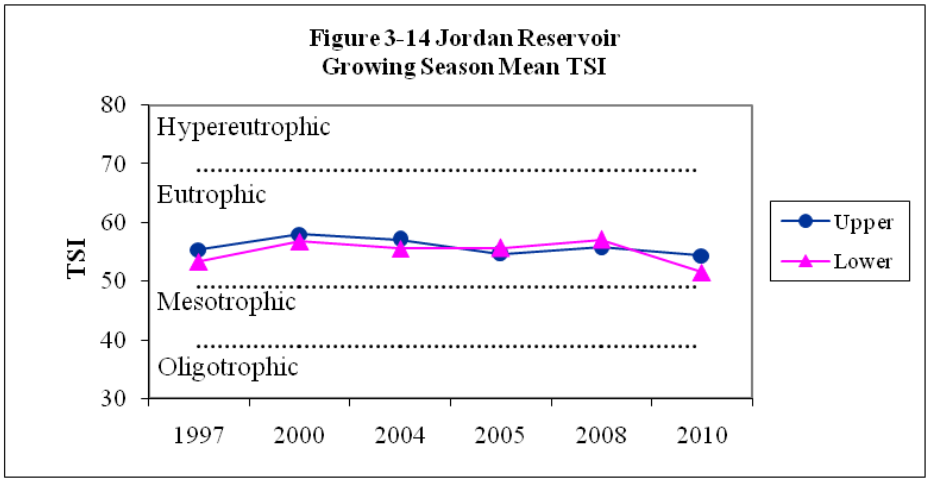
Coosa River Basin



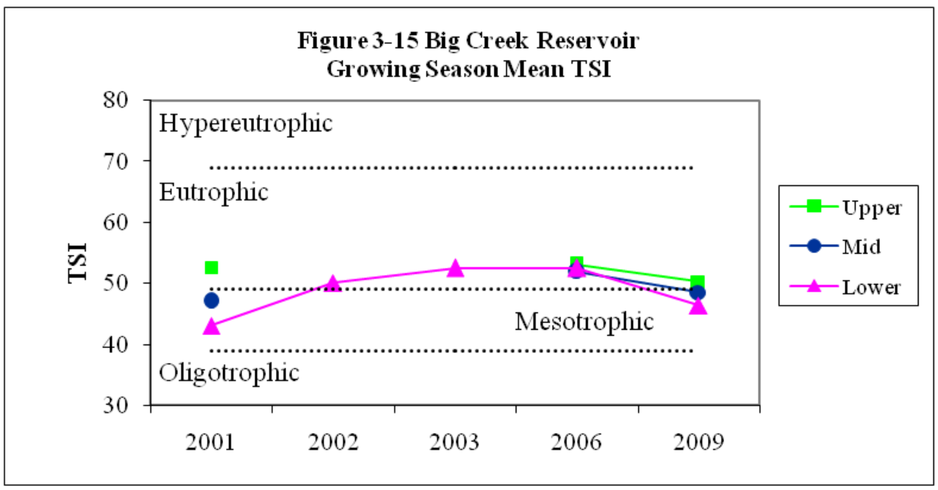




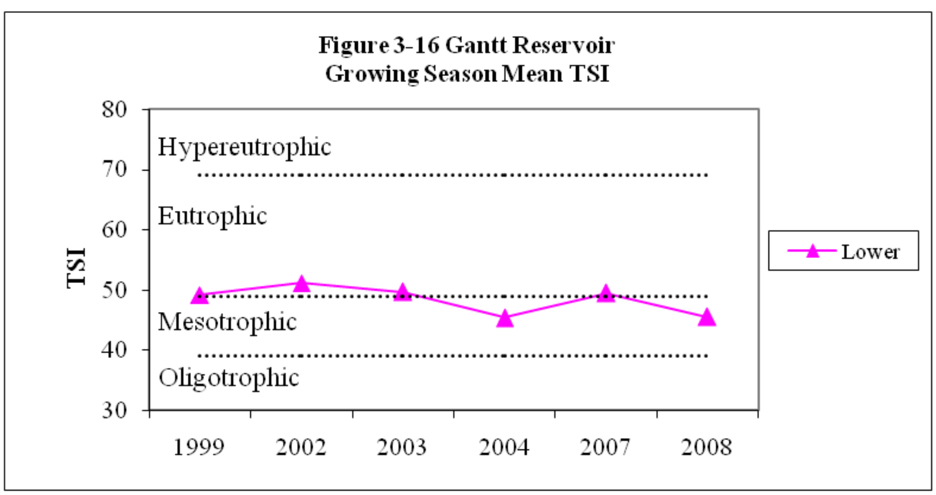
Coosa River Basin



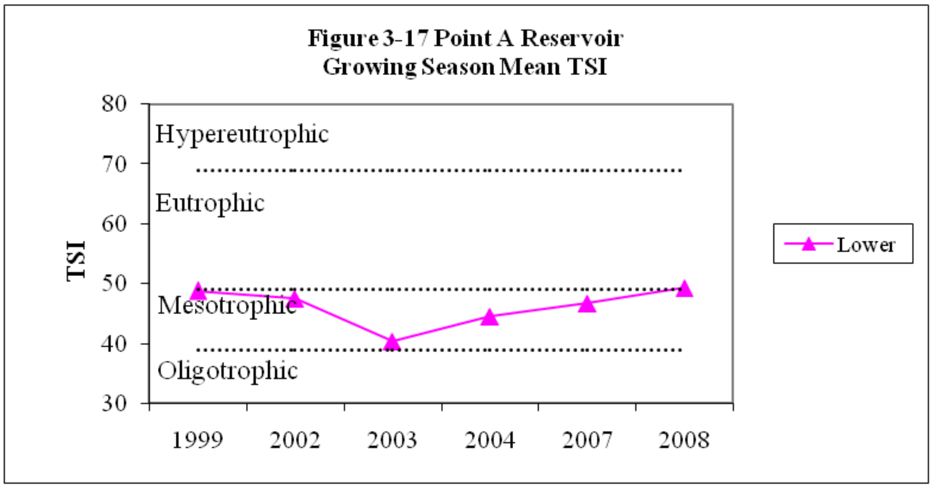
Escatawpa River Basin

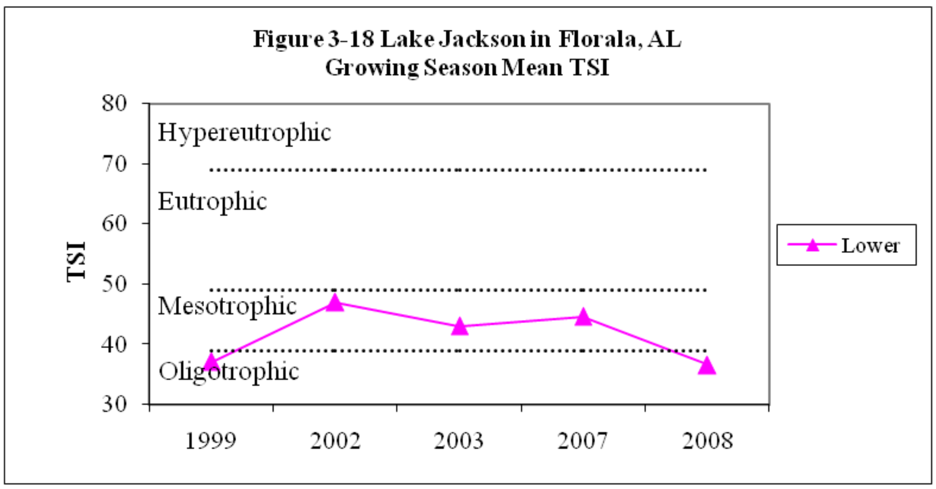


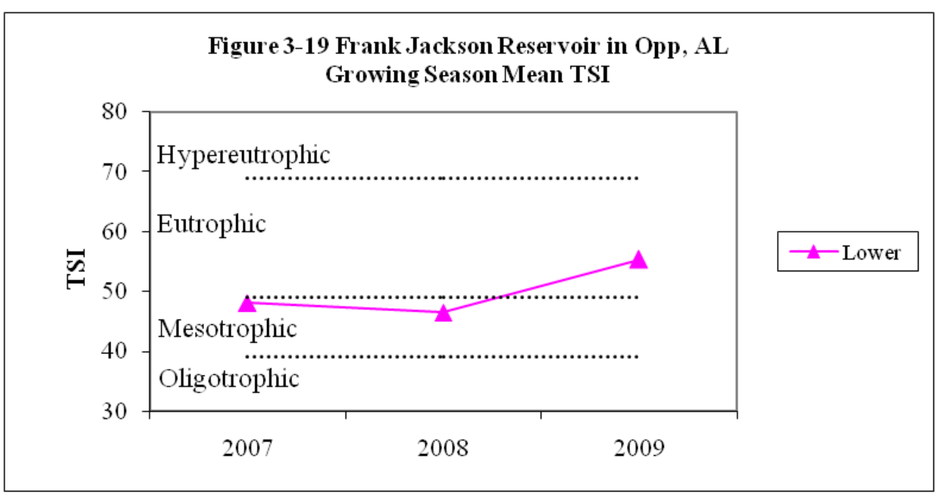
Perdido Escambia River Basin



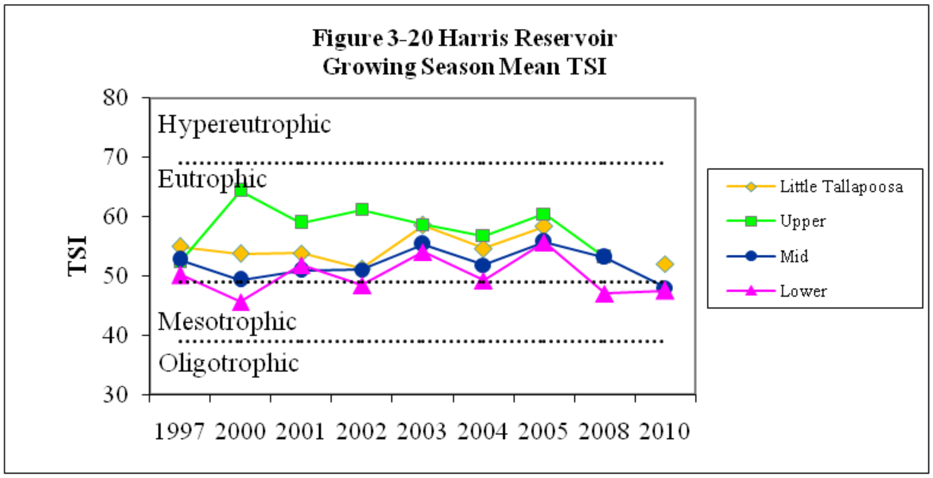
Perdido Escambia River Basin

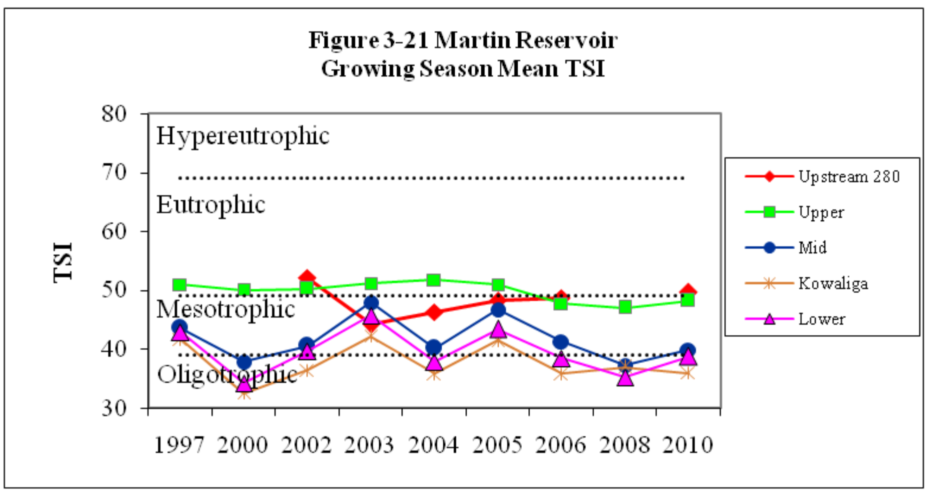


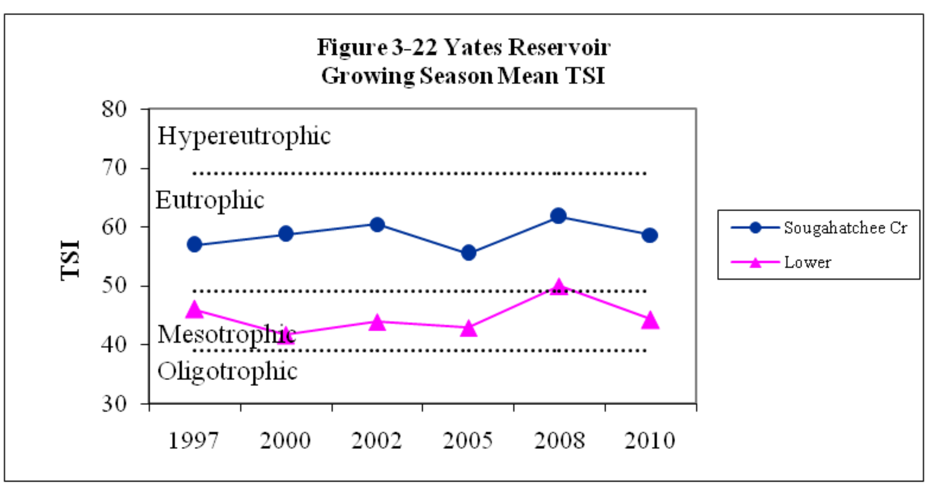




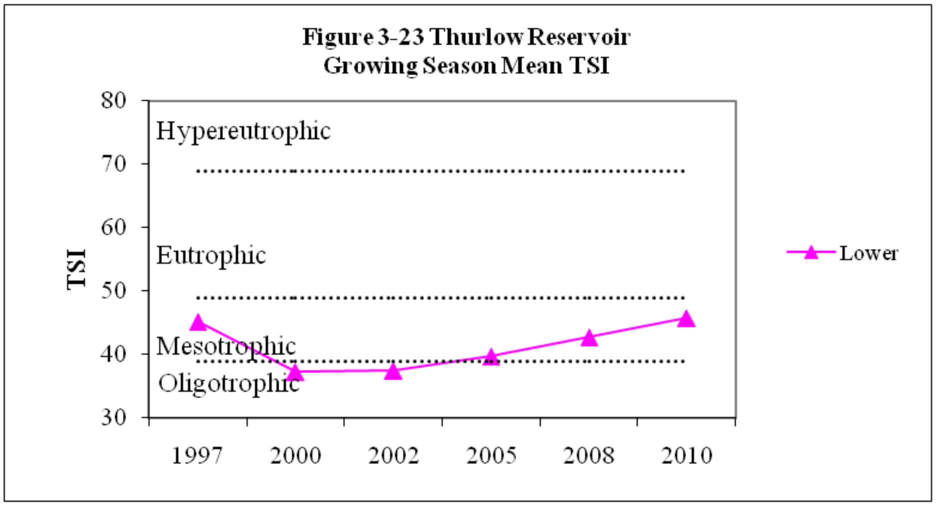
Tallapoosa River Basin

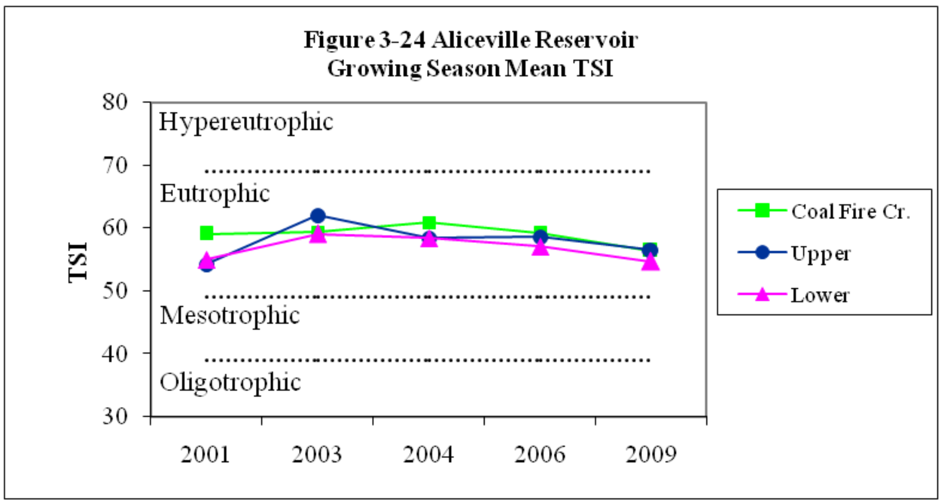


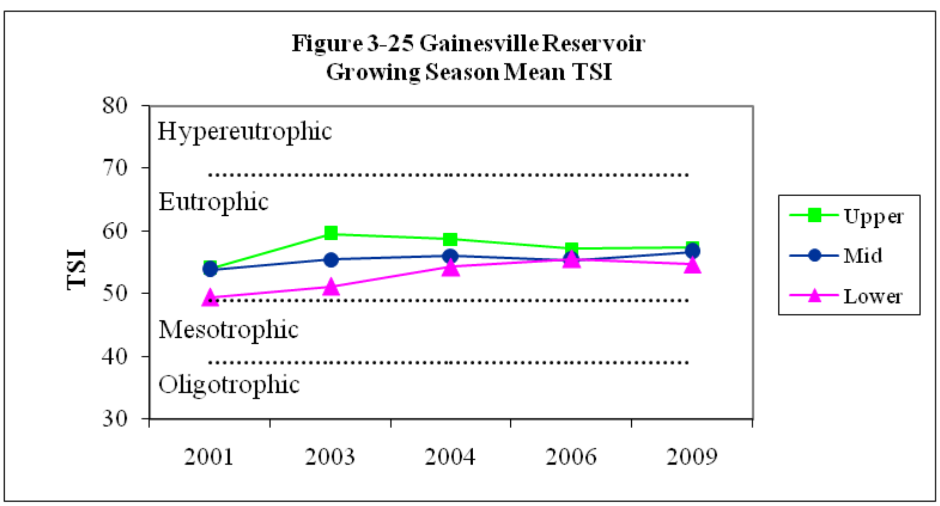




Tombigbee River Basin







Tombigbee River Basin

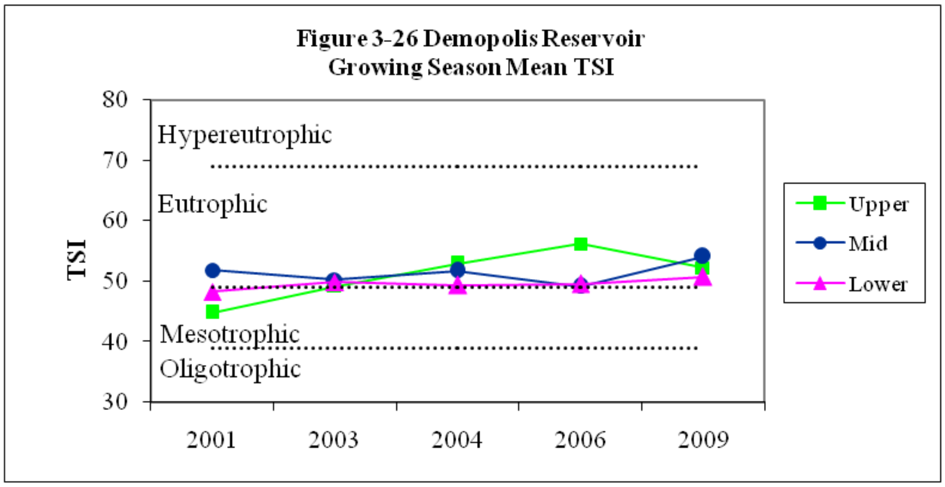


Figure 3-26 Demopolis Reservoir Growing Season Mean TSI

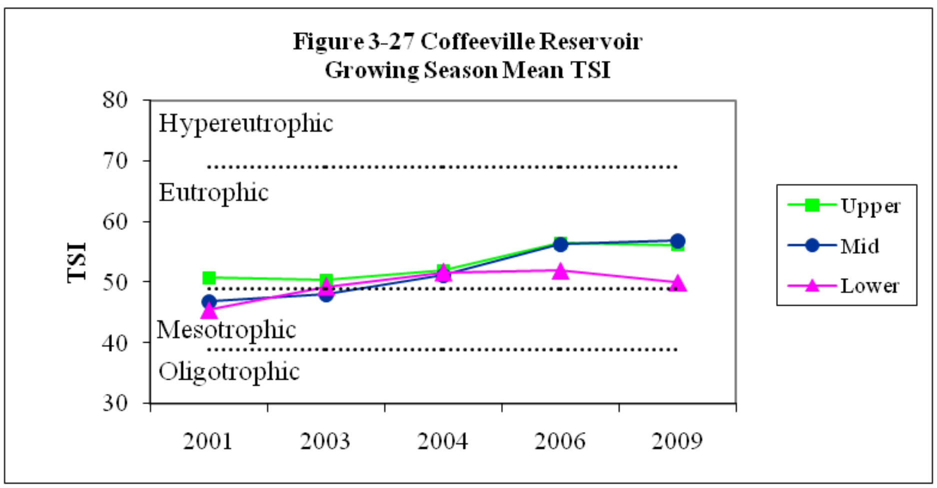


Figure 3-27 Coffeeville Reservoir Growing Season Mean TSI

Warrior River Basin

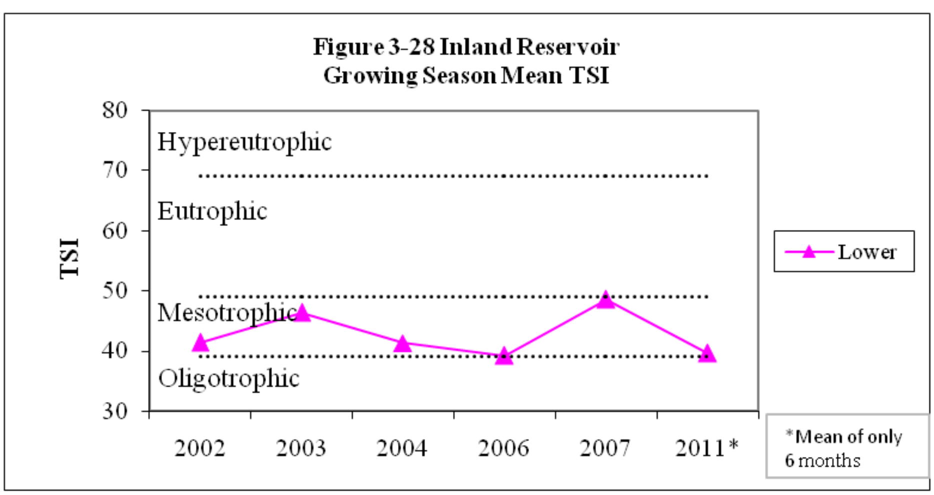
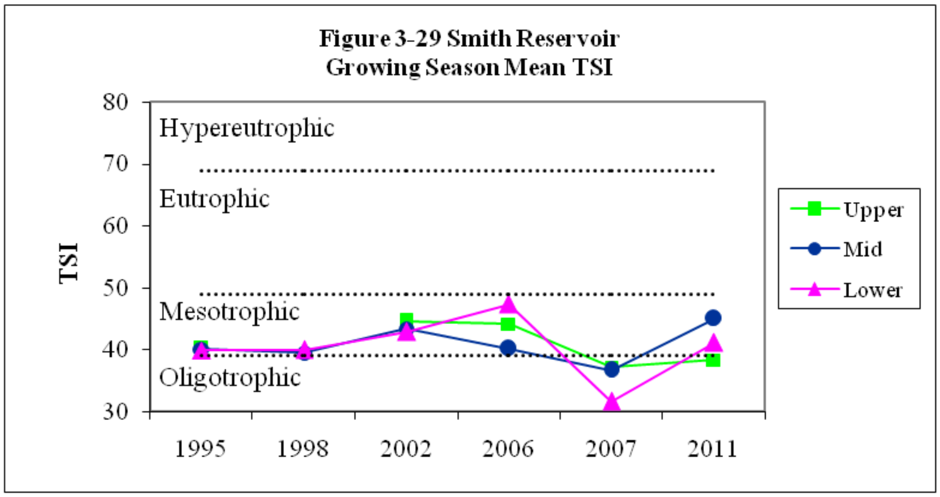
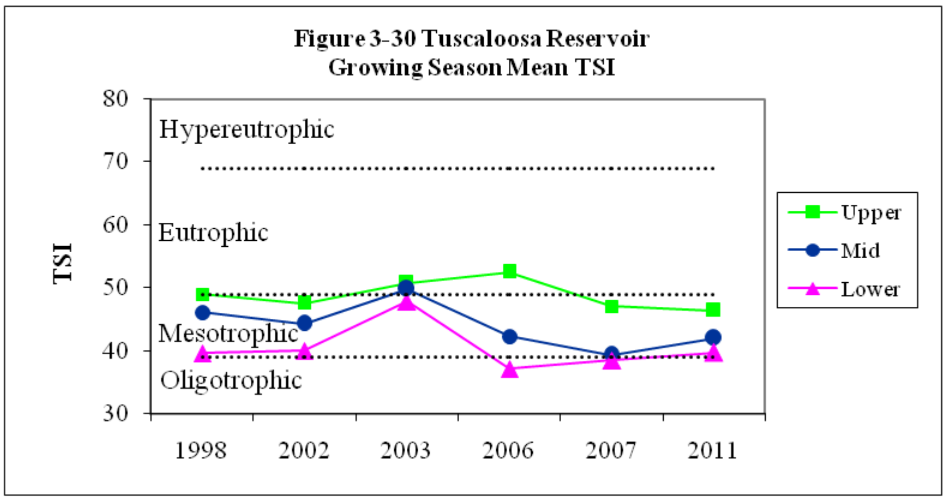
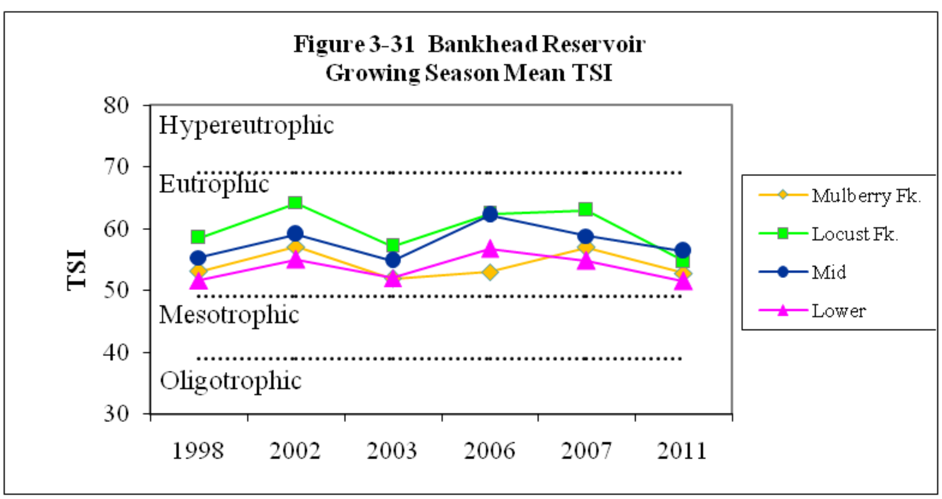


Figure 3-28 Inland Reservoir Growing Season Mean TSI

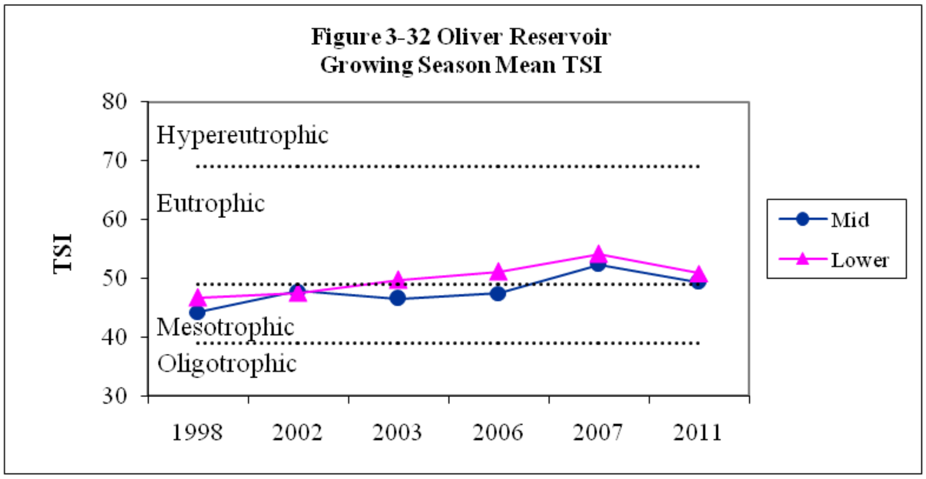
Warrior River Basin

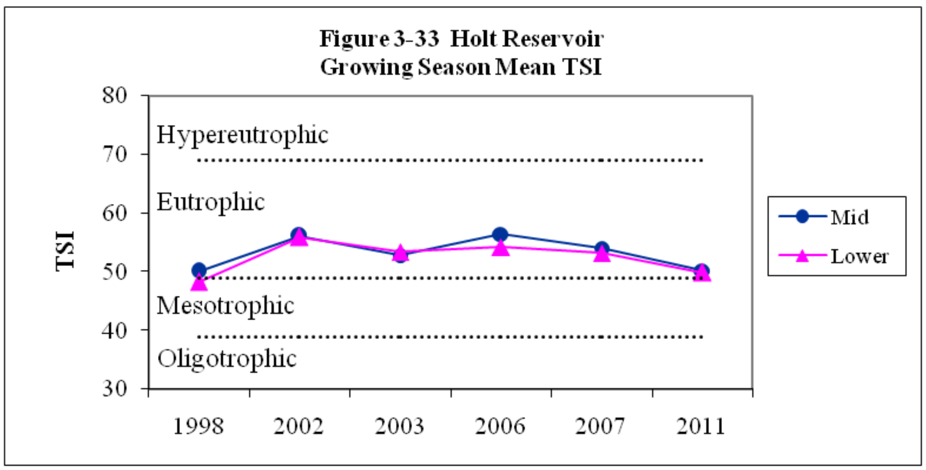


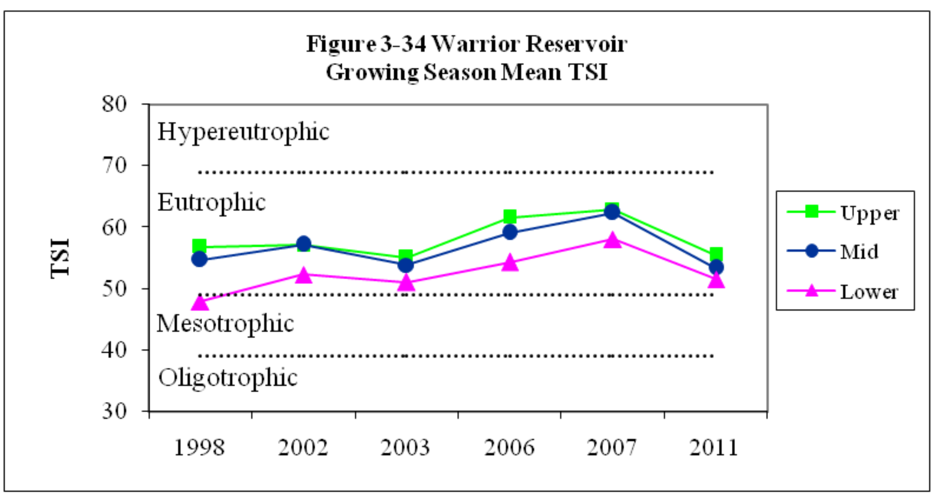




Warrior River Basin







3.3 Control Methods

The ADEM has not defined control methods specifically for lakes. Instead, the pollution controls of ADEM's Point Source Program (NPDES permitting) and the Nonpoint Source Program are applicable for all of the State's surface waters.

3.4. Restoration Efforts

Water quality data collected by the RRMP enabled the ADEM to determine lakes in need of Clean Lakes Program Phase I Diagnostic/Feasibility Studies. All Clean Lakes Program Phase I Diagnostic/Feasibility Studies were conducted through cooperative agreements between ADEM and Auburn University. A list of the Clean Lakes Program Projects of Alabama appears in Table 3-3. Table 3-4 shows State Owned and Operated Public Fishing Lakes.

Table 3-3 List of Clean Lakes Program Projects

Name of Project	Type of Project	Federal Funding ($)	Problems Addressed	Management Measures Proposed or Undertaken
West Point Reservoir	Phase I	100,000	Diagnostic/ Feasibility	See Report
W.F. George Reservoir	Phase I	70,000	Diagnostic/ Feasibility	See Report
Neely Henry Reservoir	Phase I	92,000	Diagnostic/ Feasibility	See Report
Weiss Reservoir	Phase I	142,583	Diagnostic/ Feasibility	See Report
Smith Reservoir	Phase I	93,000	Diagnostic/ Feasibility	See Report

Table 3-4 State Owned and Operated Public Fishing Lakes

County	County Fishing Lakes	Acres
Barbour	Barbour County Lake	75
Bibb	Bibb County Lake	100
Chambers	Chambers County Lake	183
Clay	Clay County Lakes	74
Coffee	Coffee County Lake	80
Crenshaw	Crenshaw County Lake	53
Dale	Dale County Lake	92
Dallas	Dallas County Lake	100
DeKalb	DeKalb County Lake	120
Escambia	Escambia County Lake	184
Fayette	Fayette County Lake	60
Geneva	Geneva County Lakes	65
Lamar	Lamar County Lake	68
Lee	Lee County Lake	130
Madison	Madison County Lake	105
Marion	Marion County Lake	37
Monroe	Monroe County Lake	94
Pike	Pike County Lake	45
Walker	Walker County Lake	163
Washington	Washington County Lake	84
Totals	20 State Fishing Lakes	1,061

3.5. Impaired Lakes

The Size of Rivers and Streams Impaired by Causes appears in Table 3-5. Size of Rivers and Streams Impaired by Sources appears in Table 3-6.

Water quality data collected by the ADEM RRMP, Clean Lakes Program Phase I Studies and TVA Reservoir Monitoring Program were used for determination of use support status. Available data from each reservoir was examined for repeated violations of specific water quality criteria established by the ADEM and evaluated with adherence to the Guidelines For Preparation of the State Water Quality Assessments (305(b) Reports). Waters affected by health advisories related to fish consumption were determined to be either partially supporting or not supporting. This determination was dependent upon whether advisories specified limited consumption or no consumption of a particular species as directed in the guidelines mentioned above.

Table 3-5 Size of Lakes/ Reservoirs Impaired by Causes

	Category 5	**Category4**
Cause	Reservoir/Lake (acres)	Reservoir/Lake (acres)
Mercury	41,180.69	
Ammonia		577.25
Nitrogen		2,291.85
Phosphorus	7,981.21	74,601.55
BOD, carbonaceous	3,669.21	3,022.88
BOD, nitrogenous	3,669.21	527.25
DDT	85.73	
pH	1,569.21	
Sedimentation/Siltation		2,840.48
Polychlorinated biphenyls (PCBs)	32,196.15	25,518.98

Table 3-6 Size of Lakes/ Reservoirs Impaired by Sources

Sources	(acres)
Agriculture	7,902.11
Atmospheric deposition	41,094.96
Contaminated sediments	32,367.61
Dam construction	4,288.00
Flow regulation/modification	4,288.00
Non-irrigated crop production	3,138.42
Pasture grazing	3,138.42
Unknown source	1,435.05

3.6. Toxic Effects on Lakes

Lake-specific monitoring information for toxic pollutants is limited. Point source control efforts are directed at the source of toxic pollutants through NPDES permitting programs. Total lake acres affected by toxicants appear in Table 3-7. Lake acreage monitored for toxicants consists of lakes for which fish have been collected and analyzed through the ADEM Fish Tissue Monitoring Program and the TVA Reservoir Monitoring Program. Lake acreage with elevated levels of toxicants consists of lake areas upon which health advisories have been instituted that relate to consumption of fish contaminated with certain priority pollutants.

Fish will continue to be collected from major lakes, rivers, and certain waterbodies of concern and analyzed for toxic pollutants as part of the ADEM Fish Tissue Monitoring Program. Fish tissue sampling results are contained in the Fish Tissue Monitoring section of Part V Public Health Information.

3.7 Acid Effects on Lakes

The number and acreage of lakes affected by acidity appear in Table 3-8. The number and acreage of lakes affected by sources of high acidity appear in Table 3-9. No reservoirs monitored by the ADEM have been determined to be impacted by high acidity based on data collected through the RRMP. However, the following reservoirs are considered vulnerable to acidity based on low alkalinities and pH values observed in monitoring data that were near limits of specific ADEM water quality criteria: Big Creek; Inland; Jackson; Frank Jackson, Point A; Smith; and Tuscaloosa. Low pH values measured in Big Creek, Jackson, Frank Jackson, and Point A Reservoirs are determined to be of natural origin and are considered unlikely to cause adverse impacts. In the case of both Smith and Tuscaloosa Reservoirs, mining activities in the watershed were also considered in determining the vulnerability of the reservoirs to acid effects.

Table 3-7 Total Reservoir Size Affected by Toxicants

Waterbody	Size Monitored for Toxicants	Size with Elevated Levels of Toxicants
Rivers (miles)	-	-
Lakes (acres)	339,406	66,832
Estuaries (sq. miles)	-	-
Coastal waters (miles)	-	-
Freshwater wetlands (acres)	-	-
Tidal wetlands (acres)	-	-

Table 3-8 Lakes Affected By Acidity

	Number of Lakes	Acreage of Lakes
Assessed for Acidity	41	479,470
Impacted by High Acidity	0	0
Vulnerable to Acidity	7	34,030

Table 3-9 Sources of High Acidity in Lakes and Reservoirs

Source	Number of Lakes Impacted	Acreage of Lakes Impacted
Acid Deposition	0	0
Acid Mine Drainage	0	0
Natural Sources	0	0
Other (list)	0	0

3.8. Trends

Status of Trends for Lakes and Reservoirs appears in Table 3-10. Trends were determined by reviewing three (3) or more years of water quality data from multiple sources, if available, for each reservoir during the period 1997 to 2011.

The reservoirs considered to be degrading were listed based on data collected through the RRMP. Assignment of a particular reservoir to the "Stable" category does not necessarily indicate desirable water quality but only that the water quality appears stable.

Changes in trend status between the 2010 and 2012 report may have occurred not because the true status of the lake has changed but the quality and quantity of the data used to make the evaluation has improved.

Future data collection is critical in further establishing trends in water quality of reservoirs in the State.
For more information about Lakes and Reservoirs, contact Ms. Gina Curvin in ADEM's Montgomery Office at (334) 260-2783 or GCurvin@adem.state.al.us

3.9 TVA Lakes

Table 3-10 Status of Trends for Lakes and Reservoirs

	Number of Lakes	Acreage of Lakes
Assessed for Trends	41	479,470
Improving	3	11,150
Stable	34	452,735
Degrading	4	15,585
Trend Unknown	0	0

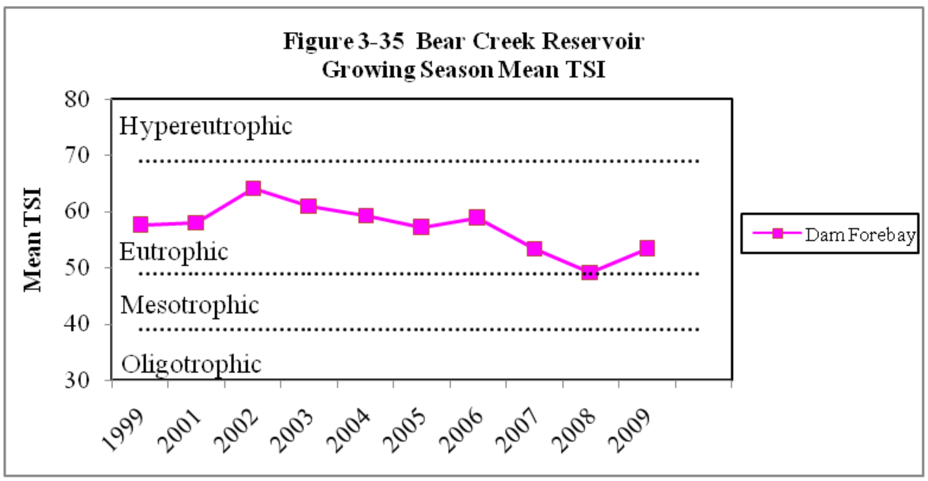
For certain lakes and reservoirs in Alabama there are waterbody-specific nutrient criteria. Nutrients may vary significantly lake-to-lake, and may vary from year to year depending on such factors as rainfall and hydraulic retention time. See Water Quality Criteria Applicable to Specific Lakes, ADEM Administrative code 335-6-10-.11. Tropic Status for TVA Reservoirs in Alabama appear in Figures 3-34 thru 3-42

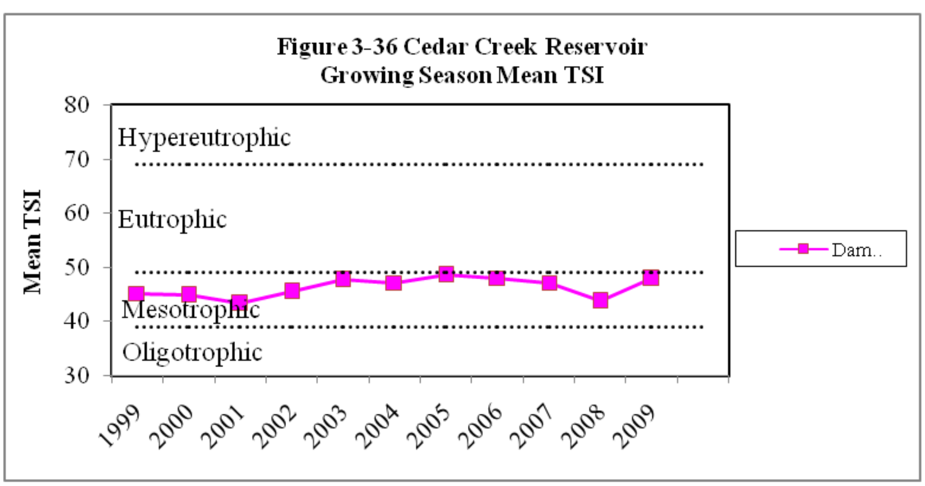
For more information about TVA Lakes, contact Mr. Tyler Baker with Tennessee Valley Authority at (423)-876-6733 or tfbaker@tva.gov

Table 3-11 TVA Lake Sampling Chlorophyll A Sampling Locations

Site Code	River Mile	Reservoir	Area	Lat	Long
UBDFB	BCM 115.4	Upper Bear Creek	Forebay	34º16'37.3"	87º41'06.3"
BCDFB	BCM 75.0	Bear Creek	Forebay	34º23'55.5"	87º58'57.8"
CCDFB	CCM 25.2	Cedar Creek	Forebay	34º32'03.0"	87º57'27.3"
LBDFB	LBCM 12.5	Little Bear	Forebay	34º27'12.7"	87º58'05.1"
PKHFB	TRM 207.3	Pickwick Land-ing	Forebay	35º04'13.0"	88º14'22.0"
WLHFB	TRM 260.8	Wilson	Forebay	34º48'30.8"	87º36'07.8"
WEHFB	TRM 277.0	Wheeler	Forebay	34º48'06.5"	87º21'15.7"
GUHFB	TRM 350.0	Guntersville	Forebay	34º25'16.1"	86º22'25.5"

Tennessee River Basin





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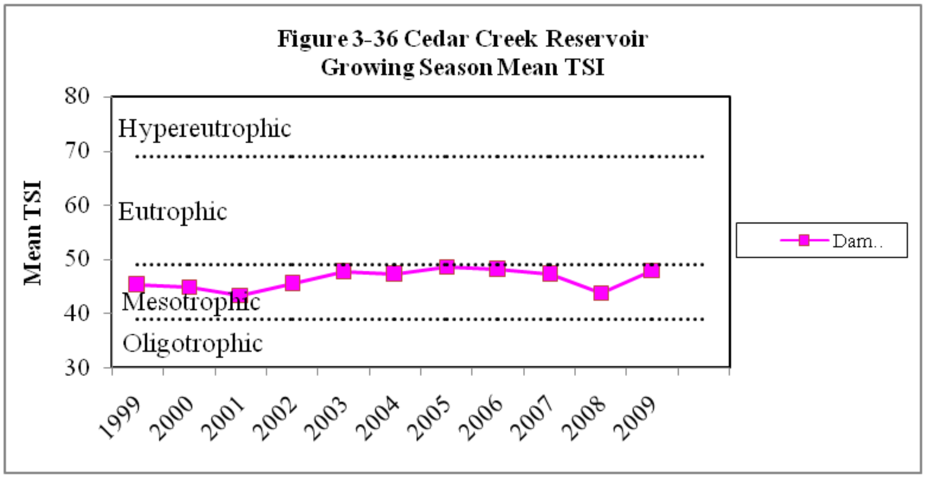
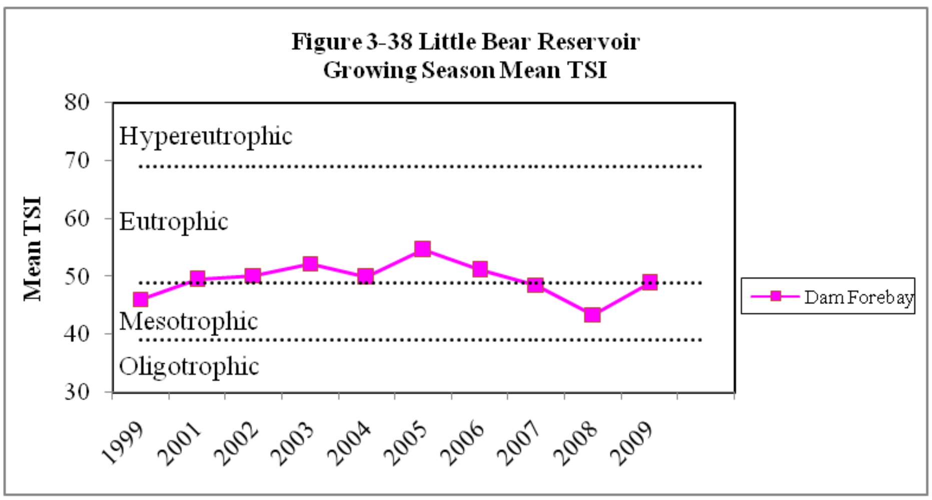
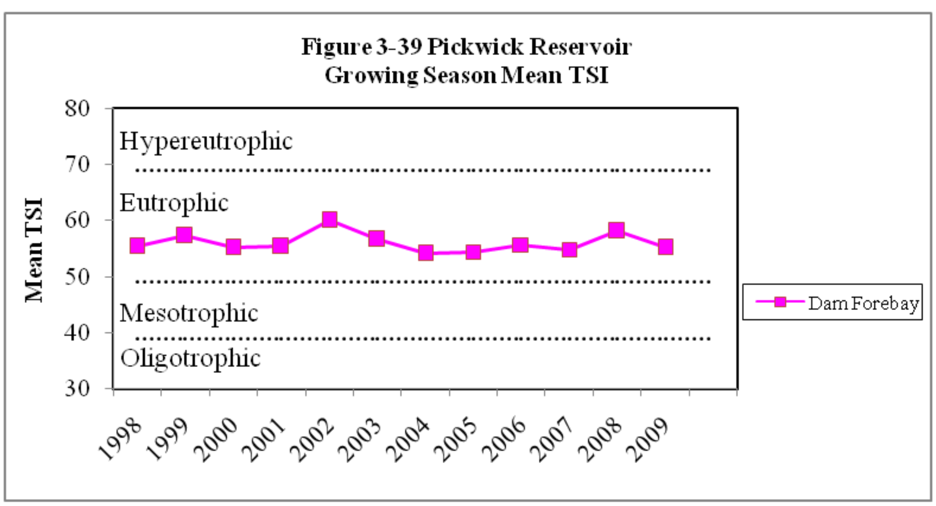
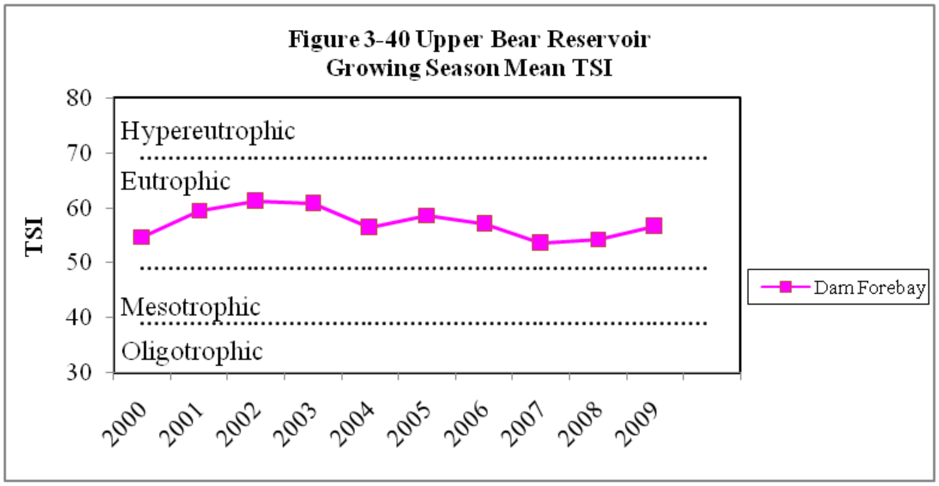
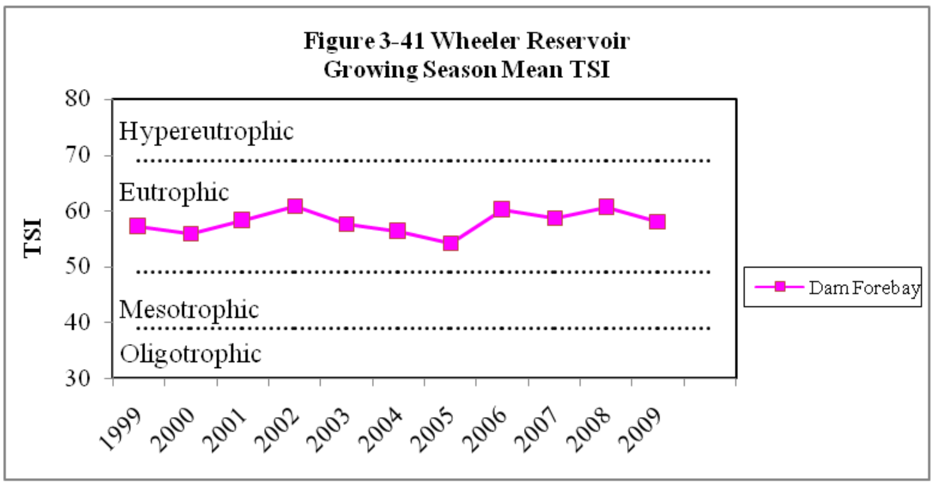


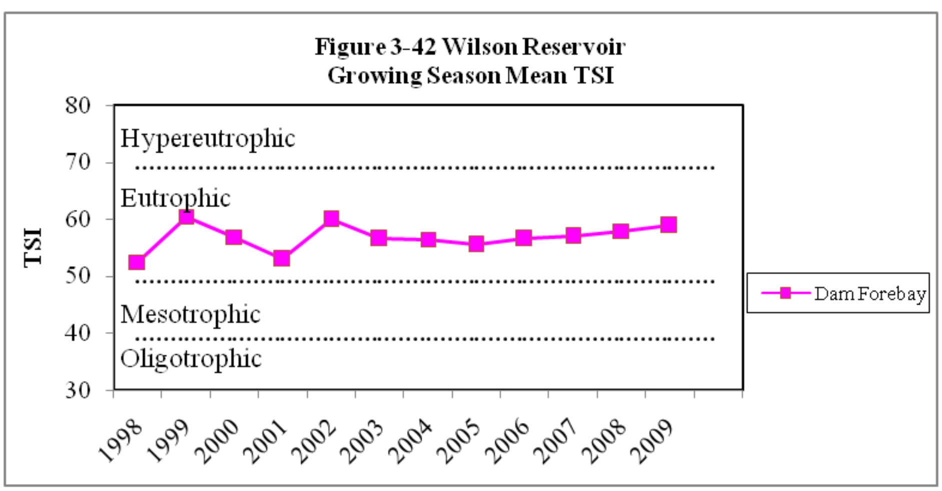




Tennessee River Basin







Chapter 4 Wetlands

4.1 Alabama Wetland Management Programs

Alabama's coastal counties contain approximately 271,000 acres of functional wetlands, based upon ADEM's 305(b) report for 2002. This acreage represents 12.5% of the total acreage of the designated areas of the Alabama Coastal Nonpoint Pollution Control Program (ACNPCP) Management Area. Alabama recognizes the function of coastal wetlands and the important role they play to reduce NonPoint Source (NPS) impacts and improve coastal water quality.

In addition, approximately 400,000 acres of coastal streams and estuarine waters, comprising 18% of the ACNPCP *Management Area*, are contained within the geographic area of Mobile and Baldwin counties. These coastal waters possess a large number of wetland, riparian and shoreline vegetative buffers that function to reduce NPS impacts and other ecosystem stressors while serving to protect coastal water quality and habitats. This sub-basin comprises the 6th largest watershed area in the United States that drains into this unique deltaic and estuarine complex contained within the southwestern region of Alabama.

4.2 Coastal Wetlands

Alabama manages its wetland, riparian areas and adjacent buffers as important resources that provide for protection of habitat and water quality. Alabama's awareness of these resources, has resulted in the development of watershed oriented projects and programs that have proactively incorporated CZARA-§6217 (g) guidance management measures within the ACNPCP *Management Area*. ADEM's Mobile Branch and Coastal Section staff have continued participation in the development and approval of proposed coastal mitigation banks throughout this area, currently totaling over 1,900 wetland acres that have been accredited to mitigate the ACNPCP Management Area.

Additionally, ADEM and the ACNPCP have continued coordination with the U.S. Fish and Wildlife Service, and the Mississippi Department of Marine Resources through the Army Corps of Engineers' Mitigation Bank Interagency Review Team (MBIRT) to develop regionalized wetland functional assessment tools as Hydro-Geomorphic (HGM) guidebooks utilized for the standardized assessment of these wetland functions for Coastal Alabama. ADEM also coordinates with the Alabama Department of Conservation and Natural Resources (ADCNR) through the ACNPCP to present best available wetland-related technologies in the form of technical studies, workshops, and conferences, which are made available to state and federal regulatory staff, consultants, and the general public. Previous accomplishments have included the presentation of the Alabama Coastal *Wetland Rapid Assessment Procedure (WRAP) Workshop* and the *Alabama Coastal Wetland Plant Identification Workshop,* the regional *Alabama Stream and Wetlands Restoration Conference*. The most recent project implemented for Alabama has included the in- depth *Coastal Alabama Hydromodification and Wetlands Technical Update* , which presents a catalog of wetland-related activities and programs that have been implemented for the southwest coastal counties of Alabama.

For more information about Alabama's Wetland Resource Programs, contact
Scott Hughes /ADEM-Montgomery at (334) 271-7700 or ash@adem.state.al.us ,
Greg Lein / ADCNR-State lands at (334) 242-7998 or glein@dcnr.state.al.us , or
Scott Brown / ADEM-Mobile Branch at (334) 432-6533 or jsb@adem.state.al.us .

Chapter 5 Groundwater

5.1. Overview of State Groundwater Protection Programs

Many of the elements of Alabama's groundwater programs listed in Table 5-1 are managed by subdivisions within the Alabama Department of Environmental Management (ADEM), including the Land, Field Operations, and Water Divisions. The Groundwater Branch in the Land Division provides the hydrogeological support for these programs. Other programs related to groundwater management and protection are managed by other state and federal agencies. The single family on-site sewage program and less than 15,000 gallon-per-day multi-family residential systems operated by management entities are managed by the Alabama Department of Public Health (ADPH). The Class II Underground Injection Control (UIC) Program is managed by the State of Alabama Oil and Gas Board. Groundwater withdrawal registrations are addressed by the Alabama Department of Economic and Community Affairs (ADECA) Office of Water Resources (Table 5-3). Other groundwater monitoring and regulatory programs are managed by the Geological Survey of Alabama and the Alabama Surface Mining Commission. The U.S. Environmental Protection Agency (EPA) provides oversight on all federally funded and delegated groundwater programs.

5.2 Significant State Groundwater Program Developments

Table 5-1 shows a Summary of State Groundwater Protection Programs. The following items summarize some of the recent groundwater developments that are underway in Alabama:

- Implementation of the Source Water Assessment Program within the ADEM Water Supply Branch regulations.
- Implementation of revised guidance for Alabama Risk-Based Corrective Action (ARBCA) with respect to releases from structures and/or facilities other than Underground Storage Tanks (USTs). This guidance was revised in 2008.
- Implementation of revised guidance for Alabama Risk-Based Corrective Action (ARBCA) with respect to releases of petroleum fuels from USTs. This guidance is currently under revision..
- Implementation of FileNet Program for transference of all new documentation from paper files to electronic files allowing these files to be more easily accessible to the public. Older files are being scanned as resources allow.
- The deadline for UST upgrades with spill, overfill and corrosion protection was December 22, 1998. Tanks should have been upgraded, replaced with a new system or permanently closed by this date. The compliance rate with these regulations is increasing with continuing enforcement of these requirements.
- A contract was signed with the Geological Survey of Alabama, in September 1997, to revise a series of 13 Aquifer Vulnerability Reports. These reports are being revised by updating

Table 5-1. Summary of State Groundwater Protection Programs

Programs or Activities	Check	Implementation Status	Responsible State Agency (1)
Active Sara Title III Program	X	Fully established	EPA/ADEM/FOD/EMA
Ambient Groundwater Level Monitoring Program	X	Fully established	GSA
Aquifer Vulnerability Assessment	X	Fully established Being updated	ADEM/GWB
Aquifer Mapping	X	Fully established	GSA
Aquifer Characterization	X	Fully established	GSA
Brownfield Redevelopment & Voluntary Cleanup Program Regulations	X	Fully established	ADEM/HWB
Dry Cleaner Trust Fund Program	X	Fully Established	ADEM/HWB
EPA-Endorsed Core Comprehensive State Groundwater Protection Program	X	Fully established	ADEM/GWB
Groundwater discharge permits	X	Established in UIC Regulations	ADEM/UIC
Groundwater Best Management Practices			
Groundwater Legislation			
Groundwater Classification	X	Established in UIC Reg Definition	ADEM/UIC
Groundwater Quality Standards			
Groundwater Use	X	Fully established	ADECA/WRD
Interagency coordination for ground water protection initiatives	X	Continuing efforts	ADEM/GWB
Non-point Source Controls	X	Ongoing education	ADEM/FOD
NPDES Permits for Land Application Sites	X	Fully established	ADEM/MUN/IND
Pesticide State Management Plan	X	Under Review	ADAI
Pollution Prevention Program	X	Fully established	ADEM/OEO
Resource Conservation and Recovery Act (RCRA) Primacy	X	Fully established	ADEM/HWB
Source Water Assessment Program	X	Fully established	ADEM/WSB
State Groundwater Program	X	Statute Based program	ADEM/GWB
State Superfund	X	Fully established	ADEM/LD
State RCRA Program incorporating more stringent requirements than RCRA Primacy	X	Fully established	ADEM/HWB
State Septic System Regulations	X	Fully established	ADPH
Subtitle D Solid Waste Program	X	Fully established	ADEM/SWB
Underground Storage Tank Installation Requirements	X	Fully established	ADEM/GWB
Underground Storage Tank Remediation Fund	X	Fully established	ADEM/GWB
Underground Storage Tank Registration Program	X	Fully established	ADEM/GWB
Underground Injection Control Program	X	Fully established	ADEM/GWB/OGB
Vulnerability Assessment for Drinking Water/Wellhead Protection	X	Fully established	ADEM/GWB
Well Abandonment Regulations	X	WSB Regs & Guidelines	ADEM/WSB/GWB
Wellhead Protection Program (EPA-approved)	X	Fully established	ADEM/WSB
Well Installation Regulations	X	Fully established	ADEM/WSB

(1) ADEM = Alabama Department of Environmental Management, FOD = Field Operations Division, GWB = Ground Water Branch, WSB = Water Supply Branch, LD = Land Division, HWB = Hazardous Waste Branch, OEO = Office of Education and Outreach, SWB = Solid Waste Branch, MUN = Municipal Section, IND = Industrial Section, GSA = Geological Survey of Alabama, ADPH = Alabama Department of Economic and Community Affairs, Office of Water Resources, EPA = Environmental Protection Agency, EMA = Emergency Management Agency

geologic names and terms to match the most recent state mapping, revising vulnerability maps from 1:250,000 scale to 1:100,000 scale, revising the vulnerability rating methods, updating information on public water supply wells, and inclusion of text, maps and figures in an electronic CDROM format and GIS Interactive maps. Area 13 (Baldwin and Mobile Counties), Area 10 (Washington, Choctaw and Clarke Counties), Area 5 (Coosa, Cleburne, Clay, Randolph, Tallapoosa, Chambers and Lee Counties), Area 11 (Covington, Escambia, Monroe, Clarke, Butler and Crenshaw Counties), and Area 4 (Jefferson, St. Clair, Calhoun, Talladega and Shelby Counties) were completed prior to 2006. The review process for Area 2 (Blount, Cherokee, DeKalb, Etowah, Jackson and Marshall Counties) has been completed and is available online. Area 7 (Bibb, Dallas, Hale, Perry and Wilcox Counties) and Area 3 (Cullman, Fayette, Lamar, Marion, Walker, and Winston Counties) are undergoing review and was available in 2009. Area 1 (Colbert, Franklin, Lauderdale, Lawrence, Limestone, Madison, and Morgan Counties), Area 6 (Greene, Marengo, Pickens, Sumter, and Tuscaloosa Counties), and Area 8 (Autauga, Chilton, Elmore, and Montgomery Counties) have been started and are currently in progress.

- Regulations have been developed and implemented by ADEM to manage Concentrated Animal Feeding Operations (CAFOs). Hydrogeologic site evaluations and groundwater monitoring requirements have been included in the regulations as part of siting and operation requirements for CAFO lagoons and land application sites.
- The U.S. Geological Survey has completed the National Water Quality Assessment that includes significant parts of Alabama's Mobile River and Lower Tennessee River Basins.
- The Alabama Department of Public Health has completed its on-site sewage regulations that went into effect on March 9, 2006.

5.3 Summary of Groundwater Contamination Sources

5.3.1 Reporting Area

The Alabama Department of Environmental Management has selected the physiographic districts of the Fall Line Hills district and the Black Prairie districts in Alabama for evaluation during this reporting period. These two districts included in this report complete the ADEM's coverage of the East Gulf Coastal Plain Province that appeared in the year 2010 report. These districts are underlain by the Alluvial Aquifer, Eutaw Aquifer, Gordo Aquifer, and Coker Aquifer. These aquifers are significant sources of drinking water supplies for private residential use as well as for municipalities. Counties included in the reporting area in whole or part are Autauga, Bibb, Bullock, Chilton, Dallas, Elmore, Fayette, Greene, Hale, Lamar, Lee, Lowndes, Macon, Marengo, Marion, Montgomery, Perry, Pickens, Russell, Sumter, Tallapoosa, Tuscaloosa, and Wilcox. Data contained in Table 5‑2 and 5‑3 were queried and retrieved by county. Some overlap of data from physiographic districts not included in the reporting area is shown where the above-mentioned counties do not lie wholly within the report's selected physiographic districts.

5.3.2 Data Review and Compilation

Hydrogeologists from the ADEM Groundwater Branch are assigned to the major groundwater regulatory programs as part of the Comprehensive State Groundwater Protection Program. The information contained in Table 5-2, Groundwater Contamination Summary, was researched from ADEM's electronic databases and prepared by the hydrogeologists assigned to each of the programs listed under the Source type column.

5.3.3 Superfund CERCLIS and DOD Sites

ADEM's Land Division works with EPA and the Department of Defense (DOD) to manage these types of sites. No facilities identified in Table 5-2 are listed on the National Priority List.

There are six DOD facilities located within the reporting area. The ongoing site assessments are being funded by the Defense Environmental Restoration Fund.

The CERCLIS listings include 1 non-NPL site located in the report area. These are sites where state and federal funds have been used to conduct preliminary and secondary assessments by ADEM and EPA. The one site has confirmed releases of contaminants into groundwater.

5.3.4 Underground Storage Tank Program

The largest category of sites listed in Table 5-2 is Underground Storage Tanks (USTs). These sites are managed by the ADEM Groundwater Branch. Assessment and remediation of eligible sites is funded through the State UST Trust Fund. Many of the cleanups listed include free product, source and soil removals. Active groundwater remediation systems are also included. Most of these cleanups involve gasoline releases, but also include releases of diesel fuel oils and hazardous substances. The petroleum fuels include compounds such as Benzene, Ethylbenzene, Toluene, and Xylene (BTEX), Polynuclear Aromatic Hydrocarbons (PAHs), Methyl Tertiary Butyl Ether (MTBE), and Lead that affect groundwater quality. Monitoring for MTBE at UST sites has been required since 1996.

5.3.5 Hazardous Waste Management Program (RCRA)

There are nine (9) hazardous waste sites managed under the Resource Conservation and Recovery Act (RCRA) identified in the study area. The ADEM Land Division's Hazardous Waste Branch manages these sites. These sites require extensive assessment, permitting and reporting requirements. Releases associated with these sites are persistent and difficult to assess and remediate. Compounds such as chlorinated VOCs and BTEX associated with hazardous waste generated by the facilities are present in many instances and have properties that make remediation problematic.

5.3.6 Alabama Brownfield & Voluntary Cleanup Program

The ADEM's Land Division administers the Brownfield Redevelopment and Voluntary Cleanup Program pursuant to the Alabama Land Recycling and Redevelopment Act, Code of Alabama 1975, § 22-30E-4 (ADEM Admin. Code Rule 335-15-x-.xx). The program provides a mechanism for the implementation of a cleanup program that encourages applicants to voluntarily assess, remediate and reuse rural and urban areas with actual or perceived contamination. There are thirty-six (36) sites managed under the Alabama Brownfield and

Voluntary Cleanup Program within the study area. Compounds such as VOCs and metals are associated with these sites.

5.3.7 Alabama Drycleaning Trust Fund Program

The ADEM's Land Division administers the Alabama Drycleaning Environmental Response Trust Fund (DERTF) Program pursuant to the Alabama Drycleaning Environmental Response Trust Fund Act, Code of Alabama, 1975, § 22-30D-1 et. seq. (ADEM Admin. Code Rule 335-16-x-.xx). The program established: (1) performance standards for facilities brought into use after May 24, 2003; (2) a schedule for the retrofit of facilities that were in existence prior to May 24, 2000; (3) criteria required for reporting a suspected release or site discovery; and (4) requirements for initial investigation, assessment, and remediation of contamination. There are seventeen (17) facilities managed under the Alabama DERTF in the study area. The compounds associated with these sites are VOCs associated with chlorinated solvents.

5.3.8 Underground Injection Control Program

The Underground Injection Control (UIC) program is managed by the ADEM Groundwater Branch. Each Class V UIC facility in the State is required to operate under an individual performance-based discharge permit issued by the UIC Program. The UIC program reviews permit applications, issues individual performance-based discharge permits for all Class V facilities, and inspects and tracks Class V facilities for compliance. In this reporting area, permits are issued to Class V facilities for the subsurface injection of treated wastewater from various industrial and commercial activities, and for the injection of materials intended to aid remediation at existing contamination sites. Some types of activities that are permitted and regulated by the UIC Program include discharges from clustered on-site sewage Waste Water Treatment Plants (WWTPs), coal washing operations at coal mines, poultry processors, laundromats, truck and car washes, as well as other industrial or commercial activities. State UIC regulations prohibit the discharge from a Class V injection well that would cause an exceedance of federally established maximum contaminant limits (MCLs) in receiving groundwater. Class I and Class IV UIC wells are prohibited in the State of Alabama and Class II UIC wells are managed by the State of Alabama Oil and Gas Board.

5.3.9 State Groundwater Program

State Groundwater Program sites are those that are not regulated by established programs such as RCRA, UST, UIC, CERCLA, DERTF Program or the Brownfield & Voluntary Cleanup Program. Sites such as releases from bulk petroleum storage facilities, pipelines, and otherwise unregulated chemical spills are assessed and remediated using the authority of the Alabama Water Pollution Control Act (AWPCA). Releases from these sites are in many cases reported by the responsible party through company initiated environmental audits or are discovered as a result of real estate assessments during property transactions. Other groundwater incidents are discovered and reported to the Department by citizens or discovered through inspections. The responsible party is required to perform assessment and cleanup of these sites. Many types of contaminant releases have been addressed by this program. There are 28 facilities managed under the State Groundwater Program within this reporting area.

Table 5-2. Groundwater Contamination Summary

Source Type	Number of Sites	Number of sites that are listed and/or have confirmed releases	Number with confirmed groundwater contamination	Contaminants	Number of Site Investigations (optional)	Number of sites that have been stabilized or have had the source removed	Number of sites with corrective action plans (optional)	Number of sites with active remediation (optional)	Number of sites with cleanup completed (optional)
NPL	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CERCLIS (non-NPL)	1	1	1	Tetrachloroethene (PCE); Trichloroethene (TCE); Benzene, Ethylbenzene and Xylene (BEX); Carbon	1	1	1	1	0
DOD/DOE	6	4	4	VOCs, PAHs, TCE, PCE, JP-4 fuel, cis-1,2-dichloroethene, dibenz(a,h) anthracene, naphthalene, 2-methylnaphthalene, arsenic, iron, lead, nitrate-nitrogen, 4,4'-DDT, manganese, dieldrin, endosulfan I, BTEX, benzo(a)pyrene, phenanthrene, ace-	4	3	1	1	0
Brownsfield & VCP Sites	36	27	16	VOCs, Metals	36	13	36	22	13
Drycleaning Trust Fund	17*	1	1	Chlorinated VOCs	1	0	0	0	0
UST	379#	379	341	BTEX, MTBE, PAHs	N/A	379	197	131	N/A
RCRA Corrective Action	9	6	5	Metals, Chorinated VOCs, Petroleum Hydrocarbons (BTEX, MTBE, PAHs)	4	4	4	5	2
Underground Injection	63	0	0						
State Sites	28	25	23	Metals, Chlorinated VOCs, SVOCs, Petroleum Hydrocarbons, Fluoride	5	18	16	15	5
Solid Waste	29	2	2	Metals, VOCs					
Totals	172	445	393		51	418	255	175	20

Hydrogeologic Setting: Fall Line Hills district and Black Prairie district of the East Gulf Coastal Plain Physiographic Section Map Available: See Figure 5-1 Date Reporting Period: 2010-2011

* Total number of sites in the Dry Cleaner Fund - not sites under investigation

The Number of sites reflects releases that have been reported but are not yet closed/NFA.

Figure 5-1 Alabama Physiographic Regions

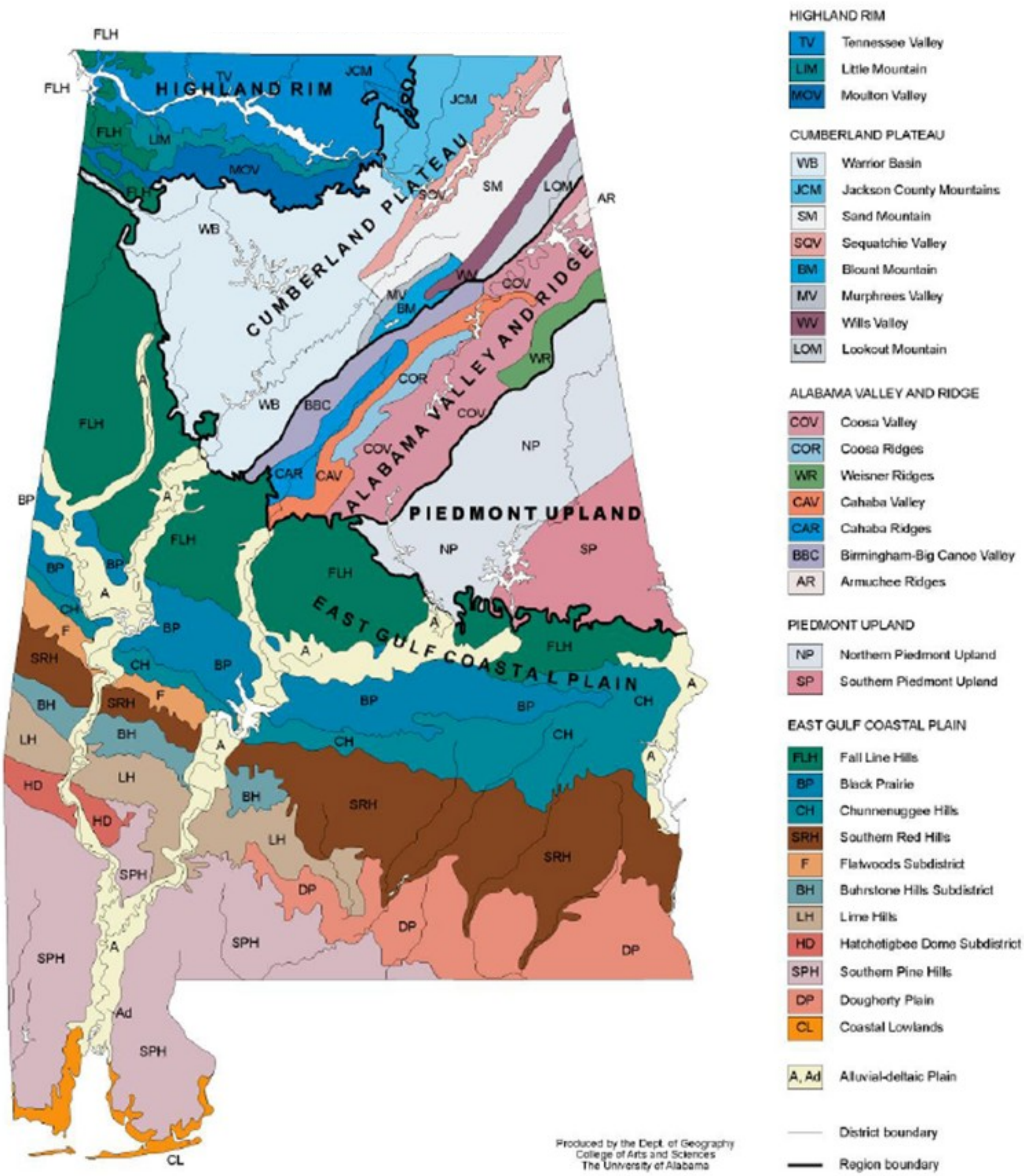


Table 5-3. Groundwater Withdrawals, Overall by Categories, by County - Alabama, 2010

	Water withdrawals (Mgal/d)															
	Public Supply		Commer-cial	Domestic	Industrial		Thermoelectric		Mining		Livestock	Aquaculture		Irrigation	Total	
County	Fresh	Saline	Fresh	Fresh	Fresh	Saline	Fresh	Saline	Fresh	Saline	Fresh	Fresh	Saline	Fresh	Fresh	Saline
Barbour	3.5				1.58		0								5.08	
Bullock	1.37				0		0								1.37	
Butler	1				0.3		0								1.3	
Choctaw	0.59				0		0								0.59	
Clarke	1.82				0		0								1.82	
Coffee	7.32				1.34		0								8.66	
Conecuh	1.57				0		0								1.57	
Covington	4.4				0.05		0								4.45	
Crenshaw	1.87				0		0								1.87	
Dale	6.84				0		0								6.84	
Dallas	1.24				0.14		0								1.38	
Geneva	1.98				0		0								1.98	
Henry	1.07				0.54		0								1.61	
Houston	16.54				0		0.17								16.71	
Lowndes	0.67				0		0								0.67	
Macon	0.91				0		0								0.91	
Marengo	2.42				0.2		0								2.62	
Monroe	1.3				0.12		0								1.42	
Montgom-ery	12.9				0.04		0								12.94	
Pike	4.88				0		0								4.88	
Russell	0.26				0.92		0								1.18	
Sumter	0.95				0		0								0.95	
Wilcox	1.12				0		0								1.12	
Total:	76.52				5.23		0.17								81.92	

Source: Tom Littlepage, Office of Water Resources, Alabama Department of Economic & Community Affairs, 2011

* Public Supply, Thermal and Industrial Withdrawals are 2010 withdrawals from eWater.

No estimates available for Domestic, Mining, Livestock, Aquaculture, and Irrigation.

5.3.10 Solid Waste Program

There are twenty-nine (29) solid waste facilities managed under the Solid Waste Program within the study area. The ADEM Land Division's Solid Waste Branch manages these sites, and includes extensive assessment, permitting and reporting requirements. Analytical data associated with these sites documents that metals and VOCs are the constituents of concern.

5.4 Summary of Groundwater Quality

5.4.1 Hydrogeology

The physiographic districts in this 305(b) Report, are the Black Prairie district and the Fall Line Hills district of the East Gulf Coastal Plain. Generally speaking they trend from northwest to southeast and/or west to east. Depending on the area of the State evaluated, the various districts are comprised of as few as a single geologic formation to as many as four separately identifiable geologic formations. The more southern district in this report is the Black Prairie district. The three districts are described below as they appear from south to north across the area of this report's interest.

(Alluvial-Deltaic Plain District)

The Alluvial-Deltaic Plain district is found in and adjacent to valleys associated with all major and minor rivers and creeks throughout the study area. It is sometimes called the Watercourse aquifer because these areas are characterized by flat flood plains and terraces. These deposits consist of alluvial sediments and terrace deposits associated with the flood plains of present and ancestral large streams. They consist mainly of gravel, sand, silt, and clay. The alluvial deposits are a potential source of water for large supplies in the flood plains of the major rivers in the area but have generally not been developed for public water systems.

(Black Prairie District)

The Black Prairie Physiographic district consists of portions of thirteen (13) counties in Alabama. They are Bullock County, Dallas County, Greene County, Hale County, Lowndes County, Macon County, Marengo County and Montgomery County, Perry County, Pickens County, Russell County, Sumter County, and Wilcox County. The Black Prairie district, named for the black soil that occurs in the area, is a gently- to moderately-rolling prairie that is characterized by extensive grasslands but very few trees. The land surface in the area generally ranges in altitude from 150 to 420 ft. above sea level (Scott, Cobb, Castleberry 1987) (Kidd 1987) (Mooty 1987). The Black Prairie district underlying geologic formations are the Mooreville Chalk and Demopolis Chalk.

Mooreville Chalk

The Mooreville Chalk is up to 420 feet thick in the reporting area and was formed in warm, shallow seas so that microfossils compose a large percentage of the chalk. The Mooreville consists of compact, very calcareous clay, marl, and clayey chalk. The Mooreville is relatively impermeable and is not an aquifer in the reporting area. It unconfomably overlies the Eutaw Formation which is the first zone encountered capable of producing significant quantities of

Figure 5-2 Study Areas for the Geohydrology and Susceptibility of Major Aquifers

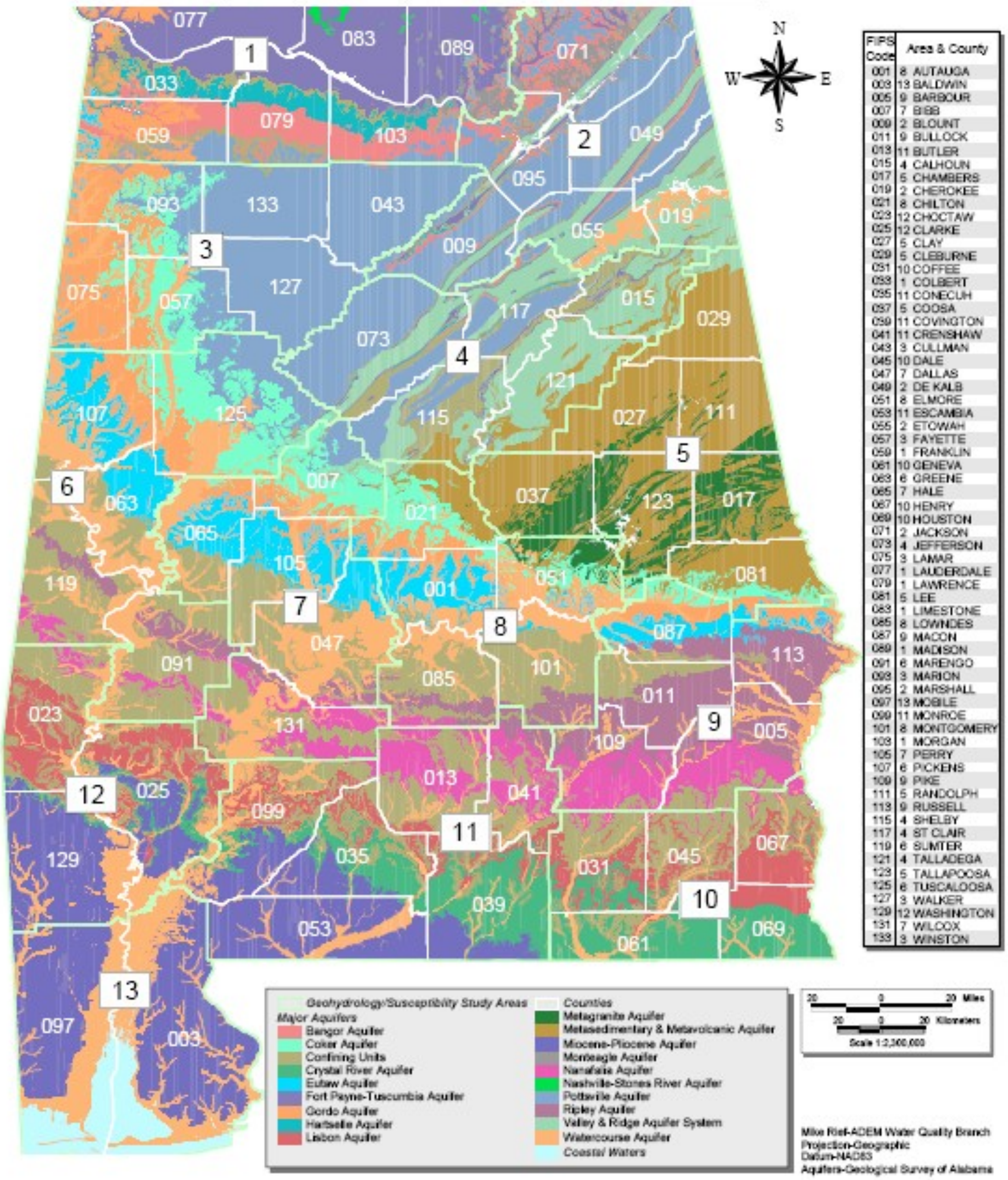
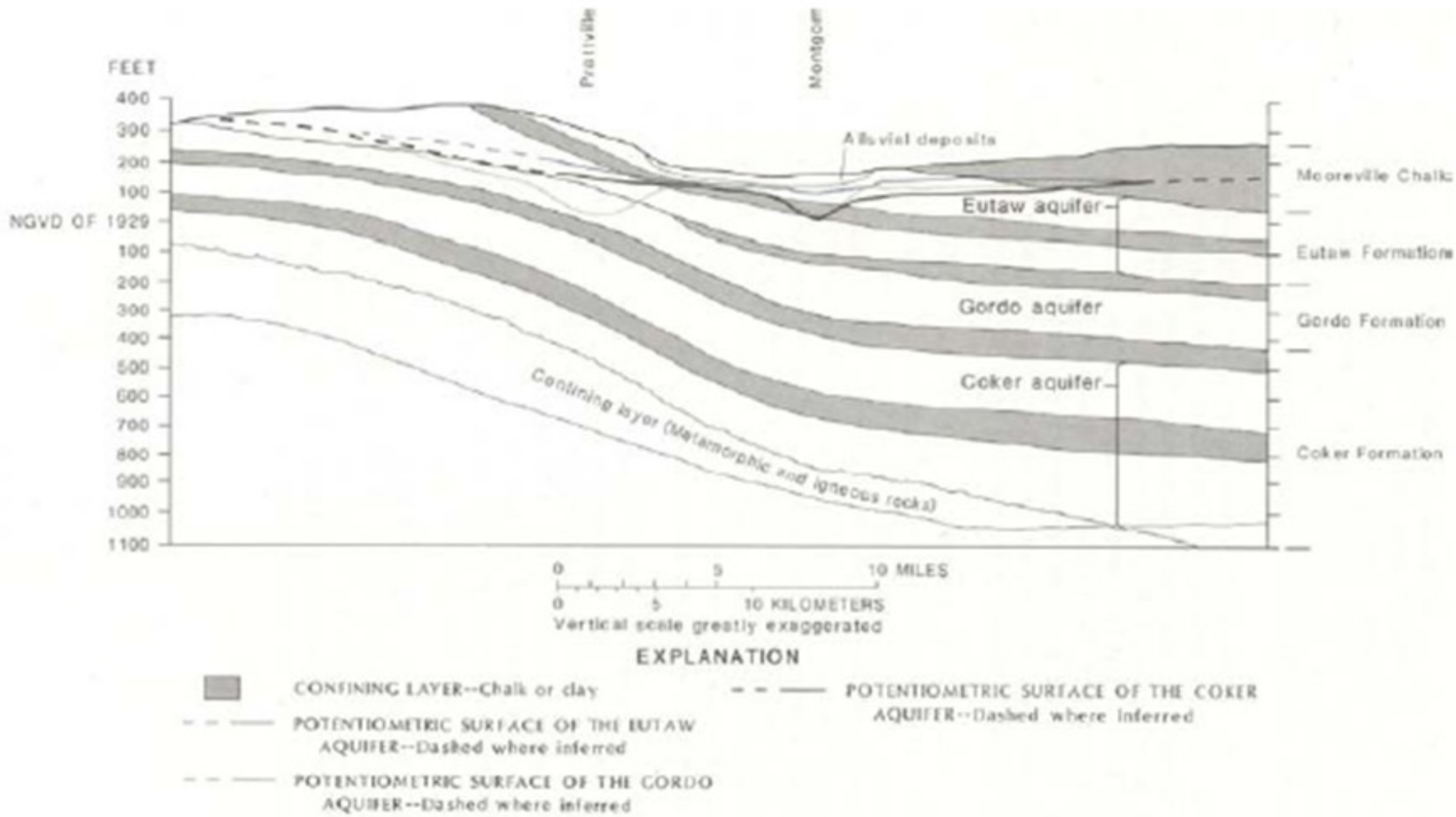


Figure 5-3 Potentiometric Surfaces of the Major Montgomery/Prattville Aquifers



--Generalized subsurface section through the Montgomery-Prattville area showing configurations of the potentiometric surfaces of the major aquifers potable groundwater.

Demopolis Chalk

The Demopolis Chalk overlies the Mooreville Chalk and consists of up to 440 feet of chalk, calcareous clay and sandy clay. The Demopolis is relatively impermeable and is not an aquifer in the reporting area.

(Fall Line Hills District)

The Fall Line Hills Physiographic district consists of portions of twenty-one (21) counties in Alabama. They are Autauga County, Bibb County, Bullock County, Chilton County, Colbert County, Dallas County, Elmore County, Fayette County, Franklin County, Greene County, Hale County, Lamar County, 0Lauderdale County, Lee County, Macon County, Marion County, Perry County, Pickens County, Russell County Tallapoosa County, and Tuscaloosa County. These areas consist mainly of flat to moderately-rolling sandy, uplands dissected by deeply-entrenched southward-flowing streams. The land surface ranges in altitude from about 160 feet above NGVD to 850 feet. The Fall Line Hills District underlying geologic formations are the Eutaw Formation and Tuscaloosa Group comprised of the Gordo Formation and Coker Formation.
(Scott, Cobb, Castleberry 1987) (Kidd 1987) (Mooty 1987)

(Eutaw Formation)

The Eutaw Formation overlies the Gordo Formation. The Eutaw consists of upper and lower zones of marine sand separated by a zone of clay. The Eutaw Formation ranges in thickness from about 200 to 400 feet where the entire formation is present. It is a major aquifer in the vicinity of Montgomery, and is a potential aquifer throughout Montgomery County.

Tuscaloosa Group

The Tuscaloosa Group crops out mainly in the western part of the reporting area. It consists of unconsolidated sand, gravel, and clay that dip gently toward the southwest. It ranges in thickness from 50 to 400 feet. Massive beds of highly-permeable gravel and gravelly sand commonly occur near the base of the Tuscaloosa Group and are normally underlain by a thick basal clay. These unconsolidated sands and gravels of the Tuscaloosa Group comprise a major aquifer known as the Tuscaloosa aquifer. The Gordo Formation and Coker Formation are stratigraphic units within the Tuscaloosa Group. The Gordo Formation overlies the Coker Formation and consists of a basal zone of gravelly
sand overlain by alternating lenticular beds of sand and varicolored mottled clay. The Gordo ranges in thickness from about 100 feet at outcrops to more than 300 feet in the subsurface. It isone of the major aquifers in the reporting area. The Coker Formation is one of the major aquifers in the reporting area. It consists of a basal zone of nonmarine gravel, sand, and clay and an upper zone of marine sand and clay beds. The
marine sand beds in the Coker are tapped by numerous wells in the reporting area.

5.4.2 Aquifers

The major aquifers in the reporting area are sand and gravel beds in the Eutaw, Gordo, and

Coker Formations. Water in these aquifers occurs under artesian conditions in most parts of the reporting area. The Watercourse or Alluvial aquifer is characterized by flat flood plains and terraces. These materials consist of alluvial sediments and terrace deposits associated with the flood plains of present and ancestral large streams. They are comprised mainly of gravel, sand, silt, and clay. Figure 5.3 shows potentiometric surfaces of the major Montgomery/Prattville aquifers.

5.4.3 General Statement of Groundwater Quality and Vulnerability

The source of recharge to the major aquifers in the study area is rainfall. Alluvial and terrace deposits along major streams overlie parts of the recharge areas for the major aquifers of this report. The various aquifers principally receive recharge from their outcrop areas within the various counties in the study area. All recharge areas for the major aquifers are susceptible to contamination from the surface. For more information about Groundwater, contact Mr. Whit Slagle in ADEM's Montgomery Office at (334) 271-7831 or cws@adem.state.al.us

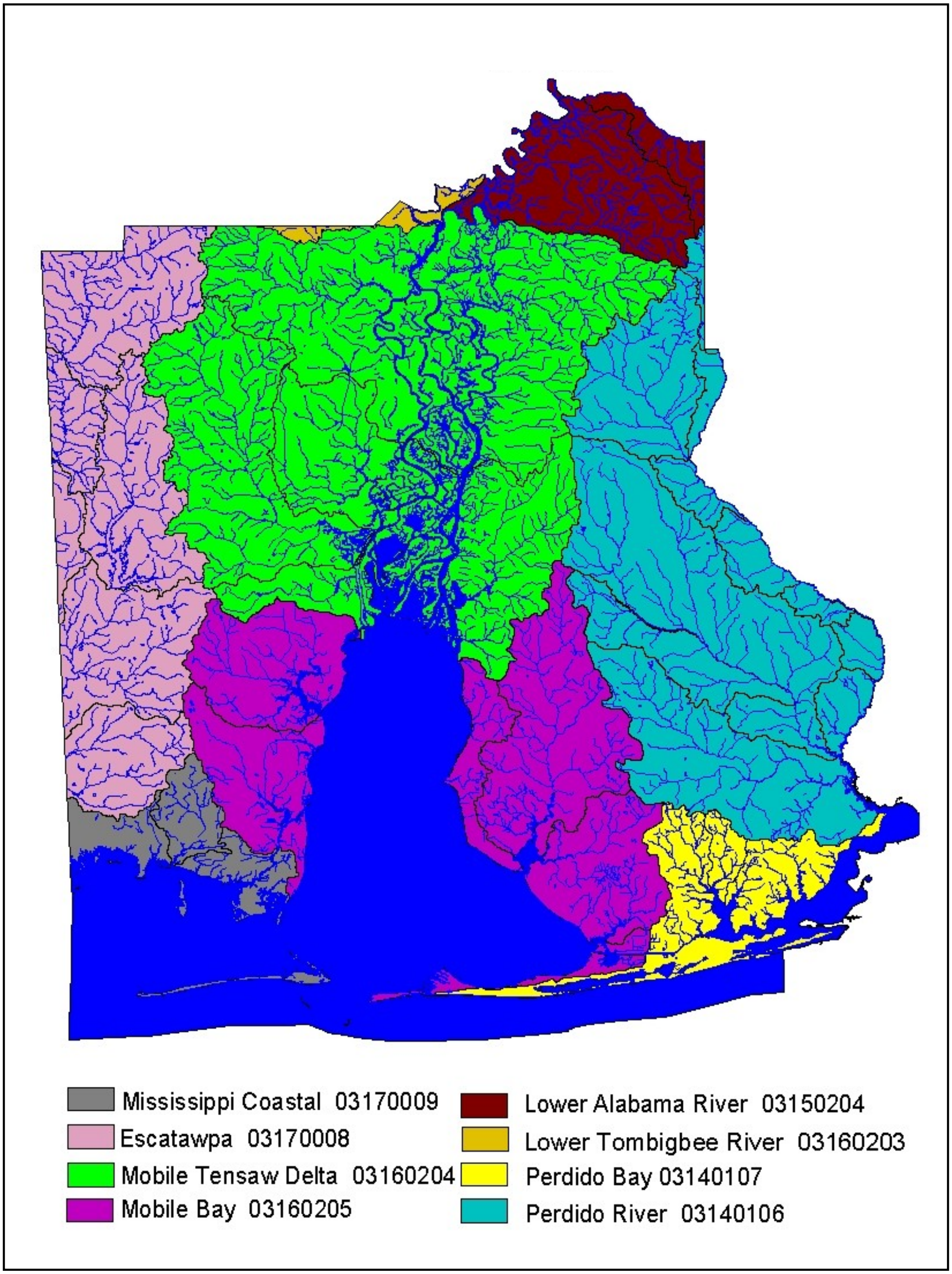
Chapter 6 Coastal Waters

6.1 Alabama Coastal Nonpoint Pollution Control Program (ACNPCP)

In June 1998, the NOAA-Office of Coastal and Resource Management (OCRM) and USEPA awarded conditional approval to the Alabama Coastal Nonpoint Pollution Control Program (ACNPCP). Since achieving conditional approval, ADEM has developed the ACNPCP, seeking full program approval, in order to ensure that program components are implemented to the maximum extent practicable. The approved ACNPCP *Management Area* is inclusive of the subwatersheds of the Escatawpa, Mobile-Tensaw, and Perdido Sub-Basins, that are contained within the geo-political boundaries of Baldwin and Mobile Counties. Figure 6-1, on page #, depicts the ACNPCP *Management Area*.

ADEM continues to work with ADCNR-State Lands Coastal Section, NOAA-OCRM, USEPA and other State and federal agencies to coordinate the Alabama Coastal Nonpoint Pollution Control Program (ACNPCP). ADEM and ADCNR jointly submitted the *ACNPCP: 2003 Submission Documentation; Response to NOAA/EPA Conditional Approval Items; July 31, 2003*, wherein the State described new and expanded program components that demonstrate an approvable ACNPCP. This submission included a 250 page description of the Program with over 500 supporting documents, which include statewide and coastal projects and programs that have been developed or tailored to address the ACNPCP management measures. This documentation was augmented by the submission of the *ACNPCP: Response to "Final Administrative Changes" Guidance; ACNPCP 2003 Submission Support Document; October 31, 2003*, that provided the enforcement policy, long term strategy and implementation planning documentation requested by the federal review agencies to complete their approval review process. The State is in the process of a new Submission documenting the State's approach and implementation of over 24 supporting projects that address the joint NOAA/EPA Interim Decision Document for Unapproved Conditions of ACNPCP (February 16, 2005). This new Submission outlines the recommended actions implemented by Alabama to help the State gain federal approval and allow full program implementation. The ACNPCP utilizes partnerships with Federal, State and Local agencies, businesses, organizations and decision makers to influence the implementation of items necessary to achieve program approval and operation. The ACNPCP has facilitated the development the Coastal Alabama Clean Water Partnership, of a broad-based Technical Advisory Committee (TAC), and the Coastal Alabama Nonpoint Source Resources Matrix (Matrix) The ACNPCP also works with the ADEM-§319 program to address nonpoint source pollution management program needs and issues. These various forums are being utilized to enhance coordination and cooperation regarding coastal water quality resources management. NOAA-OCRM, USEPA, ADEM-§319, ADCNR-State Lands, and many other agency environmental partners have helped to further administrative coordination and interagency cooperation.

Figure 6-1 ACNPCP Management Area



ADEM has engaged in many ongoing projects pertinent to the ACNPCP that monitor and promote the effectiveness of nonpoint source pollution controls, CZARA-§6217 management measures and program approval criteria. ADEM submitted the *Monitoring Plan for the ACNPCP; Mobile and Baldwin Counties, Alabama*. This plan incorporates monitoring activities being conducted through ADEM, within the ACNPCP *Management Area*. ADEM staff continue extensive field monitoring efforts to conduct specific Land- Use Category (LUC) BMP Surveys, Targeted Water Quality Studies, inspections of construction and mining operations, and Targeted Watershed Studies within the ACNPCP Management Area. The ACNPCP has also provided valuable coordination toward the development of the new *Coastal Assessment Program* (see Chapter 6.2 below). A new 'pilot' effort involves the *ACNPCP Technical Advisory Projects for Urban Areas MMs*. Two project efforts during this period that have focused on addressing Urban Areas impacts. The ACNPCP has continued involvement with:

1. The *Eight Mile Creek Watershed Management and Restoration Plan* that has engaged the watershed planning interest and involvement of three local coastal cities (Chickasaw, Prichard, and Semmes). 2. Another effort is *ACNPCP Tech Advisory Project for Semmes, AL* that have been developed to provide Program coordination with the new City of Semmes, AL (established May 2, 2011), as they promulgate their municipal ordinances and codes. These efforts facilitate common needs that address Alabama's CNPCP criteria for final approval and Program implementation processes.

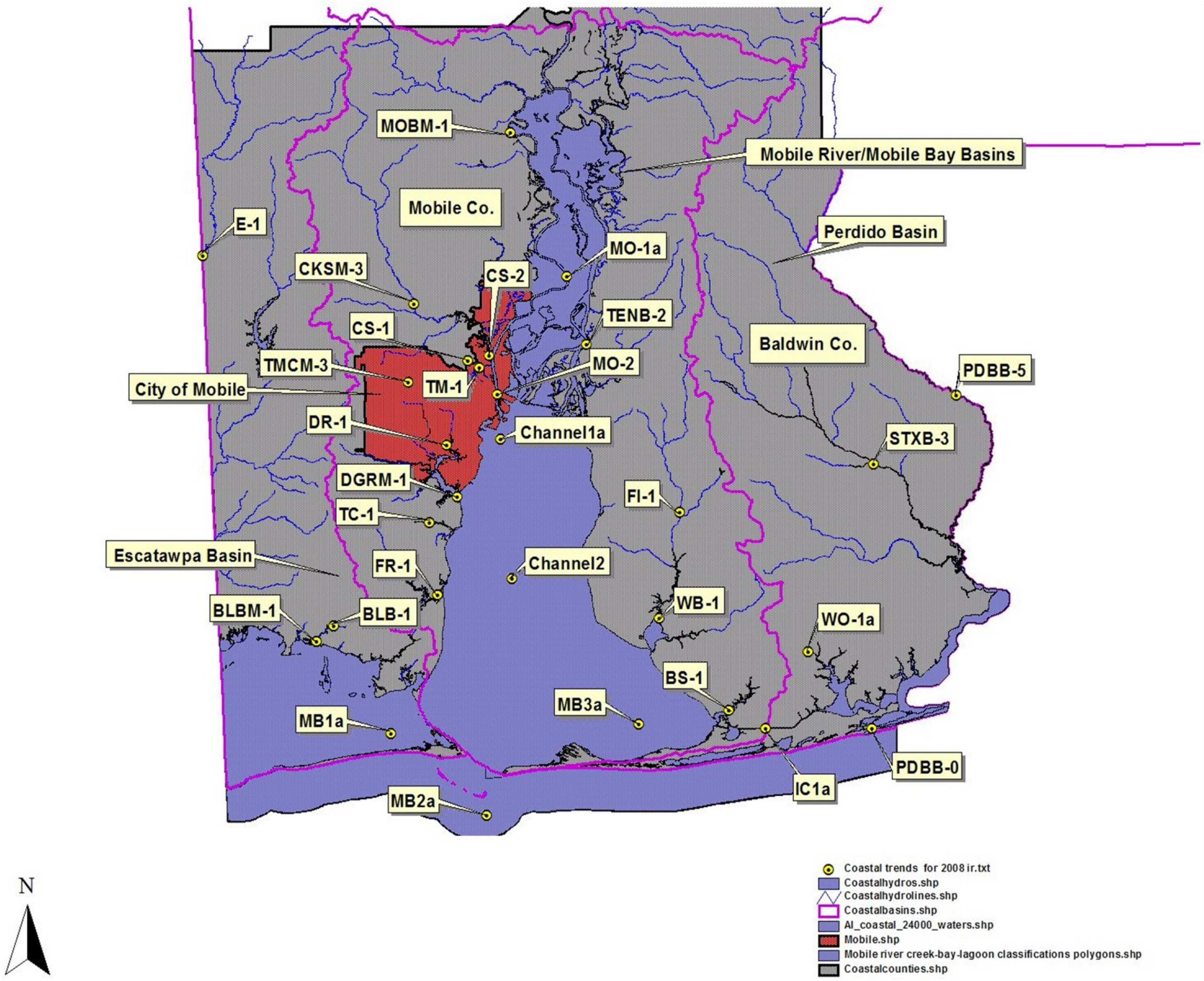
Past activities implemented for the ACNPCP by ADEM have included *Targeted BMP Survey's* for Marina and Agriculture LUCs, as well as Alabama's first *Riparian Reference Reach and Regional Curve Study* for the lower Coastal Plain. ADEM has also conducted the *Targeted Water Quality Studies* for designated Marinas and Agriculture high density sub-watershed areas, in order to acquire baseline water quality data associated with these land uses, for the coastal waterbodies of Southwest Alabama. The data from many of these activities are utilized to develop GIS information database and mapping applications that support the ACNPCP. Several projects were recently implemented or completed by ADEM for the ACNPCP. Figure 6-2 and Table 6-1 shows the Active Coastal Trend Stations.

For more information about **Alabama's Coastal Nonpoint Pollution Control Program**, contact Randy C. Shaneyfelt in ADEM's Mobile Office at (251) 450-3408 or email: rcs@adem.state.al.us

6.1.2 ACNPCP - Update of the BP Deepwater Horizon Oil Spill Activities

Concerning the ADEM-ACNPCP's assistance with the BP Deepwater Horizon Oil Spill Response Operations, one of ADEM's recently completed ACNPCP project products, the *Atlas of Coastal Alabama Marinas and Watersheds*, was repeatedly requested and continued to be used extensively to assist the Mobile Incident Command Post and Branch operations for the USCG- Mobile Sector. We received many compliments concerning its usefulness in the field, especially to plan operations and strategies for critical Alabama coastal areas that have continued through the *DWH Response and Recovery* operations.

Figure 6-2 Active Coastal Trend Stations



ADEM's Mobile Branch, Coastal Section and ACNPCP staff continued participation and involvement from April of 2010 forward. In June, 2010 the USCG selected and stood up a *BP Deep Water Horizon Oil Spill: Incident Specific Preparedness Review (ISPR) Team.* ACNPCP staff served on this project as representative for the State of Alabama, until the Report's approved release in March of 2011 by the USDHS and USCG (see http://www.uscg.mil/foia/docs/DWH/BPDWH.pdf).

ADEM's ACNPCP staff was selected to present Alabama's interests as a State representative on the Presidential *Gulf Coast Ecosystem Restoration Task Force- Science Coordination Team.* Since the President's Executive Order #13554 in October of 2010 there has been extensive participation from the ACNPCP to develop the tasked products and deliverables for this science -based regional recovery planning project. Two of the tasked products:

1. *Gulf Coast Ecosystem RestorationTask Force (2011)-Gulf of Mexico Regional Ecosystem*

Table 6-1 Actve Coastal Trend Stations

Station	Station Location	Latitude	Longitude
BLB-1	Bayou La Batre @ AL Hwy 188	30.40556	-88.24806
BLBM-1	Bayou La Batre in channel next to light approx. 0.4 miles upstream of mouth	30.38670	-88.27000
BS-1	Bon Secour River at Oyster Bay Canal	30.30139	-87.73542
Channel1a	Mobile ship channel just south of Arlington ship channel @ channel marker 76	30.63637	-88.03165
Channel2	Mobile ship channel south of Galliard Island @ channel marker 51	30.46424	-88.01657
CKSM-3	Chickasaw Creek @ State Highway 158	30.80297	-88.14334
CS-1	Chickasw Creek on north side U.S. Hwy 43 Bridge Crossing	30.73258	-88.07330
CS-2	Chickasaw Creek on north side of CSX RR Crossing @ confluence with Mobile River	30.73911	-88.04561
DR-1	Dog River @ Luscher Park Boat Launch near I-10	30.62861	-88.10139
DGRM-1	Dog River in main channel at State Highway 163	30.56510	-88.08780
E-1	Escatawpa River @ U.S. Hwy 98 (Moffat Road) near Mississippi/Ala state line	30.86241	-88.41769
FI-1	Fish River @ State Hwy 104	30.54542	-87.79861
FR-1	Fowl River @ State Hwy 193	30.44403	-88.11333
IC1a	Intracoastal Waterway @ State Highway 59	30.27930	-87.68700
MB1a	Intracoastal Waterway on east side of Portersville Bay @ buoy 25	30.27308	-88.17317
MB2a	Mobile ship channel just south of Sand Island Light House in the Gulf of Mexico @ buoy 10	30.17180	-88.04895
MB3a	Intracoastal Waterway in Bon Secour Bay @ channel marker 127	30.28407	-87.85137
MO-1a	Mobile River @ CSX RR Crossing	30.83667	-87.94472
MO-2	Mobile River @ Government Street (Bankhead Tunnel)	30.69083	-88.03556
MOBM-1	Mobile River @ APCO water intake (near Bucks @ doppler gage)	31.01370	-88.01853
PDBB-0	Perdido Bay approx. 0.25 mile upstream of State Highway 182 bridge	30.27968	-87.54948
PDBB-5	Perdido River @ Duck Place Rd. on AL/FL line (off State Highway 112)	30.69047	-87.44026
STXB-3	Styx River @ Baldwin County Rd. 87 (near Elsanor)	30.60532	-87.54700
TC-1	Theodore Industrial Canal @ State Hwy 193 (Rangeline Road)	30.53333	-88.12389
TENB-2	Tensaw River approx. 0.3 mile downstream of power line crossing (near Blakely Park and Steam Mill Landing)	30.75291	-87.91987
TM-1	Three Mile Creek between U.S. Hwy 43 & RR Crossing	30.72403	-88.05903
TMCM-3	Three Mile Creek @ Spring Hill Ave.	30.70630	-88.15111
WB-1	Weeks Bay @ U.S. Hwy 98 (Marina)	30.41470	-87.82575
WO-1a	Wolf Creek @ Swift Church Road (Baldwin Co. Rd. 12)	30.37361	-87.63250

Restoration Strategy (Preliminary)

2. *Gulf Coast Restoration Task Force (2011)-Gulf of Mexico Science Assessment and Recommendations*

are undergoing intensive regional and federal review. The final developed products will be available at http://www.epa.gov/gcertf/ or www.epa.gov/gulfcoasttaskforce.

For more information concerning these items or Alabama's Coastal Nonpoint Pollution Control Program, contact Randy C. Shaneyfelt in ADEM's Mobile Office at (251) 450-3408 or email: rcs@adem.state.al.us

6.2 Coastal Assessment

6.2.1 Eutrophication

Hypoxic and anoxic conditions are common in Alabama's coastal waters and are generally most prevalent during the summer months. Naturally occurring conditions combine to result in frequently stressed water quality conditions marked by stratification with low dissolved oxygen. These conditions include: relatively shallow water depths found in all of Alabama's open bays and sounds; low average wind and tidal energies; variable fresh water inflow; and constricted tidal passes. This persistent pattern of hypoxia manifests itself in "Jubilees", an infrequently occurring summer condition in Mobile Bay that results when winds blowing from the mainland drive surface waters from shore, causing deeper, poorly oxygenated water to move into the shallows. Fish, shrimp and crabs get caught in the poorly oxygenated water and generally rise to the surface in stress. The Jubilee phenomenon was first recorded in 1821 indicating that its underlying causes are naturally occurring. At this time it has not been determined if anthropogenic sources exacerbate those underlying causes.

6.2.2 Habitat Modification

Alabama's coastal counties are experiencing tremendous population growth. Statistics indicate that the population of Baldwin County increased from 140,415 in 2000 to 174,439 in 2008. Between 2000 and 2008, the Baldwin County population increased by 24.2%. The population of Mobile County increased from 399,843 in 2000 to 406,309 in 2008. Between 2000 and 2008, the Mobile County population increased by 1.6%. Much of that growth is occurring within Alabama's defined coastal area, particularly in Baldwin County where there has been explosive growth in the beach communities of Orange Beach and Gulf Shores and on the Eastern Shore of Mobile Bay. The area of west Mobile, inside and outside of the current city boundary, is undergoing rapid commercial and residential development. Sedimentation from erosion at the numerous construction sites and the increased post development storm water runoff have placed a heavy burden on the receiving streams in the area increasing the incidence of flooding and stream bank erosion. All of Alabama's estuarine waters are being affected by this population growth.

Applications to the Department for coastal permits and certifications are growing, particularly in terms of complexity. Many of these applications propose projects that would have significant adverse impacts to coastal resources if approved as proposed. Projects having direct and significant adverse wetland impacts are routinely reviewed by Department personnel pursuant to the provisions of ADEM Administrative Code R.335-8 (Coastal Program) and Section 404 of the Clean Water Act. Generally, permits are issued for projects having wetland impacts only if all of the following conditions are satisfied.: the activity is related to an existing or approved water dependent use, or use of regional benefit or related to an approved beach nourishment, shoreline stabilization or marsh creation, restoration or enhancement project, elimination of dead-end canals or boat slips exhibiting poor water quality or other similar beneficial use, no other feasible alternatives exist; impacts to wetlands on the project site have been minimized by project design, and mitigation is incorporated into the project proposal.

There have been no coastal area wide surveys completed of wetland acreage for submersed aquatics, tidal emergence, or swamp forest during the reporting period. Due to the State's restrictive approval process, including mitigation requirements, it is believed that wetland losses that do occur are minimal for those wetlands regulated by the program and that other losses that may occur are due to natural erosion, unpermitted activities, and minimal losses due to Nationwide permitting by the U.S. Army Corps of Engineers.

ADEM's Coastal/Facility Unit is working with other governmental entities to support wetland and submersed aquatic vegetation status and trend identification. At this time, both Mobile and Baldwin Counties have been flown and color infrared digital ortho-quarter quads have been produced. This imagery will be used to map wetlands and uplands in Mobile and Baldwin Counties.

Alabama's Coastal Program is compiling data on stabilized versus unstabilized shoreline miles. In general, the explosive coastal population growth has resulted in near continuous shoreline development, with certain areas developing more rapidly than others. The Gulf shoreline is unstabilized along its length in Alabama, except at the passes from interior estuarine waters to the Gulf of Mexico at Perdido Pass, Little Lagoon Pass, and on the eastern tip of Dauphin Island at the entrance to Mobile Bay.

6.2.3 Changes in Living Resources

The Alabama Department of Conservation and Natural Resources-Marine Resources Division (ADCNR-MRD) manages Alabama's marine resources. According to ADCNR-MRD personnel, populations are cyclic and vary by species. ADCNR oversees the replanting of oyster reefs and believes that there has been a decrease in reef size recently due to saltwater intrusion. Brown Shrimp landings were slightly above average in 2009 and well below average in 2010 (preliminary data). Blue crab landings were below average in 2009 and below average in 1010 (preliminary data). (annual averages are 3.1 million pounds).

6.2.4 Toxic Contamination

The ADEM has conducted studies to determine metals enrichment in estuarine sediments and has sampled sediments in proximity to shipyards, petroleum storage terminals, and industrial point source discharges. During 2000, ADEM began sampling Alabama's estuarine sediments for toxicity and fishes for whole-body contaminants as part of the NCA program, described above. However, no statement is being made as to the extent of areas having elevated levels of toxicants because no state or EPA criteria for toxins in sediments exist.

6.2.5 Pathogen Contamination

In addition to the recreational beach monitoring discussed above, Alabama's coastal shellfishing waters are monitored for pathogens and are subject to closings, advisories, or warnings. During the reporting period, all of Alabama's oyster harvest areas were closed at one time or another through closing orders issued by the State Health Officer of the Alabama Department of Public Health.. Those orders were issued when excess fresh water entered Mobile Bay from the Mobile River. Information on Shellfish Harvesting Area Closures/ Reopenings and Fish Advisories are included in the chapter on Public Health.

6.2.6 Other State Coastal Activities

National Coastal Condition Assessment

The U.S. EPA's National Coastal Condition Assessment (NCCA) is a partnership with EPA's Office of Water (OW), EPA's Regional office, all coastal states, and selected territories.

ADEM began and completed sampling for NCCA in July 2010. Samples were collected for water quality, sediment quality, benthic analysis, and fish tissue chemistry from seventeen sampling locations, with two sites being revisited. ADEM contracted with the ADCNR for collection of fish tissue. All samples were shipped to and analyzed by contract labs.

The NCCA program is based on EPA's EMAP program, and is a continuation of the National Coastal Assessment Program in which ADEM participated from 2000-2004 and again in 2006. These programs use a compatible probabilistic program and a common set of environmental indicators to survey each state's estuaries and assess their condition. These estimates can then be aggregated to assess conditions at the EPA Regional, biogeographical, and national levels. ADEM expects to participate in this program with sampling events occurring once every five years, with the next event occurring in 2015.

For more information about Alabama's National Coastal Condition Assessment, contact Mr. Joie Horn in ADEM's Mobile Office at (251) 450-3400 or mjhorn@adem.state.al.us

6.3 Alabama Coastal Water Quality Monitoring (CAWQM) Sites

This project will provide data to develop indicators and assessment criteria that link chemical, physical, and biological conditions for estuaries and coastal rivers within Alabama's Coastal Area. This data can be used to develop nutrient criteria and to update or revise protocols and methodologies to more accurately assess related water quality conditions for designated estuaries and coastal rivers and streams. The project will also incorporate monitoring in priority watersheds identified by ADEM's Nonpoint Source Management Program to provide corroborating data concerning the effectiveness of BMPs implemented using Section 319 funds. A total of 20 stations will be sampled as a part of the Coastal Alabama Water Quality Monitoring: Long Term Trends and Watershed Assessments (CAWQM). Sample frequency for coastal sites is four times a year between the months of March and October. Conventional and field parameters are sampled at each site visit. As well as Bacteria and Chlorophyll a. Total and dissolved metals are sampled once yearly at each site. Eleven sites have flow data. Table 6-2 and Figure 6-3 show the Alabama Coastal Water Quality Monitoring (CAWQM) Sites.

For more information about Alabama Coastal Water Quality Monitoring, contact Ms Heather Krantz in ADEM's Mobile Office at (251) 450-3409 or hkrantz@adem.state.al.us

Table 6-2 Alabama Coastal Water Quality Monitoring (CAWQM) Sites

STATION_ID	STATION_DESCRIPTION	LAT_DD	LONG_DD	WATERBODY
BMBB-1	Middle of Bay Minette Basin	30.6978	-87.92060	Bay Min. Basin
BMCB-1	Bay Minette Ck upstream of 225	30.69947	-87.90219	Bay Minette Ck
BMCB-3	Bay Minette Ck @ Bromley Rd	30.7399	-87.87460	Bay Minette Ck
DLVB-2	D'Olive Ck upstream of Co Rd 11	30.65269	-87.91181	D'Olive Creek
DVBB-1	Middle of D'Olive Bay	30.6453	-87.91790	D'Olive Bay
ESLM-4	Eslava Ck 1400ft upstream of McVay Rd	30.6422	-88.09660	Eslava Creek
FRBM-1	Middle of Fowl River Bay	30.3559	-88.19650	Fowl River Bay
FWLM-2	Fowl R @ Half Mile Rd-USGS gage-02471078	30.5011	-88.18140	Fowl River
GDBM-1	Post Hurricane site Grand Bay	30.3709	-88.33500	Grand Bay
HMCM-2	Halls Mill Ck Approx. 1000 ft upstream of I-10	30.60619	-88.15053	Halls Mills Creek
HRBM-1	Middle of Heron Bayou	30.33445	-88.15178	Heron Bayou
HRNM-1	Middle of Heron Bay	30.33719	-88.13689	Heron Bay
MGNB-101	US Hwy 98 crossing	30.40662	-87.73671	Magnolia River
MGRB-9	Magnolia River downstream of Noltie Creek	30.3902	-87.80820	Magnolia River
MIFB-1	Miflin Creek @ Co Rd20	30.3637	-87.60270	Miflin Creek
MOBB-1	NE Mobile Bay	30.6276	-87.95480	Mobile Bay
RBTM-5	Rabbit Creek~1mile upstream of Hwy 193.	30.56503	-88.14146	Rabbit Creek
SDYB-2	Sandy Creek ~50ft dnstrm of Co Rd 20/ Miflin Rd	30.3704	-87.61840	Sandy Creek
WKBB-2	~2.5 miles downriver of State Hwy 98 bridge	30.3796	-87.83390	Weeks Bay
WLFB-2	Middle of Wolf Bay	30.32124	-87.58962	Wolf Bay

6.4 Summaries of Designated Use Support for Oceans /Estuaries

Table 6-3 and Table 6-4 show the Size of Oceans and Estuaries Impaired by causes and sources respectively. For more information about Designated Use Support contact Mr. John Pate in ADEM's Montgomery Office at (334) 270-5662 or jtp@adem.state.al.us

Figure 6-3 Alabama Coastal Water Quality Monitoring (CAWQM) Sites

Table 6-3 Size of Ocean/Estuary Impaired by Causes

	Category 5	Category 4
Cause	Ocean/ Estuary	Ocean/Estuary (square miles)
Mercury	201.02	
Thallium	93.72	
Enterococcus bacteria	454.90	8.72

Table 6-4 Size of Ocean/Estuary Impaired by Sources

Sources	(square miles)
Atmospheric deposition	201.02
Collection system failure	38.17
Industrial	93.72
Municipal	18.81
On-site wastewater systems	136.25
Unknown source	0.95
Urban runoff/storm sewers	364.97

Chapter 7 Nonpoint Source Management

7.1 Overview

The Alabama Nonpoint Source Management Program continues to respond to the nation's largest source of water quality problems. Implementation of the state program enhances nonpoint source (NPS) stakeholder efforts to plan and implant environmentally-protective NPS pollution management practices, i.e., it provides a framework for stakeholders to "work off the same page." It promotes a flexible, targeted, iterative, and broad-based approach to effectively and efficiently restore NPS impaired waters and prevent the degradation of threatened or unimpaired waters. Primary management mechanisms include improved communication, collaboration, coordination, cooperation and integration of human and financial capital. The statewide program coordinates management efforts with the Alabama Coastal Nonpoint Source Program (see Chapter 6). A priority is to address water quality using a watershed based management approach. Additional Alabama Nonpoint Pollution Control Program information is available on the ADEM website at: http://www.adem.state.al.us/programs/water/npsprogram.cnt

Annual CWA Section 319(h) grants from EPA provide limited federal funding to help implement the state's NPS management program. Efforts to mitigate NPS pollution include facilitation of public/private sector partnerships, education and outreach, technical assistance, technology transfer, development and implementation of watershed-based management plans, and on-the-ground best management practice demonstrations. The management of NPS pollution is generally voluntary per the CWA; however, applicable federal and state water quality standards and pollutant discharge rules and regulations such as the NPDES and TMDL programs provide a regulatory backstop. A Section 319 grant program priority is the development and implementation of watershed-based management plans that incorporate the EPA's FY03 Section 319 grant "a-i" watershed plan development guidelines. Watershed plans continues to be developed based upon a 12-digit watershed boundary dataset in order to effectively and efficiently mitigate the sources and causes of NPS polluted runoff, enhance watershed health, and protect water quality. In addition to focusing on priority Section 319 grant guideline pollutant load reductions (i.e., nitrogen, phosphorus, and sediment), Section 319 funded watershed plans may also address other nonpoint pollutant sources and causes identified in a draft or final TMDL. About 30 Section 319 fundable watershed-based management plans are in various stages of implementation or development.

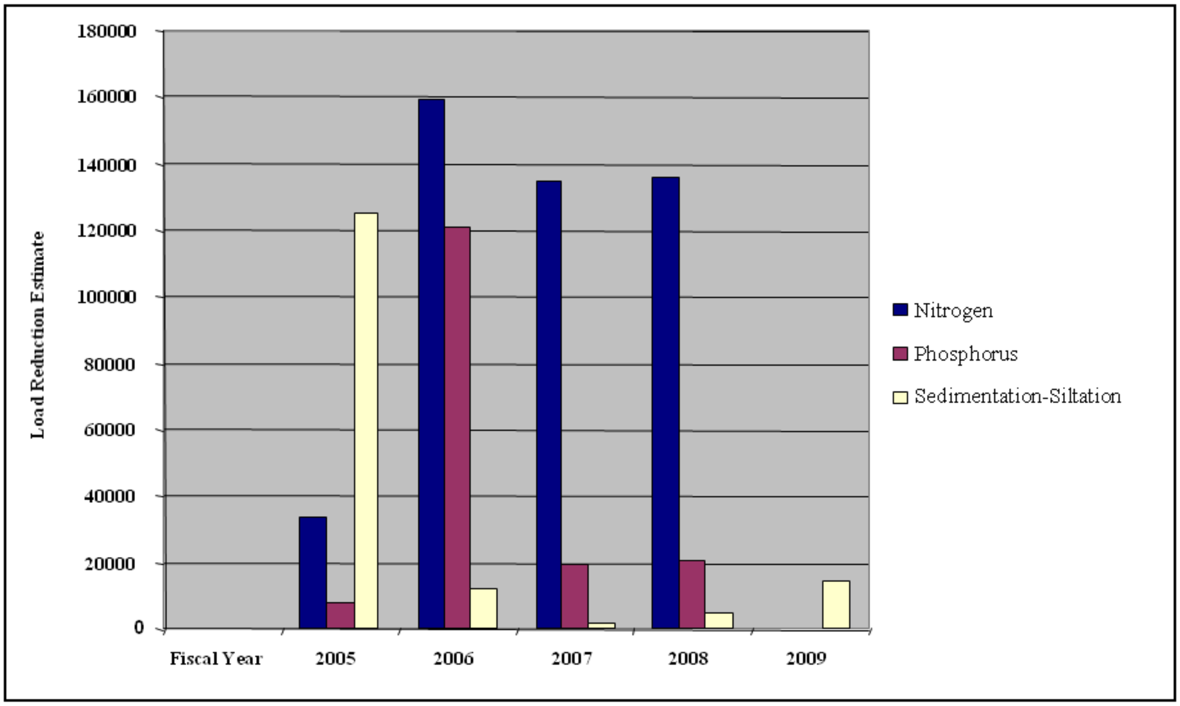
7.2 Nonpoint Source Water Quality

The Alabama Nonpoint Source Management Program incorporates a 5-year rotational water quality monitoring and assessment strategy based on major river basin geographic boundaries.

Table 7-1 Section 319 Grant Funded Pollutant Load Reduction Estimates

Load Reduction Estimate			
	Nitrogen	Phosphorus	Sedimentation-Siltation
Fiscal Year	LBS/YR	LBS/YR	TONS/YR
2005	33,564	8,147	124,710
2006	158,780	120,317	12,490
2007	134,176	19,216	2,108
2008	135,580	20,449	4,929
2009	TBD	TBD	14,875
Total	**462,099**	**168,129**	**159,111**

Figure 7-1 Section 319 Grant Funded Pollutant Load Reduction Estimates



This strategy presents the most efficient, practical, and cost-effective approach to holistically assess watershed health and monitor NPS water quality on a statewide basis. River basin assessment reports are available on the ADEM website at:
http://www.adem.state.al.us/programs/water/wqsurvey.cnt

The State Soil and Water Conservation Districts has used Section 319 grant funding to assess the environmental "health" of each of Alabama's 67 counties with input provided by locally-led citizen advisory groups. This statewide NPS assessment was completed in 2007 and is available at: http://swcc.alabama.gov/pages/watershed.aspx?sm=b_a
Section 319 NPS pollutant load reduction estimates (i.e. nitrogen, phosphorus, and sediment) are reported in the EPA Grant Reporting and Tracking (GRTS) database http://iaspub.epa.gov/

pls/grts/f?p=110:199:319676743882819. Pollutant load reduction estimates is one way to assess NPS water quality improvement progress (Table 7-1/Figure 7-1). Data quantity and quality continues to improve as a result of continued enhancements to ADEM water quality assessment and monitoring methodologies, NPS partnerships, and data-sharing and reporting cooperation. Alabama-specific Section 319 NPS success stories are available at: http://www.epa.gov/region4/water/nps/

7.3Watershed Management Approach

Watersheds comprise logical geographical and physical delineations useful for protecting water quality, developing management plans, and implementing best management practices. Stakeholders are continually encouraged to develop and implement scientifically-based, technically sound, environmentally-protective, and economically-sensible TMDL and watershed-based management plans. The development and implementation of Section 319 TMDL/watershed management plans neither replace nor supersede local water quality protection initiatives. Efforts are made to enhance and facilitate watershed partnerships in order to get the "most bang for the water quality protection buck." Section 319 watershed management plan development information is available at: http://www.adem.state.al.us/programs/water/nps/319grant.cnt. It should be noted that after NPS best management practices have been implemented, due to BMP response lag times, it may require several months or years before some improvements in watershed health is quantifiable.

7.4 Management Program Challenges and Success

Much progress has been made to protect water quality in Alabama and water quality continues to improve. However, specific targeting of some NPS best management practices can be problematic because it is sometimes difficult to definitively ascertain specific NPS pollutant sources and causes. In addition, human and financial capitol is insufficient statewide to implement some best management practices needed to protect water quality using a voluntary approach. Statewide and watershed-specific NPS and water quality protection education and outreach and provisions for citizen input must continue. Dedicated and sustainable sources of funding to be used as stakeholder incentives would likely enhance voluntary NPS management program efforts. Examples of NPS management program activities are presented in Annual Reports on the ADEM website at http://www.adem.state.al.us/programs/water/nps/default.cnt

The Alabama NPS Management Program integrates varied water quality programmatic issues such as the development and implementation of TMDLs and watershed management plans, and water quality monitoring and assessments. However, no single state agency or public/private sector entity retains comprehensive authority or possesses adequate staff, resources, or funding to adequately address all facets of watershed health and water quality protection issues. Therefore, facilitation of cooperative partnerships continues to be a NPS management program priority. Local stakeholders are encouraged to voluntarily assume local ownership of local issues and provide local resources to implement local watershed management and water quality protection solutions.

An example of a successful statewide NPS partnering effort is the Alabama Clean Water

Partnership (ACWP). The ACWP is composed of a diverse and inclusive coalition of public and private interest groups and individuals who work to improve, protect, and maintain water resources and aquatic ecosystems. This voluntary non-profit organization has assumed a leadership role in helping stakeholders plan and implement natural resource protection and restoration efforts. Additional information concerning the ACWP can be found at: http://www.cleanwaterpartnership.org/

Education and outreach helps to motivate and sustain NPS partnerships. Examples of ADEM education and outreach initiatives include: 1) Nonpoint Source Education for Municipal Officials (NEMO) http://nemo.uconn.edu/index.htm and 2) Take Action for Clean Water; http://www.adem.state.al.us/programs/water/nps/takeaction.cnt
Additional NPS education and outreach resources and information is available at: http://www.adem.state.al.us/programs/water/npsprogram.cnt or from the USEPA website at: http://www.epa.gov/owow_keep/NPS/index.html

The Alabama Water Watch (AWW) is a statewide education and outreach program coordinated by the Auburn University Department of Fisheries and Allied Aquacultures. This national and internationally recognized group coordinates water quality monitoring data collected by citizen-volunteers. The Alabama Water Watch Association, in cooperation with the AWW, promotes water quality protection efforts. Additional AWW information and data is available at: https://fp.auburn.edu/icaae/index.aspx

Statewide NPS pollution management efforts support applicable CWA Section 6217 program requirements. The Alabama Coastal Nonpoint Pollution Control Program's primary focus is to protect, manage, and improve water quality seaward of the coastal zone management area (10-foot contour elevation) of Mobile and Baldwin counties. Funding is provided by federal, state, and local entities, including Section 319 and the Alabama Coastal Area Management Program approved by NOAA under the Coastal Zone Management Act. Program approval progress is presented in Table 7-2. Additional Coastal NPS program is discussed in Chapter 6 and on the ADEM website at: http://www.adem.state.al.us/FieldOps/Coastal/Coastal.htm

The Alabama NPS Management Program / Section 319 grant program partners with many federal, state, and local units of government to efficiently and effectively protect water quality. These entities include, but are not limited to the, USDA-NRCS (technical assistance and cost-share funding), State Soil and Water Conservation Committee and Districts (BMP implementation and watershed health assessments); ACES (stream restoration), OSM and ADIR (resource extraction); ADPH (on-site septage); AFC (silviculture); and GSA and USGS (water quality). In addition, ADEM also partners with academic institutions and the private sector.

7.5 Nonpoint Source Management Program Recommendations

The development and implementation of TMDL/watershed-based plans should continue to be a NPS management program priority. Stakeholders should be encouraged to implement plans that are locally developed and have local support.

Table 7-2 Progress to Achieve Full Approval of The Alabama Coastal NPS Pollution Control Program (§6217)

	Program Approval Activities	**Status**
1998	***Findings and Conditions for Alabama," Conditional Approval"*** *with* ***72 Conditions for 14 Categories*** *remaining to be addressed.*	
2003	Through ACNPCP Coordination by ADEM, **69 Conditions for 14 Categories** remaining to be addressed / **1-FTE**.	**100%**
2003	***2003 ACNPCP Update*** *and* ***15-Year Strategy*** *documents submitted to NOAA and EPA / 2FTE.*	**100%**
2004	ADEM implemented 2 projects to address draft *IDD* /* ***2-FTE*** *Limited NOAA-OCRM Funding for ADEM Projects*	**100%**
2005	Following ***2003 ACNPCP Update Submission, 9 Conditions for 14 Categories*** *remaining to be addressed; remaining criteria re-addressed as* **Recommended Actions** *in* ***Alabama's *Interim Decision Document (IDD)*** *: 24 Actions in remaining Categories are identified to be addressed by Alabama's CNPCP.*	
2005	ADEM implemented 6 projects to address *IDD criteria /* ***3-FTE reduced to 2 FTE****.* Reduced NOAA-OCRM Funding for ADEM-ACNPCP Projects.	**100%**
2005	**NOAA-OCRM and EPA assess ACNPCP as 87% complete.**	
2006	ADEM implemented 3 projects to address *IDD criteria /* ***2-FTE****. Reduced NOAA-OCRM Funding for ADEM-ACNPCP Projects.*	**100%**
2007	ADEM implemented 3 projects to address *IDD criteria /****2-FTE****. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.*	**100%**
2008	ADEM implemented 6 projects to address *IDD criteria /* ***2-FTE reduced to 1 FTE****. Limited Funding secured from EPA-R4 to ADEM-319 for ACNPCP. No new NOAA-OCRM Funding for ADEM-ACNPCP Projects.*	**100%**
2009	ADEM implements 2 projects to address *IDD criteria /* ***1-FTE.*** Reduced Funding secured from EPA-R4 to ADEM-319 for ACNPCP. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.	**100%**
2010	ADEM to implement 1 project to address *IDD criteria/* ***1-FTE****. Project Report slated for December 2012. Reduced Funding secured from EPA-R4 to ADEM-319 for ACNPCP. No NOAA-OCRM Funding for ADEM-ACNPCP Projects.*	Project Reprogrammed
2010	ADEM will assist and support ACNPCP's new ***2010 ACNPCP UPDATE*** *SUBMISSION for Alabama during 2010 through 2012 /* ***1-FTE****.* Draft *2011 Submission submitted to EPA in May 2011*	TBD

Statewide and locally-specific NPS education and outreach, training, technical assistance, and technology transfer should be continued. Public awareness and knowledge related to the water quality protection processes, pollutant mitigation needs and available resources, and public/ private sector roles and responsibilities should be enhanced. Opportunities for NPS stakeholders to provide input into water quality protection and watershed management decision-making processes should continue to be facilitated. In addition, dedicated and consistent sources of funding are needed to help plan and implement a myriad of NPS TMDL and watershed-based best management practices and activities, and support water quality monitoring and watershed assessments, citizen volunteers, and public/private sector partnerships.

Environmental, economic, cultural, social, human health, threatened and endangered species, habitat protection, urban growth and development, recreation, and other NPS pollution impact issues should continue to be integrated into holistic watershed-based management plans. The roles, authorities, and views of regulatory and other agencies, elected and appointed officials, environmental groups, commodity groups, industries, municipalities, citizens, and others must be considered when developing the details of how watershed management plans will be implemented. In addition, implementation of innovative, alternative, or creative NPS approaches should be encouraged where feasible and practical and may include but are not limited to: pollutant trading, permitting using a watershed approach; and/or local ordinances, authorities, and incentives. Clearly defined water quality protection goals and objectives and measurable "success" endpoints should be agreed upon before management plans are implemented and funding is expended.

For more information about Section 319 grant funding and Nonpoint Source Management, contact Mr. Norman Blakey at (334) 394-4354 or nb@adem.state.al.us.

Chapter 8 Public Health

8.1 Fish Consumption Advisories

Concern about protecting the public from possible health exposure to mercury from eating fish has led to the issuance of several new fish consumption advisories for bodies of water in Alabama. The quality of water, based upon the levels of contaminants in fish from the waters in Alabama, generally continues improvements made in recent years. The Alabama Department of Environmental Management (ADEM) collected samples of specific fish species for analysis from various waterbodies throughout the state during the fall of 2010. The Alabama Department of Public Health assessed the results to determine potential human health effects. Fish consumption advisories are issued for specific waterbodies and specific species taken from those areas. The advisories apply to waters as far as a boat can be taken upstream in a tributary, that is, to full pool elevations. The Alabama Department of Public Health, in consultation with ADEM and the Alabama Department of Conservation and Natural Resources, has shifted to a more protective level for mercury. Mercury, which occurs both naturally and from man-made sources, can cause developmental disabilities and behavioral problems in children if it is consumed at high levels. One way to minimize exposure in populations at risk is to reduce mercury derived from eating fish from contaminated water. These populations include women of childbearing age, pregnant women, and children younger than 15 years of age. The fish consumption advisories are based on a stricter action level for mercury developed by the U.S. Environmental Protection Agency. Previously, Food and Drug Administration guidelines were used for mercury advisories. The FDA level was based on eating one fish meal per week. Beginning with the 2007 advisories, the Department of Public Health adopted a contaminant level for mercury in fish that would protect those who eat more than one fish meal per week. The new EPA standards are four times more protective. This advisory will be represented as the safe number of meals of that fish species that can be eaten in a given period of time, such as meals per week, meals per month or no consumption. A meal portion consists of six (6) ounces of cooked fish or eight (8) ounces of raw fish.

For more information about Fish Consumption Advisories contact the ADPH Epidemiology Division, at 1-800-201-8208 or epidemiology@adph.state.al.us . To view current and historical notices visit http://adph.org/tox/index.asp?ID=1360. Table 8-1 shows 2010/2011 Fish Consumption Advisories for Alabama with restrictions and Table 8-2 shows the areas with no restrictions (No level of concern exceeded for chemicals tested).

8.2 Shellfish Harvesting Areas

Shellfish harvesting area closures are issued when the Mobile River stage rises above 8 feet at the Barry Steam Plant. For reopening the closed areas, the river stage must be below 8 feet, ambient fecal coliform counts must be below a geometric mean of 14 MPN (most probable

Table 8-1 Alabama Fish Consumption Advisories for 2010 / 2011

Alabama Fish Consumption Advisories for 2010 and 2011						
					Consumption Level	
Water Body	County	Species	Segment	Pollutant	Type of Advisory	
					Women of child-bearing age and small children	All other individu-als
Alabama River	Monroe	Spotted Bass	Approximately 2.0 miles downstream of AL Highway 12/US Highway 84. River miles 65-66.	Mercury	Two meal per month	Two meal per month
Bear Creek Reservoir	Franklin	Largemouth Bass	Dam forebay area. Bear Creek Mile 75	Mercury	No Consumption1	No Consumption1
Big Creek Reservoir	Mobile	Largemouth Bass	Lake Wide Sample	Mercury	One meal per month	One meal per month
Big Escambia Creek	Escambia	Largemouth Bass	At the Louisville and Nashville Railroad Bridge Crossing	Mercury	No Consumption1	No Consumption1
Big Nance Creek	Lawrence	Golden Redhorse	Big Nance Creek at Lawrence County Road 25.	Mercury	Two meal per month	Two meal per month
Big Nance Creek	Lawrence	Largemouth Bass	Big Nance Creek at Lawrence County Road 25.	Mercury	No Consumption1	No Consumption1
Big Nance Creek	Lawrence	Channel Catfish	Wilson Reservoir. Big Nance Creek embayment upstream of AL Highway 101 Bridge	Mercury	Two meal per month	Two meal per month
Big Nance Creek	Lawrence	Largemouth Bass	Wilson Reservoir. Big Nance Creek embayment upstream of AL Highway 101 Bridge	Mercury	No Consumption1	One meal per month
Bilbo Creek	Washington	Largemouth Bass	Upstream of the confluence with the Tombig-bee River	Mercury	One meal per month	One meal per month
Blackwater Creek	Baldwin	Blacktail Red-horse	In the area between the mouth of the river and the pipeline crossing southeast of Robertsdale.	Mercury	Two meal per month	Two meal per month
Blackwater Creek	Baldwin	Largemouth Bass	In the area between the mouth of the river and the pipeline crossing southeast of Robertsdale.	Mercury	No Consumption1	No Consumption1
Blackwater Creek	Escambia	Largemouth Bass	Between the County Road 4 Bridge and the Alabama/Florida state line.	Mercury	No Consumption1	No Consumption1
Blackwater Creek	Escambia	Spotted Bass	Between the County Road 4 Bridge and the Alabama/Florida state line.	Mercury	One meal per month	One meal per month
Bon Secour River	Baldwin	Largemouth Bass	Vicinity of County Road 10 Bridge	Mercury	No Consumption1	No Consumption1
Burnt Corn Creek	Escambia	Largemouth Bass	Burnt Corn Creek upstream from confluence with Murder Creek	Mercury	One meal per month	One meal per month
Cedar Creek	Houston	Largemouth Bass	Cedar Creek drainage from American Brass site near Headland, AL tributary to Omussee Creek	Mercury	Two meal per month	Two meal per month
Cedar Creek Reservoir	Franklin	Channel Catfish	Dam forebay to 1 mile upstream of dam	Mercury	No Consumption1	One meal per month
Cedar Creek Reservoir	Franklin	Largemouth Bass	Dam forebay to 1 mile upstream of dam	Mercury	No Consumption1	No Consumption1
Chickasaw Creek	Mobile	Largemouth Bass	Entire Creek	Mercury	No Consumption1	No Consumption1
Choccolocco Creek	Calhoun	Spotted Bass	In the vicinity of Boiling Springs Road bridge crossing	Mercury	Two meal per month	Two meal per month

1 No Consumption advisory – Everyone should avoid eating the designated species of fish in the defined areas.

2 Women of childbearing age and children less than 15 years old should avoid eating the designated species of fish from the defined areas. Other people should limit their consumption of the particular species to the amount indicated above. A meal is considered to be 6 ounces of cooked fish or 8 ounces of raw fish.

Table 8-1 Alabama Fish Consumption Advisories for 2010 / 2011 (continued)

Alabama Fish Consumption Advisories for 2010 and 2011						
					Consumption Level	
Water Body	County	Species	Segment	Pollutant	Type of Advisory	
					Women of child-bearing age and small children	All other individu-als
Choccolocco Creek	Calhoun, Talladega	All Fish Species	Entire length of creek from south of Oxford to Logan Martin Lake	PCB's	No Consumption1	No Consumption1
Choccolocco Creek	Talladega	Spotted Bass	In the vicinity of County Road 399 bridge	Mercury	One meal per month	One meal per month
Choccolocco Creek	Talladega	All Fish Species	Deepest Point, main creek channel, Choc-colocco Creek embayment, approximately 1.0 mile upstream of lake confluence.	PCB's	No Consumption1	No Consumption1
Choctawhatchee River	Geneva	Spotted Bass, Redear Sunfish	Entire River	Mercury	Two meal per month	Two meal per month
Claiborne Reservoir	Monroe	Largemouth Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	Mercury	No Consumption1	No Consumption1
Claiborne Reservoir	Clarke, Monroe	Largemouth Bass	Dam forebay area and in vicinity of Lower Peachtree Access Area, approximately River Mile 96 close to the intersection of Clarke, Monroe and Wilcox counties	Mercury	Two meal per month	Two meal per month
Claiborne Reservoir	Clarke	Largemouth Bass	Claiborne Reservoir in vicinity of the intersec-tion of Clarke, Monroe and Wilcox counties.	Mercury	No Consumption1	No Consumption1
Coffeeville Reservoir	Sumpter	Largemouth Bass	Approximately 1.5 miles downstream of US Highway 80/AL Highway 28 bridge,Tombigbee River mile 202-200 .	Mercury	No Consumption1	No Consumption1
Coffeeville Reservoir	Sumpter	Spotted Bass	Approximately 1.5 miles downstream of US Highway 80/AL Highway 28 bridge,Tombigbee River mile 202-200 .	Mercury	No Consumption1	One meal per month
Cold Creek Swamp	Mobile	All Fish Species	From confluence of Cold Creek with the Mo-bile River west through the swamp	Mercury	No Consumption1	No Consumption1
Conecuh River	Escambia	Largemouth Bass	Vicinity of Pollard Landing to Alabama/Florida state line.	Mercury	No Consumption1	No Consumption1
Coosa River	Calhoun, St. Clair & Talladega	Catfish over 1 pound	Between Neely Henry Dam and Riverside.	PCB's	No Consumption1	One meal per month
Coosa River	St. Clair & Talladega	Striped Bass	Between Riverside and Logan Martin Dam	PCB's	No Consumption1	No Consumption1
Coosa River	Shelby, St. Clair & Talladega	Striped Bass	Between Logan Martin Dam and the railroad tracks crossing the Coosa near Vincent	PCB's	No Consumption1	No Consumption1
Coosa River	Chilton, Coosa, Shelby, St. Clair & Talladega	Striped Bass	Lay Lake between Logan Martin Dam and Lay Lake	PCB's	No Consumption1	No Consumption1
Coosa River	St. Clair	Spotted Bass	In upper Lay Reservoir approximately 2 miles downstream of Logan Martin Dam and 0.5 mile downstream from the Kelly Creek-Coosa River confluence in the vicinity of Ratcliff/Elliott Island.	PCB's & Mercury	No Consumption1	One meal per month
Cowikee Creek	Barbour	Largemouth Bass	Cowikee Creek embayment of W.F. George Reservoir. Approximate area from US 431 bridge to Chattahoochee River main channel; in vicinity of Lakepoint Resort and State Park	Mercury	Two meal per month	Two meal per month

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2 Women of childbearing age and children less than 15 years old should avoid eating the designated species of fish from the defined areas. Other people should limit their consumption of the particular species to the amount indicated above. A meal is considered to be 6 ounces of cooked fish or 8 ounces of raw fish.

Table 8-1 Alabama Fish Consumption Advisories for 2010 / 2011 (continued)

Alabama Fish Consumption Advisories for 2010 and 2011						
					Consumption Level	
Water Body	**County**	**Species**	**Segment**	**Pollutant**	**Type of Advisory**	
					Women of child-bearing age and small children	**All other individuals**
Cowpen Creek	Baldwin	Largemouth Bass	Upstream of the confluence with Fish River	Mercury	One meal per month	One meal per month
Escatawpa River	Mobile	Spotted Bass, Largemouth Bass	At US Highway 98 bridge crossing approximately one-tenth mile upstream of Alabama/ Mississippi state line	Mercury	One meal per 2 months (1/2 meal per month)	One meal per 2 months (1/2 meal per month)
Escatawpa River	Mobile	Blacktail Redhorse, Channel Catfish	At US Highway 98 bridge crossing approximately one-tenth mile upstream of Alabama/ Mississippi state line	Mercury	One meal per month	One meal per month
Fish River	Baldwin	Largemouth Bass	In the vicinity of confluence with Polecat Creek approximately one mile upstream of County Road 32 bridge	Mercury	One meal per 2 months (1/2 meal per month)	One meal per 2 months (1/2 meal per month)
Fish River	Baldwin	Black Crappie	In the vicinity of confluence with Polecat Creek approximately one mile upstream of County Road 32 bridge	Mercury	One meal per month	One meal per month
Fish River	Baldwin	Largemouth Bass	Approximately two miles upstream of US Highway 98 bridge in the vicinity of Waterhole Branch/Fish River confluence just above the two islands.	Mercury	Two meal per month	Two meal per month
Flint Creek	Morgan	Largemouth Bass	Downstream of West Flint Creek confluence, vicinity of US Highway 31	Mercury	No Consumption1	No Consumption1
Four Mile/Six Mile Creek	Dallas	All Fish Species	Four Mile Creek upstream of confluence with the Alabama River, near Selma.	Mercury	No Consumption1	One meal per month
Fowl River	Mobile	Largemouth Bass	Entire River	Mercury	No Consumption1	No Consumption1
Frank Jackson Lake	Covington	Largemouth Bass	Lightwood Knot Creek, Frank Jackson Lake, lake-wide, Opp	Mercury	One meal per month	One meal per month
Gantt Reservoir	Covington	Largemouth Bass	Conecuh River, Gantt Reservoir, lake wide	Mercury	One meal per month	One meal per month
Gulf Coast	Baldwin, Mobile	King Mackerel over 39 inches	Entire Coast	Mercury	No Consumption1	No Consumption1
Gulf Coast	Baldwin, Mobile	King Mackerel under 39 inches	Entire Coast	Mercury	No Consumption1	One meal per month
Huntsville Spring Branch/Indian Creek	Madison	Smallmouth Buffalo fish & Largemouth Buffalo fish	Deepest Point, main creek channel, Indian Creek embayment, 1.0 mile upstream of lake confluence.	DDT	No Consumption1	No Consumption1
Lake Jackson	Covington	Largemouth Bass	Lake Jackson located on the Alabama/Florida state line at Florala, Alabama	Mercury	One meal per month	One meal per month
Lake Tuscaloosa	Tuscaloosa	All Fish Species	Entire Lake	Mercury	One meal per month	One meal per month
Lay Reservoir	Chilton	Striped Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	PCB's	No Consumption1	One meal per month
Lay Reservoir	Shelby	Channel Catfish	Approximately 1.5 miles downstream of US Highway 280 bridge. Vicinity of Coosa River Mile 444.0 .	Mercury	Two meal per month	Two meal per month

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Table 8-1 Alabama Fish Consumption Advisories for 2010 / 2011 (continued)

Alabama Fish Consumption Advisories for 2010 and 2011						
					Consumption Level	
Water Body	**County**	**Species**	**Segment**	**Pollutant**	**Type of Advisory**	
					Women of child-bearing age and small children	**All other individuals**
Lay Reservoir	Shelby	Largemouth Bass	Approximately 1.5 miles downstream of US Highway 280 bridge. Vicinity of Coosa River Mile 444.0 .	Mercury	No Consumption1	One meal per month
Lewis Smith Reservoir	Cullman	Largemouth Bass	Ryan Creek, Lewis Smith Reservoir in the vicinity of Cullman County Road 222 bridge	Mercury	One meal per month	One meal per month
Lewis Smith Reservoir	Winston	Largemouth Bass	Rock Creek, Lewis Smith Reservoir in the vicinity of Little Crooked Creek and Rock Creek Marina, approximately 5 miles upstream from Sipsey Fork.	Mercury	Two meal per month	Two meal per month
Lewis Smith Reservoir	Winston	Largemouth Bass, Spotted Bass	Mouth of Clear Creek. Mouth of Butler Creek	Mercury	One meal per month	One meal per month
Limestone Creek	Limestone	Largemouth Bass	Wheeler Reservoir, Limestone Creek embayment beginning approximately 1 mile upstream of confluence with Tennessee River.	Mercury	No Consumption1	One meal per month
Little Bear Creek Reservoir	Franklin	Largemouth Bass	Dam forebay area. Little Bear Creek mile 12.5	Mercury	Two meal per month	Two meal per month
Little Escambia Creek	Escambia	Spotted Bass	In Escambia County at US Highway 31/29 Bridge	Mercury	No Consumption1	No Consumption1
Logan Martin Reservoir	St. Clair	Striped Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	PCB's	No Consumption1	One meal per month
Mobile River	Mobile	Largemouth Bass	At and south of the confluence with Cold Creek	Mercury	Two meal per month	Two meal per month
North River	Tuscaloosa	Largemouth Bass	Upstream of Lake Tuscaloosa, immediately upstream of Bull Slough Road	Mercury	Two meal per month	Two meal per month
Opossum Creek	Jefferson	Largemouth Bass	From the Pumping Station to the confluence with Valley Creek	Mercury	No Consumption1	No Consumption1
Patsaliga Creek	Covington	Largemouth Bass	Patsaliga Creek embayment of Point A Reservoir	Mercury	One meal per month	One meal per month
Pea River	Geneva	Largemouth Bass	Entire River	Mercury	Two meal per month	Two meal per month
Perdido River	Baldwin	Largemouth Bass	Styx River confluence in vicinity of US Highway 90 bridge crossing	Mercury	One meal per month	One meal per month
Perdido River	Baldwin	River Redhorse	Styx River confluence in vicinity of US Highway 90 bridge crossing	Mercury	Two meal per month	Two meal per month
Point A Reservoir	Covington	Largemouth Bass	Conecuh River, Point A Reservoir, lake wide	Mercury	One meal per month	One meal per month
Polecat Creek	Baldwin	Largemouth Bass	Upstream of confluence with Fish River	Mercury	One meal per month	One meal per month
Sepulga River	Escambia	Spotted Bass	Sepulga River upstream of Conecuh River confluence	Mercury	One meal per month	One meal per month
Sipsey River	Tuscaloosa	Largemouth Bass	Sipsey River embayment, approximately 0.5 miles upstream of confluence with Tombigbee River	Mercury	Two meal per month	Two meal per month

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Table 8-1 Alabama Fish Consumption Advisories for 2010 / 2011 (continued)

Alabama Fish Consumption Advisories for 2010 and 2011						
					Consumption Level	
Water Body	County	Species	Segment	Pollutant	Type of Advisory	
Sougahatchee Creek	Tallapoosa	Largemouth Bass	Deepest point, main creek channel, Sougahatchee Creek embayment. Approximately 1.6 miles upstream from the Tallapoosa River confluence.	Mercury	No Consumption1	One meal per month
Styx River	Baldwin	Channel Catfish	Entire River	Mercury	No Consumption1	One meal per month
Styx River	Baldwin	Largemouth Bass	Entire River	Mercury	One meal per month	One meal per month
Sugar Creek	Tallapoosa	Largemouth Bass	Martin Reservoir, Sugar Creek embayment	Mercury	No Consumption1	No Consumption1
Tallapoosa River	Montgomery	Spotted Bass	Tallapoosa River, deepest point, approximately 3.0 miles upstream of US Highway 231.	Mercury	No Consumption1	One meal per month
Tennessee River	Jackson	Spotted Bass	At AL/TN state line just upstream of Long Island at river mile 417	Mercury	Two meal per month	Two meal per month
Tensaw River	Baldwin	Largemouth Bass	Entire River	Mercury	No Consumption1	One meal per month
Thurlow Reservoir	Elmore	Largemouth Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	Mercury	No Consumption1	One meal per month
Tombigbee River	Washington	Largemouth Bass	Tombigbee River at river mile 50.0 approximately 5 Miles upstream of the confluence with the Alabama River.	Mercury	Two meal per month	Two meal per month
Tombigbee River	Washington	Largemouth Bass	Vicinity of McIntosh landing, river mile 60.	Mercury	Two meal per month	Two meal per month
Tombigbee River	Clarke	Largemouth Bass	Vicinity of Tombigbee River Mile 83.6	Mercury	No Consumption1	One meal per month
Uchee Creek	Russell	Largemouth Bass	Uchee Creek in the vicinity of Uchee Recreational Area.	Mercury	Two meal per month	Two meal per month
Upper Bear Creek Reservoir	Marion	Channel Catfish	Dam forebay area, Upper Bear Creek mile 11.	Mercury	Two meal per month	Two meal per month
Upper Bear Creek Reservoir	Marion	Largemouth Bass	Dam forebay area, Upper Bear Creek mile 11.	Mercury	No Consumption1	No Consumption1
Valley Creek	Jefferson	Largemouth Bass	Around the confluence with Opossum Creek	Mercury	No Consumption1	No Consumption1
Weiss Reservoir	Cherokee	Channel Catfish	Lower reservoir. Deepest point, main river channel, dam forebay.	PCB's	No Consumption1	No Consumption1
Weiss Reservoir	Cherokee	Striped Bass	Lower reservoir. Deepest point, main river channel, dam forebay.	PCB's	No Consumption1	One meal per month
Widows Creek	Jackson	Largemouth Bass	Widows creek between Tennessee River confluence and 1.0 mile upstream of confluence.	Mercury	No Consumption1	One meal per month
Widows Creek	Jackson	Largemouth Bass	Stretch of Widows Creek from 1.5 miles upstream of Tennessee River confluence to first bridge crossing (Million Dollar Bridge).	Mercury	No Consumption1	No Consumption1
Widows Creek	Jackson	Largemouth Bass	Upstream of Jackson County Road 96	Mercury	No Consumption1	One meal per month
Yellow River	Covington	Largemouth Bass	At county Road 4 bridge crossing approximately 1.5 miles upstream of Alabama/Florida State line.	Mercury	No Consumption1	No Consumption1

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2 Women of childbearing age and children less than 15 years old should avoid eating the designated species of fish from the defined areas. Other people should limit their consumption of the particular species to the amount indicated above. A meal is considered to be 6 ounces of cooked fish or 8 ounces of raw fish.

Table 8-2 Alabama Fish Consumption Advisories for 2010 / 2011 No Restrictions

Alabama Fish Consumption Guidelines for 2010 and 2011 No Restrictions						
					Consumption Level	
Water Body	County	Species	Segment	Pollutant	Type of Advisory	
					Women of child-bearing age and small children	All other individuals
Baker Creek	Morgan	All Species	Wheeler Reservoir, Baker Creek, Upstream of Baker Creek/Tennessee River Confluence	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bayview Lake	Jefferson	All Species	Bayview Lake at deepest point, main creek channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Bear Creek	Colbert	All Species	Pickwick Reservoir, Bear Creek embayment, at Bear Creek mile 8.0 approximately 5 miles downstream of Buzzard Roost/Bear Creek confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Cane Creek	Colbert	All Species	Pickwick Reservoir, Cane Creek embayment approximately 1 miles upstream of confluence with Tennessee River.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Dannelly Reservoir	Wilcox	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Dannelly Reservoir	Dallas	All Species	Approximately 7.5 miles upstream of AL Hwy 41. Alabama River Mile 214.9-216.9.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Elk River	Lauderdale	All Species	Elk River embayment, Elk River Mile 6, near the mouth of Anderson Creek	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Flint Creek	Morgan	All Species	Wheeler Reservoir, Flint Creek embayment beginning 1.0 mile downstream of County Road 67 bridge	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Guntersville Reservoir	Marshall	All Species	Dam forebay area. Tennessee River mile 350, downstream of Honeycomb Creek.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Guntersville Reservoir	Jackson	All Species	Guntersville Reservoir, Tennessee River Mile 375 between the confluence of South Sauty Creek and Tennessee River & North Sauty Creek and Tennessee River.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Guntersville Reservoir	Jackson	All Species	Guntersville Reservoir, vicinity of Tennessee River Mile 408. Just downstream of Widows Creek	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

Table 8-2 Alabama Fish Consumption Advisories for 2010 / 2011 No Restrictions (continued)

Alabama Fish Consumption Guidelines for 2010 and 2011 No Restrictions						
					Consumption Level	
Water Body	County	Species	Segment	Pollutant	Type of Advisory	
Harris Reservoir	Randolph	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Jordan Reservoir	Elmore	All Species	Deepest Point, main river channel, dam fore-bay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Logan Martin Reser-voir	Shelby	All Species	Approximately Logan Martin Reservoir at Riverside near the confluence of Blue Eye Creek. Alabama Power reservoir mile 20.0 (vicinity of Interstate 20 bridge).	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Martin Reservoir	Tallapoosa	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Mitchell Reservoir	Coosa	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Mobile Bay	Mobile	All Species	Little Sand Island area, Mobile River at its confluence with Mobile Bay	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Neely Henry Reser-voir	Calhoun	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Pickwick Reservoir	Colbert	All Species	Vicinity of Tennessee River mile 230, 2.5 miles upstream of Tennessee river/Second Creek confluence.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Pickwick Reservoir	Lauderdale	All Species	Between Tennessee River miles 251.0-255.0, near Sheffield, AL.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Round Island Creek	Limestone	All Species	Wheeler Reservoir, Round Island Creek embay-ment beginning 1.5 miles upstream of conflu-ence with Tennessee River.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Short Creek	Marshall	All Species	Guntersville Reservoir, Short Creek embayment approximately 1.75 miles upstream of State Highway 227	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
South Sauty Creek	Jackson	All Species	Guntersville Reservoir, South Sauty Creek embayment.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

Table 8-2 Alabama Fish Consumption Advisories for 2010 / 2011 No Restrictions (continued)

Alabama Fish Consumption Guidelines for 2010 and 2011 No Restrictions						
					Consumption Level	
Water Body	**County**	**Species**	**Segment**	**Pollutant**	**Type of Advisory**	
Spring Creek	Marshall	All Species	Guntersville Reservoir, Spring Creek embayment upstream of AL highway 227.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Spring Creek	Colbert	All Species	Spring Creek embayment approximately 1 mile upstream of Pickwick Reservoir confluence	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Spring Creek	Lawrence	All Species	Wheeler Reservoir, Spring Creek embayment, upstream of County Road 400.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Town Creek	Marshall	All Species	Guntersville Reservoir, Town Creek embayment approximately 4 miles upstream of State Highway 227.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Weiss Reservoir	Cherokee	All Species	State line. Deepest point, main river channel, AL/GA state line.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wheeler Reservoir	Lauderdale	All Species	Upstream of the dam at Tennessee River mile 277.0, near the confluence of First Creek with the main channel	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wheeler Reservoir	Lauderdale	All Species	Wheeler Reservoir at Tennessee River mile 281. Approximately 2 miles downstream of the mouth of Elk River. Due south of Rogersville.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wheeler Reservoir	Limestone	All Species	Vicinity of Tennessee River mile 296.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wheeler Reservoir	Limestone	All Species	Downstream of Bakers Creek at Tennessee River mile 300.0-296.0.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wheeler Reservoir	Madison	All Species	Vicinity of Tennessee River mile 320. 0.9 mile upstream of Cotaco Creek and 1.0 mile downstream of Indian Creek.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wheeler Reservoir	Madison	All Species	Wheeler Reservoir, Tennessee River mile 347, 2.0 miles downstream of Guntersville dam.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Woodruff Reservoir	Autauga	All Species	Lower reservoir. Deepest point, main river channel, dam forebay. In vicinity of Prairie Creek access area.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

Table 8-2 Alabama Fish Consumption Advisories for 2010 / 2011 No Restrictions (continued)

Alabama Fish Consumption Guidelines for 2010 and 2011 No Restrictions						
					Consumption Level	
Water Body	**County**	**Species**	**Segment**	**Pollutant**	**Type of Advisory**	
Woodruff Reservoir	Elmore	All Species	Deepest Point, main river channel, immediately upstream of US Highway 31 bridge. River miles 278-279.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wilson Reservoir	Lauderdale	All Species	Dam forebay at Tennessee River mile 259.5.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Wilson Reservoir	Lauderdale	All Species	Tennessee River miles 272.0-274.0, 1.0 miles downstream of Blue Water Creek.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions
Yates Reservoir	Tallapoosa	All Species	Lower reservoir. Deepest point, main river channel, dam forebay.	No level of concern exceeded for chemicals tested	No restrictions	No restrictions

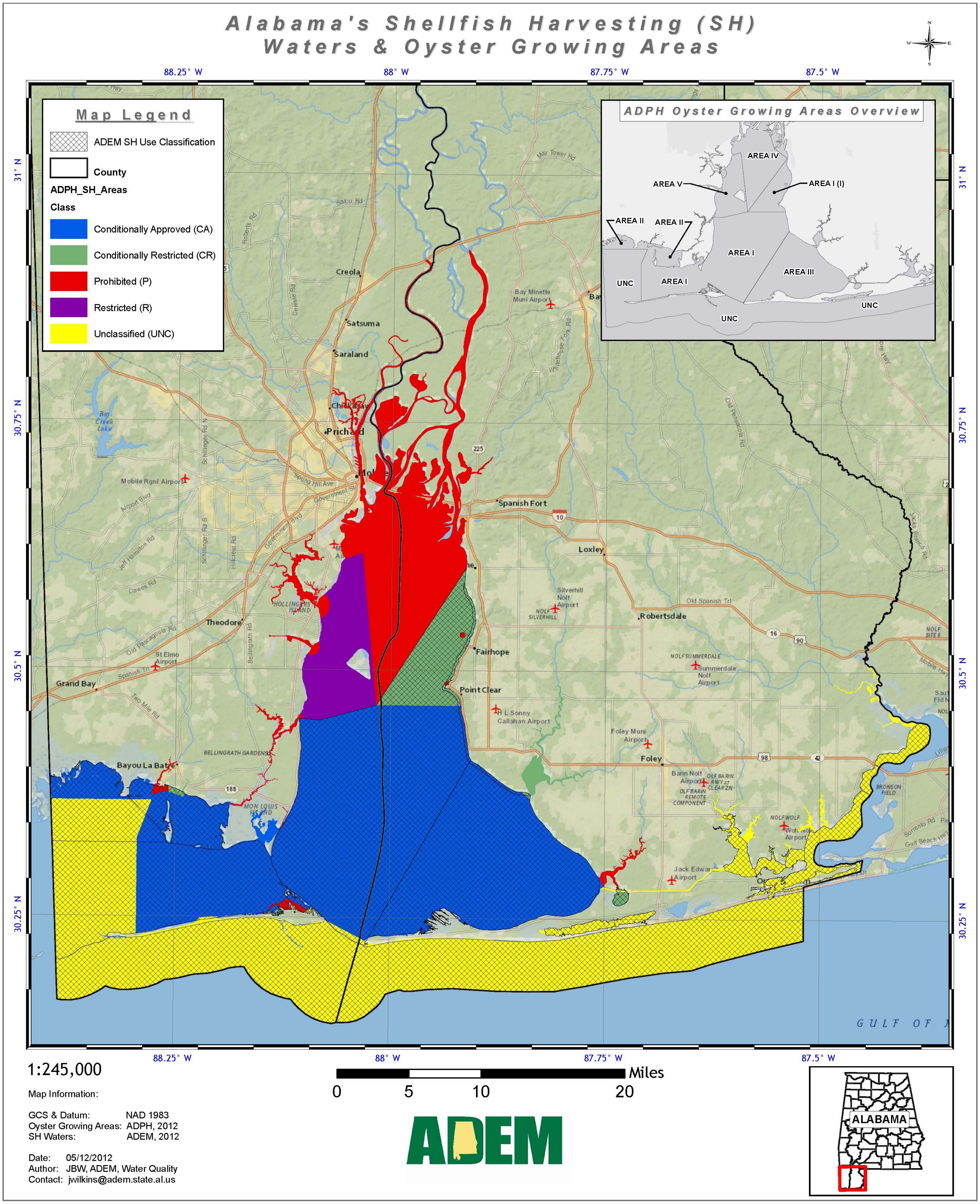
number) in 100 milliliters of sample water with not more than 10 percent exceeding 43 MPN in 100 milliliter sample of water, and the E. coli count in oyster meat must be below 230 MPN in 100g of meat. Figure 8-1 depicts Alabama's Oyster/Shellfish Harvesting Areas in Coastal Waters. For exceptions to these areas such as around outfalls, marinas, or other specific waters refer to the ADEM Administrative Code Water Quality Program Volume I Chapter 335-6-11. Table 8-3 contains the notices pertaining to shellfish harvesting area closures and subsequent reopening.

For more information about shellfish harvesting areas refer to the ADPH Seafood Branch Triennial Report, 2007 Comprehensive Sanitary Survey of Alabama's Shellfish Growing Waters at http://adph.org/foodsafety/index.asp?ID=1141 and contact Mr. Jeff McCool with the ADPH Seafood Branch Mobile at (251) 432-7618 or jeffmccool@adph.state.al.us or Mr. Ron Dawsey ADPH Montgomery at (334) 206-5375 or rdawsey@adph.state.al.us.

8.3 Public Water Supply/Drinking Water

Approximately 850,000,000 gallons of water are taken from ground and surface sources each day, provided with treatment, and made available to approximately four million citizens in Alabama. Five hundred and thirty (530) community systems, sixty-one (61) transient non-community systems and twenty-three (23) non-transient non-community systems are permitted by the ADEM.

Figure 8-1 Alabama's Oyster/Shellfish Harvesting Areas in Coastal Waters



Approximately sixty-five (65) percent of the water used is obtained from surface sources such as lakes, rivers, and streams and provided with full treatment to include coagulation, sedimentation, filtration, and disinfection. One hundred (100) percent of these systems meet turbidity requirements, one hundred (100) percent meet trihalomethane standards, ninety-seven (97) percent meet haloacetic acid standards and one hundred (100) percent meet inorganic and radiological drinking water standards. These water treatment facilities are required to employ Grade IV Certified Operators to ensure that proper doses of chemicals are applied and hourly tests are performed to demonstrate a satisfactory water quality.

Thirty-five (35) percent of the water is obtained from ground water sources such as wells and springs. An adequate source of ground water is generally available in this State; however, the ground water is extremely limited in the Piedmont area. Ground water sources are required to provide disinfection and monitor the draw down (water level change) in wells ensuring that a satisfactory available quantity of water remains. More than ninety-eight (98) percent of the Community Systems and ninety-five (95) percent of the Non-community Systems met the bacteriological quality standard of the Department. More than ninety-seven (97) percent of the community systems and approximately eighty (80) percent of the non-community systems were in full compliance with the bacteriological monitoring requirements. One hundred (100) percent meet trihalomethane standards and one hundred (100) percent of the groundwater public water systems were able to meet the inorganic and radiological maximum contaminant levels. These figures demonstrate that the majority of the water provided to the citizens in Alabama is excellent. Contaminants, chemicals, and byproducts that water systems monitor for are shown in Tables 8-4 through 8-9.

All water systems continue to monitor for lead and copper. Two systems exceeded the lead action level out of the 400 community and non-transient, non-community systems that were sampled in 2010 and 2011. This system is being required to formulate a corrosion control plan, and continue sampling every six months.

All community and non-transient non-community water system sources continued to be monitored for volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs). More than ninety-eighty (98) percent of the community systems and non-transient non-community systems required to monitor in 2008 and 2009 were in full compliance with the VOC and SOC monitoring requirements. Of the contaminants found, tetrachloroethylene (TCE) is the most common regulated VOC and Di(2-ethylhexyl)phthalate is the most common regulated SOC. Table 8-3 shows surface source public water systems with compliance violations.

For more information about to Public Water Supply/Drinking Water, contact Mr. Tom Deloach in ADEM's Montgomery Office at (334) 271-7791 or tsd@adem.state.al.us.

8.4 Source Water Assessment Program

All public water supply systems have completed a Source Water Assessment Program (SWAP) for each of their existing groundwater sources. All water systems are required to update their SWAP's when applying for reissuance of their permits-to-furnish water. All new groundwater

Table 8-3 Shellfish Harvesting Area Closures/Reopening

2010														
NOTICE DATE	EFFECTIVE DATE	TIME EFFECTIVE	AREA I			AREA II			AREA III			AREA IV		
			STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED
12/31/10														
09/03/10	09/04/10	0600	CONDITION-ALLY OPEN	119		CONDITION-ALLY OPEN	119		CONDITION-ALLY OPEN	119		CONDITION-ALLY CLOSED		119
08/30/10	08/30/10	1500	CONDITION-ALLY OPEN	5		CONDITION-ALLY CLOSED		5	CONDITION-ALLY OPEN	5		CONDITION-ALLY CLOSED		5
08/09/10	08/10/10	0600	CONDITION-ALLY OPEN	20		CONDITION-ALLY OPEN	20		CONDITION-ALLY OPEN	20		CONDITION-ALLY CLOSED		20
06/01/10	06/01/10	1500	CONDITION-ALLY CLOSED		70	CONDITION-ALLY CLOSED		70	CONDITION-ALLY CLOSED		70	CONDITION-ALLY CLOSED		70
04/08/10	04/09/10	0600	CONDITION-ALLY OPEN	53		CONDITION-ALLY OPEN	53		CONDITION-ALLY OPEN	53		CONDITION-ALLY CLOSED		53
03/16/10	03/16/10	1500	CONDITION-ALLY CLOSED		24	CONDITION-ALLY CLOSED		24	CONDITION-ALLY CLOSED		24	CONDITION-ALLY CLOSED		24
02/25/10	02/26/10	0600	CONDITION-ALLY OPEN	18		CONDITION-ALLY OPEN	18		CONDITION-ALLY OPEN	18		CONDITION-ALLY CLOSED		18
01/25/10	01/25/10	1500	CONDITION-ALLY CLOSED		32	CONDITION-ALLY CLOSED		32	CONDITION-ALLY CLOSED		32	CONDITION-ALLY CLOSED		32
01/08/10	01/09/10	0600	CONDITION-ALLY OPEN	16		CONDITION-ALLY OPEN	16		CONDITION-ALLY OPEN	16		CONDITION-ALLY CLOSED		16
01/01/10			CONDITION-ALLY CLOSED		8	CONDITION-ALLY CLOSED		8	CONDITION-ALLY CLOSED		8	CONDITION-ALLY CLOSED	0	8
				231	134		226	139		231	134		0	365
TOTALS					36.71% NON			38.08% NON			36.71% NON			100.00% NON

Conditionally means there are some exceptions to the open status, some parts of the area may still remain closed. See original notice for more detailed information.

***No Notice Found

Table 8-3 Shellfish Harvesting Area Closures/Reopening (Continued)

2011														
NOTICE DATE	EFFEC-TIVE DATE	TIME EFFEC-TIVE	AREA I			AREA II			AREA III			AREA IV		
			STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED	STATUS	#DAYS OPEN	# DAYS CLOSED
12/31/11														
09/14/11	09/15/11	0600	CONDITIONALLY OPEN	108		CONDITIONALLY OPEN	108		CONDITION-ALLY OPEN	108		CONDITIONALLY CLOSED		108
09/12/11	09/13/11	0600	CONDITIONALLY OPEN	2		CONDITIONALLY CLOSED		2	CONDITION-ALLY OPEN	2		CONDITIONALLY CLOSED		2
09/04/11	09/05/11	0600	CONDITIONALLY CLOSED		8	CONDITIONALLY CLOSED		8	CONDITION-ALLY CLOSED		8	CONDITIONALLY CLOSED		8
03/30/11	03/31/11	0600	CONDITIONALLY OPEN	158		CONDITIONALLY OPEN	158		CONDITION-ALLY OPEN	158		CONDITIONALLY CLOSED		158
03/12/11	03/12/11	1500	CONDITIONALLY CLOSED		19	CONDITIONALLY CLOSED		19	CONDITION-ALLY CLOSED		19	CONDITIONALLY CLOSED		19
01/01/11			CONDITIONALLY OPEN	70		CONDITIONALLY OPEN	70		CONDITION-ALLY OPEN	70		CONDITIONALLY CLOSED	0	70
				338	27		336	29		338	27		0	365
TOTALS					7.40% FULL			7.95% FULL			7.40% FULL			100.00% NON

Conditionally means there are some exceptions to the open status, some parts of the area may still remain closed. See original notice for more detailed information.

***No Notice Found

sources must have a completed SWAP, prior to using the source for potable water. A completed SWAP for a groundwater source must include the following:

- Delineation of the source water assessment area (SWAA),
- An inventory of the possible contaminant sources within the SWAA,
- A susceptibility analysis of each possible contaminant source in the inventory, and
- A public awareness requirement

When the Source Water Assessment Program requirements were initially promulgated, Alabama had a total of 414 public water supply systems that utilized one or more groundwater sources. Each of these systems was required to complete a SWAP for their groundwater sources.

Table 8-4 Surface Source Public Water Systems with Compliance Violations

Name of Facility	Municipality Served	Name of Water body	Contaminants with Percent Violations
Guin Water and Sewer Board	Guin	Purgatory Creek	Total Haloacetic Acids
Wedowee Water, Sewer and gas Board	Wedowee	Lake Wedowee	Total Haloacetic Acids

Table 8-5 Public Water Supply Elemental Contaminants

Elemental Contaminants	MCL in mg/L
Antimony	0.006
Arsenic	0.05
Asbestos	7 million fibers*/L
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide	0.2
Fluoride	4
Lead	0.015
Mercury	0.002
Nickel	0.1
Nitrate (as N)	10
Nitrite (as N)	1
Total Nitrate/Nitrite (as N)	10
Selenium	0.05
Sulfate	500
Thallium	0.002

* Longer than 10 micrometers

Table 8-6 Public Water Supply Radiological Contaminants

Radiological Contaminants	Concentrations
Gross alpha particle	15pCi/L
Combined radium226 and radium228	5 pCi/L
Tritium	20,000 pCi/L
Strontium90	8 pCi/L
Beta particle and photon radioactivity	4 millirem/Yr

These public water supply systems were categorized as follows:

- 310 Community Groundwater Systems
- 75 Non-Community Transient Groundwater Systems, and
- 29 Non-Community Non-Transient Groundwater Systems

Over the 2010 and 2011 fiscal years Alabama has received Source Water Assessment Reports

Table 8-8 Public Water Supply Disinfection Byproducts

Disinfection Byproduct	MCL in mg/L
Bromate	0.01
Chlorite	1
Haloacetic Acids	0.06
Trihalomethanes	0.08

Table 8-7 Public Water Supply Synthetic Organic Chemicals

Synthetic Organic Chemicals (non-volatile)	MCL in mg/L
Alachlor	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dibromochloropropane	0.0002
2,4-D	0.07
Endrin	0.002
Ethylene Dibromide	0.00005
Heptachlor	0.0004
Heptachlor Epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Polychlorinated Biphenyls	0.0005
Pentachlorophenol	0.001
Toxaphene	0.003
2,4,5-TP	0.05
Benso(a)pyrene	0.0002
Dalapon	0.2
Di (2-ethylhexyl) adipate	0.4
Di (2-ethylhexyl) phthalate	0.006
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Glyphosate	0.7
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Oxamyl (Vydate)	0.2
Picloram	0.5
Simazine	0.004
2,3,7,8-TCDD (Dioxin)	$3x10^{-8}$

Table 8-9 Public Water Supply Volatile Synthetic Organic Chemicals

Volatile Synthetic Organic Chemicals (VOC)	MCL in mg/L
Benzene	0.005
Carbon Tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
para-Dichlorobenzene	0.075
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.2
Vinyl chloride	0.002
cis-1,2-Dichloroethylene	0.07
1,2-Dichlorpropane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
0-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
Trans-1,2-Dichloroethylene	0.1
Xylene (Total)	10
Dichloromethane	0.005
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005

for twenty-nine new or expanded groundwater sources. All of these new Source Water Assessment Reports were from existing public water systems. Of these, twenty-five of the reports were for new well sources. The Source Water Assessment Program has been finalized for twenty-one of the new well sources. The SWAP's for the remaining four groundwater sources are currently in the process of being reviewed and finalized.

For more information about the Source Water Assessment Program, contact Mr. Loren Crawford in ADEM's Montgomery Office at (334) 271-7788 or llc@adem.state.al.us.

8.5 Wellhead Protection Program

A Ground Water Branch staff member is assigned to the ADEM Public Water Supply Branch to support Source Water Assessment (SWA) and Drinking Water State Revolving Fund (DWSRF) grants and contracts, to manage the Wellhead Protection Program, and to conduct technical reviews of ground water source delineations and contaminant inventories. The Wellhead Protection Program supports the Source Water Assessment Program (SWAP) by providing a mechanism for communities and water systems to develop and implement drinking water protection strategies. The Ground Water Branch provides assistance and guidance to systems in developing a Wellhead Protection Plan, promotes the Ground Water Guardian program, coordinates drinking water protection sign distribution, coordinates with the Alabama Rural Water Association (ARWA) in recognizing water systems that have completed a Wellhead Protection Plan, attends meetings, conferences and workshops, and coordinates inspections and compliance issues in wellhead protection areas with ADEM Branches and other State agencies. ADEM and the ARWA are working together to integrate the WHPP Tool Kit into implementation of the WHP Program. Nine utilities have developed a protection program utilizing the Tool Kit. In addition, the ADEM and ARWA are working together to install Drinking Water Protection signs in those communities with completed Wellhead Protection Plans. The sign installations were publicized for several of the communities in both the local media as well as the ARWA journal.

ADEM is working to insure that delineated source water area maps and potential contaminant site location information are available for use within the Department. Source Water Area maps have been digitized for use in developing a GIS layer. The ADEM Information Systems Branch is providing the digitizing and GIS support. The database is currently available to the agency as a draft. The ADEM Groundwater Branch UIC, UST and 106 Programs and the ADEM Industrial and Municipal Branches all consider existing Source Water Assessment areas as part of their permitting process.

The Groundwater Guardian Program was established within the State to provide recognition to communities, municipalities and counties that implement groundwater protection initiatives. The Department was awarded the Ground Water Guardian Affiliate designation for the 13th year by the Ground Water Foundation. Nine communities were designated Groundwater Guardians during the reporting period. These communities include the Covington County, Etowah County-Middle Coosa Watershed, City of Eufaula, Madison County, New Brockton/Coffee County, Shelby County, St. Clair County-Middle Coosa Watershed, Sumter and Marengo Counties, and

the City of Tuscumbia.
Twenty seven (27) Groundwater or Water Festivals were hosted. Approximately 22,000 students participated in a festival during the reporting period. The ADEM Groundwater Branch with the assistance of the ADEM Office of Education and Outreach manages the State program and coordinates (on average) three festival committees per year. The ARWA Groundwater and Source Water Technicians provide volunteer hours to several festivals per year and provide 4th grade teacher training on groundwater in preparation for the festivals. Funding to support the program is provided through an ADEM grant program. Festival committees can apply yearly for a $1000 grant.

The Annual Alabama Groundwater Conference was held in June 2011 at the Gordon Persons Building in Montgomery. The conference provides a forum for discussion of the latest technology and protection programs for groundwater. Approximately one hundred and ninety (190) people were registered for the conference. The audience for the conference is comprised of utility personnel, consultants, watershed managers, geologist, university professors and students, and ADEM personnel.

For more information about the Wellhead Protection Program, contact Mr. Whit Slagle in ADEM's Montgomery Office at (334) 271-7831 or cws@adem.state.al.us. For information about the Water Festival Program contact Scott Hughes, ADEM Office of Education and Outreach, at (334) 271-7955 or ash@adem.state.al.us.

8.6 Coastal Beach Monitoring

Alabama has approximately 50 miles of Gulf beaches and almost 70 miles of bay beaches, both of which are major tourist attractions and represent a significant component of the lifestyle of Alabama residents. In June 1999, ADEM, in cooperation with the ADPH, initiated a program to routinely monitor bacteria levels at five swimming beaches on the Gulf Coast and in August 2000, six additional beaches were added. Congressional passage of the Beaches Environmental Assessment and Coastal Health (BEACH) Act expanded the monitoring and assessment activities at public beaches and in the fall of 2002, ADEM and the Baldwin County Health Department conducted on-site surveys to evaluate additional public beach sites to add to the program. Figure 8-3 shows Alabama's coastal waters covered under the 2000 B.E.A.C.H. Act.
During the past summer, a total of 25 public beach areas were monitored. A majority of these sites were sampled twice weekly from Memorial Day through Labor Day and for the remainder of the year sampling is conducted monthly. All sample collection and analyses are performed by qualified ADEM or ADPH staff, with analytical results made available to the public within 24 hours.

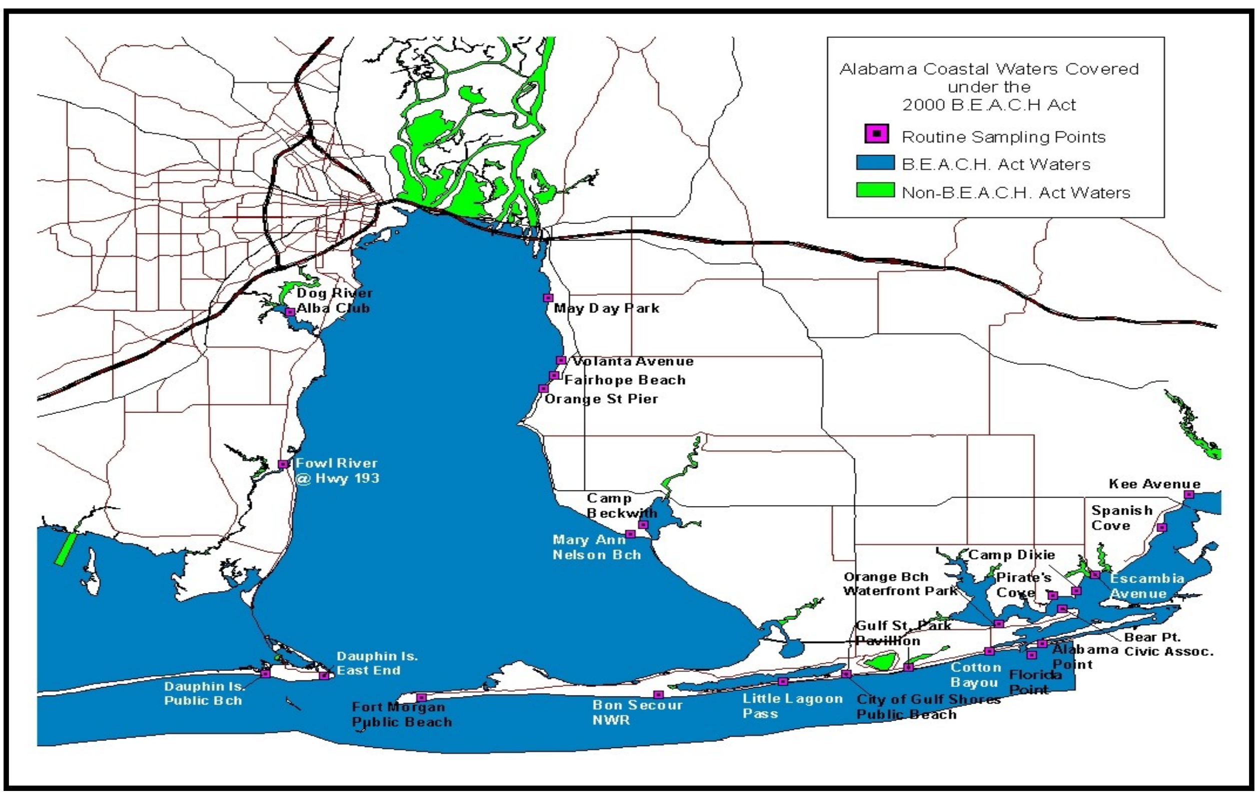
The public beach locations that are sampled have signage with a color-coded bacteriological advisory status to inform the public of the potential health risk associated with swimming or other water contact activities at that site. A GREEN advisory means the most recent water quality test revealed bacterial levels are below recommended thresholds while a YELLOW advisory indicates the most recent water quality test revealed bacterial levels exceed recommended thresholds and an increased risk of illness may be associated with swimming. Once a yellow advisory status has been issued, the site is re-tested. A RED advisory indicates continued elevated bacterial levels at the site and the ADPH issues a swimming advisory. The site is re-tested until bacterial levels return to an acceptable level.

In 2010, approximately 900 samples were collected and analyzed for enterococcus bacteria. There were 4 advisories that occurred during the swim season, May through September; resulting in a total of 4 days that beaches were under advisories because of elevated bacteria .Twelve advisories were issued as a result of the BP Oil Spill, resulting in 61 days that the gulf beaches were under an oil spill advisory. Data and monitoring location information from this program are available at www.adem.alabama.gov.

Elevated bacterial levels can be caused by heavy rainfall events that allow stormwater runoff to carry bacterial matter into the coastal waters. ADEM and the ADPH use on-site signs, the ADEM web-page, press releases, and local newspapers to notify the public of the latest monitoring results. Graphs for each beach monitoring station's Enterococcus geomean or Individual count results are on the following pages.

For information pertaining to Coastal Beach Monitoring, contact Ms. Susan Rice in ADEM's Mobile Office at (251) 450-3400 or srice@adem.state.al.us

Figure 8-2 Coastal Beach Monitoring



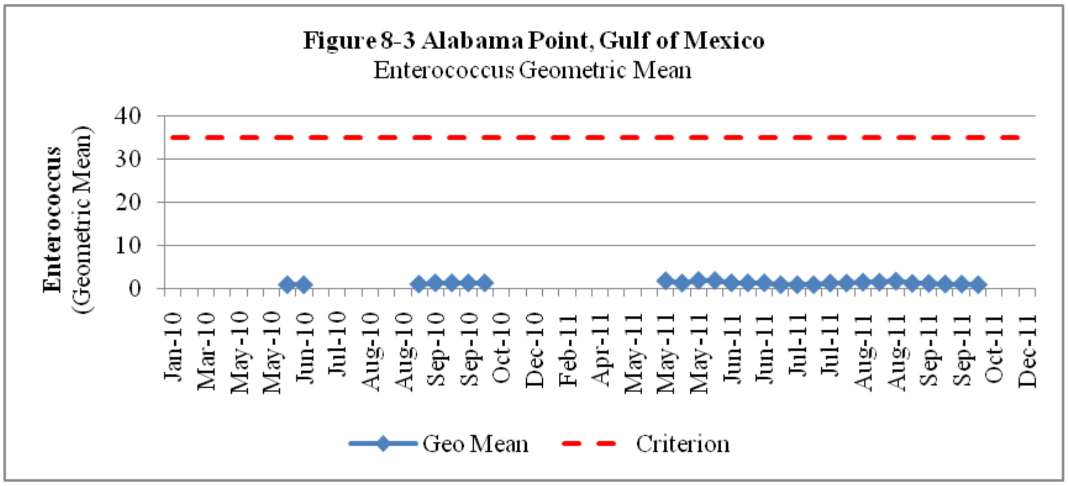


Figure 8-3 Alabama Point, Gulf of Mexico
Enterococcus Geometric Mean
Enterococcus (Geometric Mean)
40
30
20
10
0
Jan-10 Mar-10 May-10 May-10 Jun-10 Jul-10 Aug-10 Aug-10 Sep-10 Sep-10 Oct-10 Dec-10 Feb-11 Apr-11 May-11 May-11 May-11 Jun-11 Jun-11 Jul-11 Jul-11 Aug-11 Aug-11 Sep-11 Sep-11 Oct-11 Dec-11
Geo Mean
Criterion

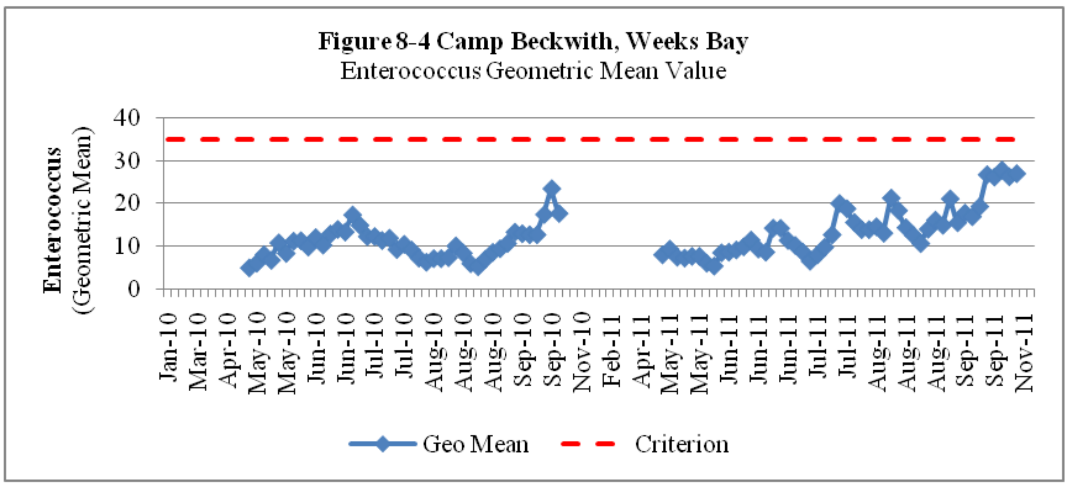


Figure 8-4 Camp Beckwith, Weeks Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
30
20
10
0
Jan-10 Mar-10 Apr-10 May-10 May-10 Jun-10 Jun-10 Jul-10 Jul-10 Aug-10 Aug-10 Aug-10 Sep-10 Sep-10 Nov-10 Feb-11 Apr-11 May-11 May-11 Jun-11 Jun-11 Jun-11 Jul-11 Jul-11 Aug-11 Aug-11 Aug-11 Sep-11 Sep-11 Nov-11
Geo Mean
Criterion

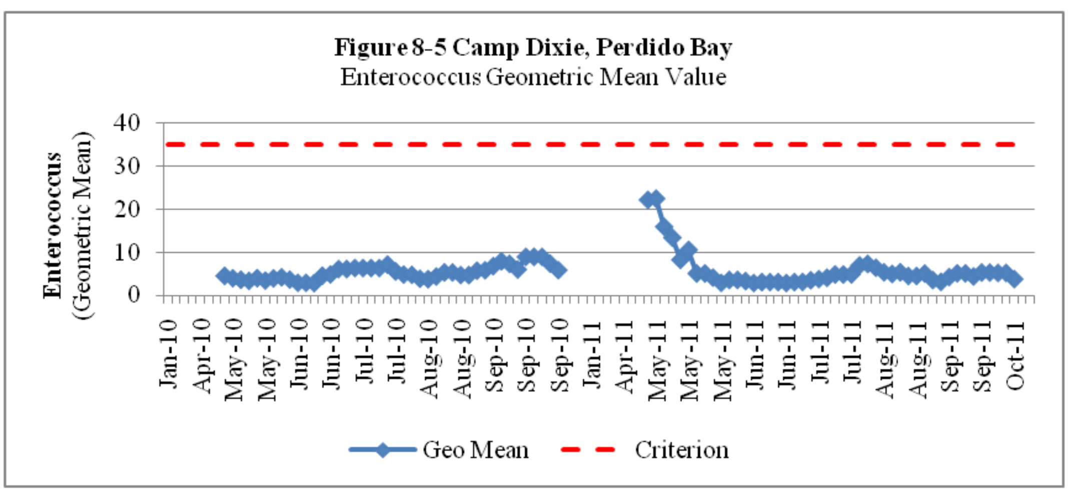


Figure 8-5 Camp Dixie, Perdido Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
30
20
10
0
Jan-10 Apr-10 May-10 May-10 Jun-10 Jun-10 Jul-10 Jul-10 Aug-10 Aug-10 Sep-10 Sep-10 Sep-10 Jan-11 Apr-11 May-11 May-11 May-11 Jun-11 Jun-11 Jul-11 Jul-11 Aug-11 Aug-11 Sep-11 Sep-11 Oct-11
Geo Mean
Criterion

Figure 8-6 City of Gulf Shores Public Beach, Gulf of Mexico
Enterococcus Geometric Mean Value

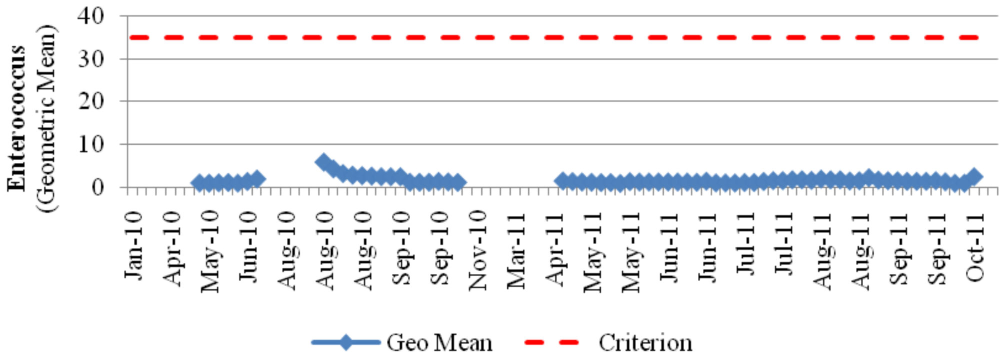


Figure 8-7 Cotton Bayou Beach, Gulf of Mexico
Enterococcus Geometric Mean Value

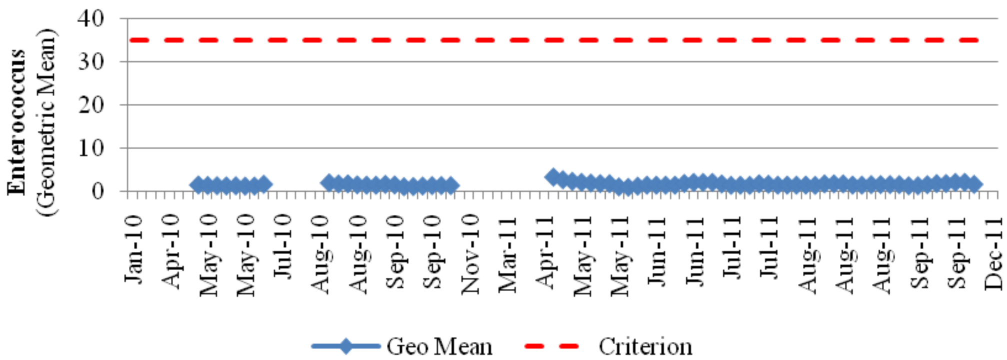
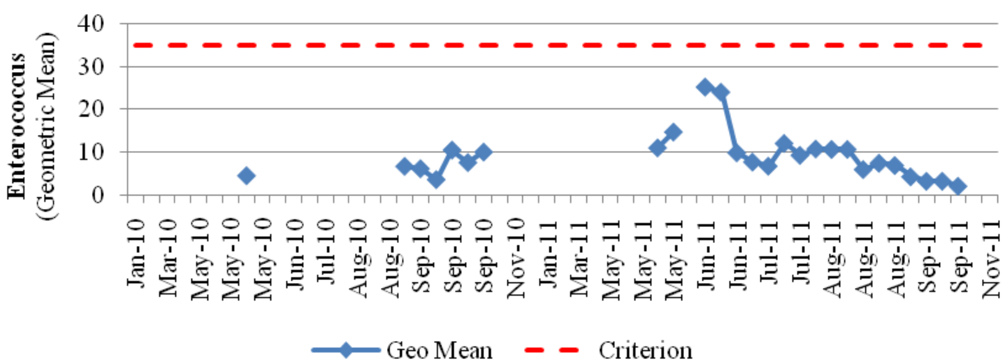


Figure 8-8 Dauphin Island East End, Gulf of Mexico
Enterococcus Geometric Mean Value



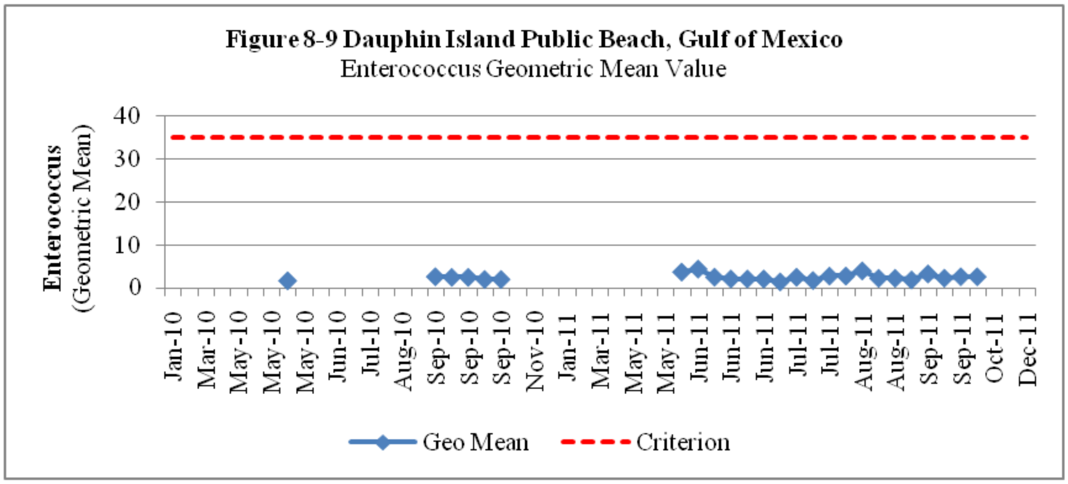


Figure 8-9 Dauphin Island Public Beach, Gulf of Mexico
Enterococcus Geometric Mean Value

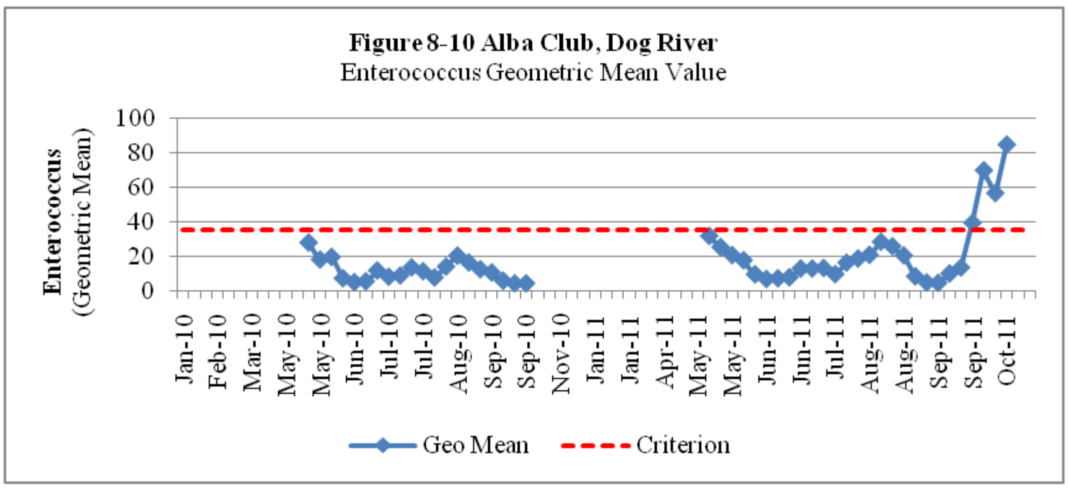


Figure 8-10 Alba Club, Dog River
Enterococcus Geometric Mean Value

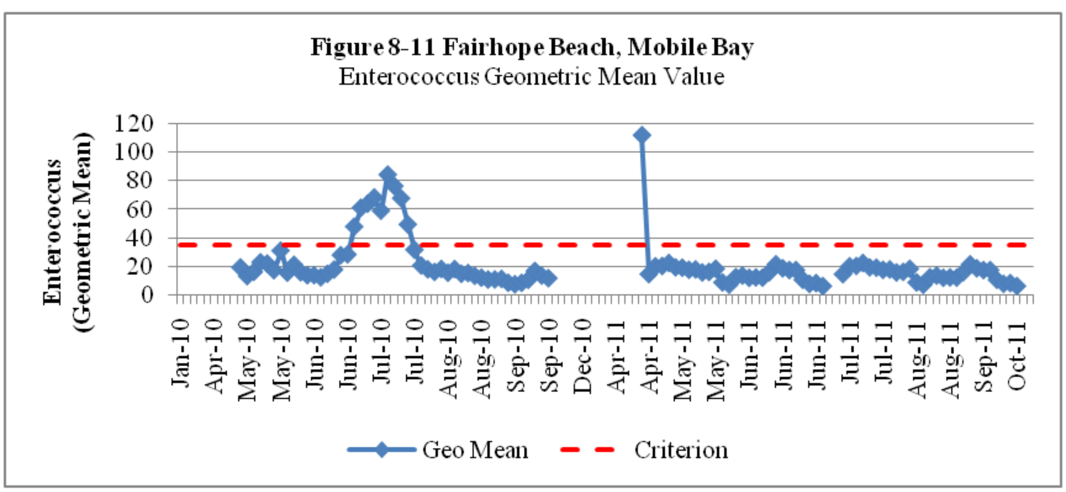


Figure 8-11 Fairhope Beach, Mobile Bay
Enterococcus Geometric Mean Value

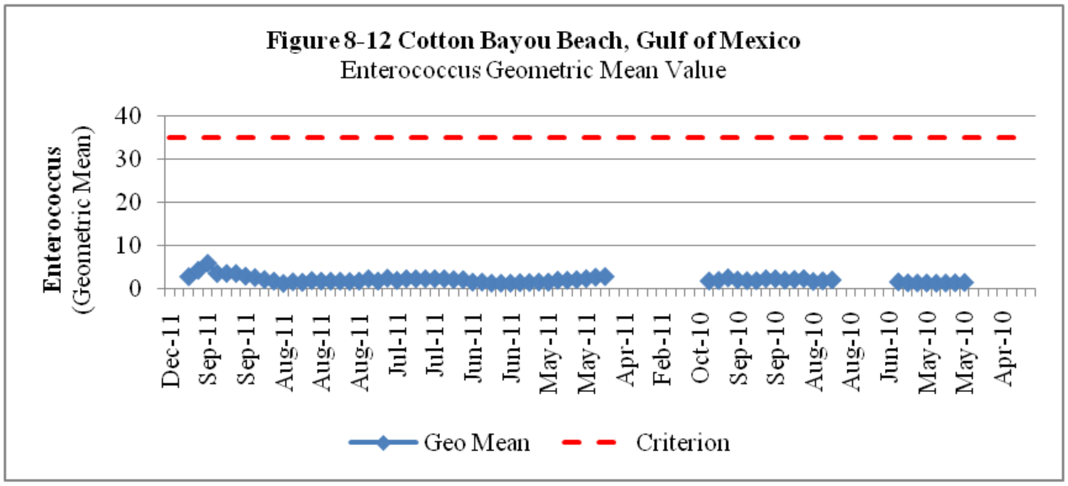


Figure 8-12 Cotton Bayou Beach, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
30
20
10
0
Dec-11
Sep-11
Sep-11
Aug-11
Aug-11
Aug-11
Jul-11
Jul-11
Jun-11
Jun-11
May-11
May-11
Apr-11
Feb-11
Oct-10
Sep-10
Sep-10
Aug-10
Aug-10
Jun-10
May-10
May-10
Apr-10
Geo Mean
Criterion

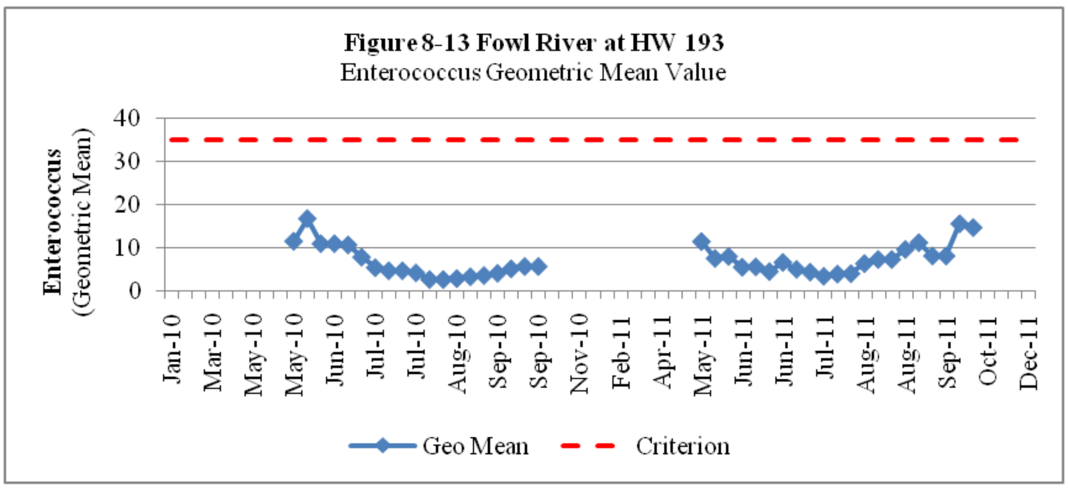


Figure 8-13 Fowl River at HW 193
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
30
20
10
0
Jan-10
Mar-10
May-10
May-10
Jun-10
Jul-10
Jul-10
Aug-10
Sep-10
Sep-10
Nov-10
Feb-11
Apr-11
May-11
Jun-11
Jun-11
Jul-11
Aug-11
Aug-11
Sep-11
Oct-11
Dec-11
Geo Mean
Criterion

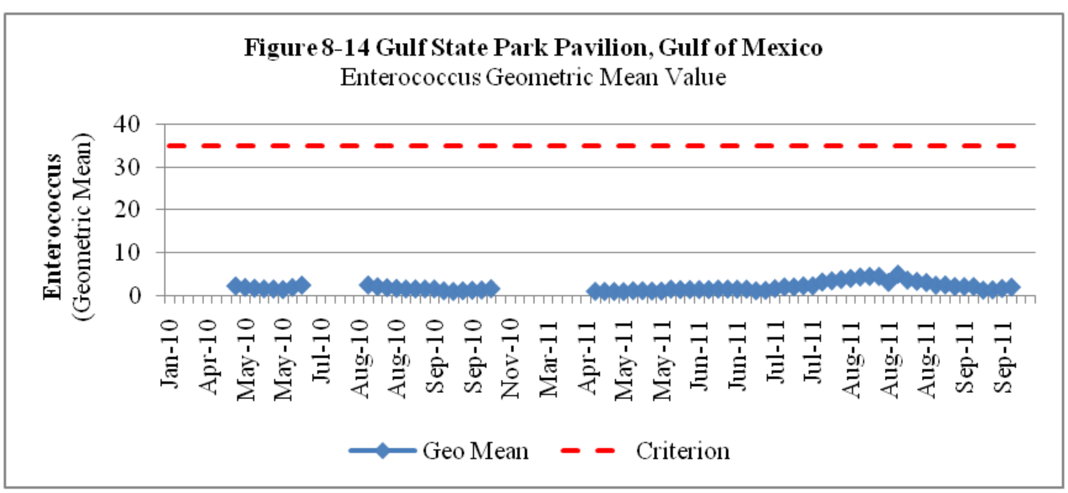


Figure 8-14 Gulf State Park Pavilion, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
30
20
10
0
Jan-10
Apr-10
May-10
May-10
Jul-10
Aug-10
Aug-10
Sep-10
Sep-10
Nov-10
Mar-11
Apr-11
May-11
May-11
Jun-11
Jun-11
Jul-11
Jul-11
Aug-11
Aug-11
Aug-11
Sep-11
Sep-11
Geo Mean
Criterion

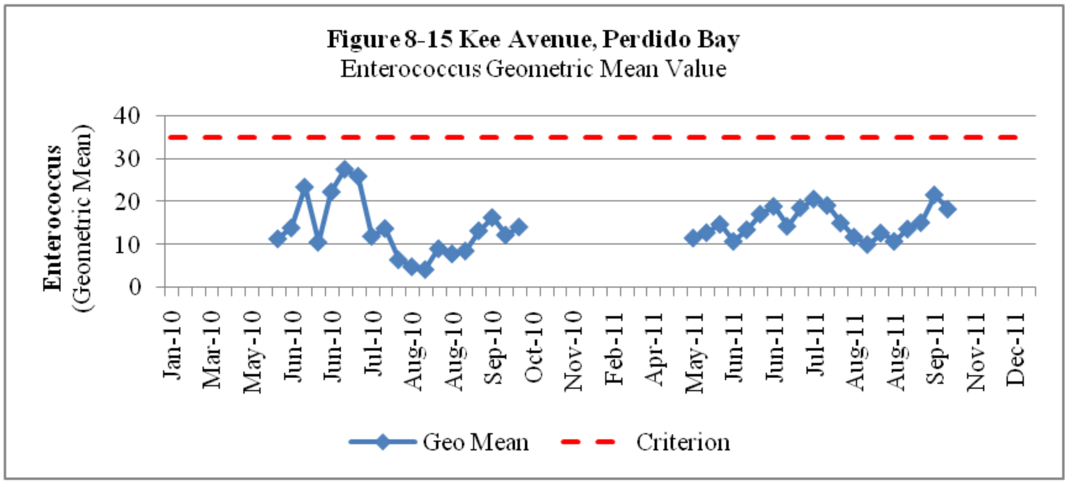


Figure 8-15 Kee Avenue, Perdido Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
30
20
10
0
Jan-10
Mar-10
May-10
Jun-10
Jun-10
Jul-10
Aug-10
Aug-10
Sep-10
Oct-10
Nov-10
Feb-11
Apr-11
May-11
Jun-11
Jun-11
Jul-11
Aug-11
Aug-11
Sep-11
Nov-11
Dec-11
Geo Mean
Criterion

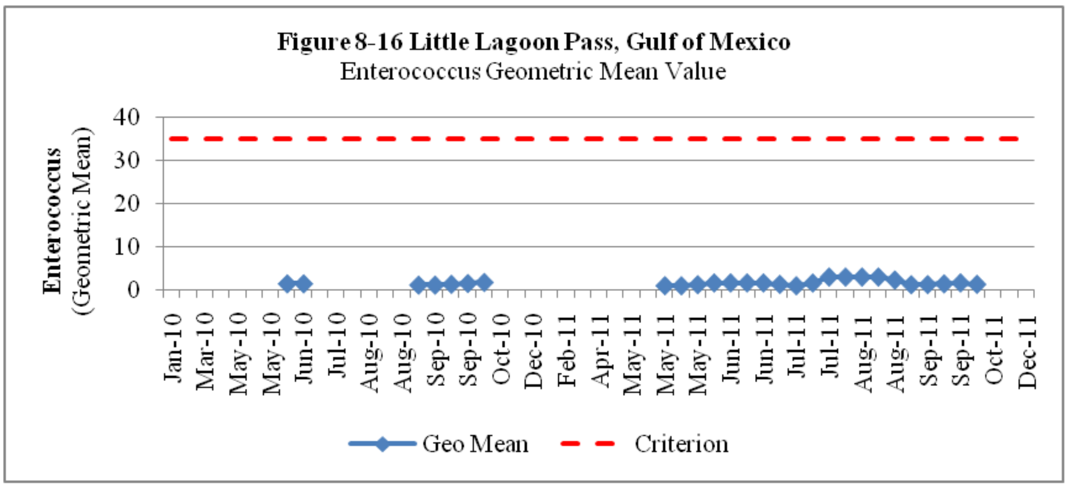


Figure 8-16 Little Lagoon Pass, Gulf of Mexico
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
40
30
20
10
0
Jan-10
Mar-10
May-10
May-10
Jun-10
Jul-10
Aug-10
Aug-10
Sep-10
Sep-10
Oct-10
Dec-10
Feb-11
Apr-11
May-11
May-11
May-11
Jun-11
Jun-11
Jul-11
Jul-11
Aug-11
Aug-11
Sep-11
Sep-11
Oct-11
Dec-11
Geo Mean
Criterion

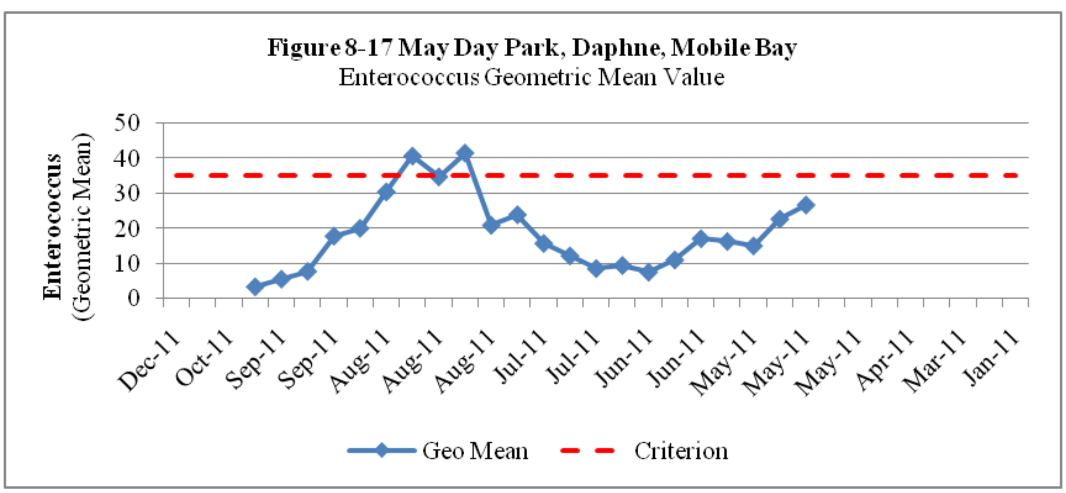


Figure 8-17 May Day Park, Daphne, Mobile Bay
Enterococcus Geometric Mean Value
Enterococcus (Geometric Mean)
50
40
30
20
10
0
Dec-11
Oct-11
Sep-11
Sep-11
Aug-11
Aug-11
Aug-11
Jul-11
Jul-11
Jun-11
Jun-11
May-11
May-11
May-11
Apr-11
Mar-11
Jan-11
Geo Mean
Criterion

Figure 8-18 Orange Beach Waterfront Park, Wolf Bay
Enterococcus Geometric Mean Value

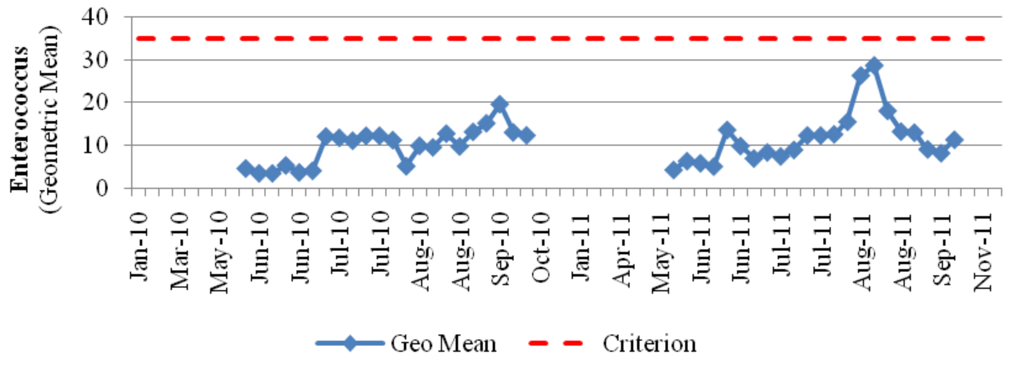


Figure 8-19 Orange Street Pier/Beach, Fairhope, Mobile Bay
Enterococcus Geometric Mean Value

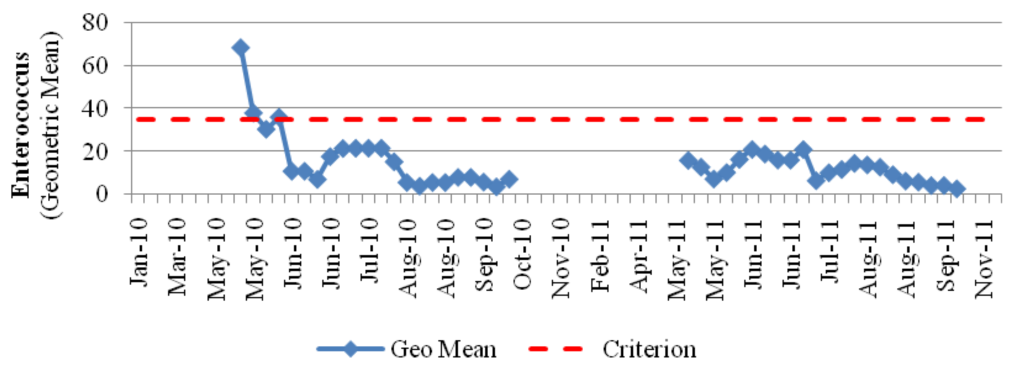
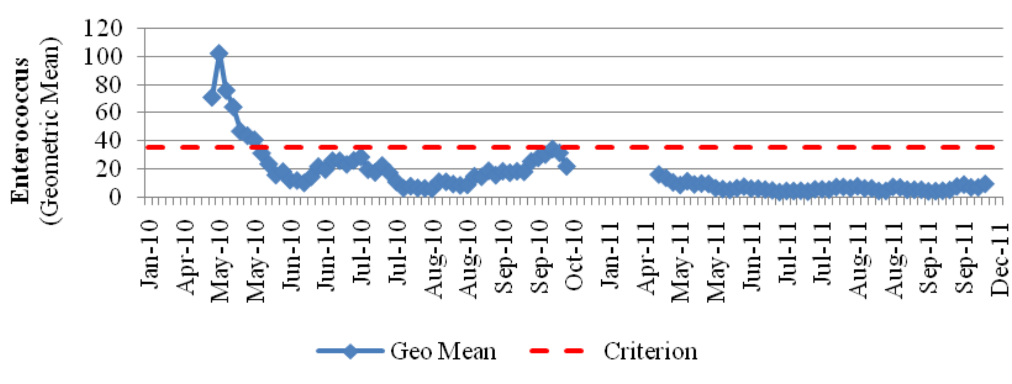


Figure 8-20 Pirate's Cove, Arnica Bay
Enterococcus Geometric Mean Value



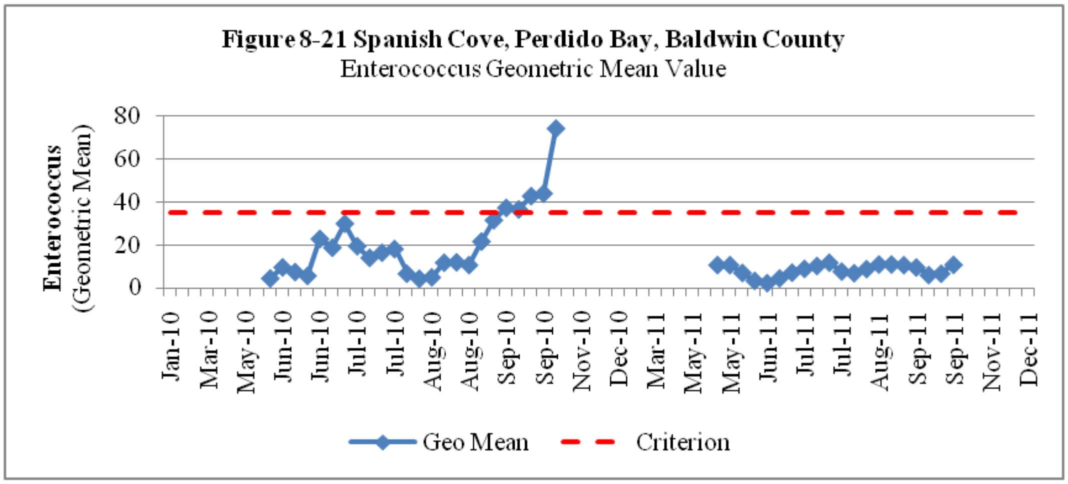


Figure 8-21 Spanish Cove, Perdido Bay, Baldwin County
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
80
60
40
20
0
Jan-10
Mar-10
May-10
Jun-10
Jun-10
Jul-10
Jul-10
Aug-10
Aug-10
Sep-10
Sep-10
Nov-10
Dec-10
Mar-11
May-11
May-11
Jun-11
Jul-11
Jul-11
Aug-11
Sep-11
Sep-11
Nov-11
Dec-11
Geo Mean
Criterion

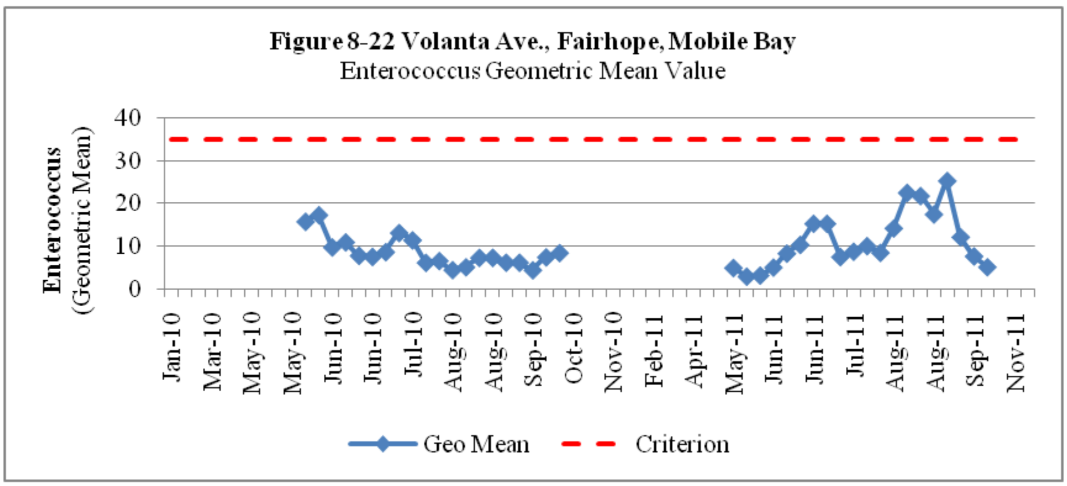


Figure 8-22 Volanta Ave., Fairhope, Mobile Bay
Enterococcus Geometric Mean Value
Enterococcus
(Geometric Mean)
40
30
20
10
0
Jan-10
Mar-10
May-10
May-10
Jun-10
Jun-10
Jul-10
Aug-10
Aug-10
Sep-10
Oct-10
Nov-10
Feb-11
Apr-11
May-11
Jun-11
Jun-11
Jul-11
Aug-11
Aug-11
Sep-11
Nov-11
Geo Mean
Criterion

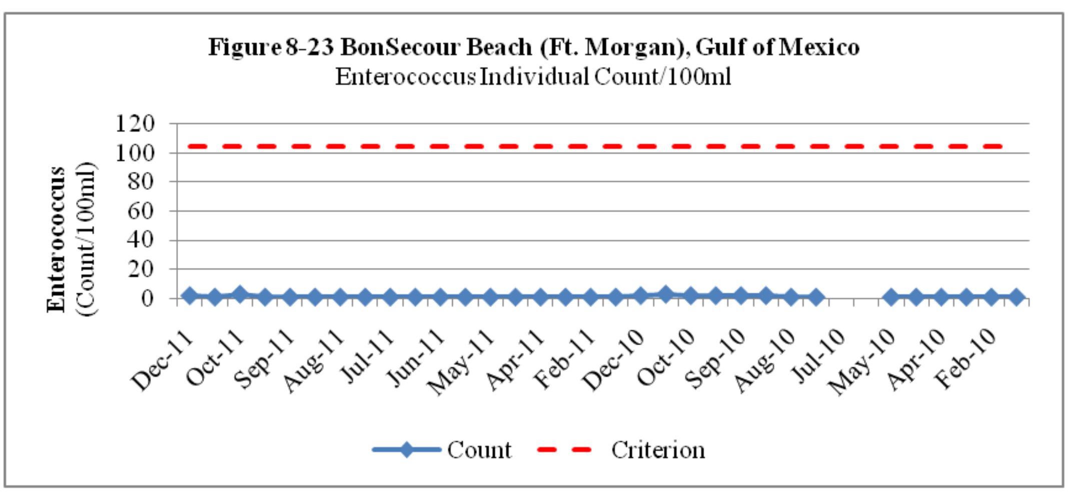


Figure 8-23 BonSecour Beach (Ft. Morgan), Gulf of Mexico
Enterococcus Individual Count/100ml
Enterococcus
(Count/100ml)
120
100
80
60
40
20
0
Dec-11
Oct-11
Sep-11
Aug-11
Jul-11
Jun-11
May-11
Apr-11
Feb-11
Dec-10
Oct-10
Sep-10
Aug-10
Jul-10
May-10
Apr-10
Feb-10
Count
Criterion

Figure 8-24 Mary Ann Nelson Beach, Mobile Bay
Enterococcus Individual Count/100ml

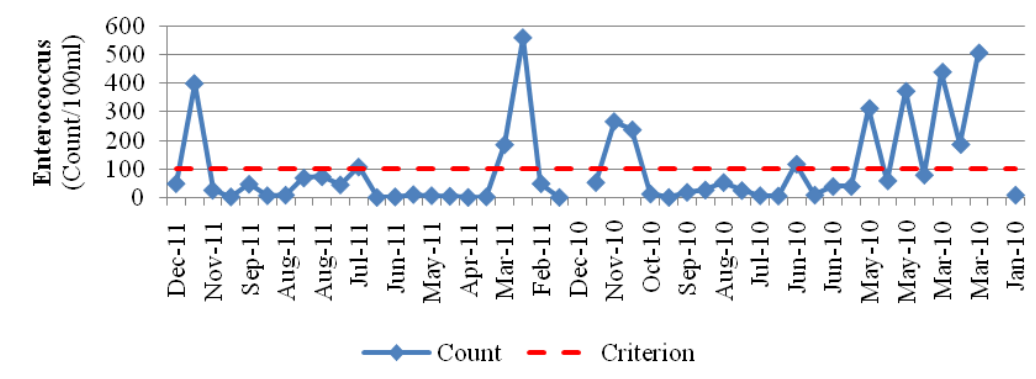


Figure 8-25 Bear Point Civic Association, Arnica Bay
Enterococcus Individual Count/100ml

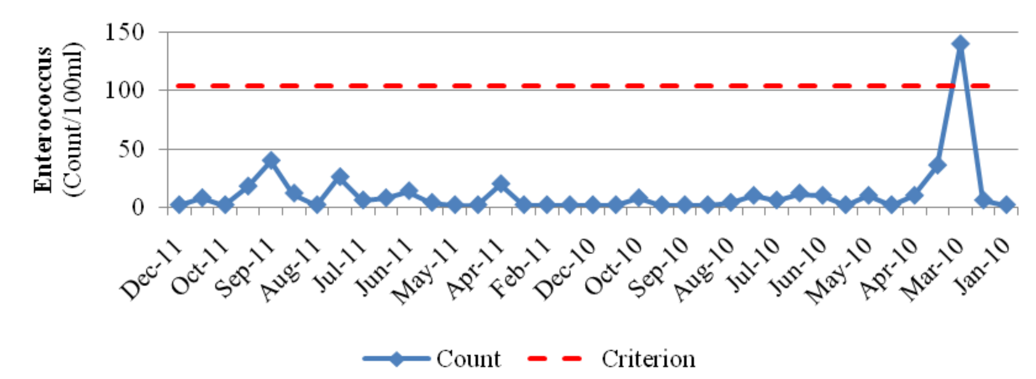
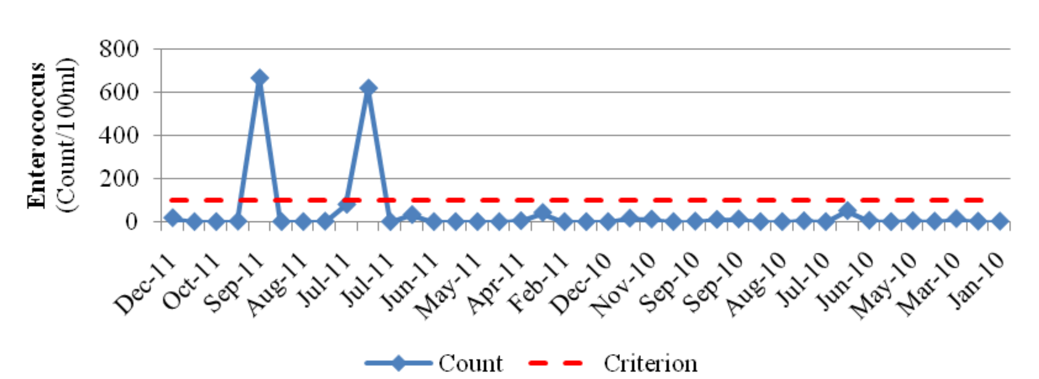


Figure 8-26 Escambia Ave., Perdido Bay
Enterococcus Individual Count/100ml



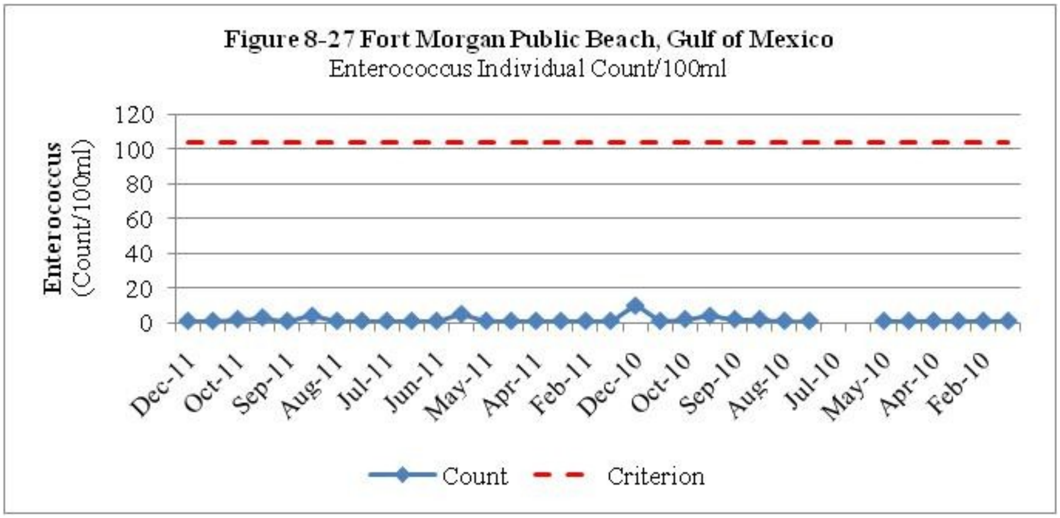


Figure 8-27 Fort Morgan Public Beach, Gulf of Mexico
Enterococcus Individual Count/100ml
Enterococcus
(Count/100ml)
120
100
80
60
40
20
0
Dec-11
Oct-11
Sep-11
Aug-11
Jul-11
Jun-11
May-11
Apr-11
Feb-11
Dec-10
Oct-10
Sep-10
Aug-10
Jul-10
May-10
Apr-10
Feb-10
Count
Criterion

Chapter 9 TMDL Program

9.1 TMDL Program

In FY2010 and FY2011 Alabama's TMDL Program continued to make strides in addressing impaired waters throughout the state. During the previous two fiscal years, the primary focus has been on addressing pathogen impaired waters within a range of waterbody types to include rivers, streams, coastal bays and estuaries. A total of 17 TMDLs were developed by ADEM Water Quality Branch and subsequently approved by EPA Region 4. Of the 17 TMDLs, 16 addressed pathogen impairments and 1 TMDL was developed to address a metals (Pb) impairment. See Table 2-4 for details concerning TMDL development in FY10-11. As of April 30, 2012 a total of 221 TMDLs have been developed for Alabama's waterbodies since the inception of the program which began in 1997. See Figures 9-1 and 9-2 for details. Table 9-1 and 9-2 provides the current TMDL Development Plan for FY2012 and FY2013. For the TMDL development schedule of all impaired waters (i.e. Category 5 waters) please refer to the 2012 303(d) List which is provided in the Appendix.

For more information about Alabama's TMDL Program, contact Mr. Chris Johnson in ADEM's Montgomery Office at (334) 271-7827 or cljohnson@adem.state.al.us

Figure 9-1 Alabama's Appproved TMDLs in Alabama

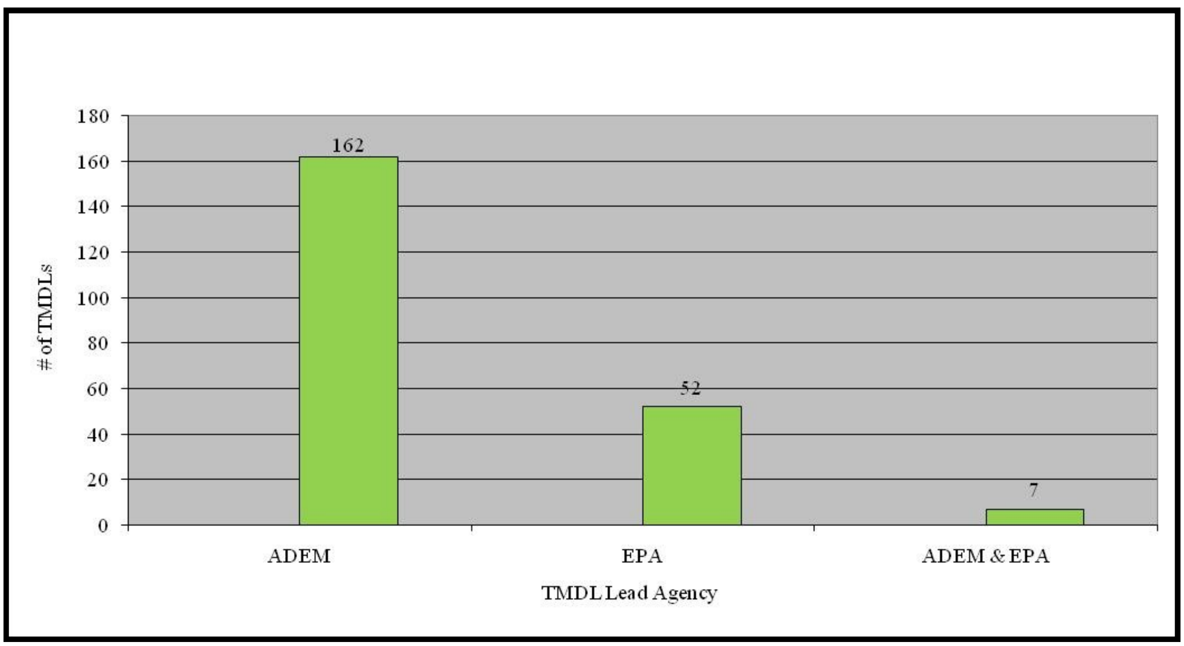


Figure 9-1 Alabama's Approved TMDLs by River Basin

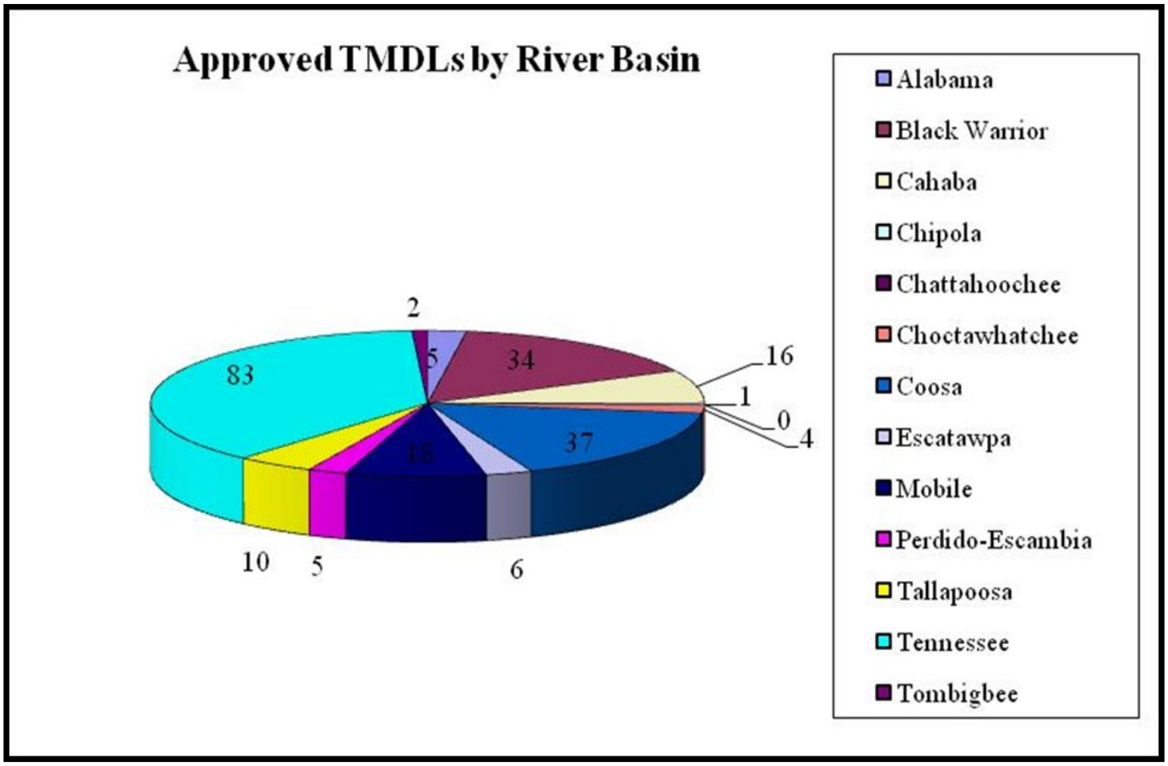


Table 9-1 TMDL Development for Fiscal Years 2010 & 2011

Waterbody Name	Waterbody ID	River Basin	County	Pollutant	Final TMDL Date (approval date)
Indian Camp Creek	AL03140201-0901-200	Choctawhatchee	Coffee	Pathogens	9/21/10
Walnut Creek	AL03140202-0401-102	Choctawhatchee	Pike	Metals (Pb)	9/21/10
Bon Secour Bay	AL03160205-0300-201	Mobile	Baldwin	Pathogens	9/21/10
Perdido Bay	AL03140107-0103-100	Perdido-Escambia	Baldwin	Pathogens	9/21/10
Little Lagoon	AL03140107-0205-102	Perdido-Escambia	Baldwin	Pathogens	9/21/10
Mobile Bay	AL03160205-0300-101	Mobile	Mobile	Pathogens	12/21/10
Pintlalla Creek	AL03150201-0404-100	Alabama	Crenshaw Montgomery	Pathogens	5/2/11
Mud Creek	AL03150105-0807-200	Coosa	Cherokee	Pathogens	5/2/11
Ryan Creek	AL03160110-0502-100	Black Warrior	Cullman	Pathogens	5/2/11
Pursley Creek	AL03150203-0802-100	Alabama	Wilcox	Pathogens	9/29/11
Town Branch	AL03150203-0802-400	Alabama	Wilcox	Pathogens	9/29/11
Lee Branch	AL03150202-0103-300	Cahaba	Shelby	Pathogens	9/29/11
Spring Creek	AL03150105-0807-102	Coosa	Cherokee	Pathogens	9/29/11
Spring Creek	AL03150105-0807-103	Coosa	Cherokee	Pathogens	9/29/11
Pepperell Branch	AL03150110-0102-700	Tallapoosa	Lee	Pathogens	9/29/11
Parkerson Mill Creek	AL03150110-0202-200	Tallapoosa	Lee	Pathogens	9/29/11
Cubahatchee Creek	AL03150110-0603-102	Tallapoosa	Macon Bullock	Pathogens	9/29/11

Table 9-2 Final TMDL Development Schedule for FY 2012

Waterbody Name	Waterbody ID (12-Digit HUC)	River Basin	County	Pollutant
Alabama River (Claiborne Reservoir)	AL03150203-0805-102	Alabama	Wilcox	Organic enrichment (CBOD, NBOD)
Alabama River (Claiborne Reservoir)	AL03150203-0805-103	Alabama	Wilcox	Organic enrichment (CBOD, NBOD)
Alabama River (Claiborne Reservoir)	AL03150203-0805-104	Alabama	Wilcox	Organic enrichment (CBOD, NBOD)
Alabama River (Claiborne Reservoir)	AL03150203-0805-105	Alabama	Wilcox	Organic enrichment (CBOD, NBOD)
Alabama River (Claiborne Reservoir)	AL03150203-0703-101	Alabama	Wilcox	Organic enrichment (CBOD, NBOD)
Brindley Creek	AL03160109-0105-101	Black Warrior	Cullman	Nutrients
Brindley Creek	AL03160109-0105-102	Black Warrior	Cullman	Nutrients
Dry Creek	AL03160111-0203-100	Black Warrior	Blount	Nutrients
Dry Creek	AL03160111-0203-100	Black Warrior	Blount	Organic Enrichment (CBOD, NBOD)
Cahaba River	AL03150202-0503-102	Cahaba	Bibb	Siltation (habitat alteration)
Cahaba River	AL03150202-0407-100	Cahaba	Bibb	Siltation (habitat alteration)
Cahaba River	AL03150202-0206-101	Cahaba	Shelby	Siltation (habitat alteration)
Cahaba River	AL03150202-0206-102	Cahaba	Shelby	Siltation (habitat alteration)
Cahaba River	AL03150202-0204-101	Cahaba	Jefferson Shelby	Siltation (habitat alteration)
Cahaba River	AL03150202-0204-102	Cahaba	Jefferson	Siltation (habitat alteration)
Cahaba River	AL03150202-0104-102	Cahaba	Jefferson St. Clair	Siltation (habitat alteration)
Cahaba River	AL03150202-0101-102	Cahaba	Jefferson	Siltation (habitat alteration)
UT to Dry Branch	AL03150107-0102-700	Coosa	Shelby	Nutrients
Bon Secour Bay	AL03160205-0300-202	Mobile	Baldwin	Pathogens
Mobile Bay	AL03160205-0300-102	Mobile	Mobile	Pathogens
UT to Jackson Lake 2-S	AL03140103-0102-700	Perdido-Escambia	Covington	Organic Enrichment (CBOD, NBOD)
UT to Jackson Lake 2-S	AL03140103-0102-700	Perdido-Escambia	Covington	Pathogens
UT to Jackson Lake 3-C	AL03140103-0102-800	Perdido-Escambia	Covington	Organic Enrichment (CBOD, NBOD)
UT to Jackson Lake 3-C	AL03140103-0102-800	Perdido-Escambia	Covington	Pathogens
Goose Creek	AL06030002-0404-200	Tennessee	Madison	Pathogens
Bear Creek	AL06030006-0103-103	Tennessee	Marion	Metals (Aluminum)
Guess Creek	AL06030002-0105-101	Tennessee	Jackson	Unknown toxicity
Guess Creek	AL06030002-0105-101	Tennessee	Jackson	Organic Enrichment (CBOD, NBOD)
Guess Creek	AL06030002-0105-101	Tennessee	Jackson	Pathogens
Hester Creek	AL06030002-0304-200	Tennessee	Madison	Nutrients
McKiernan Creek	AL06030005-0701-201	Tennessee	Colbert	Nutrients
McKiernan Creek	AL06030005-0701-201	Tennessee	Colbert	Siltation (habitat alteration)
McKiernan Creek	AL06030005-0701-201	Tennessee	Colbert	Organic Enrichment (CBOD, NBOD)
Pond Creek	AL06030005-0702-100	Tennessee	Colbert	Organic Enrichment (CBOD, NBOD)

Table 9-3 Final TMDL Development Schedule for FY 2013

Waterbody Name	Waterbody ID (12-Digit HUC)	River Basin	County	Pollutant
Cahaba River	AL03150202-0206-101	Cahaba	Shelby	Pathogens
Cahaba River	AL03150202-0206-102	Cahaba	Shelby	Siltation (habitat alteration) Pathogens
Cahaba River	AL03150202-0204-101	Cahaba	Jefferson Shelby	Pathogens
Boggy Branch	AL03170008-0502-600	Escatawpa	Mobile	Metals (Iron, Lead)
Collins Creek	AL03170008-0502-800	Escatawpa	Mobile	Metals (Arsenic)
Mississippi Sound	AL03170009-0201-100	Escatawpa	Mobile	Pathogens
Portersville Bay	AL03170009-0201-200	Escatawpa	Mobile	Pathogens
Grand Bay	AL03170009-0201-300	Escatawpa	Mobile	Pathogens
Threemile Creek	AL03160204-0504-101	Mobile	Mobile	Pathogens
Threemile Creek	AL03160204-0504-102	Mobile	Mobile	Pathogens
Toulmins Spring Branch	AL03160204-0504-300	Mobile	Mobile	Ammonia Nutrients
UT to Threemile Creek	AL03160204-0504-500	Mobile	Mobile	Nutrients
D'Olive Creek	AL03160204-0505-500	Mobile	Baldwin	Siltation (habitat alteration)
Joes Branch	AL03160204-0505-800	Mobile	Baldwin	Siltation (habitat alteration)
Tiawasee Creek	AL03160204-0505-900	Mobile	Baldwin	Siltation (habitat alteration)
UT to Tiawasee Creek	AL03160204-0505-905	Mobile	Baldwin	Siltation (habitat alteration)
UT to D'Olive Creek	AL03160204-0505-505	Mobile	Baldwin	Siltation (habitat alteration)
Middle Fork Deer River	AL03160205-0105-100	Mobile	Mobile	Organic enrichment (CBOD, NBOD)
Baker Branch	AL03160205-0202-510	Mobile	Baldwin	Organic enrichment (CBOD, NBOD)
Fish River	AL03160205-0204-112	Mobile	Baldwin	Pathogens
Oyster Bay	AL03160205-0208-100	Mobile	Baldwin	Pathogens
Sulphur Creek	AL06030004-0403-800	Tennessee	Limestone	Nutrients
Elk River	AL06030004-0405-101	Tennessee	Limestone/ Lauderdale	pH Nutrients
East Branch Luxapallila Creek	AL03160105-0101-200	Upper Tombigbee	Fayette Marion	Pathogens
Factory Creek	AL03160106-0702-101	Upper Tombigbee	Sumter	Organic Enrichment (CBOD, NBOD) Nutrients
Wahalak Creek	AL03160201-0904-101	Lower Tombigbee	Choctaw	Pathogens
Bilbo Creek	AL03160203-1103-700	Lower Tombigbee	Washington	Organic enrichment (CBOD, NBOD)

Chapter 10 Concerns and Recommendations

In recognition of limited resources, efforts to protect water resources must be based on credible science and coordinated management of available resources. Continued cooperation and collaboration of all partners, education, and promotion and implementation of voluntary and mandatory compliance with best management practices (BMPs) remains a priority.

A declining trend in national and state funding of water quality programs, including funding of water quality monitoring activities, and ever increasing federal mandates will continue to provide challenges. EPA and Congress recognized the importance of water quality monitoring to track and document the effectiveness of management actions and included additional funding in the FY 2010 and FY 2011 federal budgets. However, given the considerable task of adequately monitoring the State's surface waters and the fact that EPA's budget continues to decline overall, especially in funding for the Section 319 program, efficiencies must be found to make the most of available resources. The Department is initiating several efforts to increase program efficiency through the effective use of technology to gather, store, and report data and information. In addition, EPA has placed a greater emphasis on measuring and reporting water quality changes resulting from implementation of management practices.

Implementation of management measures must be based on sufficiently detailed watershed protection plans with measurable goals. In Alabama, the Clean Water Partnership program promotes efficient and effective implementation of technically sound, environmentally protective, and economically achievable management measures using a grass-roots approach. The partnership is composed of a diverse and inclusive coalition of public and private interest groups and individuals who are working in collaboration to improve, protect, and preserve water resources and aquatic ecosystems in Alabama. Public and private funding is needed to institutionalize this successful endeavor and to ensure permanent facilitators in each basin or sub-basin to coordinate projects and programs and to enhance citizen interest and input into decision-making processes. Federal funding reductions for the Section 319 Nonpoint Source Program may jeopardize this very successful effort.

Watersheds provide logical geophysical boundaries for identifying and mitigating sources and causes of pollution. Watershed management is a better way to coordinate people, resources, programs, and information more efficiently. The state has instituted rotational river basin/watershed water quality monitoring approaches to identify nonpoint source impaired, threatened, and unimpaired waters. These approaches provide data and information that is essential to the development of holistic watershed protection plans. However, in order to better plan, develop and coordinate actual implementation of these plans, additional staff, time, expertise, and other resources are needed statewide.

Water quality assessment and resource protection efforts should emphasize shared decision-making processes, integrate diverse and inclusive partnerships, and provide a clear understanding of the many and varied problems impacting a waterbody. In Alabama, voluntary and enforceable mechanisms are in-place, are complementary, and are effective in assuring long-term protection of water quality. However, as competing demands for limited resources endure, additional information becomes available, priorities change, or complex issues emerge, watershed protection plans must be designed to be iterative, particularly as related to TMDL plan implementation. Stakeholders must be involved in the early stages of plan development, encouraged to assume ownership, and voluntarily accept responsibility for providing solutions. Certain elements and structure of the plans can be adapted to the entire watershed, or to specific sources or causes of impairment. However, it is recommended that all plans in Alabama be based on a similar format, especially if the impairments to be addressed are both point and nonpoint source related and/or the plan will serve as a TMDL implementation plan.

The Department's ability to efficiently gather, store, analyze, and report on water quality data and information is critical to making sound management decisions. While the Department has initiated several projects to address this issue, such as electronic reporting of Discharge Monitoring Reports by industrial and municipal wastewater treatment facilities, the NPDES Management System (NMS), the Alabama Water Quality Assessment & Monitoring Data Repository (ALAWADR), and the Assessment Database (ADB), data management remains a concern. The Department is dependent upon continued EPA assistance to complete the development and implementation of it water quality data management systems.

Alabama needs additional resources to enable its monitoring program to meet a growing list of the programmatic commitments. Development of EPA-mandated nutrient criteria for State waters and evaluation of TMDL implementation activities will require significant additional monitoring resources, including both personnel and laboratory facilities. Adequate data and information are required to make sound, scientifically-based decisions related to development of new water quality criteria, designated uses, and use support status for Alabama's water resources. Additional funding for State monitoring programs is being proposed at the federal level. However, the additional funds may require additional State matching funds. Careful and thorough planning is needed to insure that any additional resources for monitoring State waters are used efficiently and as effectively as possible. To accomplish this goal, Alabama should establish a Water Quality Monitoring Council (AWQMC) made up of agencies and organizations involved in water quality monitoring activities. The AWQMC would facilitate a long-term, coordinated monitoring strategy for the state's waters and leverage resources to better assess both the quality and quantity of Alabama's water.

Appendix A

Alabama's Water Quality Assessment and Listing Methodology

Alabama's Water Quality Assessment and Listing Methodology

January 2012

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List of Acronyms

A&I	Agriculture and Industry water supply use classification
ADB	Assessment Database
ADEM	Alabama Department of Environmental Management
ADPH	Alabama Department of Public Health
AEMC	Alabama Environmental Management Commission
AWIC	Alabama Water Improvement Commission
$CaCO_3$	Calcium Carbonate
$CBOD_5$	Five-Day Carbonaceous Biochemical Oxygen Demand
Cl^{-1}	Chlorides
CWA	Clean Water Act
DO	Dissolved Oxygen
DBP	Disinfection By Products
DRP	Dissolved Reactive Phosphorus
EPA	Environmental Protection Agency
EPT	Ephemeroptera/Plecoptera/Trichoptera
F&W	Fish and Wildlife
GIS	Geographical Information System
GPS	Global Positioning System
IBI	Index of Biotic Integrity
LWF	Limited Warmwater Fishery
MPL	Most Probable Number
MDL	Method Detection Limit
NH3-N	Ammonia Nitrogen
NHD	National Hydrography Dataset
NO3+ NO2-N	Nitrate + Nitrite Nitrogen
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
OAW	Outstanding Alabama Waters
ONRW	Outstanding National Resource Water
PWS	Public Water Supply
QAPP	Quality Assurance Project Plan
S	Swimming and Other Whole Body Water-Contact Sports
SH	Shellfish Harvesting
SOP/QCA	Standard Operating Procedures/Quality Control Assurance
SW	Surface Water
TAL	Treasured Alabama Lake
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
Total-P	Total Phosphorus
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WMB-EPT	Wadeable Multi-habitat Bioassessment - EPT Families
WMB-I	Intensive Wadeable Multi-habitat Bioassessment

1.0 ***Introduction***

Alabama has long been recognized for its abundant water resources. With over 77,000 miles of perennial and intermittent streams and rivers, 481,757 acres of publicly-owned lakes and reservoirs, 610 square miles of estuaries, and 50 miles of coastal shoreline, the state is faced with a tremendous challenge to monitor and accurately report on the condition of its surface waters (ADEM, 2004).

Sections 305(b) and 303(d) of the federal Clean Water Act directs states to monitor and report the condition of their water resources. Recent guidance published by the Environmental Protection Agency (EPA) provides a basic framework that states may use to fulfill this reporting requirement. *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act* provides recommendations on the delineation of assessment units, reporting the status and progress towards comprehensive assessment of state waters, attainment of state water quality standards and the basis for making attainment decisions, schedules for additional monitoring, listing waters which do not fully support their designated uses (i.e. impaired waters), and schedules to address impaired waters (EPA, 2005).

Alabama's assessment and listing methodology establishes a process, consistent with EPA's guidance, to assess the status of surface waters in Alabama relative to the designated uses assigned to each waterbody. The methodology will also describe the procedure to assign the size or extent of assessed waterbodies. This methodology is not intended to limit the data or information that the State considers as it prepares an integrated water quality assessment report. Rather, it is intended to establish a rational and consistent process for reporting the status of Alabama's surface waters relative to their designated uses.

2.0 ***Alabama's Water Quality Standards***

State water quality standards are the yardstick by which the condition of the nation's waters is measured. They are intended to protect, restore and maintain the condition of the nation's waters. In Alabama, the Alabama Water Improvement Commission (AWIC) first adopted water quality standards in 1967. In 1982, the Alabama Department of Environmental Management (ADEM) was formed by merging AWIC with elements of the Alabama Department of Public Health (ADPH). Since first being adopted in 1967, Alabama's water quality standards have been amended on numerous occasions (ADEM, 2010).

The Alabama Environmental Management Commission (AEMC) has the authority to adopt revisions to the ADEM Administrative Code. The Designated Uses (Chapter 335-6-11 of the Administrative Code) and the Water Quality Criteria (Chapter 335-6-10 of the Administrative Code) are reviewed once every three years pursuant to EPA regulations at 40 CFR Part 131.20. Known as the triennial review, this process affords the public the opportunity to make comments and suggestions regarding Alabama's water quality standards. Any changes that ADEM may propose because of the review process are subject to further public comment before consideration by the AEMC.

Water quality standards consist of three components: designated uses, numeric and narrative criteria, and an antidegradation policy. These three components have been compared to the three legs of a stool which work together to provide water quality protection for the nation's surface waters.

Designated uses describe the best uses reasonably expected of waters. These uses should include such activities as recreation in and on the water, public water supply, agricultural and industrial water supply, and habitat for fish and wildlife. While not all waters may support all of these uses, the goal of the Clean Water Act is to provide protection of water quality consistent with "fishable/swimmable" uses, where attainable. In Alabama, waters can be assigned one or more of seven designated uses pursuant to ADEM Administrative Code 335-6-11. These uses include:

1. Outstanding Alabama Water (OAW)
2. Public Water Supply (PWS)
3. Shellfish Harvesting (SH)
4. Swimming and Other Whole Body Water-Contact Sports (S)
5. Fish and Wildlife (F&W)
6. Limited Warmwater Fishery (LWF)
7. Agricultural and Industrial Water Supply (A&I)

Designated uses 1 through 5 in the list above are considered by EPA to be consistent with the "fishable/swimmable" goal and, therefore, provide for protection of aquatic life and human health.

The State also has two special designations – Outstanding National Resource Water (ONRW) and Treasured Alabama Lake (TAL). These high quality waters are protected or require a thorough evaluation of discharges from new or expanded point sources of pollutants and may be assigned to any one of the first five designated uses in the list above.

Numeric and narrative criteria provide the means to measure the degree to which the quality of waters is consistent with their designated use or uses. The criteria are intended to provide protection of the water quality commensurate with the water's use, to including protection of human health. Narrative criteria generally describe minimum conditions necessary for all uses and may include certain restrictions for specific uses. Numeric criteria include pollutant concentrations or physical characteristics necessary to protect a specific designated use. Alabama's narrative and numeric criteria are defined in ADEM Administrative Code 335-6-10.

The state's antidegradation policy provides for the protection of high quality waters that constitute an outstanding national resource (Tier 3), waters whose quality exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water (Tier 2), and existing instream water uses and the level of water quality necessary to protect the existing uses (Tier 1). In Tier 3 waters, ADEM Administrative Code 335-6-10-.10 prohibits new or expanded point source discharges. In Tier 2 waters, ADEM Administrative Code 335-6-10-.04 provides for new or expanded discharge of pollutants only after intergovernmental coordination, public participation, and a demonstration that the new or expanded discharge is necessary for important economic or social development. Alabama's water quality standards regulations (ADEM Administrative Code 335-6-10 and 335-6-11) may be found at the Departments web page at:
http://www.adem.state.al.us/alEnviroRegLaws/files/Division6Vol1.pdf

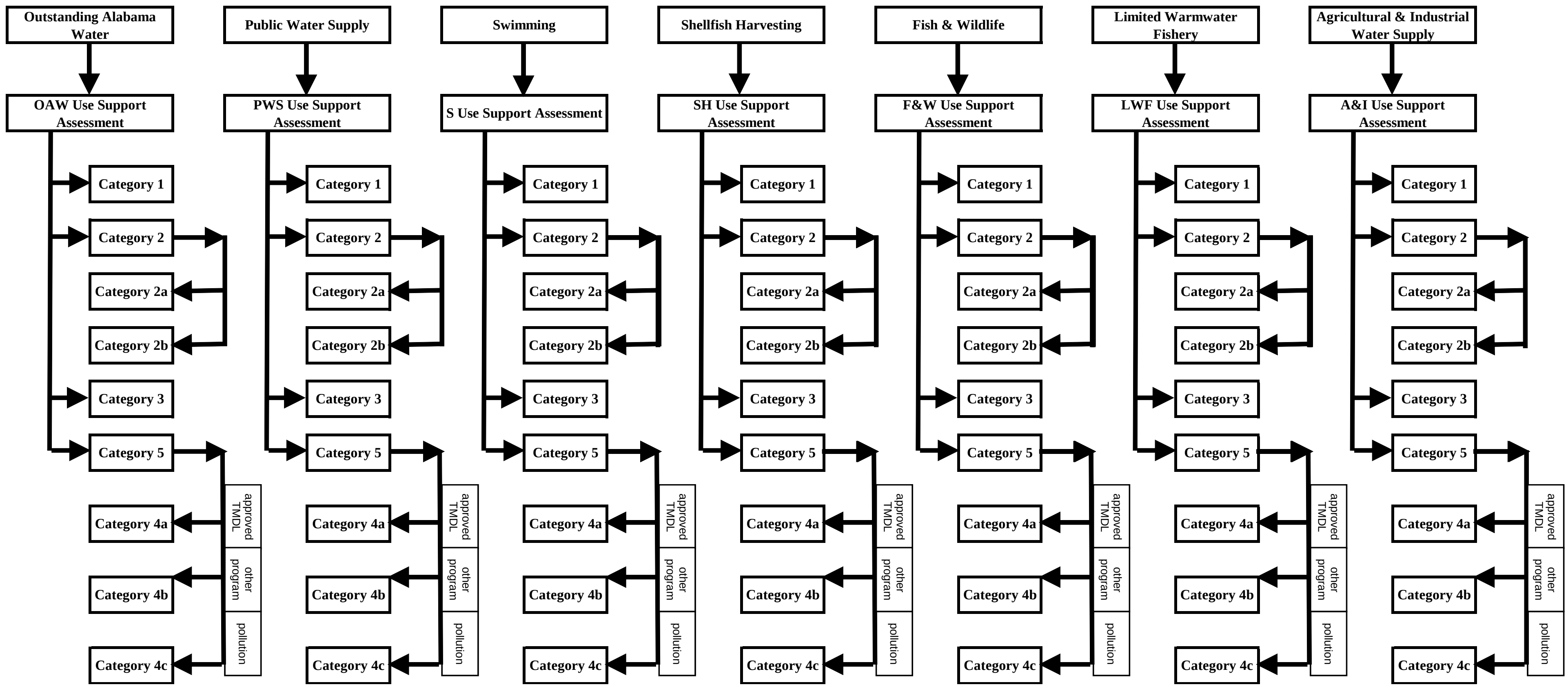
3.0 ***Waterbody Categorization***

The water quality assessment 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 used in the process be of adequate quality and provides 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 discussed in this methodology are not intended to exclude data and information from the assessment process but are a guide for use in designing monitoring activities to assess the State'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.

The use support assessment process considers all existing and readily available data and information with a goal of placing waterbodies in one of five separate categories. This process is specific to the highest designated use assigned to the waterbody and is described by the flow chart depicted in **Figure 1**.

Appendix A

Figure 1
Alabama's Waterbody Assessment Process



Waterbody data and information are evaluated using the use support assessment methodology and the waterbody is assigned to one of the following categories.

Category 1
Waters that are attaining all applicable water quality standards.

Category 2
Waters for which existing and readily available data, which meets the State's requirements as described in Section 4.9, supports a determination that some water quality standards are met and there is insufficient data to determine if remaining water quality standards are met. Attainment status of the remaining standards is unknown because data is insufficient. Waters for which the minimum data requirements (as described later) have not been met will be placed in Category 2.

1. *Category 2A*
   For these waters, available data does not satisfy minimum data requirements but there is a high potential for use impairment based on the limited data. These waters will be given a higher priority for additional data collection.

2. *Category 2B*
   For these waters available data does not satisfy minimum data requirements but there is a low potential for use impairment based on the limited data. These waters will be included in future basin monitoring rotations as resources allow.

Category 3
Waters for which there is no data or information to determine if any applicable water quality standard is attained or impaired. These waters will be considered unassessed.

Category 4
Waters in which one or more applicable water quality standards are not met but establishment of a TMDL is not required.

1. *Category 4A*
   Waters for which all TMDLs needed to result in attainment of all applicable WQSs have been approved or established by EPA.
2. *Category 4B*
   Waters for which other required control measures are expected to attain applicable water quality standards in a reasonable time. Adequate documentation is required to indicate that the proposed control mechanisms will address all major pollutant sources and should result in the issuance of more stringent effluent limitations required by either Federal, State, or local authority or the implementation of "other pollution control requirements (e.g., best management practices) required by local, state, or federal authority" that are stringent enough to implement applicable water quality standards. Waters will be evaluated on a -case-by-case basis to determine if the proposed control measures or activities under another program can be expected to address the cause of use impairment within a reasonable time. A reasonable time may vary depending on the degree of technical difficulty or extent of the modifications to existing measures needed to achieve water quality standards. EPA's 2006 assessment and listing guidance

offers additional clarification of what might be expected of waters placed in Category 4b.

3. *Category 4C*
Waters in which the impairment is not caused by a pollutant. This would include waters, which are impaired due to natural causes or pollution. A pollutant is defined in Section 502(6) of the Clean Water Act (CWA) as "spoil, solid waste, incinerator residue, sewerage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water." Pollution is defined as "the man-made or man-induced alteration of the chemical, physical, or radiological integrity of a waterbody." Invasive plants and animal species are considered pollution.

Category 5
Waters in which a pollutant has caused or is suspected of causing impairment. If an identified pollutant causes the impairment, the water should be placed in Category 5. All "existing and readily available data and information" will be used to determine when a water should be placed in Category 5. Waters in this category comprise the State's list of impaired waters or §303(d) list.

When the information used to assess the waterbody consist primarily of observed conditions, (limited water quality data, water quality data older than six years, or estimated impacts from observed or suspected activities), the assessment is generally referred to as an evaluated assessment (Category 2). Evaluated assessments usually require the use of some degree of professional judgment by the person making the assessment and these assessments are not considered sufficient to place waters in or to remove waters from the impaired category (Category 5) or the fully supporting category (Category 1).

Monitored assessments (Categories 1 and 5) are based on existing and readily available chemical, physical, and/or biological data collected during the previous six years, using commonly accepted and well-documented methods. Existing and readily available data are data that have been collected or assembled by the Department or other groups or agencies and are available to the public. Data older than six years old may be used on a case-by-case basis when assessing waters that are not currently included in Category 1 or Category 5. (For example, older data could be used if conditions, such as land use, have not changed.) Much of the remainder of this document will pertain to the use of monitoring data to make use support determinations.

4.0 ***The Water Quality Assessment Process***

The 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 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, and 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 "Fish and Wildlife" or higher 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. The 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. 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 with Alabama's various designated uses.

In order to ensure consistent and accurate assessment of a waterbody's support status and proper categorization of the waterbody, minimum data requirements must be defined that address data quality and data quantity. Data requirements will not only be dictated by the classified use of the waterbody but also by the waterbody type to account for the different monitoring strategies that may be used for different waterbody types. 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 can still be made provided the available data indicates a clear impairment and the cause of the impairment is evident. These decisions will be made on a case-by-case basis and the decision will be documented in the ADB.

In the assessment methodology, the terms "Level IV WMB-I", "Level III WMB-EPT", "Fish IBI", "habitat assessment", "conventional parameter samples", "pesticide/herbicide samples", "inorganic samples", "chlorophyll *a* samples", and "fish tissue analysis" are used. For the purposes of this assessment methodology, these terms will have the following meanings.

Level IV WMB-I:

- An intensive multi-habitat assessment of the macroinvertebrate community in a wadeable stream involving the collection of macroinvertebrates for identification and enumeration in a laboratory

Level III WMB-EPT:

- A screening-level multi-habitat assessment of the macroinvertebrate community in a stream focusing on the collection, field processing and enumeration of the pollution-sensitive Ephemeroptera, Plecoptera, and Trichoptera taxa

Fish IBI:

- A multihabitat fish community assessment method developed by the Geological Survey of Alabama (O'Neil et al. 2006) and described in ADEM SOP # 6100 for streams in the southern plains (O'Neil and Shepard 2009), Tennessee Valley (O'Neil and Shepard 2010), and Ridge and Valley/Piedmont (O'Neil and Shepard 2011) ichthyoregions (O'Neil and Shepard 2007).

Habitat assessment:

- An assessment of available aquatic habitat in a stream which considers habitat characteristics important to supporting a diverse and healthy aquatic community

Conventional parameter samples will include analyses for the following constituents:

- Collector Name
- Date (Month, Day, Year)
- Time (24 hr)
- Air Temperature, °C
- Water Temperature, °C
- Total Stream Depth at Sampling Point, ft. or m
- Sample Collection Depth, ft. or m
- Dissolved Oxygen (DO), mg/l
- Conductivity, µmhos/cm @ 25C
- Salinity, ppt (coastal waters only)
- pH, s.u.
- Turbidity, NTU
- Weather Conditions
- Stream Flow (where appropriate)
- Five-day Carbonaceous Biochemical Oxygen Demand (CBOD5), mg/l
- Alkalinity, mg/l
- Total Suspended Solids (TSS), mg/l
- Total Dissolved Solids (TDS), mg/l
- Dissolved Reactive Phosphorus (DRP), mg/l (field filtered, separate bottle)
- Ammonia Nitrogen (NH3-N), mg/l
- Nitrate + Nitrite Nitrogen (NO3+ NO2-N), mg/l
- Total Kjeldahl Nitrogen (TKN), mg/l
- Total Phosphorus (Total-P), mg/l
- Hardness, mg/l

Pesticide/Herbicide samples will include analyses for the following constituents:

- Organochlorine Pesticides by method SW8081A
- Organophosphorus Pesticides by method SW8141
- Chlorinated Herbicides by method SW8151
- Atrazine by Immunoassay

Inorganic (metals) samples will include analyses for the following constituents:

- "Total" Aluminum (Al), ug/l
- "Dissolved" Aluminum (Al), ug/l
- "Dissolved" Antimony (Sb), ug/l
- "Dissolved" Arsenic^{+3} (As^{+3}), ug/l

- "Dissolved" Cadmium (Cd), ug/l
- "Dissolved" Chromium^{+3} (Cr^{+3}), ug/l
- "Dissolved" Copper (Cu), ug/l
- "Total" Iron (Fe), ug/l
- "Dissolved" Iron (Fe), ug/l
- "Dissolved Lead (Pb), ug/l
- "Total" Manganese (Mn), ug/l
- "Dissolved" Manganese (Mn), ug/l
- "Total" Mercury (Hg), ug/l
- "Dissolved" Nickel (Ni), ug/l
- "Total" Selenium (Se), ug/l
- "Dissolved" Selenium (Se), ug/l
- "Dissolved" Silver (Ag), ug/l
- "Dissolved" Thallium (Tl), ug/l
- "Dissolved" Zinc (Zn), ug/l

Bacteriological Samples

- E. coli, colonies/100 ml in non-coastal waters
- Fecal coliform, colonies/100 ml in Shellfish Harvesting waters
- Enterococci, colonies/100 ml in coastal waters

Chlorophyll *a* samples will include the collection of photic zone composite water samples to be processed in accordance with ADEM SOP # 2063 Chlorophyll *a* Collection and Processing.

Fish tissue analysis will include collection and analyses of fish for the following constituents:

- Arsenic
- Cadmium
- Mercury
- Selenium
- Lead
- Chlordane
- 4,4-DDD
- 4,4-DDE
- 4,4-DDT
- 2,4-DDD
- 2,4-DDE
- 2,4-DDT
- Chlorpyrifos
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endrin
- Lindane
- Heptachlor
- Heptachlor Epoxide
- Hexachlorobenzene
- Mirex
- Toxaphene
- PCBs
- Dioxin
- Percent lipids

Fish sampling and tissue preparation procedures are described in SOP #2300 Fish Tissue Monitoring Sample Collection and ADEM SOP #2301 Fish Tissue Monitoring Sample, Processing and Data Reporting Procedures

Chronic aquatic life criteria will be used to assess a waterbody's use support where the designated use specifies such criteria. In those cases where both human health criteria and chronic aquatic life criteria are included, the more stringent of the criteria will determine the waterbody's use support status. The assessment process, including minimum data requirements and the number of chronic criteria exceedances, is described for each designated use in the remainder of the document.

4.1 *Outstanding Alabama Waters (OAW)*

The best usage of waters assigned this classification are those activities consistent with the natural characteristics of the waters. Waterbodies assigned the OAW use are high quality waters that constitute an outstanding Alabama resource, such as waters of state parks and wildlife refuges and waters of exceptional recreational or ecological significance. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.1.1 *Minimum Data Requirement for OAW Waters*

For waters with the OAW classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals:

SOP#	Title
2040	Stream Flow Abbreviated Measurement Method
2041(a)	Temperature Field Measurements
2044	Turbidity Field Measurements
2046	Photic Zone Measurements and Visibility Determinations
2047	*In-situ* surface water quality Field measurements by Datasonde
2048	Continuous SW Quality Monitoring Using Datasondes
2061	General SW Quality Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Field Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Surface Water Sample Collection of Bacteria Samples
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Index of Biotic Integrity Sample Collection Procedure for Wadeable Streams

SOP#	Title
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage Procedures
9040	Station, Sample ID & Chain of Custody Procedures

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. In addition, the minimum data requirement may change if pollutant sources upstream of the monitoring location are likely. Failure to meet the minimum data requirement for any waterbody type will place the waterbody in Category 2. The following list and **Figure 2** describe the minimum data requirements for assessing waters classified as OAW.

- Wadeable River or Stream
  - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or 1 Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) or 1 Level III WMB-EPT plus 1 fish community assessment (IBI). In addition, a habitat assessment must be completed with each biological assessment. Currently, metrics for the fish IBI have been calibrated only in the Black Warrior and Cahaba River basins.
  - 3 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 3 pesticide / herbicide samples
  - 3 inorganic samples

- Non-wadeable River or Stream
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 5 bacteriological samples (1 geometric mean)
  - 3 pesticide / herbicide samples
  - 3 inorganic samples

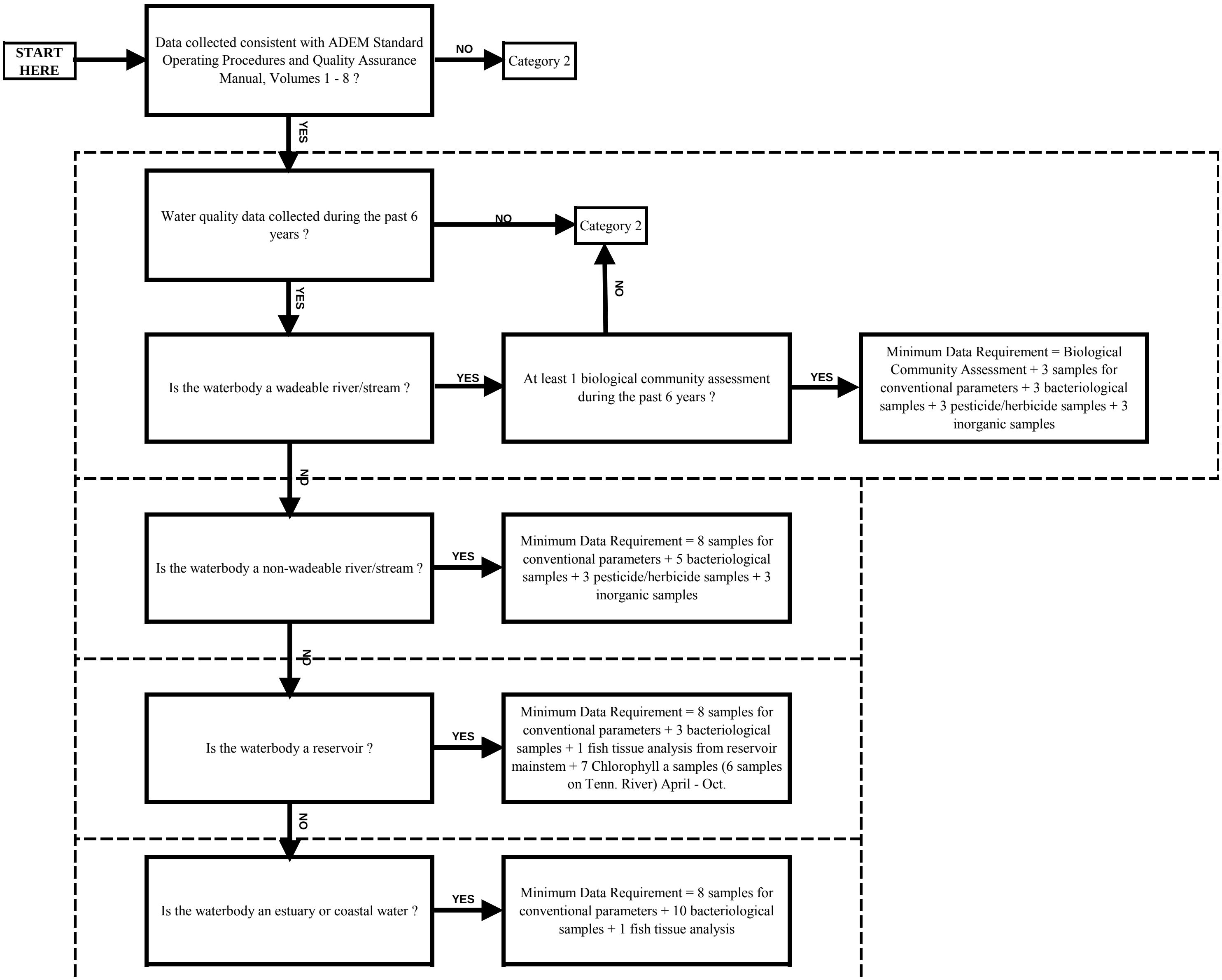
- Reservoirs and Embayments
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 1 fish tissue analysis from the reservoir mainstem

  - 7 chlorophyll a samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll a samples collected between April and September). Results from critical period sampling (i.e., August sample only) will be used with other critical period data to evaluate chlorophyll a trends at a given sampling location.

- Estuary or Coastal Waters
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric means)
  - 1 fish tissue analysis

Appendix A

Figure 2
Minimum Data Requirements for the OAW Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or
1 Level III Wadeable Multi-habitat Bioassessment – EPT Families (WMB-EPT) or
Level III WMB-EPT plus 1 fish community assessment (IBI)

4.1.2 *Use Support Assessment for OAW Waters*

Once the minimum data requirements have been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the OAW use (Category 1) or not fully supporting the OAW use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, biological community assessments, habitat assessments, periphyton assessments, and toxicity evaluations. **Figure 3** illustrates the assessment process for OAW waters.

The OAW waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "good" or "excellent", or;[1] Level III WMB-EPT assessment "good" or "excellent", or;[1] Level III WMB-EBT assessment "good" or "excellent", and fish IBI "fair", "good", or "excellent".[1]
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has not been exceeded where such a criterion has been established.[2]
Toxic Pollutants	There is an exceedance of any toxic pollutant criterion for other than natural conditions in the previous six years.
Conventional Parameters[3]	No exceedance of conventional parameters, except due to natural conditions.[4]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml, or; **B.** 10% or less of single samples must be less than or equal to 235 colonies/100 ml.[4]
	Coastal Waters: **A.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than or equal to 35 colonies/100 ml, or;

[1] Applicable to wadeable streams only.
[2] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.
[3] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[4] As determined by the binomial distribution function and Table 2.

	B. 10% or less of single samples must be less than or equal to 104 colonies/100 ml.[4]

The OAW waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory has been issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment less than "good", or;[5] Level III WMB-EPT assessment less than "good", or;[5] Level III WMB-EPT assessment less than "good", and fish IBI less than "fair". [5]
Chlorophyll a Data	Growing season mean chlorophyll a criterion has been exceeded where such a criterion has been established.[6]
Toxic Pollutants	There is an exceedance of any toxic pollutant criterion for other than natural conditions in the previous six years.
Conventional Parameters[7]	There is an exceedance of conventional parameter for other than natural conditions.[8]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml, or; **B.** More than 10% of single samples are greater than 235 colonies/100 ml.[8]
	Coastal Waters: **A.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; **B.** More than 10% of single samples are greater than 104 colonies/100 ml.[8]

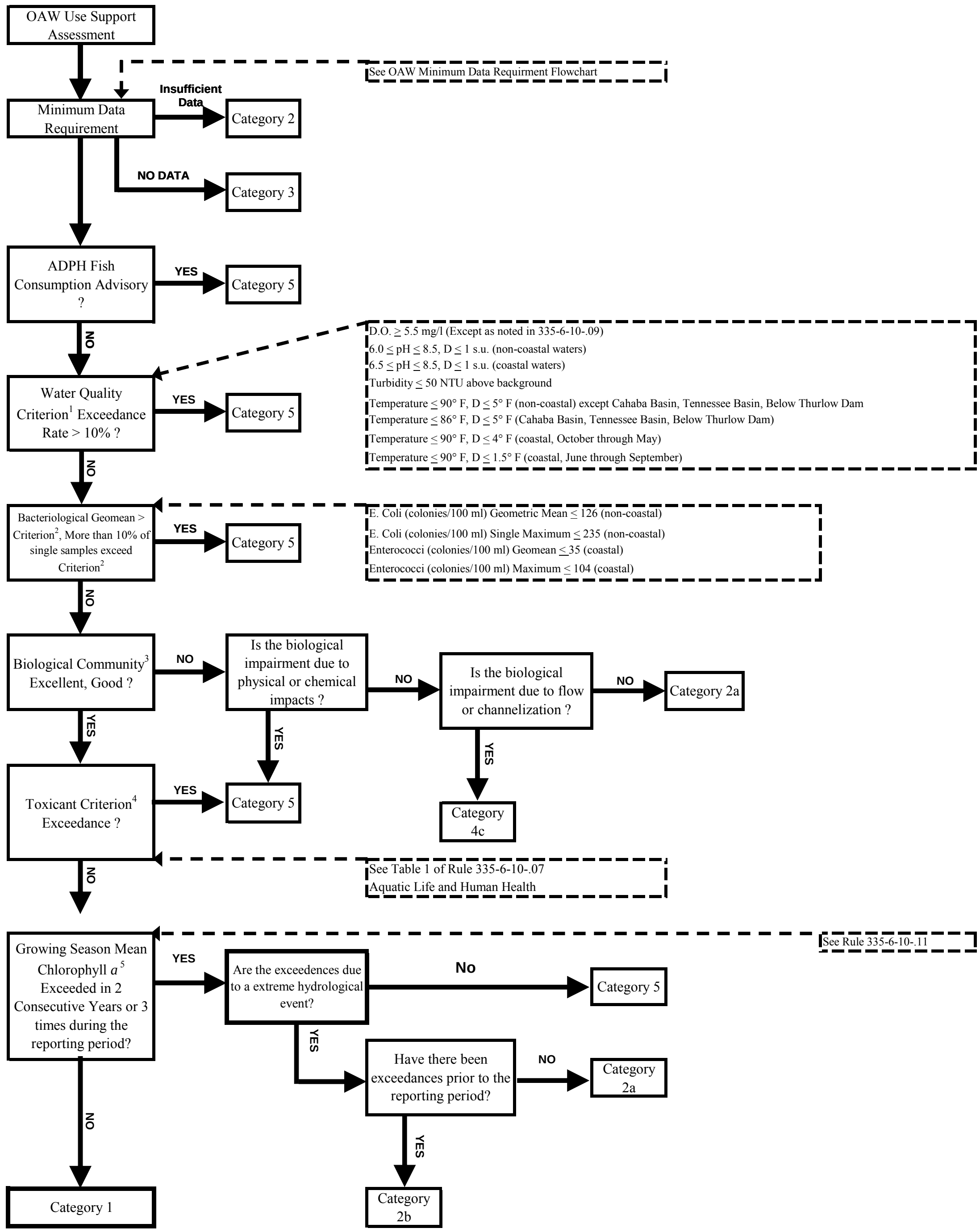
[5] Applicable to wadeable streams only. A potential anthropogenic cause for the degraded condition must be identified.

[6] Chlorophyll a values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. When a growing season mean chlorophyll a value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.

[7] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[8] As determined by the binomial distribution function and Table 2.

Figure 3
Outstanding Alabama Water (OAW) Assessment Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.1.2

3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)

4 Toxicant Criterion refers to toxics listed in 335-6-10-.07

5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.2 *Public Water Supply (PWS)*
The best usage of waters assigned this classification is as a source of water supply for drinking or food-processing purposes after approved treatment. Waterbodies assigned the PWS use are considered safe for drinking or food-processing purposes if subjected to treatment approved by the Department equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to remove naturally present impurities. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, drinking and food-processing water supply, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.2.1 *Minimum Data Requirement for PWS Waters*
For waters with the PWS classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals:

SOP#	Title
2040	Stream Flow Abbreviated Measurement Method
2041(a)	Temperature Field Measurements
2044	Turbidity Field Measurements
2046	Photic Zone Measurements and Visibility Determinations
2047	*In-situ* surface water quality Field measurements by Datasonde
2048	Continuous SW Quality Monitoring Using Datasondes
2061	General SW Quality Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Field Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Surface Water Sample Collection of Bacteria Samples
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Index of Biotic Integrity Sample Collection Procedure for Wadeable Streams
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage Procedures
9040	Station, Sample ID & Chain of Custody Procedures

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 4** describe the minimum data requirement for assessing waters classified as PWS.

- Wadeable River or Stream
  - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or 2 Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) or 1 Level III WMB-EPT plus 1 fish community assessment (IBI). In addition, a habitat assessment must be completed with each biological assessment. Currently, metrics for the fish IBI have been calibrated only in the Black Warrior and Cahaba River basins.
  - 3 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples

  OR

  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 3 pesticide / herbicide samples
  - 3 inorganic samples

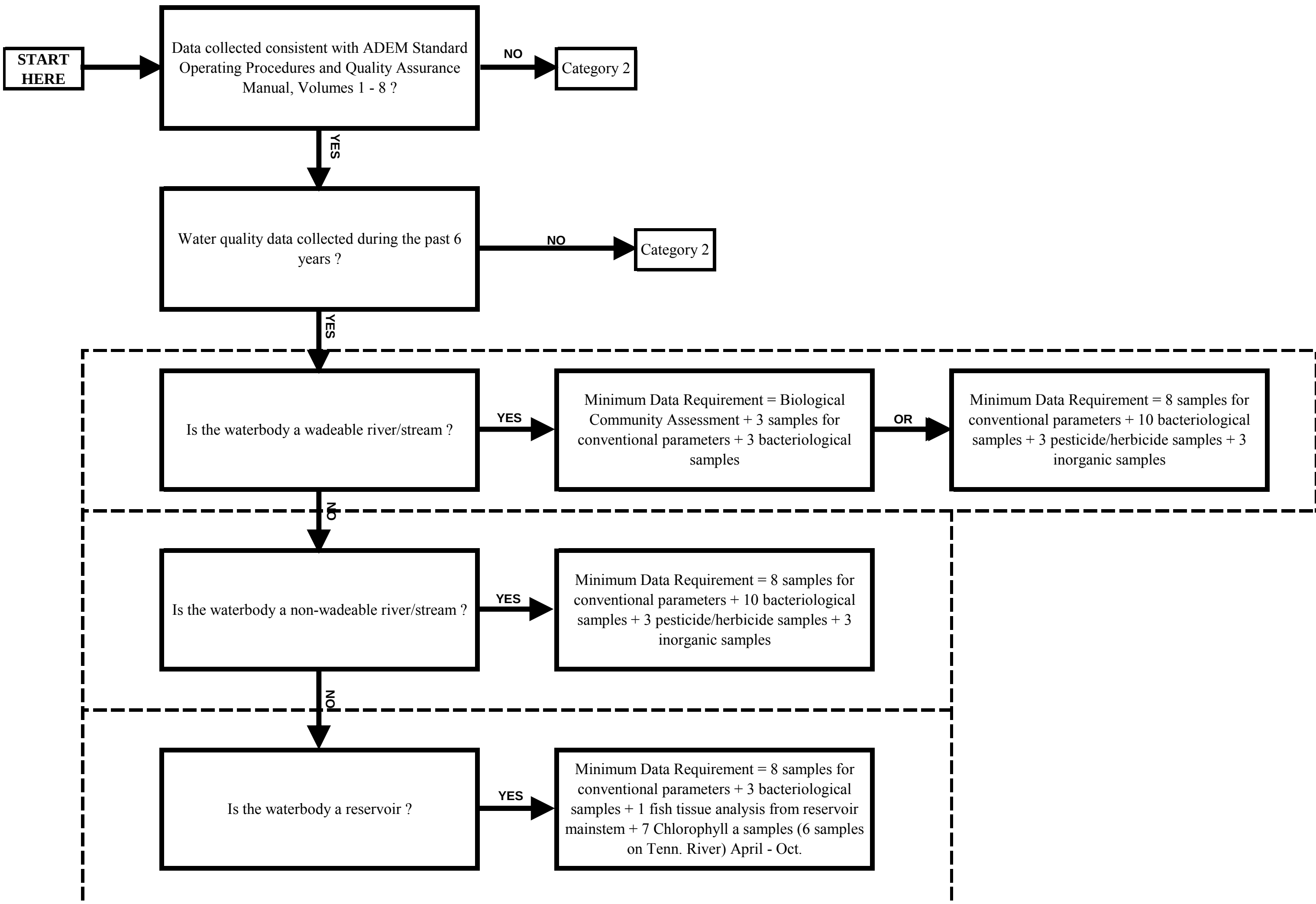
- Non-wadeable River or Stream
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 3 pesticide / herbicide samples
  - 3 inorganic samples

- Reservoirs and Embayments
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 1 fish tissue analysis from the reservoir mainstem
  - 7 chlorophyll a samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll a samples collected between April and September). Results from critical period sampling (i.e., August sample

only) will be used with other critical period data to evaluate chlorophyll a trends at a given sampling location.

- Estuary or Coastal Waters
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)
    - 1 fish tissue analysis

Figure 4
Minimum Data Requirements for the PWS Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or
2 Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) or
1 Level III WMB-EPT plus 1 fish community assessment (IBI)

4.2.2 *Use Support Assessment for PWS Waters*

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the PWS use (Category 1) or not fully supporting the PWS use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, biological community assessments, habitat assessments, periphyton assessments, drinking water system compliance records, and toxicity evaluations. **Figure 5** illustrates the assessment process for PWS waters.

The PWS waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisories issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "fair", "good" or "excellent", or;[9] Either Level III WMB-EPT assessments "fair", "good", or "excellent", or;[9] Level III WMB-EPT assessment and fish IBI "fair", "good" or "excellent".[9]
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has not been exceeded in two consecutive years where such a criterion has been established unless a drinking water system withdrawing from a waterbody does not comply with a DBP requirement.[10]
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional[11] Parameters	No more than a 10% exceedance rate for any given parameter.[12]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml (June – September) or less than or equal to 548 colonies/100 ml (October – May), or; **B.** 10% or less of single samples must be less than or equal to 487 colonies/100 ml (June – September) or less than or equal to 2,507 colonies/100 ml (October – May).[12]

[9] Applicable to wadeable streams only.
[10] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.
[11] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[12] As determined by the binomial distribution function and Table 2.

The PWS waterbody can be placed in Category 1 if all the following are true:	
	Coastal Waters: **A.** A single sample result greater than 158 colonies/100 ml enterococci (June – September) or greater than 275 colonies/100 ml enterococci (October – May) will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than or equal to 35 colonies/100 ml, or; **B.** 10% or less of single samples must be less than or equal to 158 colonies/100 ml (June – September) or less than or equal to 275 colonies/100 ml (October – May). [12]

The PWS waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment less than "fair", or;[13] Either Level III WMB-EPT assessment less than "fair", or; [13] Level III WMB-EPT assessment and fish IBI less than "fair". [13]
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has been exceeded in two consecutive years or three times during the previous six years where such a criterion has been established or after one exceedance if a drinking water system is out of compliance with the DBP requirements.[14]
Toxic Pollutants	There is more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[15]	There is more than a 10% exceedance rate for any given parameter.[16]

[13] Applicable to wadeable streams only. A potential anthropogenic cause for the degraded condition must be identified using observations made during the sampling events or from information contained in the Department's geographic information system.

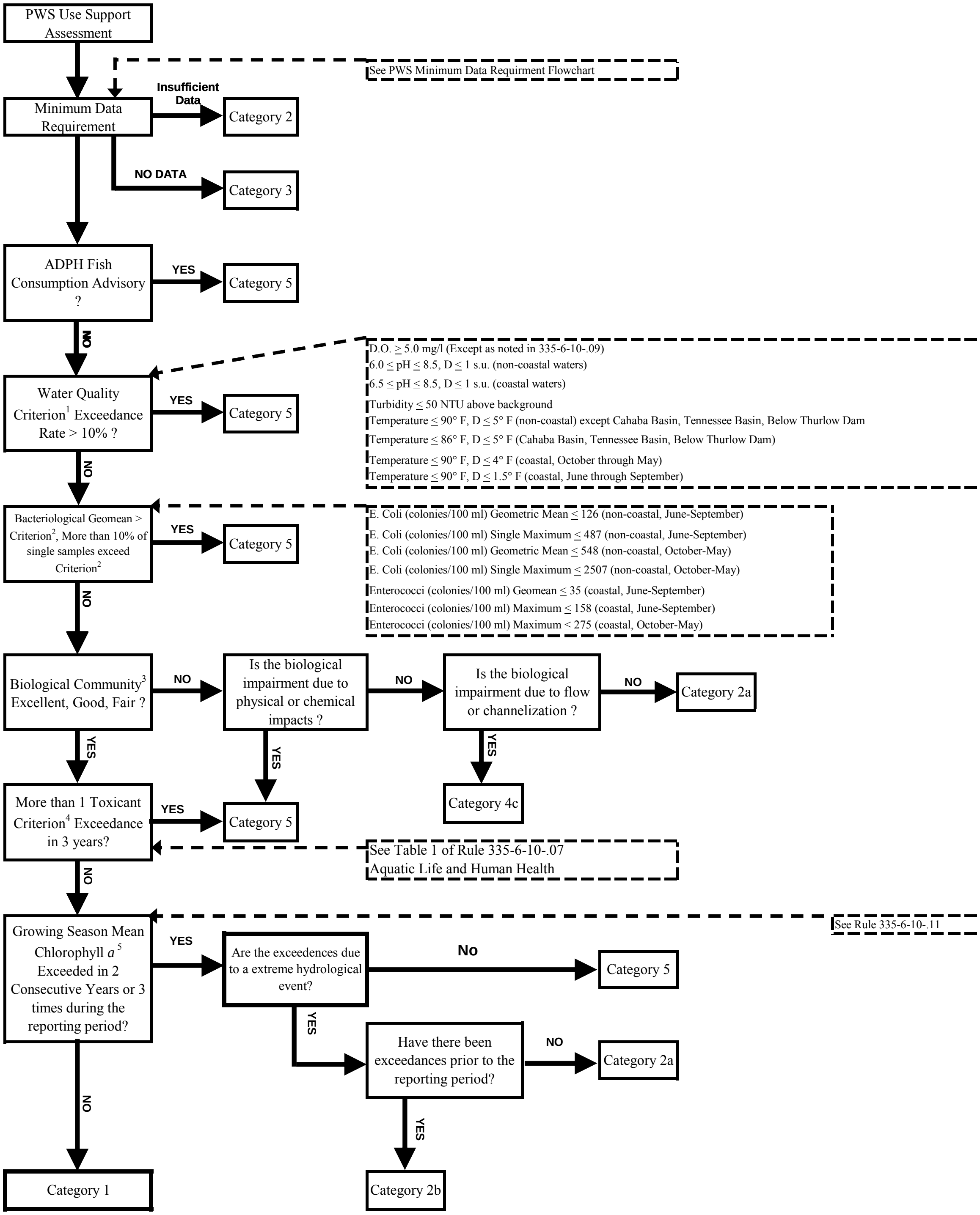
[14] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. However, once exceedance of the criterion may be sufficient justification for inclusion of a water in Category 5 when the exceedance is determined to be a result of increasing nutrient loading from anthropogenic sources. These determinations will be made on a case-by-case basis and the decision will be documented in the ADB.ADB In any case, when a growing season mean chlorophyll *a* value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.

[15] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[16] As determined by the binomial distribution function and Table 2.

<table>
<tr><th colspan="2">The PWS waterbody can be placed in Category 5 if any of the following are true:</th></tr>
<tr><td rowspan="2">Bacteriological Data</td><td><u>Non-Coastal Waters:</u>
A. A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml (June – September) or is greater than 548 colonies/100 ml (October – May), or;
B. More than 10% of single samples are greater than 487 colonies/100 ml (June – September) or greater than 2,507 colonies/100 ml (October – May). [16]</td></tr>
<tr><td><u>Coastal Waters:</u>
A. A single sample result greater than 158 colonies/100 ml enterococci (June – September) or greater than 275 colonies/100 ml enterococci (October – May) will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or;
B. More than 10% of single samples are greater than 158 colonies/100 ml (June – September) or greater than 275 colonies/100 ml (October – May). [16]</td></tr>
</table>

Figure 5
Public Water Supply (PWS) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.2.2

3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)

4 Toxicant Criterion refers to toxics listed in 335-6-10-.07

5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.3 *Swimming and Other Whole Body Water-Contact Sports (S)*

The best usage of waters assigned this classification is for swimming and other whole body water-contact sports. Waterbodies assigned the S use, under proper sanitary supervision by the controlling health authorities, will meet accepted standards of water quality for outdoor swimming places and will be considered satisfactory for swimming and other whole body water-contact sports. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.3.1 *Minimum Data Requirement for S Waters*

For waters with the S classification, the available data must have been collected consistent with the following standard operating procedures (SOP) manuals:

SOP#	Title
2040	Physical Characterization Stream Flow Abbreviated Measurement Method
63012041(a)	Habitat Assessment Temperature Field Measurements
2044	Turbidity Field Measurements
2046	Field Equipment Cleaning and Storage Procedures Photic Zone Measurements and Visibility Determinations
2047	Station, Sample ID & Chain of Custody Procedures *In-situ* surface water quality Field measurements by Datasonde
2048	Continuous SW Quality Monitoring Using Datasondes
2061	General SW Quality Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Field Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Surface Water Sample Collection of Bacteria Samples
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Index of Biotic Integrity Sample Collection Procedure for Wadeable Streams
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage
9040	Station, Sample ID & Chain of Custody Procedures

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 6** describe the minimum data requirement for assessing waters classified as S.

- Wadeable River or Stream
  - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or 2 Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) or 1 Level III WMB-EPT plus 1 fish community assessment (IBI). In addition, a habitat assessment must be completed with each biological assessment. Currently, metrics for the fish IBI have been calibrated only in the Black Warrior and Cahaba River basins.
  - 3 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)

  OR

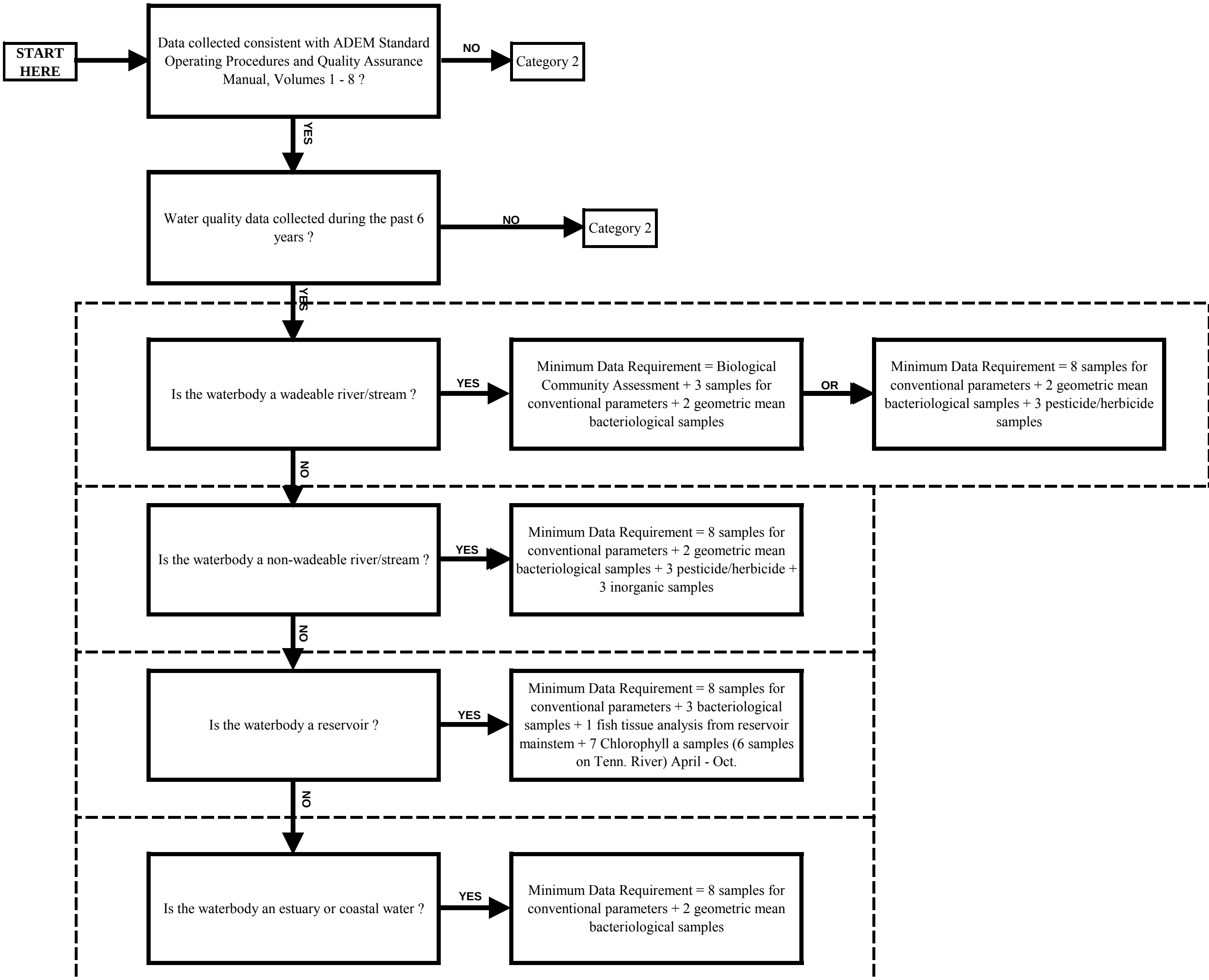
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 3 pesticide / herbicide samples

- Non-wadeable River or Stream
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 3 pesticide / herbicide samples
  - 3 inorganic samples

- Reservoirs and Embayments
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 1 fish tissue analysis from the reservoir mainstem
  - 7 chlorophyll a samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll a samples collected between April and September). Results from critical period sampling (i.e., August sample only) will be used with other critical period data to evaluate chlorophyll a trends at a given sampling location.

- Estuary or Coastal Waters
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)

Figure 6
Minimum Data Requirements for the S Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or
2 Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) or
1 Level III WMB-EPT plus 1 fish community assessment (IBI)

4.3.2 *Use Support Assessment for S Waters*

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the S use (Category 1) or not fully supporting the S use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, biological community assessments, habitat assessments, periphyton assessments, beach closure notices and toxicity evaluations. **Figure 7** illustrates the assessment process for S waters.

The S waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "fair", "good" or "excellent", or;[17] At least one of Level III WMB-EPT assessments "fair", "good", or "excellent", or;[17] Level III WMB-EPT assessment and fish IBI "fair", "good" or "excellent".[17]
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has not been exceeded in two consecutive years where such a criterion has been established.[18]
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[19]	No more than a 10% exceedance rate for any given parameter.[20]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result in excess of 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml, or; **B.** 10% or less of single samples must be less than or equal to 235 colonies/100 ml.[20]
	Coastal Waters: **A.** A single sample result in excess of 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than 35 colonies/100 ml, or; **B.** 10% or less of single samples must be less than or equal to 104 colonies/100 ml.[20]

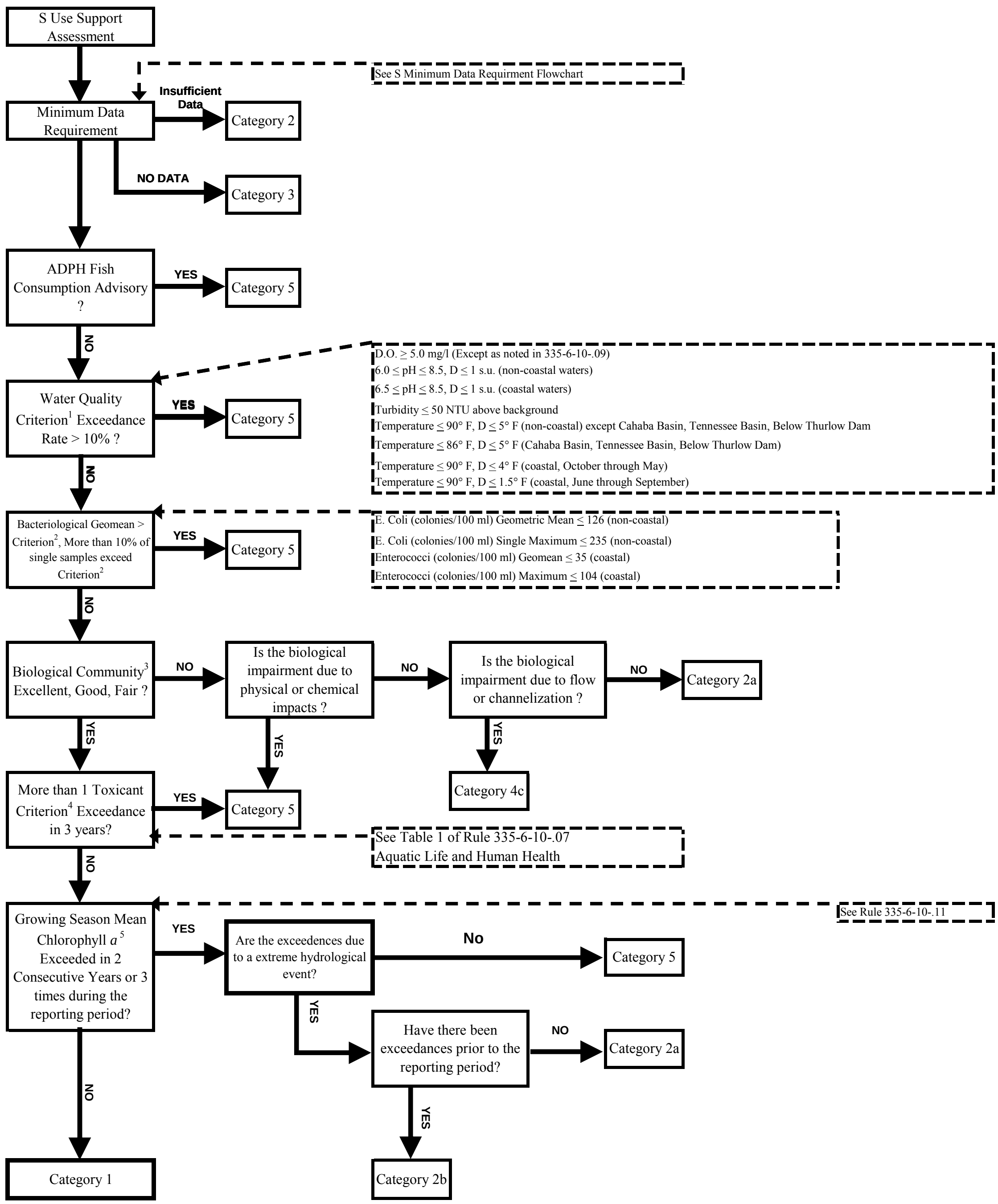
[17] Applicable to wadeable streams only.
[18] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.
[19] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[20] As determined by the binomial distribution function and Table 2.

The S waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	There is a fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment less than "fair", or;[21] Both Level III WMB-EPT assessments less than "fair", or;[21] Level III WMB-EPT assessment and fish IBI less than "fair".[21]
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has been exceeded in two consecutive years or three times during the previous six years.[22]
Toxic Pollutants	There is more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[23]	There is more than a 10% exceedance rate for any given parameter.[24]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 235 colonies/100 ml.[24]
	Coastal Waters: ***A.*** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 104 colonies/100 ml.[24]

[21] Applicable to wadeable streams only. A potential anthropogenic cause for the degraded condition must be identified using observations made during the sampling events or from information contained in the Department's geographic information system.
[22] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. However, once exceedance of the criterion may be sufficient justification for inclusion of a water in Category 5 when the exceedance is determined to be a result of increasing nutrient loading from anthropogenic sources. These determinations will be made on a case-by-case basis and the decision will be documented in the ADB.ADB In any case, when a growing season mean chlorophyll *a* value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.
[23] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[24] As determined by the binomial distribution function and Table 2.

Figure 7

Swimming and Other Whole Body Water-Contact Sports (S) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.3.2

3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)

4 Toxicant Criterion refers to toxics listed in 335-6-10-.07

5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.4 *Shellfish Harvesting (SH)*

The best usage of waters assigned this classification is the propagation and harvesting of shellfish (oysters) for sale or for use as a food product. Waterbodies assigned the SH use will meet the sanitary and bacteriological standards included in the *National Shellfish Sanitation Program Model Ordinance, 1999, Chapter IV*, published by the Food and Drug Administration, U.S. Department of Health and Human Services and the requirements of the Alabama Department of Public Health. The waters will also be of a quality suitable for the propagation of fish and other aquatic life, including shrimp and crabs. Beneficial uses encompassed within this classification include: aquatic life support and wildlife propagation, fish and shellfish harvesting and consumption, water contact recreation, agricultural irrigation, livestock watering and industrial cooling and process water supply.

4.4.1 *Minimum Data Requirement for SH Waters*

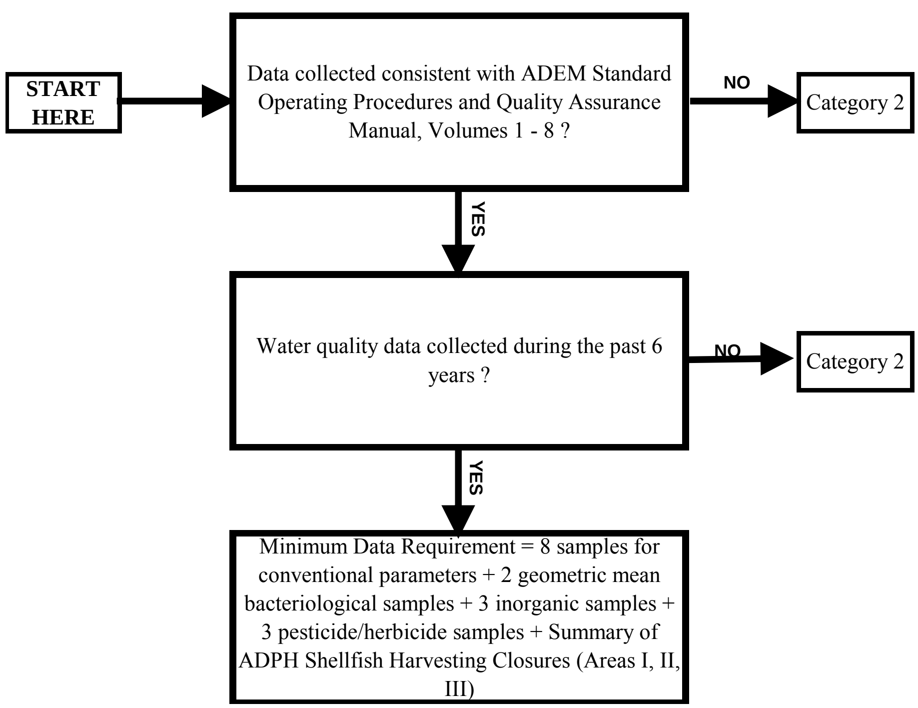
For waters with the SH classification the available data must have been collected consistent with the following standard operating procedures (SOP) manual:

SOP#	Title
2040	Stream Flow Abbreviated Measurement Method
2041(a)	Temperature Field Measurements
2044	Turbidity Field Measurements
2046	Photic Zone Measurements and Visibility Determinations
2047	*In-situ* surface water quality Field measurements by Datasonde
2048	Continuous SW Quality Monitoring Using Datasondes
2061	General SW Quality Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Field Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Surface Water Sample Collection of Bacteria Samples
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Index of Biotic Integrity Sample Collection Procedure for Wadeable Streams
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage Procedures
9040	Station, Sample ID & Chain of Custody Procedures

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. The following list and **Figure 8** describe the minimum data requirement for assessing waters classified as SH.

- 8 conventional parameter samples (including samples for nutrient analysis)
- 10 bacteriological samples (2 geometric mean samples)
- 3 inorganic samples
- 3 pesticide/herbicide samples
- Summary of ADPH shellfish harvesting closure notices for Areas I, II, and III

Figure 8
Minimum Data Requirements for the SH Designated Use



4.4.2 *Use Support Assessment for SH Waters*

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the SH use (Category 1) or not fully supporting the SH use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, shellfish harvesting closure notices, chemical specific data, bacteriological data, and toxicity evaluations. **Figure 9** illustrates the assessment process for SH waters.

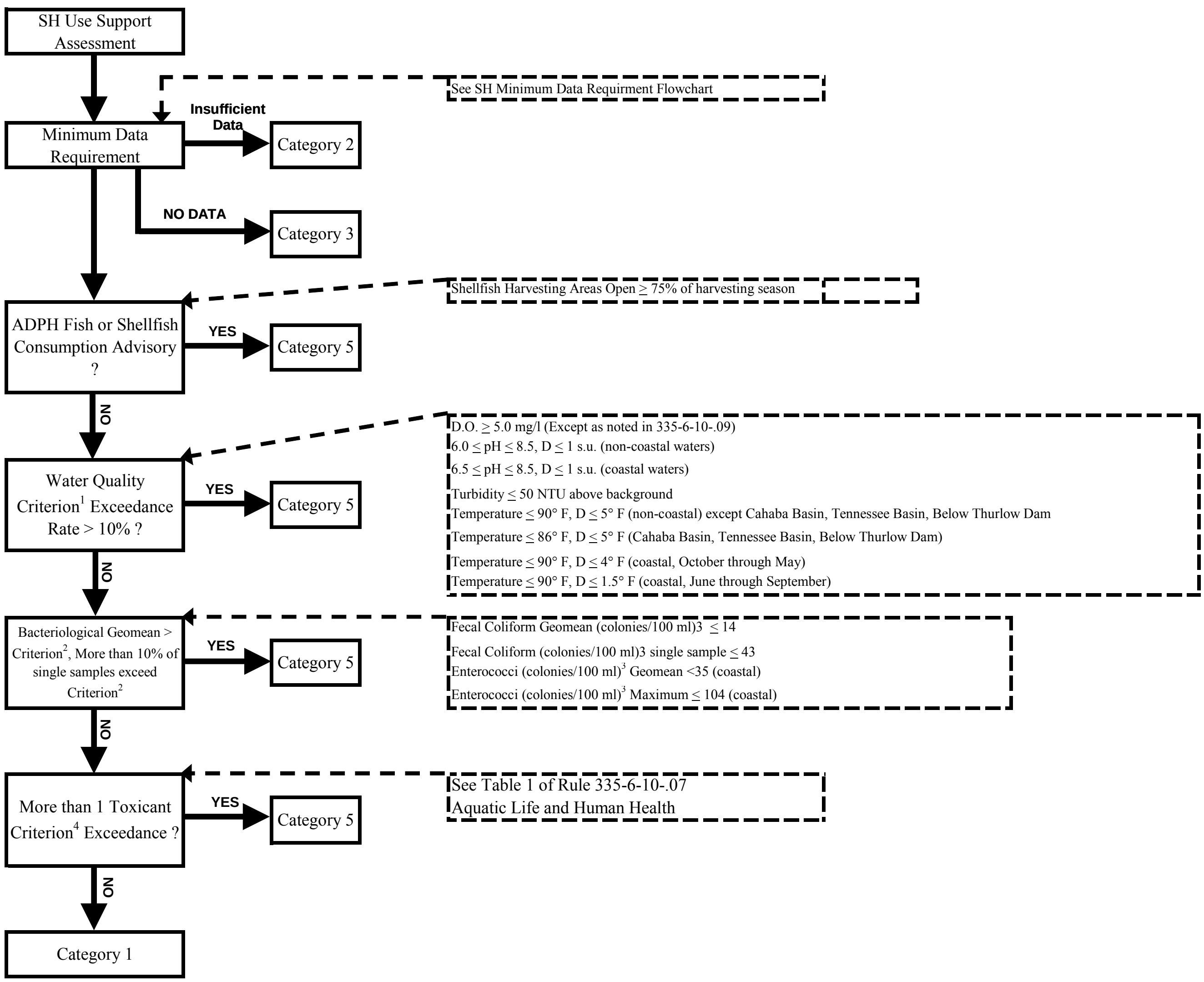
The SH waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish/shellfish consumption advisories issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[25]	No more than a 10% exceedance rate for any given parameter.[26]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml, or; **B.** 10% or less of single samples must be less than or equal to 235 colonies/100 ml.[26]
	Coastal Waters: **A.** A single sample result greater than or equal to 43 colonies /100 ml fecal coliform or a geometric mean greater than or equal to 14 colonies /100 ml fecal coliform. **B.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density must be less than 35 colonies/100 ml or; **C.** 10% or less of single samples must be less than or equal to 104 colonies/100 ml.[26]

[25] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[26] As determined by the binomial distribution function and Table 2.

The SH waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	There is a fish consumption advisory issued by the Alabama Department of Public Health (ADPH) or the shellfish growing areas are "conditionally open" or "conditionally restricted".
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	There is more than one exceedance of a particular toxic pollutant criterion in previous six years.
Conventional Parameters[27]	There is more than a 10% exceedance rate for any given parameter.[28]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 235 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml, or; **B.** More than 10% of single samples exceed 235 colonies/100 ml.[28]
	Coastal Waters: **A.** A single sample result greater than or equal to 43 colonies /100 ml fecal coliform or a geometric mean greater than or equal to 14 colonies /100 ml fecal coliform. **B.** A single sample result greater than 104 colonies/100 ml enterococci will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; **C.** More than 10% of single samples exceed 104 colonies/100 ml enterococci.[28]

[27] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[28] As determined by the binomial distribution function and Table 2.

Figure 9
Shellfish Harvesting (SH) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean

3 Not to exceed the limits specified in the latest edition of the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish: 2007 Revision, published by the Food and Drug Administration, U.S. Department of Health and Human Services.

4 Toxicant Criterion refers to toxics listed in 335-6-10-.07

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.5 *Fish and Wildlife (F&W)*
The best usage of waters assigned this classification includes fishing, the propagation of fish, aquatic life, and wildlife, and any other usage except swimming and water-contact sports or as a source of water supply for drinking or food-processing purposes. Waterbodies assigned the F&W classification will be suitable for fish, aquatic life and wildlife propagation. The quality of salt and estuarine waters to which this classification is assigned will also be suitable for the propagation of shrimp and crabs. In addition, it is recognized that these waters may be used for incidental water contact and recreation during June through September, except in the vicinity of wastewater discharges or other conditions beyond the control of the ADPH. Under proper sanitary supervision by the controlling health authorities, these waters will meet accepted standards of water quality for outdoor swimming places and will be considered satisfactory for swimming and other whole body water-contact sports during the months of June through September.

4.5.1 *Minimum Data Requirement for F&W Waters*
For waters with the F&W classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals:

SOP#	Title
2040	Physical Characterization Stream Flow Abbreviated Measurement Method
63012041(a)	Habitat Assessment Temperature Field Measurements
2044	Turbidity Field Measurements
2046	Field Equipment Cleaning and Storage Procedures Photic Zone Measurements and Visibility Determinations
2047	Station, Sample ID & Chain of Custody Procedures *In-situ* surface water quality Field measurements by Datasonde
2048	Continuous SW Quality Monitoring Using Datasondes
2061	General SW Quality Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Field Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Surface Water Sample Collection of Bacteria Samples
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Index of Biotic Integrity Sample Collection Procedure for Wadeable Streams
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage
9040	Station, Sample ID & Chain of Custody Procedures

In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 10** describe the minimum data requirement for assessing waters classified as F&W.

- Wadeable River or Stream
  - 1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or 2 Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) or 1 Level III WMB-EPT plus 1 fish community assessment (IBI). In addition, a habitat assessment must be completed with each biological assessment. Currently, metrics for the fish IBI have been calibrated only in the Black Warrior and Cahaba River basins.
  - 3 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples

  OR

  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 3 pesticide / herbicide samples
  - 3 inorganic samples

- Non-wadeable River or Stream
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 10 bacteriological samples (2 geometric mean samples)
  - 3 pesticide / herbicide samples
  - 3inorganic samples

Reservoirs and Embayments
  - 8 conventional parameter samples (including samples for nutrient analysis)
  - 3 bacteriological samples
  - 1 fish tissue analysis from the reservoir mainstem
  - 7 chlorophyll *a* samples collected between April and October (For the Tennessee River Basin: 6 chlorophyll *a* samples collected between April and September). Results from critical period sampling (i.e., August sample

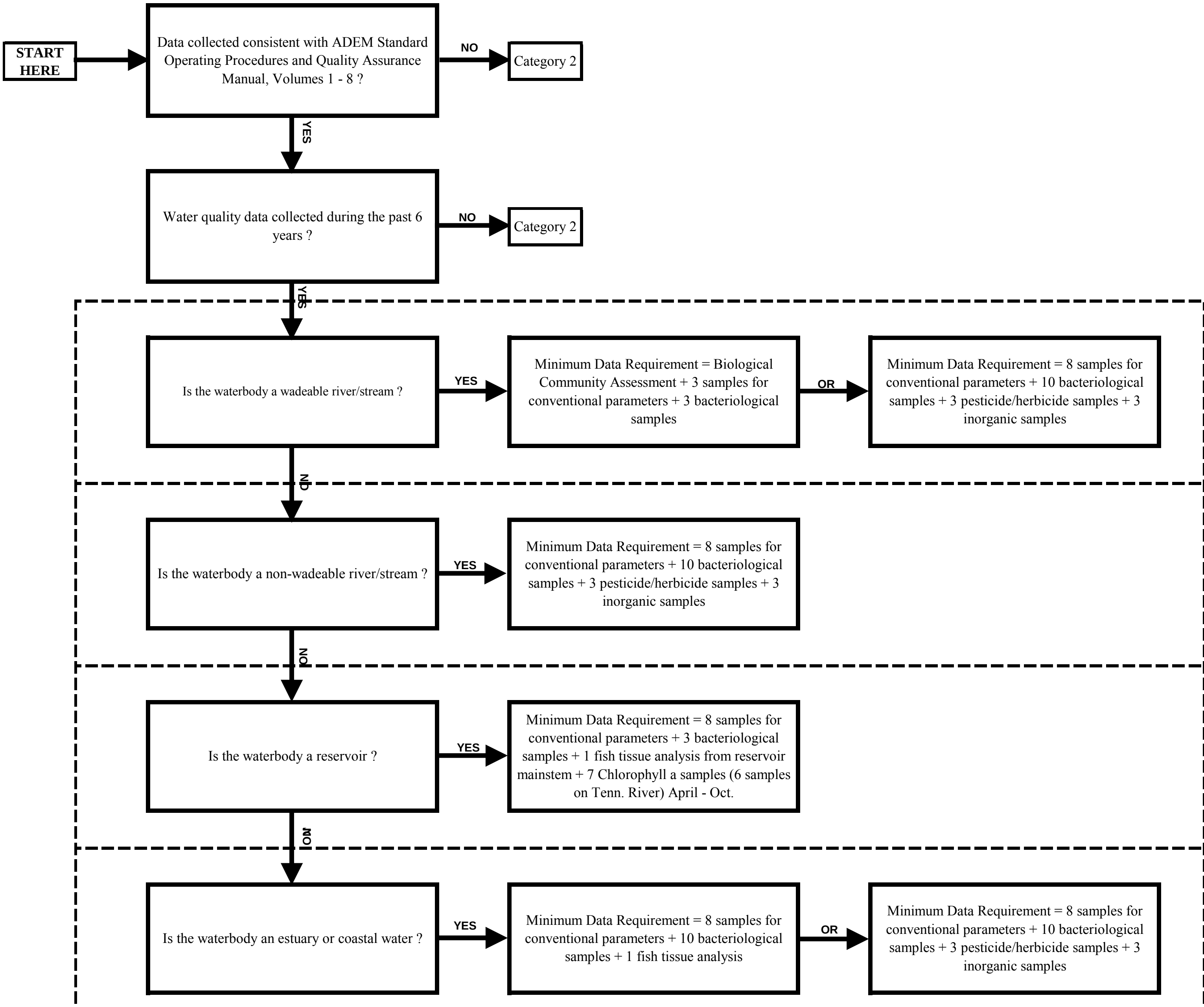
only) will be used with other critical period data to evaluate chlorophyll a trends at a given sampling location.

- Estuary or Coastal Waters
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)
    - 1 fish tissue analysis

  OR

    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 10 bacteriological samples (2 geometric mean samples)
    - 3 pesticide/herbicide samples
    - 3 inorganic samples

Figure 10
Minimum Data Requirements for the F&W Designated Use



Biological community assessment means:
1 Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) or
2 Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) or
1 Level III WMB-EPT plus 1 fish community assessment (IBI)

4.5.2 *Use Support Assessment for F&W Waters*

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the F&W use (Category 1) or not fully supporting the F&W use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, chemical specific data, biological community assessments, bacteriological data, beach closure notices and toxicity evaluations. **Figure 11** illustrates the assessment process for F&W waters.

The F&W waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV WMB-I assessment "fair", "good" or "excellent", or;[29] Either of Level III WMB-EPT assessments "fair", "good", or "excellent", or;[29] Level III WMB-EPT assessment and fish IBI "fair", "good" or "excellent".[29]
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has not been exceeded in two consecutive years where such a criterion has been established.[30]
Toxic Pollutants	No more than two exceedances of a particular toxic pollutant criterion in previous six years or more than one in a 3 year period.
Conventional Parameters[31]	No more than a 10% exceedance rate for any given parameter.[32]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geomean sampling event. The geometric mean E. coli density must be less than or equal to 126 colonies/100 ml (June – September) or less than or equal to 548 colonies/100 ml (October – May), or; **B.** 10% or less of single samples must be less than or equal to 487 colonies/100 ml (June – September) or less than or equal to 2,507 colonies/100 ml (October – May).[32]

[29] Applicable to wadeable streams only.

[30] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

[31] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[32] As determined by the binomial distribution function in Table 2.

The F&W waterbody can be placed in Category 1 if all the following are true:	
	Coastal Waters: **A.** A single sample result greater than 158 colonies/100 ml E. coli (June – September) or greater than 275 colonies/100 ml E. coli (October – May) will require a follow-up geomean sampling event. The geometric mean enterococci density must be less than or equal to 35 colonies/100 ml (June – September), or; **B.** 10% or less of single samples must be less than or equal to 158 colonies/100 ml (June – September) or less than or equal to 275 colonies/100 ml (October – May).[32]

The F&W waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	Level IV assessment less than "fair", or;[33] Both of Level III assessments less than "fair", or;[33] Level III assessment and fish IBI less than "fair".[33]
Chlorophyll *a* Data	Growing season mean chlorophyll *a* criterion has been exceeded in two consecutive years or three times during the previous six years.[34]
Toxic Pollutants	More than two exceedances of a particular toxic pollutant criterion in previous six years or more than one in a 3 year period.
Conventional Parameters[35]	More than a 10% exceedance rate for any given parameter.[36]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 487 colonies/100 ml E. coli (June – September) or greater than 2,507 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 126 colonies/100 ml (June – September) or greater than 548 colonies/100 ml (October – May), or; ***B.*** More than 10% of single samples are greater than 487 colonies/100 ml (June – September) or greater than 2507 colonies/100 ml (October – May).[36]

[33] Applicable to wadeable streams only.

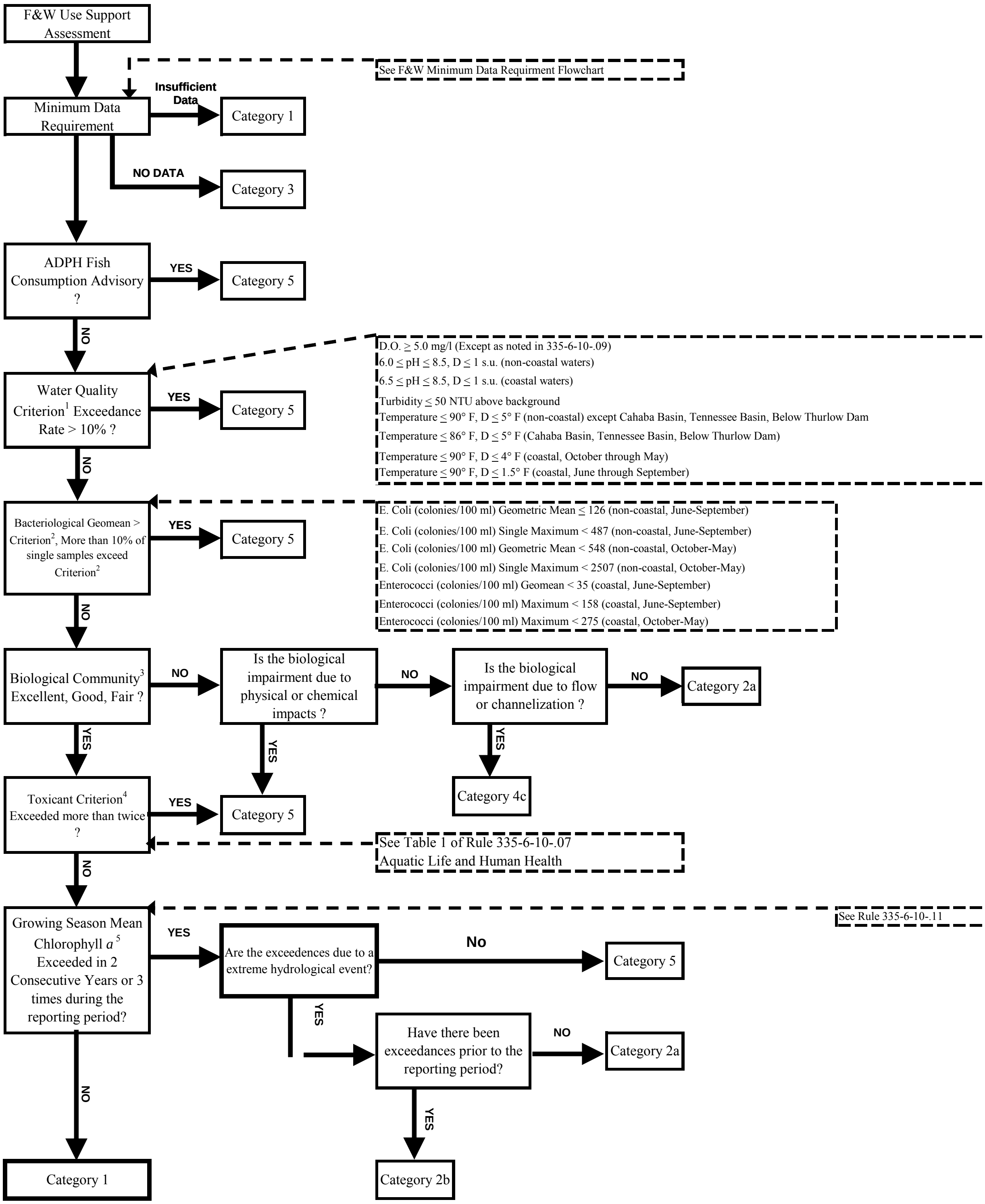
[34] Chlorophyll *a* values in excess of the criterion, due to extreme hydrological events (i.e. drought, floods), will not be considered as an exceedance of the criterion. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity. One exceedance of the chlorophyll *a* criterion may be sufficient justification for inclusion of a water in Category 5 when the exceedance is determined to be the result of increasing nutrient loading from anthropogenic sources. These determinations will be made on a case-by-case basis and the decision will be documented in the ADB. When a growing season mean chlorophyll *a* value exceeds the criterion, the reservoir will be identified for re-sampling the following year and enough samples will be collected to ensure that the minimum data requirements necessary to calculate a growing season mean are met.

[35] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.

[36] As determined by the binomial distribution function in Table 2.

The F&W waterbody can be placed in Category 5 if any of the following are true:	
	Coastal Waters: ***A.*** A single sample result greater than 158 colonies/100 ml E. coli (June – September) or greater than 275 colonies/100 ml E. coli (October – May) will require a follow-up geometric mean sampling event. The geometric mean enterococci density is greater than 35 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 158 colonies/100 ml (June – September) or greater than 275 colonies/100 ml (October – May).[36]

Appendix A
Figure 11
Fish and Wildlife (F&W) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.5.2

3 Biological community refers to macroinvertebrates and/or fish in wadeable rivers/streams only (See Minimum Data Requirments)

4 Toxicant Criterion refers to toxics listed in 335-6-10-.07

5 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.6 *Limited Warmwater Fishery (LWF)*

For the months of December through April the best usage of waters assigned this classification includes fishing, the propagation of fish, aquatic life, and wildlife, and any other usage except swimming and water-contact sports or as a source of water supply for drinking or food-processing purposes. Waterbodies assigned the LWF classification will be suitable for fish, aquatic life and wildlife propagation except during the months of May through November. During May through November the quality of waters to which this classification is assigned will be suitable for agricultural irrigation, livestock watering, industrial cooling and process water supplies, and any other usage, except fishing, bathing, recreational activities, including water-contact sports, or as a source of water supply for drinking or food-processing purposes.

4.6.1 *Minimum Data Requirement for LWF Waters*

For waters with the LWF classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals:

SOP#	Title
2040	Stream Flow Abbreviated Measurement Method
2041(a)	Temperature Field Measurements
2044	Turbidity Field Measurements
2046	Photic Zone Measurements and Visibility Determinations
2047	*In-situ* surface water quality Field measurements by Datasonde
2048	Continuous SW Quality Monitoring Using Datasondes
2061	General SW Quality Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Field Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Surface Water Sample Collection of Bacteria Samples
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Index of Biotic Integrity Sample Collection Procedure for Wadeable Streams
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage Procedures
9040	Station, Sample ID & Chain of Custody Procedures

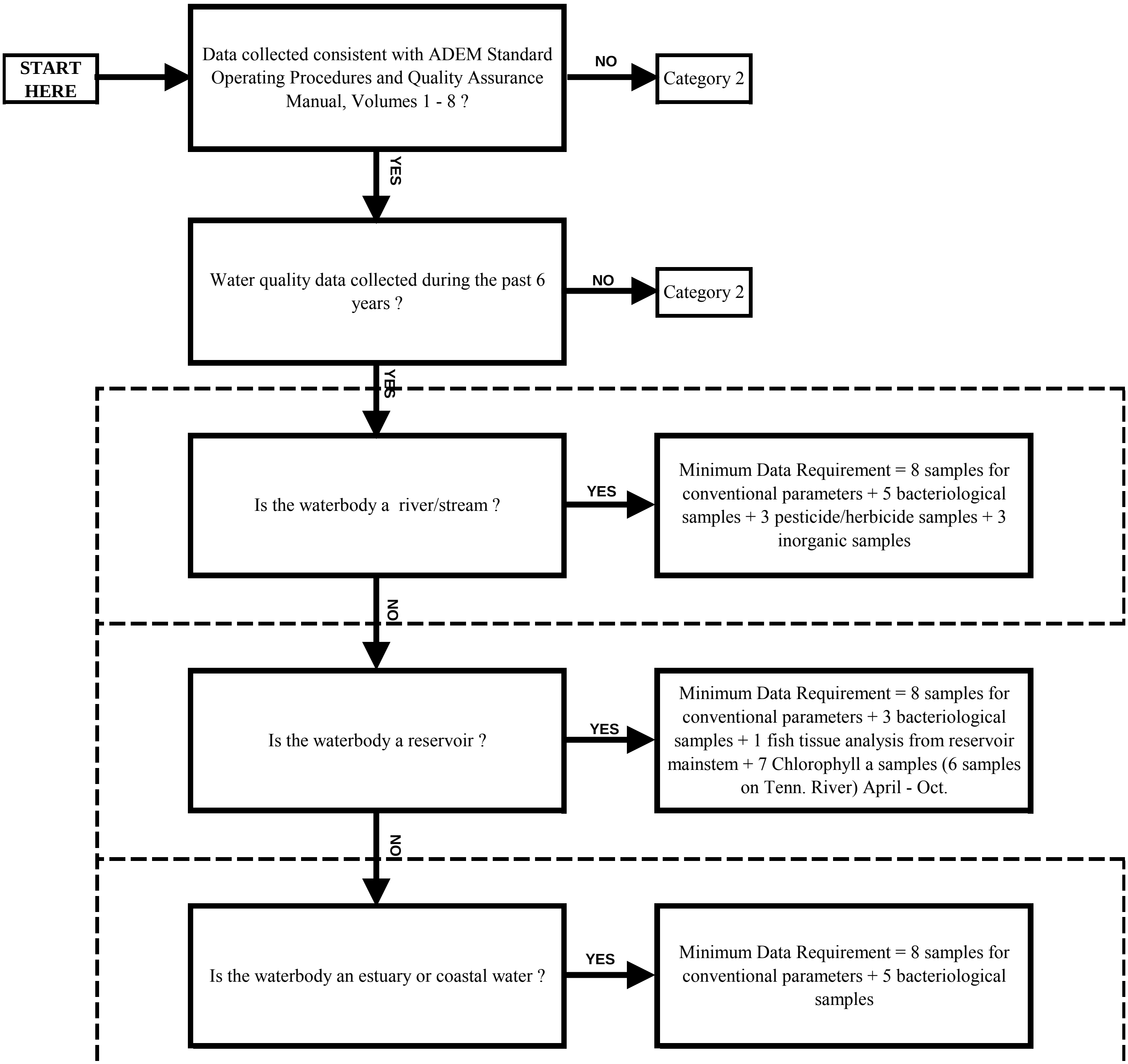
In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 12** describe the minimum data requirements for assessing waters classified as LWF.

- River or Stream (Wadeable and Non-wadeable)
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 5 bacteriological samples (1 geometric mean sample)
    - 3 pesticide / herbicide samples
    - 3 inorganic samples

- Reservoirs and Embayments
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 3 bacteriological samples
    - 1 fish tissue analysis from the reservoir mainstem

- Estuary or Coastal Waters
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 5 bacteriological samples (1 geometric mean sample)

Figure 12
Minimum Data Requirements for the LWF Designated Use



4.6.2 *Use Support Assessment for LWF Waters*

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the LWF use (Category 1) or not fully supporting the LWF use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, chemical specific data, bacteriological data, and toxicity evaluations. However, at the present time there is no available protocol for use of biological assessment results to assess use support in LWF-classified waters. The Department's current SOP for conducting biological assessments employs the use of reference sites located in least impacted watersheds and is intended to assess the "fishable" use. **Figure 13** illustrates the assessment process for LWF waters.

The LWF waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	No more than one exceedance of a particular toxic pollutant acute criterion (May – November) in previous six years. No more than one exceedance of a particular toxic pollutant chronic criterion (December – April).
Conventional Parameters[37]	No more than a 10% exceedance rate for any given parameter.[38]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 2,507 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 548 colonies/100 ml, or; **B.** 10% or less of single samples must be less than or equal to 2,507 colonies/100 ml.[38]
	Coastal Waters: **A.** 10% or less of single samples must be less than 275 colonies/100 ml Enterococci.[38]

[37] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[38] As determined by the binomial distribution function in Table 2.

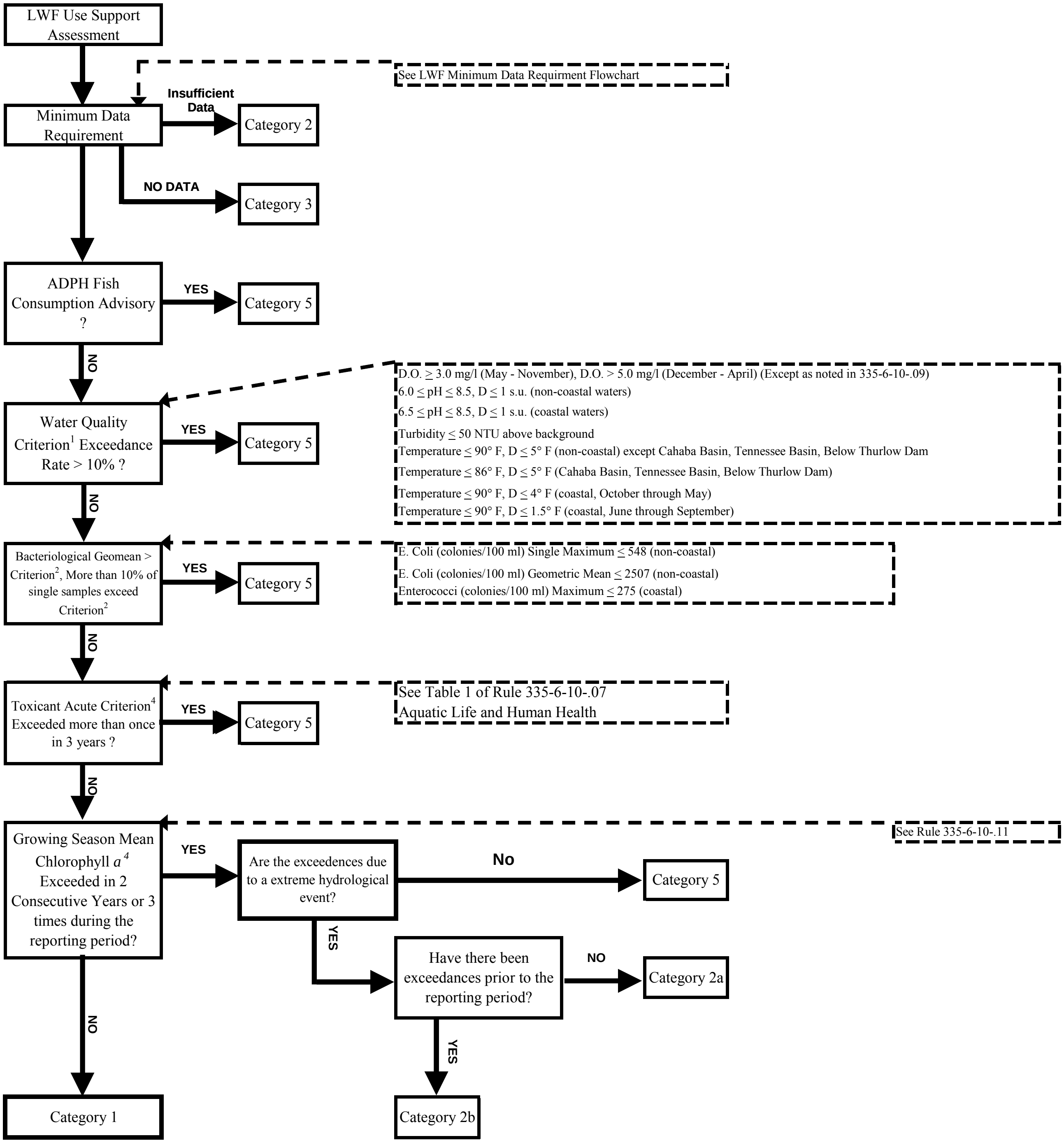
The LWF waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	Two or more exceedances of a particular toxic pollutant acute criterion (May – November) during the previous six years or more than one in a 3 year period. Two or more exceedances of a particular toxic pollutant chronic criterion (December – April) during previous six years or more than one in a 3 year period.
Conventional Parameters[39]	More than a 10% exceedance rate for any given parameter.[40]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 2,507 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 548 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 2,507 colonies/100 ml.[40]
	Coastal Waters: ***A.*** More than 10% of single samples are greater than 275 colonies/100 ml Enterococci.[40]

[39] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[40] As determined by the binomial distribution function in Table 2.

Appendix A

Figure 13

Limited Warmwater Fishery (LWF) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.6.2

3 Toxicant Criterion refers to toxics listed in 335-6-10-.07

4 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.7 *Agricultural and Industrial Water Supply (A&I)*
Best usage of waters assigned this classification include agricultural irrigation, livestock watering, industrial cooling and process water supplies, and any other usage, except fishing, bathing, recreational activities, including water-contact sports, or as a source of water supply for drinking or food-processing purposes. The waters, except for the natural impurities that may be present, will be suitable for agricultural irrigation, livestock watering, industrial cooling waters, and fish survival. The waters will be usable after special treatment, as may be needed under each particular circumstance, for industrial process water supplies. This classification includes watercourses in which natural flow is intermittent and non-existent during droughts and which may, of necessity, receive treated waste from existing municipalities and industries, both now and in the future.

4.7.1 *Minimum Data Requirement for A&I Waters*
For waters with the A&I classification the available data must have been collected consistent with the following standard operating procedures (SOP) manuals:

SOP#	Title
2040	Stream Flow Abbreviated Measurement Method
2041(a)	Temperature Field Measurements
2044	Turbidity Field Measurements
2046	Photic Zone Measurements and Visibility Determinations
2047	*In-situ* surface water quality Field measurements by Datasonde
2048	Continuous SW Quality Monitoring Using Datasondes
2061	General SW Quality Sample Collection
2062	Dissolved Reactive Phosphorus (DRP) Collection & Field Processing
2063	Water Column Chlorophyll *a* Sample Collection
2064	Surface Water Sample Collection of Bacteria Samples
2065	Sediment Sample Collection
2066	Dissolved Metals Sample Collection and Processing
2067	Organic Sample Collection
5700	Algal Growth Potential Testing (AGPT)
6000	Macroinvertebrate Sample Collection
6001	Macroinvertebrate Sample Processing
6002	Macroinvertebrate Organism Identification
6004	Macroinvertebrate Sample Data Analysis
6100	Fish Index of Biotic Integrity Sample Collection Procedure for Wadeable Streams
6300	Physical Characterization
6301	Habitat Assessment
9021	Field Quality Control Measurements and Samples
9025	Field Equipment Cleaning and Storage Procedures
9040	Station, Sample ID & Chain of Custody Procedures

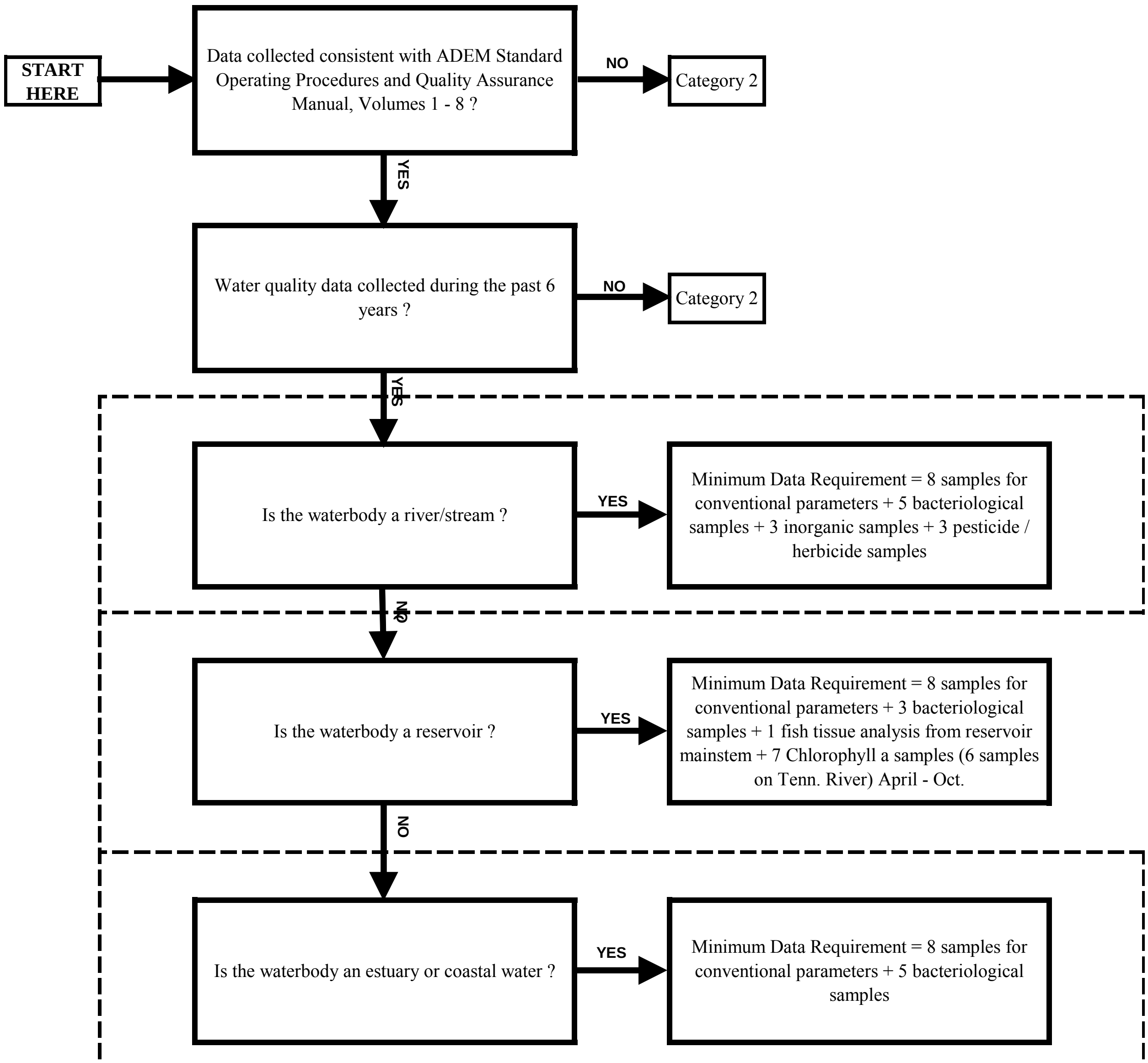
In addition, the data must have been collected within the last six years. The six-year timeframe would capture all data collected by ADEM during one complete rotation of the five-year monitoring schedule currently used by the Department. Failure to satisfy both of these conditions places the waterbody in Category 2. If these two conditions are met, the determination of the minimum data requirement is dependent upon the waterbody type. Waterbody types include wadeable rivers and streams, non-wadeable rivers and streams, reservoirs and reservoir embayments, and estuary and coastal waters. Failure to meet the minimum data requirement will place the waterbody in Category 2. The following list and **Figure 14** describe the minimum data requirement for assessing waters classified as A&I.

- River or Stream
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 5 bacteriological samples (1 geometric mean sample)
    - 3 inorganic samples
    - 3 pesticide / herbicide samples

- Reservoirs and Embayments
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 3 bacteriological samples
    - 1 fish tissue analysis from the reservoir mainstem

- Estuary or Coastal Waters
    - 8 conventional parameter samples (including samples for nutrient analysis)
    - 5 bacteriological samples (1 geometric mean sample)

Figure 14
Minimum Data Requirements for the A&I Designated Use



4.7.2 *Use Support Assessment for A&I Waters*

Once the minimum data requirement has been met an assessment of the data can be completed resulting in the categorization of the waterbody as either fully supporting the A&I use (Category 1) or not fully supporting the A&I use (Category 5). The assessment process considers the available data and may include any fish consumption advisories, chemical specific data, biological community assessments, bacteriological data, beach closure notices and toxicity evaluations. **Figure 15** illustrates the assessment process for A&I waters.

The A&I waterbody can be placed in Category 1 if all the following are true:	
Issue	**Condition**
Consumption Advisories	No fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	No more than two exceedances of a particular toxic pollutant acute criterion in previous six years or more than one in a 3 year period.
Conventional Parameters[41]	No more than a 10% exceedance rate for any given parameter.[42]
Bacteriological Data	**Non-Coastal Waters:** **A.** A single sample result greater than 3,200 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density must be less than or equal to 700 colonies/100 ml, or; **B.** 10% or less of single samples must be less than or equal to 3,200 colonies/100 ml.[42]
	Coastal Waters: **A.** 10% or less of single samples must be less than or equal to 500 colonies/100 ml.[42]

[41] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[42] As determined by the binomial distribution function in Table 2.

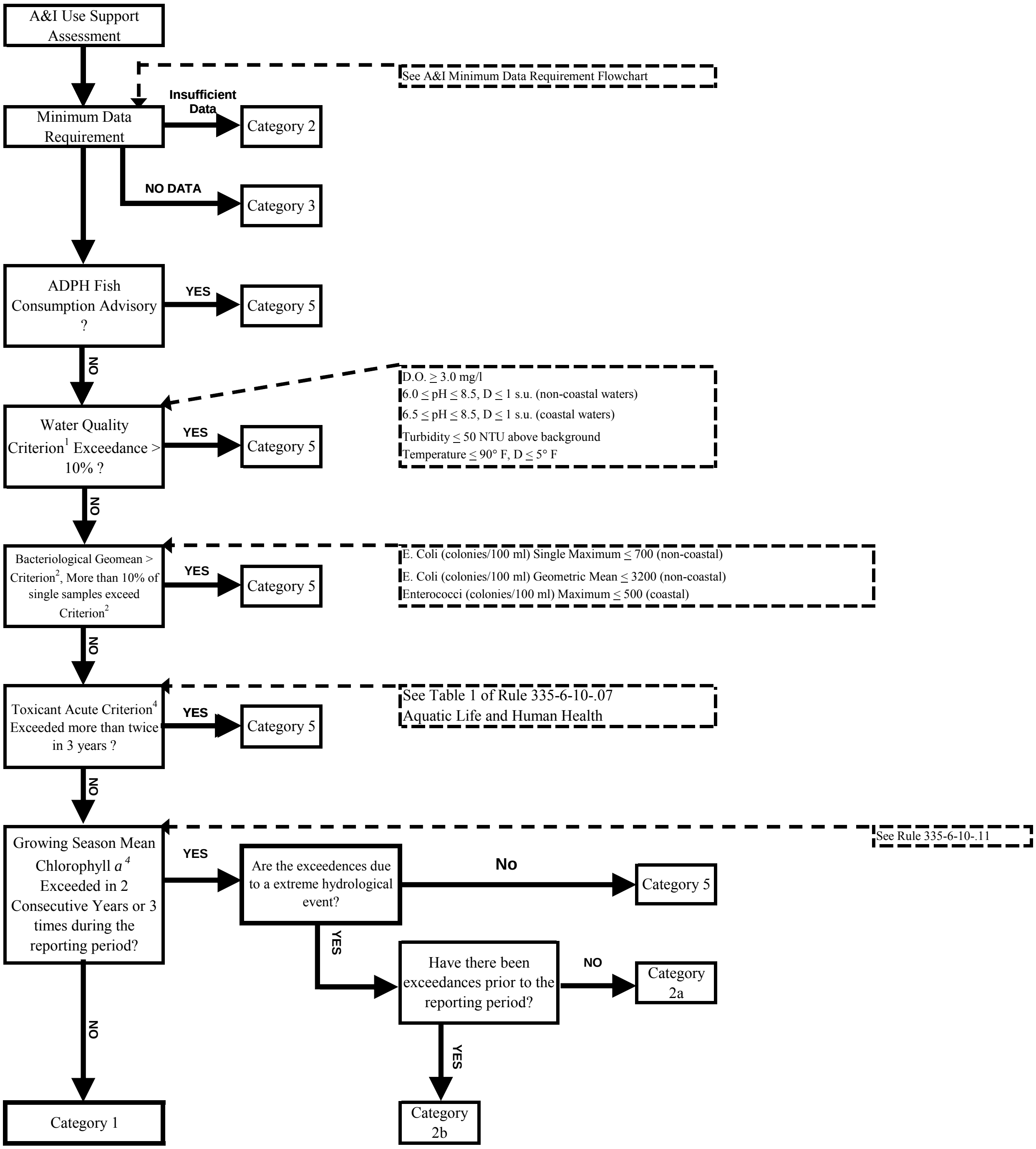
The A&I waterbody can be placed in Category 5 if any of the following are true:	
Issue	**Condition**
Consumption Advisories	Fish consumption advisory issued by the Alabama Department of Public Health (ADPH).
Macroinvertebrate and Fish Assessments	NA
Chlorophyll *a* Data	NA
Toxic Pollutants	More than two exceedances of a particular toxic pollutant acute criterion in previous six years or more than one in a 3 year period.
Conventional Parameters[43]	More than a 10% exceedance rate for any given parameter.[44]
Bacteriological Data	**Non-Coastal Waters:** ***A.*** A single sample result greater than 3,200 colonies/100 ml E. coli will require a follow-up geometric mean sampling event. The geometric mean E. coli density is greater than 700 colonies/100 ml, or; ***B.*** More than 10% of single samples are greater than 3,200 colonies/100 ml.[44]
	Coastal Waters: ***A.*** More than 10% of single samples are greater than 500 colonies/100 ml.[44]

[43] Conventional parameters include DO, pH, temperature (where influenced by heated discharge), and turbidity.
[44] As determined by the binomial distribution function and Table 2.

Appendix A

Figure 15

Agricultural and Industrial Water Supply (A&I) Categorization Methodology



1 Water Quality Criterion refers to pH, Dissolved Oxygen, turbidity, and temperature resulting from heat sources

2 Bacteriological Criterion refers to both the single sample maximum and geometric mean, see discussion in Section 4.7.2

3 Toxicant Criterion refers to toxics listed in 335-6-10-.07

4 Applies only to reservoirs with established Chlorophyll a criteria and not during extreme hydrologic events. Extreme drought conditions are droughts with a drought intensity category of D2 or greater as listed in the U.S. Drought Monitor (http://droughtmonitor.unl.edu/) that persists for 50% or more of the growing season. Extreme flood conditions are streamflows greater than the 75th percentile streamflow based on period of record caused by events such as tropical storms, hurricanes, and unusually intense storm activity.

Special Note - Natural waters may, on occasion, have characteristics outside of the limits established by these criteria. These criteria relate to condition of waters as affected by the discharge of sewage, industrial wastes, or other wastes, not to conditions resulting from natural forces. See 335-6-10-.05(4)

4.8 Other Data considerations and Requirements

4.8.1 *Use of the 10% Rule*

Seasonal variation in water quality conditions, non-anthropogenic impacts (natural conditions), sampling frequency and number of samples collected, and the temporal and spatial sampling coverage of the waterbody must be considered when evaluating water quality data to determine whether a waterbody is fully supporting its designated uses. Most states, including Alabama, determine a waterbody's use support status based on the percent of measured values exceeding a given water quality criterion. Based on USEPA guidance, 10 percent is commonly used as the maximum percent of measurements that may exceed the criterion for waters fully supporting their designated uses. For any given set of samples the percent exceedance indicated by the number of samples which exceed a given criterion is only an estimate of the true percent exceedance for the waterbody segment. As a result, it is important that a level of confidence be assigned to the estimate of percent exceedance for a given set of samples.

Hypothesis testing can be used to make this estimate. When making a decision about whether a water should be included in Category 5 on the basis of data for conventional pollutants, the null hypothesis is that the water is not impaired and sufficient data must be collected to minimize the probability that this assumption is incorrect (Type I error). For the purpose of this methodology, a 90% confidence level will be used so that we can say for a given sample size with a given number of criterion exceedances we are 90% confident that the true exceedance percentage is greater than 0.1 (10%). Using the binomial distribution it is possible to determine the number of exceedances out of a given number of samples that will result in a greater than 10 percent exceedance rate at approximately the 90% confidence level. This is the number of exceedances need to reject the null hypothesis.

When making a decision about whether a water in Category 5 should be removed to Category 1 for a particular conventional pollutant, the null hypothesis is that the water is impaired and sufficient data must be collected to minimize the probability that this assumption is incorrect. Again, a 90% confidence level will be used in the binomial distribution function to estimate the number of samples required to be 90% confident that the water is truly not impaired.

4.8.2 *Use of Data Older than Six Years*

More recent data shall take precedence over older data if:

- The newer data indicate a change in water quality and the change is related to changes in pollutant loading to the watershed or improved pollution control mechanisms in the watershed contributing to the assessed area.

OR

The Department determines that the older data do not meet the data quality requirements of this methodology or are no longer representative of the water quality of the segment.

Data older than six years will generally not be considered valid, for the purpose of initially placing a water in Category 1 or Category 5, except that data and information older than six years will be considered in the assessment process when such data/information is determined to be reliable. Data older than six years may be used to demonstrate that a waterbody was placed in the wrong category (Category 1 or Category 5) when the original water quality assessment was completed. In addition, data older than six years may be used if the data was not considered during a previous reporting cycle and there is evidence that conditions affecting water quality have not changed since the original data was collected. Waters will not be removed from Category 5 based on the age of data. However, if there is evidence that water quality conditions are likely to have changed since the water was originally placed in Category 1, waterbodies may be removed from Category 1 to Category 2 based on the age of the data

4.8.3 *Use of Accurate Location Data*

Accurate location data is required to ensure the appropriate use classification is applied, as well as confirming that sampling stations are located outside of regulatory mixing zones where water quality criteria do not apply. The monitoring data is acceptable if the locations are correct to within 200 feet. Digital spatial data (GIS or GPS) or latitude/longitude information obtained from USGS 7.5 minute quadrangle maps are acceptable methods of providing location information.

4.8.4 *Use of Temporally Independent Samples and Data from Continuous Monitoring*

When relying solely upon chemical data to determine designated use support, at least ten temporally independent samples of chemical and physical conditions obtained during a time period are needed. That includes conditions considered critical for the particular pollutant of interest. Independent samples, for the purpose of parameters other than bacteria and in-situ water quality measurements, will have been collected at least four days apart. Samples collected at the same location less than four days apart shall be considered as one sample for the purpose of determining compliance with toxic pollutant criteria, with the mean value used to represent the sampling period.

For conventional parameters measured using continuous monitoring instruments such as multi-probe datasondes, compliance with the applicable criteria will be determined at the regulatory depth established for dissolved oxygen measurements. This depth is five feet in water that is ten feet or more in total depth or is at mid-depth in water that is less than ten feet in total depth. Hourly measurements of dissolved oxygen, temperature, and pH data collected using continuous monitoring equipment will be assessed using the same binomial distribution function used for discrete sampling of these parameters. When measurements are made more frequently than hourly, the hourly values will be calculated as the mean of the measured values within each hour.

4.8.5 *Use of Fish / Shellfish Consumption Advisories and Shellfish Growing Area Classifications*

In October 2000 EPA issued guidance to states regarding the use of fish and shellfish consumption advisories (EPA, 2000). The guidance recommended that states consider certain information when determining if designated uses were impaired, including consumption advisories for fish and shellfish and certain shellfish growing area classifications. The following is an excerpt from the EPA guidance.

> "*Certain shellfish growing area classifications should be used as part of determinations of attainment of water quality standards and listing of impaired waterbodies. Shellfish growing area classifications are developed by the National Shellfish Sanitation Program (NSSP) using water column and tissue data (where available), and information from sanitary surveys of the contributing watershed, to protect public health. The States review these NSSP classifications every three years. There are certain NSSP classifications that are not appropriate to consider, and certain data and information that should not be considered independently of the classification (unless the data and information were not used in the development or review of the classification). These instances are: "Prohibited" classifications set as a precautionary measure due to the proximity of wastewater treatment discharges, or absence of a required sanitary survey; shellfish tissue pathogen data (which can fluctuate based on short-term conditions not representative of general water quality); or short-term actions to place growing areas in the closed status."*

The ADPH, Seafood Program, regulates shellfish harvesting in coastal waters of Alabama. The ADPH has designated four areas in Mobile Bay and adjacent coastal waters and classifies shellfish harvesting waters within these areas as "conditionally approved", "conditionally restricted", "restricted", "unclassified", and "prohibited". Area I waters comprise most of Mobile Bay south of East Fowl River and west of Bon Secour Bay and including Mississippi Sound. Area II waters include Grand Bay and Portersville Bay with exceptions near wastewater discharges. Area III waters are located in Bon Secour Bay and east of a line drawn from Fort Morgan to Mullet Point. Area IV is located in approximately the northern half of Mobile Bay.

Most of the waters designated as Shellfish Harvesting are classified as "conditionally approved". These harvesting areas are closed when the river stage on the Mobile River at Barry Steam Plant in Bucks, Alabama reaches a river stage of 8.0 feet above mean sea level and a public notice announcing the closure is published. These procedures are described in detail in the Conditional Area Management Plan developed by ADPH (ADPH, 2001). and the 2007 Comprehensive Sanitary Survey of Alabama's Growing Waters in Mobile and Baldwin Counties Area I, Area II and Area III (ADPH, 2008) which can be found at http://adph.org/foodsafety/index.asp?ID=1141

For purposes of making use support decisions relative to the SH designated use, the Department will consider "conditionally approved" and "conditionally restricted" waters as impaired and will include these water in Category 5. In "prohibited" and "unclassified" waters the Department will use water column bacteria sampling results to determine use support. When the applicable bacteria criterion is exceeded in more than 10% of the samples as determined using the binomial distribution function and Table 2, these waters will be included in Category 5.

The October 2000 EPA guidance concerning the use of fish and shellfish consumption advisories for protection of human health also recommended that state's include waters in Category 5 when there was a consumption advisory which suggested either limited consumption or no consumption of fish due to the presence of toxics in fish tissue. The following is an excerpt from the guidance.

> *"When deciding whether to identify a water as impaired, States, Territories, and authorized Tribes need to determine whether there are impairments of designated uses and narrative criteria, as well as the numeric criteria. Although the CWA does not explicitly direct the use of fish and shellfish consumption advisories or NSSP classifications to determine attainment of water quality standards, States, Territories, and authorized Tribes are required to consider all existing and readily available data and information to identify impaired waterbodies on their section 303(d) lists. For purposes of determining whether a waterbody is impaired and should be included on a section 303(d) list, EPA considers a fish or shellfish consumption advisory, a NSSP classification, and the supporting data, to be existing and readily available data and information that demonstrates non-attainment of a section 101(a) "fishable" use when:*
>
> > *1. the advisory is based on fish and shellfish tissue data,*
> > *2. a lower than "Approved" NSSP classification is based on water column and shellfish tissue data (and this is not a precautionary "Prohibited" classification or the state water quality standard does not identify lower than "Approved" as attainment of the standard)*
> > *3. the data are collected from the specific waterbody in question and*
> > *4. the risk assessment parameters (e.g., toxicity, risk level, exposure duration and consumption rate) of the advisory or classification are cumulatively equal to or less protective than those in the State, Territory, or authorized Tribal water quality standards."*

This listing and assessment methodology will consider fish consumption advisories issued by the ADPH as an indication of impaired use in all State waters. However, there may be circumstances under which these waters could be placed in a category other than Category 5. For example, it may be appropriate to place certain waters in Category 4b when activities are ongoing under another restoration program with the goal of restoring the water to fully supporting its uses. These decisions will be made on a case-by-case basis and documented in the ADB.

4.8.6 <u>Use of Biological Assessments</u>

Biological assessments compare data from biological surveys and other direct measurements of resident biota in surface waters to established biological criteria and assess the waterbody's degree of use support. Alabama has not established numeric biological criteria (except in the case of chlorophyll *a* in reservoirs) and, as a result, biological data are used as a means of applying narrative criteria contained in Alabama's water quality criteria document (ADEM Administrative Code Chapter 335-6-10). ADEM has been gathering biological assessment data for streams across Alabama since the 1970s. In the early 1990's the Department began assessing the biological health of wadeable streams using the USEPA Rapid Bioassessment Protocol (Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT)) and the Intensive Wadeable Multi-habitat Bioassessment (Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I)). USEPA has offered the following technical considerations when using biological data to make use support determinations.

- A waterbody's use support should be based on a comparison of site-specific biological data to a reference condition established for the ecoregion in which the waterbody is located.
- A multimetric approach to bioassessment is recommended.
- The use of a standardized index or sampling period is recommended.
- Standard operation procedures and a quality assurance program should be established.
- A determination of the performance characteristics of the bioassessment methodology is suggested.
- An identification of the appropriate number of sampling sites that are representative of the waterbody is also recommended.

Biological assessment data will be used in combination with other surface water quality data or information to arrive at an overall use support determination. However, EPA recommends that biological data should be weighted more heavily than other types of data when integrating information to make use support determinations since biological data provide a more direct indication of the condition of the aquatic community. Alabama's assessment methodology has weighted biological data more heavily by requiring at least one biological assessment for certain use classifications and stream types and by reducing the number of water quality samples needed when a biological assessment is available. However, the biological assessment must include a habitat assessment conducted at the time of the biological sampling. When available, periphyton assessment data and algal growth potential tests results will be used to refine stressor identification.

In this methodology, several bioassessment methodologies can be used to assess aquatic life use support. Two Level III Wadeable Multi-habitat Bioassessments – EPT Families (WMB-EPT) are required since these assessments are intended for screening purposes only. A combination of one WMB-EPT assessment and one fish IBI assessment is sufficient but only in the Cahaba and Black Warrior River basins since the metric ranges for the fish IBI have been calibrated only to the Cahaba and Black Warrior River basins. Alternatively, one Level IV Intensive Wadeable Multi-habitat Bioassessment (WMB-I) would be sufficient for assessing aquatic life use support. These methodologies are described in detail in the Department's SOPs referenced earlier. Occasionally it may be appropriate to place a water in Category 5 based on a single screening level assessment (WMB-EPT) when there is a clear indication of impairment and the cause is readily apparent. In addition, when assessment results vary significantly between the macroinvertebrate and fish communities, it may be appropriate to place the waterbody in Category 5 when there is an indication of the cause for the discrepancy. These decisions will be made on a case-by-case basis in consultation with the biologist(s) responsible for conducting the assessment and will be documented in the ADB.

A multi-agency, multi-year effort is currently underway to develop fish IBI metrics for all of Alabama's river basins. As the effort progresses across the state, fish IBI assessments will be incorporated into the use support assessment process. The project is expected be completed by 2011, provided that sufficient funding is available. As other fish IBI metrics are developed, finalized and become available they will be incorporated into the Alabama's Water Quality and Assessment Methodology.

4.8.7 _Use of Data Collected by Others_

Data collected by other agencies, industry or industry groups, neighboring states, and watershed groups will be considered and evaluated provided the data meet the minimum data requirements specified for each designated use and comply with the quality control and quality assurance requirements discussed in Section 4.9. Examples of other agencies and groups collecting water quality data in Alabama include, but are not limited to, the following agencies and groups:

- USGS
- USEPA
- Tennessee Valley Authority
- National Oceanic and Atmospheric Administration
- United States Fish and Wildlife Service
- Mobile Bay National Estuary Program
- Dauphin Island Sea Lab
- Geological Survey of Alabama
- Natural Resources Conservation Service
- Soil and Water Conservation Districts
- Alabama Department of Conservation and Natural Resources
- Alabama Clean Water Partnership
- Alabama Department of Public Health
- Alabama Department of Transportation
- Citizen and Watershed Groups
- Industries and municipalities conducting river monitoring pursuant to NPDES or CWA Section 401 requirements

Data submitted by third parties for consideration should include documentation describing the data, including a study plan or SOP, and certification that the data were (or were not) collected consistent with the requirements presented in this methodology.

4.8.8 _Use of Bacteria Data_

Waterbody segments are sampled for bacteria either as part of a special study, routine ambient monitoring, or as part of the Department's Beach Monitoring Program. Bacteria of the E. coli group are currently used as indicators of the possible presence of pathogens in non-coastal waters. In coastal waters, bacteria of the enterococci group are used as indicators of the possible presence of pathogens. Alabama's bacteria criteria are summarized for each designated use in **Table 1**.

Appendix A

When assessing the geometric means of bacteria samples, one excursion will generally be sufficient to determine impairment as long as the total number of geometric means is less than eight. When eight or more geometric means are available for assessment, impairment will be determined using Table 2. In addition, both the geometric mean and single sample maximum criteria must be met when the number of individual samples is less than eight. For eight or more individual samples, Table 2 will be used to determine impairment based on exceedances of the single sample criterion.

Table 1
Alabama's Bacteria Criteria

	Non-Coastal Waters	Coastal Water
Outstanding Alabama Water (OAW)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 126 • Single Sample Max ≤ 235	*Enterococci (colonies/100 ml)* • Geometric Mean ≤ 35 • Single Sample Max ≤ 104
Public Water Supply (PWS)	*E. Coli (colonies/100 ml)* June through September • Geometric Mean ≤ 126 • Single Sample Max ≤ 487 October through May • Geometric Mean ≤ 548 • Single Sample Max ≤ 2507	*Enterococci (colonies/100 ml)* June through September • Geometric Mean ≤ 35 • Single Sample Max ≤ 158 October through May • Single Sample Max ≤ 275
Swimming and Other Whole Body Water-Contact Sports (S)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 126 • Single Sample Max ≤ 235	*Enterococci (colonies/100 ml)* • Geometric Mean ≤ 35 • Single Sample Max ≤ 104
Shellfish Harvesting (SH)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 126 • Single Sample Max ≤ 235	*Fecal Coliform (colonies/100 ml)* • Geometric Mean ≤ 14 • Single Sample Max ≤ 43 *Enterococci (colonies/100 ml)*[13] • Geometric Mean ≤ 35 • Single Sample Max ≤ 104
Fish and Wildlife (F&W)	*E. Coli (colonies/100 ml)* June through September • Geometric Mean ≤ 126 • Single Sample Max ≤ 487 October through May • Geometric Mean ≤ 548 • Single Sample Max ≤ 2507	*Enterococci (colonies/100 ml)* June through September • Geometric Mean ≤ 35 • Single Sample Max ≤ 158 October through May • Single Sample Max ≤ 275
Limited Warmwater Fishery (LWF)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 548 • Single Sample Max ≤ 2507	*Enterococci (colonies/100 ml)* • Single Sample Max ≤ 275
Agricultural and Industrial Water Supply (A&I)	*E. Coli (colonies/100 ml)* • Geometric Mean ≤ 700 • Single Sample Max ≤ 3200	*Enterococci (colonies/100 ml)* • Single Sample Max ≤ 500

[13] Not to exceed the limits specified in the latest edition of the *National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish: 2007 Revision*, published by the Food and Drug Administration, U.S. Department of Health and Human Services.

4.8.9 *Consideration of Stream Flow and Method Detection Limits*
During toxicant sampling in rivers or streams the measured flow must be at or above the 7Q10 value for that location. In cases where the applicable water quality criterion is less than the method detection limit (MDL) for a particular pollutant and the concentration for the pollutant is reported as less than detection (<MDL), the Department will evaluate the data consistent with EPA guidance provided in "*Guidance for Data Quality Assessment*", EPA QA/G-9, QA00 UPDATE, EPA, July 2000 and will use the approach that is appropriate for the data set.

These requirements are intended to ensure that existing water quality conditions are accurately portrayed, do not characterize transitional conditions, and that obsolete or inaccurate data are not used. In addition, the minimum data requirements may change on a case-by-case basis if pollutant sources upstream of the monitoring locations are likely. This determination will be made using information obtained from the Department's geographic information system or other databases. Failure to meet the minimum data requirements for any waterbody type will place the waterbody in Category 2.

4.9 *Quality Control / Quality Assurance Requirements*
Collection and analyses of all data (including chemical, physical, and biological) should be collected and analyzed consistent with the SOPs presented earlier. Study plans should reference the SOP appropriate for the type of data being collected and should discuss how data quality will be documented. This should include a discussion of the quality control procedures followed during sample collection and analysis. These procedures should describe the number and type of field and laboratory quality control samples for the project, if appropriate for the type of sampling being conducted, field blanks, equipment blanks, split samples, duplicate samples, the name of the laboratory performing the analyses, name of the laboratory contact person, and the number and type of laboratory quality control samples.

While the Department will consider any existing and readily available data and information, the Department reserves the right to reject data or information in making use support decisions that do not comply with the minimum data requirements presented in this document. The decision not to use certain data will be documented in the ADB. The Department applies best professional judgment when considering datasets smaller than the specified minimum data requirements. In such instances, use support decisions are made on a case-by-case basis in consideration of ancillary data and information such as watershed characteristics, known pollutant sources, water quality trends or other environmental indicators.

4.10 *Minimum Sample Size and Allowable Number of Water Quality Criterion Exceedances*
Table 2 shows the allowable number of exceedances for various samples sizes up to 199 samples. The Department's annual sampling plans and available resources generally allow for at least eight samples per sampling location except in reservoirs where fewer samples (i.e. 3 samples) may be collected due to sample holding time and resource constraints. The number of exceedances in each range of sample sizes was calculated using the binomial distribution function. This number is the number of exceedances of a particular water quality criterion needed to say with 90% confidence that the criterion is exceeded in more than 10% of the

population represented by the available samples. This table will be used to determine the number of exceedances of Alabama numeric water quality criteria listed in ADEM Administrative Code 335-6-10 (for dissolved oxygen, temperature, turbidity, pH, and bacteria), consistent with the assessment methodology for each use discussed earlier, necessary to establish that a waterbody segment is not fully supporting its designated uses. This approach is consistent with ADEM Administrative Code 335-6-10 which recognizes that natural conditions may cause sporadic excursions of numeric water quality criteria and with EPA's 1997 305(b) guidance. For conventional water quality parameters, there must be at least eight temporally independent samples collected during the previous six-year period to be considered adequate for making use support determinations, except where fewer samples are determined to be adequate as discussed earlier. As used in this context, temporally independent means that the samples were collected at an interval appropriate to capture the expected variation in the parameter. For example, dissolved oxygen, temperature and pH measurements should capture the normal diurnal variation that occurs in the parameters and temporal independence may occur in several hours (i.e. morning versus afternoon). Measurements for turbidity and bacteria should typically be at least 24 hours apart.

It is the intent of the methodology to ensure that an adequate number of samples are available for use in the assessment process and for developing future monitoring plans. Smaller sample sizes may be appropriate in certain circumstances where there is a clear indication that exceedances of the criteria are not due to natural conditions. For example, a data set comprised of fewer than the required minimum number of samples collected monthly may be sufficient to determine that a waterbody is not supporting its use when a significant number (more than two) exceed a particular criterion. Conversely, a data set with fewer than the required minimum number of samples collected monthly may be sufficient to determine that a waterbody is fully supporting its use if none of the samples exceed any of the criteria and there is sufficient supporting information to support this conclusion (i.e. biological assessment indicates full use support). The decision to use smaller data sets for making use support decisions will be made on a case-by-case basis using best professional judgment. The basis for these decisions will be documented in the ADB.

Table 2

Minimum Number of Samples Exceeding the Numeric Criterion Necessary for Listing*

Sample Size	Number of Exceedances	Sample Size	Number of Exceedances
8 thru 11	2	97 thru 104	14
12 thru 18	3	105 thru 113	15
19 thru 25	4	114 thru 121	16
26 thru 32	5	122 thru 130	17
33 thru 40	6	131 thru 138	18
41 thru 47	7	139 thru 147	19
48 thru 55	8	148 thru 156	20
56 thru 63	9	157 thru 164	21
64 thru 71	10	165 thru 173	22
72 thru 79	11	174 thru 182	23
80 thru 88	12	183 thru 191	24
89 thru 96	13	192 thru 199	25

* - For conventional parameters, including bacteria, at the 90 percent confidence level

5.0 *Removing a Waterbody from Category 5*

Waterbodies may be removed from a 303(d) list (category 5) for various reasons, including:

- Assessment of more recent water quality data demonstrates that the waterbody is meeting all applicable water quality standards. (Move to Category 1)
- A review of the original listing decision demonstrates that the waterbody should not have been included in Category 5. (Move to Category 1 or Category 2)
- TMDL has been completed. (Move to Category 4a)
- Other pollution control requirements are reasonably expected to result in the attainment of the water quality standards in the near future. These requirements must be specifically applicable to the particular water quality problem. (Move to Category 4b)
- Impairment is not caused by a pollutant. (Move to Category 4c)
- Natural causes – When it can be demonstrated the exceedance of a numeric water quality criterion is due to natural conditions and not to human disturbance activities.. (Move to Category 1)

Table 3 shows the allowable number of exceedances of criteria for conventional pollutants for various sample sizes and a 90% confidence level. This table will be used to determine the number of allowable exceedances of Alabama numeric water quality criteria for pollutants listed in ADEM Administrative Code 335-6-10, with the exception of chlorophyll a criteria and the toxics criteria listed in the appendix to ADEM Administrative Code 335-6-10, for the waterbody to be removed from a 303(d) list for a specific pollutant (move to Category 1). In addition, the original basis for listing the waterbody will be considered as a part of the delisting process. Included in this evaluation will be a review of pollutant sources to determine which ones may have been removed or remediated, changes in land practices or uses, installation of new treatment facilities or best management practices, and changes in stream hydrology or morphology.

Table 3

Maximum Number of Samples Exceeding the Numeric Criterion Necessary for Delisting*

Sample Size	Number of Exceedances	Sample Size	Number of Exceedances
8 thru 21	0	104 thru 115	7
22 thru 37	1	116 thru 127	8
38 thru 51	2	128 thru 139	9
52 thru 64	3	140 thru 151	10
65 thru 77	4	152 thru 163	11
78 thru 90	5	164 thru 174	12
91 thru 103	6	175 thru 186	13

* - For conventional parameters, including bacteria, at the 90 percent confidence level

When a waterbody has been included in Category 5 due to a fish consumption advisory, the waterbody will be moved to Category 1 when subsequent fish tissue results indicate that pollutant concentrations have declined and a fish consumption advisory is no longer needed. The determination that a fish consumption advisory is no longer needed is made by the Alabama Department of Public Health.

For waters originally placed in Category 5 due to a specific toxic pollutant or specific toxic pollutants, there should be no violations of the appropriate criteria in a minimum of eight samples collected over a three-year period before the cause of impairment is removed or the water is placed in Category 1.

6.0 ***Estimating the Size of the Assessed Waterbody***

Waterbodies are assessed based on assessment units. Assessment units vary in size depending on the waterbody type, watershed characteristics, designated use, and the location of monitoring stations. Individual assessments will lie completely within a designated use or a segment with multiple designated uses. For example, an assessment unit will not be partially within one designated use and partially within a different designated use. However, assessment units may be assigned more than one designated use as listed in ADEM Administrative Code R. 335-6-11. For example, an assessment unit may have classified uses of both Fish and Wildlife and Public Water Supply provided both uses are assigned to the entire assessment unit. An assessment unit may be defined as a stream, the mainstem of a river, embayment, portion of a lake or reservoir, or a part of an estuary or coastal water.

A monitoring unit is defined as the watershed draining to, or close to, a sampling location and is made up of many assessment units (individual reaches). A monitoring unit will generally have a drainage area of more than 10 square miles and will be characterized by a predominant land use / land cover. When it is necessary to better characterize assessment units within the larger monitoring units, new monitoring units can be delineated based on the location of the additional sampling location or locations. Water quality data and information gathered at a sampling location which defines a monitoring unit will be the primary means for assigning a use support status to assessment units within the monitoring unit.

The spatial extent of each monitoring unit will be determined using information contained in the Department's Geographic Information System (GIS). Specifically, stream coverage contained within the National Hydrography Dataset (NHD) will be the basis for determining the size of assessed waters. This database of natural and constructed surface waters is a comprehensive set of digital spatial data that contains information about surface water features such as lakes, ponds, streams, rivers, springs and wells. Within the NHD, surface water features are combined to form "reaches", which provide the framework for linking water-related data to the NHD surface drainage network. These linkages enable the analysis and display of these water-related data in upstream and downstream order. Characteristics such as stream length or reservoir area can be aggregated within a monitoring unit to estimate the size of assessed waters.

7.0 ***Ranking and Prioritizing Impaired Waters***

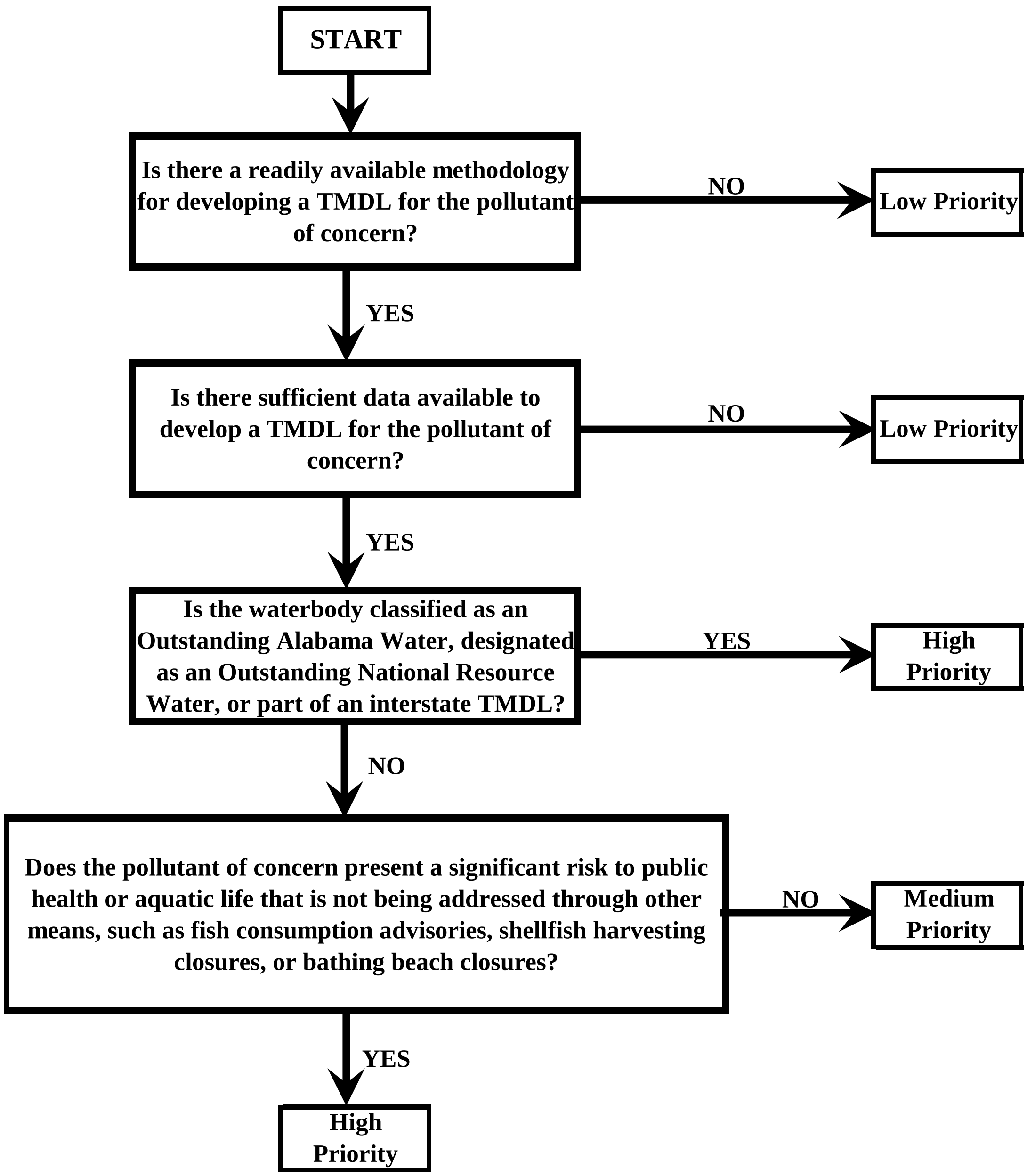
Section 303(d)(1) of the Clean Water Act requires each state to establish a priority ranking for waters it identifies on the 303(d) list (i.e. Category 5 waters) taking into account the severity of pollution and the designated uses of such waters.

The State is to establish Total Maximum Daily Loads (TMDLs) in accordance with its priority ranking strategy; however, States are given considerable flexibility in establishing their ranking method based on their particular circumstances and available resources. Alabama has implemented a basin rotation approach when it comes to monitoring waters and establishing TMDLs. In general, the Draft TMDL date follows the basin rotation monitoring schedule

because water quality data is the primary driver in the TMDL development process. See *8.0 Schedule for Assessing State Waters.*
ADEM's priority ranking strategy involves placing each waterbody/pollutant combination in one of three categories, namely "high", "medium" or "low". Typically, waters are given a "high" priority when resources are available to develop the TMDL within the next two years. For "medium" priority waters, not all resources and/or tools are available but the TMDL is expected to be developed within the next three to seven years. For "low" priority waters, resources are not readily available and the TMDL is scheduled to be developed in the next 8-12 years. **Figure 16** describes the general approach to assigning a ranking to each impaired waterbody included in Category 5. However, the TMDL development schedule may not always consider only the ranking of the impaired waterbody. The following factors may also be used to determine the timing for the development of the TMDL::

- 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.

Figure 16
Alabama's TMDL Prioritization Strategy



Waters which are currently listed on the §303(d) list will have their TMDL developed within 8 to 13 years unless they become eligible for delisting. TMDLs for Category 5 waters will be developed no later than 13 years after the water is first placed in Category 5.

The Integrated Monitoring Report will include proposed schedules (both long term and annually) for the development of TMDLs.

The Department will communicate with bordering states concerning the status of shared waters. When requested, the state will provide data concerning shared waters to the adjacent state.

8.0 ***Schedule for Assessing State Waters***

The State has developed a Watershed Management Schedule and has been operating under the rotating basin plan since 1997. This schedule has the state divided into 5 river basin groups that are sampled on a five-year rotating basis. The rotating basin schedule is as follows:

River Basin Group	Year to be Monitored
Escatawpa / Mobile / Lower Tombigbee / Upper Tombigbee	2011
Black Warrior/Cahaba	2012
Chattahoochee / Chipola / Choctawhatchee / Perdido-Escambia	2013
Tennessee	2014
Alabama / Coosa / Tallapoosa	2015

The Integrated Monitoring and Assessment Report will include a comprehensive monitoring and assessment plan that describes the state's proposed schedule for the following two years. Elements of this plan include a description of the sampling approach (i.e. rotating basin and fixed ambient) and a list of the parameters to be collected (i.e. physical, chemical, and biological). The report will also include a schedule (both long term and annually) for collecting data and information for basic assessments and for TMDLs.

9.0 ***Public Participation***

The Integrated Report will combine the Water Quality Inventory Report (§305(b)) with the Impaired Waterbodies (§303(d)) listing. Category 5 in the Integrated Report is considered the Impaired Waterbodies list. The remaining categories are considered the Water Quality Inventory. This methodology lays out the framework for assessing data and determining which of the five categories the waterbody will be assigned. The entire Integrated List will follow the same public process as the §303(d) listing but Categories 1 through 4 and the monitoring schedule will be provided for informational purposes only since these schedules are subject to change as resources allow.

The Department will solicit the submittal of data and information for use in developing the Integrated Report. The public notice requesting data will be published in four major newspapers in the state and on the Department's Website. The time period for submitting data will be specified in the public notice. The data must be received by the Department by October 31 in the year prior to the report being due to EPA. Data submitted after the specified period will be considered in the development of subsequent Integrated Reports. The Department reviews all existing and readily available data and is committed to using only data with acceptable quality assurance to develop the Integrated Report. Only electronic data or data available in published reports are considered “readily available”. Typically, the Department uses Microsoft databases (i.e., Excel, Access) or the Water Resources Database (WRDB) for database management and retrieval.

The Department will publish notice of the availability of the Integrated Water Quality Monitoring and Assessment Methodology and Draft Integrated Report in four major newspapers of general circulation throughout the State and on the Department Website. Adjacent states, federal agencies and interstate agencies shall also be noticed as necessary. The Department will coordinate with neighboring states during the development of the Integrated Report, as needed. The comment period on a proposed Category 5 (§303(d)) list will be a minimum of 30 days.

The Integrated Report, which will include the integrated list, expected monitoring schedules, TMDL schedules, as well as any other information usually included in the §305(b) Report, will be submitted to the USEPA as required by §305(b) of the Clean Water Act. The Department will post the availability of the Integrated Report on its web page at that time.

10.0 References

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O'Neil, P.E., and Shepard, T.E., 2011, Calibration of the index of biotic integrity for the Ridge and Valley/Piedmont ichthyoregion in Alabama: Alabama Geological Survey Open-File Report 1109, 140 p.

Appendix B

Categorization of Alabama Waters

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
Category 1 - Rivers and Streams									
AL03150201-0104-301	Three Mile Branch	Alabama	F&W	Galbraith Mill Creek	Lower Wetumpka Rd	1	0.24	miles	
AL03150201-0201-100	Bridge Creek	Alabama	F&W	Autauga Creek	Its source	1	12.03	miles	
AL03150201-0203-101	Autauga Creek	Alabama	F&W	Alabama River	Matthews Branch	1	7.28	miles	
AL03150201-0203-102	Autauga Creek	Alabama	S/F&W	Matthews Branch	Its source	1	26.87	miles	
AL03150201-0602-100	White Water Creek	Alabama	F&W	Swift Creek	Its source	1	9.40	miles	
AL03150201-0603-100	Swift Creek	Alabama	S/F&W	Alabama River	Its source	1	41.03	miles	
AL03150201-0807-100	Big Swamp Creek	Alabama	S/F&W	Alabama River	Its source	1	56.45	miles	
AL03150201-1001-100	Benson Creek	Alabama	F&W	Mulberry Creek	Its source	1	11.38	miles	
AL03150201-1005-100	Buck Creek	Alabama	F&W	Mulberry Creek	Its source	1	21.39	miles	
AL03150201-1006-101	Mulberry Creek	Alabama	S/F&W	Alabama River	Harris Branch	1	22.07	miles	
AL03150201-1006-102	Mulberry Creek	Alabama	F&W	Harris Branch	Its source	1	23.95	miles	
AL03150201-1101-103	Valley Creek	Alabama	S/F&W	Valley Creek Lake	Its source	1	6.07	miles	
AL03150201-1102-101	Valley Creek	Alabama	F&W	Alabama River	Selma-Summerfield Road	1	7.27	miles	
AL03150201-1102-102	Valley Creek	Alabama	S/F&W	Selma-Summerfield Road	Valley Creek Lake	1	15.22	miles	
AL03150201-1203-100	Soapstone Creek	Alabama	F&W	Alabama River	Its source	1	17.52	miles	
AL03150201-1207-101	Alabama River	Alabama	S/F&W	Cahaba River	Six Mile Creek	1	5.36	miles	
AL03150201-1207-102	Alabama River	Alabama	F&W	Six Mile Creek	Robert F. Henry Lock and Dam	1	42.43	miles	
AL03150203-0106-110	Chaney Creek	Alabama	F&W	Bogue Chitto Creek	Its source	1	17.17	miles	
AL03150203-0203-100	Wolf Creek	Alabama	F&W	Cedar Creek	Its source	1	21.94	miles	
AL03150203-0209-100	Cedar Creek	Alabama	S/F&W	Alabama River	Its source	1	63.33	miles	
AL03150203-0404-100	Turkey Creek	Alabama	F&W	Pine Barren Creek	Its source	1	18.84	miles	
AL03150203-0408-100	Pine Barren Creek	Alabama	S/F&W	Alabama River	Its source	1	68.71	miles	
AL03150203-0505-102	Alabama River	Alabama	S/F&W	Chilatchee Creek	Cahaba River	1	29.96	miles	
AL03150203-0605-200	Cub Creek	Alabama	F&W	Beaver Creek	Its source	1	12.94	miles	
AL03150204-0101-100	Tallatchee Creek	Alabama	F&W	Alabama River	Its source	1	23.94	miles	
AL03150204-0104-100	Silver Creek	Alabama	F&W	Alabama River	Its source	1	13.42	miles	
AL03150204-0205-210	Bear Creek	Alabama	F&W	Big Flat Creek	Its source	1	8.75	miles	
AL03150204-0206-500	Holly Mill Creek	Alabama	F&W	Big Flat Creek	Its source	1	9.05	miles	
AL03150204-0302-200	Walkers Creek	Alabama	F&W	Limestone Creek	Its source	1	8.24	miles	
AL03150204-0302-300	Brushy Creek	Alabama	F&W	Limestone Creek	Its source	1	8.08	miles	
AL03150204-0705-100	Alabama River	Alabama	F&W	Mobile River	Pigeon Creek	1	68.50	miles	
AL03160109-0202-110	Marriott Creek	Black Warrior	F&W	Mulberry Fork	Its source	1	14.10	miles	
AL03160109-0205-500	Rice Creek	Black Warrior	F&W	Mulberry Fork	Its source	1	8.60	miles	
AL03160109-0401-100	Mill Creek	Black Warrior	F&W	Lost Creek	Its source	1	11.44	miles	
AL03160109-0601-101	Cane Creek	Black Warrior	LWF	Mulberry Fork	Town Creek	1	10.58	miles	
AL03160109-0601-901	Town Creek	Black Warrior	LWF	Lost Creek	100 yards upstream of Southern Railway crossing	1	1.10	miles	
AL03160110-0101-100	Borden Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	16.61	miles	ONRW
AL03160110-0101-116	unnamed tributaries to Borden Creek	Black Warrior	F&W	Borden Creek	Their source	1	23.35	miles	ONRW
AL03160110-0101-210	Braziel Creek	Black Warrior	F&W	Borden Creek	Its source	1	5.69	miles	ONRW
AL03160110-0101-215	unnamed tributaries to Braziel Creek	Black Warrior	F&W	Braziel Creek	Their source	1	13.77	miles	ONRW
AL03160110-0101-310	Flannagin Creek	Black Warrior	F&W	Borden Creek	Its source	1	9.99	miles	ONRW
AL03160110-0101-315	unnamed tributaries to Flannagin Creek	Black Warrior	F&W	Flannagin Creek	Their source	1	15.49	miles	ONRW
AL03160110-0101-410	Horse Creek	Black Warrior	F&W	Borden Creek	Its source	1	1.76	miles	ONRW
AL03160110-0101-415	unnamed tributaries to Horse Creek	Black Warrior	F&W	Horse Creek	Their source	1	2.30	miles	ONRW
AL03160110-0101-510	Montgomery Creek	Black Warrior	F&W	Borden Creek	Its source	1	3.99	miles	ONRW
AL03160110-0101-515	unnamed tributaries to Montgomery Creek	Black Warrior	F&W	Montgomery Creek	Their source	1	8.99	miles	ONRW
AL03160110-0101-610	Hagood Creek	Black Warrior	F&W	Braziel Creek	Its source	1	4.23	miles	ONRW
AL03160110-0101-615	unnamed tributaries to Hagood Creek	Black Warrior	F&W	Hagood Creek	Their source	1	7.57	miles	ONRW
AL03160110-0101-710	Dry Creek	Black Warrior	F&W	Flannagin Creek	Its source	1	2.17	miles	ONRW
AL03160110-0101-715	unnamed tributaries to Dry Creek	Black Warrior	F&W	Dry Creek	Their source	1	2.80	miles	ONRW

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160110-0102-110	Parker Branch	Black Warrior	F&W	Hubbard Creek	Its source	1	3.82	miles	ONRW
AL03160110-0102-114	unnamed tributaries to Parker Branch	Black Warrior	F&W	Parker Branch	Their source	1	3.35	miles	ONRW
AL03160110-0102-115	unnamed tributaries to Sipsey Fork	Black Warrior	F&W	Sipsey Fork	Their source	1	9.69	miles	ONRW
AL03160110-0102-120	Whitman Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	3.73	miles	ONRW
AL03160110-0102-125	unnamed tributaries to Whitman Creek	Black Warrior	F&W	Whitman Creek	Their source	1	4.53	miles	ONRW
AL03160110-0102-130	Maxwell Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	2.02	miles	ONRW
AL03160110-0102-135	unnamed tributaries to Maxwell Creek	Black Warrior	F&W	Maxwell Creek	Their source	1	1.55	miles	ONRW
AL03160110-0102-140	Basin Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	2.81	miles	ONRW
AL03160110-0102-145	unnamed tributaries to Basin Creek	Black Warrior	F&W	Basin Creek	Their source	1	4.39	miles	ONRW
AL03160110-0102-150	Dunn Branch	Black Warrior	F&W	Maxwell Creek	Its source	1	1.33	miles	ONRW
AL03160110-0102-160	Natural Well Branch	Black Warrior	F&W	Maxwell Creek	Its source	1	1.45	miles	ONRW
AL03160110-0102-165	unnamed tributary to Natural Well Branch	Black Warrior	F&W	Natural Well Branch	Its source	1	0.60	miles	ONRW
AL03160110-0102-170	White Oak Branch	Black Warrior	F&W	Thompson Creek	Its source	1	1.69	miles	ONRW
AL03160110-0102-175	unnamed tributaries to White Oak Branch	Black Warrior	F&W	White Oak Branch	Their source	1	0.61	miles	ONRW
AL03160110-0102-180	Wolf Pen Branch	Black Warrior	F&W	Sipsey Fork	Its source	1	1.00	miles	ONRW
AL03160110-0102-190	Ugly Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	3.05	miles	ONRW
AL03160110-0102-195	unnamed tributaries to Ugly Creek	Black Warrior	F&W	Ugly Creek	Their source	1	4.46	miles	ONRW
AL03160110-0102-210	Fall Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	2.06	miles	ONRW
AL03160110-0102-215	unnamed tributaries to Fall Creek	Black Warrior	F&W	Fall Creek	Their source	1	0.70	miles	ONRW
AL03160110-0102-310	Bee Branch	Black Warrior	F&W	Sipsey Fork	Its source	1	2.09	miles	ONRW
AL03160110-0102-315	unnamed tributaries to Bee Branch	Black Warrior	F&W	Bee Branch	Their source	1	2.95	miles	ONRW
AL03160110-0102-410	Thompson Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	8.59	miles	ONRW
AL03160110-0102-415	unnamed tributaries to Thompson Creek	Black Warrior	F&W	Thompson Creek	Their source	1	15.29	miles	ONRW
AL03160110-0102-510	Hubbard Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	6.59	miles	ONRW
AL03160110-0102-515	unnamed tributaries to Hubbard Creek	Black Warrior	F&W	Hubbard Creek	Their source	1	5.30	miles	ONRW
AL03160110-0102-610	Tedford Creek	Black Warrior	F&W	Thompson Creek	Its source	1	3.68	miles	ONRW
AL03160110-0102-615	unnamed tributaries to Tedford Creek	Black Warrior	F&W	Tedford Creek	Their source	1	10.40	miles	ONRW
AL03160110-0102-710	Mattox Creek	Black Warrior	F&W	Thompson Creek	Its source	1	3.26	miles	ONRW
AL03160110-0102-715	unnamed tributaries to Mattox Creek	Black Warrior	F&W	Mattox Creek	Their source	1	7.73	miles	ONRW
AL03160110-0102-800	Ross Branch	Black Warrior	F&W	Tedford Creek	Its source	1	2.06	miles	ONRW
AL03160110-0102-805	unnamed tributaries to Ross Branch	Black Warrior	F&W	Ross Branch	Their source	1	2.07	miles	ONRW
AL03160110-0102-900	Quillan Creek	Black Warrior	F&W	Hubbard Creek	Its source	1	3.77	miles	ONRW
AL03160110-0102-905	unnamed tributaries to Quillan Creek	Black Warrior	F&W	Quillan Creek	Their source	1	6.68	miles	ONRW
AL03160110-0103-105	unnamed tributaries to Sipsey Fork	Black Warrior	F&W	Sipsey Fork	Their source	1	28.32	miles	ONRW
AL03160110-0103-200	Payne Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	3.89	miles	ONRW
AL03160110-0103-205	unnamed tributaries to Payne Creek	Black Warrior	F&W	Payne Creek	Their source	1	6.11	miles	ONRW
AL03160110-0103-300	Caney Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	4.66	miles	ONRW
AL03160110-0103-305	unnamed tributaries to Caney Creek	Black Warrior	F&W	Caney Creek	Their source	1	10.21	miles	ONRW
AL03160110-0103-400	Hurricane Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	2.29	miles	ONRW
AL03160110-0103-405	unnamed tributaries to Hurricane Creek	Black Warrior	F&W	Hurricane Creek	Their source	1	2.56	miles	ONRW
AL03160110-0103-500	Davis Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	2.83	miles	ONRW
AL03160110-0103-505	unnamed tributaries to Davis Creek	Black Warrior	F&W	Davis Creek	Their source	1	8.94	miles	ONRW
AL03160110-0103-600	North Fork Caney Creek	Black Warrior	F&W	Caney Creek	Its source	1	6.38	miles	ONRW
AL03160110-0103-605	unnamed tributaries to North Fork Caney Creek	Black Warrior	F&W	North Fork Caney Creek	Their source	1	19.65	miles	ONRW
AL03160110-0103-700	South Fork Caney Creek	Black Warrior	F&W	Caney Creek	Its source	1	5.04	miles	ONRW
AL03160110-0103-705	unnamed tributaries to South Fork Caney Creek	Black Warrior	F&W	South Fork Caney Creek	Their source	1	8.69	miles	ONRW
AL03160110-0103-800	Lloyds Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	1.11	miles	ONRW
AL03160110-0103-805	unnamed tributaries to Lloyds Creek	Black Warrior	F&W	Lloyds Creek	Their source	1	0.62	miles	ONRW
AL03160110-0103-900	Sweetwater Creek	Black Warrior	F&W	Caney Creek	Its source	1	1.23	miles	ONRW
AL03160110-0103-905	unnamed tributaries to Sweetwater Creek	Black Warrior	F&W	Sweetwater Creek	Their source	1	0.70	miles	ONRW
AL03160110-0104-102	Sipsey Fork	Black Warrior	F&W	Grindstone Creek	Sandy Creek	1	0.89	miles	
AL03160110-0104-103	Sipsey Fork	Black Warrior	F&W	Sandy Creek	Its source	1	21.23	miles	ONRW
AL03160110-0104-500	Sandy Creek	Black Warrior	F&W	Sipsey Fork	Its source	1	10.83	miles	
AL03160110-0201-200	Rush Creek	Black Warrior	F&W	Brushy Creek	Its source	1	9.06	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160110-0202-200	Capsey Creek	Black Warrior	F&W	Brushy Creek	Its source	1	13.47	miles	
AL03160110-0203-102	Brushy Creek	Black Warrior	PWS/F&W	Lake Lewis Smith	Highway 278	1	1.13	miles	
AL03160110-0203-110	Inman Creek	Black Warrior	F&W	Brushy Creek	Its source	1	5.79	miles	
AL03160110-0402-100	Rock Creek	Black Warrior	F&W	Blevens Creek	Its source	1	14.43	miles	
AL03160110-0407-201	White Oak Creek	Black Warrior	F&W	Rock Creek	end of embayment	1	3.21	miles	
AL03160110-0407-202	White Oak Creek	Black Warrior	F&W	Lake Lewis Smith	Its source	1	7.72	miles	
AL03160110-0507-101	Sipsey Fork	Black Warrior	PWS/F&W	Mulberry Fork	Lewis Smith Dam	1	13.92	miles	
AL03160111-0202-102	Locust Fork	Black Warrior	F&W	Blount County Road 30	Its source	1	42.64	miles	
AL03160111-0204-102	Blackburn Fork	Black Warrior	PWS	Inland Lake	Highland Lake Dam	1	3.33	miles	
AL03160111-0204-104	Blackburn Fork	Black Warrior	PWS	Highland Lake	Its source	1	6.42	miles	
AL03160111-0206-101	Calvert Prong	Black Warrior	F&W	Little Warrior River	Whited Creek	1	13.05	miles	
AL03160111-0206-102	Calvert Prong	Black Warrior	PWS	Whited Creek	Its source	1	14.30	miles	
AL03160111-0207-100	Little Warrior River	Black Warrior	F&W	Locust Fork	Its source	1	6.98	miles	
AL03160111-0207-300	Blackburn Fork	Black Warrior	F&W	Little Warrior River	Inland Lake Dam	1	11.63	miles	
AL03160111-0207-900	Hendrick Mill Branch	Black Warrior	F&W	Blackburn Fork	Its source	1	3.91	miles	
AL03160111-0304-100	Gurley Creek	Black Warrior	F&W	Locust Fork	Its source	1	23.07	miles	
AL03160111-0411-100	Short Creek	Black Warrior	F&W	Locust Fork	Its source	1	9.34	miles	
AL03160112-0301-100	Blue Creek	Black Warrior	F&W	Black Warrior River	Its source	1	18.49	miles	
AL03160112-0404-100	Tyro Creek	Black Warrior	F&W	North River	Its source	1	12.67	miles	
AL03160112-0406-100	Bear Creek	Black Warrior	F&W	North River	Its source	1	11.12	miles	
AL03160112-0409-100	Barbee Creek	Black Warrior	F&W	Binion Creek	Its source	1	10.29	miles	
AL03160112-0410-100	Binion Creek	Black Warrior	F&W	North River	Its source	1	18.07	miles	
AL03160112-0501-103	Yellow Creek	Black Warrior	PWS	Little Yellow Creek	Its source	1	10.47	miles	
AL03160113-0103-100	South Sandy Creek	Black Warrior	F&W	Big Sandy Creek	Its source	1	14.86	miles	
AL03160113-0401-103	Fivemile Creek	Black Warrior	F&W	Payne Lake	Its source	1	5.04	miles	
AL03150202-0103-101	Little Cahaba River	Cahaba	PWS	Cahaba River	Lake Purdy dam	1	4.82	miles	
AL03150202-0103-103	Little Cahaba River	Cahaba	F&W	Head of Lake Purdy	Its source	1	13.75	miles	
AL03150202-0203-112	Buck Creek	Cahaba	LWF	Cahaba Valley Creek	Shelby County Road 44	1	6.02	miles	
AL03150202-0204-800	Little Shades Creek	Cahaba	F&W	Cahaba River	Its source	1	7.40	miles	
AL03150202-0205-100	Piney Woods Creek	Cahaba	F&W	Cahaba River	Its source	1	7.64	miles	
AL03150202-0302-101	Mud Creek	Cahaba	F&W	Shades Creek	Tannehill Iron Works	1	3.68	miles	
AL03150202-0403-200	Mayberry Creek	Cahaba	F&W	Shoal Creek	Its source	1	8.51	miles	
AL03150202-0405-110	Little Cahaba River	Cahaba	OAW/F&W	Cahaba River	Its source	1	16.54	miles	
AL03150202-0405-200	Fourmile Creek	Cahaba	F&W	Little Cahaba River	Its source	1	5.64	miles	
AL03150202-0603-200	Goose Creek	Cahaba	F&W	Cahaba River	Its source	1	7.67	miles	
AL03150202-0703-400	Silver Creek	Cahaba	F&W	Cahaba River	Its source	1	3.76	miles	
AL03150202-0802-700	Holsombech Creek	Cahaba	F&W	Oakmulgee Creek	Its source	1	5.55	miles	
AL03150202-0804-100	Little Oakmulgee Creek	Cahaba	S	Oakmulgee Creek	Its source	1	18.69	miles	
AL03150202-0902-100	Cahaba River	Cahaba	OAW/S	Alabama River	Alabama Highway 82	1	89.50	miles	
AL03130002-0806-102	Wehadkee Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	1	24.66	miles	
AL03130002-0901-100	Wells Creek	Chattahoochee	F&W	Oseligee Creek	Its source	1	12.60	miles	
AL03130002-0902-200	Finley Creek	Chattahoochee	F&W	Oseligee Creek	Its source	1	4.72	miles	
AL03130002-0903-400	Barrow Creek	Chattahoochee	F&W	Oseligee Creek	Its source	1	7.54	miles	
AL03130002-0908-101	Chattahoochee River	Chattahoochee	F&W	Johnson Island	West Point Manufacturing Company water supply intake at Lanett	1	12.56	miles	
AL03130002-0908-102	Chattahoochee River	Chattahoochee	PWS	West Point Manufacturing Company water supply intake at Lanett	West Point Dam	1	4.20	miles	
AL03130002-1104-100	Wildcat Creek	Chattahoochee	F&W	Osanippa Creek	Its source	1	7.15	miles	
AL03130002-1104-200	Snapper Creek	Chattahoochee	F&W	Wildcat Creek	Its source	1	13.10	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03130002-1105-100	Osanippa Creek	Chattahoochee	F&W	Chattahoochee River	Its source	1	29.20	miles	
AL03130002-1108-100	Halawakee Creek	Chattahoochee	PWS/F&W	Chattahoochee River	Three miles upstream of County Road 79	1	8.53	miles	
AL03130003-0502-110	Adams Branch	Chattahoochee	F&W	Uchee Creek	Its source	1	6.62	miles	
AL03130003-0803-102	Hatchechubbee Creek	Chattahoochee	F&W	Russell County Highway 4	Its source	1	17.12	miles	
AL03130003-0804-100	Hatchechubbee Creek	Chattahoochee	S/F&W	Chattahoochee River	Russell County Highway 4	1	14.79	miles	
AL03130003-1003-100	Middle Fork of Cowikee Creek	Chattahoochee	S/F&W	North Fork of Cowikee Creek	Its source	1	48.33	miles	
AL03130003-1204-100	South Fork of Cowikee Creek	Chattahoochee	S/F&W	Cowikee Creek	Its source	1	32.51	miles	
AL03130003-1205-200	North Fork of Cowikee Creek	Chattahoochee	F&W	Cowikee Creek	Its source	1	43.85	miles	
AL03130003-1304-100	Leak Creek	Chattahoochee	F&W	Barbour Creek	Its source	1	11.02	miles	
AL03130004-0104-100	McRae Mill Creek	Chattahoochee	F&W	Chattahoochee River	Its source	1	7.62	miles	
AL03130004-0602-201	Poplar Spring Branch	Chattahoochee	F&W	Omusee Creek	Ross Clark Circle	1	2.13	miles	
AL03130004-0701-100	Cedar Creek	Chattahoochee	F&W	Chattahoochee River	Its source	1	11.51	miles	
AL03140201-0207-110	East Fork Choctawhatchee River	Choctawhatchee	S/F&W	Blackwood Creek	Its source	1	47.03	miles	
AL03140201-0208-100	East Fork Choctawhatchee River	Choctawhatchee	F&W	Choctawhatchee River	Blackwood Creek	1	7.34	miles	
AL03140201-0208-300	Seabes Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	1	7.16	miles	
AL03140201-0304-110	Judy Creek	Choctawhatchee	F&W	West Fork Choctawhatchee River	Its source	1	23.64	miles	
AL03140201-0502-110	Bear Creek	Choctawhatchee	F&W	Little Choctawhatchee River	Its source	1	11.41	miles	
AL03140202-0205-300	Dry Creek	Choctawhatchee	F&W	Pea River	Its source	1	6.29	miles	
AL03140202-0401-101	Walnut Creek	Choctawhatchee	F&W	Whitewater Creek	Pike County Road 3304	1	3.58	miles	
AL03140202-0401-103	Walnut Creek	Choctawhatchee	F&W	US Highway 231	Its source	1	6.14	miles	
AL03140202-0407-100	Big Creek	Choctawhatchee	F&W	Whitewater Creek	Its source	1	26.05	miles	
AL03140202-0409-100	Whitewater Creek	Choctawhatchee	F&W	Pea River	Its source	1	41.95	miles	
AL03140202-0503-100	Clearwater Creek	Choctawhatchee	F&W	Pea River	Its source	1	10.07	miles	
AL03150105-0206-600	UT to Ballplay Creek	Coosa	F&W	Ballplay Creek	Its source	1	5.29	miles	
AL03150105-0502-100	Mills Creek	Coosa	F&W	Chattooga River	Alabama-Georgia state line	1	21.59	miles	
AL03150105-0702-101	Middle Fork Little River	Coosa	PWS/S/F&W	East Fork Little River	Alabama-Georgia state line	1	2.44	miles	ONRW
AL03150105-0702-105	unnamed tributaries to Middle Fork Little River	Coosa	PWS/S/F&W	Middle Fork Little River	Their source	1	2.91	miles	ONRW
AL03150105-0702-200	Brush Creek	Coosa	PWS/S/F&W	Middle Fork Little River	Its source	1	3.04	miles	ONRW
AL03150105-0702-205	unnamed tributaries to Brush Creek	Coosa	PWS/S/F&W	Brush Creek	Their source	1	5.79	miles	ONRW
AL03150105-0702-300	Anna Branch	Coosa	PWS/S/F&W	Middle Fork Little River	Its source	1	2.18	miles	ONRW
AL03150105-0702-305	unnamed tributaries to Anna Branch	Coosa	PWS/S/F&W	Anna Branch	Their source	1	1.62	miles	ONRW
AL03150105-0702-400	Blalock Branch	Coosa	PWS/S/F&W	Anna Branch	Its source	1	3.46	miles	ONRW
AL03150105-0702-405	unnamed tributaries to Blalock Branch	Coosa	PWS/S/F&W	Blalock Branch	Their source	1	2.15	miles	ONRW
AL03150105-0702-500	Stillhouse Branch	Coosa	PWS/S/F&W	Blalock Branch	Its source	1	1.09	miles	ONRW
AL03150105-0702-505	unnamed tributaries to Stillhouse Branch	Coosa	PWS/S/F&W	Stillhouse Branch	Their source	1	0.79	miles	ONRW
AL03150105-0703-201	East Fork West Fork Little River	Coosa	PWS/S/F&W	West Fork Little River	Alabama-Georgia state line	1	0.47	miles	ONRW
AL03150105-0704-100	West Fork Little River	Coosa	PWS/S/F&W	Little River	Alabama-Georgia state line	1	18.87	miles	ONRW
AL03150105-0704-105	unnamed tributaries to West Fork Little River	Coosa	PWS/S/F&W	West Fork Little River	Their source	1	41.51	miles	ONRW
AL03150105-0704-200	Straight Creek	Coosa	PWS/S/F&W	West Fork Little River	Its source	1	4.45	miles	ONRW
AL03150105-0704-205	unnamed tributaries to Straight Creek	Coosa	PWS/S/F&W	Straight Creek	Their source	1	3.77	miles	ONRW

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150105-0704-300	Sharp Branch	Coosa	PWS/S/F&W	West Fork Little River	Its source	1	1.39	miles	ONRW
AL03150105-0704-305	unnamed tributaries to Sharp Branch	Coosa	PWS/S/F&W	Sharp Branch	Its source	1	0.67	miles	ONRW
AL03150105-0704-400	Seymour Branch	Coosa	PWS/S/F&W	West Fork Little River	Its source	1	2.48	miles	ONRW
AL03150105-0705-110	East Fork Little River	Coosa	PWS/S/F&W	Little River	Its source	1	9.55	miles	ONRW
AL03150105-0705-115	unnamed tributaries to East Fork Little River	Coosa	PWS/S/F&W	East Fork Little River	Their source	1	19.75	miles	ONRW
AL03150105-0705-210	Laurel Creek	Coosa	PWS/S/F&W	East Fork Little River	Its source	1	3.97	miles	ONRW
AL03150105-0705-215	unnamed tributaries to Laurel Creek	Coosa	PWS/S/F&W	Laurel Creek	Their source	1	4.43	miles	ONRW
AL03150105-0705-310	Gilbert Branch	Coosa	PWS/S/F&W	East Fork Little River	Its source	1	1.83	miles	ONRW
AL03150105-0705-315	unnamed tributaries to Gilbert Branch	Coosa	PWS/S/F&W	Gilbert Branch	Their source	1	1.66	miles	ONRW
AL03150105-0705-405	unnamed tributaries to Shrader Branch	Coosa	PWS/S/F&W	Shrader Branch	Their source	1	1.33	miles	ONRW
AL03150105-0705-410	Shrader Branch	Coosa	PWS/S/F&W	Laurel Creek	Its source	1	1.95	miles	ONRW
AL03150105-0705-500	Armstrong Branch	Coosa	PWS/S/F&W	Laurel Creek	Its source	1	1.75	miles	ONRW
AL03150105-0705-505	unnamed tributaries to Armstrong Branch	Coosa	PWS/S/F&W	Armstrong Branch	Their source	1	4.13	miles	ONRW
AL03150105-0801-100	Yellow Creek	Coosa	PWS/S/F&W	Little River	Its source	1	7.06	miles	ONRW
AL03150105-0801-115	unnamed tributaries to Yellow Creek	Coosa	PWS/S/F&W	Yellow Creek	Their source	1	14.96	miles	ONRW
AL03150105-0801-210	Straight Creek	Coosa	PWS/S/F&W	Yellow Creek	Its source	1	3.03	miles	ONRW
AL03150105-0801-215	unnamed tributaries to Straight Creek	Coosa	PWS/S/F&W	Straight Creek	Their source	1	4.54	miles	ONRW
AL03150105-0802-115	unnamed tributaries to Little River	Coosa	PWS/S/F&W	Little River	Their source	1	29.23	miles	ONRW
AL03150105-0802-210	Hurricane Creek	Coosa	PWS/S/F&W	Little River	Its source	1	6.67	miles	ONRW
AL03150105-0802-215	unnamed tributaries to Hurricane Creek	Coosa	PWS/S/F&W	Hurricane Creek	Their source	1	11.69	miles	ONRW
AL03150105-0803-100	Bear Creek	Coosa	PWS/S/F&W	Little River	Its source	1	8.67	miles	ONRW
AL03150105-0803-105	unnamed tributaries to Bear Creek	Coosa	PWS/S/F&W	Bear Creek	Their source	1	11.94	miles	ONRW
AL03150105-0803-200	Falls Branch	Coosa	PWS/S/F&W	Bear Creek	Its source	1	2.47	miles	ONRW
AL03150105-0803-205	unnamed tributaries to Falls Branch	Coosa	PWS/S/F&W	Falls Branch	Their source	1	1.67	miles	ONRW
AL03150105-0803-300	Hicks Creek	Coosa	PWS/S/F&W	Bear Creek	Its source	1	3.42	miles	ONRW
AL03150105-0803-305	unnamed tributaries to Hicks Creek	Coosa	PWS/S/F&W	Hicks Creek	Their source	1	2.00	miles	ONRW
AL03150105-0804-100	Johnnies Creek	Coosa	PWS/S/F&W	Little River	Its source	1	11.63	miles	ONRW
AL03150105-0804-105	unnamed tributaries to Johnnies Creek	Coosa	PWS/S/F&W	Johnnies Creek	Their source	1	24.92	miles	ONRW
AL03150105-0804-200	Camprock Creek	Coosa	PWS/S/F&W	Johnnies Creek	Its source	1	3.40	miles	ONRW
AL03150105-0804-205	unnamed tributaries to Camprock Creek	Coosa	PWS/S/F&W	Camprock Creek	Their source	1	2.65	miles	ONRW
AL03150105-0804-300	Dry Creek	Coosa	PWS/S/F&W	Johnnies Creek	Its source	1	2.37	miles	ONRW
AL03150105-0804-305	unnamed tributaries to Dry Creek	Coosa	PWS/S/F&W	Dry Creek	Their source	1	3.29	miles	ONRW
AL03150105-0805-100	Wolf Creek	Coosa	PWS/S/F&W	Little River	Its source	1	9.51	miles	ONRW
AL03150105-0805-105	unnamed tributaries to Wolf Creek	Coosa	PWS/S/F&W	Wolf Creek	Their source	1	36.20	miles	ONRW
AL03150105-0806-100	Little River	Coosa	PWS/S/F&W	Coosa River	Its source	1	22.19	miles	ONRW
AL03150105-0806-105	unnamed tributaries to Little River	Coosa	PWS/S/F&W	Little River	Their source	1	42.86	miles	ONRW
AL03150105-0806-200	Brooks Branch	Coosa	PWS/S/F&W	Little River	Its source	1	1.68	miles	ONRW
AL03150105-0806-205	unnamed tributary to Brooks Branch	Coosa	PWS/S/F&W	Brooks Branch	Its source	1	0.74	miles	ONRW
AL03150105-0901-100	South Fork Terrapin Creek	Coosa	F&W	Terrapin Creek	Its source	1	11.36	miles	
AL03150105-0905-100	Nances Creek	Coosa	F&W	Terrapin Creek	Its source	1	13.48	miles	
AL03150105-0906-102	Terrapin Creek	Coosa	PWS/F&W	US Highway 278	Calhoun County Road 70	1	3.58	miles	
AL03150105-0906-103	Terrapin Creek	Coosa	F&W	Calhoun County Road 70	Alabama-Georgia state line	1	21.07	miles	
AL03150105-0907-100	Hurricane Creek	Coosa	F&W	Terrapin Creek	Its source	1	15.85	miles	
AL03150105-0907-300	Wolf Branch	Coosa	F&W	Hurricane Creek	Its source	1	2.61	miles	
AL03150105-0909-100	Terrapin Creek	Coosa	F&W	Coosa River	US Highway 278	1	24.28	miles	
AL03150106-0101-102	Big Wills Creek	Coosa	PWS/F&W	100 yards below Allen Branch	Its source	1	7.51	miles	
AL03150106-0106-100	Little Wills Creek	Coosa	F&W	Big Wills Creek	Its source	1	21.65	miles	
AL03150106-0109-100	Big Wills Creek	Coosa	F&W	Coosa River	100 yards below Allen Branch	1	80.09	miles	
AL03150106-0304-100	Little Canoe Creek	Coosa	F&W	Big Canoe Creek	Its source	1	19.88	miles	
AL03150106-0306-100	Big Canoe Creek	Coosa	F&W	Coosa River	Its source	1	57.29	miles	
AL03150106-0501-103	Shoal Creek	Coosa	S/F&W	Whitesides Mill Lake	Highrock Lake	1	3.45	miles	
AL03150106-0501-105	Shoal Creek	Coosa	S/F&W	Highrock Lake	Sweetwater Lake	1	6.31	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150106-0501-107	Shoal Creek	Coosa	F&W	Sweetwater Lake	Its source	1	5.71	miles	
AL03150106-0501-111	Shoal Creek	Coosa	S/F&W	Choccolocco Creek	Whitesides Mill Lake	1	1.55	miles	
AL03150106-0502-700	Dry Creek	Coosa	F&W	Choccolocco Creek	Its source	1	4.03	miles	
AL03150106-0503-101	Hillabee Creek	Coosa	F&W	Choccolocco Creek	Hillabee Lake dam	1	1.14	miles	
AL03150106-0503-103	Hillabee Creek	Coosa	F&W	Hillabee Lake	Its source	1	10.85	miles	
AL03150106-0504-101	Choccolocco Creek	Coosa	PWS/F&W	Hillabee Creek	Egoniaga Creek	1	8.18	miles	
AL03150106-0504-102	Choccolocco Creek	Coosa	F&W	Egoniaga Creek	Its source	1	29.96	miles	
AL03150106-0506-200	Coldwater Spring	Coosa	PWS/F&W			1	0.10	miles	
AL03150106-0508-100	Salt Creek	Coosa	F&W	Choccolocco Creek	Its source	1	15.43	miles	
AL03150106-0509-103	Cheaha Creek	Coosa	F&W	Lake Chinnabee	Its source	1	4.86	miles	
AL03150106-0511-100	Cheaha Creek	Coosa	S/F&W	Choccolocco Creek	Lake Chinnabee	1	17.67	miles	
AL03150106-0601-100	Trout Creek	Coosa	F&W	Coosa River	Its source	1	13.69	miles	
AL03150106-0701-102	Talladega Creek	Coosa	F&W	Mump Creek	Its source	1	23.21	miles	
AL03150106-0702-102	Talladega Creek	Coosa	PWS/F&W	Drivers Branch	Mump Creek	1	6.67	miles	
AL03150106-0703-100	Talladega Creek	Coosa	F&W	Coosa River	Drivers Branch	1	30.62	miles	
AL03150107-0102-103	Tallaseehatchee Creek	Coosa	PWS/F&W	Lake Howard	Lake Virginia dam	1	0.60	miles	
AL03150107-0102-105	Tallaseehatchee Creek	Coosa	PWS/F&W	Lake Virginia	Its source	1	5.83	miles	
AL03150107-0205-200	Fourmile Creek	Coosa	F&W	Yellowleaf Creek	Its source	1	10.90	miles	
AL03150107-0502-110	Paint Creek	Coosa	F&W	Coosa River	Its source	1	19.31	miles	
AL03150107-0603-110	Weogufka Creek	Coosa	S/F&W	Hatchet Creek	Its source	1	49.05	miles	
AL03150107-0701-300	East Fork Hatchet Creek	Coosa	OAW/F&W	Hatchet Creek	Its source	1	5.30	miles	
AL03150107-0701-400	West Fork Hatchet Creek	Coosa	OAW/F&W	Hatchet Creek	Its source	1	7.71	miles	
AL03150107-0704-100	Jacks Creek	Coosa	F&W	Socapatoy Creek	Its source	1	10.51	miles	
AL03150107-0705-100	Socapatoy Creek	Coosa	F&W	Hatchet Creek	Its source	1	16.17	miles	
AL03150107-0706-102	Hatchet Creek	Coosa	OAW/PWS/S/F&W	Wildcat Creek	Its source	1	18.87	miles	
AL03150107-0708-300	Jones Creek	Coosa	F&W	Hatchet Creek	Its source	1	5.22	miles	
AL03150107-0709-100	Hatchet Creek	Coosa	OAW/S/F&W	Coosa River	Wildcat Creek	1	43.20	miles	
AL03150107-0801-800	Turkey Creek	Coosa	F&W	Yellow Leaf Creek	Its source	1	5.17	miles	
AL03150107-0802-110	Walnut Creek	Coosa	F&W	Coosa River	Its source	1	18.12	miles	
AL03150107-0803-300	Cargle Creek	Coosa	F&W	Coosa River	Its source	1	10.29	miles	
AL03150107-0901-110	Chestnut Creek	Coosa	F&W	Coosa River	Its source	1	22.10	miles	
AL03150107-0904-100	Weoka Creek	Coosa	S/F&W	Coosa River	Its source	1	27.54	miles	
AL03150107-0905-102	Sofkahatchee Creek	Coosa	F&W	Coosa River (Lake Jordan)	Its source	1	12.71	miles	
AL03150107-0906-800	Pinchoulee Creek	Coosa	F&W	Coosa River	Its source	1	9.03	miles	
AL03170008-0205-101	Puppy Creek	Escatawpa	F&W	Escatawpa River	Alabama Highway 217	1	5.68	miles	
AL03170008-0501-100	Big Creek	Escatawpa	PWS/F&W	Collins Creek	Its source	1	13.33	miles	
AL03170008-0502-200	Hamilton Creek	Escatawpa	F&W	Big Creek	Its source	1	7.78	miles	
AL03170008-0601-200	Pasture Creek	Escatawpa	F&W	Big Creek	Its source	1	8.47	miles	
AL03170008-0602-110	Miller Creek	Escatawpa	F&W	Big Creek	Its source	1	14.15	miles	
AL03170008-0602-400	Deakle Creek	Escatawpa	F&W	Miller Creek	Its source	1	6.37	miles	
AL03170008-0603-100	Big Creek	Escatawpa	F&W	Alabama-Mississippi state line	Big Creek Reservoir	1	14.55	miles	
AL03170008-0701-100	Jackson Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	1	14.03	miles	
AL03170008-0702-100	Franklin Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	1	9.46	miles	
AL03160204-0103-100	Mobile River	Mobile	F&W	Tensaw River	Its source	1	5.72	miles	
AL03160204-0104-100	Halls Creek	Mobile	F&W	Tensaw Lake	Its source	1	11.93	miles	
AL03160204-0202-200	Middle River	Mobile	F&W	Tensaw River (RM 20.6)	Tensaw River (RM 37.7)	1	9.72	miles	
AL03160204-0304-104	Eightmile Creek	Mobile	F&W	Highpoint Boulevard	Its source	1	2.56	miles	
AL03160204-0401-100	Gunnison Creek	Mobile	S/F&W	Bayou Sara	Its source	1	7.62	miles	
AL03160204-0502-100	Whitehouse Creek	Mobile	F&W	Bay Minette Creek	Its source	1	13.10	miles	
AL03160204-0503-102	Bay Minette Creek	Mobile	F&W	Bay Minette	Its source	1	18.15	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160205-0201-200	Caney Branch	Mobile	F&W	Fish River	Its source	1	5.25	miles	
AL03160205-0201-400	Perone Branch	Mobile	F&W	Fish River	Its source	1	7.06	miles	
AL03160205-0203-120	UT to Magnolia River	Mobile	F&W	Magnolia River	Its source	1	3.65	miles	
AL03160205-0208-200	Intracoastal Waterway	Mobile	F&W	Bon Secour Bay	Alabama Highway 59	1	3.35	miles	
AL03140103-0203-200	Pond Creek	Perdido-Escambia	F&W	Five Runs Creek	Its source	1	4.71	miles	
AL03140103-0203-400	Bay Branch	Perdido-Escambia	F&W	Five Runs Creek	Its source	1	7.58	miles	
AL03140103-0301-100	Indian Creek	Perdido-Escambia	F&W	Yellow River	Its source	1	10.86	miles	
AL03140104-0103-100	Bear Creek	Perdido-Escambia	F&W	Panther Creek	Its source	1	10.70	miles	
AL03140106-0503-100	Hollinger Creek	Perdido-Escambia	F&W	Styx River	Its source	1	23.10	miles	
AL03140107-0204-100	Intracoastal Waterway	Perdido-Escambia	F&W	Alabama Highway 59	Wolf Bay	1	5.08	miles	
AL03140302-0401-100	Pond Creek	Perdido-Escambia	F&W	Patsaliga Creek	Its source	1	7.97	miles	
AL03140302-0502-100	Piney Woods Creek	Perdido-Escambia	F&W	Patsaliga Creek	Its source	1	14.15	miles	
AL03140304-0505-700	Mayo Mill Creek	Perdido-Escambia	F&W	Conecuh River	Its source	1	5.81	miles	
AL03150108-0404-101	Cahulga Creek	Tallapoosa	F&W	Tallapoosa River	US Highway 78	1	4.50	miles	
AL03150108-0404-102	Cahulga Creek	Tallapoosa	PWS/F&W	US Highway 78	Cahulga Reservoir dam	1	0.47	miles	
AL03150108-0404-104	Cahulga Creek	Tallapoosa	PWS/F&W	Cahulga Reservoir	Its source	1	2.99	miles	
AL03150108-0902-100	Bear Creek	Tallapoosa	F&W	Little Tallapoosa River	Its source	1	12.78	miles	
AL03150108-0905-102	Little Tallapoosa River	Tallapoosa	PWS/S/F&W	US Highway 431	Wolf Creek	1	4.91	miles	
AL03150108-1003-100	Ketchepedrakee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	26.66	miles	
AL03150109-0102-102	Crooked Creek	Tallapoosa	PWS/F&W	Alabama Highway 9	Its source	1	2.17	miles	
AL03150109-0102-400	Horsetrough Creek	Tallapoosa	F&W	Crooked Creek	Its source	1	8.40	miles	
AL03150109-0103-100	Crooked Creek	Tallapoosa	F&W	Tallapoosa River	Alabama Highway 9	1	21.08	miles	
AL03150109-0104-100	Cornhouse Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	19.53	miles	
AL03150109-0106-400	Hurricane Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	11.67	miles	
AL03150109-0202-100	Little Chatahospee Creek	Tallapoosa	F&W	Chatahospee Creek	Its source	1	14.20	miles	
AL03150109-0302-100	Caty Creek	Tallapoosa	F&W	High Pine Creek	Its source	1	11.93	miles	
AL03150109-0304-100	Chikasanoxee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	21.56	miles	
AL03150109-0307-100	Little Emuckfaw Creek	Tallapoosa	F&W	Emuckfaw Creek	Its source	1	9.23	miles	
AL03150109-0308-100	Emuckfaw Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	23.51	miles	
AL03150109-0701-102	Oakachoy Creek	Tallapoosa	F&W	Tallapoosa River (Lake Martin)	Its source	1	6.14	miles	
AL03150109-0801-100	Timbergut Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	14.19	miles	
AL03150109-0803-302	Sugar Creek	Tallapoosa	F&W	Lake Martin	Its source	1	4.64	miles	
AL03150110-0101-300	Little Loblockee Creek	Tallapoosa	F&W	Loblockee Creek	Its source	1	9.94	miles	
AL03150110-0101-400	UT to Loblockee Creek	Tallapoosa	F&W	Loblockee Creek	Its source	1	2.26	miles	
AL03150110-0202-102	Chewacla Creek	Tallapoosa	PWS/F&W	Moores Mill Creek	Its source	1	14.92	miles	
AL03150110-0204-100	Chewacla Creek	Tallapoosa	F&W	Uphapee Creek	Moores Mill Creek	1	23.20	miles	
AL03150110-0204-300	Long Branch	Tallapoosa	F&W	Chewacla Creek	Its source	1	12.26	miles	
AL03150110-0402-102	Channahatchee Creek	Tallapoosa	F&W	Yates Lake	Its source	1	17.31	miles	
AL03150110-0504-102	Calebee Creek	Tallapoosa	F&W	Macon County Road 9	Its source	1	36.95	miles	
AL03150110-0802-102	Line Creek	Tallapoosa	F&W	Panther Creek	Its source	1	34.78	miles	
AL03150110-0902-100	Chubbehatchee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	23.11	miles	
AL03150110-0905-200	Harwell Mill Creek	Tallapoosa	F&W	Tallapoosa River	Its source	1	7.70	miles	
AL06030001-0402-110	Flat Rock Creek	Tennessee	F&W	Coon Creek	Its source	1	9.22	miles	
AL06030001-0402-300	Hogue Creek	Tennessee	F&W	Flat Rock Creek	Its source	1	3.48	miles	
AL06030001-0403-100	Coon Creek	Tennessee	F&W	Tennessee River	Its source	1	7.38	miles	
AL06030001-0403-140	Rocky Branch	Tennessee	F&W	Dry Creek	Its source	1	3.52	miles	
AL06030001-0403-600	Dry Creek	Tennessee	F&W	Coon Creek	Its source	1	4.13	miles	
AL06030001-0405-110	Mud Creek	Tennessee	F&W	Tennessee River	Its source	1	24.97	miles	
AL06030001-0406-100	Bryant Creek	Tennessee	F&W	Jones Creek	Its source	1	12.96	miles	
AL06030001-0505-100	South Sauty Creek	Tennessee	S/F&W	Tennessee River	Its source	1	39.65	miles	
AL06030001-0805-110	Short Creek	Tennessee	F&W	Scarham Creek	Its source	1	24.81	miles	
AL06030001-0806-100	Short Creek	Tennessee	PWS/F&W	Tennessee River	Scarham Creek	1	5.21	miles	
AL06030002-0307-102	Flint River	Tennessee	F&W	Mountain Fork	Alabama-Tennessee state line	1	16.99	miles	
AL06030002-0402-102	Hurricane Creek	Tennessee	F&W	Gurley Pike Road	Its source	1	18.11	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL06030002-0403-111	Flint River	Tennessee	F&W	Hurricane Creek	Alabama Highway 72	1	7.14	miles	
AL06030002-0404-102	Flint River	Tennessee	PWS/F&W	Big Cove Creek	Hurricane Creek	1	8.04	miles	
AL06030002-0404-300	Big Cove Creek	Tennessee	F&W	Flint River	Its source	1	8.19	miles	
AL06030002-0405-100	Flint River	Tennessee	F&W	Tennessee River	Big Cove Creek	1	21.53	miles	
AL06030002-0702-102	Limestone Creek	Tennessee	F&W	Leslie Branch	Alabama-Tennessee state line	1	19.21	miles	
AL06030002-0703-111	Limestone Creek	Tennessee	F&W	Wheeler Lake	US Highway 72	1	15.62	miles	
AL06030002-0803-100	Piney Creek	Tennessee	F&W	Limestone Creek	Its source	1	43.75	miles	
AL06030002-1003-710	Rock Creek	Tennessee	F&W	Flint Creek	Its source	1	5.23	miles	
AL06030002-1012-202	McDaniel Creek	Tennessee	F&W	Alabama Highway 36	Its source	1	3.83	miles	
AL06030002-1014-101	Flint Creek	Tennessee	F&W	Tennessee River	Alabama Highway 67	1	3.32	miles	
AL06030002-1101-200	Town Creek	Tennessee	F&W	Swan Creek	Its source	1	7.28	miles	
AL06030002-1202-100	First Creek	Tennessee	F&W	Tennessee River	Its source	1	14.48	miles	
AL06030002-1204-101	Second Creek	Tennessee	S/F&W	Tennessee River	First bridge upstream from US Highway 72	1	5.71	miles	
AL06030002-1204-102	Second Creek	Tennessee	F&W	First bridge upstream from US Highway 72	Lauderdale County Road 76	1	2.34	miles	
AL06030004-0403-102	Elk River	Tennessee	PWS/F&W	Alabama Highway 99	Alabama-Tennessee state line	1	12.89	miles	
AL06030004-0405-900	Big Creek	Tennessee	F&W	Elk River	Its source	1	9.15	miles	
AL06030005-0304-100	Town Creek	Tennessee	F&W	Tennessee River	Its source	1	49.97	miles	
AL06030005-0509-800	Indiancamp Creek	Tennessee	F&W	Shoal Creek	Its source	1	5.98	miles	
AL06030006-0203-112	Cedar Creek	Tennessee	PWS/S/F&W	End of embayment	Alabama Highway 24	1	3.01	miles	
AL03160201-0102-100	Dry Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	1	13.84	miles	
AL03160201-0103-300	Poplar Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	1	8.87	miles	
AL03160201-0109-100	Chickasaw Bogue	Tombigbee (Lower)	F&W	Tombigbee River	Its source	1	42.64	miles	
AL03160201-0201-100	Little Kinterbish Creek	Tombigbee (Lower)	F&W	Kinterbish Creek	Its source	1		miles	
AL03160201-0504-200	Clear Creek	Tombigbee (Lower)	F&W	Yantley Creek	Its source	1	17.25	miles	
AL03160201-0506-110	Tuckabum Creek	Tombigbee (Lower)	F&W	Tombigbee River	Alabama-Mississippi state line	1	48.25	miles	
AL03160201-0602-100	Sweetwater Creek	Tombigbee (Lower)	F&W	Horse Creek	Its source	1	18.59	miles	
AL03160201-0702-100	Tallahatta Creek	Tombigbee (Lower)	F&W	Bashi Creek	Its source	1	20.97	miles	
AL03160201-0807-100	Okatuppa Creek	Tombigbee (Lower)	F&W	Tombigbee River	Alabama-Mississippi state line	1	48.47	miles	
AL03160201-0908-110	Turkey Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	1	18.15	miles	
AL03160203-0201-110	Wells Creek	Tombigbee (Lower)	F&W	Salitpa Creek	Its source	1	14.71	miles	
AL03160203-0203-100	Harris Creek	Tombigbee (Lower)	F&W	Salitpa Creek	Its source	1	12.35	miles	
AL03160203-0205-100	Salitpa Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	1	43.34	miles	
AL03160203-0302-200	Ulcanush Creek	Tombigbee (Lower)	F&W	Tombigbee River	Its source	1	9.33	miles	
AL03160203-0401-100	Tattilaba Creek	Tombigbee (Lower)	F&W	Jackson Creek	Its source	1	23.68	miles	
AL03160203-0902-100	Salt Creek	Tombigbee (Lower)	F&W	Tombigbee River	Its source	1	9.96	miles	
AL03160101-0502-100	Bull Mountain Creek	Tombigbee (Upper)	F&W	Alabama-Mississippi state line	Its source	1	24.98	miles	
AL03160101-0503-100	Hurricane Creek	Tombigbee (Upper)	F&W	Alabama-Mississippi state line	Its source	1	10.14	miles	
AL03160103-0201-201	Purgatory Creek	Tombigbee (Upper)	F&W	Beaver Creek	Wickett Creek	1	0.50	miles	
AL03160103-0201-202	Purgatory Creek	Tombigbee (Upper)	F&W	Wickett Creek	US Highway 278	1	1.86	miles	
AL03160103-0201-203	Purgatory Creek	Tombigbee (Upper)	PWS/F&W	US Highway 278	Its source	1	1.28	miles	
AL03160103-0301-100	Woods Creek	Tombigbee (Upper)	F&W	Buttahatchee River	Its source	1	13.95	miles	
AL03160103-0303-200	Cantrell Mill Creek	Tombigbee (Upper)	F&W	Buttahatchee River	Its source	1	7.40	miles	
AL03160103-0401-200	Boardtree Creek	Tombigbee (Upper)	F&W	Sipsey Creek	Its source	1	10.87	miles	
AL03160105-0303-100	Hells Creek	Tombigbee (Upper)	F&W	Yellow Creek	Its source	1	25.20	miles	
AL03160106-0405-200	Little Bear Creek	Tombigbee (Upper)	F&W	Bear Creek	Its source	1	7.82	miles	
AL03160106-0407-100	Bear Creek	Tombigbee (Upper)	F&W	Lubbub Creek	Its source	1	33.40	miles	
AL03160106-0703-100	Jones Creek	Tombigbee (Upper)	F&W	Tombigbee River	Its source	1	15.28	miles	
AL03160107-0203-100	Bear Creek	Tombigbee (Upper)	F&W	Sipsey River	Its source	1	10.64	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160107-0306-102	Sipsey River	Tombigbee (Upper)	F&W	Gainesville Reservoir	Tuscaloosa county line	1	40.86	miles	
Category 1 - Lakes and Reservoirs									
AL03150201-0107-100	Alabama River	Alabama	F&W	Autauga Creek	Its source	1	6258.78	acres	Woodruff Lake
AL03150201-0501-100	Alabama River	Alabama	F&W	Pintlala Creek	Autauga Creek	1	1702.40	acres	Woodruff Lake
AL03150201-0706-100	Alabama River	Alabama	S/F&W	Robert F. Henry Lock and Dam	Pintlalla Creek	1	6156.78	acres	Woodruff Lake
AL03150201-1101-102	Valley Creek Lake	Alabama	S/F&W	Within Paul M. Grist State Park		1	64.00	acres	Valley Creek Lake
AL03150203-0701-100	Alabama River	Alabama	S/F&W	Millers Ferry Lock and Da	Chilatchee Creek	1	11564.75	acres	Dannelly Reservoir
AL03160109-0604-101	Mulberry Fork	Black Warrior	PWS/S/F&W	Black Warrior River	Baker Creek	1	1357.57	acres	Bankhead Reservoir
AL03160110-0105-100	Sipsey Fork	Black Warrior	S/F&W	Brushy Creek	Grindstone Creek	1	2280.57	acres	Lewis Smith Lake
AL03160110-0203-101	Brushy Creek	Black Warrior	S/F&W	Sipsey Fork	extent of reservoir	1	1280.10	acres	Lewis Smith Lake
AL03160110-0302-102	Clear Creek	Black Warrior	PWS	City of Haleyville water su	Its source	1	21.30	acres	
AL03160110-0404-100	Rock Creek	Black Warrior	S/F&W	Crooked Creek	extent of reservoir	1	843.72	acres	Lewis Smith Lake
AL03160110-0407-100	Crooked Creek	Black Warrior	S/F&W	Rock Creek	extent of reservoir	1	1075.93	acres	Lewis Smith Lake
AL03160110-0505-102	Ryan Creek	Black Warrior	S/F&W	Doctor Harris Spring Branc	Coon Creek	1	887.65	acres	Lewis Smith Lake
AL03160110-0507-102	Sipsey Fork	Black Warrior	PWS/S/F&W	Lewis Smith Dam	three miles upstream from L	1	1269.96	acres	Lewis Smith Lake
AL03160110-0507-103	Sipsey Fork	Black Warrior	S/F&W	three miles upstream from	County Road 41	1	2870.56	acres	Lewis Smith Lake
AL03160111-0204-103	Blackburn Fork	Black Warrior	PWS	Highland Lake Dam	extent of reservoir	1	315.81	acres	Highland Lake
AL03160111-0204-111	Blackburn Fork	Black Warrior	PWS	Inland Lake Dam	extent of reservoir	1	1389.78	acres	Inland Lake
AL03160112-0203-100	Black Warrior River	Black Warrior	PWS/S/F&W	Bankhead Lock and Dam	Its source	1	4112.01	acres	Bankhead Reservoir
AL03160112-0306-100	Black Warrior River	Black Warrior	S/F&W	Holt Lock and Dam	Bankhead Lock and Dam	1	3149.63	acres	Holt Reservoir
AL03160112-0505-101	Black Warrior River	Black Warrior	F&W	Oliver Lock and Dam	Hurricane Creek	1	556.93	acres	Oliver Reservoir
AL03160112-0505-102	Black Warrior River	Black Warrior	S/F&W	Hurricane Creek	Holt Lock and Dam	1	57.98	acres	Oliver Reservoir
AL03160113-0401-102	Fivemile Creek	Black Warrior	S	Payne Lake		1	111.54	acres	Payne Lake
AL03160113-0607-100	Black Warrior River	Black Warrior	F&W	Warrior Lock and Dam	Oliver Lock and Dam	1	5583.16	acres	Warrior Lake
AL03160113-0804-102	Black Warrior River	Black Warrior	PWS/S/F&W	Five miles upstream of Big	Eight miles upstream of Big	1	131.02	acres	Demopolis Lake
AL03160113-0804-103	Black Warrior River	Black Warrior	S/F&W	Eight miles upstream of Bi	Warrior Lock and Dam	1	1451.33	acres	Demopolis Lake
AL03160113-0806-100	Black Warrior River	Black Warrior	S/F&W	Tombigbee River	Five miles upstream of Big	1	2074.06	acres	Demopolis Lake
AL03150202-0103-102	Little Cahaba River	Cahaba	PWS	Lake Purdy dam	Head of Lake Purdy	1	961.95	acres	Purdy Lake
AL03150202-0202-110	Oak Mountain State Park Lakes	Cahaba	PWS	Within Oak Mountain State Park		1	166.73	acres	
AL03130002-0808-101	Chattahoochee River	Chattahoochee	S/F&W	West Point Dam	West Point Lake Limits in A	1	2201.43	acres	West Point Reservoir
AL03130002-1109-101	Chattahoochee River	Chattahoochee	PWS/S/F&W	Bartletts Ferry Dam	Osanippa Creek	1	2327.29	acres	Harding Lake
AL03130002-1109-102	Chattahoochee River	Chattahoochee	F&W	Osanippa Creek	Johnson Island	1	200.89	acres	Harding Lake
AL03130002-1306-101	Chattahoochee River	Chattahoochee	PWS/S/F&W	Oliver Dam	Goat Rock Dam	1	334.30	acres	Oliver Lake
AL03130002-1306-102	Chattahoochee River	Chattahoochee	PWS/S/F&W	Goat Rock Dam	Bartletts Ferry Dam	1	131.20	acres	Oliver Lake
AL03130003-0905-100	Chattahoochee River	Chattahoochee	F&W	Cowikee Creek	Cliatt Branch	1	3761.02	acres	Walter F. George Reservoir
AL03130003-1600-100	Chattahoochee River	Chattahoochee	S/F&W	Walter F. George Lock and	Cowikee Creek	1	10069.40	acres	Walter F. George Reservoir
AL03150106-0501-104	Shoal Creek	Coosa	S/F&W	Highrock Lake		1	13.95	acres	Highrock Lake
AL03150106-0501-106	Shoal Creek	Coosa	PWS/S/F&W	Sweetwater Lake		1	54.97	acres	Sweetwater Lake
AL03150106-0501-112	Shoal Creek	Coosa	PWS/S/F&W	Whitesides Mill Lake		1	251.75	acres	Whitesides Mill Lake
AL03150106-0501-400	Coleman Lake	Coosa	S/F&W	Coleman Lake		1	19.46	acres	Coleman Lake
AL03150106-0503-102	Hillabee Creek	Coosa	PWS/S/F&W	Hillabee Lake		1	180.88	acres	Hillabee Lake
AL03150106-0508-400	Salt Creek Lake	Coosa	S/F&W	Salt Creek Lake		1	1.73	acres	Salt Creek Lake
AL03150106-0509-102	Cheaha Creek	Coosa	S/F&W	Lake Chinnabee		1	13.94	acres	Chinnabee Lake
AL03150107-0102-102	Tallaseehatchee Creek	Coosa	PWS/F&W	City of Sylacauga's water s	End of embayment	1	135.97	acres	Lake Howard
AL03150107-0102-104	Tallaseehatchee Creek	Coosa	PWS/F&W	Lake Virginia dam	End of embayment	1	126.74	acres	Lake Virginia
AL03150107-0906-100	Coosa River	Coosa	S/F&W	Jordan Dam	Mitchell Dam	1	6043.89	acres	Lake Jordan
AL03140107-0204-200	Shelby Lakes	Perdido-Escambia	S/F&W	Within Gulf State Park		1	802.00	acres	
AL03150108-0404-103	Cahulga Creek	Tallapoosa	PWS/F&W	Cahulga Reservoir dam	End of embayment	1	82.04	acres	Cahulga Reservoir
AL03150108-0906-100	Little Tallapoosa River	Tallapoosa	S/F&W	Tallapoosa River	US Highway 431	1	3042.57	acres	Harris Lake
AL03150108-1006-110	Tallapoosa River	Tallapoosa	S/F&W	Little Tallapoosa River	4 miles upstream of Randolph County Road 88	1	2151.73	acres	Harris Lake
AL03150109-0105-102	Tallapoosa River	Tallapoosa	S/F&W	R. L. Harris Dam	Little Tallapoosa River	1	5356.95	acres	Harris Lake
AL03150109-0703-201	Little Kowaliga Creek	Tallapoosa	PWS/S/F&W	Big Kowaliga Creek	End of embayment	1	2634.38	acres	Lake Martin

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150109-0802-102	Tallapoosa River	Tallapoosa	PWS/S/F&W	US Highway 280	Hillabee Creek	1	2025.57	acres	Lake Martin
AL03150109-0804-201	Manoy Creek	Tallapoosa	PWS/S/F&W	Tallapoosa River	End of embayment	1	618.88	acres	Lake Martin
AL03150109-0805-100	Tallapoosa River	Tallapoosa	S/F&W	Martin Dam	US Highway 280	1	34400.04	acres	Lake Martin
AL06030001-0606-103	Tennessee River	Tennessee	PWS/S/F&W	Roseberry Creek	Pump Spring Branch	1	13162.18	acres	Lake Guntersville
AL06030001-0901-102	Tennessee River	Tennessee	S/F&W	upper end of Buck Island	Roseberry Creek	1	29974.56	acres	Lake Guntersville
AL06030001-0906-100	Tennessee River	Tennessee	PWS/S/F&W	Guntersville Dam	upper end of Buck Island	1	13540.75	acres	Lake Guntersville
AL06030002-0902-100	Tennessee River	Tennessee	S/F&W	Flint River	Guntersville Dam	1	1345.77	acres	Wheeler Lake
AL06030002-0904-100	Tennessee River	Tennessee	PWS/F&W	Indian Creek	Flint River	1	3531.35	acres	Wheeler Lake
AL06030002-0906-102	Tennessee River	Tennessee	PWS/S/F&W	Cotaco Creek	Indian Creek	1	334.49	acres	Wheeler Lake
AL06030002-1102-102	Tennessee River	Tennessee	PWS/S/F&W	US Highway 31	Flint Creek	1	2587.33	acres	Wheeler Lake
AL06030002-1102-103	Tennessee River	Tennessee	S/F&W	Flint Creek	Cotaco Creek	1	7385.35	acres	Wheeler Lake
AL06030002-1107-102	Tennessee River	Tennessee	S/F&W	five miles upstream of Elk River (RM 289.3)	US Highway 31	1	20633.11	acres	Wheeler Lake
AL06030002-1205-100	Tennessee River	Tennessee	PWS/S/F&W	Wheeler Dam	five miles upstream of Elk River (RM 289.3)	1	15168.18	acres	Wheeler Lake
AL06030004-0405-102	Elk River	Tennessee	S/F&W	Anderson Creek	Alabama Highway 99	1	3114.40	acres	Wheeler Lake
AL06030005-0801-100	Tennessee River	Tennessee	PWS/S/F&W	Wilson Dam	Wheeler Dam	1	15534.74	acres	Wilson Lake
AL06030005-0808-103	Tennessee River	Tennessee	F&W	lower end of Seven Mile Island	Sheffield water intake	1	2424.33	acres	Pickwick Reservoir
AL06030005-0808-104	Tennessee River	Tennessee	PWS/F&W	Sheffield water intake	Wilson Dam	1	1170.03	acres	Pickwick Reservoir
AL06030005-1203-100	Tennessee River	Tennessee	PWS/S/F&W	Alabama-Tennessee state line	lower end of Seven Mile Island	1	25902.67	acres	Pickwick Reservoir
AL06030006-0102-102	Bear Creek	Tennessee	PWS/S/F&W	Pretty Branch	Alabama Highway 243	1	249.44	acres	Upper Bear Creek Reservoir
AL03160201-0401-102	Tombigbee River	Tombigbee (Lower)	S/F&W	Demopolis Lock and Dam	Black Warrior River	1	545.48	acres	Demopolis Lake
AL03160201-0408-102	Tombigbee River	Tombigbee (Lower)	PWS/F&W	1/2 mile downstream from Alabama Highway 114	3 miles upstream from Alabama Highway 114	1	196.10	acres	Coffeeville Reservoir
AL03160201-0408-104	Tombigbee River	Tombigbee (Lower)	F&W	3 miles upstream from Alabama Highway 114	Sucarnoochee River	1	1337.70	acres	Coffeeville Reservoir
AL03160201-0907-102	Tombigbee River	Tombigbee (Lower)	F&W	Beach Bluff (RM 141)	1/2 mile downstream from Alabama Highway 114	1	2077.05	acres	Coffeeville Reservoir
AL03160201-0909-100	Tombigbee River	Tombigbee (Lower)	S/F&W	Coffeeville Lock and Dam	Beach Bluff (RM 141)	1	2461.03	acres	Coffeeville Reservoir
AL03160106-0609-102	Tombigbee River	Tombigbee (Upper)	S/F&W	Heflin Lock and Dam	Bevill Lock and Dam	1	5152.69	acres	Gainesville Reservoir
AL03160106-0706-100	Tombigbee River	Tombigbee (Upper)	F&W	Cobb Creek	Heflin Lock and Dam	1	2078.31	acres	Demopolis Lake
AL03160106-0709-100	Tombigbee River	Tombigbee (Upper)	S/F&W	Black Warrior River	Cobb Creek	1	1859.82	acres	Demopolis Lake
Category 1 - Estuaries and Oceans									
AL03160205-0204-111	Weeks Bay	Mobile	S/F&W	Bon Secour Bay	Fish River	1	3.04	square miles	ONRW
AL03160205-0300-300	Mobile Bay	Mobile	F&W	West of a line drawn due south from the western shore of Chacaloochee Bay (30.67981, -087.99561)	North of a line due east from a point at the mouth of Dog River (30.56478, -088.08758)	1	31.56	square miles	
AL03160205-0300-400	Mobile Bay	Mobile	S/F&W	South of a line drawn due east from the mouth of Dog River (30.56478, -088.08758)	North of the segment classified for shellfish harvesting	1	54.93	square miles	
AL03140107-0205-101	Little Lagoon	Perdido-Escambia	SH/S/F&W	west of Little Lagoon Pass		1	2.64	square miles	
Category 2 - Rivers and Streams									

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150201-0103-100	Mortar Creek	Alabama	F&W	Alabama River	Its source	2B	23.99	miles	
AL03150201-0105-500	Pierce Creek	Alabama	F&W	Mill Creek	Its source	2B	3.42	miles	
AL03150201-0304-110	Little Catoma Creek	Alabama	F&W	Catoma Creek	Its source	2B	28.99	miles	
AL03150201-0306-110	Waller Creek	Alabama	F&W	Ramer Creek	Its source	2B	12.16	miles	
AL03150201-0308-100	Catoma Creek	Alabama	F&W	Ramer Creek	Its source	2B	21.50	miles	
AL03150201-0407-100	Pintlala Creek	Alabama	S/F&W	Alabama River	Pinchony Creek	2A	24.91	miles	
AL03150201-0501-200	Noland Creek	Alabama	F&W	Alabama River	Its source	2B	9.99	miles	
AL03150201-0502-100	Tallawassee Creek	Alabama	F&W	Alabama River	Its source	2B	16.93	miles	
AL03150201-0601-400	Indian Creek	Alabama	F&W	Swift Creek	Its source	2B	4.77	miles	
AL03150201-0704-100	Beaver Creek	Alabama	F&W	Alabama River	Its source	2B	10.19	miles	
AL03150201-0705-100	Ivy Creek	Alabama	F&W	Alabama River	Its source	2B	15.51	miles	
AL03150201-0801-100	Fort Deposit Creek	Alabama	F&W	Big Swamp Creek	Its source	2B	13.52	miles	
AL03150201-0801-200	Lake Creek	Alabama	F&W	Fort Deposit Creek	Its source	2A	8.79	miles	
AL03150201-0802-500	Cherry Creek	Alabama	F&W	Big Swamp Creek	Its source	2B	7.71	miles	
AL03150201-1002-100	Little Mulberry Creek	Alabama	F&W	Mulberry Creek	Its source	2B	4.92	miles	
AL03150201-1002-300	Morgan Creek	Alabama	F&W	Little Mulberry Creek	Its source	2B	6.66	miles	
AL03150203-0101-100	Washington Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2A	17.28	miles	
AL03150203-0104-100	Brush Creek	Alabama	F&W	Mud Creek	Its source	2B	15.51	miles	
AL03150203-0105-100	Mud Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2A	20.87	miles	
AL03150203-0108-110	Bear Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2B	16.60	miles	
AL03150203-0109-200	Tatum Creek	Alabama	F&W	Bogue Chitto Creek	Its source	2B	11.92	miles	
AL03150203-0206-100	Dry Cedar Creek	Alabama	F&W	Cedar Creek	Its source	2B	28.26	miles	
AL03150203-0206-300	Sullivan Branch	Alabama	F&W	Dry Cedar Creek	Its source	2B	8.63	miles	
AL03150203-0208-100	Mush Creek	Alabama	F&W	Cedar Creek	Its source	2B	24.58	miles	
AL03150203-0405-100	Bear Creek	Alabama	F&W	Pine Barren Creek	Its source	2B	27.35	miles	
AL03150203-0501-100	Sand Creek	Alabama	F&W	Chilatchee Creek	Its source	2B	13.39	miles	
AL03150203-0501-200	Glover Creek	Alabama	F&W	Sand Creek	Its source	2B	4.70	miles	
AL03150203-0502-100	Rogers Creek	Alabama	F&W	Chilatchee Creek	Its source	2B	14.05	miles	
AL03150203-0504-100	Little Chilatchee Creek	Alabama	F&W	Chilatchee Creek	Its source	2B	12.30	miles	
AL03150203-0505-200	Chilatchee Creek	Alabama	S/F&W	Alabama River	Its source	2B	41.61	miles	
AL03150203-0606-100	Beaver Creek	Alabama	F&W	Alabama River	Its source	2B	32.96	miles	
AL03150203-0606-200	Red Creek	Alabama	F&W	Beaver Creek	Its source	2B	21.96	miles	
AL03150203-0801-100	Gravel Creek	Alabama	F&W	Pursley Creek	Its source	2A	18.45	miles	
AL03150204-0203-100	Robinson Creek	Alabama	F&W	Big Flat Creek	Its source	2A	24.35	miles	
AL03150204-0403-110	Randons Creek	Alabama	F&W	Lovetts Creek	Its source	2B	16.14	miles	
AL03150204-0403-300	Bear Creek	Alabama	F&W	Randons Creek	Its source	2B	9.78	miles	
AL03150204-0404-110	Lovetts Creek	Alabama	F&W	Alabama River	Its source	2B	16.34	miles	
AL03150204-0502-300	Butterfork Creek	Alabama	F&W	Little River	Its source	2B	7.70	miles	
AL03150204-0502-501	Chitterling Creek	Alabama	F&W	Little River	Little River Lake	2B	0.34	miles	
AL03150204-0502-503	Chitterling Creek	Alabama	F&W	Little River Lake	Its source	2B	4.69	miles	
AL03150204-0503-100	Little River	Alabama	S/F&W	Alabama River	Its source	2B	33.49	miles	
AL03150204-0601-100	Wallers Creek	Alabama	F&W	Alabama River	Its source	2B	15.40	miles	
AL03150204-0602-400	Baileys Creek	Alabama	F&W	Alabama River	Its source	2B	9.25	miles	
AL03150204-0604-400	Shomo Creek	Alabama	F&W	Alabama River	Its source	2B	11.04	miles	
AL03160109-0101-700	Warrior Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	4.28	miles	
AL03160109-0103-100	Duck River	Black Warrior	F&W	Mulberry Fork	Its source	2A	19.28	miles	
AL03160109-0107-110	Blue Springs Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	13.97	miles	
AL03160109-0108-101	Mud Creek	Black Warrior	F&W	Mulberry Fork	Alabama Highway 31	2B	4.34	miles	
AL03160109-0108-102	Mud Creek	Black Warrior	F&W	Alabama Highway 31	Its source	2A	4.66	miles	
AL03160109-0109-103	Mulberry Fork	Black Warrior	F&W	Blount County Road 6	Its source	2B	14.74	miles	
AL03160109-0109-900	Pan Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	10.67	miles	
AL03160109-0204-100	Dorsey Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	18.04	miles	
AL03160109-0205-200	Sullivan Creek	Black Warrior	F&W	Mulberry Fork	Its source	2B	8.20	miles	
AL03160109-0206-510	Sloan Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	5.62	miles	
AL03160109-0301-110	Splunge Creek	Black Warrior	F&W	Blackwater Creek	Its source	2B	20.11	miles	
AL03160109-0306-100	Spring Creek	Black Warrior	F&W	Blackwater Creek	Its source	2B	7.90	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160109-0309-100	Blackwater Creek	Black Warrior	F&W	Mulberry Fork	Its source	2A	70.05	miles	
AL03160109-0402-102	Lost Creek	Black Warrior	F&W	US Highway 78 at Carbon Hill	Its source	2B	8.99	miles	
AL03160109-0403-102	Lost Creek	Black Warrior	F&W	Mill dam at Cedrum	US Highway 78 north of Cedrum	2B	1.23	miles	
AL03160109-0405-103	Lost Creek	Black Warrior	F&W	Cane Creek	Alabama Highway 69 at Oakman	2B	14.52	miles	
AL03160109-0502-102	Wolf Creek	Black Warrior	F&W	Alabama Highway 102	Its source	2B	5.28	miles	
AL03160110-0203-103	Brushy Creek	Black Warrior	F&W	Highway 278	Its source	2A	29.85	miles	
AL03160110-0301-100	Right Fork Clear Creek	Black Warrior	F&W	Clear Creek	Its source	2A	15.61	miles	
AL03160110-0302-200	Little Clear Creek	Black Warrior	F&W	Clear Creek	Its source	2A	11.53	miles	
AL03160110-0303-200	Widows Creek	Black Warrior	F&W	Clear Creek	Its source	2A	7.35	miles	
AL03160110-0305-203	Clear Creek	Black Warrior	F&W	Caney Creek	City of Haleyville water supply reservoir dam	2A	35.34	miles	
AL03160110-0401-100	Blevens Creek	Black Warrior	F&W	Rock Creek	Its source	2A	19.14	miles	
AL03160110-0506-100	Mill Creek	Black Warrior	F&W	Sipsey Fork	Its source	2B	12.99	miles	
AL03160110-0506-200	Little Mill Creek	Black Warrior	F&W	Mill Creek	Its source	2B	6.01	miles	
AL03160111-0101-100	Bristow Creek	Black Warrior	F&W	Locust Fork	Its source	2B	9.51	miles	
AL03160111-0103-100	Clear Creek	Black Warrior	F&W	Locust Fork	Its source	2B	16.40	miles	
AL03160111-0106-100	Slab Creek	Black Warrior	F&W	Locust Fork	Its source	2B	24.98	miles	
AL03160111-0106-110	Little Reedbrake Creek	Black Warrior	F&W	Slab Creek	Its source	2B	2.92	miles	
AL03160111-0201-100	Wynnville Creek	Black Warrior	F&W	Locust Fork	Its source	2B	5.98	miles	
AL03160111-0302-100	Longs Branch	Black Warrior	F&W	Locust Fork	Its source	2A	7.87	miles	
AL03160111-0303-200	Sand Valley Creek	Black Warrior	F&W	Gurley Creek	Its source	2B	5.55	miles	
AL03160111-0304-201	Self Creek	Black Warrior	F&W	Gurley Creek	Alabama Highway 79	2B	8.55	miles	
AL03160111-0304-202	Self Creek	Black Warrior	PWS	Alabama Highway 79	Its source	2B	4.14	miles	
AL03160111-0307-100	Turkey Creek	Black Warrior	F&W	Locust Fork	Its source	2A	25.34	miles	
AL03160111-0401-100	Crooked Creek	Black Warrior	F&W	Locust Fork	Its source	2B	10.03	miles	
AL03160111-0404-500	Ward Creek	Black Warrior	F&W	Locust Fork	Its source	2B	6.65	miles	
AL03160111-0410-100	Locust Fork	Black Warrior	F&W	Village Creek	Jefferson County Road 77	2B	23.26	miles	
AL03160112-0101-102	Valley Creek	Black Warrior	LWF	Opossum Creek	Its source	2B	13.53	miles	
AL03160112-0102-100	Valley Creek	Black Warrior	LWF	Blue Creek	19th Street North (Bessemer)	2A	10.80	miles	
AL03160112-0104-400	Lick Creek	Black Warrior	F&W	Valley Creek	Its source	2B	8.13	miles	
AL03160112-0105-102	Mud Creek	Black Warrior	F&W	Big Branch	Its source	2A	7.70	miles	
AL03160112-0201-500	Little Yellow Creek	Black Warrior	F&W	Big Yellow Creek	Its source	2A	10.65	miles	
AL03160112-0202-200	Clifty Creek	Black Warrior	F&W	Big Yellow Creek	Its source	2B	4.91	miles	
AL03160112-0301-300	Little Bear Creek	Black Warrior	F&W	Blue Creek	Its source	2B	3.48	miles	
AL03160112-0301-400	Jock Creek	Black Warrior	F&W	Blue Creek	Its source	2A	2.21	miles	
AL03160112-0303-110	Davis Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	39.00	miles	
AL03160112-0303-120	Hanna Mill Creek	Black Warrior	F&W	Davis Creek	Its source	2B	4.62	miles	
AL03160112-0303-400	Prudes Creek	Black Warrior	F&W	Davis Creek	Its source	2B	3.78	miles	
AL03160112-0401-101	Clear Creek	Black Warrior	F&W	North River	Bugs Lake dam	2B	3.82	miles	
AL03160112-0401-103	Clear Creek	Black Warrior	PWS	end of embayment	Its source	2B	7.66	miles	
AL03160112-0402-102	North River	Black Warrior	F&W	Ellis Creek	Its source	2B	16.39	miles	
AL03160112-0403-200	Cedar Creek	Black Warrior	F&W	North River	Its source	2B	13.97	miles	
AL03160112-0407-100	Cripple Creek	Black Warrior	F&W	North River	Its source	2B	10.45	miles	
AL03160112-0412-100	Carroll Creek	Black Warrior	F&W	North River	Its source	2B	15.12	miles	
AL03160112-0413-101	North River	Black Warrior	F&W	Black Warrior River	City of Tuscaloosa's water supply reservoir dam	2B	1.60	miles	
AL03160112-0501-101	Yellow Creek	Black Warrior	F&W	Black Warrior River	City of Tuscaloosa's water supply reservoir dam	2B	2.88	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160113-0105-100	Big Sandy Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	37.36	miles	
AL03160113-0202-200	Big Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	12.12	miles	
AL03160113-0302-110	Elliotts Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	23.83	miles	
AL03160113-0402-100	Fivemile Creek	Black Warrior	F&W	Black Warrior River	Payne Lake	2B	34.00	miles	
AL03160113-0501-100	Brush Creek	Black Warrior	F&W	Big Brush Creek	Its source	2B	17.35	miles	
AL03160113-0502-110	Sparks Creek	Black Warrior	F&W	Big Brush Creek	Its source	2B	10.06	miles	
AL03160113-0503-110	Polecat Creek	Black Warrior	F&W	Big Brush Creek	Its source	2A	14.02	miles	
AL03160113-0506-100	Big Brush Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	29.65	miles	
AL03160113-0601-100	Grant Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	11.18	miles	
AL03160113-0603-100	Buck Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	12.97	miles	
AL03160113-0604-200	Gabriel Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	17.00	miles	
AL03160113-0604-300	Millians Creek	Black Warrior	F&W	Gabriel Creek	Its source	2B	16.91	miles	
AL03160113-0606-100	Minter Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	16.82	miles	
AL03160113-0702-100	Dry Creek	Black Warrior	F&W	Big Prairie Creek	Its source	2B	15.28	miles	
AL03160113-0707-110	Big German Creek	Black Warrior	F&W	Big Prairie Creek	Its source	2B	15.21	miles	
AL03160113-0708-100	Big Prairie Creek	Black Warrior	F&W	Black Warrior River	Its source	2A	44.16	miles	
AL03160113-0801-200	Needham Creek	Black Warrior	F&W	Dollarhide Creek	Its source	2A	8.96	miles	
AL03160113-0802-110	Hines Creek	Black Warrior	F&W	Black Warrior River	Its source	2B	9.87	miles	
AL03150202-0202-200	Dry Brook	Cahaba	F&W	Cahaba Valley Creek	Its source	2A	3.49	miles	
AL03150202-0203-103	Buck Creek	Cahaba	F&W	Shelby County Road 44	Its source	2B	8.35	miles	
AL03150202-0403-600	Spring Creek	Cahaba	F&W	Shoal Creek	Its source	2B	9.38	miles	
AL03150202-0406-100	Caffee Creek	Cahaba	F&W	Cahaba River	Its source	2A	17.88	miles	
AL03150202-0407-800	Cane Creek	Cahaba	F&W	Cahaba River	Its source	2A	10.38	miles	
AL03150202-0503-200	Sandy Creek	Cahaba	F&W	Cahaba River	Its source	2B	16.29	miles	
AL03150202-0504-100	Haysop Creek	Cahaba	F&W	Cahaba River	Its source	2B	26.81	miles	
AL03150202-0505-100	Affonee Creek	Cahaba	S	Cahaba River	Its source	2B	18.51	miles	
AL03150202-0506-200	Walton Creek	Cahaba	F&W	Cahaba River	Its source	2B	5.45	miles	
AL03150202-0506-300	Gully Creek	Cahaba	F&W	Cahaba River	Its source	2B	7.72	miles	
AL03150202-0507-100	Blue Girth Creek	Cahaba	S	Cahaba River	Its source	2B	15.08	miles	
AL03150202-0601-200	Wallace Creek	Cahaba	F&W	Cahaba River	Its source	2B	8.94	miles	
AL03150202-0601-300	Potato Patch Creek	Cahaba	F&W	Cahaba River	Its source	2B	7.54	miles	
AL03150202-0601-400	Taylor Creek	Cahaba	F&W	Cahaba River	Its source	2B	8.77	miles	
AL03150202-0602-200	Old Town Creek	Cahaba	S	Cahaba River	Its source	2B	12.66	miles	
AL03150202-0603-300	Mill Creek	Cahaba	F&W	Cahaba River	Its source	2B	11.35	miles	
AL03150202-0701-100	Rice Creek	Cahaba	F&W	Cahaba River	Its source	2B	14.87	miles	
AL03150202-0702-210	Waters Creek	Cahaba	S	Cahaba River	Its source	2B	9.93	miles	
AL03150202-0702-300	Wells Creek	Cahaba	F&W	Cahaba River	Its source	2B	5.36	miles	
AL03150202-0703-200	Possum Creek	Cahaba	F&W	Cahaba River	Its source	2B	8.97	miles	
AL03150202-0801-100	Beaverdam Creek	Cahaba	F&W	Oakmulgee Creek	Its source	2B	13.49	miles	
AL03150202-0805-100	Oakmulgee Creek	Cahaba	S	Cahaba River	Its source	2B	56.67	miles	
AL03150202-0902-501	Dry Creek	Cahaba	F&W	Cahaba River	Dallas County Road 201	2B	4.50	miles	
AL03130003-0104-102	Chattahoochee River	Chattahoochee	PWS/S/F&W	14th Street Bridge between Columbus and Phenix City	Oliver Dam	2B	3.15	miles	
AL03130003-0403-100	Little Uchee Creek	Chattahoochee	F&W	Uchee Creek	Its source	2B	36.54	miles	
AL03130003-0501-200	Snake Creek	Chattahoochee	F&W	Uchee Creek	Its source	2B	11.40	miles	
AL03130003-0503-100	Uchee Creek	Chattahoochee	S/F&W	Island Creek	Its source	2B	22.59	miles	
AL03130003-0505-102	Uchee Creek	Chattahoochee	PWS/S/F&W	County Road 39	Island Creek	2B	11.59	miles	
AL03130003-0903-102	Chattahoochee River	Chattahoochee	F&W	Cliatt Branch	14th Street Bridge between Columbus and Phenix City	2B	41.77	miles	
AL03130003-1101-100	Hurtsboro Creek	Chattahoochee	F&W	North Fork of Cowikee Creek	Its source	2A	19.41	miles	
AL03130004-0206-100	Bennett Mill Creek	Chattahoochee	F&W	Chattahoochee River	Its source	2A	5.88	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03130004-0403-110	Peterman Creek	Chattahoochee	F&W	Abbie Creek	Its source	2B	12.43	miles	
AL03130004-0602-202	Poplar Spring Branch	Chattahoochee	F&W	Ross Clark Circle	Its source	2B	3.46	miles	
AL03130004-0604-100	Spivey Mill Creek	Chattahoochee	F&W	Omusee Creek	Its source	2B	8.07	miles	
AL03130004-0607-100	Omusee Creek	Chattahoochee	F&W	Chattahoochee River	Its source	2B	28.05	miles	
AL03130012-0106-100	Buck Creek	Chipola	F&W	Alabama-Florida state line	Its source	2B	11.11	miles	
AL03130012-0106-202	Boggy Creek	Chipola	F&W	Cottondale WWTP	Its source	2B	6.72	miles	
AL03140201-0201-200	Jack Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	2B	5.83	miles	
AL03140201-0203-200	Panther Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	2B	7.63	miles	
AL03140201-0204-200	Deal Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	2A	6.57	miles	
AL03140201-0303-300	Blacks Creek	Choctawhatchee	F&W	Judy Creek	Its source	2B	5.62	miles	
AL03140201-0407-100	West Fork Choctawhatchee River	Choctawhatchee	F&W	Choctawhatchee River	Its source	2B	39.45	miles	
AL03140201-0501-202	Beaver Creek	Choctawhatchee	F&W	Dothan WWTP	Its source	2B	4.54	miles	
AL03140201-1004-400	Cox Mill Creek	Choctawhatchee	F&W	Hurricane Creek	Its source	2B	2.53	miles	
AL03140201-1004-800	Sandy Branch	Choctawhatchee	F&W	Hurricane Creek	Its source	2B	2.34	miles	
AL03140201-1103-100	Tight Eye Creek	Choctawhatchee	F&W	Double Bridges Creek	Its source	2B	14.69	miles	
AL03140201-1202-200	Providence Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	2B	1.70	miles	
AL03140201-1203-110	Adams Creek	Choctawhatchee	F&W	Rocky Creek	Its source	2B	1.97	miles	
AL03140202-0201-200	Johnson Creek	Choctawhatchee	F&W	Pea River	Its source	2B	9.51	miles	
AL03140202-0204-110	Big Sandy Creek	Choctawhatchee	F&W	Pea River	Its source	2B	11.32	miles	
AL03140202-0206-200	Double Creek	Choctawhatchee	F&W	Mill Creek	Its source	2B	9.30	miles	
AL03140202-0301-200	Buckhorn Creek	Choctawhatchee	F&W	Pea River	Its source	2A	15.97	miles	
AL03140202-0303-200	Richland Creek	Choctawhatchee	F&W	Pea River	Its source	2A	15.90	miles	
AL03140202-0407-400	Cowpen Creek	Choctawhatchee	F&W	Big Creek	Its source	2B	4.19	miles	
AL03140202-0407-500	Sweetwater Creek	Choctawhatchee	F&W	Big Creek	Its source	2B	6.82	miles	
AL03140202-0601-200	Patrick Creek	Choctawhatchee	F&W	Beaverdam Creek	Its source	2A	5.18	miles	
AL03140202-0701-100	Panther Creek	Choctawhatchee	F&W	Flat Creek	Its source	2B	10.81	miles	
AL03140202-0702-110	Flat Creek	Choctawhatchee	S/F&W	Eightmile Creek	Its source	2B	24.26	miles	
AL03140202-0803-100	Flat Creek	Choctawhatchee	F&W	Pea River	Eightmile Creek	2B	4.72	miles	
AL03140202-0905-110	Sandy Creek	Choctawhatchee	F&W	Pea River	Its source	2B	10.91	miles	
AL03140203-0701-100	Holmes Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	2B	6.72	miles	
AL03150105-0908-200	Mill Creek	Coosa	F&W	Terrapin Creek	Its source	2A	8.79	miles	
AL03150106-0107-100	Black Creek	Coosa	F&W	Coosa River	Its source	2A	29.10	miles	
AL03150106-0305-200	Gulf Creek	Coosa	F&W	Big Canoe Creek	Its source	2A	9.17	miles	
AL03150106-0307-100	Beaver Creek	Coosa	F&W	Coosa River	Its source	2A	29.37	miles	
AL03150106-0406-100	Ohatchee Creek	Coosa	S/F&W	Coosa River	Its source	2A	27.22	miles	
AL03150106-0408-100	Cane Creek	Coosa	F&W	Coosa River	Its source	2A	31.82	miles	
AL03150106-0509-200	Fayne Creek	Coosa	F&W	Cheaha Creek	Its source	2B	11.10	miles	
AL03150107-0203-100	Weewoka Creek	Coosa	F&W	Tallaseehatchee Creek	Its source	2A	18.32	miles	
AL03150107-0907-500	Fourmile Creek	Coosa	F&W	Taylor Creek	Its source	2A	5.67	miles	
AL03170002-0604-100	Red Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	2B	15.95	miles	
AL03170008-0201-100	Little Creek	Escatawpa	F&W	Escatawpa River	Its source	2B	12.05	miles	
AL03170008-0201-600	Long Branch	Escatawpa	F&W	Pond Creek	Its source	2B	3.45	miles	
AL03170008-0203-100	Bennett Creek	Escatawpa	F&W	Escatawpa River	Its source	2B	11.79	miles	
AL03170008-0601-400	Pierce Creek	Escatawpa	F&W	Big Creek	Its source	2B	10.23	miles	
AL03160205-0101-102	Dog River	Mobile	F&W	Moore Creek	Its source	2B	5.50	miles	
AL03160205-0103-402	Rabbit Creek	Mobile	F&W	Alabama Highway 163	Its source	2B	8.20	miles	
AL03160205-0203-110	Magnolia River	Mobile	OAW/S/F&W	Weeks Bay	Its source	2A	12.41	miles	
AL03160205-0203-400	Weeks Creek	Mobile	F&W	Magnolia River	Its source	2A	3.58	miles	
AL03160205-0203-500	Schoolhouse Branch	Mobile	F&W	Magnolia River	Its source	2A	3.83	miles	
AL03160205-0204-400	Turkey Branch	Mobile	S/F&W	Fish River	Its source	2A	13.38	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160205-0204-510	Waterhole Branch	Mobile	F&W	Fish River	Its source	2A	7.22	miles	
AL03160205-0206-701	UT to Bon Secour River	Mobile	F&W	Bon Secour River	Baldwin County Road 65	2B	0.61	miles	
AL03140103-0303-110	Clear Creek	Perdido-Escambia	F&W	Yellow River	Its source	2A	13.99	miles	
AL03140103-0305-102	Yellow River	Perdido-Escambia	F&W	North Creek	Its source	2B	35.05	miles	
AL03140106-0302-102	Brushy Creek	Perdido-Escambia	F&W	Boggy Branch	Its source	2B	9.12	miles	
AL03140106-0302-203	Boggy Branch	Perdido-Escambia	F&W	Masland Carpets WWTP	Its source	2B	0.95	miles	
AL03140106-0603-102	Blackwater River	Perdido-Escambia	F&W	Narrow Gap Creek	Its source	2B	27.30	miles	
AL03140106-0701-102	Perdido River	Perdido-Escambia	F&W	Jacks Branch	Its source	2B	43.48	miles	
AL03140303-0201-102	Rocky Creek	Perdido-Escambia	F&W	County road north of Chapman	Its source	2B	12.64	miles	
AL03140304-0501-200	Folley Creek	Perdido-Escambia	F&W	Conecuh River	Its source	2A	3.68	miles	
AL03140304-0502-100	Silas Creek	Perdido-Escambia	F&W	Conecuh River	Its source	2B	1.57	miles	
AL03140304-0601-100	Little Escambia Creek	Perdido-Escambia	F&W	Wild Fork Creek	Its source	2B	15.31	miles	
AL03140305-0206-102	Big Escambia Creek	Perdido-Escambia	F&W	Big Spring Creek	Its source	2B	27.55	miles	
AL03150108-1004-115	Tallapoosa River	Tallapoosa	F&W	Cleburne County Road 19	Cane Creek	2B	5.85	miles	
AL03150108-0405-102	Tallapoosa River	Tallapoosa	OAW/F&W	Cane Creek	Alabama-Georgia state line	2A	31.60	miles	
AL03150110-0102-103	Sougahatchee Creek	Tallapoosa	PWS/F&W	end of embayment	Its source	2A	4.95	miles	
AL03150110-0104-102	Sougahatchee Creek	Tallapoosa	F&W	End of embayment	Sougahatchee Lake dam	2A	47.35	miles	
AL03150110-0501-100	Persimmon Creek	Tallapoosa	F&W	Calebee Creek	Its source	2B	13.87	miles	
AL03150110-0801-100	Panther Creek	Tallapoosa	F&W	Line Creek	Its source	2B	20.57	miles	
AL03150110-0803-110	Johnsons Creek	Tallapoosa	F&W	Line Creek	Its source	2A	16.77	miles	
AL03150110-0903-300	Goodwater Creek	Tallapoosa	F&W	Tallapoosa River	Its source	2A	7.28	miles	
AL03150110-0904-102	Tallapoosa River	Tallapoosa	PWS/F&W	Jenkins Creek	Thurlow dam	2B	30.00	miles	
AL03150110-0905-101	Tallapoosa River	Tallapoosa	F&W	Alabama River	US Highway 231	2B	6.47	miles	
AL06030001-0502-100	Kirby Creek	Tennessee	F&W	South Sauty Creek	Its source	2A	12.52	miles	
AL06030002-0302-100	West Fork Flint River	Tennessee	F&W	Flint River	Its source	2B	1.76	miles	
AL06030002-0505-102	Indian Creek	Tennessee	F&W	Martin Road (Redstone Arsenal)	US Highway 72	2B	10.37	miles	
AL06030002-0602-103	West Fork Cotaco Creek	Tennessee	F&W	Frost Creek	Its source	2B	2.93	miles	
AL06030002-0606-100	Cotaco Creek	Tennessee	S/F&W	Tennessee River	Guyer Branch	2B	14.12	miles	
AL06030002-1012-102	West Flint Creek	Tennessee	F&W	McDaniel Creek	Its source	2B	24.32	miles	
AL06030002-1101-103	Swan Creek	Tennessee	F&W	Town Creek	Its source	2A	10.83	miles	
AL06030002-1202-200	Neeley Branch	Tennessee	F&W	First Creek	Its source	2A	3.61	miles	
AL06030005-0102-101	Muddy Fork	Tennessee	A&I	Big Nance Creek	Crow Branch	2A	11.14	miles	
AL06030005-0102-700	Crow Branch	Tennessee	A&I	Muddy Fork	Its source	2A	4.73	miles	
AL06030005-0806-100	Sinking Creek	Tennessee	F&W	Tennessee River	Its source	2B	16.38	miles	
AL06030006-0102-103	Bear Creek	Tennessee	F&W	Alabama Highway 243	Its source	2B	10.97	miles	
AL06030006-0104-102	Bear Creek	Tennessee	S/F&W	Alabama Highway 187	Mill Creek	2B	22.31	miles	
AL06030006-0206-101	Little Bear Creek	Tennessee	S/F&W	Cedar Creek	Little Bear Creek Dam	2B	11.88	miles	
AL06030006-0207-100	Cedar Creek	Tennessee	F&W	Alabama-Mississippi state line	Cedar Creek Lake Dam	2B	18.75	miles	
AL03160201-0105-100	Powell Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	2A	18.92	miles	
AL03160201-0203-100	Kinterbish Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Alabama-Mississippi state line	2A	52.74	miles	
AL03160201-0504-100	Yantley Creek	Tombigbee (Lower)	F&W	Tuckabum Creek	Alabama-Mississippi state line	2A	37.28	miles	
AL03160201-0601-100	Mill Creek	Tombigbee (Lower)	F&W	Horse Creek	Its source	2B	14.15	miles	
AL03160201-0904-102	Wahalak Creek	Tombigbee (Lower)	F&W	Spear Creek	Its source	2A	11.42	miles	
AL03160202-0404-101	Sucarnoochee River	Tombigbee (Lower)	PWS/S/F&W	US Highway 11	Miuka Creek	2A	6.07	miles	
AL03160103-0101-600	Moore Creek	Tombigbee (Upper)	F&W	West Branch Buttahatchee River	Its source	2B	3.47	miles	
AL03160103-0303-600	Clark Creek	Tombigbee (Upper)	F&W	Buttahatchee River	Its source	2A	3.96	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160106-0506-110	Blubber Creek	Tombigbee (Upper)	F&W	Lubbub Creek	Its source	2A	20.12	miles	
AL03160106-0702-102	Factory Creek	Tombigbee (Upper)	F&W	End of embayment	Its source	2B	18.81	miles	
AL03160107-0102-100	New River	Tombigbee (Upper)	F&W	Sipsey River	Its source	2A	24.41	miles	
AL03160107-0201-102	Sipsey River	Tombigbee (Upper)	PWS/F&W	US Highway 43	Alabama Highway 102	2B	12.61	miles	
AL03160107-0201-103	Sipsey River	Tombigbee (Upper)	F&W	Alabama Highway 102	Its source	2B	20.17	miles	
AL03160107-0303-102	Sipsey River	Tombigbee (Upper)	F&W	Tuscaloosa county line	US Highway 43	2B	74.42	miles	
Category 2 - Lakes and Reservoirs									
AL03150203-0703-102	Alabama River	Alabama	PWS	Rockwest Creek	Millers Ferry Lock and Dam	2B	454.40	acres	Claiborne Reservoir
AL03150204-0502-502	Chitterling Creek	Alabama	S/F&W	within Little River State Forest		2B	33.01	acres	Little River Lake
AL03160110-0305-202	Clear Creek	Black Warrior	S/F&W	Coon Creek	Caney Creek	2A	782.08	acres	Lewis Smith Lake
AL03160112-0401-112	Clear Creek	Black Warrior	PWS	Bugs Lake dam	extent of reservoir	2B	63.96	acres	
AL03160112-0501-102	Yellow Creek	Black Warrior	PWS	City of Tuscaloosa's water supply reservoir dam	Little Yellow Creek	2B	450.31	acres	
AL03150110-0102-102	Sougahatchee Creek	Tallapoosa	PWS/F&W	Sougahatchee Lake dam	End of embayment	2A	346.36	acres	Sougahatchee Lake
AL03150110-0406-103	Tallapoosa River	Tallapoosa	PWS/S/F&W	Yates dam	Martin Dam	2B	1595.89	acres	Yates Lake
Category 2 - Estuaries and Oceans									
AL03140107-0203-102	Wolf Bay	Perdido-Escambia	SH/S/F&W	Moccasin Bayou	Its source	2B	0.22	square miles	
AL03140107-0204-301	Perdido Bay	Perdido-Escambia	SH/S/F&W	Gulf of Mexico	Suarez Point	2B	11.85	square miles	
AL03140107-0204-500	Bay la Launch	Perdido-Escambia	SH/S/F&W	Arnica Bay	Wolf Bay	2B	1.48	square miles	
AL03140107-0204-600	Wolf Bay	Perdido-Escambia	OAW/SH/S/F&W	Bay la Launch	Moccasin Bayou	2B	4.65	square miles	
Category 3 - Rivers and Streams									
AL03150201-0101-100	Bouldin tailrace canal	Alabama	F&W	Coosa River	Bouldin Dam	3	4.74	miles	
AL03150201-1003-400	Gale Creek	Alabama	F&W	Mulberry Creek	Its source	3	7.39	miles	
AL03150201-1003-600	Charlotte Creek	Alabama	F&W	Gale Creek	Its source	3	4.14	miles	
AL03150203-0102-200	Sand Creek	Alabama	F&W	Bogue Chitto Creek	Its source	3	7.91	miles	
AL03150203-0301-100	Big Swamp Creek	Alabama	F&W	Alabama River	Its source	3	18.67	miles	
AL03150203-0603-100	Turkey Creek	Alabama	F&W	Beaver Creek	Its source	3	29.98	miles	
AL03150203-0703-300	Rockwest Creek	Alabama	F&W	Alabama River	Its source	3	12.69	miles	
AL03150203-0703-900	UT to Rockwest Creek	Alabama	F&W	Rockwest Creek	Its source	3	3.80	miles	
AL03150204-0206-100	Big Flat Creek	Alabama	S/F&W	Alabama River	Its source	3	63.53	miles	
AL03150204-0302-500	Hudson Branch	Alabama	F&W	Limestone Creek	Its source	3	3.54	miles	Local Name
AL03150204-0303-110	Double Branch Creek	Alabama	F&W	Limestone Creek	Its source	3	7.37	miles	Local Name
AL03150204-0304-100	Limestone Creek	Alabama	F&W	Alabama River	Its source	3	28.16	miles	
AL03160109-0102-800	Wolf Creek	Black Warrior	F&W	Duck River	Its source	3	4.31	miles	
AL03160109-0104-201	Bridge Creek	Black Warrior	F&W	Eightmile Creek	Cullman water supply reservoir dam	3	4.41	miles	
AL03160109-0104-800	Adams Branch	Black Warrior	PWS	Bridge Creek	Its source	3	1.96	miles	
AL03160109-0104-900	Pope Creek	Black Warrior	PWS	Bridge Creek	Its source	3	2.84	miles	
AL03160109-0206-100	Mulberry Fork	Black Warrior	F&W	Sipsey Fork	Marriott Creek	3	23.34	miles	
AL03160109-0405-102	Lost Creek	Black Warrior	PWS/F&W	Two miles upstream from Wolf Creek	Cane Creek	3	4.92	miles	
AL03160109-0405-500	Indian Creek	Black Warrior	F&W	Lost Creek	Its source	3	7.10	miles	
AL03160109-0503-400	Indian Creek	Black Warrior	F&W	Wolf Creek	Its source	3	11.50	miles	
AL03160109-0601-102	Cane Creek	Black Warrior	F&W	Town Creek	Its source	3	10.34	miles	
AL03160109-0601-902	Town Creek	Black Warrior	F&W	100 yards upstream of Southern Railway crossing	Its source	3	6.27	miles	
AL03160109-0603-101	Mulberry Fork	Black Warrior	PWS/F&W	Burnt Cane Creek	Frog Ague Creek	3	8.60	miles	
AL03160109-0603-102	Mulberry Fork	Black Warrior	PWS/F&W	Frog Ague Creek	Sipsey Fork	3	13.54	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160109-0603-200	Burnt Cane Creek	Black Warrior	F&W	Mulberry Fork	Its source	3	10.31	miles	
AL03160109-0603-700	Frog Ague Creek	Black Warrior	F&W	Mulberry Fork	Its source	3	4.46	miles	
AL03160109-0604-102	Mulberry Fork	Black Warrior	PWS/S/F&W	Baker Creek	Burnt Cane Creek	3	8.60	miles	
AL03160109-0604-700	Lost Creek	Black Warrior	F&W	Mulberry Fork	Two miles upstream from Wolf Creek	3	5.92	miles	
AL03160110-0104-701	Curtis Mill Creek	Black Warrior	F&W	Sandy Creek	Town of Double Springs water supply reservoir dam	3	3.67	miles	
AL03160110-0503-100	Rock Creek	Black Warrior	F&W	Ryan Creek	Its source	3	12.39	miles	
AL03160111-0201-600	Whippoorwill Creek	Black Warrior	F&W	Wynnville Creek	Its source	3	6.98	miles	
AL03160111-0206-500	Chitwood Creek	Black Warrior	F&W	Calvert Prong	Its source	3	2.78	miles	
AL03160111-0206-700	Whited Creek	Black Warrior	F&W	Calvert Prong	Its source	3	4.19	miles	
AL03160111-0206-800	Mill Creek	Black Warrior	F&W	Chitwood Creek	Its source	3	6.39	miles	
AL03160111-0307-200	Cunningham Creek	Black Warrior	F&W	Turkey Creek	Its source	3	11.60	miles	
AL03160112-0106-100	Valley Creek	Black Warrior	F&W	Black Warrior River	Blue Creek	3	30.75	miles	
AL03160112-0202-100	Big Yellow Creek	Black Warrior	S/F&W	Black Warrior River	end of embayment	3	7.48	miles	
AL03160112-0301-200	Lick Creek	Black Warrior	F&W	Blue Creek	Its source	3	2.99	miles	
AL03160113-0203-110	Cypress Creek	Black Warrior	F&W	Black Warrior River	Its source	3	14.63	miles	
AL03160113-0504-200	Little Brush Creek	Black Warrior	F&W	Big Brush Creek	Its source	3	10.76	miles	
AL03160113-0505-110	Colwell Creek	Black Warrior	F&W	Big Brush Creek	Its source	3	11.79	miles	
AL03160113-0604-400	Martin Creek	Black Warrior	F&W	Gabriel Creek	Its source	3	1.20	miles	
AL03160113-0607-400	Pole Bridge Branch	Black Warrior	F&W	Big Brush Creek	Its source	3	8.39	miles	
AL03160113-0801-100	Dollarhide Creek	Black Warrior	F&W	Black Warrior River	Its source	3	8.59	miles	
AL03160113-0803-900	White Creek	Black Warrior	F&W	Black Warrior River	Its source	3	8.38	miles	
AL03150202-0101-103	Cahaba River	Cahaba	OAW/F&W	I-59	Its source	3	2.22	miles	
AL03150202-0201-100	Peavine Creek	Cahaba	F&W	Buck Creek	Its source	3	10.01	miles	
AL03150202-0202-300	UT to Cahaba Valley Creek	Cahaba	F&W	Cahaba Valley Creek	Its source	3	2.31	miles	
AL03150202-0303-800	Little Shades Creek	Cahaba	F&W	Shades Creek	Its source	3	8.99	miles	
AL03150202-0402-100	Mahan Creek	Cahaba	F&W	Little Cahaba River	Its source	3	15.47	miles	
AL03150202-0403-110	Shoal Creek	Cahaba	F&W	Little Cahaba River	Its source	3	19.09	miles	
AL03150202-0404-110	Sixmile Creek	Cahaba	S	Little Cahaba River	Its source	3	27.27	miles	
AL03150202-0502-100	Schultz Creek	Cahaba	S	Cahaba River	Its source	3	16.39	miles	
AL03130002-0804-100	Guss Creek	Chattahoochee	F&W	Wehadkee Creek	Its source	3	6.63	miles	
AL03130002-0804-400	Gladney Mill Branch	Chattahoochee	F&W	Guss Creek	Its source	3	3.17	miles	
AL03130002-0805-102	Veasey Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	3	10.51	miles	
AL03130002-0805-400	Finley Creek	Chattahoochee	F&W	Stroud Creek	Its source	3	4.98	miles	
AL03130002-0902-300	Allen Creek	Chattahoochee	F&W	Oseligee Creek	Its source	3	4.89	miles	
AL03130002-0902-400	Kellem Hill Creek	Chattahoochee	F&W	Oseligee Creek	Its source	3	4.69	miles	
AL03130002-0903-200	Oseligee Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	3	18.71	miles	
AL03130002-0903-300	Hardley Creek	Chattahoochee	F&W	Alabama-Georgia state line	Its source	3	10.22	miles	
AL03130003-1301-100	Chewalla Creek	Chattahoochee	S/F&W	Chattahoochee River	Its source	3	15.48	miles	
AL03130003-1310-100	Cheneyhatchee Creek	Chattahoochee	S/F&W	Chattahoochee River	Its source	3	13.78	miles	
AL03130004-0303-100	Skippers Creek	Chattahoochee	F&W	Abbie Creek	Its source	3	6.71	miles	
AL03130004-0304-200	Vann Mill Creek	Chattahoochee	F&W	Abbie Creek	Its source	3	3.04	miles	
AL03130004-0405-100	Abbie Creek	Chattahoochee	F&W	Chattahoochee River	Its source	3	42.53	miles	
AL03130004-0703-102	Chattahoochee River	Chattahoochee	S/F&W	Woods Branch	Walter F. George Lock and Dam	3	36.04	miles	
AL03130004-0801-100	Chattahoochee River	Chattahoochee	F&W	Alabama-Florida state line	Woods Branch	3	14.14	miles	
AL03130012-0101-100	Limestone Creek	Chipola	F&W	Big Creek	Its source	3	10.80	miles	
AL03130012-0101-210	Harkin Branch	Chipola	F&W	Limestone Creek	Its source	3	3.31	miles	
AL03130012-0101-310	Chipola Creek	Chipola	F&W	Limestone Creek	Its source	3	6.41	miles	
AL03130012-0102-210	Coopers Bay Creek	Chipola	F&W	Big Creek	Its source	3	3.17	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03130012-0102-310	Chestnut Branch	Chipola	F&W	Big Creek	Its source	3	2.36	miles	
AL03130012-0102-400	Big Branch	Chipola	F&W	Coopers Bay Creek	Its source	3	3.22	miles	
AL03130012-0103-110	Double Bridges Creek	Chipola	F&W	Big Creek	Its source	3	9.22	miles	
AL03130012-0104-100	Marshall Creek	Chipola	F&W	Alabama-Florida state line	Its source	3	3.80	miles	
AL03130012-0104-200	Big Creek	Chipola	F&W	Marshall Creek	Its source	3	16.45	miles	
AL03130012-0105-100	Spring Creek	Chipola	F&W	Big Creek	Its source	3	13.68	miles	
AL03130012-0107-100	Freeman Branch	Chipola	F&W	Alabama-Florida state line	Its source	3	3.83	miles	
AL03130012-0201-210	Mill Creek	Chipola	F&W	Cowarts Creek	Its source	3	9.43	miles	
AL03130012-0201-310	Webb Creek	Chipola	F&W	Cowarts Creek	Its source	3	10.22	miles	
AL03130012-0201-410	Cooper Creek	Chipola	F&W	Cowarts Creek	Its source	3	3.13	miles	
AL03130012-0202-100	Rocky Creek	Chipola	F&W	Cowarts Creek	Its source	3	11.70	miles	
AL03130012-0202-210	Bruners Gin Creek	Chipola	F&W	Rocky Creek	Its source	3	5.43	miles	
AL03130012-0202-310	Little Rocky Creek	Chipola	F&W	Rocky Creek	Its source	3	5.14	miles	
AL03130012-0203-110	Cowarts Creek	Chipola	F&W	Alabama-Florida state line	Its source	3	21.72	miles	
AL03130012-0203-200	Gum Slough	Chipola	F&W	Alabama-Florida state line	Its source	3	6.74	miles	
AL03130012-0203-300	Guy Branch	Chipola	F&W	Cowarts Creek	Its source	3	4.48	miles	
AL03130012-0203-400	Bazemores Mill Branch	Chipola	F&W	Cowarts Creek	Its source	3	1.38	miles	
AL03140201-0102-100	Piney Woods Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	3	9.23	miles	
AL03140201-0102-200	Little Piney Woods Creek	Choctawhatchee	F&W	Piney Woods Creek	Its source	3	3.64	miles	
AL03140201-0202-100	Poor Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	3	10.71	miles	
AL03140201-0206-100	Blackwood Creek	Choctawhatchee	F&W	East Fork Choctawhatchee River	Its source	3	11.33	miles	
AL03140201-0302-110	Little Judy Creek	Choctawhatchee	F&W	Judy Creek	Its source	3	14.99	miles	
AL03140201-0401-100	Lindsey Creek	Choctawhatchee	F&W	West Fork Choctawhatchee River	Its source	3	12.48	miles	
AL03140201-0403-110	Sikes Creek	Choctawhatchee	F&W	West Fork Choctawhatchee River	Its source	3	13.07	miles	
AL03140201-0501-100	Newton Creek	Choctawhatchee	F&W	Little Choctawhatchee River	Its source	3	11.05	miles	
AL03140201-0504-100	Little Choctawhatchee River	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	24.02	miles	
AL03140201-0702-100	Claybank Creek	Choctawhatchee	F&W	Lake Tholocco	Its source	3	11.64	miles	
AL03140201-0904-100	Claybank Creek	Choctawhatchee	F&W	Choctawhatchee River	Lake Tholocco dam	3	20.52	miles	
AL03140201-1002-100	Pates Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	8.51	miles	
AL03140201-1004-200	Spann Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	2.09	miles	
AL03140201-1004-300	Hurricane Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	15.66	miles	
AL03140201-1004-900	Caney Creek	Choctawhatchee	F&W	Hurricane Creek	Its source	3	2.36	miles	
AL03140201-1105-120	Beaverdam Creek	Choctawhatchee	F&W	Double Bridges Creek	Its source	3	12.37	miles	
AL03140201-1105-200	Brushy Branch	Choctawhatchee	F&W	Beaverdam Creek	Its source	3	3.07	miles	
AL03140201-1106-100	Double Bridges Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	38.28	miles	
AL03140202-0101-100	Stinking Creek	Choctawhatchee	F&W	Pea Creek	Its source	3	9.89	miles	
AL03140202-0103-100	Hurricane Creek	Choctawhatchee	F&W	Pea Creek	Its source	3	10.34	miles	
AL03140202-0104-100	Pea Creek	Choctawhatchee	F&W	Pea River	Its source	3	22.85	miles	
AL03140202-0202-110	Spring Creek	Choctawhatchee	F&W	Pea River	Its source	3	11.13	miles	
AL03140202-0203-110	Little Indian Creek	Choctawhatchee	F&W	Pea River	Its source	3	12.56	miles	
AL03140202-0205-200	Bogue Chitta Creek	Choctawhatchee	F&W	Pea River	Its source	3	7.19	miles	
AL03140202-0206-100	Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	5.01	miles	
AL03140202-0207-200	Connors Creek	Choctawhatchee	F&W	Pea River	Its source	3	4.35	miles	
AL03140202-0302-100	Big Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.29	miles	
AL03140202-0403-600	Mims Creek	Choctawhatchee	F&W	Whitewater Creek	Its source	3	7.82	miles	
AL03140202-0406-110	Bluff Creek	Choctawhatchee	F&W	Big Creek	Its source	3	10.13	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140202-0409-200	Pea Creek	Choctawhatchee	F&W	Whitewater Creek	Its source	3	10.84	miles	
AL03140202-0501-100	Bowden Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.78	miles	
AL03140202-0505-200	Halls Creek	Choctawhatchee	F&W	Pea River	Its source	3	5.54	miles	
AL03140202-0601-100	Beaverdam Creek	Choctawhatchee	F&W	Pea River	Its source	3	11.33	miles	
AL03140202-0602-100	Bucks Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	10.35	miles	
AL03140202-0603-200	Helms Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	4.46	miles	
AL03140202-0604-100	Hays Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.10	miles	
AL03140202-0607-100	Cripple Creek	Choctawhatchee	F&W	Pea River	Its source	3	8.75	miles	
AL03140202-0608-100	Holley Mill Creek	Choctawhatchee	F&W	Pea River	Its source	3	4.66	miles	
AL03140202-0610-200	Samson Branch	Choctawhatchee	F&W	Pea River	Its source	3	6.06	miles	
AL03140202-0802-110	Corner Creek	Choctawhatchee	F&W	Eightmile Creek	Its source	3	16.35	miles	
AL03140202-0803-400	Eightmile Creek	Choctawhatchee	F&W	Flat Creek	Alabama-Florida state line	3	8.61	miles	
AL03140203-0101-100	Justice Mill Creek	Choctawhatchee	F&W	Spring Creek	Its source	3	7.51	miles	
AL03140203-0103-200	Spring Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	13.72	miles	
AL03140203-0103-300	Ice Factory Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	1.45	miles	
AL03140203-0103-400	Wheeler Mill Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	2.73	miles	
AL03140203-0103-500	Blue Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	2.31	miles	
AL03140203-0103-600	Negro Church Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	3.15	miles	
AL03140203-0103-700	Hathaway Branch	Choctawhatchee	F&W	Spring Creek	Its source	3	2.79	miles	
AL03140203-0104-110	Hand Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	0.55	miles	
AL03140203-0105-210	Wide Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	3.65	miles	
AL03140203-0105-300	Flowers Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	2.40	miles	
AL03140203-0105-400	Smith Branch	Choctawhatchee	F&W	Choctawhatchee River	Its source	3	1.77	miles	
AL03140203-0105-500	Whitewater Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	0.70	miles	
AL03140203-0105-600	John Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	1.21	miles	
AL03140203-0105-700	Boggy Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	1.57	miles	
AL03140203-0201-100	Wrights Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	8.96	miles	
AL03140203-0201-200	Gully Branch	Choctawhatchee	F&W	Wrights Creek	Its source	3	3.58	miles	
AL03140203-0201-300	Grant Branch	Choctawhatchee	F&W	Wrights Creek	Its source	3	3.57	miles	
AL03140203-0201-400	Davis Mill Creek	Choctawhatchee	F&W	Wrights Creek	Its source	3	3.43	miles	
AL03140203-0201-500	Lighter Snag Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	4.50	miles	
AL03140203-0201-600	Mill Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	2.27	miles	
AL03140203-0201-700	Tindil Branch	Choctawhatchee	F&W	Davis Mill Creek	Its source	3	3.55	miles	
AL03140203-0203-100	Tenmile Creek	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	3.18	miles	
AL03140203-0203-200	Poplar Creek	Choctawhatchee	F&W	Tenmile Creek	Its source	3	2.03	miles	
AL03140203-0203-300	Cannon Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	2.46	miles	
AL03140203-0701-200	Kirkland Branch	Choctawhatchee	F&W	Holmes Creek	Its source	3	3.19	miles	
AL03140203-0701-300	Boggy Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	2.31	miles	
AL03140203-0701-400	Big Branch	Choctawhatchee	F&W	Alabama-Florida state line	Its source	3	1.78	miles	
AL03150105-0206-200	Ballplay Creek	Coosa	F&W	Coosa River	Its source	3	9.20	miles	
AL03150105-0304-100	Spring Creek	Coosa	F&W	Coosa River	Alabama-Georgia state line	3	15.29	miles	
AL03150105-0605-101	Chattooga River	Coosa	S/F&W	Coosa River	Gaylesville	3	9.98	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150105-0605-102	Chattooga River	Coosa	F&W	Gaylesville	Alabama-Georgia state line	3	8.57	miles	
AL03150105-0906-200	Ladiga Creek	Coosa	PWS	Terrapin Creek	Terrapin Creek	3	2.91	miles	
AL03150106-0101-401	Allen Branch	Coosa	F&W	Big Wills Creek	Ft. Payne public water supply dam	3	0.31	miles	
AL03150106-0402-200	UT to Tallasseehatchee Creek	Coosa	F&W	Tallasseehatchee Creek	Its source	3	5.97	miles	
AL03150106-0406-210	Tallasseehatchee Creek	Coosa	F&W	Ohatchee Creek	Its source	3	35.97	miles	
AL03150106-0407-200	Cave Creek	Coosa	F&W	Cane Creek	Its source	3	6.23	miles	
AL03150106-0506-100	Coldwater Spring Branch	Coosa	F&W	Choccolocco Creek	Its source	3	10.39	miles	
AL03150106-0507-200	Snows Branch	Coosa	F&W	Choccolocco Creek	Its source	3	2.76	miles	
AL03150106-0510-100	Kelly Creek	Coosa	F&W	Cheaha Creek	Its source	3	12.25	miles	
AL03150106-0510-200	Brecon Branch	Coosa	F&W	Kelly Creek	Its source	3	3.68	miles	
AL03150106-0605-210	Dye Creek	Coosa	F&W	Coosa River	Its source	3	6.46	miles	
AL03150106-0611-100	Eastaboga Creek	Coosa	F&W	Choccolocco Creek	Its source	3	6.85	miles	
AL03150106-0701-201	Mump Creek	Coosa	F&W	Talladega Creek	City of Talladega's water supply dam	3	0.85	miles	
AL03150106-0701-203	Mump Creek	Coosa	PWS/F&W	Mump Creek Reservoir	Its source	3	4.31	miles	
AL03150106-0808-100	Kelly Creek	Coosa	S/F&W	Coosa River	Its source	3	34.11	miles	
AL03150107-0205-100	Yellowleaf Creek	Coosa	S/F&W	Coosa River	Its source	3	20.67	miles	
AL03150107-0403-500	UT to Waxahatchee Creek	Coosa	F&W	Waxahatchee Creek	Its source	3	4.02	miles	
AL03150107-0406-100	Waxahatchee Creek	Coosa	F&W	Coosa River	Its source	3	21.58	miles	
AL03150107-0907-100	Coosa River	Coosa	F&W	Tallapoosa River	Jordan Dam	3	12.96	miles	
AL03170002-0602-100	Turkey Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	6.66	miles	
AL03170002-0602-200	Sandy Creek	Escatawpa	F&W	Turkey Creek	Its source	3	4.72	miles	
AL03170002-0604-200	Whiskey Creek	Escatawpa	F&W	Red Creek	Its source	3	2.17	miles	
AL03170002-0604-300	Buck Creek	Escatawpa	F&W	Red Creek	Its source	3	2.05	miles	
AL03170002-0605-400	Little Red Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	3.53	miles	
AL03170002-0605-500	Savannah Branch	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	3.15	miles	
AL03170003-0204-100	Bryd Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	0.21	miles	
AL03170008-0104-100	Pine Barren Creek	Escatawpa	F&W	Escatawpa River	Its source	3	5.82	miles	
AL03170008-0104-300	West Pine Barren Creek	Escatawpa	F&W	Pine Barren Creek	Its source	3	8.27	miles	
AL03170008-0104-400	East Pine Barren Creek	Escatawpa	F&W	Pine Barren Creek	Its source	3	3.28	miles	
AL03170008-0105-100	Brushy Creek	Escatawpa	F&W	Escatawpa River	Alabama-Mississippi state line	3	8.98	miles	
AL03170008-0201-200	Pond Creek	Escatawpa	F&W	Little Creek	Its source	3	10.84	miles	
AL03170008-0404-100	Flat Creek	Escatawpa	F&W	Alabama-Mississippi state line	Its source	3	5.86	miles	
AL03170009-0101-100	Little River	Escatawpa	F&W	Portersville Bay	Its source	3	2.54	miles	
AL03170009-0103-200	West Fowl River	Escatawpa	S/F&W	Fowl River bay	Its source	3	5.84	miles	
AL03170009-0103-600	Bayou Coden	Escatawpa	F&W	Portersville Bay	Its source	3	2.30	miles	
AL03160204-0105-112	Cold Creek	Mobile	PWS/F&W	Dam 1 1/2 miles west of US Highway 43	Its source	3	5.05	miles	
AL03160204-0106-103	Mobile River	Mobile	PWS/F&W	Barry Steam Plant	Tensaw River	3	10.29	miles	
AL03160204-0106-112	Mobile River	Mobile	F&W	Cold Creek	Barry Steam Plant	3	2.37	miles	
AL03160204-0203-900	Martin Branch	Mobile	F&W	Red Hill Creek	Its source	3	5.52	miles	
AL03160204-0304-101	Eightmile Creek	Mobile	F&W	Chickasaw Creek	City of Prichard's water supply intake	3	2.19	miles	
AL03160204-0304-102	Eightmile Creek	Mobile	PWS/F&W	City of Prichard's water supply intake	US Highway 45	3	1.73	miles	
AL03160204-0305-300	Hog Bayou	Mobile	F&W	Chickasaw Creek	Its source	3	0.85	miles	
AL03160204-0401-200	Steele Creek	Mobile	S/F&W	Gunnison Creek	Its source	3	3.45	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160204-0402-101	Bayou Sara	Mobile	S/F&W	Mobile River	Gunnison Creek	3	4.51	miles	
AL03160204-0402-103	Bayou Sara	Mobile	S/F&W	Norton Creek	US Highway 43	3	1.26	miles	
AL03160204-0402-104	Bayou Sara	Mobile	F&W	US Highway 43	Its source	3	14.95	miles	
AL03160204-0402-502	Norton Creek	Mobile	F&W	Saraland WWTP	Its source	3	3.74	miles	
AL03160205-0101-110	Eslava Creek	Mobile	F&W	Bolton Branch	Its source	3	3.02	miles	
AL03160205-0101-300	Robinson Bayou	Mobile	F&W	Dog River	Its source	3	1.97	miles	
AL03160205-0103-300	Alligator Bayou	Mobile	F&W	Dog River	Its source	3	4.47	miles	
AL03160205-0103-500	Rattlesnake Bayou	Mobile	F&W	Rabbit Creek	Its source	3	1.49	miles	
AL03160205-0104-210	East Fowl River	Mobile	S/F&W	Fowl River	Its source	3	5.38	miles	
AL03160205-0201-300	Corn Branch	Mobile	F&W	Fish River	Its source	3	5.14	miles	
AL03160205-0205-300	Point Clear Creek	Mobile	F&W	Mobile Bay	Its source	3	4.45	miles	
AL03160205-0205-700	Fly Creek	Mobile	S/F&W	Mobile Bay	Its source	3	4.57	miles	
AL03160205-0205-800	Rock Creek	Mobile	F&W	Mobile Bay	Its source	3	4.01	miles	
AL03160205-0206-300	Boggy Branch	Mobile	S/F&W	Bon Secour River	Its source	3	3.47	miles	
AL03140103-0102-103	Lightwood Knot Creek	Perdido-Escambia	F&W	Frank Jackson Lake	Its source	3	14.56	miles	
AL03140103-0102-300	Cameron Creek	Perdido-Escambia	F&W	Lightwood Knot Creek	Its source	3	3.57	miles	
AL03140103-0103-100	Lightwood Knot Creek	Perdido-Escambia	F&W	Yellow River	Frank Jackson Lake dam	3	6.13	miles	
AL03140103-0203-100	Five Runs Creek	Perdido-Escambia	F&W	Yellow River	Its source	3	30.72	miles	
AL03140103-0402-300	Big Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	5.26	miles	
AL03140103-0601-100	Pond Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	2.85	miles	
AL03140103-0601-200	Fleming Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	3.15	miles	
AL03140103-0602-100	Horsehead Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	4.59	miles	
AL03140104-0104-200	Boggy Hollow Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	7.45	miles	
AL03140104-0105-110	Rock Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	1.98	miles	
AL03140104-0301-100	Sweetwater Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	4.23	miles	
AL03140104-0303-100	Big Jumiper Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	0.49	miles	
AL03140104-0402-100	Dixon Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	0.77	miles	
AL03140106-0101-100	Perdido Creek	Perdido-Escambia	F&W	Perdido River	Its source	3	9.61	miles	
AL03140106-0203-100	Dyas Creek	Perdido-Escambia	S/F&W	Perdido River	Its source	3	18.34	miles	
AL03140106-0601-100	Negro Creek	Perdido-Escambia	F&W	Blackwater River	Its source	3	11.77	miles	
AL03140106-0602-500	Rock Creek	Perdido-Escambia	F&W	Blackwater River	Its source	3	8.22	miles	
AL03140107-0104-200	Palmetto Creek	Perdido-Escambia	S/F&W	Perdido Bay	Its source	3	4.79	miles	
AL03140107-0104-300	Soldier Creek	Perdido-Escambia	S/F&W	Perdido Bay	Its source	3	8.77	miles	
AL03140107-0104-600	Spring Branch	Perdido-Escambia	S/F&W	Palmetto Creek	Its source	3	3.04	miles	
AL03140107-0201-100	Wolf Creek	Perdido-Escambia	F&W	Wolf Bay	Its source	3	8.91	miles	
AL03140107-0201-200	Sandy Creek	Perdido-Escambia	S/F&W	Wolf Creek	Its source	3	7.57	miles	
AL03140107-0202-101	Miflin Creek	Perdido-Escambia	S/F&W	Wolf Bay	limit of tidal effects	3	3.39	miles	
AL03140107-0202-102	Miflin Creek	Perdido-Escambia	F&W	limit of tidal effects	Its source	3	4.98	miles	
AL03140107-0203-201	Hammock Creek	Perdido-Escambia	S/F&W	Wolf Bay	limit of tidal effects	3	3.69	miles	
AL03140107-0203-202	Hammock Creek	Perdido-Escambia	F&W	limit of tidal effects	Its source	3	2.50	miles	
AL03140301-0105-100	Conecuh River	Perdido-Escambia	F&W	Mannings Creek	Its source	3	39.63	miles	
AL03140301-0402-500	Double Branch	Perdido-Escambia	F&W	Conecuh River	Its source	3	6.59	miles	
AL03140301-0404-103	Conecuh River	Perdido-Escambia	F&W	Hornet Creek	Broadhead Creek	3	35.36	miles	
AL03140301-0501-300	Prestwood Creek	Perdido-Escambia	F&W	Conecuh River	Its source	3	6.01	miles	
AL03140301-0501-500	UT to Conecuh River	Perdido-Escambia	F&W	Conecuh River	Its source	3	2.22	miles	
AL03140301-0503-100	Conecuh River	Perdido-Escambia	F&W	Sepulga River	Point A Dam	3	34.68	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140302-0303-100	Little Patsaliga Creek	Perdido-Escambia	S/F&W	Patsaliga Creek	Its source	3	32.00	miles	
AL03140302-0506-102	Patsaliga Creek	Perdido-Escambia	F&W	Buck Creek	Its source	3	83.17	miles	
AL03140303-0204-100	Persimmon Creek	Perdido-Escambia	F&W	Sepulga River	Its source	3	55.01	miles	
AL03140303-0402-500	UT to Pigeon Creek	Perdido-Escambia	F&W	Pigeon Creek	Its source	3	3.83	miles	
AL03140303-0504-100	Pigeon Creek	Perdido-Escambia	F&W	Sepulga River	Its source	3	79.41	miles	
AL03140303-0703-102	Sepulga River	Perdido-Escambia	F&W	Robinson Mill Creek	Its source	3	46.99	miles	
AL03140304-0106-100	Mill Creek	Perdido-Escambia	F&W	Murder Creek	Its source	3	10.88	miles	
AL03140304-0106-200	Sandy Creek	Perdido-Escambia	F&W	Mill Creek	Its source	3	5.76	miles	
AL03140304-0305-102	Burnt Corn Creek	Perdido-Escambia	S/F&W	Sevenmile Creek	Its source	3	38.44	miles	
AL03140304-0404-100	Murder Creek	Perdido-Escambia	F&W	Conecuh River	Its source	3	67.84	miles	
AL03140304-0505-110	Conecuh River	Perdido-Escambia	F&W	Mantle Branch	Sepulga River	3	33.57	miles	
AL03140305-0101-100	Wet Weather Creek	Perdido-Escambia	F&W	Sizemore Creek	Its source	3	13.46	miles	
AL03140305-0102-100	Sizemore Creek	Perdido-Escambia	S/F&W	Big Escambia Creek	Its source	3	14.28	miles	
AL03140305-0401-100	Canoe Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	3.85	miles	
AL03140305-0401-300	Reedy Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	1.83	miles	
AL03140305-0501-100	Pine Barren Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	2.62	miles	
AL03140305-0501-200	Beaverdam Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	3	3.99	miles	
AL03150108-1004-112	Tallapoosa River	Tallapoosa	F&W	4 miles upstream of Randolph County Road 88	dam at Cleburne County Road 36	3	5.77	miles	
AL03150109-0106-102	Tallapoosa River	Tallapoosa	F&W	Cedar Creek	R. L. Harris Dam	3	10.68	miles	
AL03150109-0802-103	Tallapoosa River	Tallapoosa	F&W	Hillabee Creek	Alabama Highway 77	3	40.75	miles	
AL03150110-0102-600	Head Creek	Tallapoosa	F&W	Sougahatchee Creek	Its source	3	4.00	miles	
AL03150110-0304-100	Uphapee Creek	Tallapoosa	F&W	Tallapoosa River	Its source	3	21.16	miles	
AL03150110-0304-400	Bulger Creek	Tallapoosa	PWS/F&W	Uphapee Creek	Its source	3	7.52	miles	
AL03150110-0704-100	Old Town Creek	Tallapoosa	F&W	Line Creek	Its source	3	40.26	miles	
AL06030002-0203-401	Cole Spring Branch	Tennessee	F&W	Paint Rock River	Bridge at Jones farm	3	0.99	miles	
AL06030002-0203-403	Cole Spring Branch	Tennessee	F&W	Jeep trail crossing	Its source	3	3.29	miles	
AL06030002-0204-301	Little Paint Rock Creek	Tennessee	F&W	Paint Rock River	Merril Road Bridge	3	1.20	miles	
AL06030002-0204-303	Little Paint Rock Creek	Tennessee	F&W	Jeep trail crossing	Its source	3	1.93	miles	
AL06030002-0403-301	Chase Creek	Tennessee	F&W	Flint River	Acuff Spring	3	0.78	miles	
AL06030002-0403-303	Chase Creek	Tennessee	F&W	Alabama Highway 72	Its source	3	2.14	miles	
AL06030002-0502-100	Huntsville Spring Branch	Tennessee	F&W	Broglan Branch	Its source	3	1.85	miles	
AL06030002-0602-101	West Fork Cotaco Creek	Tennessee	F&W	Cotaco Creek	Alabama Highway 67	3	1.56	miles	
AL06030002-0603-100	Cotaco Creek	Tennessee	S/F&W	West Fork Cotaco Creek	Its source	3	14.08	miles	
AL06030002-1008-102	No Business Creek	Tennessee	F&W	Johnson Chapel Creek	Its source	3	6.81	miles	
AL06030002-1009-111	Elam Creek	Tennessee	F&W	West Flint Creek	Rocky Branch	3	2.01	miles	
AL06030002-1014-701	Village Branch	Tennessee	F&W	West Flint Creek	Moss Spring Branch	3	2.94	miles	
AL06030004-0404-101	Anderson Creek	Tennessee	F&W	Elk River	Snake Road bridge	3	4.69	miles	
AL06030006-0202-102	Cedar Creek	Tennessee	F&W	Alabama Highway 24	Its source	3	24.60	miles	
AL03160201-0108-200	Sycamore Creek	Tombigbee (Lower)	F&W	Chickasaw Bogue	Its source	3	8.02	miles	
AL03160201-0302-100	Beaver Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	41.86	miles	
AL03160201-0604-100	Horse Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	45.44	miles	
AL03160201-0704-100	Bashi Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	35.12	miles	
AL03160201-0804-100	Bogueloosa Creek	Tombigbee (Lower)	F&W	Okatuppa Creek	Its source	3	22.73	miles	
AL03160201-0904-200	Tishlarka Creek	Tombigbee (Lower)	F&W	Wahalak Creek	Its source	3	11.58	miles	
AL03160202-0404-102	Sucarnoochee River	Tombigbee (Lower)	F&W	Miuka Creek	Alabama-Mississippi state line	3	19.44	miles	
AL03160202-0502-101	Toomsuba Creek	Tombigbee (Lower)	F&W	Alamuchee Creek	AT&N Railroad	3	1.14	miles	
AL03160202-0502-102	Toomsuba Creek	Tombigbee (Lower)	PWS/F&W	AT&N Railroad	Alabama-Mississippi state line	3	9.90	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160202-0502-201	UT to Toomsuba Creek	Tombigbee (Lower)	PWS	Toomsuba Creek	Lake Louise dam	3	1.91	miles	
AL03160202-0604-100	Alamuchee Creek	Tombigbee (Lower)	F&W	Sucarnoochee River	Alabama-Mississippi state line	3	37.58	miles	
AL03160202-0703-100	Sucarnoochee River	Tombigbee (Lower)	F&W	Tombigbee River	US Highway 11	3	33.41	miles	
AL03160203-0104-100	Santa Bogue Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	26.44	miles	
AL03160203-0403-100	Jackson Creek	Tombigbee (Lower)	F&W	Tombigbee River	Its source	3	23.33	miles	
AL03160203-0502-102	Tombigbee River	Tombigbee (Lower)	F&W	Smiths Creek	Coffeeville Lock and Dam	3	18.45	miles	
AL03160203-0603-200	James Creek	Tombigbee (Lower)	F&W	Bassett Creek	Its source	3	6.86	miles	
AL03160203-0607-100	Bassett Creek	Tombigbee (Lower)	F&W	Tombigbee River	Little Bassett Creek	3	39.26	miles	
AL03160203-0701-100	Little Bassetts Creek	Tombigbee (Lower)	F&W	Bassetts Creek	Its source	3	13.54	miles	
AL03160203-0702-700	Miles Creek	Tombigbee (Lower)	F&W	Bassetts Creek	Its source	3	5.21	miles	
AL03160203-0705-100	Bassetts Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	43.22	miles	
AL03160203-0802-100	Lewis Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	3	12.28	miles	
AL03160203-0901-112	Tombigbee River	Tombigbee (Lower)	PWS/S/F&W	1/2 mile downstream of Southern Railway Crossing	Smiths Creek	3	8.83	miles	
AL03160203-1001-100	Bates Creek	Tombigbee (Lower)	S/F&W	Bilbo Creek	Its source	3	25.30	miles	
AL03160203-1103-103	Tombigbee River	Tombigbee (Lower)	F&W	Olin Basin canal	Bassetts Creek	3	21.37	miles	
AL03160106-0505-200	Owl Creek	Tombigbee (Upper)	F&W	Tombigbee River	Alabama-Mississippi state line	3	4.02	miles	
Category 3 - Lakes and Reservoirs									
AL03160109-0104-202	Bridge Creek	Black Warrior	PWS	Cullman water supply reservoir dam	Its source	3	159.21	acres	
AL03160110-0104-702	Curtis Mill Creek	Black Warrior	PWS	Town of Double Springs water supply reservoir dam	Its source	3	2.20	acres	
AL03140201-0703-100	Claybank Creek	Choctawhatchee	S/F&W	Lake Tholocco dam	extent of reservoir	3	679.39	acres	Tholocco Lake
AL03150106-0101-402	Allen Branch	Coosa	PWS/F&W	Ft. Payne public water supply dam	Its source	3	53.63	acres	
AL03150106-0701-202	Mump Creek	Coosa	PWS/F&W	City of Talladega's water supply dam	End of embayment	3	36.40	acres	Mump Creek Reservoir
AL03160204-0106-400	Briar Lake	Mobile	OAW/F&W	Junction of Tensaw River	Junction of Tensaw Lake	3	169.36	acres	
AL03160204-0106-500	Tensaw Lake	Mobile	OAW/F&W	Junction of Tensaw River	Bryant Landing	3	436.74	acres	
AL03140103-0203-502	Blue Lake	Perdido-Escambia	S/F&W	Within Conecuh National Forest		3	41.37	acres	
AL03140103-0401-180	Open Pond	Perdido-Escambia	S/F&W	Within Conecuh National Forest		3	34.76	acres	
AL03140103-0401-190	Dowdy Pond	Perdido-Escambia	S/F&W	Within Conecuh National Forest		3	12.73	acres	
AL03160202-0502-202	UT to Toomsuba Creek	Tombigbee (Lower)	PWS	Lake Louise		3	47.39	acres	Lake Louise
Category 4 - Rivers and Streams									
AL03150201-0304-200	UT to Little Catoma Creek	Alabama	F&W	Little Catoma Creek	Its source	4A	6.27	miles	
AL03150201-0307-100	Ramer Creek	Alabama	F&W	Catoma Creek	Its source	4A	22.37	miles	
AL03150201-0311-100	Catoma Creek	Alabama	F&W	Alabama River	Ramer Creek	4A	23.19	miles	
AL03150201-0404-100	Pintlala Creek	Alabama	S/F&W	Pinchony Creek	Its source	4A	26.45	miles	
AL03150203-0802-100	Pursley Creek	Alabama	F&W	Alabama River	Its source	4A	26.11	miles	
AL03150203-0802-400	Town Branch	Alabama	F&W	Pursley Creek	Its source	4A	4.35	miles	Local Name
AL03160109-0102-150	Long Branch	Black Warrior	F&W	Wolf Creek	Its source	4A	2.04	miles	
AL03160109-0102-910	Duck Creek	Black Warrior	F&W	Duck River	Its source	4A	5.76	miles	
AL03160109-0104-103	Eightmile Creek	Black Warrior	PWS	Moody Branch	Its source	4A	7.60	miles	
AL03160109-0105-101	Brindley Creek	Black Warrior	PWS	Broglen River	State Highway 69	4A	7.17	miles	
AL03160109-0105-102	Brindley Creek	Black Warrior	PWS	State Highway 69	Its source	4A	9.89	miles	
AL03160109-0106-100	Broglen River	Black Warrior	F&W	Mulberry Fork	Its source	4A	12.40	miles	
AL03160109-0106-500	Eightmile Creek	Black Warrior	F&W	Broglen River	Cullman water supply reservoir dam	4A	8.15	miles	

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160109-0201-100	Thacker Creek	Black Warrior	F&W	Mulberry Fork	Its source	4A	9.98	miles	
AL03160110-0403-102	Rock Creek	Black Warrior	F&W	Lake Lewis Smith	Blevens Creek	4A	8.82	miles	
AL03160110-0406-100	Crooked Creek	Black Warrior	F&W	Lake Lewis Smith	Its source	4A	30.47	miles	
AL03160110-0502-102	Ryan Creek	Black Warrior	F&W	Rock Creek	Its source	4A	16.12	miles	
AL03160111-0202-200	Graves Creek	Black Warrior	F&W	Locust Fork	Its source	4A	9.79	miles	
AL03160111-0407-100	Fivemile Creek	Black Warrior	F&W	Locust Fork	Its source	4B	44.57	miles	
AL03160111-0408-300	Camp Branch	Black Warrior	F&W	Bayview Lake	Its source	4A	4.93	miles	
AL03160112-0502-200	Little Hurricane Creek	Black Warrior	F&W	Hurricane Creek	Its source	4A	10.19	miles	
AL03160112-0502-300	North Fork of Hurricane Creek	Black Warrior	F&W	Hurricane Creek	Its source	4A	6.53	miles	
AL03160112-0504-100	Hurricane Creek	Black Warrior	F&W	Black Warrior River	Its source	4A	31.50	miles	
AL03150202-0102-100	Big Black Creek	Cahaba	F&W	Cahaba River	Its source	4A	16.45	miles	
AL03150202-0103-300	Lee Branch	Cahaba	F&W	Lake Purdy	Its source	4A	2.87	miles	
AL03150202-0202-100	Cahaba Valley Creek	Cahaba	F&W	Buck Creek	Its source	4A	14.98	miles	
AL03150202-0203-111	Buck Creek	Cahaba	F&W	Cahaba River	Cahaba Valley Creek	4A	2.92	miles	
AL03150202-0204-500	Patton Creek	Cahaba	F&W	Cahaba River	Its source	4A	8.84	miles	
AL03150202-0302-102	Mud Creek	Cahaba	F&W	Tannehill Iron Works	Its source	4A	4.08	miles	
AL03150202-0302-200	Mill Creek	Cahaba	F&W	Mud Creek	Its source	4A	6.65	miles	
AL03150202-0302-400	Cooley Creek	Cahaba	F&W	Mill Creek	Its source	4A	2.83	miles	
AL03150202-0303-100	Shades Creek	Cahaba	F&W	Cahaba River	Its source	4A	56.38	miles	
AL03150202-0902-502	Dry Creek	Cahaba	F&W	Dallas County Road 201	Its source	4A	4.98	miles	
AL03130012-0106-201	Boggy Creek	Chipola	F&W	Buck Creek	Cottondale WWTP	4A	3.48	miles	
AL03140201-0206-300	Dunham Creek	Choctawhatchee	F&W	Blackwood Creek	Its source	4B	4.27	miles	
AL03140201-0601-100	Hurricane Creek	Choctawhatchee	F&W	Choctawhatchee River	Its source	4A	9.39	miles	
AL03140202-0401-102	Walnut Creek	Choctawhatchee	F&W	Pike County Road 3304	US Highway 231	4A	3.30	miles	
AL03150105-0807-102	Spring Creek	Coosa	F&W	Coosa River	Mud Creek	4A	5.39	miles	
AL03150105-0807-103	Spring Creek	Coosa	F&W	Mud Creek	Its source	4A	9.88	miles	
AL03150105-0807-200	Mud Creek	Coosa	F&W	Spring Creek	Its source	4A	5.24	miles	
AL03150105-1003-200	Coosa River	Coosa	F&W	Weiss dam powerhouse	Weiss dam	4C	19.62	miles	
AL03150106-0102-300	Little Wills Creek	Coosa	F&W	Big Wills Creek	Its source	4A	6.08	miles	
AL03150107-0404-100	Watson Creek	Coosa	F&W	Buxahatchee Creek	Its source	4A	12.37	miles	
AL03150107-0405-100	Buxahatchee Creek	Coosa	F&W	Waxahatchee Creek	Its source	4A	14.00	miles	
AL03170008-0205-102	Puppy Creek	Escatawpa	F&W	Alabama Highway 217	Its source	4A	11.32	miles	
AL03170008-0501-210	Juniper Creek	Escatawpa	F&W	Big Creek	Its source	4A	6.67	miles	
AL03170009-0102-100	Bayou La Batre	Escatawpa	F&W	Portersville Bay	Its source	4A	5.46	miles	
AL03160204-0304-103	Eightmile Creek	Mobile	F&W	US Highway 45	Highpoint Boulevard	4A	3.32	miles	
AL03160204-0304-200	Gum Tree Branch	Mobile	F&W	Eightmile Creek	Its source	4A	2.27	miles	
AL03160204-0402-102	Bayou Sara	Mobile	S/F&W	Gunnison Creek	Norton Creek	4A	2.76	miles	
AL03160204-0402-501	Norton Creek	Mobile	F&W	Bayou Sara	Saraland WWTP	4A	0.95	miles	
AL03160204-0504-103	Threemile Creek	Mobile	A&I	Mobile Street	Its source	4A	8.85	miles	
AL03160204-0504-200	Industrial Canal	Mobile	A&I	Threemile Creek	Its source	4A	2.32	miles	
AL03160205-0101-101	Dog River	Mobile	F&W	Halls Mill Creek	Moore Creek	4A	1.38	miles	
AL03160205-0101-200	Moore Creek	Mobile	F&W	Dog River	Its source	4A	3.95	miles	
AL03160205-0101-400	Bolton Branch	Mobile	F&W	Dog River	Its source	4A	2.44	miles	
AL03160205-0101-500	Eslava Creek	Mobile	F&W	Dog River	Its source	4A	3.17	miles	
AL03160205-0101-600	Bolton Branch	Mobile	F&W	Moore Creek	Its source	4A	5.69	miles	
AL03160205-0102-101	Dog River	Mobile	S/F&W	Mobile Bay	Halls Mill Creek	4A	2.79	miles	
AL03160205-0103-401	Rabbit Creek	Mobile	F&W	Halls Mill Creek	Alabama Highway 163	4A	2.28	miles	
AL03160205-0206-702	UT to Bon Secour River	Mobile	F&W	Baldwin County Road 65	Its source	4A	1.64	miles	
AL03140301-0302-102	Conecuh River	Perdido-Escambia	F&W	Broadhead Creek	Mannings Creek	4A	24.53	miles	
AL03140301-0404-112	Conecuh River	Perdido-Escambia	F&W	Gantt Reservoir	Hornet Creek	4A	4.55	miles	
AL03140301-0405-102	Conecuh River	Perdido-Escambia	S/F&W	Point A Reservoir	Gantt Dam	4A	2.26	miles	
AL03150108-0905-400	Wolf Creek	Tallapoosa	F&W	Little Tallapoosa River	Its source	4A	5.53	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03150108-1004-104	Tallapoosa River	Tallapoosa	PWS/F&W	1/2 mile upstream of Cleburne County Road 36	Cleburne County Road 19	4A	3.82	miles	
AL03150108-1004-113	Tallapoosa River	Tallapoosa	F&W	dam at Cleburne County Road 36	1/2 mile upstream of Cleburne County Road 36	4A	0.44	miles	
AL03150109-0107-102	Tallapoosa River	Tallapoosa	F&W	Alabama Highway 77	Cedar Creek	4C	3.15	miles	
AL03150110-0102-700	Pepperell Branch	Tallapoosa	F&W	Sougahatchee Creek	Its source	4A	6.67	miles	
AL03150110-0202-200	Parkerson Mill Creek	Tallapoosa	F&W	Chewacla Creek	Its source	4A	6.85	miles	
AL06030001-0705-100	Town Creek	Tennessee	F&W	Tennessee River	Its source	4A	69.39	miles	
AL06030001-0805-200	Scarham Creek	Tennessee	F&W	Short Creek	Its source	4A	23.42	miles	
AL06030002-0203-402	Cole Spring Branch	Tennessee	F&W	Bridge at Jones farm	Jeep trail crossing	4A	1.80	miles	
AL06030002-0204-302	Little Paint Rock Creek	Tennessee	F&W	Merril Road Bridge	Jeep trail crossing	4A	2.17	miles	
AL06030002-0303-100	Mountain Fork	Tennessee	F&W	Flint River	Its source	4A	14.90	miles	
AL06030002-0402-101	Hurricane Creek	Tennessee	F&W	Flint River	Gurley Pike Road	4A	7.31	miles	
AL06030002-0403-302	Chase Creek	Tennessee	F&W	Acuff Spring	Alabama Highway 72	4A	2.14	miles	
AL06030002-0405-300	Yellow Bank Creek	Tennessee	F&W	Flint River	Its source	4A	5.33	miles	
AL06030002-0501-110	Indian Creek	Tennessee	F&W	US Highway 72	Its source	4A	6.49	miles	
AL06030002-0503-101	Huntsville Spring Branch	Tennessee	F&W	Indian Creek	Johnson Road (Huntsville Field)	4B	11.08	miles	
AL06030002-0505-101	Indian Creek	Tennessee	F&W	Tennessee River	Martin Road (Redstone Arsenal)	4B	7.69	miles	
AL06030002-0604-100	Town Creek	Tennessee	F&W	Cotaco Creek	Its source	4A	8.66	miles	
AL06030002-0605-102	Cotaco Creek	Tennessee	S/F&W	Guyer Branch	West Fork Cotaco Creek	4A	5.38	miles	
AL06030002-0703-102	Limestone Creek	Tennessee	F&W	US Highway 72	Leslie Branch	4A	10.79	miles	
AL06030002-0802-201	French Mill Creek	Tennessee	F&W	Piney Creek	Unnamed tributary in Pine Swamp	4A	5.21	miles	
AL06030002-0902-200	Cane Creek	Tennessee	F&W	Tennessee River	Its source	4A	7.92	miles	
AL06030002-0903-100	Aldridge Creek	Tennessee	F&W	Tennessee River	Its source	4A	11.80	miles	
AL06030002-1001-100	East Fork Flint Creek	Tennessee	F&W	Flint Creek	Its source	4A	15.32	miles	
AL06030002-1003-112	Robinson Creek	Tennessee	F&W	Flint Creek	Its source	4A	6.69	miles	
AL06030002-1003-510	Indian Creek	Tennessee	F&W	Flint Creek	Its source	4A	4.22	miles	
AL06030002-1004-100	Cedar Creek	Tennessee	F&W	Flint Creek	Its source	4A	9.54	miles	
AL06030002-1005-100	Shoal Creek	Tennessee	F&W	Flint Creek	Its source	4A	12.59	miles	
AL06030002-1005-150	unnamed tributary to Town Branch	Tennessee	F&W	Town Branch	Its source	4A	1.25	miles	
AL06030002-1005-200	Town Branch	Tennessee	F&W	Shoal Creek	Its source	4A	1.90	miles	
AL06030002-1006-100	Crowdabout Creek	Tennessee	F&W	Flint Creek	Its source	4A	16.11	miles	
AL06030002-1006-200	Herrin Creek	Tennessee	F&W	Crowdabout Creek	Its source	4A	6.21	miles	
AL06030002-1007-102	Flint Creek	Tennessee	F&W	Shoal Creek	Its source	4A	13.39	miles	
AL06030002-1007-500	Mack Creek	Tennessee	F&W	Flint Creek	Its source	4A	5.91	miles	
AL06030002-1008-101	No Business Creek	Tennessee	F&W	Flint Creek	Johnson Chapel Creek	4A	7.28	miles	
AL06030002-1009-112	Elam Creek	Tennessee	F&W	Rocky Branch	Its source	4A	12.08	miles	
AL06030002-1011-100	Big Shoal Creek	Tennessee	F&W	West Flint Creek	Its source	4A	14.47	miles	
AL06030002-1012-201	McDaniel Creek	Tennessee	F&W	West Flint Creek	Alabama Highway 36	4A	4.16	miles	
AL06030002-1013-100	West Flint Creek	Tennessee	F&W	Flint Creek	McDaniel Creek	4A	23.12	miles	
AL06030002-1013-900	Flat Creek	Tennessee	F&W	West Flint Creek	Its source	4A	7.78	miles	
AL06030002-1014-102	Flint Creek	Tennessee	F&W	Alabama Highway 67	L&N Raiload	4A	5.06	miles	
AL06030002-1014-104	Flint Creek	Tennessee	LWF	Alabama Highway 36	Shoal Creek	4A	10.00	miles	
AL06030002-1014-702	Village Branch	Tennessee	F&W	Moss Spring Branch	Its source	4A	6.47	miles	
AL06030002-1101-102	Swan Creek	Tennessee	A&I	Alabama Highway 24	Town Creek	4A	2.80	miles	
AL06030002-1103-202	Round Island Creek	Tennessee	F&W	Browns Ferry Road	Beauchamp Branch	4A	3.52	miles	
AL06030002-1106-100	Mallard Creek	Tennessee	F&W	Tennessee River	Its source	4A	14.05	miles	
AL06030002-1204-103	Second Creek	Tennessee	F&W	Lauderdale County Road 76	Alabama-Tennessee state line	4A	13.00	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL06030004-0401-100	Shoal Creek	Tennessee	F&W	Elk River	Alabama-Tennessee state line	4A	7.47	miles	
AL06030006-0201-900	Harris Creek	Tennessee	F&W	Mud Creek	Its source	4A	5.99	miles	
AL03160203-0602-100	Bassett Creek	Tombigbee (Lower)	F&W	Little Bassett Creek	Its source	4A	14.47	miles	
Category 4 - Lakes and Reservoirs									
AL03160109-0104-102	Eightmile Creek	Black Warrior	PWS	Cullman water supply reservoir dam	Moody Branch	4A	527.25	acres	
AL03160111-0408-101	Village Creek	Black Warrior	LWF	Bayview Lake Dam	Second Creek	4A	412.49	acres	Bayview Lake
AL03150105-1002-102	Coosa River	Coosa	S/F&W	Spring Creek	Alabama-Georgia state line	4A	7689.78	acres	Weiss Lake
AL03150105-1003-102	Coosa River	Coosa	PWS/S/F&W	Weiss dam powerhouse	Spring Creek	4A	17829.20	acres	Weiss Lake
AL03150106-0309-101	Coosa River	Coosa	S/F&W	Neely Henry Dam	McCardney's Ferry	4A	5487.94	acres	Lake Neely Henry
AL03150106-0309-102	Coosa River	Coosa	F&W	McCardney's Ferry	Big Wills Creek	4A	3502.52	acres	Lake Neely Henry
AL03150107-0803-100	Coosa River	Coosa	PWS/S/F&W	Mitchell Dam	Lay Dam	4A	5400.33	acres	Lake Mitchell
AL03160106-0308-101	Tombigbee River	Tombigbee (Upper)	S/F&W	Bevill Lock and Dam	Alabama-Mississippi state line	4A	2291.85	acres	Aliceville Reservoir
Category 4 - Estuaries and Oceans									
AL03160205-0300-101	Mobile Bay	Mobile	SH/F&W	out to 1000 feet offshore from Mullet Point to Ragged		4A	2.31	square miles	
AL03160205-0300-201	Bon Secour Bay	Mobile	SH/S/F&W	out to 1000 feet offshore from Fish River Point to Mull		4A	0.88	square miles	
AL03140107-0103-100	Perdido Bay	Perdido-Escambia	SH/S/F&W	Lillian Bridge	Its source	4A	4.21	square miles	
AL03140107-0205-102	Little Lagoon	Perdido-Escambia	SH/S/F&W	east of Little Lagoon Pass		4A	1.32	square miles	
Category 5 - Rivers and Streams									
AL03150201-0101-200	Callaway Creek	Alabama	F&W	Bouldin tailrace canal	Its source	5	13.02	miles	
AL03150201-0104-302	Three Mile Branch	Alabama	F&W	Lower Wetumpka Rd	Its source	5	7.65	miles	
AL03150201-0105-300	Mill Creek	Alabama	F&W	Still Creek	Its source	5	8.86	miles	
AL03150201-1207-301	Sixmile Creek	Alabama	F&W	Alabama River	Fourmile Creek	5	1.23	miles	
AL03150203-0103-200	Coffee Creek	Alabama	F&W	Tayloe Creek	Its source	5	7.67	miles	
AL03150203-0110-100	Bogue Chitto Creek	Alabama	F&W	Alabama River	Its source	5	60.49	miles	
AL03150204-0405-102	Alabama River	Alabama	F&W	Pigeon Creek	Claiborne Lock and Dam	5	12.35	miles	
AL03160109-0101-150	Riley Maze Creek	Black Warrior	F&W	Tibb Creek	Its source	5	4.13	miles	
AL03160109-0101-600	Tibb Creek	Black Warrior	F&W	Mulberry Fork	Its source	5	5.13	miles	
AL03160109-0109-102	Mulberry Fork	Black Warrior	F&W	Broglen River	Blount County Road 6	5	18.23	miles	
AL03160109-0203-101	Mulberry Fork	Black Warrior	F&W	Marriott Creek	Mill Creek	5	2.52	miles	
AL03160109-0203-102	Mulberry Fork	Black Warrior	F&W	Mill Creek	Broglen River	5	17.27	miles	
AL03160109-0403-103	Lost Creek	Black Warrior	F&W	US Highway 78 north of Cedrum	US Highway 78 at Carbon Hill	5	6.53	miles	
AL03160109-0404-101	Cane Creek (Oakman)	Black Warrior	F&W	Lost Creek	Dixie Springs Road	5	7.15	miles	
AL03160109-0404-102	Cane Creek (Oakman)	Black Warrior	LWF	Dixie Springs Road	Alabama Highway 69	5	3.49	miles	
AL03160109-0404-103	Cane Creek (Oakman)	Black Warrior	F&W	Alabama Highway 69	Its source	5	7.38	miles	
AL03160109-0404-500	Black Branch	Black Warrior	F&W	Cane Creek	Its source	5	3.15	miles	
AL03160109-0405-104	Lost Creek	Black Warrior	F&W	Alabama Highway 69 at Oakman	Mill dam at Cedrum	5	17.33	miles	
AL03160109-0503-100	Wolf Creek	Black Warrior	F&W	Lost Creek	Alabama Highway 102	5	38.40	miles	
AL03160109-0602-601	Old Town Creek	Black Warrior	F&W	Mulberry Fork	Pinhook Creek	5	2.71	miles	
AL03160109-0604-900	Baker Creek	Black Warrior	F&W	Mulberry Fork	Its source	5	7.01	miles	
AL03160111-0203-100	Dry Creek	Black Warrior	F&W	Locust Fork	Its source	5	12.00	miles	
AL03160111-0208-101	Locust Fork	Black Warrior	F&W	Little Warrior River	Blount County Road 30	5	27.18	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03160111-0305-102	Locust Fork	Black Warrior	F&W	county road between Hayden and County Line	Little Warrior River	5	18.15	miles	
AL03160111-0308-102	Locust Fork	Black Warrior	PWS/F&W	US Highway 31	county road between Hayden and County Line	5	14.86	miles	
AL03160111-0404-102	Locust Fork	Black Warrior	F&W	Jefferson County Road 77	US Highway 31	5	14.25	miles	
AL03160111-0405-101	Newfound Creek	Black Warrior	F&W	Fivemile Creek	Impoundment	5	2.76	miles	
AL03160111-0408-102	Village Creek	Black Warrior	LWF	Second Creek	Woodlawn Bridge	5	12.60	miles	
AL03160111-0408-103	Village Creek	Black Warrior	LWF	Woodlawn Bridge	Its source	5	4.04	miles	
AL03160111-0409-100	Village Creek	Black Warrior	F&W	Locust Fork	Bayview Lake Dam	5	17.90	miles	
AL03160111-0413-101	Locust Fork	Black Warrior	PWS/S/F&W	Junction of Locust and Mulberry Forks	Jefferson County Highway 61	5	6.88	miles	
AL03160111-0413-112	Locust Fork	Black Warrior	F&W	Jefferson County Highway 61	Village Creek	5	13.06	miles	
AL03160112-0101-101	Valley Creek	Black Warrior	LWF	19th Street North (Bessemer)	Opossum Creek	5	0.90	miles	
AL03160112-0101-200	Opossum Creek	Black Warrior	A&I	Valley Creek	Its source	5	7.45	miles	
AL03160112-0105-101	Mud Creek	Black Warrior	F&W	Valley Creek	Big Branch	5	14.12	miles	
AL03160112-0201-102	Big Yellow Creek	Black Warrior	S/F&W	Bankhead Lake	Its source	5	14.59	miles	
AL03160112-0304-110	Pegues Creek	Black Warrior	F&W	Black Warrior River	Its source	5	4.23	miles	
AL03160112-0305-110	Daniel Creek	Black Warrior	F&W	Black Warrior River	Its source	5	10.42	miles	
AL03160112-0411-102	North River	Black Warrior	F&W	Lake Tuscaloosa	Ellis Creek	5	43.48	miles	
AL03160113-0704-100	Cottonwood Creek	Black Warrior	F&W	Big Prairie Creek	Its source	5	11.42	miles	
AL03150202-0101-102	Cahaba River	Cahaba	OAW/F&W	US Highway 11	I-59	5	3.13	miles	
AL03150202-0104-102	Cahaba River	Cahaba	F&W	Grant's Mill Road	US Highway 11	5	21.11	miles	
AL03150202-0204-101	Cahaba River	Cahaba	F&W	Buck Creek	Dam near US Highway 280	5	17.46	miles	
AL03150202-0204-102	Cahaba River	Cahaba	OAW/PWS	Dam near US Highway 280	Grant's Mill Road	5	13.45	miles	
AL03150202-0206-101	Cahaba River	Cahaba	OAW/F&W	Shades Creek	Shelby County Road 52	5	23.61	miles	
AL03150202-0206-102	Cahaba River	Cahaba	F&W	Shelby County Road 52	Buck Creek	5	3.62	miles	
AL03150202-0407-100	Cahaba River	Cahaba	OAW/F&W	lower Little Cahaba River	Shades Creek	5	13.51	miles	
AL03150202-0503-102	Cahaba River	Cahaba	OAW/S	Alabama Highway 82	lower Little Cahaba River	5	10.58	miles	
AL03150202-0901-100	Childers Creek	Cahaba	F&W	Cahaba River	Its source	5	18.79	miles	
AL03130002-0907-100	Moores Creek	Chattahoochee	F&W	Chattahoochee River	Its source	5	11.40	miles	
AL03130002-1107-110	Halawakee Creek	Chattahoochee	F&W	Three miles upstream of County Road 79	Its source	5	16.57	miles	
AL03130003-0101-100	Mill Creek	Chattahoochee	F&W	Chattahoochee River	Its source	5	9.93	miles	
AL03130003-0505-101	Uchee Creek	Chattahoochee	S/F&W	Chattahoochee River	County Road 39	5	10.36	miles	
AL03130003-0605-100	Ihagee Creek	Chattahoochee	S/F&W	Chattahoochee River	Its source	5	15.73	miles	
AL03130003-1307-100	Barbour Creek	Chattahoochee	F&W	Chattahoochee River	Its source	5	27.23	miles	
AL03130004-0602-500	Cedar Creek	Chattahoochee	F&W	Omusee Creek	Its source	5	4.04	miles	
AL03130012-0101-410	Cypress Creek	Chipola	F&W	Limestone Creek	Its source	5	8.11	miles	
AL03140201-0501-201	Beaver Creek	Choctawhatchee	F&W	Newton Creek	Dothan WWTP	5	2.09	miles	
AL03140201-0901-100	Harrand Creek	Choctawhatchee	F&W	Claybank Creek	Its source	5	9.71	miles	
AL03140201-0901-200	Indian Camp Creek	Choctawhatchee	F&W	Harrand Creek	Its source	5	3.98	miles	
AL03140201-1004-600	Dowling Branch	Choctawhatchee	F&W	Cox Mill Creek	Its source	5	2.10	miles	
AL03140201-1102-500	Blanket Creek	Choctawhatchee	F&W	Double Bridges Creek	Its source	5	5.71	miles	
AL03140201-1203-100	Choctawhatchee River	Choctawhatchee	F&W	Pea River	Its source	5	46.35	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140202-0906-100	Pea River	Choctawhatchee	F&W	Choctawhatchee River	Its source	5	157.23	miles	
AL03140203-0105-100	Choctawhatchee River	Choctawhatchee	F&W	Alabama-Florida state line	Pea River	5	4.45	miles	
AL03150106-0507-102	Choccolocco Creek	Coosa	PWS/F&W	UT from Boiling Spring	Hillabee Creek	5	2.37	miles	
AL03150106-0514-100	Choccolocco Creek	Coosa	F&W	Coosa River	UT from Boiling Spring	5	39.85	miles	
AL03150106-0602-100	Broken Arrow Creek	Coosa	F&W	Coosa River	Its source	5	21.37	miles	
AL03150106-0806-100	Wolf Creek	Coosa	F&W	Kelly Creek	Its source	5	16.70	miles	
AL03150107-0104-100	Shirtee Creek	Coosa	F&W	Tallaseehatchee Creek	Its source	5	4.94	miles	
AL03150107-0106-100	Tallaseehatchee Creek	Coosa	F&W	Coosa River	City of Sylacauga's water supply dam	5	17.51	miles	
AL03150107-0304-700	UT to Dry Branch	Coosa	F&W	Dry Branch	Its source	5	1.58	miles	
AL03150107-0801-100	Yellow Leaf Creek	Coosa	F&W	Coosa River	Its source	5	31.27	miles	
AL03170008-0402-110	Escatawpa River	Escatawpa	S/F&W	AL-MS state line	Its source	5	70.66	miles	
AL03170008-0502-600	Boggy Branch	Escatawpa	F&W	Big Creek Lake	Its source	5	4.58	miles	
AL03170008-0502-800	Collins Creek	Escatawpa	F&W	Big Creek	Its source	5	5.15	miles	
AL03160204-0105-111	Cold Creek	Mobile	F&W	Mobile River	Dam 1 1/2 miles west of US Highway 43	5	4.21	miles	
AL03160204-0106-302	Tensaw River	Mobile	OAW/F&W	Junction of Briar Lake	Junction of Tensaw Lake	5	2.93	miles	
AL03160204-0106-303	Tensaw River	Mobile	F&W	Junction of Tensaw Lake	Mobile River	5	10.98	miles	
AL03160204-0303-100	Chickasaw Creek	Mobile	S/F&W	Mobile College	Its source	5	26.82	miles	
AL03160204-0305-101	Chickasaw Creek	Mobile	LWF	Mobile River	US Highway 43	5	4.43	miles	
AL03160204-0305-102	Chickasaw Creek	Mobile	F&W	US Highway 43	Mobile College	5	6.64	miles	
AL03160204-0403-112	Mobile River	Mobile	F&W	Spanish River	Cold Creek	5	20.90	miles	
AL03160204-0504-101	Threemile Creek	Mobile	A&I	Mobile River	Toulmins Spring Branch	5	2.04	miles	
AL03160204-0504-102	Threemile Creek	Mobile	A&I	Toulmins Spring Branch	Mobile Street	5	4.34	miles	
AL03160204-0504-300	Toulmins Spring Branch	Mobile	F&W	Threemile Creek	Its source	5	3.22	miles	
AL03160204-0504-500	UT to Threemile Creek	Mobile	F&W	Threemile Creek	Its source	5	1.04	miles	
AL03160204-0505-100	Mobile River	Mobile	LWF	Mobile Bay	Spanish River	5	7.61	miles	
AL03160204-0505-201	Tensaw River	Mobile	F&W	Mobile Bay	Junction of Tensaw and Apalachee Rivers	5	6.51	miles	
AL03160204-0505-202	Tensaw River	Mobile	OAW/S/F&W	Junction of Tensaw and Apalachee Rivers	Junction of Briar Lake	5	21.73	miles	
AL03160204-0505-500	D'Olive Creek	Mobile	F&W	D'Olive Bay	Its source	5	4.89	miles	
AL03160204-0505-505	UT to D'Olive Creek	Mobile	F&W	D'Olive Creek	Its source	5	1.22	miles	
AL03160204-0505-800	Joes Branch	Mobile	F&W	D'Olive Creek	Its source	5	1.57	miles	
AL03160204-0505-900	Tiawasee Creek	Mobile	F&W	D'Olive Creek	Its source	5	3.54	miles	
AL03160204-0505-905	UT to Tiawasee Creek	Mobile	F&W	Tiawasee Creek	Its source	5	1.87	miles	
AL03160205-0102-110	Halls Mill Creek	Mobile	F&W	Dog River	Its source	5	11.30	miles	
AL03160205-0104-110	Fowl River	Mobile	S/F&W	Mobile Bay	Its source	5	20.56	miles	
AL03160205-0105-100	Middle Fork Deer River	Mobile	F&W	Mobile Bay	Its source	5	3.51	miles	
AL03160205-0202-210	Polecat Creek	Mobile	S/F&W	Fish River	Its source	5	7.89	miles	
AL03160205-0202-510	Baker Branch	Mobile	F&W	Polecat Creek	Its source	5	6.15	miles	
AL03160205-0204-112	Fish River	Mobile	S/F&W	Weeks Bay	Its source	5	30.01	miles	
AL03160205-0204-700	Cowpen Creek	Mobile	S/F&W	Fish River	Its source	5	7.04	miles	
AL03160205-0206-101	Bon Secour River	Mobile	S/F&W	Bon Secour Bay	One mile upstream from first bridge above its mouth	5	9.12	miles	
AL03160205-0206-102	Bon Secour River	Mobile	S/F&W	One mile upstream from first bridge above its mouth	Its source	5	4.38	miles	
AL03140103-0102-700	UT to Frank Jackson Lake 3-C	Perdido-Escambia	F&W	Frank Jackson Lake	Its source	5	1.05	miles	

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140103-0102-800	UT to Frank Jackson Lake 2-S	Perdido-Escambia	F&W	Frank Jackson Lake	Its source	5	1.77	miles	
AL03140103-0402-100	Yellow River	Perdido-Escambia	F&W	Alabama-Florida state line	North Creek	5	14.87	miles	
AL03140104-0104-100	Blackwater River	Perdido-Escambia	F&W	Alabama-Florida state line	Its source	5	2.78	miles	
AL03140106-0302-101	Brushy Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Boggy Branch	5	0.22	miles	
AL03140106-0302-201	Boggy Branch	Perdido-Escambia	F&W	Brushy Creek	Atmore WWTP	5	1.54	miles	
AL03140106-0302-202	Boggy Branch	Perdido-Escambia	F&W	Atmore WWTP	Masland Carpets WWTP	5	0.22	miles	
AL03140106-0504-100	Styx River	Perdido-Escambia	S/F&W	Hollinger Creek	Its source	5	22.72	miles	
AL03140106-0507-100	Styx River	Perdido-Escambia	F&W	Perdido River	Hollinger Creek	5	18.52	miles	
AL03140106-0603-101	Blackwater River	Perdido-Escambia	F&W	Perdido River	Narrow Gap Creek	5	3.11	miles	
AL03140106-0703-100	Perdido River	Perdido-Escambia	F&W	Perdido Bay	Jacks Branch	5	21.93	miles	
AL03140303-0201-101	Rocky Creek	Perdido-Escambia	F&W	Persimmon Creek	County road north of Chapman	5	9.23	miles	
AL03140303-0704-100	Sepulga River	Perdido-Escambia	F&W	Conecuh River	Robinson Mill Creek	5	14.48	miles	
AL03140304-0305-101	Burnt Corn Creek	Perdido-Escambia	S/F&W	Murder Creek	Sevenmile Creek	5	5.03	miles	
AL03140304-0506-100	Conecuh River	Perdido-Escambia	F&W	Alabama-Florida state line	Mantle Branch	5	12.70	miles	
AL03140304-0605-100	Little Escambia Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Wild Fork Creek	5	12.21	miles	
AL03140305-0302-100	Big Escambia Creek	Perdido-Escambia	F&W	Alabama-Florida state line	Big Spring Creek	5	17.03	miles	
AL03150108-0905-103	Little Tallapoosa River	Tallapoosa	F&W	Wolf Creek	Alabama-Georgia state line	5	30.78	miles	
AL03150110-0202-300	Moores Mill Creek	Tallapoosa	S/F&W	Chewacla Creek	Its source	5	10.51	miles	
AL03150110-0406-200	Mill Creek	Tallapoosa	F&W	Tallapoosa River	Its source	5	9.16	miles	
AL03150110-0504-101	Calebee Creek	Tallapoosa	F&W	Tallapoosa River	Macon County Road 9	5	10.26	miles	
AL03150110-0603-102	Cubahatchee Creek	Tallapoosa	S/F&W	Coon Hop Creek	Its source	5	22.37	miles	
AL03150110-0604-100	Cubahatchee Creek	Tallapoosa	S/F&W	Tallapoosa River	Coon Hop Creek	5	22.07	miles	
AL03150110-0804-101	Line Creek	Tallapoosa	F&W	Tallapoosa River	Johnsons Creek	5	10.29	miles	
AL03150110-0804-102	Line Creek	Tallapoosa	F&W	Johnsons Creek	Panther Creek	5	5.51	miles	
AL03150110-0904-300	Jenkins Creek	Tallapoosa	F&W	Tallapoosa River	Its source	5	13.48	miles	
AL03150110-0905-112	Tallapoosa River	Tallapoosa	PWS/F&W	US Highway 231	Jenkins Creek	5	10.07	miles	
AL06030001-0202-500	Higdon Creek	Tennessee	F&W	Miller Creek	Alabama-Georgia state line	5	4.16	miles	
AL06030001-0204-101	Widows Creek	Tennessee	S/F&W	Tennessee River	Alabama Highway 277	5	4.98	miles	
AL06030001-0306-100	Little Coon Creek	Tennessee	F&W	Coon Creek	Its source	5	16.30	miles	
AL06030001-0403-801	Warren Smith Creek	Tennessee	F&W	Dry Creek	Ross Branch	5	1.96	miles	
AL06030001-0904-102	Browns Creek	Tennessee	F&W	Tennessee River (Lake Guntersville)	Its source	5	11.86	miles	
AL06030002-0106-101	Guess Creek	Tennessee	F&W	Paint Rock River	Bee Branch	5	11.08	miles	
AL06030002-0303-500	Hester Creek	Tennessee	F&W	Mountain Fork	Alabama-Tennessee state line	5	7.27	miles	
AL06030002-0305-100	Beaverdam Creek	Tennessee	F&W	Brier Fork	Its source	5	22.14	miles	
AL06030002-0306-110	Brier Fork	Tennessee	F&W	Flint River	Alabama-Tennessee state line	5	21.89	miles	
AL06030002-0403-112	Flint River	Tennessee	F&W	Alabama Highway 72	Mountain Fork	5	15.32	miles	
AL06030002-0404-200	Goose Creek	Tennessee	F&W	Flint River	Its source	5	8.89	miles	
AL06030002-0503-102	Huntsville Spring Branch	Tennessee	F&W	Johnson Road (Huntsville Field)	Broglan Branch	5	1.98	miles	
AL06030002-0601-300	Hughes Creek	Tennessee	F&W	Cotaco Creek	Its source	5	3.02	miles	
AL06030002-0602-102	West Fork Cotaco Creek	Tennessee	F&W	Alabama Highway 67	Frost Creek	5	8.12	miles	

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Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL06030002-0602-200	Mud Creek	Tennessee	F&W	West Fork Cotaco Creek	Its source	5	3.42	miles	
AL06030002-0602-800	Widner Creek	Tennessee	F&W	Mud Creek	Its source	5	6.79	miles	
AL06030002-0602-900	Fall Creek	Tennessee	F&W	Mud Creek	Its source	5	3.62	miles	
AL06030002-0603-600	Mill Pond Creek	Tennessee	F&W	Hog Jaw Creek	Its source	5	1.29	miles	
AL06030002-1014-103	Flint Creek	Tennessee	PWS/F&W	L&N Railroad	Alabama Highway 36	5	9.10	miles	
AL06030002-1101-101	Swan Creek	Tennessee	F&W	Tennessee River	Alabama Highway 24	5	8.97	miles	
AL06030004-0403-800	Sulphur Creek	Tennessee	F&W	Elk River	Its source	5	8.34	miles	
AL06030004-0404-102	Anderson Creek	Tennessee	F&W	Snake Road bridge	Its source	5	9.31	miles	
AL06030005-0105-100	Big Nance Creek	Tennessee	F&W	Tennessee River	Its source	5	27.31	miles	
AL06030005-0801-201	McKiernan Creek	Tennessee	PWS/S/F&W	Tennessee River	Shegog Creek	5	2.71	miles	
AL06030005-0802-100	Pond Creek	Tennessee	A&I	Tennessee River	Its source	5	12.43	miles	
AL06030005-0803-400	Sweetwater Creek	Tennessee	F&W	Tennessee River (Florence Canal)	Its source	5	4.41	miles	
AL06030006-0102-700	Little Dice Branch	Tennessee	F&W	Bear Creek	Its source	5	3.83	miles	
AL06030006-0103-103	Bear Creek	Tennessee	S/F&W	Mill Creek	Upper Bear Creek Dam	5	3.00	miles	
AL03160201-0904-101	Wahalak Creek	Tombigbee (Lower)	F&W	Tombigbee River	Spear Creek	5	14.83	miles	
AL03160203-0903-102	Tombigbee River	Tombigbee (Lower)	F&W	Bassetts Creek	1/2 mile downstream of Southern Railway Crossing	5	7.83	miles	
AL03160203-1103-101	Tombigbee River	Tombigbee (Lower)	F&W	Mobile River	Upper end of Bilbo Island	5	11.89	miles	
AL03160203-1103-102	Tombigbee River	Tombigbee (Lower)	F&W	Upper end of Bilbo Island	Olin Basin canal	5	3.75	miles	
AL03160203-1103-700	Bilbo Creek	Tombigbee (Lower)	S/F&W	Tombigbee River	Its source	5	30.74	miles	
AL03160105-0101-200	East Branch Luxapallila Creek	Tombigbee (Upper)	PWS/F&W	Luxapallila Creek	Its source	5	11.18	miles	
AL03160106-0702-101	Factory Creek	Tombigbee (Upper)	F&W	Tombigbee River	extent of reservoir	5	1.86	miles	
Category 5 - Lakes and Reservoirs									
AL03150203-0703-101	Alabama River	Alabama	PWS	Beaver Creek	Rockwest Creek	5	467.20	acres	Claiborne Reservoir
AL03150203-0805-101	Alabama River	Alabama	S/F&W	McCalls Creek	Bear Creek	5	844.79	acres	Claiborne Reservoir
AL03150203-0805-102	Alabama River	Alabama	S/F&W	Bear Creek	Frisco Railroad Crossing	5	358.40	acres	Claiborne Reservoir
AL03150203-0805-103	Alabama River	Alabama	F&W	Frisco Railroad Crossing	Pursley Creek	5	563.20	acres	Claiborne Reservoir
AL03150203-0805-104	Alabama River	Alabama	F&W	Pursley Creek	River Mile 131	5	627.20	acres	Claiborne Reservoir
AL03150203-0805-105	Alabama River	Alabama	PWS	River Mile 131	Beaver Creek	5	128.00	acres	Claiborne Reservoir
AL03150204-0105-100	Alabama River	Alabama	S/F&W	Claiborne Lock and Dam	McCalls Creek	5	2438.39	acres	Claiborne Reservoir
AL03160110-0305-201	Clear Creek	Black Warrior	S/F&W	Sipsey Fork	Coon Creek	5	346.47	acres	Lewis Smith Lake
AL03160110-0306-201	Sipsey Fork	Black Warrior	S/F&W	County Road 41	Brushy Creek	5	1321.71	acres	Lewis Smith Lake
AL03160110-0306-901	Butler Branch	Black Warrior	S/F&W	embayed portion of Butler Branch		5	119.74	acres	Lewis Smith Lake
AL03160110-0408-110	Rock Creek	Black Warrior	S/F&W	Sipsey Fork	Crooked Creek	5	1946.62	acres	Lewis Smith Lake
AL03160110-0505-103	Ryan Creek	Black Warrior	S/F&W	Coon Creek	Rock Creek	5	4547.96	acres	Lewis Smith Lake
AL03160112-0411-101	North River	Black Warrior	F&W	Binion Creek	end of embayment	5	1235.32	acres	Lake Tuscaloosa
AL03160112-0413-102	North River	Black Warrior	PWS/S	City of Tuscaloosa's water	Binnion Creek	5	3840.14	acres	Lake Tuscaloosa
AL03130003-1205-100	Cowikee Creek	Chattahoochee	S/F&W	Chattahoochee River	end of embayment	5	1739.13	acres	Walter F. George Reservoir
AL03150106-0204-101	Coosa River	Coosa	F&W	Big Wills Creek	City of Gadsden water sup	5	245.39	acres	Lake Neely Henry
AL03150106-0204-102	Coosa River	Coosa	PWS/F&W	City of Gadsden water sup	Weiss dam powerhouse	5	1897.43	acres	Lake Neely Henry
AL03150106-0603-111	Coosa River	Coosa	PWS/S/F&W	Broken Arrow Creek	Trout Creek	5	1450.26	acres	Logan Martin Lake
AL03150106-0603-112	Coosa River	Coosa	S/F&W	Trout Creek	Neely Henry Dam	5	820.38	acres	Logan Martin Lake
AL03150106-0803-100	Coosa River	Coosa	S/F&W	Logan Martin Dam	Broken Arrow Creek	5	14415.70	acres	Logan Martin Lake
AL03150106-0810-102	Coosa River	Coosa	PWS/S/F&W	River Mile 89	Logan Martin Dam	5	698.25	acres	Lay Lake
AL03150107-0301-102	Coosa River	Coosa	S/F&W	Southern RR Bridge	River Mile 89	5	862.40	acres	Lay Lake
AL03150107-0503-110	Coosa River	Coosa	PWS/S/F&W	Lay Dam	Southern RR Bridge	5	11806.34	acres	Lay Lake
AL03170008-0502-110	Big Creek	Escatawpa	PWS/F&W	Big Creek Reservoir	Collins Creek	5	3309.31	acres	Big Creek Reservoir

Categorization of Alabama Waters

Assessment Unit ID	Waterbody Name	River Basin	Classification	Downstream	Upstream	Category	Size	Type	Comment
AL03140103-0102-102	Lightwood Knot Creek	Perdido-Escambia	F&W	Frank Jackson Lake dam	extent of reservoir	5	956.26	acres	Frank Jackson Lake
AL03140103-0601-300	Lake Jackson	Perdido-Escambia	S/F&W	Within Florala and north of AL-FL state line		5	415.46	acres	
AL03140301-0404-111	Conecuh River	Perdido-Escambia	S/F&W	Gantt Dam	end of embayment	5	1817.43	acres	Gantt Reservoir
AL03140301-0405-101	Conecuh River	Perdido-Escambia	S/F&W	Point A Dam	end of embayment	5	610.56	acres	Point A Reservoir
AL03140302-0506-101	Patsaliga Creek	Perdido-Escambia	F&W	Conecuh River	Buck Creek	5	154.43	acres	Point A Reservoir
AL03150109-0803-301	Sugar Creek	Tallapoosa	S/F&W	embayed portion of Sugar Creek		5	58.93	acres	Lake Martin
AL03150110-0104-101	Sougahatchee Creek	Tallapoosa	PWS/S/F&W	Tallapoosa River	End of embayment	5	203.78	acres	Yates Lake
AL03150110-0402-101	Channahatchee Creek	Tallapoosa	PWS/S/F&W	embayed portion of Channahatchee Creek		5	62.63	acres	Yates Lake
AL03150110-0406-102	Tallapoosa River	Tallapoosa	PWS/S/F&W	Thurlow dam	Yates dam	5	538.60	acres	Thurlow Reservoir
AL06030001-0205-102	Tennessee River	Tennessee	PWS/S/F&W	Pump Spring Branch	Alabama-Tennessee state li	5	2708.77	acres	Lake Guntersville
AL06030001-0904-101	Browns Creek	Tennessee	PWS/S/F&W	embayed portion of Browns Creek		5	4976.95	acres	Lake Guntersville
AL06030002-0906-600	Limestone Creek	Tennessee	F&W	embayed portion of Limestone Creek		5	1543.22	acres	Wheeler Lake
AL06030004-0405-101	Elk River	Tennessee	S/F&W	Tennessee River	Anderson Creek	5	1569.21	acres	Wheeler Lake
AL06030006-0103-104	Bear Creek	Tennessee	PWS/S/F&W	Upper Bear Creek Dam	Pretty Branch	5	1462.58	acres	Upper Bear Creek Reservoir
AL06030006-0104-101	Bear Creek	Tennessee	PWS/S/F&W	Bear Creek Lake Dam	Alabama Highway 187	5	653.54	acres	Bear Creek Reservoir
AL06030006-0203-101	Cedar Creek	Tennessee	PWS/S/F&W	Cedar Creek Lake Dam	extent of reservoir	5	4063.07	acres	Cedar Creek Lake
AL06030006-0205-111	Little Bear Creek	Tennessee	PWS/S/F&W	Little Bear Creek Dam	Scott Branch	5	1435.05	acres	Little Bear Creek Reservoir
AL03160201-0401-103	Tombigbee River	Tombigbee (Lower)	F&W	Sucarnoochee River	Demopolis Lock and Dam	5	668.76	acres	Coffeeville Reservoir
AL03160203-1103-800	Olin Basin	Tombigbee (Lower)	F&W	Olin Basin		5	85.73	acres	
AL03160107-0306-101	Sipsey River	Tombigbee (Upper)	F&W	Tombigbee River	extent of reservoir	5	554.29	acres	Gainesville Reservoir
Category 5 - Estuaries and Oceans									
AL03170009-0201-100	Mississippi Sound	Escatawpa	SH/S/F&W	Mississippi Sound		5	93.72	square miles	
AL03170009-0201-200	Portersville Bay	Escatawpa	SH/S/F&W	1000 feet west of outfall	Bayou la Batre Utilities out	5	18.81	square miles	
AL03170009-0201-300	Grand Bay	Escatawpa	SH/S/F&W	Grand Bay		5	30.73	square miles	
AL03160205-0208-100	Oyster Bay	Mobile	SH/F&W	Oyster Bay		5	0.95	square miles	
AL03160205-0300-102	Mobile Bay	Mobile	SH/F&W	All except out to 1000 feet offshore from Mullet Point		5	168.29	square miles	
AL03160205-0300-202	Bon Secour Bay	Mobile	SH/S/F&W	All except out to 1000 feet offshore from Fish River Po		5	102.96	square miles	
AL03160205-0300-500	Mobile Bay	Mobile	S/F&W	East of a line drawn due south from the western shore of Chacaloochee Bay (30.67981, -087.99561)	North of a line due east of a point at the mouth of Dog River (30.56478, -088.08758)	5	36.88	square miles	
AL-Gulf-of-Mexico	Gulf of Mexico	Mobile	SH/S/F&W	Mississippi	Florida	5	201.02	square miles	
AL03140107-0204-302	Perdido Bay	Perdido-Escambia	SH/S/F&W	Suarez Point	Lillian Bridge	5	1.29	square miles	
AL03140107-0204-400	Arnica Bay	Perdido-Escambia	SH/S/F&W	Perdido Bay	Bay la Launch	5	1.27	square miles	

Appendix C

Alabama’s 2012 § 303(d) List Fact Sheet

Alabama's 2012 §303(d) List
Fact Sheet

Background

Section 303(d) of the Clean Water Act requires that each state identify those waters that do not currently support designated uses, and to establish a priority ranking of these waters by taking into account the severity of the pollution and the designated uses of such waters. For each waterbody on the list, the state is required to establish a total maximum daily load (TMDL) for the pollutant or pollutants of concern at a level necessary to implement the applicable water quality standards. Guidance issued in August 1997 by the Environmental Protection Agency (EPA) suggested that states also include a schedule for TMDL development. The TMDL schedule included as part of Alabama's 2012 List provides the expected date the specific TMDL will be drafted and submitted for public notice and comment.

Alabama's 2012 §303(d) List

Alabama's 2012 §303(d) List includes segments of rivers, streams, lakes, reservoirs, and estuaries that do not fully support their currently designated use or uses. Most of the waterbodies on the 2012 §303(d) List also appeared on Alabama's 2010 §303(d) List as submitted to EPA in April 2010. The Department has attempted to obtain and evaluate all existing and readily available water quality-related data and information. The notice soliciting information is included in **Appendix A**. The notice was published in Alabama's four major daily newspapers, appeared on the Department's web page, and was mailed to the Department's general mailing list. Data in the Department's multiple databases, information from §319 nonpoint assessments, special watershed studies, other federal and state agencies, industries, and watershed initiatives were evaluated as the 2012 §303(d) List was compiled. Any individual or organization may submit additional data or information during the advertised comment period relative to water quality impairment in waterbodies in Alabama. Chemical, physical, and biological data collected primarily during the previous six years have been considered in the preparation of the 2012 §303(d) List, consistent with the Department's water quality assessment and listing methodology. Comments on the methodology were solicited in the public notice included in **Appendix A**. Alabama's water quality assessment and listing methodology may be found at the Departments web page at: http://www.adem.state.al.us/programs/water/wquality/2012WAM.pdf. Data sources include the Alabama Department of Environmental Management, the Alabama Department of Public Health, the Geological Survey of Alabama, the United States Geological Survey, the Tennessee Valley Authority, other public agencies, universities, county and municipal governments, and industries.

The list contains information such as the waterbody name, county(s) in which the listed segment is located, dates when the data on which the listing is based were collected, cause(s) for the use impairment, the source(s) of the pollutant(s) causing the impairment, the size of the impaired segment, and the location of the listed waterbody.

<u>Changes since the 2010 §303(d) List</u>

A number of differences exist between the 2012 §303(d) List and the Final Approved 2010 §303(d) List. Some of the changes were to correct errors or omissions in the 2010 List and to provide additional or updated information about waterbodies on the list. Other significant changes since 2010 include the addition and deletion of waterbodies. **Table 1** shows the new waterbody/pollutant combinations that are being added to Alabama's §303(d) List and the justification for the additions. **Table 2** provides the waterbody/pollutant combinations that are being removed from the list and placed in a different category and the corresponding justification for each removal.

Changes have also been proposed to the TMDL completion schedule since the Final 2010 §303(d) List. The changes reflect the pace of TMDL development that can reasonably be expected given ADEM's current funding and staffing levels. The TMDL schedule provides the expected date the specific TMDL will be drafted and submitted for public notice and comment. Where more than one TMDL is required for a segment, TMDLs for specific pollutants may be developed in advance of the expected date shown on the list. A notice of availability will be published on the Department's web page as draft TMDLs are completed and offered for public review and comment.

Table 3 provides a listing of other changes appearing on the 2012 §303(d) List. Most of these changes result from corrections to Assessment Unit numbers, corrections to causes and sources and updates to the draft TMDL development schedule.

Table 4 provides a listing of waterbodies being added proposed for addition to Category 4A (Waters for which all TMDLs needed to result in attainment of all applicable water quality standards have been approved or established by EPA). While these waterbodies would normally have been listed in Category 5 based on exceedances of water quality standards, they are part of a watershed for which a TMDL has already been completed for the pollutant of concern, and any pollutant loads from these segments are already accounted for in the TMDL.

Table 5 provides revisions made between the draft 2012 §303(d) List and the final 2012 §303(d) List submitted to EPA. These revisions were made to the list as a result of comments received during the public notice period or as a result of errors or omissions identified by ADEM staff since the draft 2012 §303(d) List was public noticed. Primarily, a number of segments had been moved to Category 4B, and after consultation with EPA it was determined that they will remain in Category 5 for the 2012 cycle.

Table 1
Alabama's 2012 §303(d) List
New Waterbody/Pollutant Combinations Appearing on the 2012 List

The waterbody/pollutant combinations listed in the following table are proposed for addition to Alabama's 2012 §303(d) List for the reasons presented in the table.

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL03150201-1207-301	Sixmile Creek	Alabama	Dallas	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2011 based on records from ADEM station CLAM-6.	ADPH 2011
AL03150204-0405-102	Alabama River	Alabama	Clarke Monroe	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2011 based on records from ADEM station ALRM-1.	ADPH 2011
AL03160111-0409-100	Village Creek	Black Warrior	Jefferson	Nutrients	Records at ADEM Station VLGJ-5 from 2005-2011 show dissolved oxygen concentrations ranging from 7.4 mg/L to 13.2 mg/L. The median pH value during this period of record was 8.2 s.u. and the maximum value was 9.2 s.u. These enriched conditions are most likely caused by high Nitrogen and/or Phosphorus concentrations. During this time period the median Total Nitrogen concentration was 3.39 mg/L with a maximum concentration of 4.87 mg/L. The median Total Phosphorus concentration was 0.23 mg/L with a maximum value of 0.51 mg/L. In addition, a maximum chlorophyll *a* value of 73.20 µg/L was recorded.	ADEM 2005-2011

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL03160111-0413-101	Locust Fork	Black Warrior	Jefferson	Nutrients	Records at ADEM Station LFKJ-6 from 2005-2011 show dissolved oxygen concentrations ranging from 4.6 mg/L to 18.8 mg/L. The median pH value during this period of record was 7.9 s.u. and the maximum value was 9.3 s.u. These enriched conditions are most likely caused by high Nitrogen and/or Phosphorus concentrations. During this time period the median Total Nitrogen concentration was 3.06 mg/L with a maximum concentration of 17.38 mg/L. The median Total Phosphorus concentration was 0.07 mg/L with a maximum value of 0.17 mg/L. In addition, a maximum chlorophyll *a* value of 98.70 µg/L was recorded. Chlorophyll *a* values as high as 48.59 µg/L were measured at a downstream station, BANT-3 as well.	ADEM 2005-2011
AL03160111-0413-112	Locust Fork	Black Warrior	Jefferson	Nutrients	Records at ADEM Station LFKJ-6 from 2005-2011 show dissolved oxygen concentrations ranging from 4.6 mg/L to 18.8 mg/L. The median pH value during this period of record was 7.9 s.u. and the maximum value was 9.3 s.u. These enriched conditions are most likely caused by high Nitrogen and/or Phosphorus concentrations. During this time period the median Total Nitrogen concentration was 3.06 mg/L with a maximum concentration of 17.38 mg/L. The median Total Phosphorus concentration was 0.07 mg/L with a maximum value of 0.17 mg/L. In addition, a maximum chlorophyll *a* value of 98.70 µg/L was recorded.	ADEM 2005 - 2011

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL03130002-0907-100	Moores Creek	Chattahoochee	Chambers	Siltation (habitat alteration)	A Macroinvertebrate Assessment at ADEM station MOOC-2 had a Poor WMB-1 score. Habitat information from this watershed noted that sand and silt accounted for 80% of the substrate and that the Sediment Deposition, Sinuosity and Riparian Buffer were all graded Poor.	ADEM 2007
AL03130003-0605-100	Ihagee Creek	Chattahoochee	Russell	Siltation (habitat alteration)	Macroinvertebrate Assessments at Station IHGR-1 from 2005 and 2008 had Poor WMB-1 scores. Records at ADEM Station IHGR-1 from 2005 show a maximum turbidity value of 139 NTU and a TSS concentration of 169.0 mg/L. Site inspections note that this may be caused by several new housing developments in the watershed, as well as clear cut areas which go up to the banks of the stream.	ADEM 2005, 2008
AL03130002-1107-110	Halawakee Creek	Chattahoochee	Chambers Lee	Siltation (habitat alteration)	A Macroinvertebrate Assessment at Station HACL-1 from 2008 had a Poor WMB-1 score. Records at ADEM station HACL-1 from 2008 show a maximum turbidity value of 162 NTU. Site inspections note severe bank erosion near a recent housing development and a recently constructed large trailer park near the station.	ADEM 2008
AL03160205-0102-110	Halls Mill Creek	Mobile	Mobile	Siltation (habitat alteration)	Macroinvertebrate Assessments at Stations HALM-1 and HALM-2 from 2006 had a Poor WMB-1 score. . Habitat information from this watershed noted that sand accounts for 85% of the substrate. Also, at the time of the assessment, there were more than 130 construction stormwater permits in the watershed.	ADEM 2006
AL03140107-0204-400	Arnica Bay	Perdido-Escambia	Baldwin	Pathogens	Records at ADEM station P_Cove from 2010 show that the enterococci criterion was exceeded in 15 out of 65 samples.	ADEM 2010
AL03140107-0204-302	Perdido Bay	Perdido-Escambia	Baldwin	Pathogens	Records at ADEM station Span_Cove from 2010 show that the enterococci criterion was exceeded in 8 out of 37 samples.	ADEM 2010

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL03150109-0803-301	Sugar Creek (Lake Martin)	Tallapoosa	Tallapoosa	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2011 based on records from ADEM station SUGT-2.	ADPH 2011
AL03150110-0104-101	Sougahatchee Creek (Yates Lake)	Tallapoosa	Tallapoosa	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2011 based on records from ADEM station YATE-2.	ADPH 2011
AL03150110-0402-101	Channahatchee Creek (Yates Lake)	Tallapoosa	Elmore	Organic enrichment (CBOD, NBOD)	Records at ADEM Station YATE-3 from 2005-2010 show dissolved oxygen concentrations as low as 2.2 mg/L. The dissolved oxygen criterion was exceeded in 7 of 15 samples taken during this period.	ADEM 2005, 2010
AL03150110-0406-102	Tallapoosa River (Thurlow Reservoir)	Tallapoosa	Elmore Tallapoosa	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2011 based on records from ADEM station THUE-1.	ADPH 2011
AL03150110-0905-112	Tallapoosa River	Tallapoosa	Elmore Montgomery	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2011 based on records from ADEM station TARE-1.	ADPH 2011
AL06030001-0204-101	Widows Creek	Tennessee	Jackson	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM stations WDWJ-3, WDWJ-4, and WDWJ-5.	ADPH 2010, 2011
AL06030001-0205-102	Tennessee River (Lake Guntersville)	Tennessee	Jackson	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM station TENR-417.	ADPH 2010

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL06030001-0306-100	Little Coon Creek	Tennessee	Jackson	Siltation (habitat alteration)	A Macroinvertebrate Assessment at Station COCJ-1 from 2009 had a Poor WMB-1 score. Habitat information from this watershed noted that the substrate was 71% sand and that the riparian buffer was graded as Poor. Site inspections note that the watershed is dominated by cow pastures and corn fields with a minimal riparian zone.	ADEM 2009
AL06030001-0202-500	Higdon Creek	Tennessee	DeKalb Jackson	Siltation (habitat alteration)	A Macroinvertebrate Assessment at Station HDND-1 from 2009 had a Poor WMB-1 score. Records at ADEM Station HDND-1 from 2009 show dissolved oxygen concentrations as low as 2.0 mg/L. The dissolved oxygen criterion was exceeded in 5 of 10 samples taken during this period. Site inspections note that the stream runs through several cow pastures with no riparian buffer as well as having clear cut areas near station HDND-1 which go up to the edge of the stream.	ADEM 2009
AL06030001-0904-101	Browns Creek	Tennessee	Marshall	Nutrients	Records at ADEM station GUNM-10 from 2009 show a growing season mean concentration for chlorophyll *a* of 27.47 µg/L. The maximum concentration recorded was 48. 06 µg/L. The pH criterion was exceeded in 5 of 7 samples during this sampling period.	ADEM 2009
AL06030001-0904-102	Browns Creek	Tennessee	Marshall	Nutrients Total dissolved solids	A Macroinvertebrate Assessment at Station BRSB-2 had a Poor WMB-1 score in 2009. During this sampling period, the median total Phosphorus concentration was 0.06 mg/L with a maximum value of 0.48 mg/L. The maximum total dissolved solids value was 1036 mg/L.	ADEM 2009
AL06030002-0602-800	Widner Creek	Tennessee	Cullman Morgan	Organic enrichment (CBOD, NBOD)	Records at ADEM Station MUDM-2 from 2009 show dissolved oxygen concentrations ranging from 4.3 mg/L to 10.2 mg/L.	ADEM 2009

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL06030002-0602-900	Fall Creek	Tennessee	Cullman Morgan	Organic enrichment (CBOD, NBOD)	Records at ADEM Station MARM-1 from 2009 show dissolved oxygen concentrations ranging from 3.9 mg/L to 10.0 mg/L.	ADEM 2009
AL06030002-0906-600	Limestone Creek (Wheeler Lake)	Tennessee	Limestone	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM station WHEL-5.	ADPH 2010
AL06030002-1014-103	Flint Creek	Tennessee	Morgan	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM station FTCM-6.	ADPH 2010
AL06030005-0105-100	Big Nance Creek	Tennessee	Lawrence	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM stations BGNL-1, and WILL-1.	ADPH 2010
AL06030006-0203-101	Cedar Creek (Cedar Creek Lake)	Tennessee	Franklin	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM station CEDF-2.	ADPH 2010
AL06030005-0803-400	Sweetwater Creek	Tennessee	Lauderdale	Nutrients	A Macroinvertebrate Assessment at Station SWTL-1 in 2009 had a Very Poor WMB-1 score. During this sampling period, the median Total Nitrogen concentration was 183 mg/L with a maximum concentration of 2.09 mg/L. The median total Phosphorus concentration was 0.026 mg/L with a maximum value of 0.124 mg/L.	ADEM 2009
AL06030006-0205-111	Little Bear Creek (Little Bear Creek Reservoir)	Tennessee	Franklin	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM station LBRF-2.	ADPH 2010
AL03160201-0401-103	Tombigbee River (Coffeeville Reservoir)	Lower Tombigbee	Marengo Sumter	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2010 based on records from ADEM station COFC-19.	ADPH 2010

Appendix C

Assessment Unit	Waterbody Name	River Basin	County	Causes	Basis for Addition to the List	Source / Date of Data
AL03160203-1103-101	Tombigbee River	Lower Tombigbee	Baldwin Clarke Mobile Washington	Metals (Mercury)	A fish consumption advisory issued by the Alabama Department of Public Health in 2011 based on records from ADEM station TOMW-1.	ADPH 2011

Table 2
Alabama's 2012 §303(d) List
Waterbody/Pollutants Removed from the 2010 List

The waterbody/pollutant combinations listed in the following table are proposed for removal from Alabama's 2010 §303(d) List and are proposed for removal from Alabama's 2012 §303(d) List for the reasons presented. Waterbody/pollutant combinations for which EPA has approved a TMDL will be included in Category 4A of the 2012 Integrated Water Quality Report.

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
AL03150201-0203-102	Autauga Creek	Alabama	Autauga	Unknown	WMB-I scores for Autauga Creek based on data collected by USGS in 2009 at AUCA-5 and AUCA-6 were Fair and Good, respectively. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03150201-0404-100	Pintlala Creek	Alabama	Crenshaw Montgomery	Pathogens	TMDL approved by EPA on 5/02/2011
AL03150203-0802-100	Pursley Creek	Alabama	Wilcox	Pathogens	TMDL approved by EPA on 9/29/2011
AL03150203-0802-400	Town Branch	Alabama	Wilcox	Pathogens	TMDL approved by EPA on 9/29/2011
AL03160109-0105-101	Brindley Creek	Black Warrior	Cullman	Nutrients	TMDL approved by EPA on 3/15/2012
AL03160109-0105-102	Brindley Creek	Black Warrior	Cullman	Nutrients	TMDL approved by EPA on 3/15/2012
AL03160109-0108-102	Mud Creek	Black Warrior	Cullman	Organic enrichment (CBOD)	Available data for Mud Creek indicates that an organic enrichment/dissolved oxygen (OE/DO) impairment does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160109-0108-102	Mud Creek	Black Warrior	Cullman	Organic enrichment (NBOD)	Available data for Mud Creek indicates that an organic enrichment/dissolved oxygen (OE/DO) impairment does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160110-0502-102	Ryan Creek	Black Warrior	Cullman	Pathogens	TMDL approved by EPA on 5/2/2011
AL03160111-0203-100	Dry Creek	Black Warrior	Blount	Ammonia	Available data for Dry Creek indicates that an ammonia impairment does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03150202-0103-300	Lee Branch	Cahaba	Shelby	Pathogens	TMDL approved by EPA on 9/29/2011
AL03150105-0807-102	Spring Creek	Coosa	Cherokee	Pathogens	TMDL approved by EPA on 9/29/2011
AL03150105-0807-103	Spring Creek	Coosa	Cherokee	Nutrients	Available water quality data obtained for Spring Creek, inclusive of physical, chemical, and biological data, indicates that no water quality impairment from nutrients exists. Accordingly, ADEM will not proceed in developing a TMDL for this stream due to "more recent or accurate data" which, in doing so, provides sufficient justification for delisting a waterbody in conformance with Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03150105-0807-200	Mud Creek	Coosa	Cherokee	Pathogens	TMDL approved by EPA on 5/2/2011
AL03160204-0202-200	Middle River	Mobile	Baldwin Mobile	Metals (Mercury)	This segment was removed from the Alabama Fish Consumption Advisory list in 2005.
AL03160204-0503-102	Bay Minette Creek	Mobile	Baldwin	Metals (Mercury)	This segment was removed from the Alabama Fish Consumption Advisory list in 2005.
AL03140107-0205-101	Little Lagoon	Perdido-Escambia	Baldwin	Pathogens	Available data for the west portion of Little Lagoon indicates that a pathogen (enterococci) impairment does not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03150110-0102-700	Pepperell Branch	Tallapoosa	Lee	Pathogens	TMDL approved by EPA on 9/29/2011.
AL03150110-0202-200	Parkerson Mill Creek	Tallapoosa	Lee	Pathogens	TMDL approved by EPA on 9/29/2011.
AL03150110-0603-102	Cubahatchee Creek	Tallapoosa	Bullock Macon	Pathogens	TMDL approved by EPA on 9/29/2011.

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
AL06030002-0303-500	Hester Creek	Tennessee	Madison	Turbidity	Available water quality data and information provided for Hester Creek indicates that impairments due to Turbidity do not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data or accurate data" which is just cause for delisting a waterbody according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL06030002-0503-101	Huntsville Spring Branch	Tennessee	Madison	Pesticides (DDT)	A TMDL is not needed for this pollutant as it is being addressed by EPA and ADEM under the CERCLA program (ALD983166299). This waterbody/pollutant will be moved to Category 4B.
AL06030002-0505-101	Indian Creek	Tennessee	Madison	Pesticides (DDT)	A TMDL is not needed for this pollutant as it is being addressed by EPA and ADEM under the CERCLA program (ALD983166299). This waterbody/pollutant will be moved to Category 4B.
AL06030005-0801-201	McKiernan Creek	Tennessee	Colbert	Ammonia	Available water quality data and information for McKiernan Creek indicates that impairments due to Ammonia do not currently exist. Therefore, ADEM will not develop a TMDL due to "more recent data or accurate data" which is just cause for delisting a waterbody according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160107-0306-101	Sipsey River (Gainesville Reservoir)	Upper Tombigbee	Greene Pickens	Metals (Iron)	Iron concentrations measured in 2005 - 2006 suggests that this watershed is not impaired with respect to iron. The weighted iron concentration from ecoregional reference guideline data is higher than the median values for both impaired and unimpaired portions of the river basin, thus suggesting that elevated iron concentrations are due to natural conditions. Therefore, ADEM will not develop a TMDL due to "more recent data or accurate data" which is just cause for delisting a waterbody according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).
AL03160107-0306-102	Sipsey River	Upper Tombigbee	Greene Pickens	Metals (Iron)	Iron concentrations measured in 2005 - 2006 suggests that this watershed is not impaired with respect to iron. The weighted iron concentration from ecoregional reference guideline data is higher than the median values for both impaired and unimpaired portions of the river basin, thus suggesting that elevated iron concentrations are due to natural conditions. Therefore, ADEM will not develop a TMDL due

Assessment Unit	Waterbody Name	River Basin	County	Cause (Pollutant)	Good Cause Justification for Removal
					to "more recent data or accurate data" which is just cause for delisting a waterbody according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).

Table 3
List of Other Changes Appearing on Alabama's 2012 §303(d) List

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03150203-0805-102	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2013.
AL03150203-0805-103	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2013.
AL03150203-0805-104	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2013.
AL03150203-0805-105	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2013.
AL03150203-0703-101	Alabama River (Claiborne Reservoir)	Alabama	Wilcox	The draft TMDL due date was changed to 2013.
AL03150202-0503-102	Cahaba River	Cahaba	Bibb	The draft TMDL due date was changed to 2012.
AL03150202-0407-100	Cahaba River	Cahaba	Bibb	The draft TMDL due date was changed to 2012.
AL03150202-0206-101	Cahaba River	Cahaba	Shelby	The draft TMDL due date was changed to 2012.
AL03150202-0206-102	Cahaba River	Cahaba	Shelby	The draft TMDL due date was changed to 2012.
AL03150202-0204-101	Cahaba River	Cahaba	Jefferson Shelby	The draft TMDL due date was changed to 2012.
AL03150202-0204-101	Cahaba River	Cahaba	Jefferson Shelby	The draft TMDL due date was changed to 2012.
AL03150202-0204-102	Cahaba River	Cahaba	Jefferson	The draft TMDL due date was changed to 2012.
AL03150202-0104-102	Cahaba River	Cahaba	Jefferson St. Clair	The draft TMDL due date was changed to 2012.
AL03150202-0101-102	Cahaba River	Cahaba	Jefferson	The draft TMDL due date was changed to 2012.
AL03150107-0304-700	UT to Dry Branch	Coosa	Shelby	The draft TMDL due date was changed to 2017.
AL03140103-0102-700	UT to Jackson Lake 3-C	Perdido-Escambia	Covington	The draft TMDL due date was changed to 2012.
AL03140103-0102-800	UT to Jackson Lake 2-S	Perdido-Escambia	Covington	The draft TMDL due date was changed to 2012.

Appendix C

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03140303-0201-101	Rocky Creek	Perdido-Escambia	Butler	Based on data collected in 2008 at ADEM station RYC-3, the cause of the impairment was changed from unknown to pathogens. Records from this station for Fecal Coliform taken between 6/12/2008 and 8/13/2008 were 2000, 26,000 and 40,000 col/100 mL.
AL03150110-0202-300	Moores Mill Creek	Tallapoosa	Lee	The draft TMDL due date was changed to 2017.
AL06030002-0404-200	Goose Creek	Tennessee	Madison	Based on data collected in 2010 at ADEM stations GOOM-1 and GOOM-2, the cause of the impairment was changed from unknown to pathogens. The geomean values calculated from E. coli records at ADEM Station GOOM-1 and GOOM-2 between 6/9/2010 and 6/30/2010 were 175 and 142 col/100 mL.
AL06030002-0106-101	Guess Creek	Tennessee	Jackson	The draft TMDL due date was changed to 2012.
AL06030002-0303-500	Hester Creek	Tennessee	Madison	The draft TMDL due date was changed to 2012.
AL06030002-0602-200	Mud Creek	Tennessee	Morgan	The draft TMDL due date was changed to 2012.
AL06030004-0405-101	Elk River (Wheeler Lake)	Tennessee	Lauderdale Limestone	The draft TMDL due date was changed to 2013.
AL06030004-0405-101	Elk River (Wheeler Lake)	Tennessee	Lauderdale Limestone	The draft TMDL due date was changed to 2013.
AL06030004-0403-800	Sulphur Creek	Tennessee	Limestone	The draft TMDL due date was changed to 2013.
AL06030005-0802-100	Pond Creek	Tennessee	Colbert	The draft TMDL due date was changed to 2012.
AL06030006-0103-103	Bear Creek	Tennessee	Marion	The draft TMDL due date was changed to 2012.

Table 4
Alabama's 2012 §303(d) List
New Waterbody/Pollutant Combinations Listed in Category 4A

The waterbody/pollutant combinations listed in the following table are proposed for addition to Category 4A (waterbody/pollutants with a completed TMDL).

Assessment Unit	Waterbody Name	River Basin	County	Causes	Change
AL03150202-0102-100	Big Black Creek	Cahaba	St. Clair	Nutrients	A Macroinvertebrate Assessment at Station BLCC-1 in 2007 had a Poor WMB-1 score. This segment is included in the Cahaba River watershed nutrient TMDL and will be added to Category 4A under this TMDL.
AL03160204-0504-200	Industrial Canal	Mobile	Mobile	Organic enrichment	Records at ADEM station INCM-1 from 2007 show a maximum Total Nitrogen value of 3.03 mg/L and a median Total Nitrogen value on 1.56 mg/L. Nitrogen exceedances in Industrial Canal are included in the Threemile Creek TMDL approved on 01/18/2007.
AL03160205-0102-110	Halls Mill Creek	Mobile	Mobile	Enterococci	Records at ADEM station HMCM-2 from 2007-2011 show that the enterococci criterion was exceeded in 3 out of 16 samples. Pathogen exceedances in Halls Mill Creek are included as a part of the Load Allocation (LA) in the Dog River/Rabbit Creek TMDL approved on 4/12/2005. (Halls Mill Creek is listed in Category 5 for siltation)
AL03160205-0101-200	Moore Creek	Mobile	Mobile	Enterococci	Records at ADEM station MCM-1 from 2007-2011 show that the enterococci criterion was exceeded in 3 out of 16 samples. Pathogen exceedances in Moore Creek are included as a part of the Load Allocation (LA) in the Dog River/Rabbit Creek TMDL approved on 4/12/2005.

Table 5
Additional Revisions made between the Draft 2012 §303(d) List and the Final 2012 §303(d) List

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03150201-0203-102	Autauga Creek	Alabama	Autauga	Autauga Creek flows across the outcrop of the Tuscaloosa Group. Groundwater from this formation that forms the baseflow for the creek has characteristically low pH. This is a natural condition caused by low pH rainfall entering the subsurface and the mineral content of the formation which provides no pH buffering. Low pH baseflow combined with runoff from low pH rainfall, the result is a relatively low pH stream discharge. Therefore, the change of listing from unknown to pH is withdrawn.
AL03150201-0602-100	White Water Creek	Alabama	Autauga	White Water Creek flows across the outcrop of the Tuscaloosa Group. Groundwater from this formation that forms the baseflow for the creek has characteristically low pH. This is a natural condition caused by low pH rainfall entering the subsurface and the mineral content of the formation which provides no pH buffering. Low pH baseflow combined with runoff from low pH rainfall, the result is a relatively low pH stream discharge. Therefore, the listing for pH has been withdrawn.
AL03160109-0404-500	Black Branch	Black Warrior	Walker	The length of the segment was adjusted to 4.11 miles.
AL03160111-0203-100	Dry Creek	Black Warrior	Blount	Municipal was added as a Source for nutrients and organic enrichment.
AL03160112-0201-102	Big Yellow Creek	Black Warrior	Tuscaloosa	The delistings for Chromium and Lead have been withdrawn.
AL03150202-0206-101	Cahaba River	Cahaba	Shelby	The draft TMDL due date for Pathogens was changed to 2013.
AL03150202-0206-102	Cahaba River	Cahaba	Shelby	The draft TMDL due date for Pathogens was changed to 2013.
AL03150106-0803-100	Coosa River (Logan Martin Lake)	Coosa	St. Clair Talladega	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
				Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150106-0603-111	Coosa River (Logan Martin Lake)	Coosa	St. Clair Talladega Calhoun	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150106-0603-112	Coosa River (Logan Martin Lake)	Coosa	St. Clair Calhoun	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150106-0204-101	Coosa River (Lake Neely Henry)	Coosa	Etowah	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150106-0204-102	Coosa River (Lake Neely Henry)	Coosa	Etowah Cherokee	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150106-0507-102	Choccolocco Creek	Coosa	Calhoun Talladega	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150106-0514-100	Choccolocco Creek	Coosa	Calhoun	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150107-0503-110	Coosa River (Lay Lake)	Coosa	Chilton Coosa Shelby Talladega	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.

Appendix C

Assessment Unit ID	Waterbody Name	River Basin	County	Revision
AL03150107-0301-102	Coosa River (Lay Lake)	Coosa	Shelby Talladega	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03150106-0810-102	Coosa River (Lay Lake)	Coosa	Shelby St. Clair Talladega	Moving the waterbody from Category 5 to 4B for PCBs has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03160205-0300-102	Mobile Bay	Mobile	Mobile	The delisting for Pathogens has been withdrawn.
AL03160205-0300-500	Mobile Bay	Mobile	Baldwin	The source for Pathogens was changed from collection system failure to urban runoff/storm sewers.
AL03160205-0300-202	Bon Secour Bay	Mobile	Baldwin	The delisting for Pathogens has been withdrawn.
AL06030001-0502-100	Kirby Creek	Tennessee	Jackson	The listing for Nutrients was based on records which have been withdrawn due to poor data quality. Although there was a Poor WMB-I score for this segment, it will be placed in Category 2A until more data can be collected.
AL06030002-0404-200	Goose Creek	Tennessee	Madison	The draft TMDL due date was changed to 2012.
AL06030002-0303-500	Hester Creek	Tennessee	Madison	The draft TMDL due date was changed to 2014.
AL06030005-0801-201	McKiernan Creek	Tennessee	Colbert	The draft TMDL due date was changed to 2015.
AL06030006-0103-103	Bear Creek	Tennessee	Marion	The draft TMDL due date was changed to 2014.
AL03160203-1103-800	Olin Basin	Lower Tombigbee	Washington	Moving the waterbody from Category 5 to 4B for DDT has been delayed pending completion of the Record of Decision (ROD). TMDL development for this pollutant will be determined based upon ongoing RCRA/CERCLA program activities.
AL03160203-1103-800	Olin Basin	Lower Tombigbee	Washington	Moving the waterbody from Category 5 to 4B for Mercury has been delayed pending completion of the Record of Decision (ROD).

APPENDIX A

Public Notice Soliciting Available Data and Information for Preparation of Alabama's Draft 2012 303(d) List

Public Notice - 210

Alabama Department of Environmental Management

Notice of Requesting Data and Information for Preparation of Alabama's Draft 2012 Section 303(d) List of Impaired Waters and Comments on Alabama's Draft Water Assessment and Listing Methodology

Section 303(d) of the Clean Water Act requires that each state identify those waters that do not currently support designated uses and establish a priority ranking of the waters, taking into account the severity of the pollution and the uses to be made of the waters. For each water on the list, the state is required to establish the total maximum daily load (TMDL) at a level necessary to implement the applicable water quality standards.

At this time, ADEM has begun development of the 2012 Section 303(d) list and is soliciting data and information for consideration during preparation of the list. Also, the Department is soliciting comments on Alabama's Water Assessment and Listing Methodology which will be used to develop the 2012 Section 303(d) list. The methodology has been prepared to assist the Department in the development of the 303(d) list and establishes minimum data requirements and listing criteria. In order to be fully considered in this process, persons wishing to offer a submittal should do so in an electronic format.

While the Department will consider all data submitted, we reserve the right to incorporate only those data that meet minimum quality standards. The Department is not bound by interpretations provided by data submitters. It should also be noted that the Department is unable to pay a fee for the use of data. Data, information, and comments should be submitted to Joseph Roy, Water Division, Alabama Department of Environmental Management, P.O. Box 301463, Montgomery, Alabama 36130-1463 (street address: 1400 Coliseum Boulevard, Montgomery, Alabama 36110-2059). Mr. Roy's phone number is 334-270-5635. His email address is jtr@adem.state.al.us. **Data, information, and comments must be received by the Department prior to 5:00 p.m. on October 19, 2011.**

An electronic copy of the Draft 2011 Water Assessment and Listing Methodology is available on ADEM's website under the Public Notice section at the following address: www.adem.state.al.us.

This notice is hereby given this **18th day of September 2011** by authorization of the Alabama Department of Environmental Management.

Lance LeFleur
Director

Appendix D

Alabama's 2012 §303(d) List

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03150201-0101-200	Callaway Creek	R	Alabama	Elmore	Fish & Wildlife	Nutrients	Agriculture Municipal	2005	13.02 miles	Bouldin tailrace canal / Its source	2010	2017
AL03150201-0104-302	Three Mile Branch	R	Alabama	Montgomery	Fish & Wildlife	Pesticides (Dieldrin)	Unknown source	1999	7.65 miles	Lower Wetumpka Road / Its source	2002	2017
AL03150201-0104-302	Three Mile Branch	R	Alabama	Montgomery	Fish & Wildlife	Pathogens Siltation (habitat alteration)	Urban development	2005	7.65 miles	Lower Wetumpka Road / Its source	2010	2017
AL03150201-0105-300	Mill Creek	R	Alabama	Autauga Elmore	Fish & Wildlife	Siltation (habitat alteration)	Urban development	2005	8.71 miles	Still Creek / Its source	2010	2017
AL03150201-1207-301	Sixmile Creek	R	Alabama	Dallas	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	1.23 miles	Alabama River / Fourmile Creek	2012	2017
AL03150203-0103-200	Coffee Creek	R	Alabama	Dallas Perry	Fish & Wildlife	Nutrients Pathogens Siltation (habitat alteration)	Pasture grazing	2005	7.67 miles	Tayloe Creek / Its source	2010	2017
AL03150203-0805-101	Alabama River (Claiborne Reservoir)	L	Alabama	Clarke Monroe Wilcox	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	844.79 acres	McCalls Creek / Bear Creek	2008	2017
AL03150203-0805-102	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1991 1995-99	358.40 acres	Bear Creek / Frisco Railroad Crossing	1996	2013
AL03150203-0805-103	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1991 1995-99	563.20 acres	Frisco Railroad Crossing / Pursley Creek	1996	2013
AL03150203-0805-104	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1995-99	627.20 acres	Pursley Creek / River Mile 131	2000	2013
AL03150203-0805-105	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Public Water Supply	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1995-99	128.00 acres	River Mile 131 / Beaver Creek	2000	2013
AL03150203-0703-101	Alabama River (Claiborne Reservoir)	L	Alabama	Wilcox	Public Water Supply	Organic enrichment (CBOD, NBOD)	Dam construction Flow regulation/modification	1991	467.20 acres	Beaver Creek / Rockwest Creek	1996	2013
AL03150203-0110-100	Bogue Chitto Creek	R	Alabama	Dallas Perry	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Pasture grazing	2005	60.49 miles	Alabama River / Its source	2010	2017
AL03150204-0405-102	Alabama River	R	Alabama	Clarke Monroe	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	12.35 miles	Pigeon Creek / Claiborne Lock and Dam	2012	2017
AL03150204-0105-100	Alabama River (Claiborne Reservoir)	L	Alabama	Clarke Monroe	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	2438.39 acres	Claiborne Lock and Dam / McCalls Creek	2008	2017
AL03160109-0203-101	Mulberry Fork	R	Black Warrior	Blount Cullman	Fish & Wildlife	Nutrients	Agriculture Industrial Municipal	1972-83 1988 1996	2.52 miles	Marriott Creek / Mill Creek	1998	2014
AL03160109-0203-102	Mulberry Fork	R	Black Warrior	Blount Cullman	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Industrial Municipal	1972-83 1988 1996	17.27 miles	Mill Creek / Broglen River	1998	2014
AL03160109-0109-102	Mulberry Fork	R	Black Warrior	Blount Cullman	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1974-83	18.23 miles	Broglen River / Blount County Road 6	1998	2014
AL03160109-0101-150	Riley Maze Creek	R	Black Warrior	Cullman Marshall	Fish & Wildlife	Toxicity Siltation (habitat alteration)	Municipal	1998	4.13 miles	Tibb Creek / Its source	2006	2014
AL03160109-0101-600	Tibb Creek	R	Black Warrior	Cullman Marshall	Fish & Wildlife	Toxicity Siltation (habitat alteration)	Municipal	1998	5.13 miles	Mulberry Fork / Its source	2006	2014
AL03160109-0403-103	Lost Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1987	6.53 miles	US Highway 78 north of Cedrum / US Highway 78 at Carbon Hill	1998	2014
AL03160109-0404-101	Cane Creek (Oakman)	R	Black Warrior	Walker	Fish & Wildlife	Metals (Aluminum, Iron) Nutrients pH Organic enrichment (CBOD, NBOD) Siltation (habitat alteration)	Municipal Surface mining-abandoned	1988 1993	7.15 miles	Lost Creek / Dixie Springs Road	1998	2014
AL03160109-0404-102	Cane Creek (Oakman)	R	Black Warrior	Walker	Limited Warmwater Fishery	Metals (Aluminum, Iron) Nutrients pH Organic Enrichment (CBOD, NBOD) Siltation (habitat alteration)	Municipal Surface mining-abandoned	1988 1993	3.49 miles	Dixie Springs Road / Alabama Highway 69	1998	2014

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03160109-0404-103	Cane Creek (Oakman)	R	Black Warrior	Walker	Fish & Wildlife	Metals(Aluminum, Iron) Nutrients pH Organic Enrichment (CBOD, NBOD) Siltation (habitat alteration)	Municipal Surface mining-abandoned	1988 1993	7.38 miles	Alabama Highway 69 / Its source	1998	2014
AL03160109-0404-500	Black Branch	R	Black Warrior	Walker	Fish & Wildlife	Metals (Aluminum, Iron) pH Siltation (habitat alteration)	Surface mining-abandoned	1996-97	4.11 miles	Cane Creek / Its source	1998	2014
AL03160109-0405-104	Lost Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1987	17.33 miles	Alabama Highway 69 at Oakman / Mill dam at Cedrum	1998	2014
AL03160109-0503-100	Wolf Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1996	38.40 miles	Lost Creek / Alabama Highway 102	1998	2014
AL03160109-0602-601	Old Town Creek	R	Black Warrior	Walker	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Surface mining-abandoned	2002	2.71 miles	Mulberry Fork / Pinhook Creek	2006	2014
AL03160109-0604-900	Baker Creek	R	Black Warrior	Walker	Fish & Wildlife	Siltation (habitat alteration)	Unknown source	2002	7.01 miles	Mulberry Fork / Its source	2006	2014
AL03160110-0305-201	Clear Creek (Lewis Smith Lake)	L	Black Warrior	Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	346.47 acres	Sipsey Fork / Coon Creek	2010	2019
AL03160110-0306-201	Sipsey Fork (Lewis Smith Lake)	L	Black Warrior	Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	1321.71 acres	County Road 41 / Brushy Creek	2010	2019
AL03160110-0306-901	Butler Branch (Lewis Smith Lake)	L	Black Warrior	Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	119.74 acres	embayed portion of Butler Branch	2010	2019
AL03160110-0408-110	Rock Creek (Lewis Smith Lake)	L	Black Warrior	Cullman Winston	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	1946.62 acres	Sipsey Fork / Crooked Creek	2010	2019
AL03160110-0505-103	Ryan Creek (Lewis Smith Lake)	L	Black Warrior	Cullman	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	4547.96 acres	Coon Creek / Rock Creek	2010	2019
AL03160111-0413-101	Locust Fork	R	Black Warrior	Jefferson	Public Water Supply Swimming Fish & Wildlife	Nutrients	Industrial Municipal Urban runoff/storm sewers	2005-2011	6.88 miles	Junction of Locust and Mulberry Forks / Jefferson County Hwy 61	2012	2019
AL03160111-0413-112	Locust Fork	R	Black Warrior	Jefferson	Fish & Wildlife	Nutrients	Industrial Municipal Urban runoff/storm sewers	2005-2011	13.06 miles	Jefferson County Hwy 61 / Village Creek	2012	2019
AL03160111-0404-102	Locust Fork	R	Black Warrior	Blount Jefferson	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1998	14.25 miles	Jefferson County Road 77 / US Highway 31	1998	2014
AL03160111-0308-102	Locust Fork	R	Black Warrior	Blount Jefferson	Public Water Supply Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1998	14.86 miles	US Highway 31 / County road between Hayden and County Line	1998	2014
AL03160111-0305-102	Locust Fork	R	Black Warrior	Blount Jefferson	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1998	18.15 miles	County road between Hayden and County Line / Little Warrior River	1998	2014
AL03160111-0208-101	Locust Fork	R	Black Warrior	Blount	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining-abandoned	1987 1998	27.18 miles	Little Warrior River / Blount County Road 30	1998	2014
AL03160111-0203-100	Dry Creek	R	Black Warrior	Blount	Fish & Wildlife	Nutrients Organic enrichment (CBOD, NBOD)	Municipal Pasture grazing	1988 1991	12.00 miles	Locust Fork / Its source	1998	2012
AL03160111-0405-101	Newfound Creek	R	Black Warrior	Jefferson	Fish & Wildlife	Siltation (habitat alteration)	Urban runoff/storm sewers	1986 2002	2.76 miles	Fivemile Creek / Impoundment	1998	2014
AL03160111-0409-100	Village Creek	R	Black Warrior	Jefferson	Fish & Wildlife	Nutrients	Industrial Municipal Urban runoff/storm sewers	2005-2011	17.9 miles	Locust Fork / Bayview Lake dam	2012	2019
AL03160111-0408-102	Village Creek	R	Black Warrior	Jefferson	Limited Warmwater Fishery	Pathogens Pesticides (Dieldrin)	Collection system failure Urban runoff/storm sewers	2000 2001 2002 2004	12.60 miles	Second Creek / Woodlawn Bridge	2006	2014
AL03160111-0408-103	Village Creek	R	Black Warrior	Jefferson	Limited Warmwater Fishery	Pathogens Pesticides (Dieldrin)	Collection system failure Urban runoff/storm sewers	2000 2001 2002 2004	4.04 miles	Woodlawn Bridge / Its source	2006	2014
AL03160112-0101-101	Valley Creek	R	Black Warrior	Jefferson	Limited Warmwater Fishery	Metals (Mercury)	Atmospheric deposition	2003	0.90 miles	19th Street North (Bessemer) / Opossum Creek	2004	2019
AL03160112-0101-200	Opossum Creek	R	Black Warrior	Jefferson	Agricultural & Industrial	Metals (Mercury)	Atmospheric deposition	2003	7.45 miles	Valley Creek / Its source	2004	2019
AL03160112-0105-101	Mud Creek	R	Black Warrior	Jefferson	Fish & Wildlife	pH Siltation (habitat alteration)	Unknown source	1974-83	14.12 miles	Valley Creek / Big Branch	1998	2014
AL03160112-0201-102	Big Yellow Creek	R	Black Warrior	Tuscaloosa	Swimming Fish & Wildlife	Metals (Chromium, Lead)	Surface mining-abandoned	1979-85 1988	14.59 miles	Bankhead Lake / Its source	1998	2014
AL03160112-0304-110	Pegues Creek	R	Black Warrior	Tuscaloosa	Fish & Wildlife	Metals (Chromium, Lead) Siltation (habitat alteration)	Surface mining-abandoned	2002	4.23 miles	Black Warrior River / Its source	2006	2014
AL03160112-0305-110	Daniel Creek	R	Black Warrior	Tuscaloosa	Fish & Wildlife	Metals (Chromium, Lead)	Surface mining-abandoned	2002	10.42 miles	Black Warrior River / Its source	2006	2014

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03160112-0411-102	North River	R	Black Warrior	Fayette Tuscaloosa	Fish & Wildlife	Nutrients Siltation (habitat alteration)	Surface mining-abandoned	1987	43.48 miles	Lake Tuscaloosa / Ellis Creek	1998	2014
AL03160112-0411-102	North River	R	Black Warrior	Fayette Tuscaloosa	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	43.48 miles	Lake Tuscaloosa / Ellis Creek	2010	2019
AL03160112-0413-102	North River (Lake Tuscaloosa)	L	Black Warrior	Tuscaloosa	Public Water Supply Swimming	Metals (Mercury)	Atmospheric deposition	2007 2008	3840.14 acres	City of Tuscaloosa water supply reservoir dam / Binion Creek	2010	2019
AL03160112-0411-101	North River (Lake Tuscaloosa)	L	Black Warrior	Tuscaloosa	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	1235.32 acres	Binion Creek / extent of reservoir	2010	2019
AL03160113-0704-100	Cottonwood Creek	R	Black Warrior	Hale Marengo Perry	Fish & Wildlife	Organic Enrichment (CBOD, NBOD) Siltation (habitat alteration) Nutrients	Municipal Pasture grazing	2002	11.42 miles	Big Prairie Creek / Its source	2006	2014
AL03150202-0503-102	Cahaba River	R	Cahaba	Bibb	Outstanding Alabama Water Swimming	Siltation (habitat alteration)	Land development Urban runoff/storm sewers	1990 1992 1993 2002-04	10.58 miles	Alabama Highway 82 / lower Little Cahaba River	1998	2012
AL03150202-0407-100	Cahaba River	R	Cahaba	Bibb	Outstanding Alabama Water Fish & Wildlife	Siltation (habitat alteration)	Land development Urban runoff/storm sewers	1990 1992 1993 2002-04	13.51 miles	lower Little Cahaba River / Shades Creek	1998	2012
AL03150202-0206-101	Cahaba River	R	Cahaba	Shelby	Outstanding Alabama Water Fish & Wildlife	Pathogens	Municipal Urban runoff/storm sewers	1993-97 2002-04	23.61 miles	Shades Creek / Shelby County Road 52	1998	2013
AL03150202-0206-101	Cahaba River	R	Cahaba	Shelby	Outstanding Alabama Water Fish & Wildlife	Siltation (habitat alteration)	Land development Municipal Urban runoff/storm sewers	1993-97 2002-04	23.61 miles	Shades Creek / Shelby County Road 52	1998	2012
AL03150202-0206-102	Cahaba River	R	Cahaba	Shelby	Fish & Wildlife	Pathogens	Municipal Urban runoff/storm sewers	1993-97 2002-04	3.62 miles	Shelby County Road 52 / Buck Creek	1998	2013
AL03150202-0206-102	Cahaba River	R	Cahaba	Shelby	Fish & Wildlife	Siltation (habitat alteration)	Land development Municipal Urban runoff/storm sewers	1993-97 2002-04	3.62 miles	Shelby County Road 52 / Buck Creek	1998	2012
AL03150202-0204-101	Cahaba River	R	Cahaba	Jefferson Shelby	Fish & Wildlife	Siltation (habitat alteration)	Urban runoff/storm sewers	1993 2002-04	17.46 miles	Buck Creek / Dam near US Highway 280	1998	2012
AL03150202-0204-101	Cahaba River	R	Cahaba	Jefferson Shelby	Fish & Wildlife	Pathogens	Urban runoff/storm sewers Municipal	2003-09	17.46 miles	Buck Creek / Dam near US Highway 280	2010	2013
AL03150202-0204-102	Cahaba River	R	Cahaba	Jefferson	Outstanding Alabama Water Public Water Supply	Siltation (habitat alteration)	Urban runoff/storm sewers	1993 2002-04	13.45 miles	Dam near US Highway 280 / Grant's Mill Road	1998	2012
AL03150202-0104-102	Cahaba River	R	Cahaba	Jefferson St. Clair	Fish & Wildlife	Siltation (habitat alteration)	Urban runoff/storm sewers	1993 2002-04	21.11 miles	Grant's Mill Road / US Highway 11	1998	2012
AL03150202-0101-102	Cahaba River	R	Cahaba	Jefferson	Outstanding Alabama Water Fish & Wildlife	Siltation (habitat alteration)	Urban runoff/storm sewers	1993 2002-04	3.13 miles	US Highway 11 / I-59	1998	2012
AL03150202-0901-100	Childers Creek	R	Cahaba	Dallas	Fish & Wildlife	Siltation (habitat alteration)	Pasture grazing	2002	18.79 miles	Cahaba River / Its source	2006	2014
AL03130002-0907-100	Moores Creek	R	Chattahoochee	Chambers	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	11.4 miles	Chattahoochee River / Its source	2012	2020
AL03130002-1107-110	Halawakee Creek	R	Chattahoochee	Chambers Lee	Fish & Wildlife	Siltation (habitat alteration)	Land development	2008	16.57 miles	Three miles upstream of County Road 79 / Its source	2012	2020
AL03130003-0101-100	Mill Creek	R	Chattahoochee	Lee Russell	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Urban development	1999 2008	9.93 miles	Chattahoochee River / Its source	2006	2015
AL03130003-0505-101	Uchee Creek	R	Chattahoochee	Russell	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	10.36 miles	Chattahoochee River / County Road 39	2010	2020
AL03130003-0605-100	Ihagee Creek	R	Chattahoochee	Russell	Swimming Fish & Wildlife	Siltation (habitat alteration)	Land development Silviculture activities	2005 2008	15.73 miles	Chattahoochee River / Its source	2012	2020
AL03130003-1205-100	Cowikee Creek (Walter F. George Reservoir)	L	Chattahoochee	Barbour	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	1739.13 acres	embayed portion of Cowikee Creek	2010	2020
AL03130003-1307-100	Barbour Creek	R	Chattahoochee	Barbour	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1987	27.23 miles	Chattahoochee River / Its source	1998	2015
AL03130004-0602-500	Cedar Creek	R	Chattahoochee	Henry Houston	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	4.04 miles	Omusee Creek / Its source	2008	2020
AL03130012-0101-410	Cypress Creek	R	Chipola	Houston	Fish & Wildlife	Nutrients Organic enrichment (CBOD, NBOD)	Municipal Urban runoff/storm sewers	1984 1986	8.11 miles	Limestone Creek / Its source	1998	2015
AL03140201-0501-201	Beaver Creek	R	Choctawhatchee	Houston	Fish & Wildlife	Nutrients	Municipal Urban runoff/storm sewers	1977-86	2.09 miles	Newton Creek / Dothan WWTP	1998	2015

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AL03140201-0501-201	Beaver Creek	R	Choctawhatchee	Houston	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Municipal Urban runoff/storm sewers	1977-86	2.09 miles	Newton Creek / Dothan WWTP	1998	2015
AL03140201-1004-600	Dowling Branch	R	Choctawhatchee	Geneva	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Agriculture Municipal Urban runoff/storm sewers	1991	2.10 miles	Cox Mill Creek / Its source	1998	2015
AL03140201-0901-100	Harrand Creek	R	Choctawhatchee	Coffee Dale	Fish & Wildlife	Siltation (habitat alteration)	Urban runoff/storm sewers	1999	9.71 miles	Claybank Creek / Its source	2006	2015
AL03140201-0901-200	Indian Camp Creek	R	Choctawhatchee	Coffee	Fish & Wildlife	Siltation (habitat alteration)	Land development Urban runoff/storm sewers	1999	3.98 miles	Harrand Creek / Its source	2004	2015
AL03140201-1203-100	Choctawhatchee River	R	Choctawhatchee	Dale Geneva	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	46.35 miles	Pea River / Its source	2010	2020
AL03140201-1102-500	Blanket Creek	R	Choctawhatchee	Coffee	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Municipal	2008	5.71 miles	Double Bridges Creek / Its source	2010	2020
AL03140202-0906-100	Pea River	R	Choctawhatchee	Barbour Bullock Coffee Dale Geneva Pike	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	157.23 miles	Choctawhatchee River / Its source	2010	2020
AL03140203-0105-100	Choctawhatchee River	R	Choctawhatchee	Geneva	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	4.45 miles	AL-FL state line / Pea River	2010	2020
AL03150106-0803-100	Coosa River (Logan Martin Lake)	L	Coosa	St. Clair Talladega	Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1996	14415.70 acres	Logan Martin Dam / Broken Arrow Creek	1998	*
AL03150106-0603-111	Coosa River (Logan Martin Lake)	L	Coosa	St. Clair Talladega Calhoun	Public Water Supply Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1996	1450.26 acres	Broken Arrow Creek / Trout Creek	1998	*
AL03150106-0603-112	Coosa River (Logan Martin Lake)	L	Coosa	St. Clair Calhoun	Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1996	820.38 acres	Trout Creek / Neely Henry Dam	1998	*
AL03150106-0204-101	Coosa River (Lake Neely Henry)	L	Coosa	Etowah	Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	2001-02	245.39 acres	Big Wills Creek / City of Gadsden water supply intake	2002	*
AL03150106-0204-102	Coosa River (Lake Neely Henry)	L	Coosa	Etowah Cherokee	Public Water Supply Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	2001-02	1897.43 acres	City of Gadsden water supply intake /Weiss Dam powerhouse	2002	*
AL03150106-0602-100	Broken Arrow Creek	R	Coosa	St. Clair	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Pasture grazing	2005	21.37 miles	Coosa River / Its source	2010	2017
AL03150106-0514-100	Choccolocco Creek	R	Coosa	Talladega Calhoun	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	39.85 miles	Coosa River / UT from Boiling Spring	2010	2017
AL03150106-0514-100	Choccolocco Creek	R	Coosa	Talladega Calhoun	Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1994	39.85 miles	Coosa River / UT from Boiling Spring	1996	*
AL03150106-0507-102	Choccolocco Creek	R	Coosa	Calhoun	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	2.37 miles	UT from Boiling Spring / Hillabee Creek	2010	2017
AL03150106-0507-102	Choccolocco Creek	R	Coosa	Calhoun	Public Water Supply Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1994	2.37 miles	UT from Boiling Spring / Hillabee Creek	1996	*
AL03150106-0806-100	Wolf Creek	R	Coosa	Shelby St. Clair	Fish & Wildlife	Siltation (habitat alteration) Turbidity	Surface mining Urban development	2005	16.70 miles	Kelly Creek / Its source	2010	2017
AL03150107-0106-100	Tallaseehatchee Creek	R	Coosa	Talladega	Fish & Wildlife	Total dissolved solids	Industrial Municipal	2005	17.51 miles	Coosa River / City of Sylacauga's water supply dam	2010	2017
AL03150107-0104-100	Shirtee Creek	R	Coosa	Talladega	Fish & Wildlife	Total dissolved solids	Industrial Municipal	2005	4.94 miles	Tallaseehatchee Creek / Its source	2010	2017
AL03150107-0503-110	Coosa River (Lay Lake)	L	Coosa	Talladega Chilton Coosa Shelby	Public Water Supply Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1990-91 1992-97	11806.34 acres	Lay Dam / Southern RR Bridge	1996	*
AL03150107-0301-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby	Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1990-91 1992-97	862.40 acres	Southern RR Bridge / River Mile 89	1996	*
AL03150107-0301-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	862.40 acres	Southern RR Bridge / River Mile 89	2010	2017
AL03150106-0810-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby St. Clair	Public Water Supply Swimming Fish & Wildlife	Priority organics (PCBs)	Contaminated sediments	1990-91 1992-97	698.25 acres	River Mile 89 / Logan Martin Dam	1996	*
AL03150106-0810-102	Coosa River (Lay Lake)	L	Coosa	Talladega Shelby St. Clair	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006 2008	698.25 acres	River Mile 89 / Logan Martin Dam	2010	2017
AL03150107-0801-100	Yellow Leaf Creek	R	Coosa	Chilton	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	2005	31.27 miles	Coosa River / Its source	2010	2017

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AL03150107-0304-700	UT to Dry Branch	R	Coosa	Shelby	Fish & Wildlife	Nutrients	Municipal Urban runoff/storm sewers	1991	1.58 miles	Dry Branch / Its source	1996	2017
AL03170008-0402-110	Escatawpa River	R	Escatawpa	Mobile	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	70.66 miles	AL-MS state line / Its source	2002	2018
AL03170008-0502-110	Big Creek (Big Creek Reservoir)	L	Escatawpa	Mobile	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	3309.31 acres	Big Creek Reservoir / Collins Creek	2008	2018
AL03170008-0502-600	Boggy Branch	R	Escatawpa	Mobile	Fish & Wildlife	Metals (Iron, Lead)	Natural Wet weather discharge	1996-99 2007	4.58 miles	Big Creek Reservoir / Its source	1998	2013
AL03170008-0502-800	Collins Creek	R	Escatawpa	Mobile	Fish & Wildlife	Metals (Arsenic)	Unknown source	2001 2002	5.15 miles	Big Creek / Its source	2006	2013
AL03170009-0201-100	Mississippi Sound	E	Escatawpa	Mobile	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	Urban runoff/storm sewers	1994-97	93.72 square miles	Segment classified for shellfish harvesting	1998	2013
AL03170009-0201-100	Mississippi Sound	E	Escatawpa	Mobile	Shellfish Harvesting Swimming Fish & Wildlife	Metals (Thallium)	Industrial	2005-07	93.72 square miles	Segment classified for shellfish harvesting	2010	2018
AL03170009-0201-200	Portersville Bay	E	Escatawpa	Mobile	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	Municipal	1996	18.81 square miles	1000 feet west of outfall / Bayou la Batre Utilities outfall	1998	2013
AL03170009-0201-300	Grand Bay	E	Escatawpa	Mobile	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	On-site wastewater systems	2003-2005	30.73 square miles	Grand Bay	2006	2013
AL03160204-0505-100	Mobile River	R	Mobile	Mobile	Limited Warmwater Fishery	Metals (Mercury)	Atmospheric deposition	2000	7.61 miles	Mobile Bay / Spanish River	2000	2018
AL03160204-0403-112	Mobile River	R	Mobile	Baldwin Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	20.90 miles	Spanish River / Cold Creek	2000	2018
AL03160204-0105-111	Cold Creek	R	Mobile	Mobile	Fish & Wildlife	Metals (Mercury)	Contaminated sediments	1993	4.21 miles	Mobile River / Dam 1 1/2 miles west of US Highway 43	1996	2018
AL03160204-0305-101	Chickasaw Creek	R	Mobile	Mobile	Limited Warmwater Fishery	Metals (Mercury)	Atmospheric deposition	2000	4.43 miles	Mobile River / US Highway 43	2000	2018
AL03160204-0305-102	Chickasaw Creek	R	Mobile	Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	6.64 miles	US Highway 43 / Mobile College	2000	2018
AL03160204-0303-100	Chickasaw Creek	R	Mobile	Mobile	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	26.82 miles	Mobile College / Its source	2000	2018
AL03160204-0504-101	Threemile Creek	R	Mobile	Mobile	Agricultural & Industrial	Pathogens	Collection system failure Municipal Urban runoff/storm sewers	2000-01	2.04 miles	Mobile River / Toulmins Spring Branch	2004	2013
AL03160204-0504-102	Threemile Creek	R	Mobile	Mobile	Agricultural & Industrial	Pathogens	Collection system failure Municipal Urban runoff/storm sewers	2000-01	4.34 miles	Toulmins Spring Branch / Mobile Street	2004	2013
AL03160204-0504-300	Toulmins Spring Branch	R	Mobile	Mobile	Fish & Wildlife	Ammonia Nutrients	Urban runoff/storm sewers	2000-01	3.22 miles	Threemile Creek / Its source	2008	2013
AL03160204-0504-500	UT to Threemile Creek	R	Mobile	Mobile	Fish & Wildlife	Nutrients	Urban runoff/storm sewers	2000-01	1.04 miles	Threemile Creek / Its source	2008	2013
AL03160204-0505-201	Tensaw River	R	Mobile	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	6.51 miles	Mobile Bay / Junction of Tensaw and Apalachee Rivers	2002	2018
AL03160204-0505-202	Tensaw River	R	Mobile	Baldwin	Outstanding Alabama Water Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	21.73 miles	Junction of Tensaw and Apalachee Rivers / Junction of Briar Lake	2002	2018
AL03160204-0505-500	D'Olive Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	4.89 miles	D'Olive Bay / Its source	2008	2013
AL03160204-0505-800	Joes Branch	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	1.57 miles	D'Olive Creek / Its source	2008	2013
AL03160204-0505-900	Tiawasee Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	3.54 miles	D'Olive Creek / Its source	2008	2013
AL03160204-0505-905	UT to Tiawasee Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	1.87 miles	Tiawasee Creek / Its source	2008	2013
AL03160204-0505-505	UT to D'Olive Creek	R	Mobile	Baldwin	Fish & Wildlife	Siltation (habitat alteration)	Land development	2007	1.22 miles	D'Olive Creek / Its source	2008	2013
AL03160204-0106-302	Tensaw River	R	Mobile	Baldwin	Outstanding Alabama Water Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	2.93 miles	Junction of Briar Lake / Junction of Tensaw Lake	2002	2018
AL03160204-0106-303	Tensaw River	R	Mobile	Baldwin Mobile	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	10.98 miles	Junction of Tensaw Lake / Mobile River	2002	2018

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AL03160205-0300-102	Mobile Bay	E	Mobile	Mobile	Shellfish Harvesting Fish & Wildlife	Pathogens	Urban runoff/storm sewers	1994-97	168.29 square miles	All except out to 1000 feet offshore from Mullet Point to Ragged Point	1998	2014
AL03160205-0300-202	Bon Secour Bay	E	Mobile	Baldwin	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	On-site wastewater systems Urban runoff/storm sewers	1994-97	102.96 square miles	All except out to 1000 feet offshore from Fish River Point to Mullet Point	1998	2014
AL03160205-0300-500	Mobile Bay	E	Mobile	Baldwin	Swimming Fish & Wildlife	Pathogens	Urban runoff/storm sewers	2008-09	36.88 square miles	Northeast bay	2010	2016
AL03160205-0102-110	Halls Mill Creek	R	Mobile	Mobile	Fish & Wildlife	Siltation (habitat alteration)	Land development	2006	11.30 miles	Dog River / its source	2012	2018
AL03160205-0105-100	Middle Fork Deer River	R	Mobile	Mobile	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Collection system failure Urban runoff/storm sewers	2003-05	3.51 miles	Mobile Bay / Its source	2006	2013
AL03160205-0104-110	Fowl River	R	Mobile	Mobile	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2000	20.56 miles	Mobile Bay / Its source	2000	2018
AL03160205-0202-210	Polecat Creek	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	7.89 miles	Fish River / Its source	2006	2018
AL03160205-0202-510	Baker Branch	R	Mobile	Baldwin	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Pasture grazing	2001	6.15 miles	Polecat Creek / Its source	2006	2013
AL03160205-0204-112	Fish River	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	1996	30.01 miles	Weeks Bay / Its source	1998	2018
AL03160205-0204-112	Fish River	R	Mobile	Baldwin	Swimming Fish & Wildlife	Pathogens	Pasture grazing	1996	30.01 miles	Weeks Bay / Its source	1998	2013
AL03160205-0204-700	Cowpen Creek	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	7.04 miles	Fish River / Its source	2008	2018
AL03160205-0206-101	Bon Secour River	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	9.12 miles	Bon Secour Bay / One mile upstream from first bridge above its mouth	2006	2018
AL03160205-0206-102	Bon Secour River	R	Mobile	Baldwin	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	4.38 miles	One mile upstream from first bridge above its mouth / Its source	2006	2018
AL03160205-0208-100	Oyster Bay	E	Mobile	Baldwin	Shellfish Harvesting Fish & Wildlife	Pathogens	Unknown source	2003-2005	0.95 square miles	Oyster Bay	2006	2013
AL-Gulf-of-Mexico	Gulf of Mexico	E	Mobile	Baldwin Mobile	Shellfish Harvesting Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	1996-97	201.02 square miles	Mississippi / Florida	1998	2018
AL03140103-0102-102	Lightwood Knot Creek (Lake Frank Jackson)	L	Perdido-Escambia	Covington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	956.26 acres	Lake Frank Jackson Dam / extent of reservoir	2010	2020
AL03140103-0102-700	UT to Jackson Lake 3-C	R	Perdido-Escambia	Covington	Fish & Wildlife	Organic enrichment (CBOD, NBOD) Pathogens	Feedlots Pasture grazing	1996-97	1.05 miles	Lake Frank Jackson / Its source	1998	2012
AL03140103-0102-800	UT to Jackson Lake 2-S	R	Perdido-Escambia	Covington	Fish & Wildlife	Organic enrichment (CBOD, NBOD) Pathogens	Feedlots Pasture grazing	1996-97	1.77 miles	Lake Frank Jackson / Its source	1998	2012
AL03140103-0402-100	Yellow River	R	Perdido-Escambia	Covington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	14.87 miles	AL-FL state line / North Creek	2004	2020
AL03140103-0601-300	Lake Jackson	L	Perdido-Escambia	Covington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007 2008	415.46 acres	Within Florala and north of the Alabama-Florida stste line	2010	2020
AL03140104-0104-100	Blackwater River	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	2.78 miles	AL-FL state line / Its source	2004	2020
AL03140106-0302-101	Brushy Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Industrial Municipal Urban runoff/storm sewers	1999	0.22 miles	AL-FL state line / Boggy Branch	2000	2015
AL03140106-0302-101	Brushy Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Lead)	Industrial Municipal	2004 2005	0.22 miles	AL-FL state line / Boggy Branch	2006	2015
AL03140106-0302-201	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Pathogens Metals (Copper, Lead)	Industrial Municipal	2004	1.54 miles	Brushy Creek / Atmore WWTP	2006	2015
AL03140106-0302-201	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Industrial Municipal	2004	1.54 miles	Brushy Creek / Atmore WWTP	2008	2015
AL03140106-0302-202	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Organic Enrichment (CBOD, NBOD) Metals (Zinc) Chlorides	Industrial	1996 1997	0.22 miles	Atmore WWTP / Masland Carpets WWTP	1998	2015
AL03140106-0302-202	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Industrial	1996 1997	0.22 miles	Atmore WWTP / Masland Carpets WWTP	2008	2015
AL03140106-0302-202	Boggy Branch	R	Perdido-Escambia	Escambia	Fish & Wildlife	Ammonia	Industrial Municipal	2004 2005	0.22 miles	Atmore WWTP / Masland Carpets WWTP	1998	2015
AL03140106-0504-100	Styx River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	22.72 miles	Hollinger Creek / Its source	2002	2020

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL03140106-0507-100	Styx River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	18.52 miles	Perdido River / Hollinger Creek	2002	2020
AL03140106-0603-101	Blackwater River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	3.11 miles	Perdido River / Narrow Gap Creek	2004	2020
AL03140106-0703-100	Perdido River	R	Perdido-Escambia	Baldwin	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	21.93 miles	Perdido Bay / Jacks Branch	2006	2020
AL03140107-0204-400	Arnica Bay	E	Perdido-Escambia	Baldwin	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	On-site wastewater systems	2010	1.27 square miles	Perdido Bay / Bay la launch	2012	2019
AL03140107-0204-302	Perdido Bay	E	Perdido-Escambia	Baldwin	Shellfish Harvesting Swimming Fish & Wildlife	Pathogens	Collection system failure On-site wastewater systems	2010	1.29 square miles	Suarez Point / Lillian Bridge	2012	2019
AL03140301-0404-111	Conecuh River (Gantt Reservoir)	L	Perdido-Escambia	Covington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	1817.43 acres	Gantt Dam / extent of reservoir	2010	2020
AL03140301-0405-101	Conecuh River (Point A Reservoir)	L	Perdido-Escambia	Covington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	610.56 acres	Point A Dam / extent of reservoir	2010	2020
AL03140302-0506-101	Patsaliga Creek (Point A Reservoir)	L	Perdido-Escambia	Covington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	154.43 acres	Conecuh River / Buck Creek	2010	2020
AL03140303-0201-101	Rocky Creek	R	Perdido-Escambia	Butler	Fish & Wildlife	Pathogens	Unknown source	2008	9.23 miles	Persimmon Creek / County Road north of Chapman	1998	2015
AL03140303-0704-100	Sepulga River	R	Perdido-Escambia	Conecuh	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2007	14.48 miles	Conecuh River / Robinson Mill Creek	2010	2020
AL03140304-0506-100	Conecuh River	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	12.70 miles	AL-FL state line / Mantle Branch	2004	2020
AL03140304-0305-101	Burnt Corn Creek	R	Perdido-Escambia	Escambia	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	5.03 miles	Murder Creek / Sevenmile Creek	2010	2020
AL03140304-0605-100	Little Escambia Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	12.21 miles	AL-FL state line / Wild Fork Creek	2004	2020
AL03140305-0302-100	Big Escambia Creek	R	Perdido-Escambia	Escambia	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2002	17.03 miles	AL-FL state line / Big Spring Creek	2004	2020
AL03150108-0905-103	Little Tallapoosa River	R	Tallapoosa	Cleburne Randolph	Fish & Wildlife	Pathogens	Pasture grazing Sources outside state	2005-2009	30.78 miles	Wolf Creek / AL-GA state line	2010	2017
AL03150109-0803-301	Sugar Creek (Lake Martin)	L	Tallapoosa	Tallapoosa	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	58.93 acres	embayed portion of Sugar Creek	2012	2022
AL03150110-0104-101	Sougahatchee Creek (Yates Lake)	L	Tallapoosa	Tallapoosa	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	203.78 acres	embayed portion of Sougahatchee Creek	2012	2022
AL03150110-0402-101	Channahatchee Creek (Yates Lake)	L	Tallapoosa	Elmore	Public Water Supply Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Nonpoint source runoff	2005 2010	62.63 acres	embayed portion of Channahatchee Creek	2012	2017
AL03150110-0202-300	Moores Mill Creek	R	Tallapoosa	Lee	Swimming Fish & Wildlife	Siltation (habitat alteration)	Land development Urban runoff/storm sewers	1998	10.51 miles	Chewacla Creek / Its source	2000	2017
AL03150110-0406-102	Tallapoosa River (Thurlow Reservoir)	L	Tallapoosa	Elmore Tallapoosa	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	538.60 acres	Thurlow dam / Yates dam	2012	2022
AL03150110-0406-200	Mill Creek	R	Tallapoosa	Macon Tallapoosa	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Pasture grazing	2005	9.16 miles	Tallapoosa River / Its source	2010	2017
AL03150110-0504-101	Calebee Creek	R	Tallapoosa	Macon	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	10.26 miles	Tallapoosa River / Macon County Road 9	1998	2017
AL03150110-0604-100	Cubahatchee Creek	R	Tallapoosa	Macon	Swimming Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	22.07 miles	Tallapoosa River / Coon Hop Creek	1998	2017
AL03150110-0603-102	Cubahatchee Creek	R	Tallapoosa	Bullock Macon	Swimming Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	22.37 miles	Coon Hop Creek / Its source	1998	2017
AL03150110-0804-101	Line Creek	R	Tallapoosa	Macon Montgomery	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	10.29 miles	Tallapoosa River / Johnsons Creek	1998	2017
AL03150110-0804-102	Line Creek	R	Tallapoosa	Macon Montgomery	Fish & Wildlife	Siltation (habitat alteration)	Agriculture Surface mining	1996	5.51 miles	Johnsons Creek / Panther Creek	1998	2017
AL03150110-0905-112	Tallapoosa River	R	Tallapoosa	Elmore Montgomery	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	10.07 miles	US Highway 231 / Jenkins Creek	2012	2022
AL03150110-0904-300	Jenkins Creek	R	Tallapoosa	Montgomery	Fish & Wildlife	Siltation (habitat alteration)	Urban development	2005	13.48 miles	Tallapoosa River / Its source	2010	2017
AL06030001-0204-101	Widows Creek	R	Tennessee	Jackson	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009 2010	4.98 miles	Tennesee River / Alabama Highway 277	2012	2021
AL06030001-0205-102	Tennessee River (Lake Guntersville)	L	Tennessee	Jackson	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	2708.77 acres	Pump Spring Branch / AL-TN state line	2012	2021

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL06030001-0306-100	Little Coon Creek	R	Tennessee	Jackson	Fish & Wildlife	Siltation (habitat alteration)	Non-irrigated crop production Pasture grazing	2009	16.30 miles	Coon Creek / AL-TN state line	2012	2016
AL06030001-0403-801	Warren Smith Creek	R	Tennessee	Jackson	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1986 1987	1.96 miles	Dry Creek / Ross Branch	1998	2016
AL06030001-0202-500	Higdon Creek	R	Tennessee	DeKalb Jackson	Fish & Wildlife	Siltation (habitat alteration)	Pasture grazing Silviculture activities	2009	4.16 miles	Miller Creek / AL-GA state line	2012	2016
AL06030001-0904-101	Browns Creek (Lake Guntersville)	L	Tennessee	Marshall	Public Water Supply Swimming Fish & Wildlife	Nutrients	Agriculture	2009	4976.95 acres	embayed portion of Browns Creek	2012	2016
AL06030001-0904-102	Browns Creek	R	Tennessee	Marshall	Fish & Wildlife	Nutrients Total dissolved solids	Agriculture Mining	2009	11.86 miles	Lake Guntersville / Its source	2012	2016
AL06030002-0106-101	Guess Creek	R	Tennessee	Jackson	Fish & Wildlife	Organic enrichment (CBOD, NBOD) Pathogens Unknown toxicity	Pasture grazing Unknown source	1997	11.08 miles	Paint Rock River / Bee Branch	1998	2012
AL06030002-0303-500	Hester Creek	R	Tennessee	Madison	Fish & Wildlife	Nutrients	Pasture grazing	1994-95	7.27 miles	Mountain Fork / AL-TN state line	1998	2014
AL06030002-0305-100	Beaverdam Creek	R	Tennessee	Madison	Fish & Wildlife	Siltation (habitat alteration)	Land development Non-irrigated crop production	1994-95	22.14 miles	Brier Fork / Its source	1998	2016
AL06030002-0306-110	Brier Fork	R	Tennessee	Madison	Fish & Wildlife	Siltation (habitat alteration)	Land development Non-irrigated crop production	1994-95	21.89 miles	Flint River / AL-TN state line	1998	2016
AL06030002-0403-112	Flint River	R	Tennessee	Madison	Fish & Wildlife	Turbidity	Agriculture Land development	1999-2004	15.32 miles	Alabama Highway 72 / Mountain Fork	2006	2016
AL06030002-0404-200	Goose Creek	R	Tennessee	Madison	Fish & Wildlife	Pathogens	Agriculture	1997	8.89 miles	Flint River / Its source	1998	2012
AL06030002-0503-102	Huntsville Spring Branch	R	Tennessee	Madison	Fish & Wildlife	Metals (Arsenic, Mercury)	Urban runoff/storm sewers	1994-95	1.98 miles	Johnson Road (Huntsville Field) / Broglan Branch	2006	2016
AL06030002-0601-300	Hughes Creek	R	Tennessee	Marshall Morgan	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1995	3.02 miles	Cotaco Creek / Its source	1998	2016
AL06030002-0603-600	Mill Pond Creek	R	Tennessee	Marshall	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1994-95	1.29 miles	Hog Jaw Creek / Its source	1998	2016
AL06030002-0602-102	West Fork Cotaco Creek	R	Tennessee	Morgan	Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1997	8.12 miles	Alabama Highway 67 / Frost Creek	1998	2016
AL06030002-0602-200	Mud Creek	R	Tennessee	Morgan	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Agriculture	2004 2005	3.42 miles	West Fork Cotaco Creek / Its source	2006	2012
AL06030002-0602-800	Widner Creek	R	Tennessee	Cullman Morgan	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Pasture grazing	2009	6.79 miles	Mud Creek / Its source	2012	2016
AL06030002-0602-900	Fall Creek	R	Tennessee	Cullman Morgan	Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Pasture grazing	2009	3.62 miles	Mud Creek / Its source	2012	2016
AL06030002-0906-600	Limestone Creek (Wheeler Lake)	L	Tennessee	Limestone	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	1543.22 acres	embayed portion of Limestone Creek	2012	2021
AL06030002-1014-103	Flint Creek	R	Tennessee	Morgan	Public Water Supply Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	9.10 miles	L&N Railroad / Alabama Highway 36	2012	2021
AL06030002-1101-101	Swan Creek	R	Tennessee	Limestone	Fish & Wildlife	Nutrients	Agriculture Municipal Urban runoff/storm sewers	2006	8.97 miles	Tennessee River / Alabama Highway 24	2008	2016
AL06030004-0404-102	Anderson Creek	R	Tennessee	Lauderdale	Fish & Wildlife	Siltation (habitat alteration)	Non-irrigated crop production Pasture grazing	1994-95	9.31 miles	Snake Road bridge / Its source	1998	2016
AL06030004-0405-101	Elk River (Wheeler Lake)	L	Tennessee	Lauderdale Limestone	Swimming Fish & Wildlife	pH	Non-irrigated crop production Pasture grazing	1990-91	1569.21 acres	Tennessee River / Anderson Creek	1996	2013
AL06030004-0405-101	Elk River (Wheeler Lake)	L	Tennessee	Lauderdale Limestone	Swimming Fish & Wildlife	Nutrients	Non-irrigated crop production Pasture grazing	1999-02	1569.21 acres	Tennessee River / Anderson Creek	2004	2013
AL06030004-0403-800	Sulphur Creek	R	Tennessee	Limestone	Fish & Wildlife	Nutrients	Agriculture Industrial	2004-06	8.34 miles	Elk River / Its source	2008	2013
AL06030005-0105-100	Big Nance Creek	R	Tennessee	Lawrence	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	27.31 miles	Tennessee River / its source	2012	2021
AL06030005-0801-201	McKiernan Creek	R	Tennessee	Colbert	Public Water Supply Swimming Fish & Wildlife	Nutrients Organic enrichment (CBOD, NBOD) Siltation (habitat alteration)	Agriculture	1988	2.71 miles	Tennessee River / Shegog Creek	1998	2015
AL06030005-0801-201	McKiernan Creek	R	Tennessee	Colbert	Public Water Supply Swimming Fish & Wildlife	Siltation (habitat alteration)	Agriculture	1988	2.71 miles	Tennessee River / Shegog Creek	1998	2012
AL06030005-0802-100	Pond Creek	R	Tennessee	Colbert	Agricultural & Industrial	Organic enrichment (CBOD, NBOD)	Non-irrigated crop production Urban runoff/storm sewers	1991	12.43 miles	Tennessee River / Its source	1996	2015

Assessment Unit ID	Waterbody Name	Type	River Basin	County	Uses	Causes	Sources	Date of Data	Size	Downstream / Upstream Locations	Year Listed	Draft TMDL Date
AL06030005-0802-100	Pond Creek	R	Tennessee	Colbert	Agricultural & Industrial	Metals (Arsenic, Cyanide, Mercury)	Non-irrigated crop production Urban runoff/storm sewers Natural	1991	12.43 miles	Tennessee River / Its source	2006	2016
AL06030005-0803-400	Sweetwater Creek	R	Tennessee	Lauderdale	Fish & Wildlife	Nutrients	Urban runoff/storm sewers	2009	4.41 miles	Tennessee River (Florence Canal) / Its source	2012	2016
AL06030006-0102-700	Little Dice Branch	R	Tennessee	Franklin	Fish & Wildlife	Siltation (habitat alteration)	Surface mining-abandoned	1982	3.83 miles	Bear Creek / Its source	1998	2016
AL06030006-0104-101	Bear Creek (Bear Creek Reservoir)	L	Tennessee	Franklin	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2005	653.54 acres	Bear Creek Reservoir Dam / Alabama Highway 187	2006	2016
AL06030006-0103-103	Bear Creek	R	Tennessee	Marion	Swimming Fish & Wildlife	Metals (Aluminum)	Surface mining-abandoned	1992-96	3.00 miles	Mill Creek / Upper Bear Creek Dam	1998	2014
AL06030006-0103-104	Bear Creek (Upper Bear Creek Reservoir)	L	Tennessee	Franklin Marion Winston	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	1462.58 acres	Upper Bear Creek Dam / Pretty Branch	2008	2016
AL06030006-0103-104	Bear Creek (Upper Bear Creek Reservoir)	L	Tennessee	Franklin Marion Winston	Public Water Supply Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Agriculture	2003-2009	1462.58 acres	Upper Bear Creek Dam / Pretty Branch	2010	2016
AL06030006-0203-101	Cedar Creek (Cedar Creek Lake)	L	Tennessee	Franklin	Public Water Supply Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	4063.07 acres	Cedar Creek Lake dam / extent of reservoir	2012	2021
AL06030006-0205-111	Little Bear Creek (Little Bear Creek Reservoir)	L	Tennessee	Franklin	Public Water Supply Swimming Fish & Wildlife	Nutrients	Unknown source	1994-2005	1435.05 acres	Little Bear Creek Dam / Scott Branch	2006	2016
AL06030006-0205-111	Little Bear Creek (Little Bear Creek Reservoir)	L	Tennessee	Franklin	Public Water Supply Swimming	Metals (Mercury)	Atmospheric deposition	2009	1435.05 acres	Little Bear Creek Dam / Scott Branch	2012	2021
AL03160105-0101-200	East Branch Luxapallila Creek	R	Upper Tombigbee	Fayette Marion	Public Water Supply Fish & Wildlife	Pathogens	Municipal	2001	11.18 miles	Luxapallila Creek / Its source	2006	2013
AL03160106-0702-101	Factory Creek	R	Upper Tombigbee	Sumter	Fish & Wildlife	Organic Enrichment (CBOD, NBOD) Nutrients	Agriculture	2001	1.86 miles	Tombigbee River / end of embayment	2004	2013
AL03160107-0306-101	Sipsey River (Gainesville Reservoir)	L	Upper Tombigbee	Greene Pickens	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2008	554.29 acres	Tombigbee River / extent of reservoir	2010	2018
AL03160201-0401-103	Tombigbee River (Coffeeville Reservoir)	L	Lower Tombigbee	Marengo Sumter	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2009	668.76 acres	Sucarnoochee River / Demopolis Lock and Dam	2012	2018
AL03160201-0904-101	Wahalak Creek	R	Lower Tombigbee	Choctaw	Fish & Wildlife	Pathogens	Municipal Urban runoff/storm sewers	2001	14.83 miles	Tombigbee River / Spear Creek	2006	2013
AL03160203-0903-102	Tombigbee River	R	Lower Tombigbee	Clarke Washington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	7.83 miles	Bassetts Creek / 1/2 mile downstream of Southern Railway	2008	2018
AL03160203-1103-101	Tombigbee River	R	Lower Tombigbee	Baldwin Clarke Mobile Washington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2010	11.89 miles	Mobile River / upper end of Bilbo Island	2012	2018
AL03160203-1103-102	Tombigbee River	R	Lower Tombigbee	Clarke Washington	Fish & Wildlife	Metals (Mercury)	Atmospheric deposition Contaminated sediments	2001-02 2009	3.75 miles	Upper end of Bilbo Island / Olin Basin canal	2004	2018
AL03160203-1103-700	Bilbo Creek	R	Lower Tombigbee	Washington	Swimming Fish & Wildlife	Organic enrichment (CBOD, NBOD)	Unknown source	2001-02	30.74 miles	Tombigbee River / Its source	2004	2013
AL03160203-1103-700	Bilbo Creek	R	Lower Tombigbee	Washington	Swimming Fish & Wildlife	Metals (Mercury)	Atmospheric deposition	2006	30.74 miles	Tombigbee River / Its source	2008	2018
AL03160203-1103-800	Olin Basin	L	Lower Tombigbee	Washington	Fish & Wildlife	Pesticides (DDT)	Contaminated sediments	1993	85.73 acres	All of Olin Basin	1996	*
AL03160203-1103-800	Olin Basin	L	Lower Tombigbee	Washington	Fish & Wildlife	Metals (Mercury)	Contaminated sediments	1993	85.73 acres	All of Olin Basin	1996	2018

* TMDL development for this pollutant is to be determined based upon ongoing RCRA/CERCLA program activities.

Appendix E

2012 Summary of Alabama’s Active Trend Stations (Ambient Monitoring)

Ambient Trend Stations

Currently, there are 103 stations in ADEM's ambient trend station network. Sampling frequency occurs three times a year during the months of June, August, and October or May, July, and September. Selected sites are sampled more frequently.

Ambient Trend Chart (Pages 7-13)

The Ambient Trend Chart includes information about each trend station, including the Station ID, Waterbody, River Basin, County, Latitude and Longitude, Sample Protocol (wadeable or non-wadeable), and Use Classification. Stations are listed based on the river basin in which they are located.

Trend Station Network Map (Page 14) and Land Use Map (Page 15)

The Trend Station Network map displays the location of each individual trend station while also showing waterbodies throughout the state and the boundary of each river basin.

For the land use map, each color represents a specific land use. Significant color representations include the following: yellow—hay/pasture, brown—cultivated crops, light green—deciduous forest, dark green—evergreen forest, red—developed land. On this map, the river basins are identified, and the locations for all trend stations are clearly displayed.

River Basin Maps (Pages 16-28)

Included in this report are individual river basin maps. These maps show the name and location of each trend station. Also, they include the waterbodies contained in each river basin.

Ambient Data Summaries (Pages 29-50) and Trend Graphs (Pages 51-359)

The data summaries are based on nine parameters for each station. Parameters for each station include Temperature (˚C), pH (su), Dissolved Oxygen (mg/L), Specific Conductance (µmhos), Turbidity (NTU), Total Suspended Solids (mg/L), Nitrate + Nitrite Nitrogen (mg/L), Total Nitrogen (mg/L), and Total Phosphorus (mg/L). The time frame varies for each trend station, but each dataset contains the entire life of that station. Older stations include data from 1978, and most stations include data through 2011. The statistics for each trend station include the number of samples (N), the minimum (Min) and maximum (Max) values, the median (Med), the average (Avg), and the standard deviation (SD).

Each of the nine parameters is also represented in the trend graphs. For those nine parameters, each data point represents the yearly average. The initial graph for each station displays temperature, pH, dissolved oxygen, and specific conductance. It is then followed by individual graphs which display the remaining five parameters.

River Basins

Alabama River Basin

Drainage Area	6,012 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Coosa River, Tallapoosa River, Cahaba River
Physiography	East Gulf Coast Plain
Major Population Area	Montgomery
Ambient Monitoring Stations	CATM-3A, MULD-1, WDFA-2A

Black Warrior River Basin

Drainage Area	6,274 square miles
Major Land Uses	Forest, agriculture, urban, open land
Major Tributaries	Mulberry Fork, Locust Fork, Sipsey Fork
Physiography	Cumberland Plateau, Alabama Valley and Ridge, East Gulf Coastal Plain
Major Population Area	Metropolitan Birmingham, Tuscaloosa
Ambient Monitoring Stations	FM-1, FM-2, FMCJ-1B, H-1, LFKJ-6, LOSW-7, MBFB-1, NRRT-1, SF-2, VA-1, VALJ-8, VC-5, VI-3, VLGJ-5

Cahaba River Basin

Drainage Area	1,822 square miles
Major Land Uses	Forest, agriculture, urban
Major Tributaries	Little Cahaba River, Buck Creek, Shades Creek, Shoal Creek
Physiography	Alabama Valley and Ridge, East Gulf Coastal Plain

Major Population Area	Metropolitan Birmingham
Ambient Monitoring Stations	B-1, C-1, C-2, C-3, CABB-1, CABJ-8, CAHS-1, LC-1, SH-1A

Chattahoochee River Basin

Drainage Area	2,571 square miles
Major Land Uses	Forest, agriculture
Major Tributaries	Uchee Creek, Cowikee Creek, Abbie Creek, Omussee Creek
Physiography	Southern Piedmont, East Gulf Coastal Plain
Major Population Area	Opelika, Phenix City
Ambient Monitoring Stations	SFCB-1

Choctawhatchee River Basin

Drainage Area	3,121 square miles
Major Land Uses	Forest, agriculture, urban, open land
Major Tributaries	Pea River
Physiography	East Gulf Coastal Plain
Major Population Area	Dothan, Andalusia
Ambient Monitoring Stations	CHO-9, PEAG-2

Coosa River Basin

Drainage Area	5,394 square miles
Major Land Uses	Forest, agriculture, open land, urban

Major Tributaries	Chattooga River, Terapin Creek, Big Wills Creek, Choccolocco Creek
Physiography	Alabama Valley and Ridge, East Gulf Coastal Plain
Major Population Area	Gadsden, Anniston
Ambient Monitoring Stations	BWCE-1, CHAC-1, CHOC-10, CHOT-1, CO-12, COSE-1, HATC-1, SHRT-1, TERC-1, TH-1, WEIC-12

Escatawpa River Basin

Drainage Area	1,010 square miles
Major Land Uses	Forest, agriculture
Major Tributaries	Big Creek
Physiography	East Gulf Coastal Plain
Major Population Area	Portion of Citronelle
Ambient Monitoring Stations	BLB-1, BLBM-1, E-1, MB-1A

Lower Tombigbee River Basin

Drainage Area	4,041 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Sucarnoochee River, Okatuppa Creek, Bassetts Creek
Physiography	East Gulf Coastal Plain
Major Population Area	Demopolis, Jackson
Ambient Monitoring Stations	LT-12, SUCS-1

Mobile River Basin

Drainage Area	1,840 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Chickasaw Creek, Bayou Sara, Cedar Creek
Physiography	East Gulf Coastal Plain
Major Population Area	Mobile
Ambient Monitoring Stations	BS-1, CHANNEL-1A, CHANNEL-2, CKSM-3, CS-1, CS-2, DGRM-1, DR-1, FI-1, FR-1, MB-2A, MB-3A, MO-1A- MO-2, MOBM-1, TC-1, TENB-2, TM-1, TMCM-3, WB-1

Perdido-Escambia River Basin

Drainage Area	5,332 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Yellow River, Blackwater River, Conecuh River
Physiography	East Gulf Coastal Plain
Major Population Area	Andalusia, Greenville
Ambient Monitoring Stations	BEC-1, BKRE-1, CNR-1A, CONE-2, IC-1A, PALC-2, PDBB-0, PDBB-5, SPLC-3, STXB-3, WO-1A, YERC-3

Tallapoosa River Basin

Drainage Area	4,037 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Little Tallapoosa River, Hillabee Creek, Sougahatchee Creek, Uphapee Creek
Physiography	Southern Piedmont, East Gulf Coastal Plain

Major Population Area	Auburn, Opelika
Ambient Monitoring Stations	HILT-2, LTRR-1, PPLL-2, SOGL-1, TA-1, TA-2, TARE-1, UPHM-3

Tennessee River Basin

Drainage Area	6,821 square miles
Major Land Uses	Agriculture, forest, open land, urban
Major Tributaries	Bear Creek, Town Creek, Elk River, Flint River, Paint Rock River
Physiography	East Gulf Coastal Plain, Highland Rim, Cumberland Plateau
Major Population Area	Huntsville, Decatur, Florence
Ambient Monitoring Stations	BERM-2, BGNL-1, FLIM-2A, FTCM-6, INDM-249, LIML-300, PRRJ-1, SCRL-2, SSCD-1A, TENR-417, TN-4A

Upper Tombigbee River Basin

Drainage Area	3,652 square miles
Major Land Uses	Forest, agriculture, open land, urban
Major Tributaries	Buttahatchee River, Sipsey River
Physiography	East Gulf Coastal Plain, Cumberland Plateau
Major Population Area	Fayette, Hamilton
Ambient Monitoring Stations	BCTP-1, BDKS-48, BUTL-2A, LUXL-1, NXBS-50, SPYG-3

Ambient Trend Stations

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Classification
CATM-3A	Catoma Creek	Alabama R	Montgomery	32.30736	-86.29941	WADEABLE-BIOASSESSMENTS	F&W
MULD-1	Mulberry Creek	Alabama R	Dallas	32.58278	-86.90361	WADEABLE-BIOASSESSMENTS	S/F&W
WDFA-2A	Woodruff Reservoir	Alabama R	Elmore	32.41142	-86.40836	NONWADEABLE BOAT	F&W
FM-1	Five Mile Creek	Black Warrior R	Jefferson	33.59111	-86.803611	WADEABLE-BIOASSESSMENTS	F&W
FM-2	Five Mile Creek	Black Warrior R	Jefferson	33.611111	-86.885556	WADEABLE-BIOASSESSMENTS	F&W
FMCJ-1B	Five Mile Creek	Black Warrior R	Jefferson	33.60191	-86.75527	WADEABLE-BIOASSESSMENTS	F&W
H-1	Hurricane Creek	Black Warrior R	Tuscaloosa	33.229826	-87.46181	WADEABLE-BIOASSESSMENTS	F&W
LFKJ-6	Locust Fork	Black Warrior R	Jefferson	33.587257	-87.109325	NONWADEABLE BOAT	F&W
LOSW-7	Lost Creek	Black Warrior R	Walker	33.742472	-87.326722	WADEABLE-BIOASSESSMENTS	F&W
MBFB-1	Mulberry Fork	Black Warrior R	Blount	33.872403	-86.923778	WADEABLE-BIOASSESSMENTS	F&W
NRRT-1	North River	Black Warrior R	Tuscaloosa	33.4798	-87.596806	WADEABLE-BIOASSESSMENTS	F&W
SF-2	Sipsey Fork	Black Warrior R	Winston	34.218096	-87.368906	WADEABLE-BIOASSESSMENTS	F&W
VA-1	Valley Creek	Black Warrior R	Jefferson	33.38775	-87.05874	WADEABLE-BIOASSESSMENTS	LWF
VALJ-8	Valley Creek	Black Warrior R	Jefferson	33.44722	-87.12222	WADEABLE-BIOASSESSMENTS	F&W
VC-5	Valley Creek	Black Warrior R	Jefferson	33.420027	-86.963056	WADEABLE-BIOASSESSMENTS	LWF

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Classification
VI-3	Village Creek	Black Warrior R	Jefferson	33.547974	-86.925667	WADEABLE-BIOASSESSMENTS	LWF
VLGJ-5	Village Creek	Black Warrior R	Jefferson	33.627286	-87.053335	WADEABLE-BIOASSESSMENTS	F&W
B-1	Buck Creek	Cahaba R	Shelby	33.296944	-86.842639	WADEABLE-BIOASSESSMENTS	F&W
C-1	Cahaba River	Cahaba R	St Clair	33.60503	-86.54924	WADEABLE-BIOASSESSMENTS	F&W
C-2	Cahaba River	Cahaba R	Shelby	33.41546	-86.74002	WADEABLE-BIOASSESSMENTS	F&W
C-3	Cahaba River	Cahaba R	Shelby	33.284	-86.88193	WADEABLE-BIOASSESSMENTS	OAW/F&W
CABB-1	Cahaba River	Cahaba R	Bibb	32.94456	-87.139827	WADEABLE-BIOASSESSMENTS	OAW/S
CABJ-8	Cahaba River	Cahaba R	Jefferson	33.62283	-86.60007	WADEABLE-BIOASSESSMENTS	OAW/F&W
CAHS-1	Cahaba River	Cahaba R	Shelby	33.3635	-86.8132	WADEABLE-BIOASSESSMENTS	F&W
LC-1	Little Cahaba River	Cahaba R	Jefferson	33.52444	-86.575277	WADEABLE-BIOASSESSMENTS	F&W
SH-1A	Shades Creek	Cahaba R	Jefferson	33.355278	-86.890556	WADEABLE-BIOASSESSMENTS	F&W
SFCB-1	South Fork of Cowikee Creek	Chattahoochee R	Barbour	32.0175	-85.29583	WADEABLE-BIOASSESSMENTS	S/F&W
CHO-9	Choctawhatchee River	Choctawhatchee R	Geneva	31.15917	-85.78472	NONWADEABLE GRAB-SHALLOW	F&W
PEAG-2	Pea River	Choctawhatchee R	Geneva	31.112002	-86.09937	NONWADEABLE GRAB-SHALLOW	F&W
BWCE-1	Big Wills Creek	Coosa R	Etowah	34.09805	-86.03809	WADEABLE-BIOASSESSMENTS	F&W
CHAC-1	Chattooga River	Coosa R	Cherokee	34.290278	-85.509167	NONWADEABLE GRAB-SHALLOW	F&W
CHOC-10	Choccolocco Creek	Coosa R	Calhoun	33.606111	-85.790111	WADEABLE-BIOASSESSMENTS	PWS/F&W

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Classification
CHOT-1	Choccolocco Creek	Coosa R	Talladega	33.54818	-86.0966	NONWADEABLE GRAB-SHALLOW	F&W
CO-12	Little River	Coosa R	Cherokee	34.28186	-85.67244	WADEABLE-BIOASSESSMENTS	PWS/S/F&W
COSE-1	Coosa River	Coosa R	Elmore	32.61396	-86.25498	NONWADEABLE BOAT	F&W
HATC-1	Hatchet Creek	Coosa R	Coosa	32.91821	-86.26938	WADEABLE-BIOASSESSMENTS	OAW/S/F&W
SHRT-1	Shirtee Creek	Coosa R	Talladega	33.21202	-86.27324	WADEABLE-BIOASSESSMENTS	F&W
TERC-1	Terrapin Creek	Coosa R	Cherokee	34.06294	-85.61227	NONWADEABLE GRAB-SHALLOW	F&W
TH-1	Tallasseehatchee Creek	Coosa R	Talladega	33.255339	-86.259666	WADEABLE-BIOASSESSMENTS	F&W
WEIC-12	Coosa River	Coosa R	Cherokee	34.202441	-85.452402	NONWADEABLE BOAT	S/F&W
BLB-1	Bayou La Batre	Escatawpa R	Mobile	30.4059	-88.2481	NONWADEABLE BOAT	F&W
BLBM-1	Bayou La Batre	Escatawpa R	Mobile	30.3867	-88.27	NONWADEABLE BOAT	F&W
E-1	Escatawpa River	Escatawpa R	Mobile	30.862741	-88.417868	NONWADEABLE GRAB-SHALLOW	S/F&W
MB-1A	Intracoastal Waterway	Escatawpa R	Mobile	30.27308	-88.17317	NONWADEABLE BOAT	SH/F&W
LT-12	Satilpa Creek	Lower Tombigbee R	Clarke	31.74444	-88.02133	WADEABLE-BIOASSESSMENTS	S/F&W
SUCS-1	Sucarnoochee River	Lower Tombigbee R	Sumter	32.5739	-88.1942	WADEABLE-BIOASSESSMENTS	PWS/S/F&W
BS-1	Bon Secour River	Mobile R	Baldwin	30.30221	-87.73575	NONWADEABLE BOAT	S/F&W
CHANNEL-1A	Mobile Ship Channel	Mobile R	Mobile	30.62973	-88.03263	NONWADEABLE BOAT	F&W
CHANNEL-2	Mobile Ship Channel	Mobile R	Mobile	30.46437	-88.01577	NONWADEABLE BOAT	S/F&W

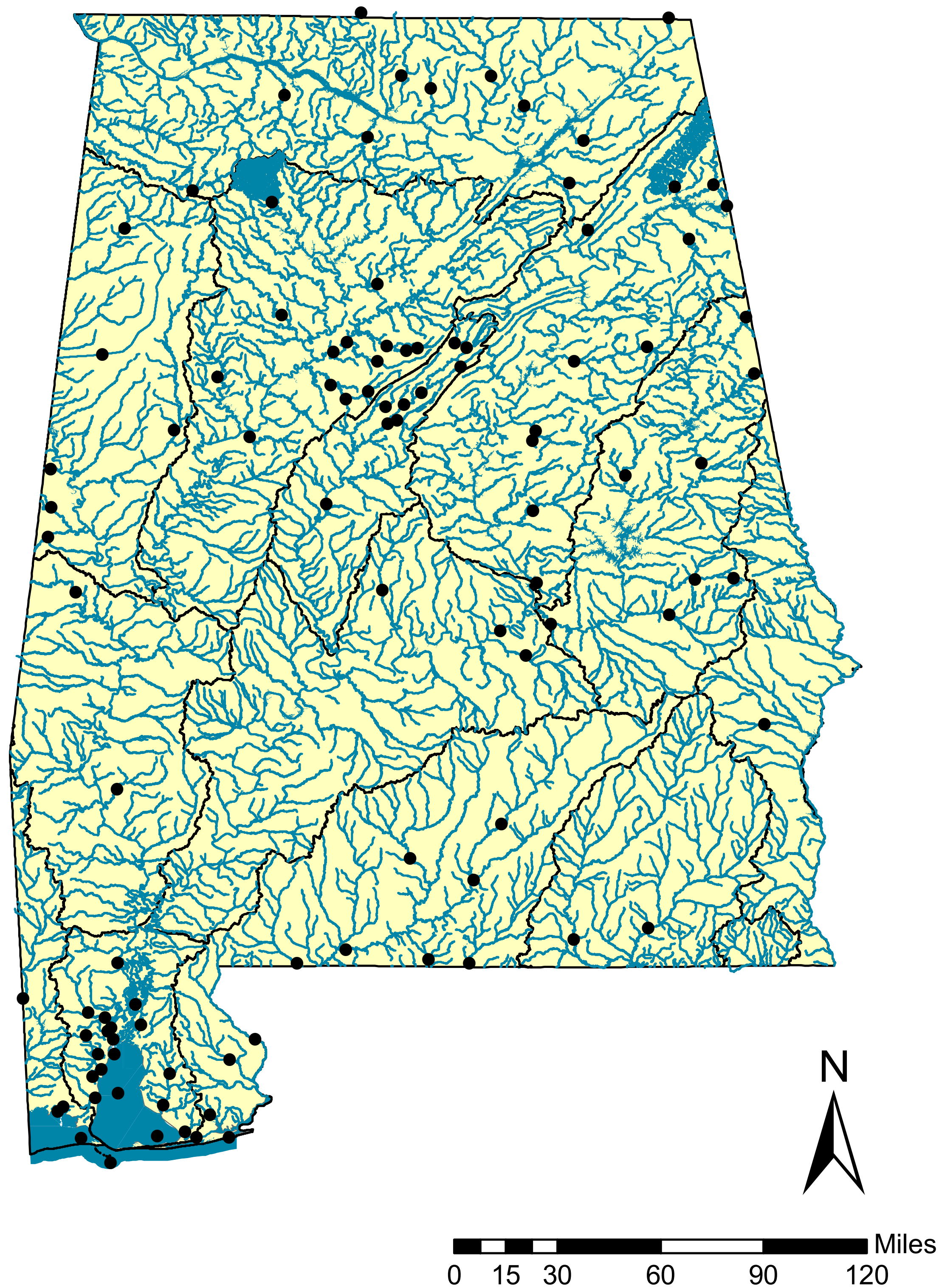
Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Classification
CKSM-3	Chickasaw Creek	Mobile R	Mobile	30.80297	-88.14334	WADEABLE-BIOASSESSMENTS	S/F&W
CS-1	Chickasaw Creek	Mobile R	Mobile	30.78224	-88.072481	NONWADEABLE BOAT	LWF
CS-2	Chickasaw Creek	Mobile R	Mobile	30.73925	-88.04571	NONWADEABLE BOAT	LWF
DGRM-1	Dog River	Mobile R	Mobile	30.5651	-88.0878	NONWADEABLE BOAT	S/F&W
DR-1	Dog River	Mobile R	Mobile	30.62845	-88.10166	NONWADEABLE BOAT	F&W
FI-1	Fish River	Mobile R	Baldwin	30.5458	-87.7983	WADEABLE-BIOASSESSMENTS	S/F&W
FR-1	Fowl River	Mobile R	Mobile	30.444166	-88.113056	NONWADEABLE BOAT	S/F&W
MB-2A	Mobile Ship Channel	Mobile R	Baldwin	30.1718	-88.04895	NONWADEABLE BOAT	SH/S/F&W
MB-3A	Intracoastal Waterway	Mobile R	Baldwin	30.28407	-87.85137	NONWADEABLE BOAT	SH/S/F&W
MO-1A	Mobile River	Mobile R	Baldwin	30.8364	-87.94406	NONWADEABLE BOAT	F&W
MO-2	Mobile River	Mobile R	Mobile	30.69137	-88.03646	NONWADEABLE BOAT	LWF
MOBM-1	Mobile River	Mobile R	Mobile	31.0137	-88.01853	NONWADEABLE BOAT	PWS/F&W
TC-1	Theodore Industrial Canal	Mobile R	Mobile	30.533333	-88.123889	NONWADEABLE BOAT	F&W
TENB-2	Tensaw River	Mobile R	Baldwin	30.75291	-87.91987	NONWADEABLE BOAT	OAW/S/F&W
TM-1	Three Mile Creek	Mobile R	Mobile	30.723983	-88.059119	NONWADEABLE BOAT	A&I
TMCM-3	Threemile Creek	Mobile R	Mobile	30.7063	-88.15111	WADEABLE-WATER QUALITY SAMPLING	A&I
WB-1	Weeks Bay	Mobile R	Baldwin	30.41469	-87.82583	NONWADEABLE BOAT	S/F&W

Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Classification
BEC-1	Big Escambia Creek	Perdido-Escambia R	Escambia	31.0106	-87.2629	WADEABLE-BIOASSESSMENTS	F&W
BKRE-1	Blackwater River	Perdido-Escambia R	Escambia	31.026555	-86.710005	NONWADEABLE GRAB-SHALLOW	F&W
CNR-1A	Conecuh River	Perdido-Escambia R	Covington	31.36128	-86.51968	WADEABLE-BIOASSESSMENTS	F&W
CONE-2	Conecuh River	Perdido-Escambia R	Escambia	31.068271	-87.058419	NONWADEABLE BOAT	F&W
IC-1A	Intracoastal Waterway	Perdido-Escambia R	Baldwin	30.2793	-87.687	NONWADEABLE BOAT	F&W
PALC-2	Patsaliga Creek	Perdido-Escambia R	Crenshaw	31.5959	-86.40407	NONWADEABLE GRAB-SHALLOW	F&W
PDBB-0	Perdido Bay	Perdido-Escambia R	Baldwin	30.27968	-87.54948	NONWADEABLE BOAT	SH/S/F&W
PDBB-5	Perdido River	Perdido-Escambia R	Baldwin	30.69047	-87.44026	NONWADEABLE GRAB-SHALLOW	F&W
SPLC-3	Sepulga River	Perdido-Escambia R	Conecuh	31.45362	-86.7868	NONWADEABLE GRAB-SHALLOW	F&W
STXB-3	Styx River	Perdido-Escambia R	Baldwin	30.60532	-87.547	WADEABLE-WATER QUALITY SAMPLING	F&W
WO-1A	Wolf Creek	Perdido-Escambia R	Baldwin	30.371668	-87.630556	NONWADEABLE GRAB-SHALLOW	F&W
YERC-3	Yellow River	Perdido-Escambia R	Covington	31.0107	-86.5375	NONWADEABLE GRAB-SHALLOW	F&W
HILT-2	Hillabee Creek	Tallapoosa R	Tallapoosa	33.06635	-85.87993	WADEABLE-BIOASSESSMENTS	F&W
LTRR-1	Little Tallapoosa River	Tallapoosa R	Randolph	33.49466	-85.33788	NONWADEABLE GRAB-SHALLOW	F&W
PPLL-2	Pepperell Branch	Tallapoosa R	Lee	32.6347	-85.4254	WADEABLE-BIOASSESSMENTS	F&W
SOGL-1	Sougahatchee Creek	Tallapoosa R	Lee	32.6267	-85.588	WADEABLE-BIOASSESSMENTS	F&W

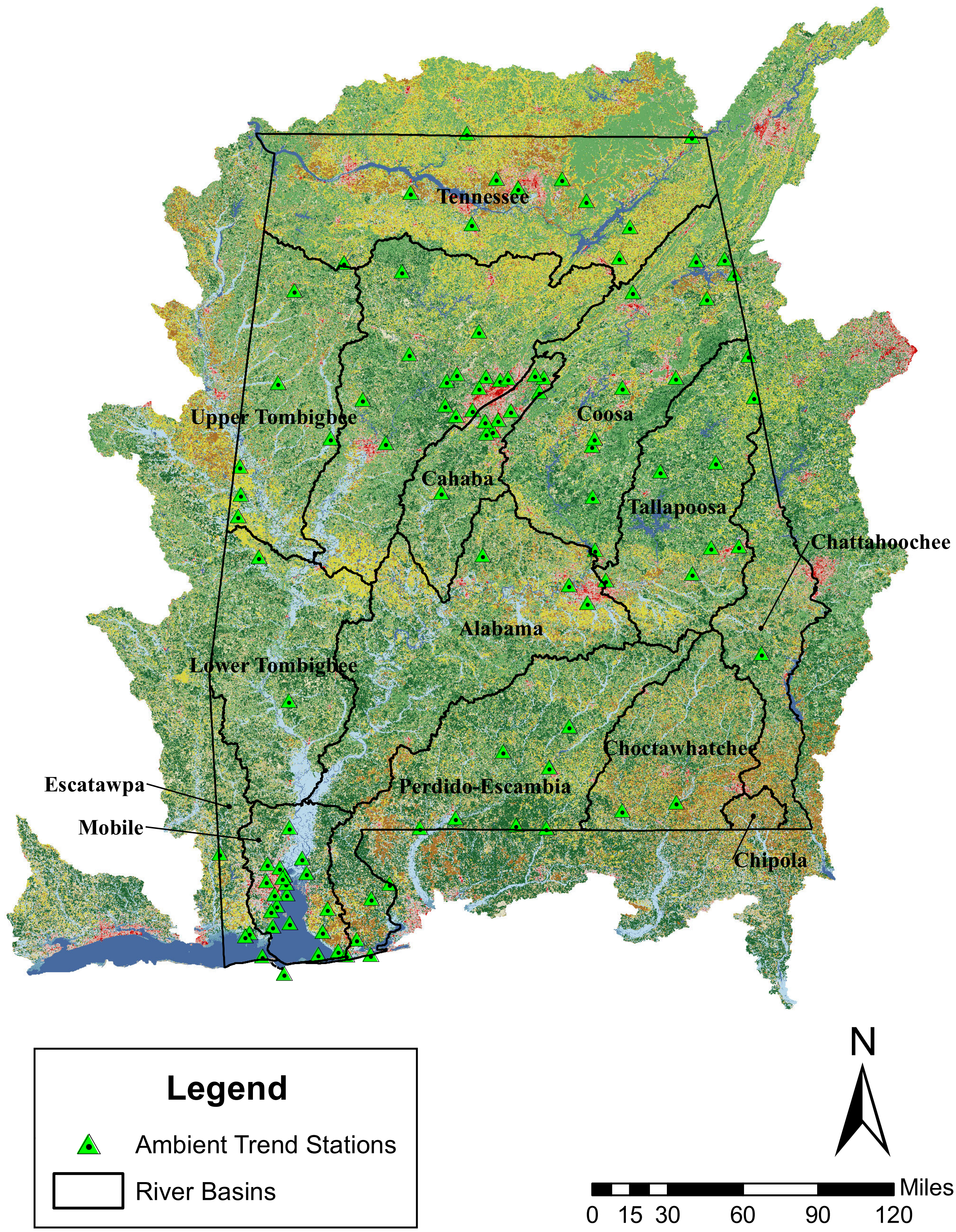
Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Classification
TA-1	Tallapoosa River	Tallapoosa R	Randolph	33.118007	-85.560152	NONWADEABLE GRAB-SHALLOW	F&W
TA-2	Tallapoosa River	Tallapoosa R	Cleburne	33.732723	-85.372167	WADEABLE-BIOASSESSMENTS	F&W
TARE-1	Tallapoosa River	Tallapoosa R	Montgomery	32.43972	-86.19556	NONWADEABLE BOAT	PWS/F&W
UPHM-3	Uphapee Creek	Tallapoosa R	Macon	32.47751	-85.69554	WADEABLE-BIOASSESSMENTS	F&W
BERM-2	Bear Creek	Tennessee R	Marion	34.266831	-87.702577	WADEABLE-BIOASSESSMENTS	S/F&W
BGNL-1	Big Nance Creek	Tennessee R	Lawrence	34.67	-87.31722	NONWADEABLE GRAB-SHALLOW	F&W
FLIM-2A	Flint River	Tennessee R	Madison	34.74926	-86.44666	NONWADEABLE GRAB-SHALLOW	F&W
FTCM-6	Flint Creek	Tennessee R	Morgan	34.491139	-86.965389	NONWADEABLE BOAT	PWS/F&W
INDM-249	Indian Creek	Tennessee R	Madison	34.69731	-86.7	WADEABLE-BIOASSESSMENTS	F&W
LIML-300	Limestone Creek	Tennessee R	Limestone	34.7521	-86.8232	WADEABLE-BIOASSESSMENTS	F&W
PRRJ-1	Paint Rock River	Tennessee R	Jackson	34.62417	-86.30639	NONWADEABLE GRAB-SHALLOW	F&W
SCRL-2	Scarham Creek	Tennessee R	Marshall	34.29843	-86.11664	WADEABLE-BIOASSESSMENTS	F&W
SSCD-1A	South Sauty Creek	Tennessee R	Jackson	34.47602	-86.05689	WADEABLE-BIOASSESSMENTS	S/F&W
TENR-417	Tennessee River	Tennessee R	Jackson	34.994014	-85.698327	NONWADEABLE BOAT	PWS/S/F&W
TN-4A	Elk River	Tennessee R	Giles	35.01415	-86.99465	NONWADEABLE BOAT	PWS/F&W
BCTP-1	Bogue Chitto Creek	Upper Tombigbee R	Pickens	33.09222	-88.300641	WADEABLE-BIOASSESSMENTS	F&W
BDKS-48	Bodka Creek	Upper Tombigbee R	Sumter	32.806787	-88.312129	WADEABLE-BIOASSESSMENTS	F&W

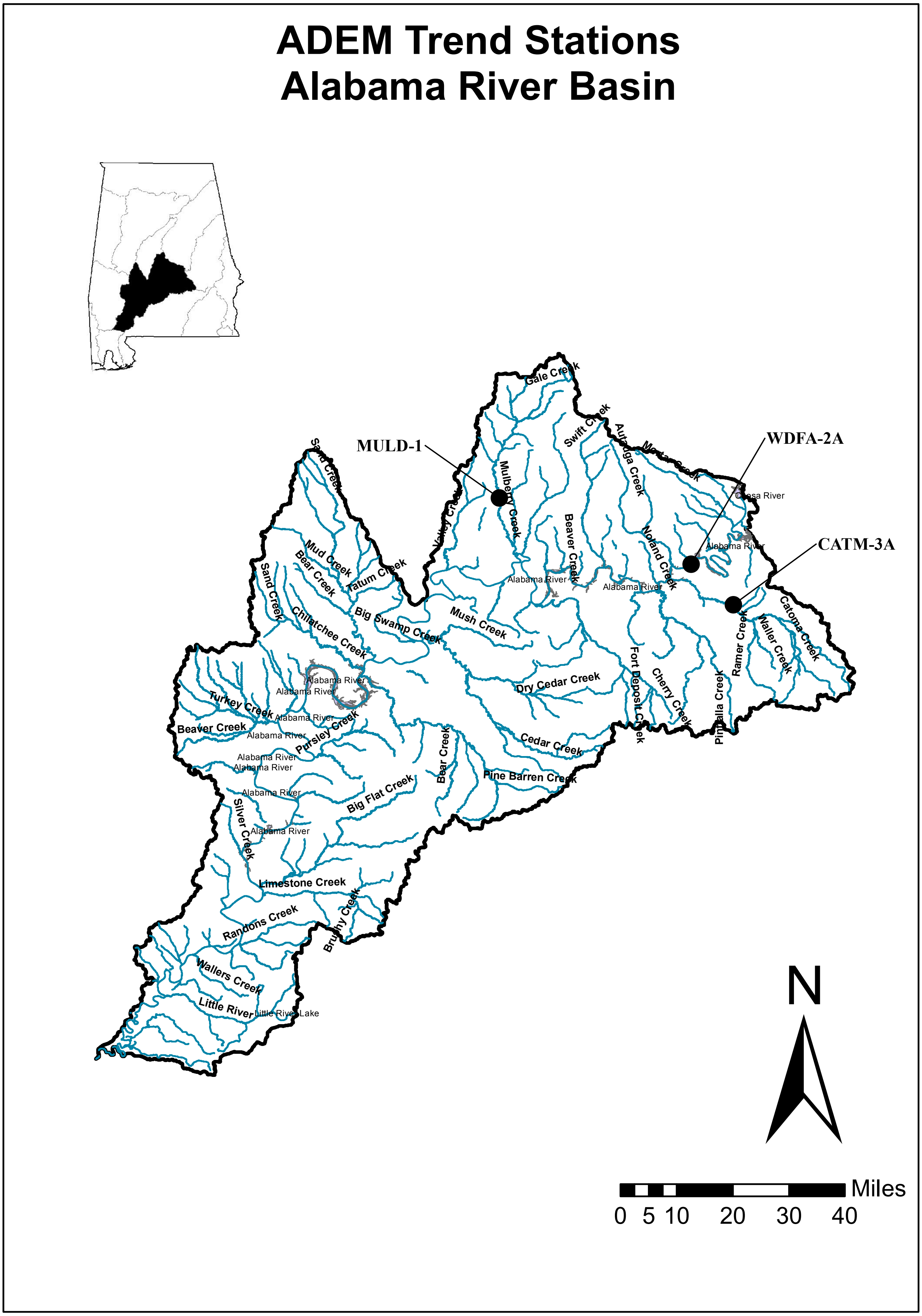
Station ID	Waterbody	River Basin	County	Latitude	Longitude	Sample Protocol	Use Classification
BUTL-2A	Buttahatchee River	Upper Tombigbee R	Marion	34.10597	-87.98869	WADEABLE-WATER QUALITY SAMPLING	F&W
LUXL-1	Luxapallila Creek	Upper Tombigbee R	Lamar	33.575	-88.0834	WADEABLE-BIOASSESSMENTS	F&W
NXBS-50	Noxubee Creek	Upper Tombigbee R	Sumter	32.932681	-88.297789	WADEABLE-BIOASSESSMENTS	F&W
SPYG-3	Sipsey River	Upper Tombigbee R	Tuscaloosa	33.256764	-87.781692	NONWADEABLE GRAB-SHALLOW	F&W

ADEM Trend Station Network

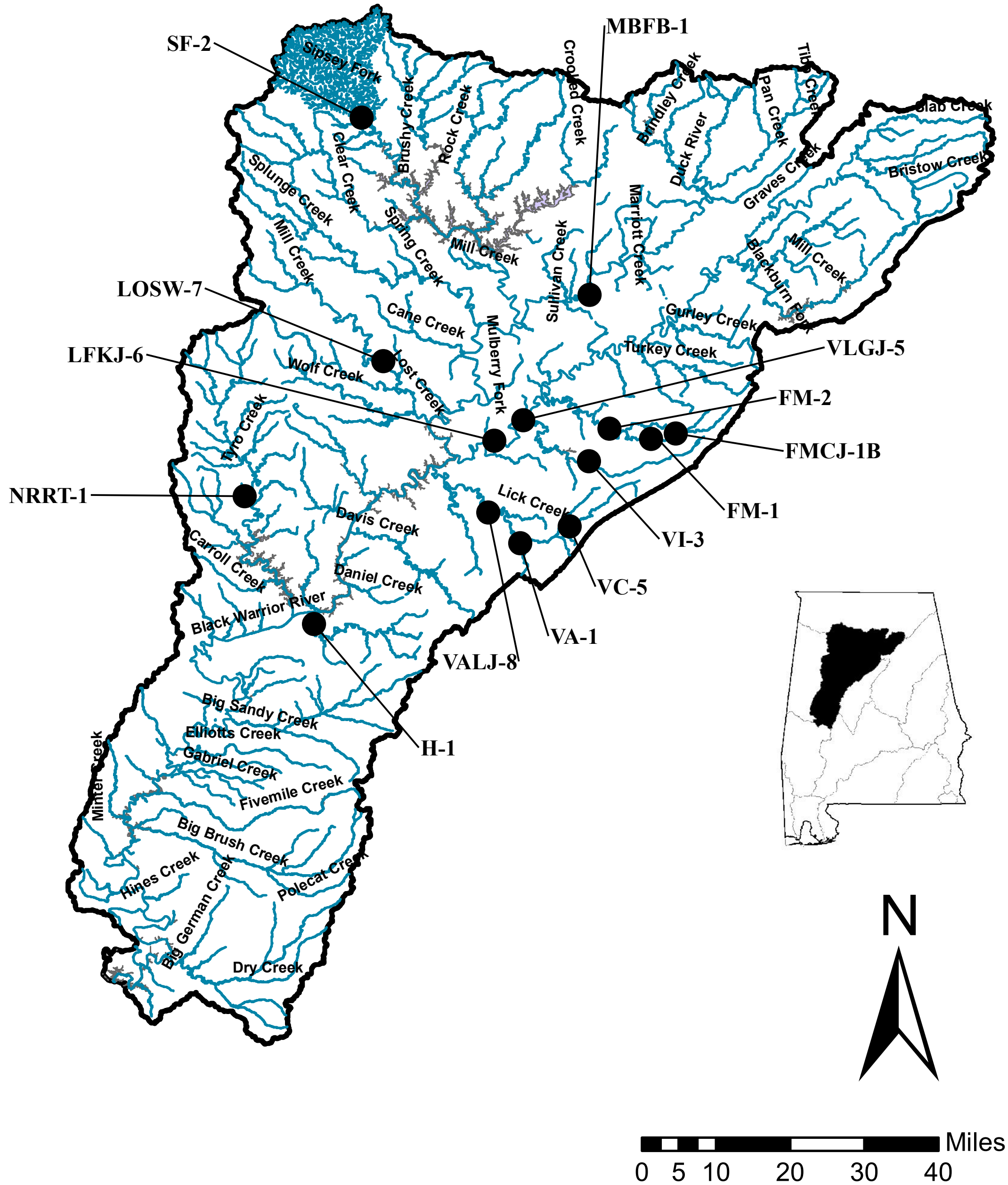


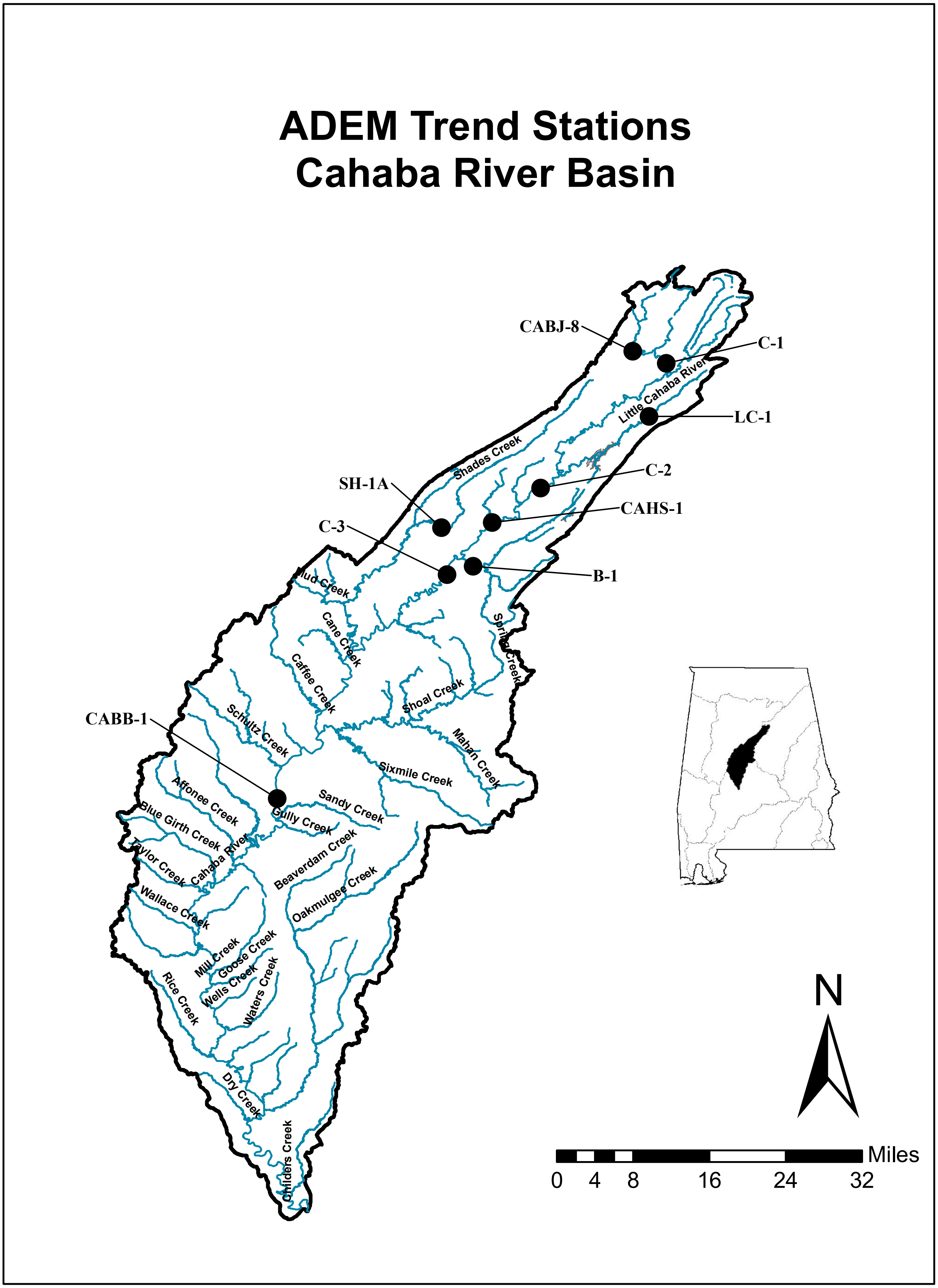
ADEM Trend Stations
Land Use Map

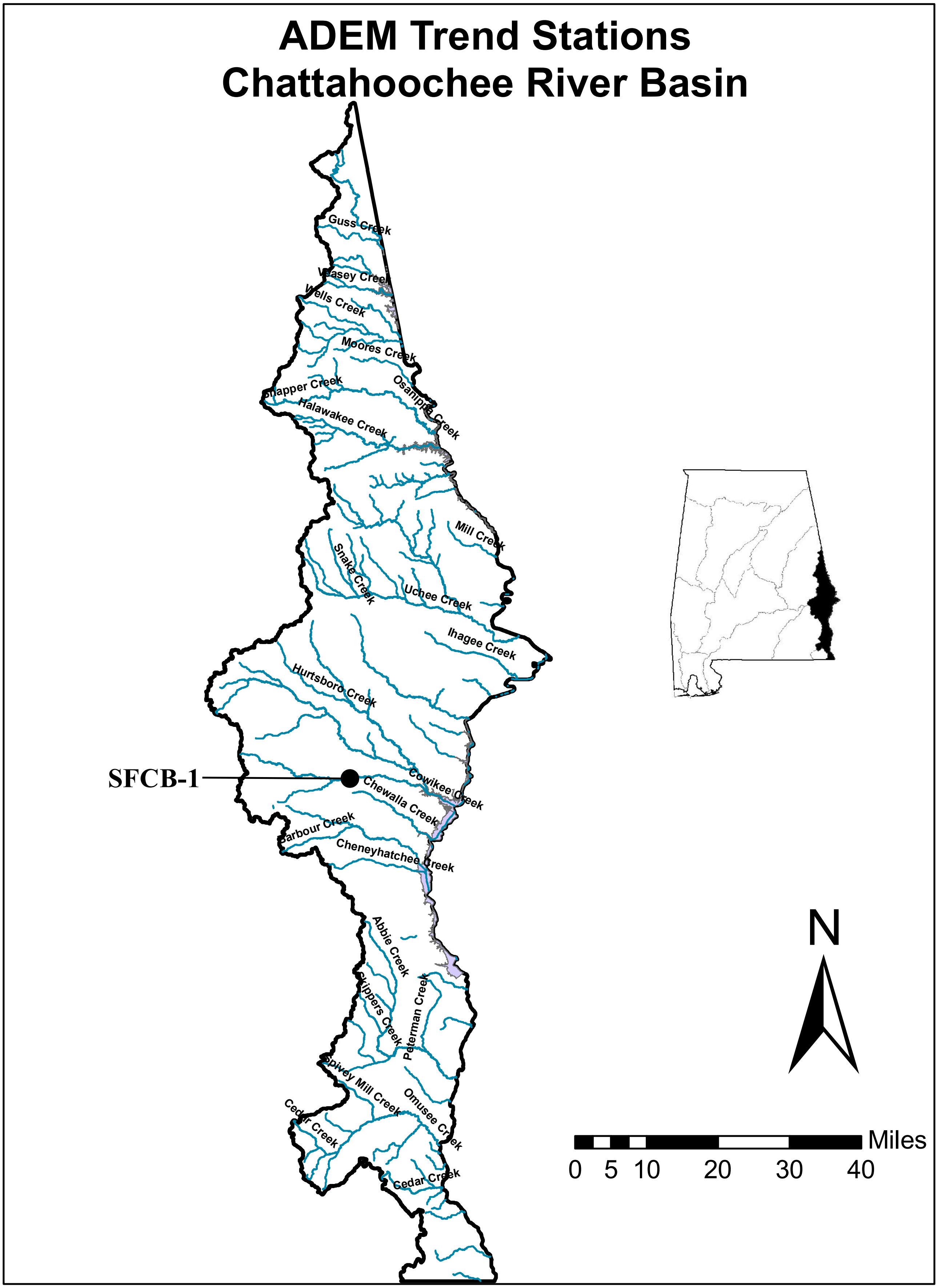



ADEM Trend Stations
Alabama River Basin
MULD-1
WDFA-2A
CATM-3A
Gale Creek
Swift Creek
Autauga Creek
Mortar Creek
Coosa River
Mulberry Creek
Valley Creek
Sand Creek
Mud Creek
Bear Creek
Tatum Creek
Beaver Creek
Noland Creek
Alabama River
Big Swamp Creek
Mush Creek
Chilatchee Creek
Catoma Creek
Ramer Creek
Waller Creek
Fort Deposit Creek
Cherry Creek
Pintlalla Creek
Dry Cedar Creek
Turkey Creek
Pursley Creek
Cedar Creek
Pine Barren Creek
Big Flat Creek
Silver Creek
Limestone Creek
Randons Creek
Brushy Creek
Wallers Creek
Little River
Little River Lake
N
Miles
0 5 10 20 30 40

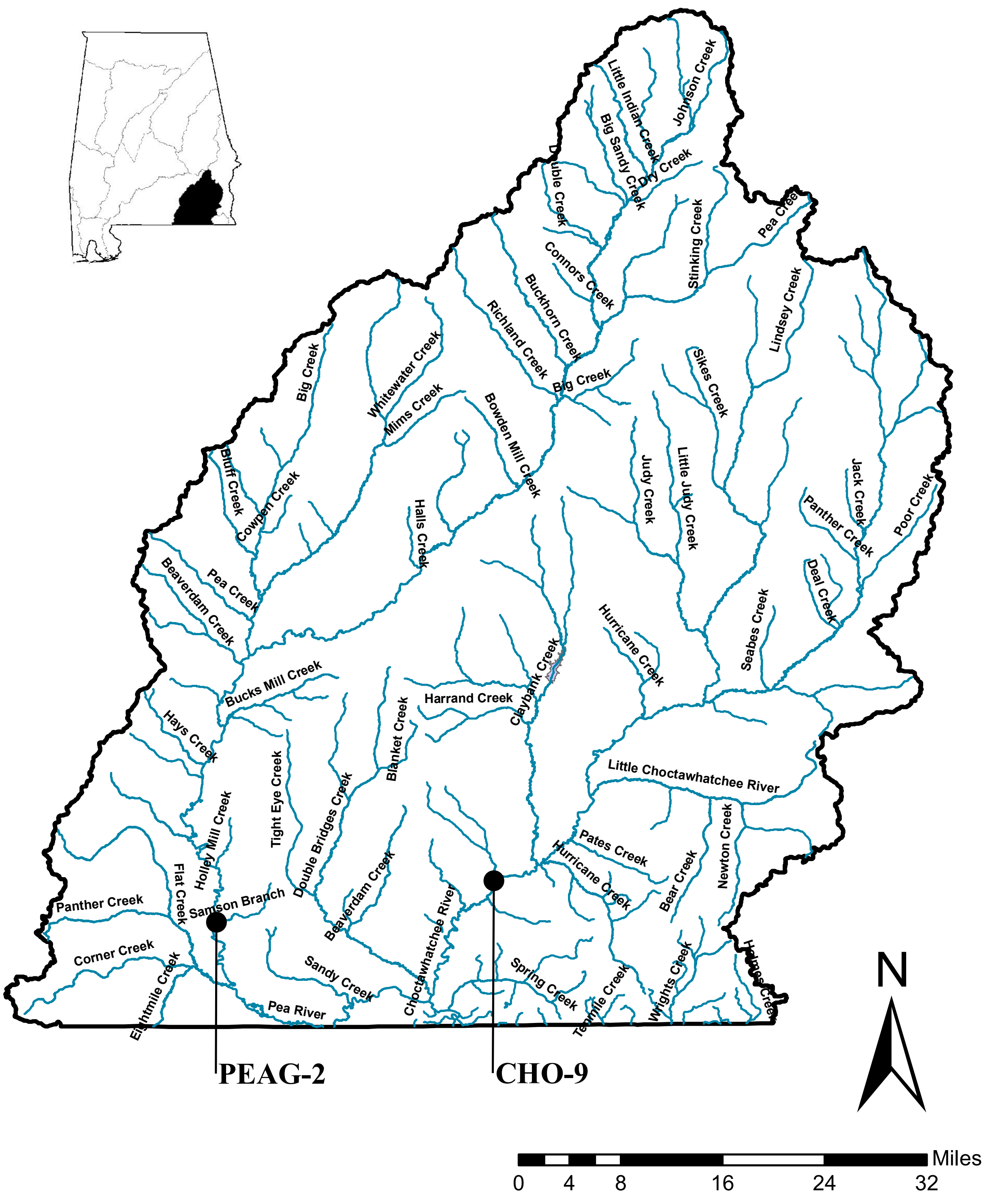
ADEM Trend Stations
Black Warrior River Basin

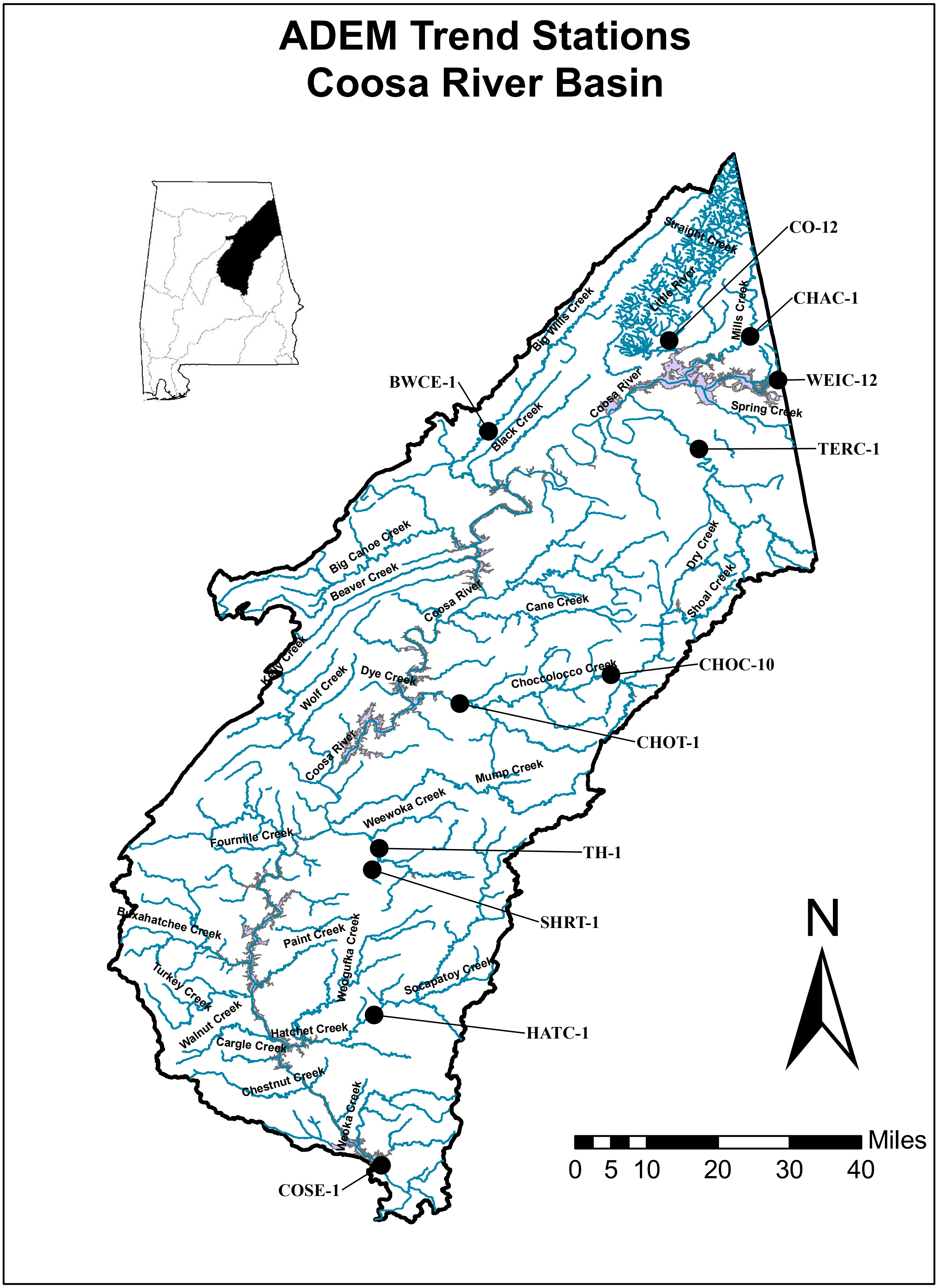


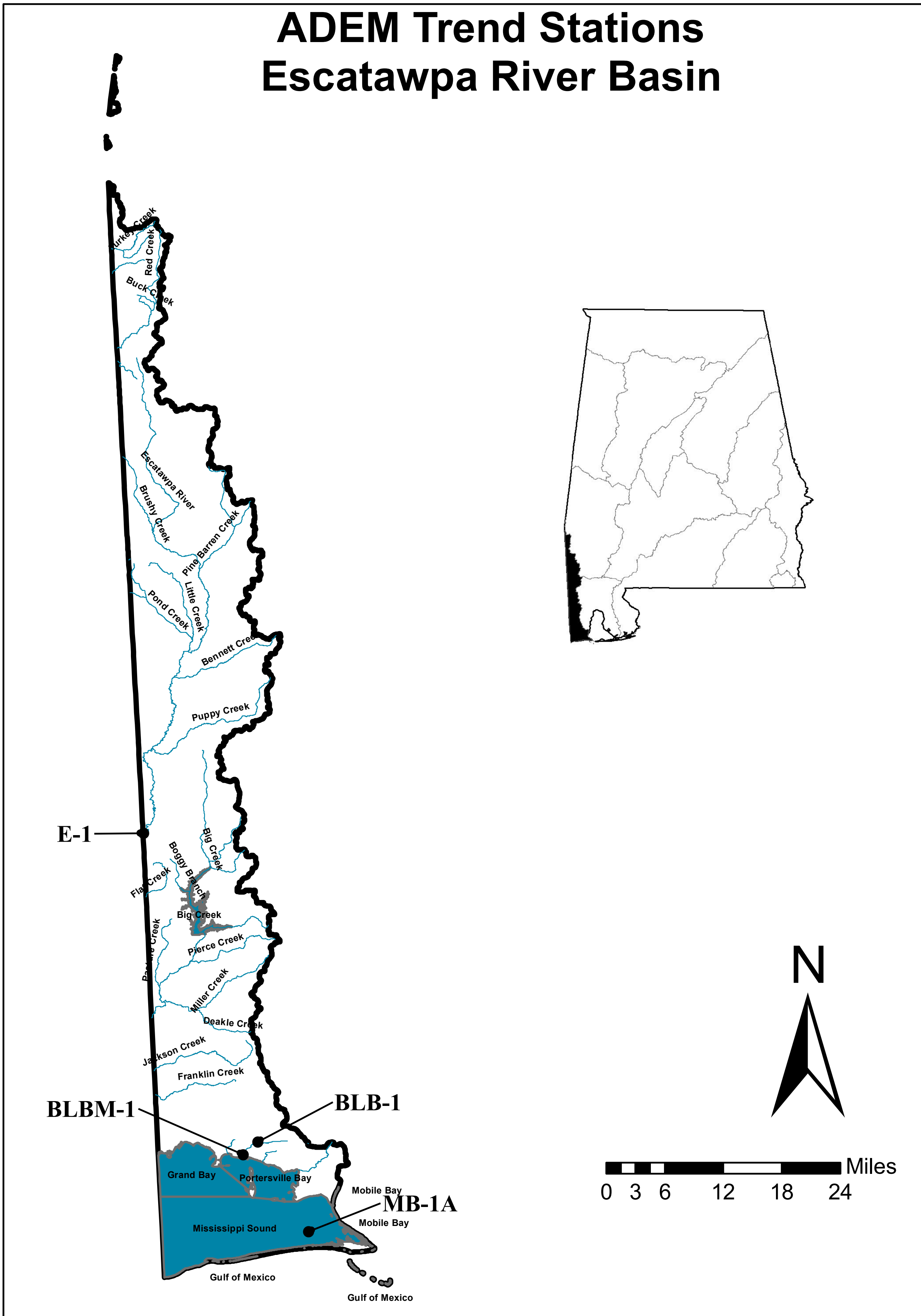

ADEM Trend Stations
Cahaba River Basin
CABJ-8
C-1
LC-1
C-2
CAHS-1
SH-1A
C-3
B-1
CABB-1
Little Cahaba River
Shades Creek
Mud Creek
Cane Creek
Caffee Creek
Spring Creek
Shoal Creek
Schultz Creek
Mahan Creek
Sixmile Creek
Affonee Creek
Sandy Creek
Gully Creek
Blue Girth Creek
Cahaba River
Taylor Creek
Beaverdam Creek
Oakmulgee Creek
Wallace Creek
Mill Creek
Goose Creek
Wells Creek
Waters Creek
Rice Creek
Dry Creek
Childers Creek
N
Miles
0 4 8 16 24 32

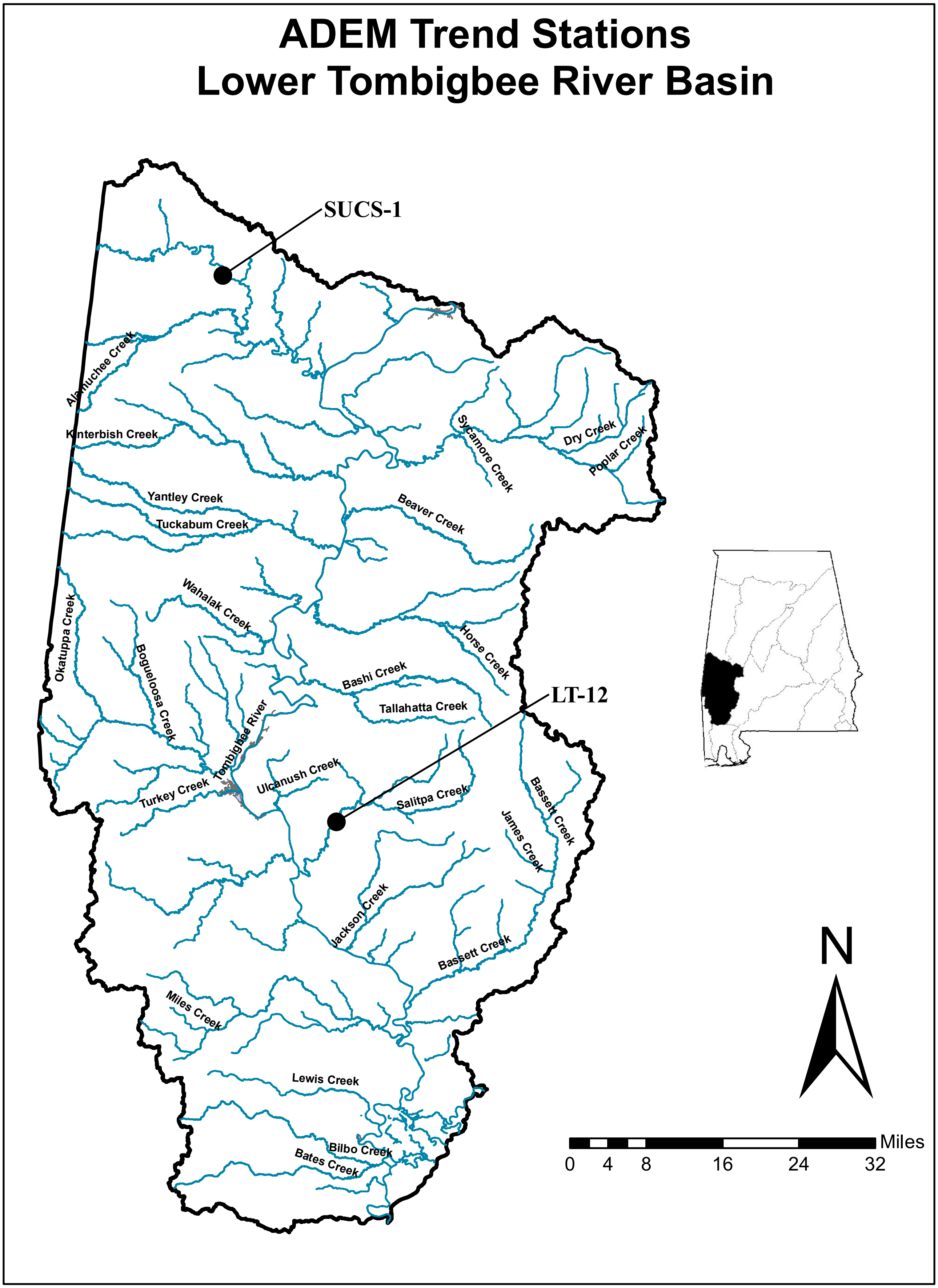

ADEM Trend Stations
Chattahoochee River Basin
Guss Creek
Veasey Creek
Wells Creek
Moores Creek
Osanippa Creek
Snapper Creek
Halawakee Creek
Mill Creek
Snake Creek
Uchee Creek
Ihagee Creek
Hurtsboro Creek
SFCB-1
Cowikee Creek
Chewalla Creek
Barbour Creek
Cheneyhatchee Creek
Abbie Creek
Peterman Creek
Spivey Mill Creek
Omusee Creek
Cedar Creek
Cedar Creek
N
Miles
0 5 10 20 30 40

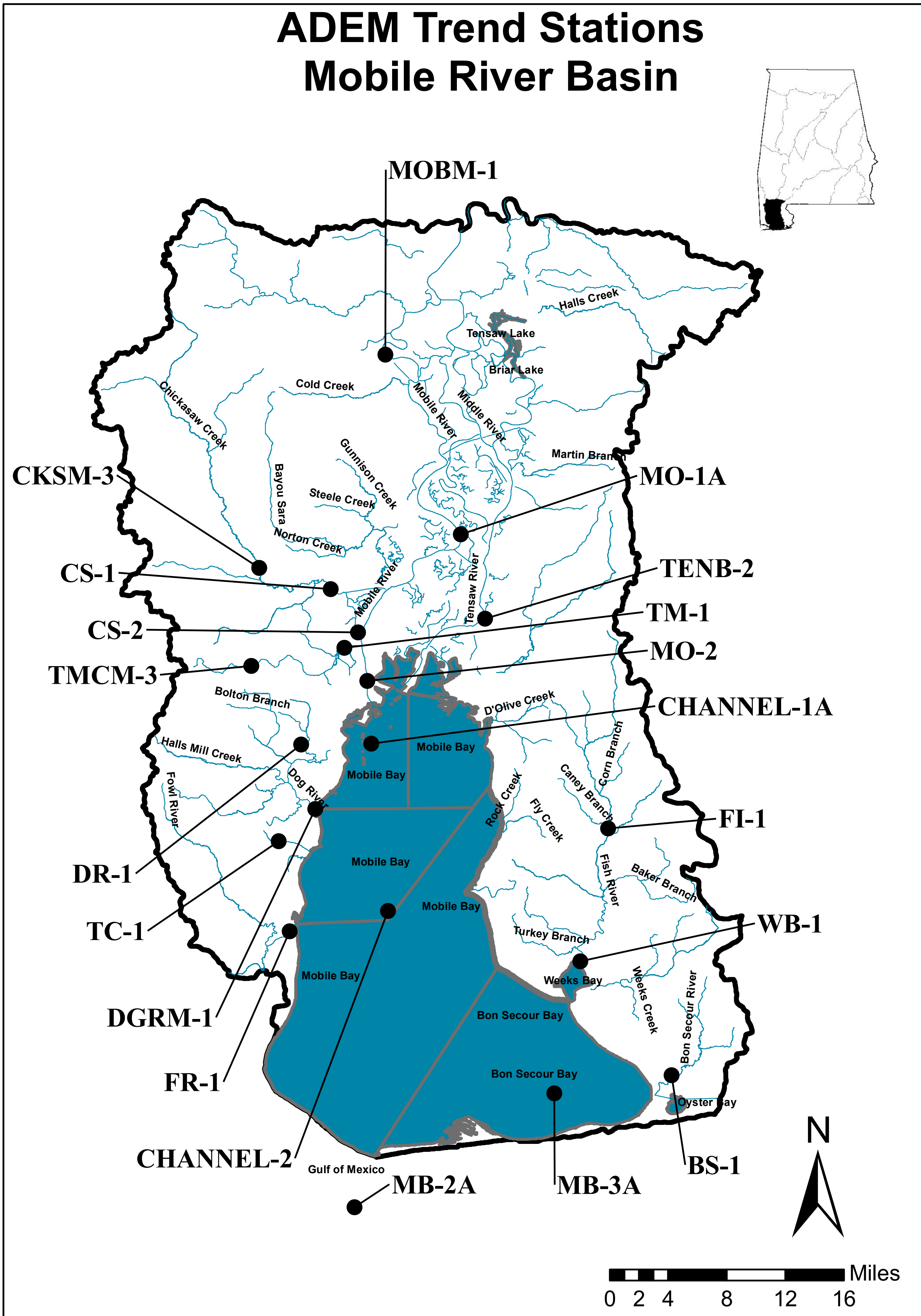
ADEM Trend Stations
Choctawhatchee River Basin

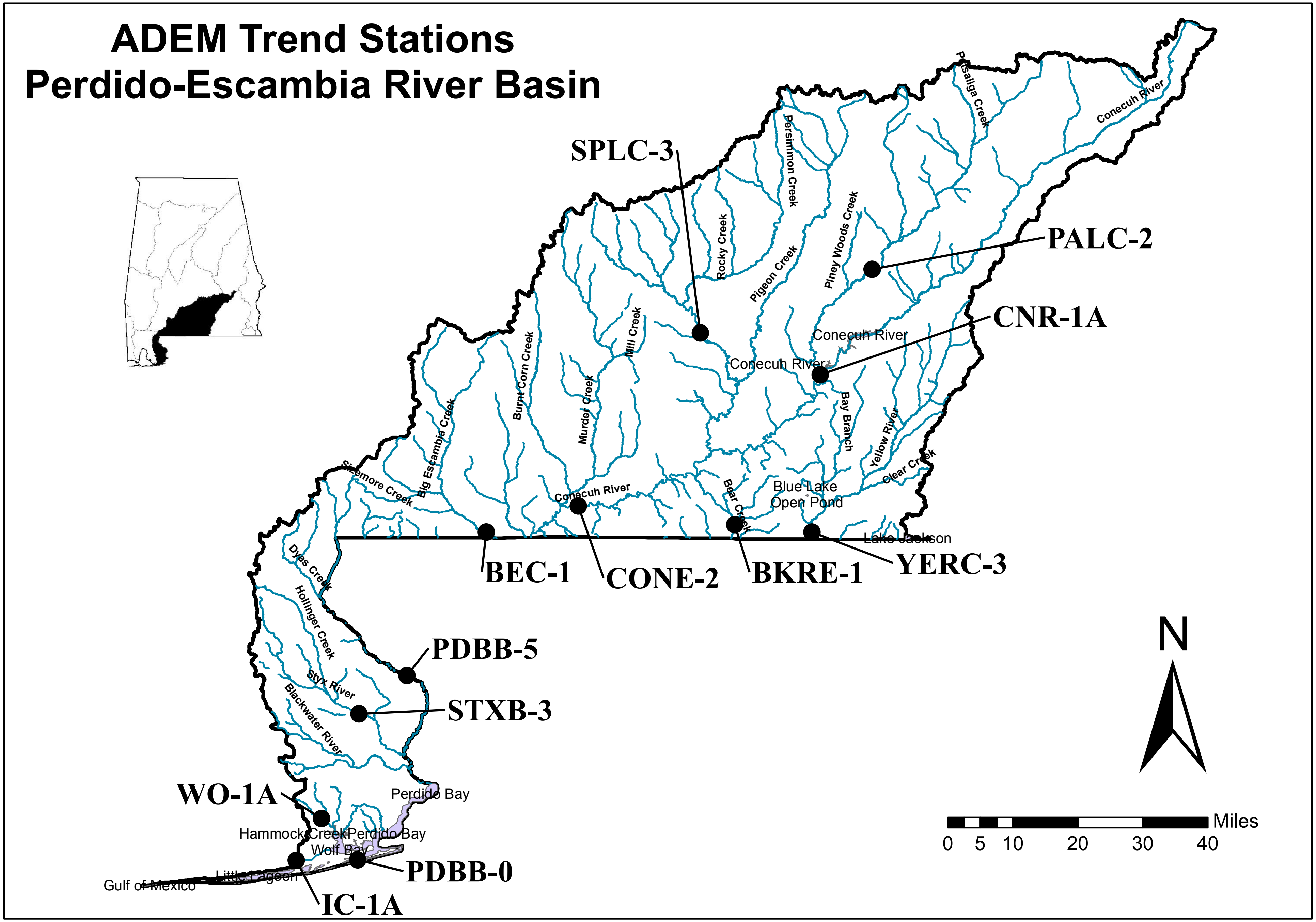



ADEM Trend Stations
Coosa River Basin
Straight Creek
Little River
Mills Creek
CO-12
CHAC-1
WEIC-12
Spring Creek
TERC-1
Big Wills Creek
BWCE-1
Black Creek
Coosa River
Big Canoe Creek
Beaver Creek
Dry Creek
Shoal Creek
Cane Creek
Kelly Creek
Wolf Creek
Dye Creek
Choccolocco Creek
CHOC-10
CHOT-1
Mump Creek
Weewoka Creek
Fourmile Creek
TH-1
SHRT-1
Buxahatchee Creek
Paint Creek
Weogufka Creek
Turkey Creek
Socapatoy Creek
Walnut Creek
Hatchet Creek
HATC-1
Cargle Creek
Chestnut Creek
Weoka Creek
COSE-1
N
Miles
0 5 10 20 30 40

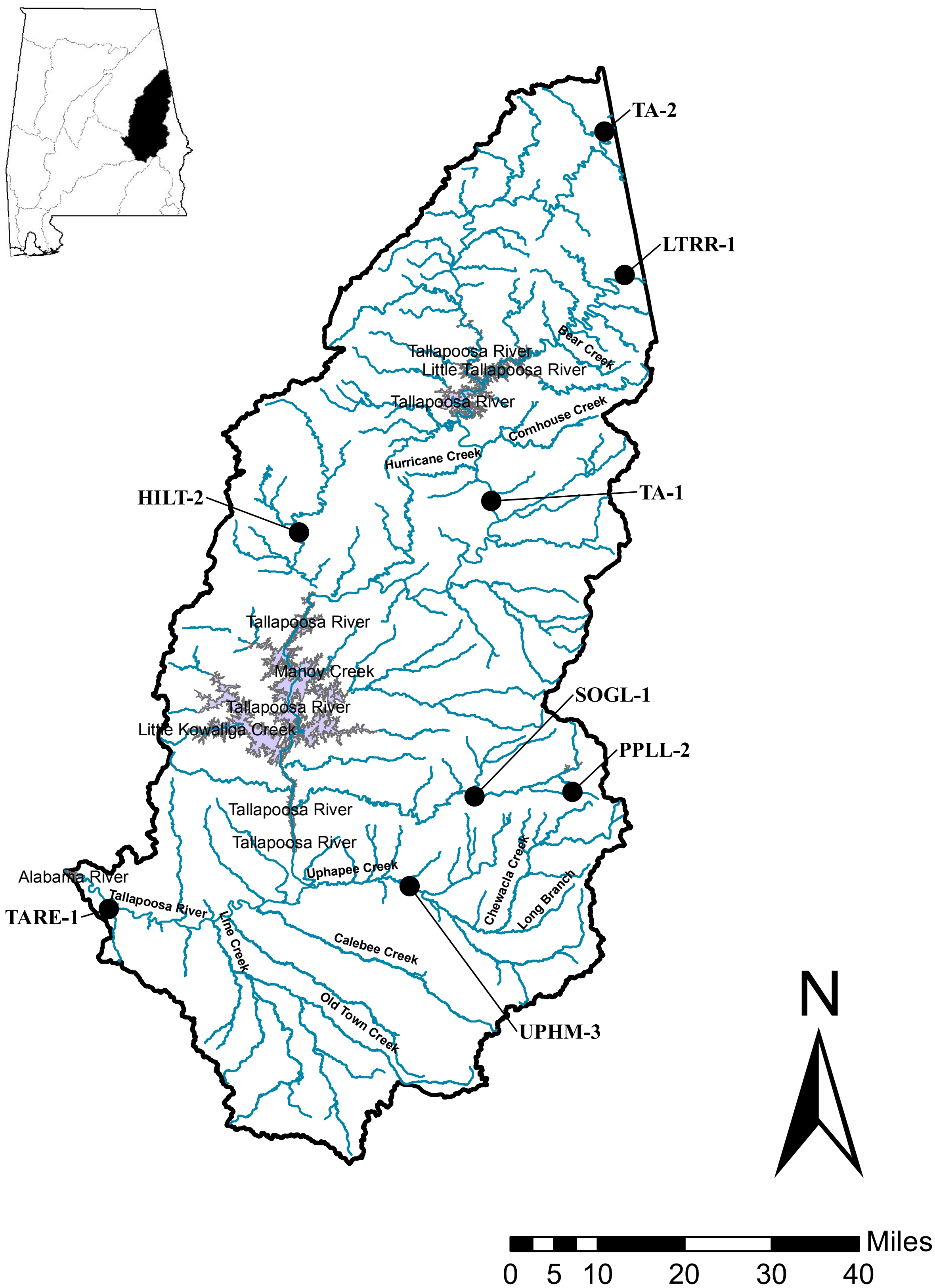

ADEM Trend Stations
Escatawpa River Basin
Red Creek
Buck Creek
Escatawpa River
Brushy Creek
Pine Barren Creek
Little Creek
Pond Creek
Puppy Creek
Big Creek
Big Creek
Pierce Creek
Miller Creek
Franklin Creek
E-1
BLBM-1
BLB-1
MB-1A
Grand Bay
Portersville Bay
Mobile Bay
Mobile Bay
Mississippi Sound
Gulf of Mexico
Gulf of Mexico
N
Miles
0 3 6 12 18 24

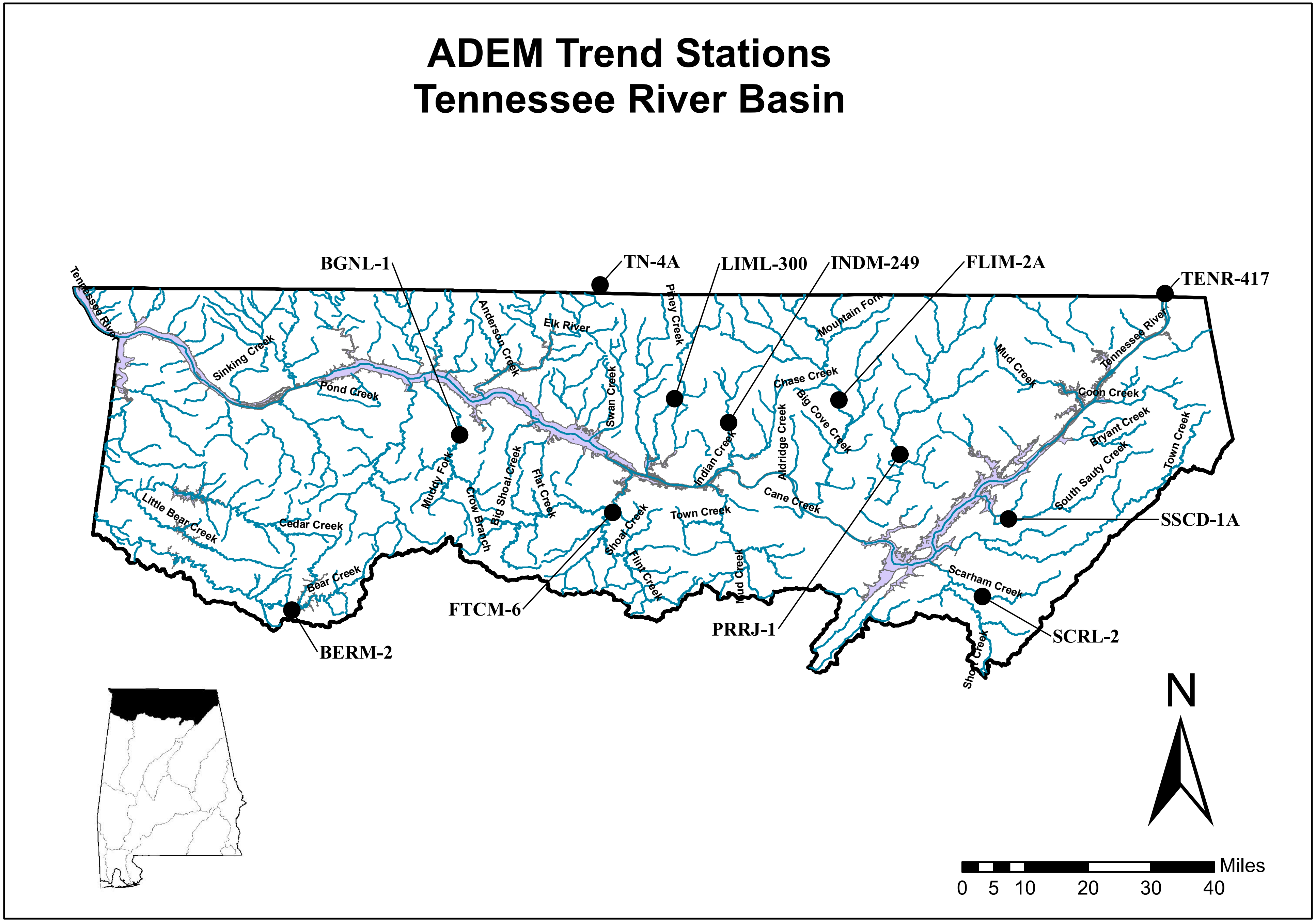

ADEM Trend Stations
Lower Tombigbee River Basin
SUCS-1
LT-12
Alamuchee Creek
Kinterbish Creek
Yantley Creek
Tuckabum Creek
Sycamore Creek
Dry Creek
Poplar Creek
Beaver Creek
Wahalak Creek
Okatuppa Creek
Horse Creek
Bogueloosa Creek
Bashi Creek
Tallahatta Creek
Tombigbee River
Ulcanush Creek
Turkey Creek
Salitpa Creek
Bassett Creek
James Creek
Jackson Creek
Bassett Creek
Miles Creek
Lewis Creek
Bilbo Creek
Bates Creek
N
Miles
0 4 8 16 24 32

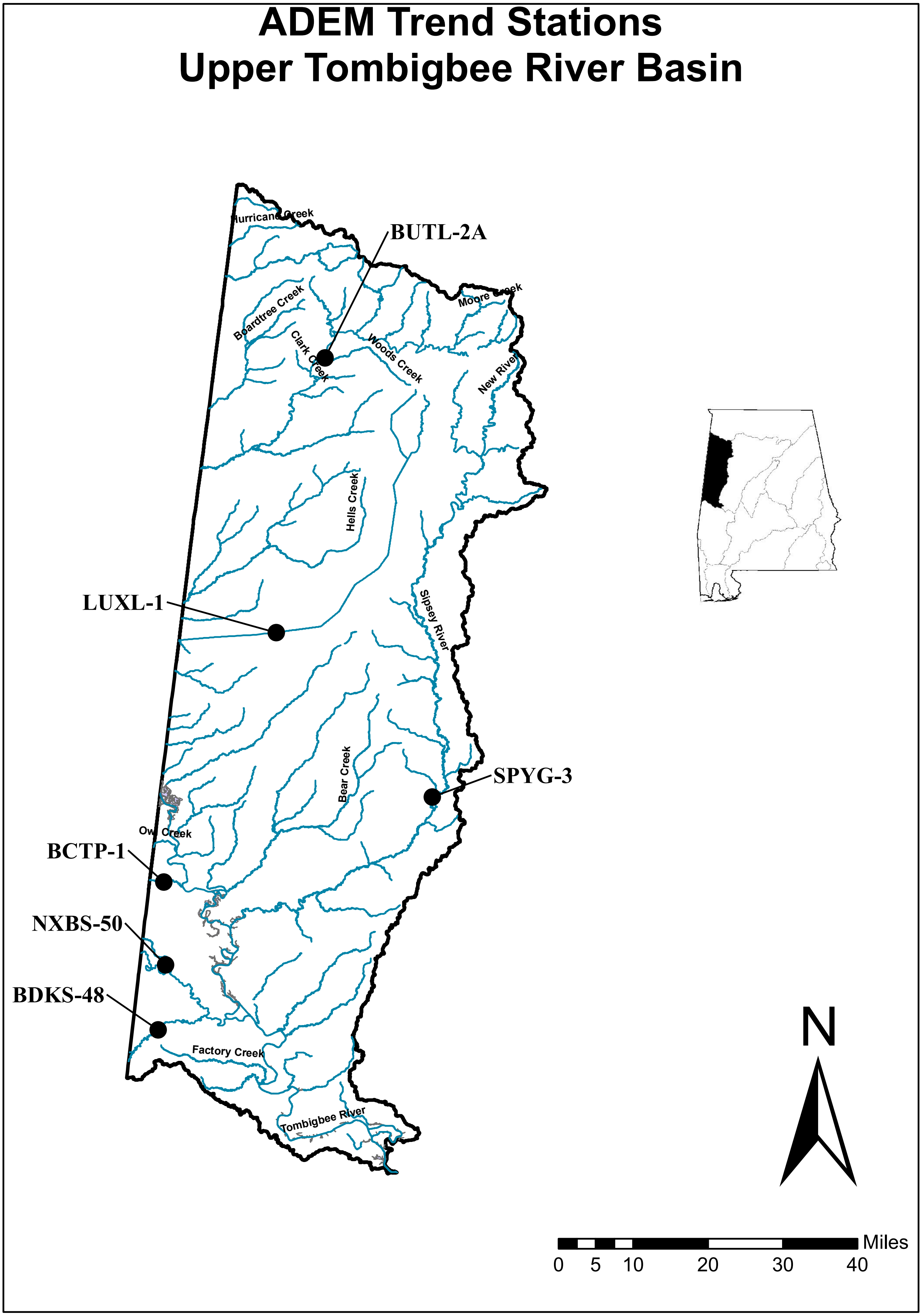

ADEM Trend Stations
Mobile River Basin
MOBM-1
CKSM-3
CS-1
CS-2
TMCM-3
MO-1A
TENB-2
TM-1
MO-2
CHANNEL-1A
FI-1
WB-1
DR-1
TC-1
DGRM-1
FR-1
CHANNEL-2
MB-2A
MB-3A
BS-1
Halls Creek
Tensaw Lake
Briar Lake
Cold Creek
Mobile River
Middle River
Chickasaw Creek
Martin Branch
Gunnison Creek
Bayou Sara
Steele Creek
Norton Creek
Tensaw River
Bolton Branch
D'Olive Creek
Mobile Bay
Halls Mill Creek
Corn Branch
Caney Branch
Dog River
Fowl River
Rock Creek
Fly Creek
Fish River
Baker Branch
Turkey Branch
Weeks Bay
Weeks Creek
Bon Secour River
Bon Secour Bay
Oyster Bay
Gulf of Mexico
N
Miles
0 2 4 8 12 16


ADEM Trend Stations
Perdido-Escambia River Basin
SPLC-3
PALC-2
CNR-1A
BEC-1
CONE-2
BKRE-1
YERC-3
PDBB-5
STXB-3
WO-1A
PDBB-0
IC-1A
Conecuh River
Patsaliga Creek
Persimmon Creek
Rocky Creek
Pigeon Creek
Piney Woods Creek
Mill Creek
Burnt Corn Creek
Murder Creek
Big Escambia Creek
Sizemore Creek
Bay Branch
Yellow River
Clear Creek
Bear Creek
Blue Lake
Open Pond
Lake Jackson
Dyas Creek
Hollinger Creek
Styx River
Blackwater River
Perdido Bay
Hammock Creek
Wolf Bay
Little Lagoon
Gulf of Mexico
N
Miles
0 5 10 20 30 40

ADEM Trend Stations
Tallapoosa River Basin




ADEM Trend Stations
Tennessee River Basin
BGNL-1
TN-4A
LIML-300
INDM-249
FLIM-2A
TENR-417
SSCD-1A
SCRL-2
PRRJ-1
FTCM-6
BERM-2
Tennessee River
Sinking Creek
Pond Creek
Anderson Creek
Elk River
Piney Creek
Swan Creek
Mountain Fork
Chase Creek
Big Cove Creek
Aldridge Creek
Indian Creek
Mud Creek
Coon Creek
Bryant Creek
South Sauty Creek
Town Creek
Cane Creek
Muddy Fork
Crow Branch
Big Shoal Creek
Flat Creek
Shoal Creek
Flint Creek
Little Bear Creek
Cedar Creek
Bear Creek
Scarham Creek
N
Miles
0 5 10 20 30 40


ADEM Trend Stations
Upper Tombigbee River Basin
BUTL-2A
LUXL-1
SPYG-3
BCTP-1
NXBS-50
BDKS-48
Hurricane Creek
Boardtree Creek
Clark Creek
Woods Creek
Moore Creek
New River
Hells Creek
Sipsey River
Bear Creek
Owl Creek
Factory Creek
Tombigbee River
N
Miles
0 5 10 20 30 40

Ambient Trend Station Data Summaries

B-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	199		6.0	30.0	21.6	19.8	5.4
pH (su)	199		6.0	9.1	7.8	7.8	0.4
Dissolved Oxygen (mg/L)	125		7.4	13.6	9.5	9.8	1.6
Specific Conductance (µmhos)	124		5.0	683.0	387.3	378.4	112.8
Turbidity (NTU)	94		0.8	289.0	7.8	21.6	43.8
Total Suspended Solids (mg/L)	171	<	0.3	572.0	8.0	22.3	57.7
Nitrate+Nitrite Nitrogen (mg/L)	138		0.123	16.780	1.395	2.092	2.451
Total Nitrogen (mg/L)	122	<	0.360	16.855	1.808	2.532	2.560
Total Phosphorus (mg/L)	138	<	0.020	1.980	0.312	0.441	0.414

BCTP-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	23		13.1	36.5	29.4	27.5	6.7
pH (su)	23		6.9	9.0	8.3	8.3	0.4
Dissolved Oxygen (mg/L)	22		5.6	17.0	11.1	11.4	2.7
Specific Conductance (µmhos)	23		183.0	606.0	411.7	395.9	84.6
Turbidity (NTU)	23		3.4	710.0	12.1	44.3	145.4
Total Suspended Solids (mg/L)	22		1.0	588.0	7.0	35.9	123.6
Nitrate+Nitrite Nitrogen (mg/L)	19	<	0.002	5.495	0.011	0.836	1.446
Total Nitrogen (mg/L)	19	<	0.626	6.151	1.682	2.208	1.598
Total Phosphorus (mg/L)	19	<	0.006	0.793	0.050	0.097	0.171

BDKS-48	N		Min	Max	Med	Avg	SD
Temperature (°C)	29		12.3	30.1	25.4	23.7	5.2
pH (su)	29		6.9	8.2	7.6	7.6	0.3
Dissolved Oxygen (mg/L)	27		3.6	14.0	6.6	7.1	2.2
Specific Conductance (µmhos)	27		107.9	555.0	285.4	292.8	106.2
Turbidity (NTU)	27		2.7	249.0	9.0	21.6	46.1
Total Suspended Solids (mg/L)	28		3.0	161.0	8.5	17.2	29.5
Nitrate+Nitrite Nitrogen (mg/L)	25	<	0.002	1.617	0.031	0.142	0.351
Total Nitrogen (mg/L)	25	<	0.093	2.820	0.804	1.071	0.765
Total Phosphorus (mg/L)	25	<	0.057	0.245	0.070	0.088	0.051

BEC-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	31		10.2	28.0	22.0	20.4	5.5
pH (su)	31		5.3	7.3	6.1	6.2	0.5
Dissolved Oxygen (mg/L)	24		7.9	12.6	9.4	9.6	1.2
Specific Conductance (µmhos)	24		26.2	41.0	32.4	32.8	2.6
Turbidity (NTU)	24		1.0	87.3	4.7	10.4	18.3
Total Suspended Solids (mg/L)	28	<	1.0	123.0	4.0	11.0	23.5
Nitrate+Nitrite Nitrogen (mg/L)	31		0.089	0.879	0.400	0.413	0.173
Total Nitrogen (mg/L)	31	<	0.268	1.534	0.720	0.752	0.272
Total Phosphorus (mg/L)	30	<	0.005	0.047	0.012	0.016	0.010

BERM-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	20		5.7	25.2	18.8	17.2	6.2
pH (su)	20		7.2	8.3	7.6	7.6	0.3
Dissolved Oxygen (mg/L)	20		7.6	11.9	9.5	9.6	1.2
Specific Conductance (µmhos)	20		8.0	102.0	74.0	72.3	19.8

	N		Min	Max	Med	Avg	SD
Turbidity (NTU)	20		1.6	29.5	5.2	9.1	9.0
Total Suspended Solids (mg/L)	20	<	0.3	18.0	3.5	4.1	4.0
Nitrate+Nitrite Nitrogen (mg/L)	1					0.155	
Total Nitrogen (mg/L)	1					1.935	
Total Phosphorus (mg/L)	1					0.035	

BGNL-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	27		12.9	37.4	21.3	21.4	4.7
pH (su)	27		7.2	9.3	7.5	7.6	0.5
Dissolved Oxygen (mg/L)	27		4.1	10.5	6.6	6.8	1.5
Specific Conductance (µmhos)	27		129.0	396.0	314.0	294.8	80.2
Turbidity (NTU)	27		0.9	393.0	3.9	25.6	75.9
Total Suspended Solids (mg/L)	26	<	0.3	116.0	3.0	12.2	25.6
Nitrate+Nitrite Nitrogen (mg/L)	14	<	0.258	2.764	1.920	1.793	0.811
Total Nitrogen (mg/L)	14	<	1.498	3.482	2.513	2.506	0.562
Total Phosphorus (mg/L)	14	<	0.006	0.335	0.050	0.085	0.106

BKRE-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	32		11.5	25.0	22.8	21.7	3.3
pH (su)	32		4.0	5.6	4.9	4.8	0.5
Dissolved Oxygen (mg/L)	32		6.5	10.1	7.9	8.0	0.8
Specific Conductance (µmhos)	31		0.0	46.7	20.3	18.4	11.9
Turbidity (NTU)	32		1.1	18.5	2.3	3.4	3.5
Total Suspended Solids (mg/L)	32	<	1.0	25.0	2.5	4.9	5.4
Nitrate+Nitrite Nitrogen (mg/L)	32		0.014	0.329	0.182	0.165	0.098
Total Nitrogen (mg/L)	32	<	0.106	0.901	0.407	0.442	0.173
Total Phosphorus (mg/L)	32		0.005	0.064	0.018	0.021	0.015

BLB-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	282		5.0	32.1	23.0	21.9	6.0
pH (su)	282		4.2	8.0	6.6	6.6	0.7
Dissolved Oxygen (mg/L)	54		0.6	9.6	3.0	3.7	2.3
Specific Conductance (µmhos)	52		28.0	50356.0	29524.5	24004.0	16570.3
Turbidity (NTU)	51		2.0	20.1	5.0	6.0	3.6
Total Suspended Solids (mg/L)	271	<	1.0	124.0	7.0	9.6	11.3
Nitrate+Nitrite Nitrogen (mg/L)	280	<	0.004	0.430	0.144	0.146	0.096
Total Nitrogen (mg/L)	184	<	0.040	6.002	0.600	0.716	0.627
Total Phosphorus (mg/L)	284	<	0.005	0.390	0.040	0.047	0.044

BLBM-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	39		15.0	32.1	27.9	26.5	4.6
pH (su)	39		6.0	8.4	7.5	7.3	0.6
Dissolved Oxygen (mg/L)	31		1.8	10.4	5.7	5.7	1.8
Specific Conductance (µmhos)	29		23558.1	48378.7	38536.7	37443.2	6393.6
Turbidity (NTU)	28		4.3	22.5	8.8	8.9	3.4
Total Suspended Solids (mg/L)	36	<	5.0	44.0	18.0	19.8	10.6
Nitrate+Nitrite Nitrogen (mg/L)	36	<	0.004	0.213	0.017	0.034	0.044
Total Nitrogen (mg/L)	36	<	0.040	5.518	0.648	0.790	0.878
Total Phosphorus (mg/L)	36		0.025	0.118	0.048	0.053	0.024

BS-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	308		6.5	33.0	23.0	22.9	6.3
pH (su)	306		5.8	8.9	7.7	7.6	0.5
Dissolved Oxygen (mg/L)	93		3.2	13.1	7.6	7.9	2.4

Specific Conductance (µmhos)	83		3694.0	36002.9	23355.0	22246.4	8489.9
Turbidity (NTU)	78		3.0	42.0	12.0	12.9	5.9
Total Suspended Solids (mg/L)	310		2.0	68.0	20.5	23.0	11.7
Nitrate+Nitrite Nitrogen (mg/L)	303	<	0.001	1.670	0.088	0.150	0.187
Total Nitrogen (mg/L)	198	<	0.052	5.560	1.148	1.351	0.831
Total Phosphorus (mg/L)	309	<	0.020	4.500	0.097	0.181	0.346

BUTL-2A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	25		16.9	31.2	24.5	23.9	3.8
pH (su)	26		5.9	8.6	7.2	7.3	0.6
Dissolved Oxygen (mg/L)	20		6.9	9.3	8.4	8.4	0.7
Specific Conductance (µmhos)	20		31.0	67.0	37.0	39.0	7.5
Turbidity (NTU)	20		2.8	38.0	6.1	8.1	7.1
Total Suspended Solids (mg/L)	21	<	1.0	53.0	4.0	7.7	12.4
Nitrate+Nitrite Nitrogen (mg/L)	20	<	0.003	1.490	0.274	0.298	0.298
Total Nitrogen (mg/L)	20	<	0.180	2.010	0.502	0.647	0.437
Total Phosphorus (mg/L)	20	<	0.006	0.100	0.021	0.028	0.020

BWCE-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	29		11.8	26.0	22.3	20.2	4.4
pH (su)	29		7.2	8.0	7.7	7.7	0.2
Dissolved Oxygen (mg/L)	29		5.7	11.4	7.5	7.8	1.3
Specific Conductance (µmhos)	28		40.0	582.0	343.2	338.2	148.9
Turbidity (NTU)	22		5.8	43.9	21.7	19.7	9.1
Total Suspended Solids (mg/L)	29		5.0	182.0	20.0	27.7	33.5
Nitrate+Nitrite Nitrogen (mg/L)	26		0.243	2.440	1.056	1.126	0.513
Total Nitrogen (mg/L)	26	<	0.609	3.003	1.450	1.518	0.595
Total Phosphorus (mg/L)	26		0.097	1.490	0.592	0.668	0.386

C-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	176		2.6	31.1	18.8	18.1	6.9
pH (su)	176		3.8	9.0	7.8	7.8	0.5
Dissolved Oxygen (mg/L)	104		6.1	16.7	9.8	10.2	2.1
Specific Conductance (µmhos)	105		95.0	1852.0	206.0	235.7	178.3
Turbidity (NTU)	89		1.2	440.0	7.1	26.5	66.0
Total Suspended Solids (mg/L)	174	<	0.3	295.0	5.0	12.5	29.7
Nitrate+Nitrite Nitrogen (mg/L)	143	<	0.238	13.150	1.210	1.746	1.749
Total Nitrogen (mg/L)	74	<	0.388	7.505	1.394	1.798	1.395
Total Phosphorus (mg/L)	142	<	0.002	5.950	0.216	0.355	0.562

C-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	179		3.4	31.0	21.1	19.9	7.1
pH (su)	178		6.5	8.7	7.7	7.6	0.3
Dissolved Oxygen (mg/L)	105		6.2	15.9	9.0	9.4	1.9
Specific Conductance (µmhos)	107		75.0	435.0	226.0	237.3	75.5
Turbidity (NTU)	91		1.8	225.0	7.6	14.9	26.3
Total Suspended Solids (mg/L)	160	<	0.3	220.0	6.0	10.9	21.3
Nitrate+Nitrite Nitrogen (mg/L)	130	<	0.054	5.530	0.495	0.970	1.128
Total Nitrogen (mg/L)	112	<	0.300	48.930	0.910	1.865	4.682
Total Phosphorus (mg/L)	129	<	0.010	1.640	0.136	0.312	0.387

C-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	219		4.2	30.6	21.9	20.2	6.5
pH (su)	219		6.0	8.7	7.8	7.7	0.4

Dissolved Oxygen (mg/L)	145		6.0	15.6	8.6	9.2	2.0
Specific Conductance (µmhos)	145		123.0	463.0	268.0	273.8	81.2
Turbidity (NTU)	108		1.4	354.0	7.8	24.3	50.8
Total Suspended Solids (mg/L)	184	<	0.3	1540.0	9.0	32.3	122.9
Nitrate+Nitrite Nitrogen (mg/L)	153		0.233	5.870	1.050	1.515	1.180
Total Nitrogen (mg/L)	136	<	0.526	6.024	1.547	1.904	1.174
Total Phosphorus (mg/L)	152	<	0.036	1.160	0.240	0.296	0.250

CABB-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	74		4.8	29.2	19.7	19.2	6.9
pH (su)	74		6.5	8.7	7.9	7.9	0.4
Dissolved Oxygen (mg/L)	71		6.2	15.3	9.4	9.6	2.0
Specific Conductance (µmhos)	73		113.0	345.0	239.0	236.1	61.4
Turbidity (NTU)	73		2.3	378.0	8.2	27.3	53.5
Total Suspended Solids (mg/L)	72	<	0.3	262.0	8.0	25.4	45.6
Nitrate+Nitrite Nitrogen (mg/L)	42	<	0.003	0.756	0.266	0.267	0.141
Total Nitrogen (mg/L)	41	<	0.204	2.566	0.503	0.689	0.527
Total Phosphorus (mg/L)	41	<	0.002	0.371	0.050	0.064	0.060

CABJ-8	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	83		4.4	26.1	16.8	16.5	5.9
pH (su)	83		6.2	8.9	7.6	7.6	0.4
Dissolved Oxygen (mg/L)	83		2.8	15.4	9.6	9.5	2.5
Specific Conductance (µmhos)	83		72.0	596.0	169.0	200.8	111.6
Turbidity (NTU)	66		1.4	157.0	6.6	15.7	29.6
Total Suspended Solids (mg/L)	82	<	0.3	116.0	5.0	10.6	18.0
Nitrate+Nitrite Nitrogen (mg/L)	52	<	0.003	0.833	0.243	0.237	0.144
Total Nitrogen (mg/L)	50	<	0.052	5.828	0.486	0.715	0.850
Total Phosphorus (mg/L)	50	<	0.002	0.100	0.021	0.029	0.024

CAHS-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	136		3.6	29.0	22.0	20.2	6.6
pH (su)	135		6.1	8.4	7.7	7.6	0.3
Dissolved Oxygen (mg/L)	133		3.3	14.7	8.0	8.8	2.1
Specific Conductance (µmhos)	132		118.0	462.0	246.2	264.1	87.2
Turbidity (NTU)	103		1.9	400.0	7.2	22.8	49.4
Total Suspended Solids (mg/L)	101	<	0.3	398.0	9.0	23.1	53.1
Nitrate+Nitrite Nitrogen (mg/L)	71	<	0.221	7.850	0.658	1.276	1.584
Total Nitrogen (mg/L)	69	<	0.452	7.925	1.407	1.964	1.634
Total Phosphorus (mg/L)	69	<	0.028	1.900	0.193	0.364	0.417

CATM-3A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	20		13.0	33.8	27.6	25.9	5.5
pH (su)	20		6.8	8.3	7.5	7.4	0.4
Dissolved Oxygen (mg/L)	20		2.9	9.1	6.2	6.1	1.8
Specific Conductance (µmhos)	20		162.3	314.7	243.2	248.0	41.2
Turbidity (NTU)	20		3.7	249.0	11.2	27.2	54.3
Total Suspended Solids (mg/L)	19		3.0	411.0	12.0	34.9	91.5
Nitrate+Nitrite Nitrogen (mg/L)	19	<	0.003	0.572	0.016	0.063	0.132
Total Nitrogen (mg/L)	19	<	0.184	1.162	0.603	0.649	0.304
Total Phosphorus (mg/L)	19	<	0.012	0.428	0.086	0.102	0.089

CHAC-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	76		4.8	28.3	16.7	16.9	6.4

	N		Min	Max	Med	Avg	SD
pH (su)	76		6.5	8.4	7.7	7.7	0.3
Dissolved Oxygen (mg/L)	76		4.9	14.3	8.4	8.6	1.8
Specific Conductance (µmhos)	75		34.8	877.9	395.0	436.7	201.1
Turbidity (NTU)	79		1.7	297.0	9.2	18.4	45.6
Total Suspended Solids (mg/L)	78	<	0.3	103.0	9.0	12.3	13.6
Nitrate+Nitrite Nitrogen (mg/L)	74		0.043	2.120	0.464	0.513	0.292
Total Nitrogen (mg/L)	72	<	0.130	2.700	0.866	0.926	0.411
Total Phosphorus (mg/L)	72	<	0.006	0.797	0.197	0.238	0.158

CHANNEL-1A	N		Min	Max	Med	Avg	SD
Temperature (°C)	197		7.3	31.0	27.5	25.7	4.7
pH (su)	306		5.3	8.3	7.7	7.7	0.4
Dissolved Oxygen (mg/L)	927		1.5	11.4	6.0	6.0	1.3
Specific Conductance (µmhos)	1664		10.8	40341.7	22077.0	20452.2	7359.8
Turbidity (NTU)	71		4.7	75.7	11.3	17.1	13.8
Total Suspended Solids (mg/L)	74	<	1.0	70.0	13.0	15.8	10.7
Nitrate+Nitrite Nitrogen (mg/L)	74	<	0.005	0.614	0.118	0.150	0.131
Total Nitrogen (mg/L)	66	<	0.060	7.820	0.754	0.895	0.962
Total Phosphorus (mg/L)	74		0.019	0.120	0.052	0.056	0.022

CHANNEL-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	72		6.3	31.0	24.4	22.6	6.7
pH (su)	73		6.8	8.7	8.0	7.9	0.4
Dissolved Oxygen (mg/L)	73		0.0	12.6	8.0	8.4	1.9
Specific Conductance (µmhos)	63		1530.0	37838.5	18860.0	17715.2	11169.6
Turbidity (NTU)	81		2.9	98.0	10.9	14.4	14.8
Total Suspended Solids (mg/L)	84	<	2.0	53.0	12.0	13.2	8.0
Nitrate+Nitrite Nitrogen (mg/L)	84	<	0.002	0.370	0.046	0.097	0.108
Total Nitrogen (mg/L)	76	<	0.052	2.710	0.640	0.690	0.434
Total Phosphorus (mg/L)	84		0.014	0.168	0.043	0.048	0.030

CHO-9	N		Min	Max	Med	Avg	SD
Temperature (°C)	25		13.4	29.6	26.9	24.6	4.7
pH (su)	25		5.4	8.2	7.0	7.0	0.6
Dissolved Oxygen (mg/L)	20		0.3	9.7	7.5	7.4	1.9
Specific Conductance (µmhos)	20		40.9	127.8	90.0	87.4	22.8
Turbidity (NTU)	21		5.6	32.6	13.6	15.7	8.6
Total Suspended Solids (mg/L)	21		2.0	33.0	10.0	13.1	10.0
Nitrate+Nitrite Nitrogen (mg/L)	24		0.082	1.158	0.630	0.579	0.265
Total Nitrogen (mg/L)	24	<	0.375	1.736	0.908	0.954	0.296
Total Phosphorus (mg/L)	24		0.017	0.135	0.062	0.063	0.026

CHOC-10	N		Min	Max	Med	Avg	SD
Temperature (°C)	21		14.9	27.6	24.0	22.4	3.9
pH (su)	21		7.1	8.0	7.6	7.6	0.2
Dissolved Oxygen (mg/L)	21		6.0	9.8	7.8	7.7	1.1
Specific Conductance (µmhos)	21		70.1	178.0	145.8	141.3	28.8
Turbidity (NTU)	21		4.0	120.0	8.4	14.2	24.4
Total Suspended Solids (mg/L)	21	<	1.0	93.0	8.0	12.8	19.0
Nitrate+Nitrite Nitrogen (mg/L)	18		0.011	0.246	0.201	0.178	0.066
Total Nitrogen (mg/L)	18	<	0.086	0.914	0.366	0.401	0.216
Total Phosphorus (mg/L)	18	<	0.004	0.137	0.043	0.047	0.034

CHOT-1	N		Min	Max	Med	Avg	SD

	N		Min	Max	Med	Avg	SD
Temperature (°C)	29		15.8	27.8	24.0	22.4	4.0
pH (su)	29		6.3	8.3	7.8	7.7	0.5
Dissolved Oxygen (mg/L)	29		7.3	10.2	8.5	8.5	0.8
Specific Conductance (µmhos)	28		113.9	320.0	226.4	213.7	50.0
Turbidity (NTU)	28		5.0	45.6	9.7	12.4	10.1
Total Suspended Solids (mg/L)	29		2.0	31.0	7.0	9.8	6.8
Nitrate+Nitrite Nitrogen (mg/L)	26		0.339	1.206	0.754	0.707	0.238
Total Nitrogen (mg/L)	26	<	0.485	6.401	1.100	1.354	1.144
Total Phosphorus (mg/L)	26	<	0.051	0.206	0.098	0.110	0.045

CKSM-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	21		15.0	28.0	23.8	23.1	3.4
pH (su)	21		5.2	6.7	6.1	6.1	0.5
Dissolved Oxygen (mg/L)	21		7.4	10.2	7.7	8.0	0.7
Specific Conductance (µmhos)	21		26.0	35.0	31.0	31.1	2.8
Turbidity (NTU)	21		2.2	29.0	4.5	6.5	6.0
Total Suspended Solids (mg/L)	19	<	5.0	45.0	6.0	8.2	10.0
Nitrate+Nitrite Nitrogen (mg/L)	19	<	0.006	0.237	0.056	0.077	0.055
Total Nitrogen (mg/L)	19	<	0.101	0.904	0.502	0.504	0.237
Total Phosphorus (mg/L)	19	<	0.004	0.038	0.014	0.018	0.010

CNR-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	39		7.5	31.0	24.9	22.6	6.7
pH (su)	39		6.4	8.6	6.9	7.0	0.4
Dissolved Oxygen (mg/L)	39		2.8	12.0	7.2	7.7	2.0
Specific Conductance (µmhos)	39		50.1	110.6	79.0	78.7	16.6
Turbidity (NTU)	39		3.8	30.5	11.1	12.4	6.5
Total Suspended Solids (mg/L)	39	<	1.0	30.0	5.0	5.5	5.7
Nitrate+Nitrite Nitrogen (mg/L)	39	<	0.003	0.356	0.092	0.115	0.090
Total Nitrogen (mg/L)	39	<	0.087	1.213	0.526	0.540	0.208
Total Phosphorus (mg/L)	39	<	0.004	0.050	0.022	0.024	0.011

CO-12	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	86		3.8	30.9	16.2	16.8	7.7
pH (su)	86		4.8	8.6	7.0	7.1	0.6
Dissolved Oxygen (mg/L)	81		6.2	12.8	9.6	9.6	1.7
Specific Conductance (µmhos)	81		23.1	82.0	36.5	39.3	11.0
Turbidity (NTU)	80		0.3	37.3	1.4	3.0	6.1
Total Suspended Solids (mg/L)	79	<	0.3	42.0	1.0	3.1	5.9
Nitrate+Nitrite Nitrogen (mg/L)	78	<	0.003	4.760	0.146	0.261	0.563
Total Nitrogen (mg/L)	76	<	0.049	4.790	0.322	0.451	0.578
Total Phosphorus (mg/L)	76	<	0.002	0.232	0.007	0.019	0.032

CONE-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	38		8.4	30.4	23.5	22.4	7.0
pH (su)	40		6.3	8.9	7.2	7.1	0.4
Dissolved Oxygen (mg/L)	39		6.2	12.2	7.7	8.3	1.5
Specific Conductance (µmhos)	39		0.1	124.9	92.1	74.3	45.1
Turbidity (NTU)	38		2.3	41.5	9.0	12.0	9.6
Total Suspended Solids (mg/L)	38	<	1.0	55.0	6.0	11.4	13.6
Nitrate+Nitrite Nitrogen (mg/L)	38		0.008	0.512	0.140	0.161	0.102
Total Nitrogen (mg/L)	38	<	0.076	1.104	0.390	0.463	0.263
Total Phosphorus (mg/L)	38		0.006	0.074	0.019	0.026	0.018

COSE-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	78		5.6	31.5	21.3	20.1	7.4
pH (su)	78		6.7	7.9	7.3	7.3	0.3
Dissolved Oxygen (mg/L)	78		4.6	12.2	8.0	8.3	2.1
Specific Conductance (µmhos)	78		53.1	259.9	142.0	153.1	43.6
Turbidity (NTU)	78		0.9	21.0	3.9	5.3	4.1
Total Suspended Solids (mg/L)	78	<	1.0	10.0	3.0	3.5	2.5
Nitrate+Nitrite Nitrogen (mg/L)	78		0.014	0.359	0.136	0.148	0.089
Total Nitrogen (mg/L)	78	<	0.190	0.908	0.498	0.507	0.171
Total Phosphorus (mg/L)	78	<	0.004	0.104	0.034	0.036	0.015

CS-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	276		6.0	33.0	22.0	21.0	6.3
pH (su)	277		4.7	7.9	6.2	6.2	0.5
Dissolved Oxygen (mg/L)	36		2.4	11.1	5.4	5.9	2.1
Specific Conductance (µmhos)	34		45.0	29382.9	482.2	5171.1	8195.3
Turbidity (NTU)	37		3.0	23.0	4.8	7.2	4.1
Total Suspended Solids (mg/L)	277	<	1.0	84.0	6.0	7.5	9.4
Nitrate+Nitrite Nitrogen (mg/L)	281	<	0.003	0.774	0.133	0.151	0.094
Total Nitrogen (mg/L)	280	<	0.059	4.360	0.630	0.711	0.506
Total Phosphorus (mg/L)	282	<	0.005	1.650	0.040	0.054	0.113

CS-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	259		8.0	33.0	24.0	22.8	6.8
pH (su)	260		4.4	7.9	6.9	6.9	0.5
Dissolved Oxygen (mg/L)	42		2.6	11.3	5.8	6.4	2.1
Specific Conductance (µmhos)	40		179.7	33841.5	2913.8	8109.5	8977.8
Turbidity (NTU)	37		2.0	111.0	8.5	15.7	21.1
Total Suspended Solids (mg/L)	274	<	2.0	94.0	13.5	16.6	12.8
Nitrate+Nitrite Nitrogen (mg/L)	271	<	0.005	0.717	0.166	0.186	0.131
Total Nitrogen (mg/L)	255	<	0.094	4.574	0.916	1.024	0.566
Total Phosphorus (mg/L)	273	<	0.005	0.600	0.084	0.103	0.081

DGRM-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	20		14.2	31.2	26.7	25.0	5.3
pH (su)	20		6.2	9.0	7.8	7.6	0.6
Dissolved Oxygen (mg/L)	12		5.1	10.0	7.0	7.0	1.4
Specific Conductance (µmhos)	12		3171.7	25960.0	13266.9	13920.6	8473.8
Turbidity (NTU)	12		7.0	26.0	10.4	12.3	5.1
Total Suspended Solids (mg/L)	20		5.0	37.0	14.0	15.9	6.9
Nitrate+Nitrite Nitrogen (mg/L)	20	<	0.002	0.173	0.028	0.050	0.057
Total Nitrogen (mg/L)	20	<	0.338	2.005	0.658	0.752	0.380
Total Phosphorus (mg/L)	20		0.027	0.086	0.052	0.052	0.016

DR-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	272		7.0	34.0	24.0	23.1	6.3
pH (su)	275		4.6	8.4	6.9	6.9	0.5
Dissolved Oxygen (mg/L)	45		0.9	15.0	6.0	6.0	3.0
Specific Conductance (µmhos)	42		76.0	21431.0	2777.4	4738.8	5802.4
Turbidity (NTU)	36		5.0	131.0	9.0	12.3	20.5
Total Suspended Solids (mg/L)	278	<	1.0	94.0	12.0	14.2	10.4
Nitrate+Nitrite Nitrogen (mg/L)	273	<	0.001	1.800	0.100	0.163	0.245
Total Nitrogen (mg/L)	166	<	0.052	4.220	0.958	1.028	0.531
Total Phosphorus (mg/L)	279	<	0.005	0.900	0.102	0.128	0.094

E-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	293		3.0	31.0	20.0	19.8	6.0
pH (su)	295		3.2	8.3	5.3	5.3	0.8
Dissolved Oxygen (mg/L)	50		6.3	10.7	7.9	8.2	1.1
Specific Conductance (µmhos)	50		0.0	345.0	31.0	38.8	46.0
Turbidity (NTU)	53		2.5	62.0	8.6	11.9	12.6
Total Suspended Solids (mg/L)	292	<	1.0	163.0	9.0	13.8	17.1
Nitrate+Nitrite Nitrogen (mg/L)	296	<	0.003	1.290	0.120	0.129	0.119
Total Nitrogen (mg/L)	60	<	0.211	2.176	0.580	0.684	0.394
Total Phosphorus (mg/L)	300	<	0.001	0.380	0.025	0.035	0.040

FI-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	171		11.7	25.0	20.9	19.7	3.4
pH (su)	171		5.3	7.8	6.0	6.0	0.5
Dissolved Oxygen (mg/L)	83		6.4	12.6	8.0	8.2	0.8
Specific Conductance (µmhos)	84		36.0	125.0	56.0	57.0	15.6
Turbidity (NTU)	76		1.0	159.0	4.1	10.1	22.1
Total Suspended Solids (mg/L)	144	<	1.0	73.0	5.0	9.1	11.5
Nitrate+Nitrite Nitrogen (mg/L)	148		0.012	2.660	1.290	1.276	0.523
Total Nitrogen (mg/L)	148	<	0.210	3.800	1.720	1.700	0.542
Total Phosphorus (mg/L)	147	<	0.005	0.317	0.049	0.061	0.052

FLIM-2A	N		Min	Max	Med	Avg	SD
Temperature (°C)	69		6.4	27.8	17.4	17.6	5.9
pH (su)	69		6.8	8.7	7.8	7.8	0.3
Dissolved Oxygen (mg/L)	69		6.6	12.1	9.3	9.2	1.4
Specific Conductance (µmhos)	69		91.0	231.0	178.0	175.4	25.6
Turbidity (NTU)	69		1.9	421.0	7.0	17.4	52.0
Total Suspended Solids (mg/L)	69	<	0.3	225.0	6.0	13.2	31.1
Nitrate+Nitrite Nitrogen (mg/L)	42	<	0.476	3.190	1.650	1.580	0.527
Total Nitrogen (mg/L)	40	<	0.847	4.048	1.968	2.064	0.600
Total Phosphorus (mg/L)	40	<	0.002	0.384	0.050	0.062	0.068

FM-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	92		5.6	32.0	21.6	19.8	6.6
pH (su)	92		5.8	8.8	7.9	7.8	0.5
Dissolved Oxygen (mg/L)	22		7.4	11.7	8.9	9.0	1.1
Specific Conductance (µmhos)	23		325.0	632.0	506.0	503.6	67.0
Turbidity (NTU)	23		1.6	25.1	3.2	4.8	4.8
Total Suspended Solids (mg/L)	92	<	0.3	772.0	3.0	19.5	93.5
Nitrate+Nitrite Nitrogen (mg/L)	81		0.400	4.520	1.466	1.576	0.811
Total Nitrogen (mg/L)	17	<	1.390	4.440	2.731	2.838	0.876
Total Phosphorus (mg/L)	82	<	0.006	13.000	0.145	0.533	1.500

FM-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	113		6.8	31.0	21.3	20.2	5.6
pH (su)	113		6.0	8.3	7.8	7.8	0.4
Dissolved Oxygen (mg/L)	39		7.7	15.2	9.2	9.8	1.7
Specific Conductance (µmhos)	39		279.0	643.0	554.0	534.0	79.0
Turbidity (NTU)	24		2.1	139.0	4.0	14.3	31.2
Total Suspended Solids (mg/L)	112	<	0.3	476.0	4.0	19.6	66.2
Nitrate+Nitrite Nitrogen (mg/L)	102	<	0.040	6.170	2.888	3.022	1.338
Total Nitrogen (mg/L)	36	<	1.797	7.070	3.800	3.765	1.260

Total Phosphorus (mg/L)	103		0.090	2.570		0.380	0.538	0.456

FMCJ-1B	**N**		**Min**	**Max**		**Med**	**Avg**	**SD**
Temperature (°C)	19		16.8	25.2		22.1	21.7	2.1
pH (su)	19		7.7	8.5		8.2	8.1	0.2
Dissolved Oxygen (mg/L)	19		9.0	12.6		10.0	10.2	0.9
Specific Conductance (µmhos)	19		250.0	376.0		359.0	344.0	34.6
Turbidity (NTU)	19		1.1	20.1		1.9	4.2	5.4
Total Suspended Solids (mg/L)	18	<	0.3	12.0		2.0	2.9	2.8
Nitrate+Nitrite Nitrogen (mg/L)	9		0.346	1.050		0.816	0.752	0.253
Total Nitrogen (mg/L)	9	<	0.604	2.026		1.025	1.105	0.402
Total Phosphorus (mg/L)	9	<	0.002	0.100		0.014	0.024	0.023

FR-1	**N**		**Min**	**Max**		**Med**	**Avg**	**SD**
Temperature (°C)	183		6.0	33.0		24.2	22.1	6.7
pH (su)	183		5.6	8.6		7.4	7.4	0.5
Dissolved Oxygen (mg/L)	46		0.6	12.0		6.3	6.6	2.3
Specific Conductance (µmhos)	43		1765.0	33289.8		15851.0	16132.3	9170.6
Turbidity (NTU)	37		6.0	40.3		14.0	16.2	8.6
Total Suspended Solids (mg/L)	181	<	1.0	74.0		16.0	18.6	10.9
Nitrate+Nitrite Nitrogen (mg/L)	179	<	0.001	1.165		0.039	0.067	0.108
Total Nitrogen (mg/L)	171	<	0.041	4.982		0.656	0.745	0.537
Total Phosphorus (mg/L)	182	<	0.005	0.502		0.043	0.050	0.048

FTCM-6	**N**		**Min**	**Max**		**Med**	**Avg**	**SD**
Temperature (°C)	22		6.5	28.0		18.0	19.3	6.6
pH (su)	22		6.9	7.7		7.4	7.4	0.2
Dissolved Oxygen (mg/L)	22		2.7	9.9		4.7	5.3	2.1
Specific Conductance (µmhos)	22		154.9	303.0		229.0	228.5	33.6
Turbidity (NTU)	20		7.0	40.2		11.8	13.4	7.3
Total Suspended Solids (mg/L)	20	<	0.3	32.0		10.0	11.8	7.6
Nitrate+Nitrite Nitrogen (mg/L)	1	<			<		0.211	
Total Nitrogen (mg/L)	1						1.001	
Total Phosphorus (mg/L)	1						0.045	

H-1	**N**		**Min**	**Max**		**Med**	**Avg**	**SD**
Temperature (°C)	132		2.0	32.0		20.0	19.6	7.0
pH (su)	132		4.5	8.9		7.3	7.2	0.6
Dissolved Oxygen (mg/L)	62		0.2	14.9		9.7	9.7	2.1
Specific Conductance (µmhos)	63		97.0	1218.0		293.0	354.1	206.0
Turbidity (NTU)	61		0.9	203.0		4.5	20.3	40.9
Total Suspended Solids (mg/L)	132	<	0.3	1133.0		4.0	36.5	122.2
Nitrate+Nitrite Nitrogen (mg/L)	120	<	0.003	2.510		0.180	0.236	0.299
Total Nitrogen (mg/L)	106	<	0.131	2.772		0.382	0.538	0.441
Total Phosphorus (mg/L)	119	<	0.002	0.790		0.020	0.062	0.126

HATC-1	**N**		**Min**	**Max**		**Med**	**Avg**	**SD**
Temperature (°C)	98		4.8	31.3		19.4	18.7	7.0
pH (su)	98		6.4	8.6		7.2	7.2	0.3
Dissolved Oxygen (mg/L)	98		6.6	12.8		9.2	9.3	1.5
Specific Conductance (µmhos)	96		23.2	63.8		42.0	41.6	7.4
Turbidity (NTU)	98		1.6	185.0		4.9	11.3	26.4
Total Suspended Solids (mg/L)	91	<	0.5	197.0		3.0	8.7	24.6
Nitrate+Nitrite Nitrogen (mg/L)	91	<	0.002	1.630		0.012	0.041	0.170

Total Nitrogen (mg/L)	91	<	0.039	3.060	0.164	0.281	0.439
Total Phosphorus (mg/L)	91	<	0.004	0.107	0.018	0.028	0.024

HILT-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	27		14.4	29.4	23.8	23.1	4.1
pH (su)	27		5.8	7.6	6.9	6.8	0.4
Dissolved Oxygen (mg/L)	27		5.4	9.5	7.8	7.7	0.9
Specific Conductance (µmhos)	27		19.4	49.5	37.7	36.4	6.4
Turbidity (NTU)	26		5.2	272.0	8.3	28.1	55.4
Total Suspended Solids (mg/L)	23	<	1.0	152.0	3.8	15.9	32.9
Nitrate+Nitrite Nitrogen (mg/L)	23		0.010	0.198	0.081	0.086	0.055
Total Nitrogen (mg/L)	23	<	0.072	0.973	0.323	0.384	0.275
Total Phosphorus (mg/L)	23	<	0.011	0.170	0.018	0.035	0.036

IC-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	68		6.1	32.6	24.8	23.4	6.6
pH (su)	68		6.0	8.5	7.7	7.6	0.5
Dissolved Oxygen (mg/L)	68		4.2	12.6	6.8	7.0	1.8
Specific Conductance (µmhos)	58		25.6	37034.0	28019.6	25946.6	7974.7
Turbidity (NTU)	68		1.0	29.0	12.4	13.0	6.3
Total Suspended Solids (mg/L)	69		7.0	42.0	18.0	19.9	7.2
Nitrate+Nitrite Nitrogen (mg/L)	69	<	0.005	0.492	0.040	0.081	0.106
Total Nitrogen (mg/L)	62	<	0.058	3.116	0.843	0.883	0.491
Total Phosphorus (mg/L)	69		0.017	0.400	0.064	0.073	0.051

INDM-249	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	40		12.1	27.8	22.1	20.9	4.5
pH (su)	40		7.0	8.7	7.8	7.8	0.3
Dissolved Oxygen (mg/L)	40		4.4	11.0	6.9	7.5	1.7
Specific Conductance (µmhos)	40		104.7	283.0	245.4	240.1	32.6
Turbidity (NTU)	40		1.4	76.0	8.1	12.0	15.3
Total Suspended Solids (mg/L)	26	<	0.3	60.0	6.0	9.0	11.6
Nitrate+Nitrite Nitrogen (mg/L)	19		0.167	1.724	0.707	0.772	0.418
Total Nitrogen (mg/L)	19	<	0.502	1.847	1.201	1.189	0.437
Total Phosphorus (mg/L)	19	<	0.006	0.175	0.041	0.052	0.044

LC-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	172		7.6	30.3	18.2	18.1	4.8
pH (su)	171		6.3	8.7	7.7	7.6	0.3
Dissolved Oxygen (mg/L)	94		5.9	14.8	9.1	9.2	1.7
Specific Conductance (µmhos)	94		40.0	466.0	385.5	367.4	72.0
Turbidity (NTU)	87		1.2	152.0	4.1	9.4	20.0
Total Suspended Solids (mg/L)	164	<	0.3	117.0	5.0	7.7	13.3
Nitrate+Nitrite Nitrogen (mg/L)	137	<	0.238	5.570	1.192	1.394	0.868
Total Nitrogen (mg/L)	65	<	0.521	5.835	1.972	2.104	1.050
Total Phosphorus (mg/L)	136	<	0.004	8.000	0.057	0.156	0.688

LFKJ-6	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	74		5.2	34.0	22.0	22.0	7.4
pH (su)	74		6.4	9.3	7.6	7.7	0.6
Dissolved Oxygen (mg/L)	28		4.6	18.8	9.1	9.7	3.0
Specific Conductance (µmhos)	27		141.0	569.0	390.0	380.0	130.0
Turbidity (NTU)	21		4.4	91.8	7.0	15.9	23.0
Total Suspended Solids (mg/L)	76		1.0	54.0	8.0	11.8	10.9

Nitrate+Nitrite Nitrogen (mg/L)	66	<	0.003	2.322	0.862	0.882	0.445
Total Nitrogen (mg/L)	49	<	0.456	2.711	1.398	1.436	0.389
Total Phosphorus (mg/L)	67	<	0.004	0.670	0.055	0.082	0.099

LIML-300	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	30		12.6	29.3	22.3	21.5	4.4
pH (su)	30		6.8	8.1	7.6	7.6	0.4
Dissolved Oxygen (mg/L)	27		6.7	10.2	8.1	8.2	0.9
Specific Conductance (µmhos)	27		92.7	156.0	129.0	124.9	18.3
Turbidity (NTU)	27		1.7	61.5	5.1	8.2	11.3
Total Suspended Solids (mg/L)	29	<	0.3	37.0	3.0	5.1	7.3
Nitrate+Nitrite Nitrogen (mg/L)	22	<	0.015	1.352	0.890	0.864	0.289
Total Nitrogen (mg/L)	22	<	0.757	2.396	1.266	1.296	0.337
Total Phosphorus (mg/L)	22	<	0.005	0.159	0.066	0.073	0.037

LOSW-7	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	6		19.4	28.6	22.2	23.4	3.6
pH (su)	6		7.6	8.2	8.1	8.0	0.3
Dissolved Oxygen (mg/L)	6		6.8	10.7	7.7	8.1	1.5
Specific Conductance (µmhos)	6		569.0	2004.0	1466.0	1341.7	573.8
Turbidity (NTU)	6		2.7	40.2	7.8	12.9	14.5
Total Suspended Solids (mg/L)	6		1.0	30.0	9.5	11.2	10.6
Nitrate+Nitrite Nitrogen (mg/L)	0	<					
Total Nitrogen (mg/L)	0						
Total Phosphorus (mg/L)	0						

LT-12	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	29		15.1	28.0	24.4	23.7	3.5
pH (su)	29		6.3	7.8	7.2	7.2	0.4
Dissolved Oxygen (mg/L)	24		6.7	10.1	7.4	7.8	0.9
Specific Conductance (µmhos)	24		46.2	175.6	136.6	128.6	33.7
Turbidity (NTU)	24		5.0	107.0	10.4	19.5	25.3
Total Suspended Solids (mg/L)	25	<	1.0	75.0	6.0	13.2	19.8
Nitrate+Nitrite Nitrogen (mg/L)	26		0.012	0.740	0.100	0.154	0.167
Total Nitrogen (mg/L)	26	<	0.074	2.690	0.382	0.583	0.594
Total Phosphorus (mg/L)	26		0.010	0.115	0.021	0.037	0.033

LTRR-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	41		11.8	27.5	23.8	22.9	3.5
pH (su)	41		6.2	8.1	7.0	7.0	0.4
Dissolved Oxygen (mg/L)	41		5.1	10.8	6.8	7.0	1.2
Specific Conductance (µmhos)	41		46.4	120.0	75.2	74.4	16.6
Turbidity (NTU)	42		9.3	425.0	16.3	33.1	68.7
Total Suspended Solids (mg/L)	31		3.0	231.0	10.0	24.5	49.8
Nitrate+Nitrite Nitrogen (mg/L)	28		0.171	0.678	0.327	0.345	0.112
Total Nitrogen (mg/L)	28	<	0.458	1.313	0.742	0.782	0.220
Total Phosphorus (mg/L)	28	<	0.032	0.381	0.058	0.077	0.071

LUXL-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	36		6.2	29.6	22.9	21.8	5.4
pH (su)	36		5.8	8.6	6.9	6.9	0.6
Dissolved Oxygen (mg/L)	23		7.4	10.4	8.3	8.3	0.7
Specific Conductance (µmhos)	23		28.0	45.0	38.3	38.4	4.0
Turbidity (NTU)	26		5.3	500.0	9.8	33.7	96.6

Total Suspended Solids (mg/L)	30	<	1.0	62.0	7.5	13.7	15.0
Nitrate+Nitrite Nitrogen (mg/L)	32		0.075	1.800	0.294	0.320	0.287
Total Nitrogen (mg/L)	32	<	0.167	3.110	0.538	0.662	0.613
Total Phosphorus (mg/L)	32	<	0.002	0.218	0.020	0.029	0.039

MB-1A	N		Min	Max	Med	Avg	SD
Temperature (°C)	66		6.8	31.9	23.6	22.7	6.7
pH (su)	67		5.4	8.4	8.0	7.8	0.6
Dissolved Oxygen (mg/L)	66		3.5	12.2	7.8	7.9	1.8
Specific Conductance (µmhos)	57		32.2	51664.2	36090.1	34289.7	10092.2
Turbidity (NTU)	62		4.3	30.1	11.3	12.6	5.0
Total Suspended Solids (mg/L)	65		8.0	39.0	19.0	19.5	7.0
Nitrate+Nitrite Nitrogen (mg/L)	65	<	0.005	0.955	0.028	0.071	0.133
Total Nitrogen (mg/L)	58	<	0.052	1.469	0.410	0.472	0.342
Total Phosphorus (mg/L)	65		0.012	0.370	0.033	0.041	0.043

MB-2A	N		Min	Max	Med	Avg	SD
Temperature (°C)	68		10.3	31.0	23.7	23.3	5.6
pH (su)	67		6.9	8.3	8.0	8.0	0.3
Dissolved Oxygen (mg/L)	68		2.0	10.9	7.4	7.2	1.5
Specific Conductance (µmhos)	59		23470.1	52565.5	45078.3	45220.4	5527.3
Turbidity (NTU)	66		0.1	32.5	3.0	4.3	4.5
Total Suspended Solids (mg/L)	70	<	5.0	58.0	14.5	15.3	7.2
Nitrate+Nitrite Nitrogen (mg/L)	70	<	0.005	0.603	0.041	0.080	0.118
Total Nitrogen (mg/L)	63	<	0.038	2.517	0.379	0.494	0.535
Total Phosphorus (mg/L)	70	<	0.004	0.200	0.024	0.028	0.030

MB-3A	N		Min	Max	Med	Avg	SD
Temperature (°C)	78		4.2	31.6	25.0	22.9	6.9
pH (su)	78		5.9	8.3	8.0	7.8	0.5
Dissolved Oxygen (mg/L)	78		3.8	13.4	7.7	7.9	1.9
Specific Conductance (µmhos)	68		7492.2	43491.1	26880.6	26725.8	9993.7
Turbidity (NTU)	70		2.4	75.7	12.0	16.8	13.6
Total Suspended Solids (mg/L)	72		7.0	85.0	21.0	23.6	13.5
Nitrate+Nitrite Nitrogen (mg/L)	72	<	0.005	1.130	0.030	0.082	0.159
Total Nitrogen (mg/L)	65	<	0.052	2.629	0.642	0.755	0.549
Total Phosphorus (mg/L)	72		0.023	1.200	0.051	0.069	0.137

MBFB-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	28		15.0	30.7	26.2	25.2	4.2
pH (su)	28		7.0	9.1	7.5	7.6	0.4
Dissolved Oxygen (mg/L)	22		5.5	10.4	7.8	7.9	1.5
Specific Conductance (µmhos)	22		118.0	357.9	213.0	217.9	73.9
Turbidity (NTU)	22		5.2	27.9	11.2	12.6	5.7
Total Suspended Solids (mg/L)	25	<	1.0	45.0	12.0	14.3	9.9
Nitrate+Nitrite Nitrogen (mg/L)	16		0.275	4.433	1.544	1.717	1.226
Total Nitrogen (mg/L)	16		0.872	4.871	2.254	2.444	1.071
Total Phosphorus (mg/L)	16		0.090	0.570	0.354	0.329	0.170

MO-1A	N		Min	Max	Med	Avg	SD
Temperature (°C)	334		7.0	35.0	23.0	22.2	7.4
pH (su)	330		5.1	8.1	7.1	7.0	0.4
Dissolved Oxygen (mg/L)	86		1.9	12.3	7.1	7.5	2.1
Specific Conductance (µmhos)	77		106.8	24774.0	286.4	2596.7	4961.9

Turbidity (NTU)	88		3.0	132.0	18.5	30.5	29.4
Total Suspended Solids (mg/L)	346	<	1.0	317.0	19.0	33.7	39.9
Nitrate+Nitrite Nitrogen (mg/L)	342	<	0.005	35.000	0.227	0.337	1.886
Total Nitrogen (mg/L)	332	<	0.058	35.540	0.772	0.954	1.982
Total Phosphorus (mg/L)	344	<	0.010	0.631	0.070	0.090	0.070

MO-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	307		7.0	32.0	22.1	21.7	7.0
pH (su)	308		5.3	8.9	7.2	7.1	0.5
Dissolved Oxygen (mg/L)	81		2.2	12.1	6.8	7.2	2.2
Specific Conductance (µmhos)	72		144.6	37441.4	6359.2	10799.6	10276.9
Turbidity (NTU)	82		2.0	78.0	12.0	17.1	17.2
Total Suspended Solids (mg/L)	322		1.0	82.0	12.5	17.1	14.5
Nitrate+Nitrite Nitrogen (mg/L)	318	<	0.005	0.800	0.200	0.204	0.126
Total Nitrogen (mg/L)	302	<	0.082	4.400	0.780	0.821	0.408
Total Phosphorus (mg/L)	320	<	0.015	0.573	0.067	0.077	0.050

MOBM-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	90		5.5	34.1	22.6	22.0	7.8
pH (su)	90		5.5	8.1	7.0	7.0	0.6
Dissolved Oxygen (mg/L)	89		5.3	12.8	8.1	8.4	1.9
Specific Conductance (µmhos)	81		108.1	5190.9	201.3	264.4	557.3
Turbidity (NTU)	94		5.0	198.0	18.8	29.2	30.6
Total Suspended Solids (mg/L)	99		6.0	227.0	16.0	26.9	35.1
Nitrate+Nitrite Nitrogen (mg/L)	99	<	0.005	1.340	0.204	0.206	0.167
Total Nitrogen (mg/L)	92	<	0.197	2.110	0.826	0.815	0.311
Total Phosphorus (mg/L)	99		0.026	0.370	0.066	0.078	0.050

MULD-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	22		18.0	29.9	24.7	24.3	3.5
pH (su)	22		6.2	7.5	6.9	6.9	0.5
Dissolved Oxygen (mg/L)	22		7.5	9.7	8.3	8.4	0.6
Specific Conductance (µmhos)	22		0.0	526.0	41.0	61.1	104.4
Turbidity (NTU)	22		3.1	274.0	12.1	35.8	63.7
Total Suspended Solids (mg/L)	21	<	1.0	276.0	13.0	37.2	66.2
Nitrate+Nitrite Nitrogen (mg/L)	21		0.029	0.218	0.150	0.136	0.048
Total Nitrogen (mg/L)	20	<	0.069	0.695	0.248	0.306	0.170
Total Phosphorus (mg/L)	21	<	0.006	0.100	0.021	0.030	0.021

NRRT-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	40		10.0	31.0	23.9	22.5	5.0
pH (su)	41		6.5	8.9	8.0	8.0	0.6
Dissolved Oxygen (mg/L)	41		5.8	13.4	8.5	8.6	1.6
Specific Conductance (µmhos)	40		74.0	4595.0	515.8	1096.7	1345.1
Turbidity (NTU)	40		1.9	254.0	5.7	19.5	50.8
Total Suspended Solids (mg/L)	39	<	1.0	308.0	6.0	18.4	53.1
Nitrate+Nitrite Nitrogen (mg/L)	38	<	0.003	0.883	0.123	0.183	0.200
Total Nitrogen (mg/L)	38	<	0.129	1.801	0.511	0.615	0.456
Total Phosphorus (mg/L)	38	<	0.006	0.210	0.050	0.042	0.034

NXBS-50	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	21		14.1	32.0	27.3	25.6	5.2
pH (su)	21		6.7	8.6	8.0	7.9	0.5
Dissolved Oxygen (mg/L)	20		5.0	8.8	7.0	7.1	1.0

Specific Conductance (µmhos)	21		55.1	204.0	140.0	142.4	28.5
Turbidity (NTU)	22		13.6	390.0	33.6	76.4	110.6
Total Suspended Solids (mg/L)	22	<	1.0	353.0	31.0	79.4	105.1
Nitrate+Nitrite Nitrogen (mg/L)	19	<	0.003	2.940	0.148	0.351	0.653
Total Nitrogen (mg/L)	19	<	0.233	3.543	0.775	1.154	0.989
Total Phosphorus (mg/L)	19	<	0.049	0.441	0.082	0.118	0.109

PALC-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	25		8.8	30.0	25.0	24.0	4.4
pH (su)	25		6.4	8.2	7.5	7.3	0.4
Dissolved Oxygen (mg/L)	22		5.8	10.7	7.6	7.6	1.0
Specific Conductance (µmhos)	22		41.8	219.8	136.5	130.7	50.2
Turbidity (NTU)	22		2.8	49.6	8.1	13.1	13.0
Total Suspended Solids (mg/L)	21	<	1.0	29.0	2.5	6.9	8.9
Nitrate+Nitrite Nitrogen (mg/L)	24	<	0.003	0.291	0.122	0.138	0.084
Total Nitrogen (mg/L)	24	<	0.086	1.373	0.476	0.495	0.298
Total Phosphorus (mg/L)	24	<	0.004	0.061	0.024	0.026	0.015

PDBB-0	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	20		18.2	31.1	27.5	26.1	4.4
pH (su)	19		6.2	8.1	8.0	7.8	0.4
Dissolved Oxygen (mg/L)	19		5.4	8.9	6.8	6.9	1.0
Specific Conductance (µmhos)	20		27371.6	54860.6	47625.3	45607.7	7933.0
Turbidity (NTU)	17		0.0	11.0	2.0	2.4	2.6
Total Suspended Solids (mg/L)	20		8.0	33.0	14.0	15.0	5.9
Nitrate+Nitrite Nitrogen (mg/L)	20	<	0.005	0.083	0.013	0.024	0.027
Total Nitrogen (mg/L)	20	<	0.038	2.102	0.108	0.344	0.496
Total Phosphorus (mg/L)	20	<	0.005	0.045	0.026	0.023	0.013

PDBB-5	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	18		19.0	27.0	23.3	23.7	2.2
pH (su)	18		4.5	6.5	5.7	5.5	0.6
Dissolved Oxygen (mg/L)	18		7.0	9.3	7.8	7.9	0.5
Specific Conductance (µmhos)	17		24.2	39.0	27.0	27.9	3.5
Turbidity (NTU)	21		1.5	15.6	3.4	4.4	3.1
Total Suspended Solids (mg/L)	21	<	5.0	15.0	2.5	4.8	3.4
Nitrate+Nitrite Nitrogen (mg/L)	21		0.167	0.835	0.279	0.308	0.152
Total Nitrogen (mg/L)	21	<	0.329	1.605	0.647	0.737	0.321
Total Phosphorus (mg/L)	21		0.008	0.064	0.021	0.026	0.016

PEAG-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	21		13.2	30.0	25.2	25.1	4.4
pH (su)	21		6.3	9.1	7.3	7.3	0.6
Dissolved Oxygen (mg/L)	21		6.7	9.9	7.8	8.0	0.8
Specific Conductance (µmhos)	21		55.1	165.2	109.2	110.8	32.4
Turbidity (NTU)	21		1.8	157.0	8.8	21.5	33.6
Total Suspended Solids (mg/L)	21	<	1.0	82.0	6.0	17.8	23.4
Nitrate+Nitrite Nitrogen (mg/L)	21		0.029	0.735	0.369	0.381	0.182
Total Nitrogen (mg/L)	21	<	0.276	1.266	0.834	0.790	0.282
Total Phosphorus (mg/L)	21		0.007	0.133	0.029	0.042	0.035

PPLL-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	100		6.2	31.8	24.0	22.3	5.1
pH (su)	101		6.0	9.1	7.6	7.6	0.6

Dissolved Oxygen (mg/L)	70		1.3	12.0	6.1	6.4	1.8
Specific Conductance (µmhos)	70		53.2	2424.0	243.4	566.9	554.0
Turbidity (NTU)	70		2.3	650.0	8.3	24.7	81.0
Total Suspended Solids (mg/L)	75	<	1.0	340.0	10.0	21.9	50.7
Nitrate+Nitrite Nitrogen (mg/L)	72	<	0.015	15.000	0.330	0.733	1.962
Total Nitrogen (mg/L)	55	<	0.400	19.875	2.854	4.140	4.563
Total Phosphorus (mg/L)	72		0.016	10.380	0.373	0.964	1.752

PRRJ-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	21		12.1	27.3	22.3	21.5	4.0
pH (su)	21		7.4	8.2	7.6	7.6	0.2
Dissolved Oxygen (mg/L)	21		4.5	9.5	5.9	6.2	1.2
Specific Conductance (µmhos)	21		236.0	403.0	314.0	313.2	41.6
Turbidity (NTU)	21		1.3	69.3	7.1	11.9	16.2
Total Suspended Solids (mg/L)	21		3.0	40.0	6.0	7.8	8.0
Nitrate+Nitrite Nitrogen (mg/L)	15		0.275	1.330	0.515	0.572	0.267
Total Nitrogen (mg/L)	15	<	0.350	2.540	0.944	1.031	0.612
Total Phosphorus (mg/L)	15	<	0.006	0.100	0.027	0.030	0.019

SCRL-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	23		8.1	27.1	21.8	19.3	5.8
pH (su)	23		6.1	8.7	7.3	7.4	0.7
Dissolved Oxygen (mg/L)	23		4.4	10.4	8.4	8.2	1.7
Specific Conductance (µmhos)	23		67.7	131.0	91.4	97.4	15.7
Turbidity (NTU)	23		0.6	102.0	2.5	10.7	23.1
Total Suspended Solids (mg/L)	21	<	0.3	141.0	2.0	14.6	32.7
Nitrate+Nitrite Nitrogen (mg/L)	13		0.026	4.484	0.254	0.889	1.239
Total Nitrogen (mg/L)	13		0.331	5.271	1.278	1.512	1.410
Total Phosphorus (mg/L)	13	<	0.006	0.277	0.050	0.059	0.068

SF-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	10		9.3	29.7	24.5	22.2	6.3
pH (su)	10		7.4	8.0	7.6	7.6	0.2
Dissolved Oxygen (mg/L)	10		7.2	10.8	8.3	8.4	1.1
Specific Conductance (µmhos)	10		57.0	96.0	69.8	71.2	12.3
Turbidity (NTU)	9		1.1	8.4	1.8	2.5	2.2
Total Suspended Solids (mg/L)	7	<	0.3	401.0	3.0	60.0	150.4
Nitrate+Nitrite Nitrogen (mg/L)	0	<					
Total Nitrogen (mg/L)	0						
Total Phosphorus (mg/L)	0						

SFCB-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	22		9.0	32.1	24.9	23.5	5.6
pH (su)	22		7.2	9.1	7.9	8.0	0.5
Dissolved Oxygen (mg/L)	22		7.3	12.9	8.9	9.4	1.5
Specific Conductance (µmhos)	22		71.7	222.8	131.4	138.4	45.6
Turbidity (NTU)	22		1.3	30.4	5.0	9.5	9.5
Total Suspended Solids (mg/L)	21	<	1.0	26.0	4.0	6.1	7.1
Nitrate+Nitrite Nitrogen (mg/L)	21		0.004	0.284	0.074	0.087	0.070
Total Nitrogen (mg/L)	21	<	0.100	1.234	0.447	0.514	0.283
Total Phosphorus (mg/L)	21		0.019	0.057	0.034	0.036	0.013

SH-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	124		0.5	29.0	18.6	18.1	6.9

pH (su)	123		6.2	8.8	7.7	7.7	0.4
Dissolved Oxygen (mg/L)	93		5.4	16.5	9.1	9.6	2.4
Specific Conductance (µmhos)	95		122.0	398.0	255.0	258.1	58.5
Turbidity (NTU)	95		1.2	156.0	5.7	16.2	30.9
Total Suspended Solids (mg/L)	112	<	0.3	233.0	4.0	16.3	39.5
Nitrate+Nitrite Nitrogen (mg/L)	81	<	0.003	0.816	0.295	0.291	0.212
Total Nitrogen (mg/L)	62	<	0.196	2.615	0.734	0.808	0.447
Total Phosphorus (mg/L)	79	<	0.002	0.230	0.041	0.039	0.037

SHRT-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	59		5.0	27.0	22.3	21.4	4.3
pH (su)	62		7.3	8.5	7.9	7.8	0.2
Dissolved Oxygen (mg/L)	35		5.7	10.5	7.8	8.0	1.0
Specific Conductance (µmhos)	36		106.7	1303.0	387.6	522.9	278.0
Turbidity (NTU)	36		1.2	154.0	3.6	8.8	25.2
Total Suspended Solids (mg/L)	55	<	0.3	925.0	7.0	25.3	124.2
Nitrate+Nitrite Nitrogen (mg/L)	52		0.301	6.190	2.605	2.809	1.155
Total Nitrogen (mg/L)	37	<	1.018	7.019	3.160	3.427	1.223
Total Phosphorus (mg/L)	52		0.037	15.400	1.377	2.554	3.183

SOGL-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	59		5.8	31.0	22.7	21.0	5.7
pH (su)	59		6.6	9.8	7.3	7.4	0.6
Dissolved Oxygen (mg/L)	43		6.0	10.9	7.3	7.6	1.2
Specific Conductance (µmhos)	43		58.5	1376.0	225.1	286.1	220.2
Turbidity (NTU)	44		2.8	340.0	9.9	22.3	50.4
Total Suspended Solids (mg/L)	55	<	1.0	450.0	10.0	22.9	61.4
Nitrate+Nitrite Nitrogen (mg/L)	51		0.003	9.106	1.971	2.716	2.337
Total Nitrogen (mg/L)	51	<	0.491	9.678	3.298	3.747	2.363
Total Phosphorus (mg/L)	51		0.004	1.870	0.413	0.530	0.452

SPLC-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	22		16.0	32.0	25.0	24.6	4.0
pH (su)	22		6.4	8.3	7.1	7.1	0.4
Dissolved Oxygen (mg/L)	19		5.5	8.3	7.3	7.3	0.7
Specific Conductance (µmhos)	19		29.0	179.7	73.5	85.2	37.2
Turbidity (NTU)	20		1.6	41.4	9.8	13.4	11.0
Total Suspended Solids (mg/L)	20	<	1.0	47.0	3.0	9.3	13.7
Nitrate+Nitrite Nitrogen (mg/L)	23		0.006	0.429	0.053	0.086	0.096
Total Nitrogen (mg/L)	23	<	0.076	0.986	0.432	0.493	0.256
Total Phosphorus (mg/L)	23	<	0.004	0.058	0.024	0.025	0.015

SPYG-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	35		4.0	30.3	22.5	21.7	6.9
pH (su)	35		6.0	8.0	7.0	7.0	0.5
Dissolved Oxygen (mg/L)	24		5.5	10.5	7.3	7.5	1.0
Specific Conductance (µmhos)	21		52.0	182.0	120.0	113.0	33.2
Turbidity (NTU)	28		10.1	29.2	18.1	17.8	5.0
Total Suspended Solids (mg/L)	39		1.0	32.0	13.0	14.1	7.8
Nitrate+Nitrite Nitrogen (mg/L)	38		0.005	1.304	0.110	0.142	0.206
Total Nitrogen (mg/L)	38	<	0.092	1.857	0.480	0.539	0.312
Total Phosphorus (mg/L)	38	<	0.004	0.100	0.047	0.038	0.021

SSCD-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**

Temperature (°C)	8		6.0	24.0	15.8	15.4	7.1
pH (su)	8		6.1	8.0	7.6	7.4	0.6
Dissolved Oxygen (mg/L)	6		8.3	12.5	11.0	10.6	1.6
Specific Conductance (µmhos)	6		17.0	106.0	84.2	78.1	32.0
Turbidity (NTU)	6		1.3	500.0	2.3	85.2	203.2
Total Suspended Solids (mg/L)	9		1.0	689.0	4.0	80.0	228.4
Nitrate+Nitrite Nitrogen (mg/L)	9		0.025	4.488	1.180	1.971	1.685
Total Nitrogen (mg/L)	9	<	0.805	4.563	1.489	2.545	1.633
Total Phosphorus (mg/L)	9		0.014	0.679	0.030	0.106	0.215

STXB-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	19		19.0	27.0	23.0	23.2	2.1
pH (su)	19		5.1	6.8	5.7	5.7	0.5
Dissolved Oxygen (mg/L)	19		8.0	9.4	8.3	8.4	0.4
Specific Conductance (µmhos)	18		30.1	44.0	34.1	35.2	3.9
Turbidity (NTU)	22		2.1	29.5	5.2	7.2	6.0
Total Suspended Solids (mg/L)	21	<	5.0	48.0	6.0	8.4	9.1
Nitrate+Nitrite Nitrogen (mg/L)	21		0.192	0.704	0.500	0.478	0.126
Total Nitrogen (mg/L)	21	<	0.378	1.492	0.911	0.900	0.248
Total Phosphorus (mg/L)	21		0.005	0.071	0.022	0.026	0.017

SUCS-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	38		5.3	30.0	24.2	22.6	6.7
pH (su)	38		5.7	8.2	7.2	7.2	0.6
Dissolved Oxygen (mg/L)	22		6.6	9.6	7.4	7.8	0.9
Specific Conductance (µmhos)	22		46.0	94.9	61.3	63.4	12.7
Turbidity (NTU)	22		10.1	211.0	26.4	47.3	56.5
Total Suspended Solids (mg/L)	38		3.0	259.7	23.5	42.2	58.0
Nitrate+Nitrite Nitrogen (mg/L)	35	<	0.003	0.400	0.067	0.074	0.066
Total Nitrogen (mg/L)	35	<	0.052	1.947	0.300	0.479	0.441
Total Phosphorus (mg/L)	35	<	0.002	0.132	0.050	0.055	0.035

TA-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	34		12.3	29.7	24.4	23.2	4.7
pH (su)	34		6.1	7.9	7.1	7.0	0.4
Dissolved Oxygen (mg/L)	32		6.6	10.8	8.1	8.3	1.1
Specific Conductance (µmhos)	32		29.6	53.2	40.4	41.0	6.2
Turbidity (NTU)	32		0.3	193.0	3.4	11.3	33.8
Total Suspended Solids (mg/L)	31	<	0.8	103.0	1.0	6.9	18.9
Nitrate+Nitrite Nitrogen (mg/L)	33	<	0.003	0.365	0.133	0.140	0.070
Total Nitrogen (mg/L)	32	<	0.125	1.251	0.300	0.389	0.266
Total Phosphorus (mg/L)	32	<	0.009	0.200	0.016	0.031	0.041

TA-2	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	146		-1.8	34.0	20.9	19.1	6.6
pH (su)	147		5.7	8.7	7.0	7.0	0.5
Dissolved Oxygen (mg/L)	59		6.0	12.6	8.5	8.8	1.4
Specific Conductance (µmhos)	59		28.4	295.9	46.6	57.1	44.9
Turbidity (NTU)	60		3.6	458.0	12.7	35.1	82.7
Total Suspended Solids (mg/L)	143	<	1.0	292.0	10.0	22.4	38.4
Nitrate+Nitrite Nitrogen (mg/L)	135	<	0.003	0.570	0.140	0.140	0.078
Total Nitrogen (mg/L)	70	<	0.095	9.460	0.350	0.609	1.246
Total Phosphorus (mg/L)	135	<	0.004	2.210	0.040	0.070	0.197

TARE-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	76		5.6	29.8	18.8	18.8	6.2
pH (su)	76		5.9	10.0	7.0	6.9	0.5
Dissolved Oxygen (mg/L)	75		6.6	11.8	8.9	9.0	1.2
Specific Conductance (µmhos)	76		36.1	85.5	51.4	52.7	9.3
Turbidity (NTU)	74		2.7	74.9	9.6	16.3	17.1
Total Suspended Solids (mg/L)	77	<	1.0	122.0	9.0	17.7	23.9
Nitrate+Nitrite Nitrogen (mg/L)	77		0.060	0.385	0.172	0.184	0.067
Total Nitrogen (mg/L)	77	<	0.184	1.986	0.369	0.444	0.255
Total Phosphorus (mg/L)	77	<	0.004	0.119	0.023	0.032	0.028

TC-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	192		6.0	37.0	25.1	23.8	6.4
pH (su)	192		6.0	9.4	7.8	7.7	0.6
Dissolved Oxygen (mg/L)	55		2.3	12.4	7.1	7.3	2.6
Specific Conductance (µmhos)	52		3035.0	38639.9	20699.8	20478.3	9984.0
Turbidity (NTU)	54		4.0	104.0	7.0	11.3	15.8
Total Suspended Solids (mg/L)	192	<	3.0	9420.0	14.0	66.4	678.7
Nitrate+Nitrite Nitrogen (mg/L)	189	<	0.005	5.160	0.129	0.503	0.868
Total Nitrogen (mg/L)	176	<	0.038	5.760	1.048	1.407	1.088
Total Phosphorus (mg/L)	192	<	0.012	3.350	0.138	0.234	0.328

TENB-2	N		Min	Max	Med	Avg	SD
Temperature (°C)	65		7.9	33.2	24.2	22.9	6.9
pH (su)	65		6.7	7.8	7.4	7.4	0.2
Dissolved Oxygen (mg/L)	64		4.6	12.2	7.7	8.0	1.9
Specific Conductance (µmhos)	55		97.1	6814.0	400.4	1590.2	1995.1
Turbidity (NTU)	70		3.0	66.0	11.4	15.0	12.0
Total Suspended Solids (mg/L)	69	<	1.0	69.0	9.0	11.8	9.9
Nitrate+Nitrite Nitrogen (mg/L)	69	<	0.002	0.443	0.122	0.140	0.106
Total Nitrogen (mg/L)	68	<	0.114	2.082	0.699	0.736	0.336
Total Phosphorus (mg/L)	69		0.017	0.140	0.051	0.055	0.022

TENR-417	N		Min	Max	Med	Avg	SD
Temperature (°C)	32		5.7	30.5	20.4	19.3	7.8
pH (su)	32		7.3	8.3	7.6	7.6	0.3
Dissolved Oxygen (mg/L)	32		4.4	13.1	8.3	8.1	2.4
Specific Conductance (µmhos)	32		159.0	232.0	186.5	189.5	18.7
Turbidity (NTU)	32		2.9	19.9	5.3	6.8	4.0
Total Suspended Solids (mg/L)	32	<	0.3	19.0	4.5	5.1	3.7
Nitrate+Nitrite Nitrogen (mg/L)	8		0.179	0.329	0.253	0.258	0.050
Total Nitrogen (mg/L)	8	<	0.312	0.703	0.446	0.472	0.151
Total Phosphorus (mg/L)	8		0.032	0.057	0.036	0.040	0.009

TERC-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	33		13.0	27.8	23.7	21.8	4.4
pH (su)	33		6.7	8.9	7.8	7.8	0.5
Dissolved Oxygen (mg/L)	28		7.0	10.4	8.1	8.3	1.0
Specific Conductance (µmhos)	28		27.0	300.0	197.4	184.0	59.0
Turbidity (NTU)	21		1.3	21.4	4.5	5.8	4.7
Total Suspended Solids (mg/L)	29	<	1.0	165.0	4.0	11.3	31.0
Nitrate+Nitrite Nitrogen (mg/L)	29		0.023	0.417	0.249	0.234	0.093
Total Nitrogen (mg/L)	29	<	0.163	0.952	0.401	0.436	0.182
Total Phosphorus (mg/L)	29	<	0.004	0.224	0.020	0.032	0.043

TH-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	105		6.0	29.0	20.0	19.1	5.9
pH (su)	107		6.4	8.6	7.7	7.6	0.4
Dissolved Oxygen (mg/L)	29		6.1	9.6	7.1	7.3	0.8
Specific Conductance (µmhos)	28		40.1	712.0	328.7	349.3	157.3
Turbidity (NTU)	30		2.6	17.7	5.8	6.6	3.2
Total Suspended Solids (mg/L)	103	<	1.0	293.0	8.0	13.8	30.8
Nitrate+Nitrite Nitrogen (mg/L)	100		0.031	4.989	0.972	1.356	1.066
Total Nitrogen (mg/L)	84	<	0.197	5.260	1.381	1.799	1.218
Total Phosphorus (mg/L)	100	<	0.004	7.830	0.354	0.899	1.472

TM-1	N		Min	Max	Med	Avg	SD
Temperature (°C)	308		8.0	33.0	24.0	22.9	6.1
pH (su)	309		5.8	8.8	6.8	6.8	0.4
Dissolved Oxygen (mg/L)	90		1.7	12.8	5.4	5.6	2.3
Specific Conductance (µmhos)	82		191.1	32922.4	4271.5	8293.1	8918.8
Turbidity (NTU)	96		2.8	30.4	7.0	8.4	5.4
Total Suspended Solids (mg/L)	311	<	1.0	214.0	13.0	17.0	18.9
Nitrate+Nitrite Nitrogen (mg/L)	313	<	0.005	8.150	0.851	1.382	1.384
Total Nitrogen (mg/L)	309	<	0.170	10.460	3.360	3.713	1.862
Total Phosphorus (mg/L)	315		0.092	5.240	0.520	0.708	0.601

TMCM-3	N		Min	Max	Med	Avg	SD
Temperature (°C)	68		10.0	33.0	25.4	22.8	6.4
pH (su)	68		5.0	10.1	7.0	6.8	1.0
Dissolved Oxygen (mg/L)	66		6.7	11.7	8.4	8.6	1.2
Specific Conductance (µmhos)	68		0.0	104.0	73.0	66.5	26.0
Turbidity (NTU)	69		1.0	96.0	4.1	9.4	15.0
Total Suspended Solids (mg/L)	66	<	5.0	19.0	2.5	4.0	3.4
Nitrate+Nitrite Nitrogen (mg/L)	66	<	0.005	0.692	0.144	0.170	0.130
Total Nitrogen (mg/L)	66	<	0.114	1.859	0.576	0.627	0.311
Total Phosphorus (mg/L)	66		0.005	0.130	0.021	0.027	0.020

TN-4A	N		Min	Max	Med	Avg	SD
Temperature (°C)	72		5.0	29.9	16.8	17.4	6.6
pH (su)	72		6.7	9.0	7.9	8.0	0.4
Dissolved Oxygen (mg/L)	72		3.8	13.1	9.0	9.1	1.8
Specific Conductance (µmhos)	69		215.2	326.0	267.0	267.7	30.6
Turbidity (NTU)	79		0.5	271.0	10.7	19.3	31.6
Total Suspended Solids (mg/L)	79		1.0	206.0	13.0	22.2	28.8
Nitrate+Nitrite Nitrogen (mg/L)	47	<	0.004	2.400	0.661	0.803	0.499
Total Nitrogen (mg/L)	45	<	0.446	4.510	1.089	1.394	0.852
Total Phosphorus (mg/L)	45	<	0.002	1.100	0.141	0.186	0.174

UPHM-3	N		Min	Max	Med	Avg	SD
Temperature (°C)	27		11.1	31.7	25.6	24.2	5.4
pH (su)	27		6.7	8.3	7.4	7.4	0.3
Dissolved Oxygen (mg/L)	27		6.7	10.7	8.3	8.4	1.0
Specific Conductance (µmhos)	27		66.1	247.7	174.0	161.1	59.2
Turbidity (NTU)	27		0.6	121.0	5.1	14.5	25.5
Total Suspended Solids (mg/L)	26	<	1.0	107.0	4.0	11.9	22.6
Nitrate+Nitrite Nitrogen (mg/L)	26		0.163	1.767	0.691	0.754	0.407
Total Nitrogen (mg/L)	26	<	0.366	1.987	1.006	1.029	0.439

Total Phosphorus (mg/L)	26	<	0.004	0.116	0.018	0.028	0.026

VA-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	118		8.7	32.0	21.5	20.8	5.2
pH (su)	119		6.2	8.2	7.6	7.5	0.4
Dissolved Oxygen (mg/L)	24		6.4	10.5	8.2	8.2	0.9
Specific Conductance (µmhos)	24		201.0	505.0	457.0	440.2	65.2
Turbidity (NTU)	24		1.0	116.0	2.6	9.2	23.9
Total Suspended Solids (mg/L)	117	<	0.3	471.0	2.0	10.0	46.6
Nitrate+Nitrite Nitrogen (mg/L)	108	<	0.003	12.180	3.938	4.161	2.212
Total Nitrogen (mg/L)	25	<	2.269	9.450	6.642	6.104	2.158
Total Phosphorus (mg/L)	109	<	0.040	3.250	0.470	0.605	0.494

VALJ-8	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	21		14.7	29.5	24.9	24.3	3.7
pH (su)	21		7.4	8.4	8.2	8.1	0.3
Dissolved Oxygen (mg/L)	21		6.9	13.0	8.8	8.8	1.5
Specific Conductance (µmhos)	21		453.0	1295.0	863.0	826.1	211.4
Turbidity (NTU)	21		1.2	149.0	4.1	13.3	32.0
Total Suspended Solids (mg/L)	21	<	0.3	185.0	3.0	13.4	39.7
Nitrate+Nitrite Nitrogen (mg/L)	12	<	0.003	8.000	5.918	4.864	2.654
Total Nitrogen (mg/L)	12	<	2.422	8.075	6.162	5.523	2.074
Total Phosphorus (mg/L)	12	<	0.100	0.910	0.508	0.494	0.263

VC-5	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	42		11.8	28.6	23.4	22.6	3.7
pH (su)	42		6.2	8.3	7.7	7.7	0.4
Dissolved Oxygen (mg/L)	18		5.0	11.3	8.1	8.2	1.6
Specific Conductance (µmhos)	18		131.0	478.0	412.0	373.9	101.1
Turbidity (NTU)	18		1.7	59.1	2.7	6.8	13.4
Total Suspended Solids (mg/L)	38	<	0.3	58.0	3.0	5.0	9.4
Nitrate+Nitrite Nitrogen (mg/L)	31		0.008	1.388	0.613	0.640	0.309
Total Nitrogen (mg/L)	16	<	0.498	1.708	0.928	0.966	0.331
Total Phosphorus (mg/L)	31	<	0.004	0.158	0.029	0.035	0.032

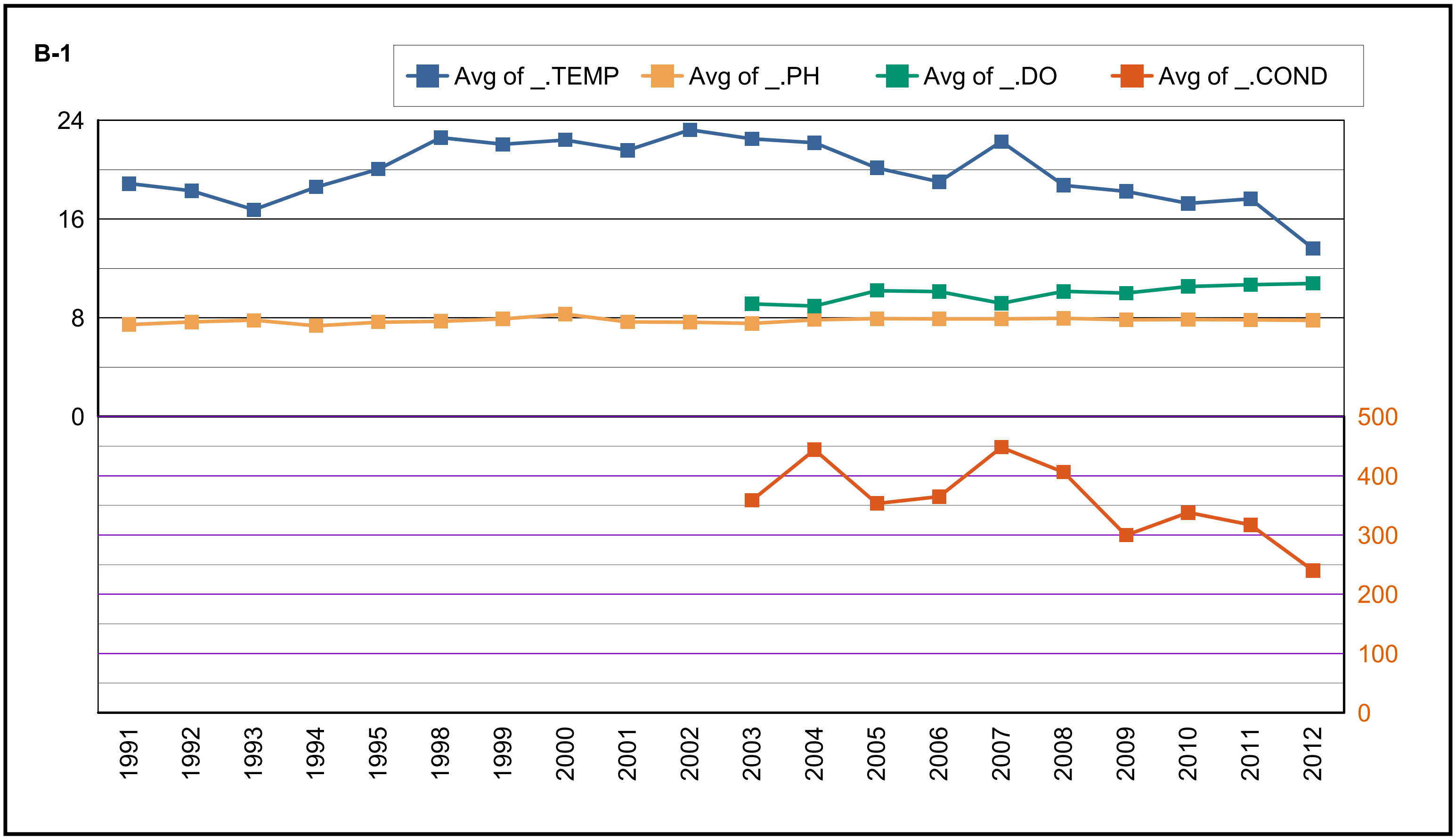
VI-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	45		13.6	28.2	24.4	23.3	3.6
pH (su)	45		6.6	8.2	7.5	7.4	0.3
Dissolved Oxygen (mg/L)	26		5.0	10.5	7.2	7.2	1.4
Specific Conductance (µmhos)	26		120.0	486.0	442.0	411.3	82.4
Turbidity (NTU)	26		2.0	33.8	4.1	7.5	8.1
Total Suspended Solids (mg/L)	45	<	1.0	54.0	5.0	8.9	11.4
Nitrate+Nitrite Nitrogen (mg/L)	36		0.020	13.700	4.755	5.011	2.646
Total Nitrogen (mg/L)	23	<	0.652	14.218	5.470	6.186	2.853
Total Phosphorus (mg/L)	36		0.203	1.820	0.656	0.716	0.370

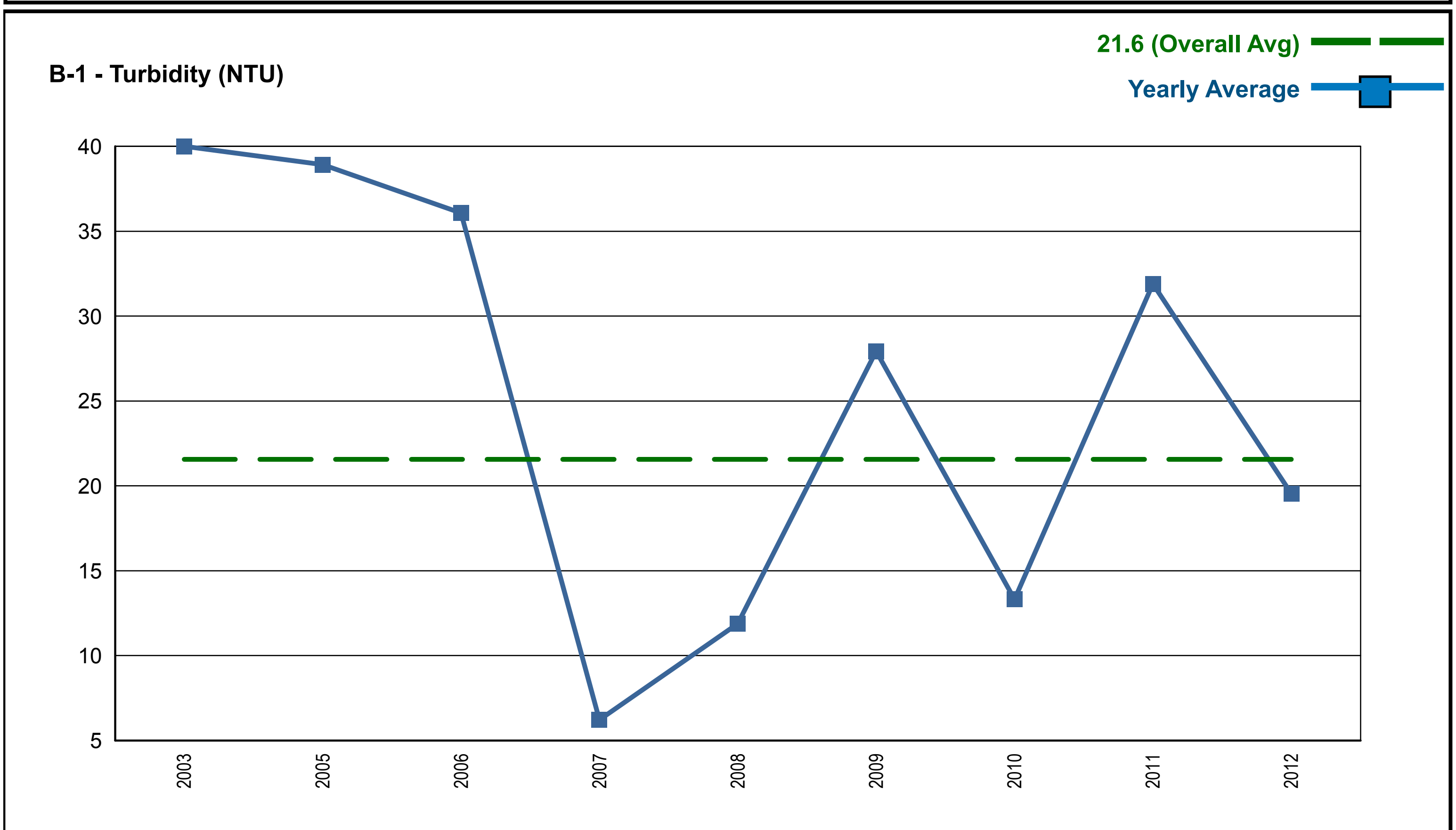
VLGJ-5	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	26		15.5	29.5	25.1	24.1	4.0
pH (su)	26		7.3	9.2	8.2	8.3	0.4
Dissolved Oxygen (mg/L)	26		7.4	13.2	9.1	9.4	1.3
Specific Conductance (µmhos)	26		362.0	724.0	615.0	577.0	108.8
Turbidity (NTU)	26		1.6	30.2	6.7	7.5	6.0
Total Suspended Solids (mg/L)	26	<	1.0	49.0	7.0	10.2	9.9
Nitrate+Nitrite Nitrogen (mg/L)	17		0.763	4.162	2.690	2.296	1.137

	N		Min	Max	Med	Avg	SD
Total Nitrogen (mg/L)	17		2.003	4.874	3.386	3.350	0.958
Total Phosphorus (mg/L)	17		0.151	0.517	0.272	0.299	0.097
WB-1	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	219		9.0	32.6	24.0	23.3	5.8
pH (su)	219		5.3	8.8	7.1	7.2	0.7
Dissolved Oxygen (mg/L)	74		3.8	12.4	6.9	7.5	2.0
Specific Conductance (µmhos)	75		98.0	29405.5	9540.9	10745.5	7599.9
Turbidity (NTU)	60		2.4	48.0	10.2	12.7	8.9
Total Suspended Solids (mg/L)	189	<	1.0	70.0	12.0	14.7	11.4
Nitrate+Nitrite Nitrogen (mg/L)	191	<	0.006	1.940	0.467	0.486	0.268
Total Nitrogen (mg/L)	183	<	0.349	5.184	1.226	1.358	0.660
Total Phosphorus (mg/L)	191	<	0.005	0.310	0.050	0.057	0.046
WDFA-2A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	78		6.8	32.3	21.5	20.6	7.4
pH (su)	78		6.6	8.4	7.4	7.4	0.4
Dissolved Oxygen (mg/L)	78		6.5	12.6	9.2	9.2	1.2
Specific Conductance (µmhos)	78		65.2	222.5	122.7	124.8	32.3
Turbidity (NTU)	78		3.6	42.1	7.2	10.7	7.8
Total Suspended Solids (mg/L)	78	<	1.0	62.0	7.5	9.6	9.2
Nitrate+Nitrite Nitrogen (mg/L)	78		0.003	0.361	0.146	0.147	0.084
Total Nitrogen (mg/L)	78	<	0.080	0.982	0.582	0.546	0.201
Total Phosphorus (mg/L)	78	<	0.004	0.114	0.036	0.039	0.018
WEIC-12	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	215		5.6	33.7	21.7	21.0	7.5
pH (su)	215		5.8	9.0	7.5	7.5	0.5
Dissolved Oxygen (mg/L)	95		4.2	11.9	8.4	8.5	1.6
Specific Conductance (µmhos)	95		0.1	246.8	170.2	144.9	74.2
Turbidity (NTU)	93		6.7	237.0	13.0	19.7	25.8
Total Suspended Solids (mg/L)	210	<	1.0	213.0	11.0	16.8	22.1
Nitrate+Nitrite Nitrogen (mg/L)	210	<	0.007	5.309	0.382	0.421	0.440
Total Nitrogen (mg/L)	159	<	0.065	1.612	0.740	0.771	0.272
Total Phosphorus (mg/L)	209	<	0.004	1.650	0.102	0.135	0.154
WO-1A	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	258		8.0	30.0	21.0	20.4	4.0
pH (su)	257		4.5	8.4	6.3	6.3	0.5
Dissolved Oxygen (mg/L)	39		0.1	9.3	7.1	6.7	2.1
Specific Conductance (µmhos)	38		84.0	23383.0	107.6	1479.0	4883.6
Turbidity (NTU)	41		1.5	15.0	3.2	4.5	3.3
Total Suspended Solids (mg/L)	243	<	1.0	54.0	3.0	4.7	6.8
Nitrate+Nitrite Nitrogen (mg/L)	266		0.220	6.240	1.500	1.566	0.631
Total Nitrogen (mg/L)	261	<	0.319	6.570	1.950	2.021	0.697
Total Phosphorus (mg/L)	265	<	0.018	2.000	0.200	0.242	0.196
YERC-3	**N**		**Min**	**Max**	**Med**	**Avg**	**SD**
Temperature (°C)	36		10.4	27.6	23.1	21.5	5.1
pH (su)	37		5.9	7.8	7.1	7.1	0.4
Dissolved Oxygen (mg/L)	38		6.8	10.6	8.2	8.2	1.0
Specific Conductance (µmhos)	37		0.0	167.9	97.5	81.8	51.8
Turbidity (NTU)	35		2.1	60.8	5.8	9.4	10.8
Total Suspended Solids (mg/L)	35	<	1.0	53.0	4.0	8.8	11.9

Nitrate+Nitrite Nitrogen (mg/L)	35		0.022	0.244	0.113	0.120	0.054
Total Nitrogen (mg/L)	35	<	0.118	1.001	0.362	0.377	0.211
Total Phosphorus (mg/L)	35	<	0.005	0.092	0.020	0.028	0.022

ADEM Ambient Trend Stations - Sampled 1977 - 2012





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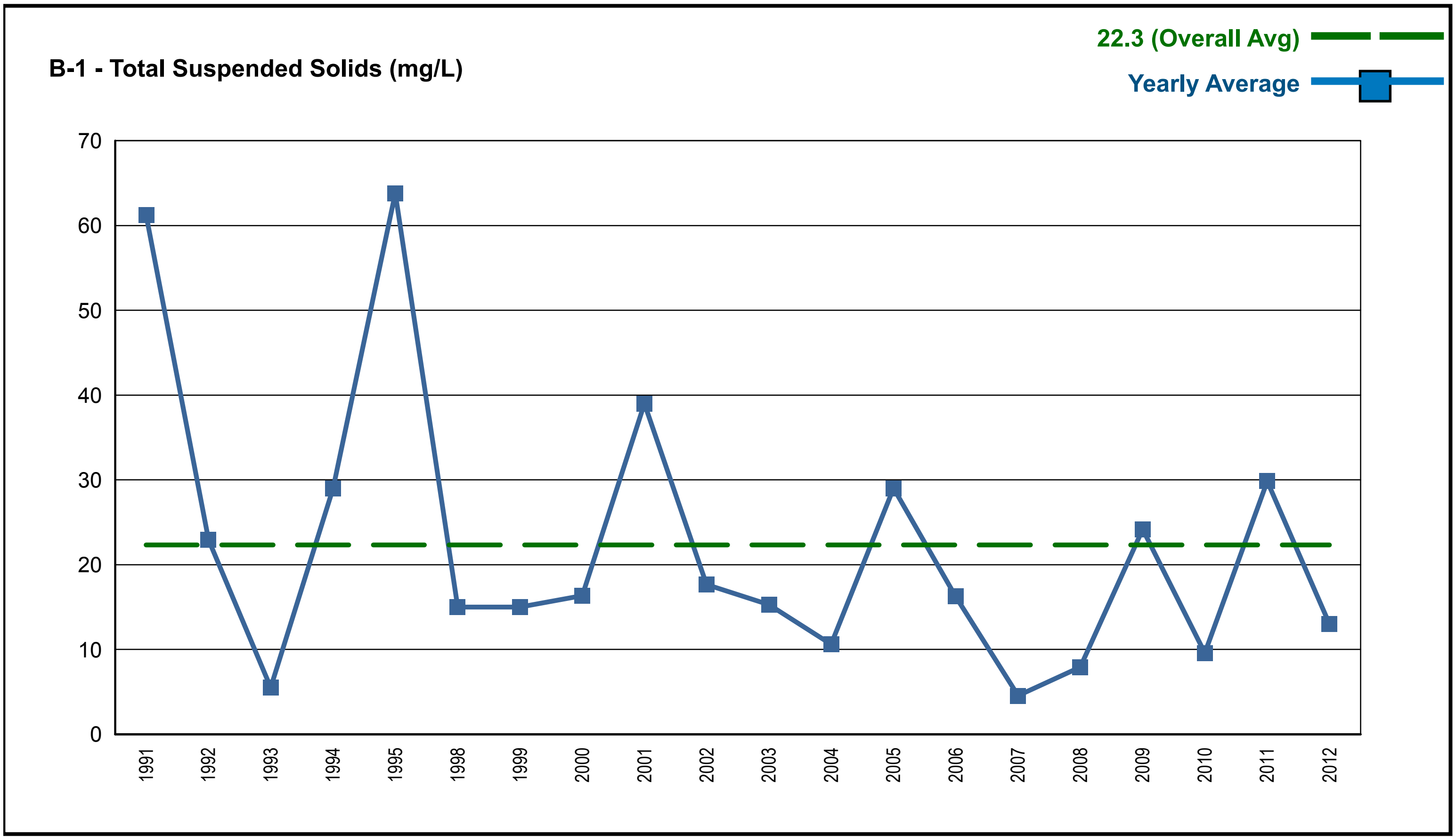

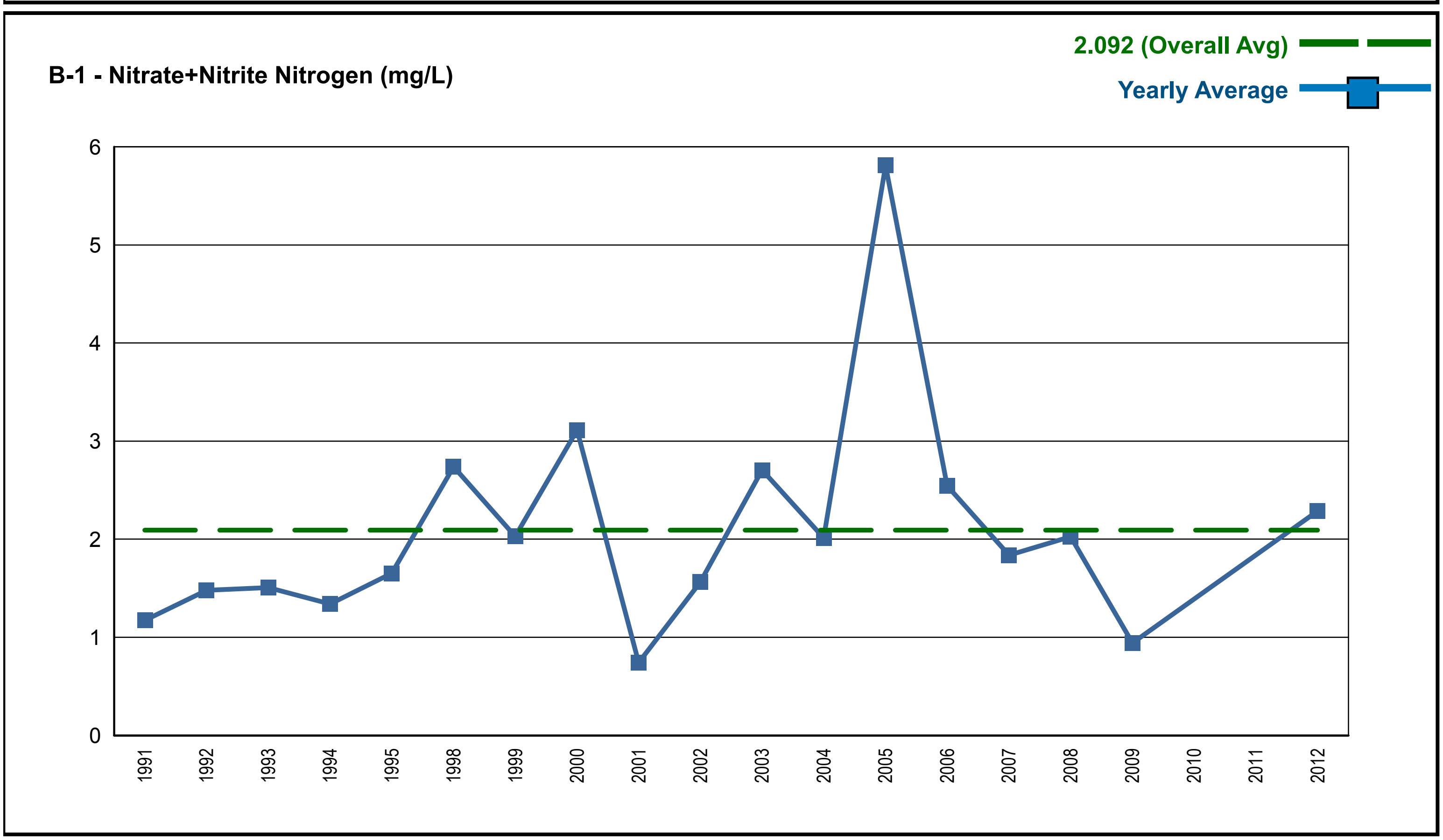

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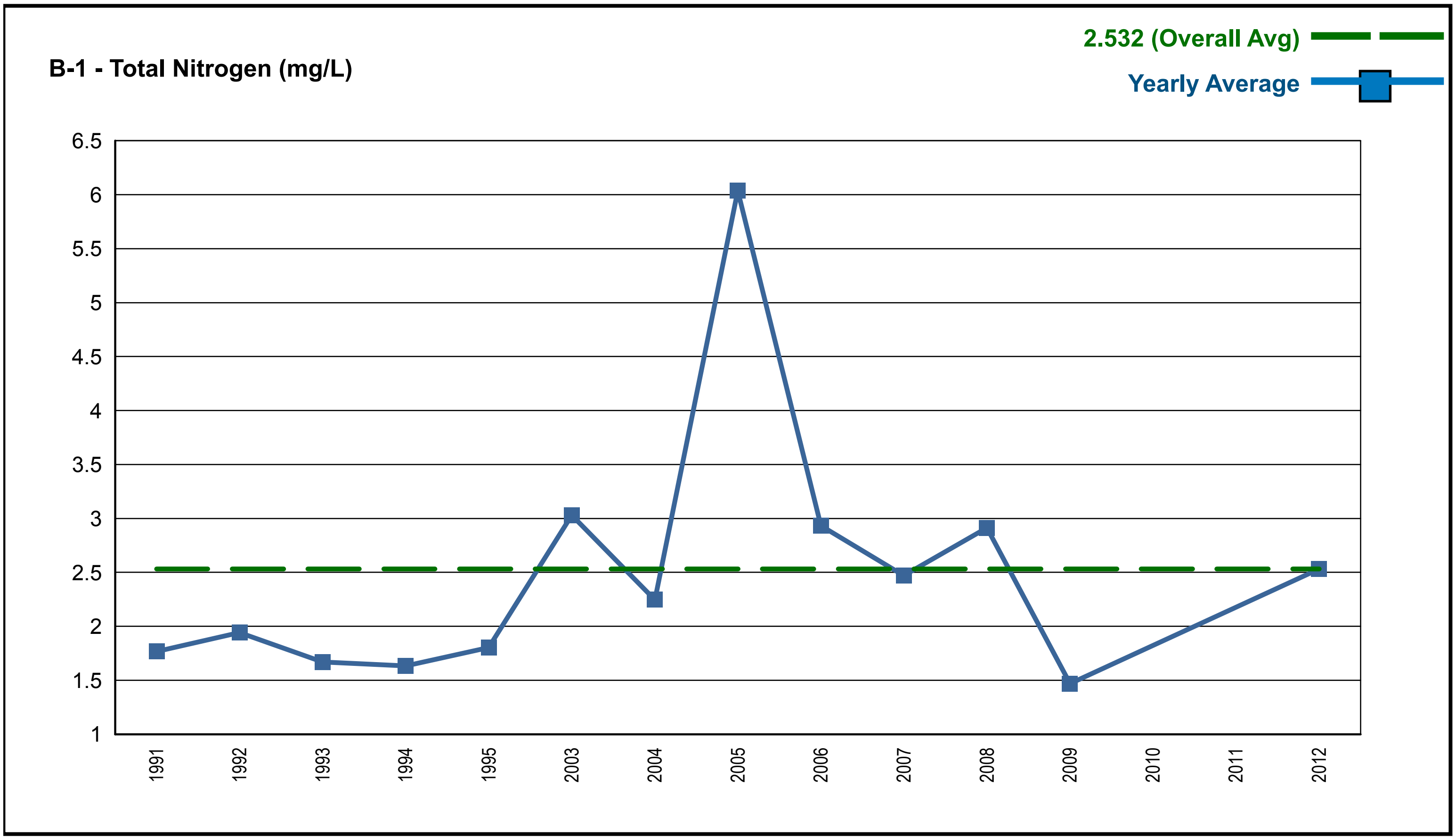

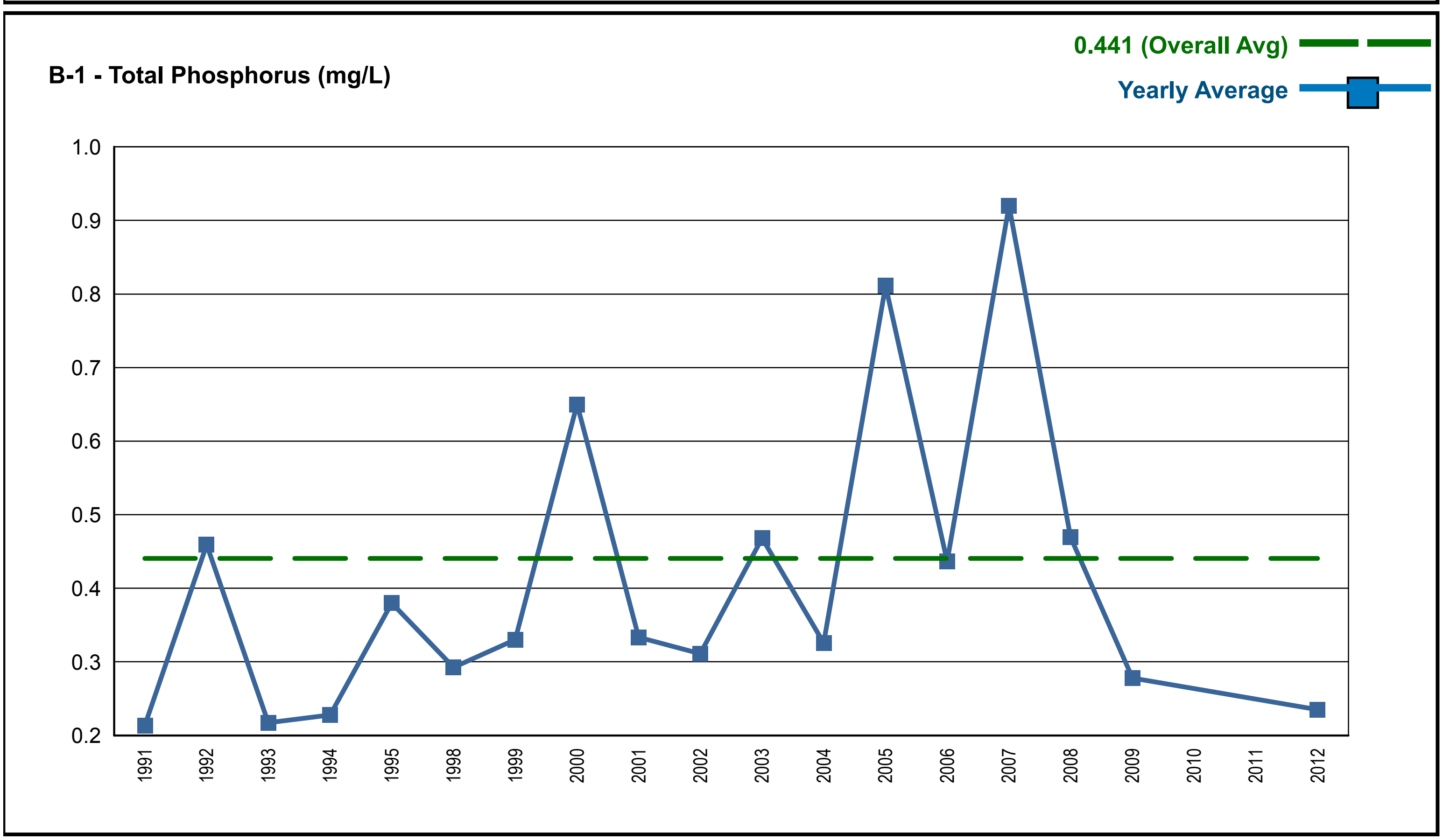

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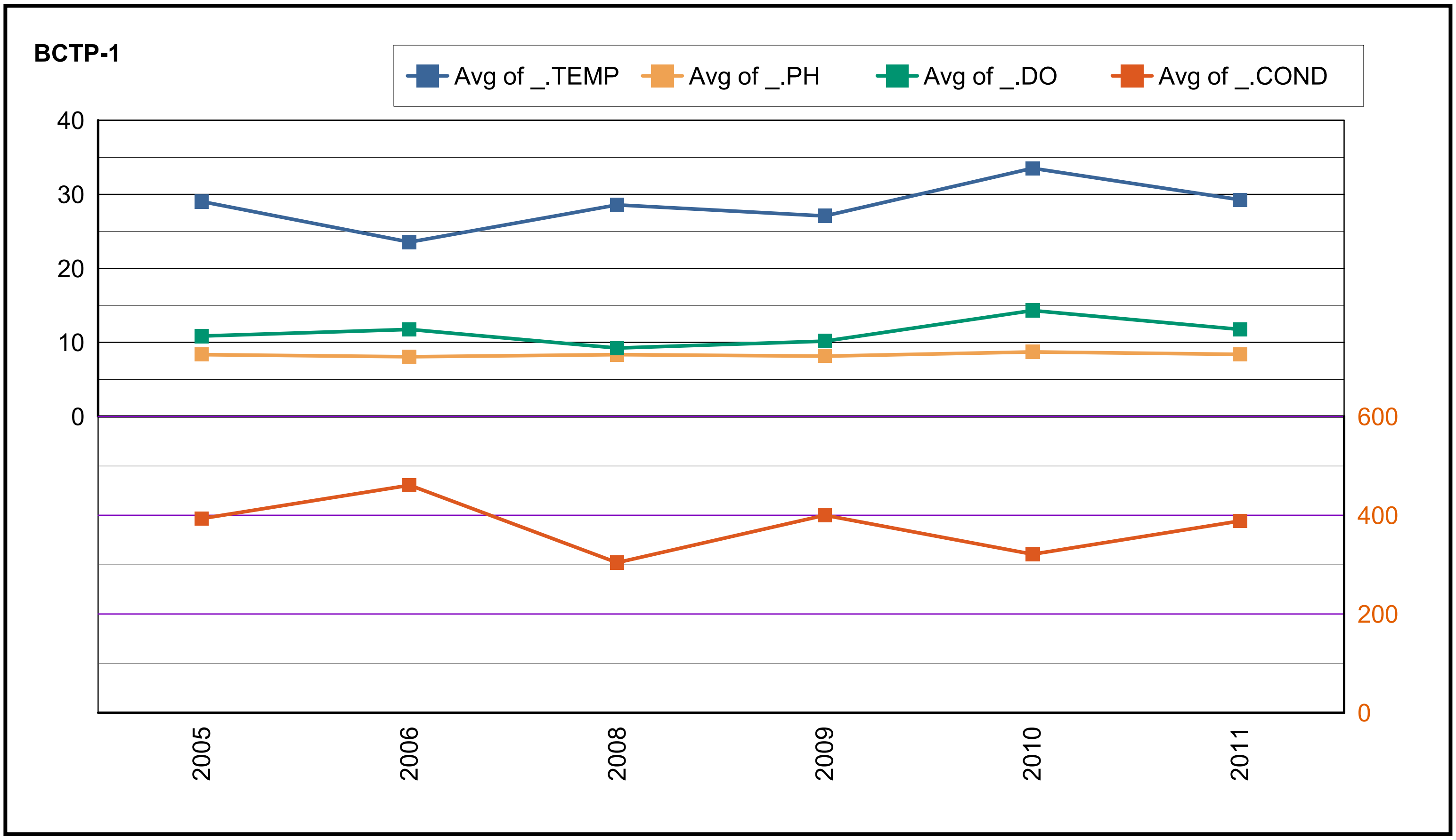

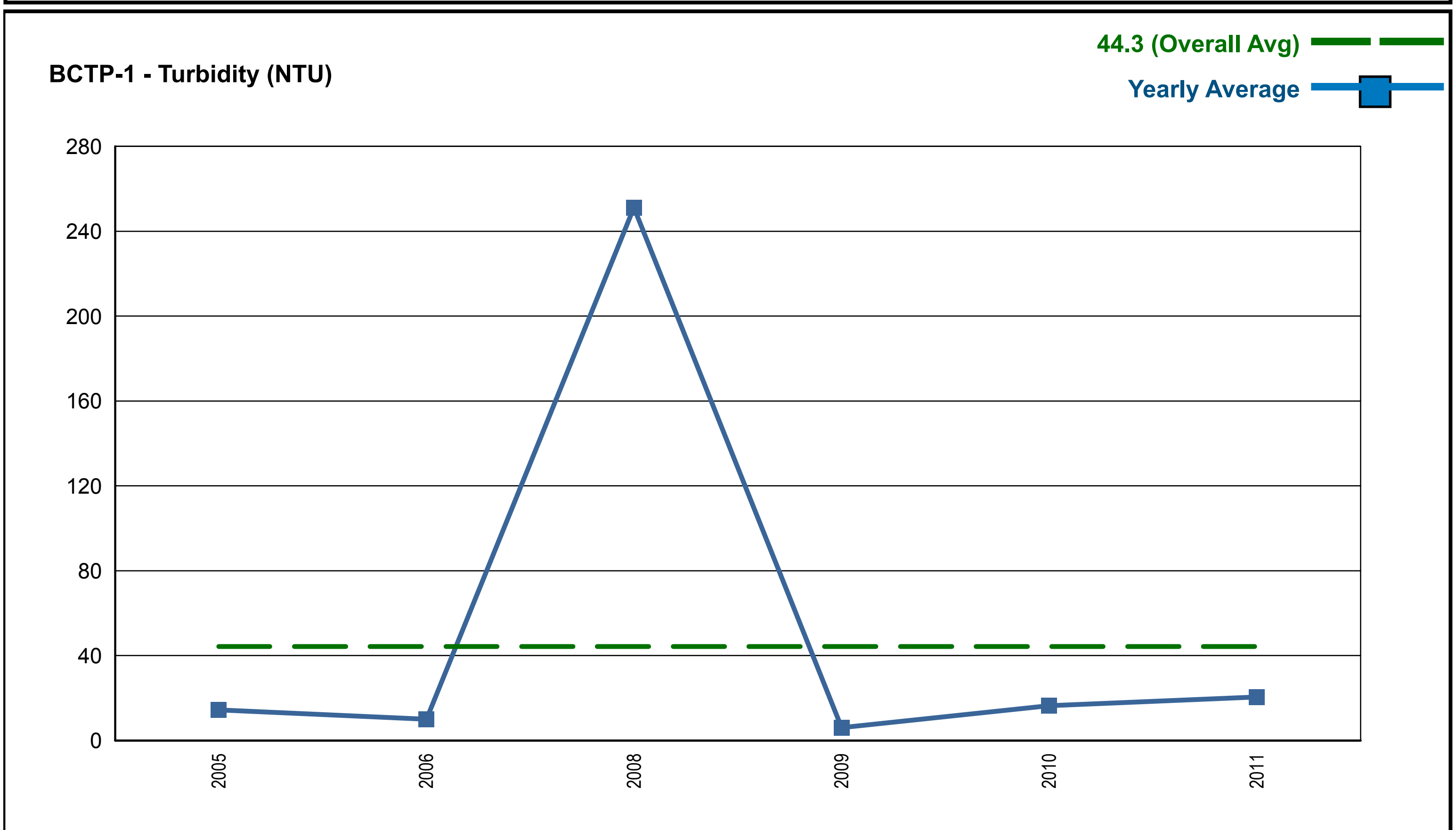

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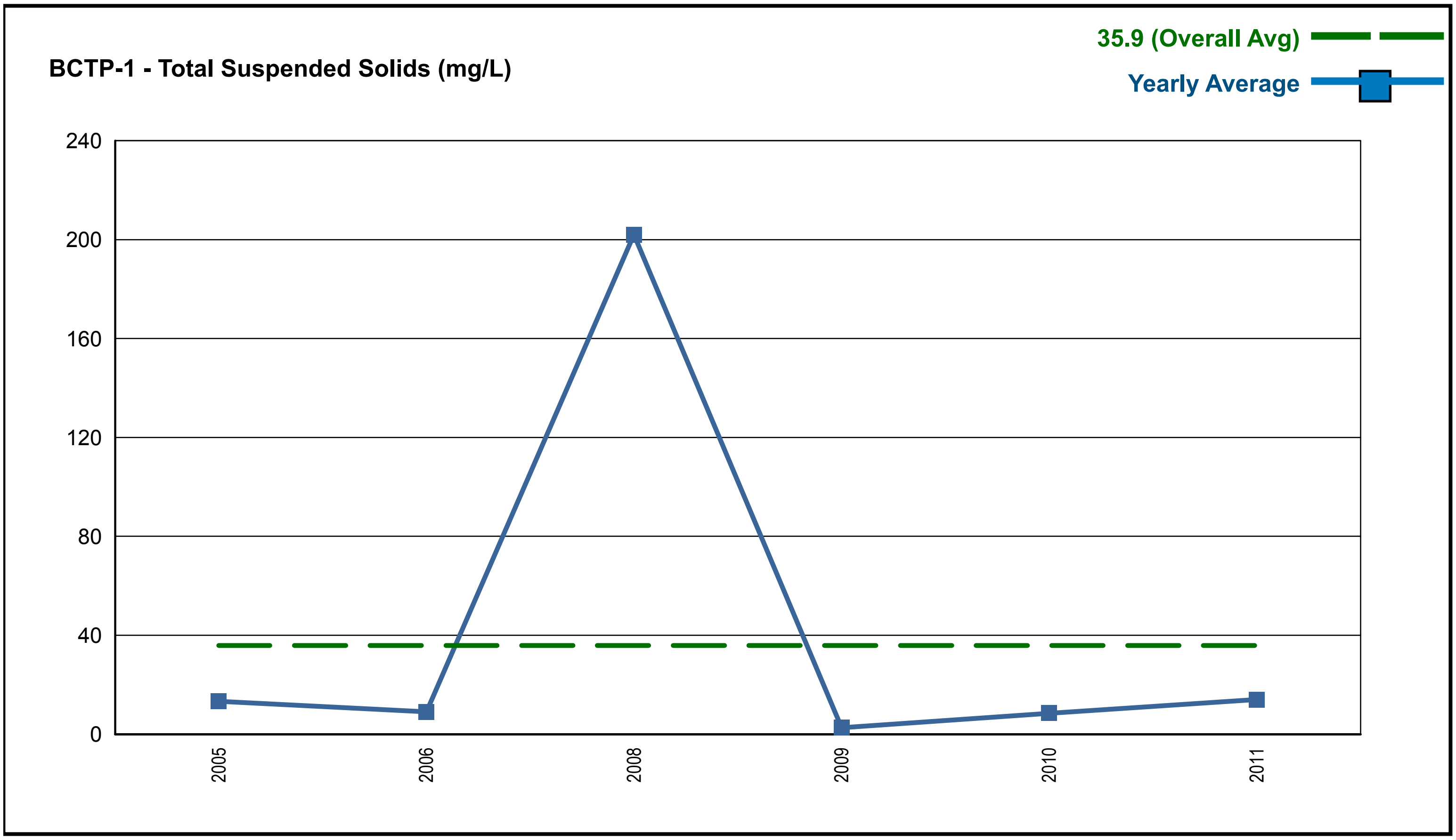

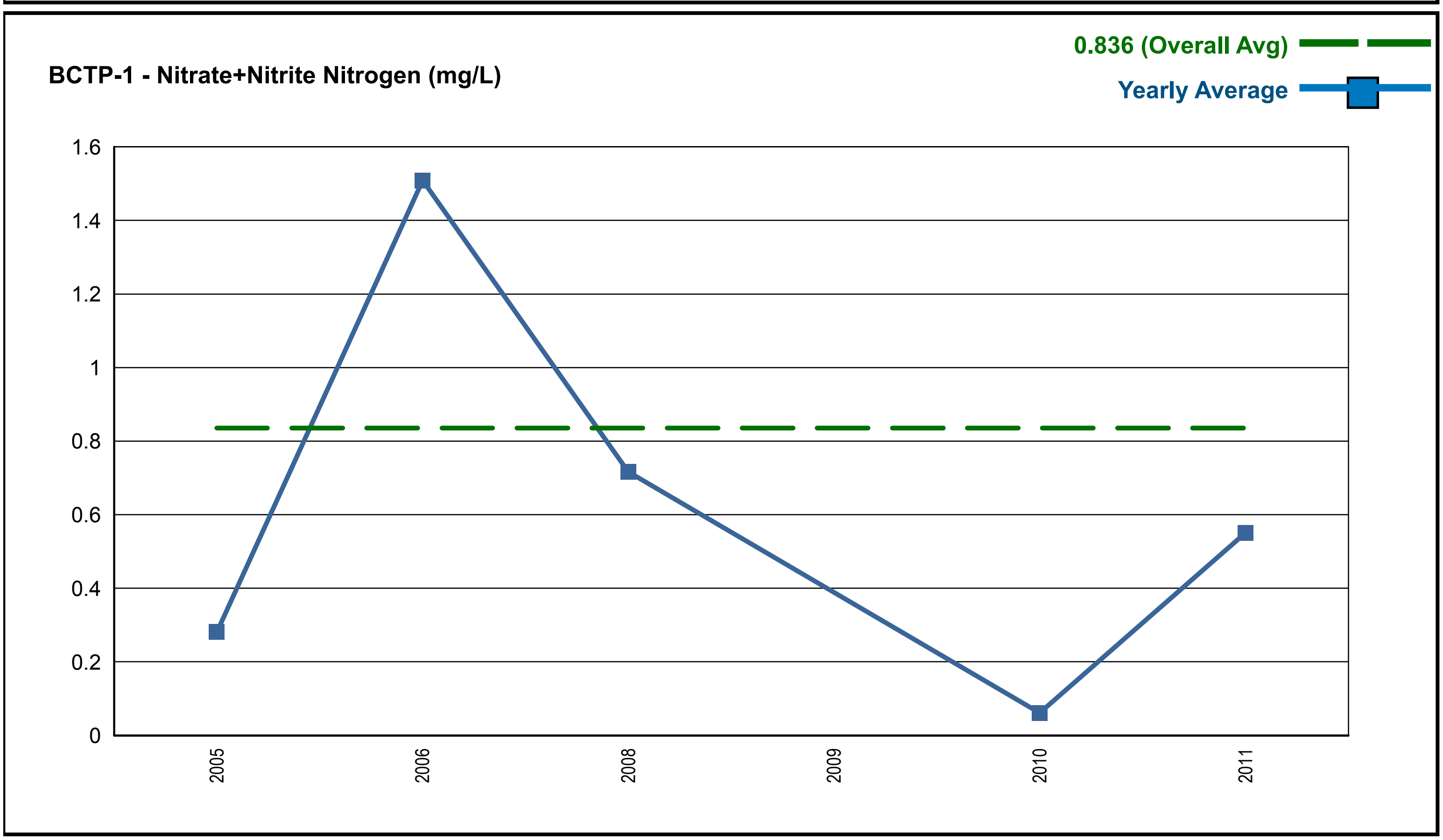

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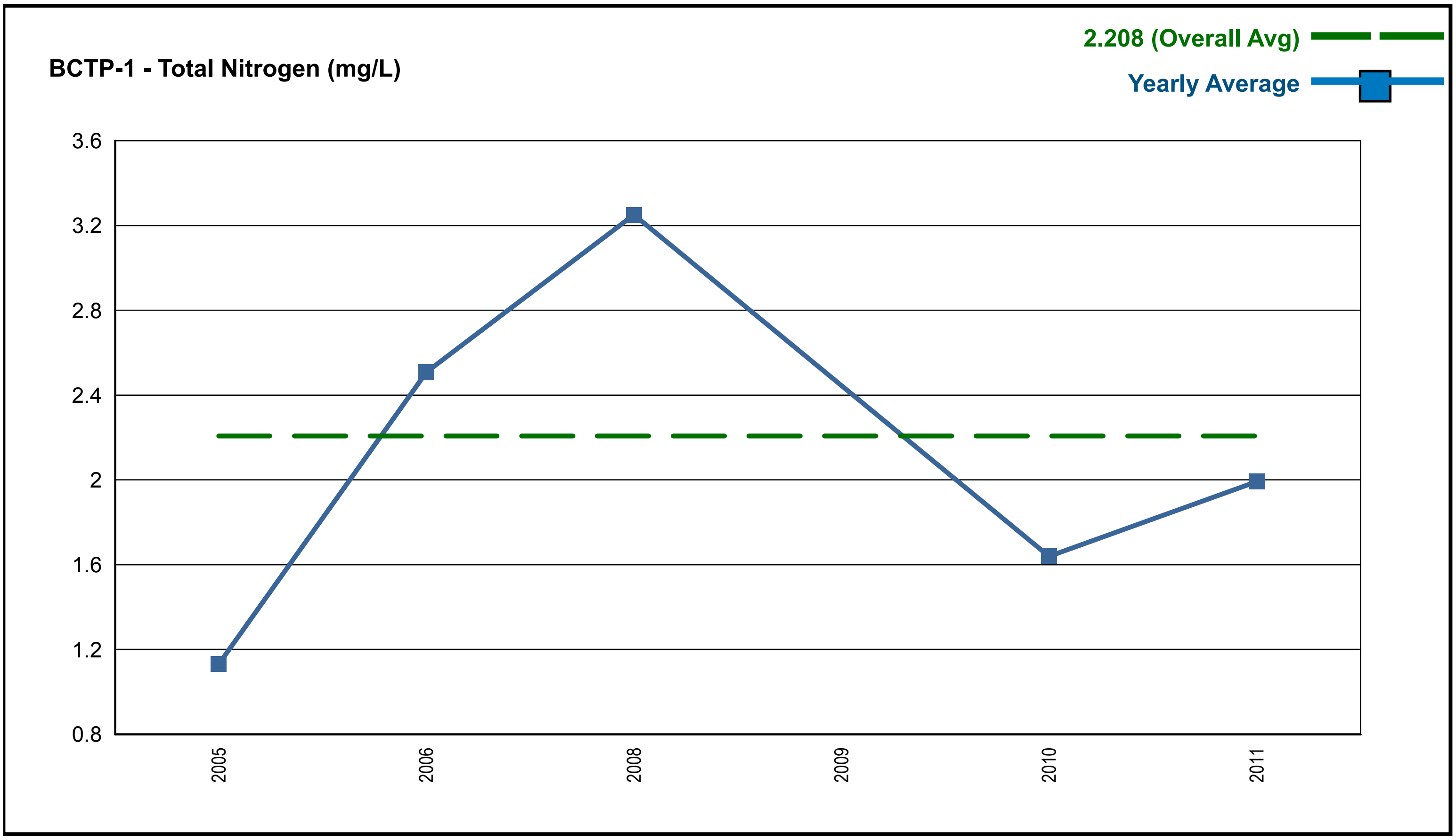

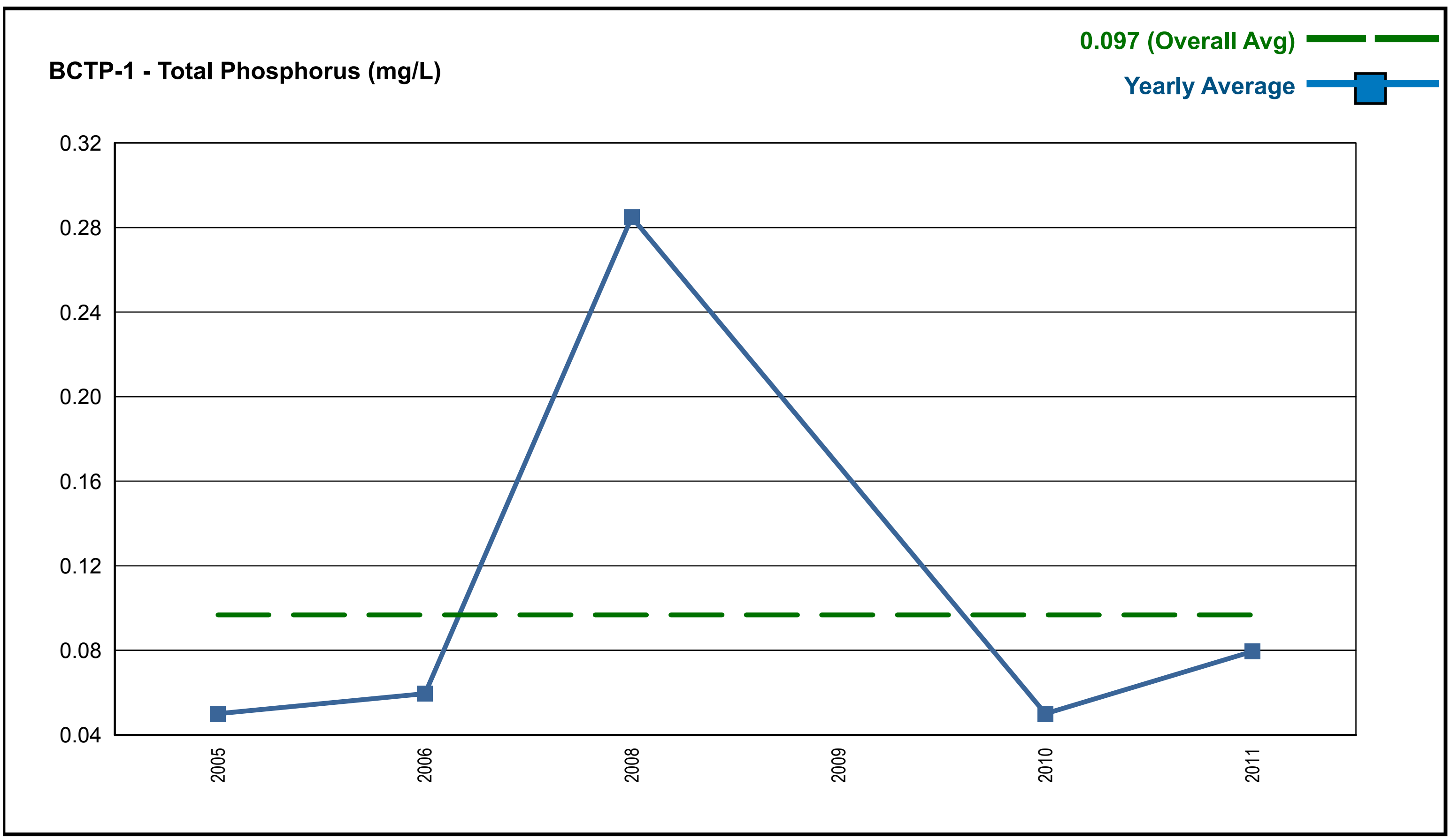

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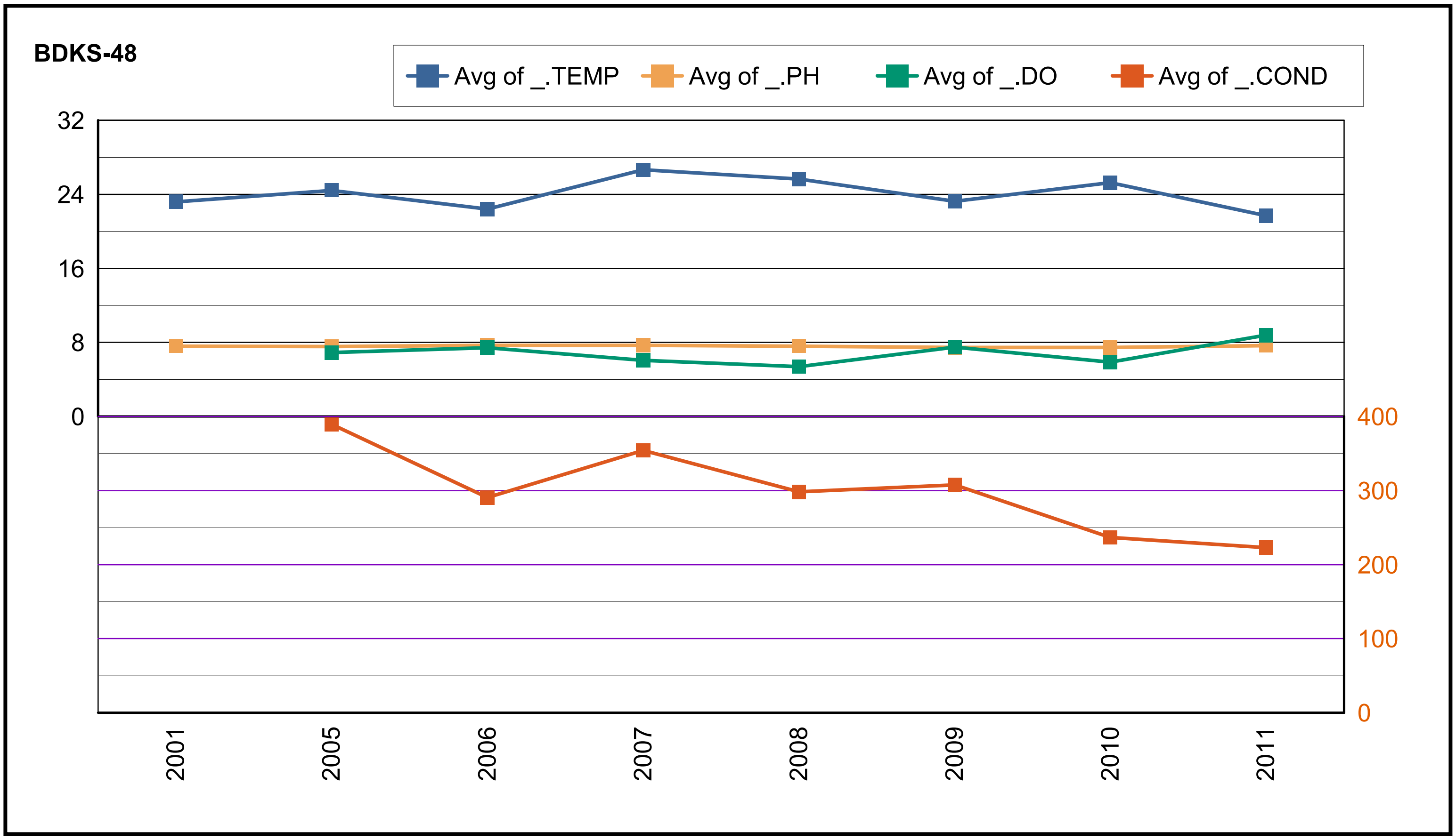

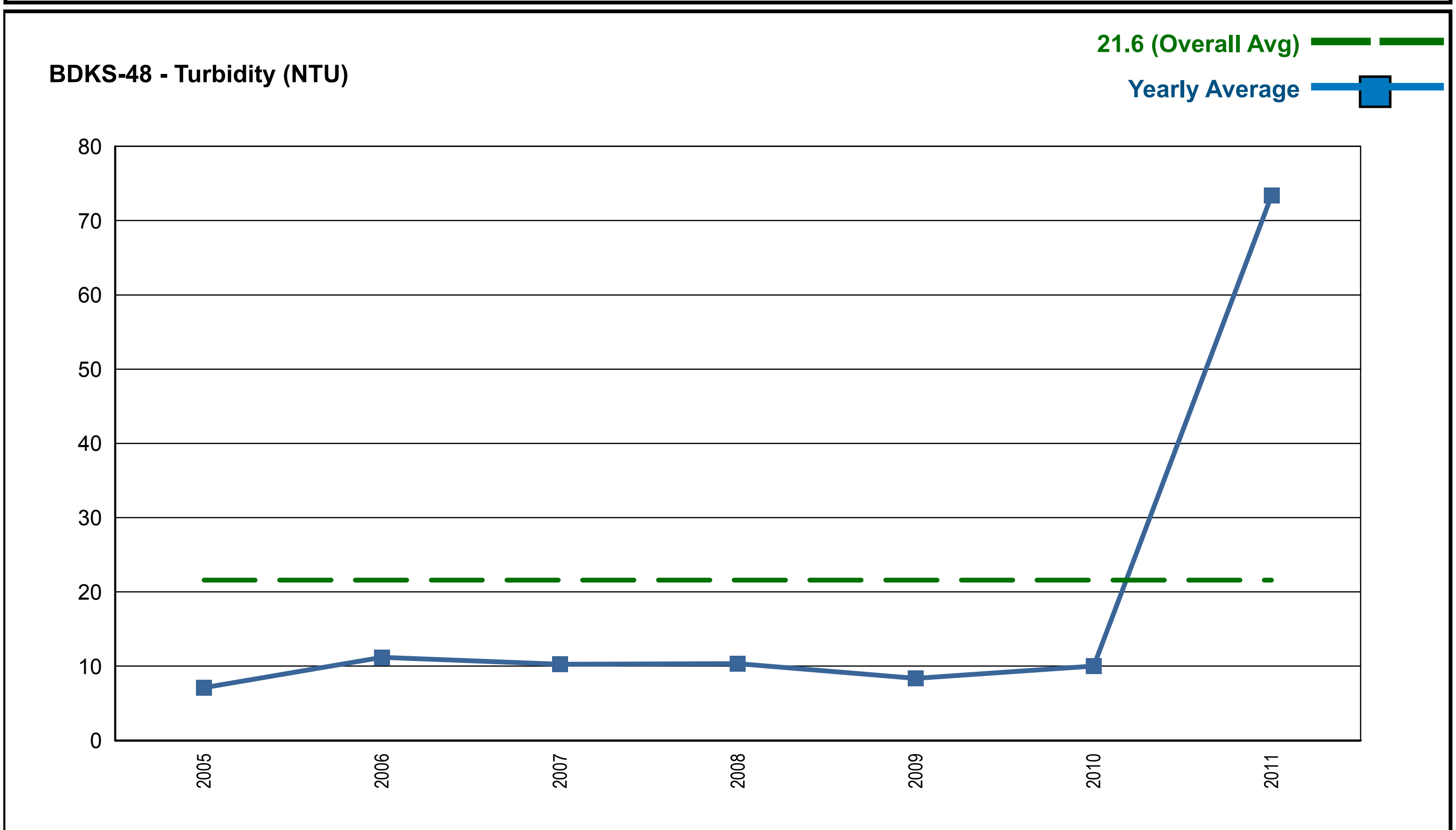

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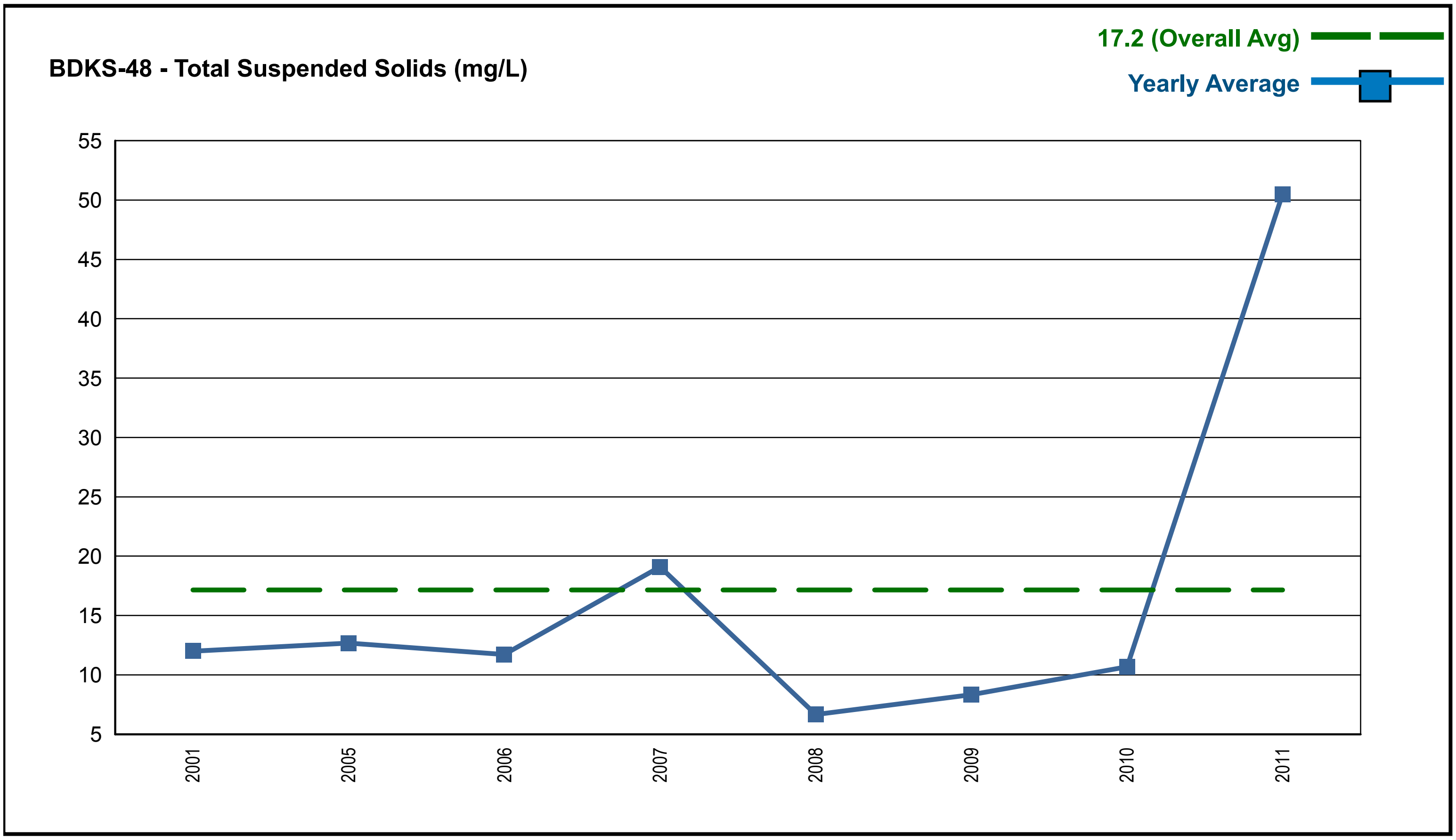

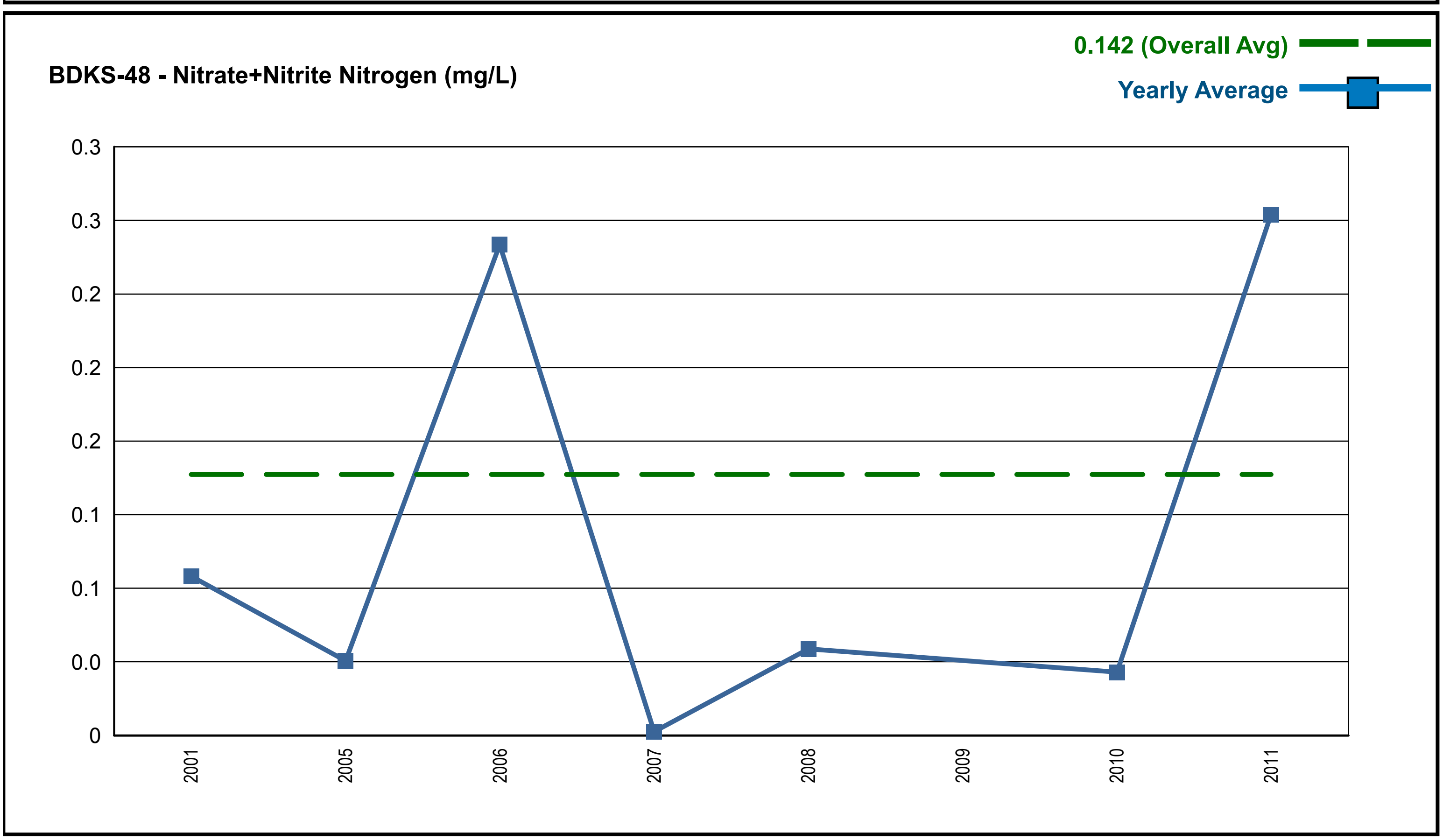

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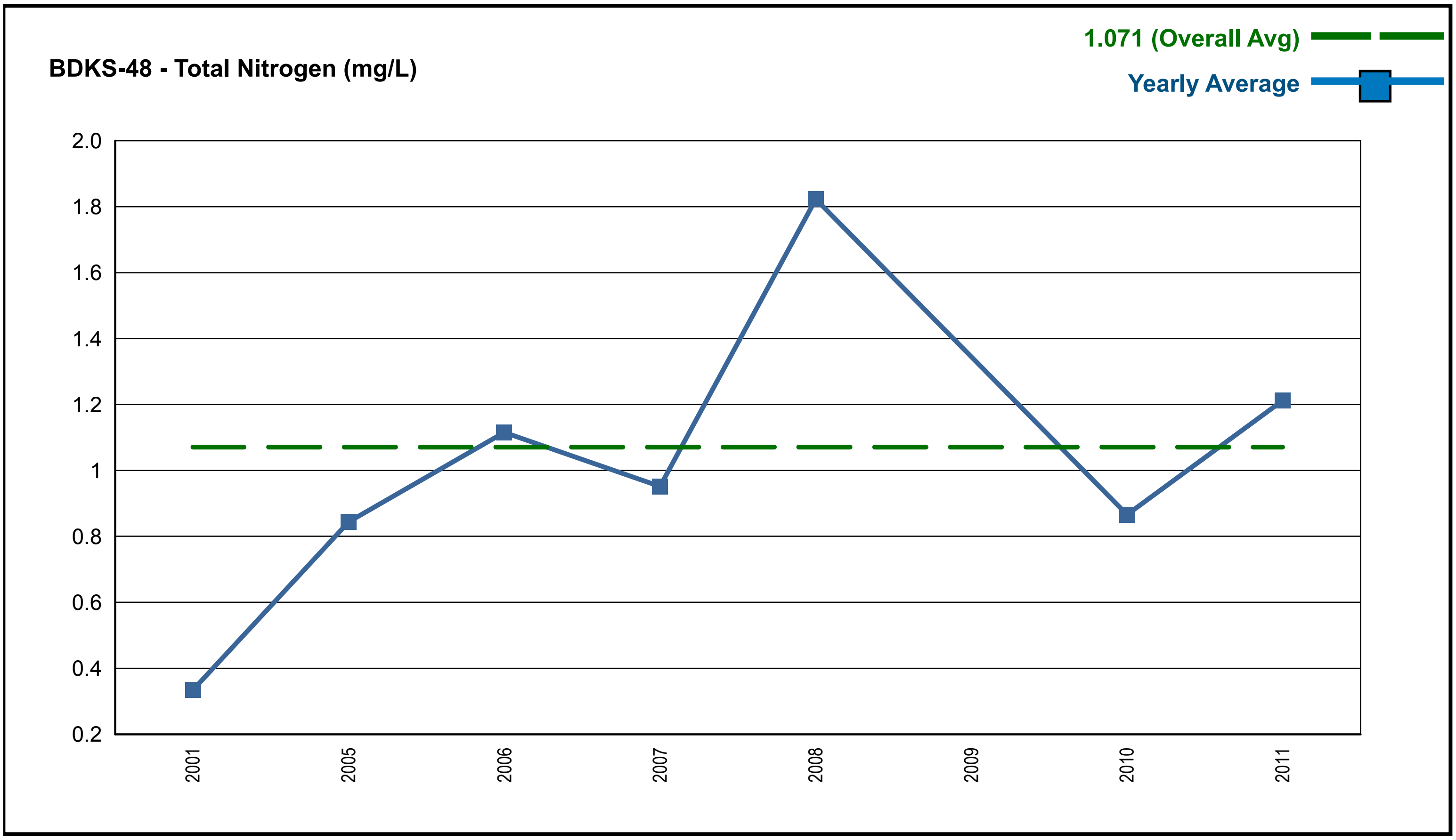

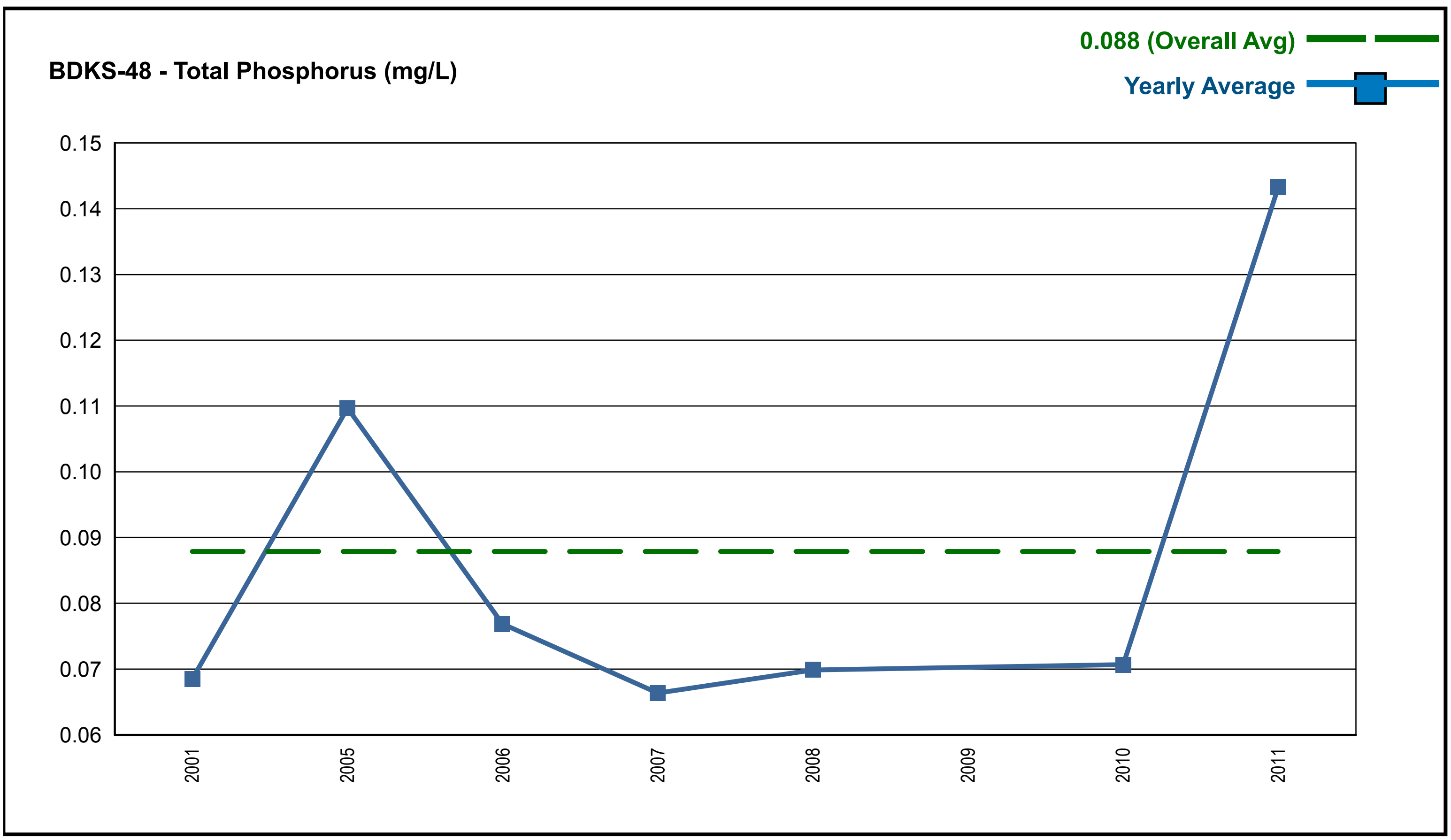

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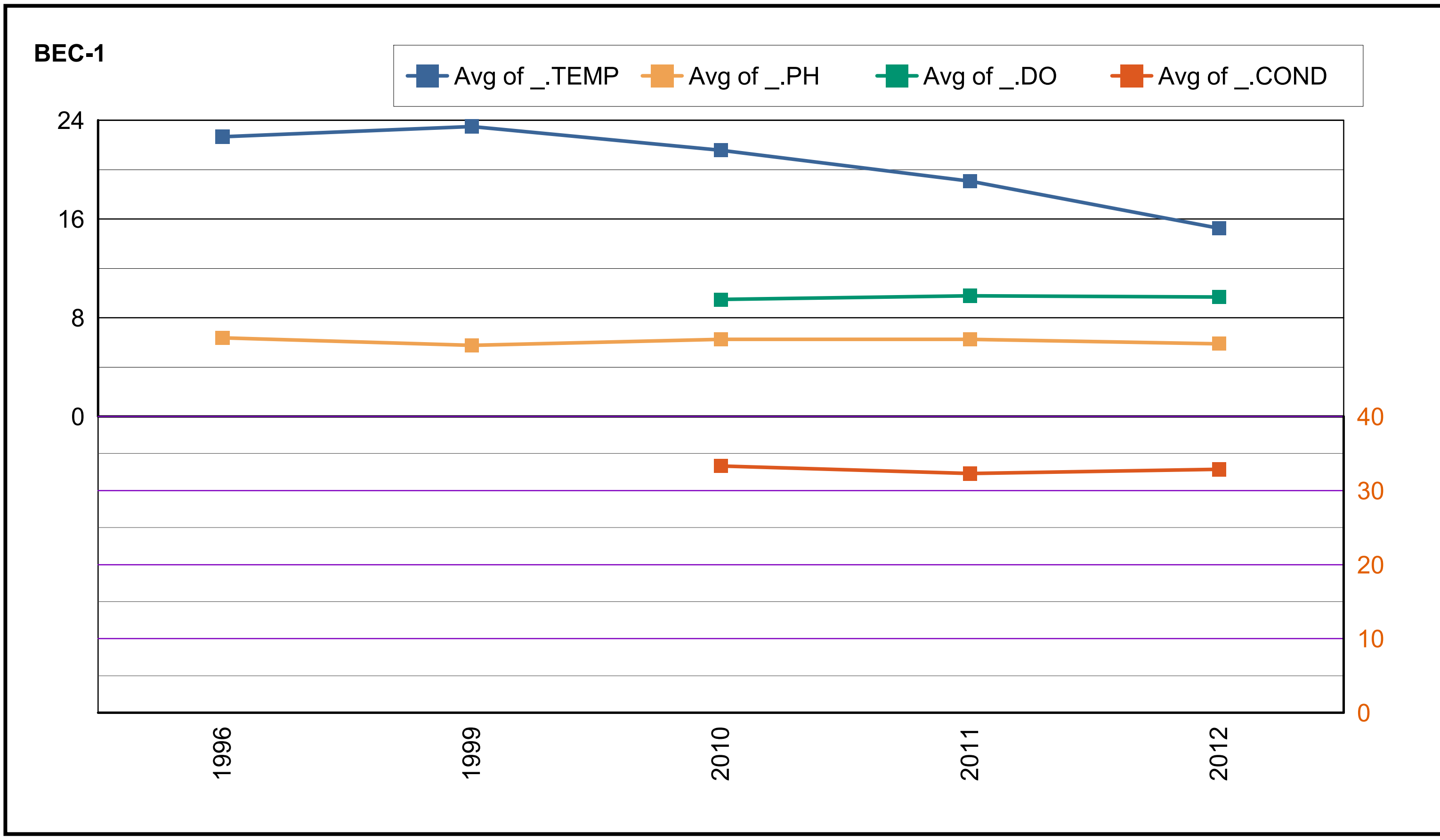

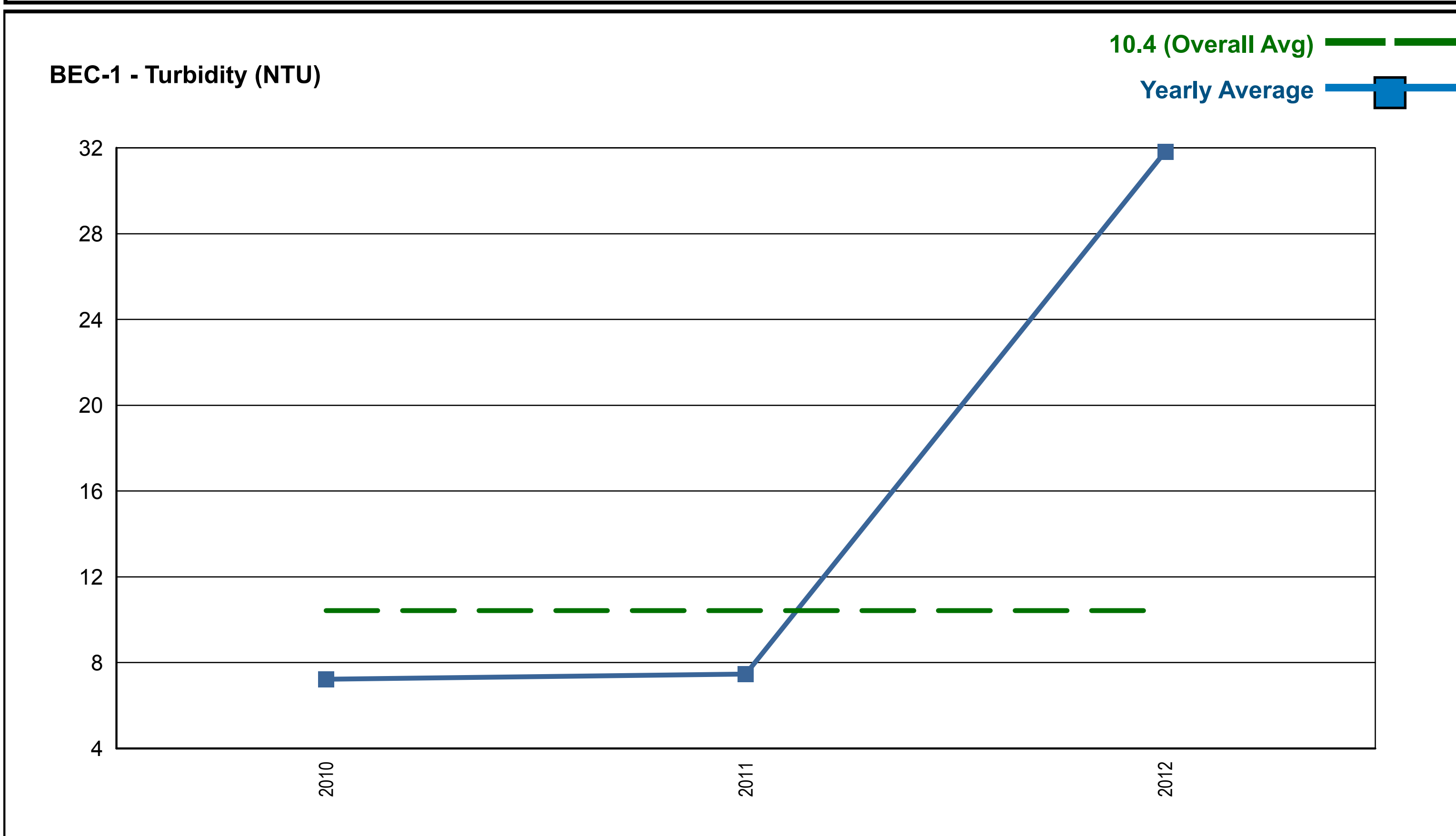

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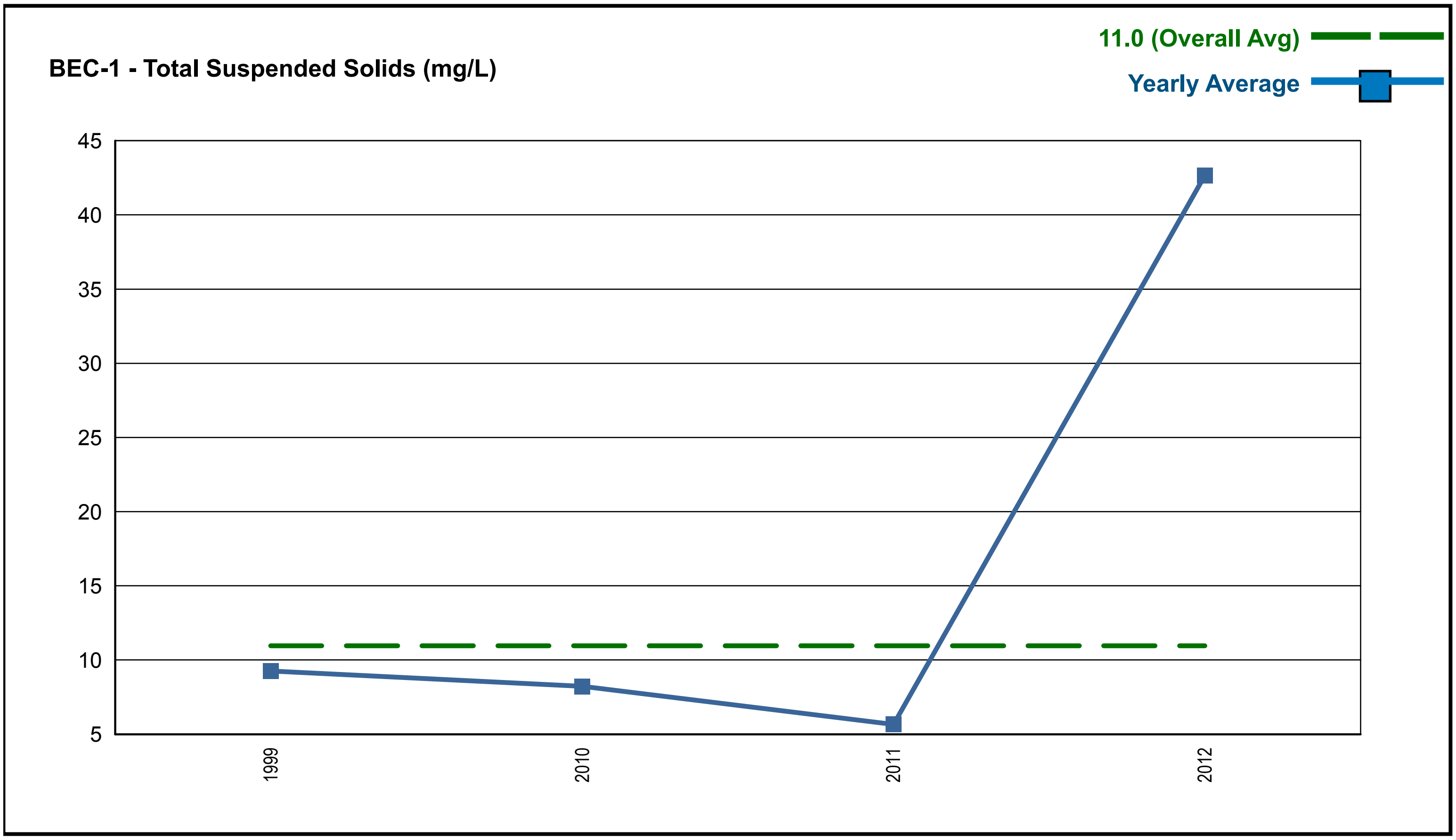

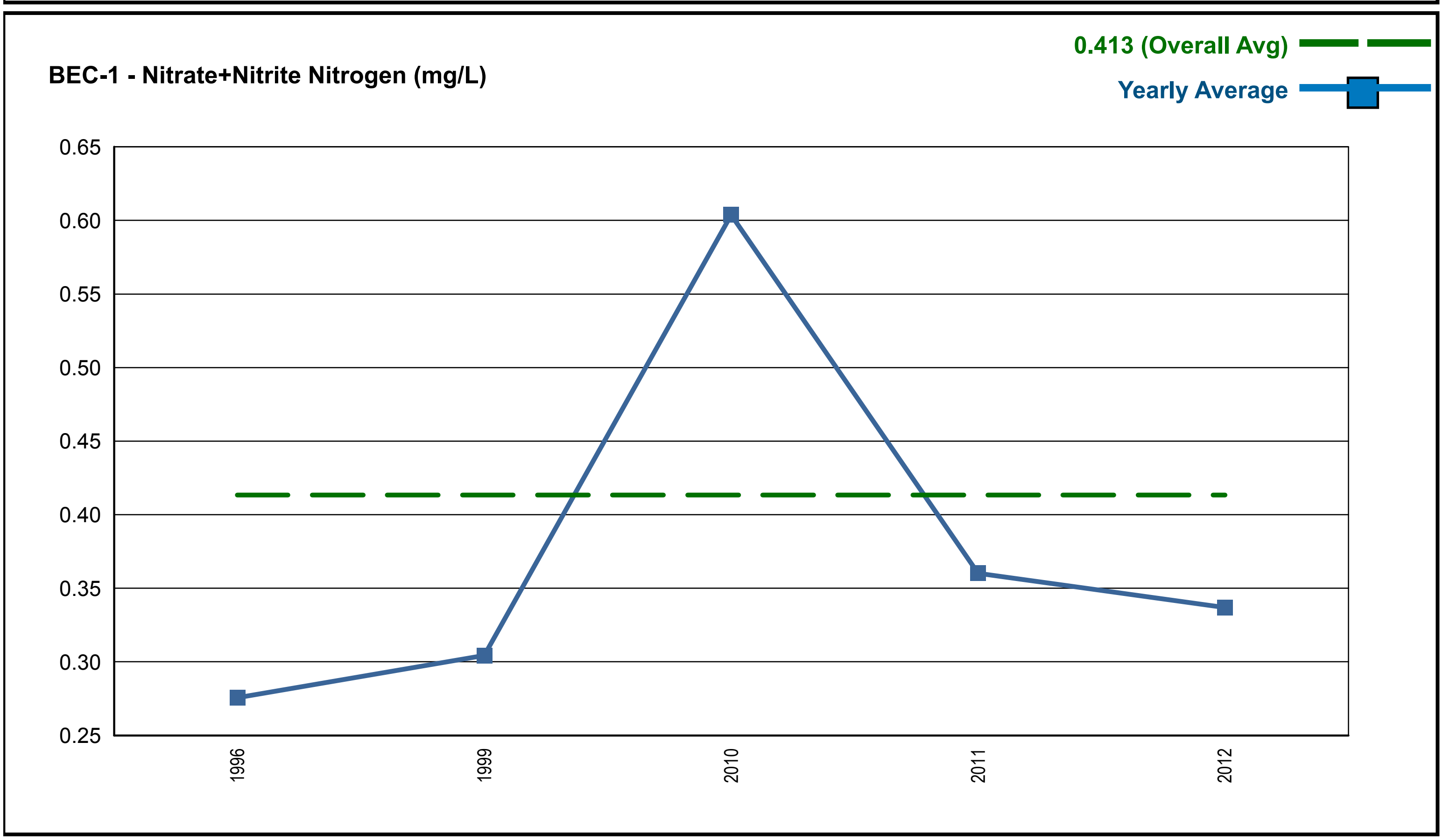

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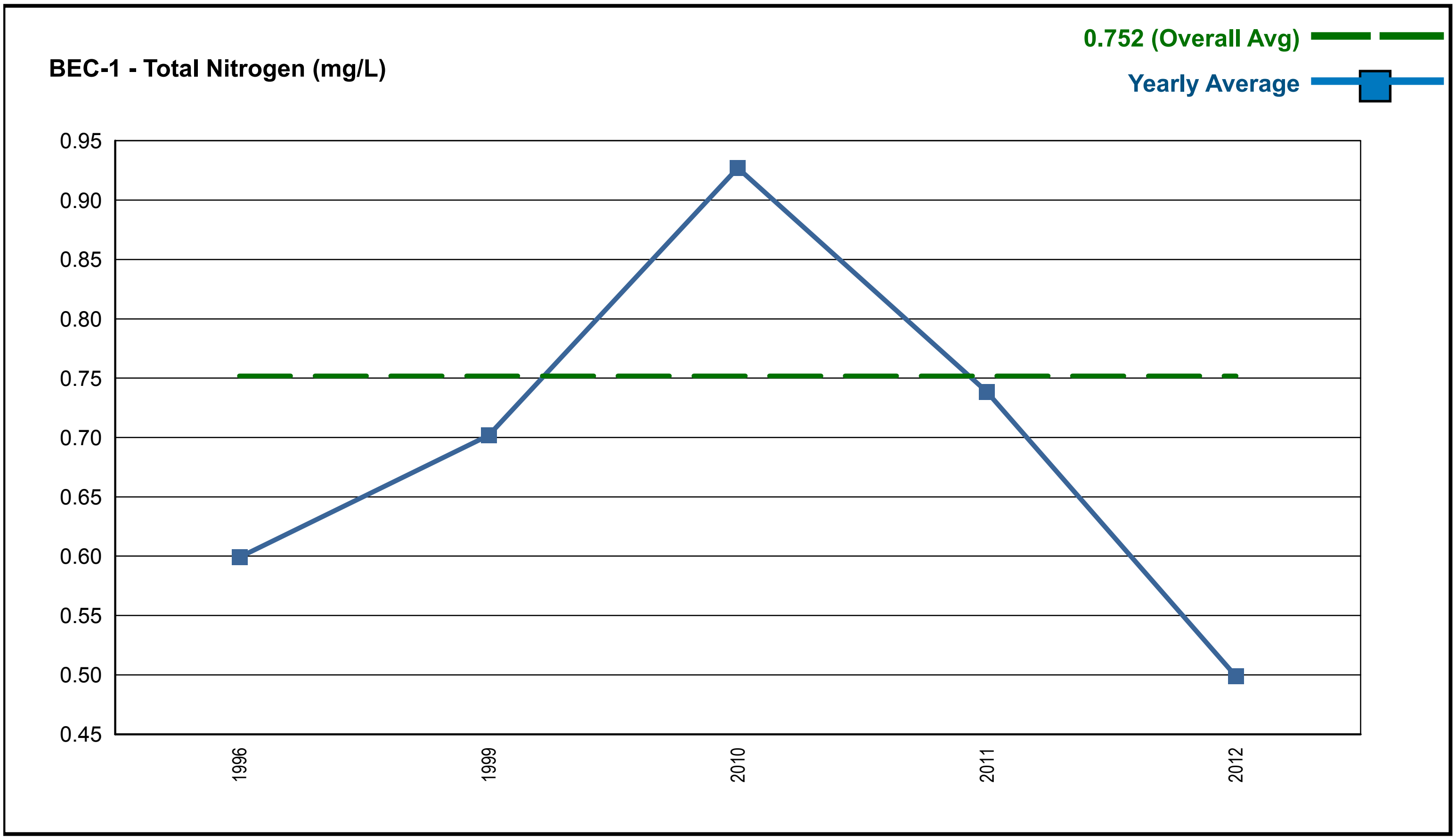

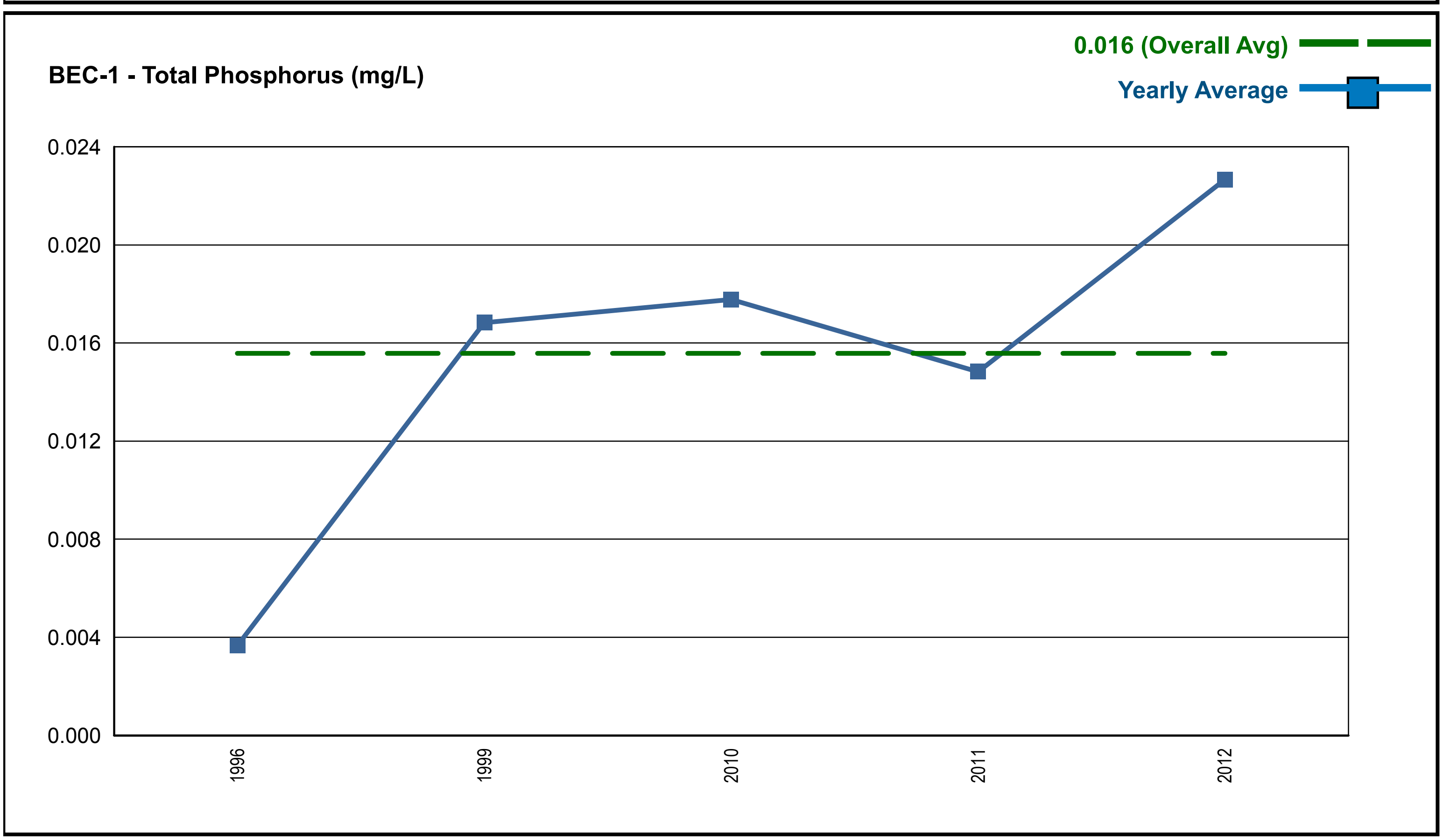

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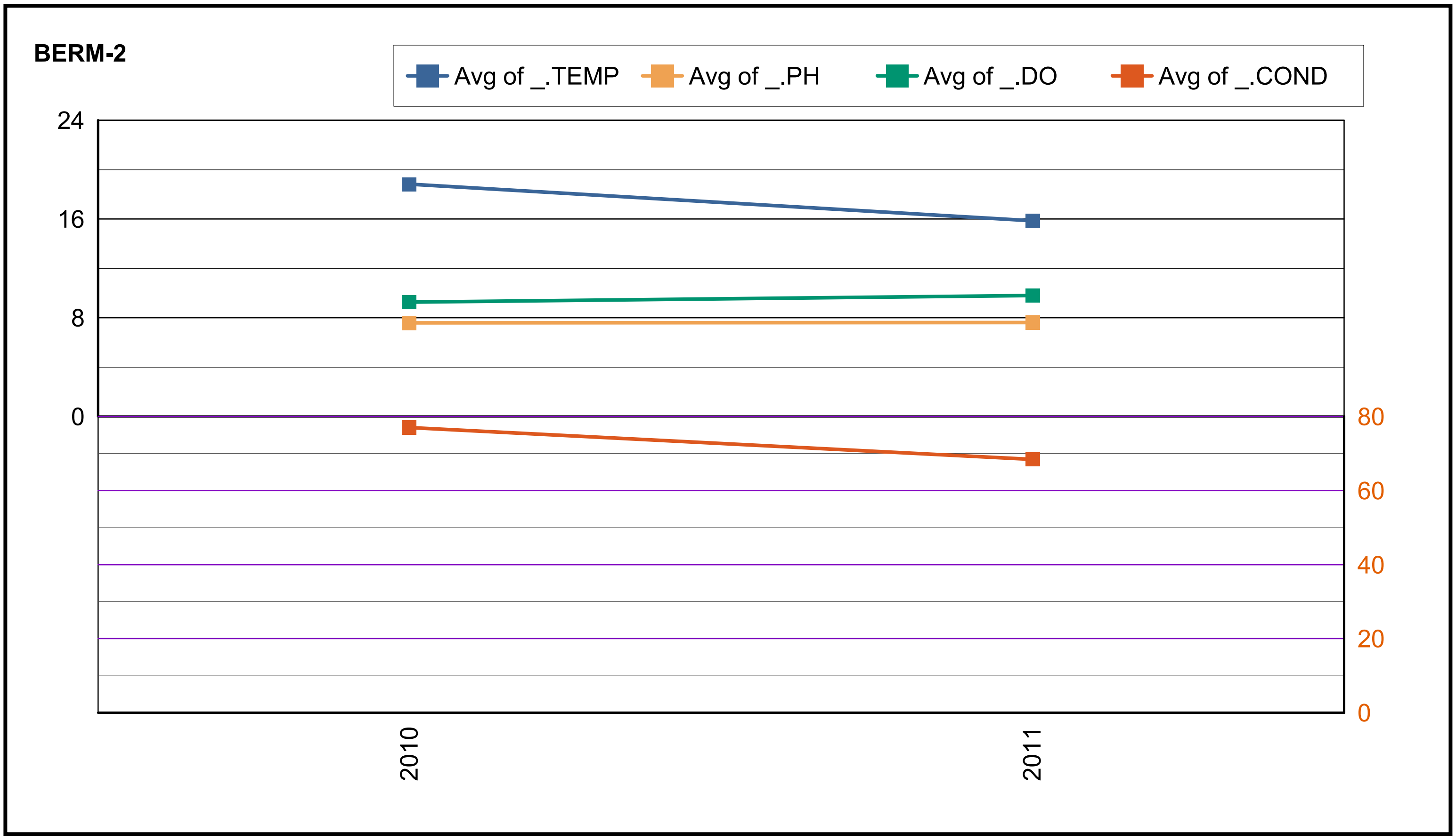

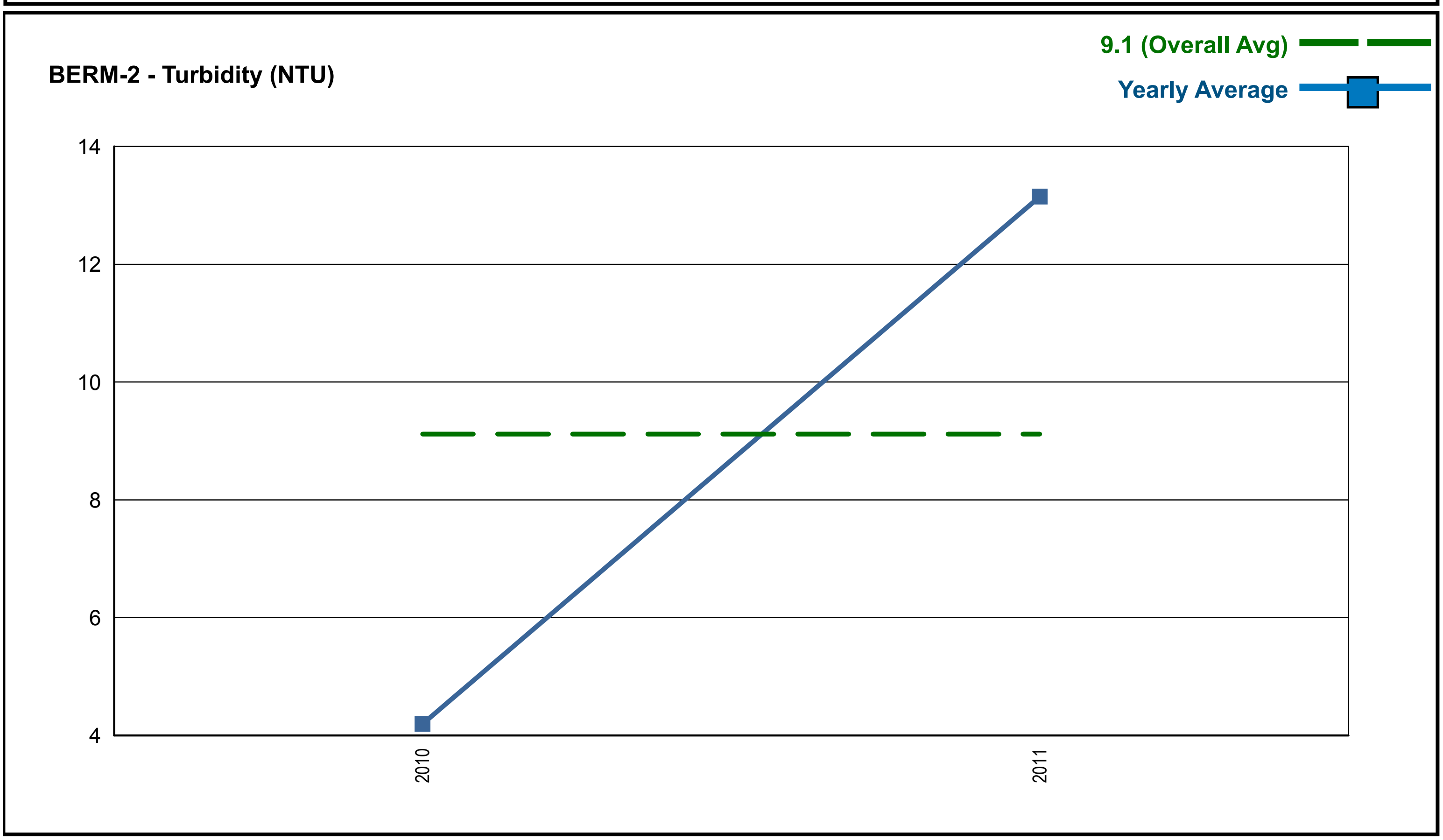

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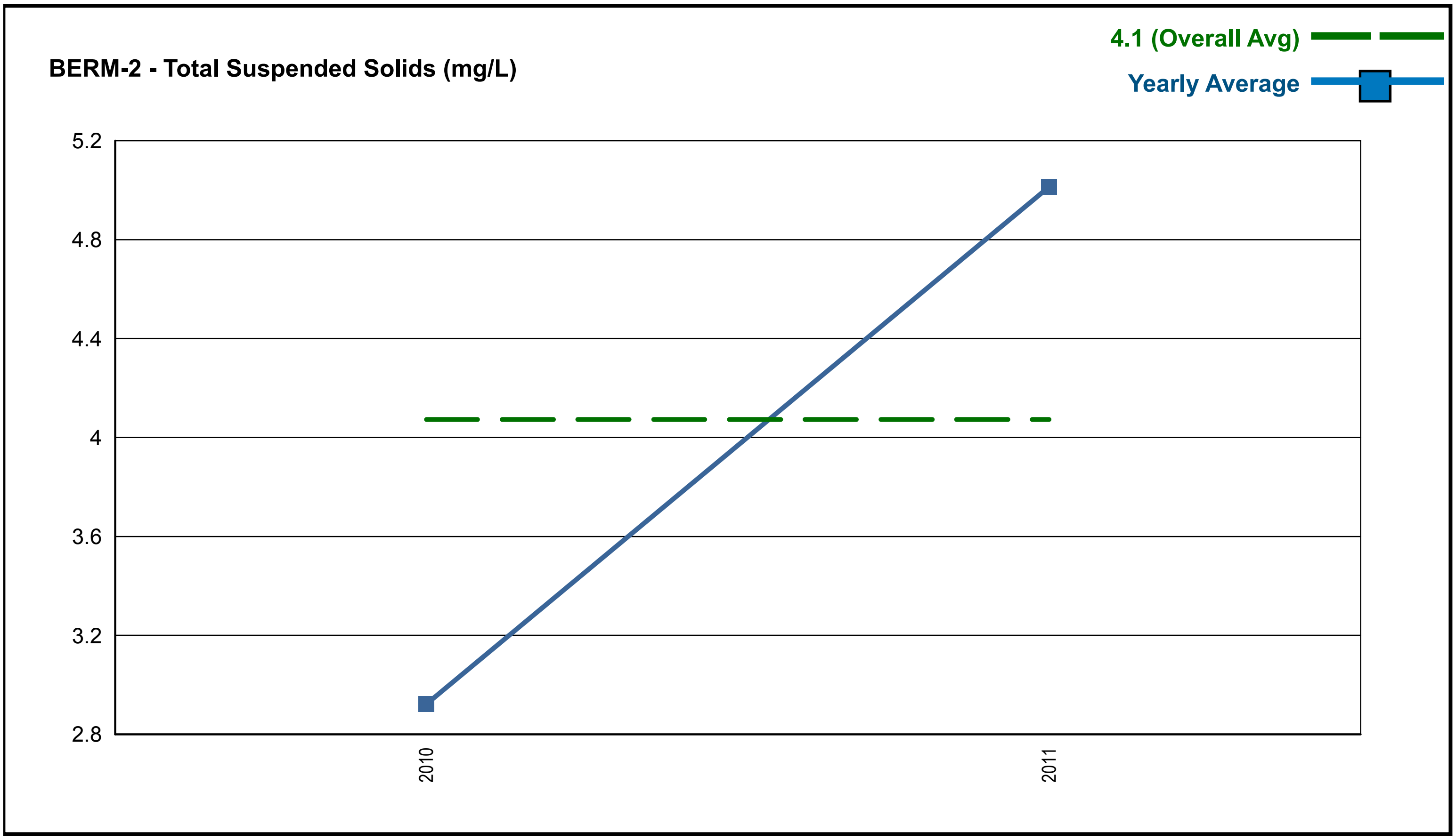

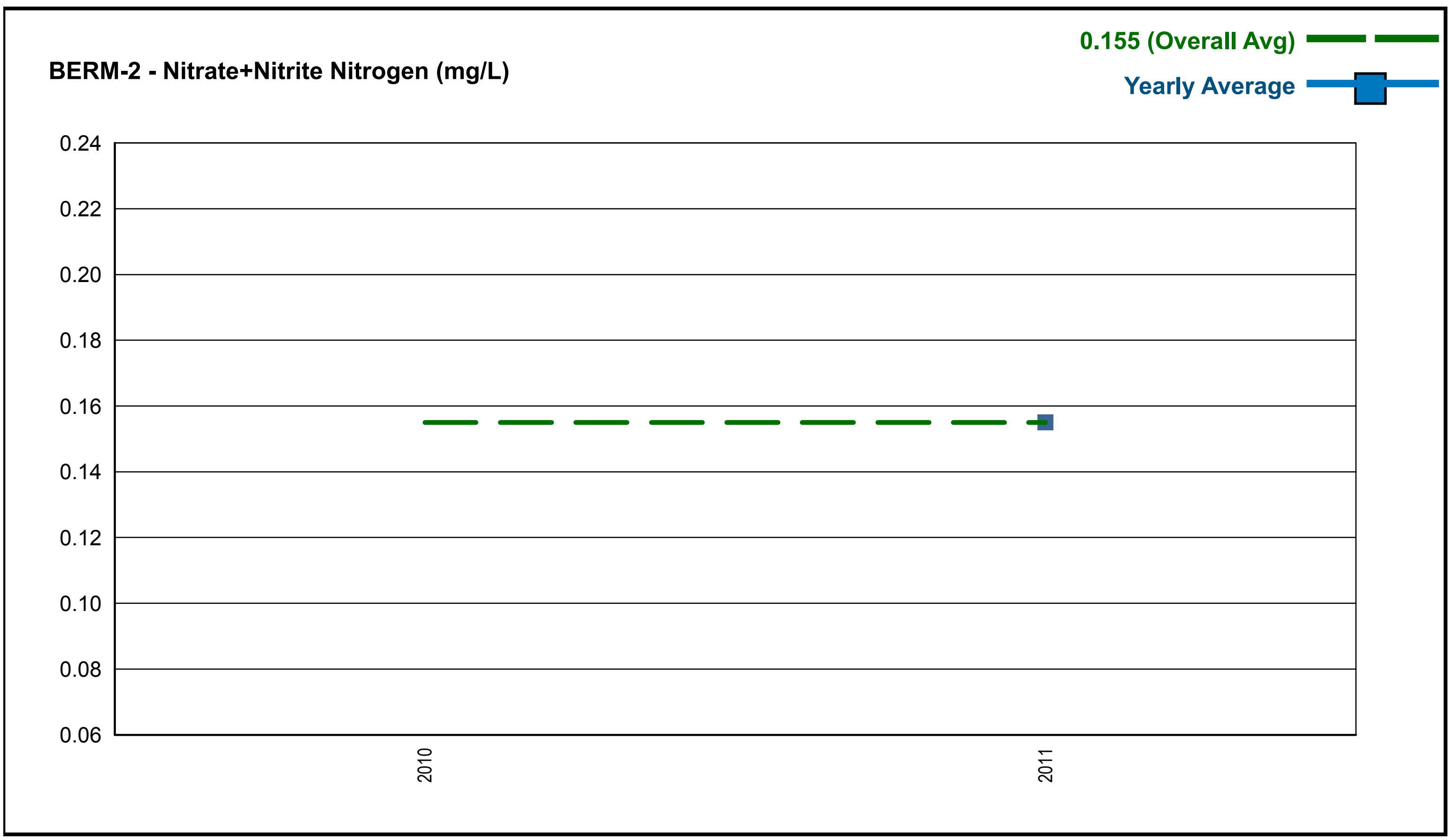

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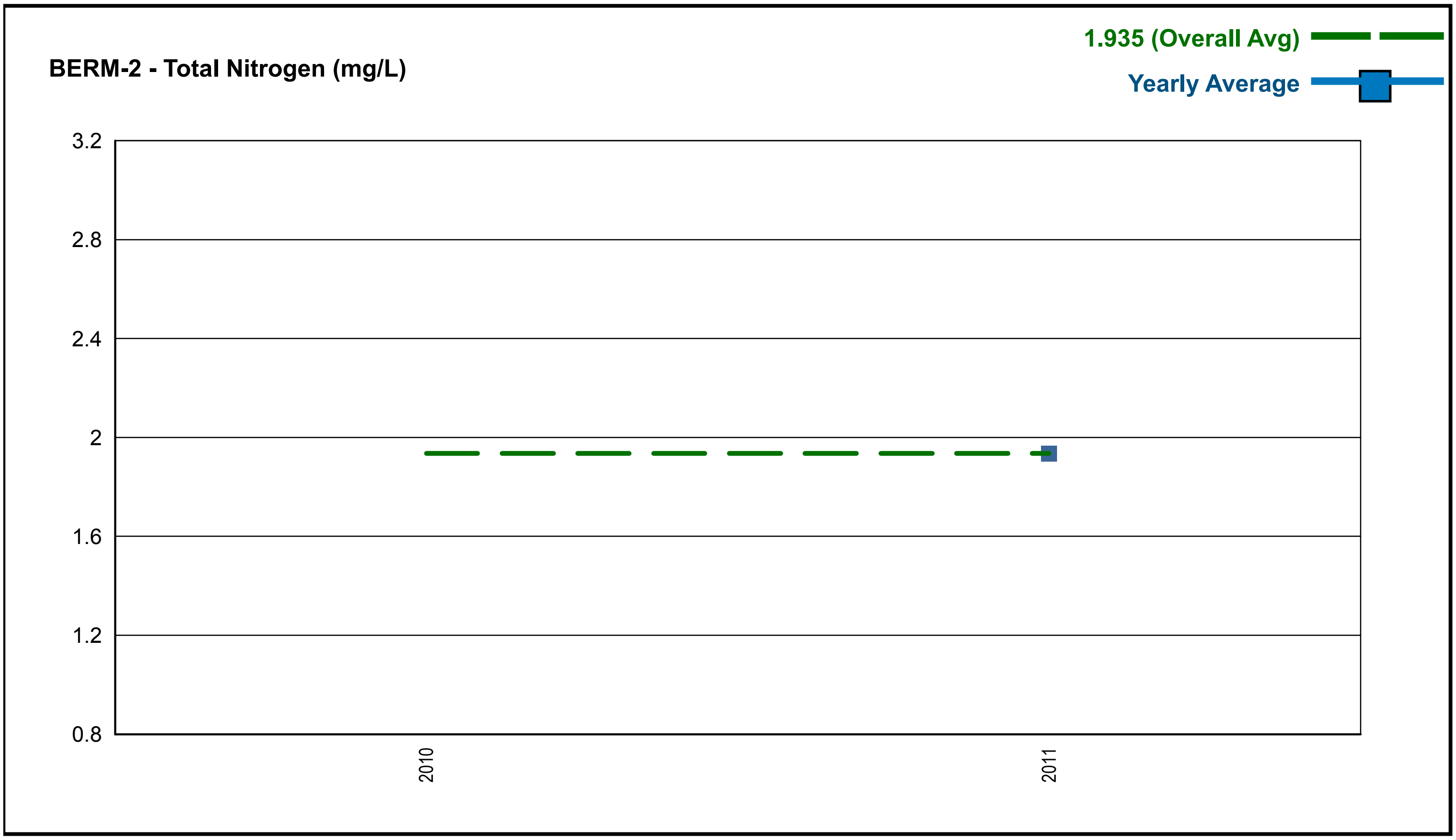

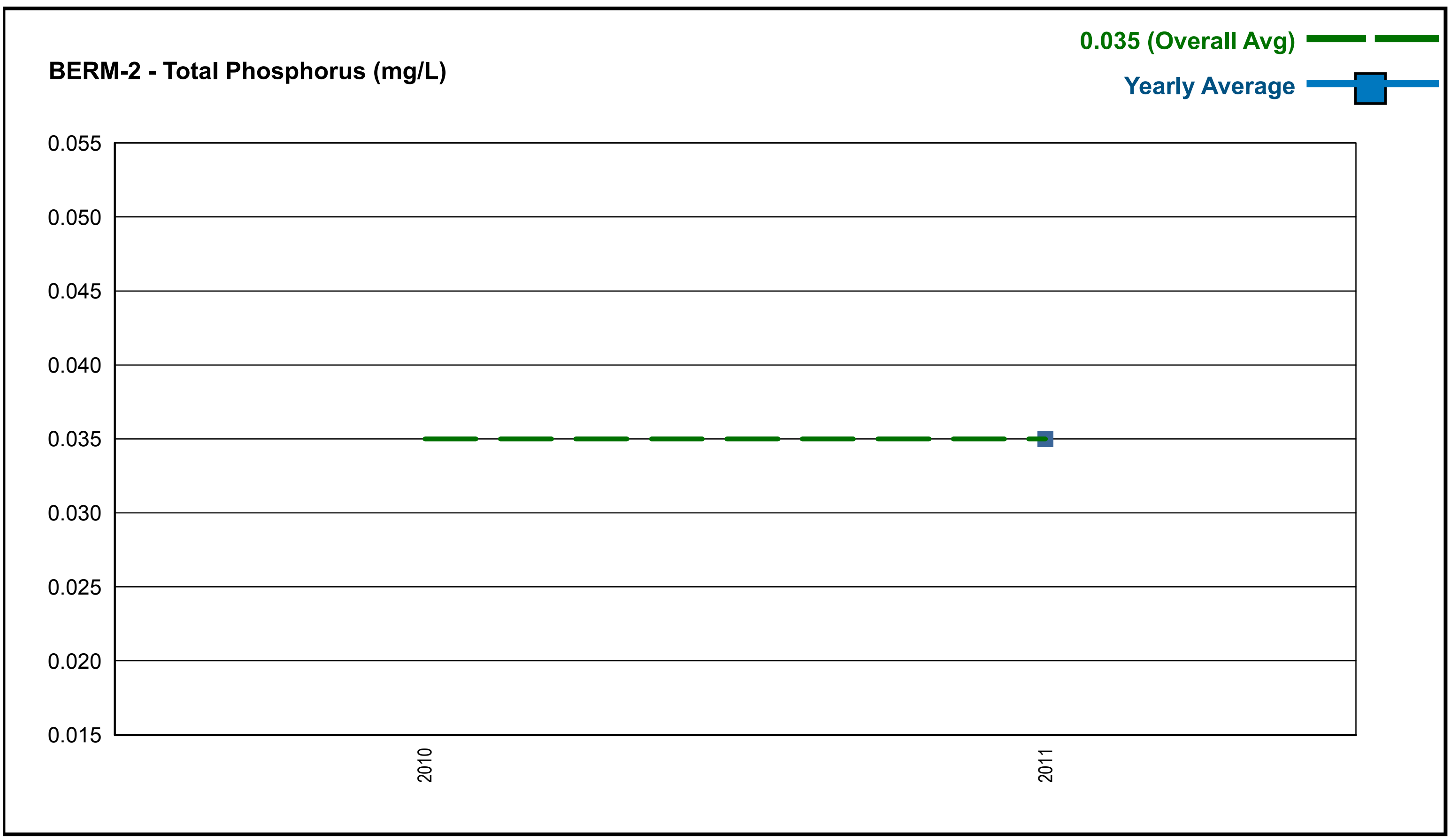

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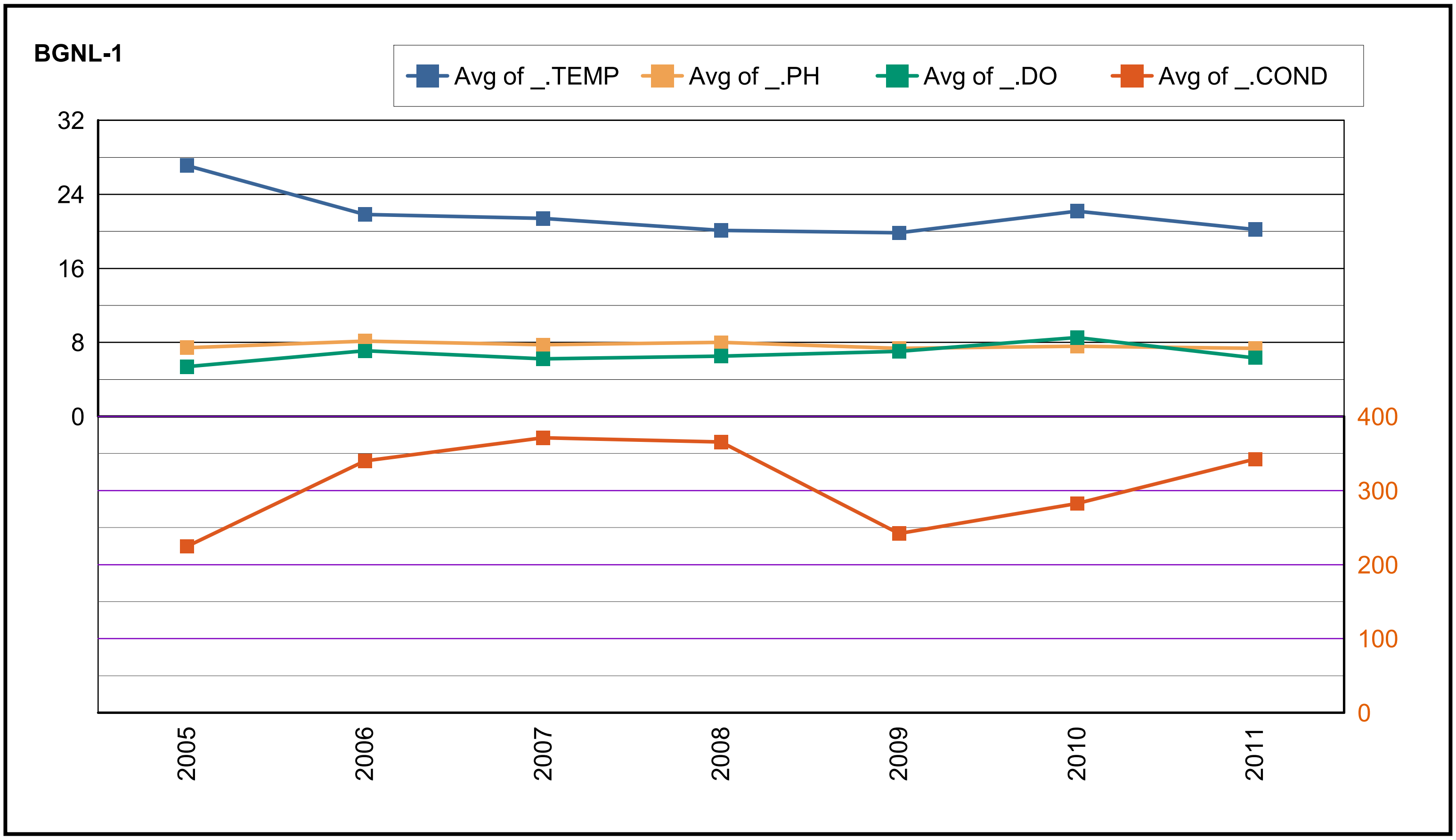

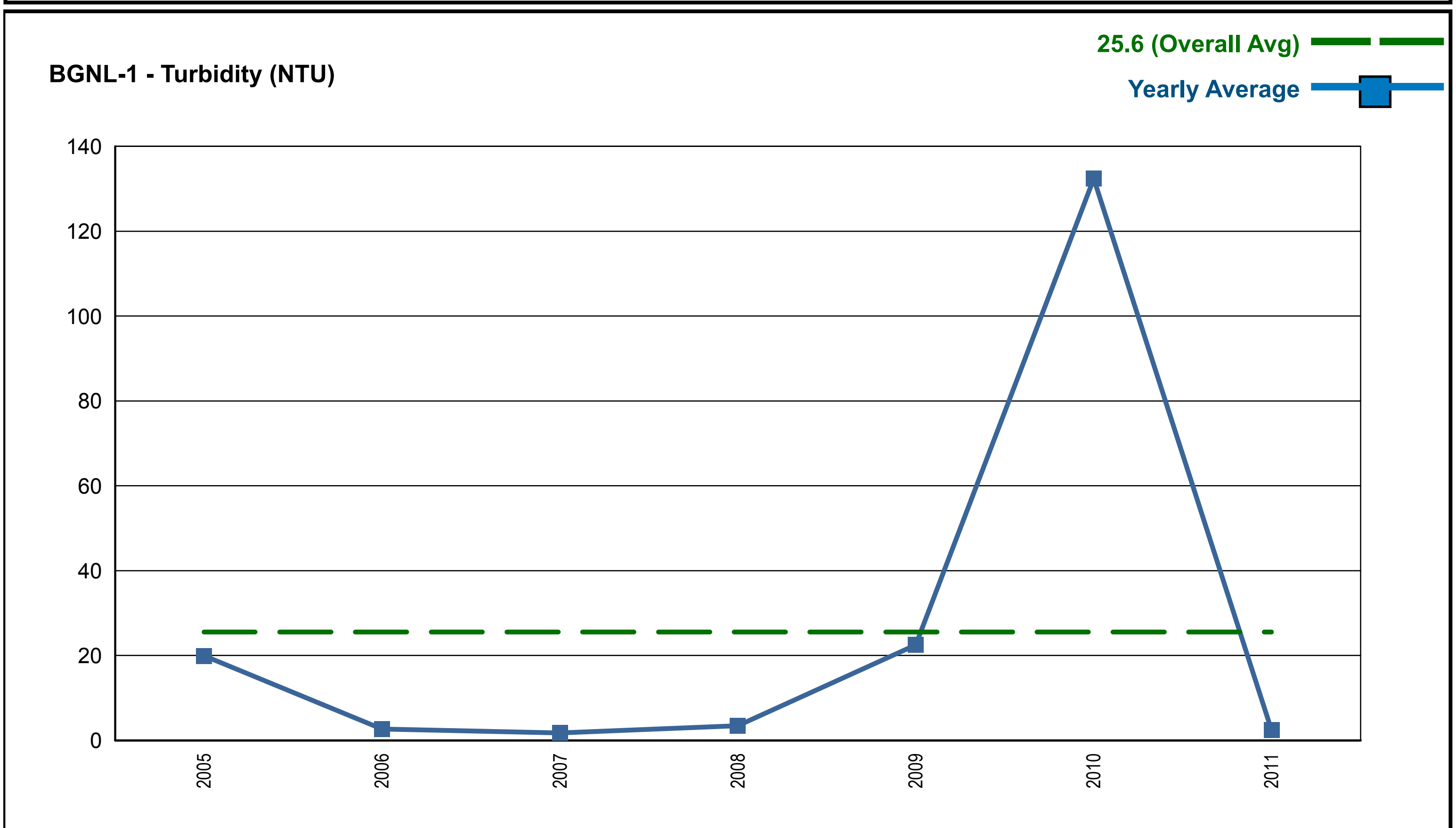

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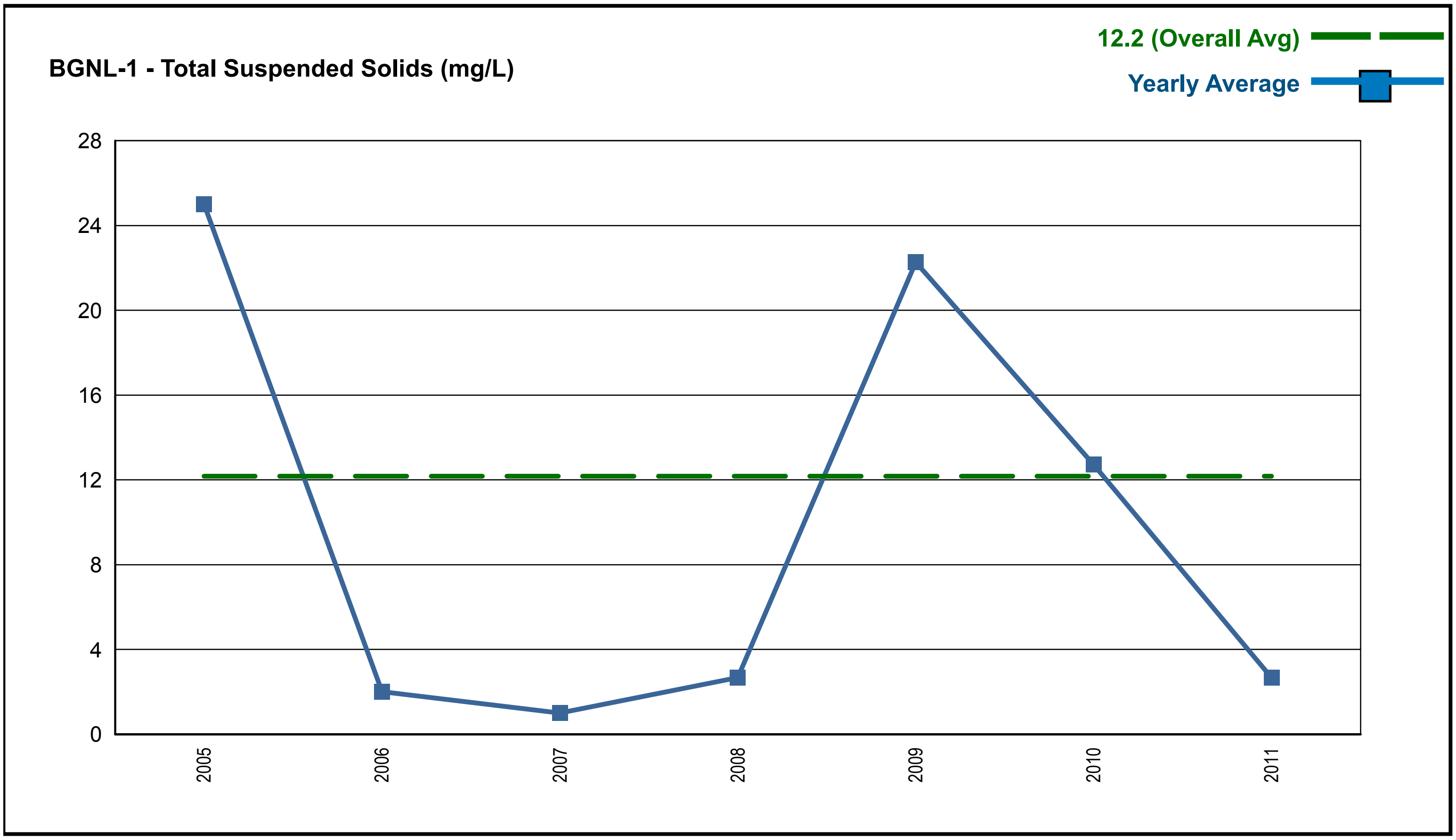

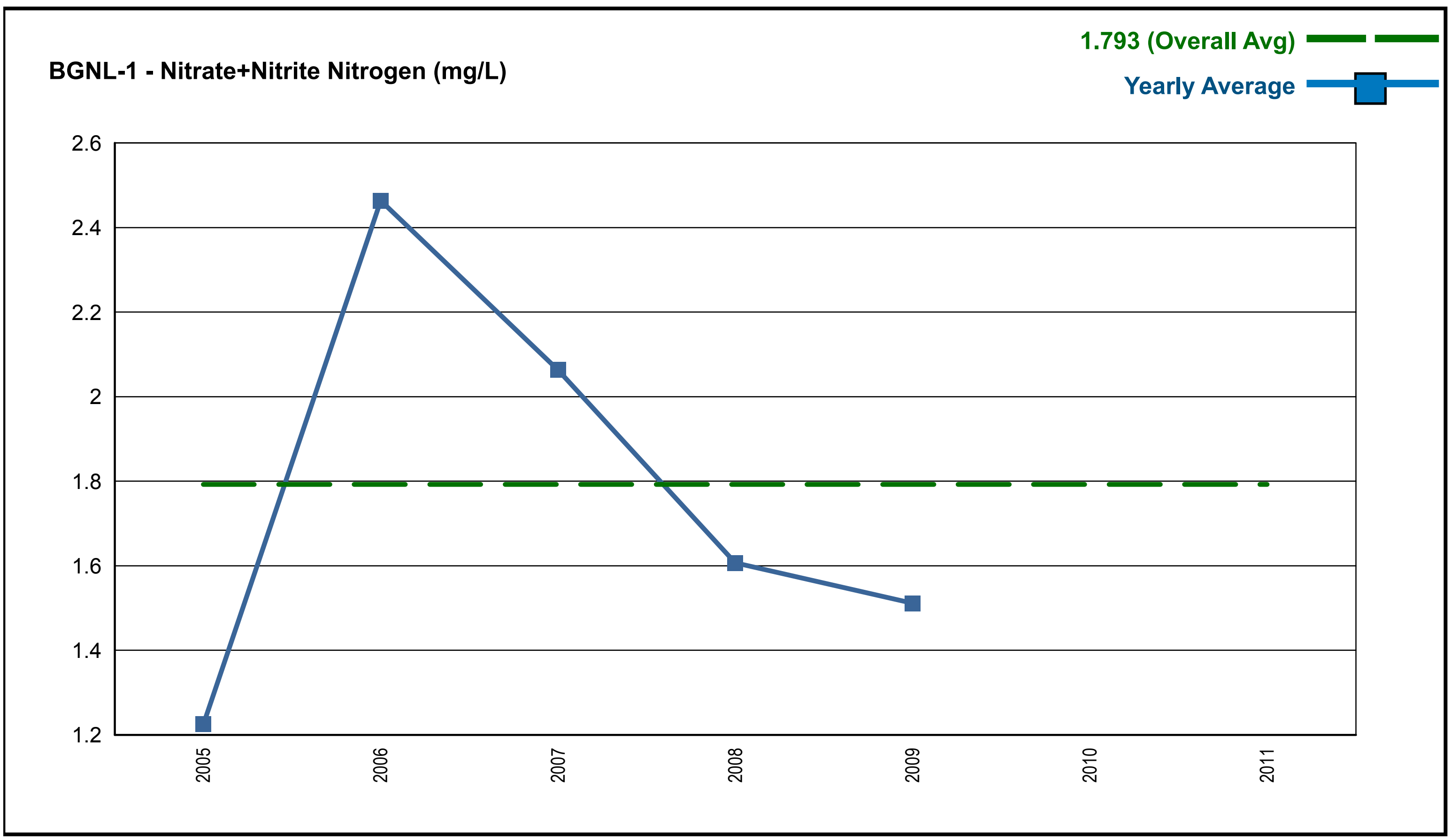

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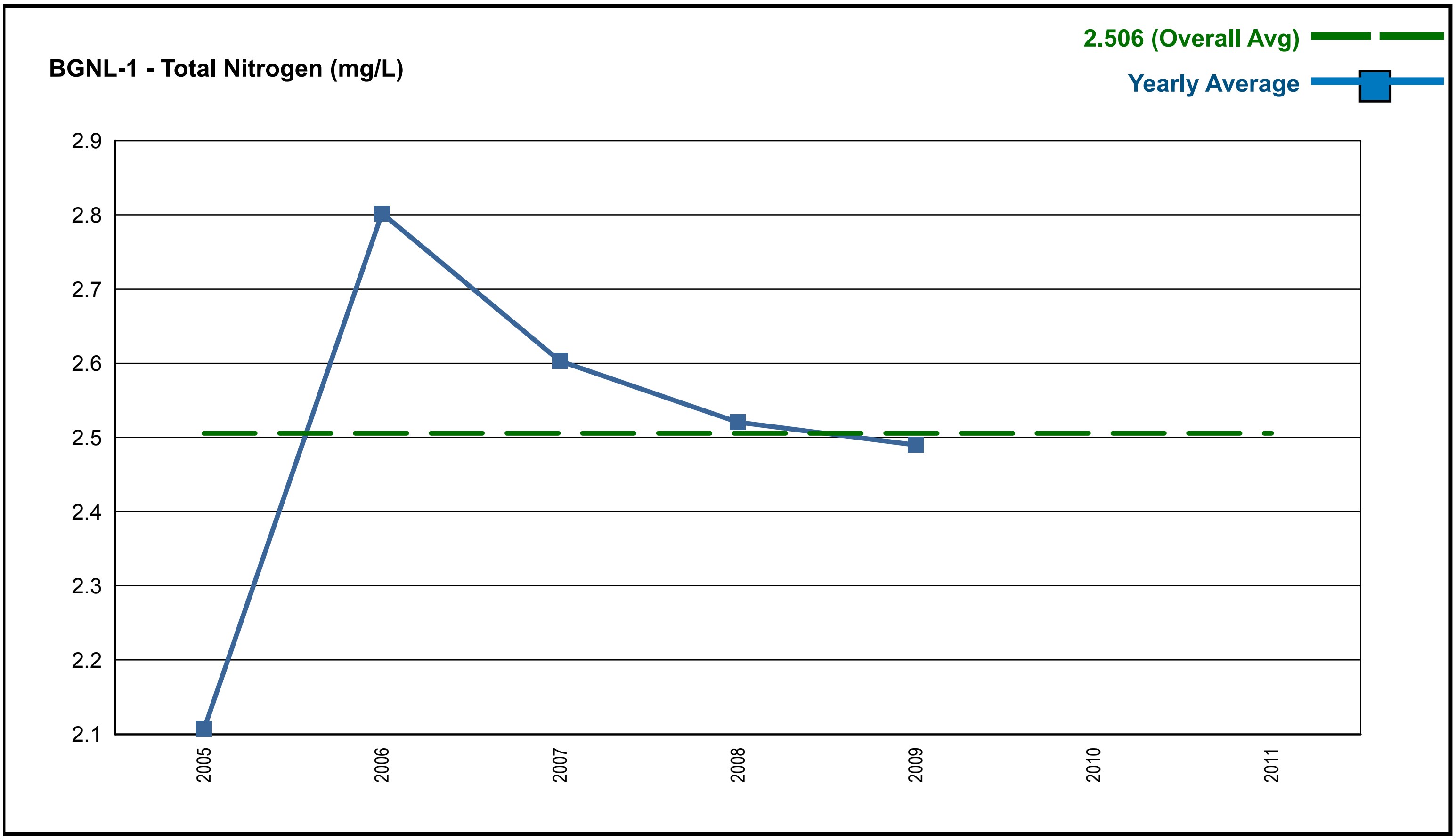

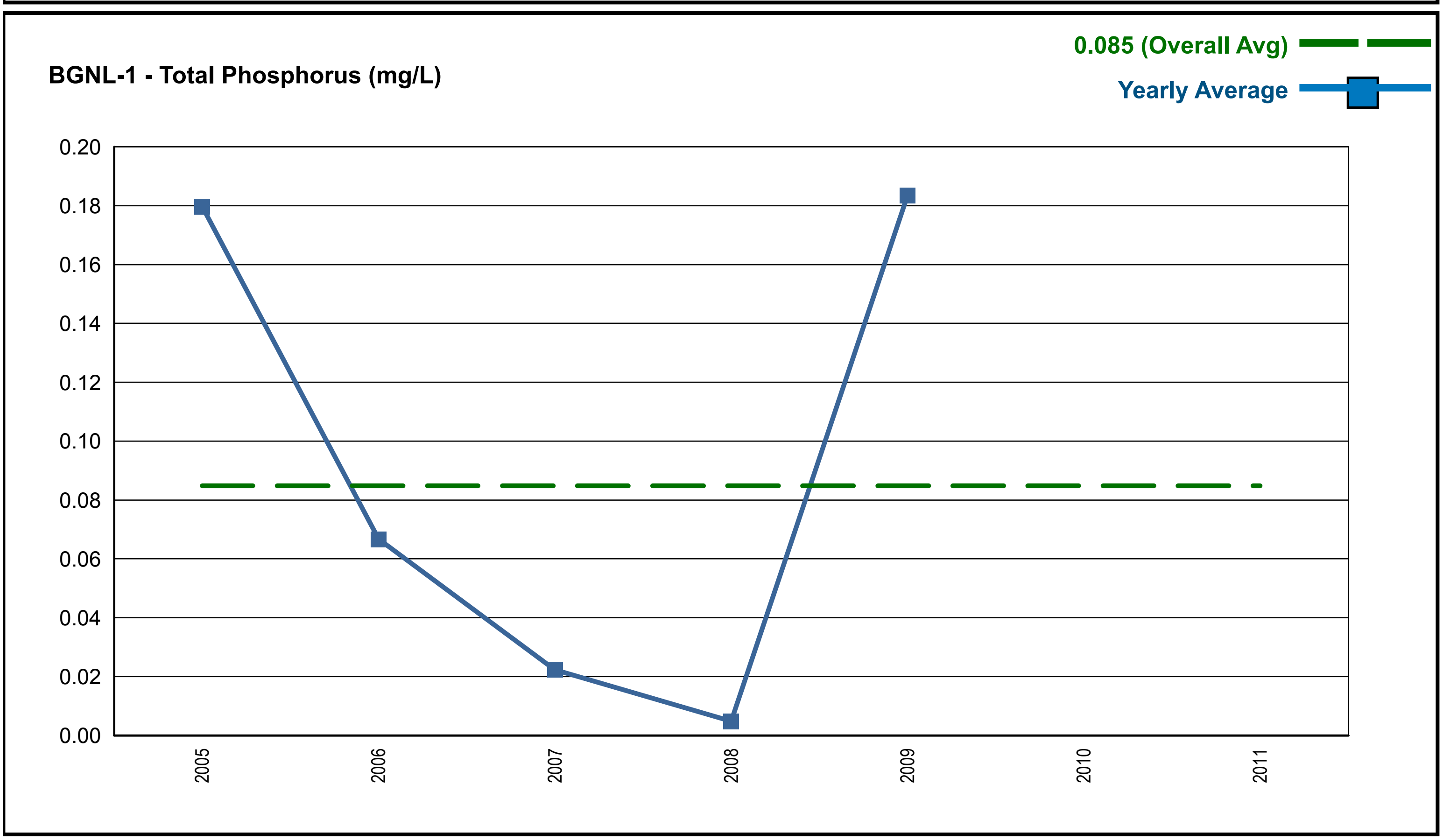

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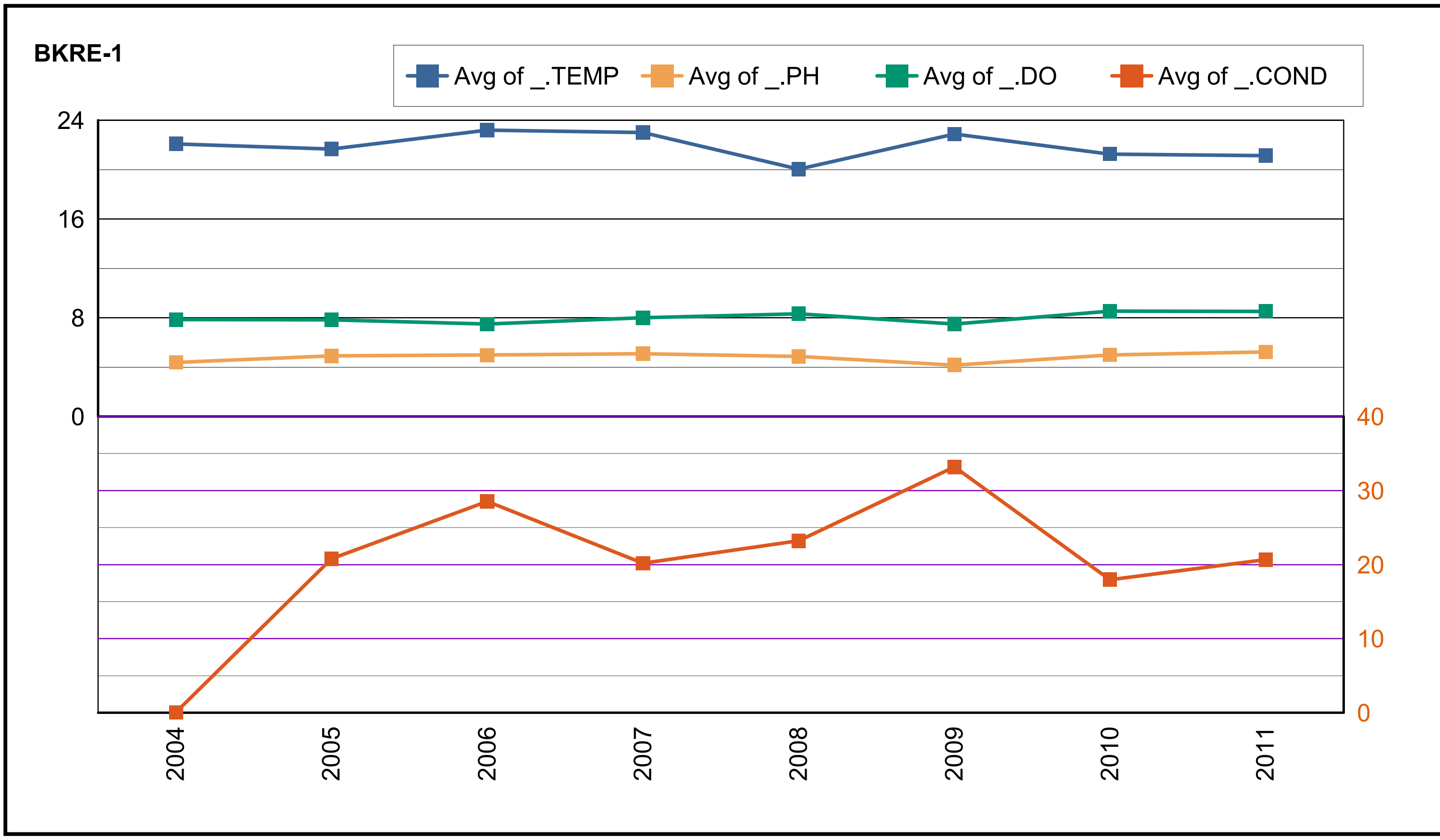

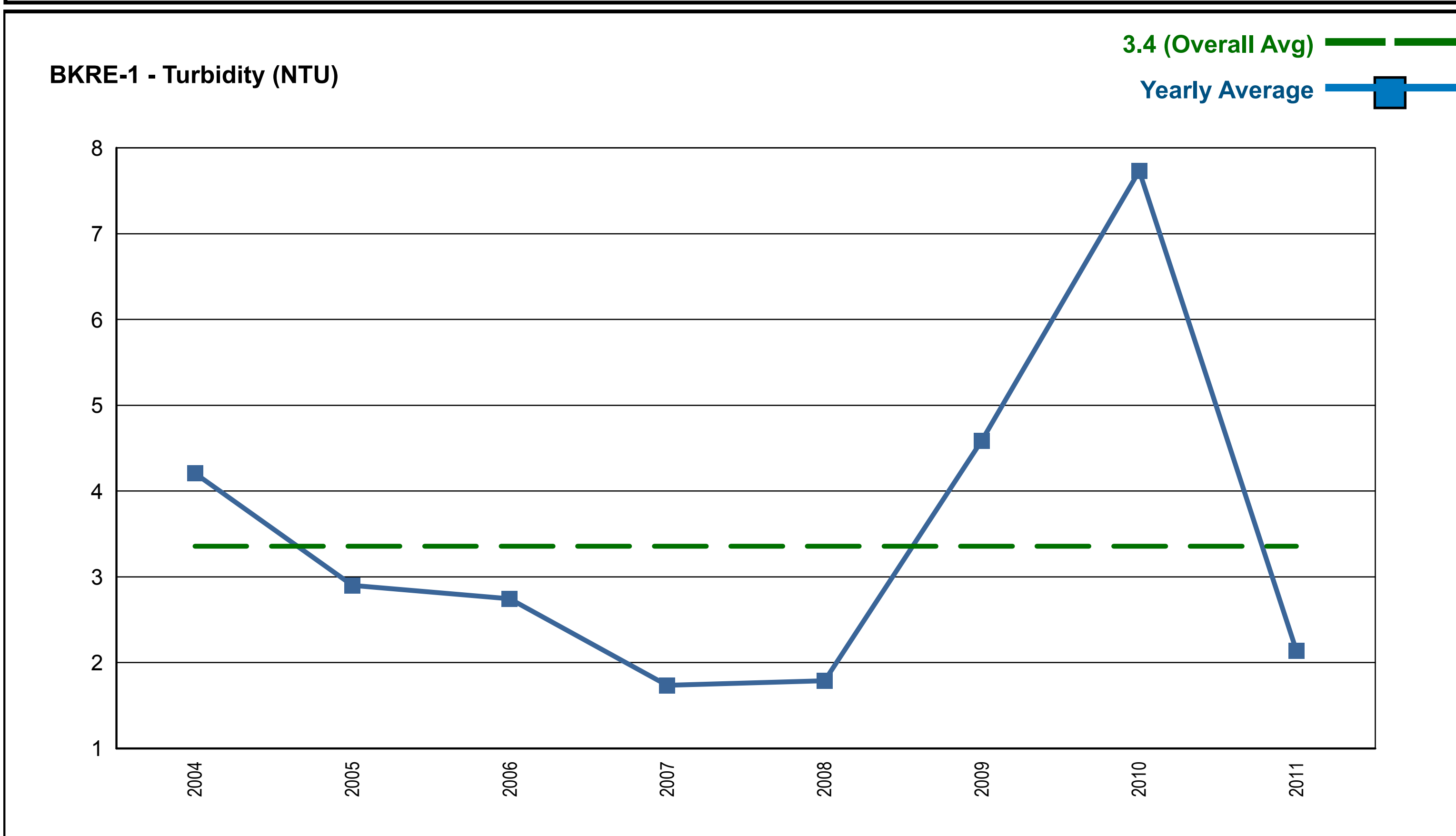

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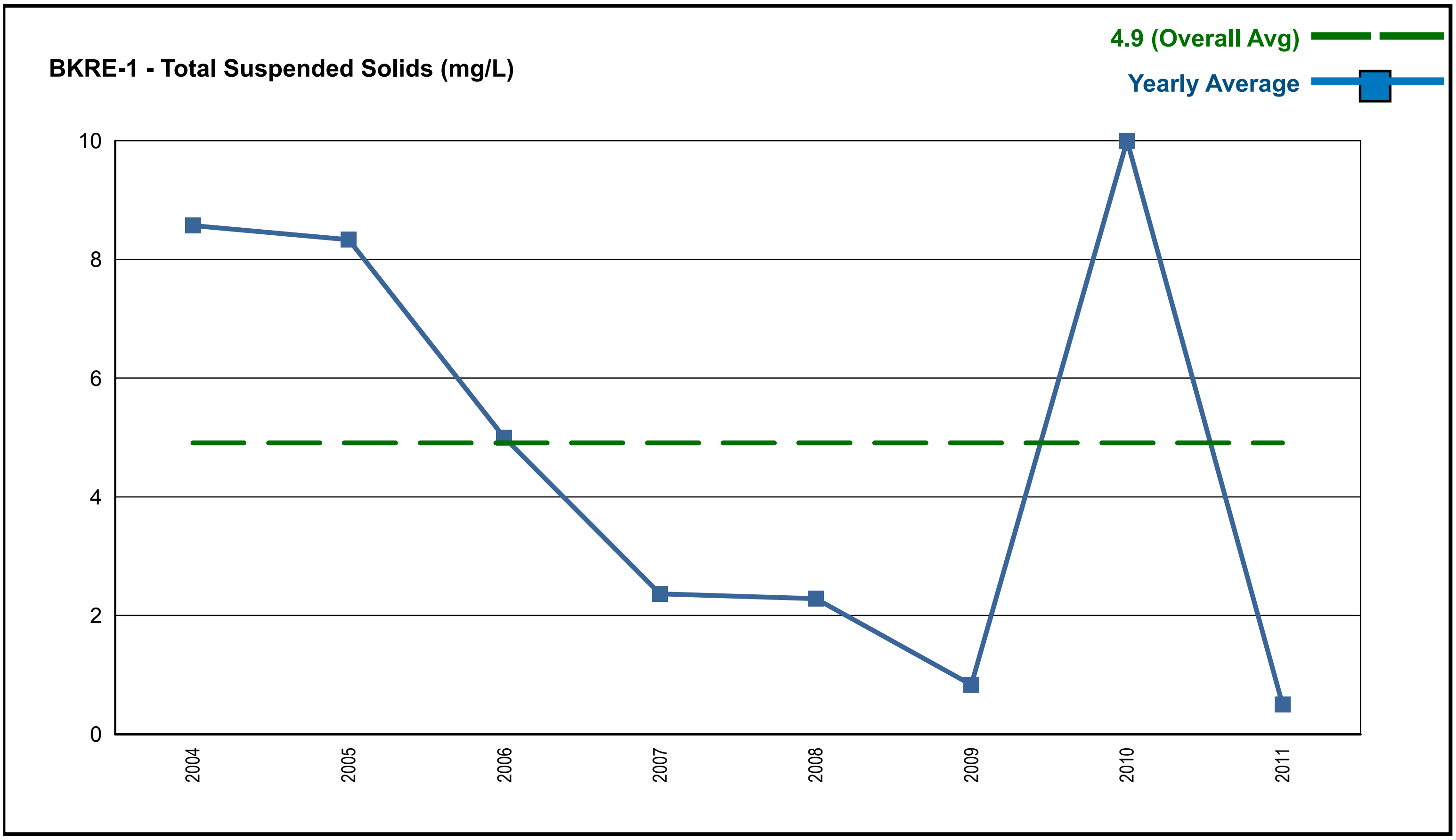

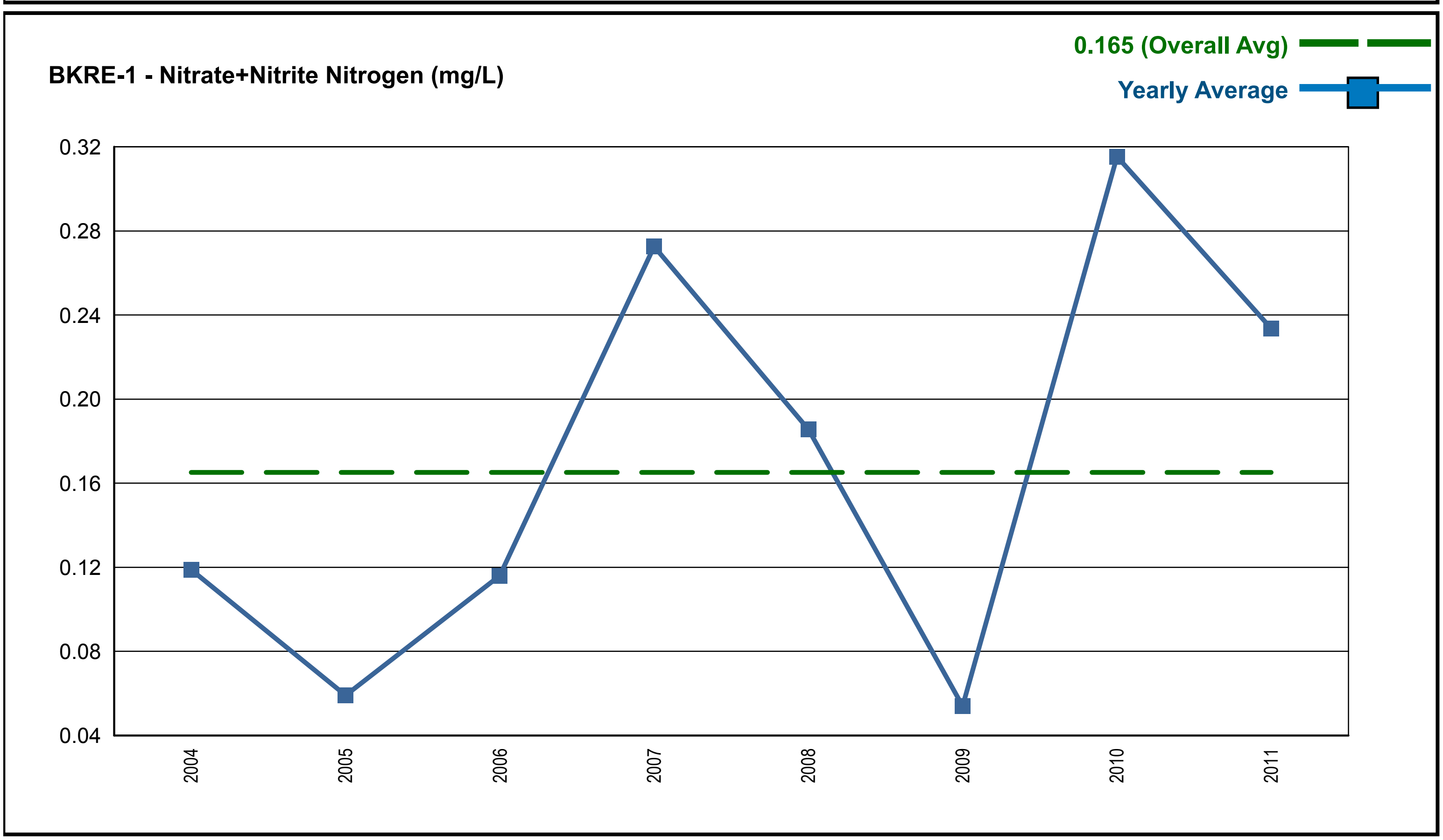

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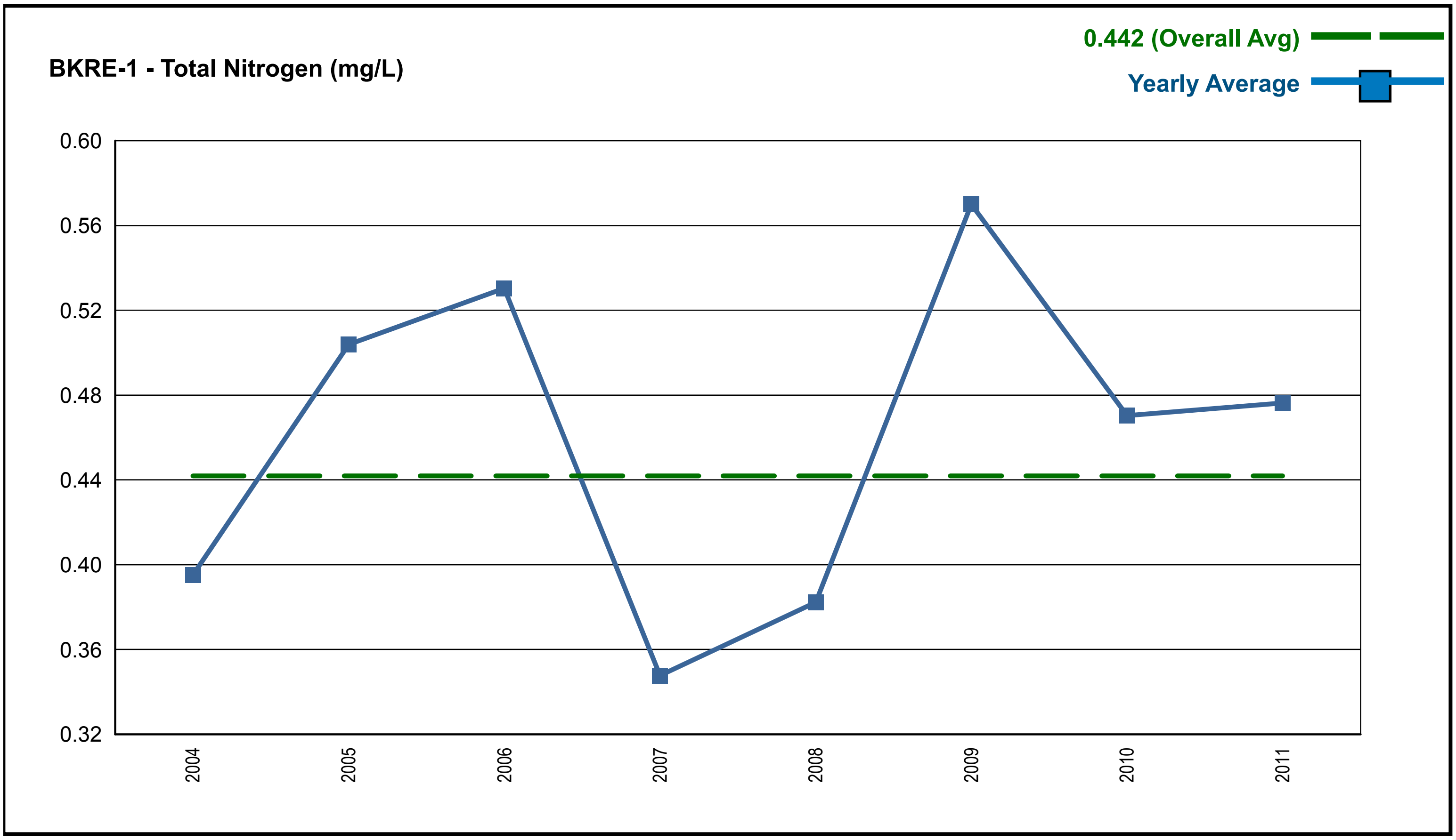

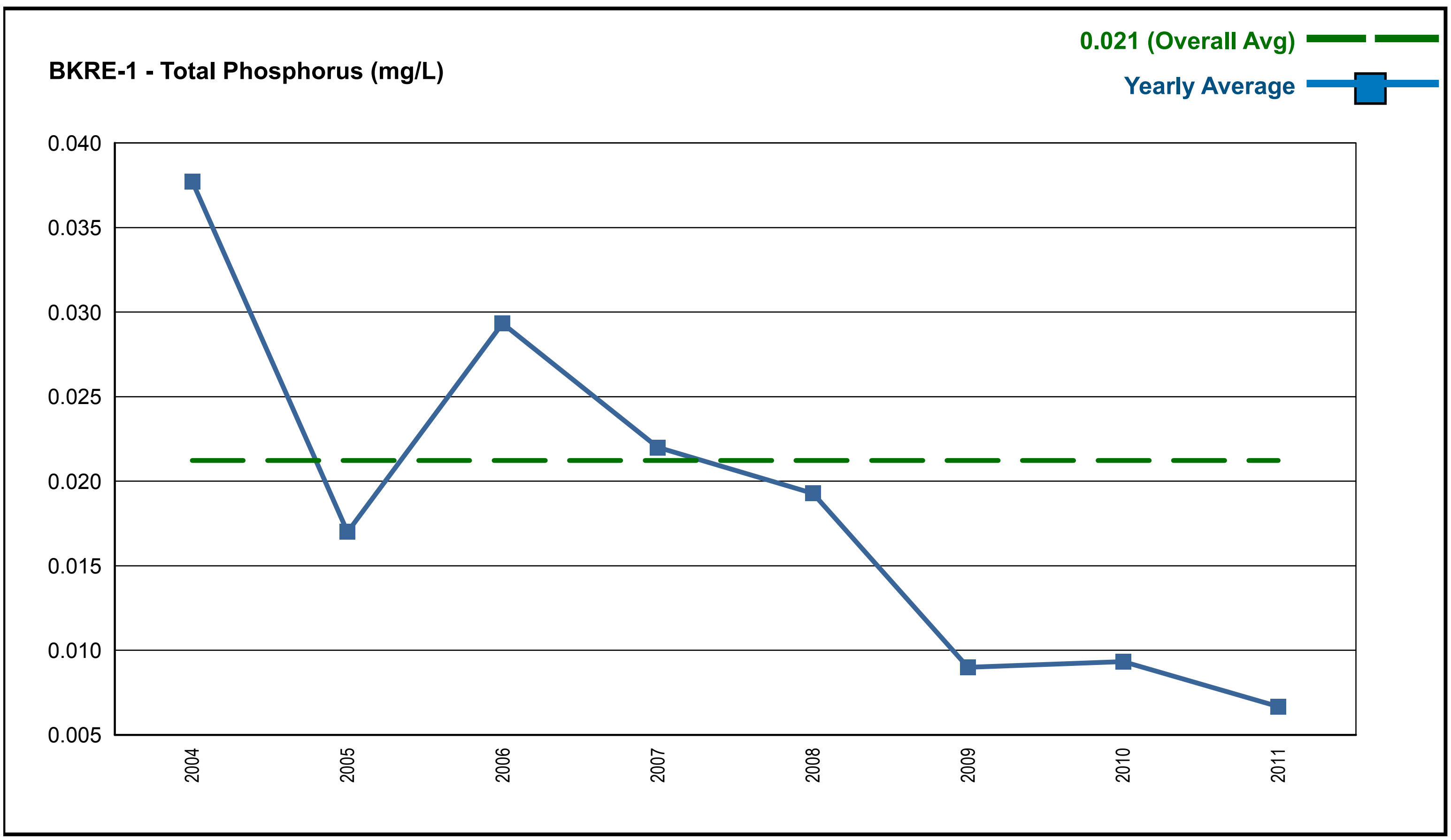

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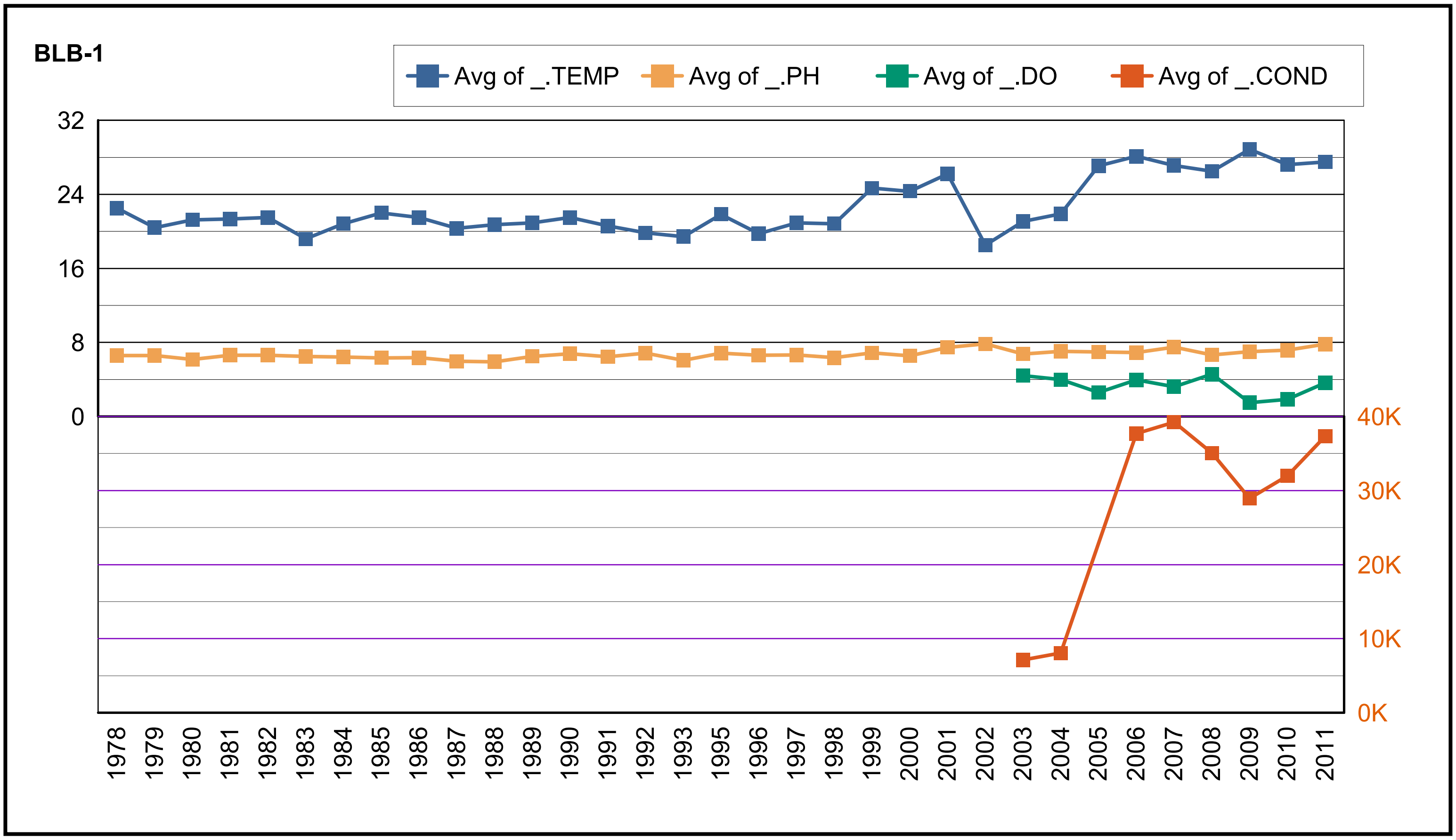

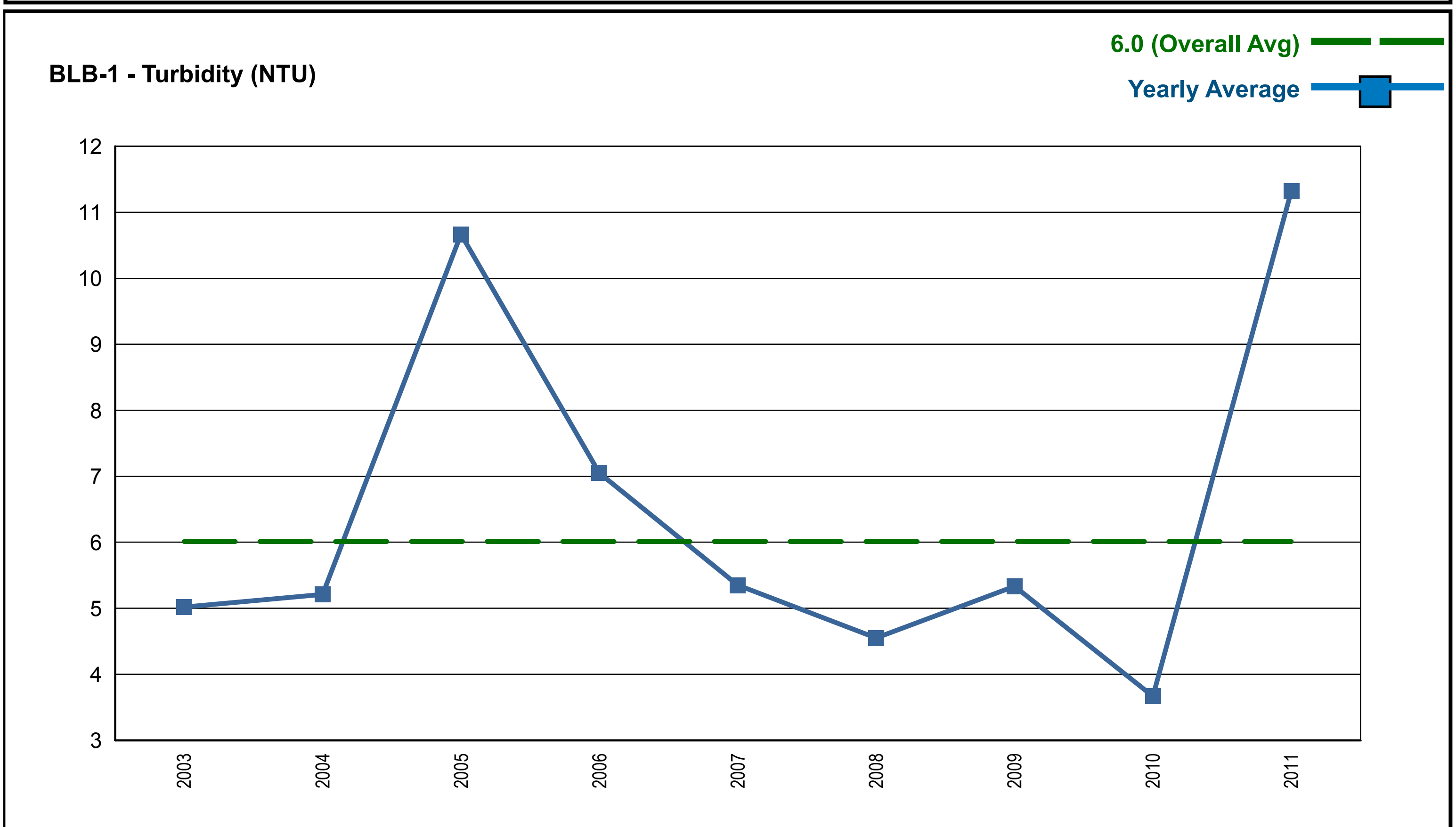

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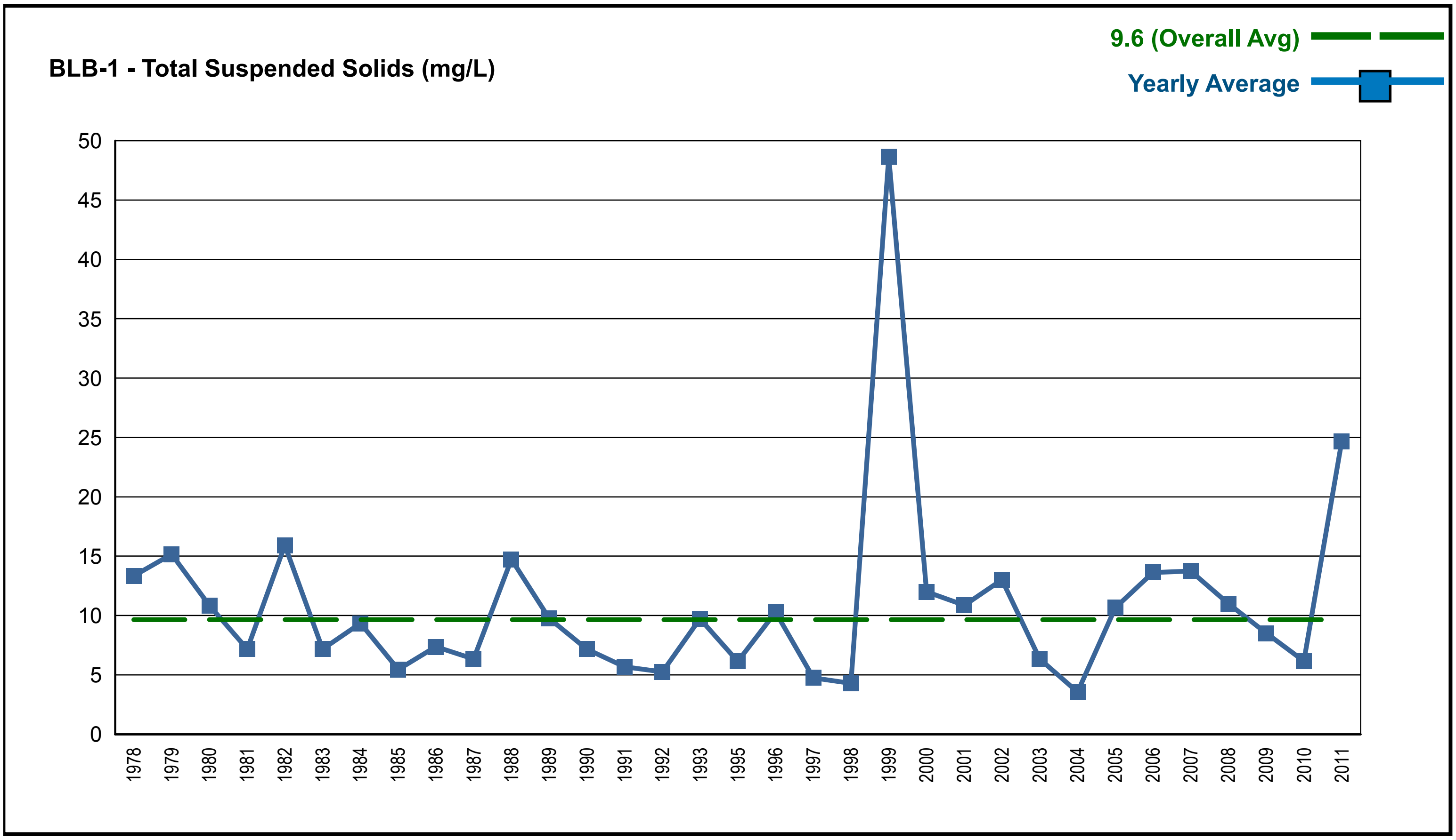

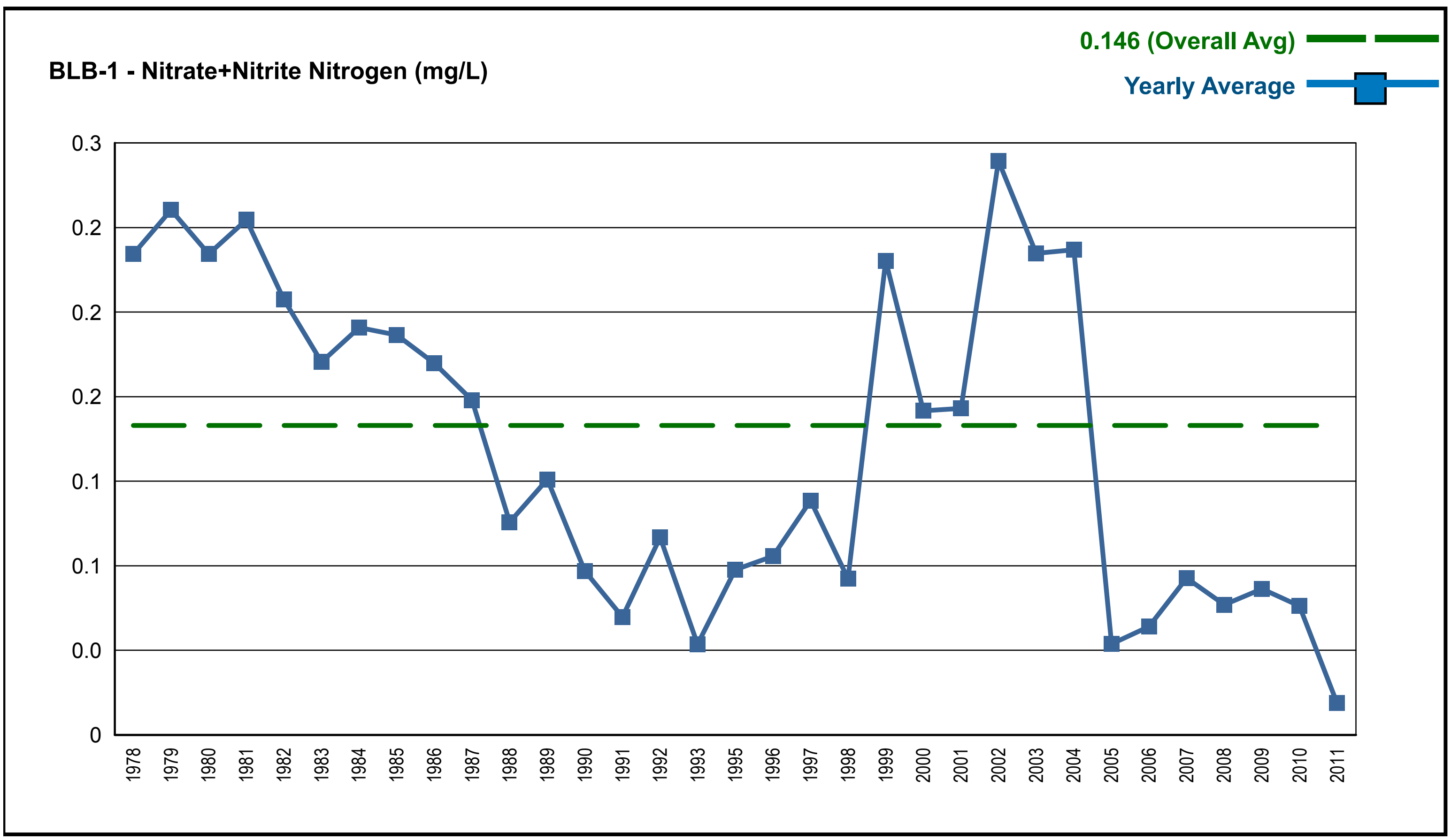

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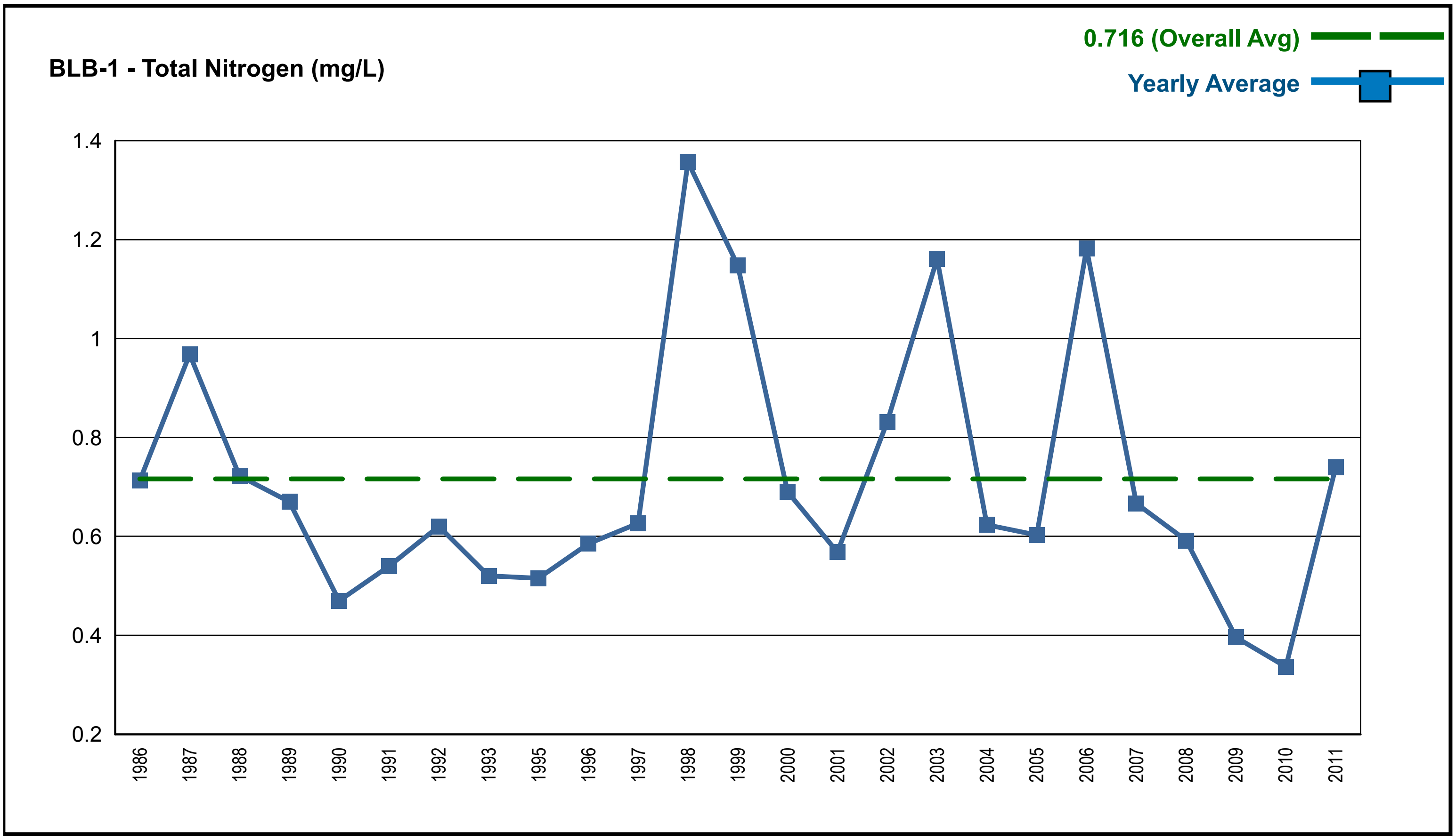

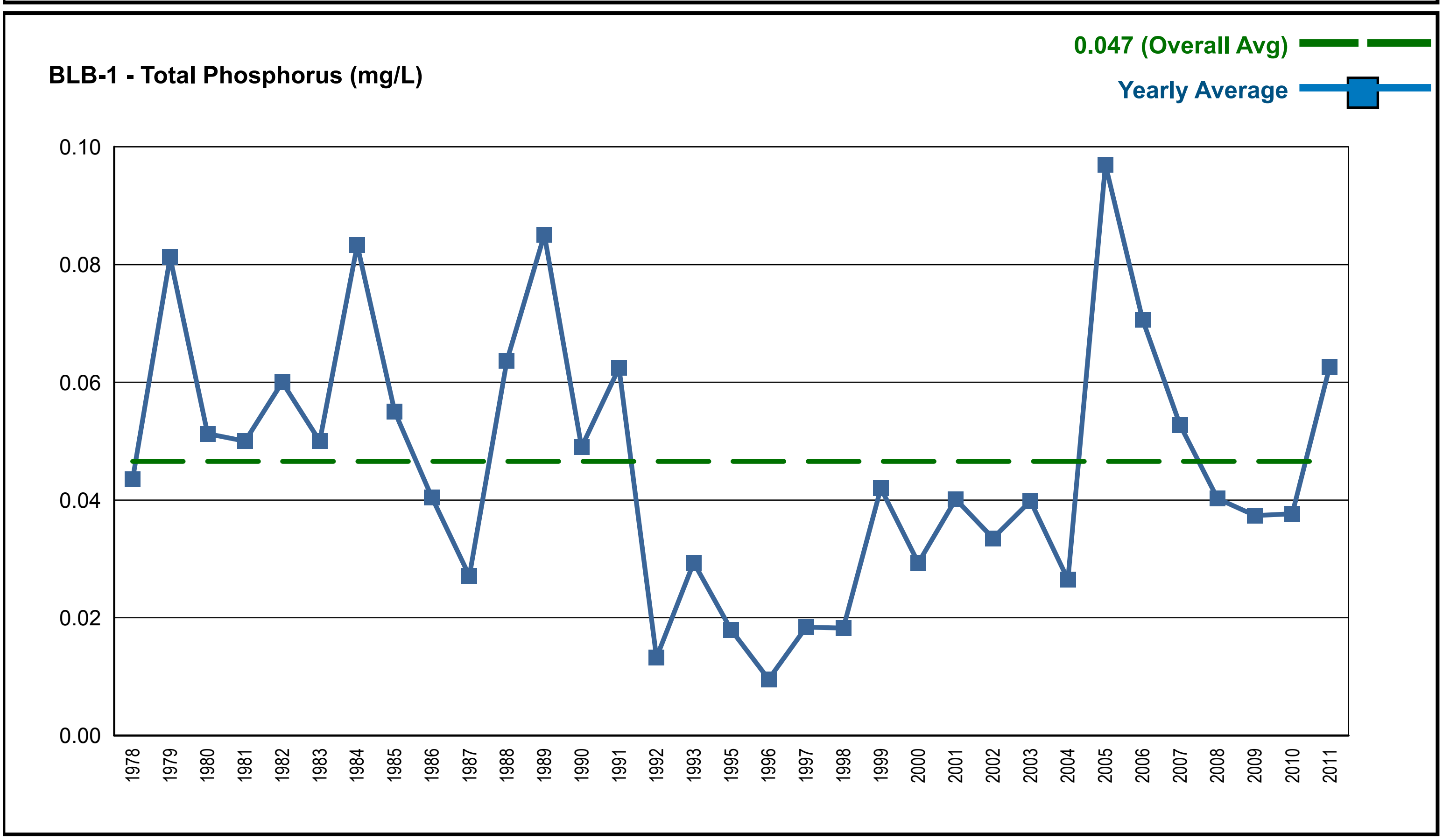

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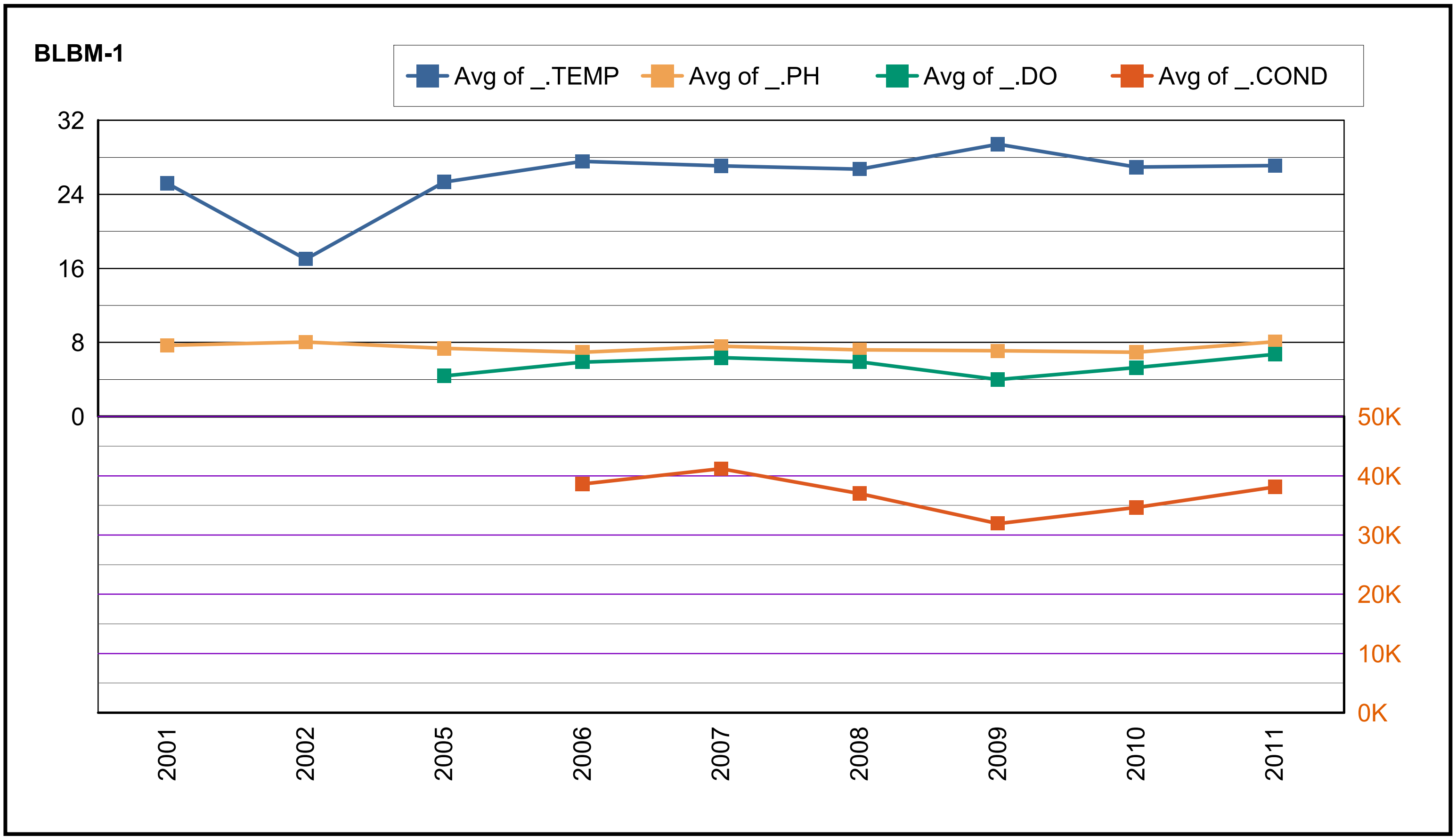

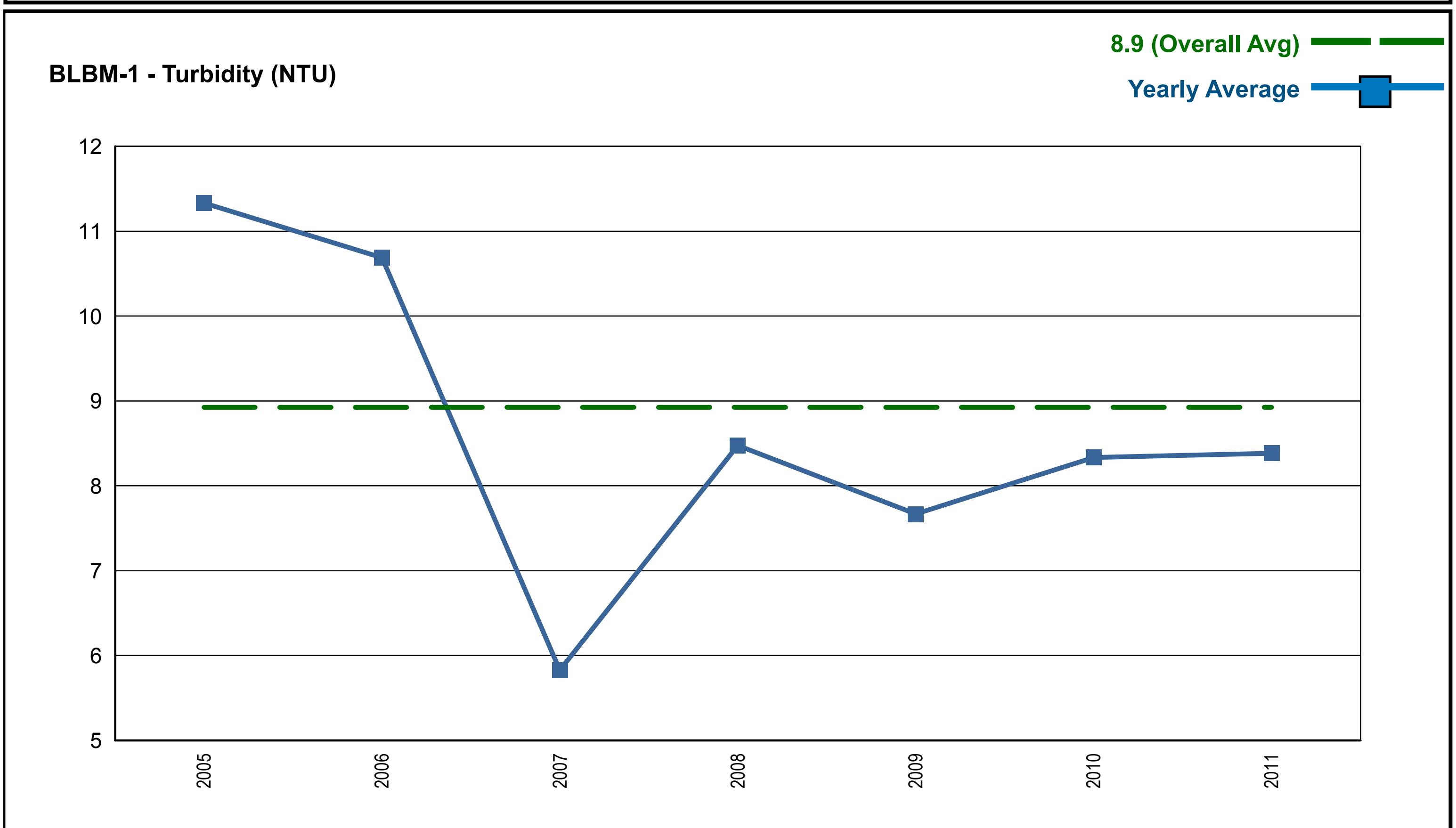

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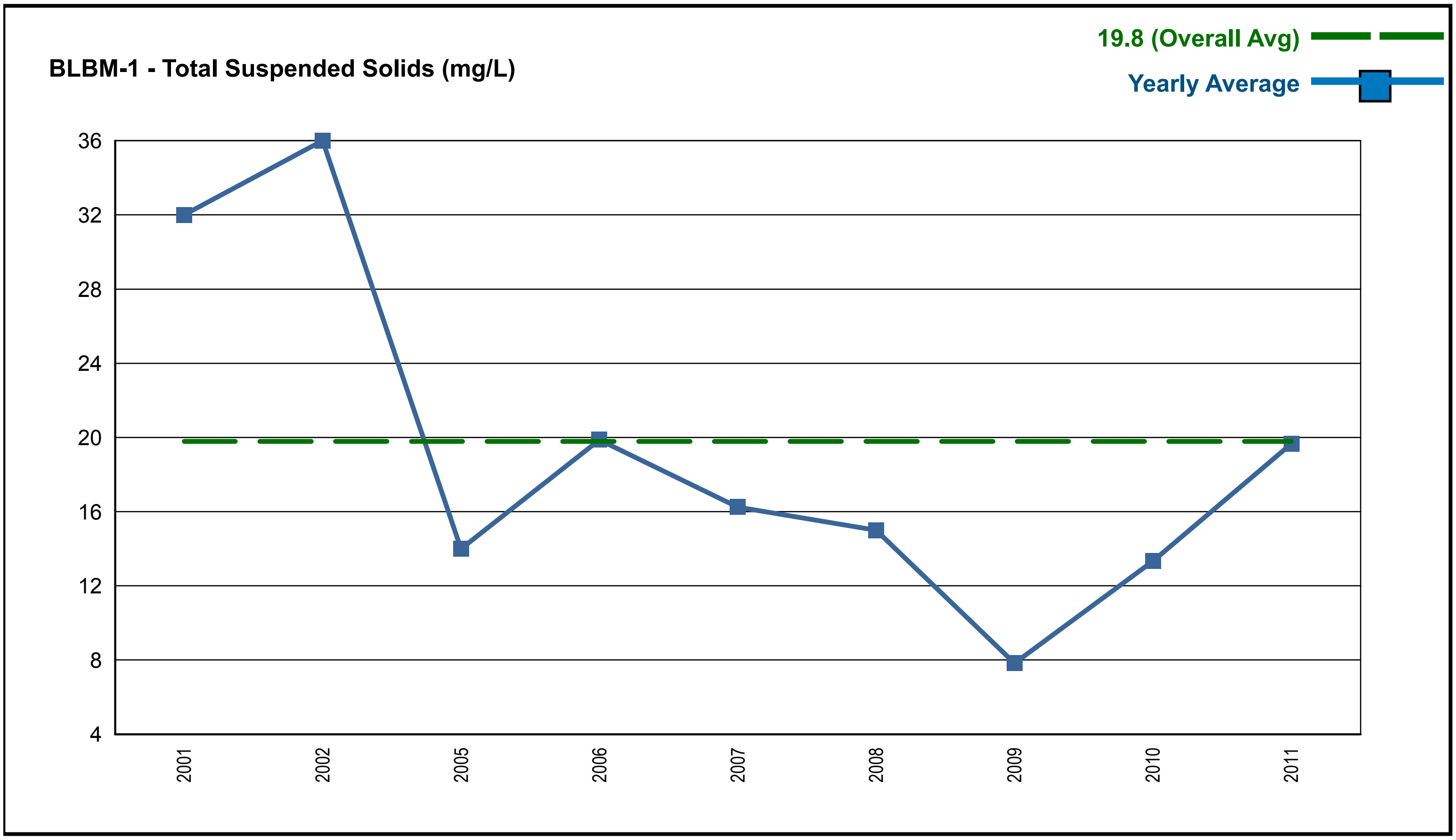

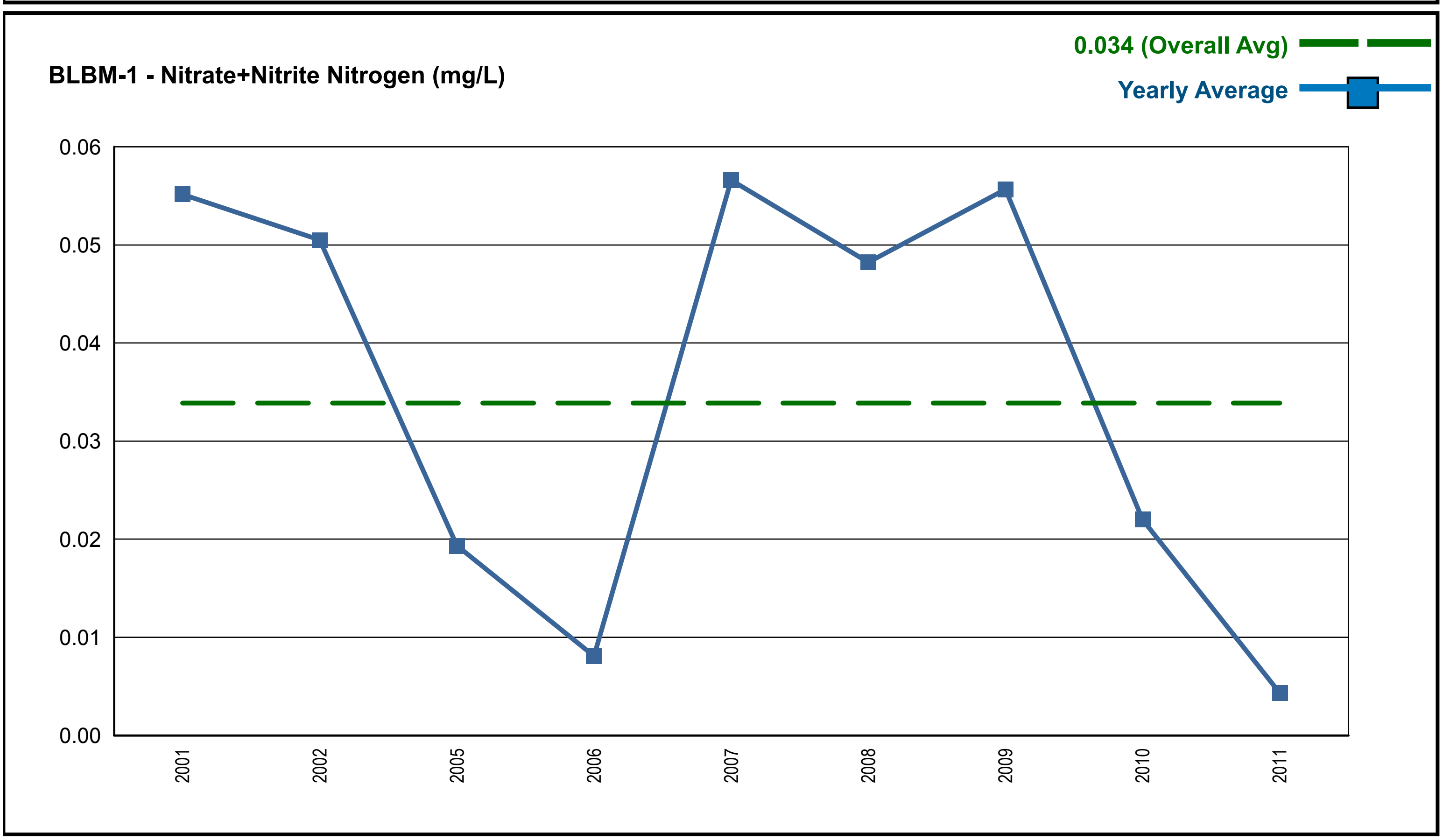

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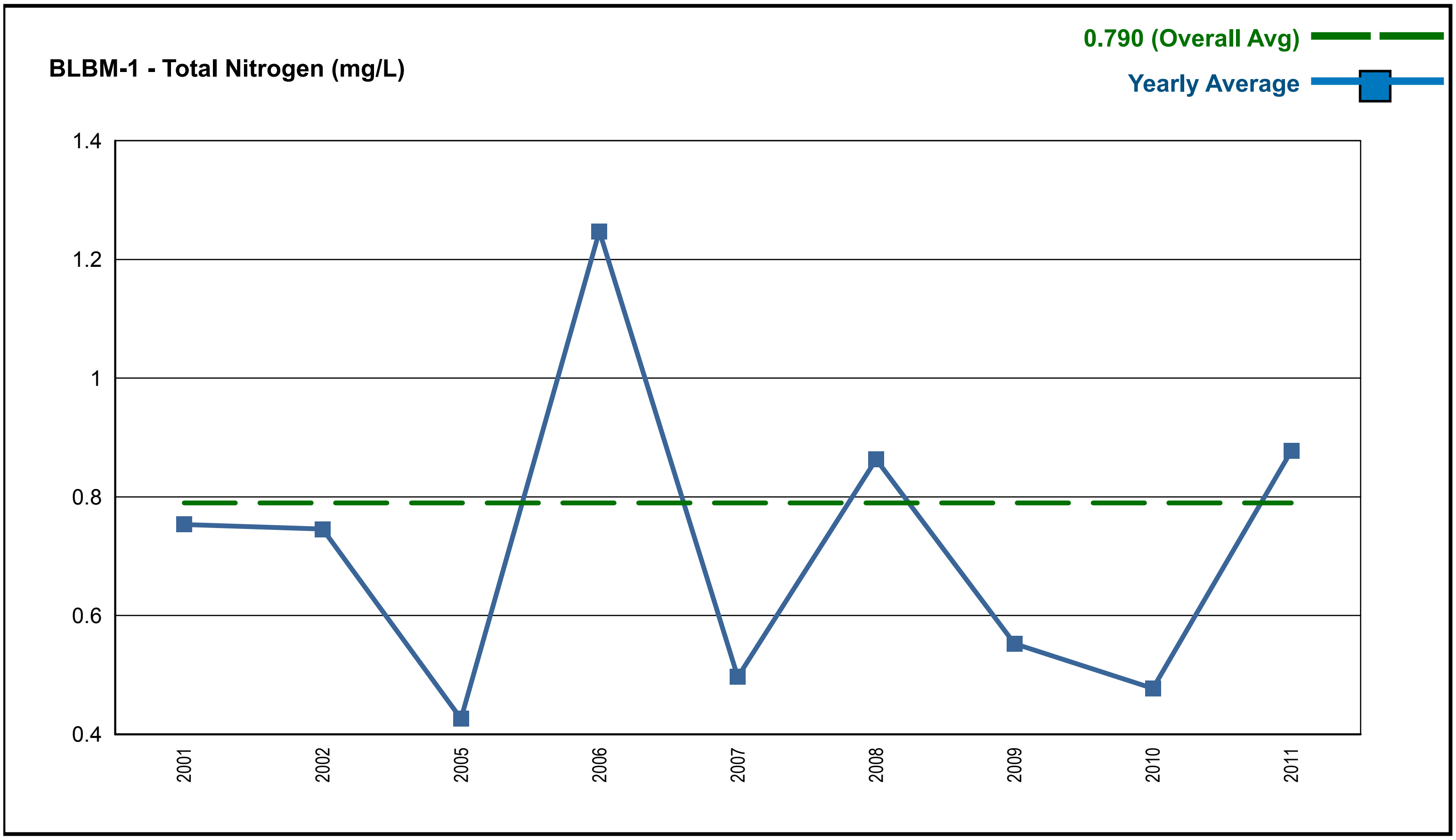
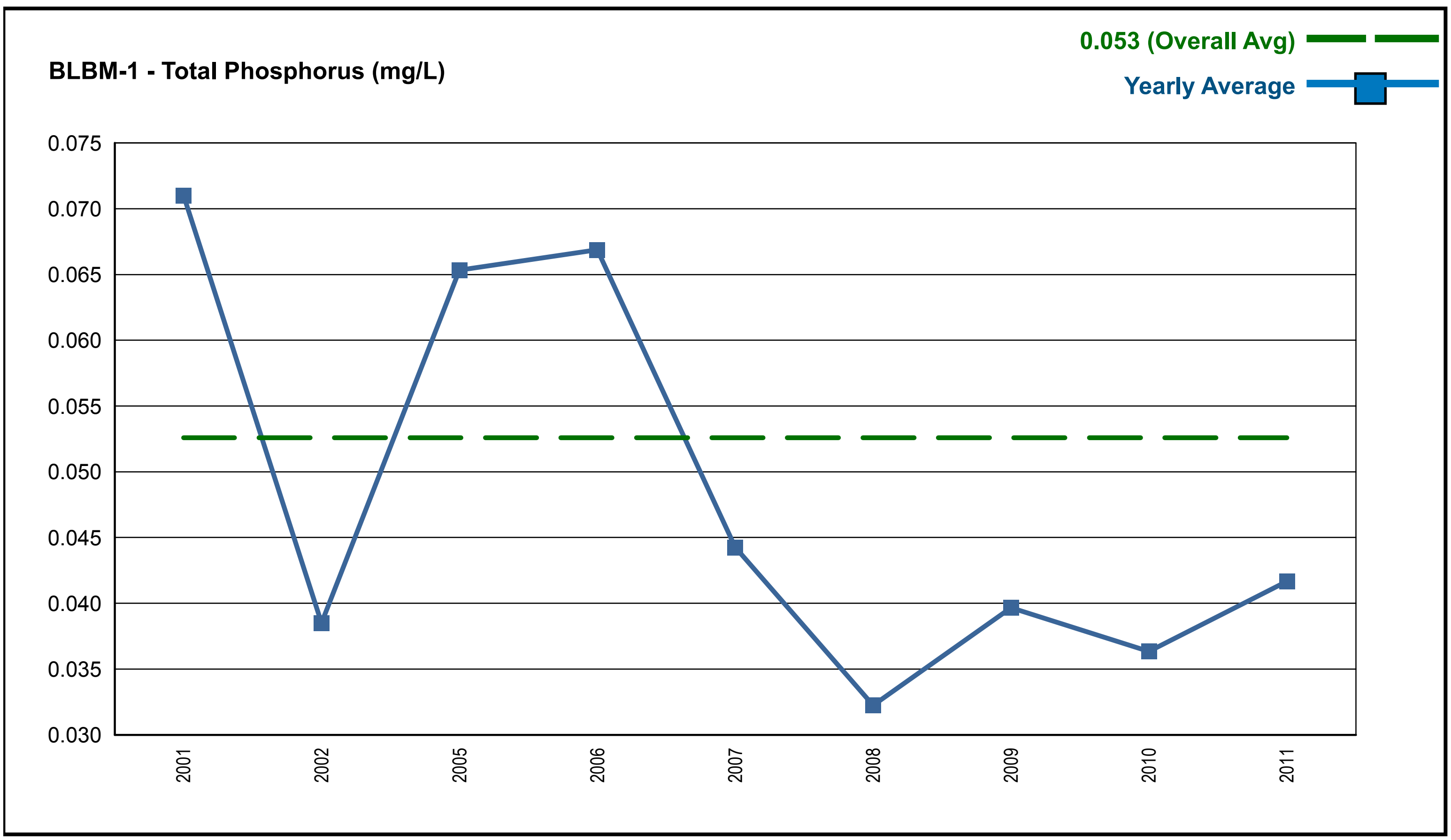
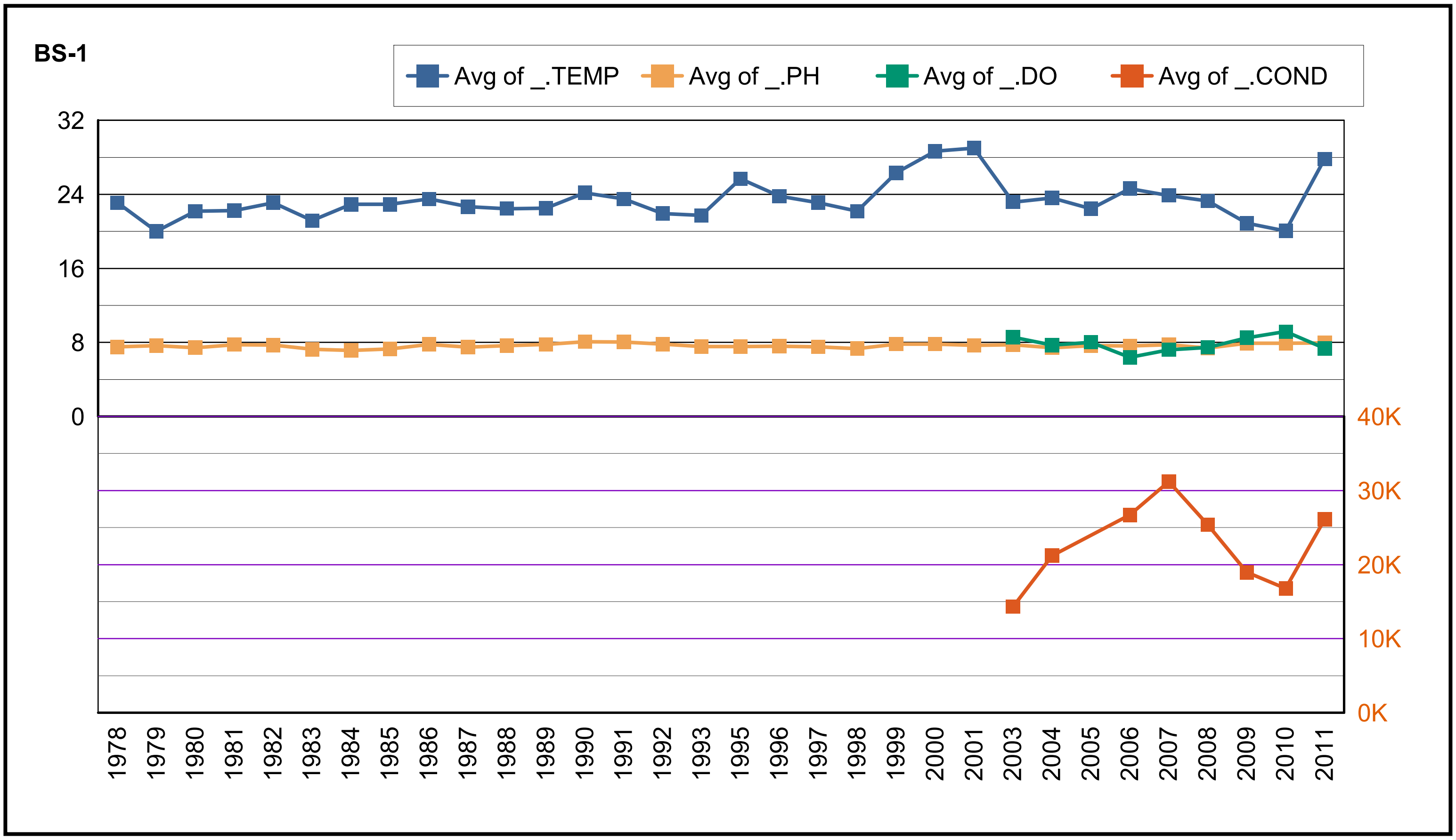
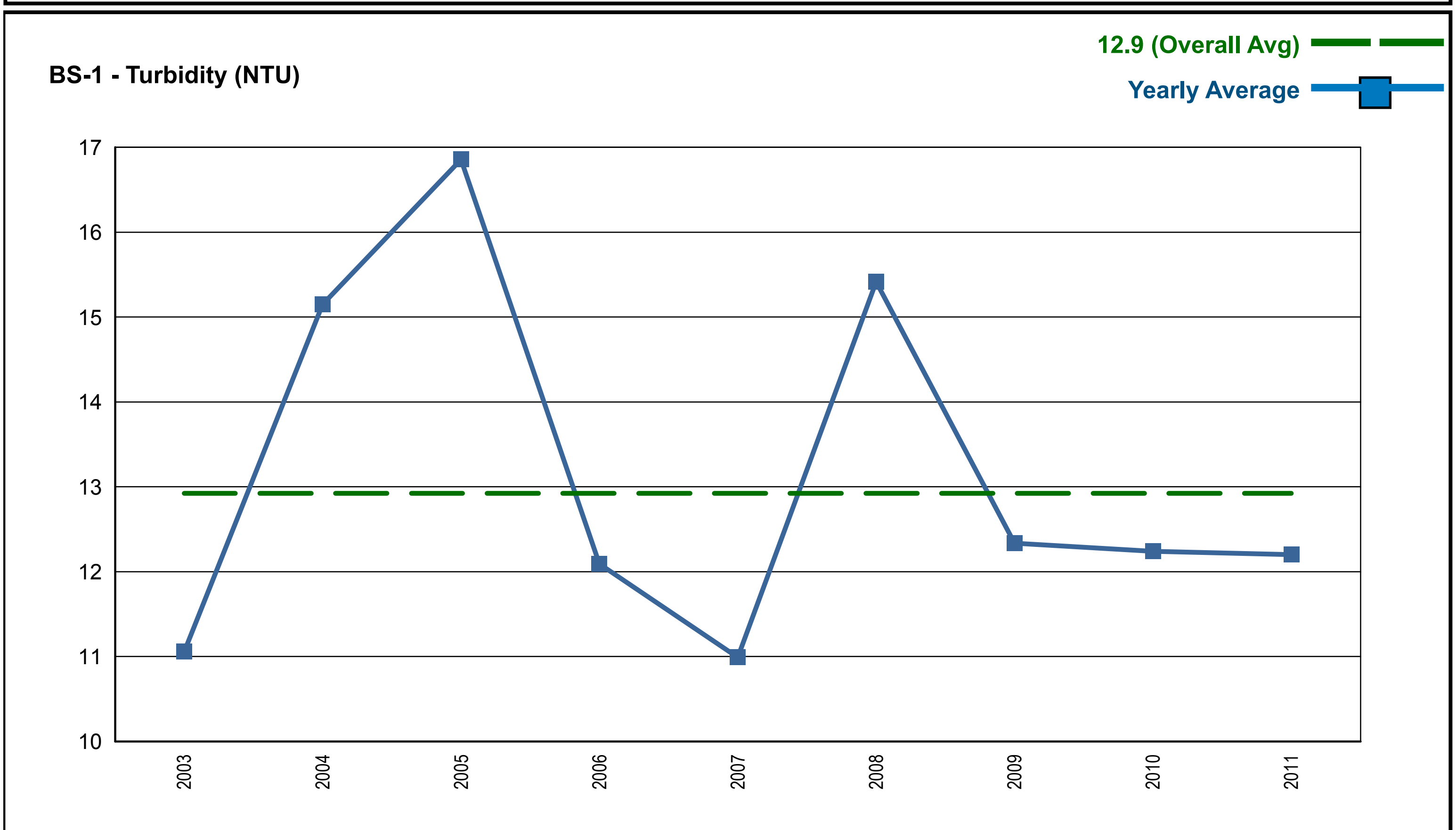


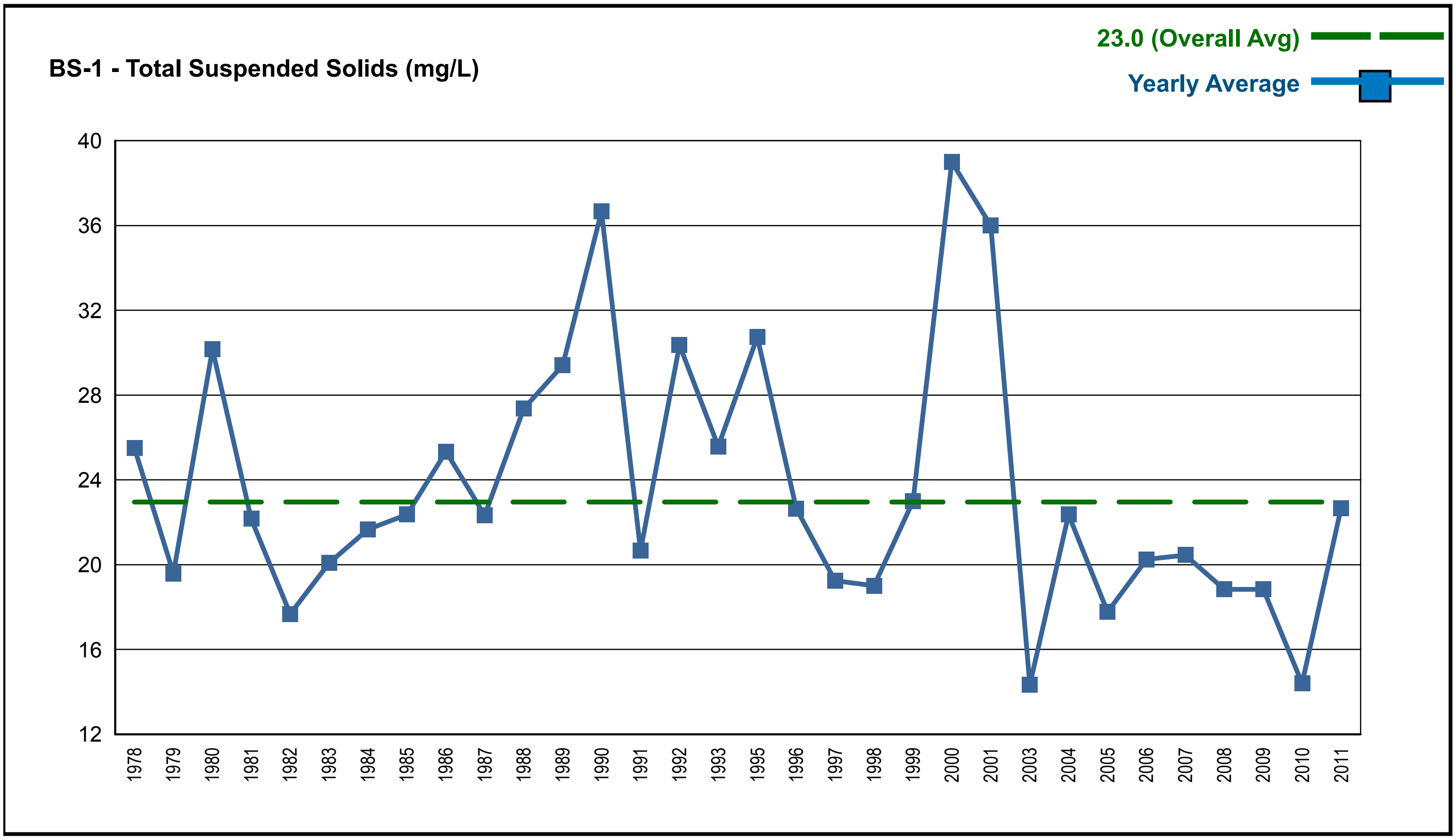


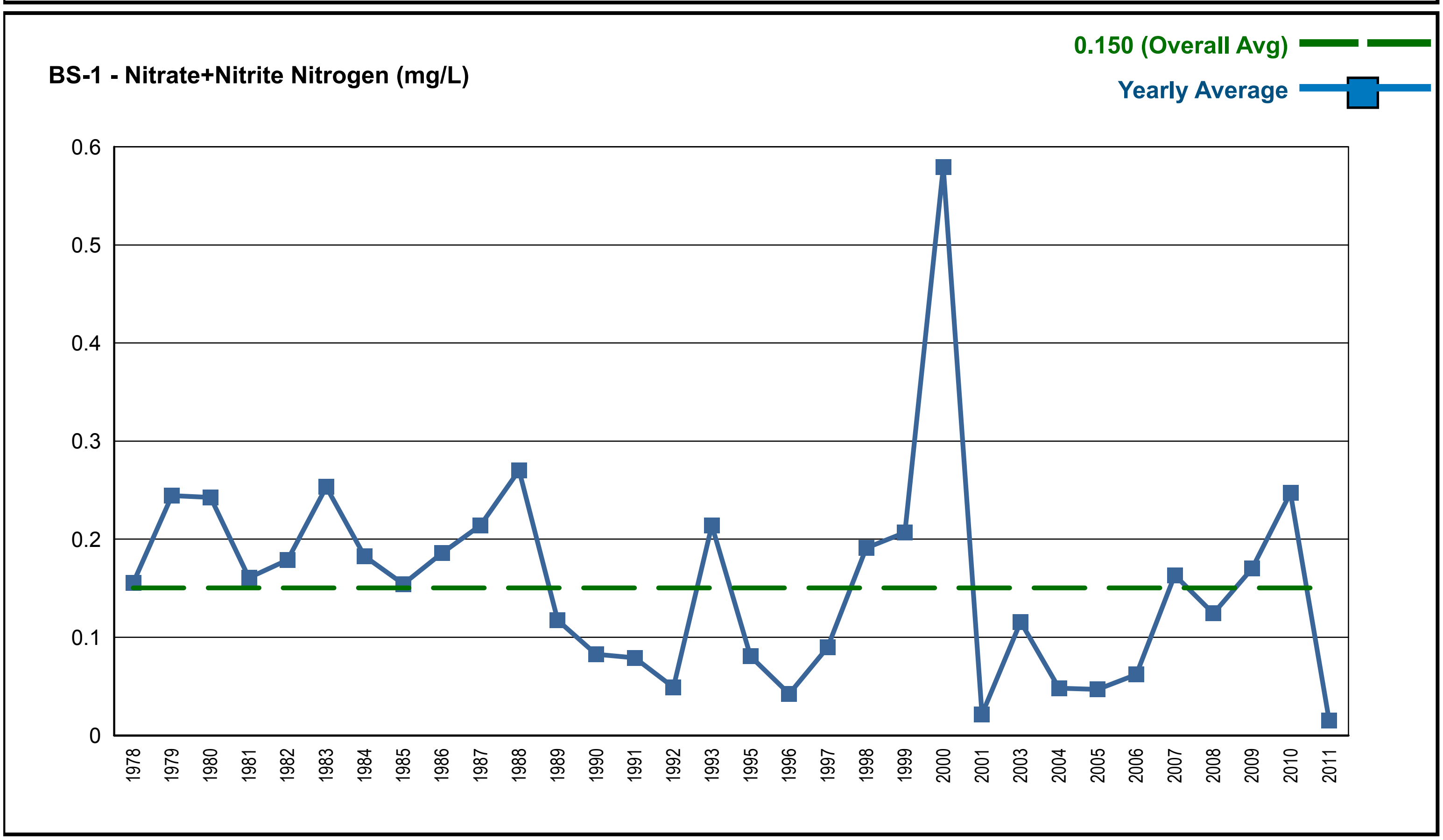
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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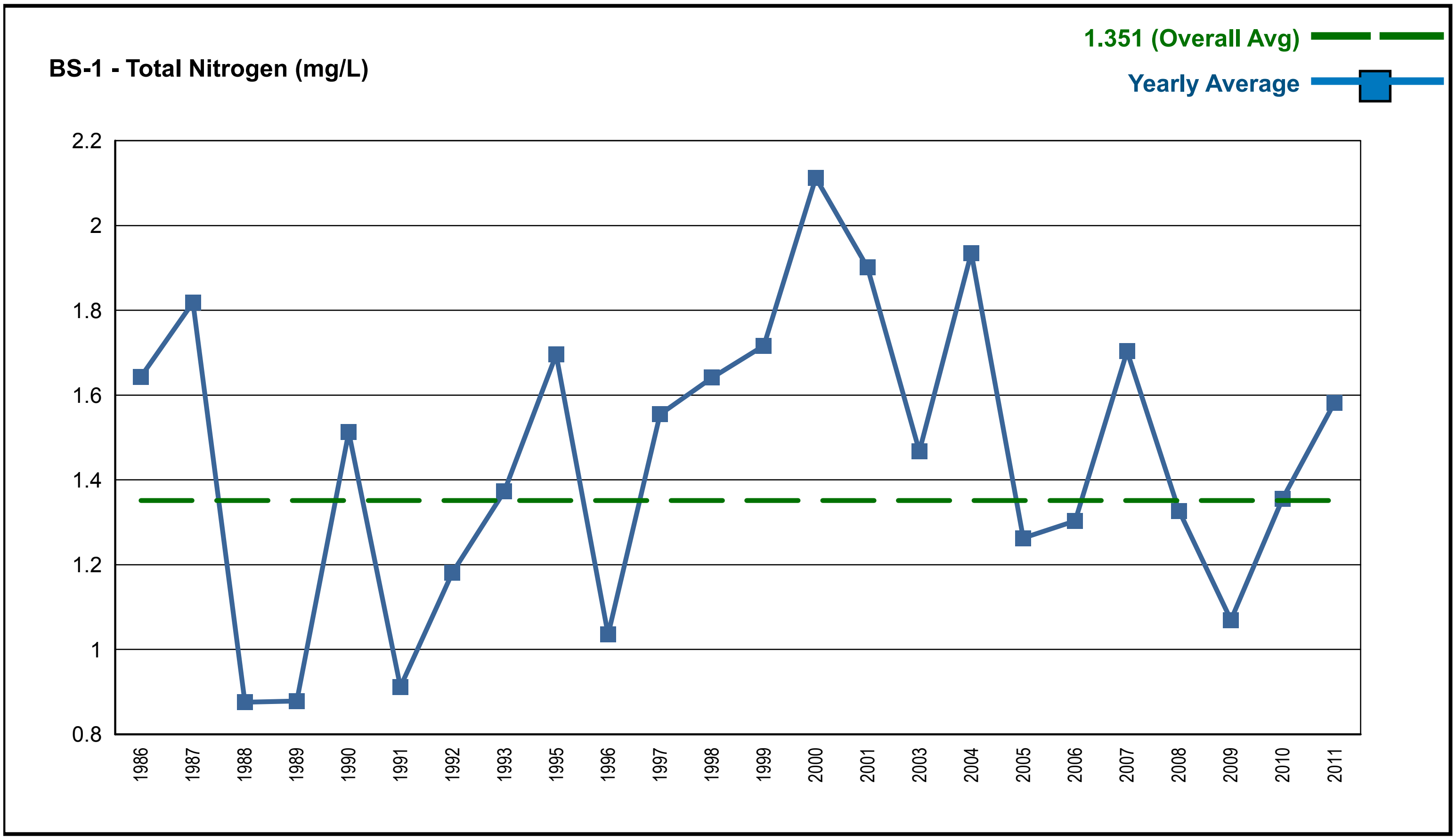

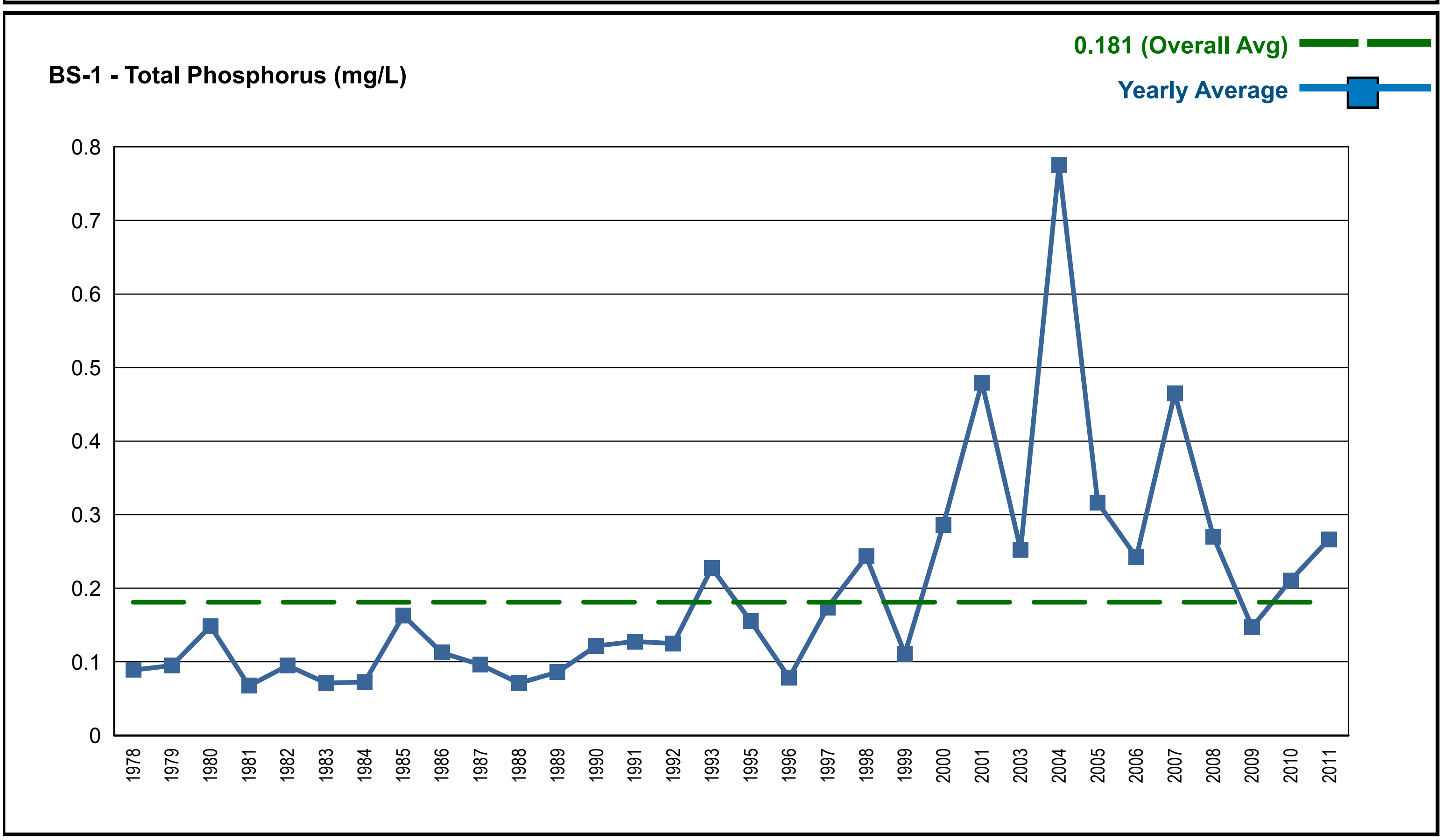

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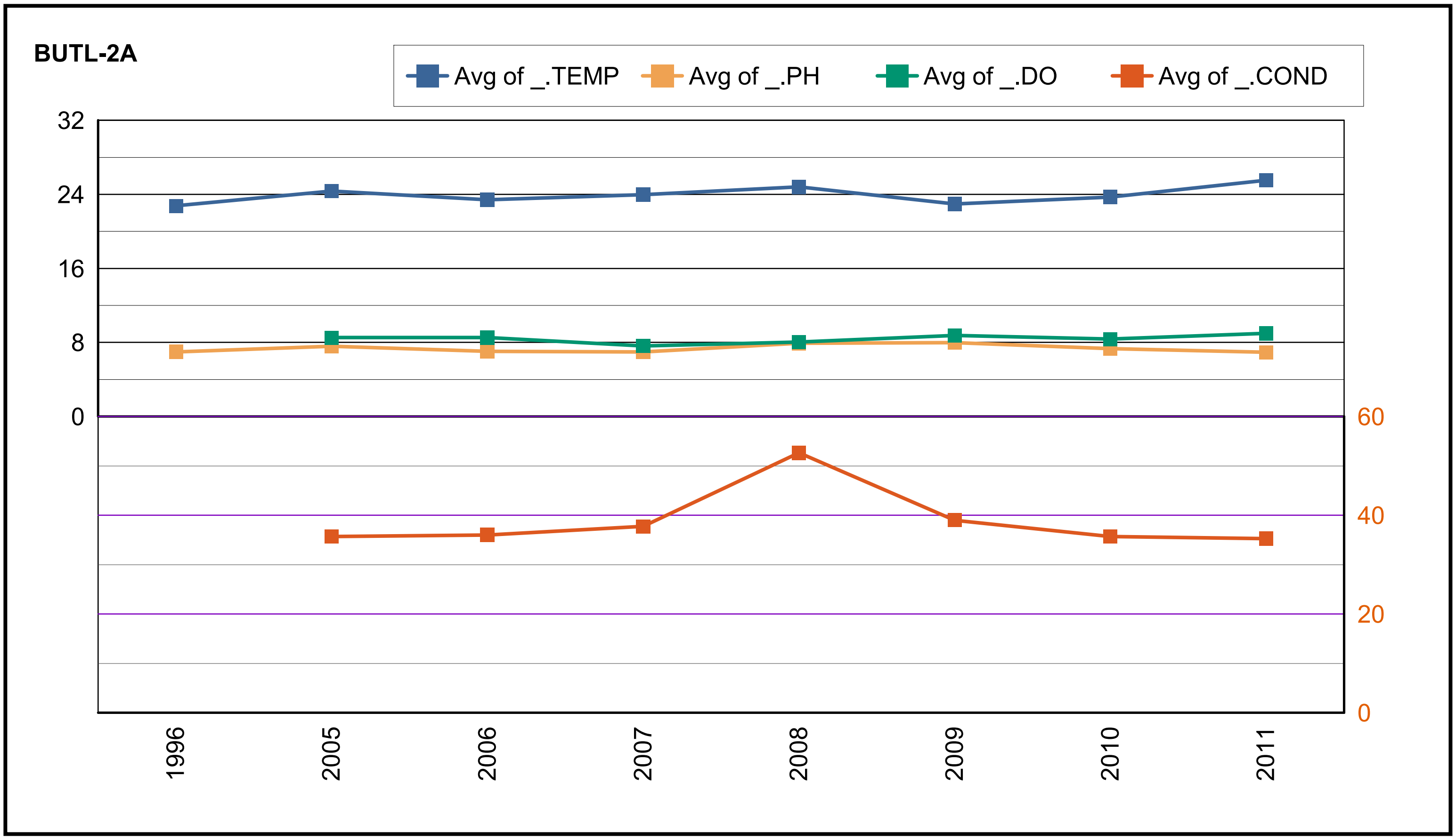

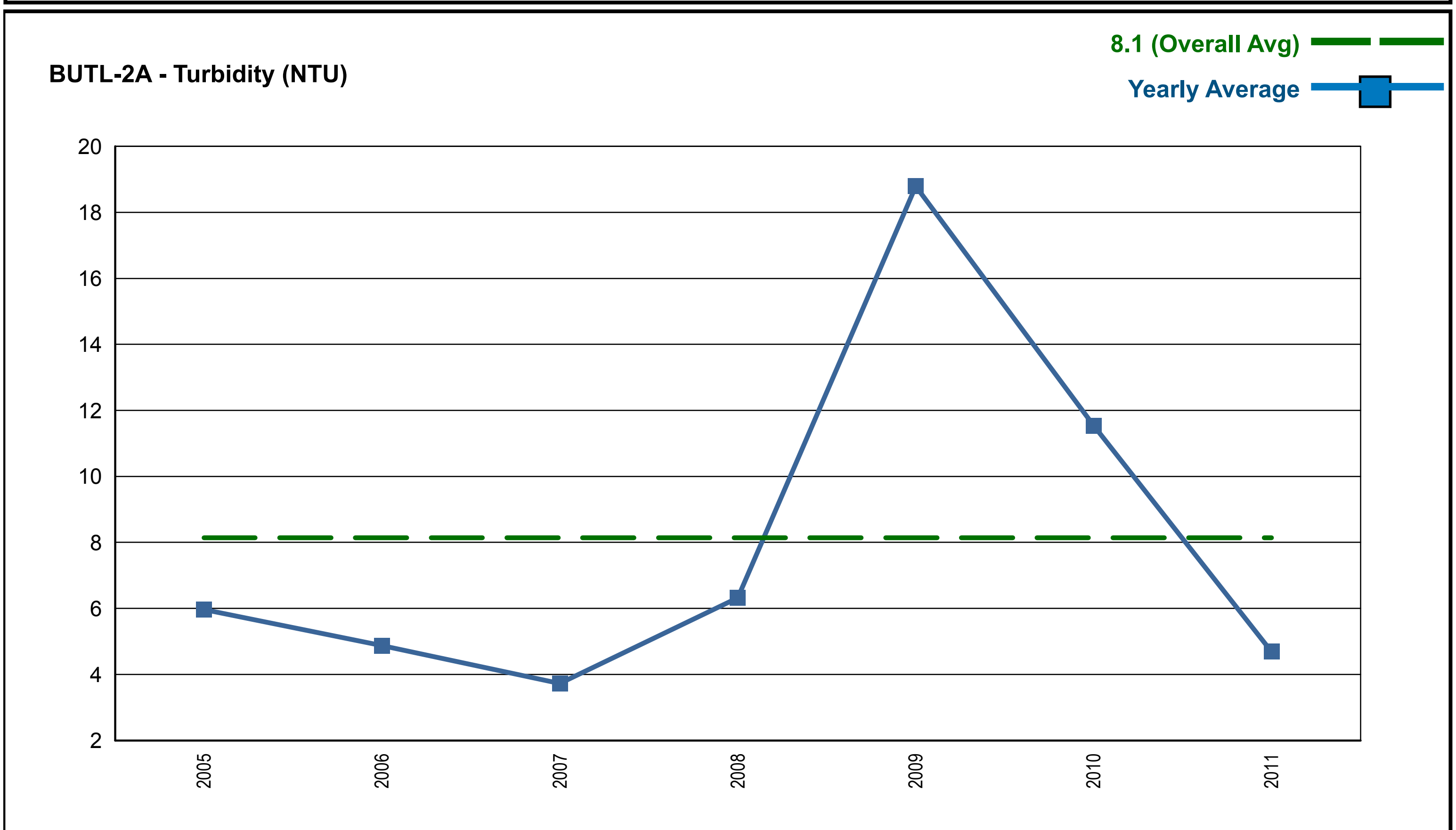

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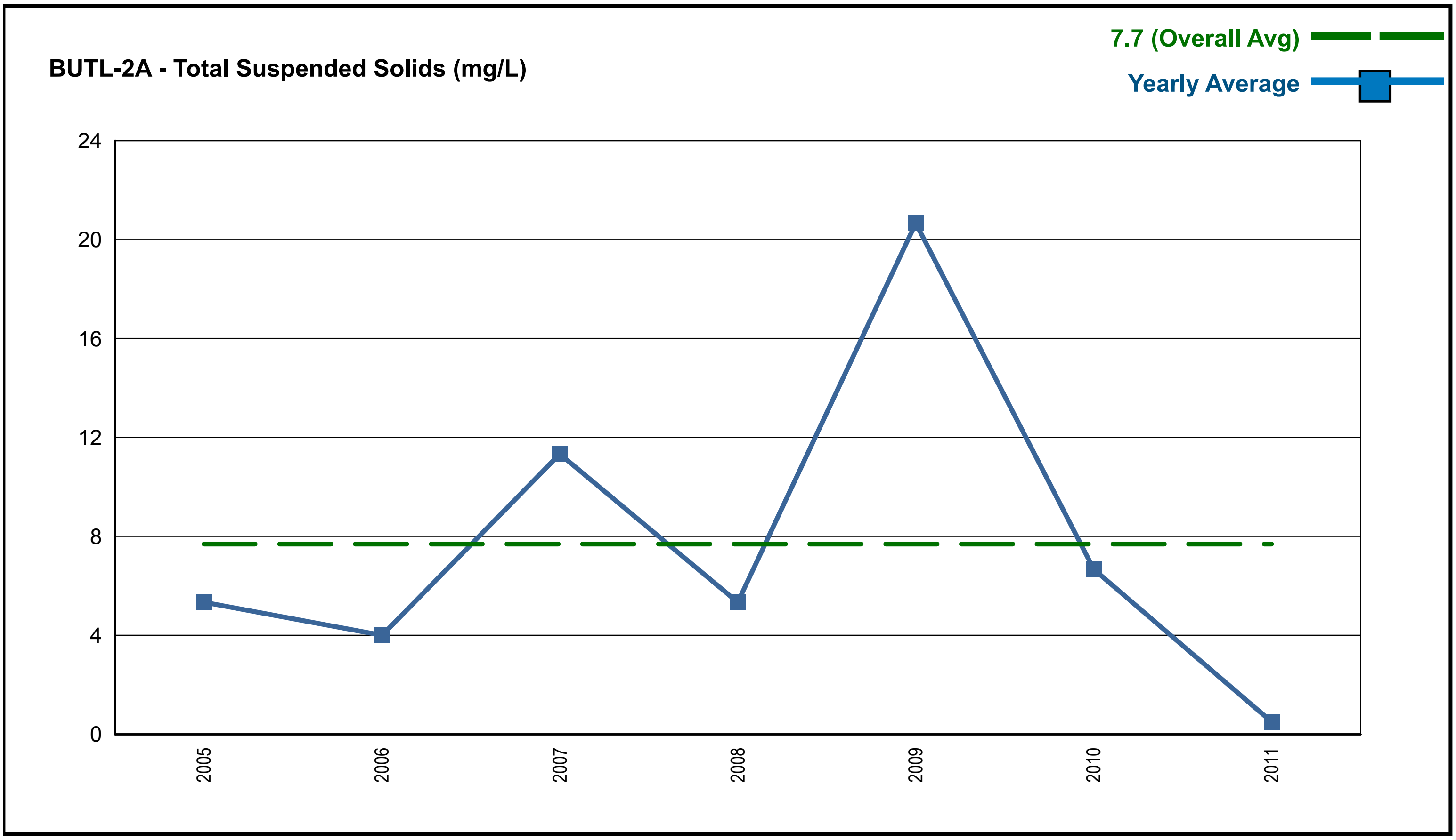

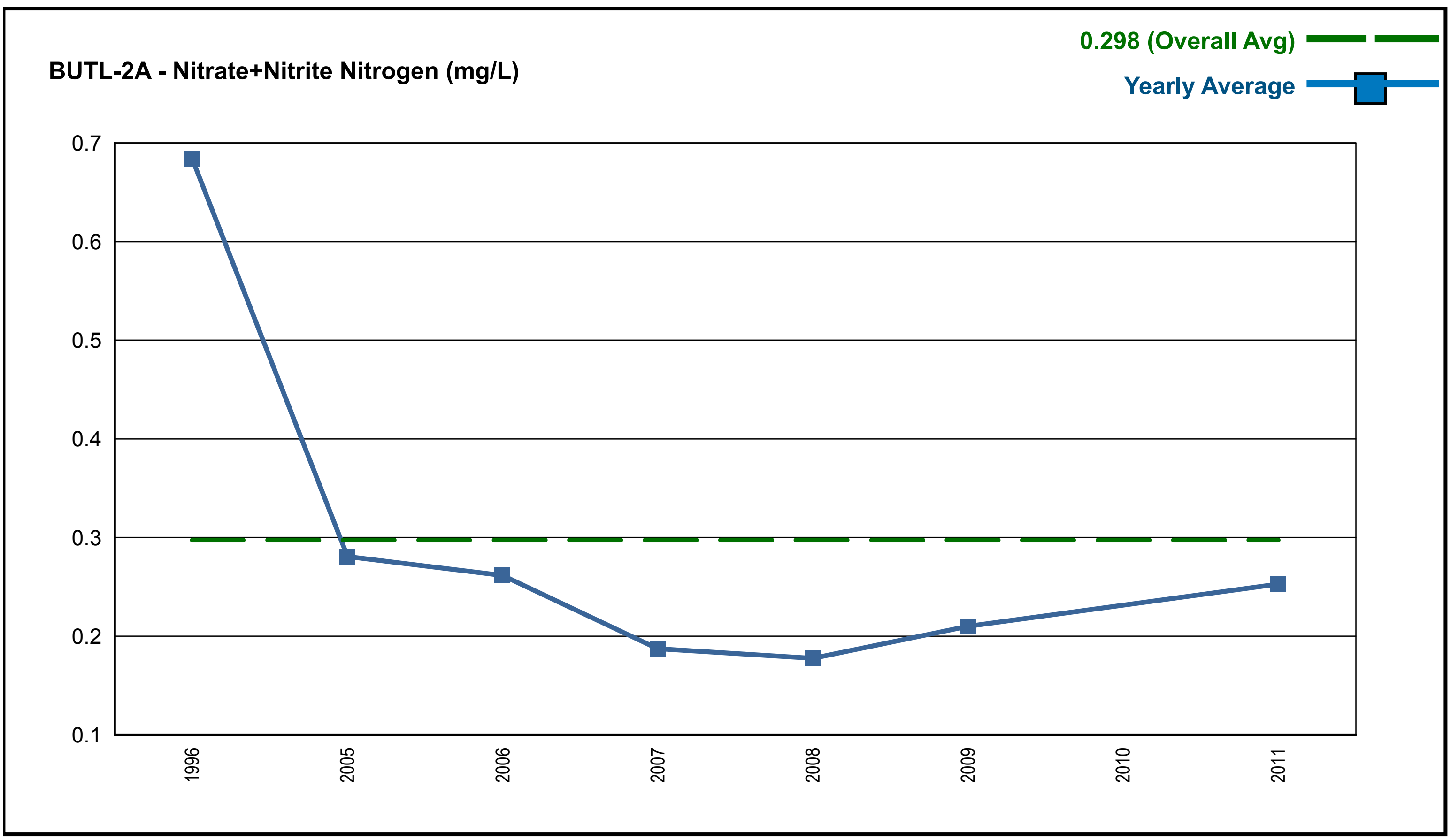

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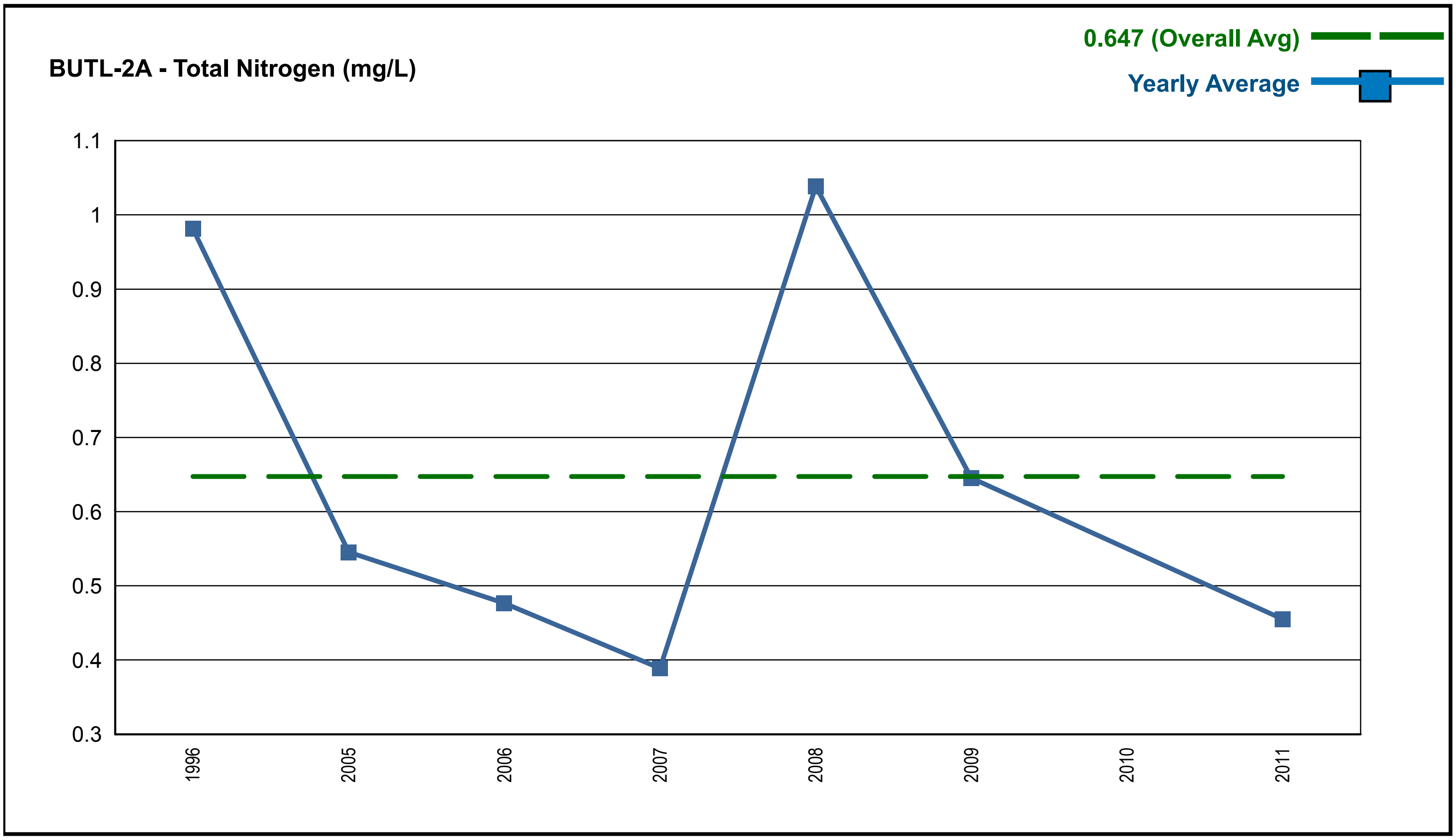

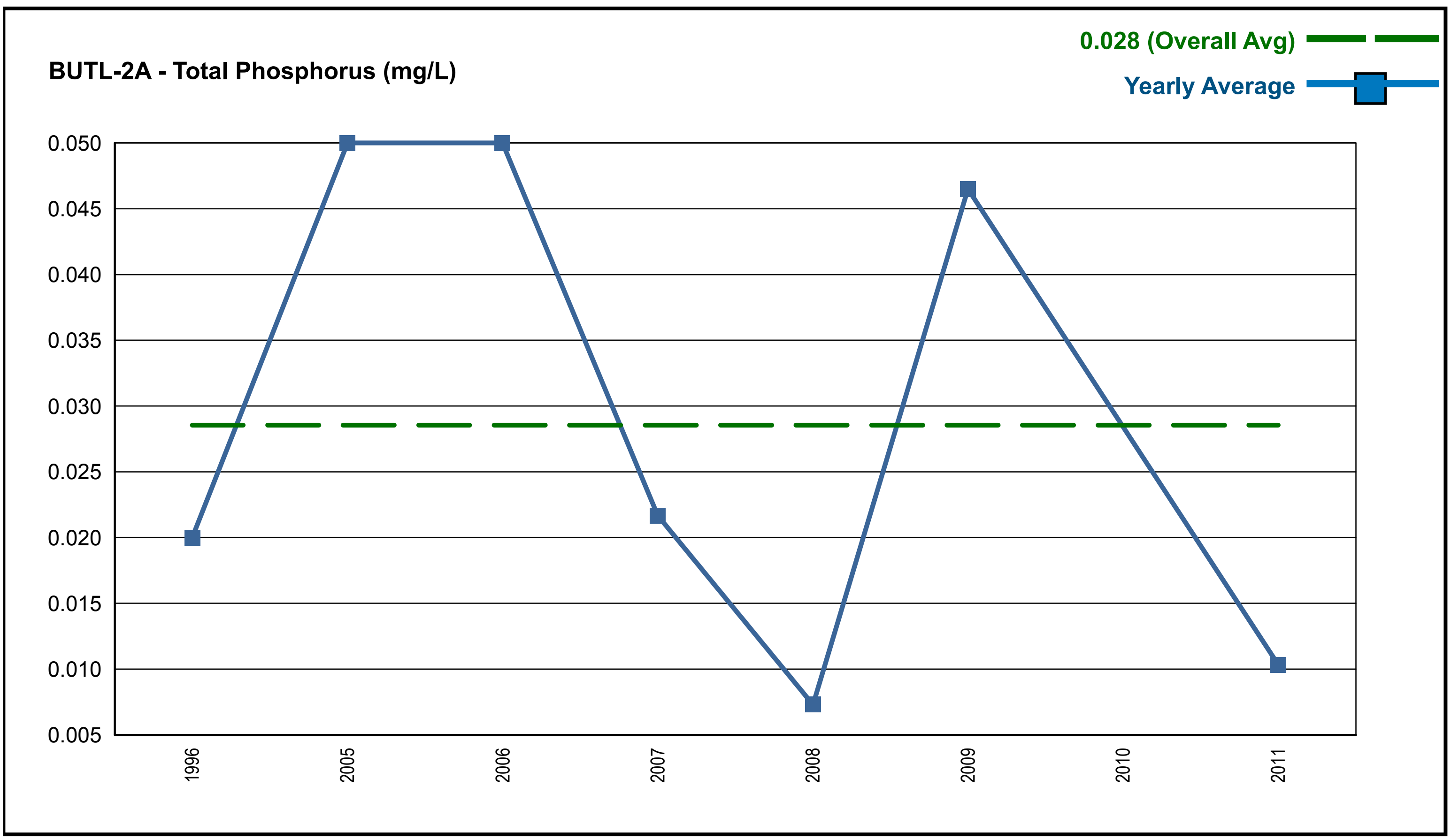

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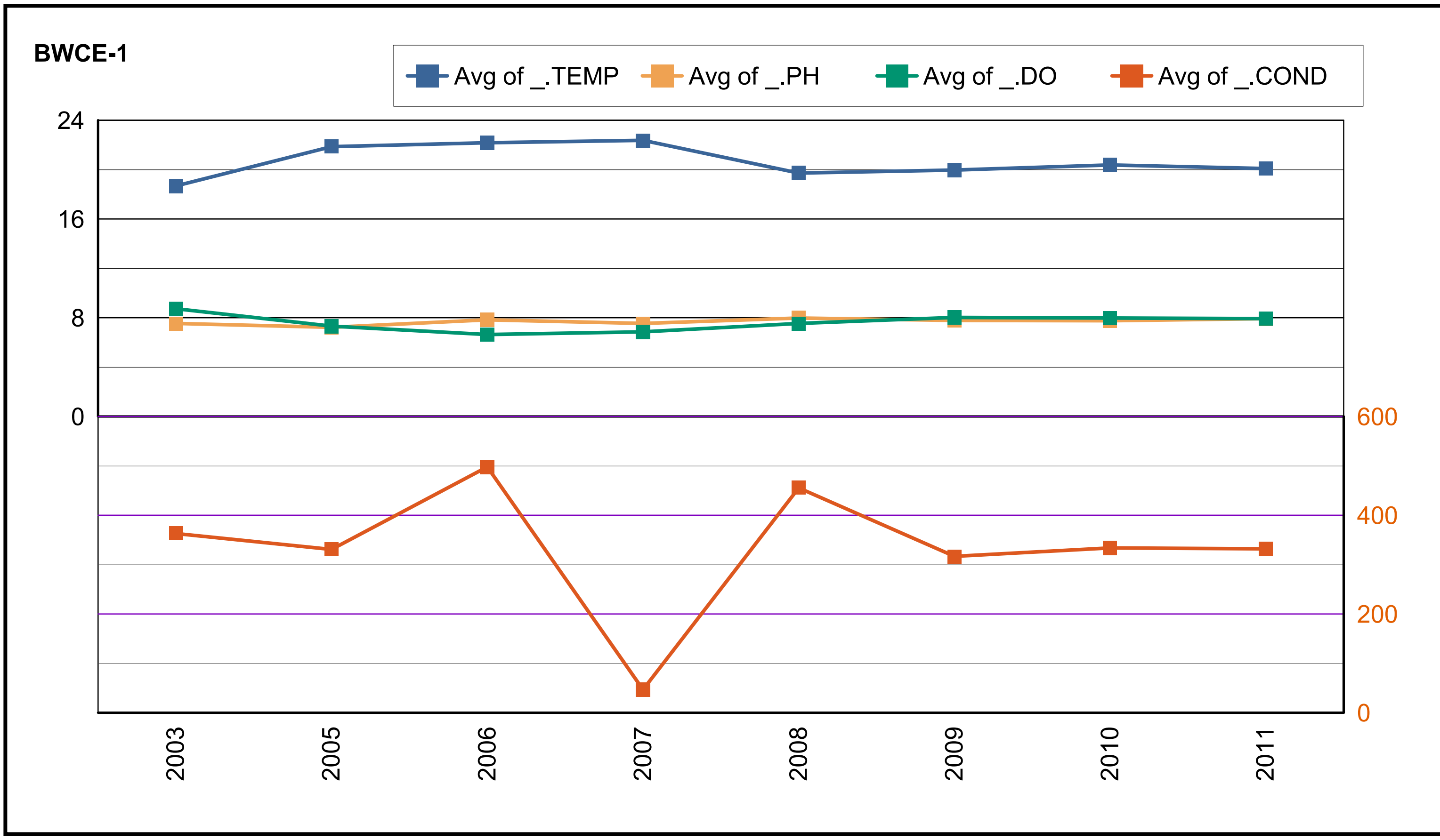

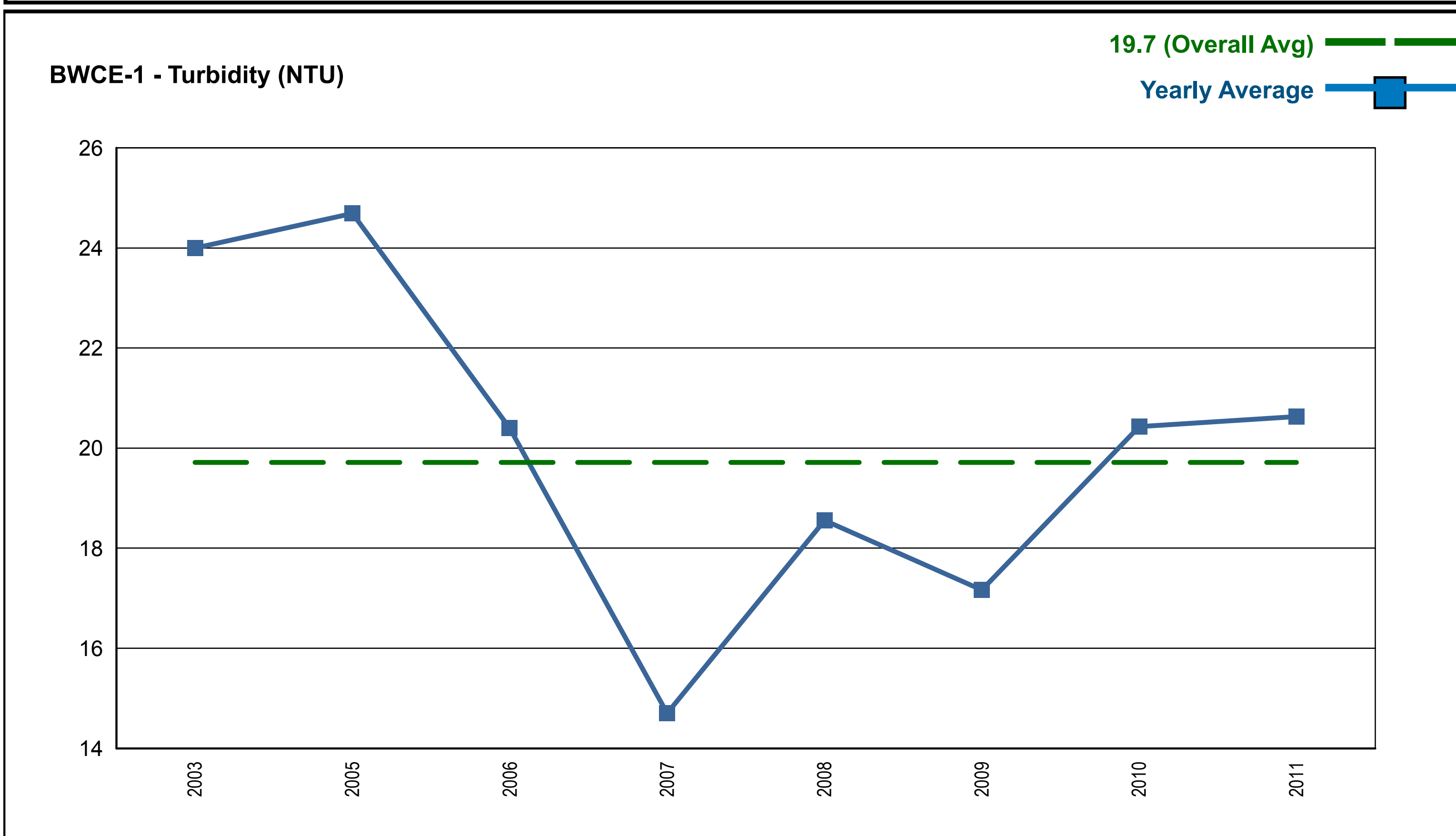

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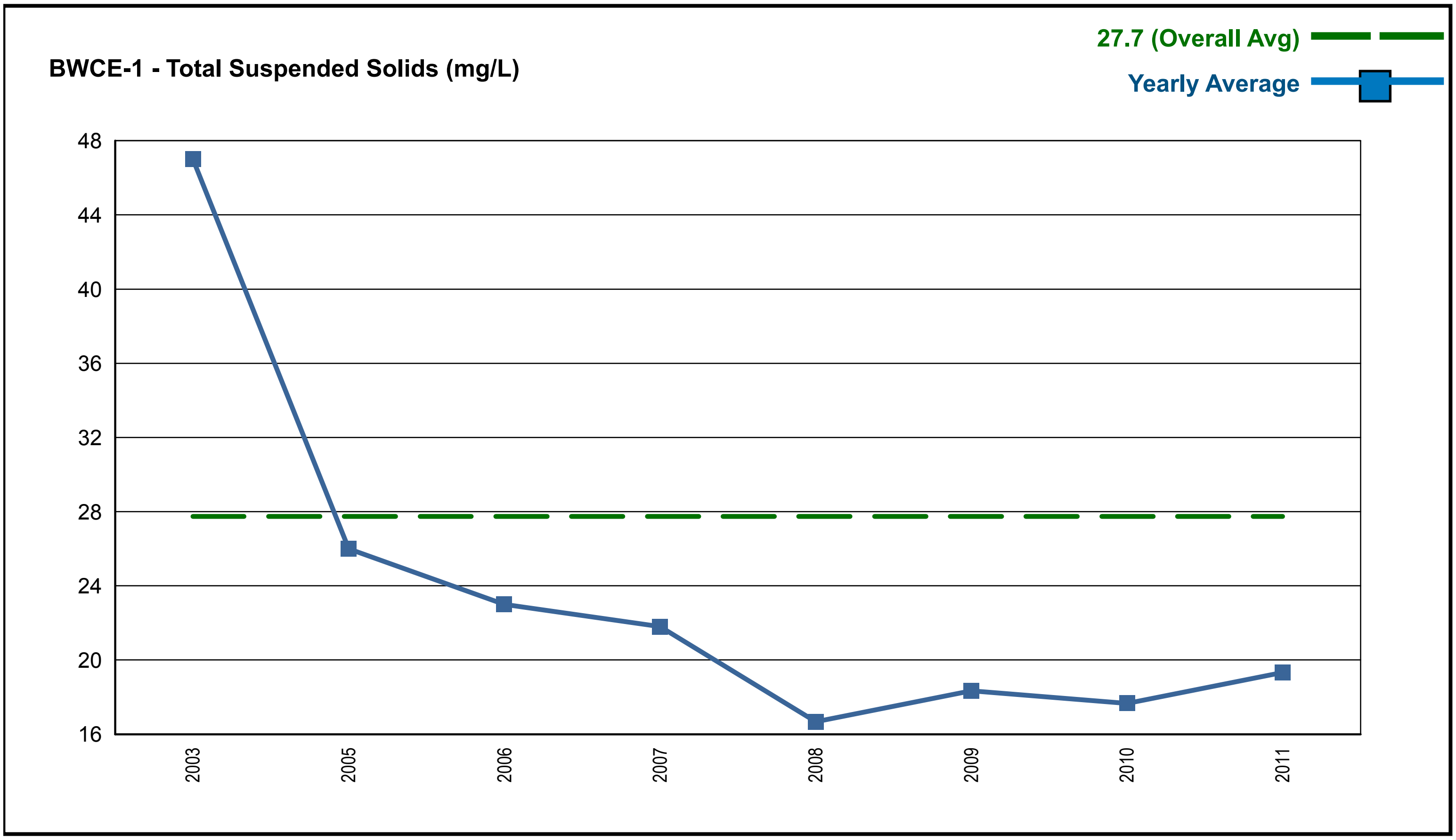

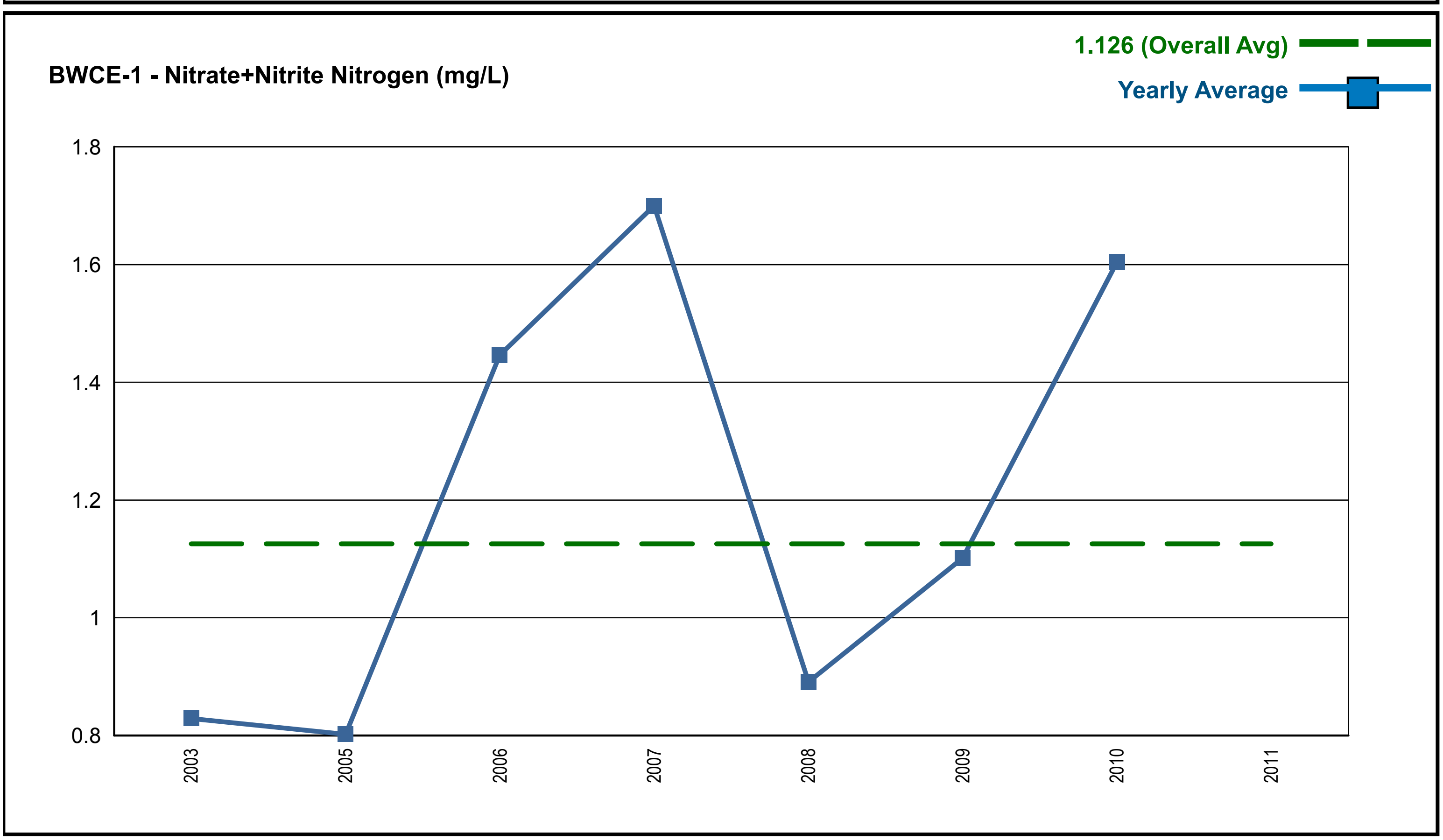

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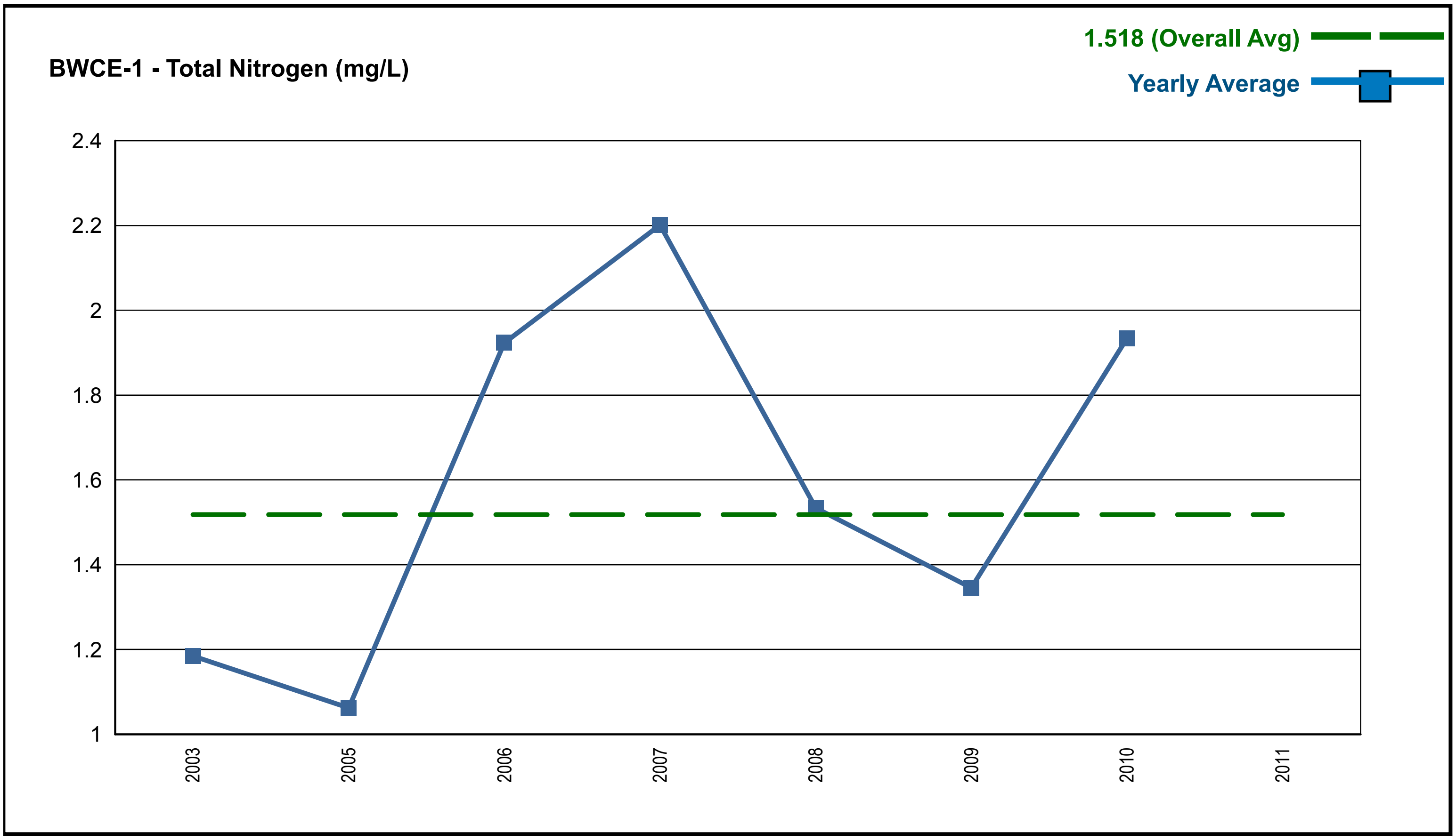

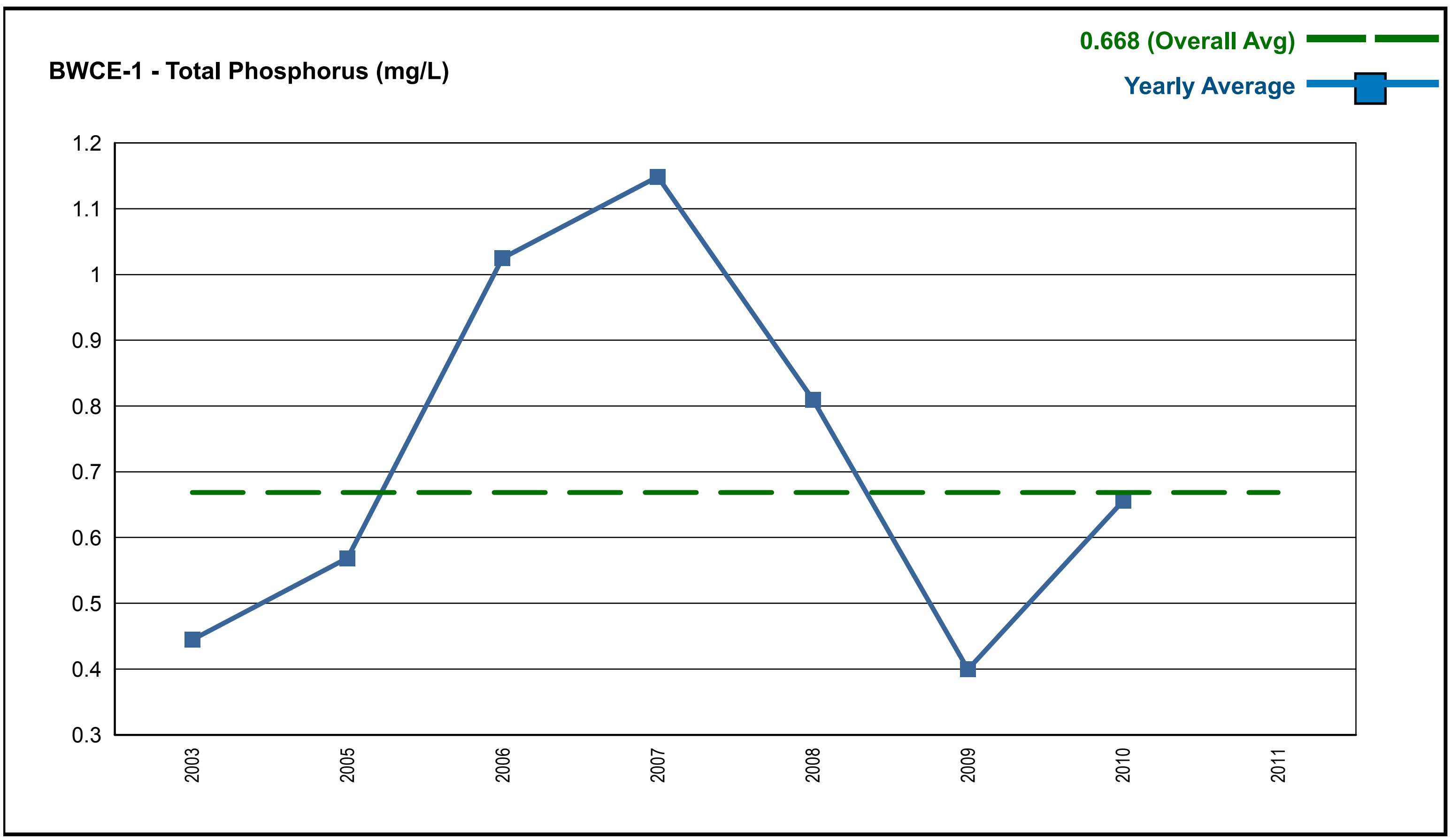

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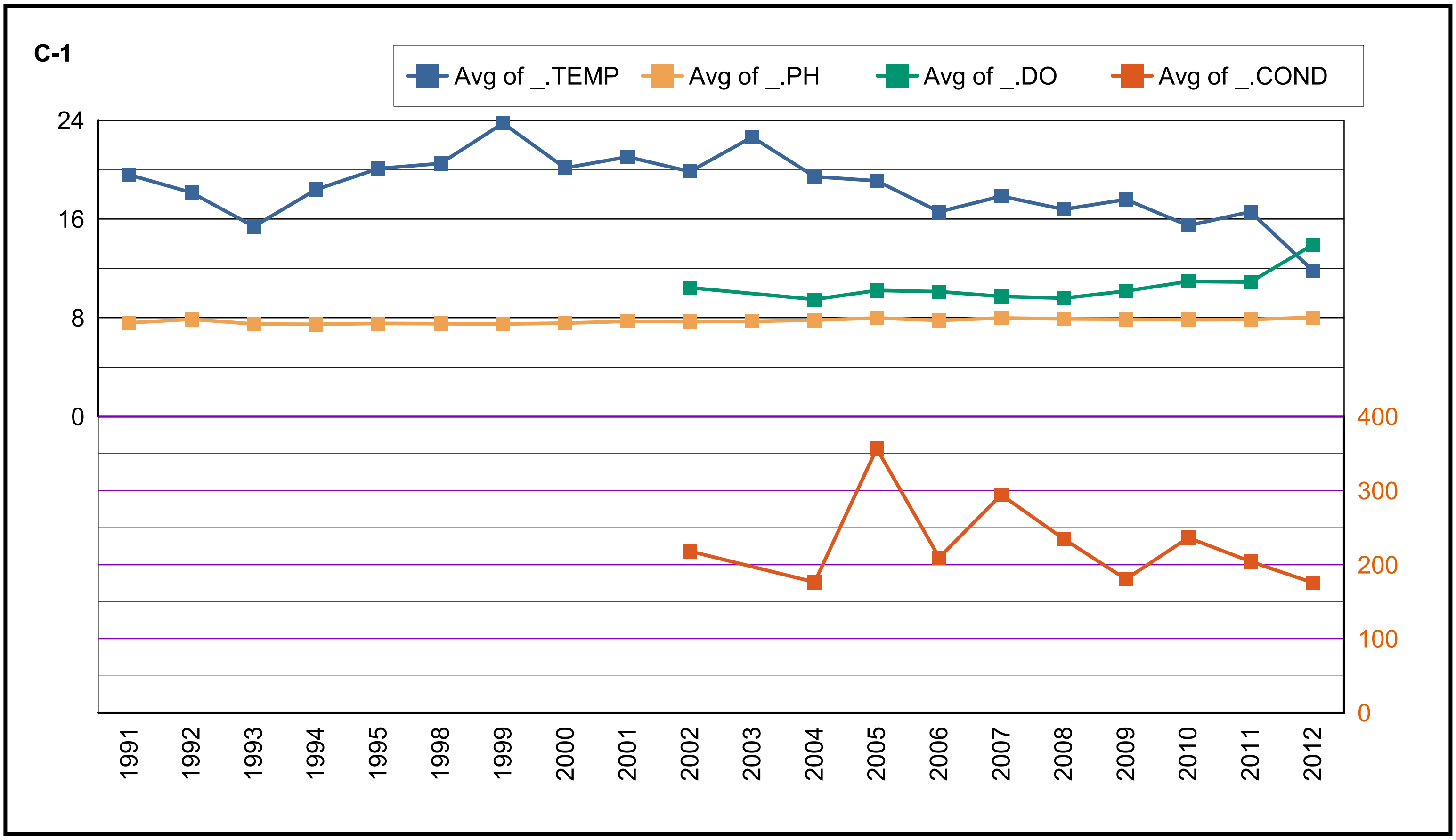

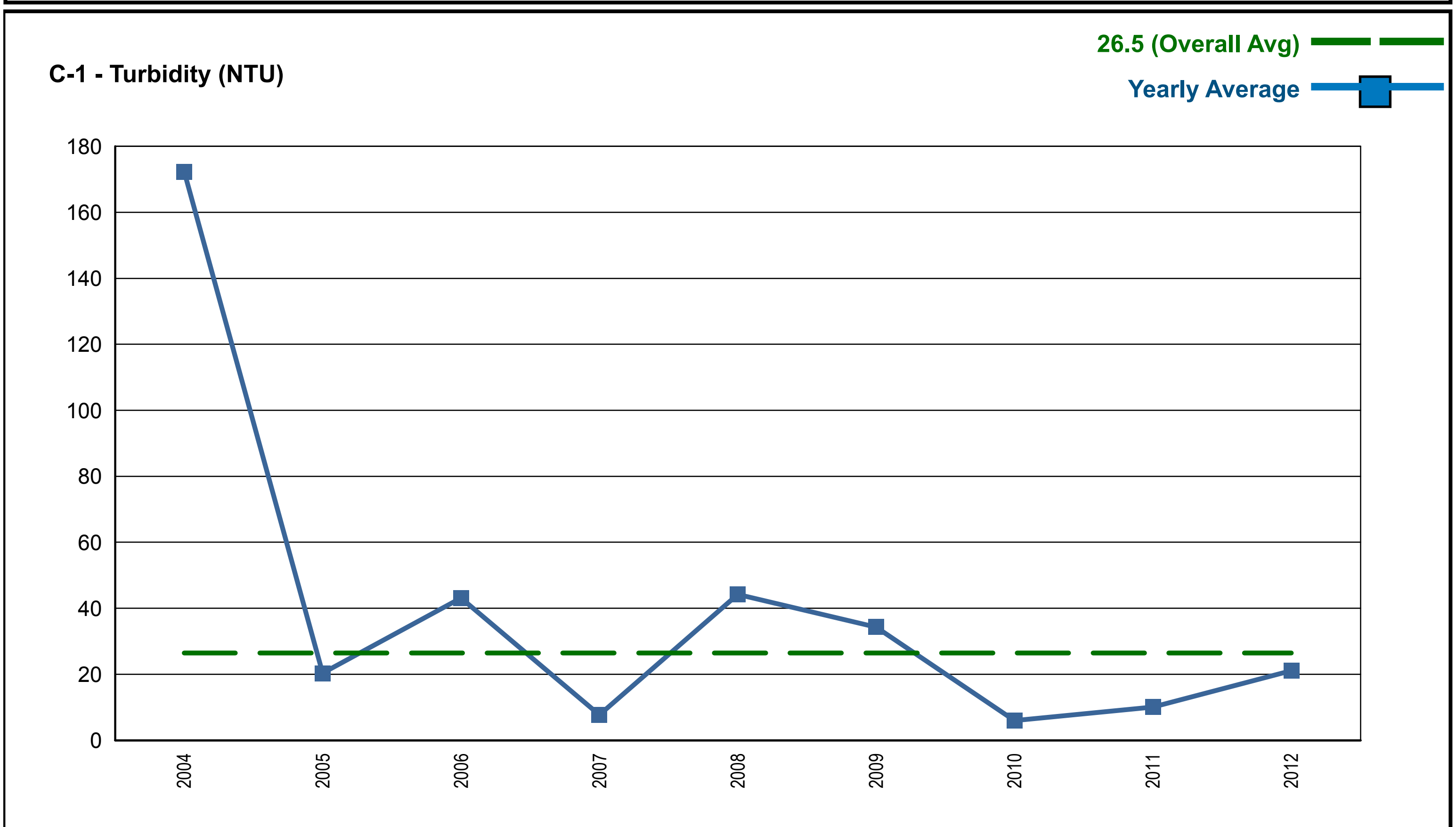

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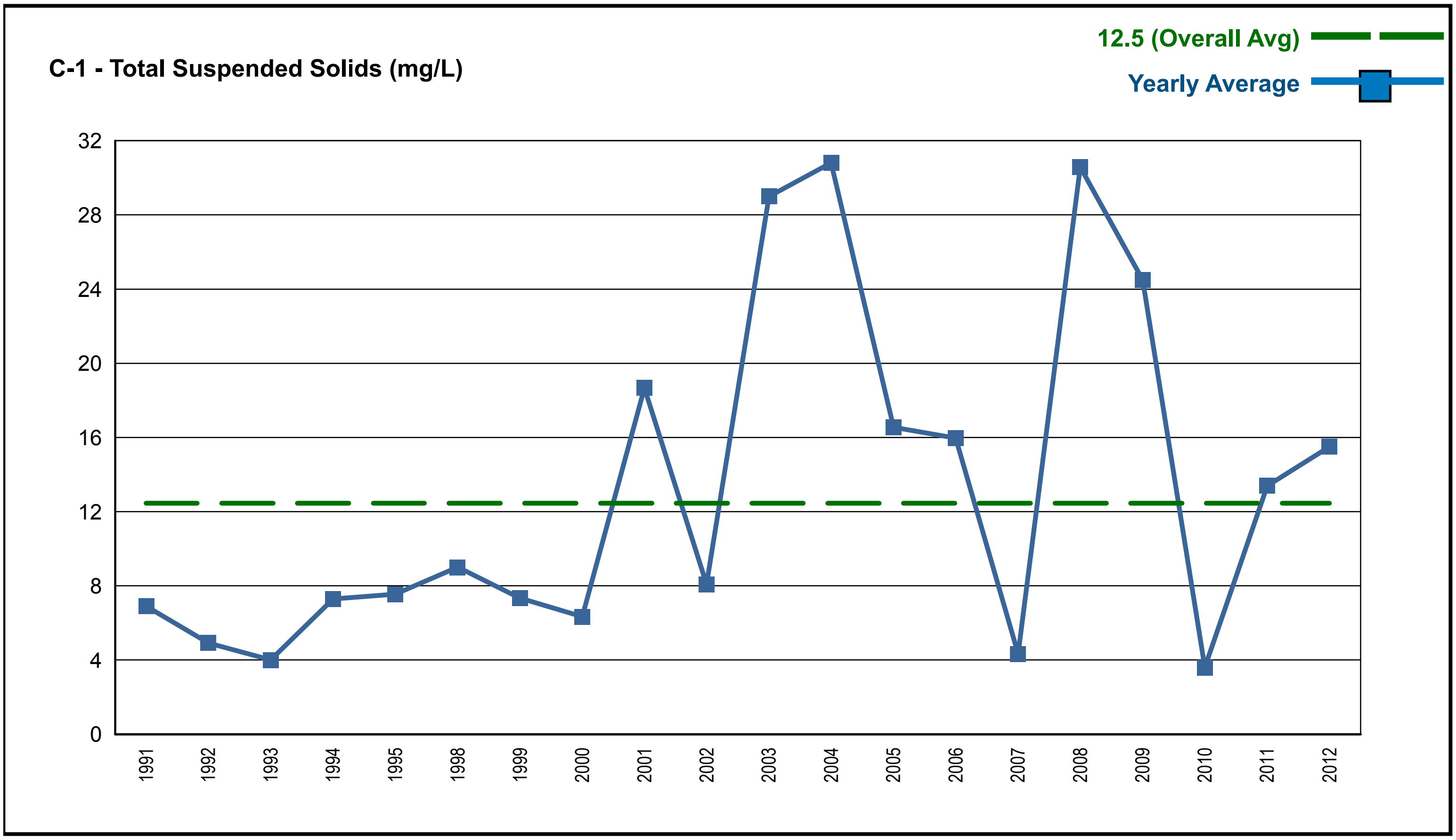

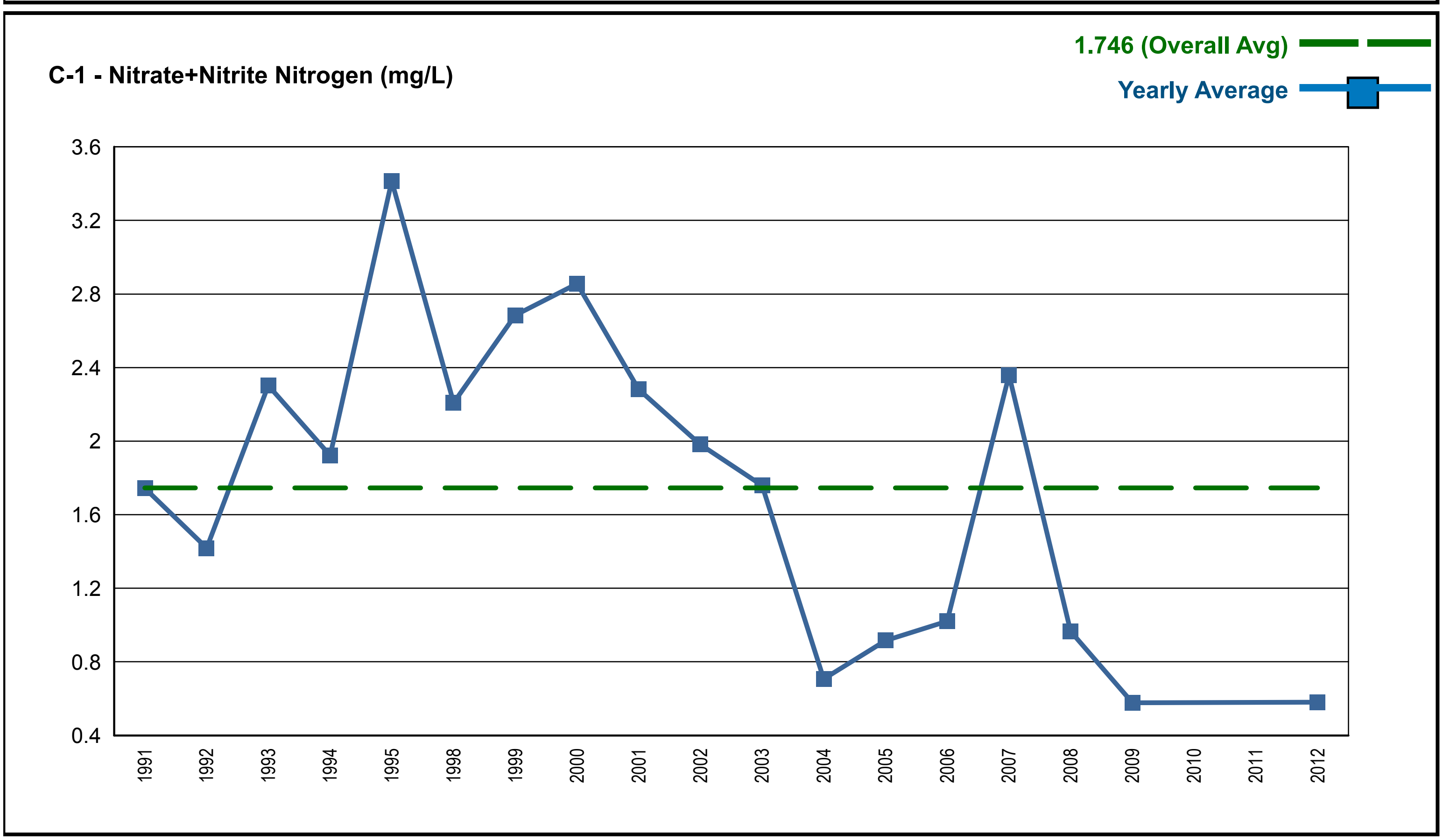

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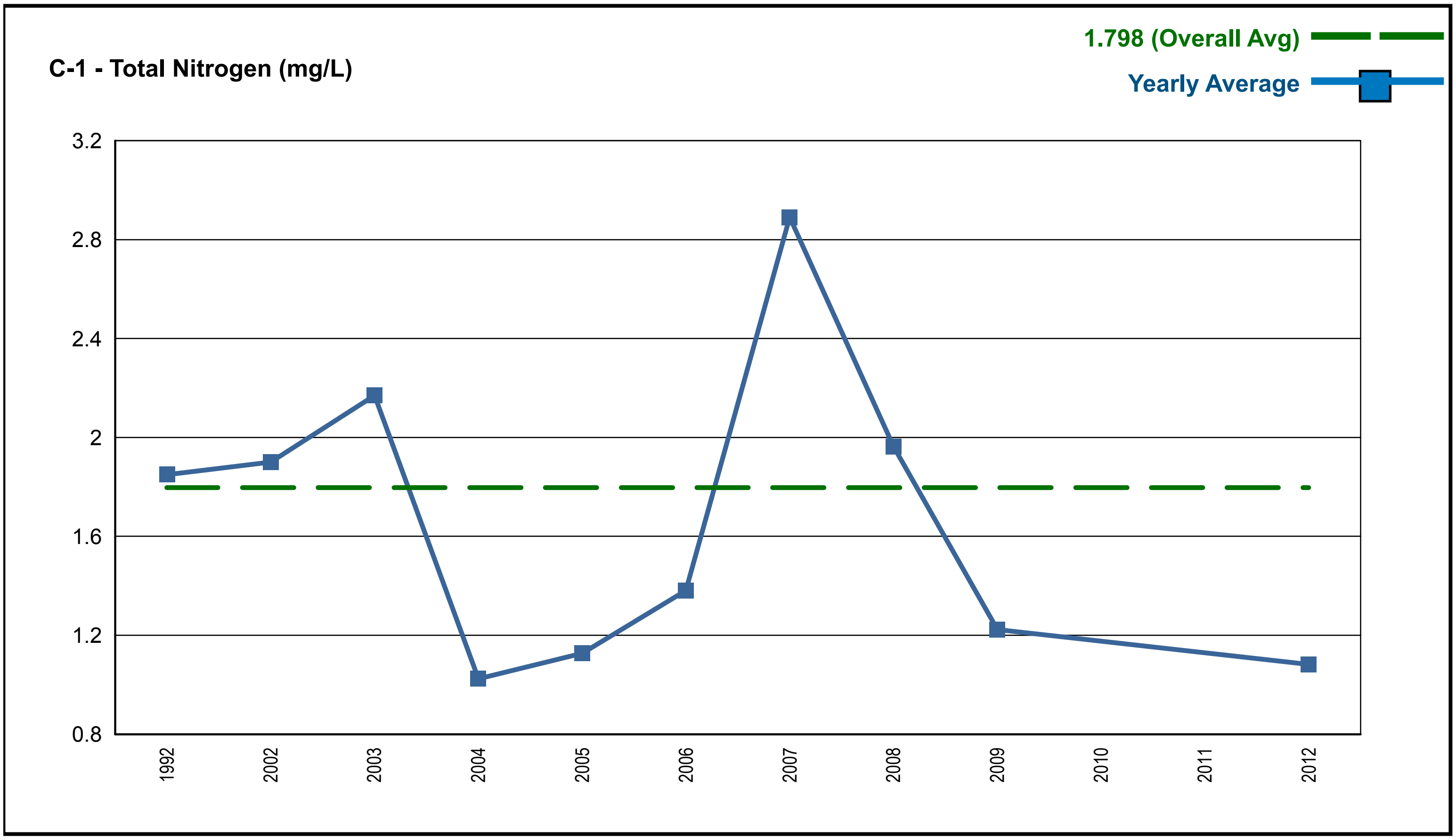

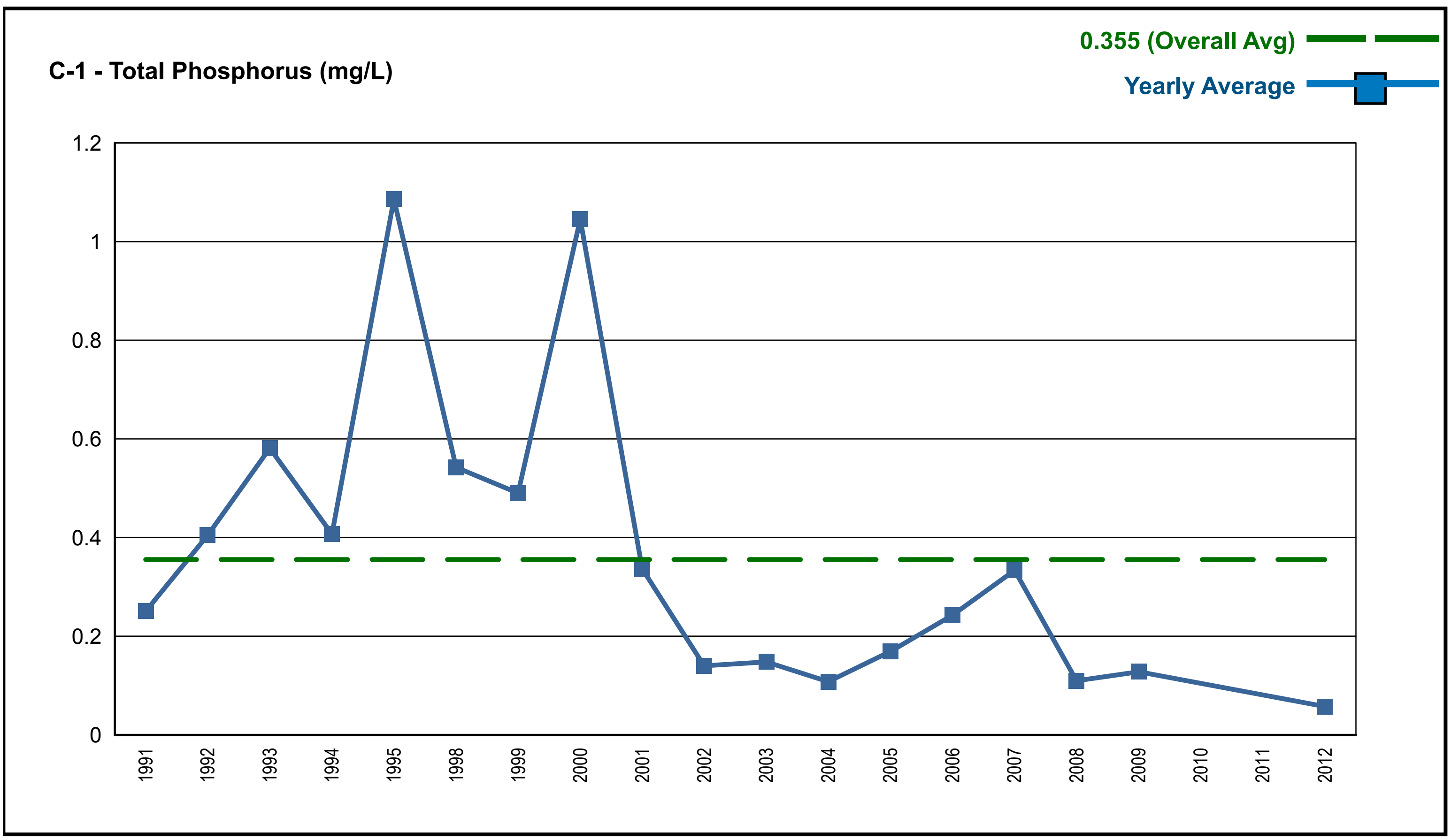

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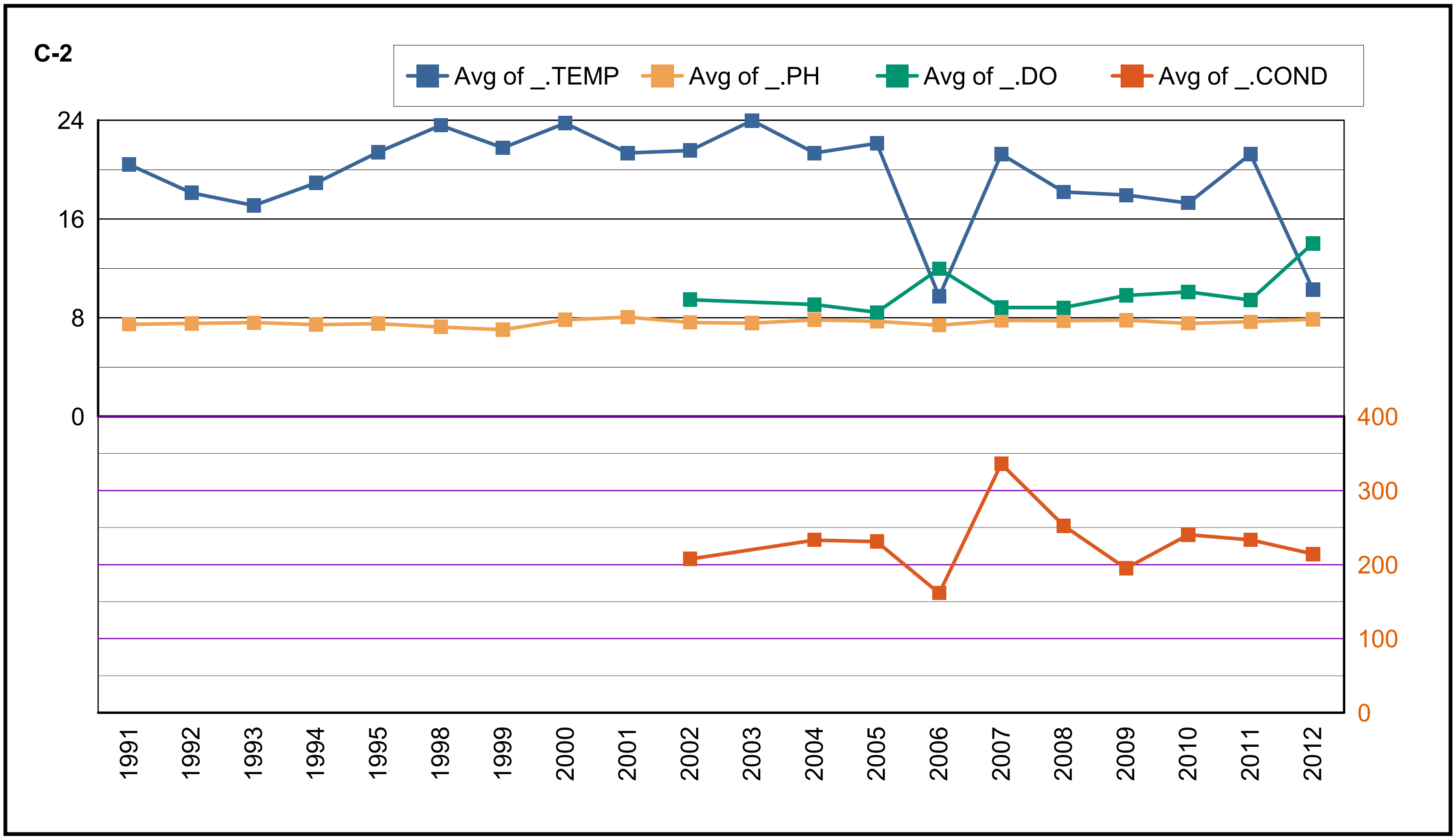

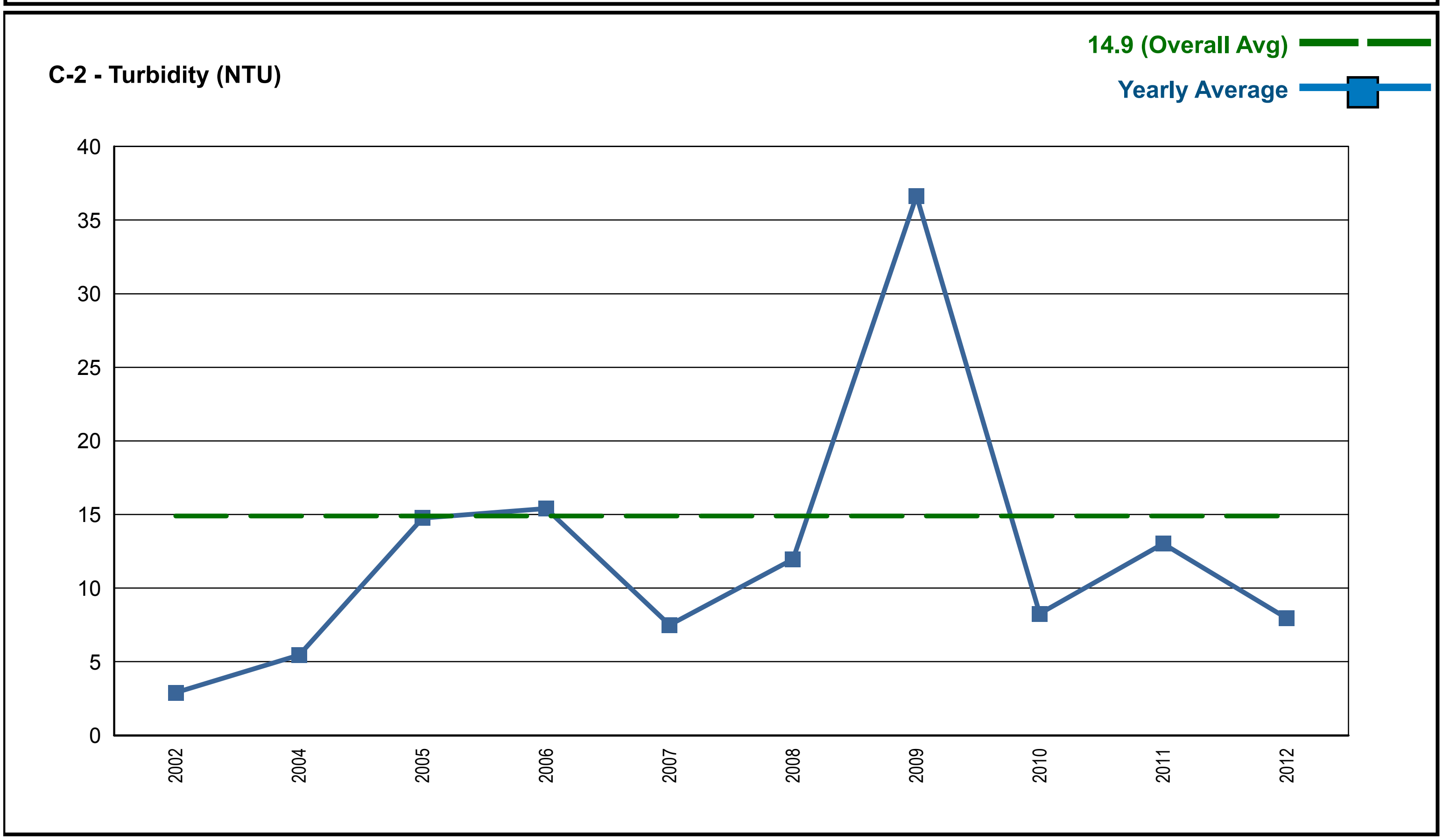

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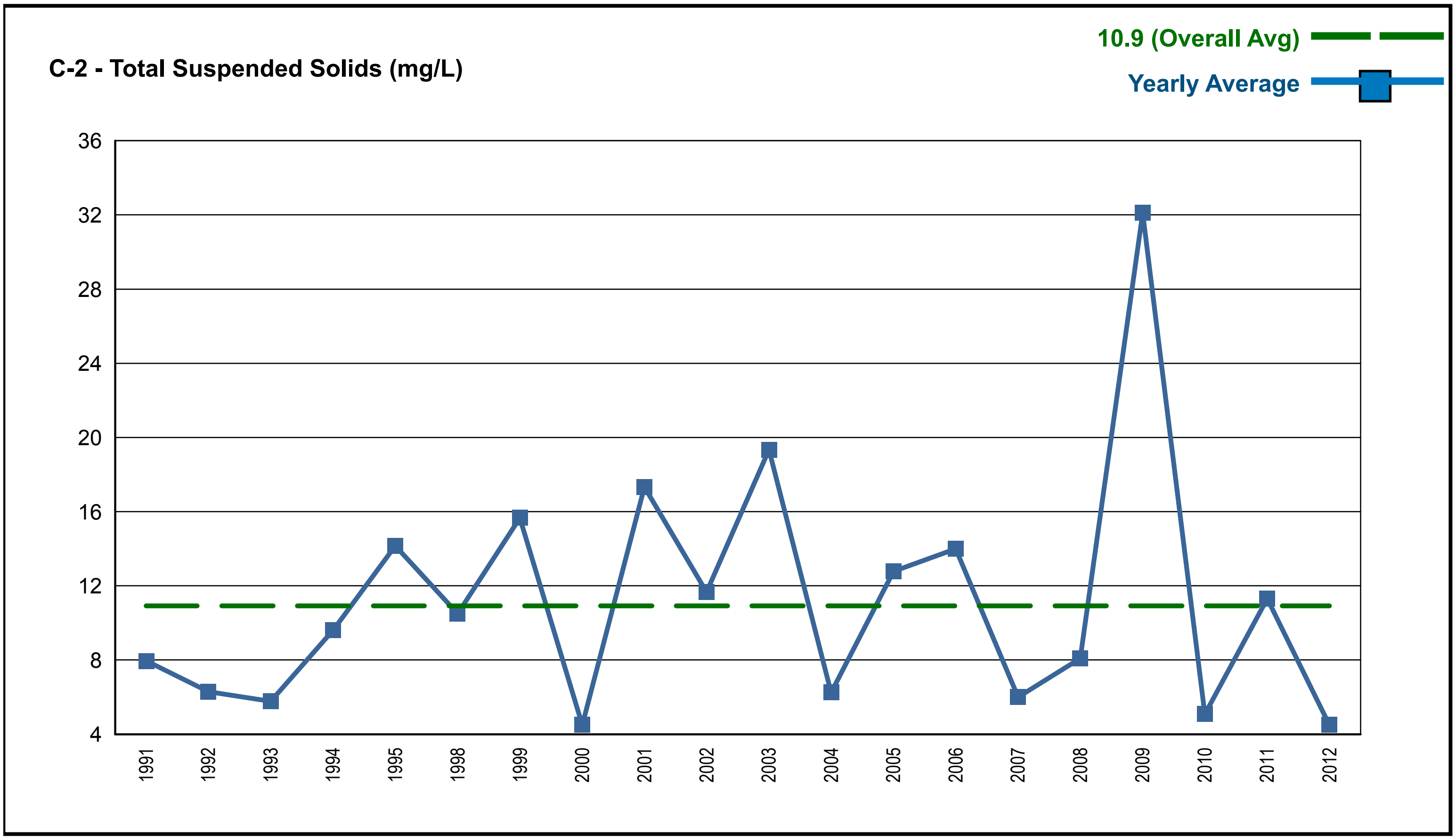

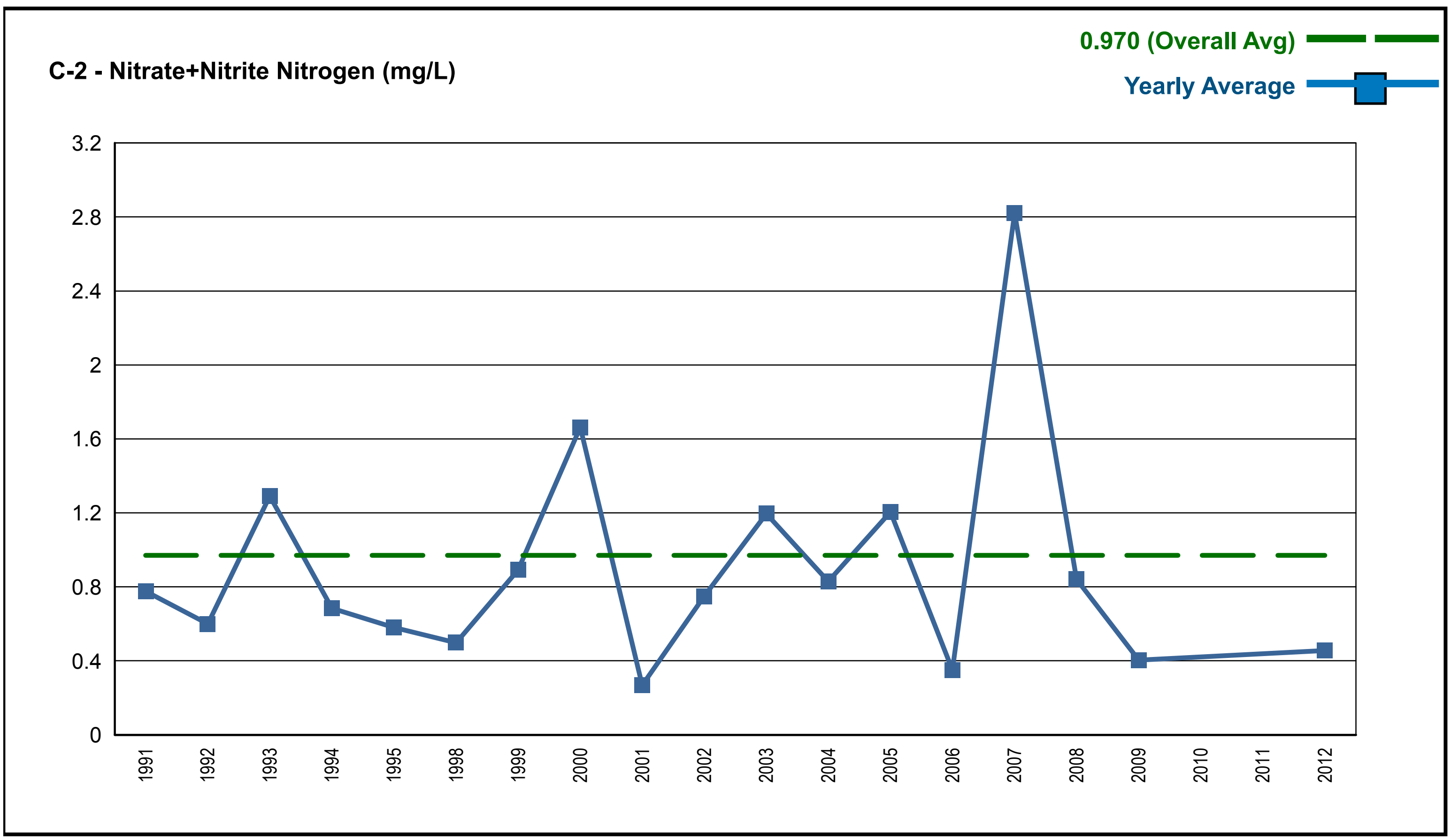

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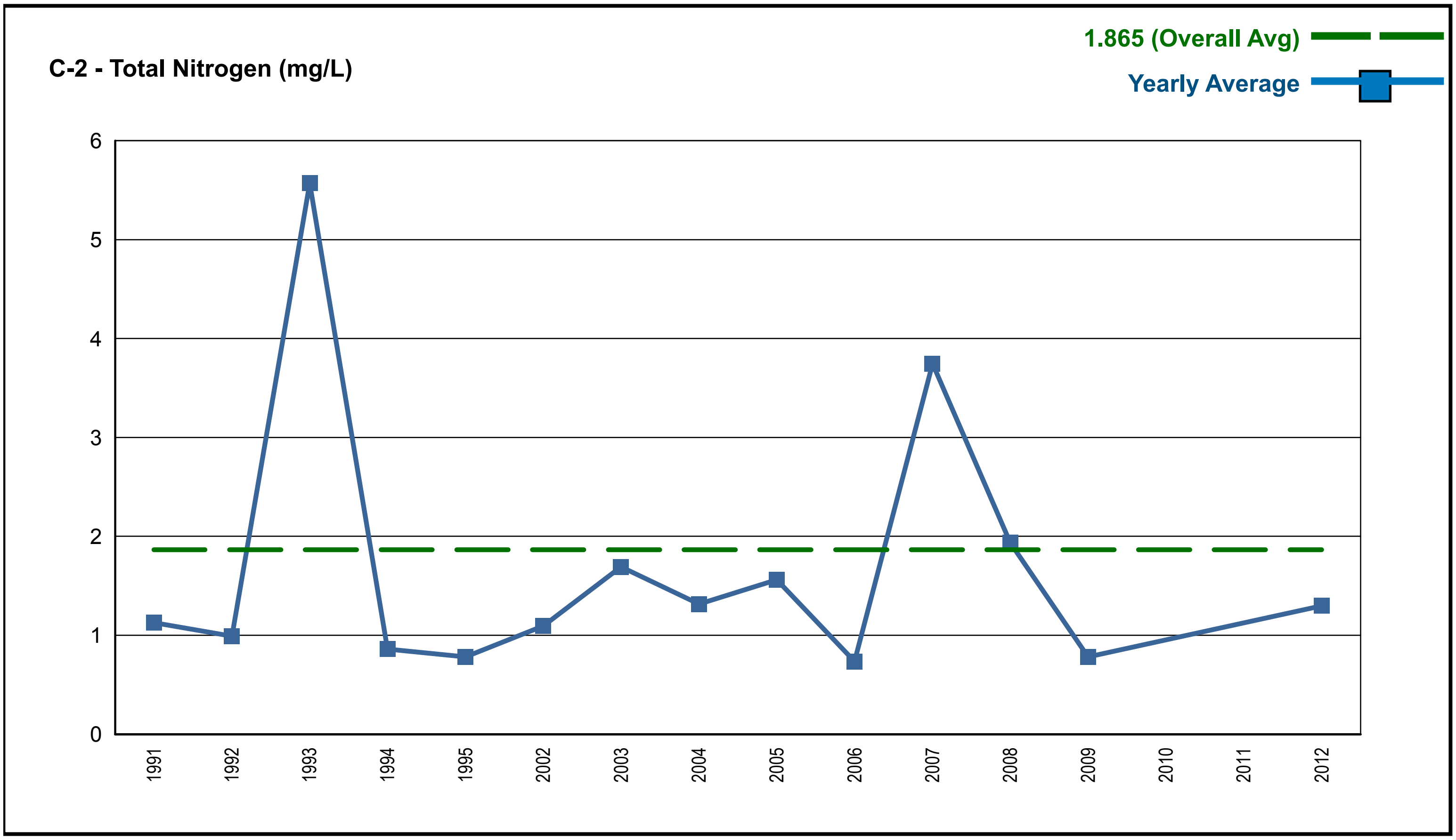

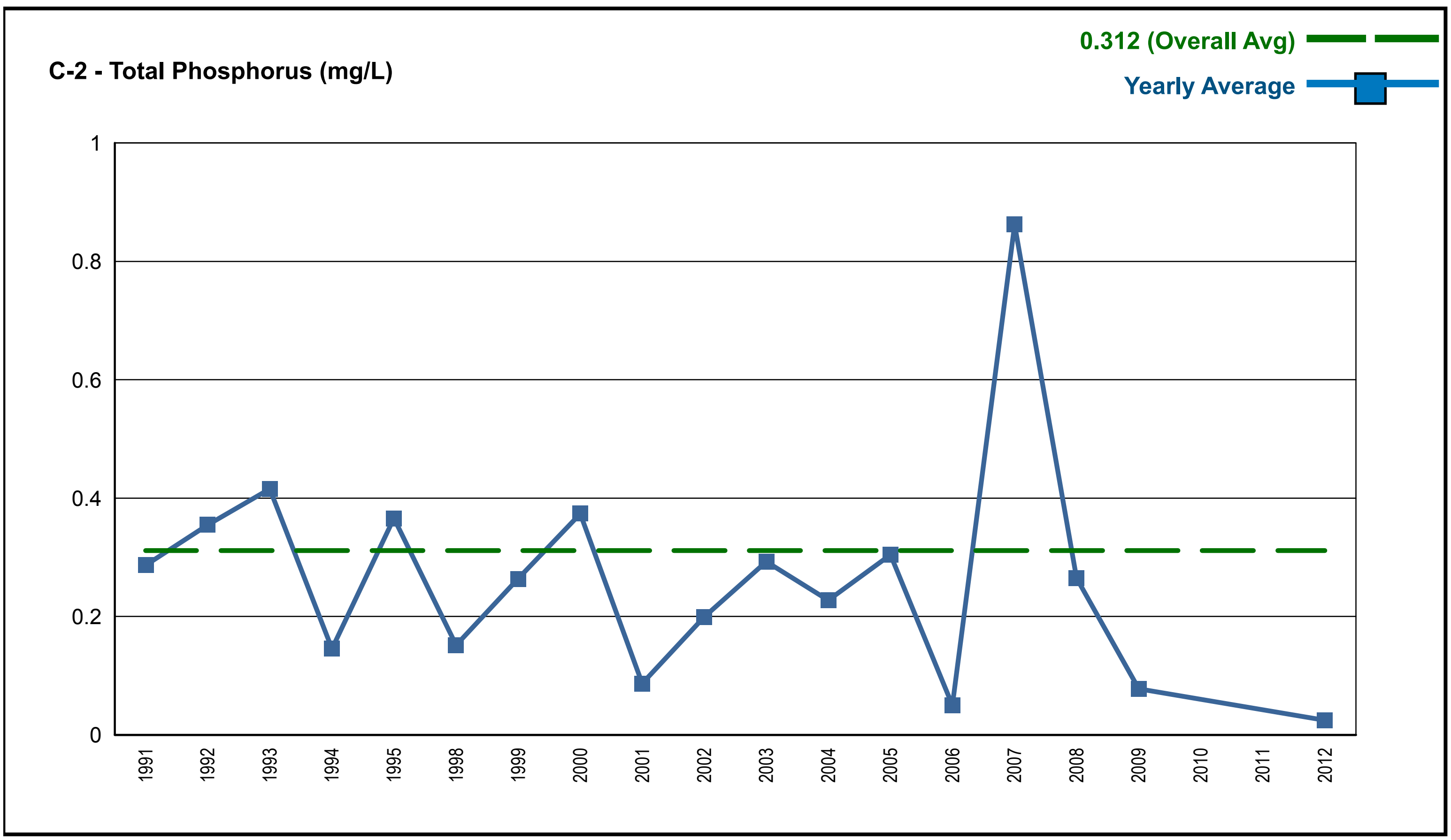

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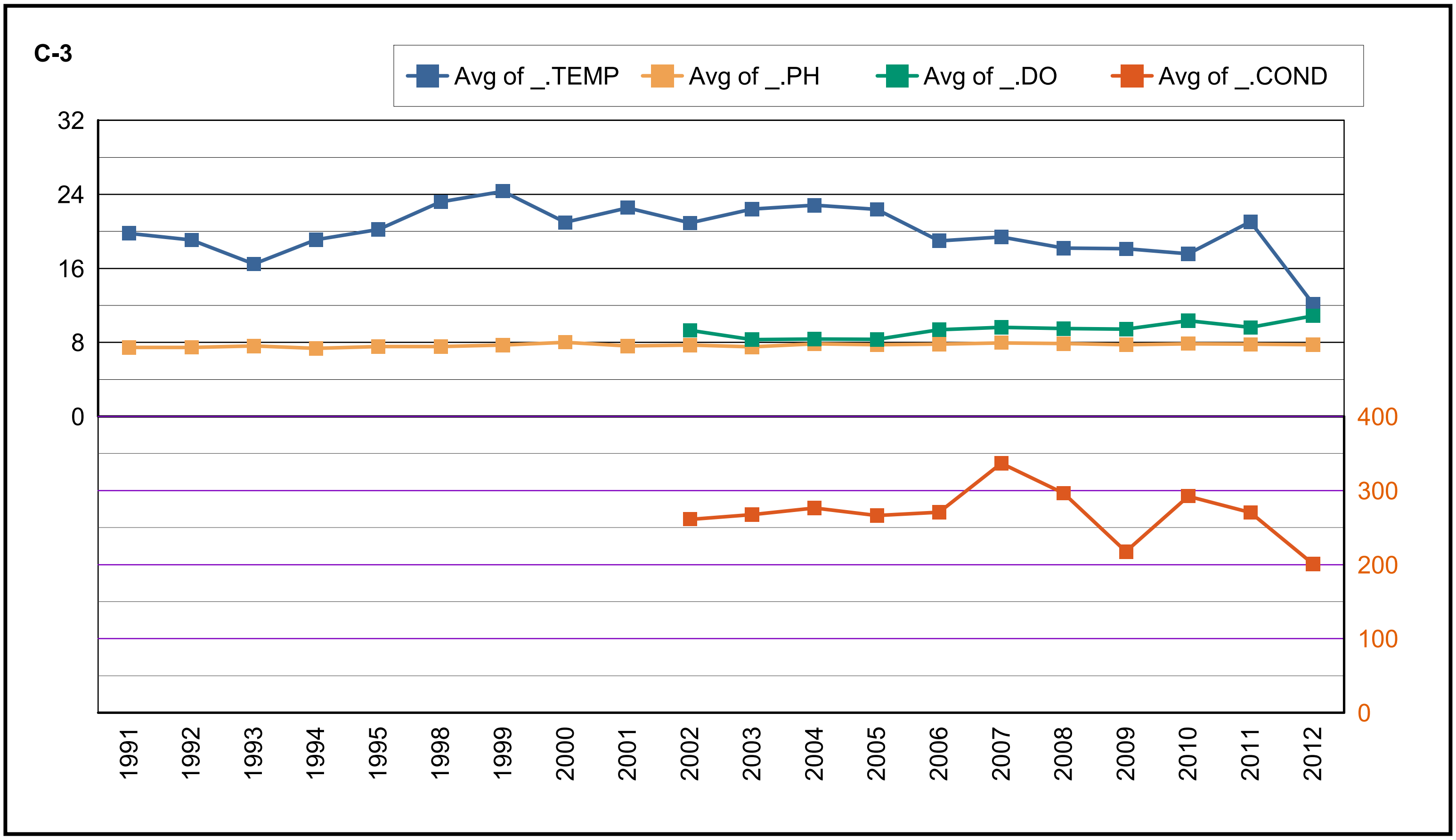

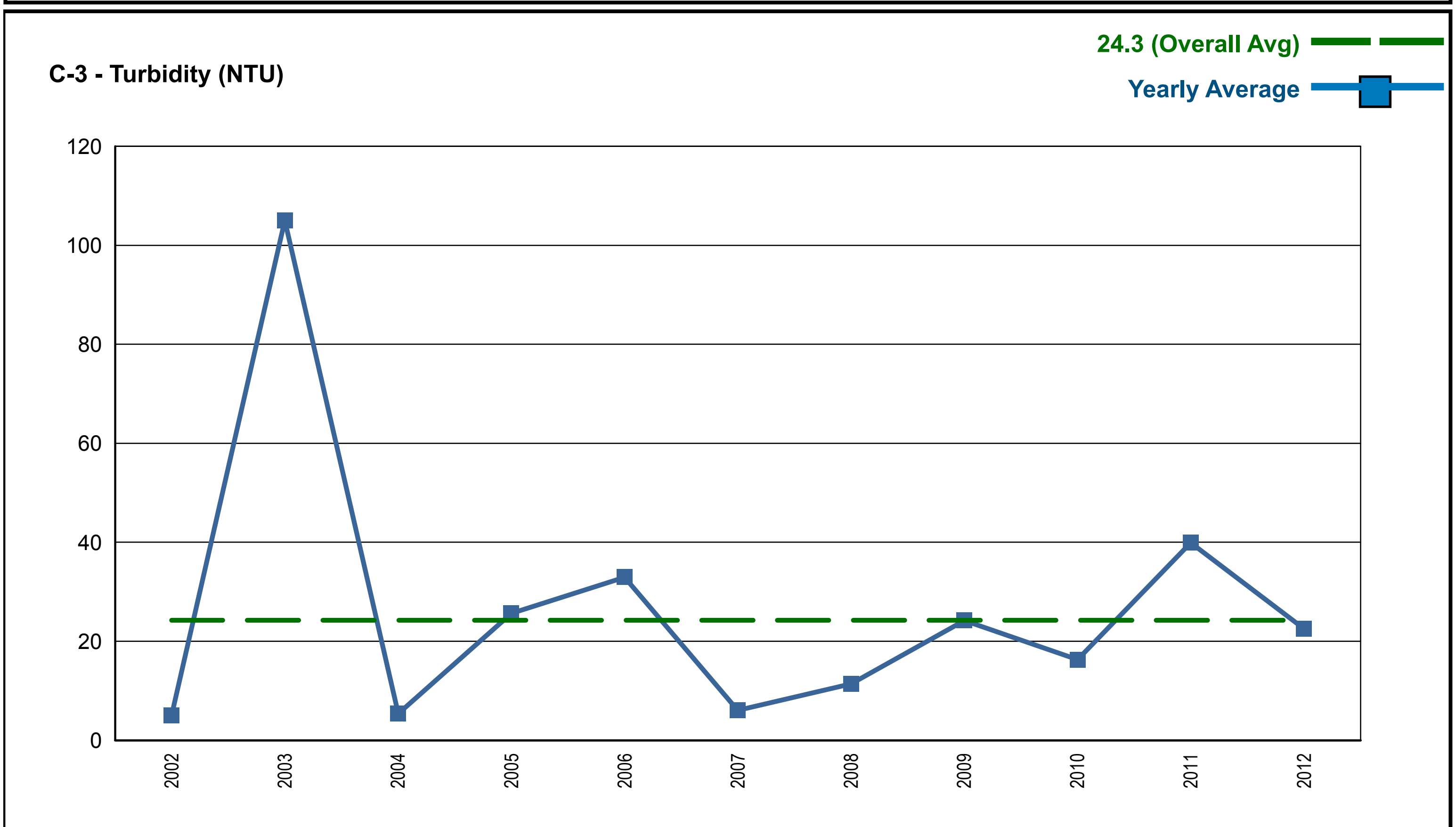

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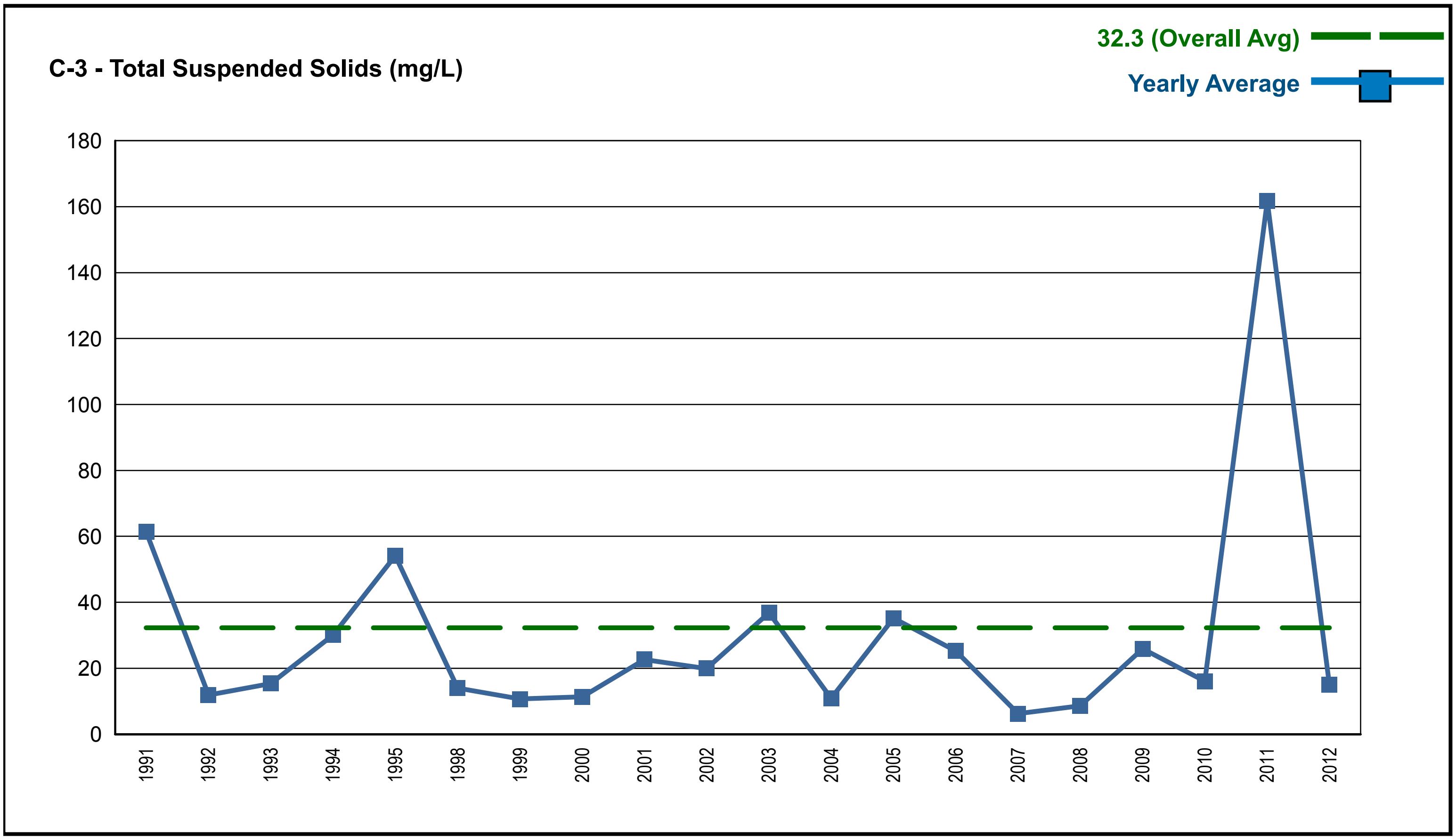

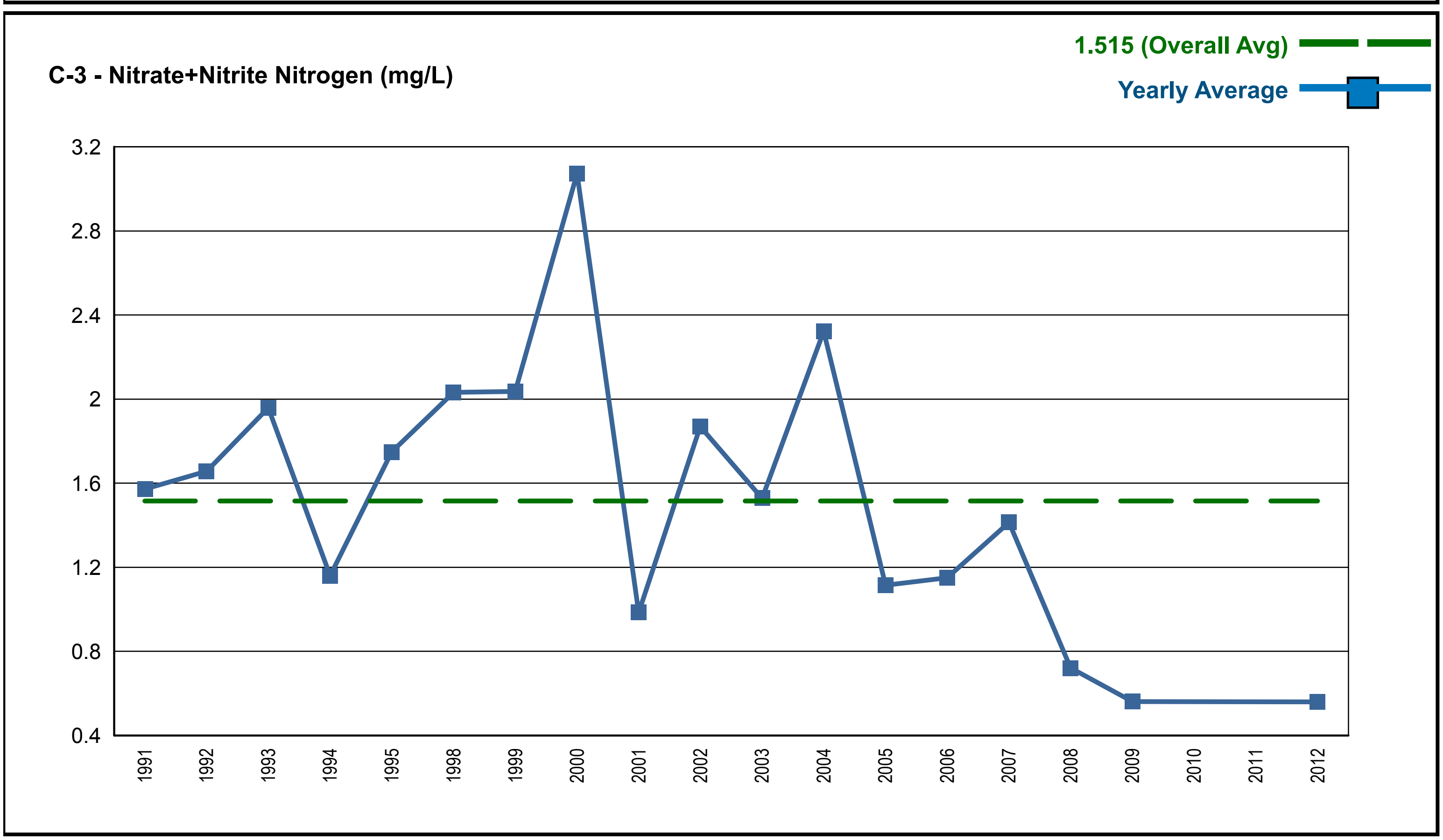

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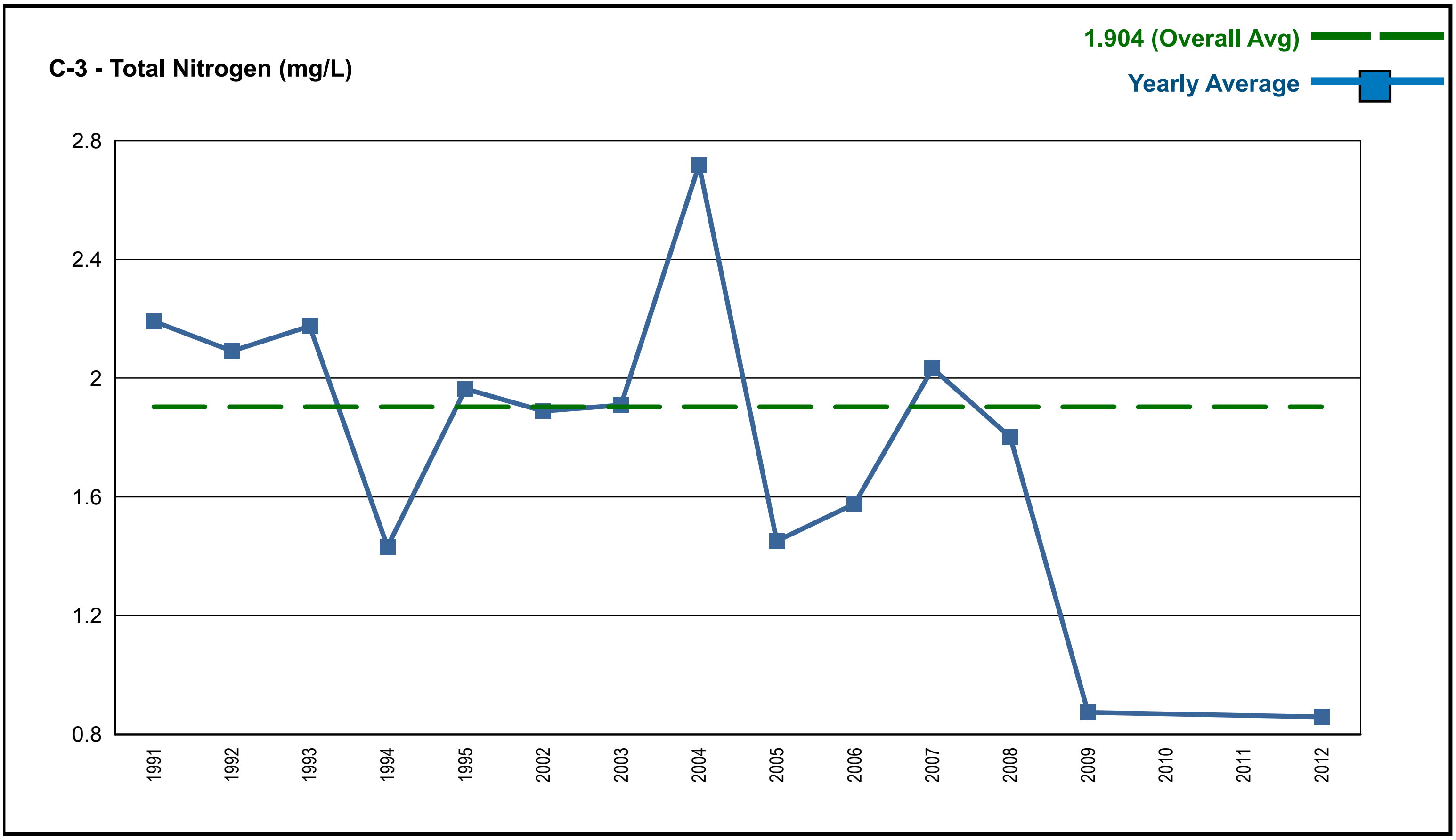

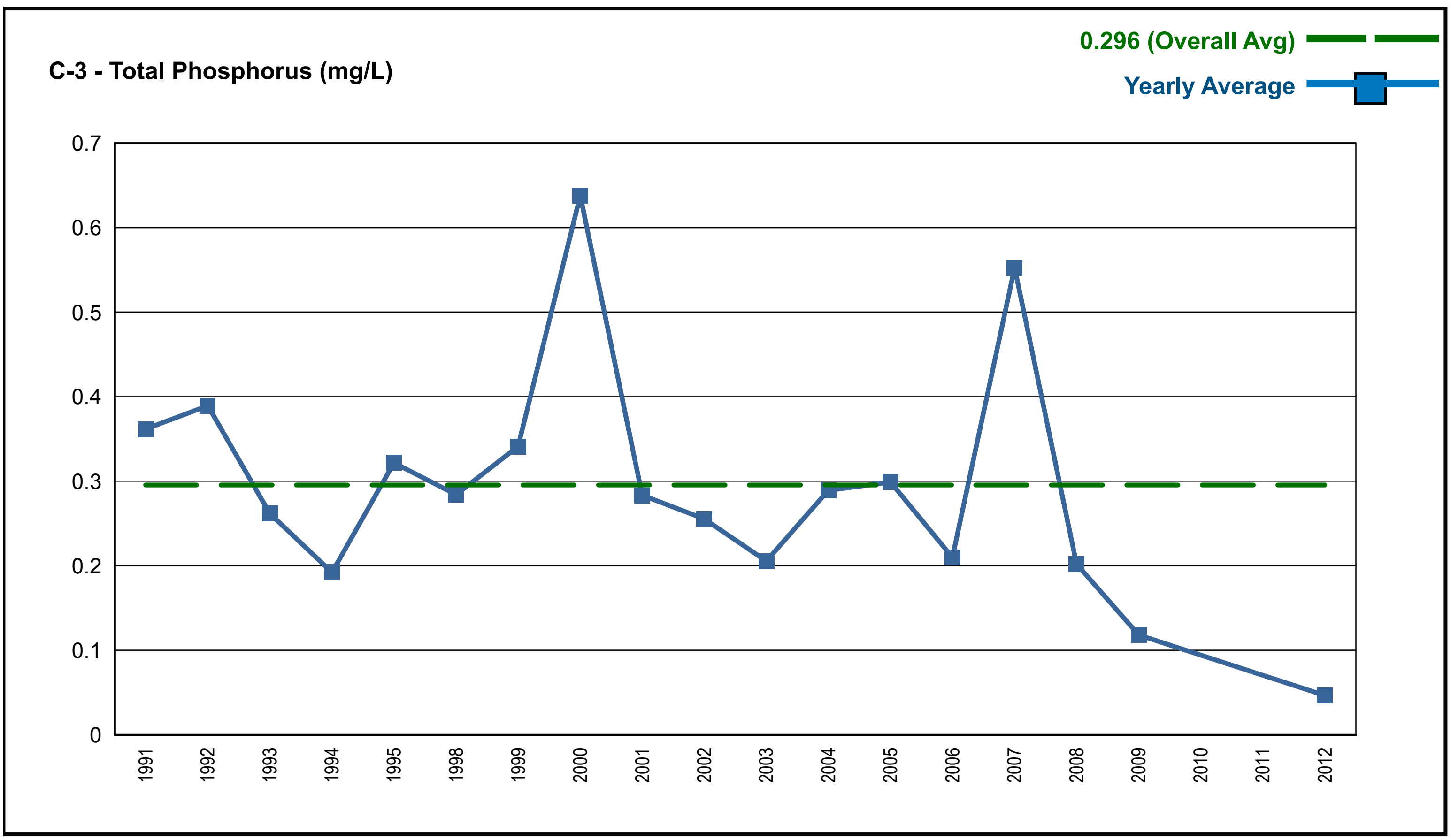

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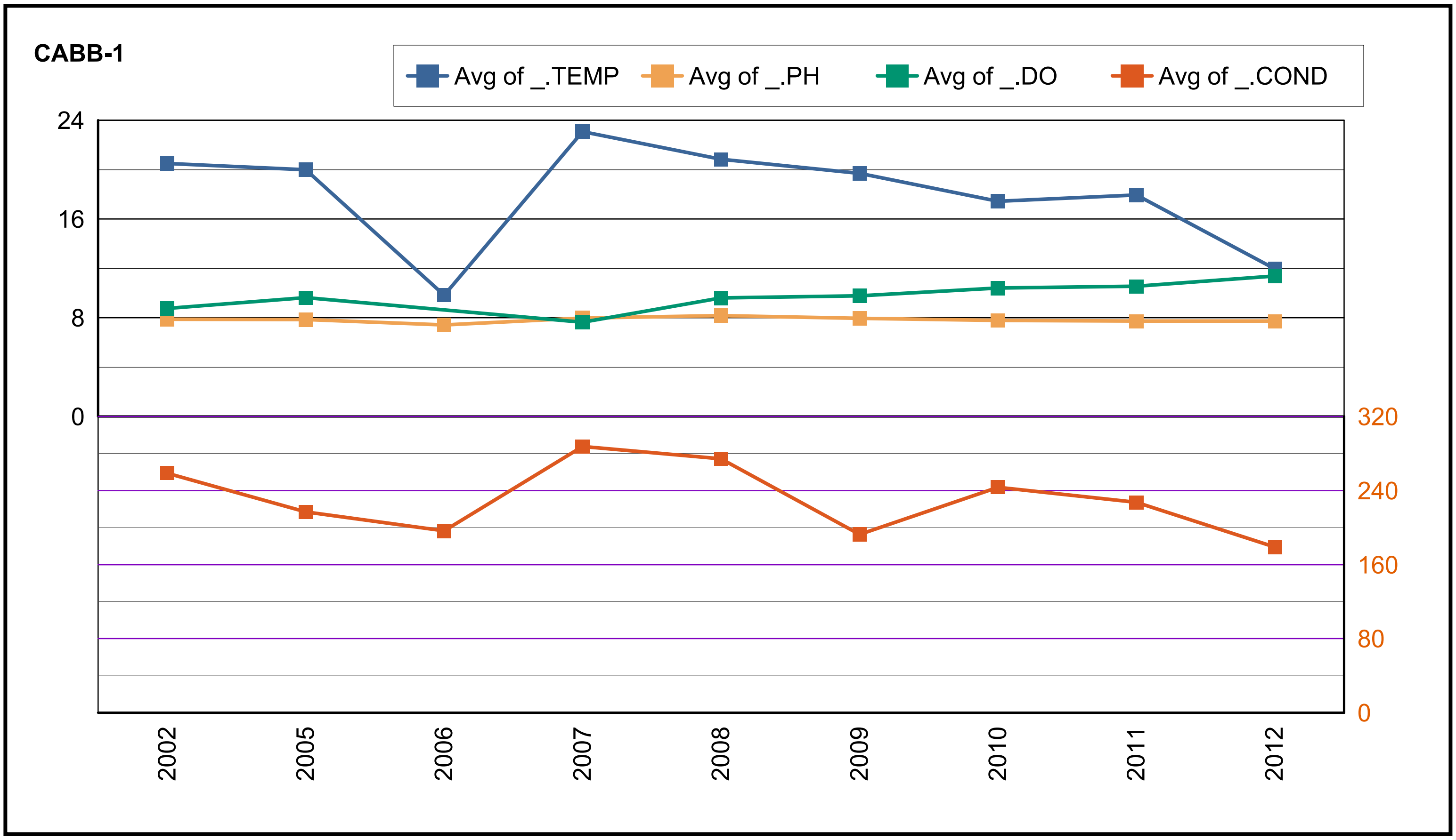

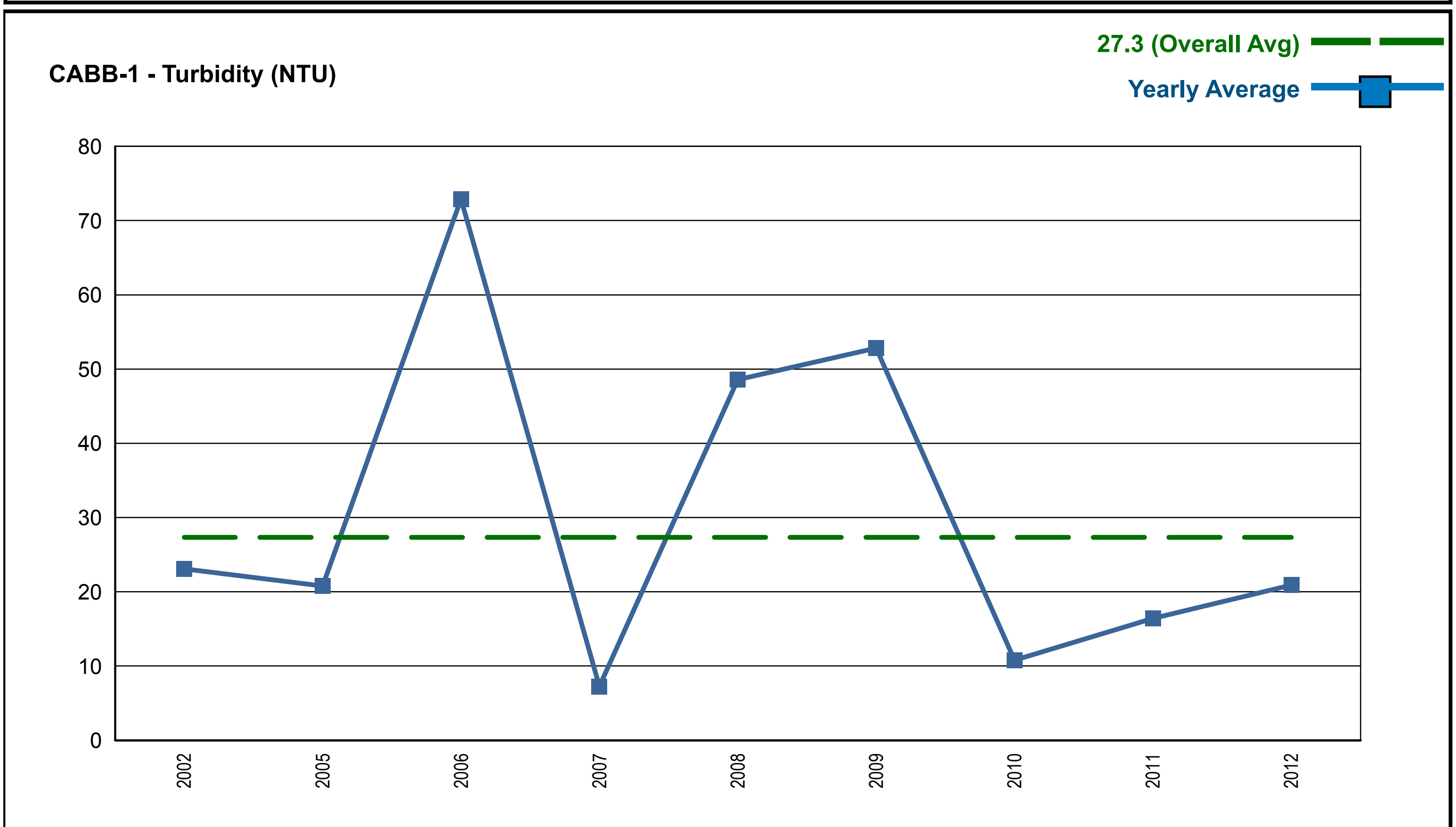

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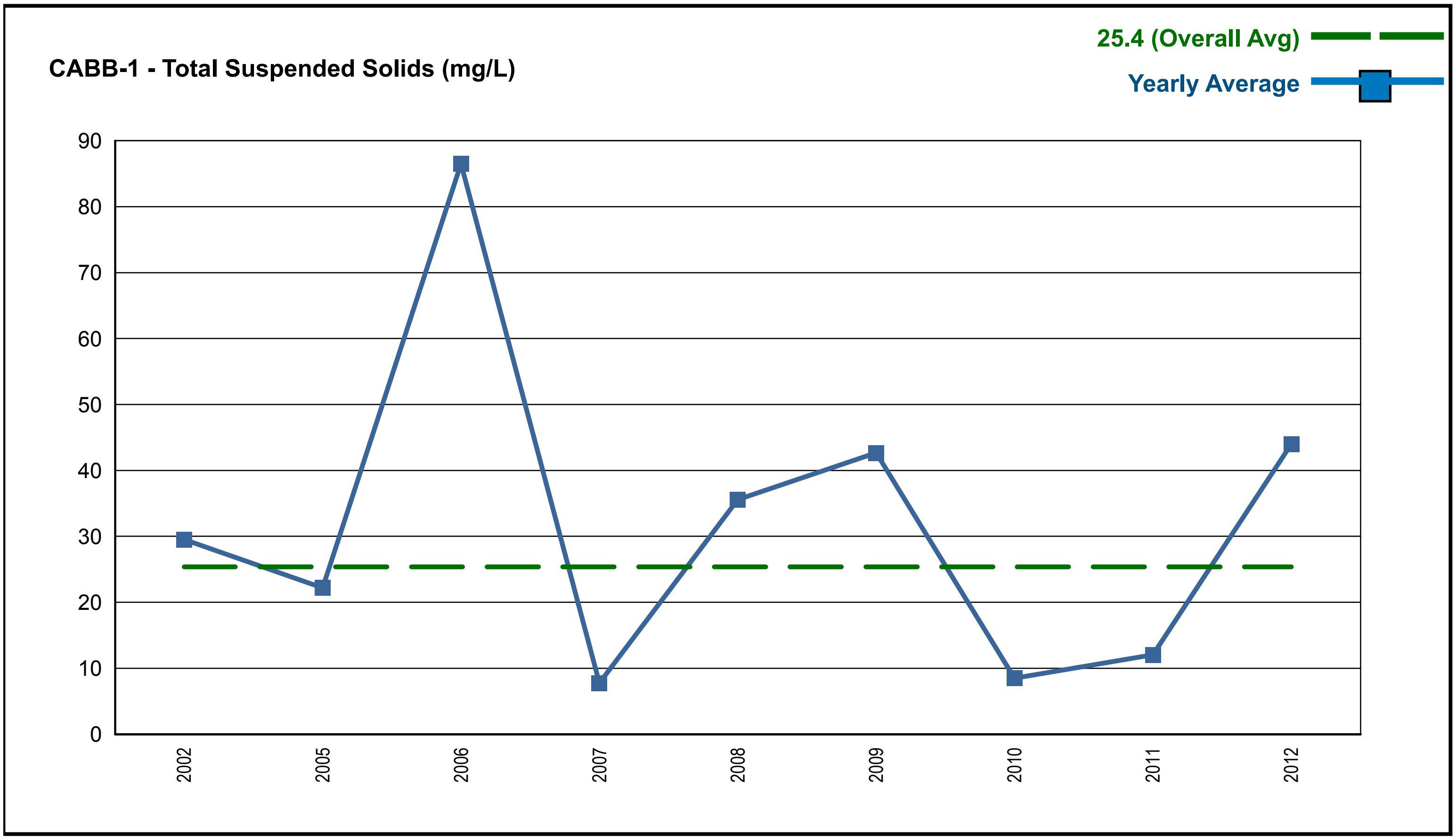

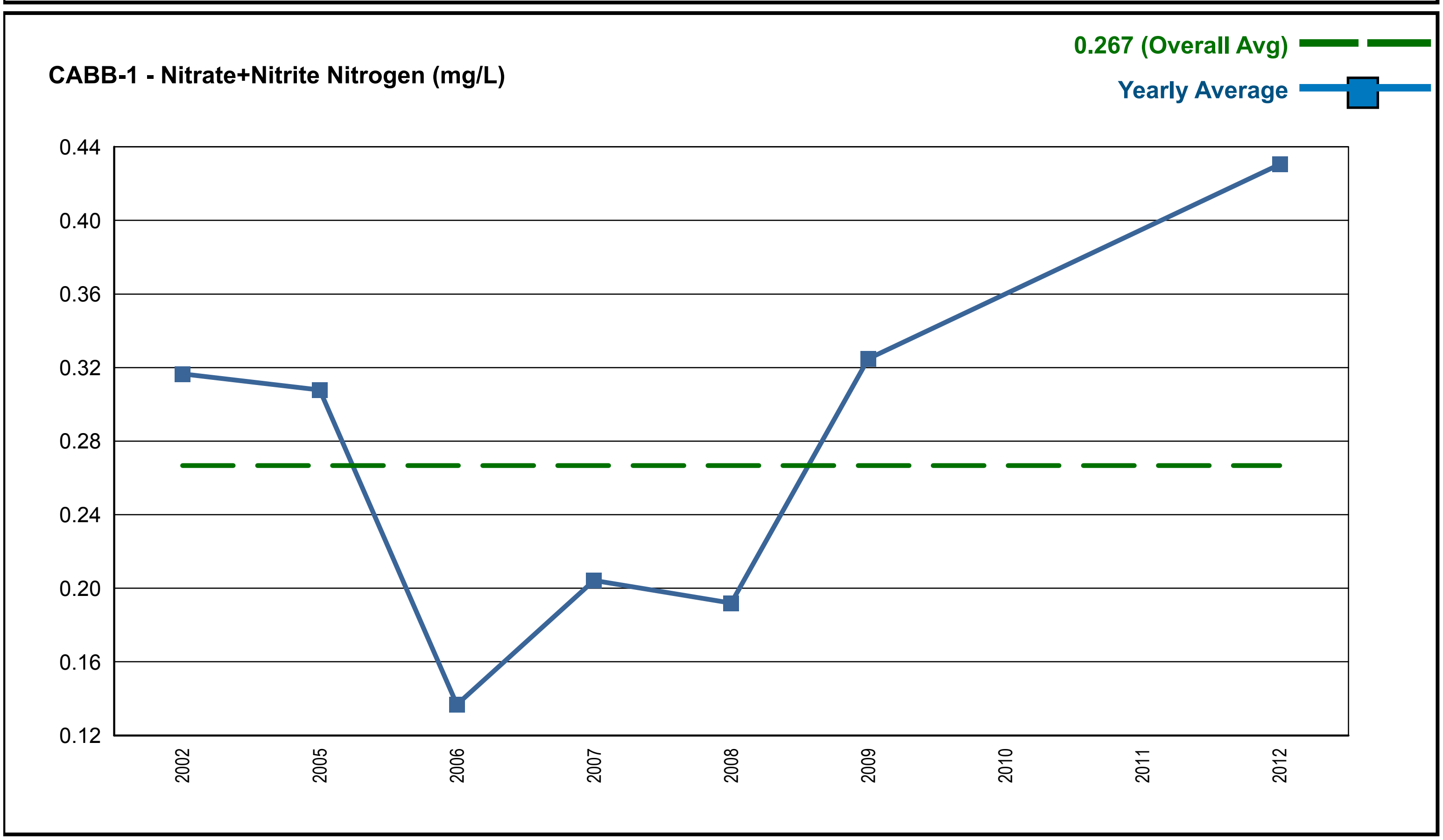

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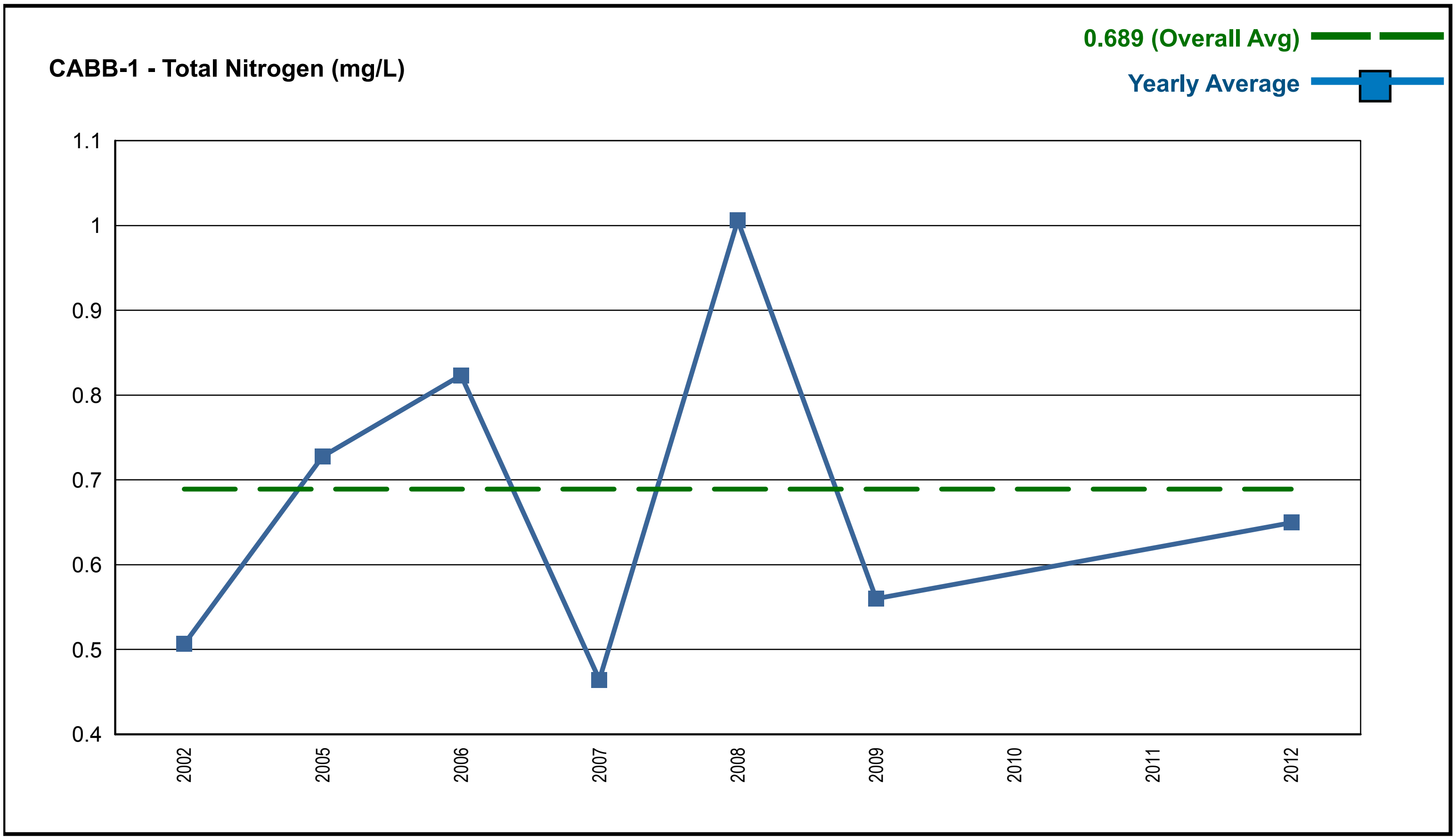

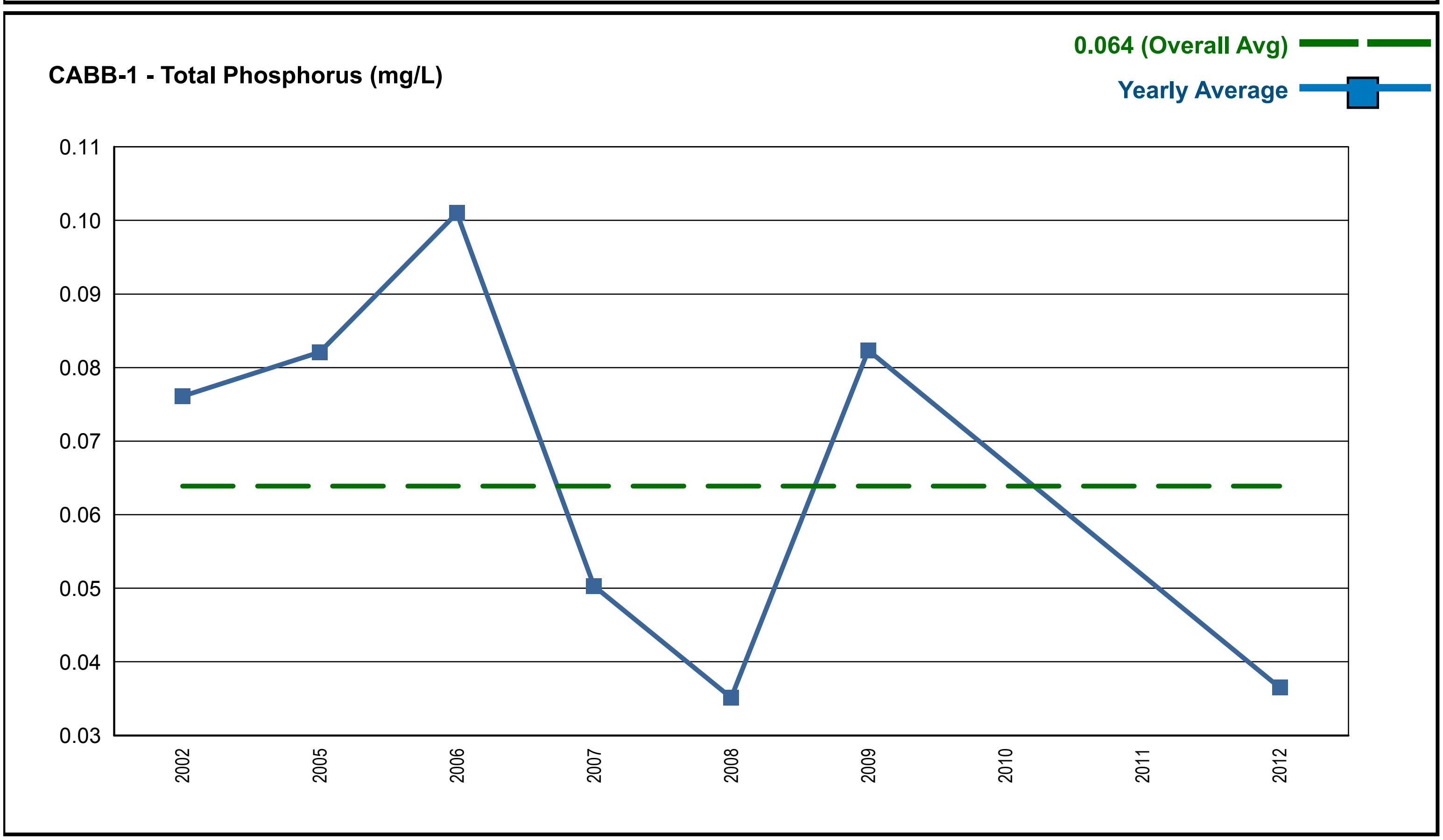

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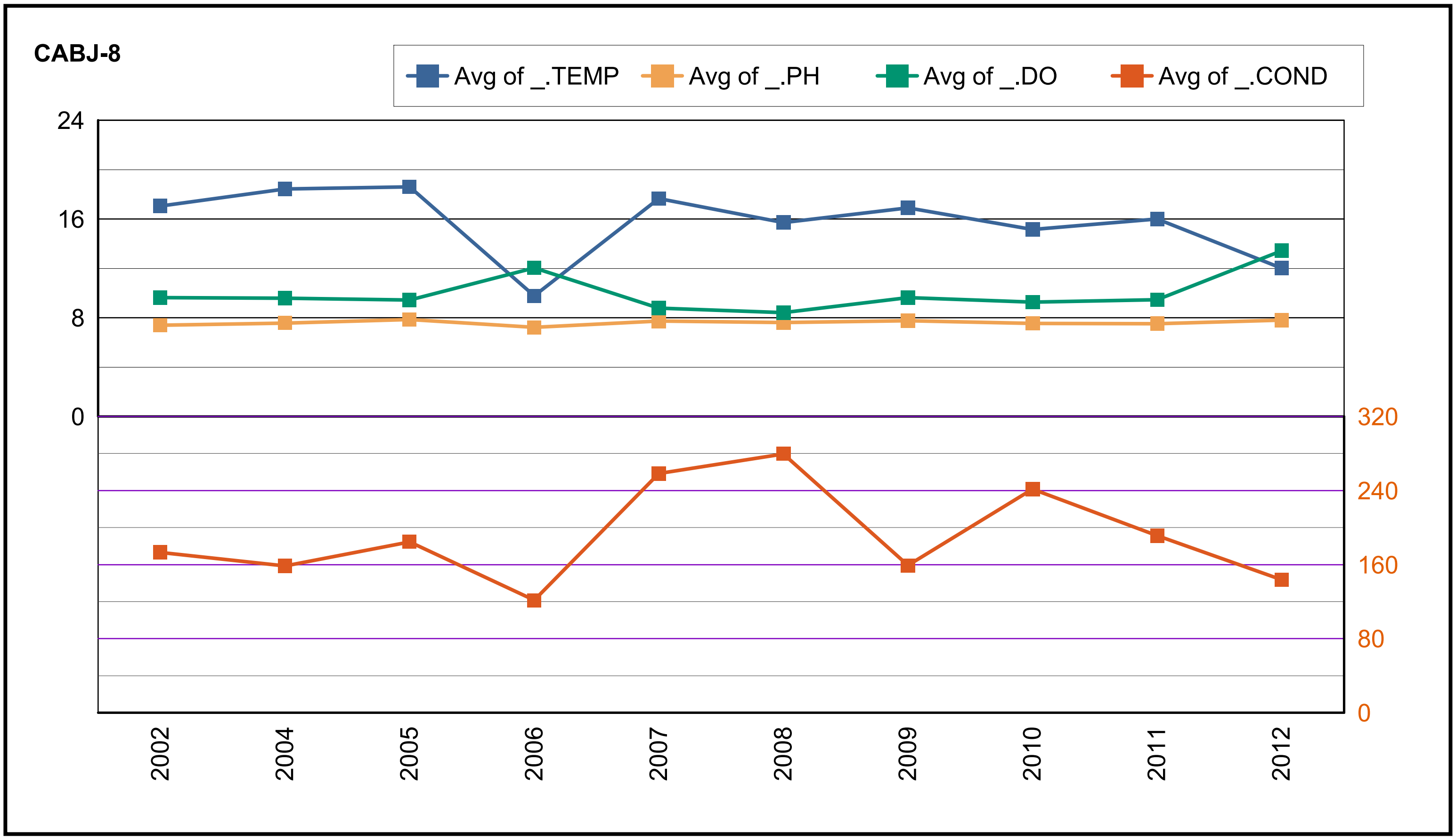

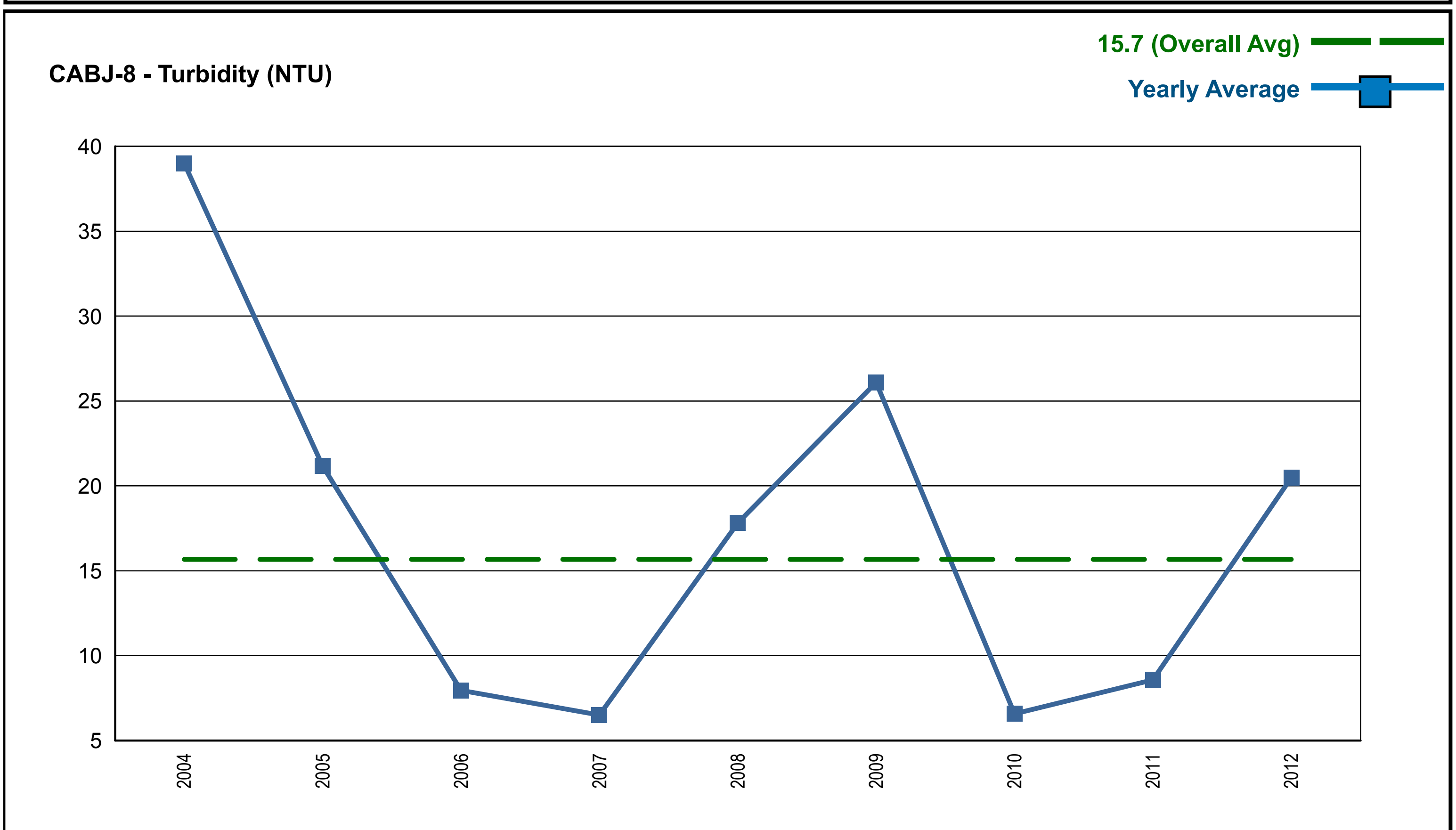

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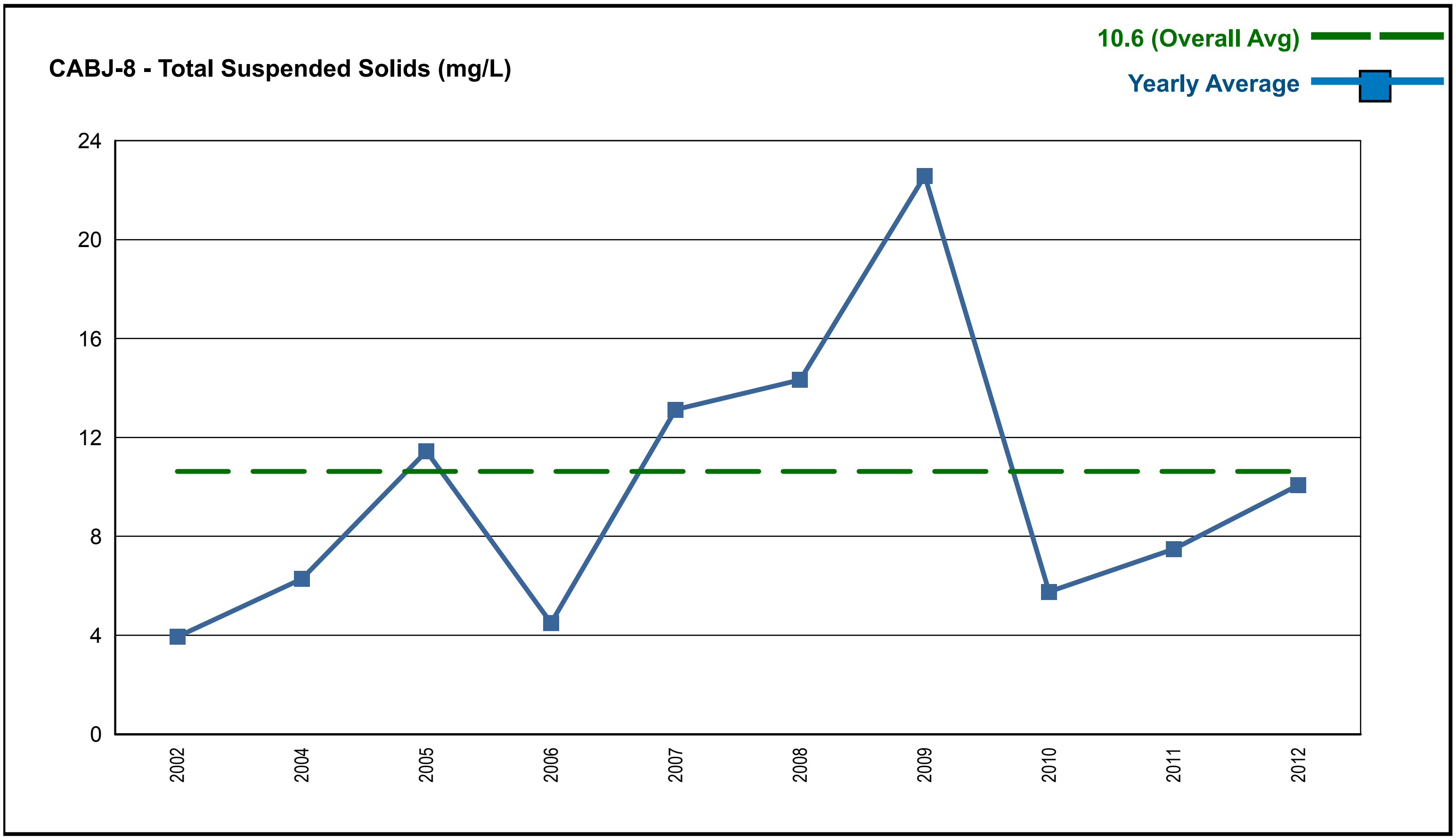

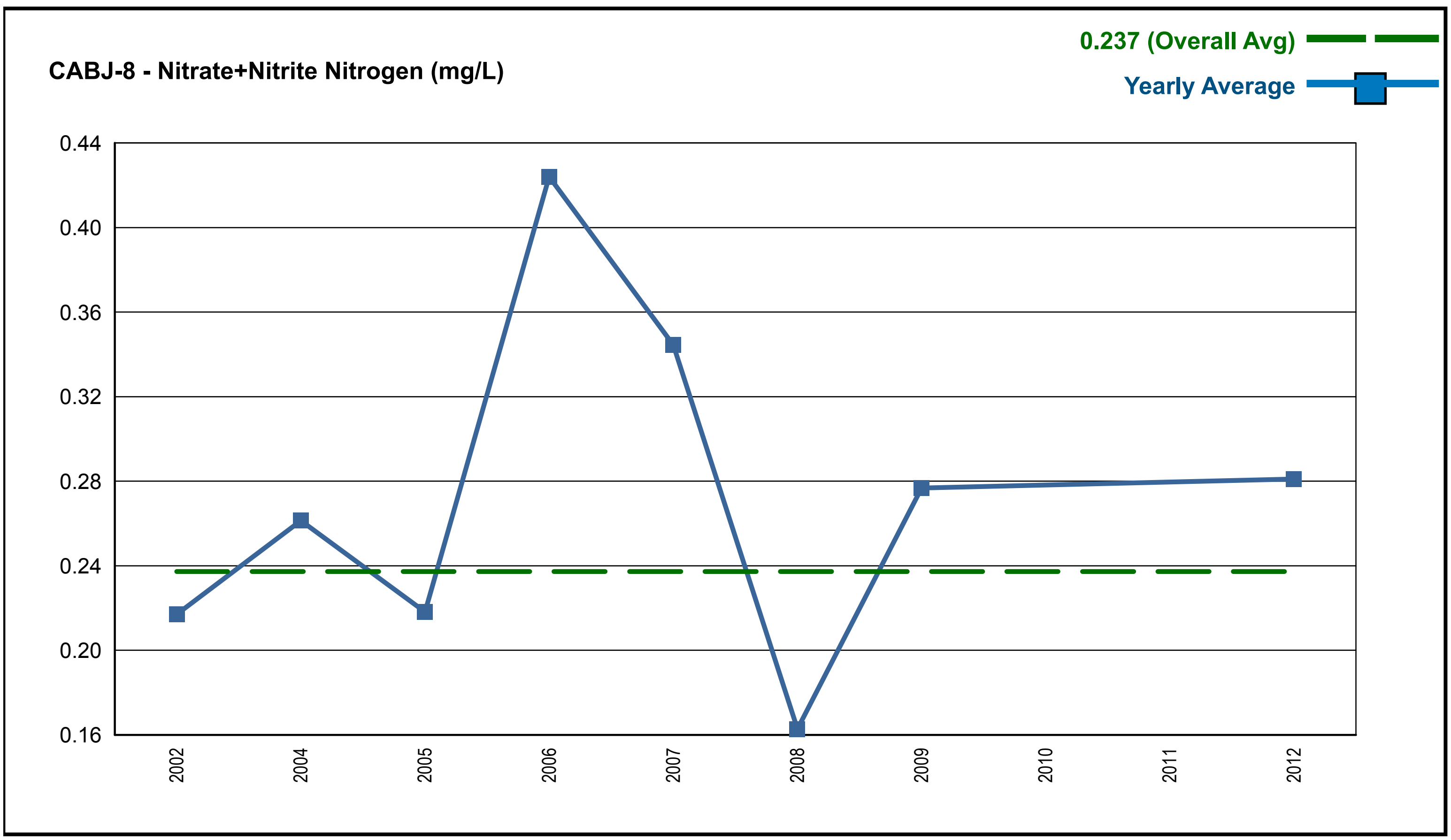

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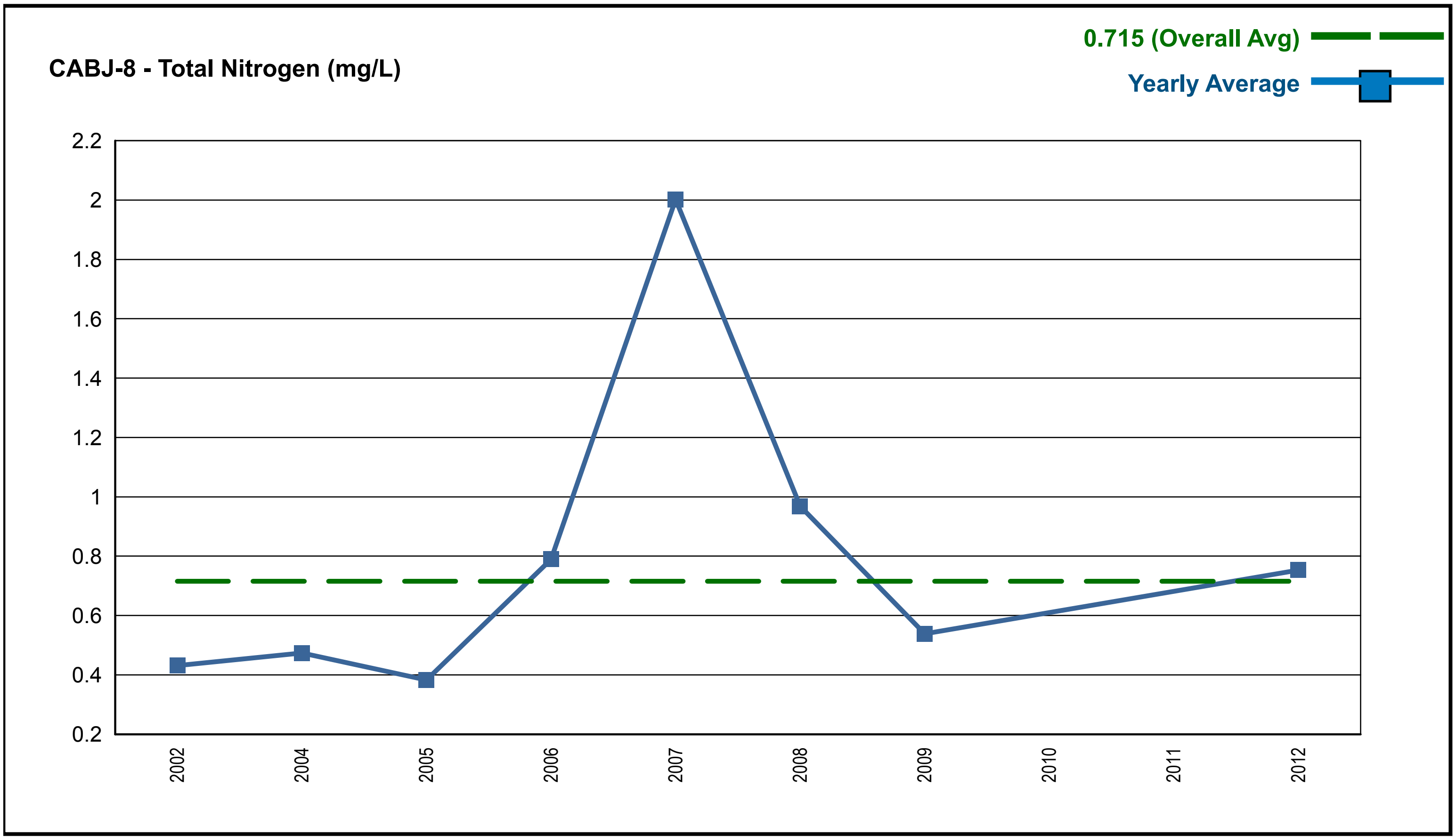

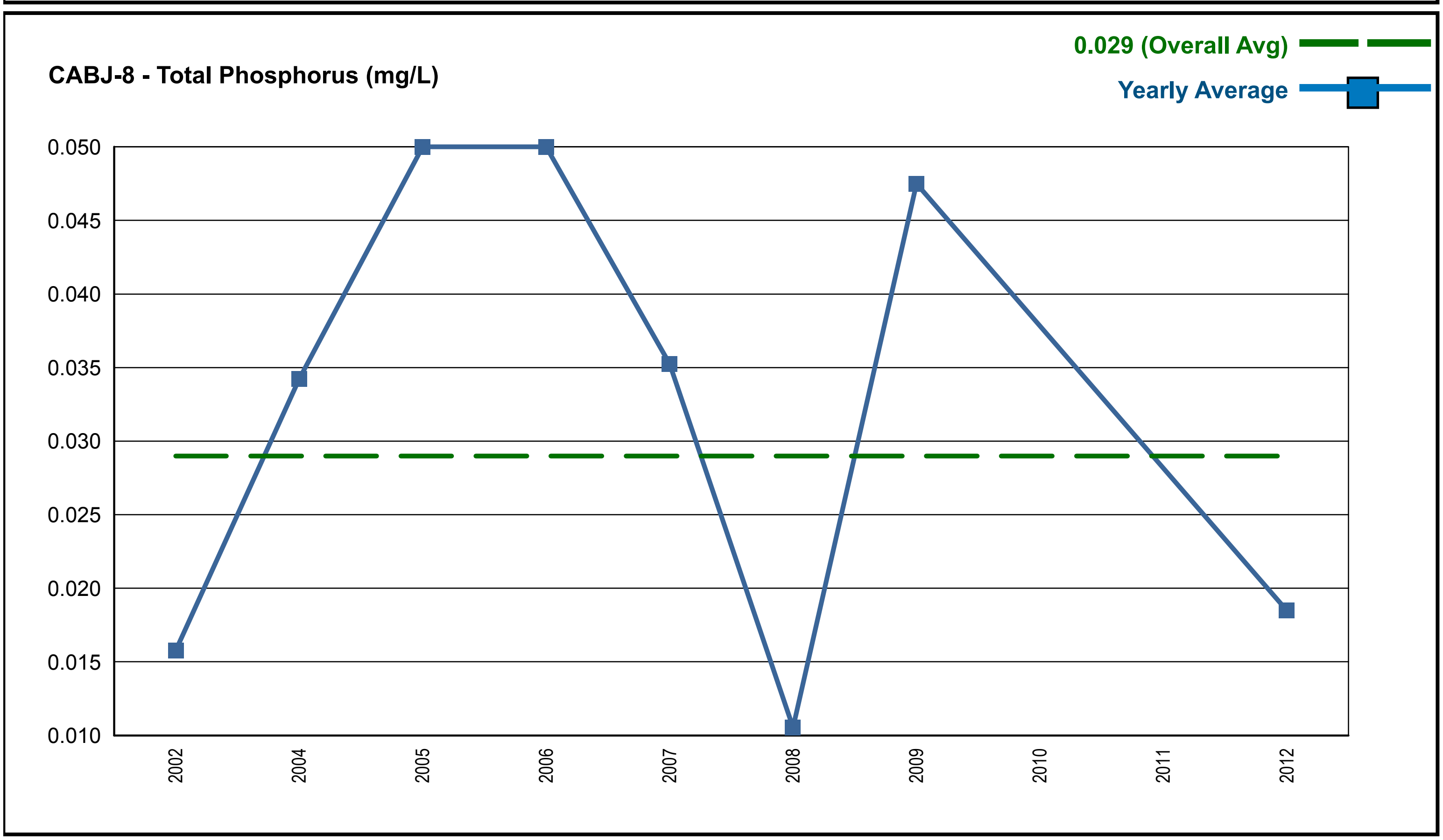

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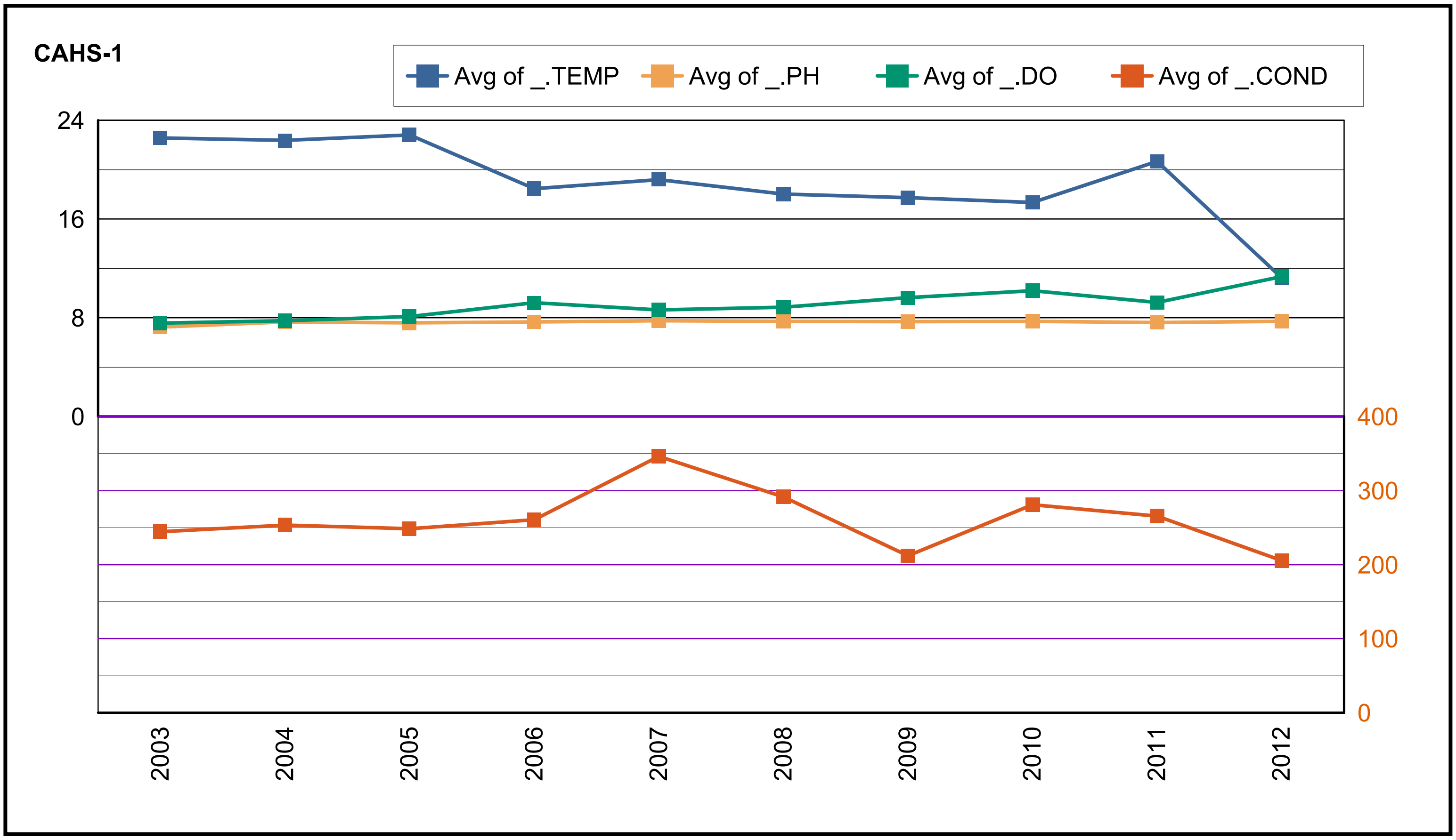

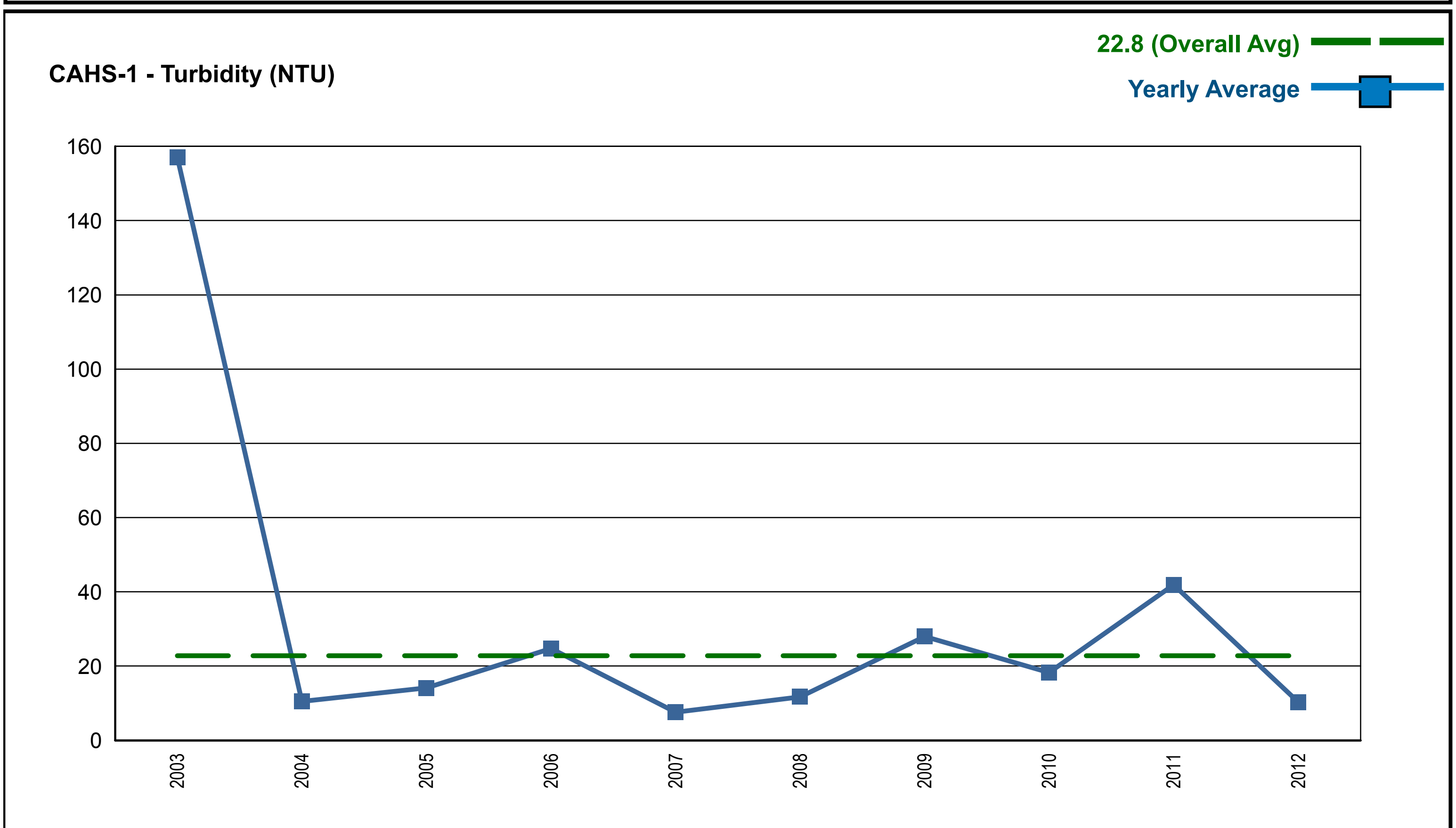

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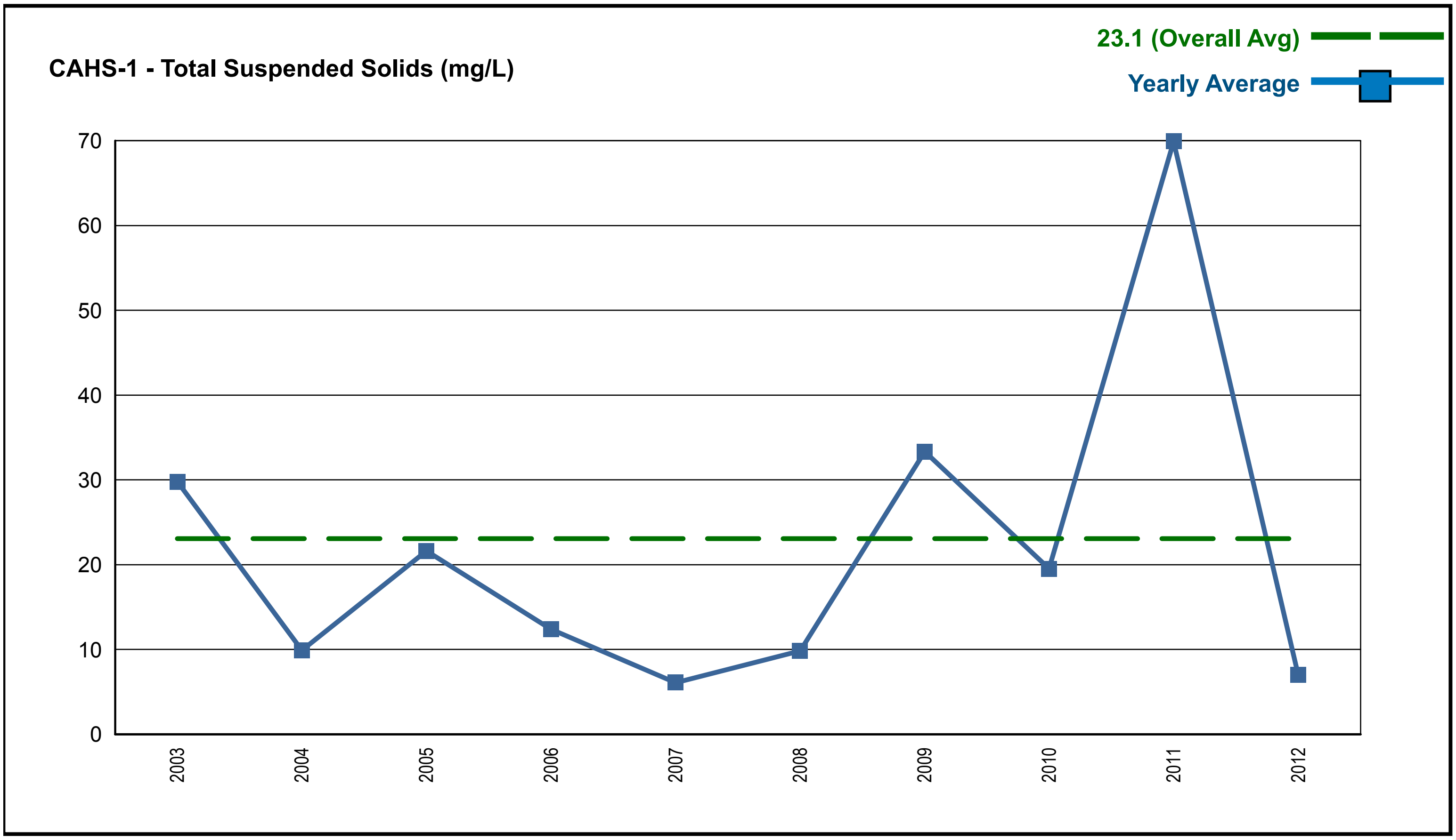

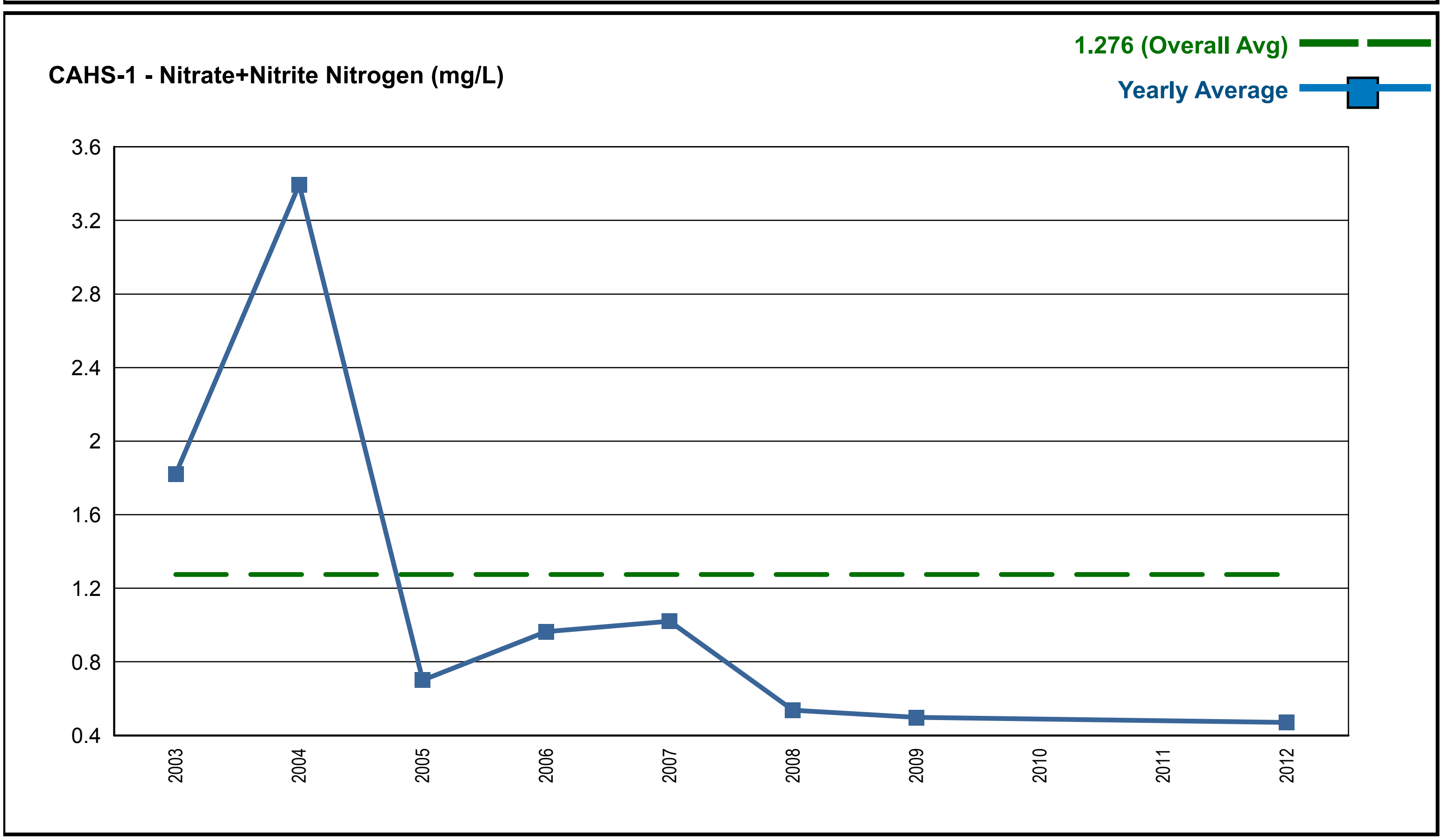

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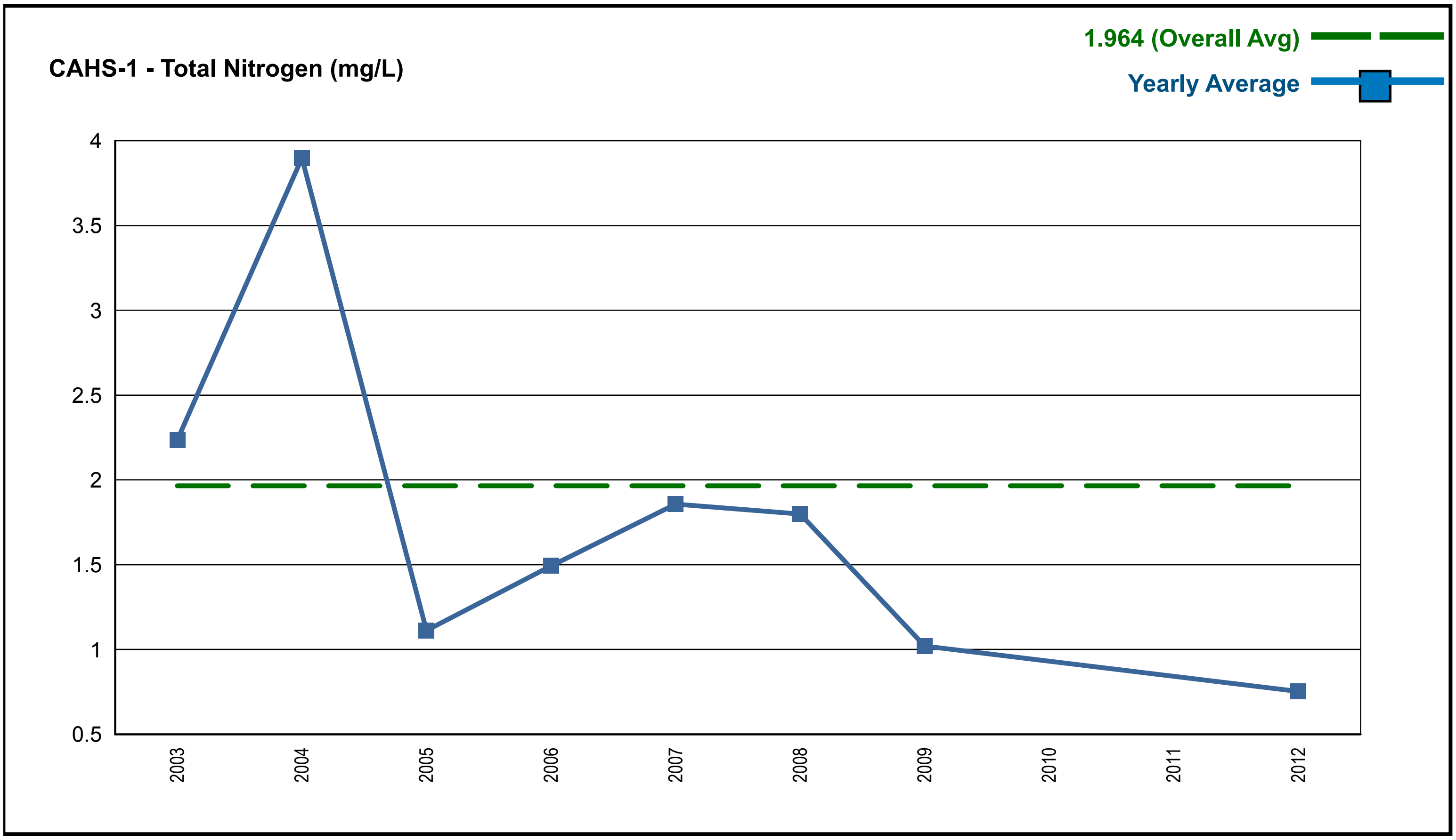

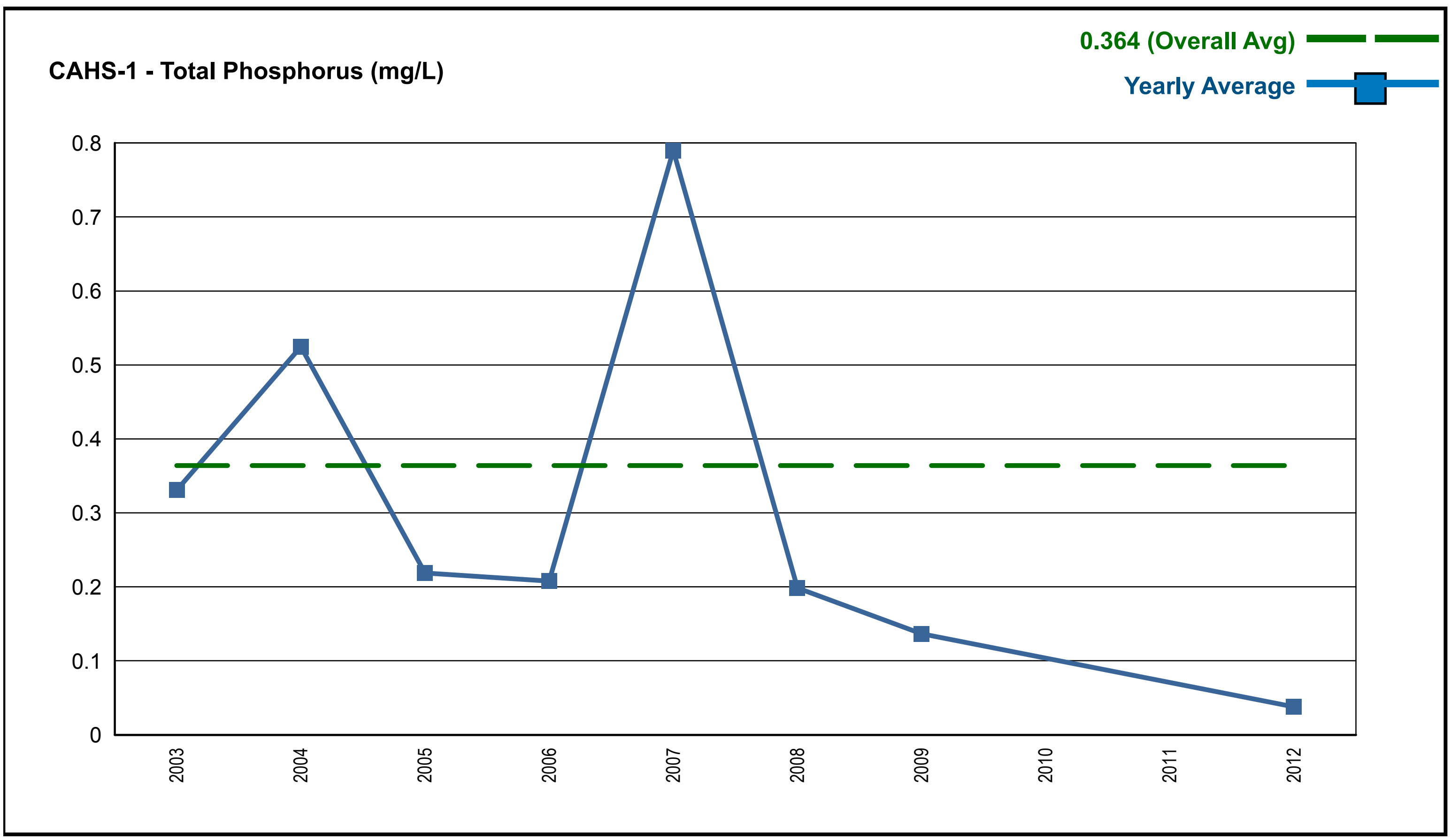

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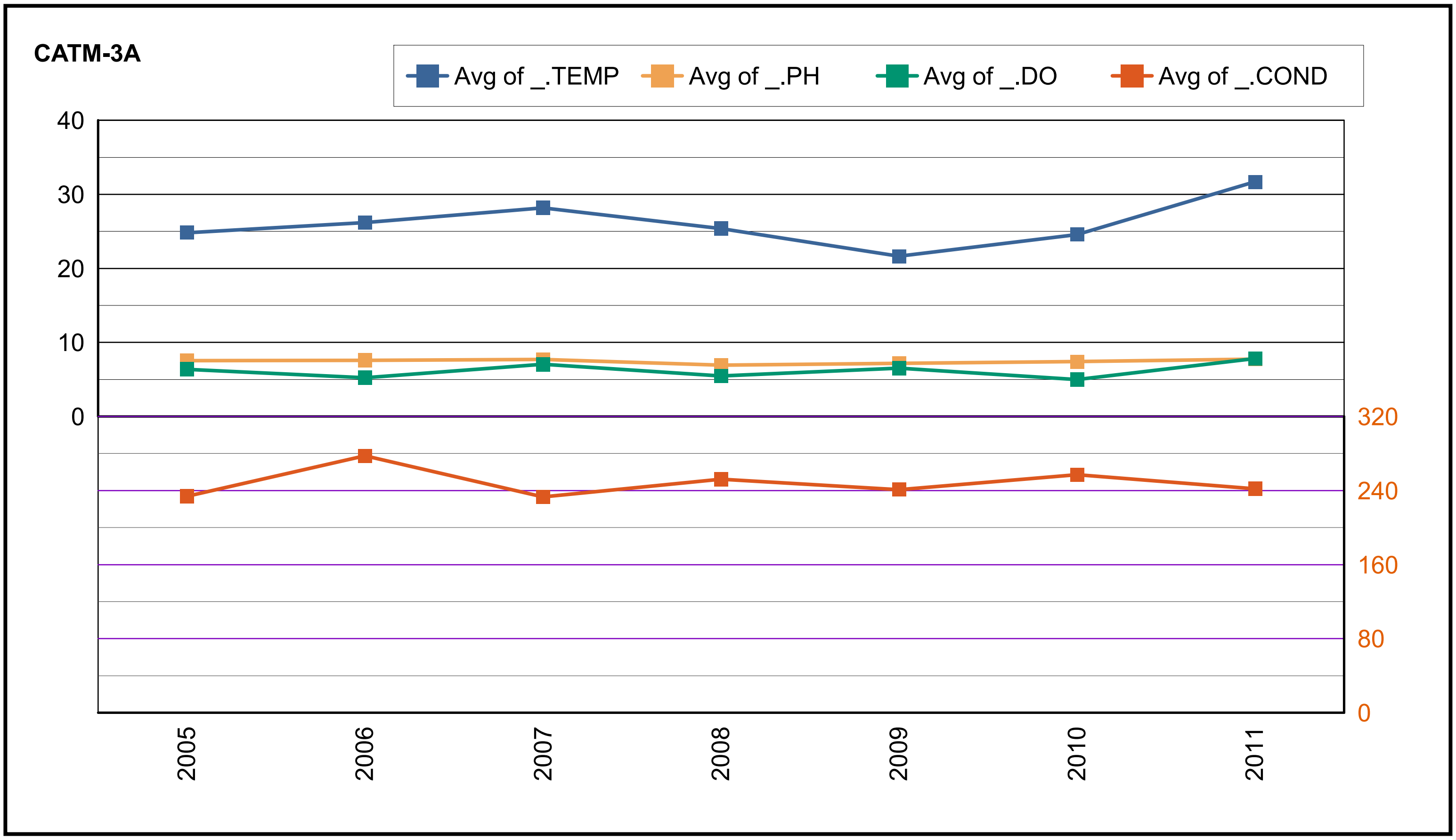

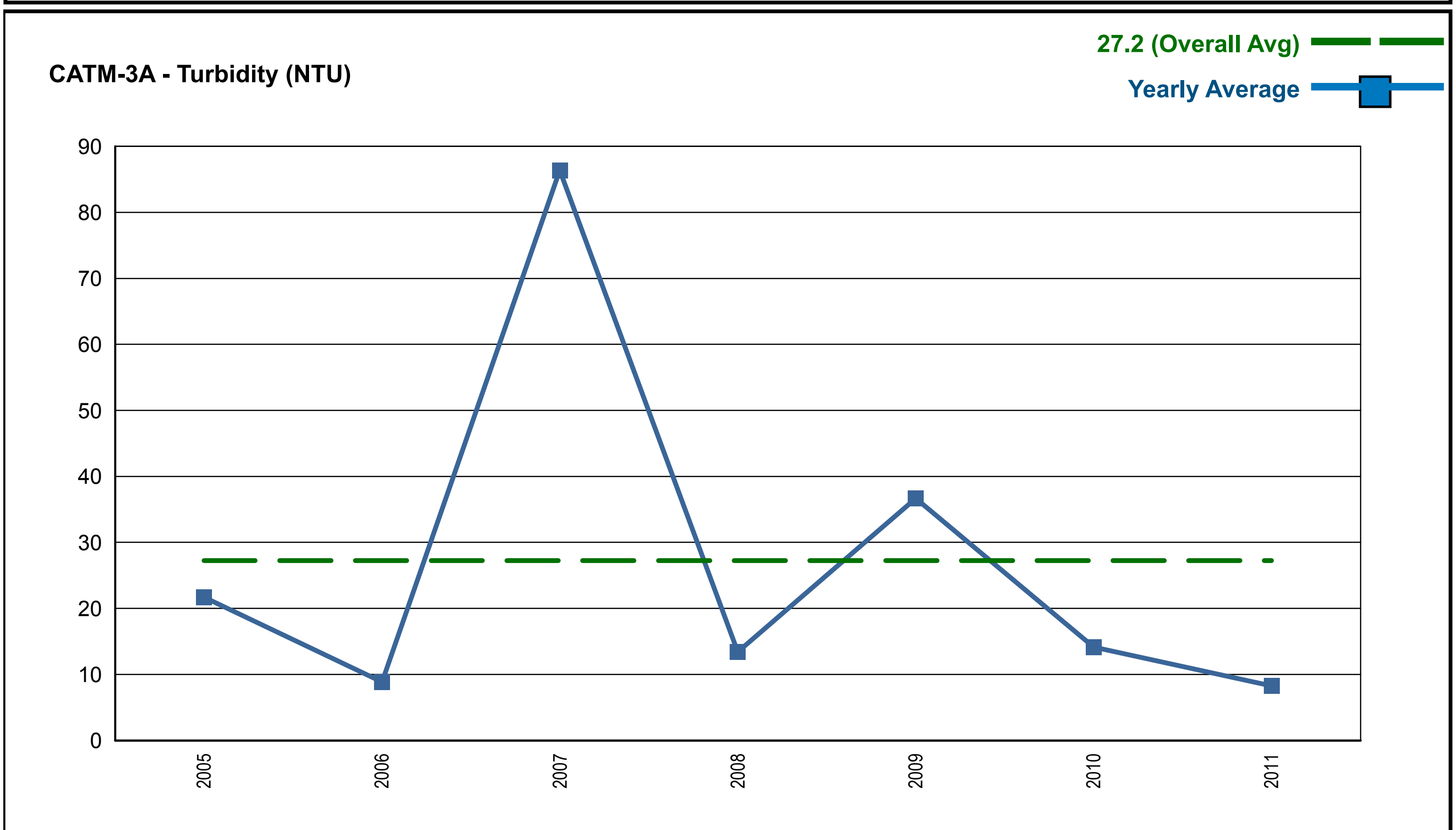

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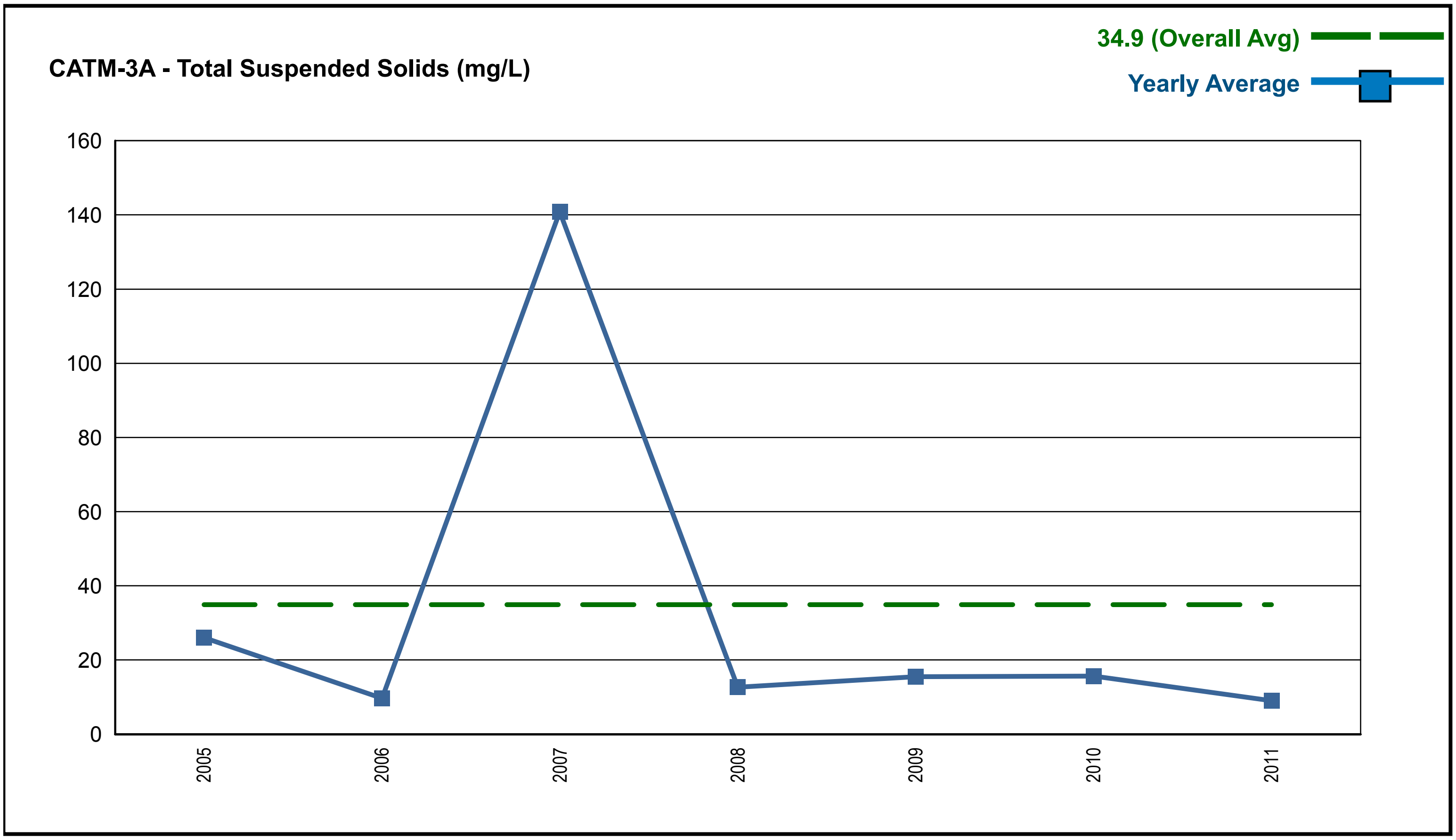

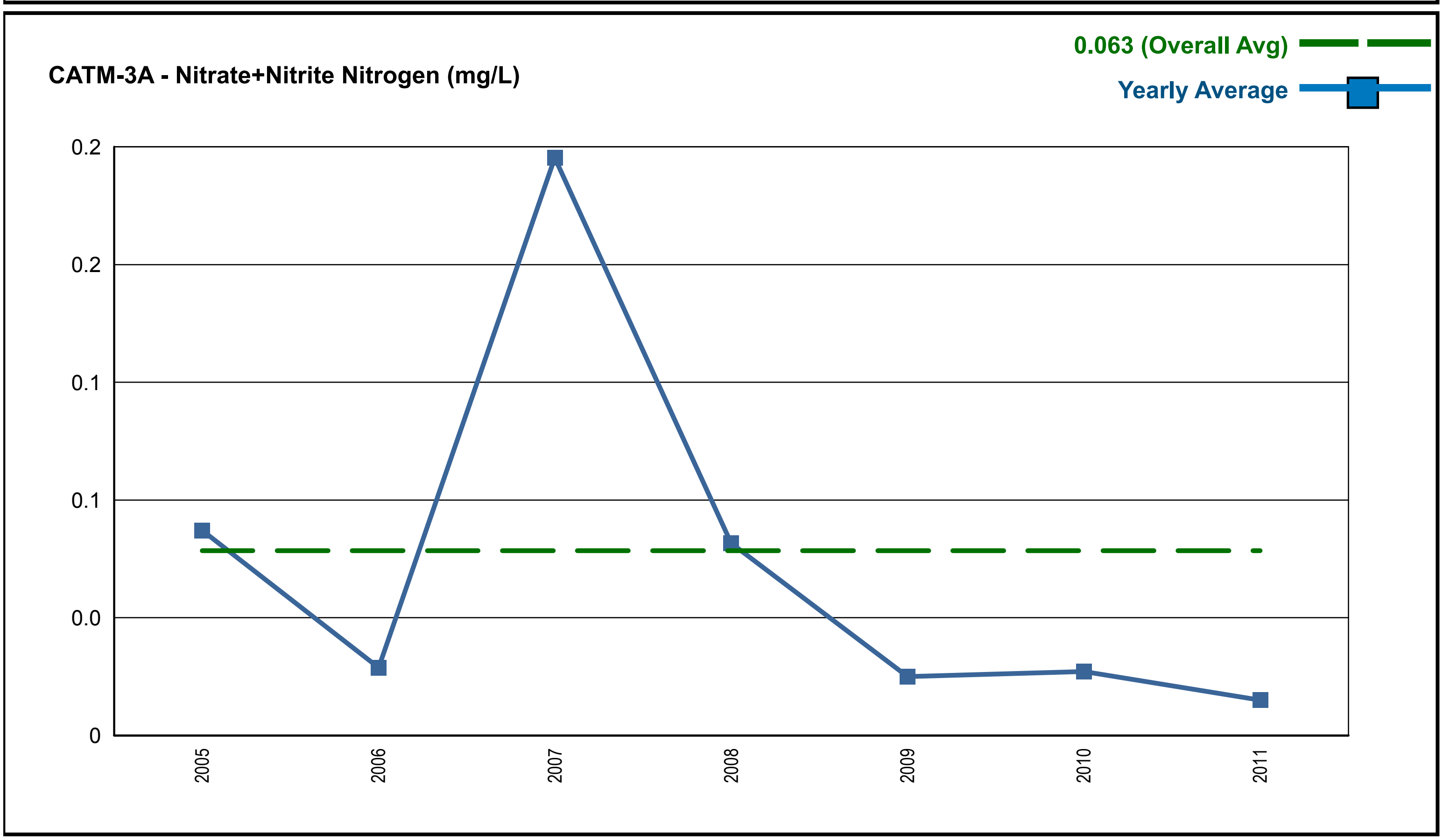

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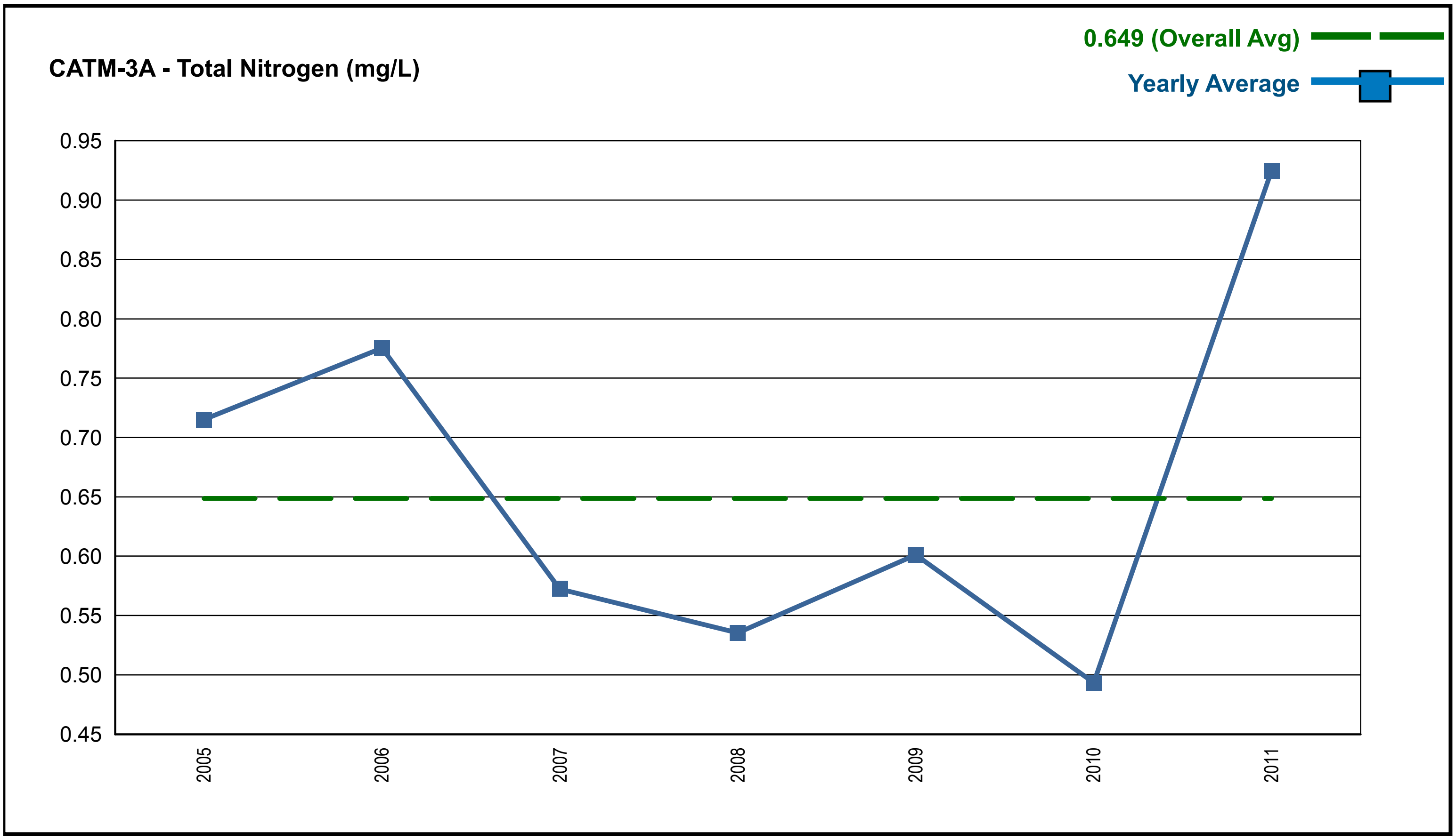

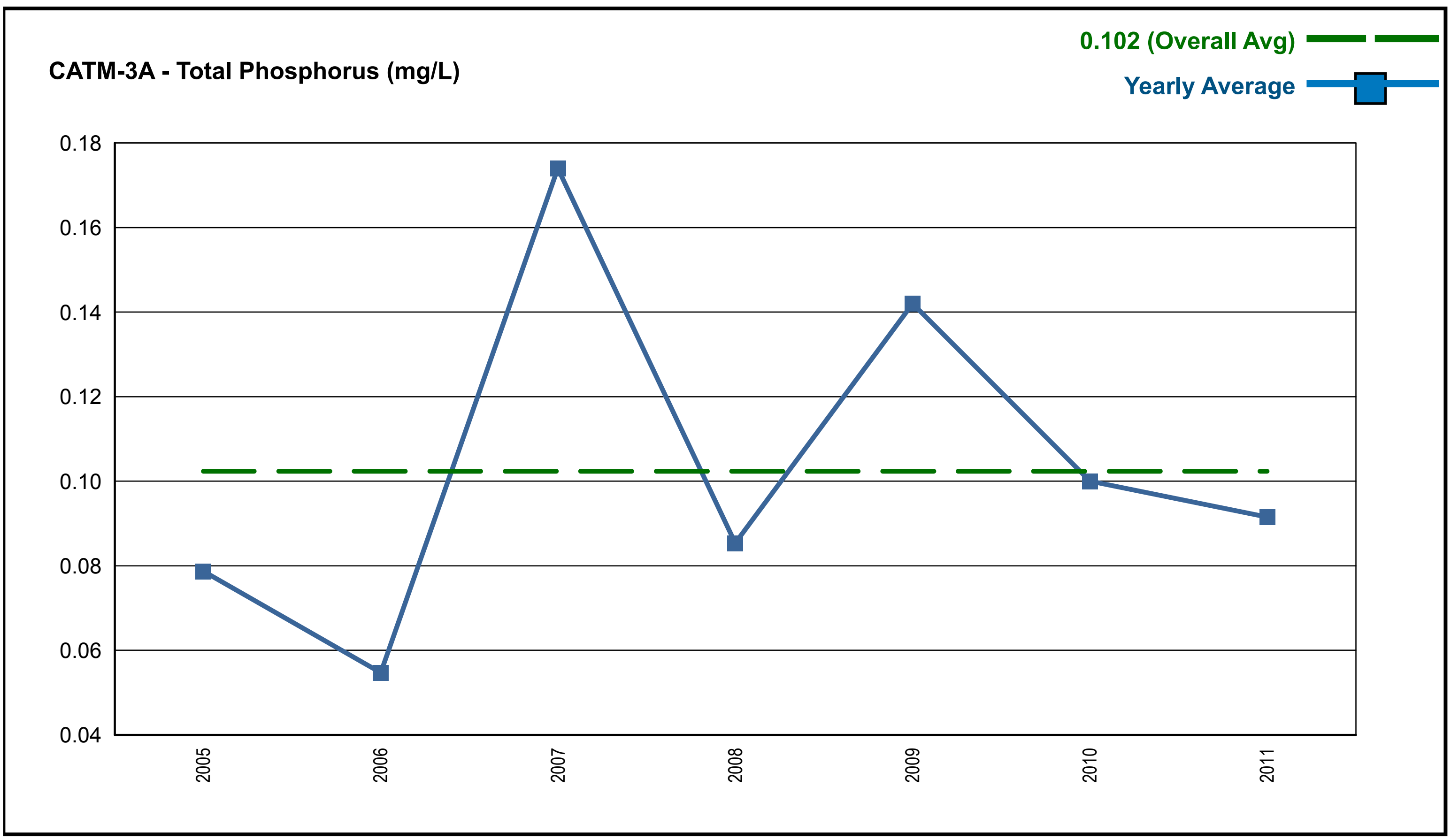

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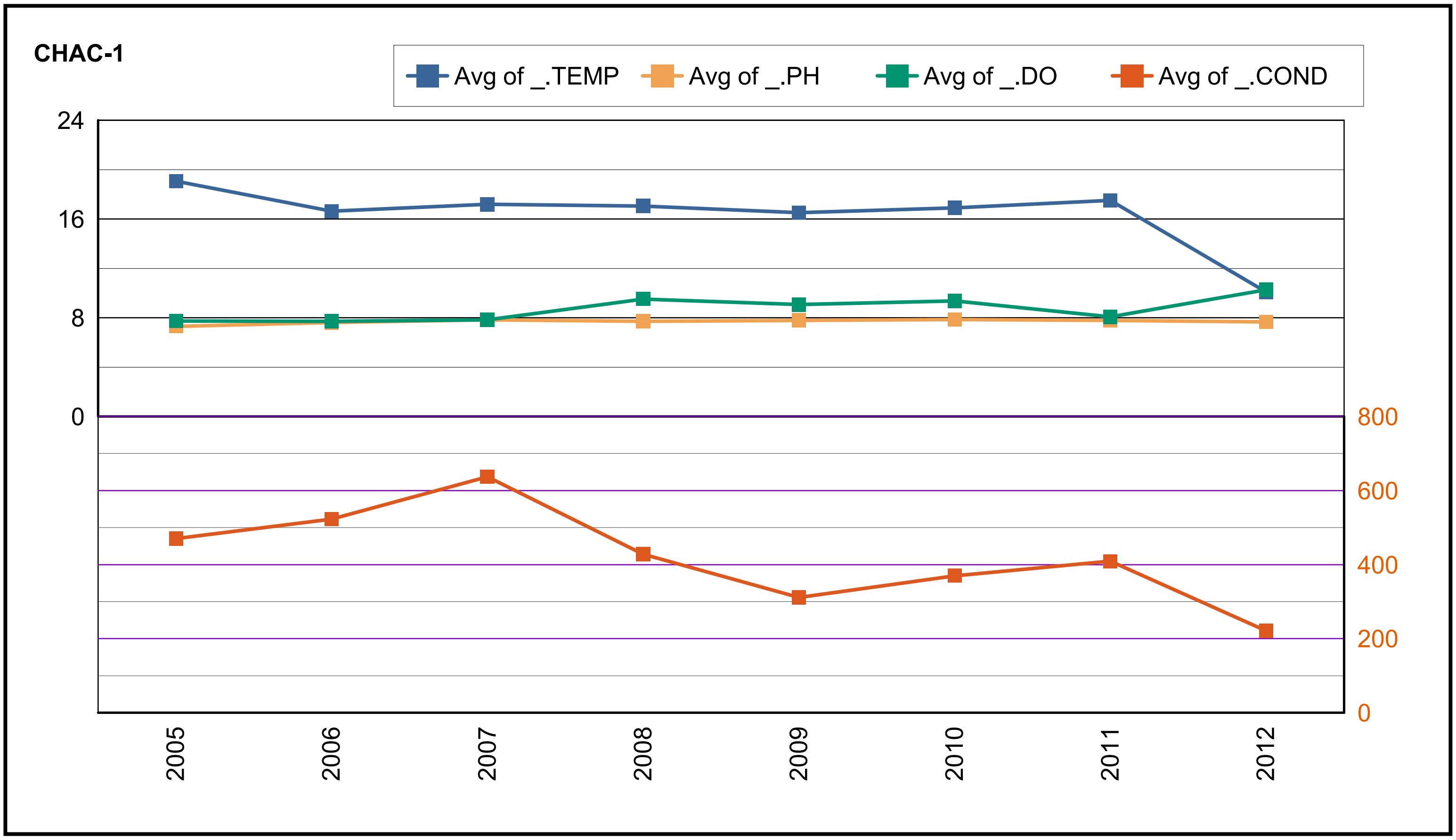

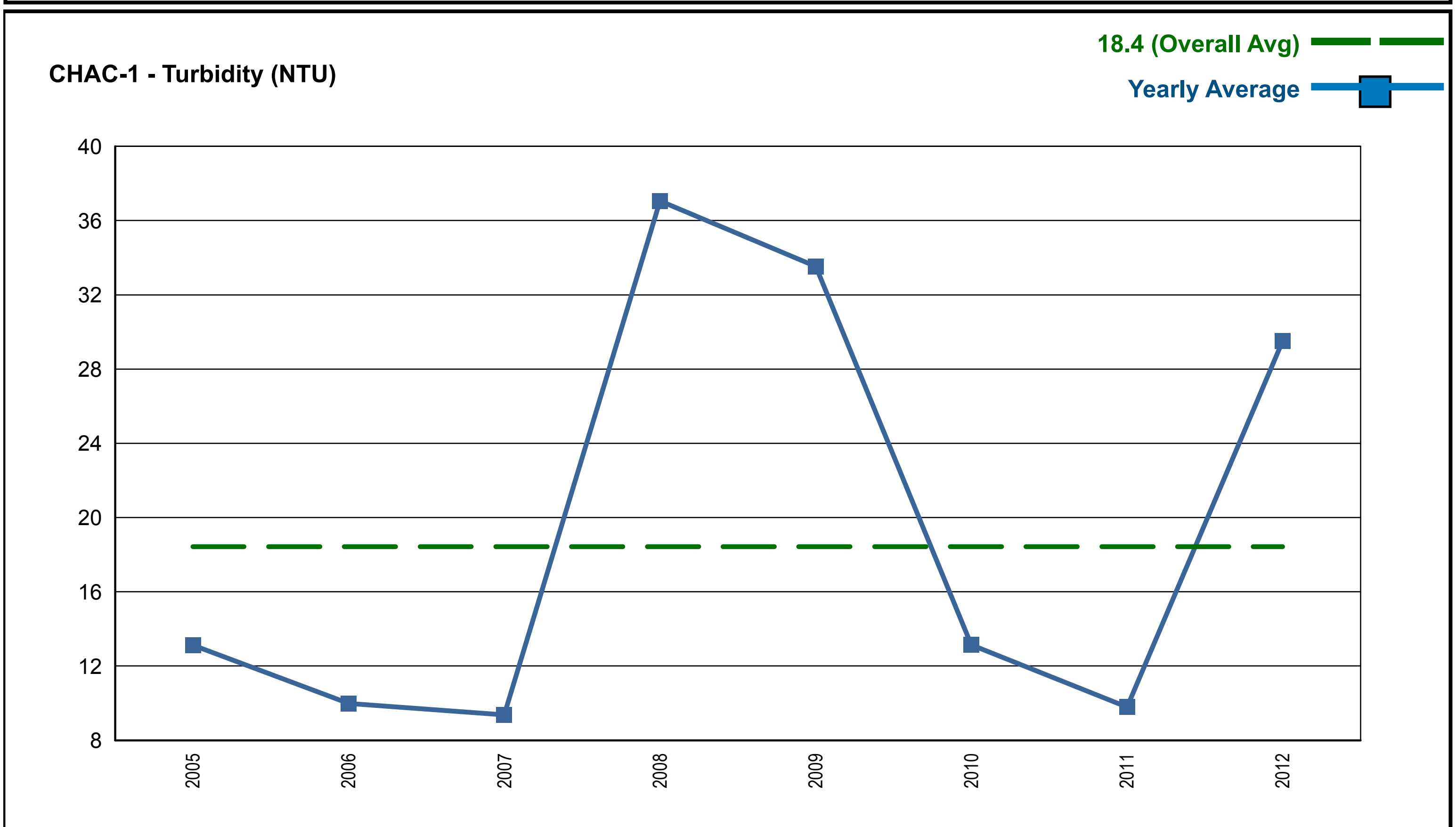

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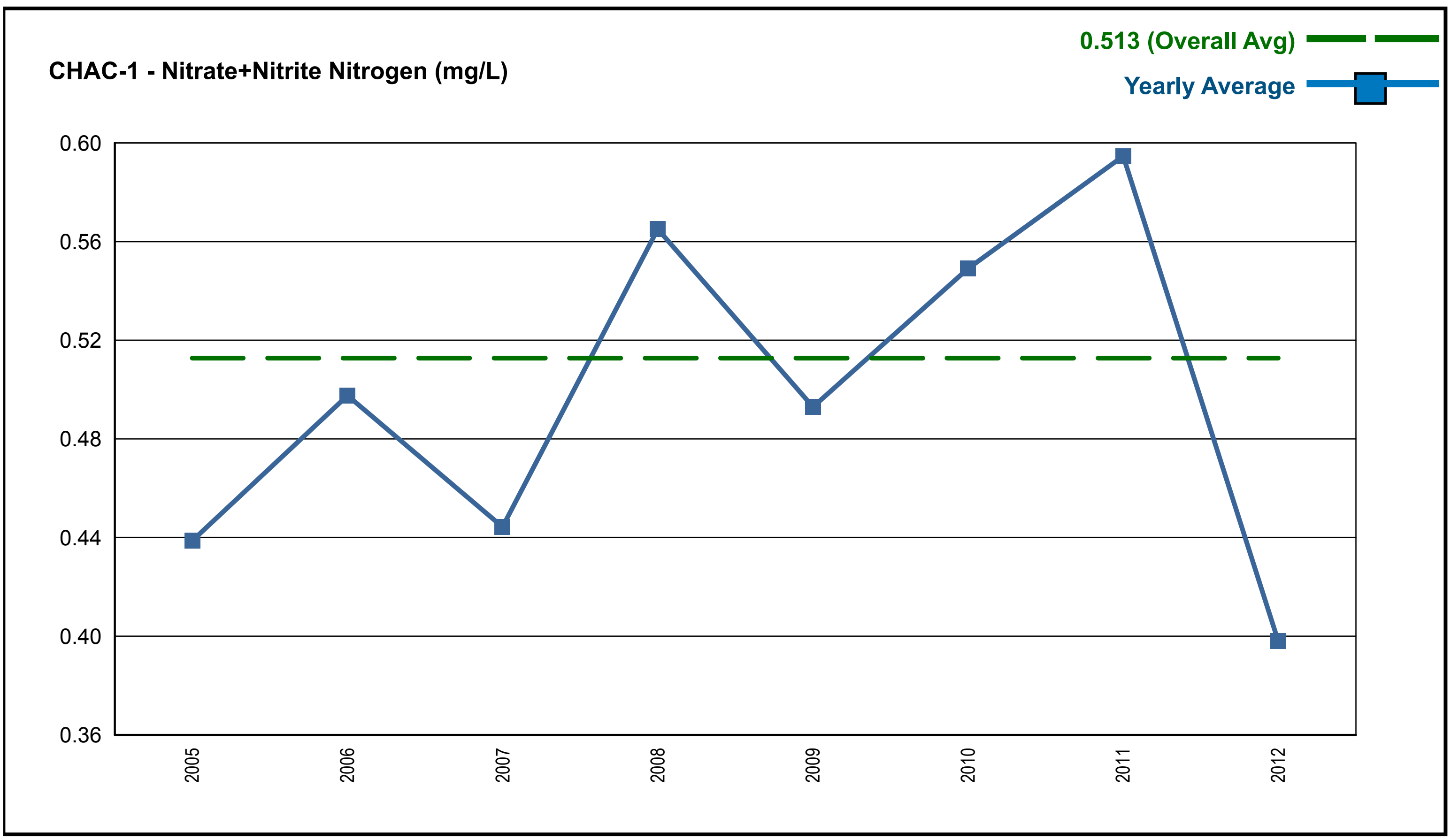

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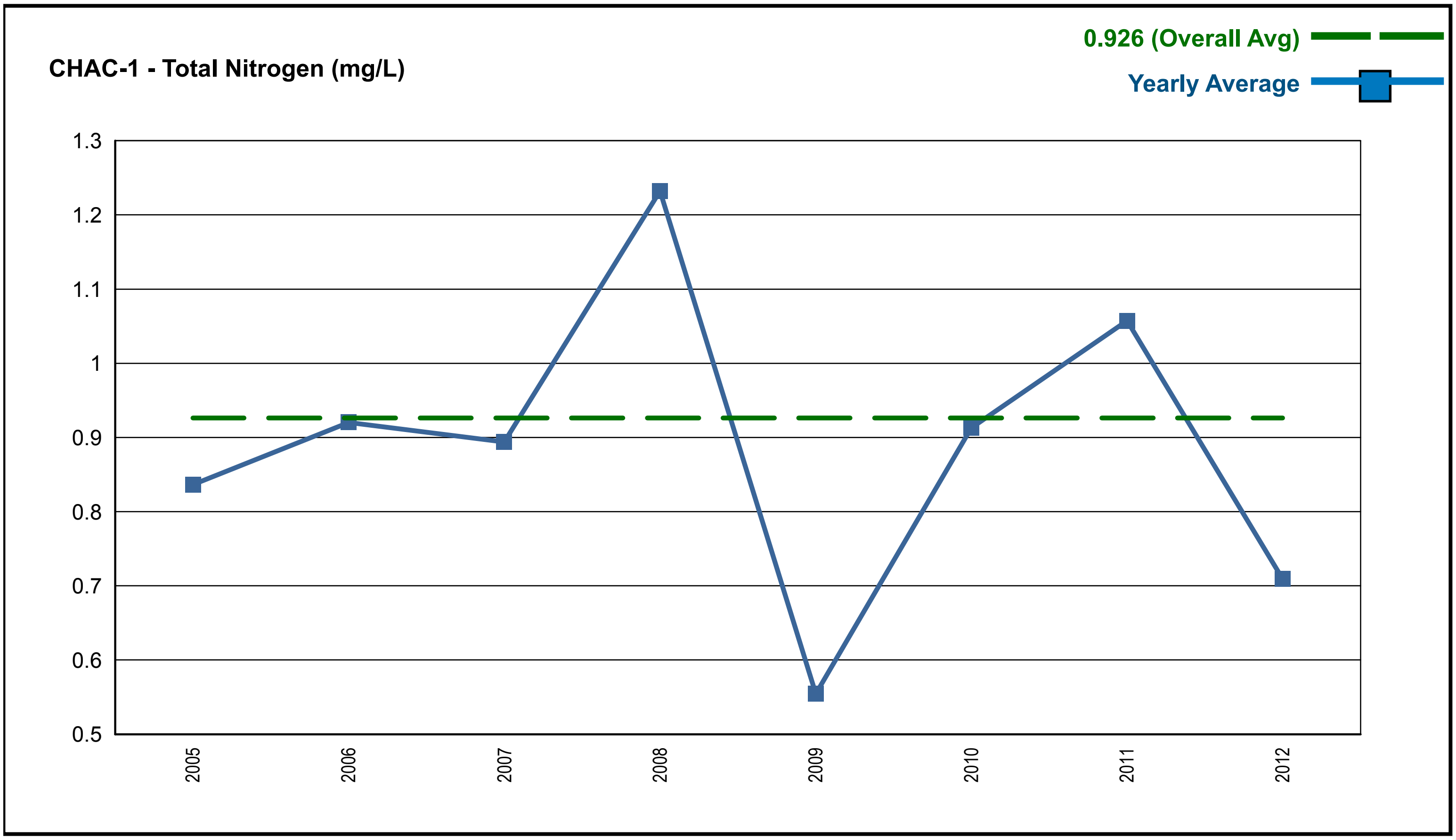

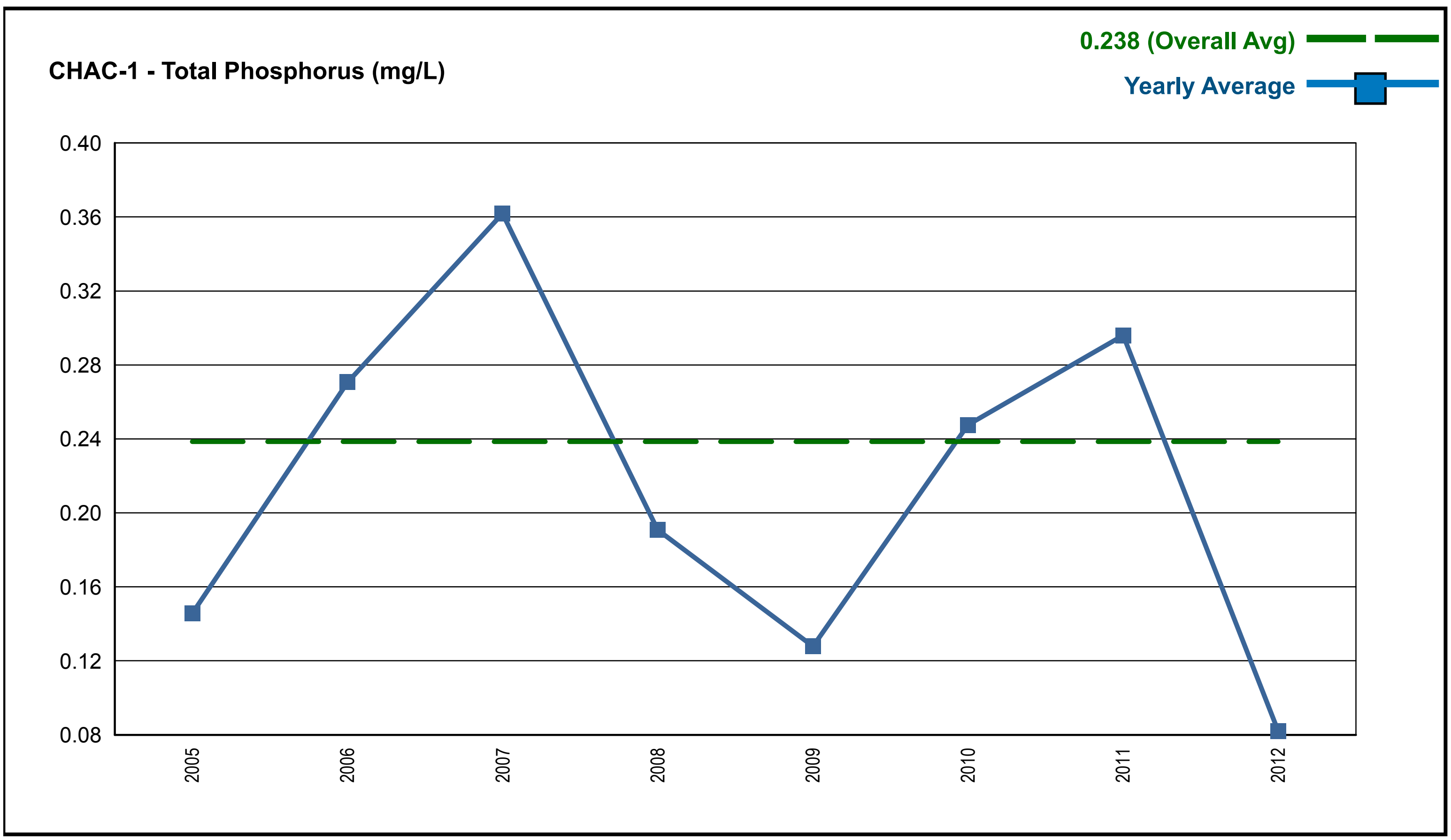

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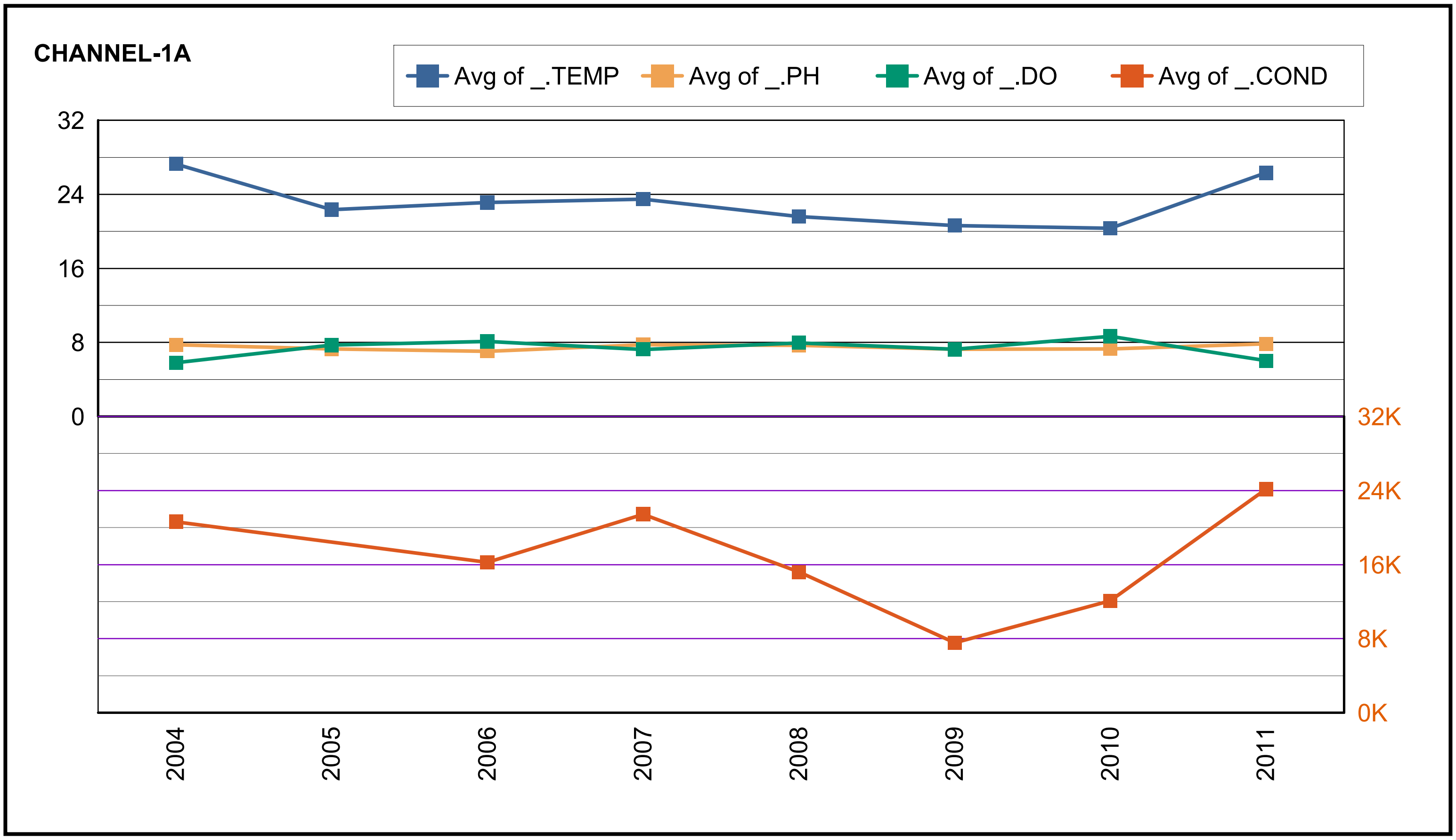

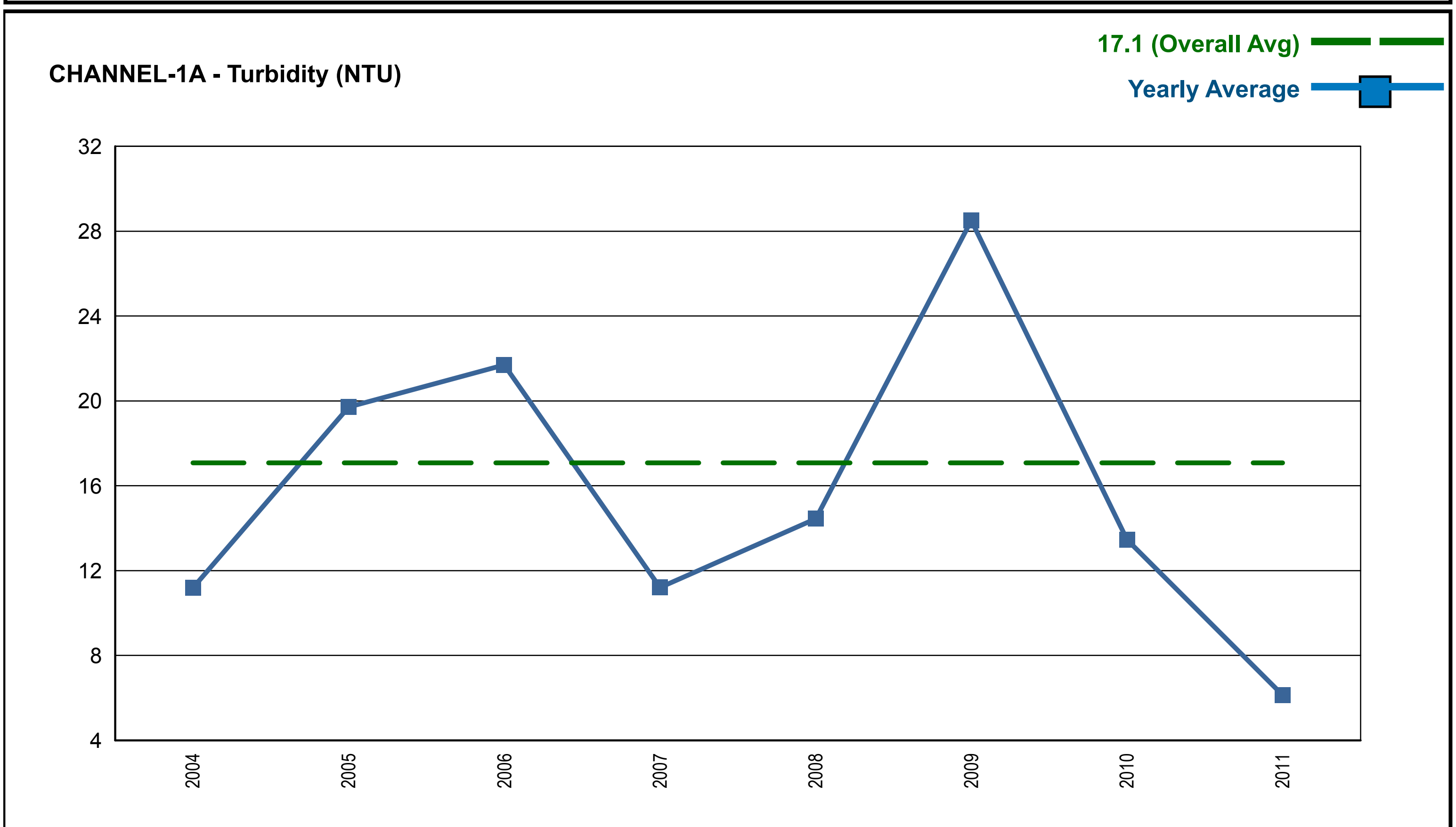

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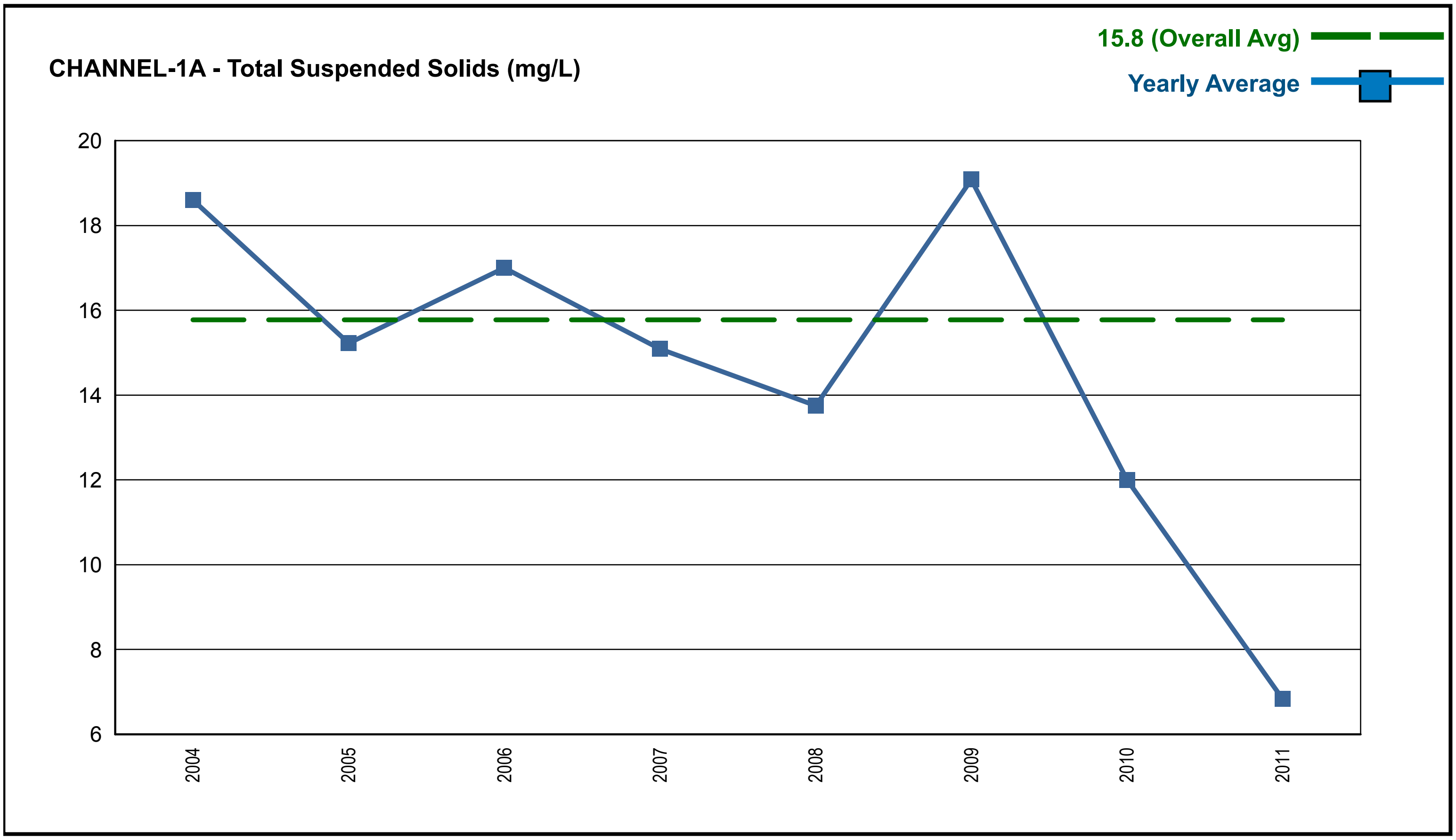

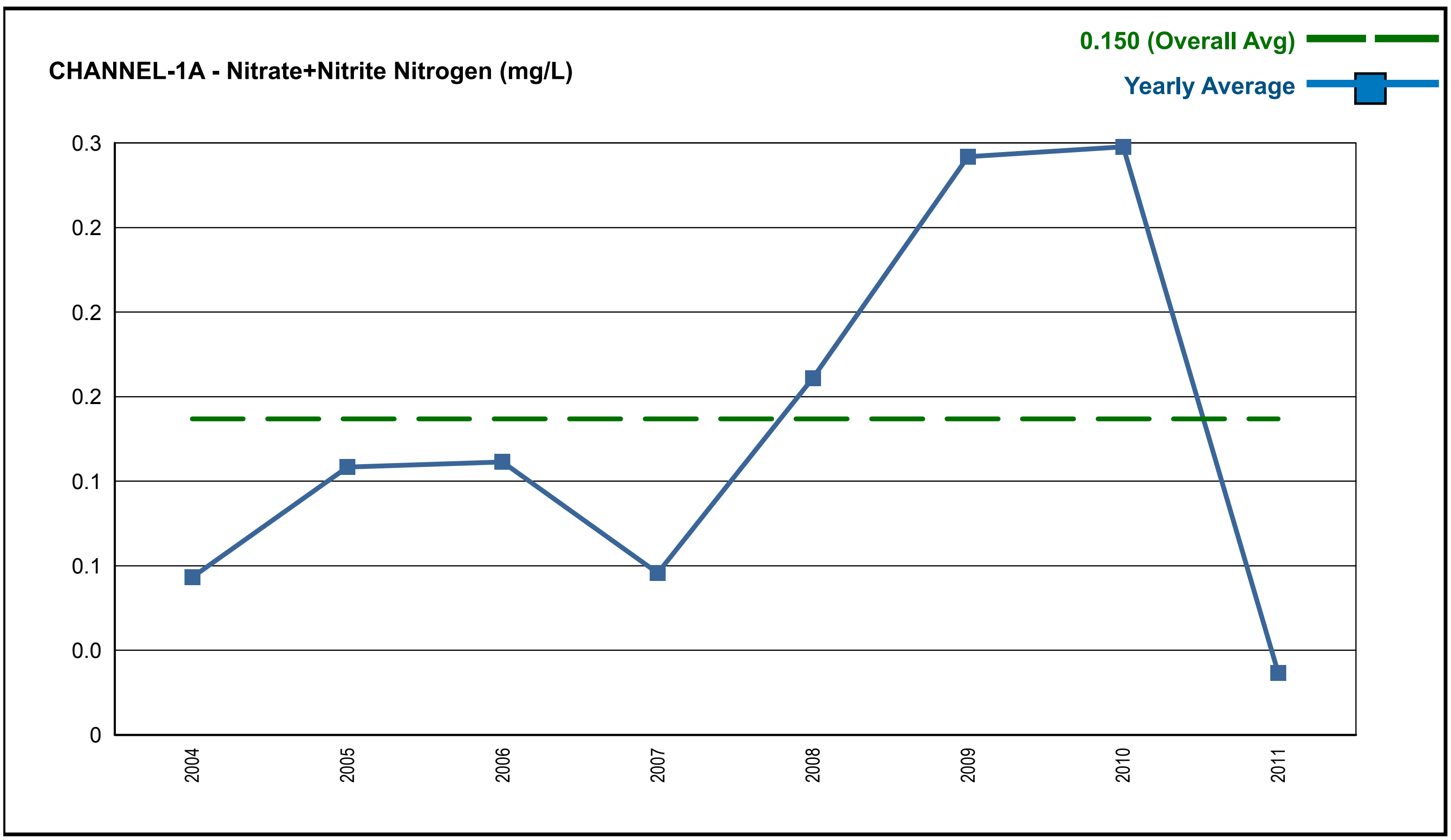

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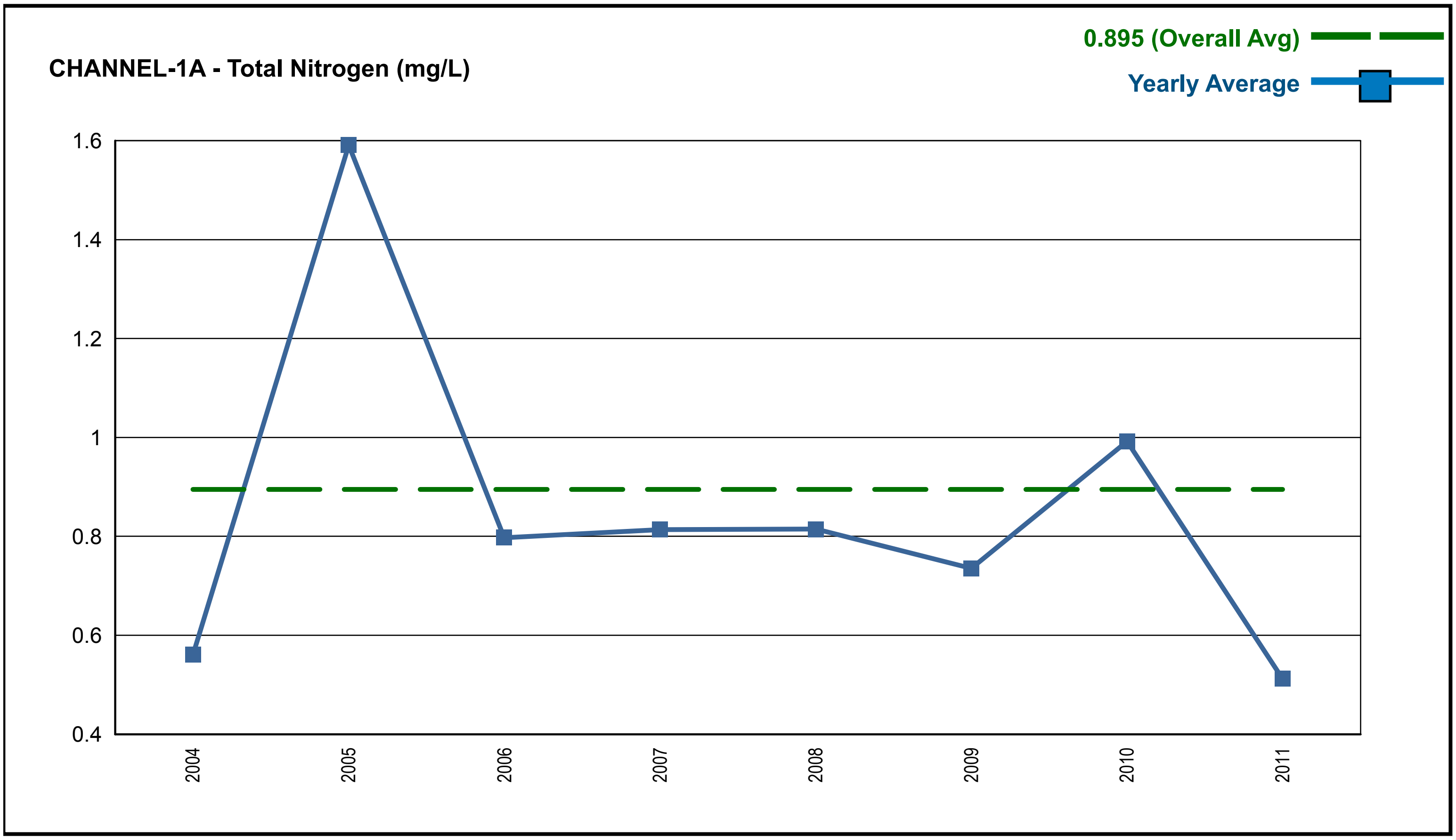

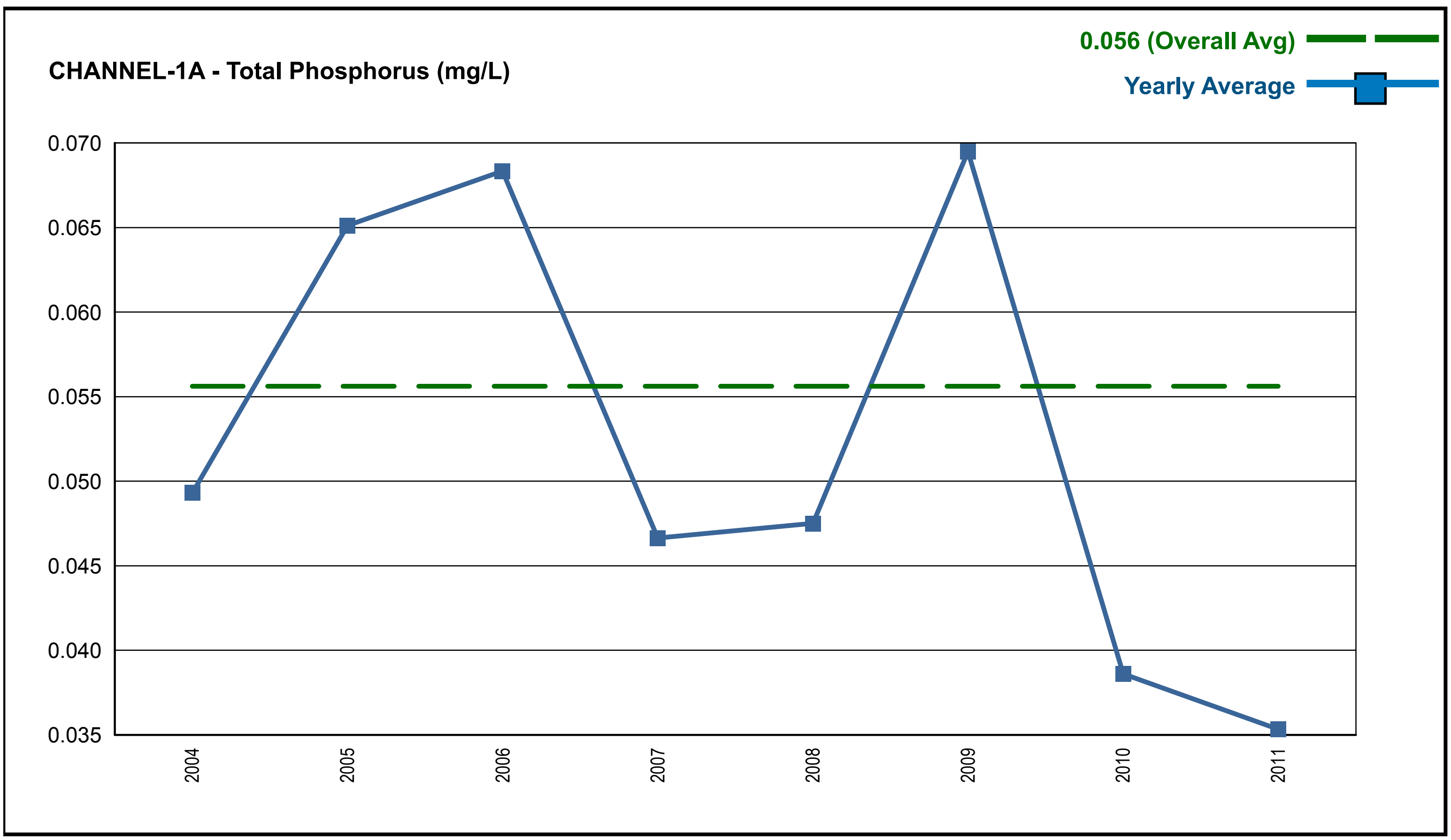

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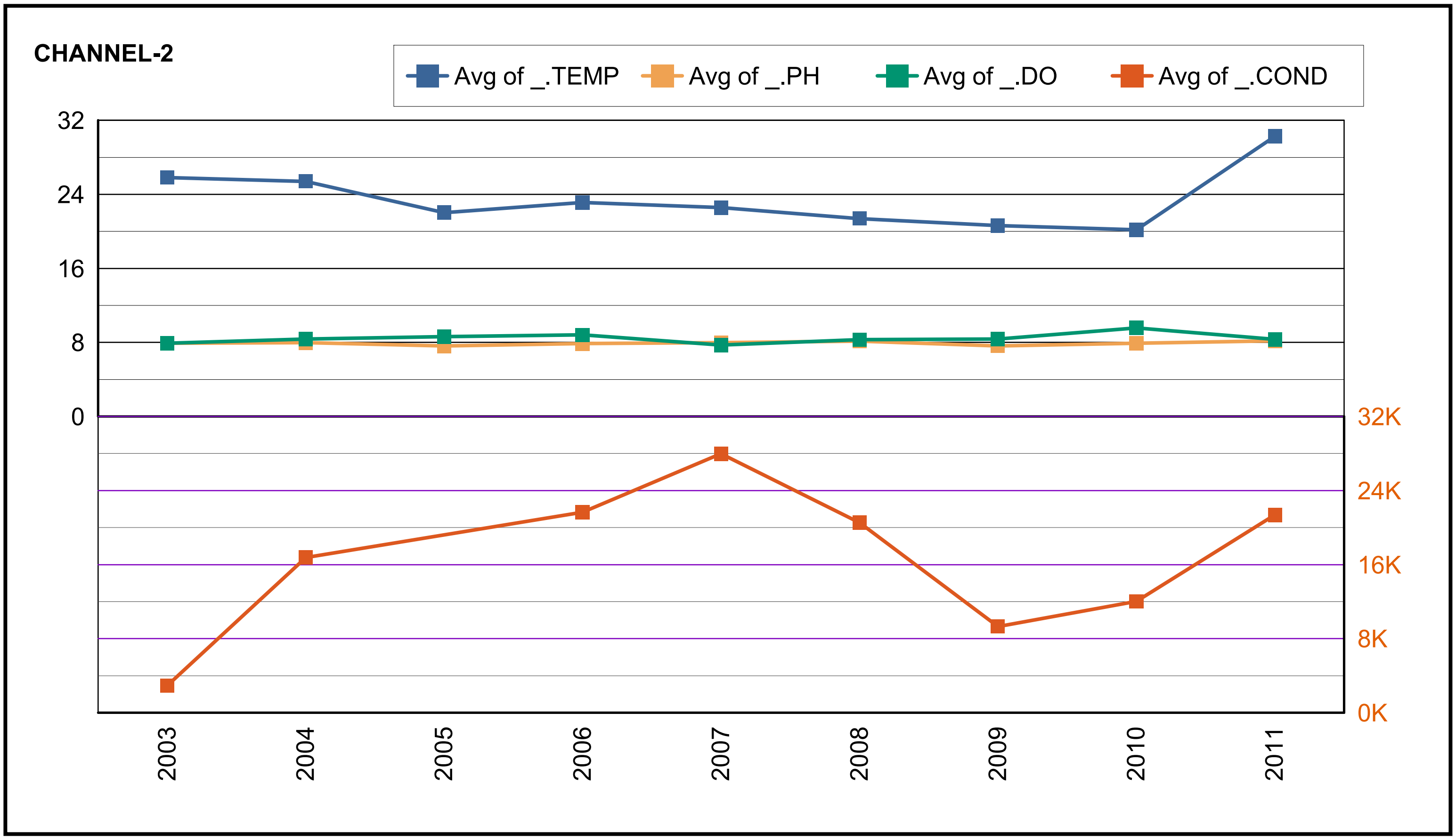

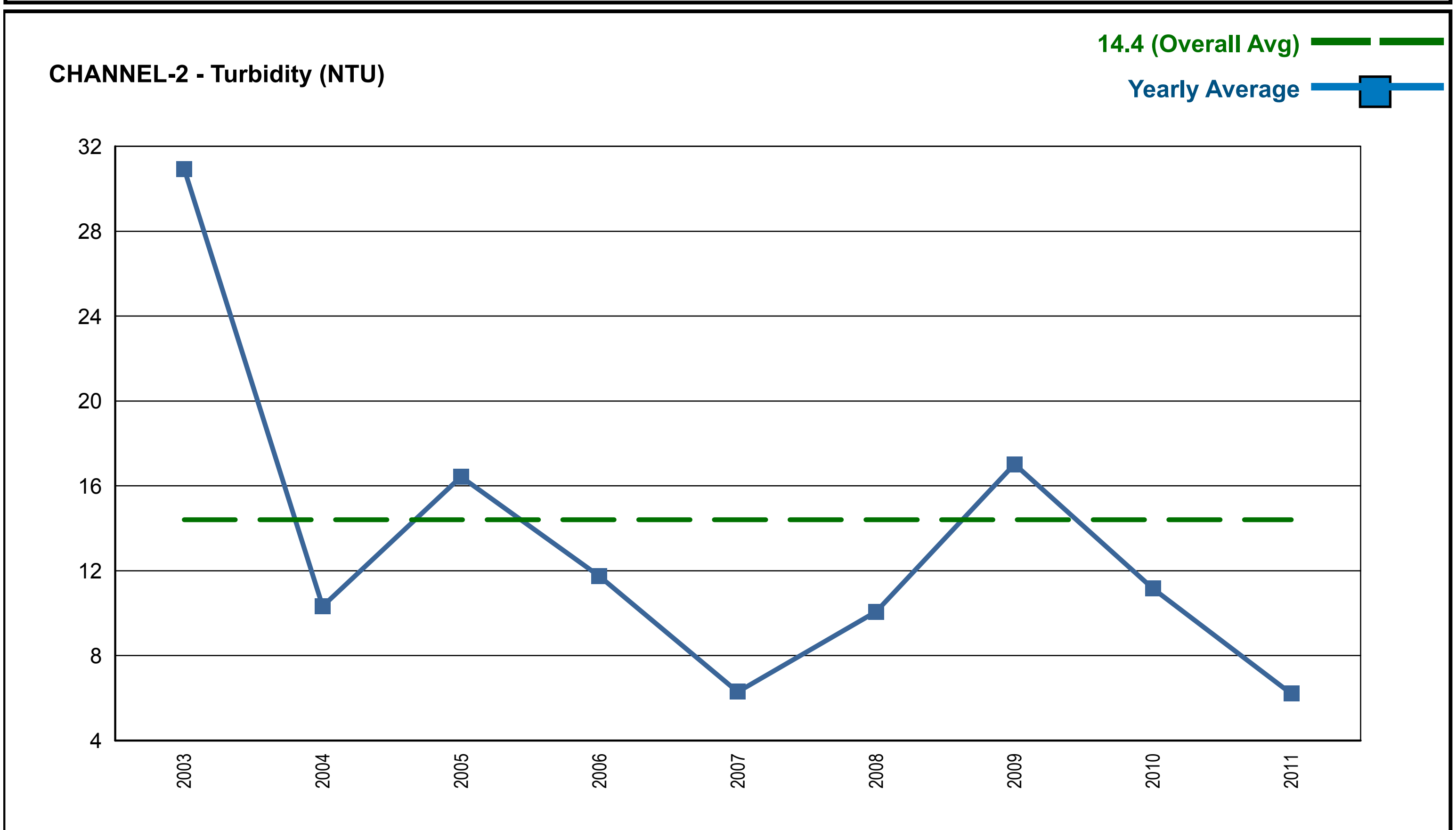

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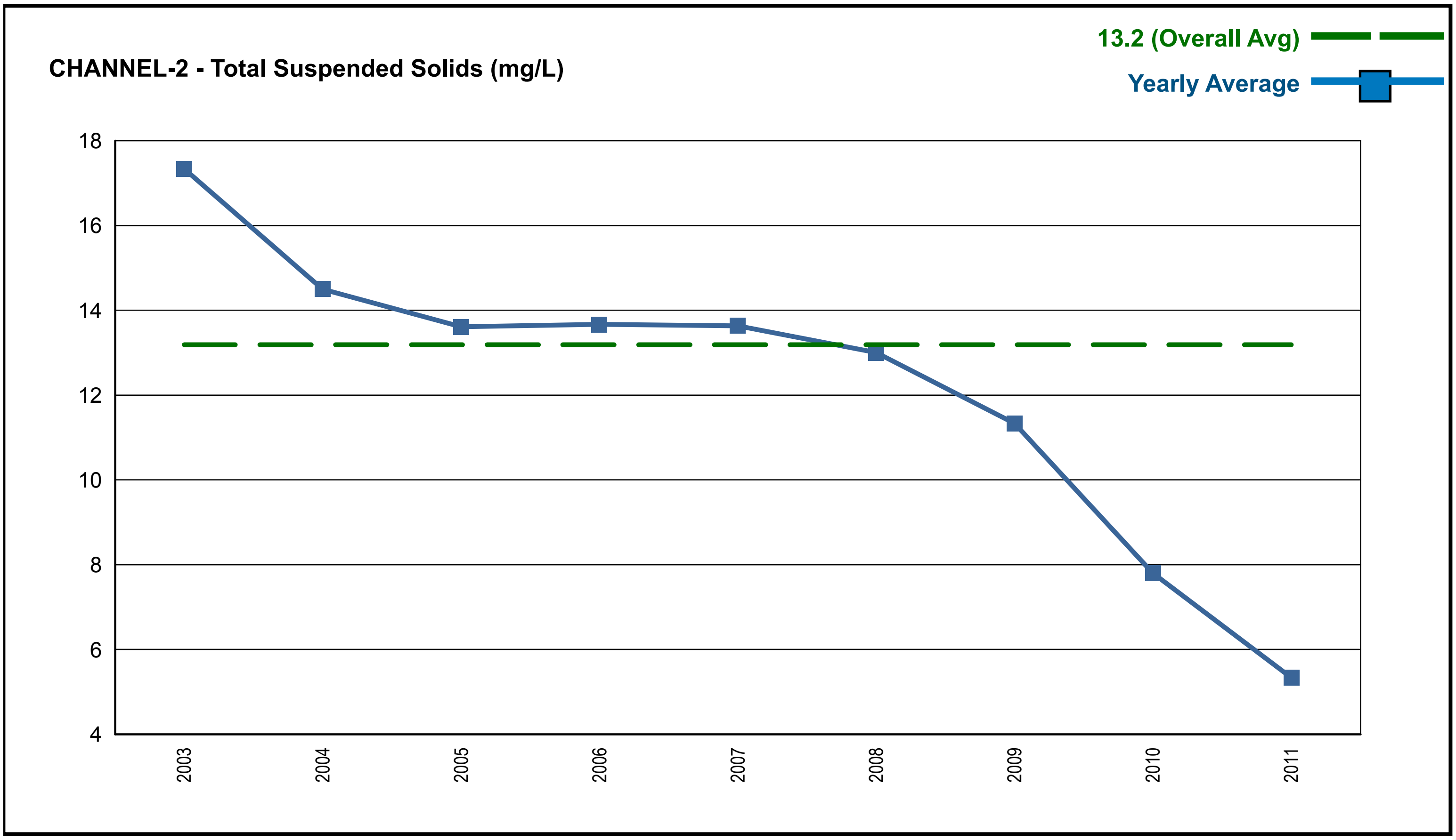

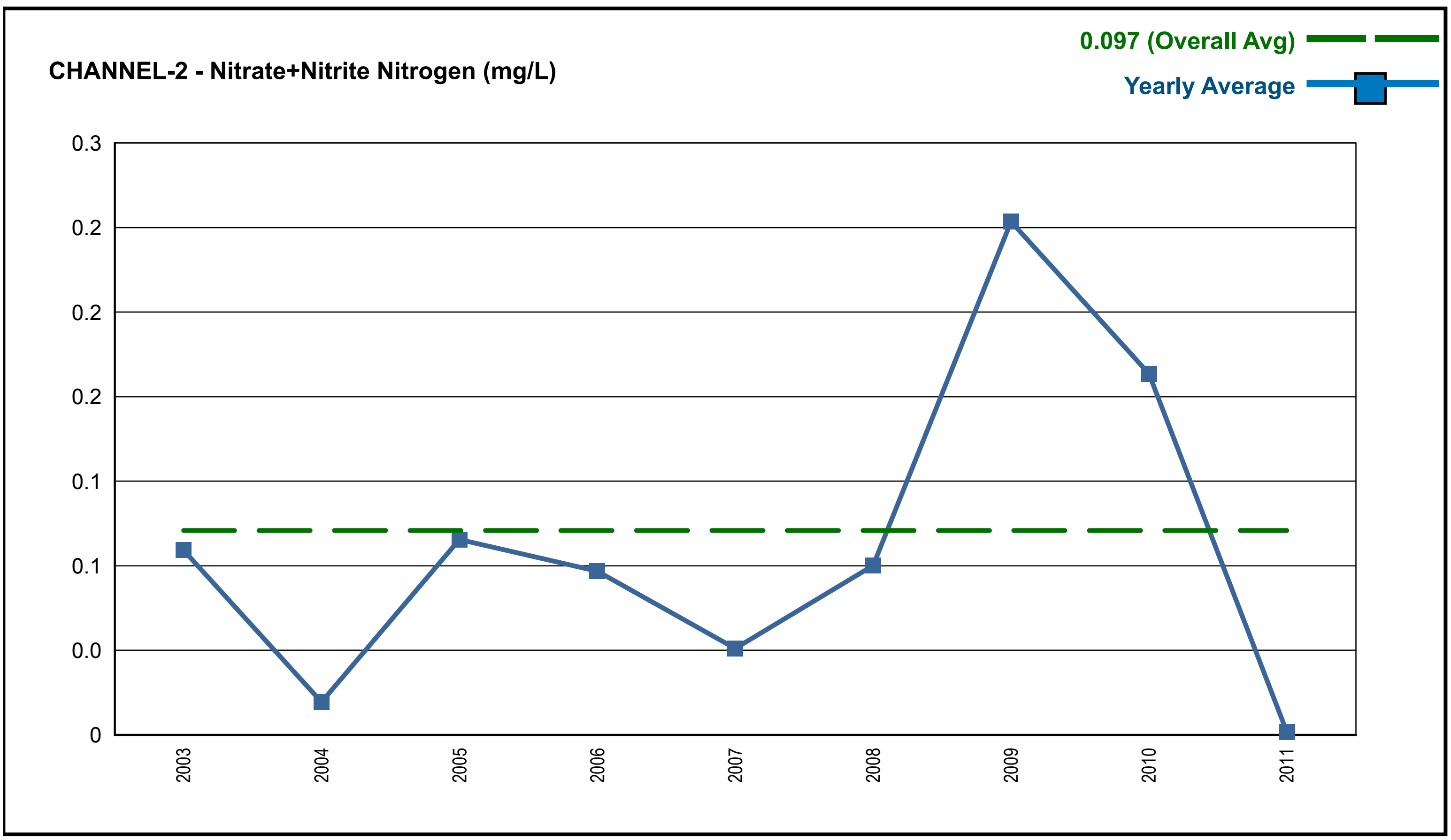

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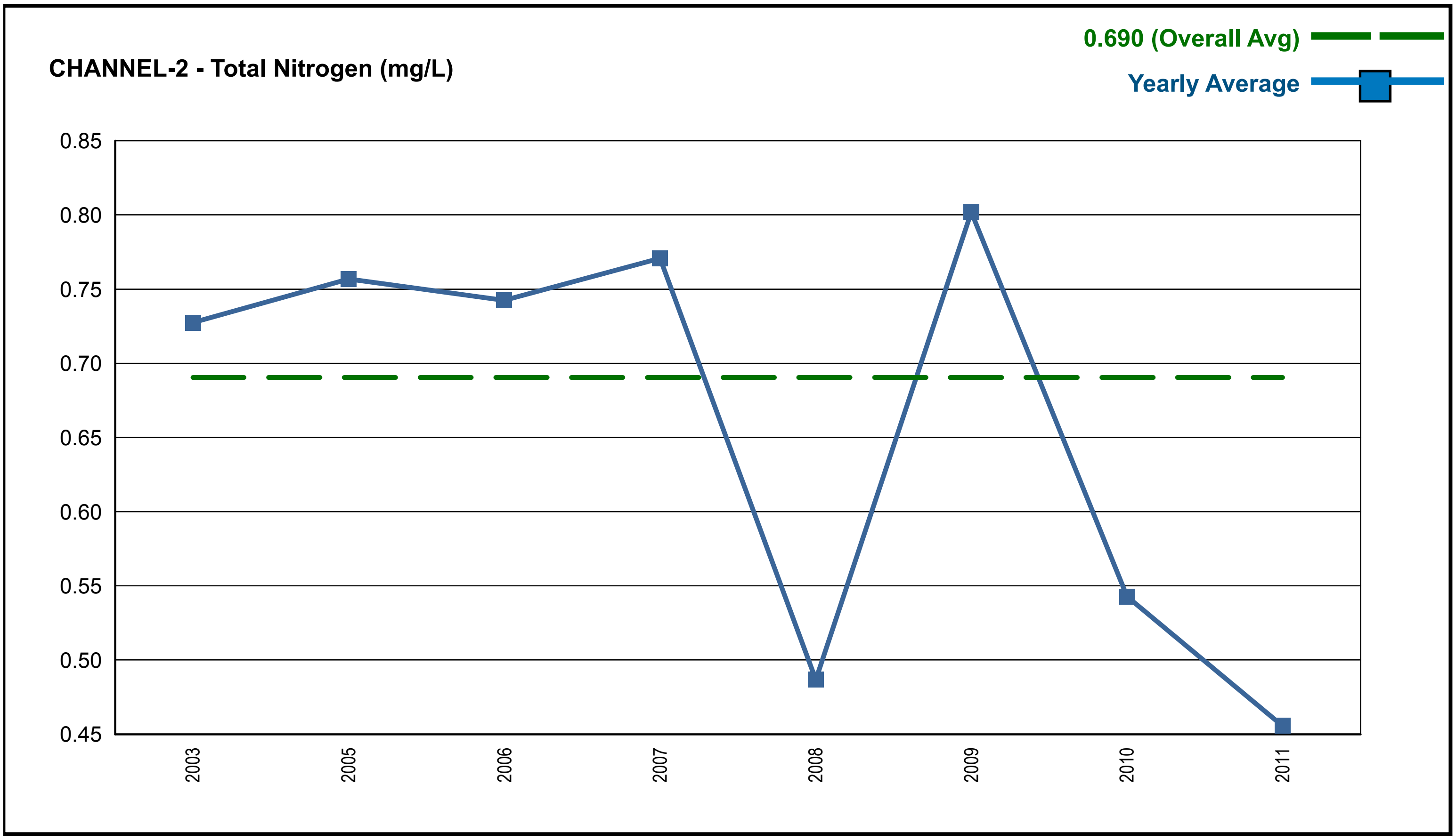

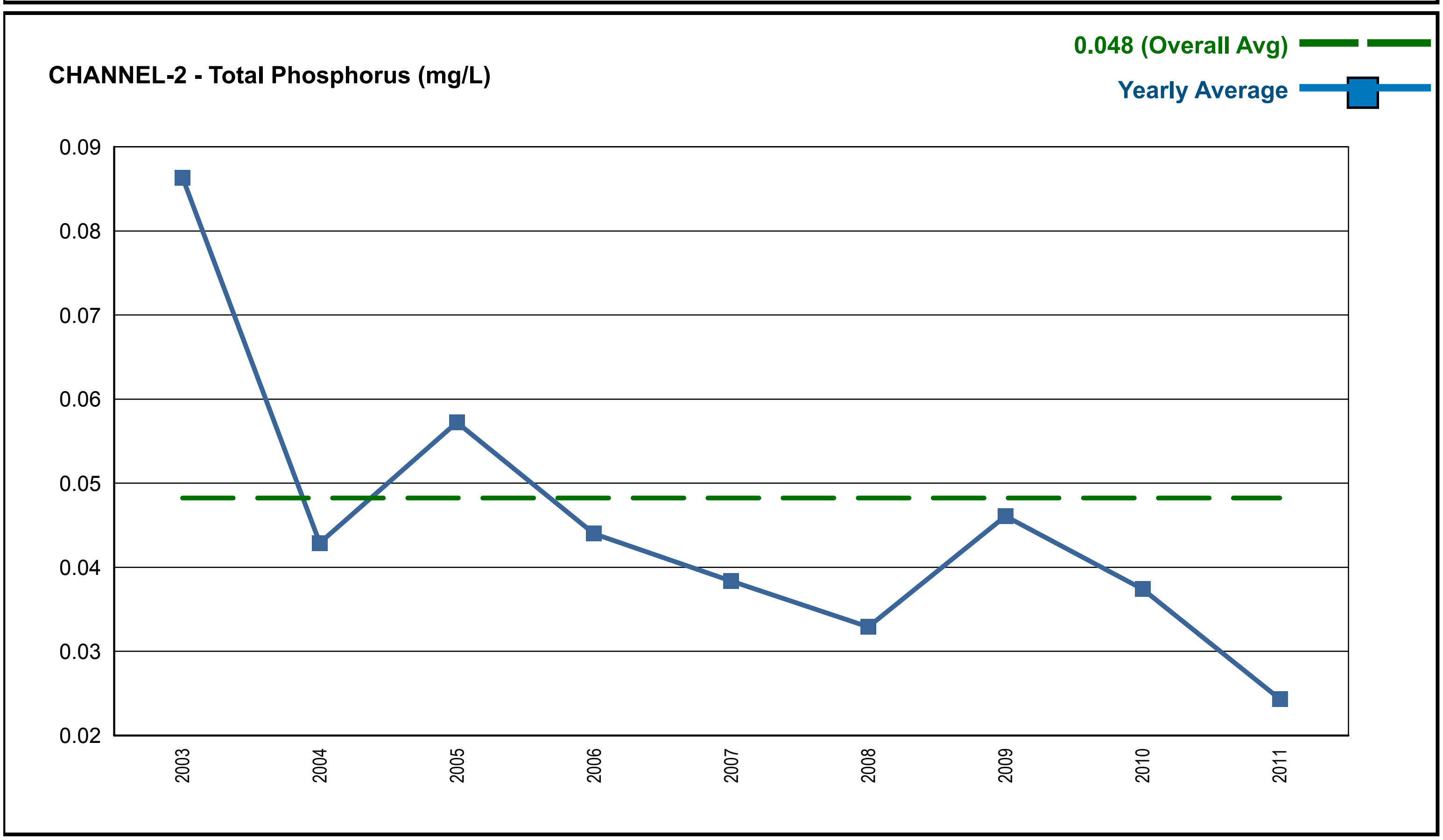

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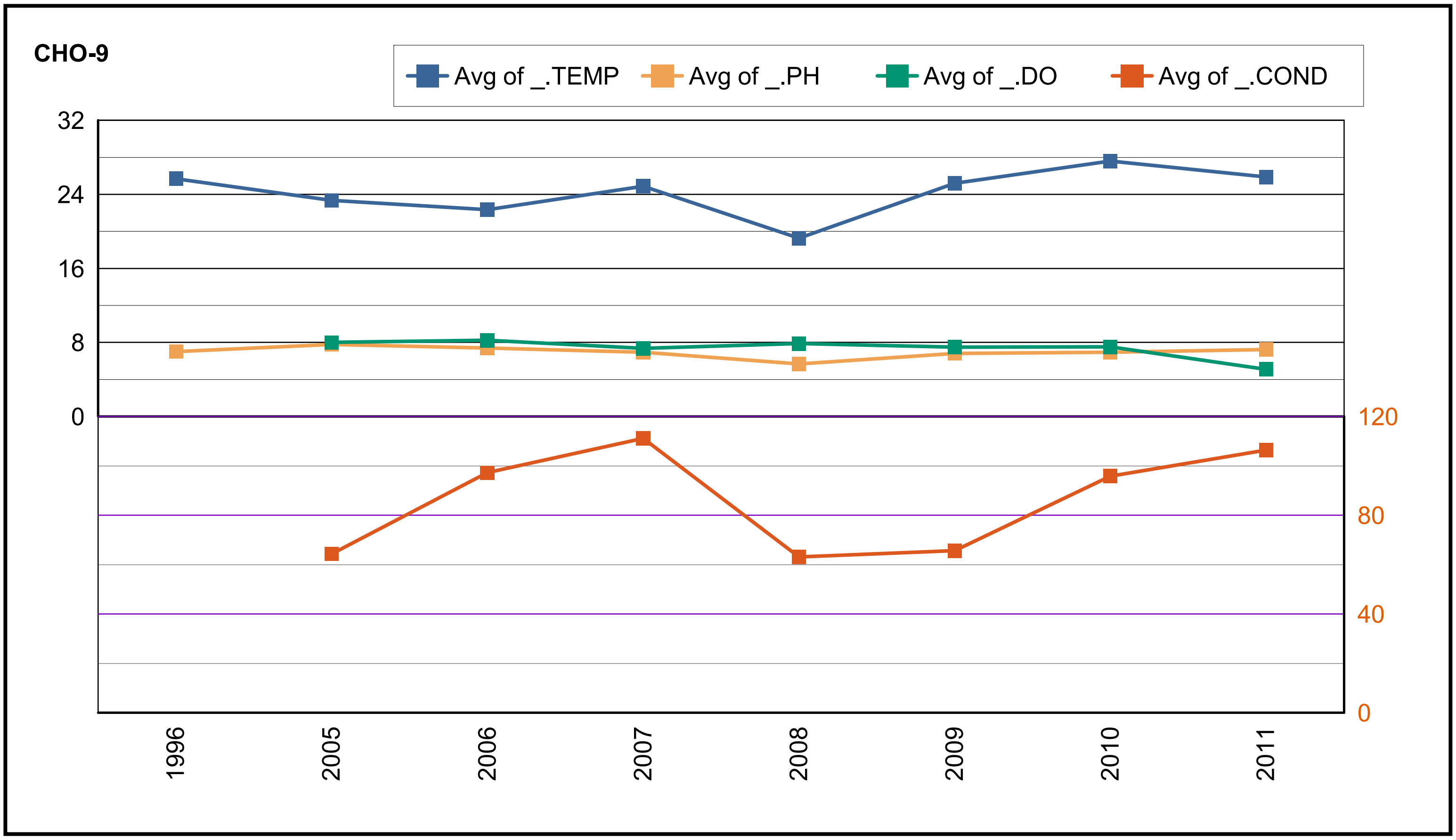

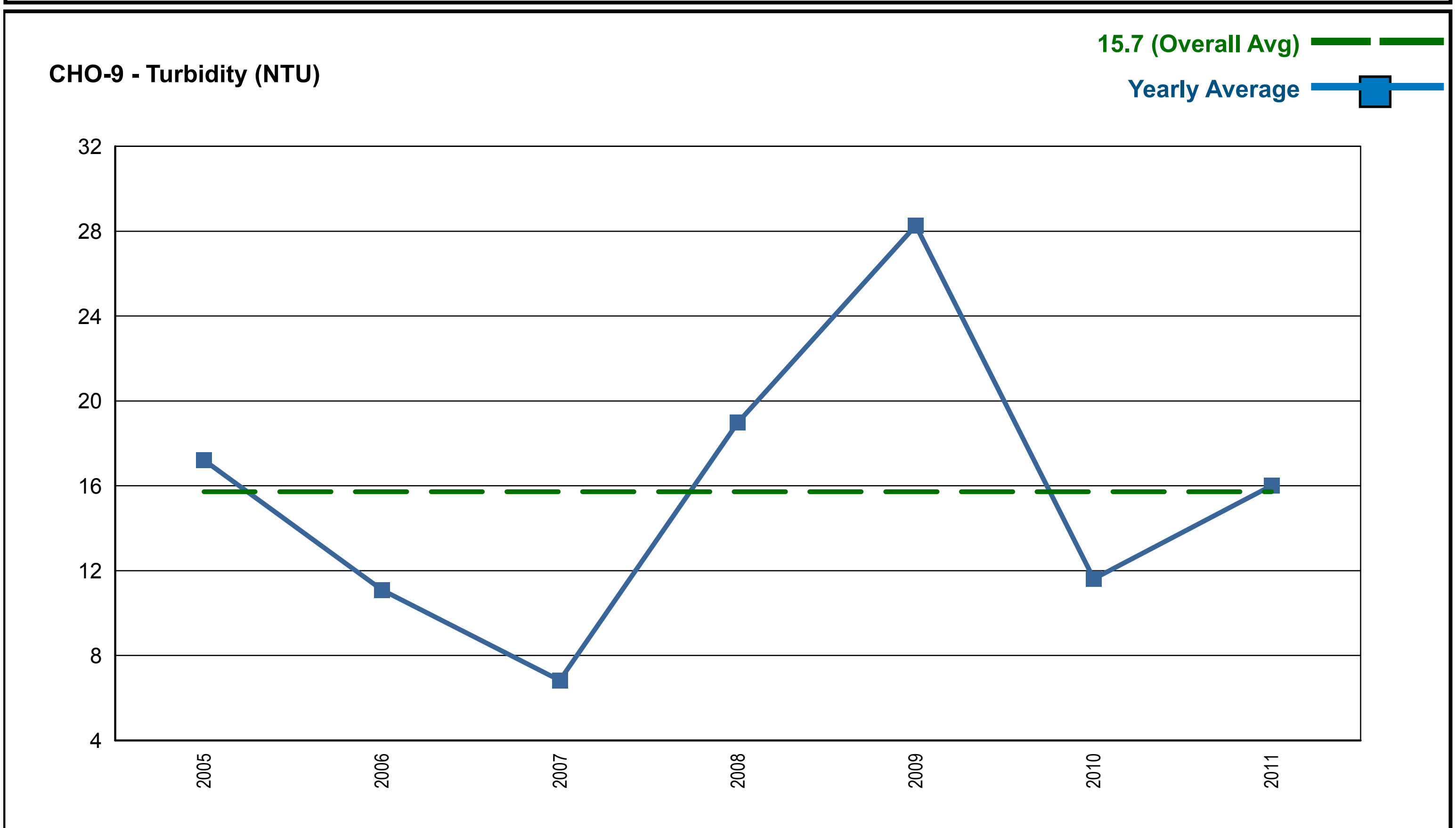

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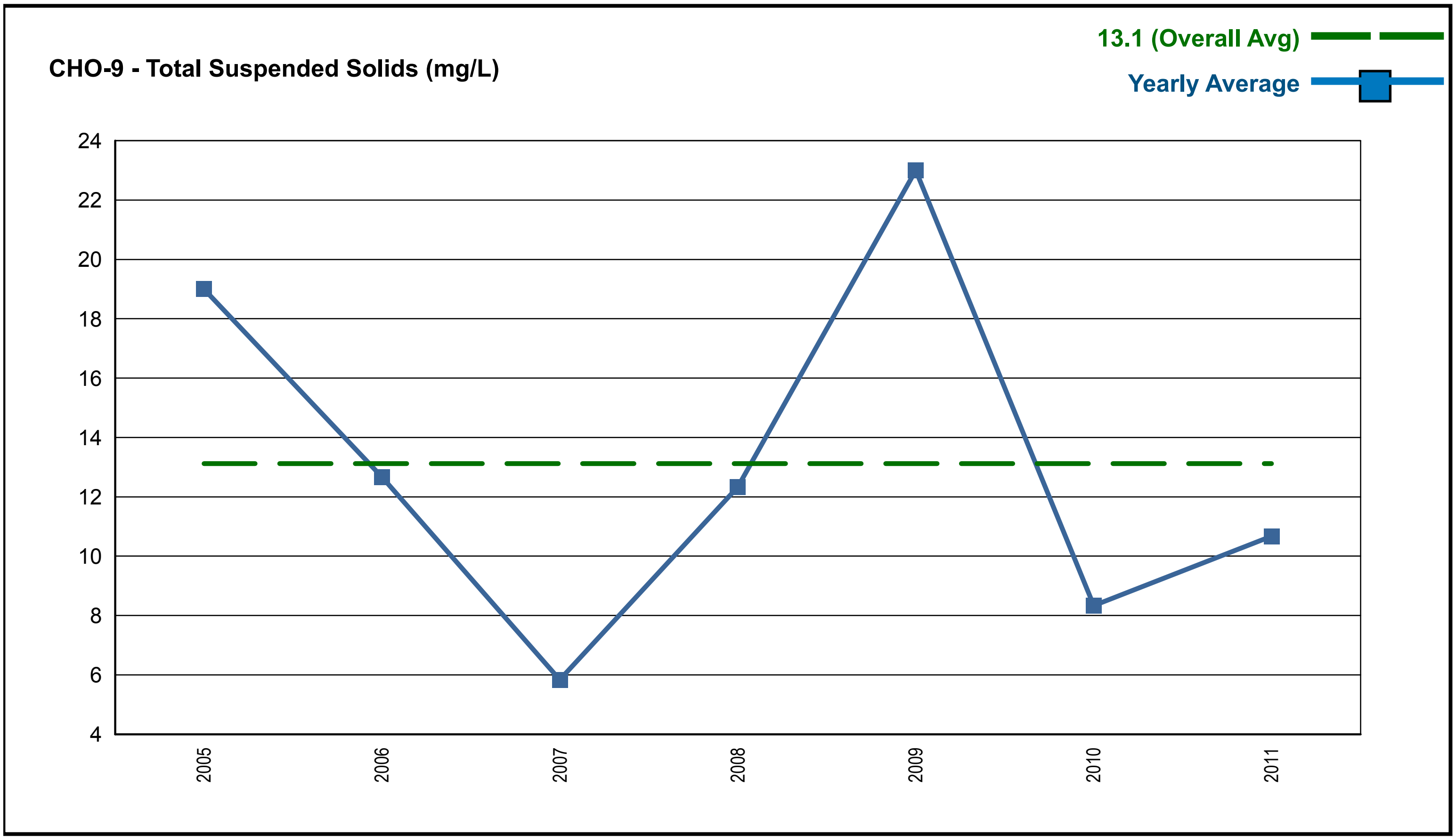

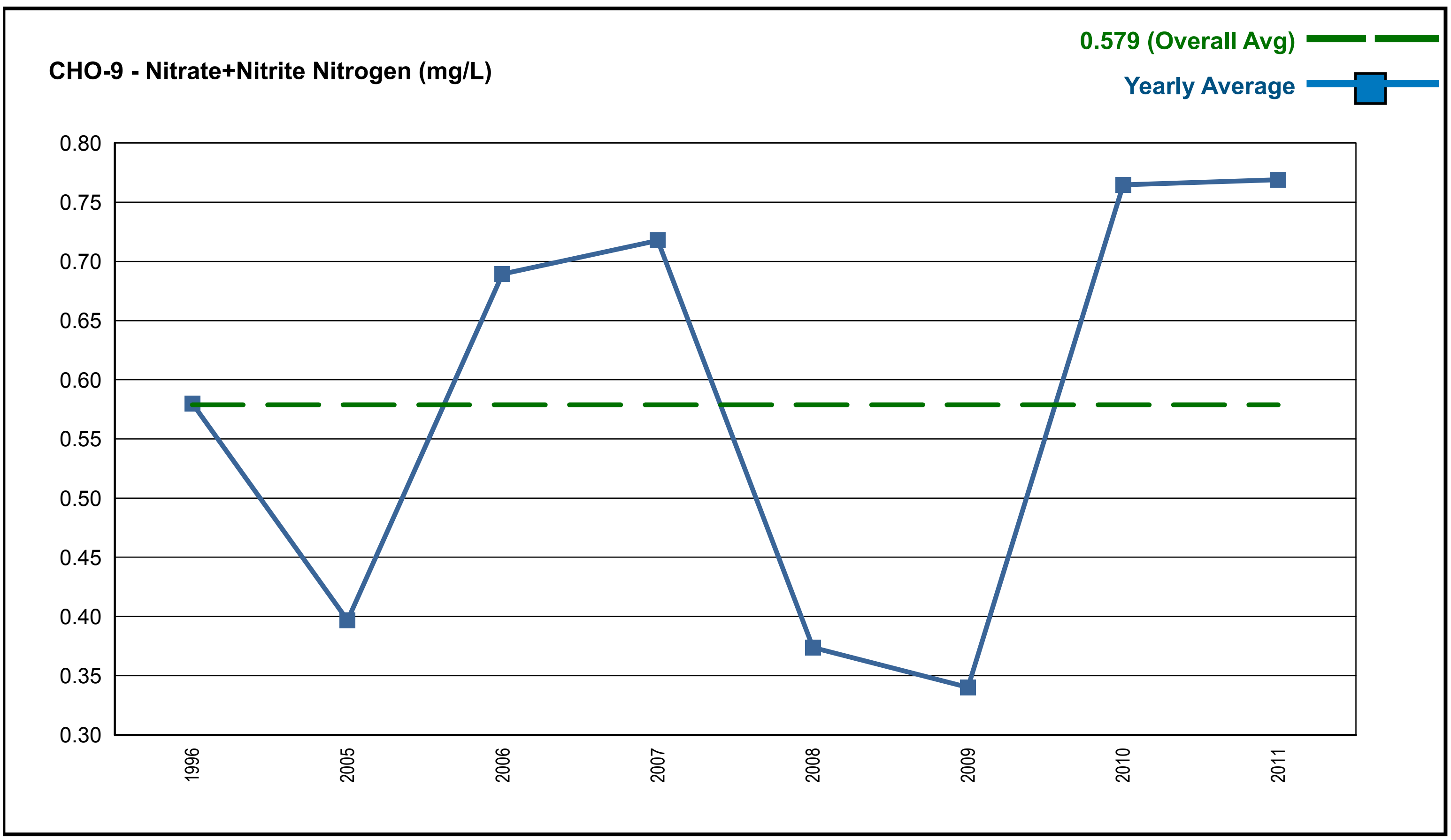

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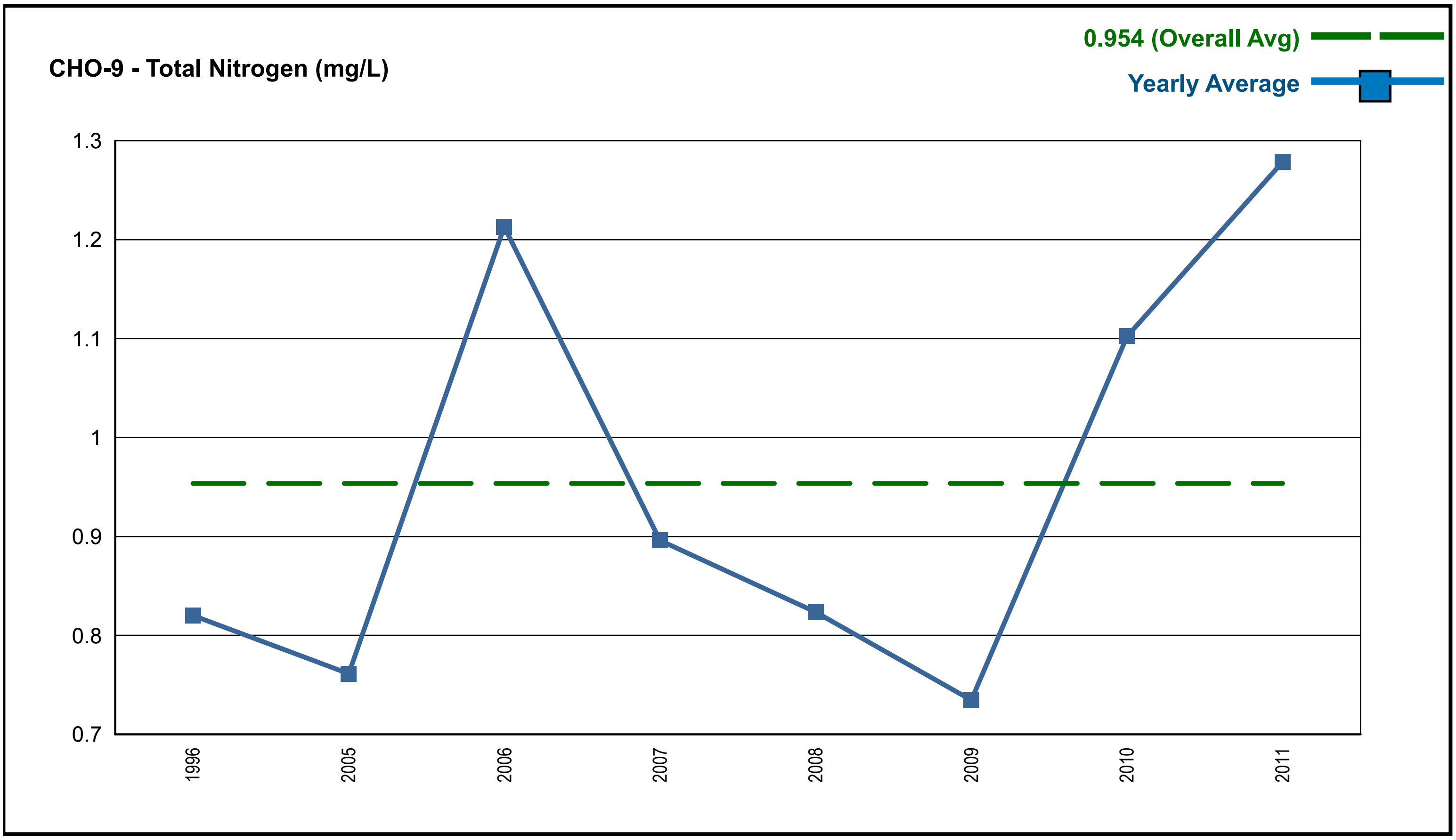

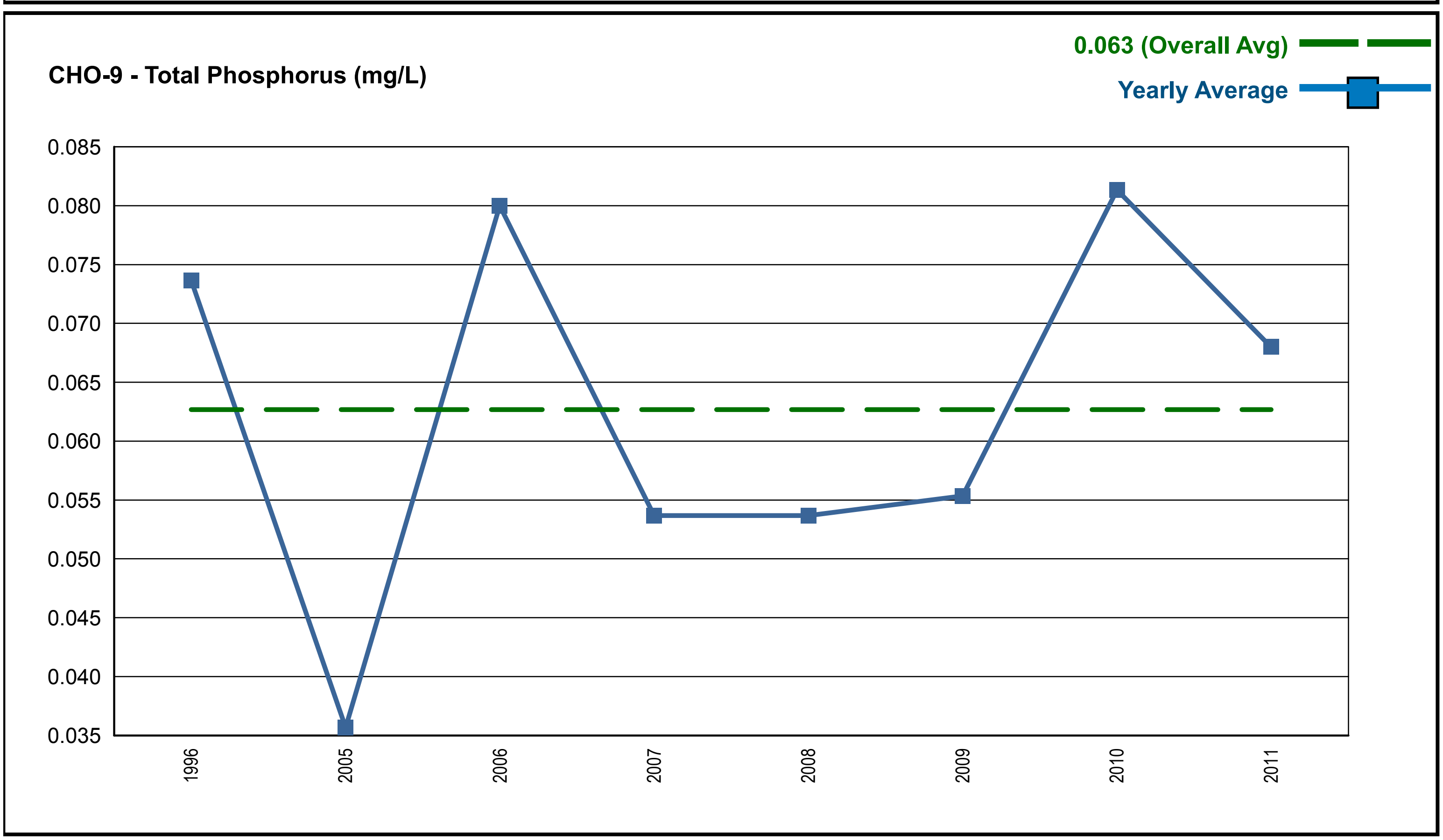

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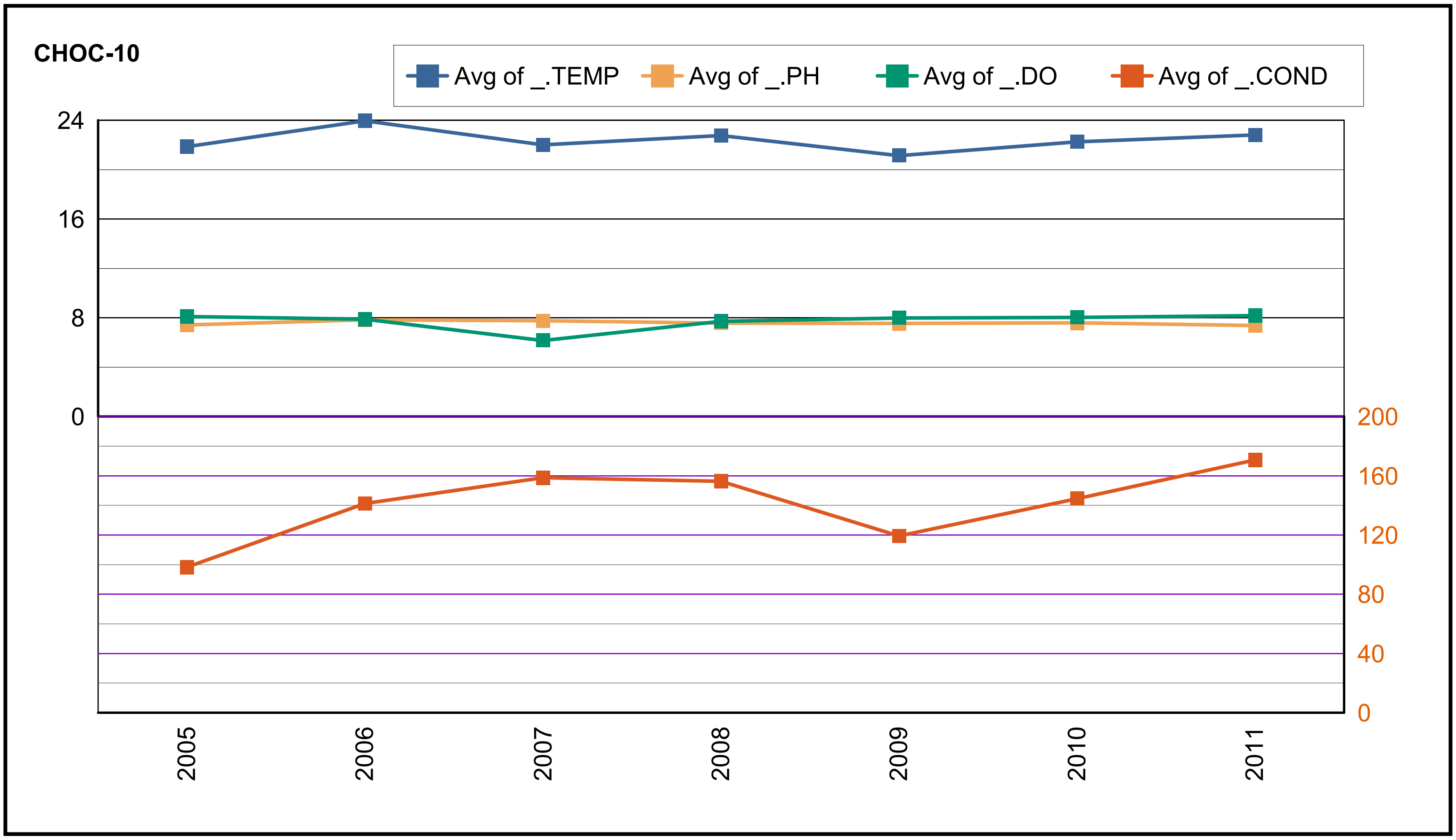

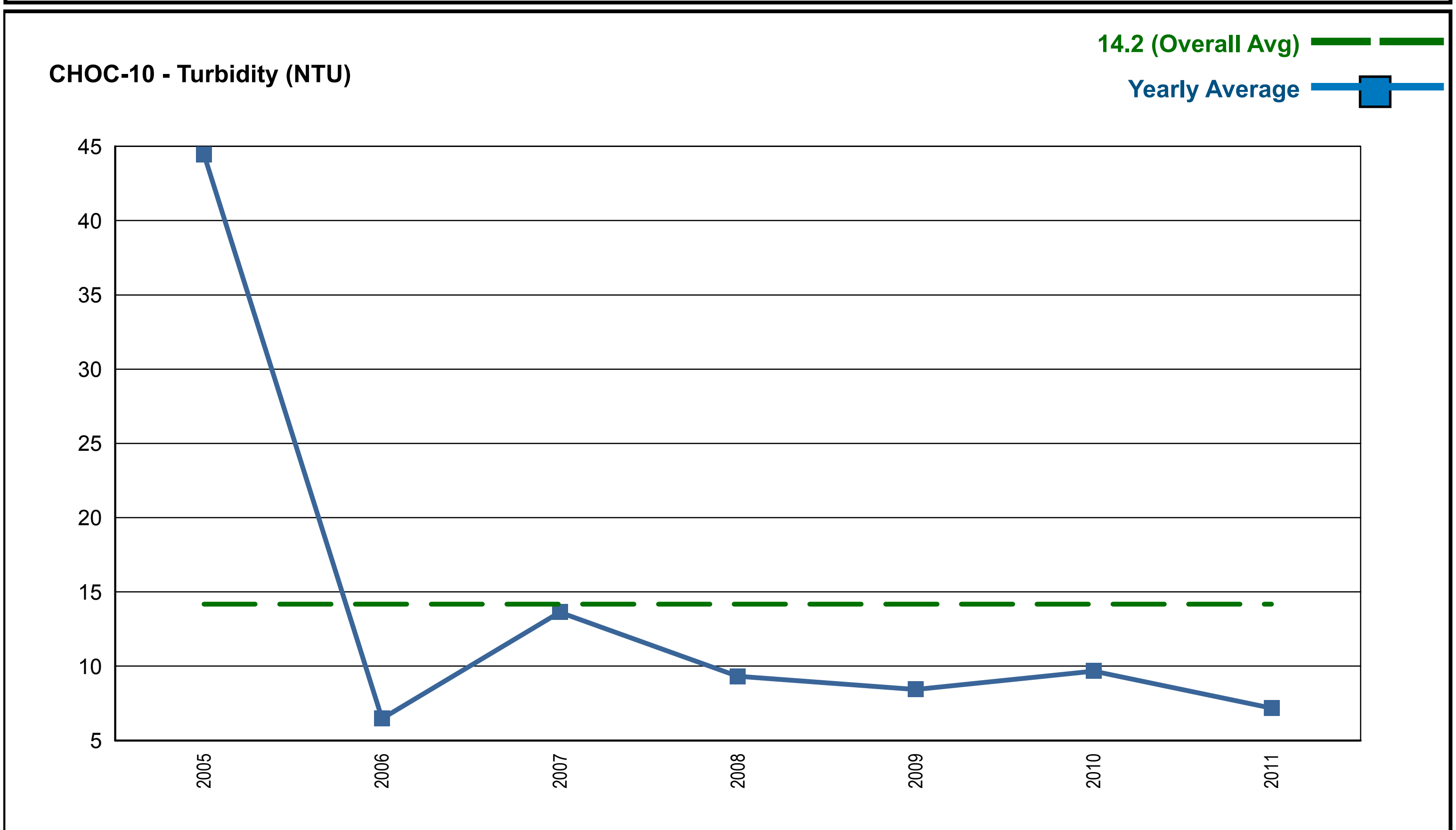

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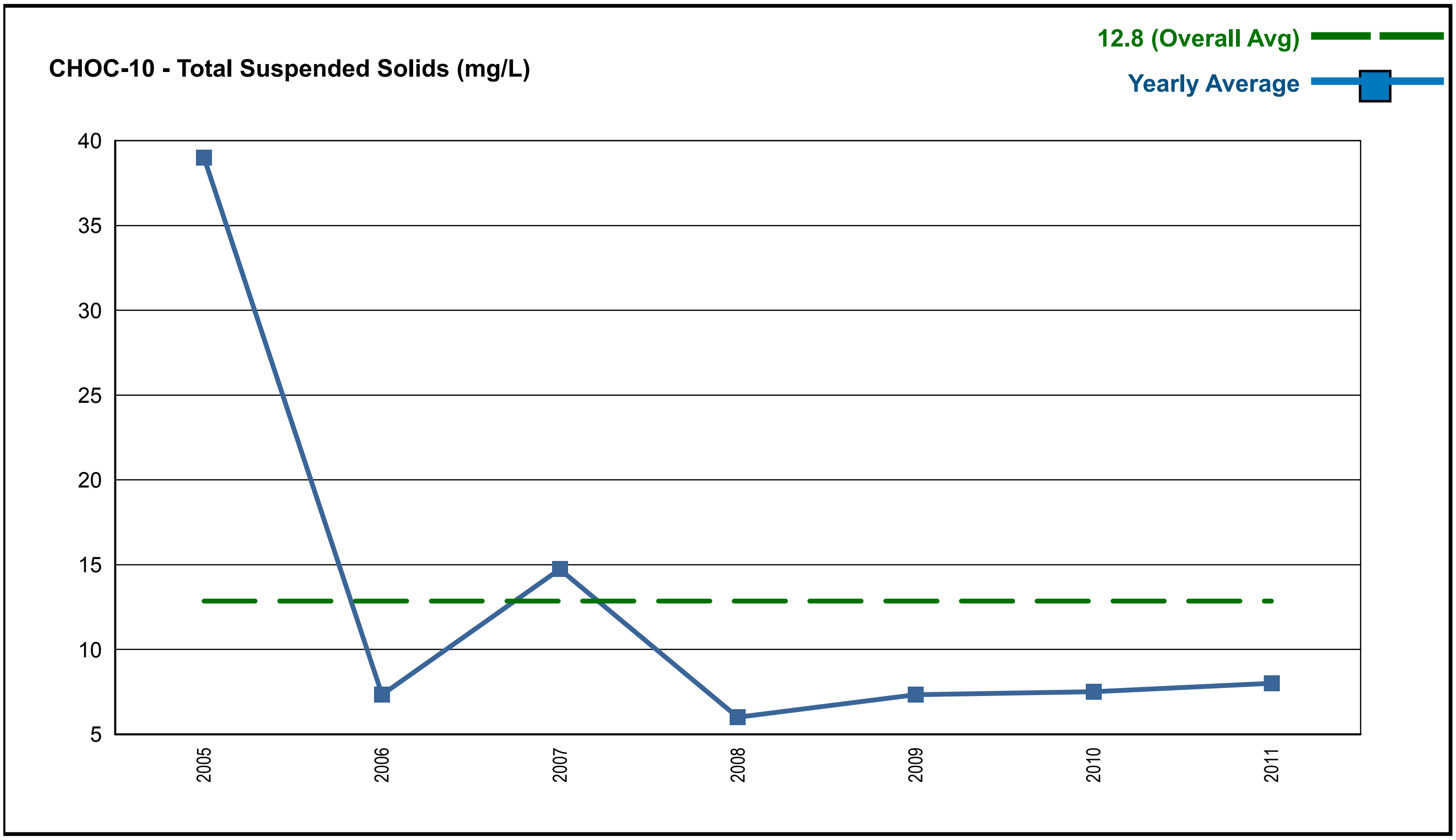

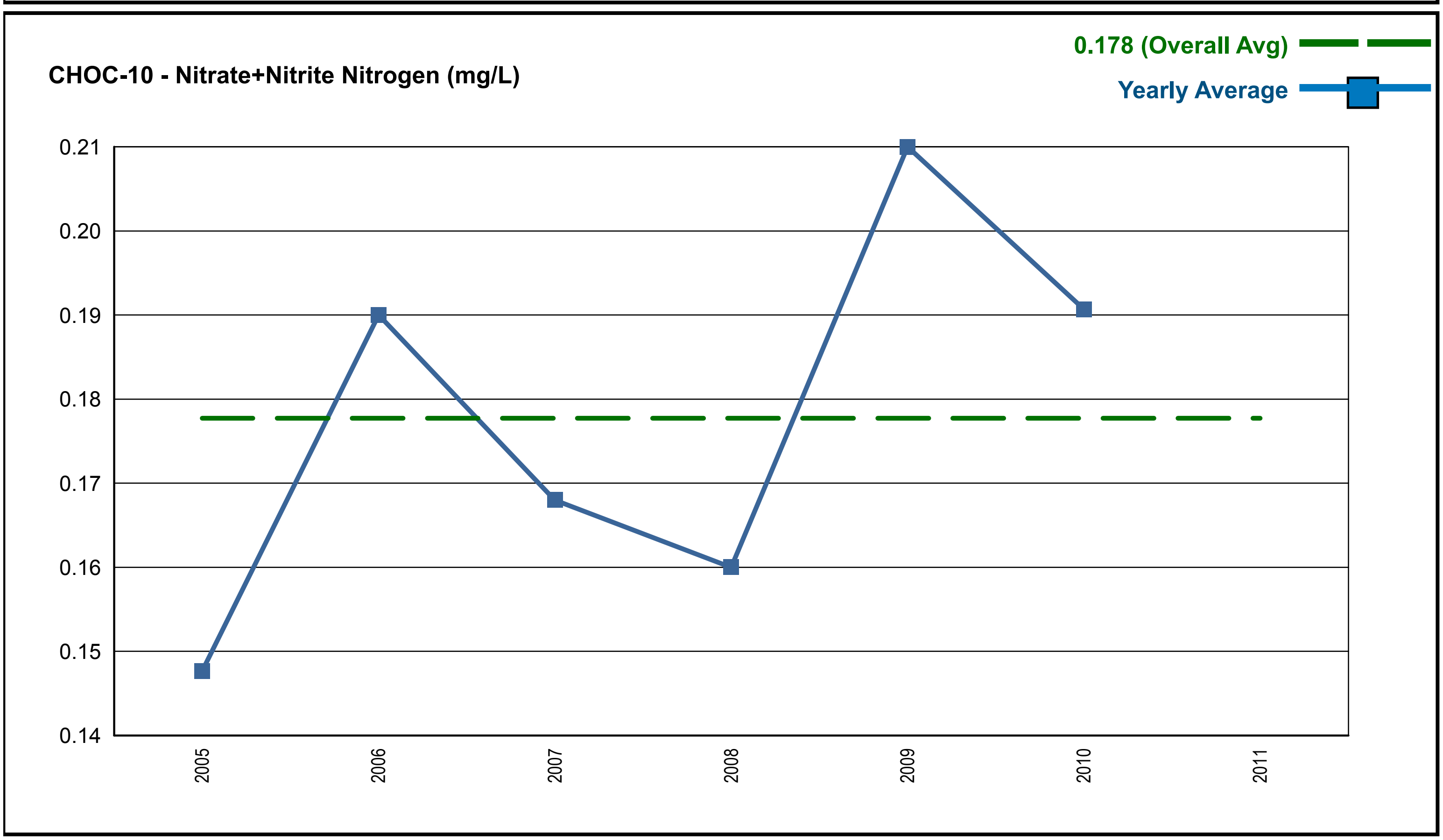

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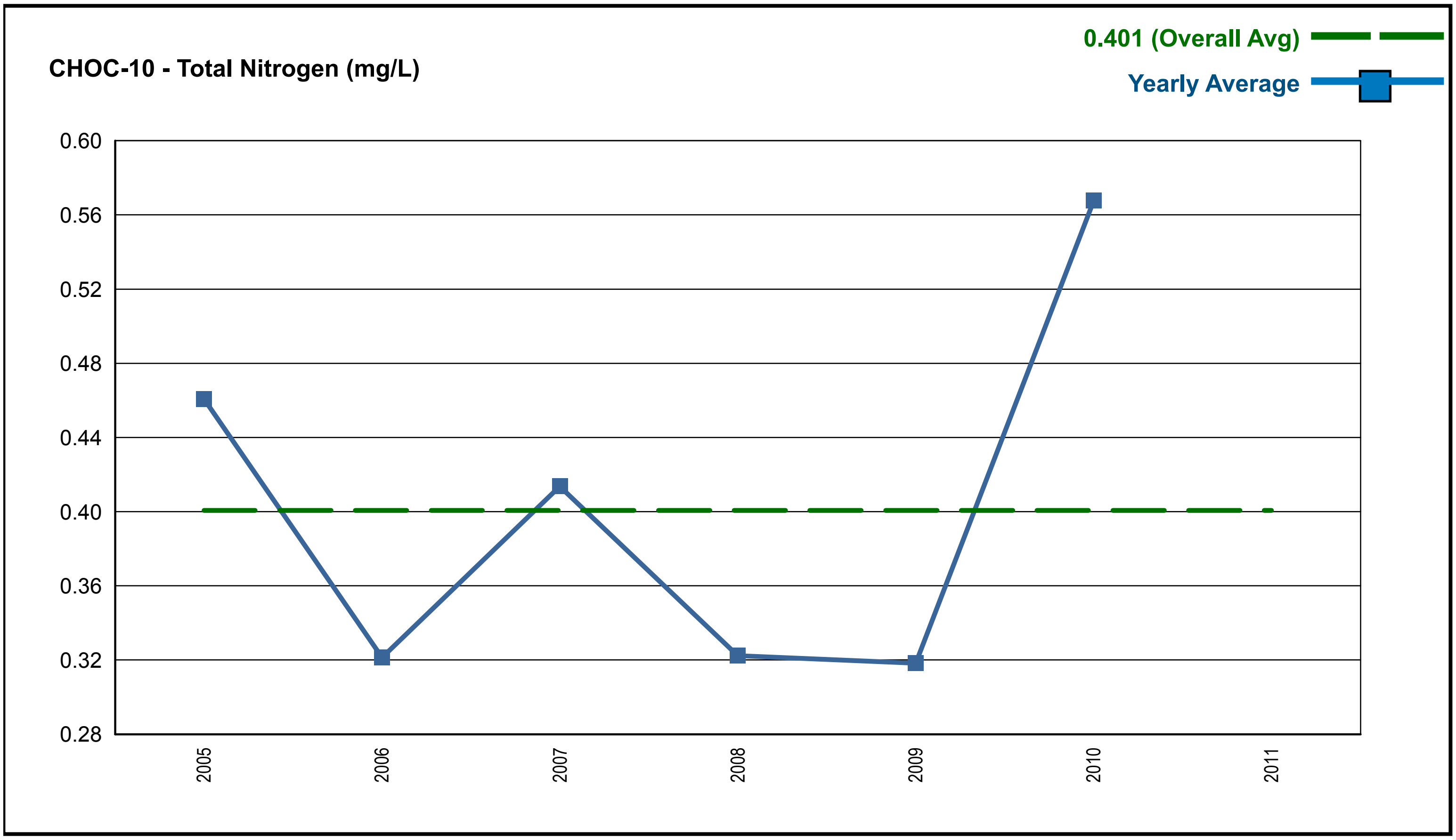

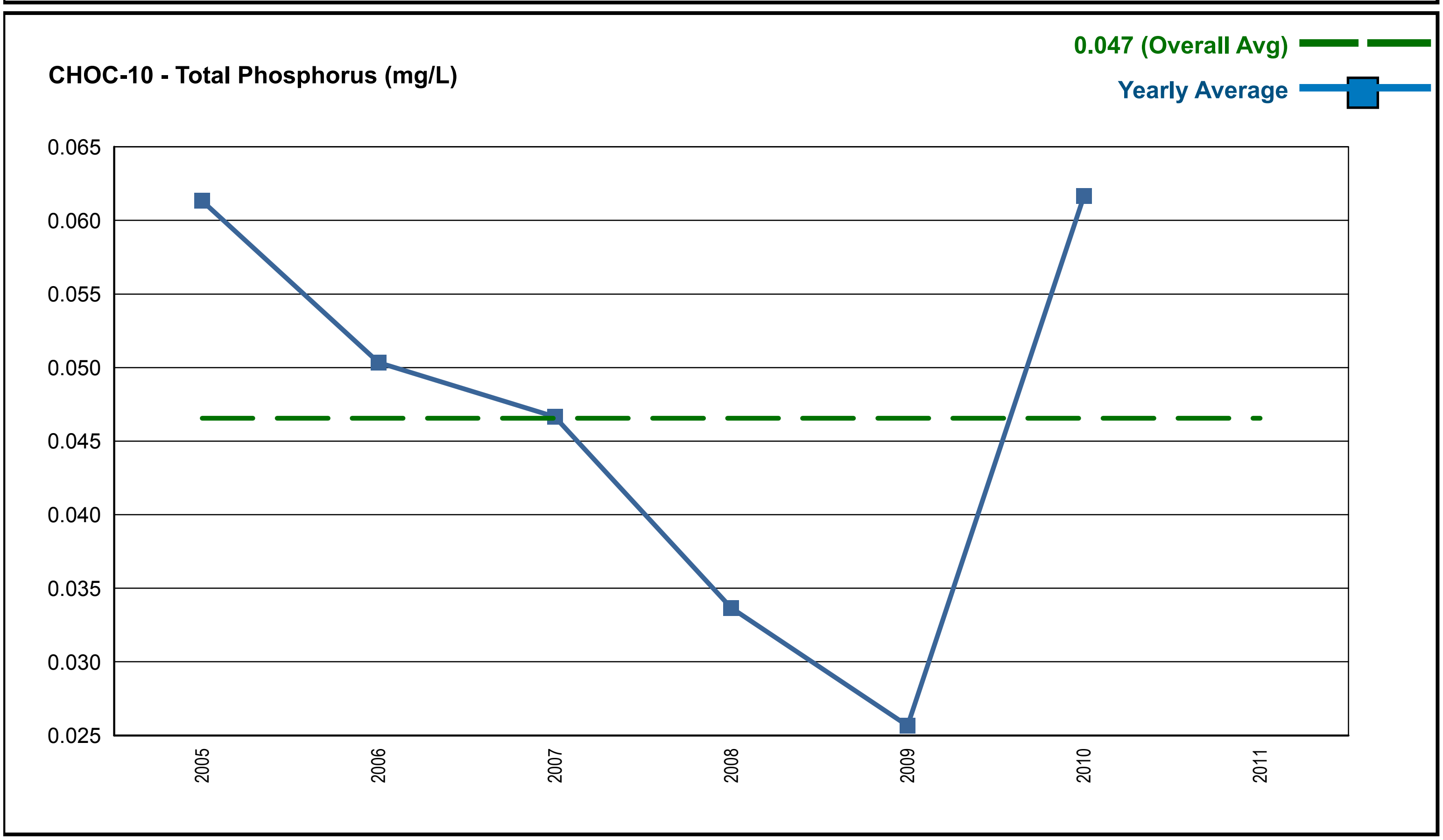

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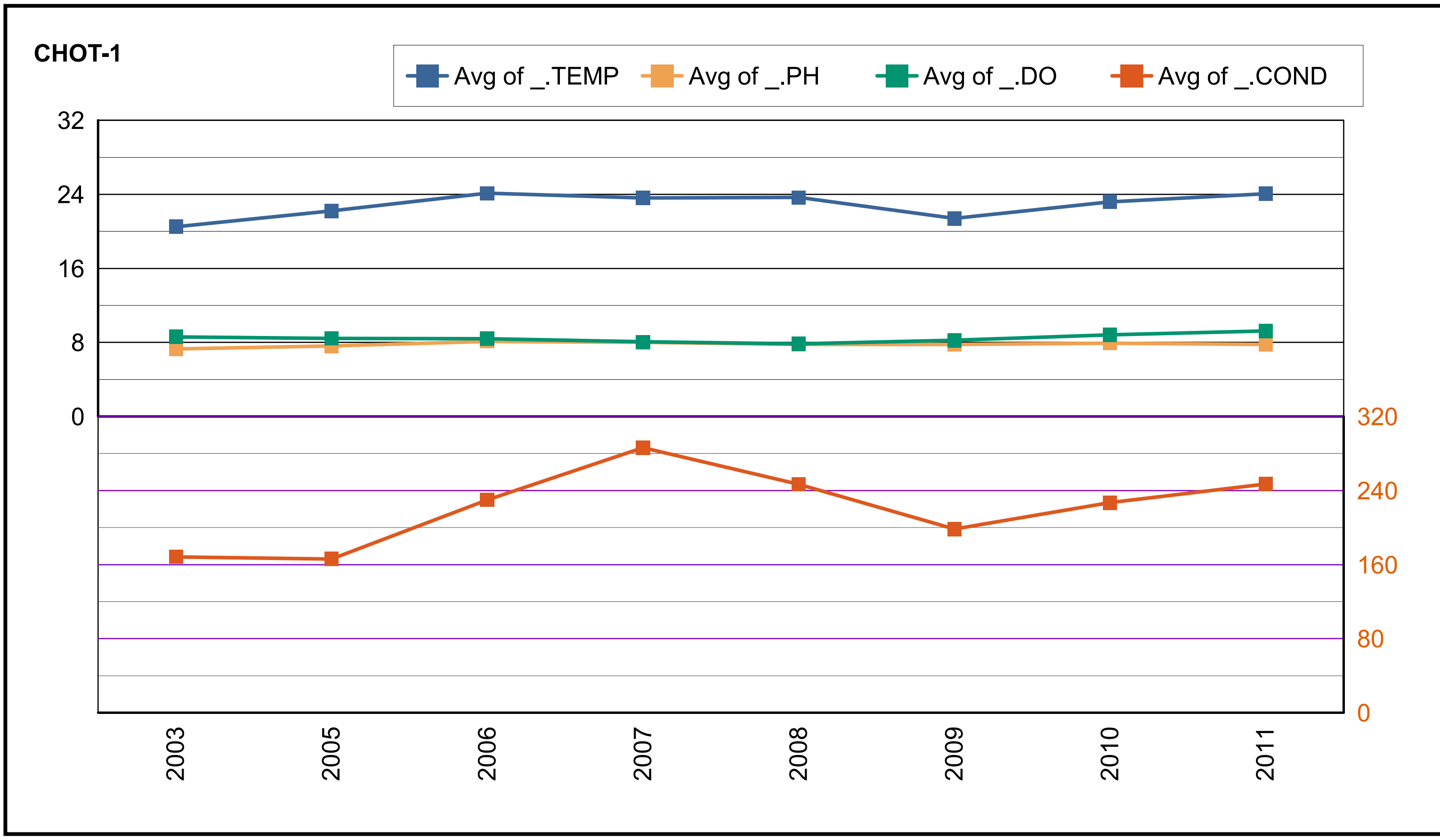

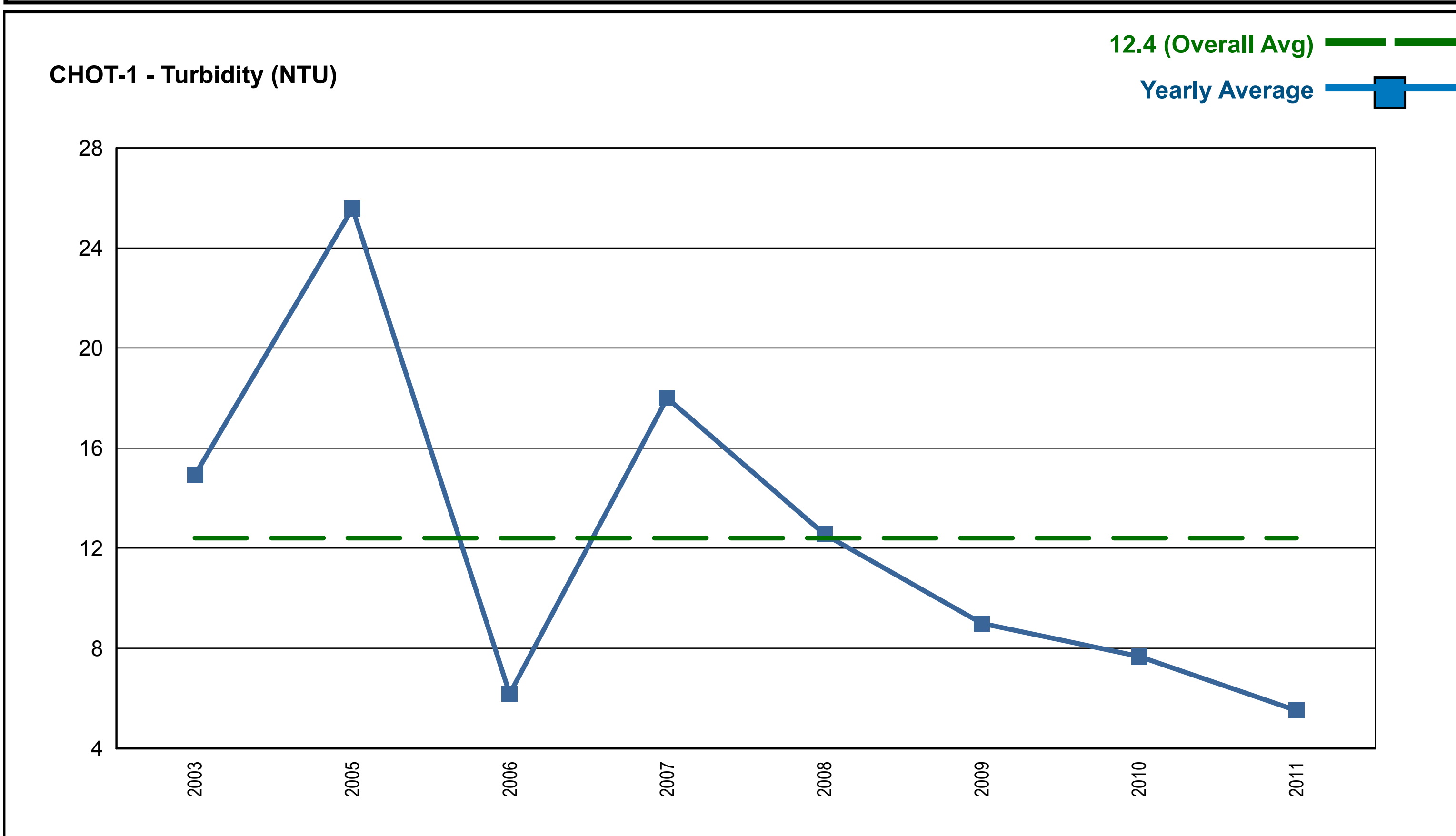

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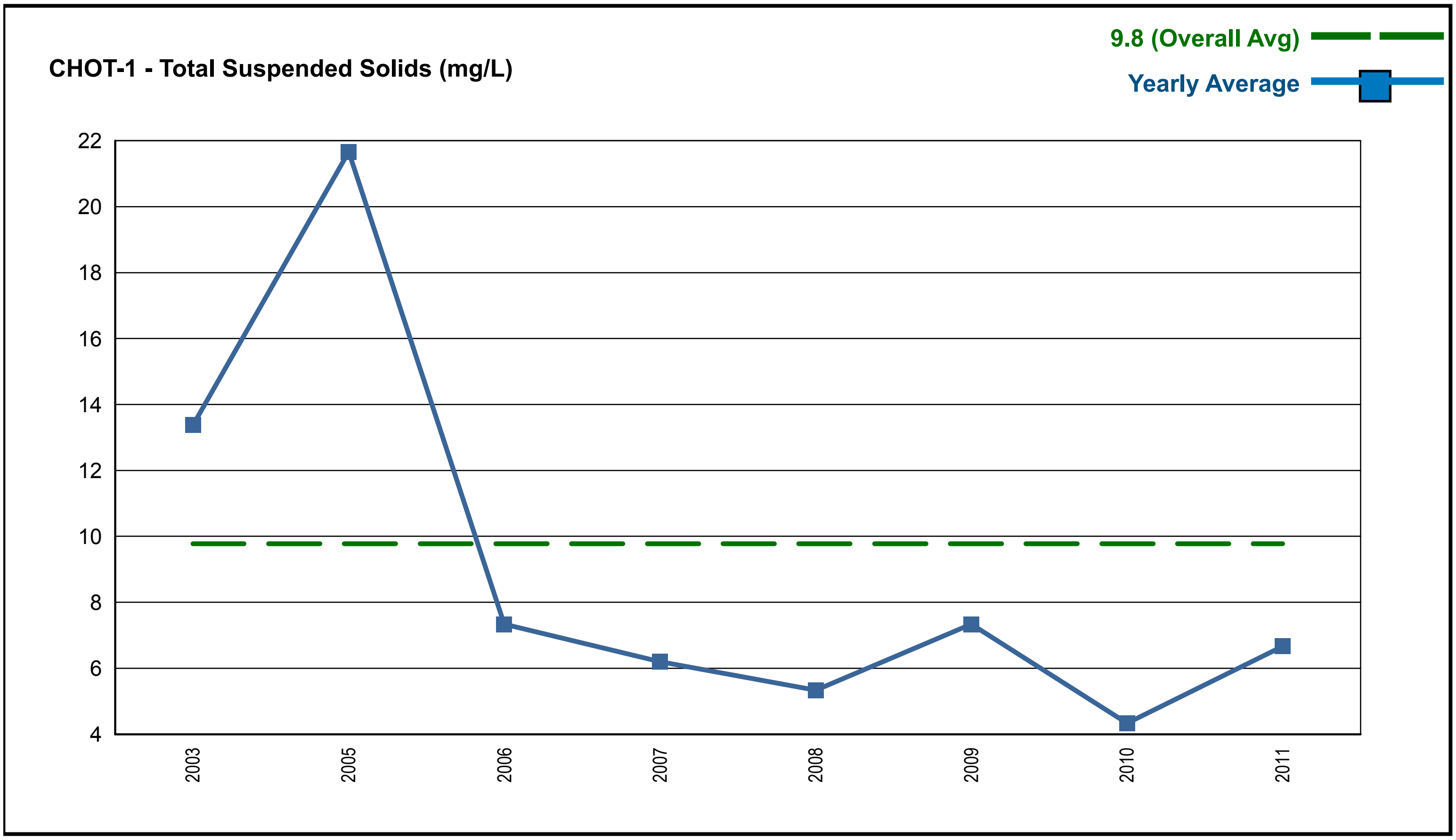

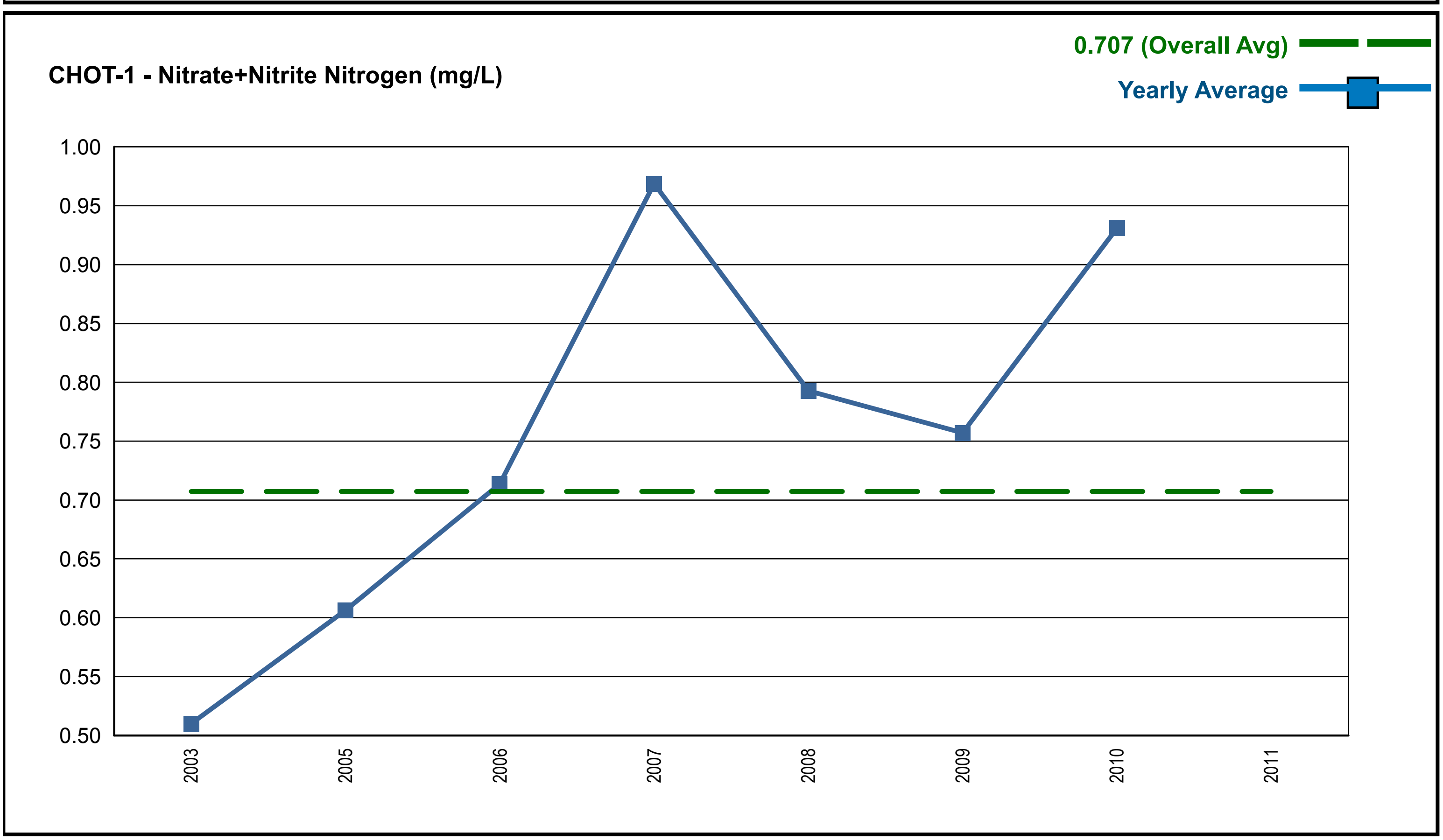

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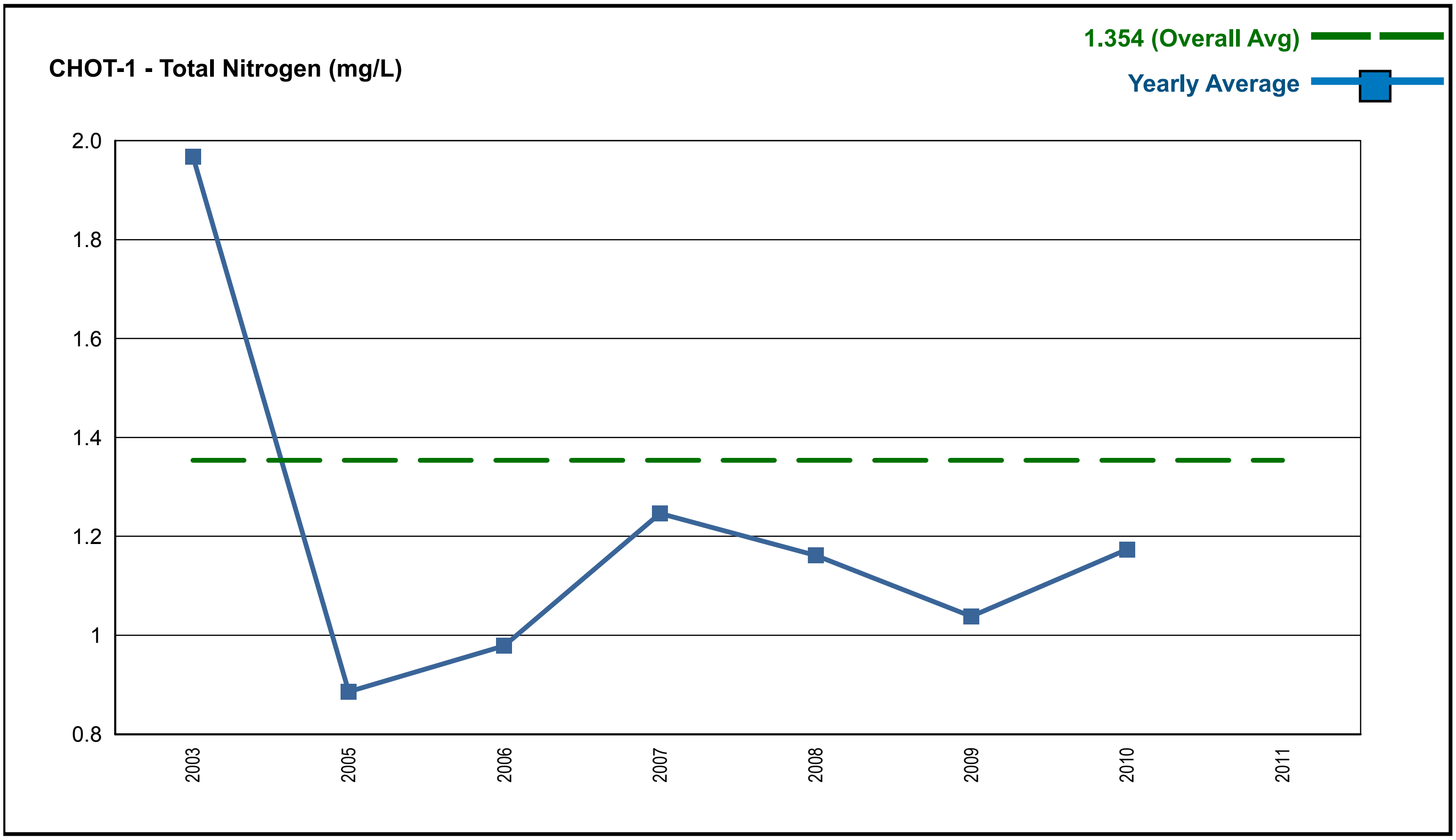

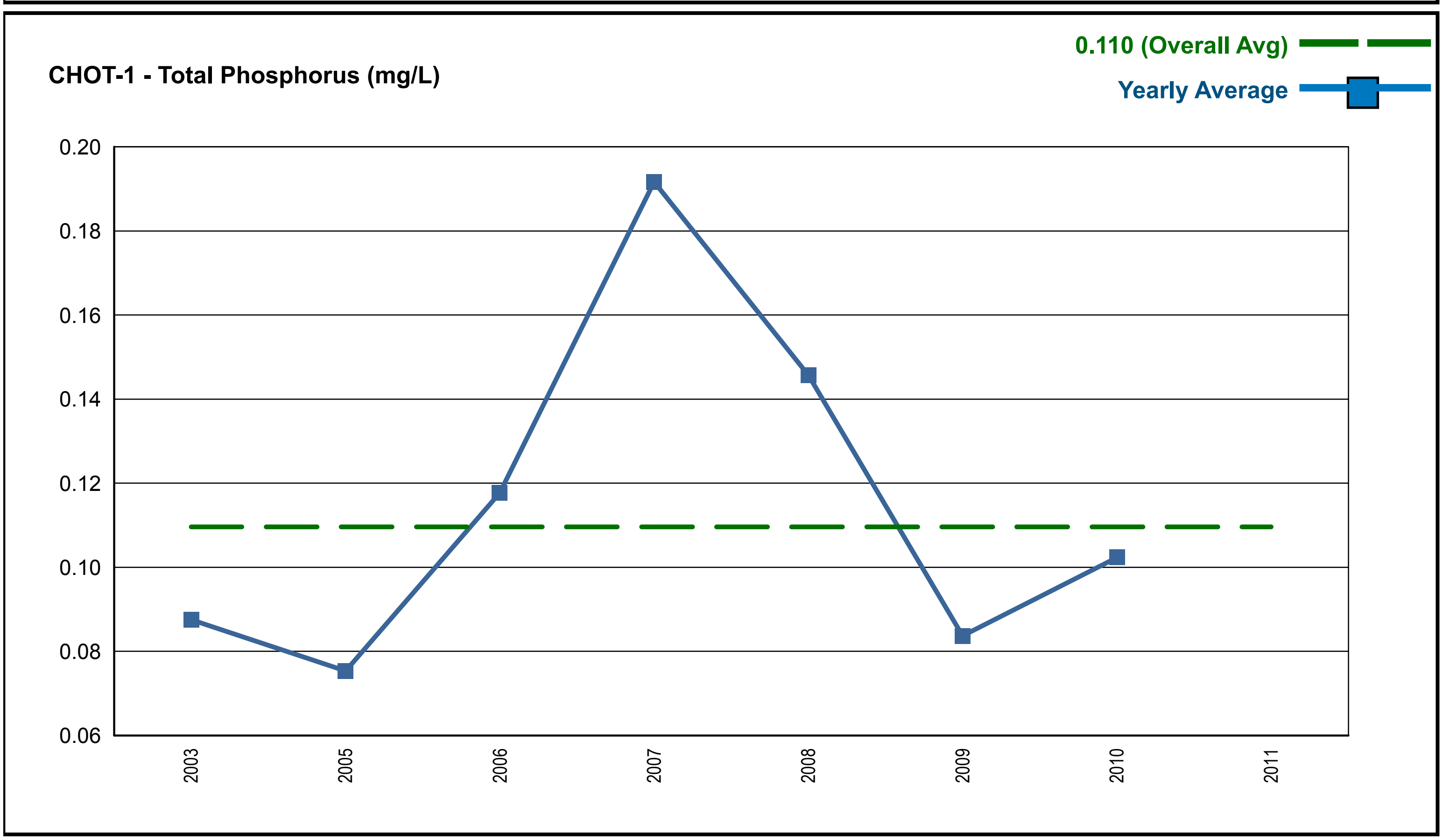

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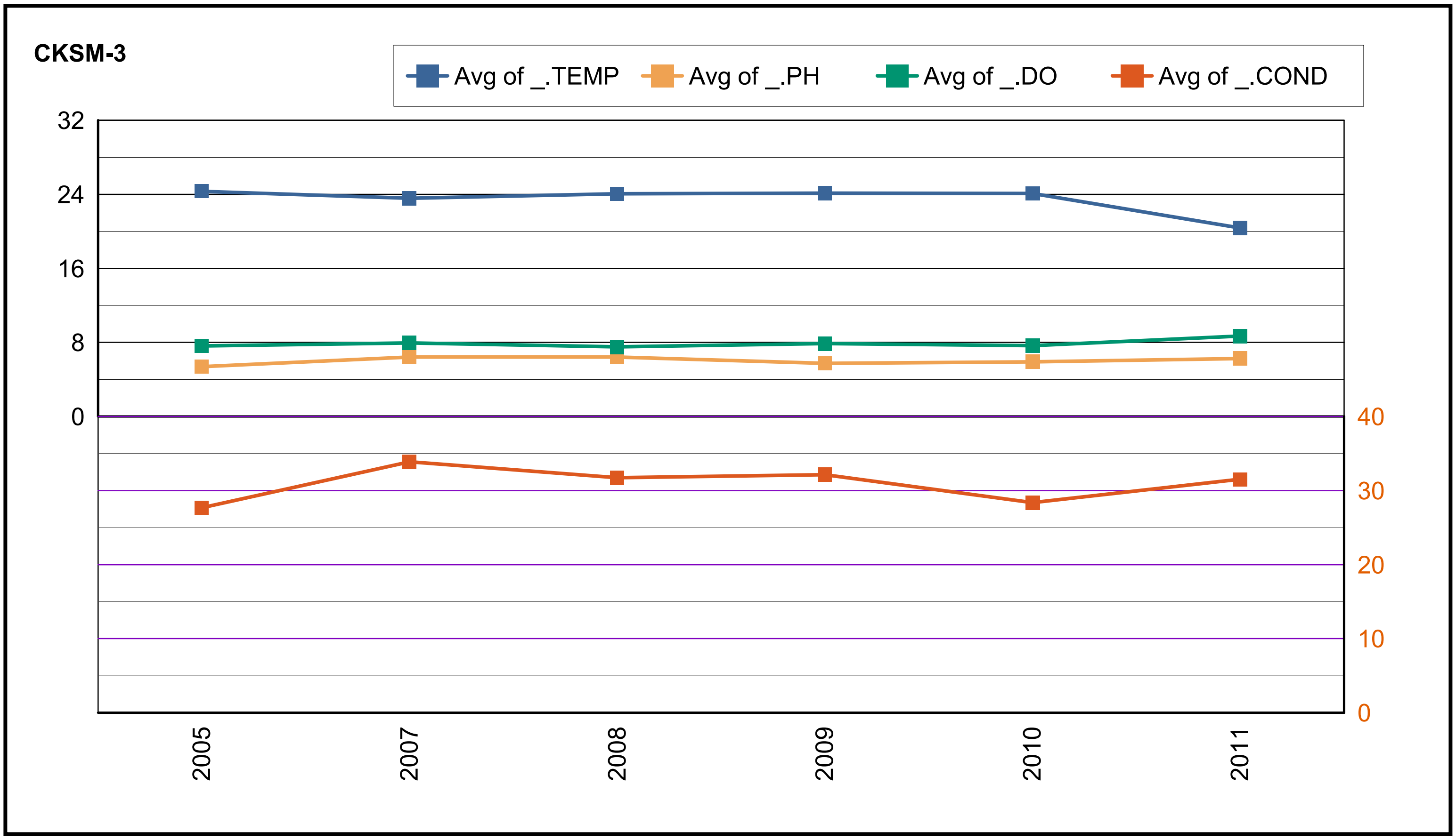

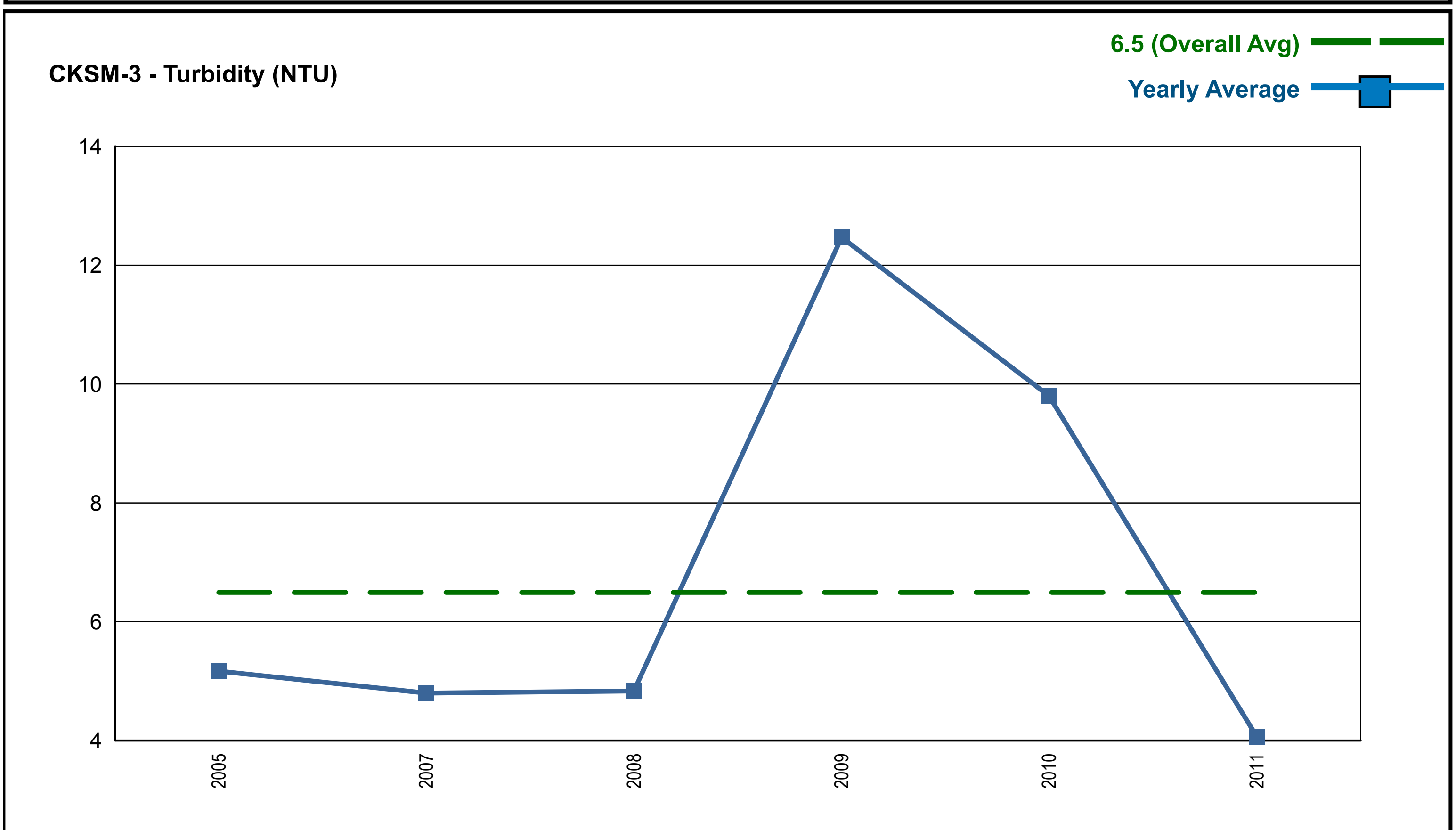

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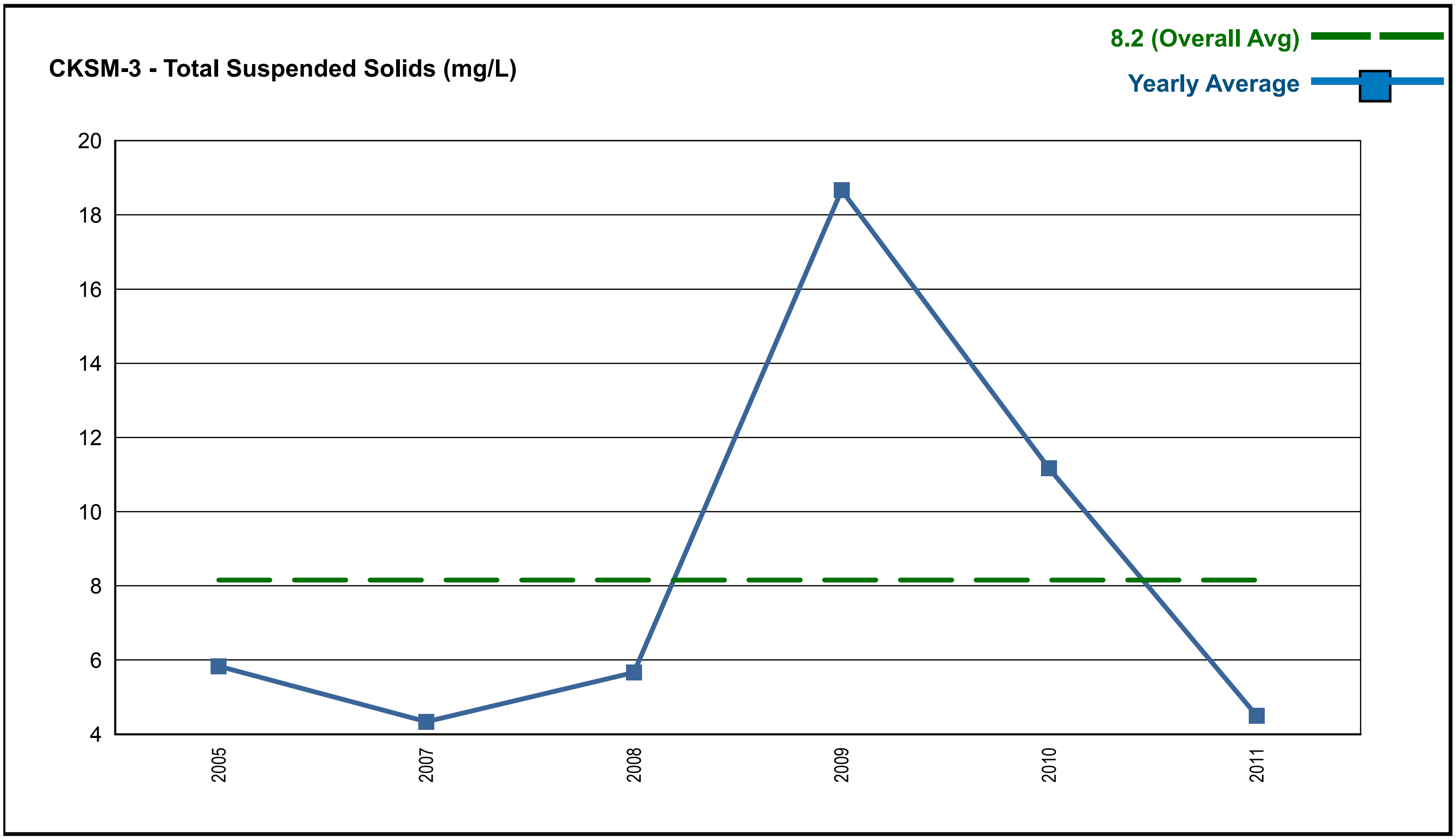

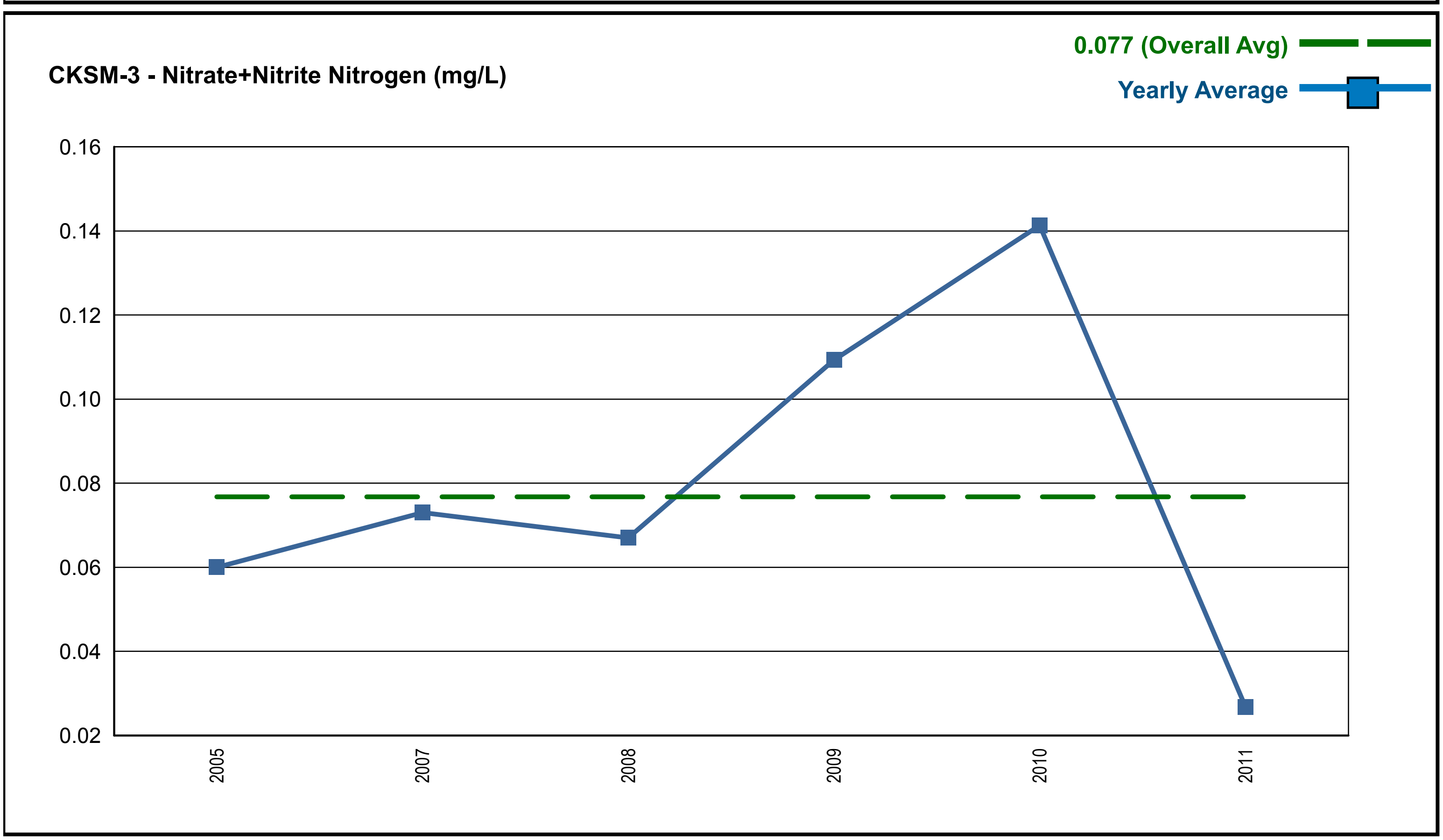

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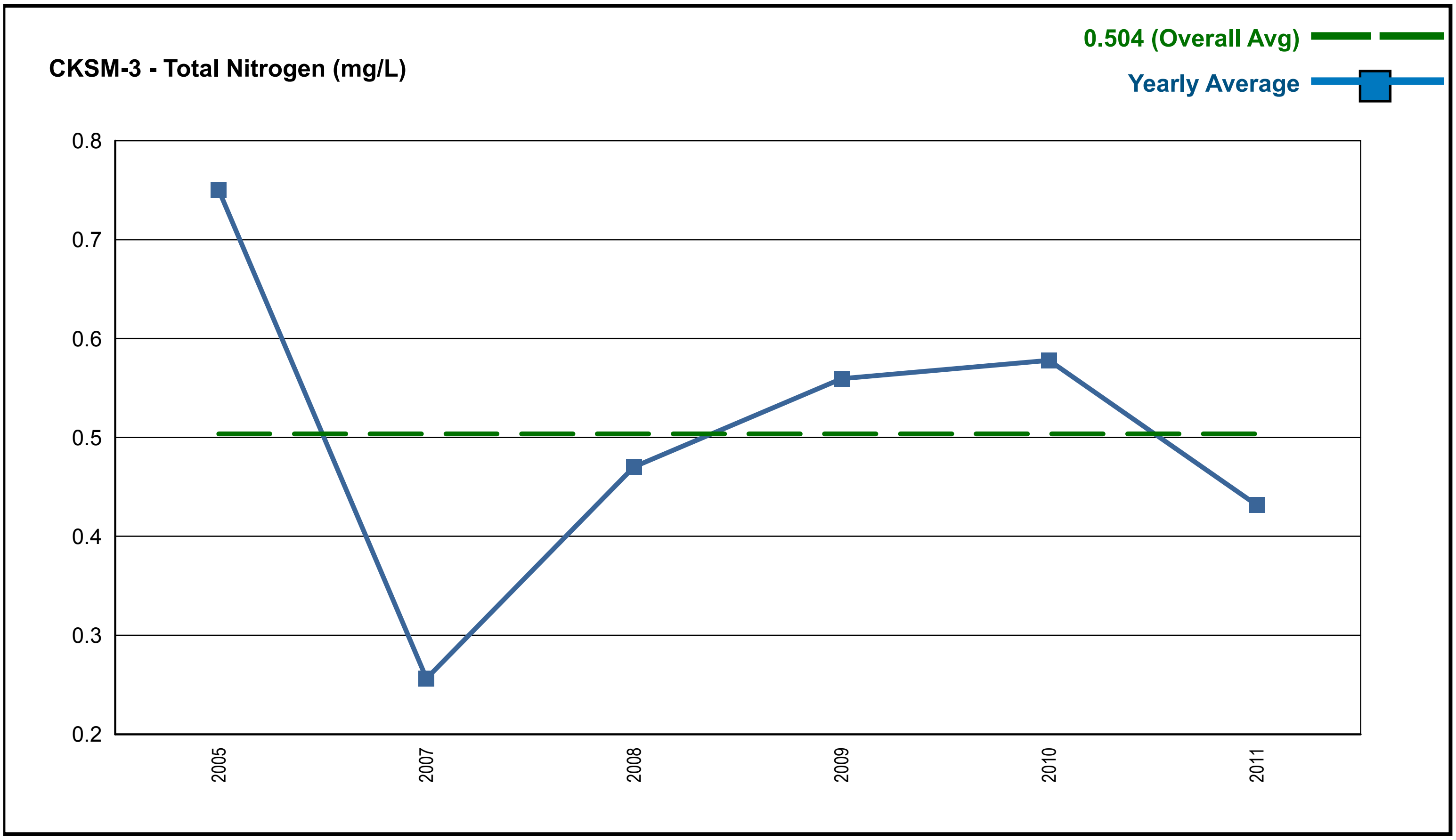

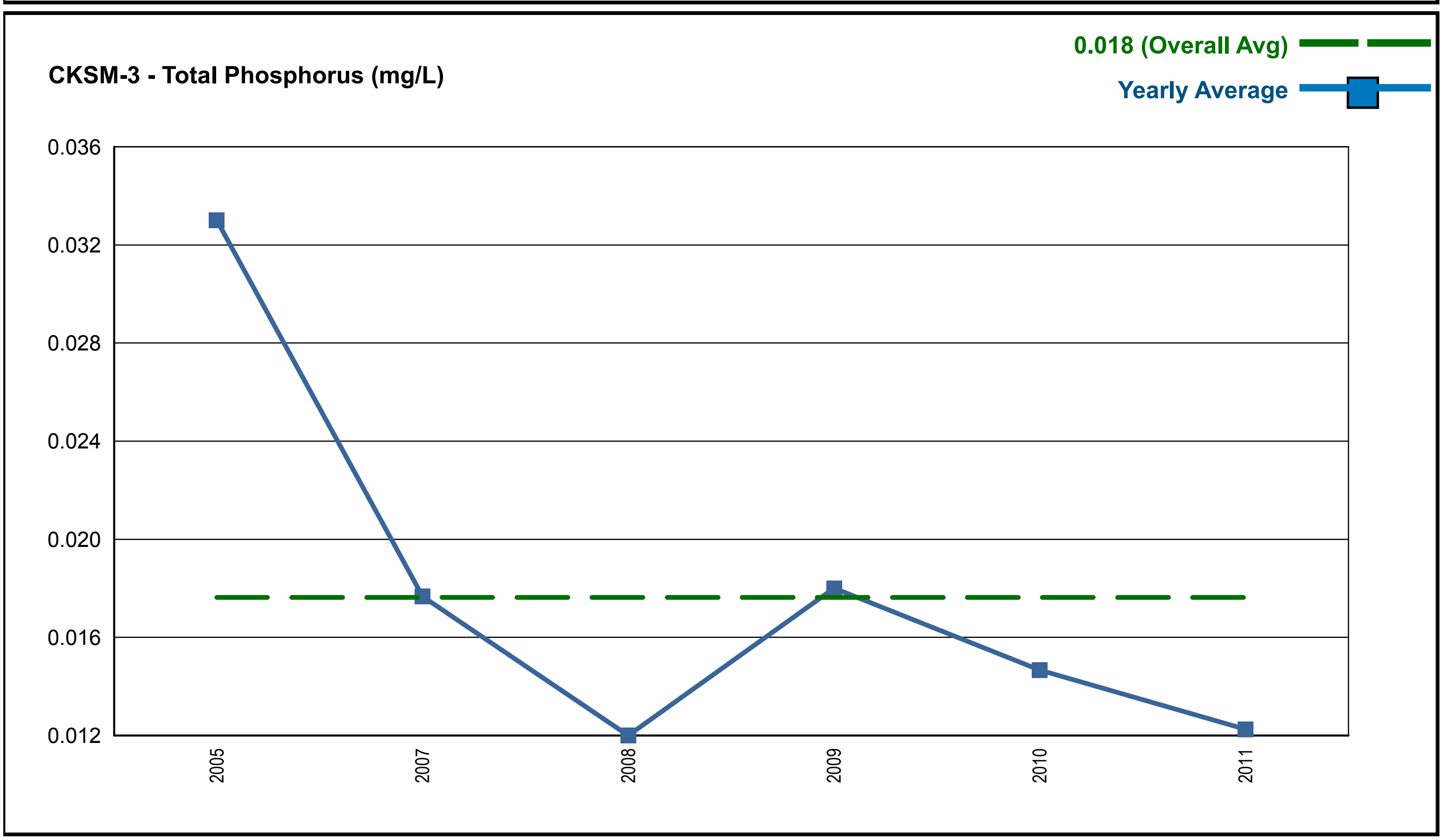

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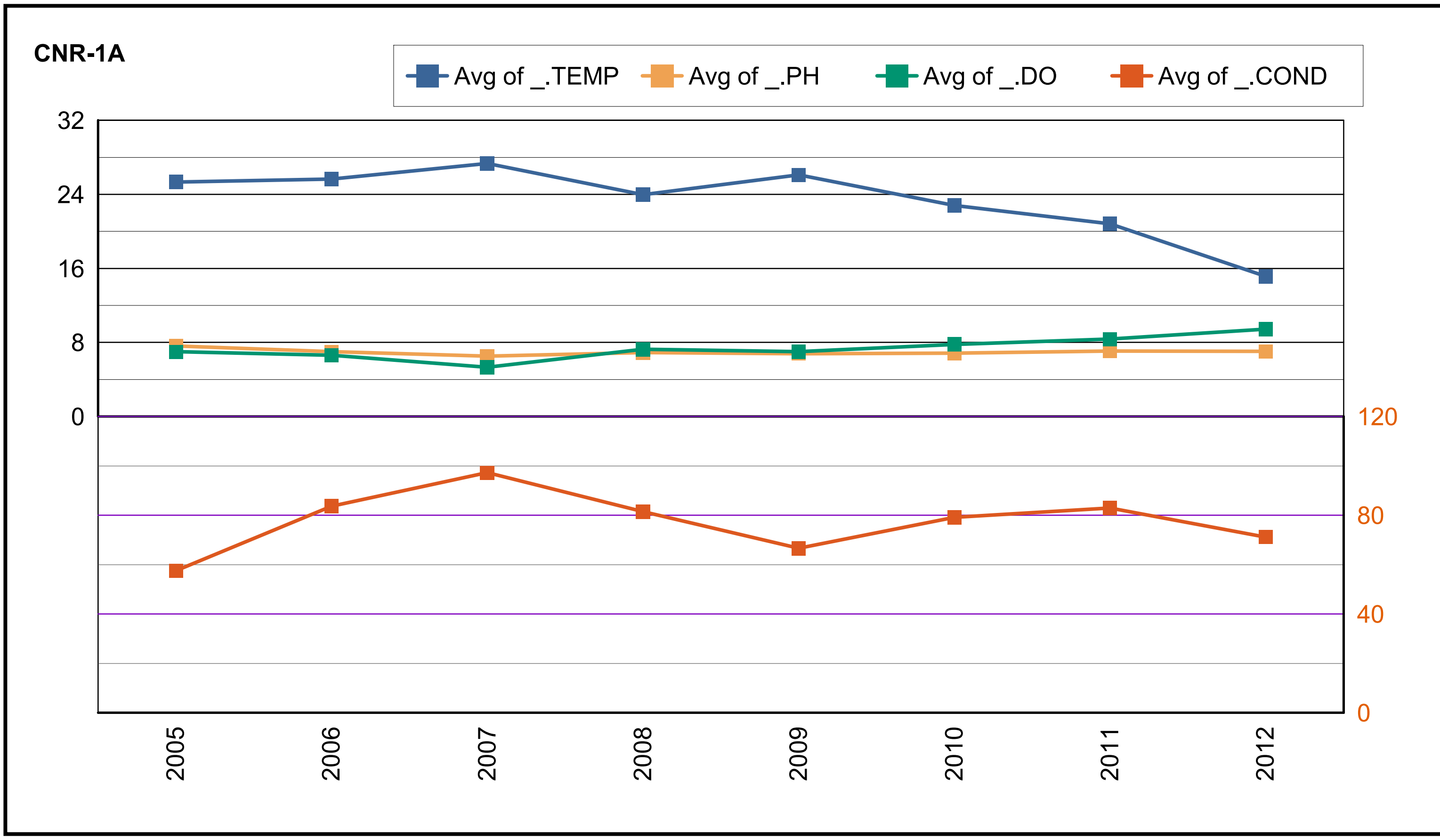

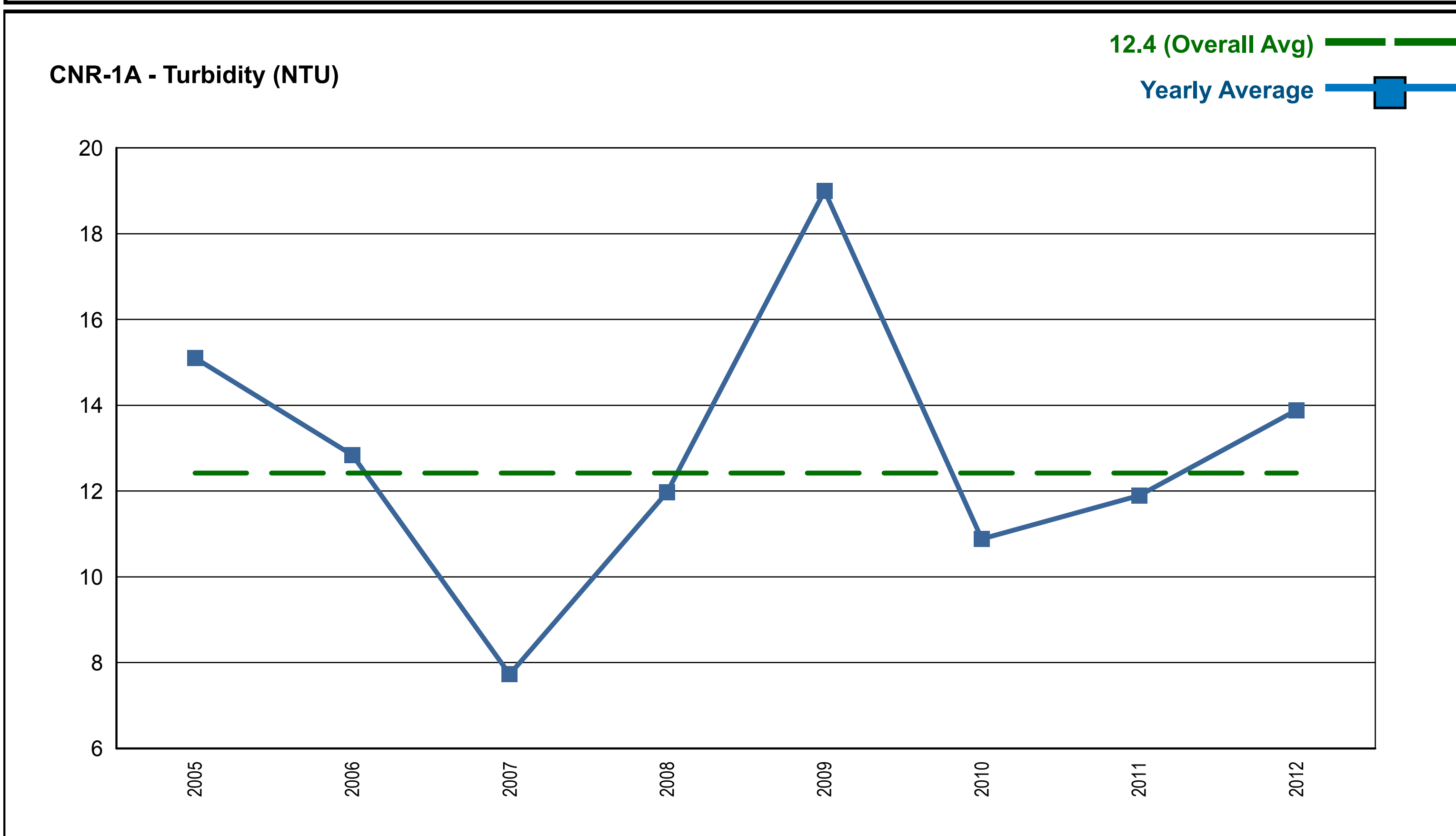

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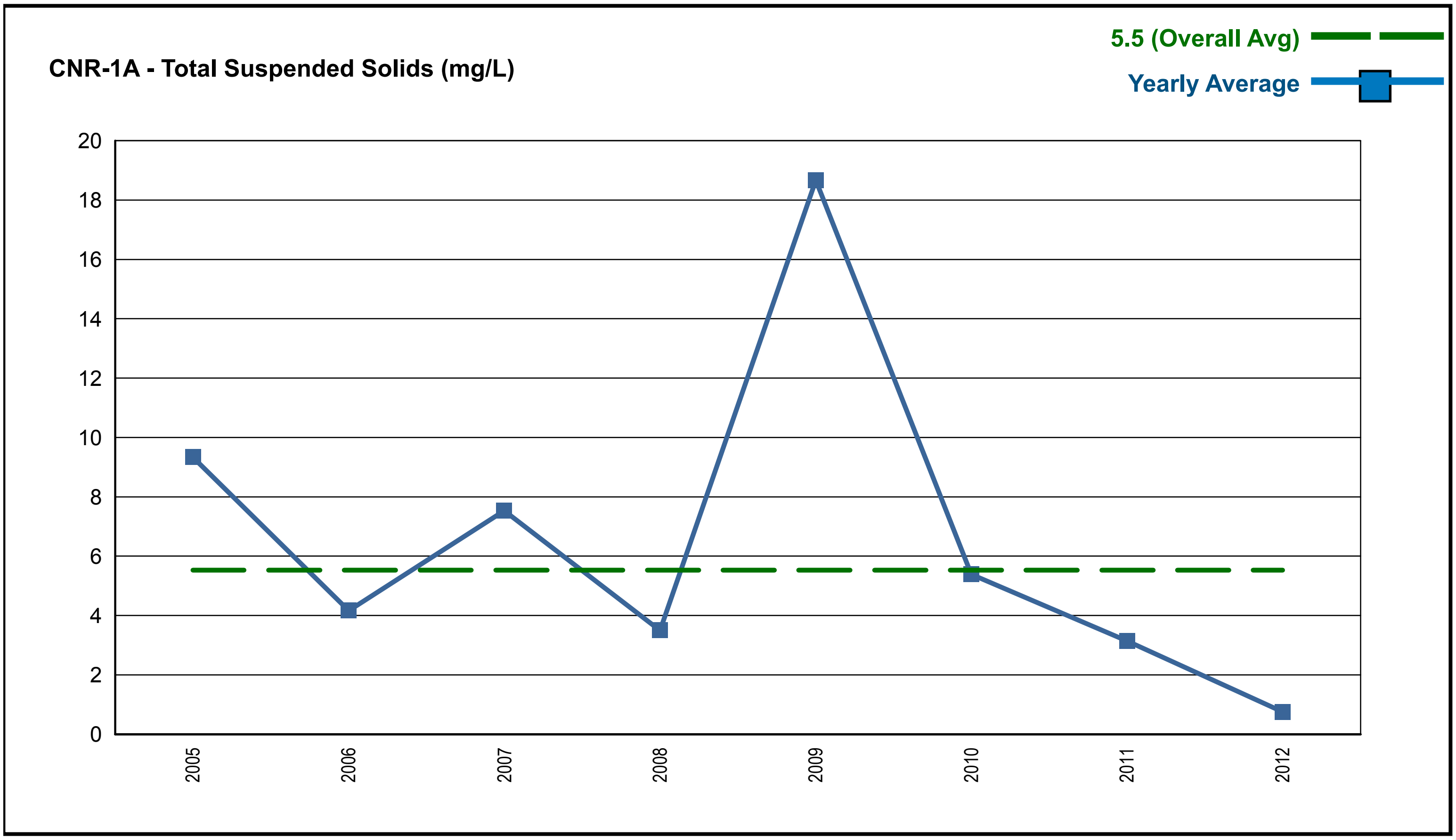

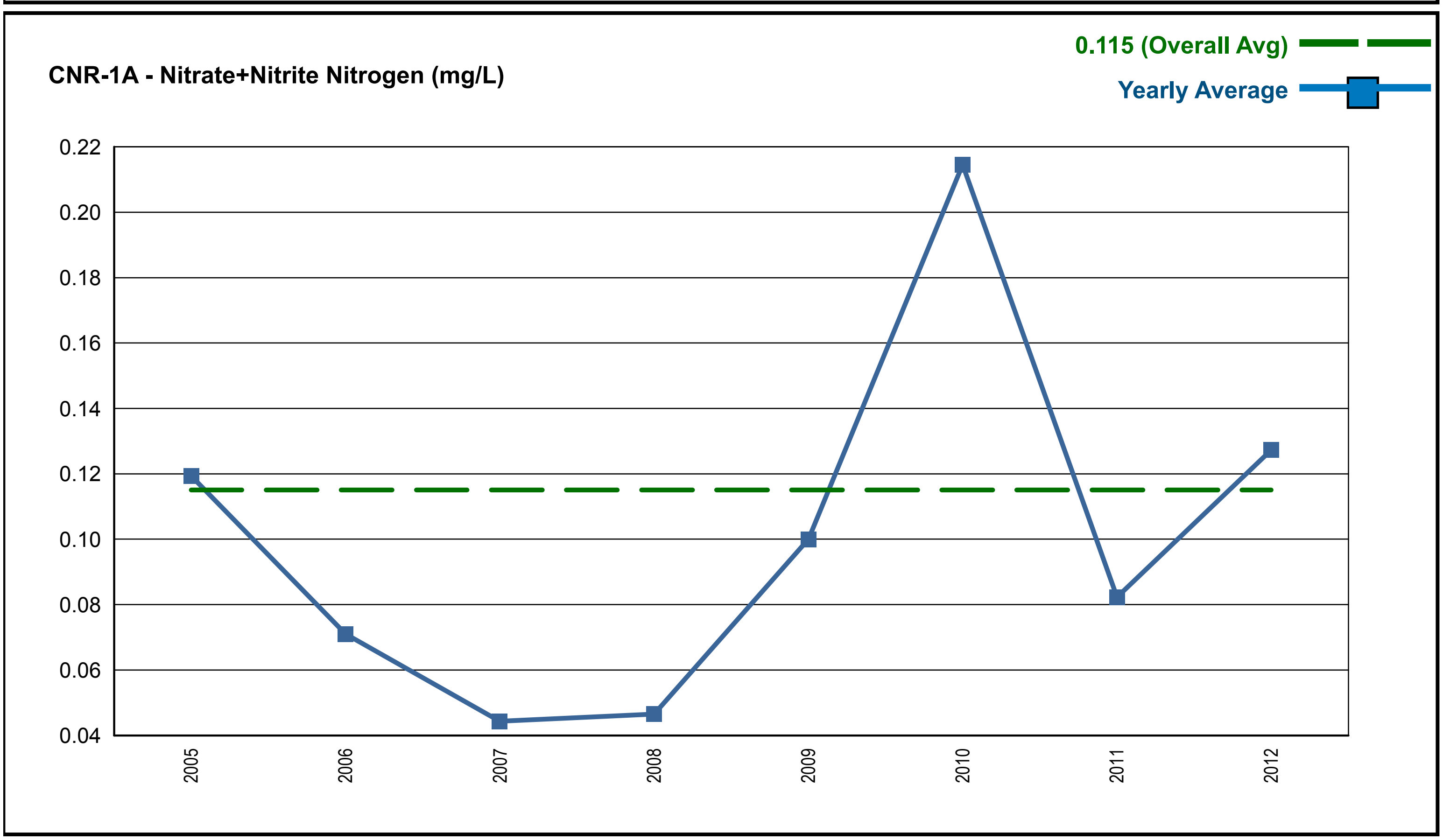

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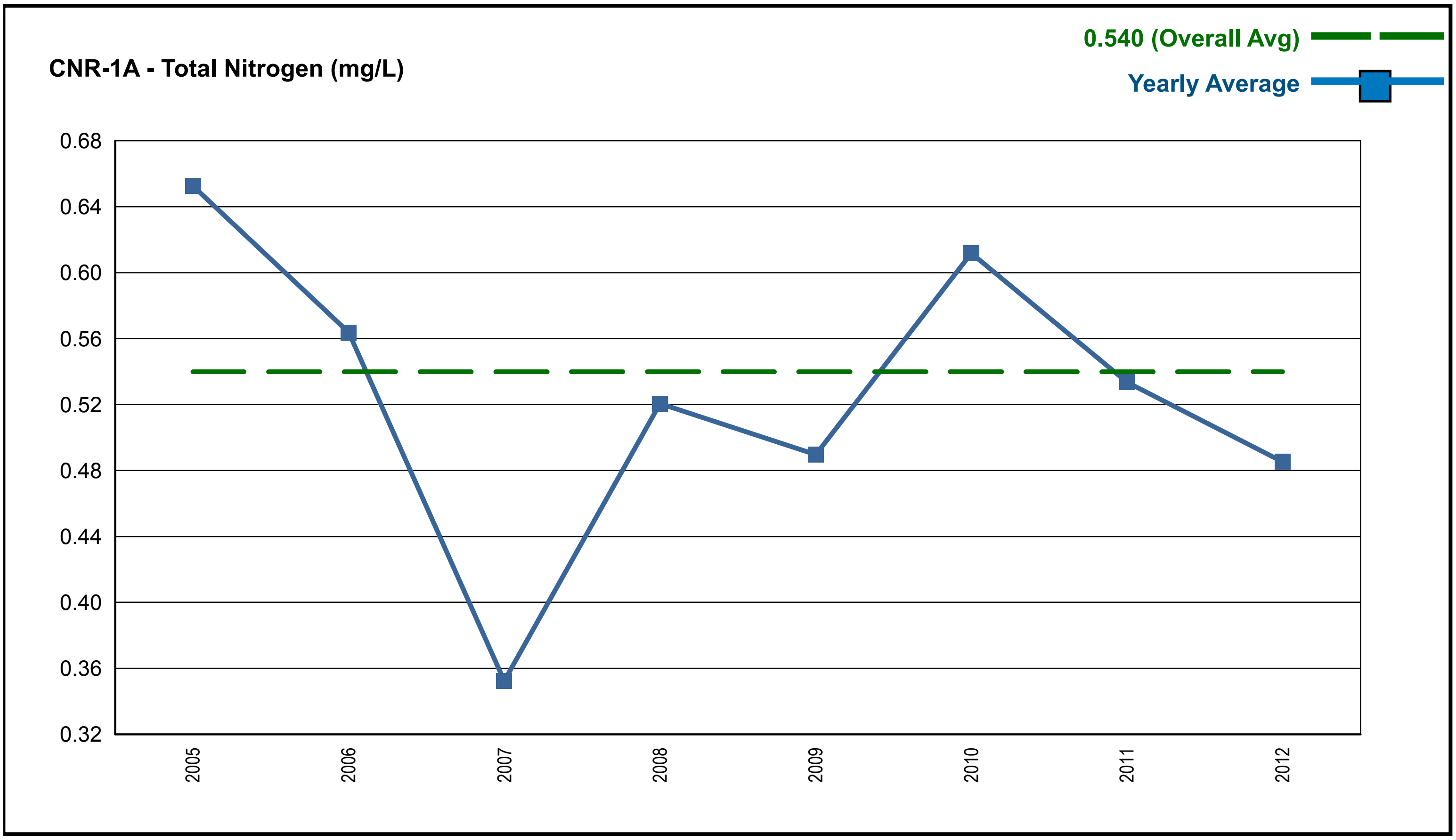

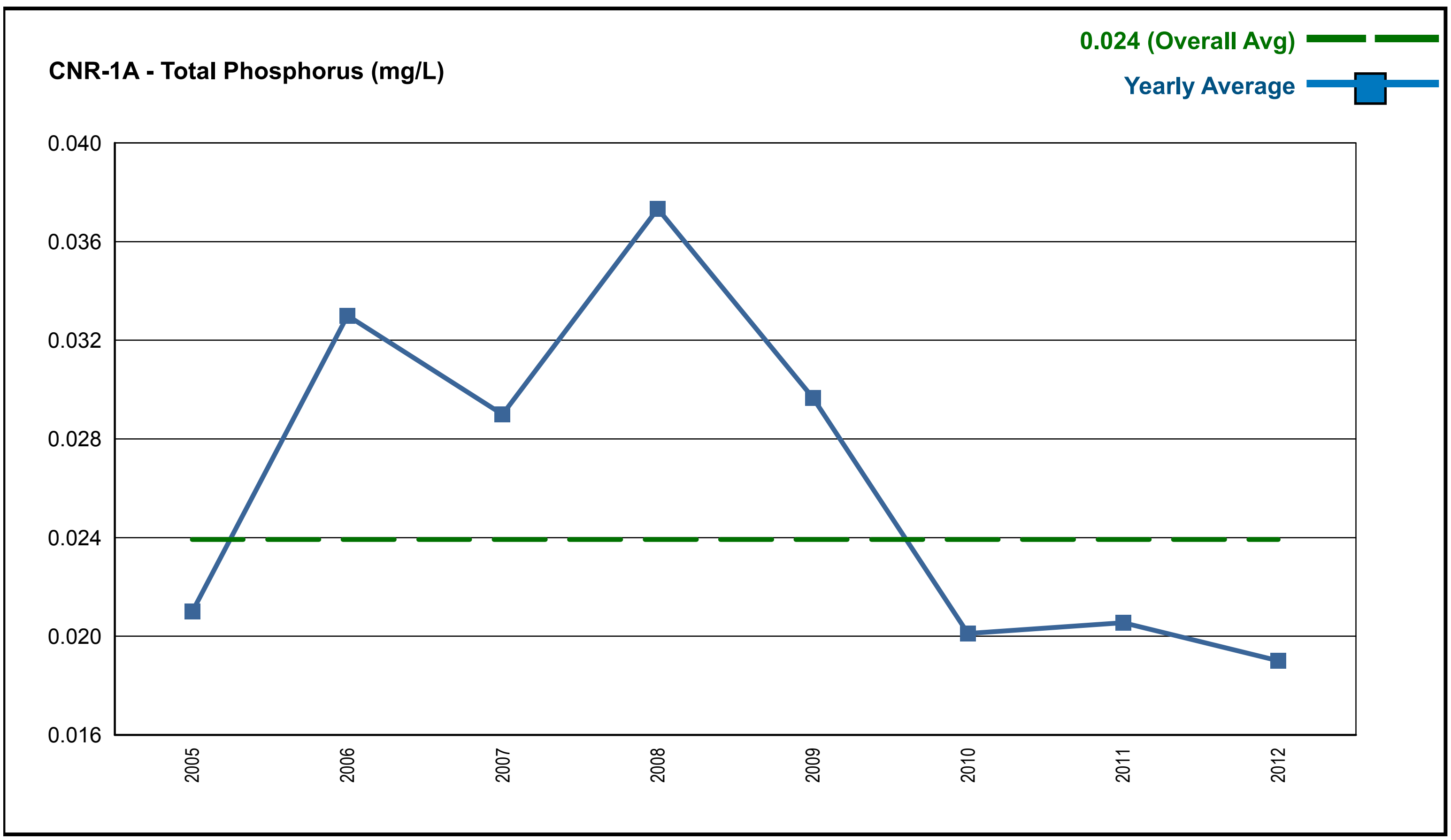

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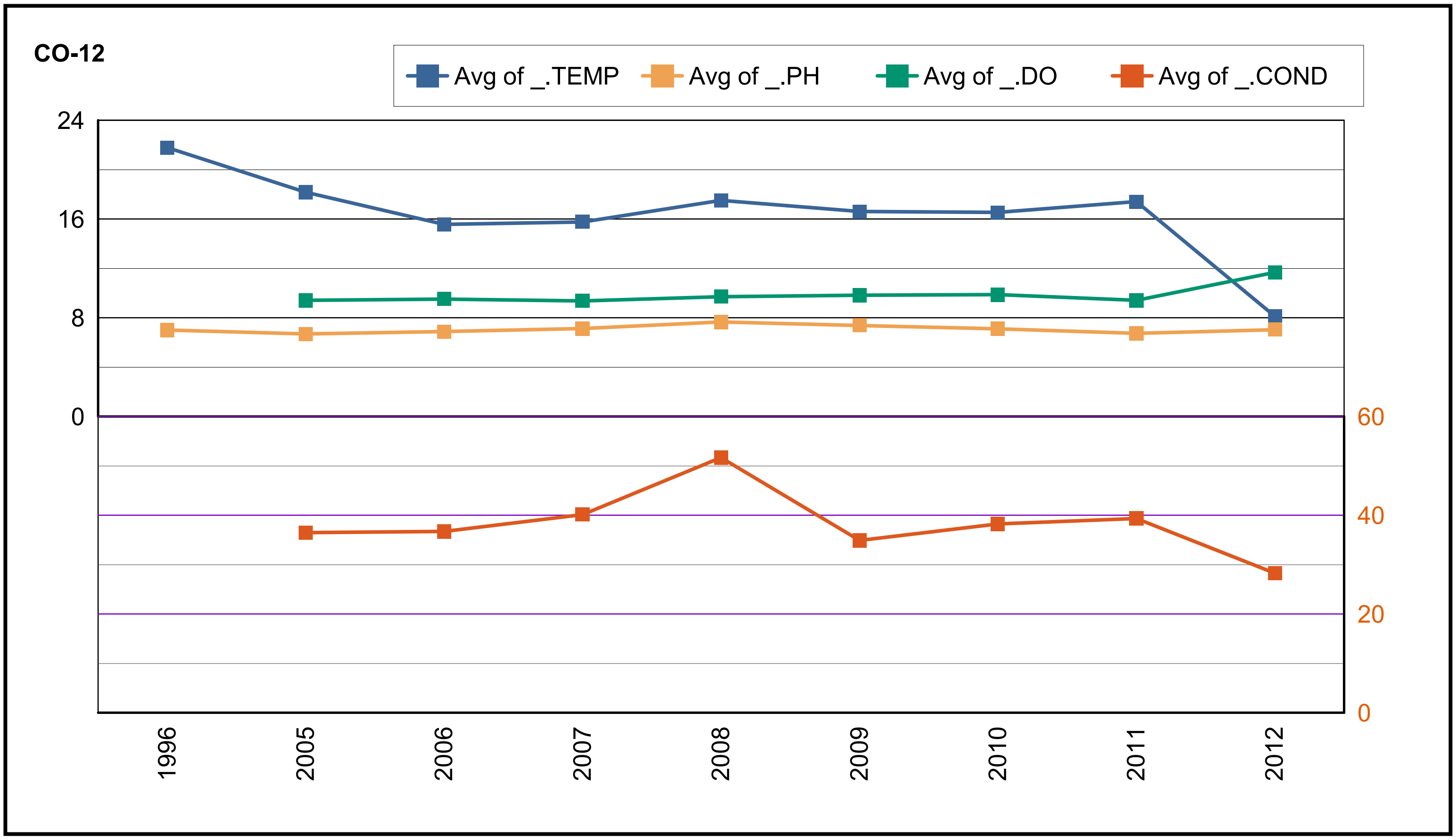

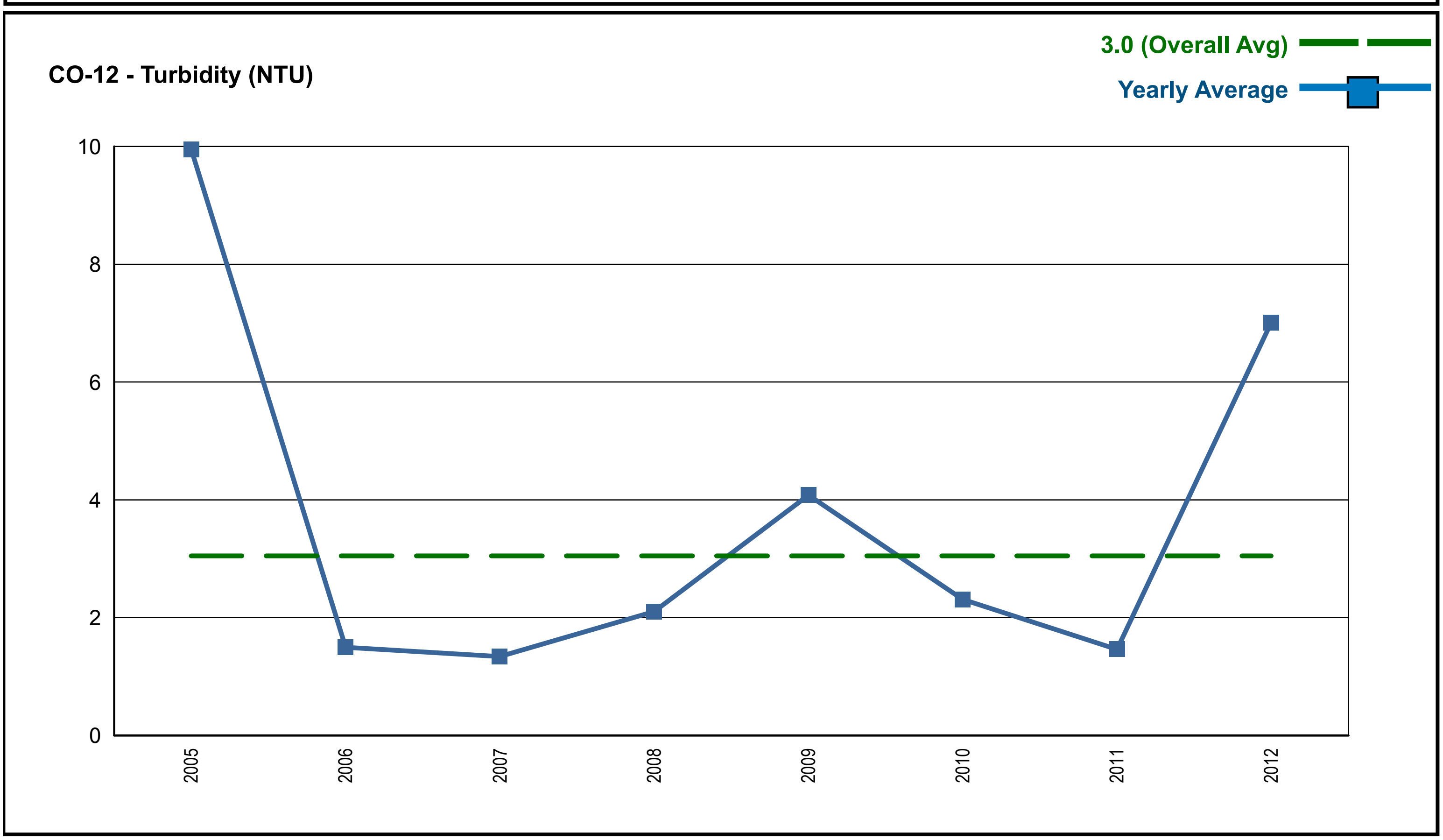

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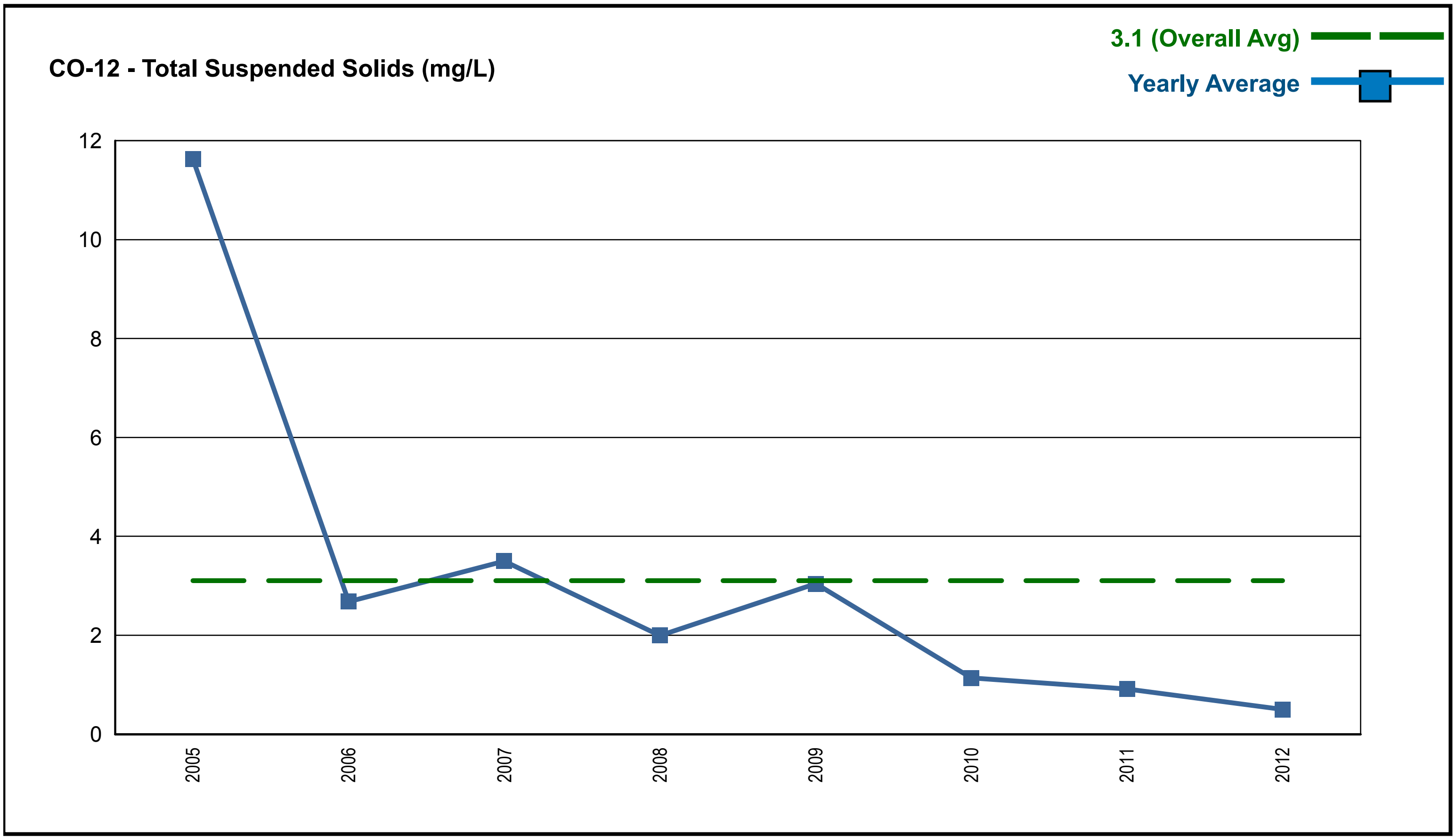

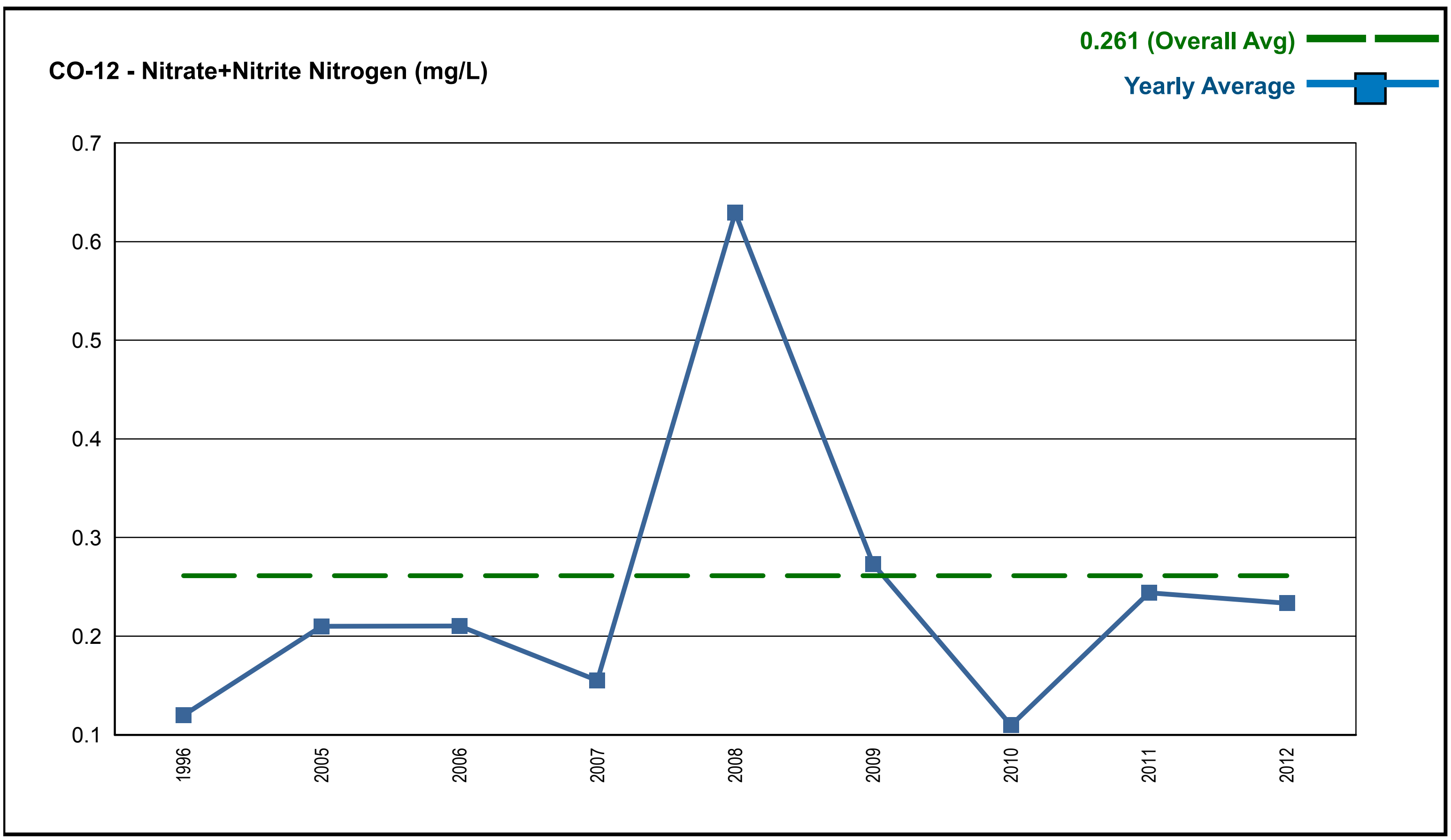

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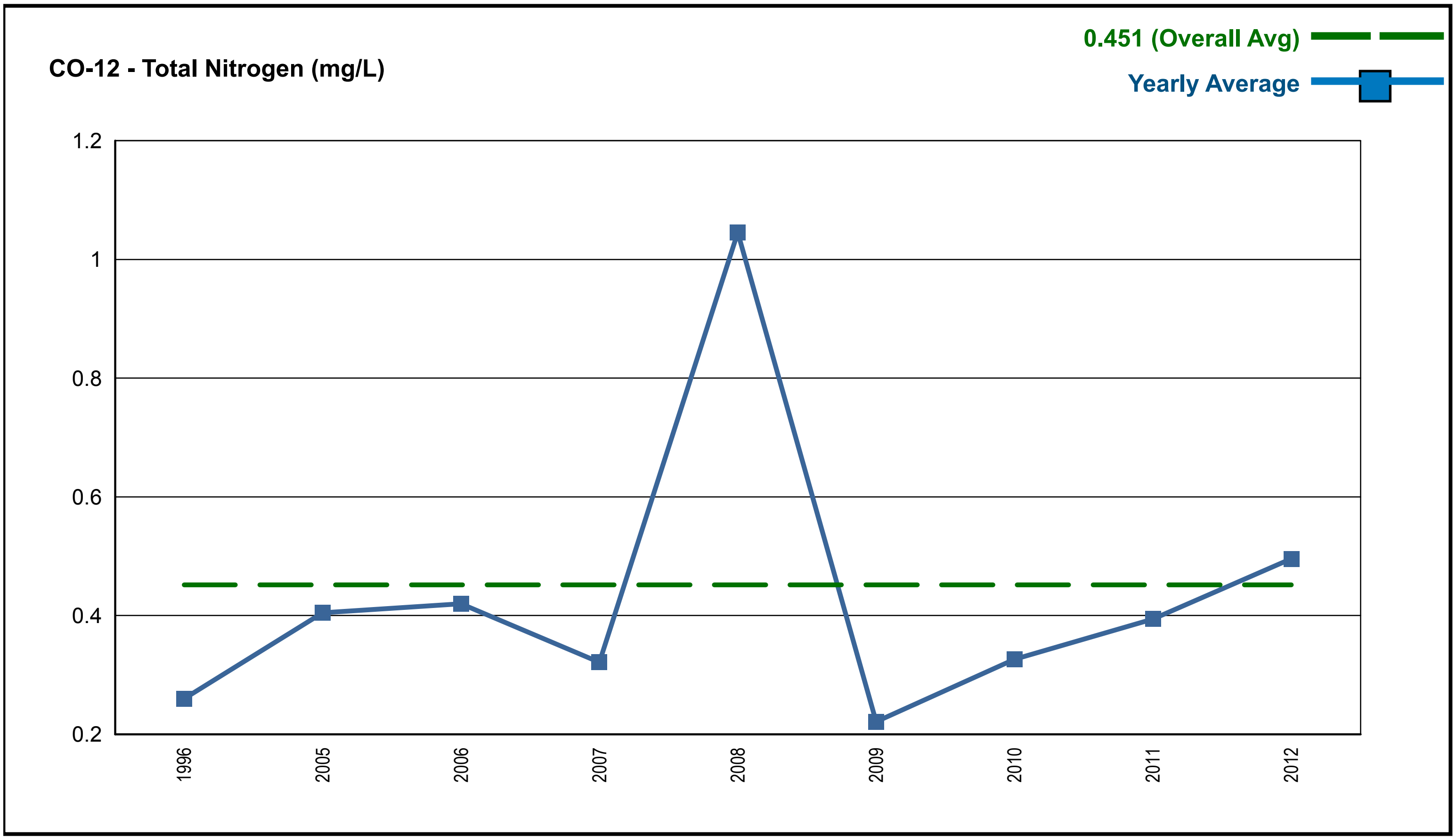

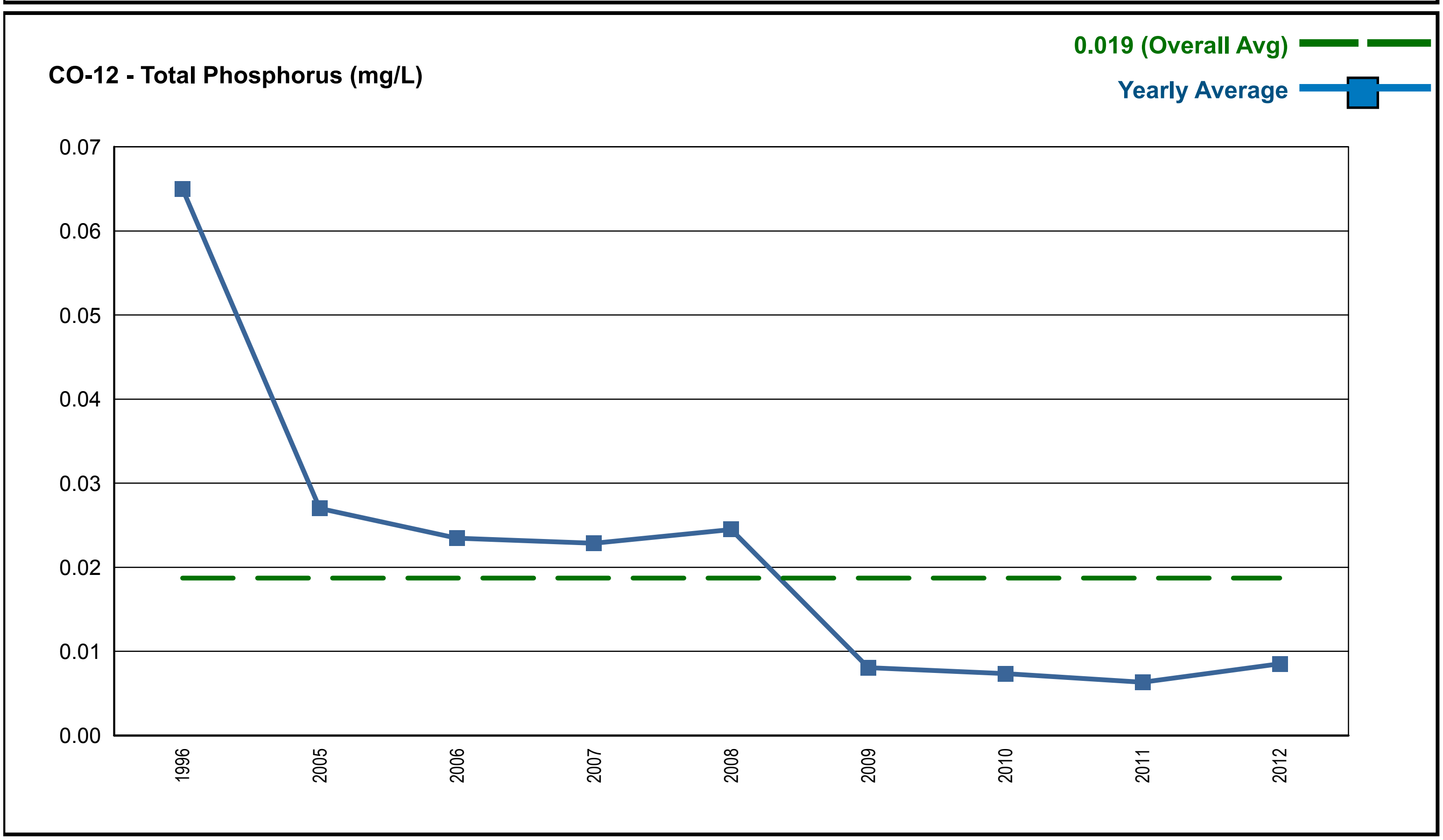

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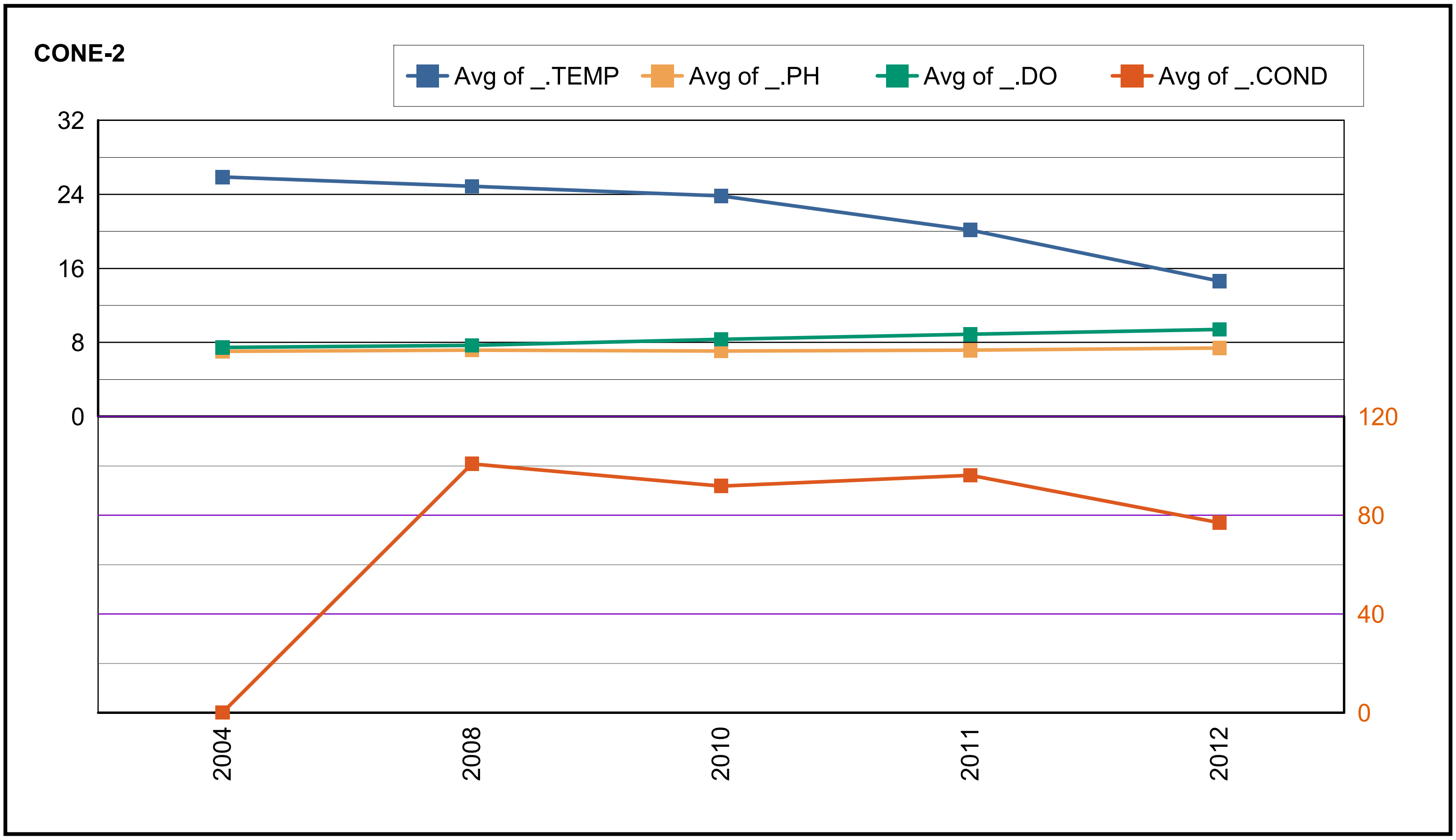

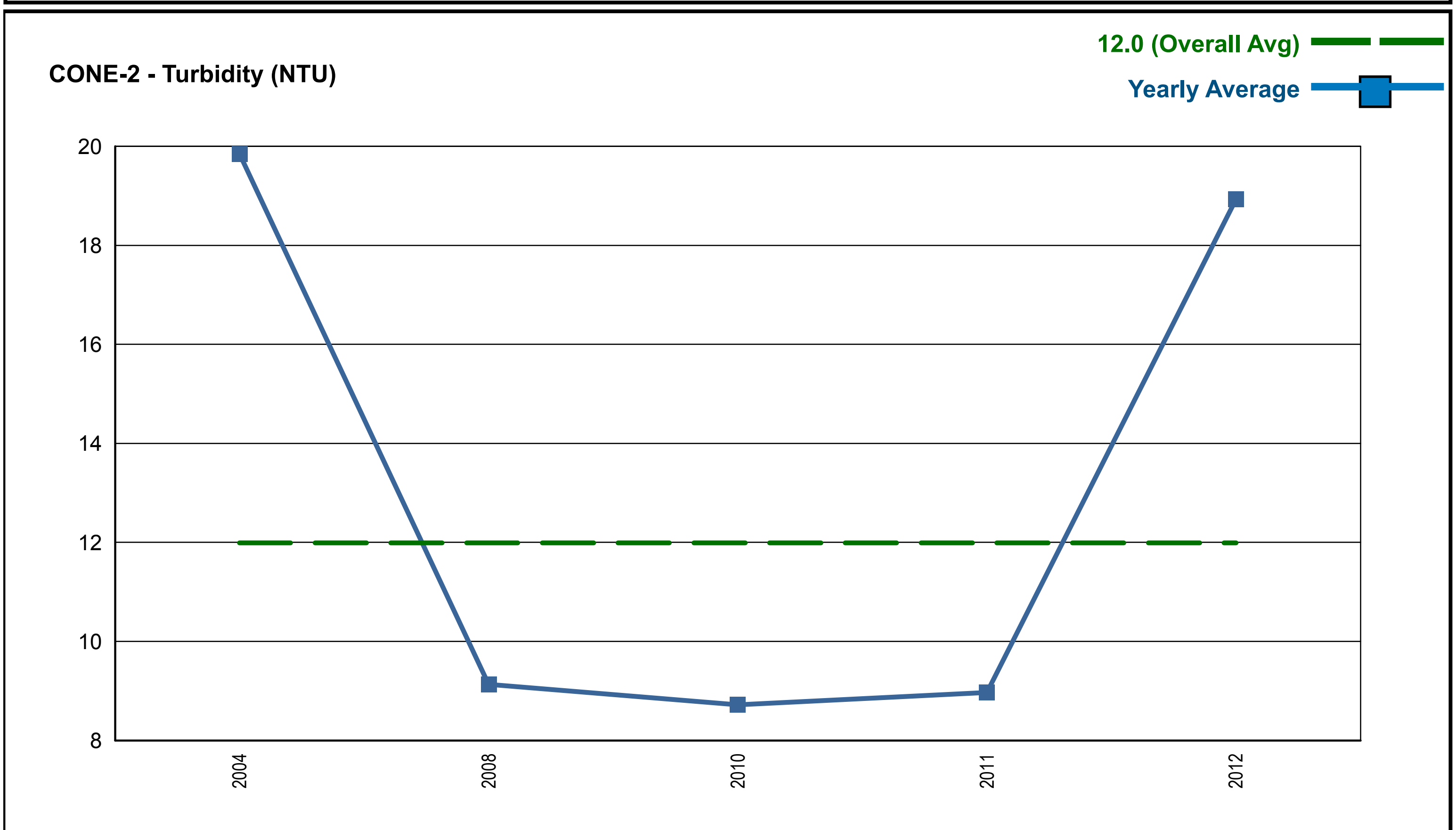

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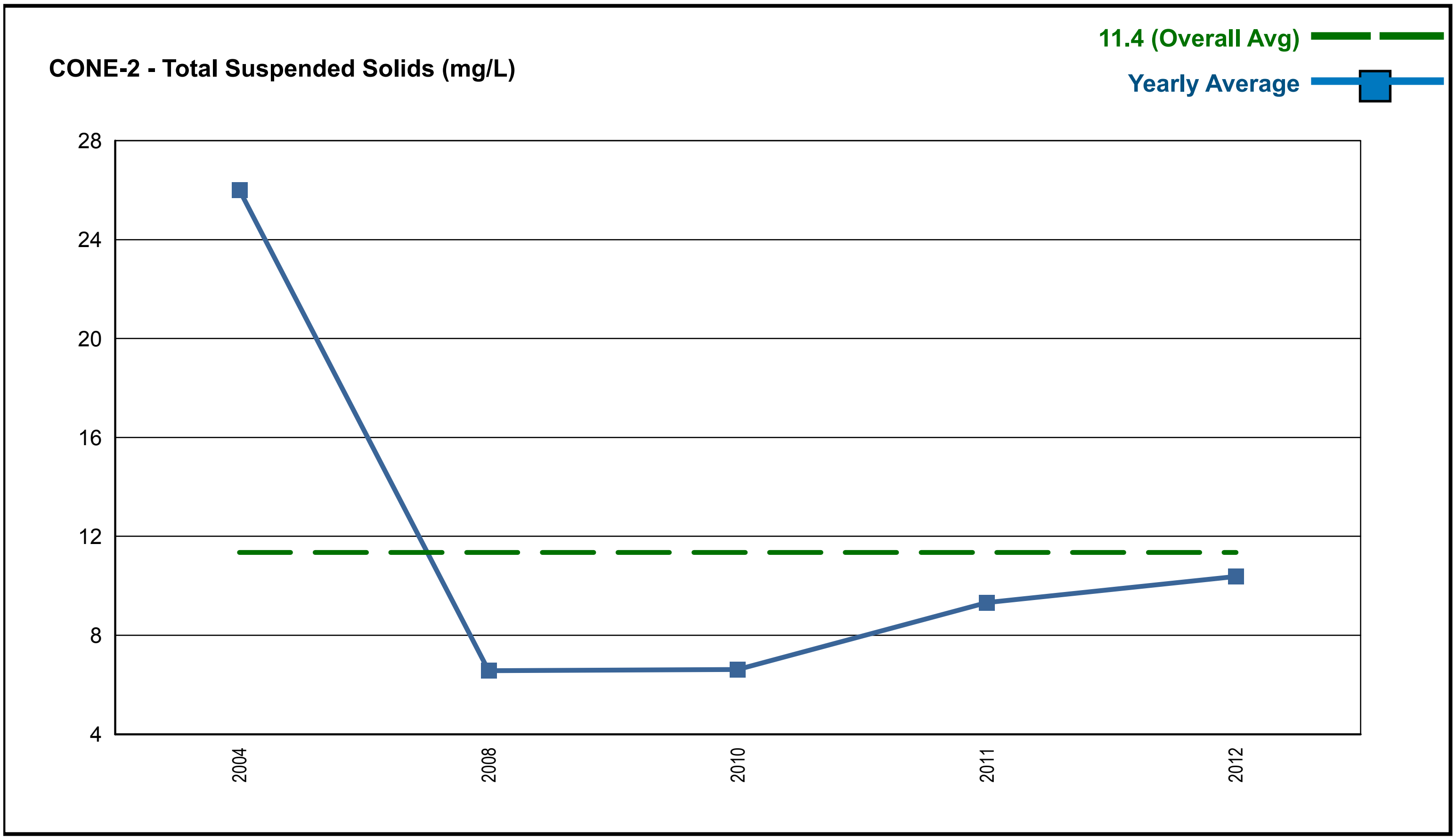

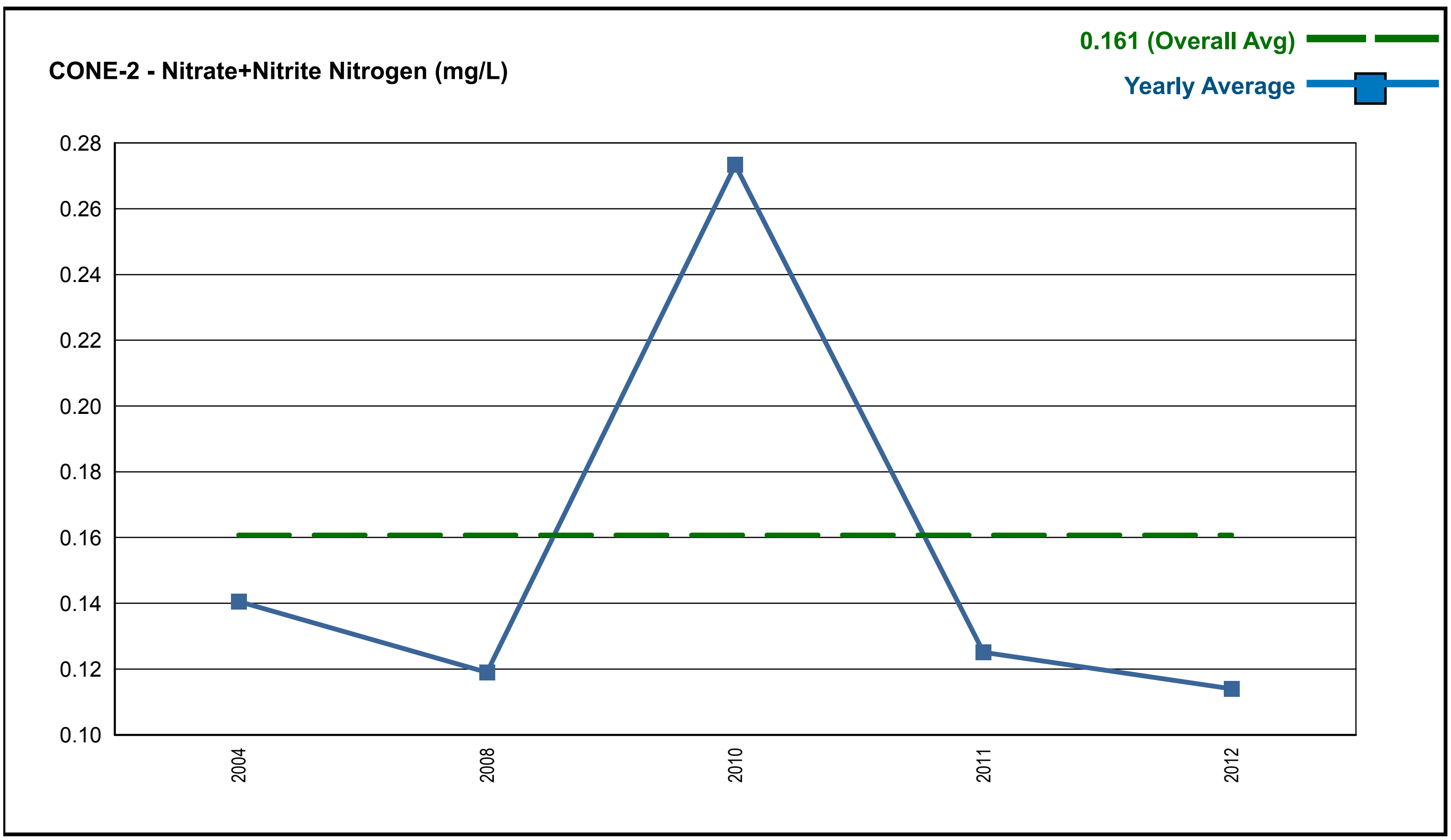

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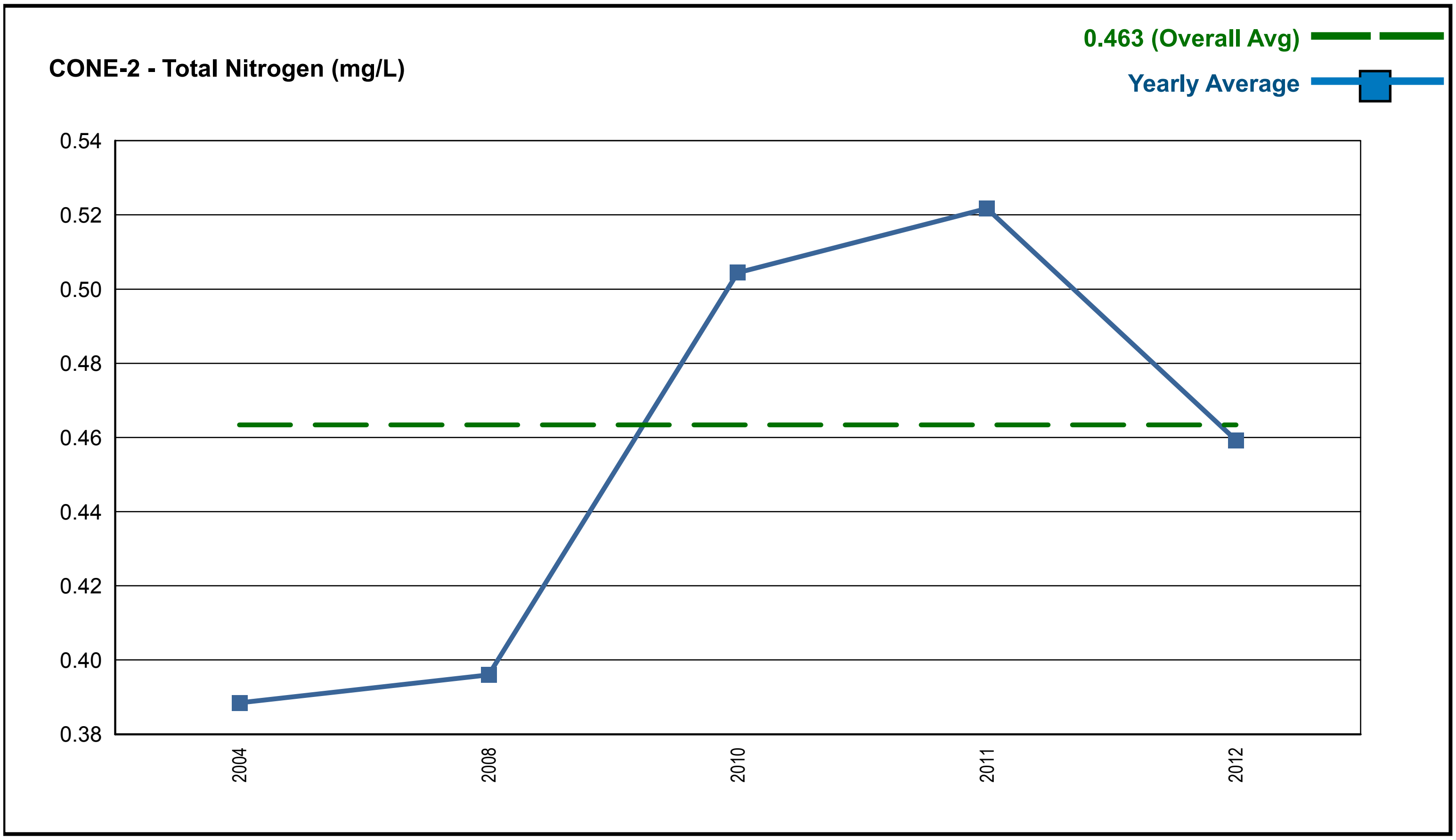

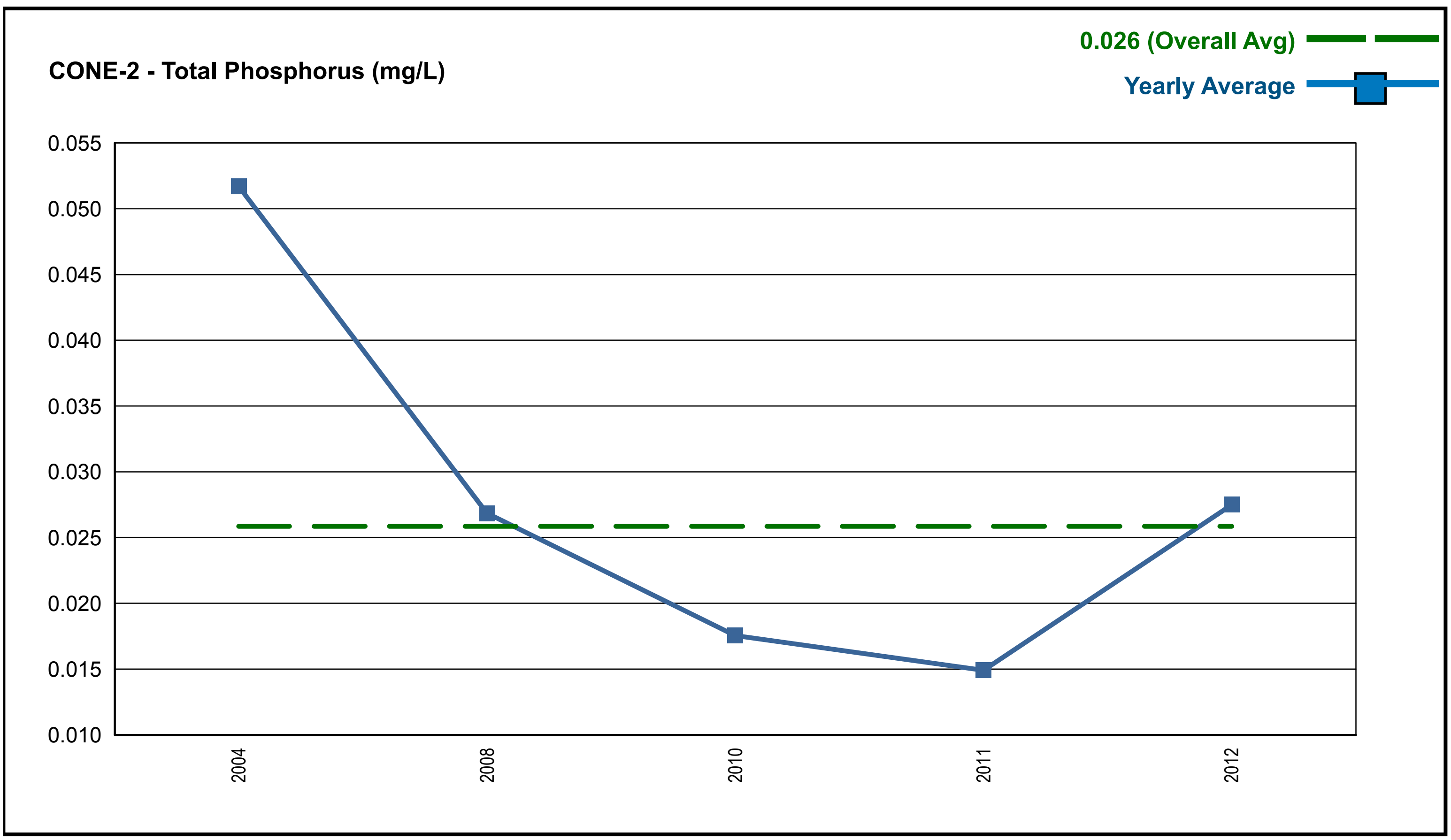

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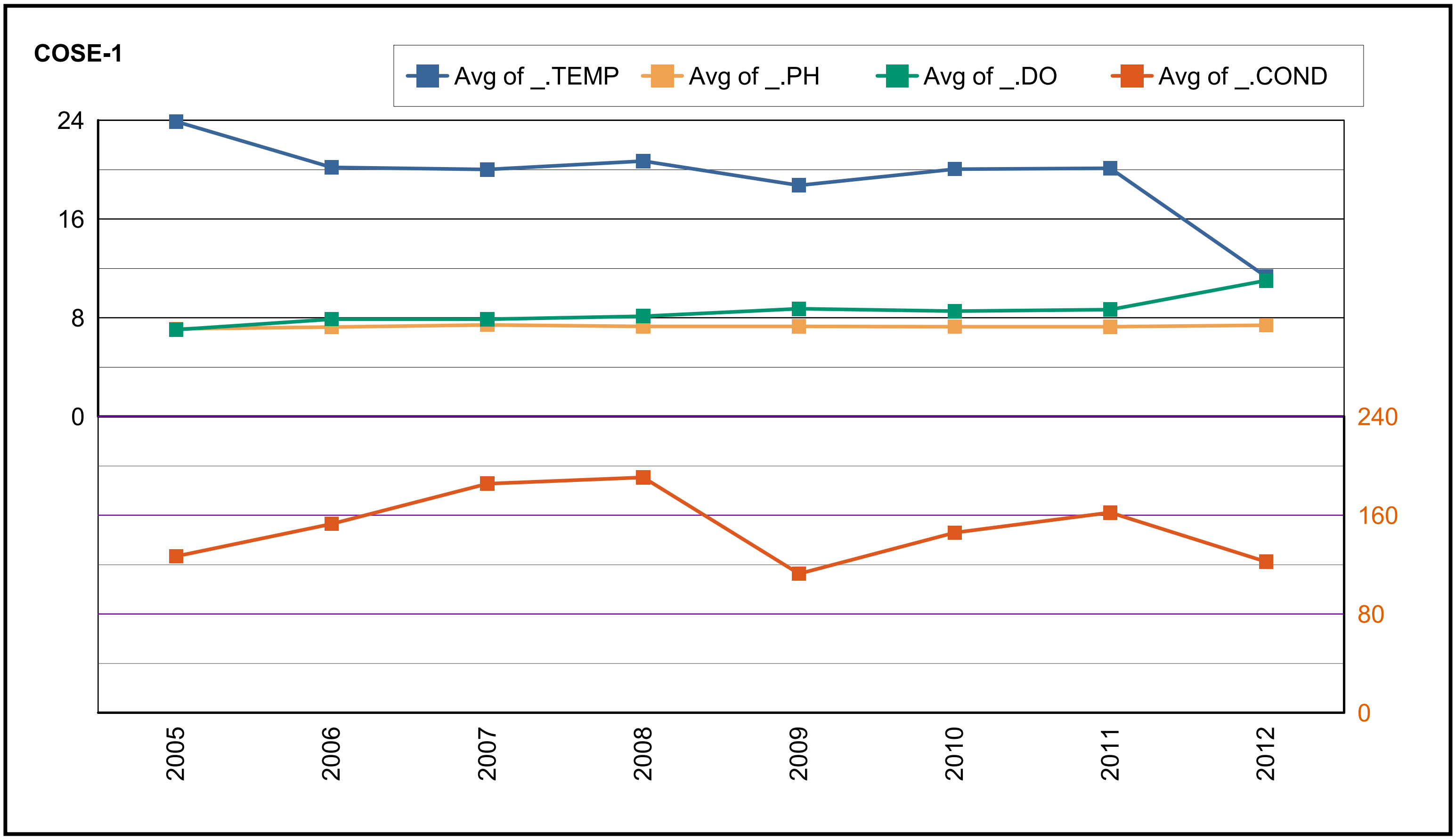

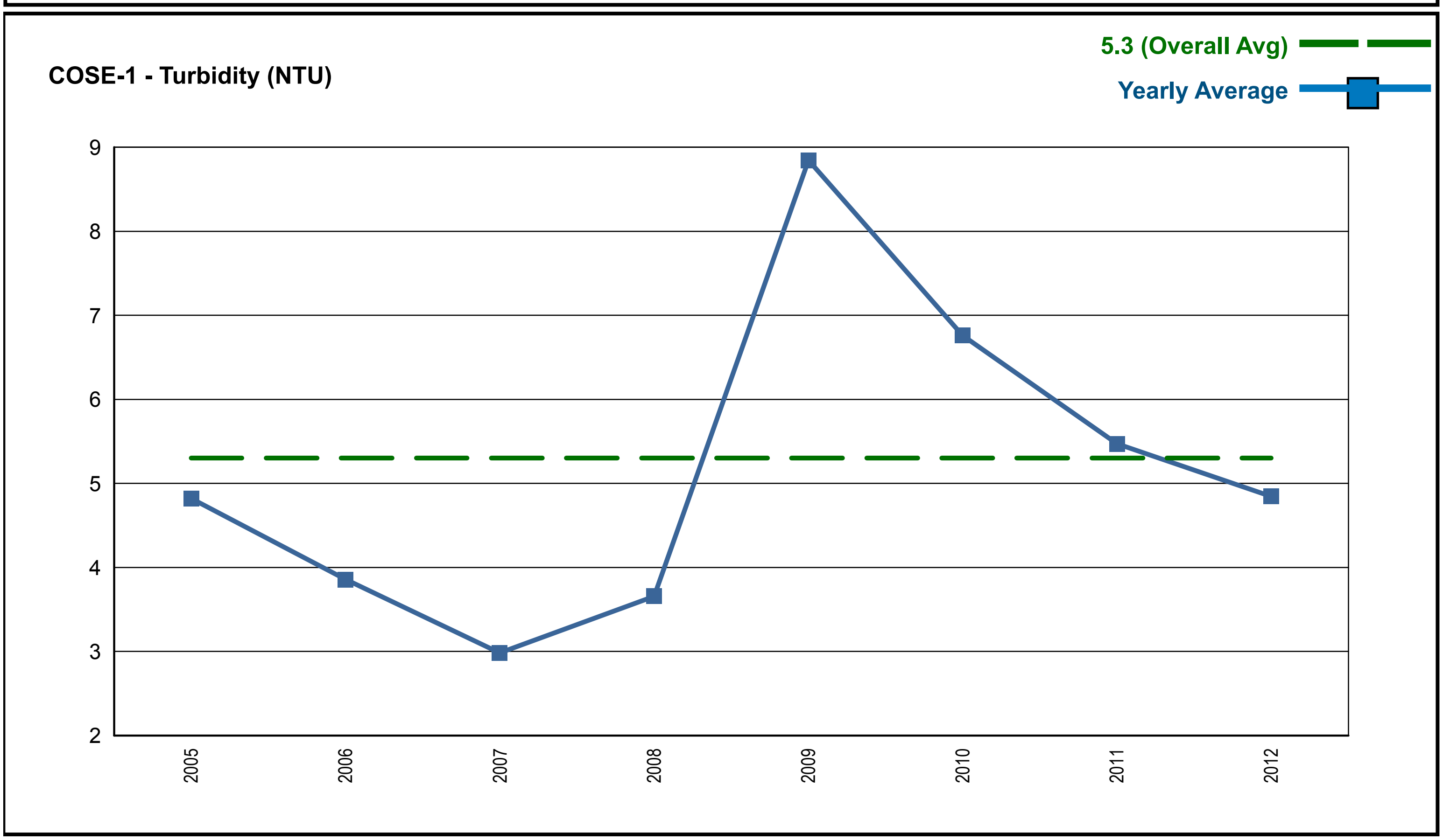

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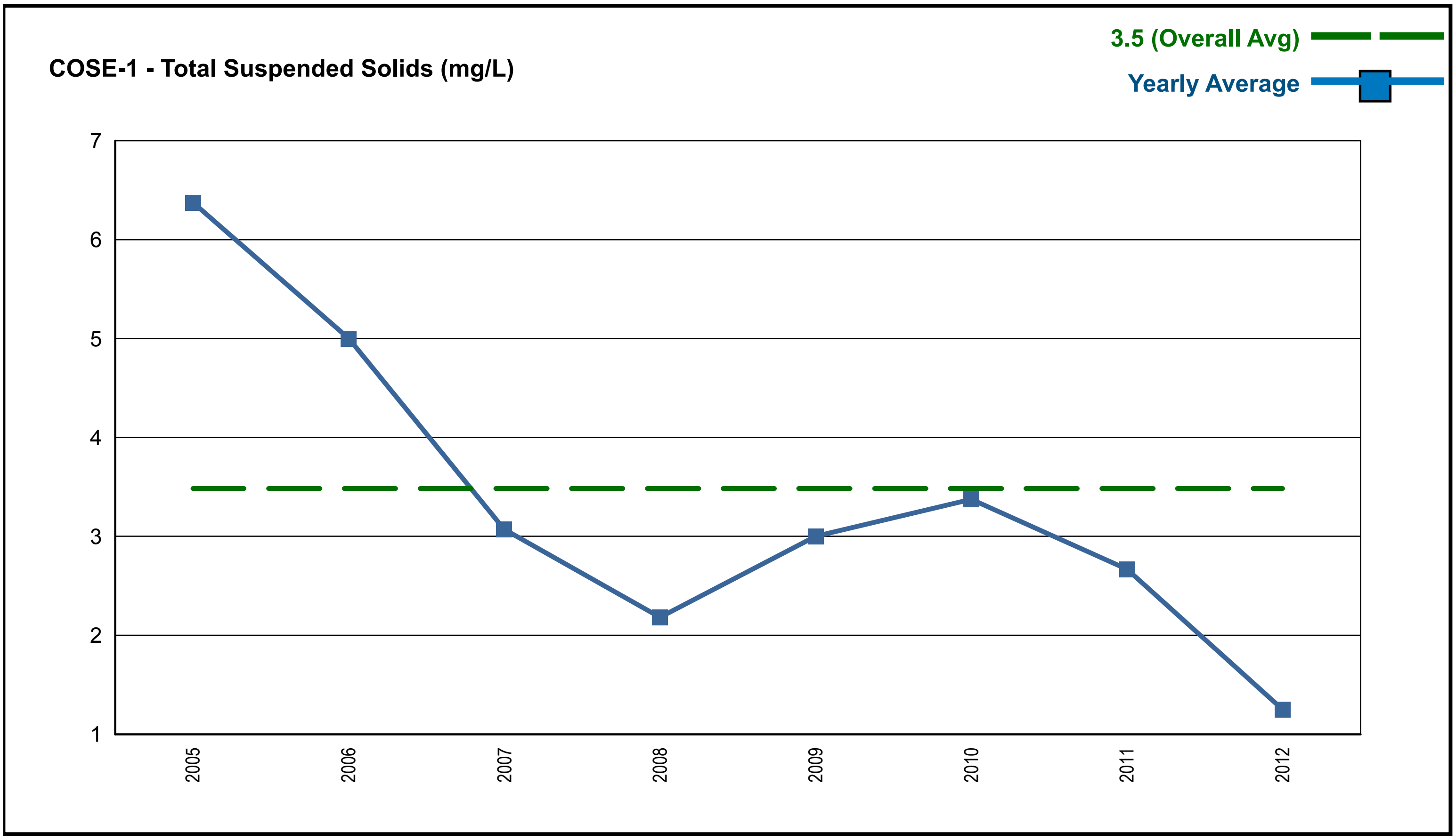

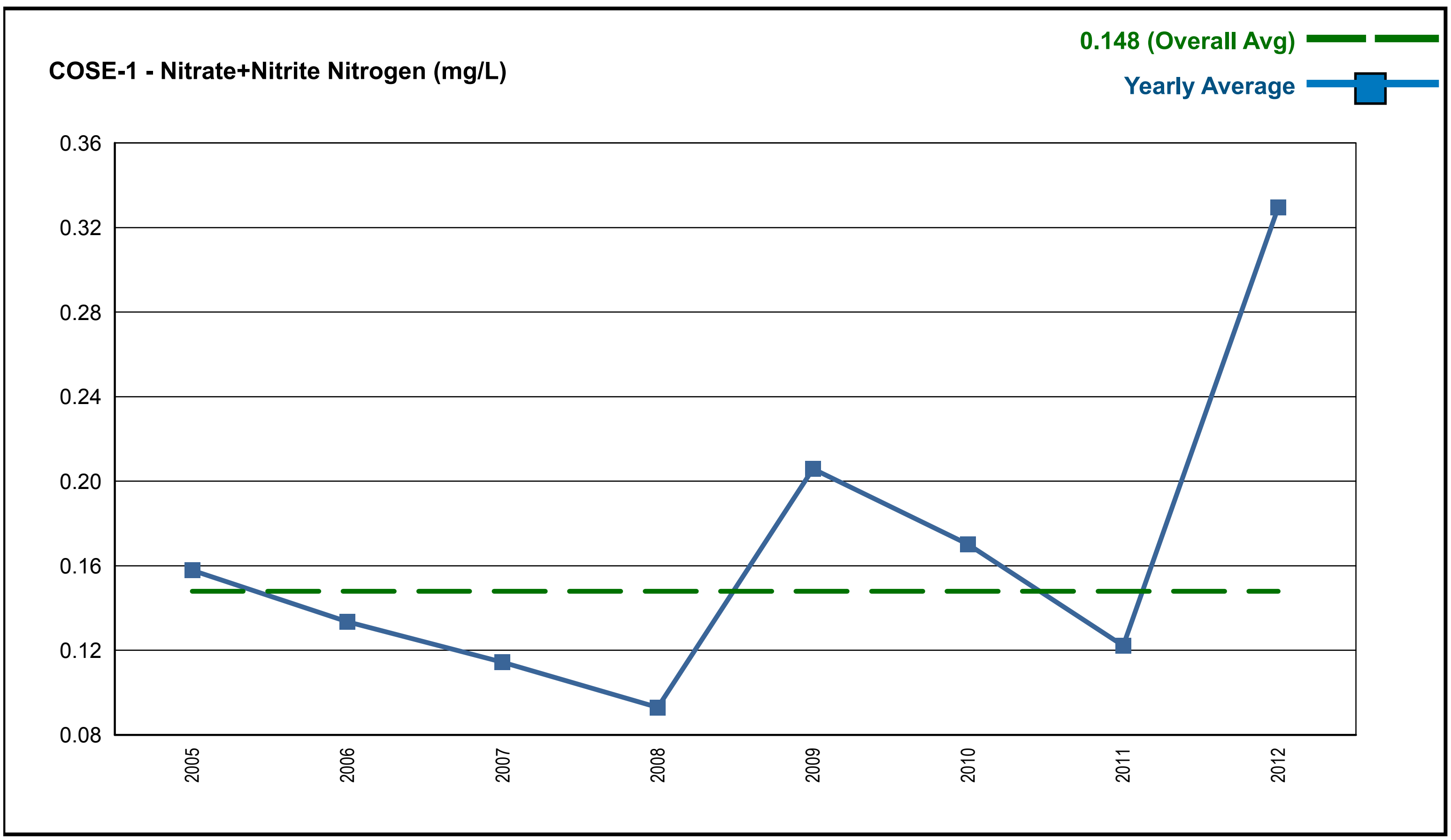

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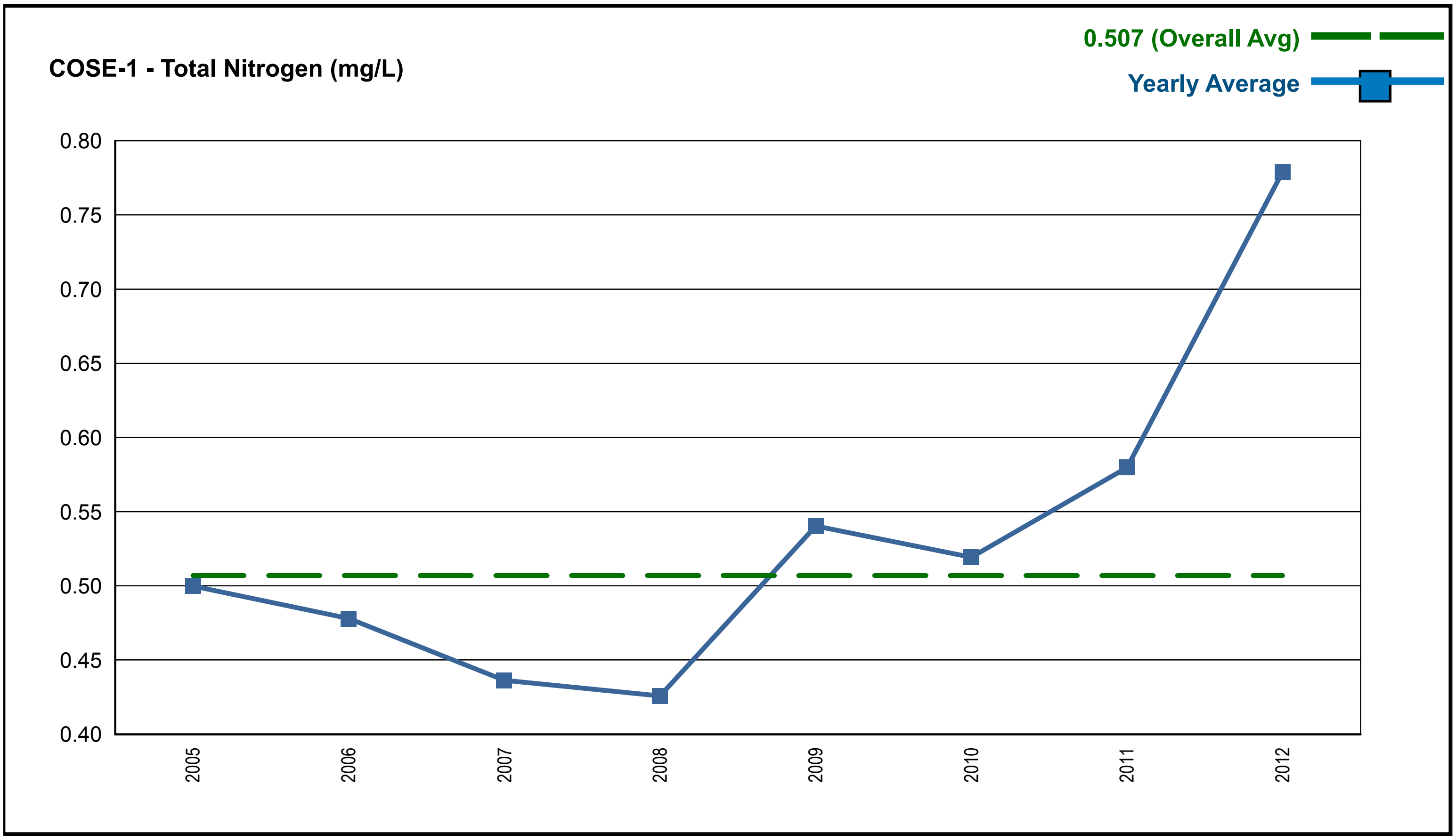

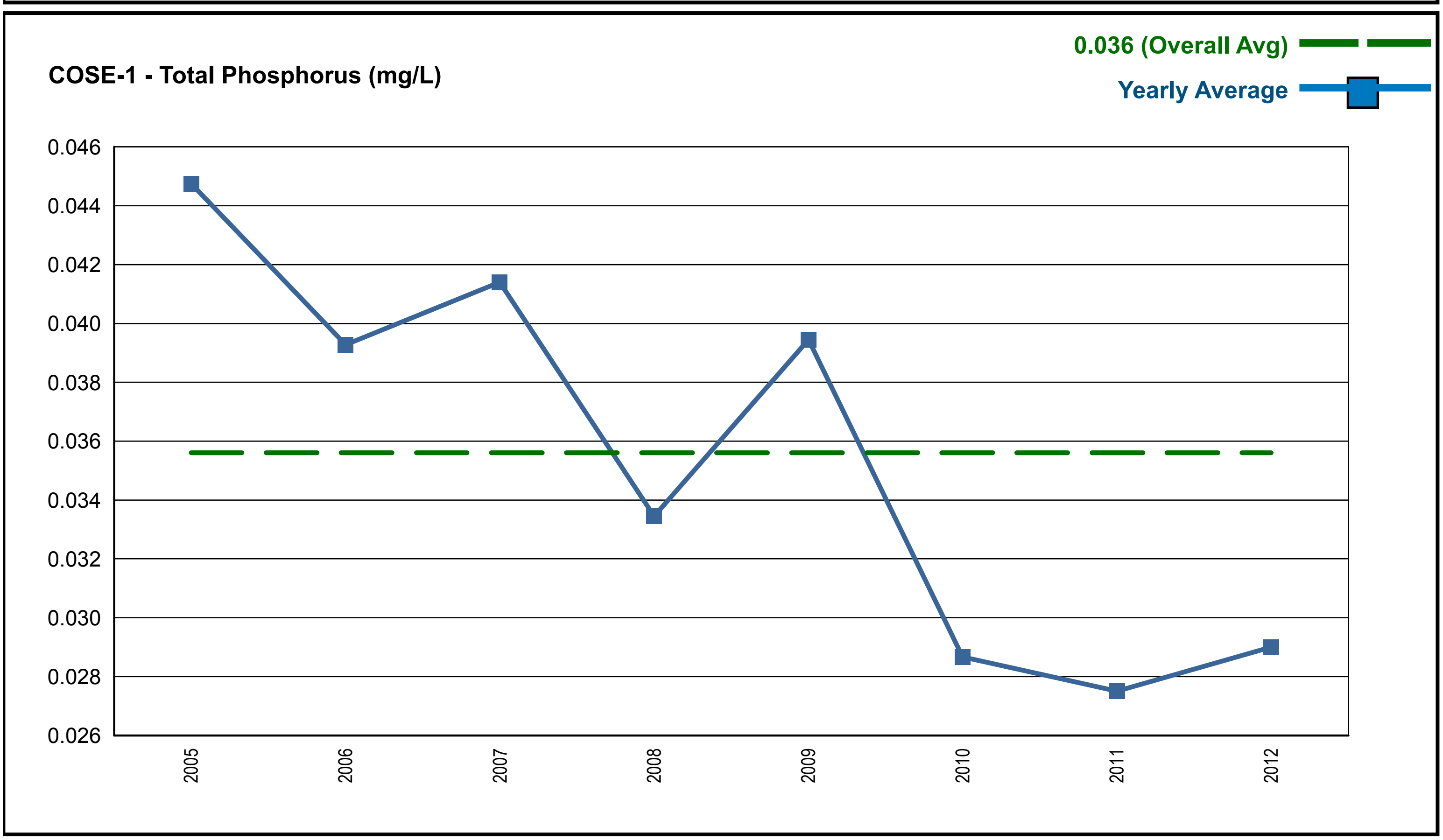

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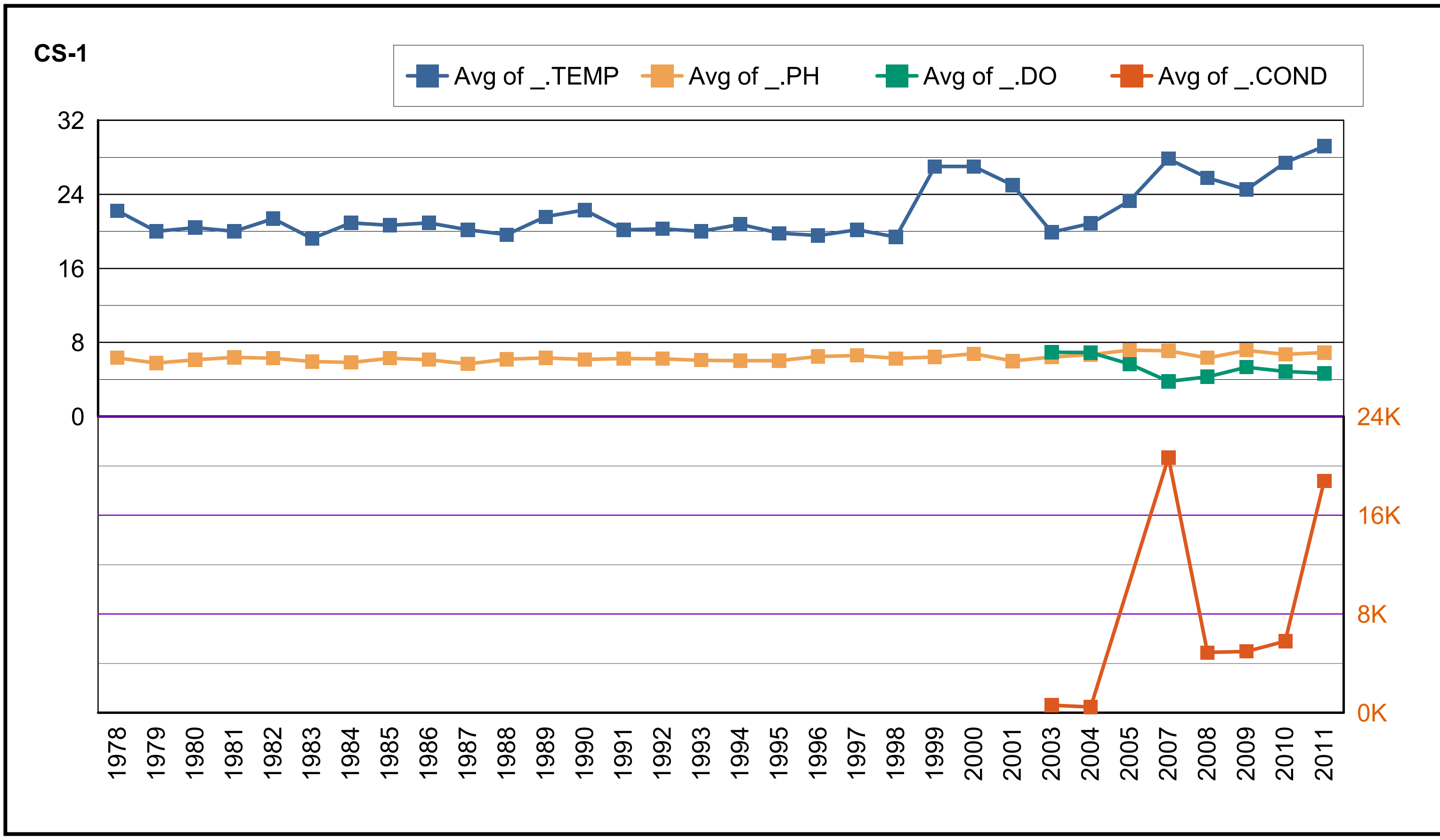

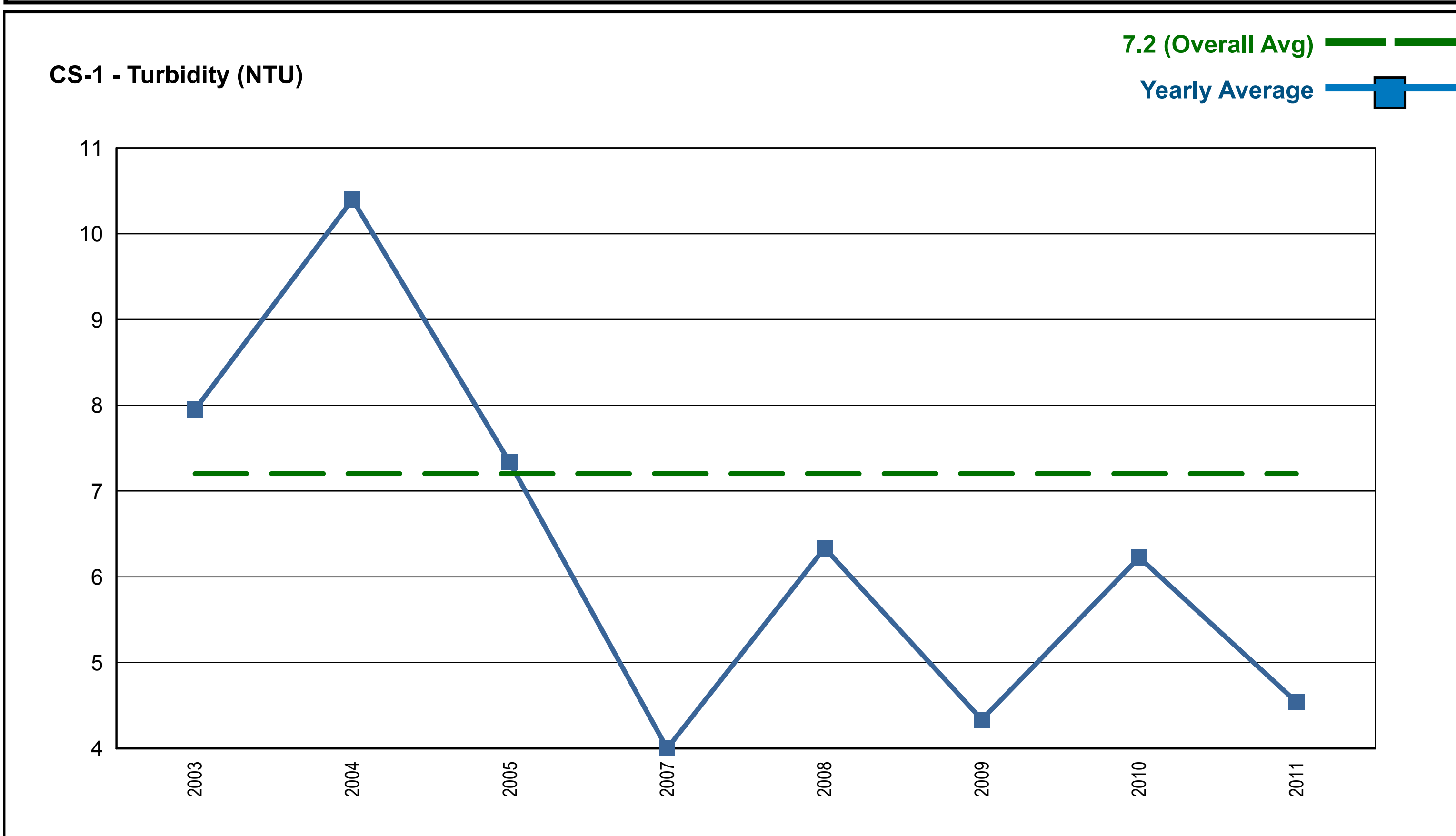

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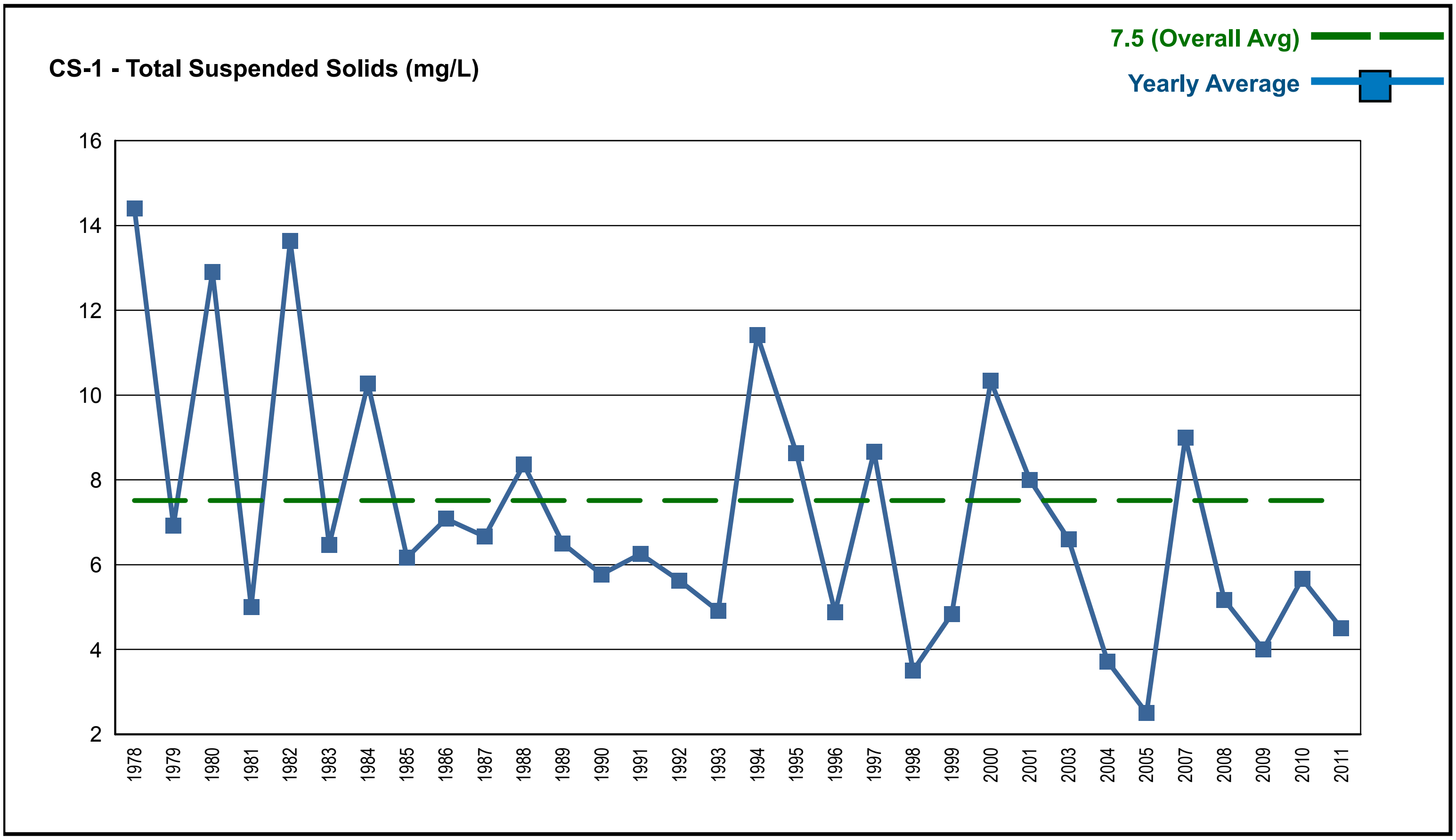

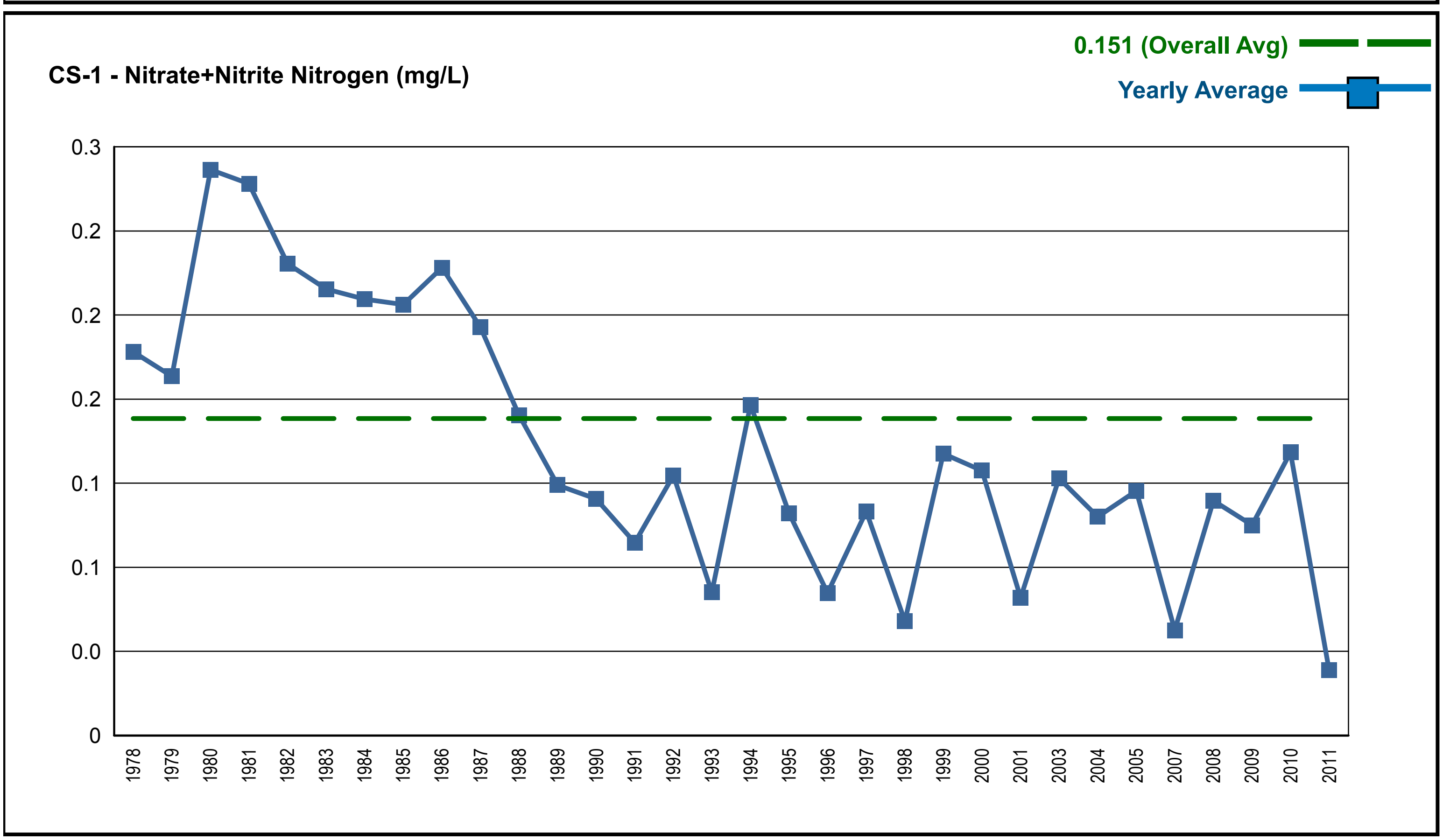

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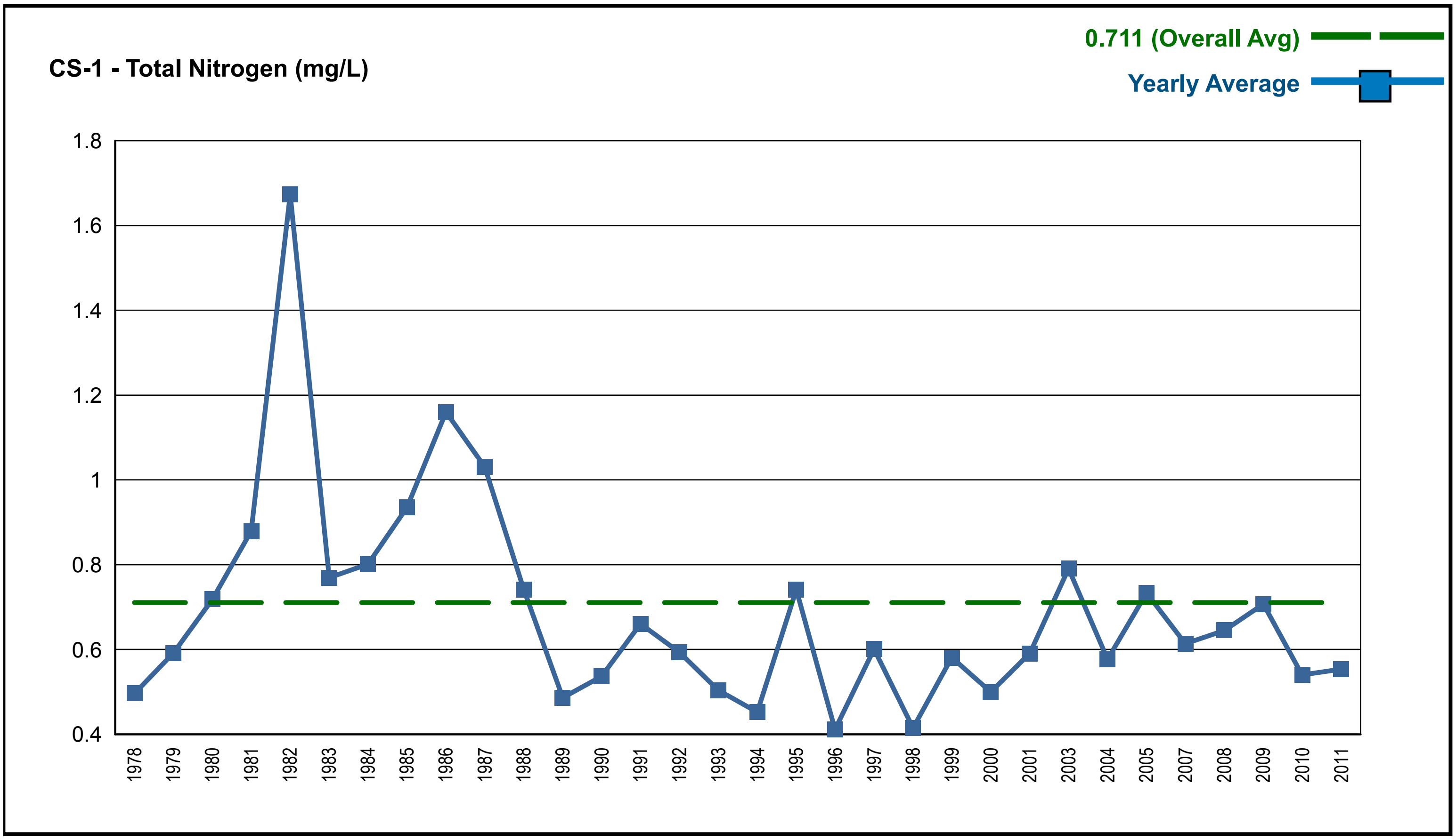

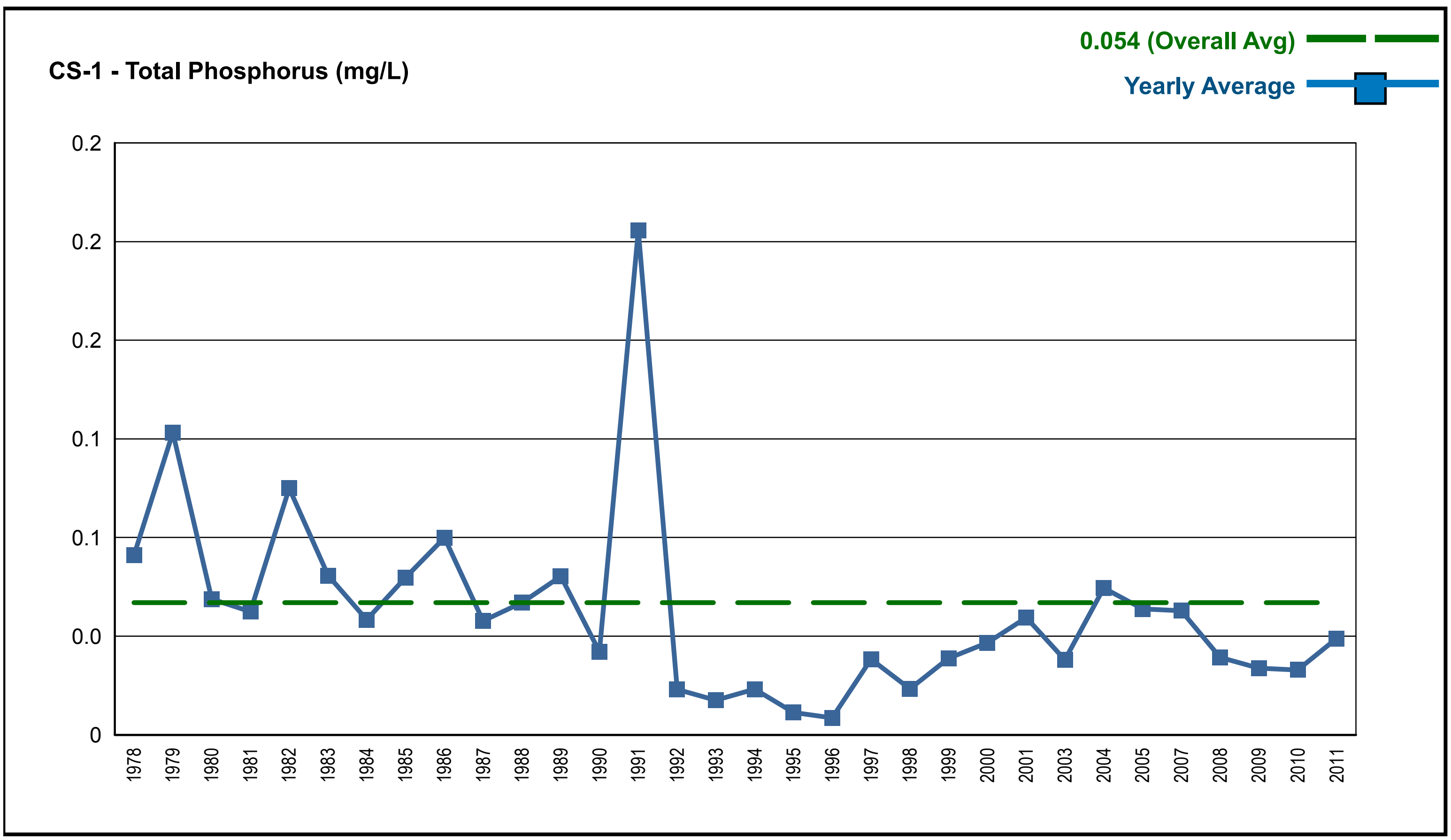

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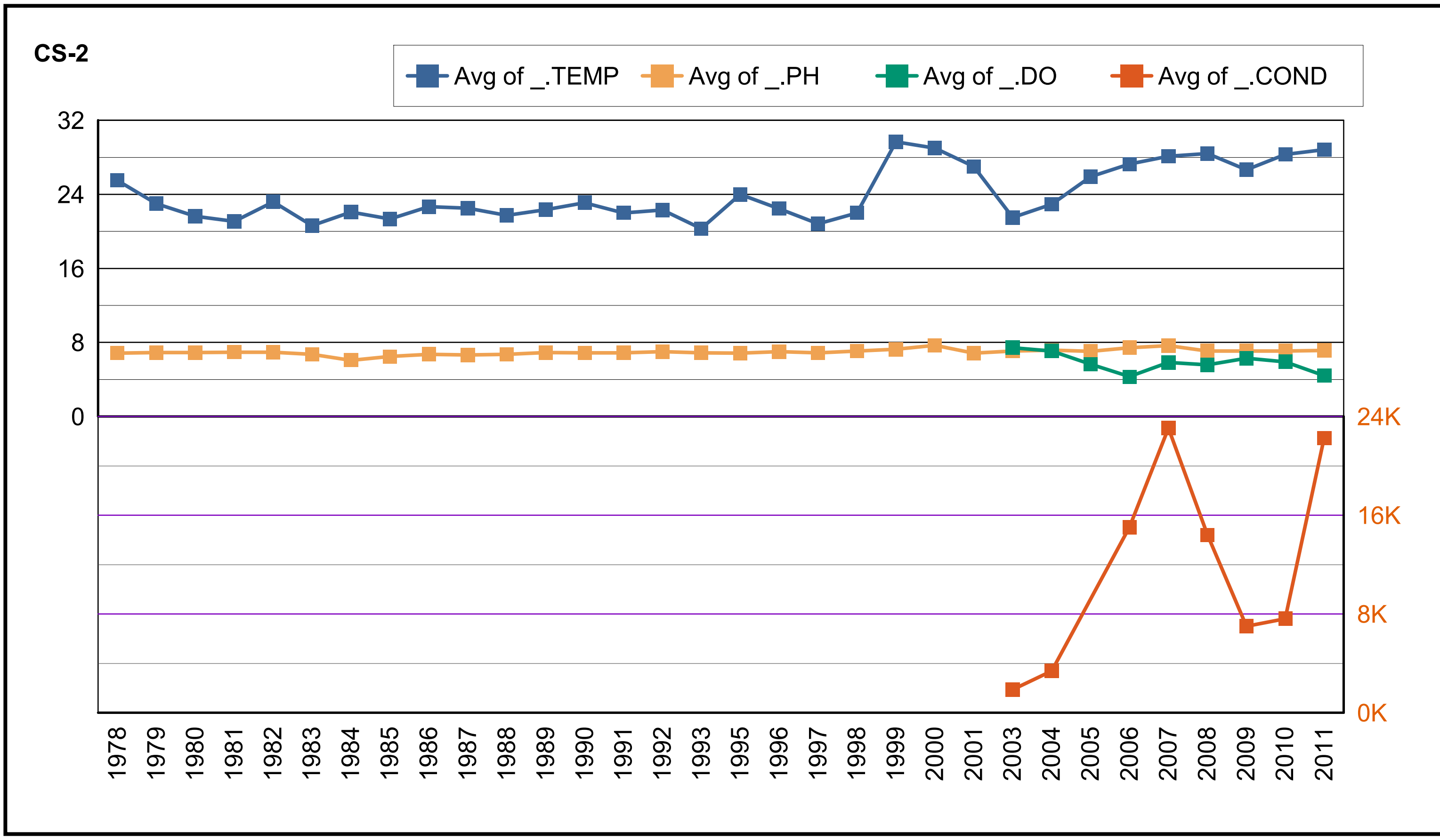

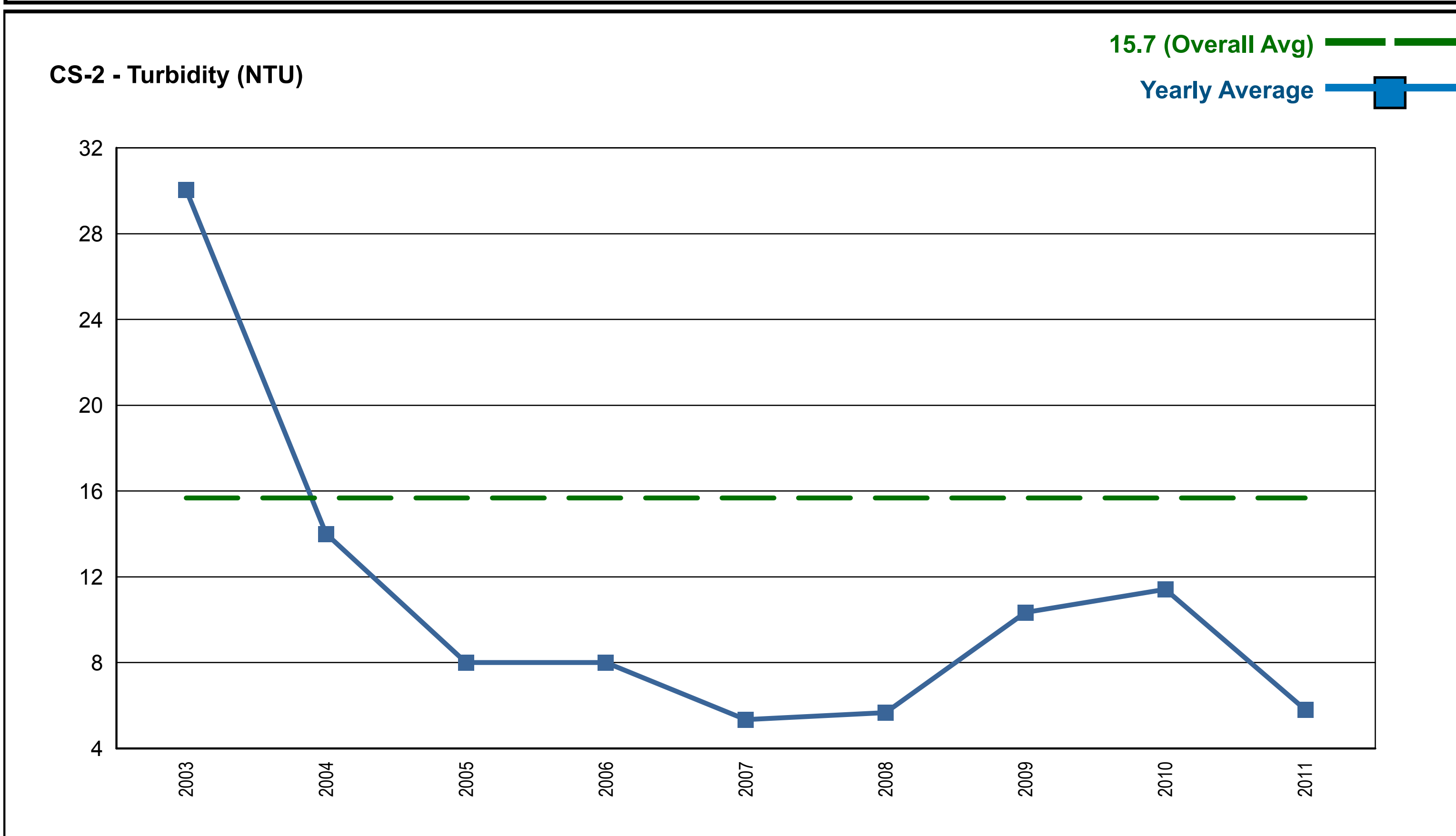

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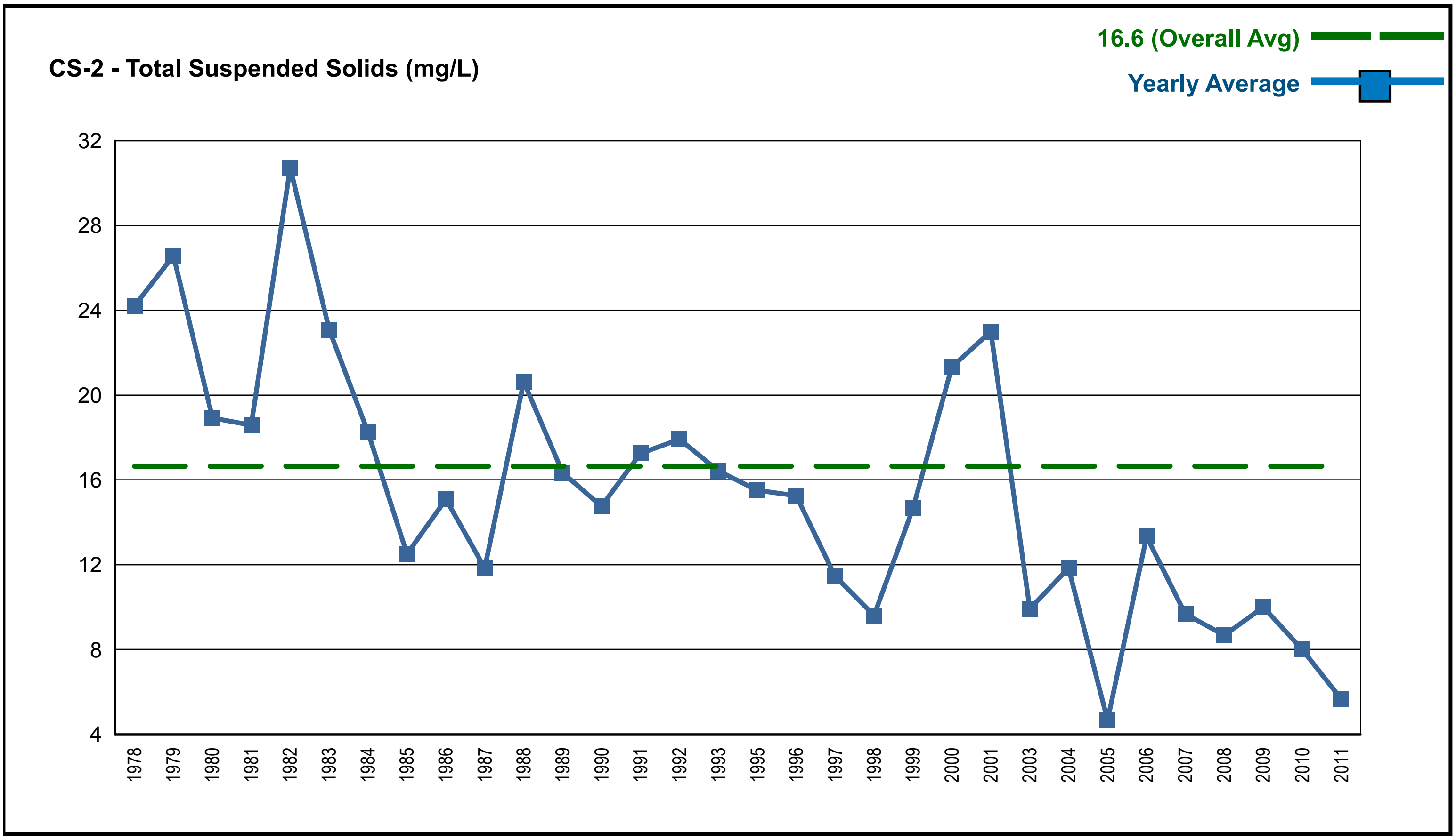

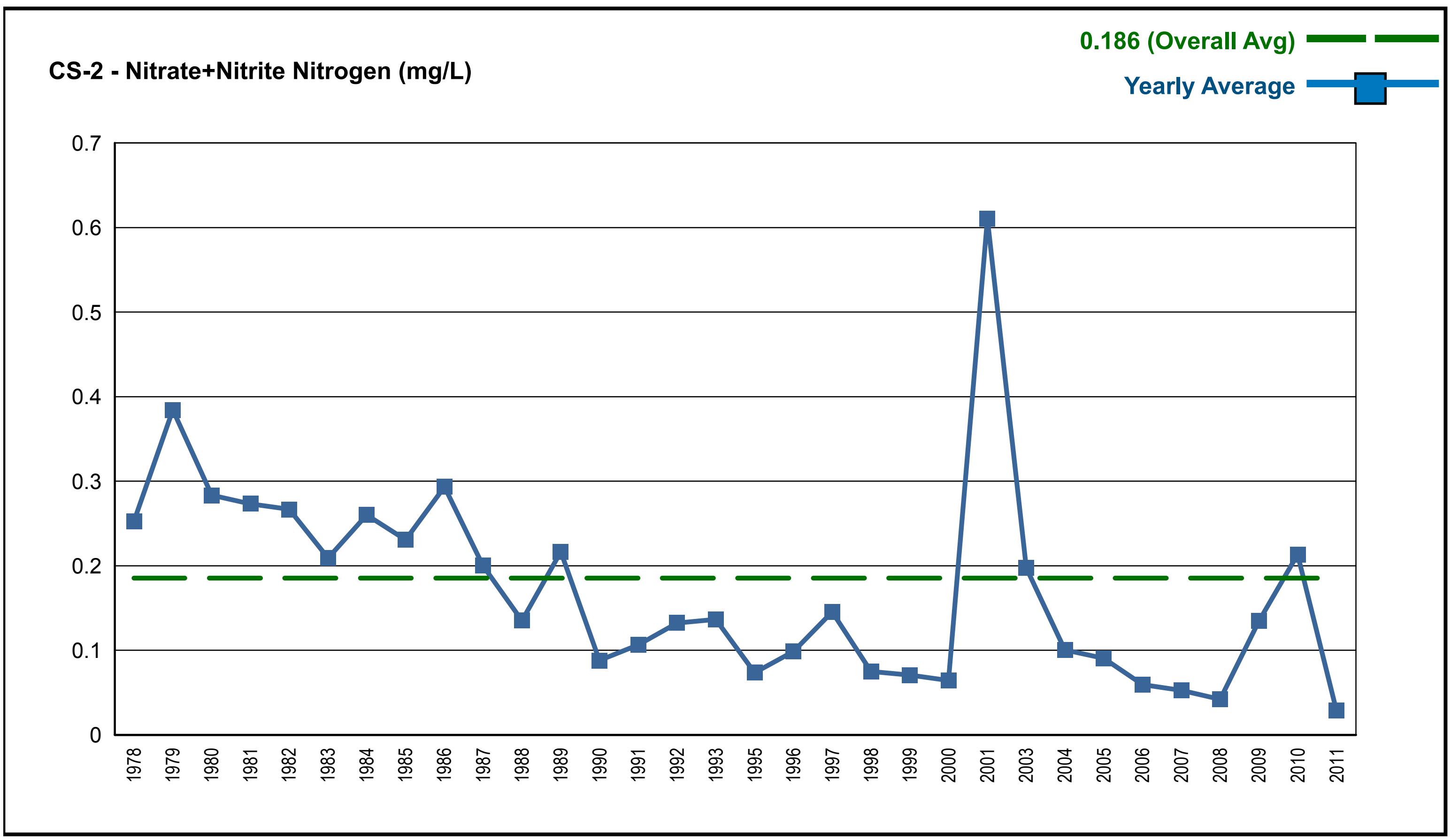

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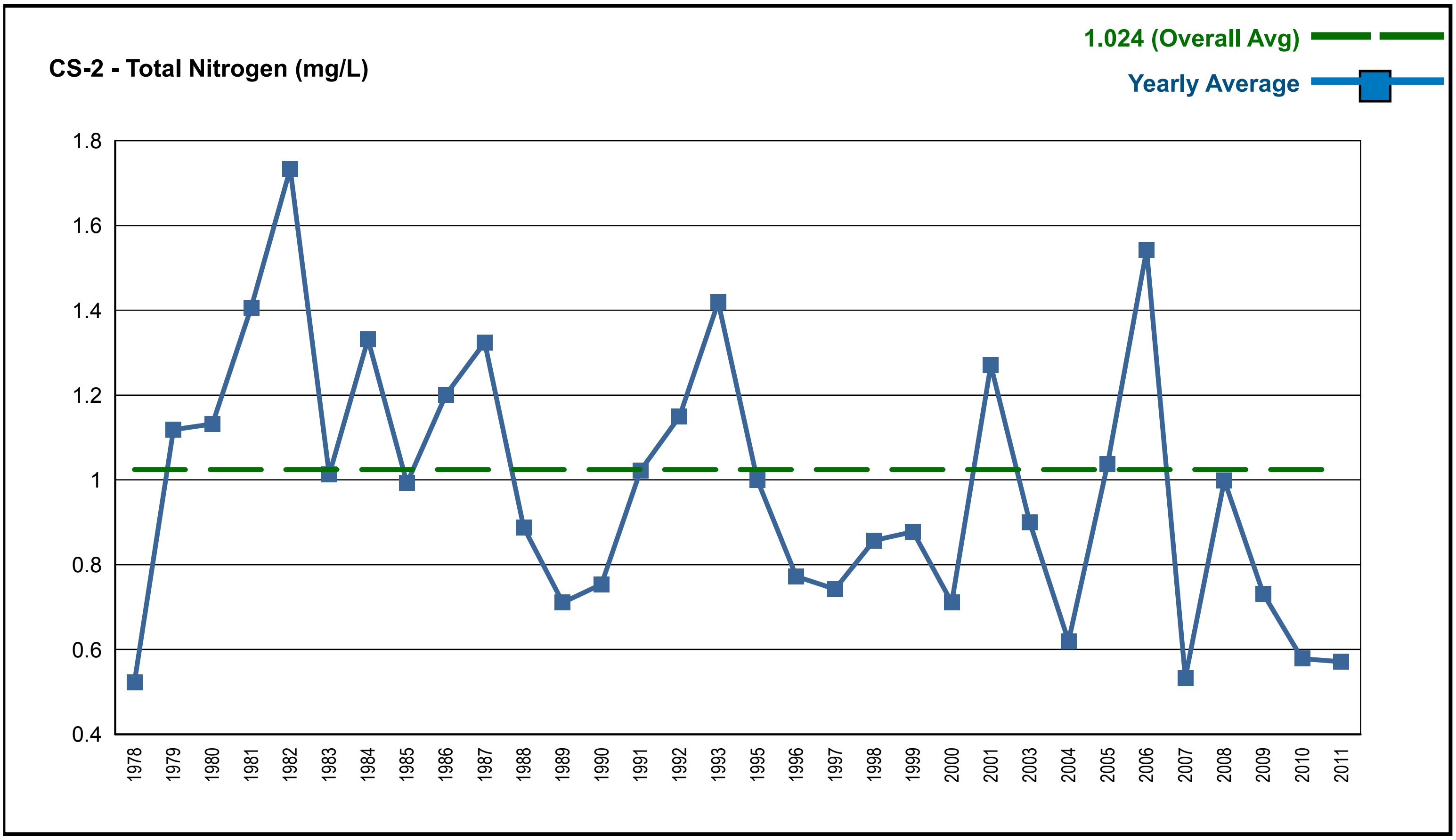

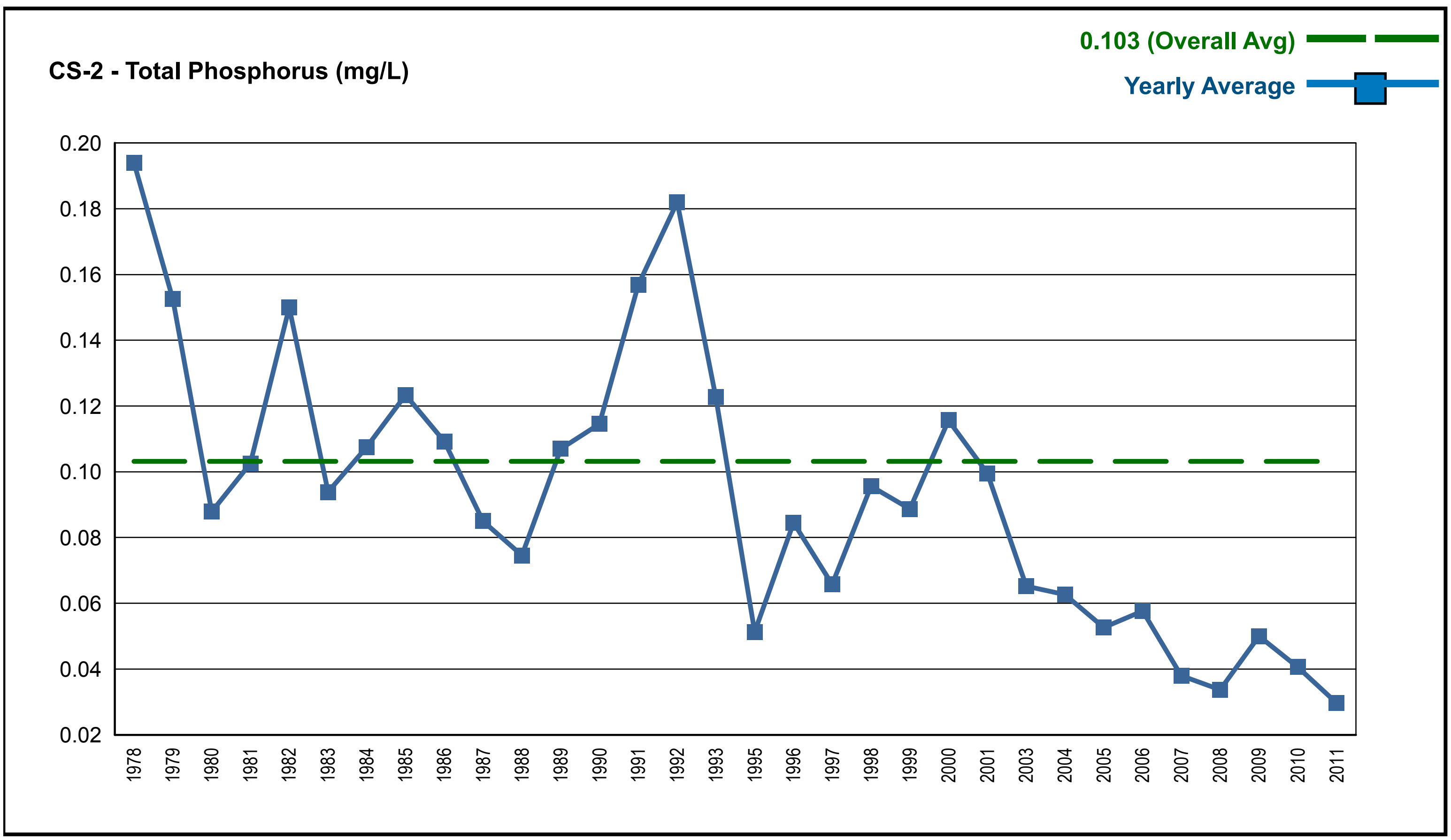

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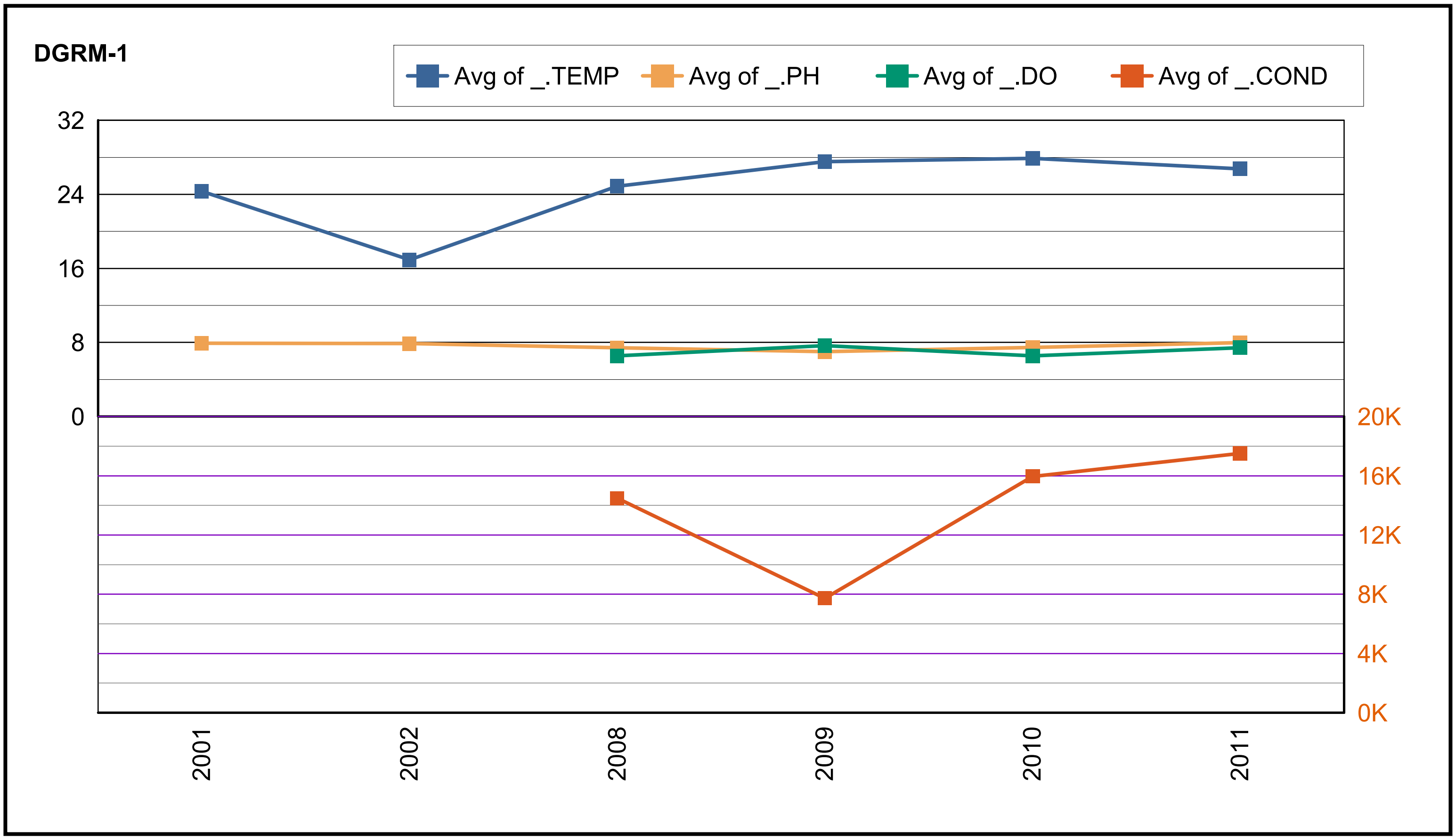

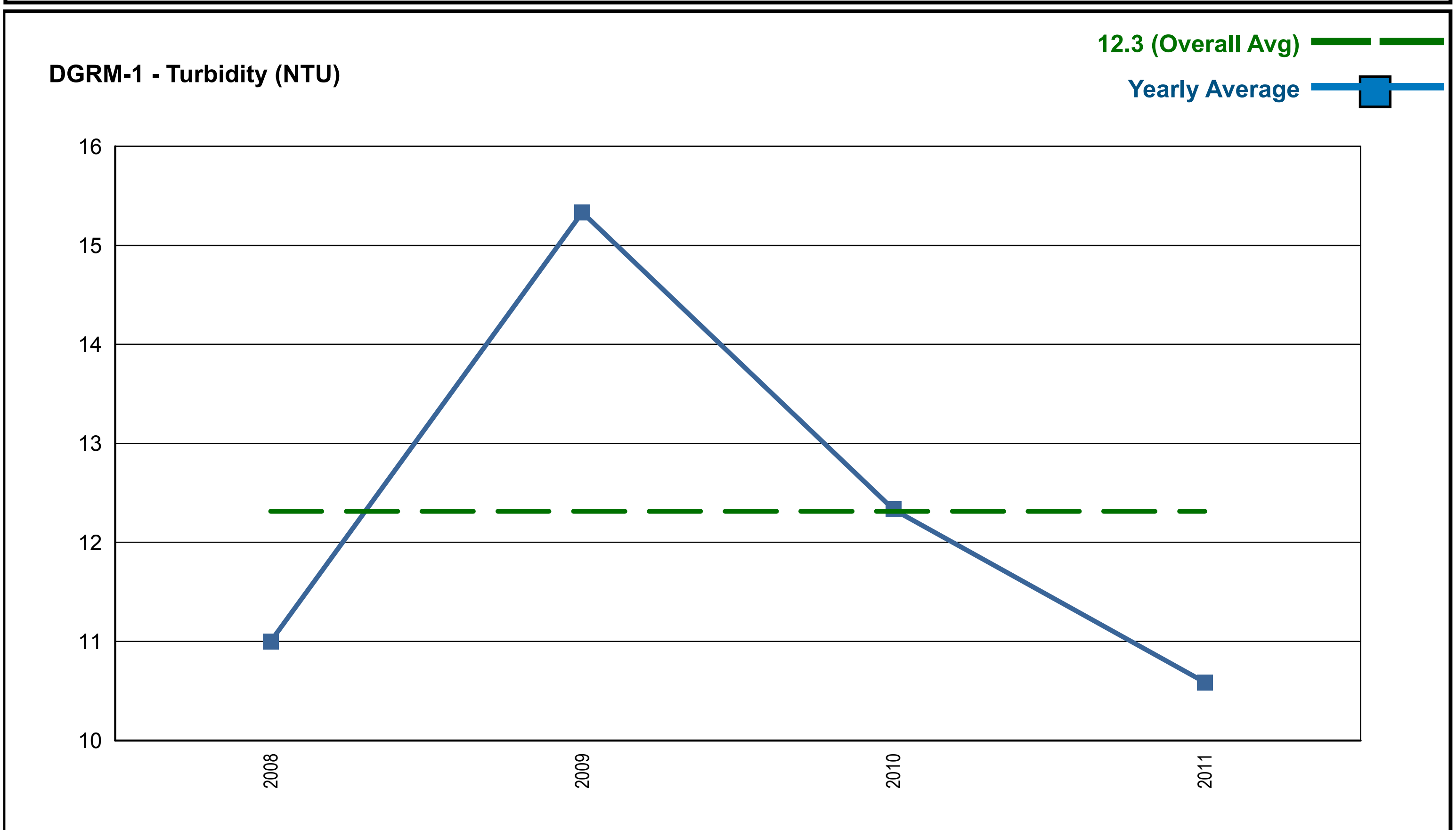

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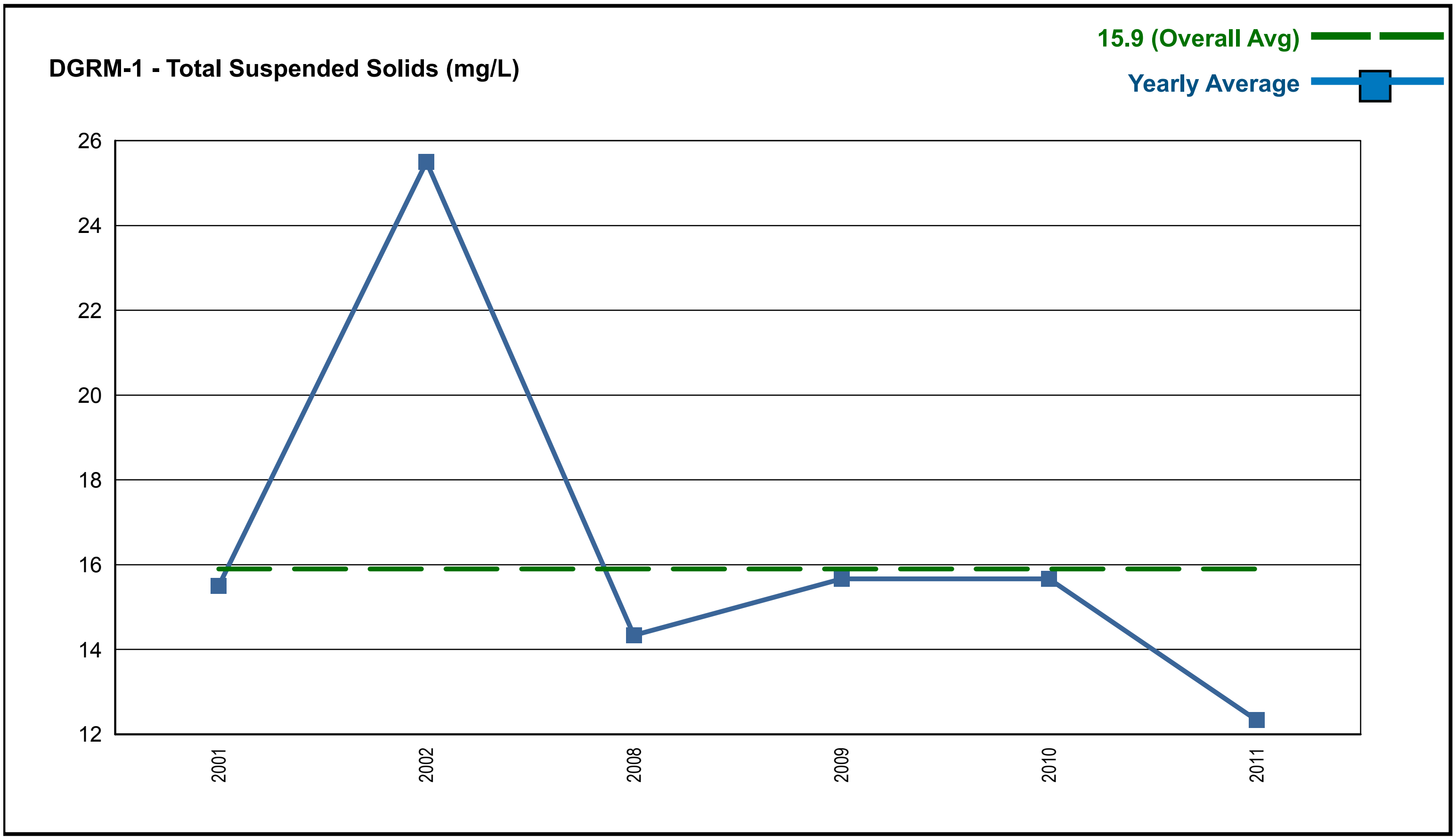

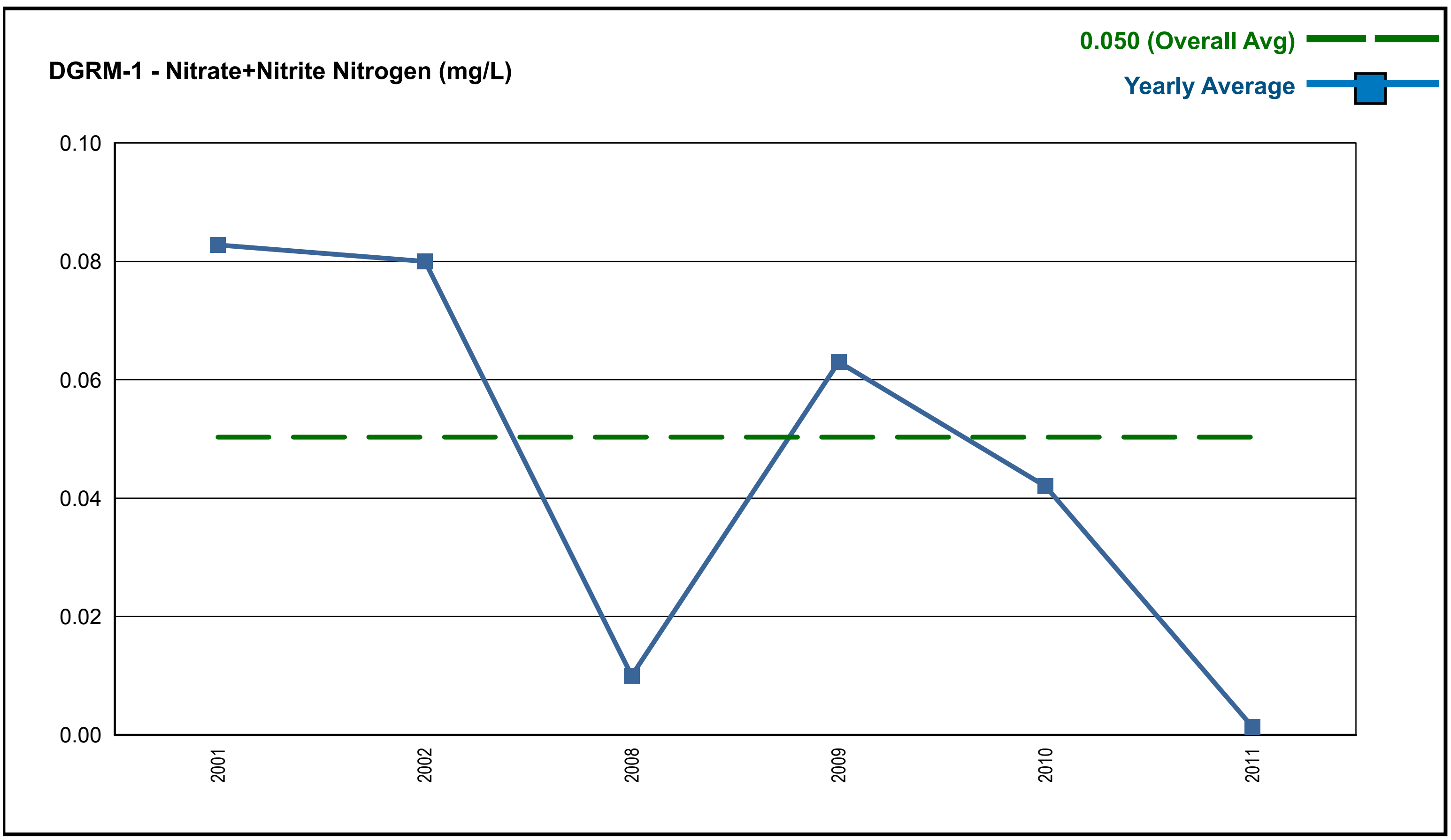

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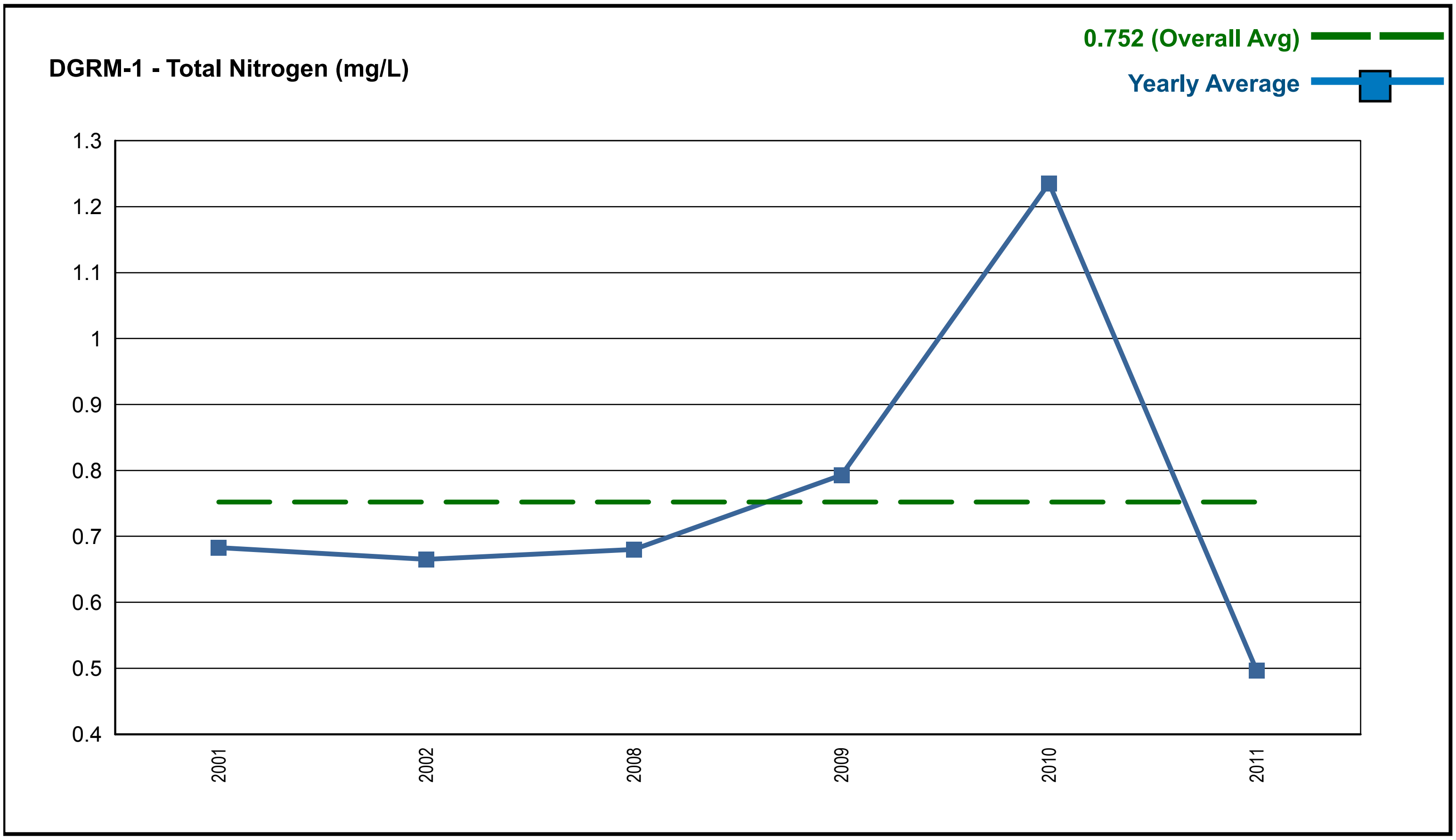
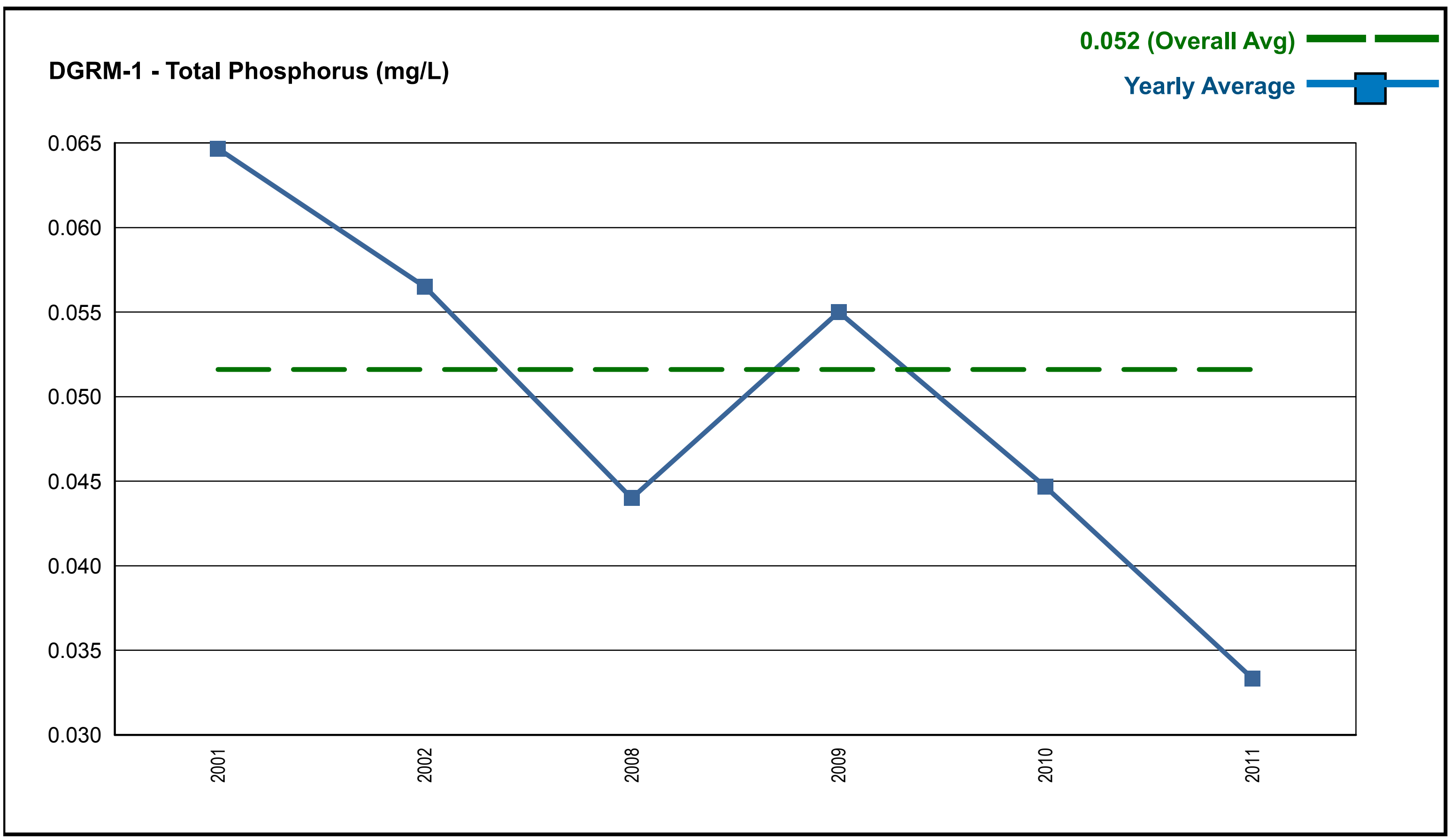
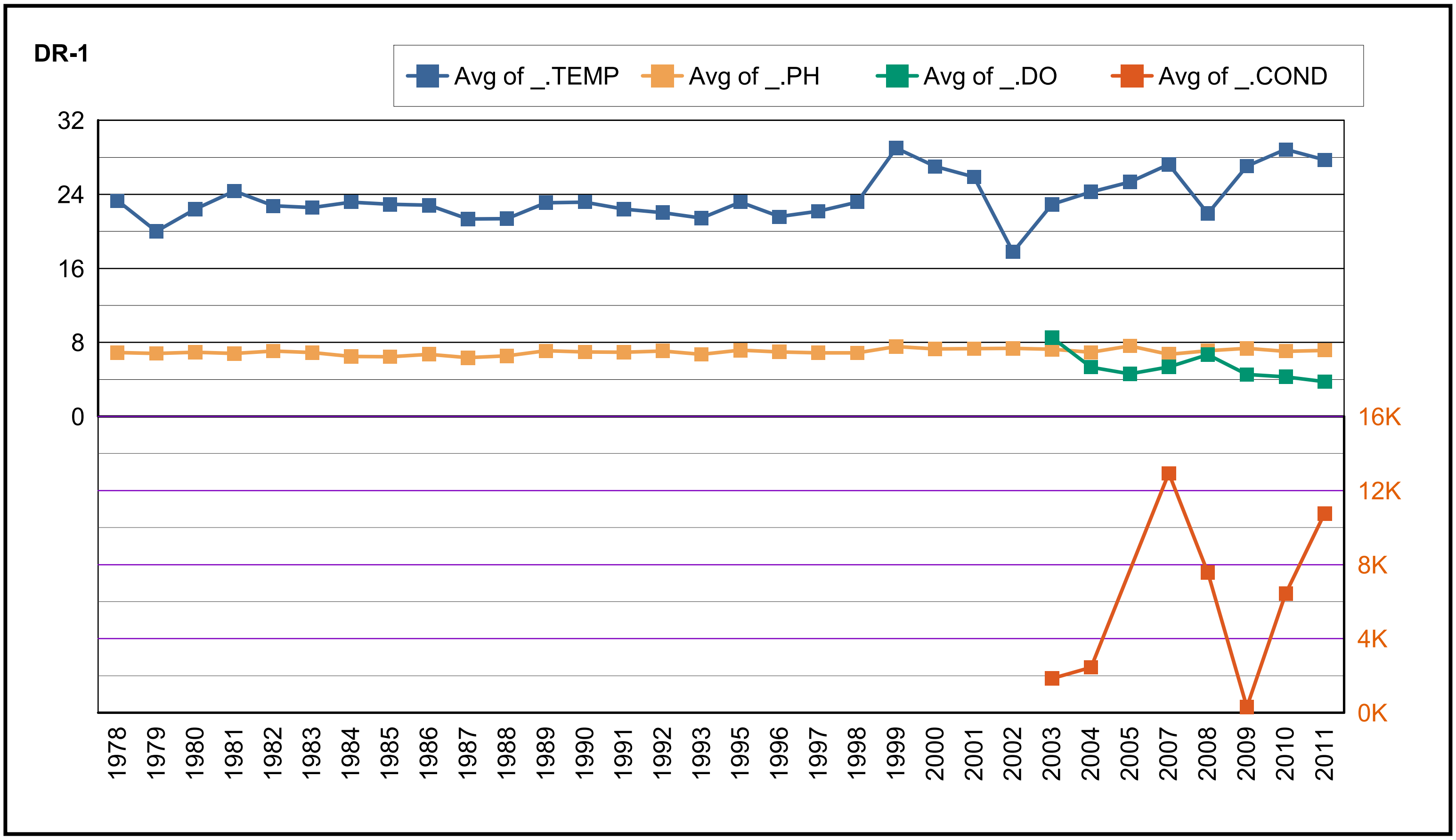
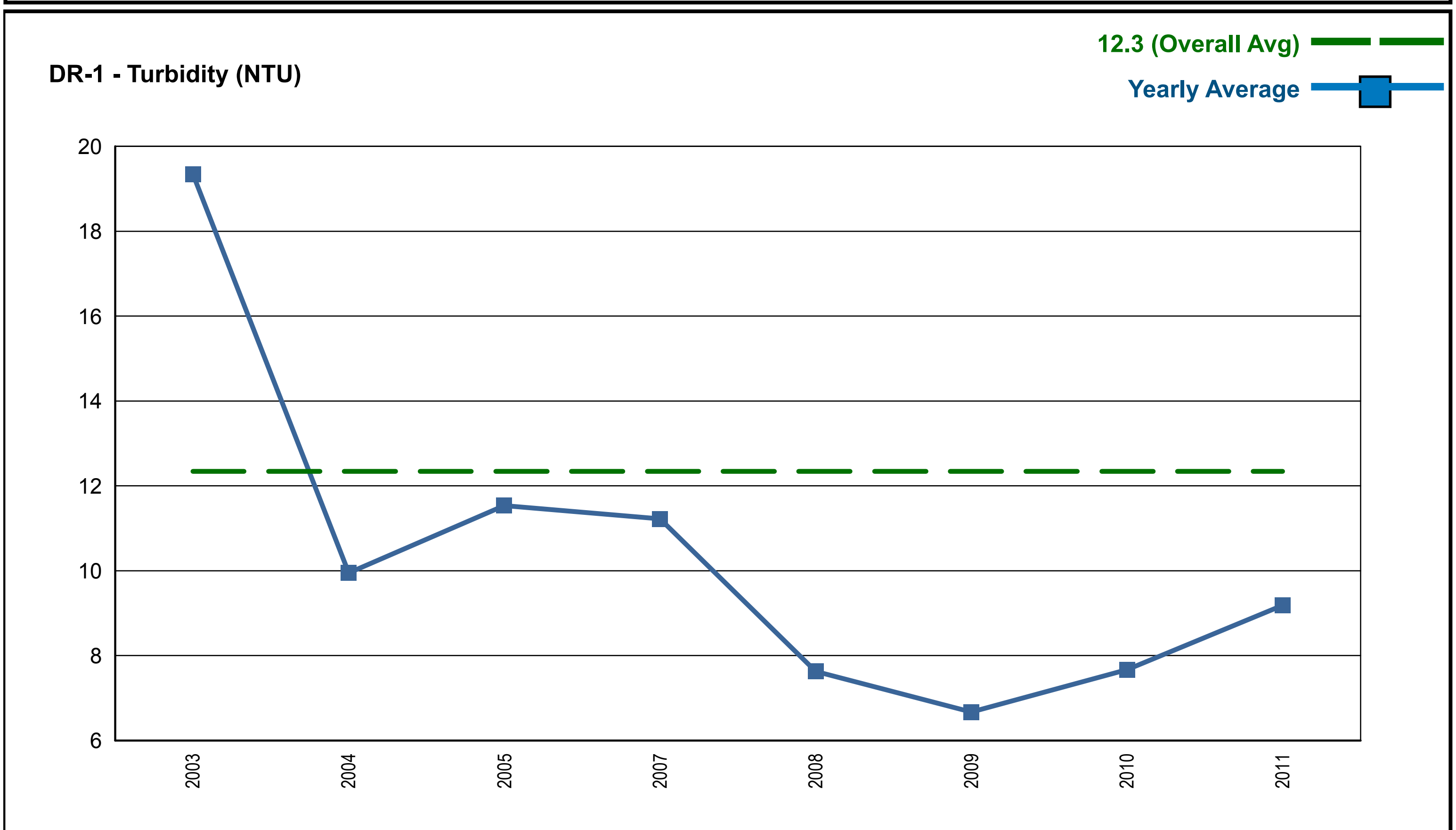


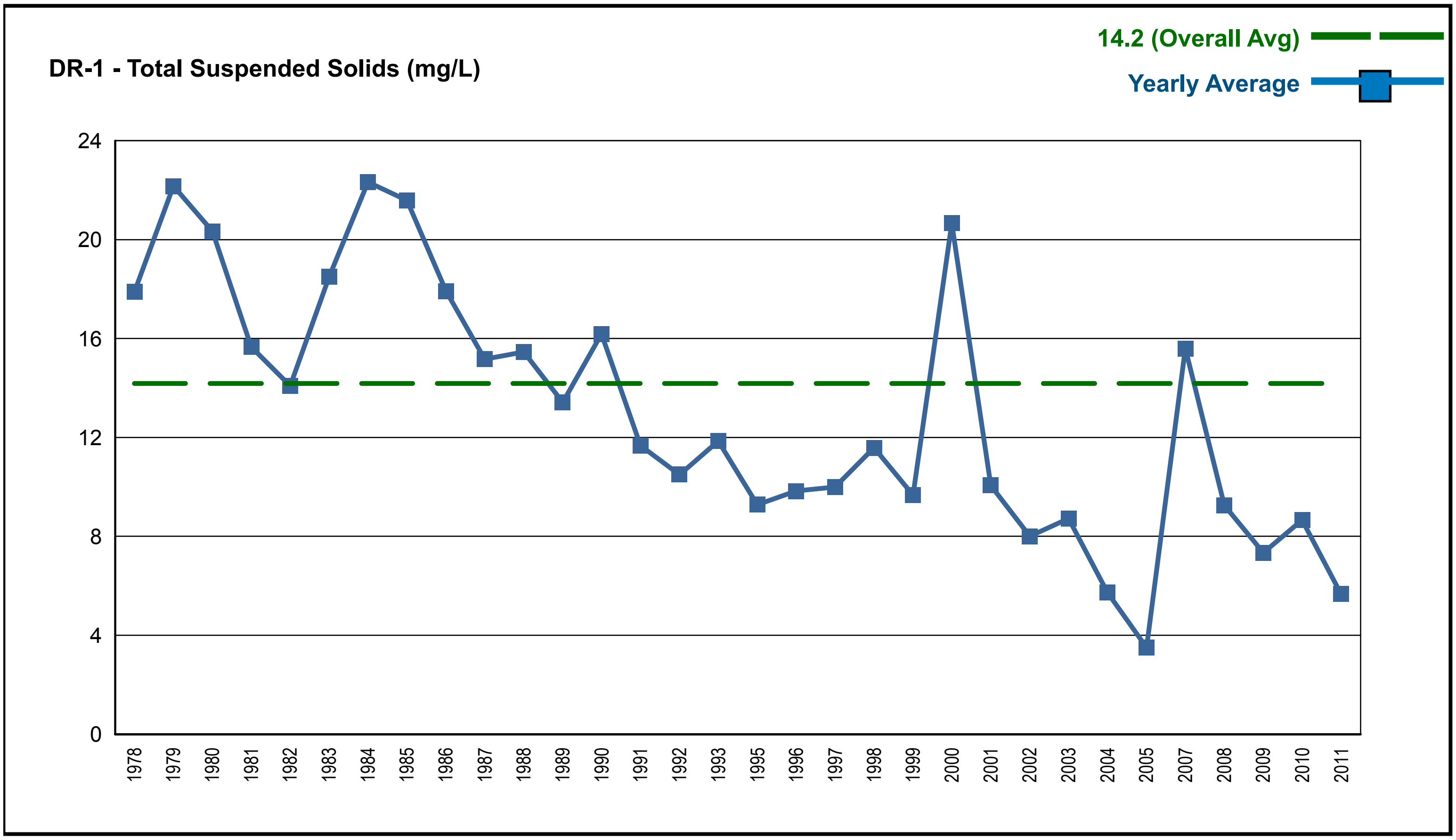


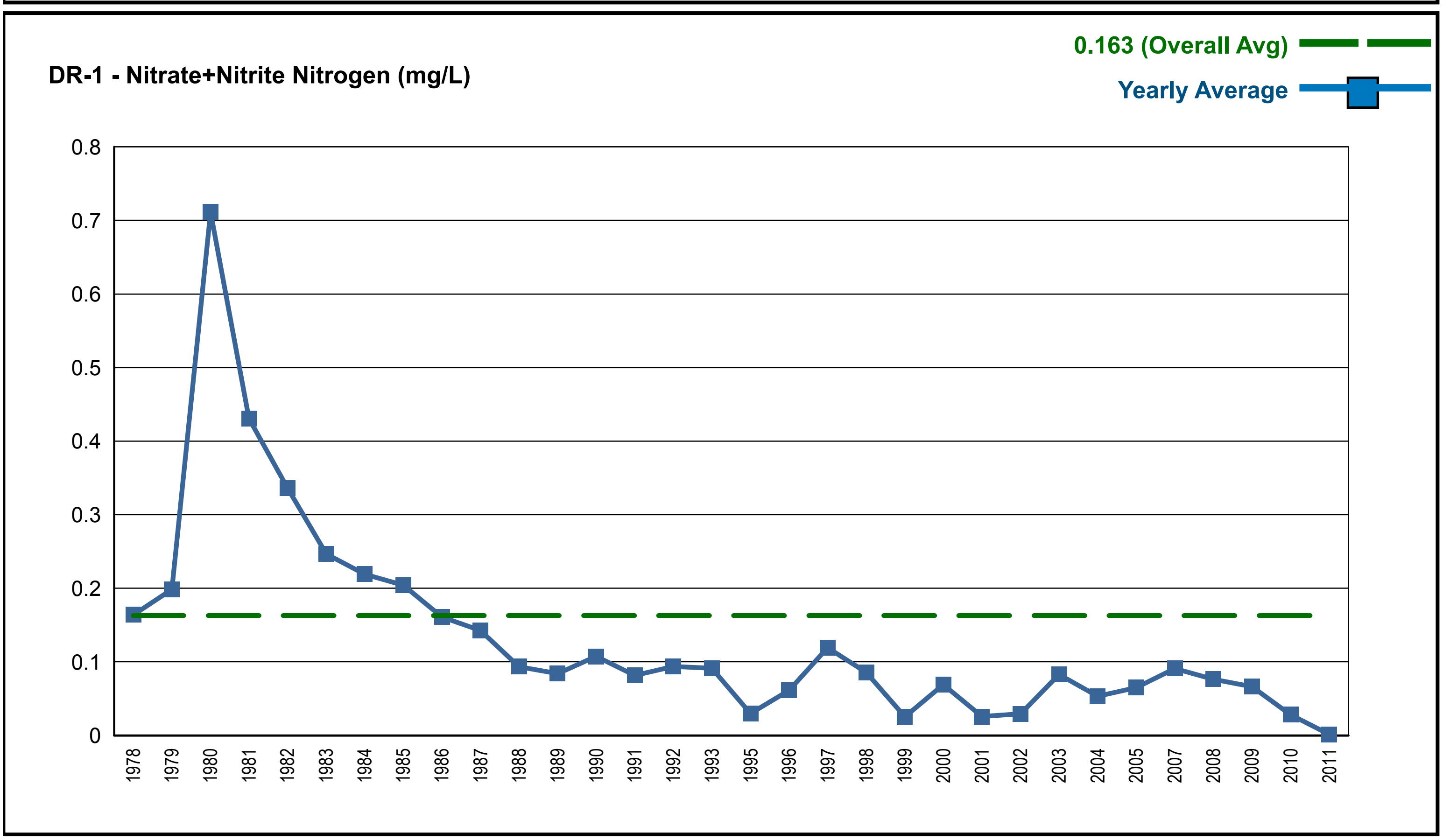
ADEM Ambient Trend Stations - Sampled 1977 - 2012



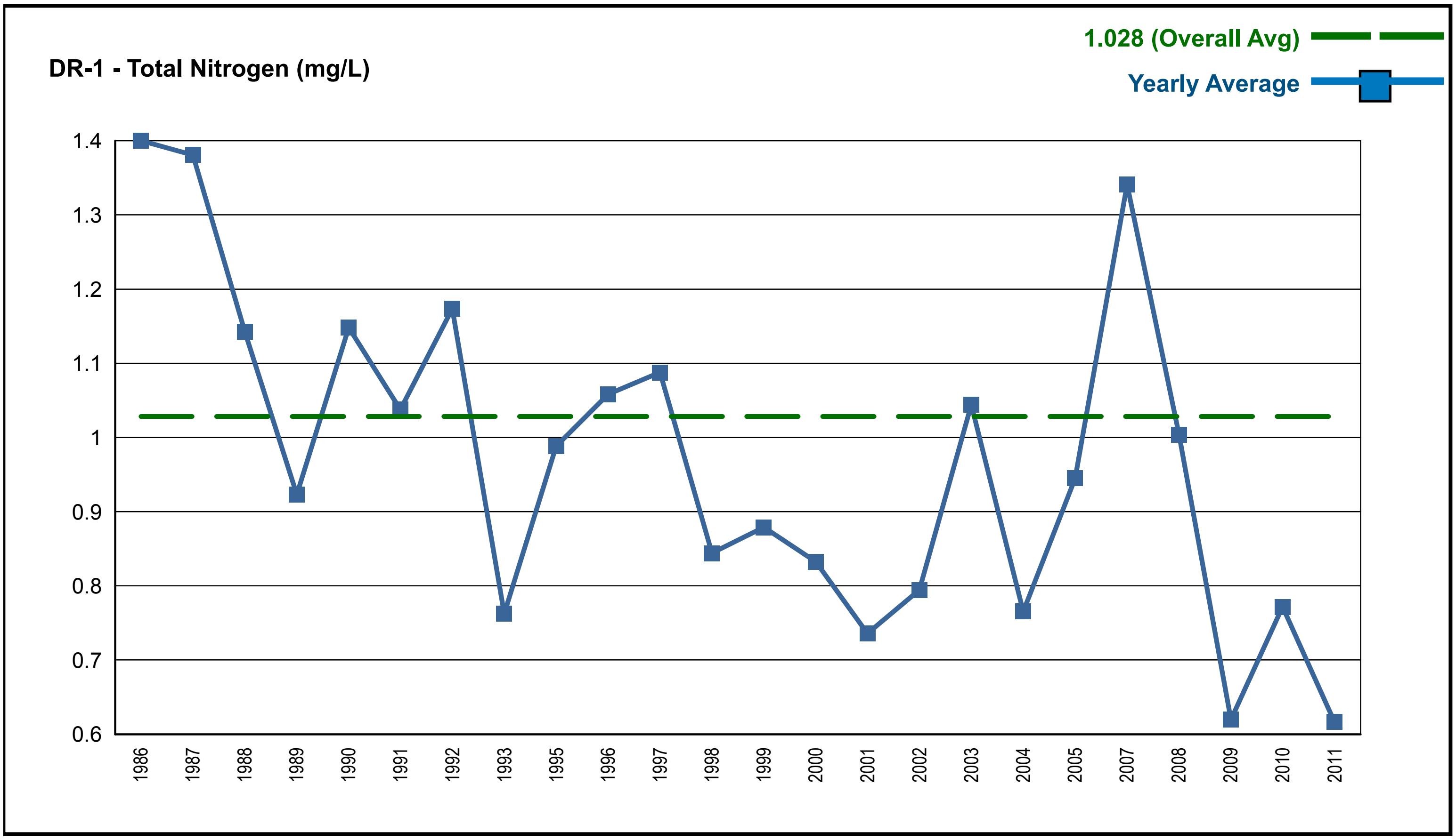


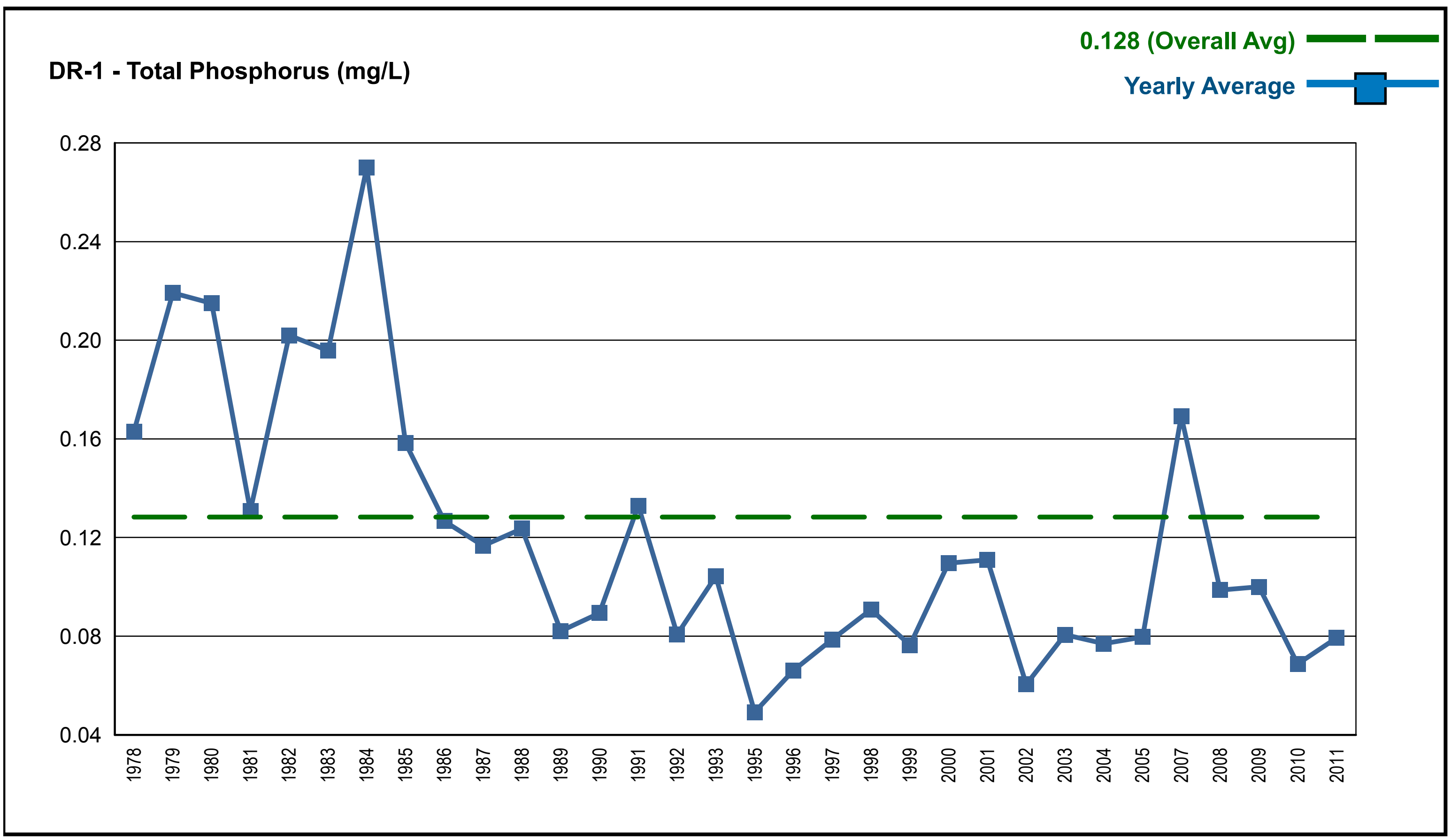
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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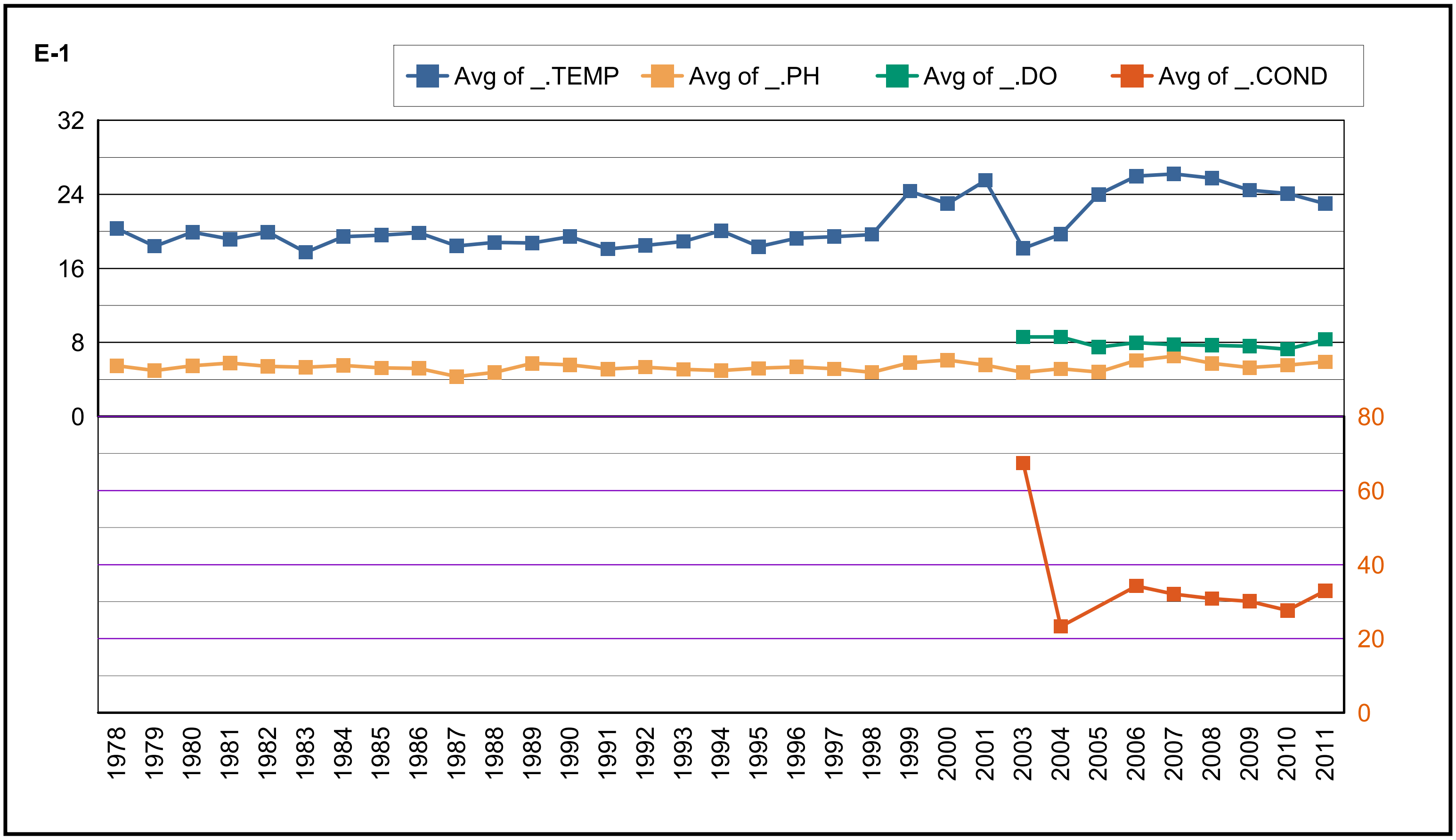

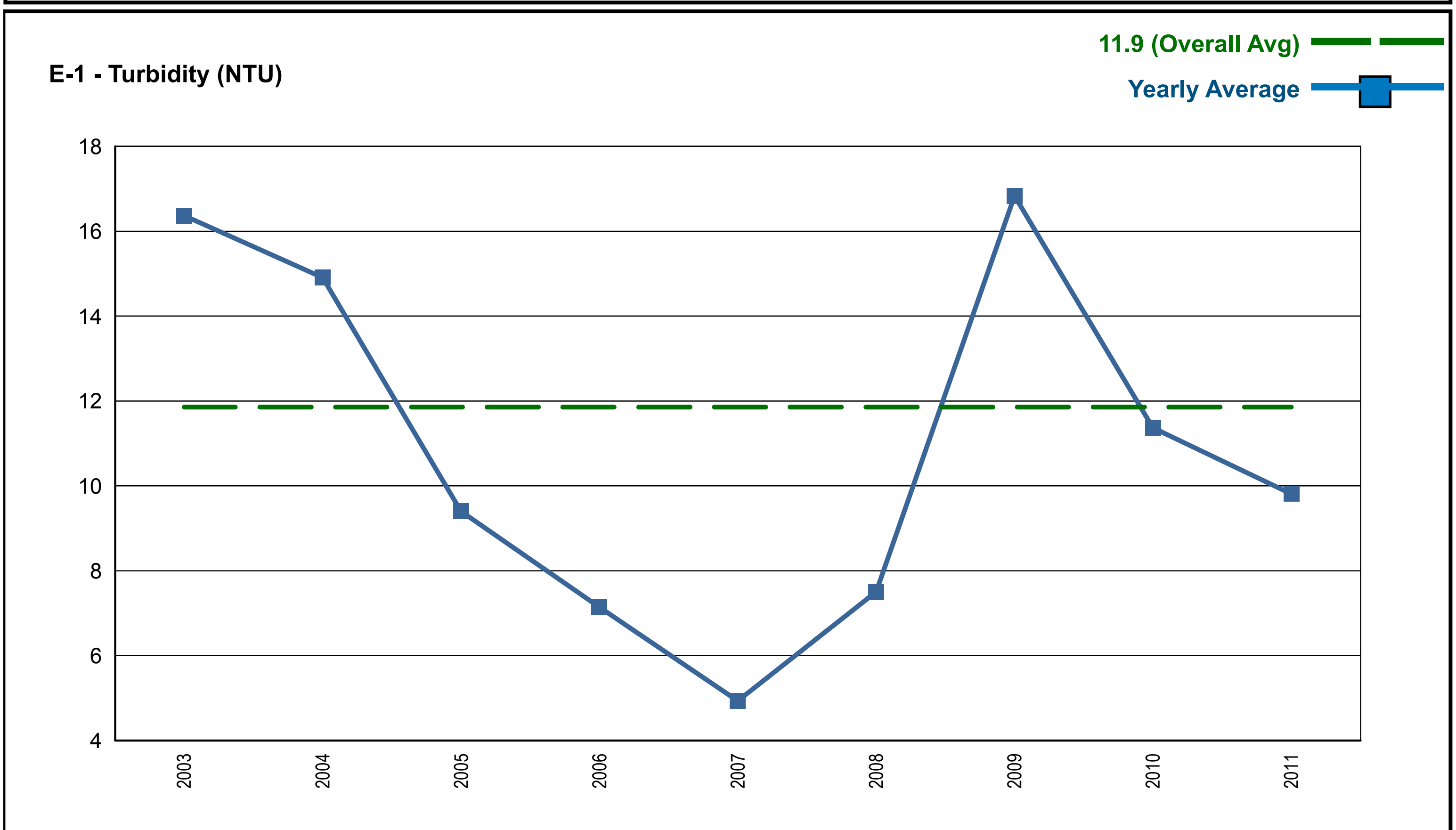

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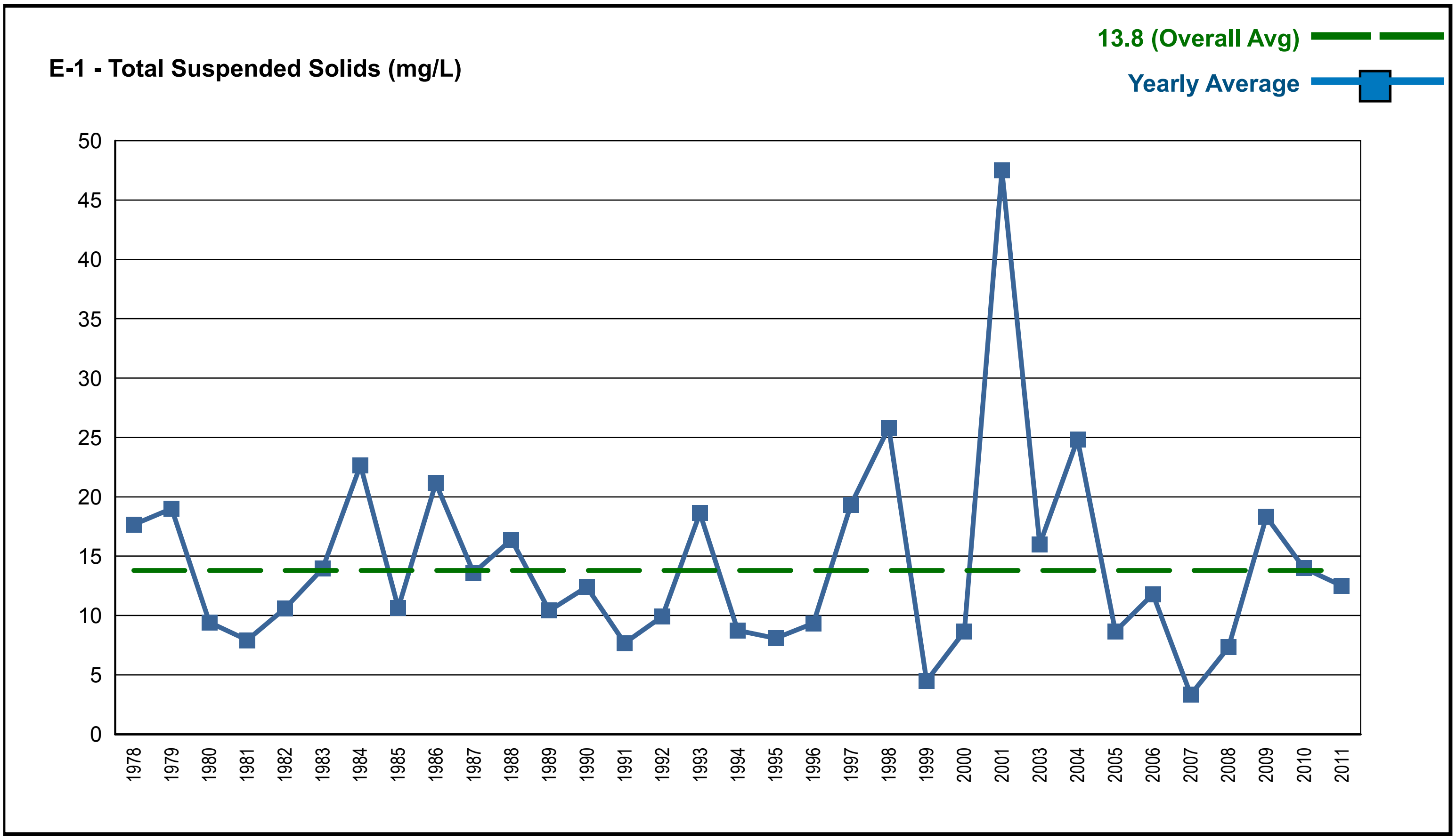

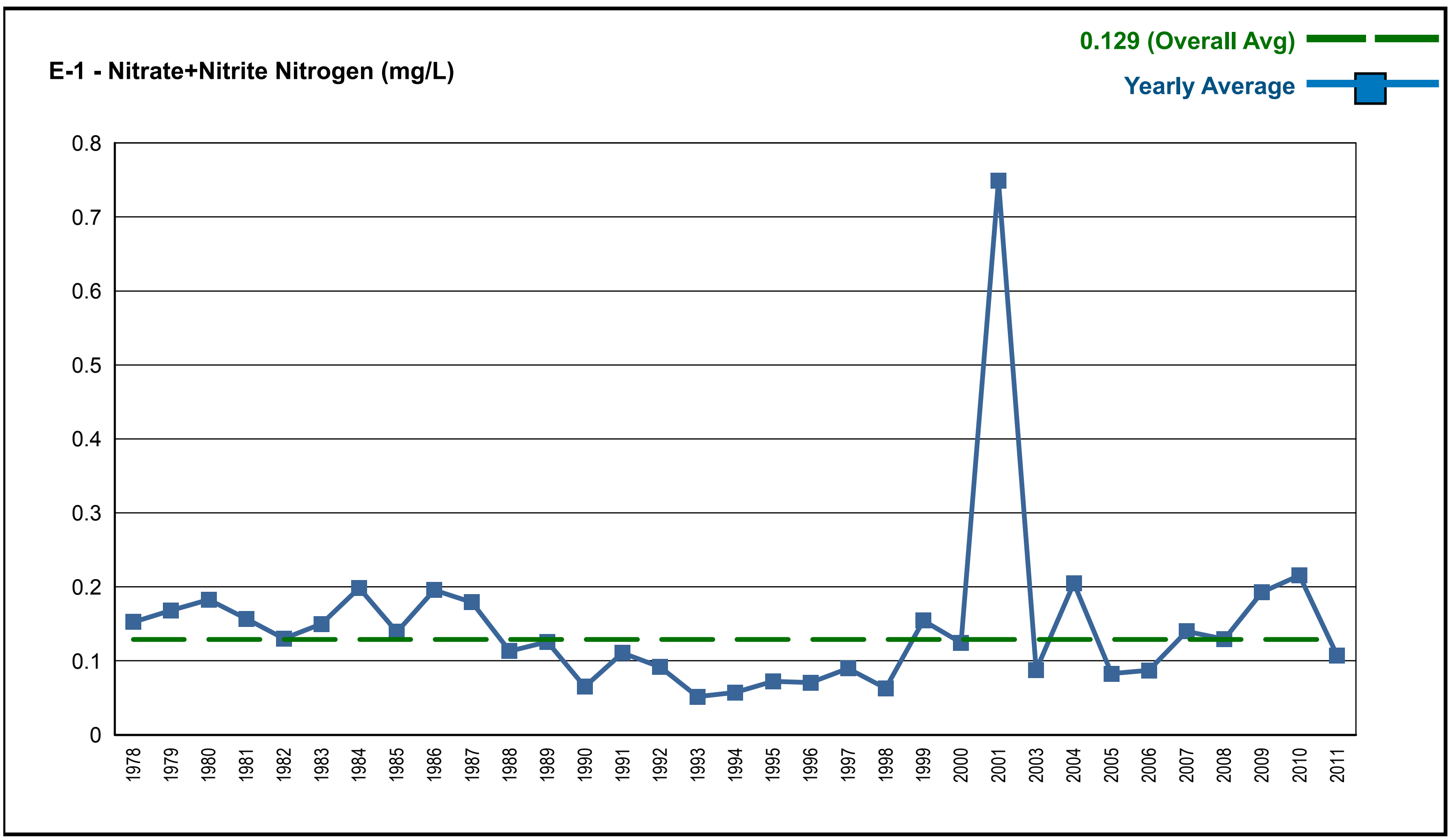

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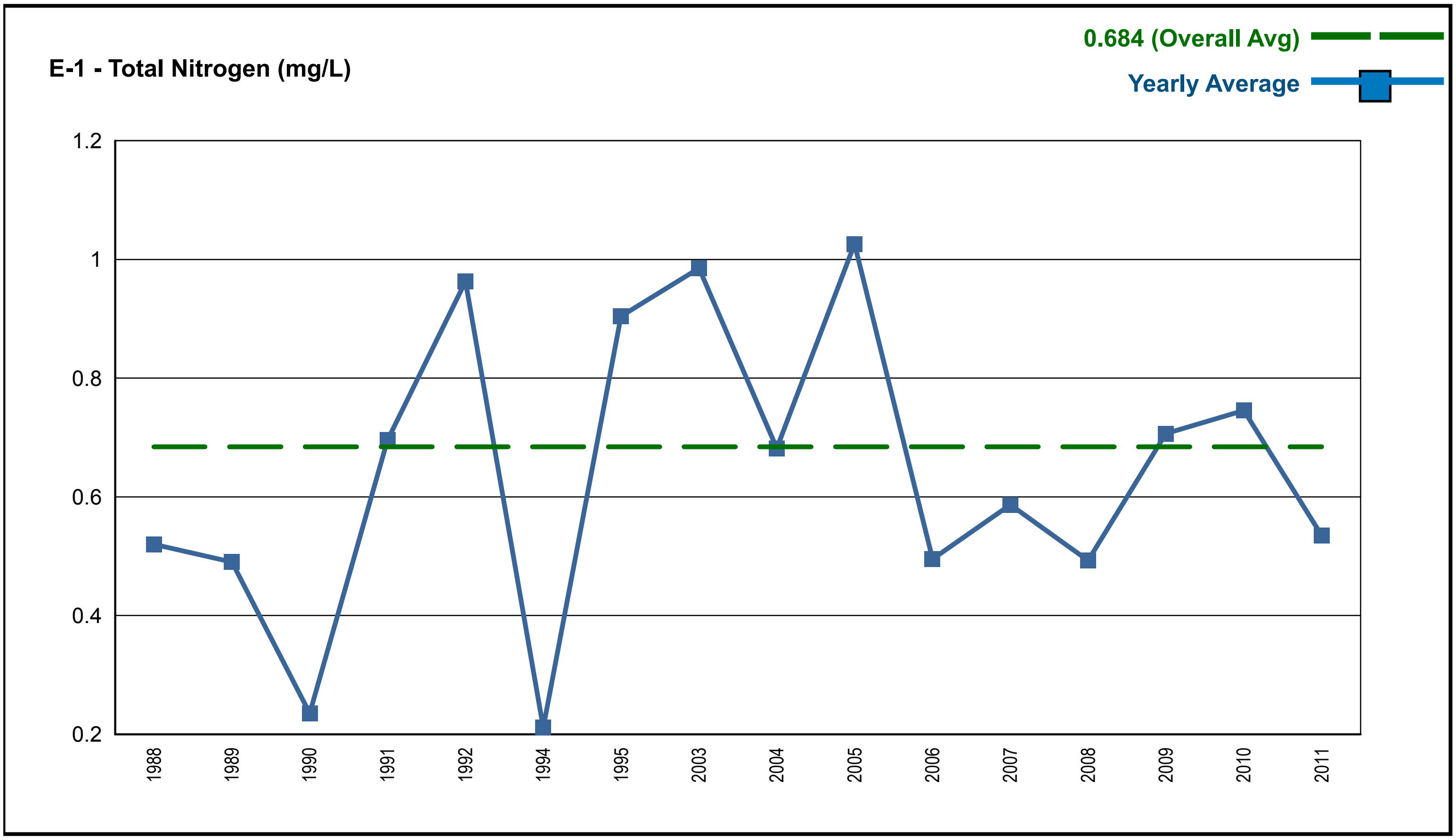

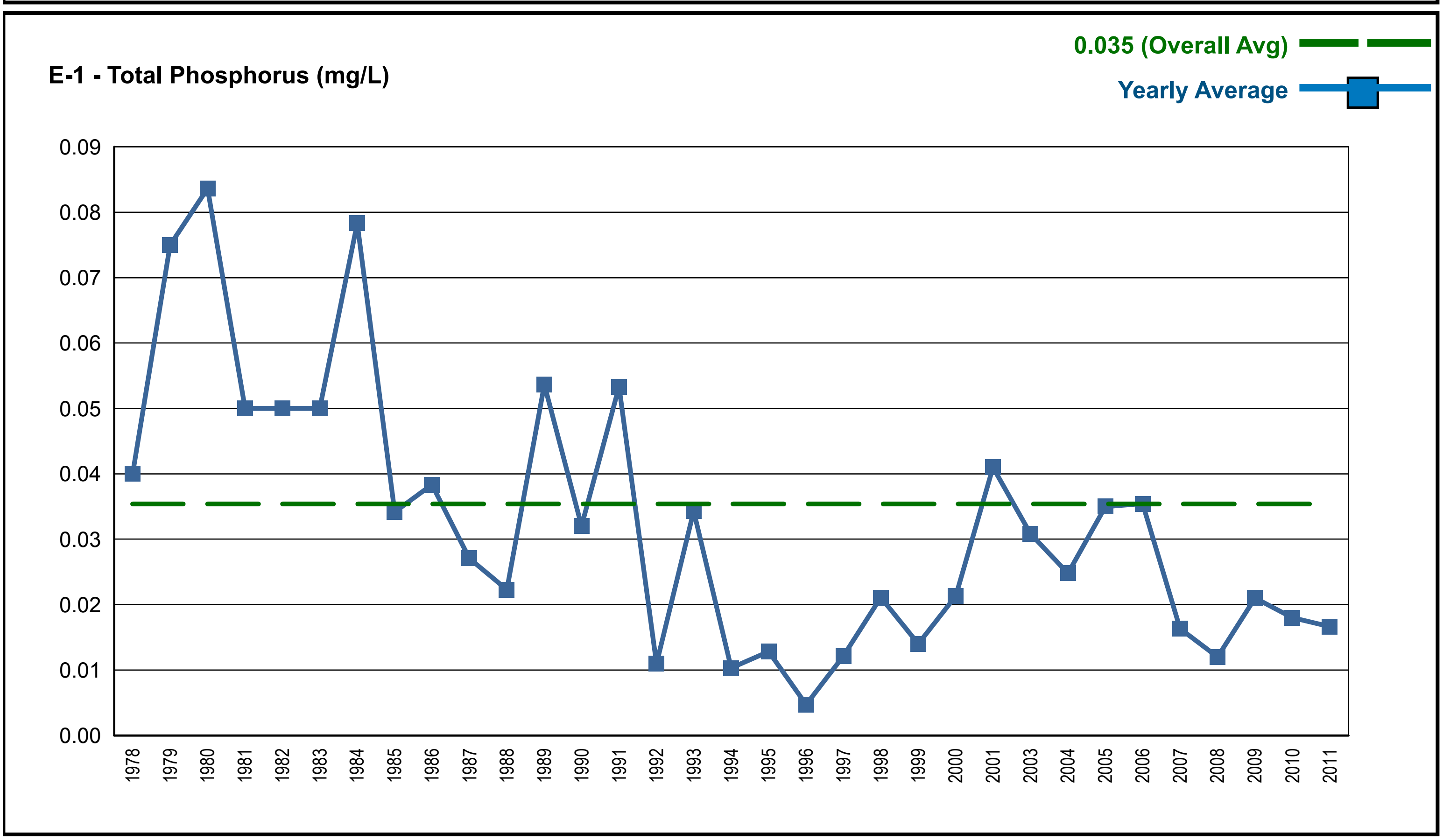

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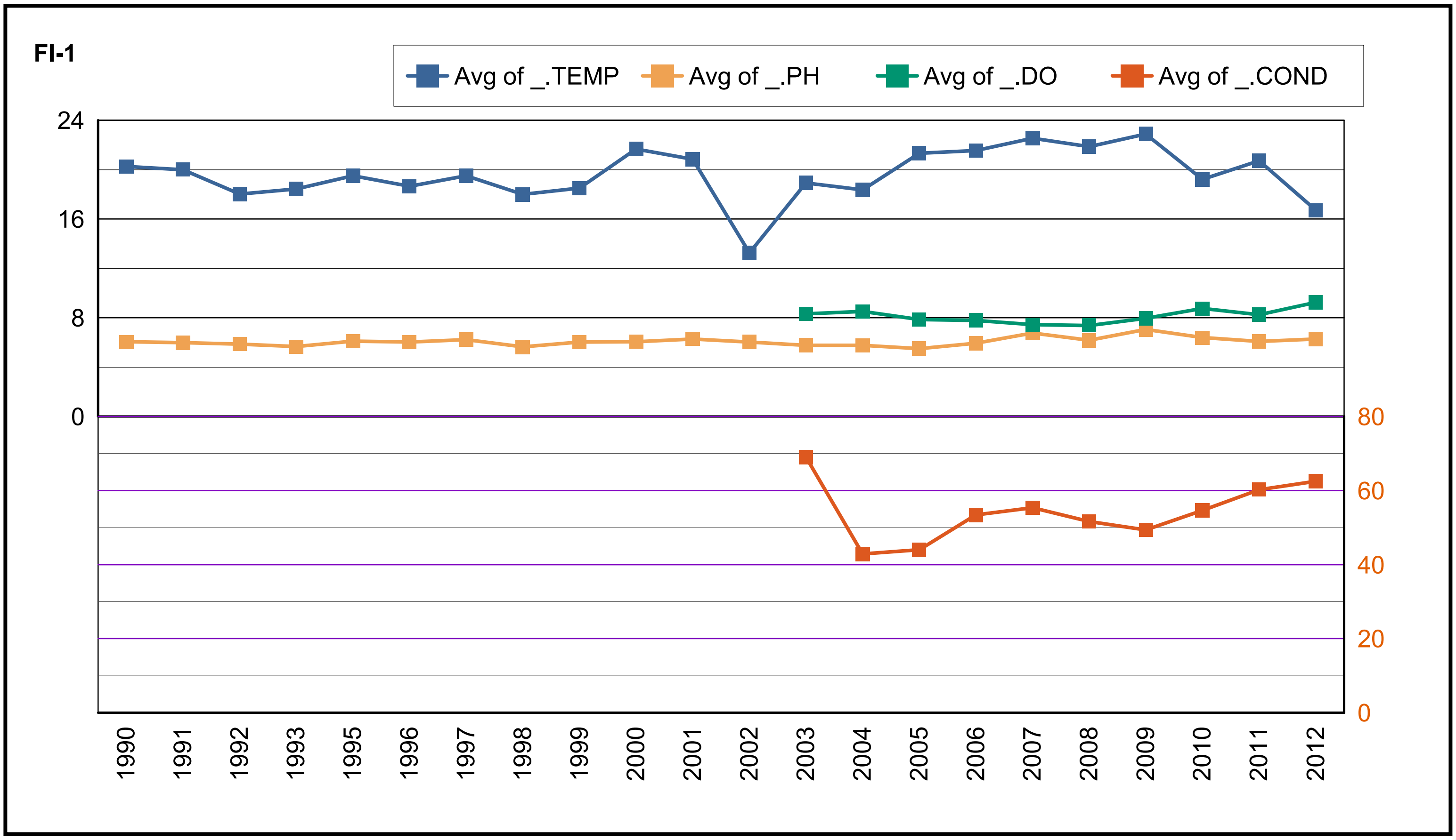

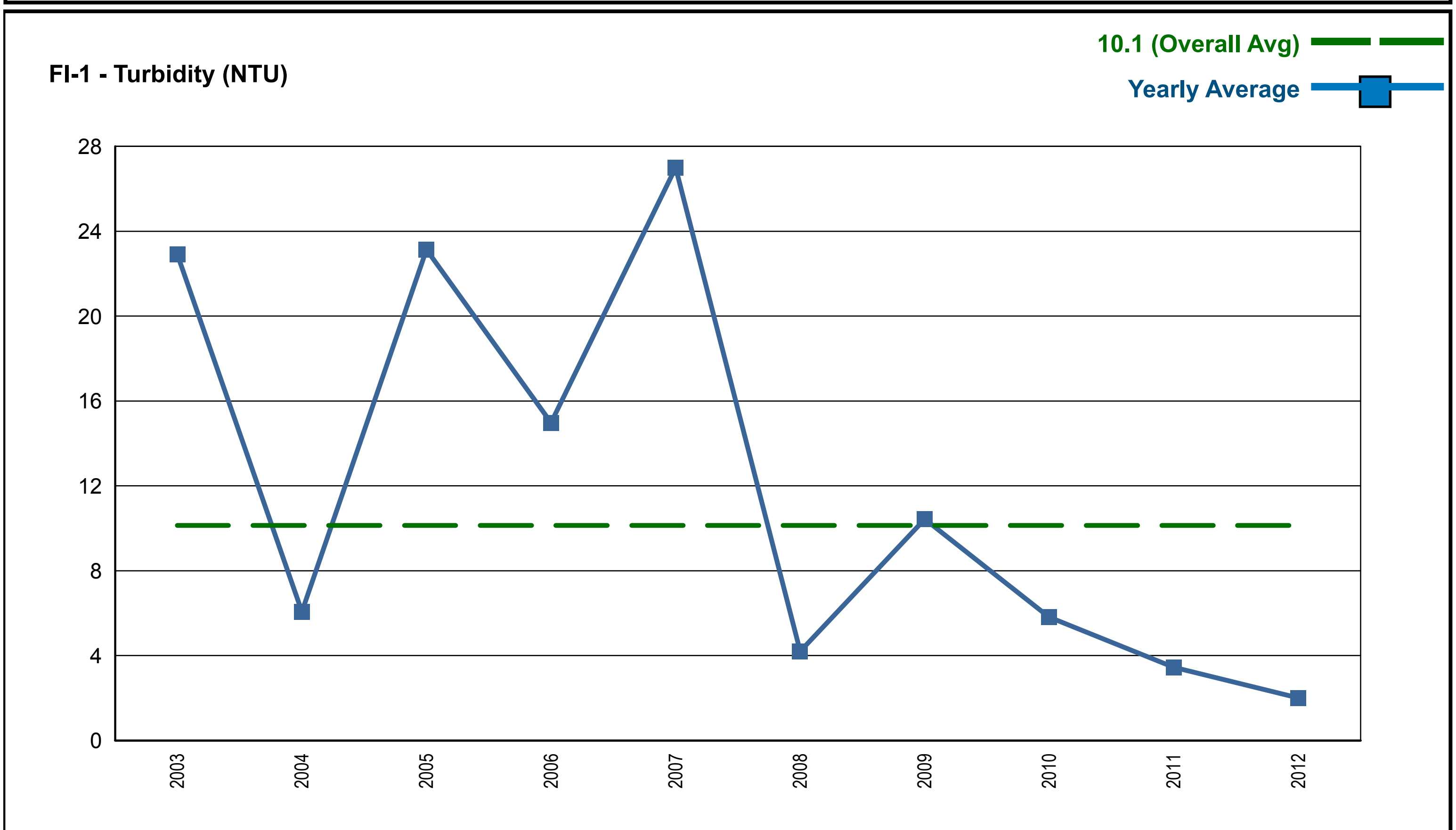

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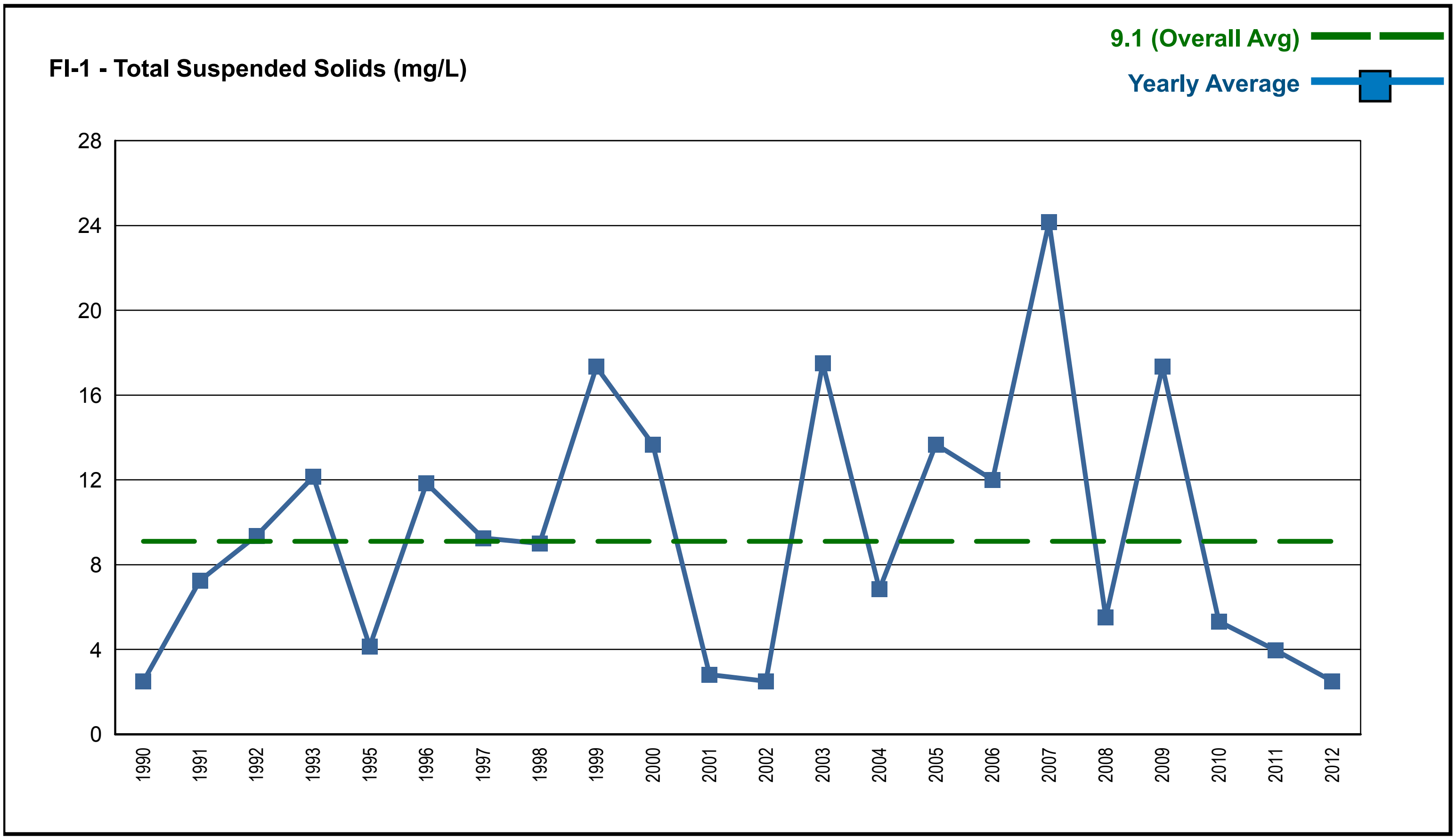

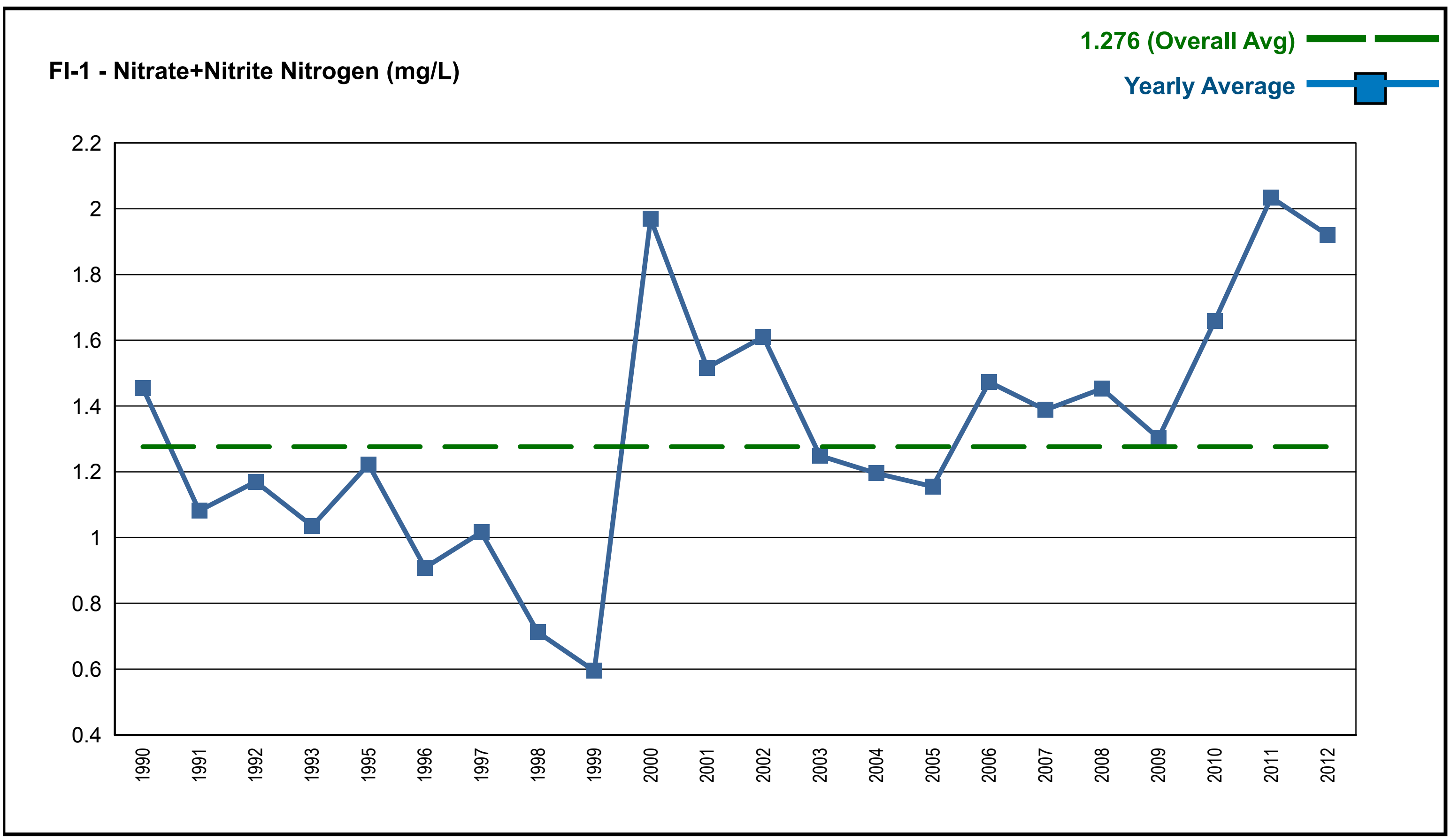

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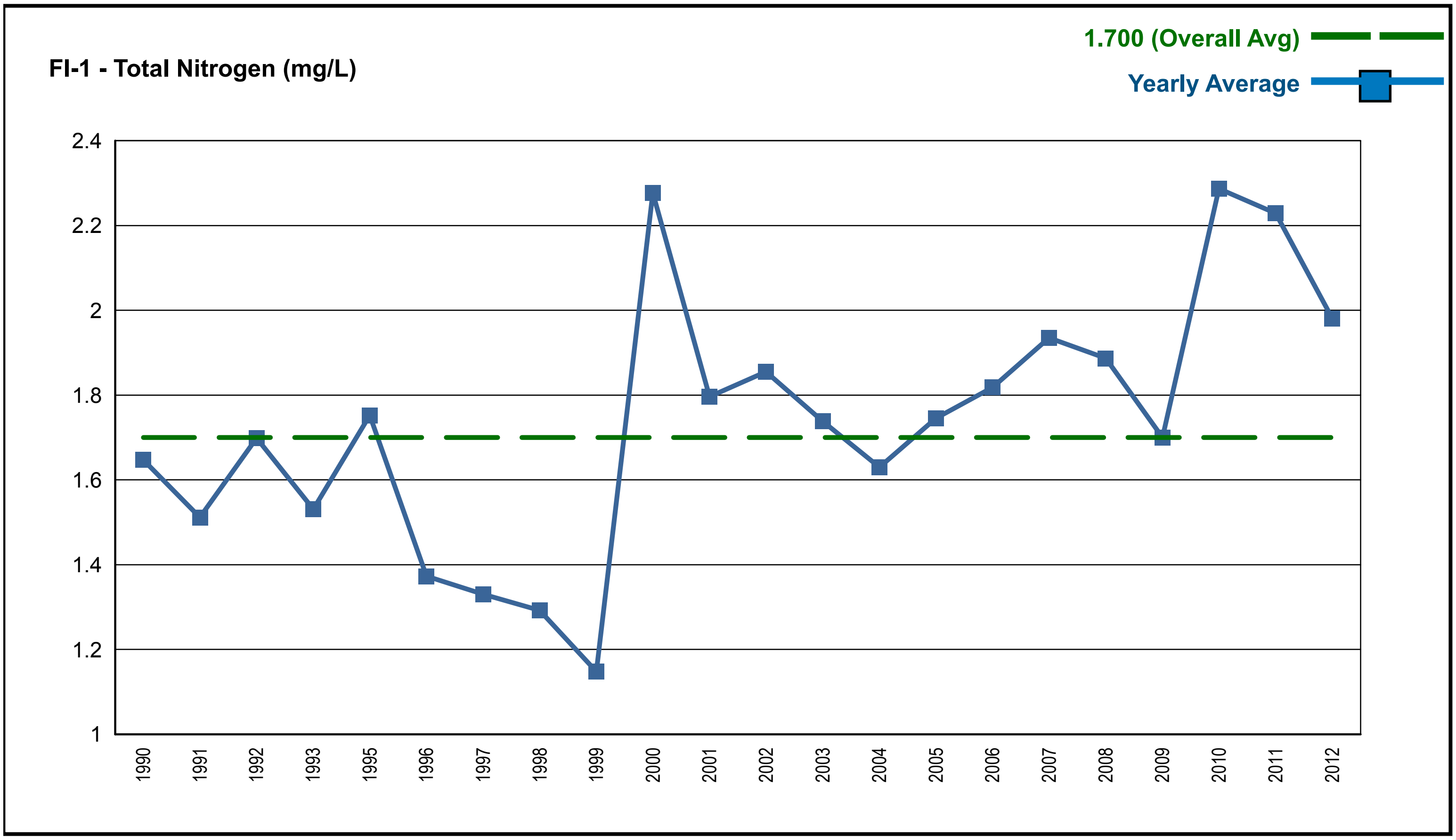

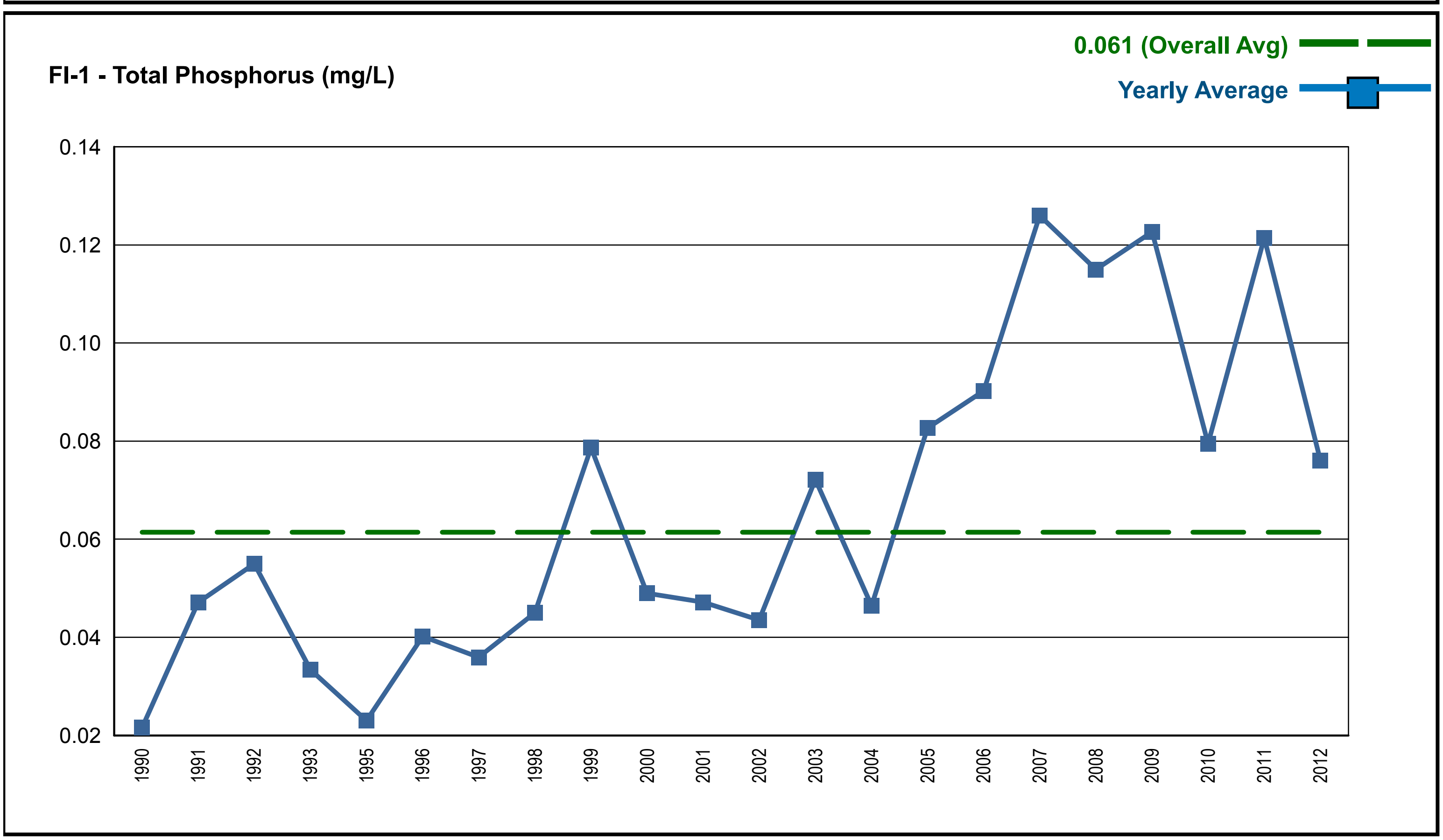

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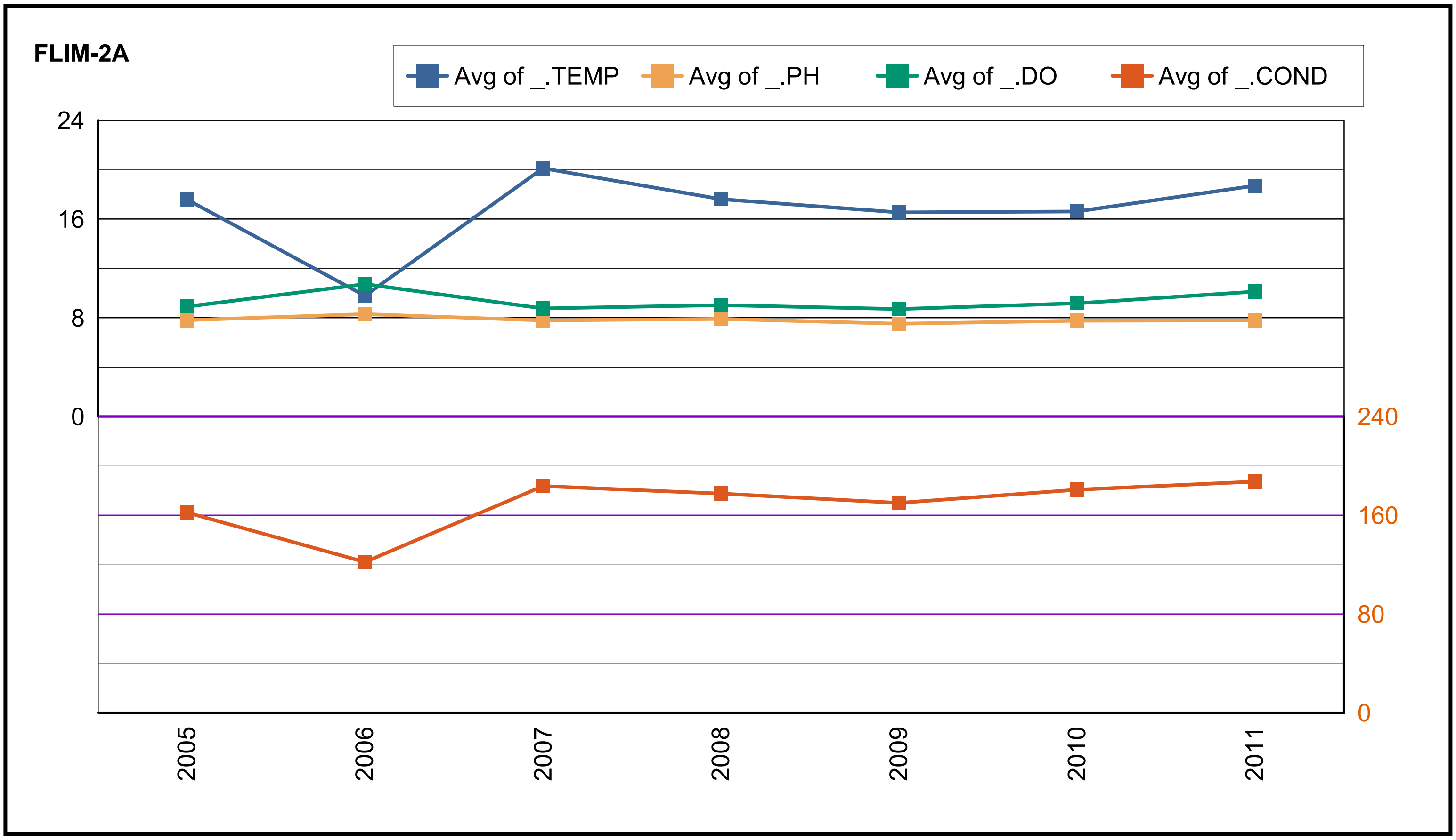
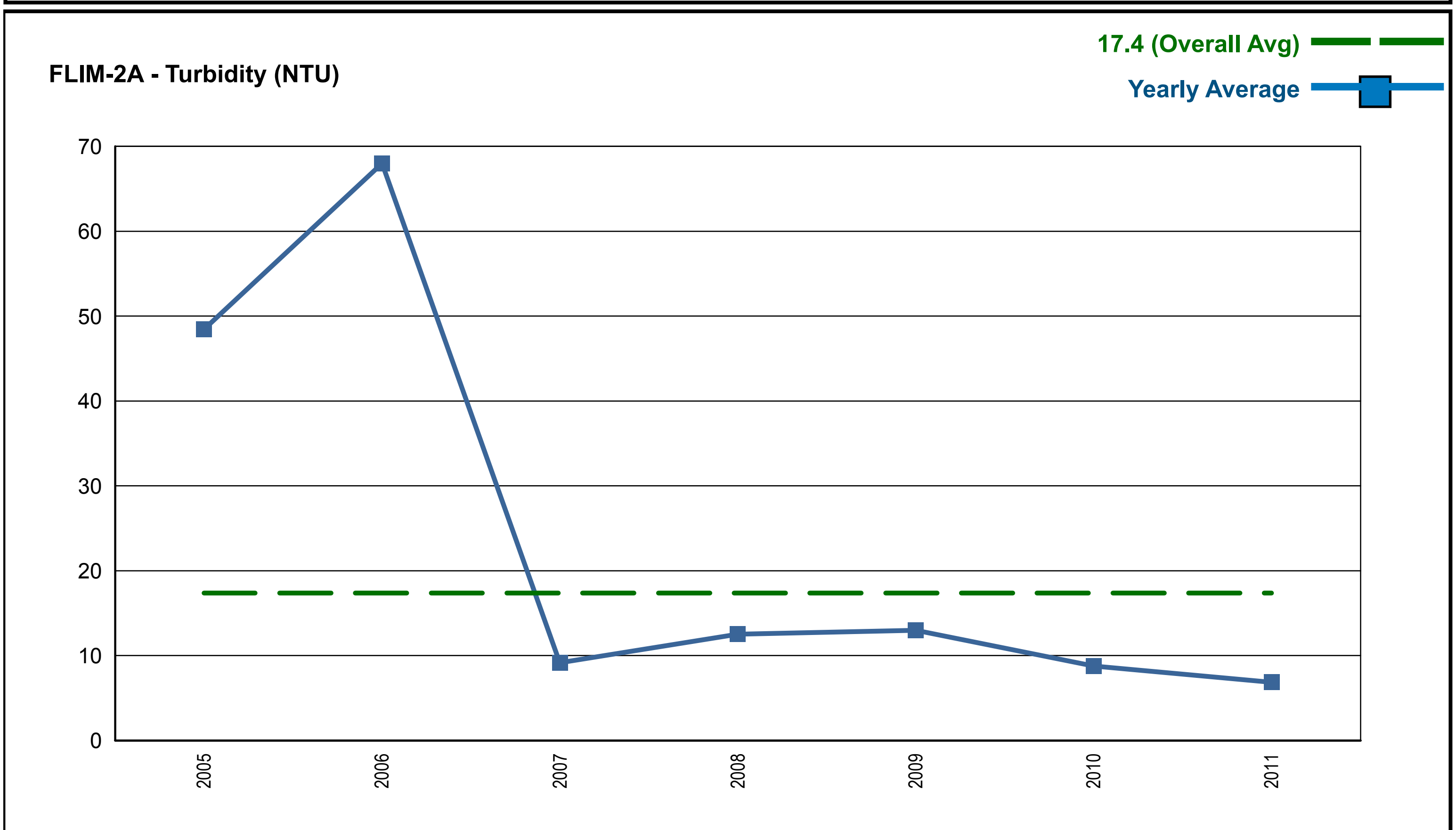
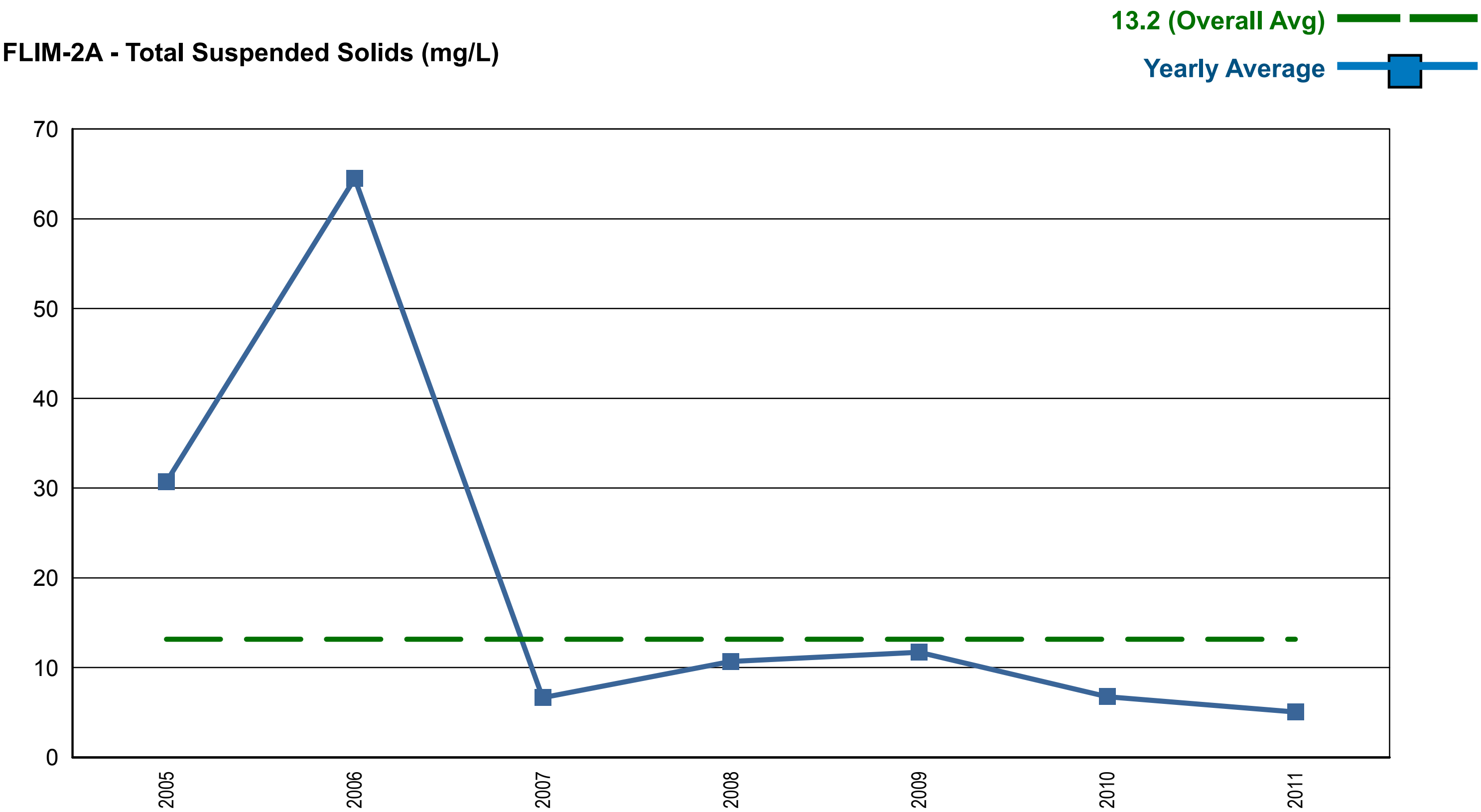


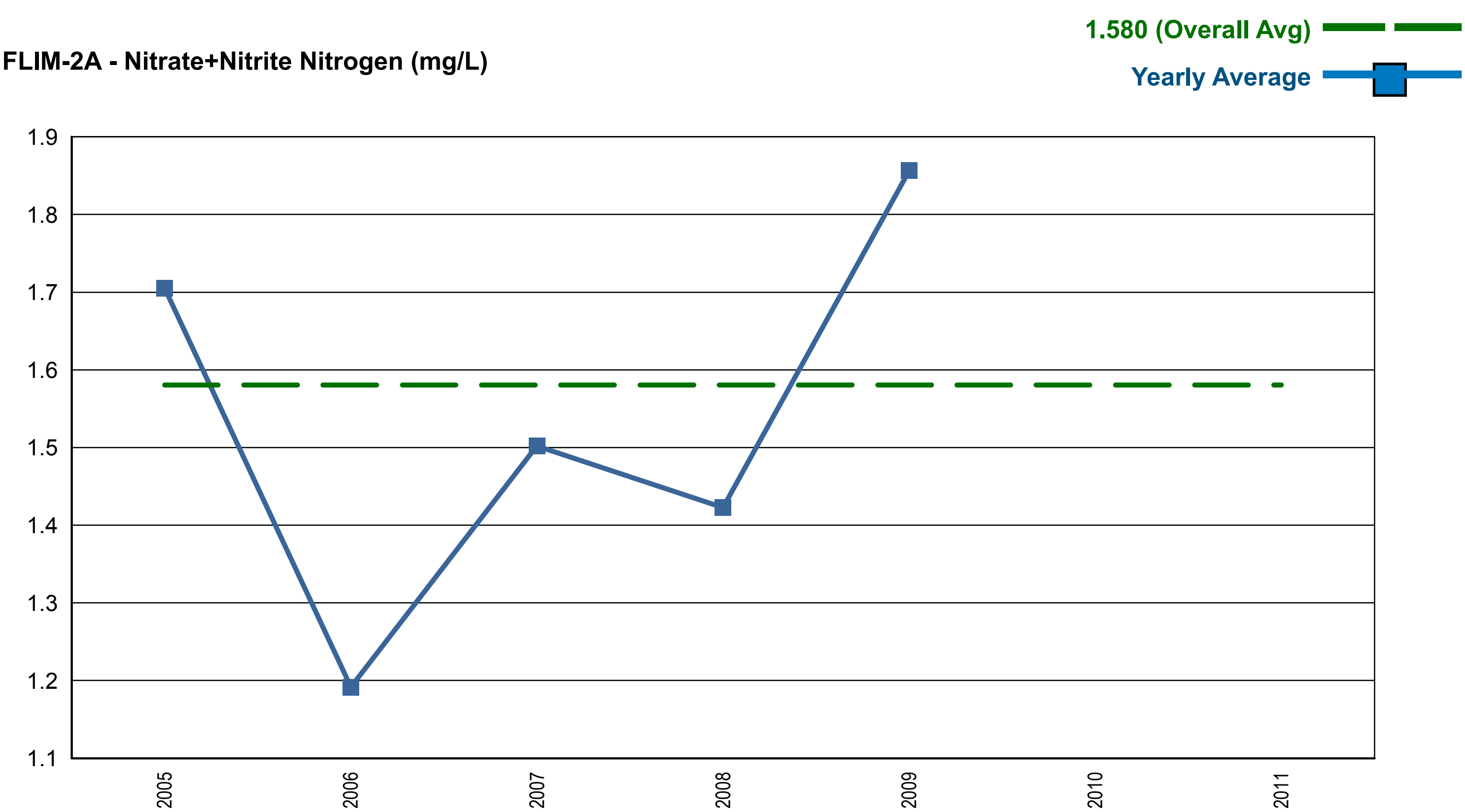


ADEM Ambient Trend Stations - Sampled 1977 - 2012

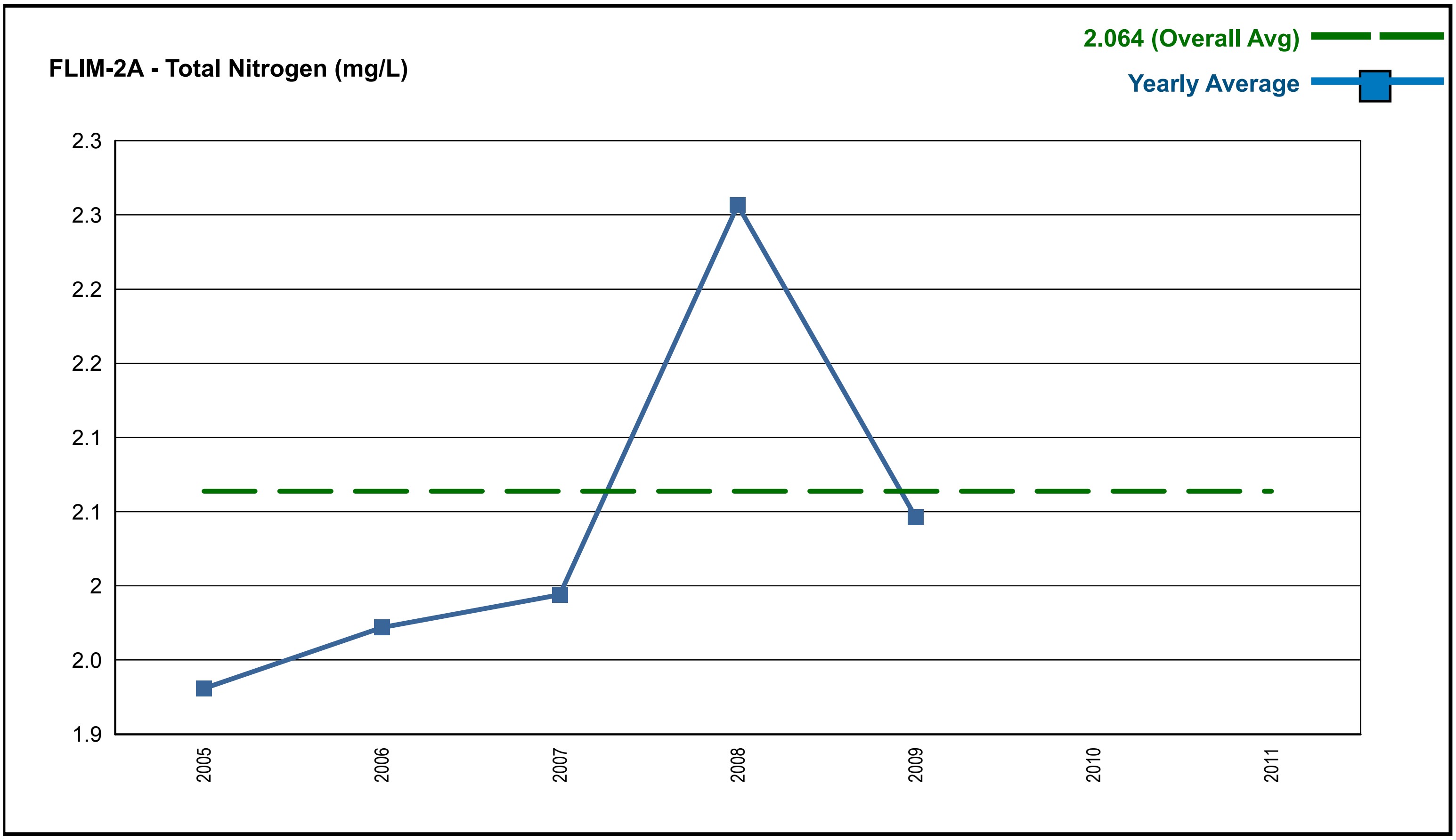
FLIM-2A - Total Suspended Solids (mg/L)

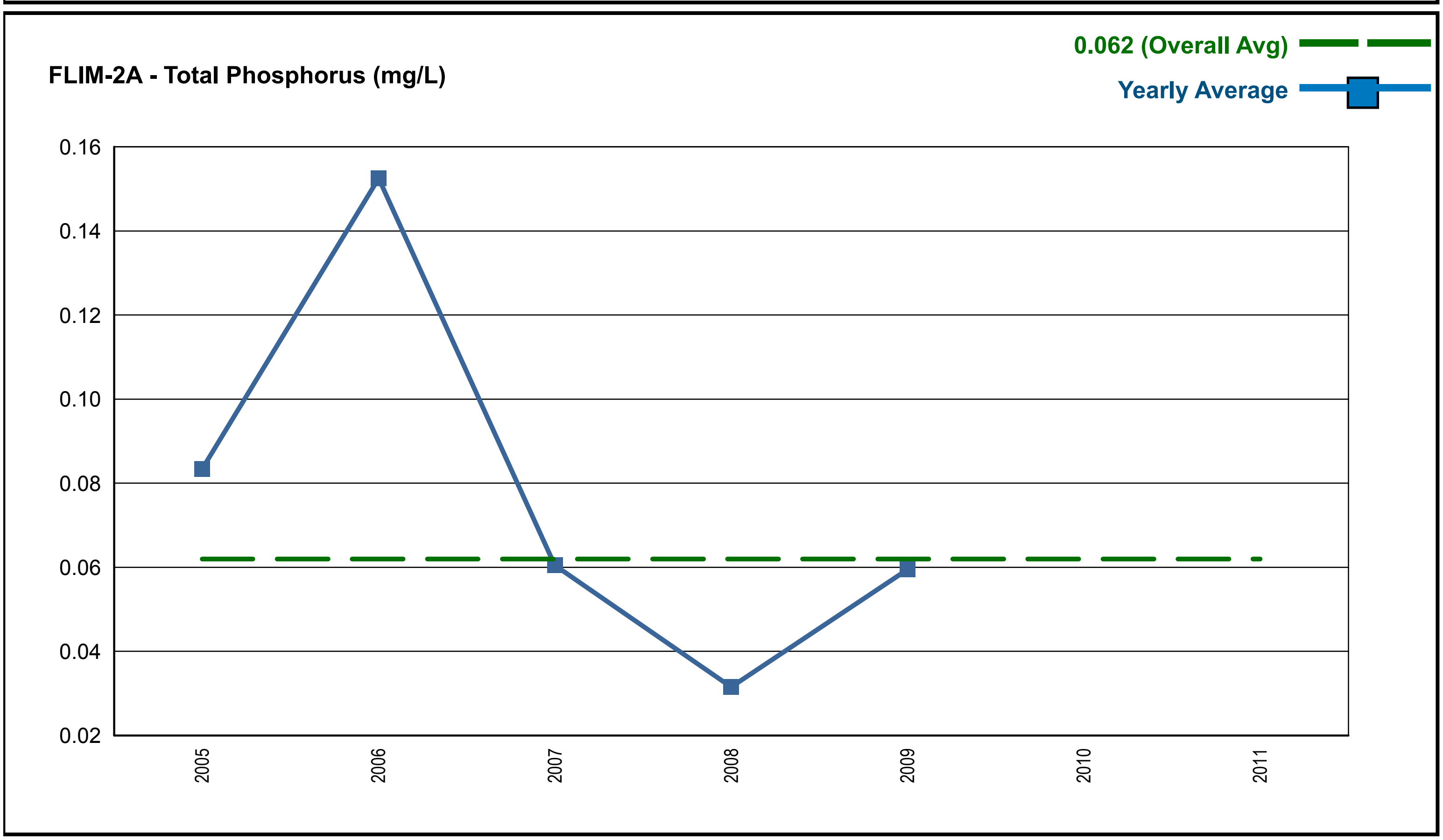


FLIM-2A - Nitrate+Nitrite Nitrogen (mg/L)

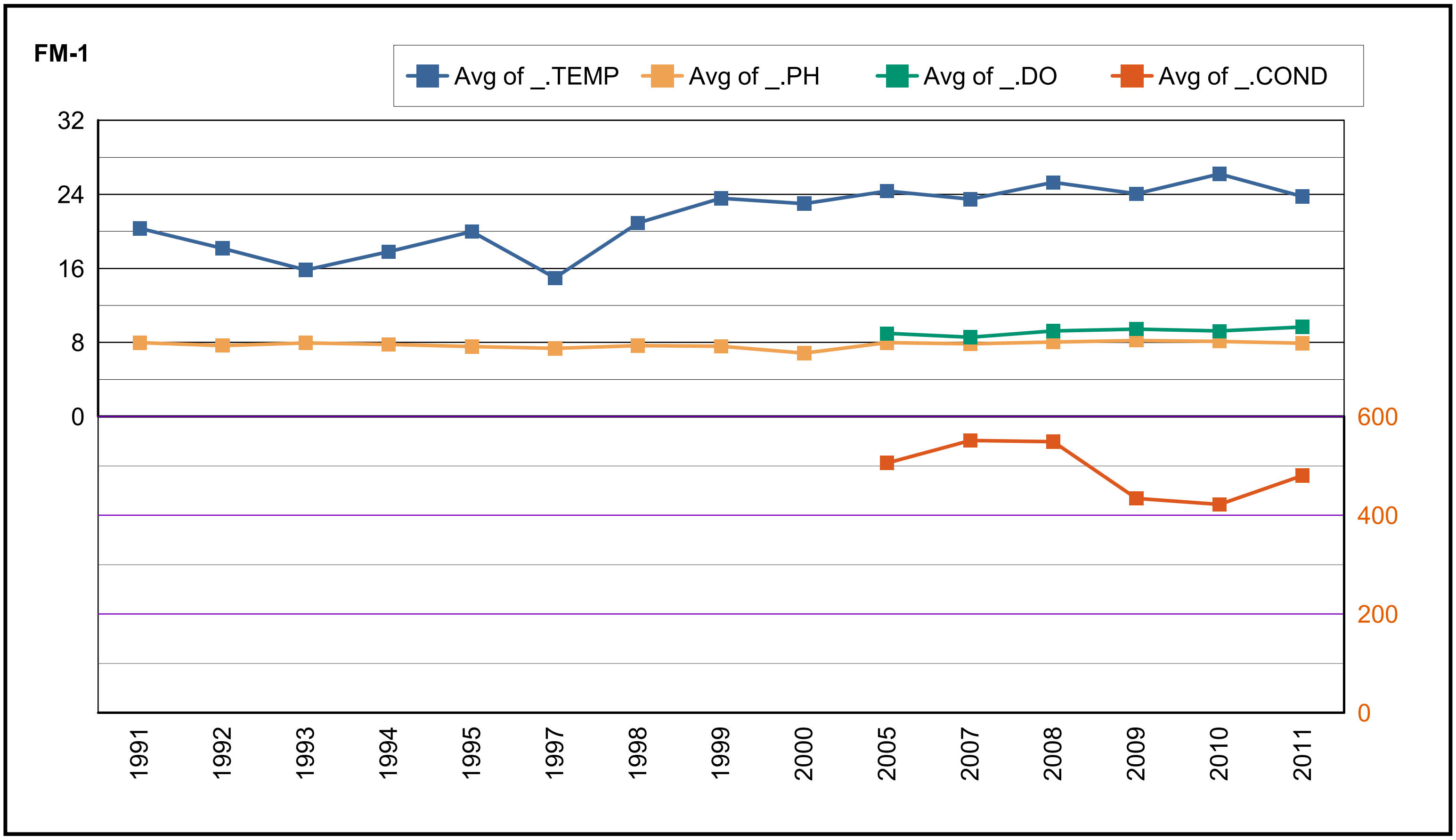


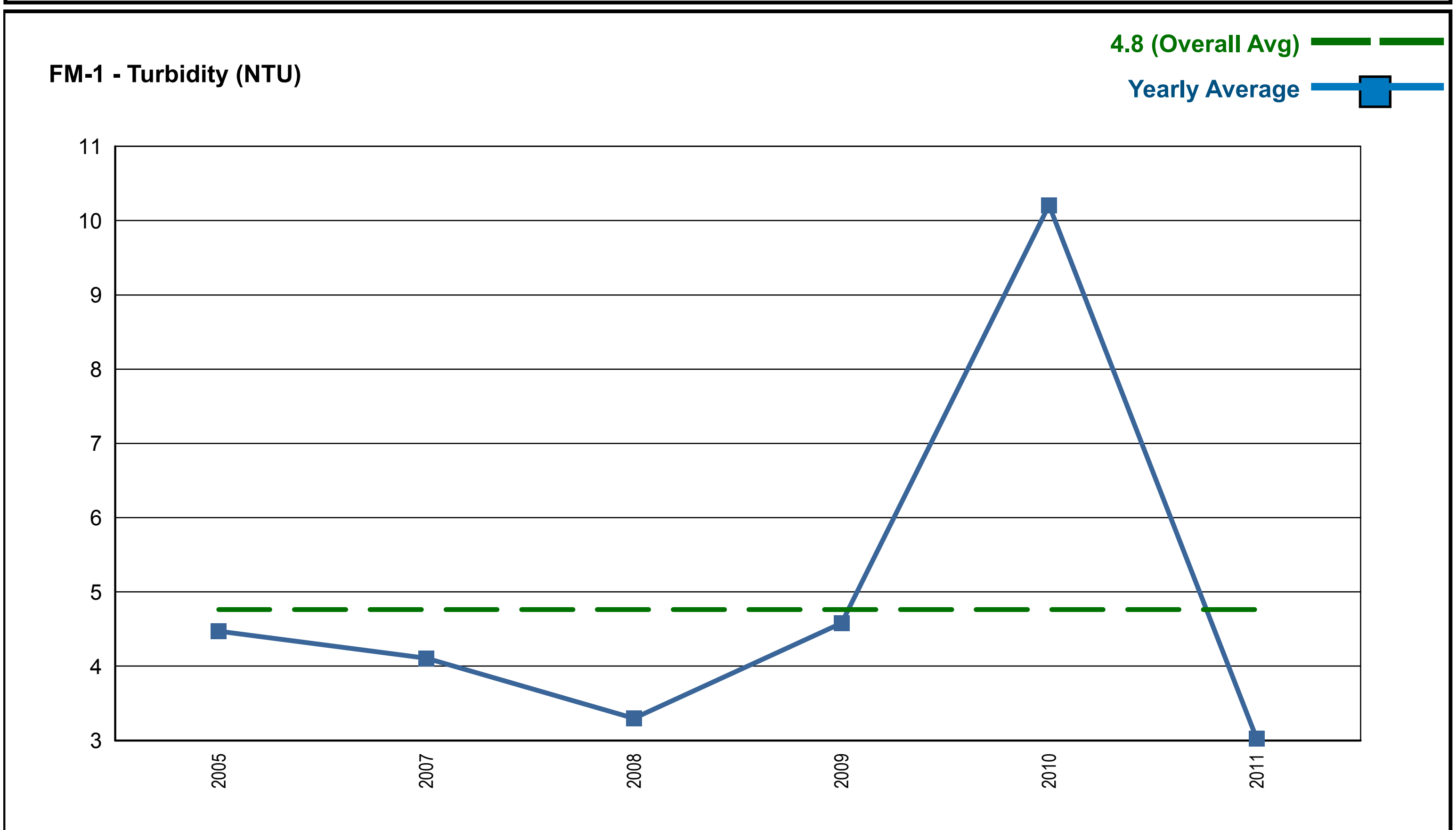
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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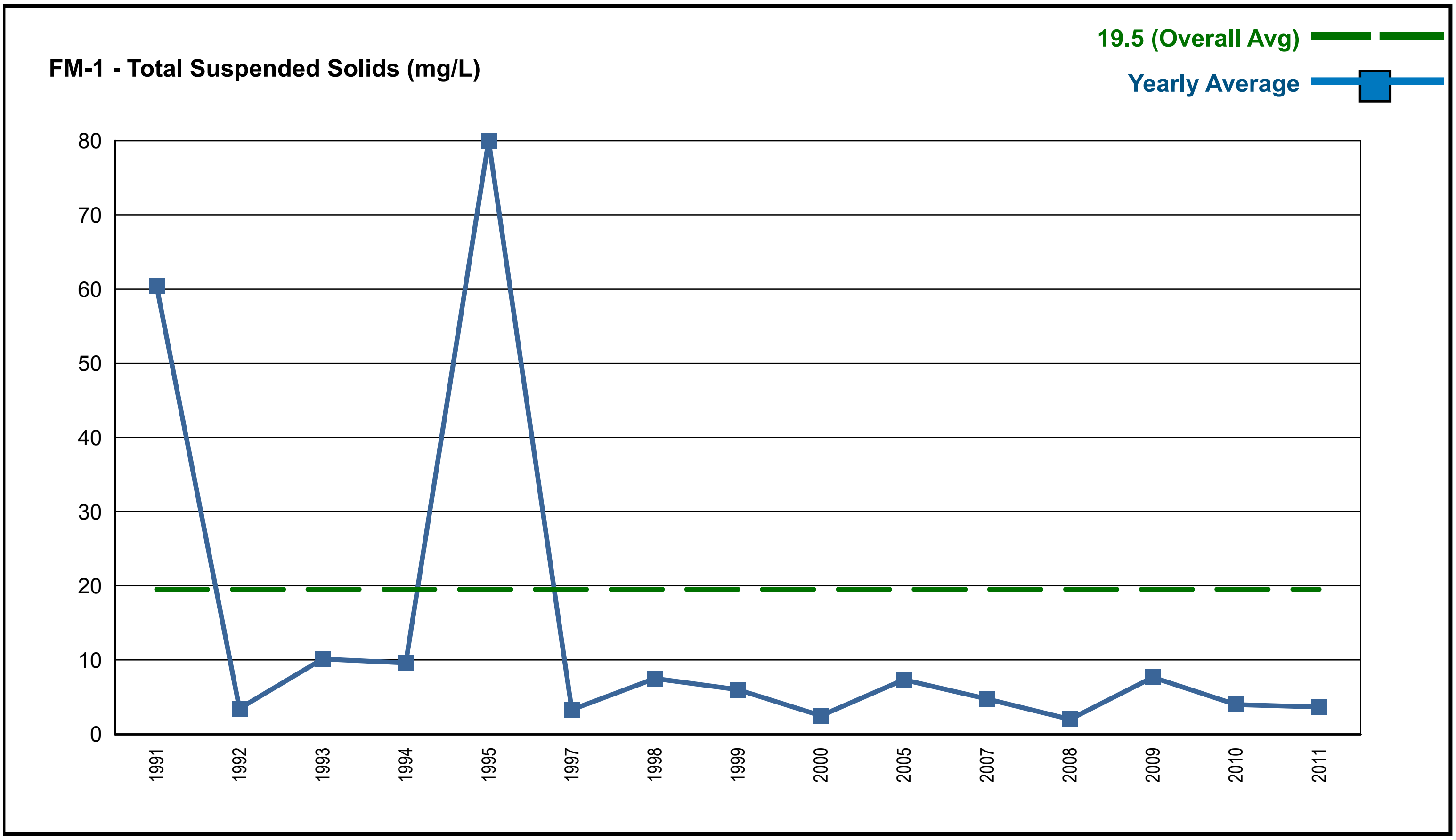
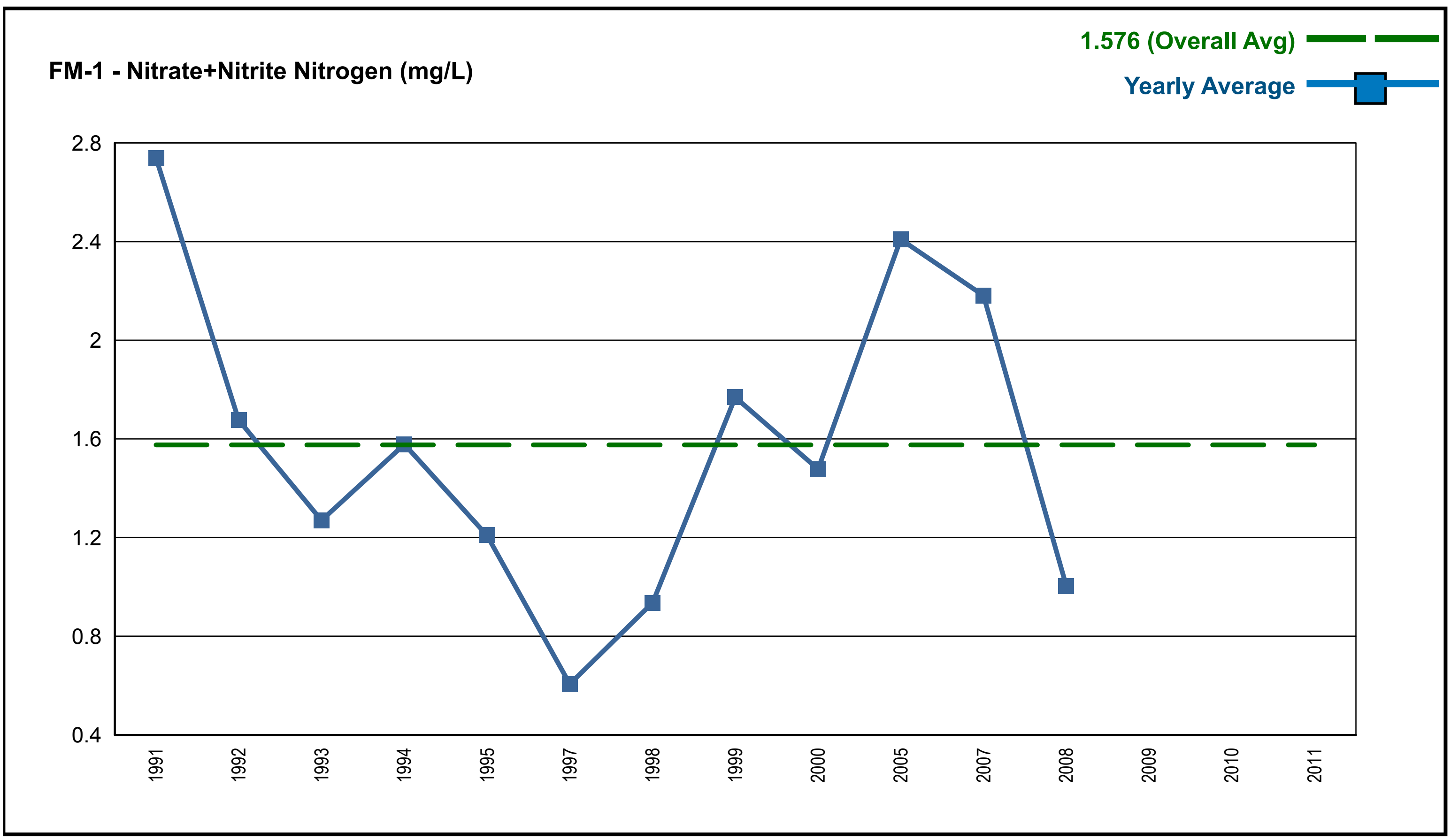
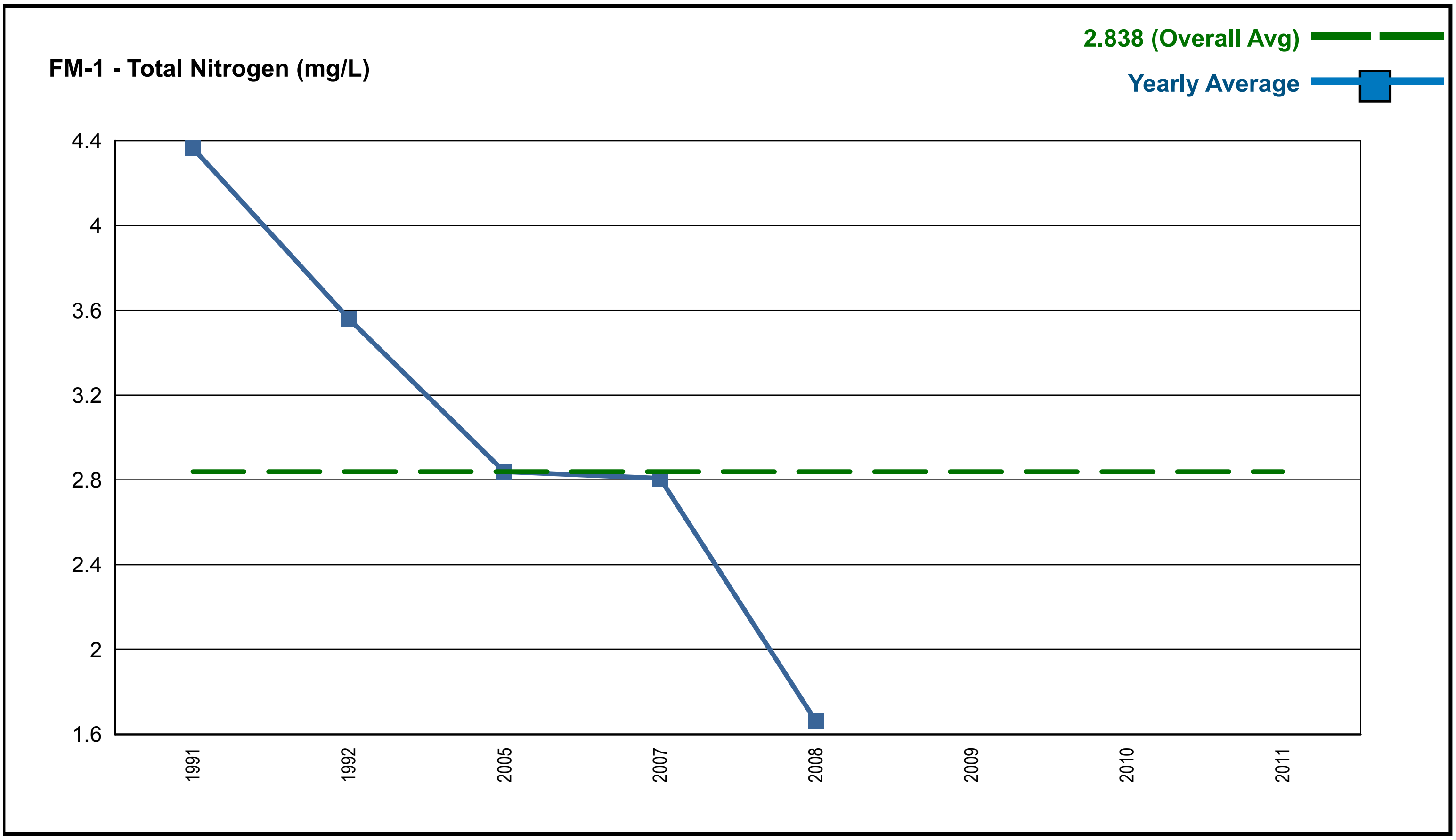
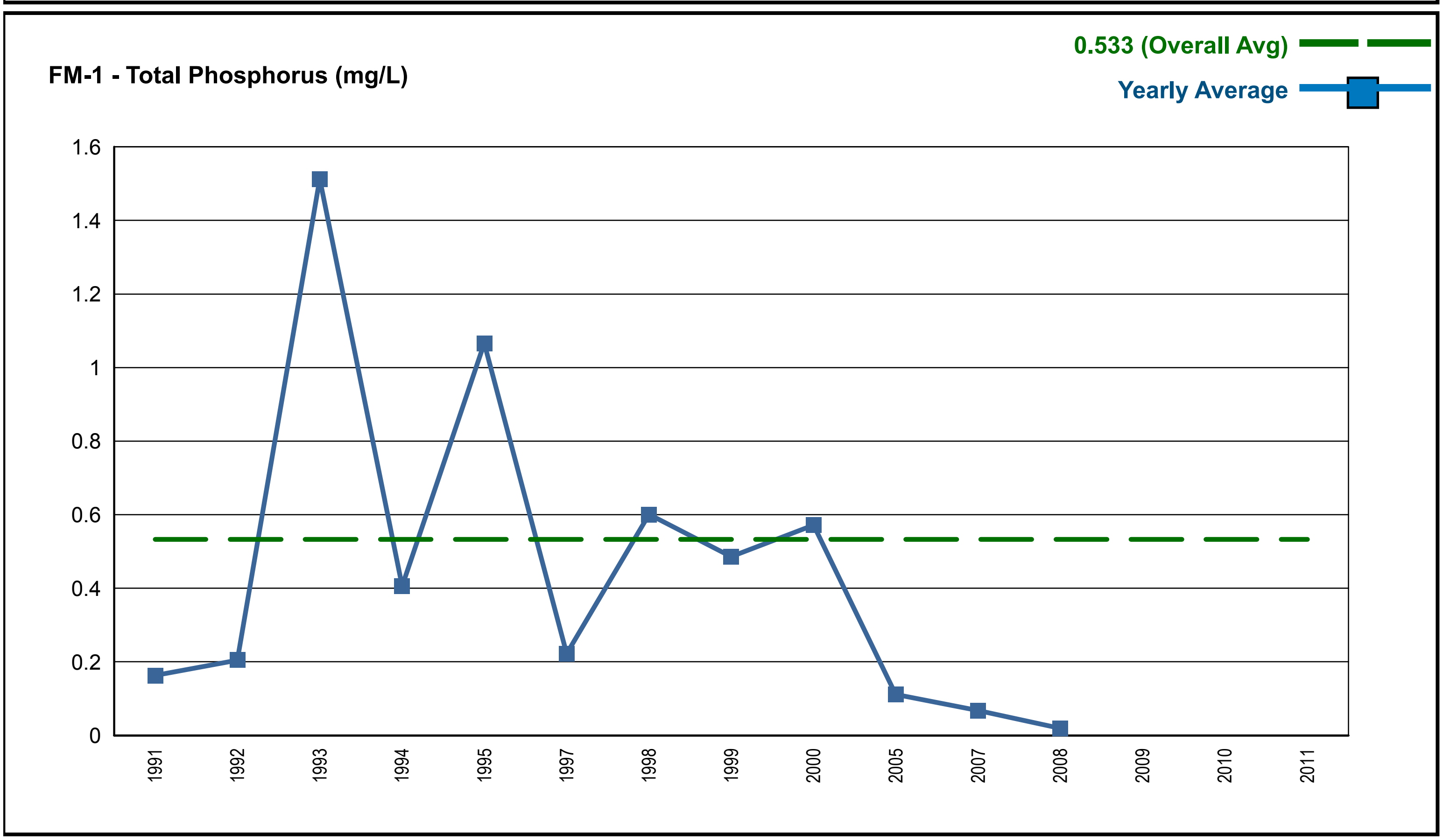


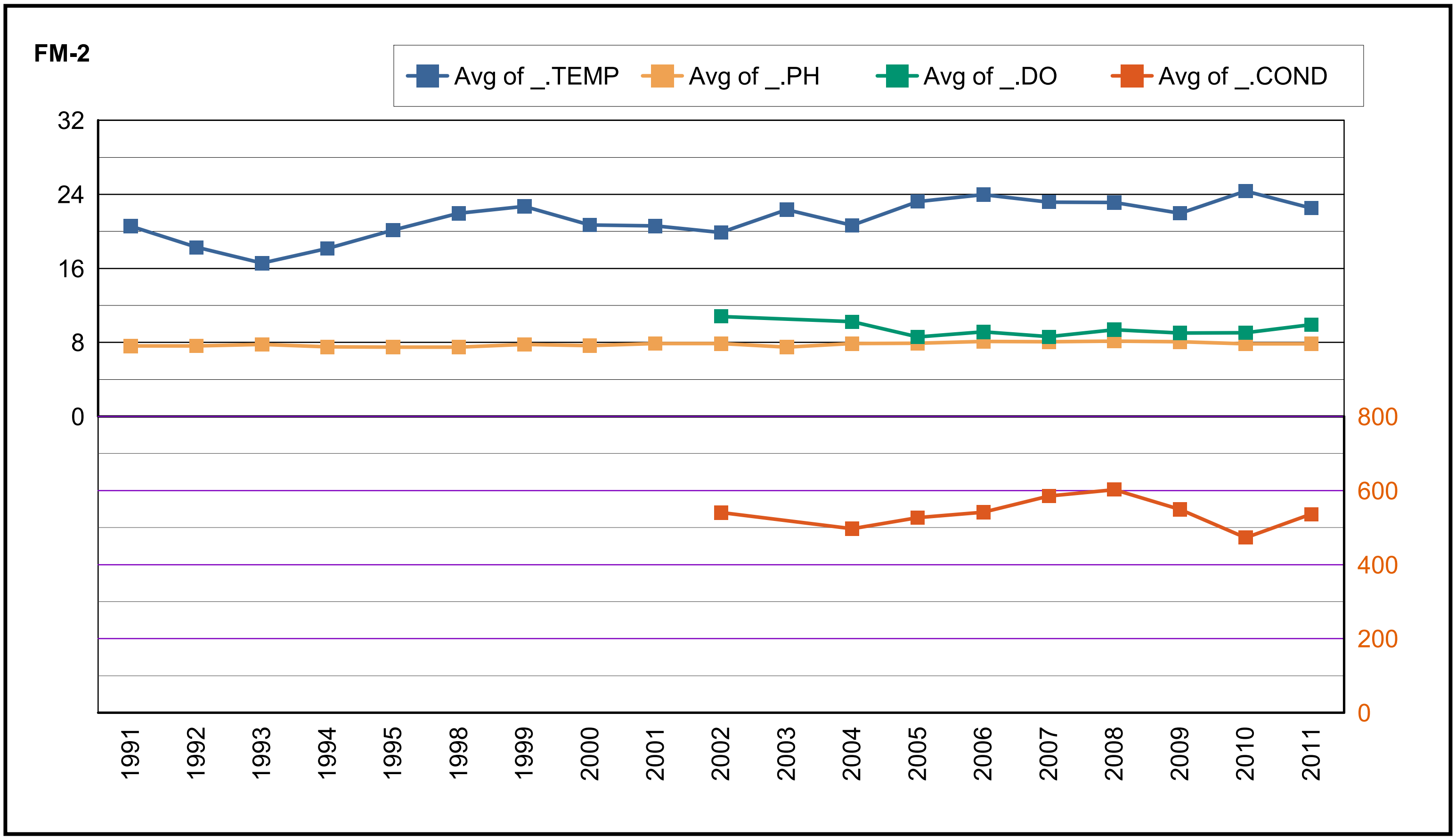


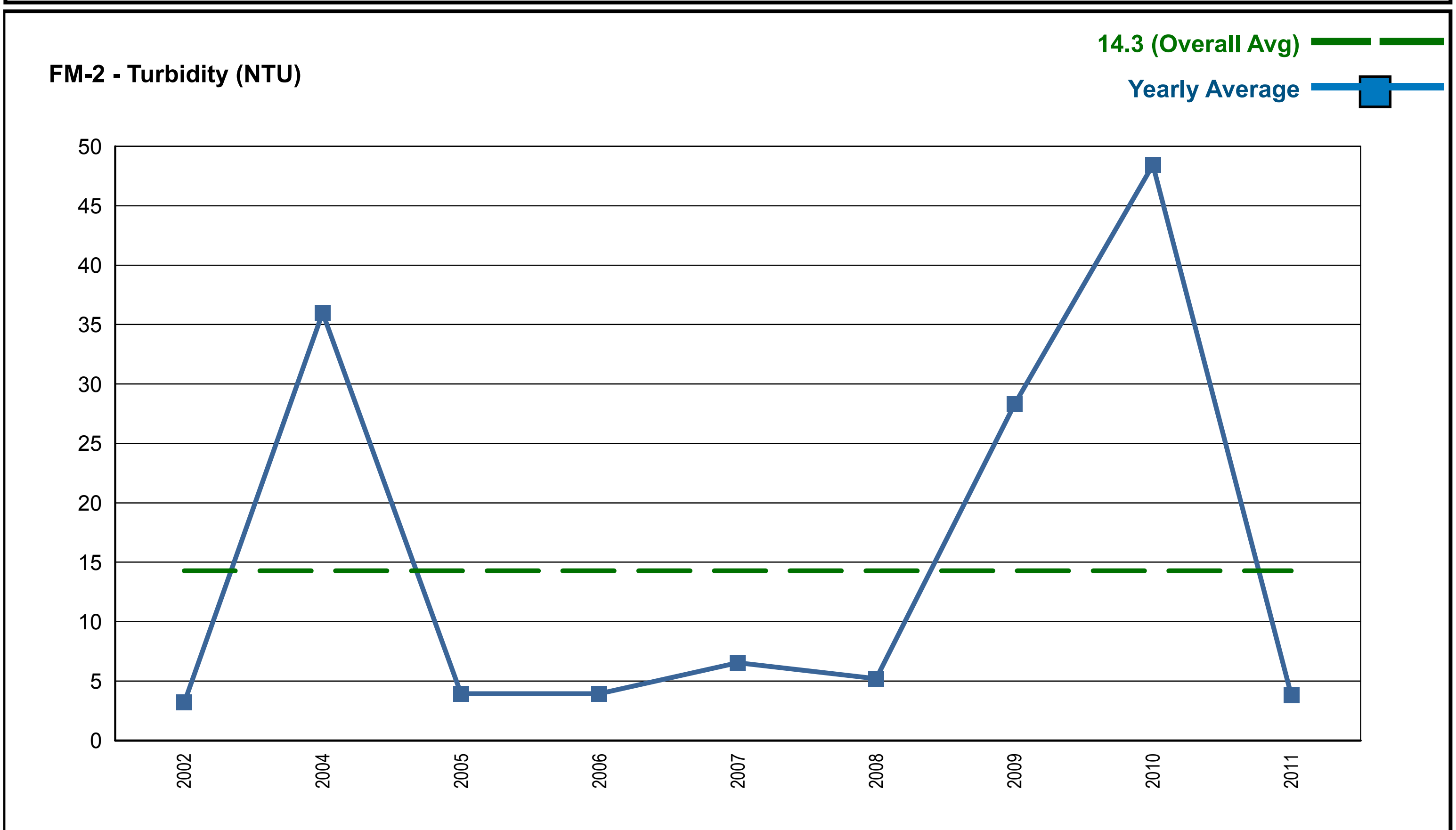
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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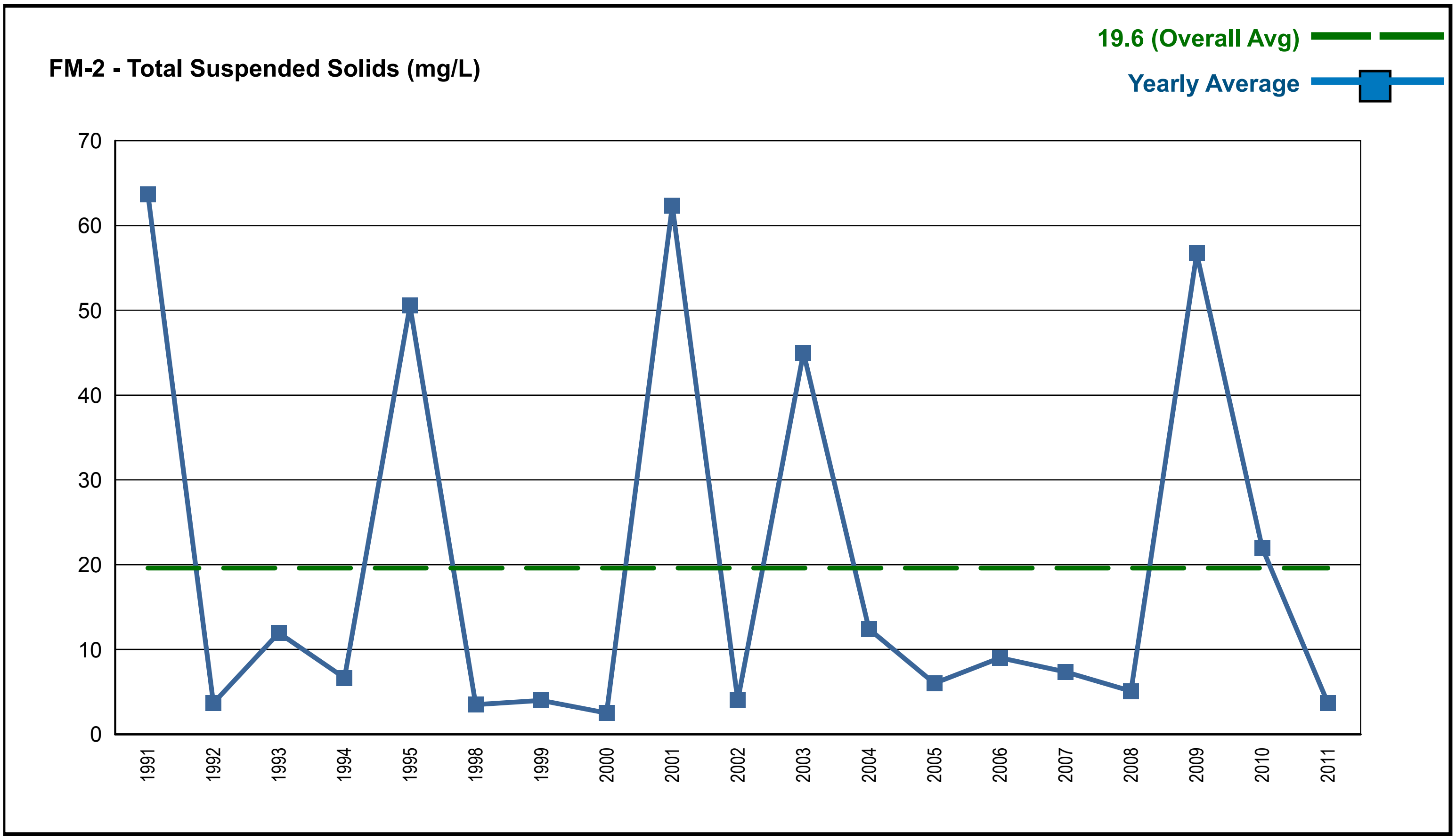

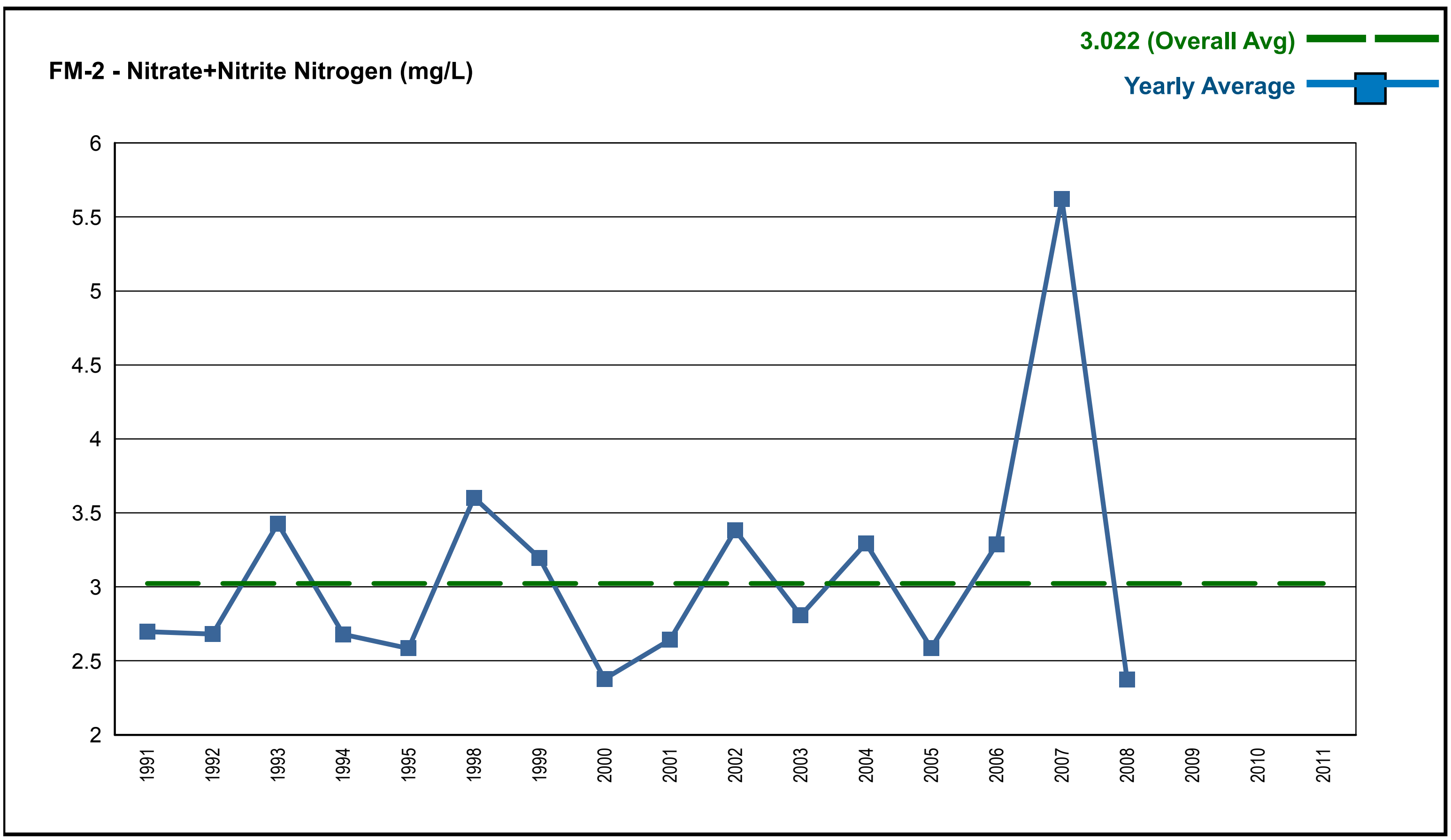

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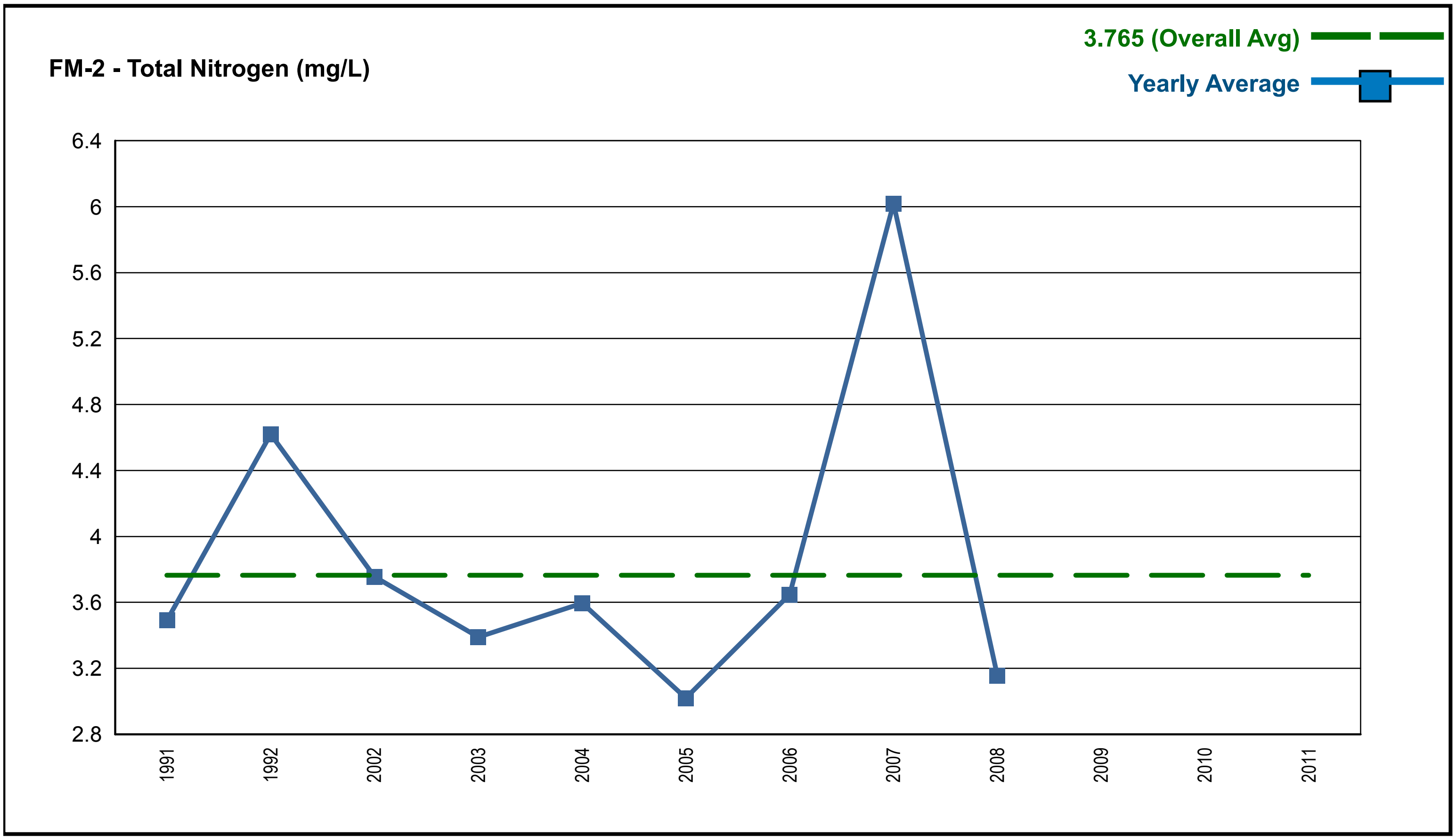

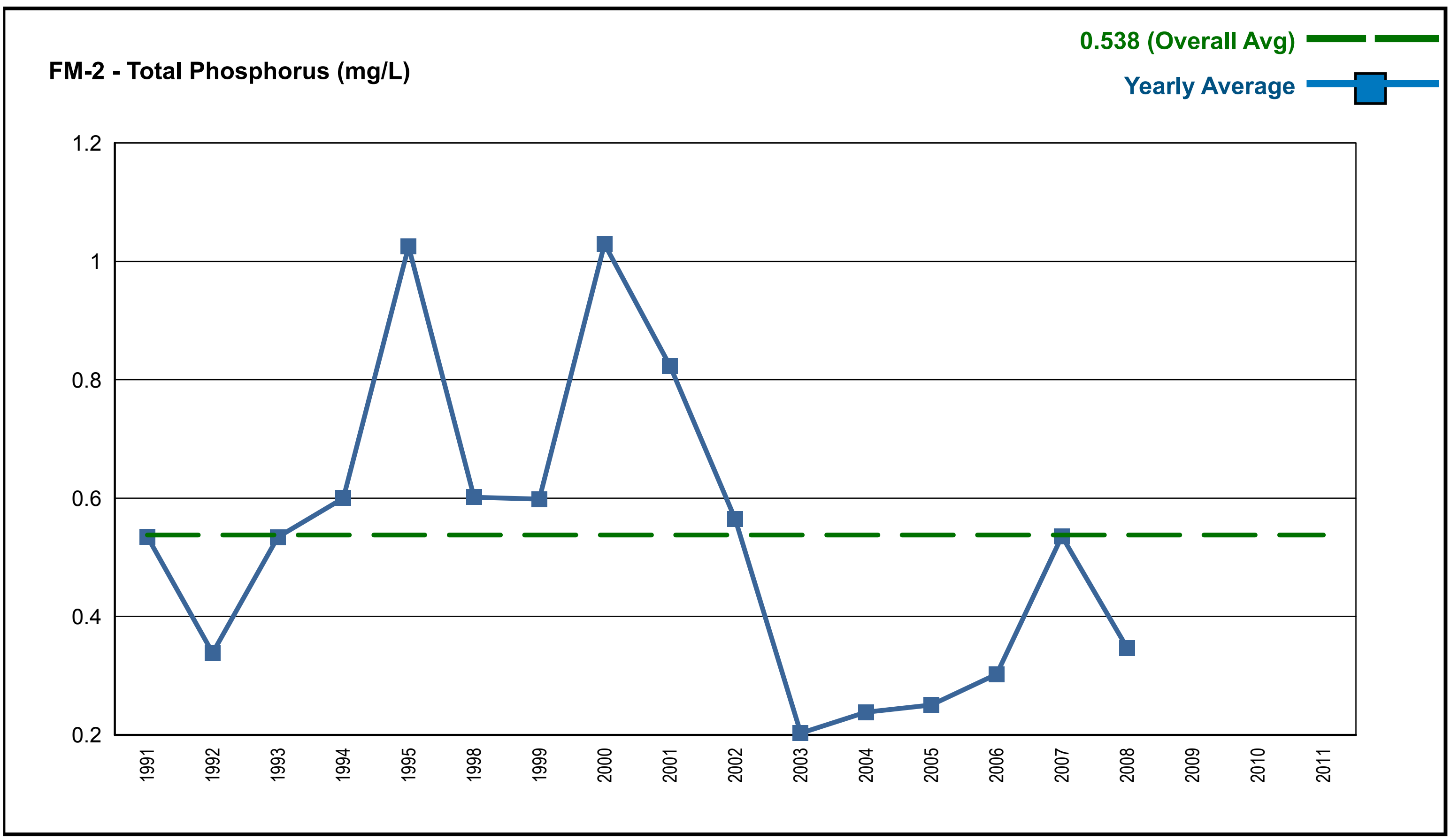

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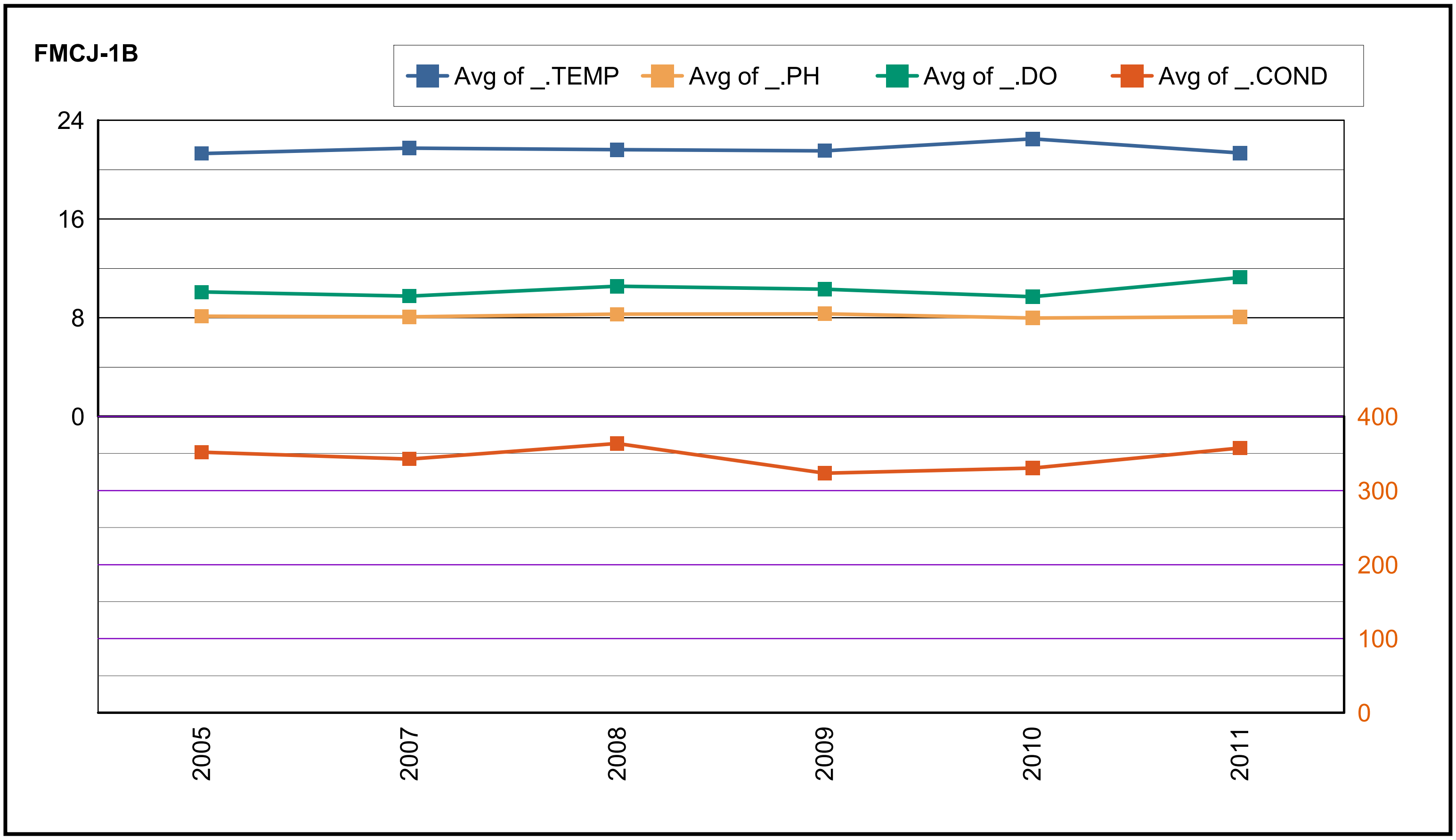

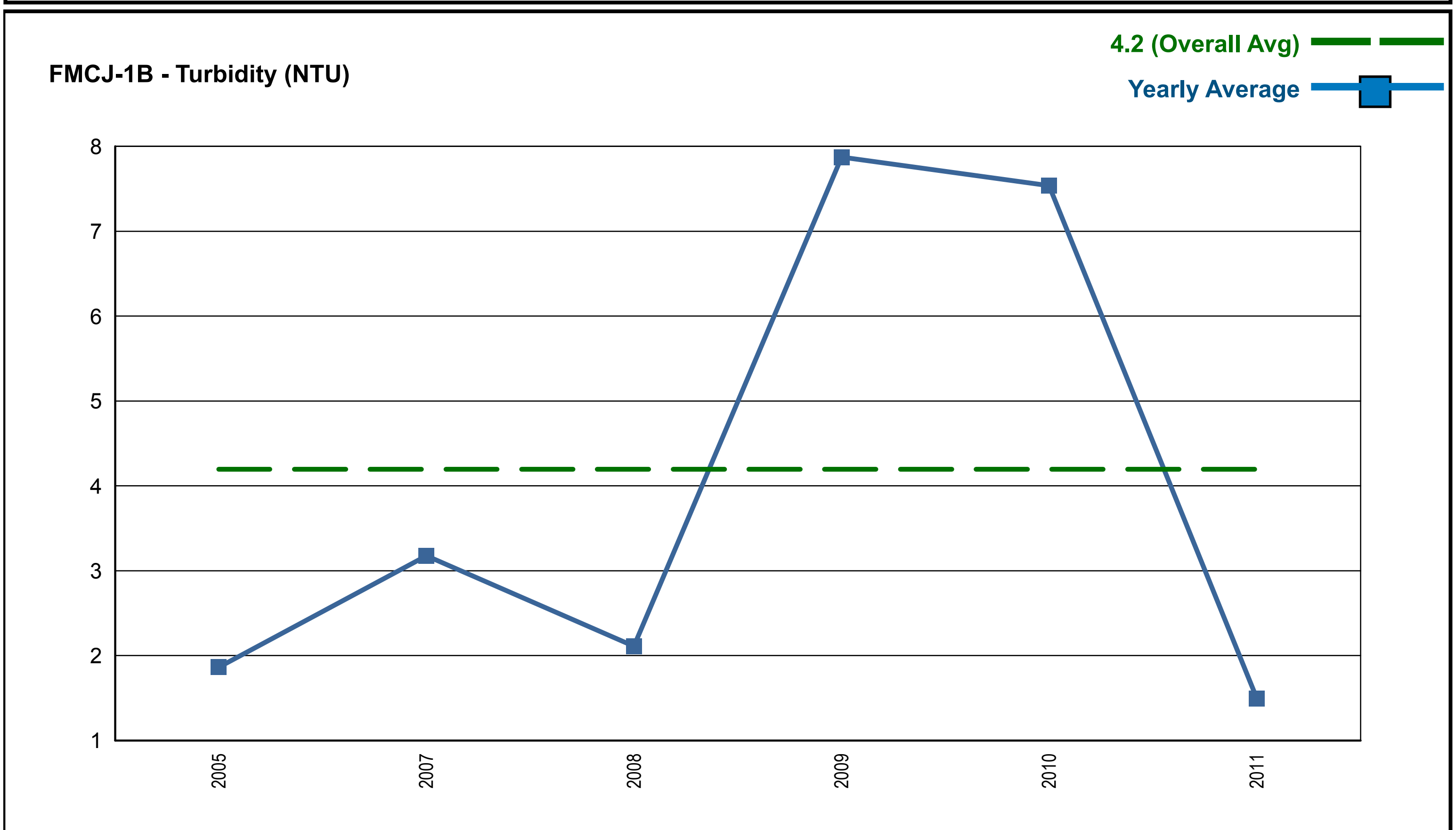

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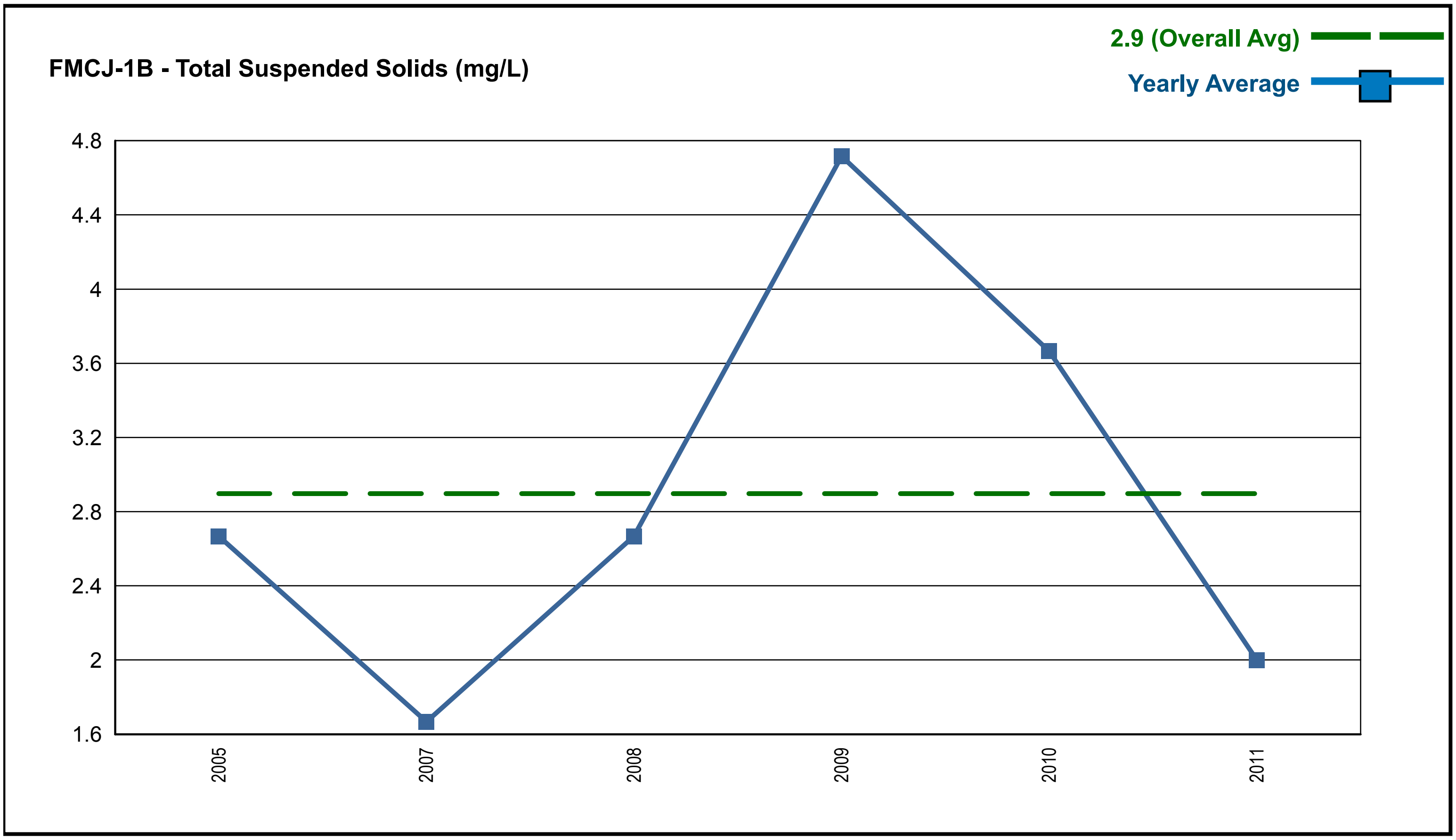

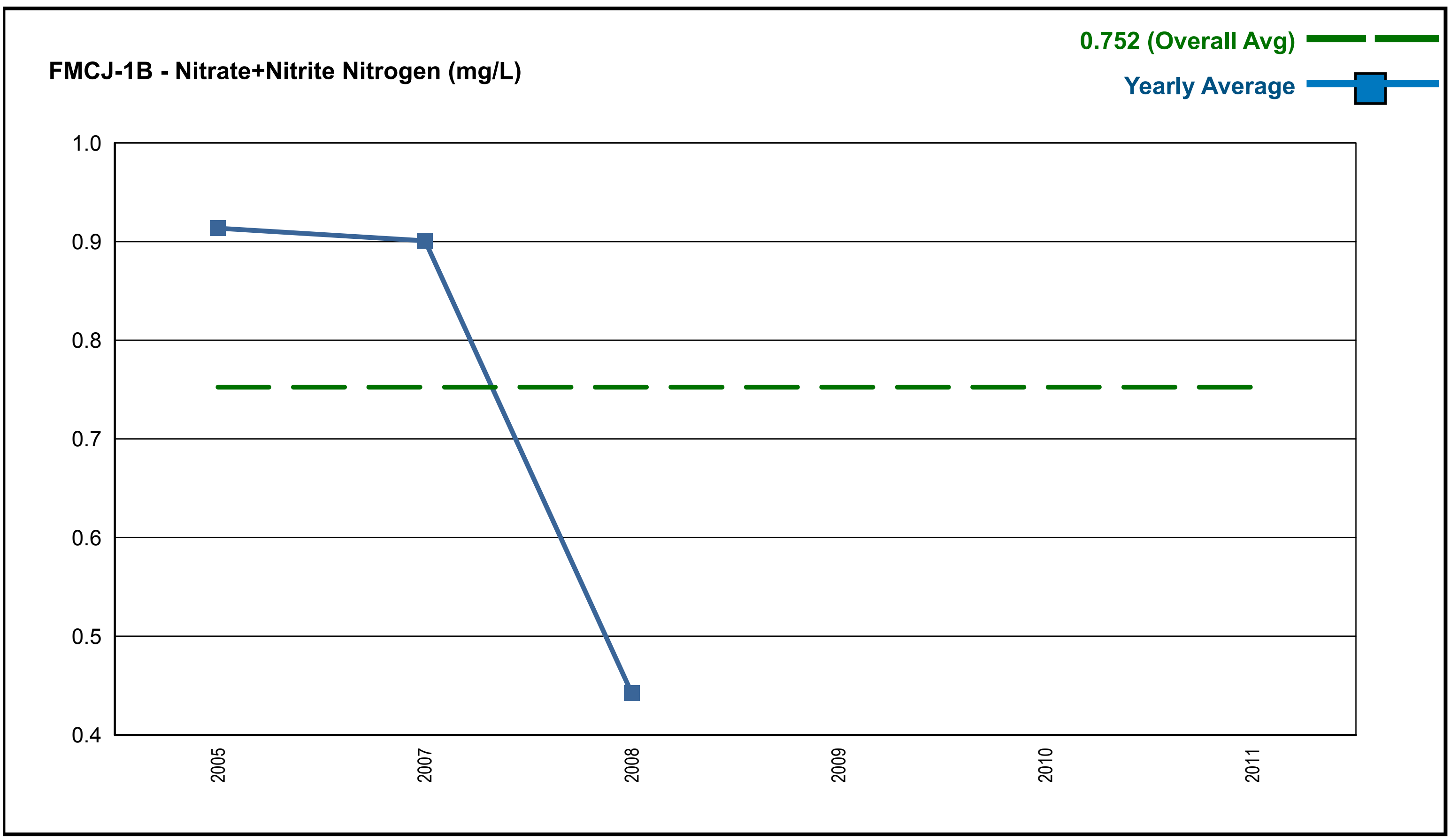

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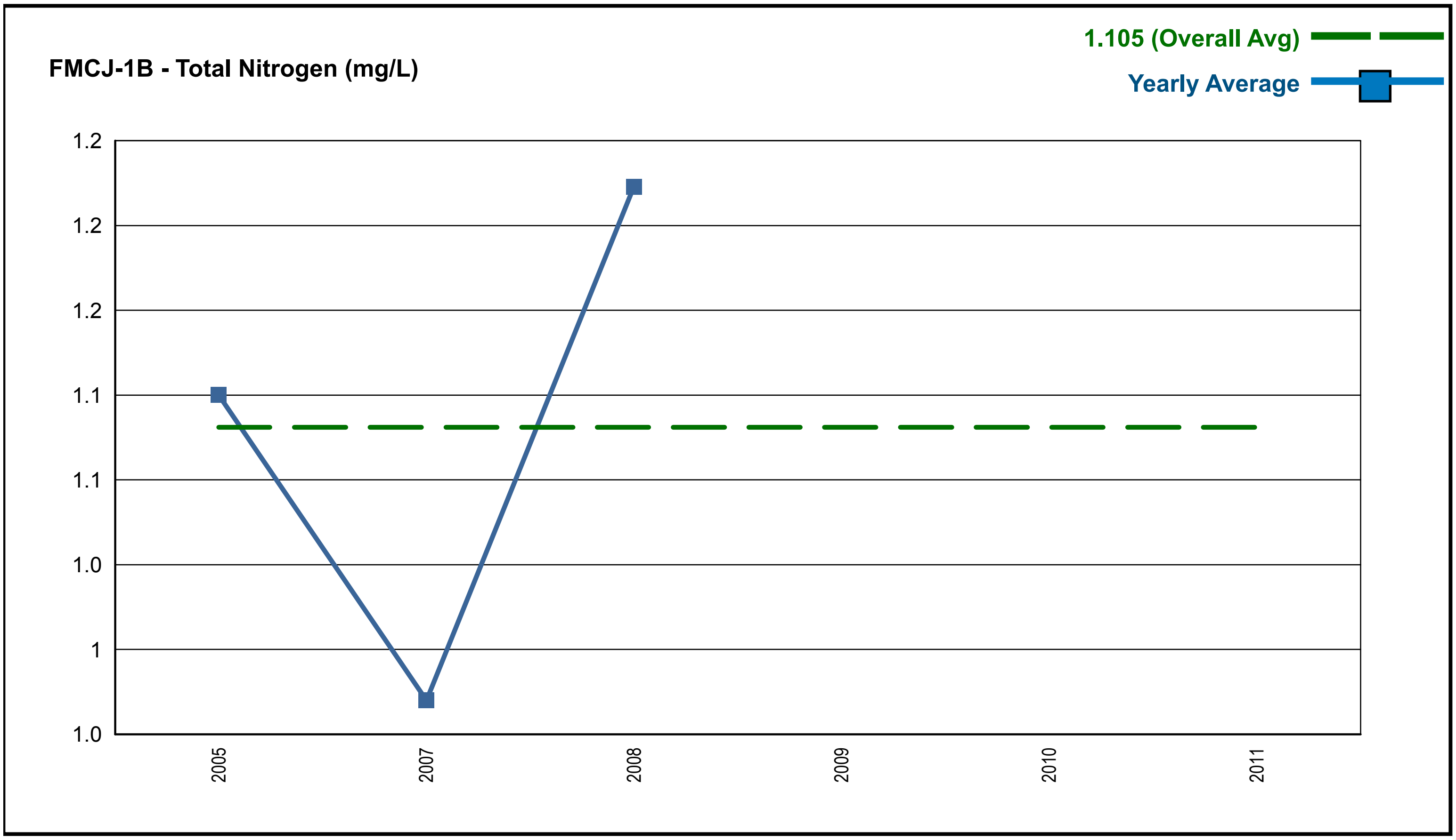

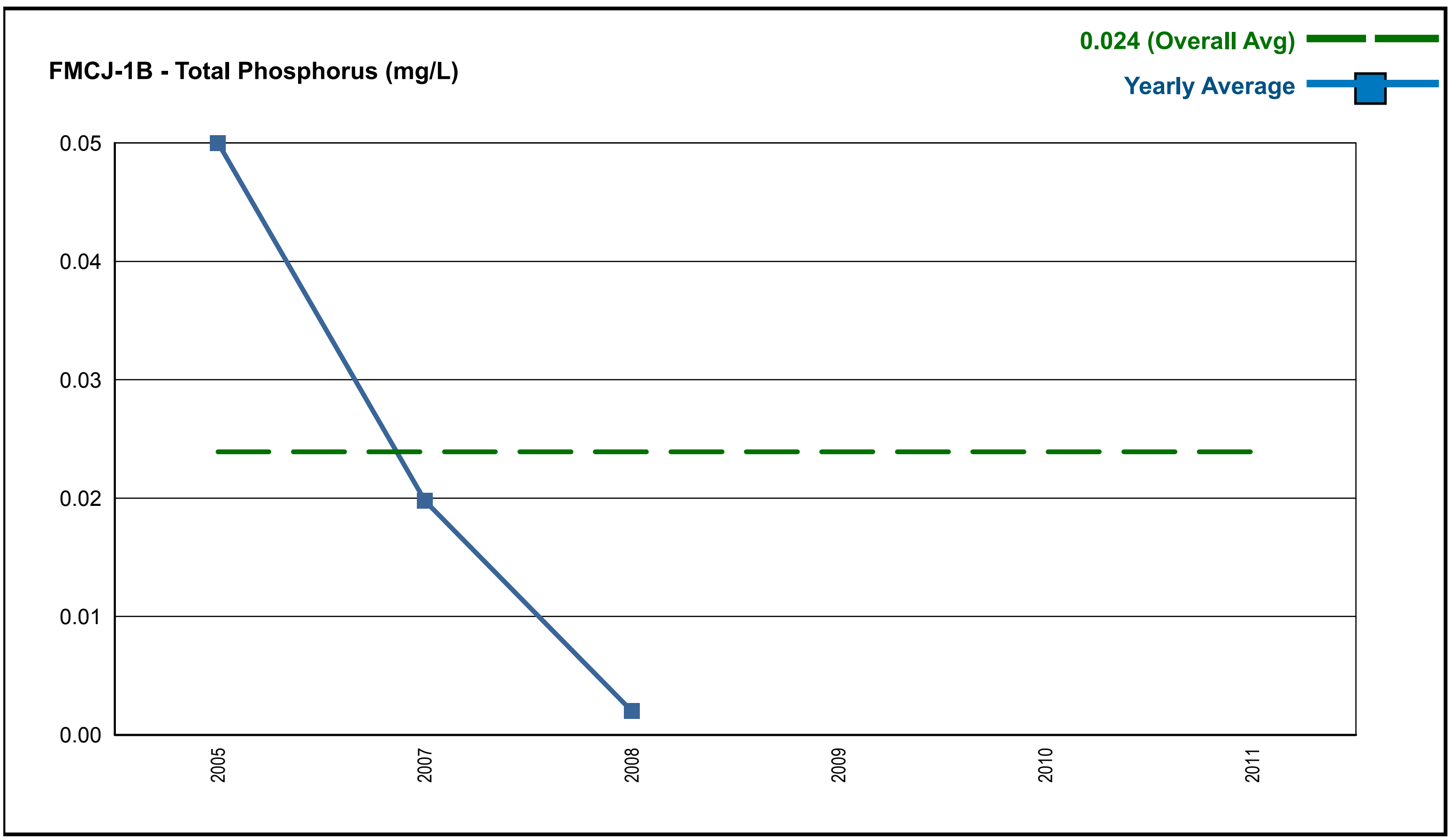

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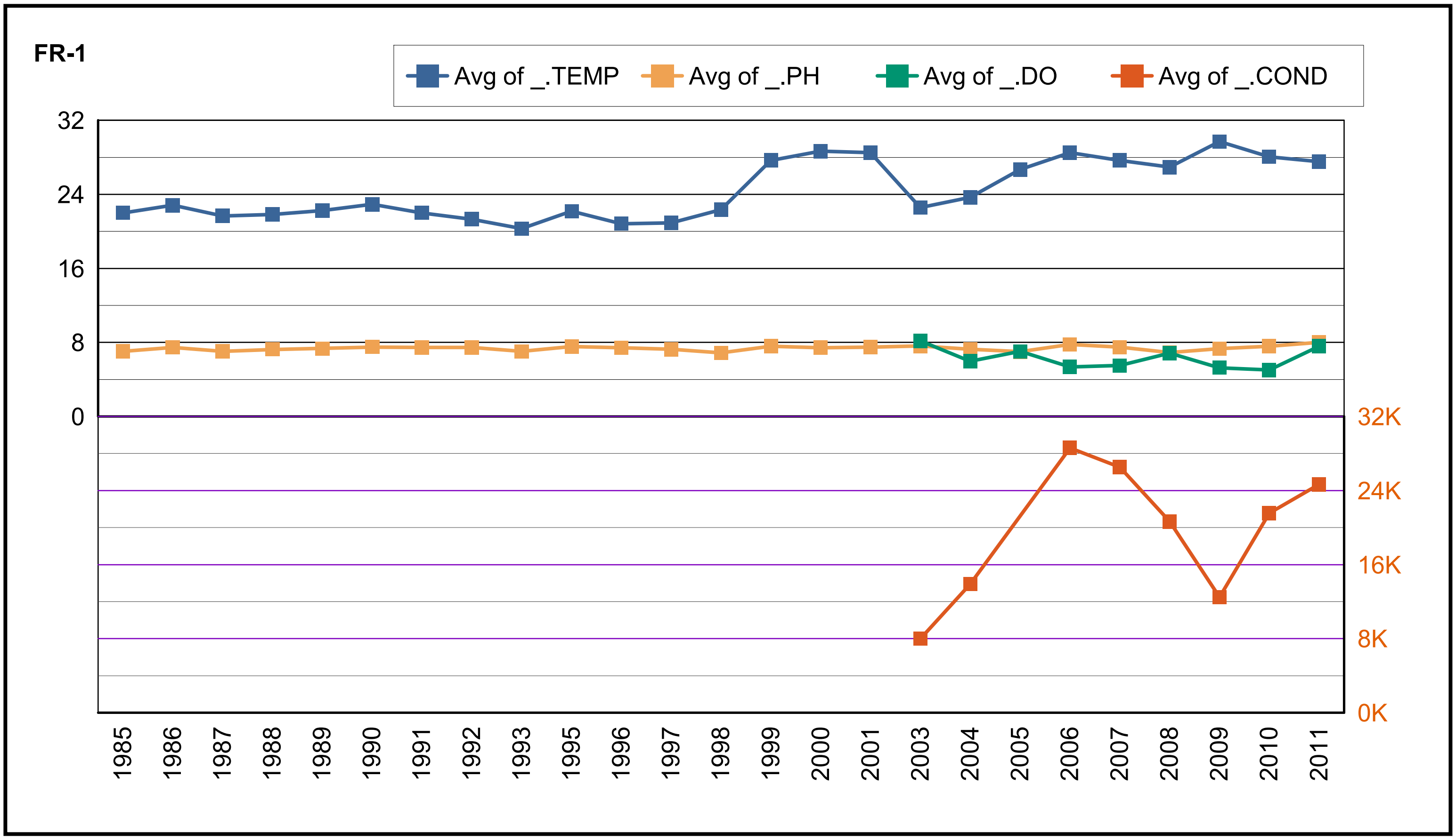

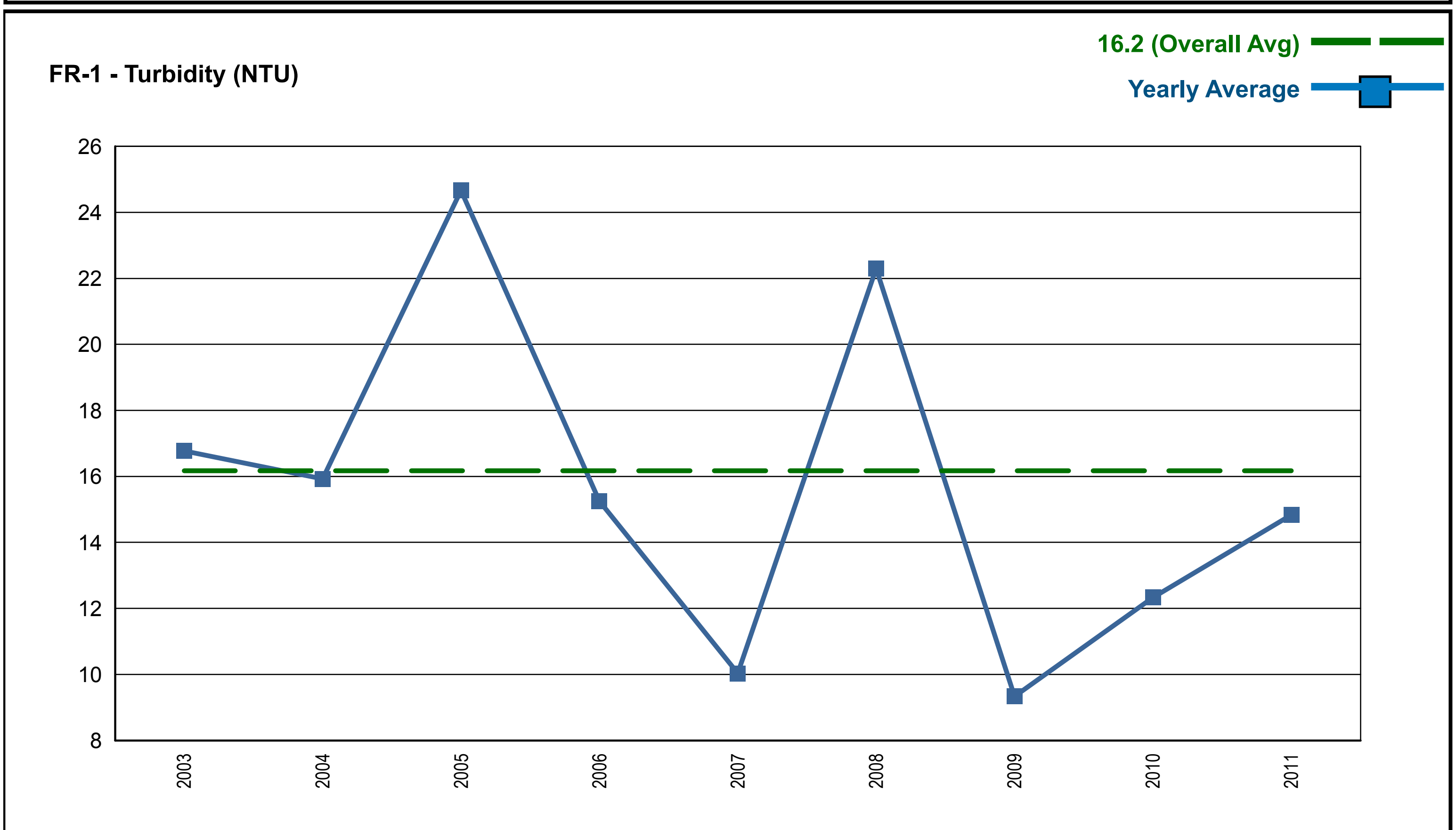

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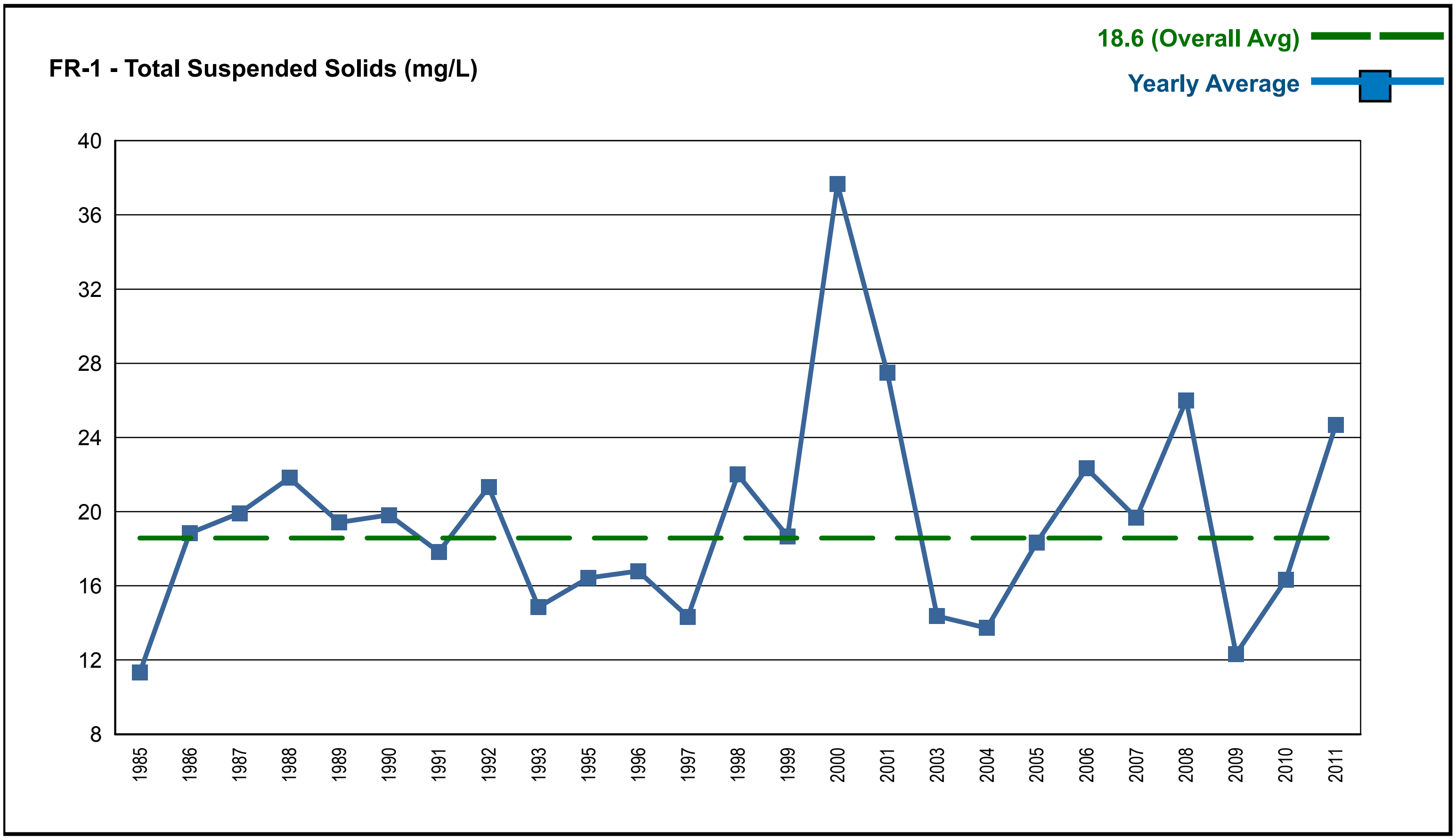

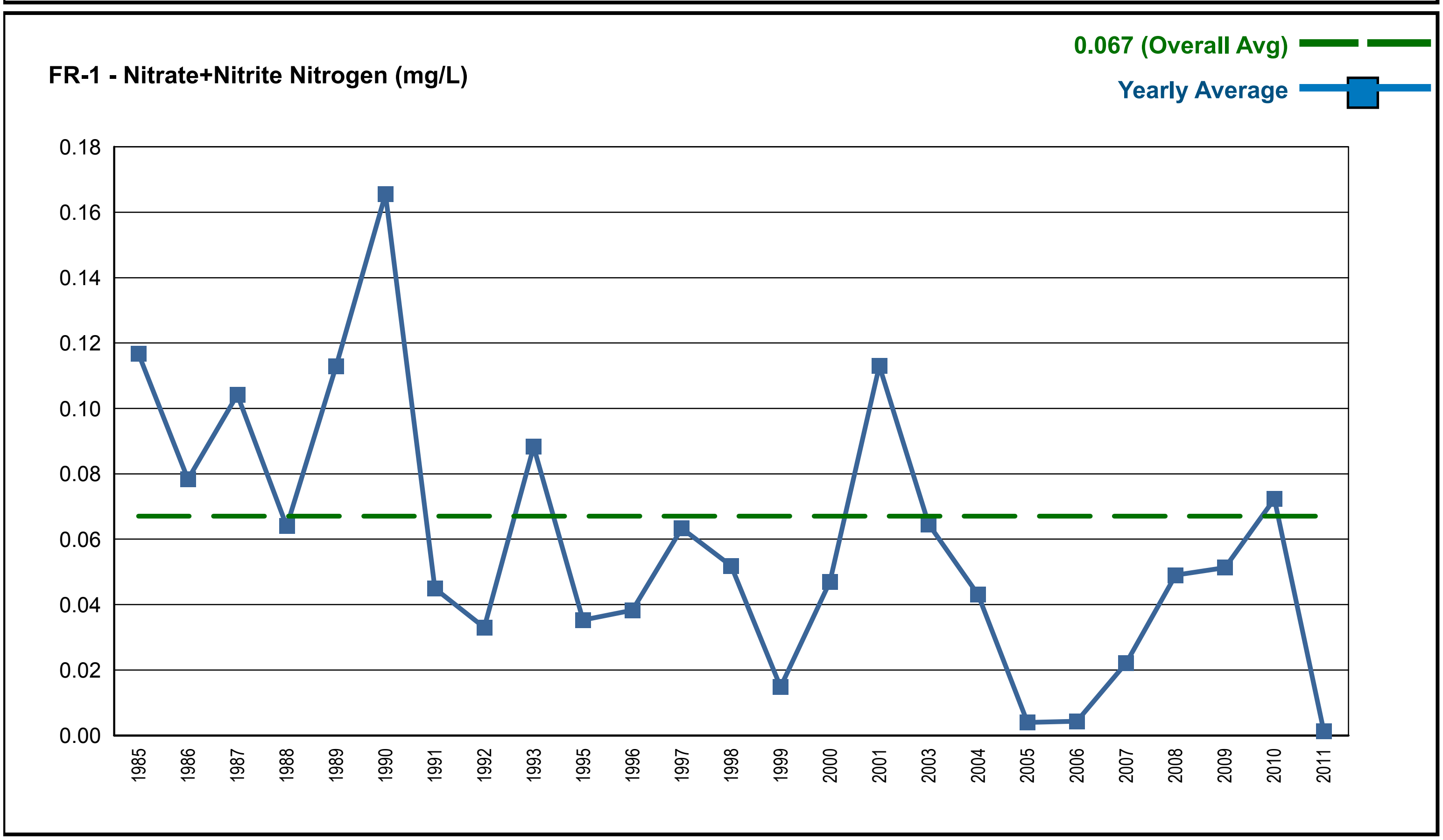

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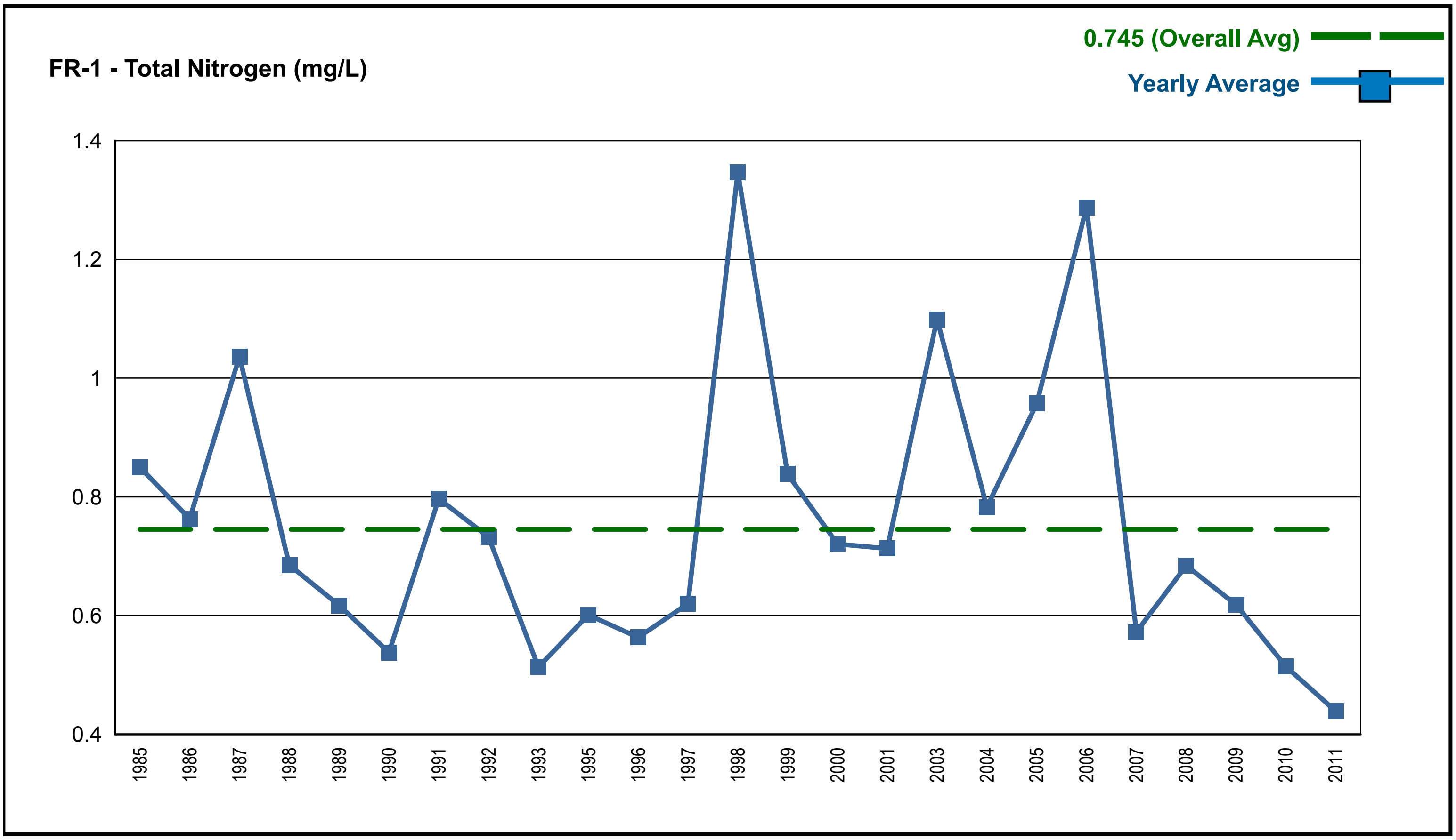

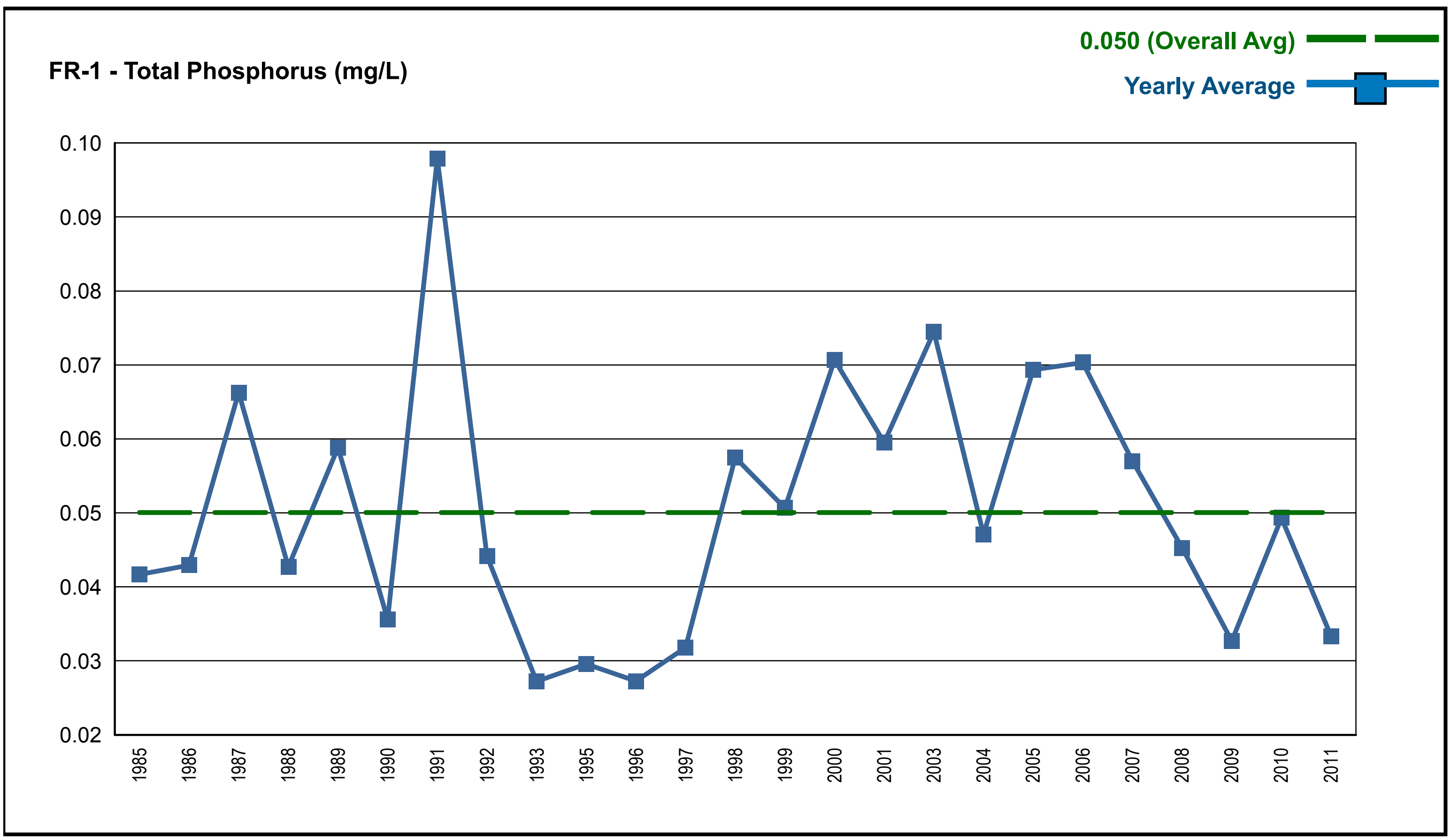

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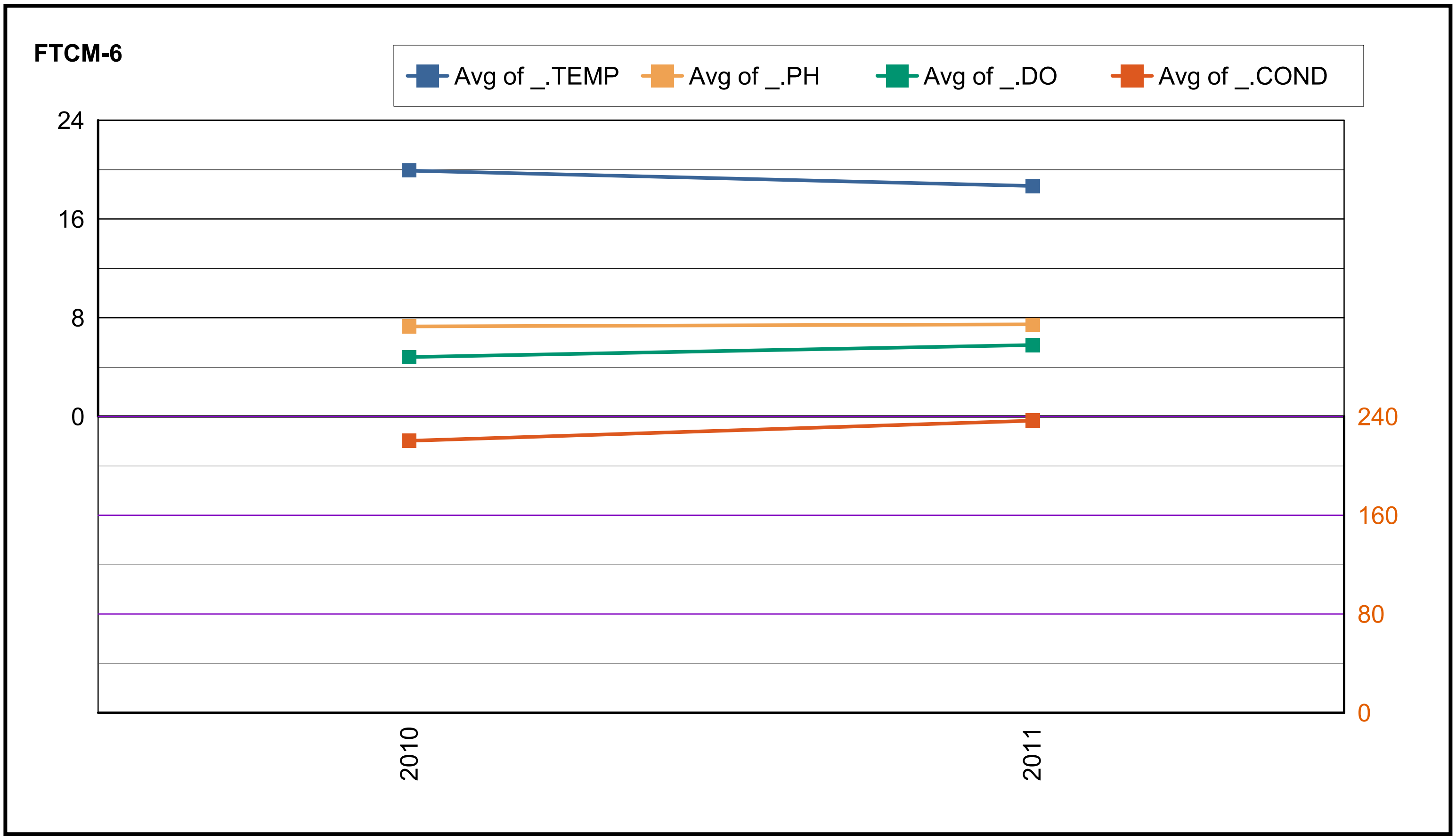

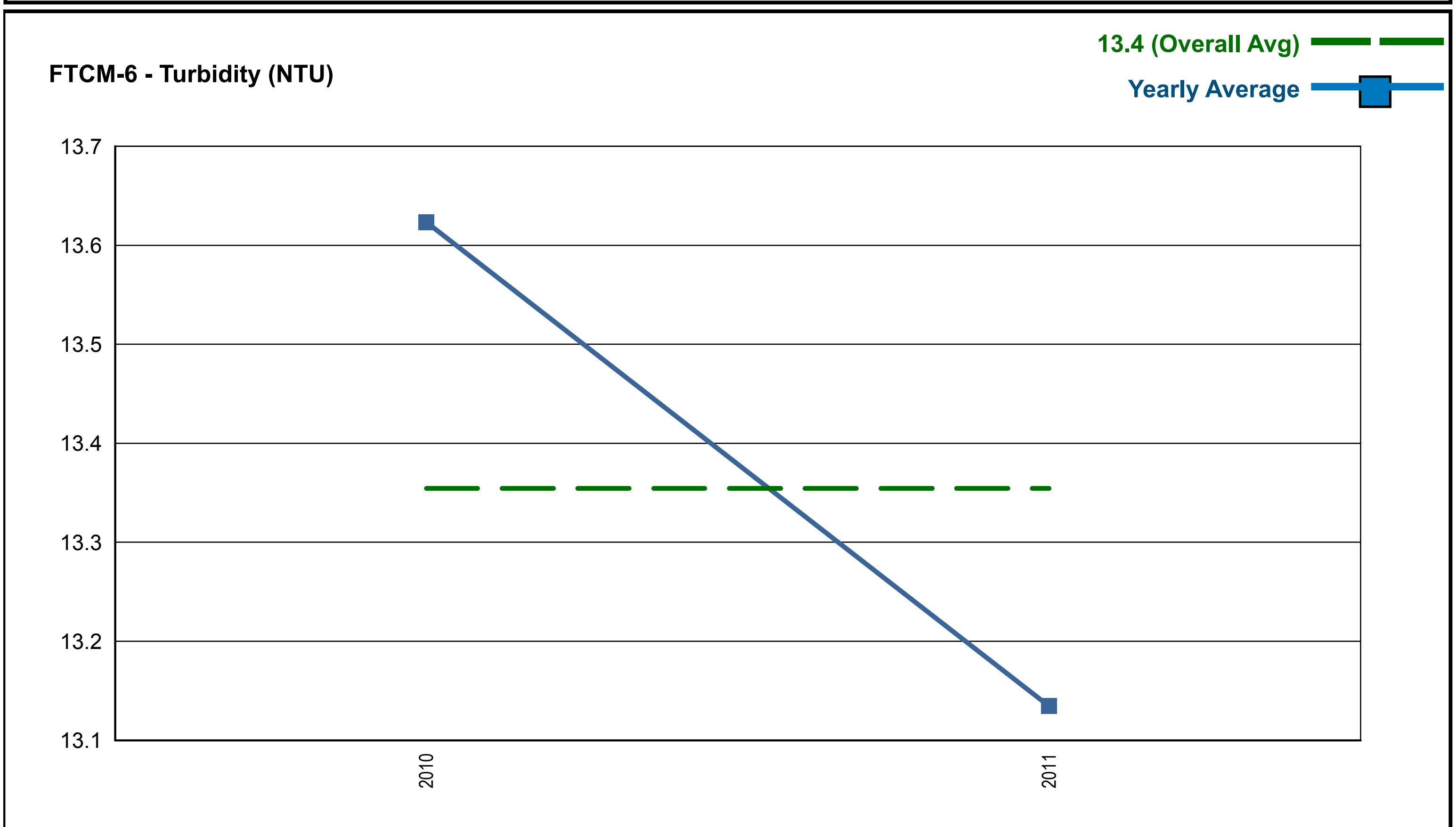

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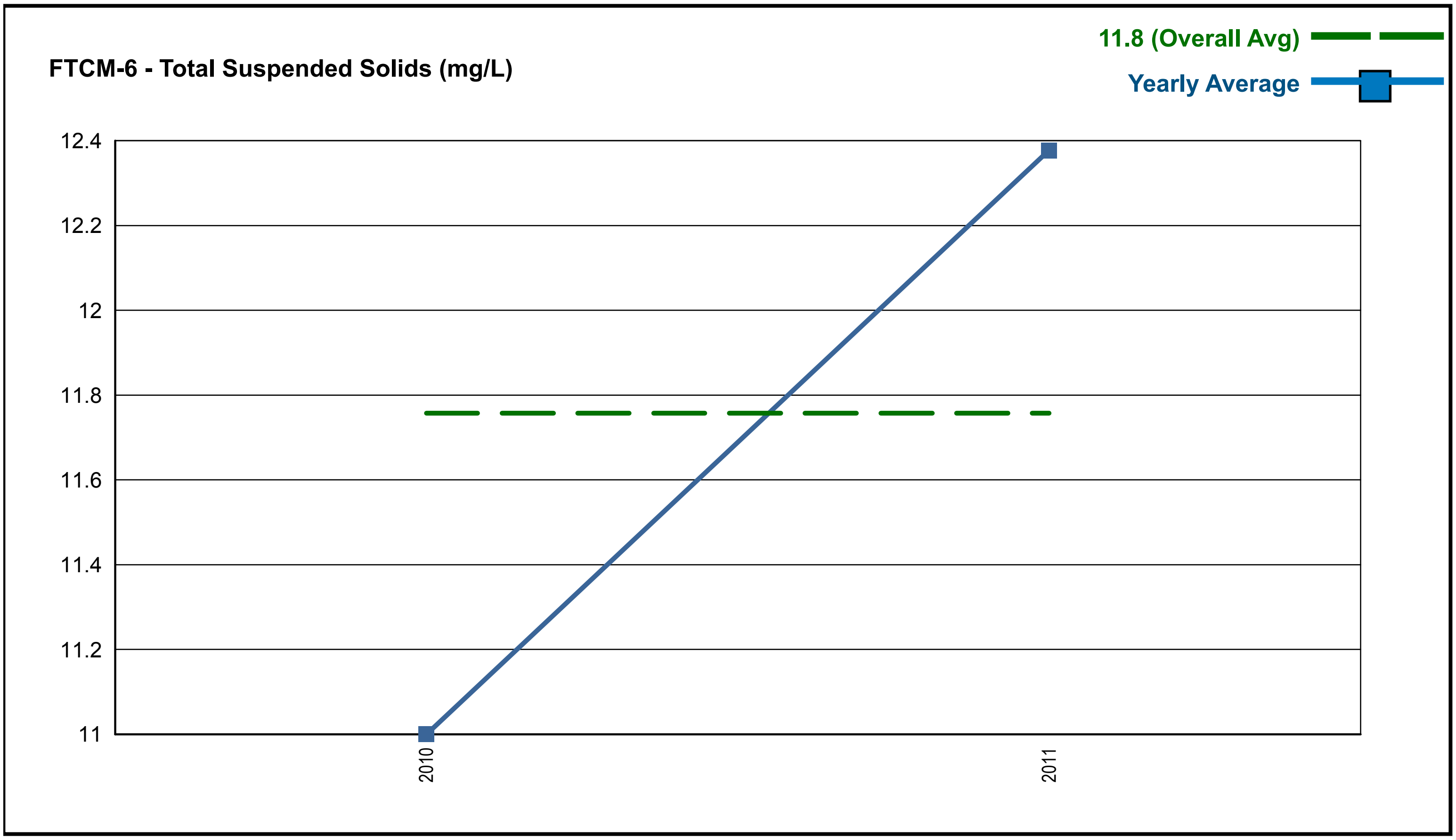

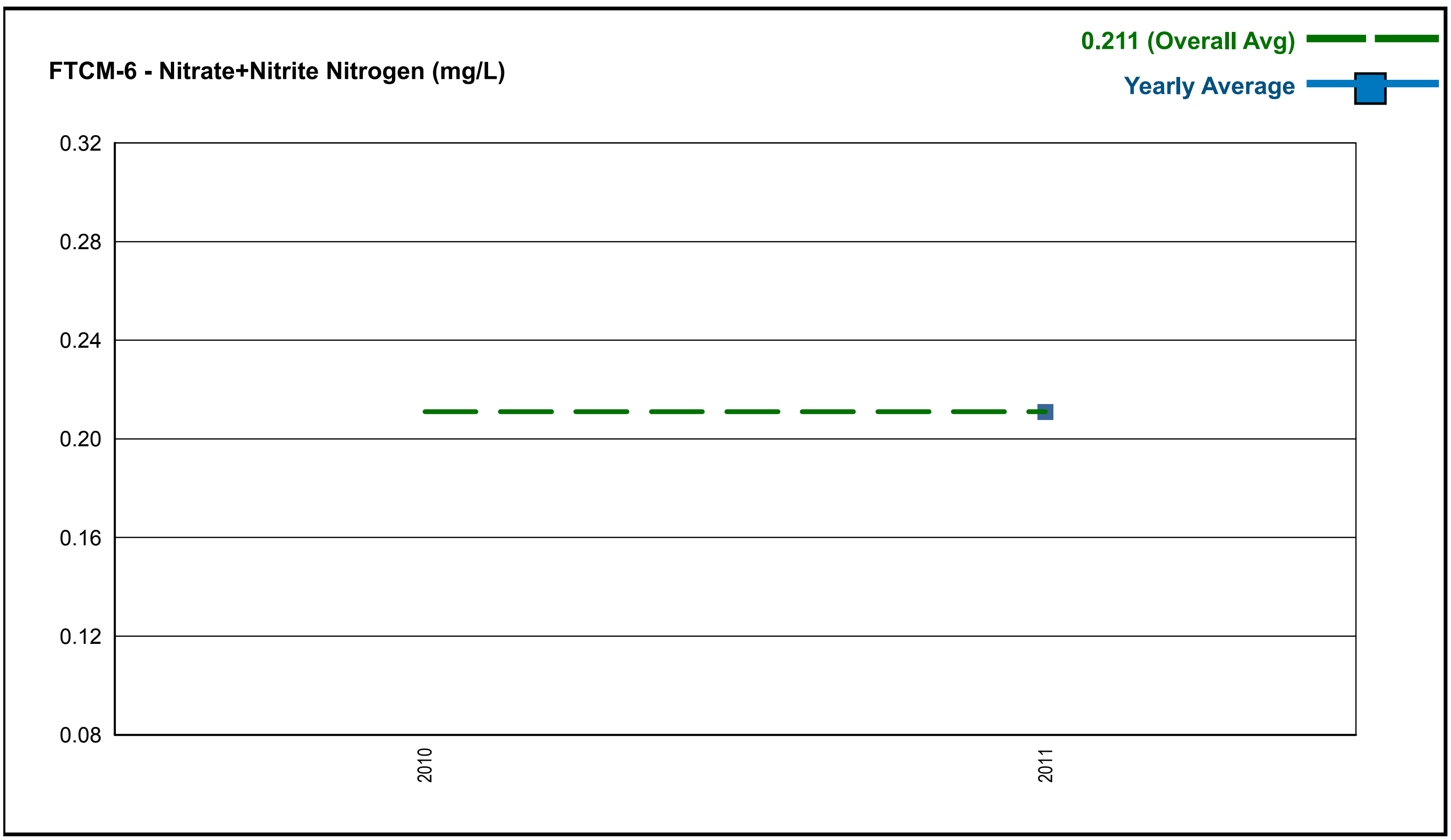

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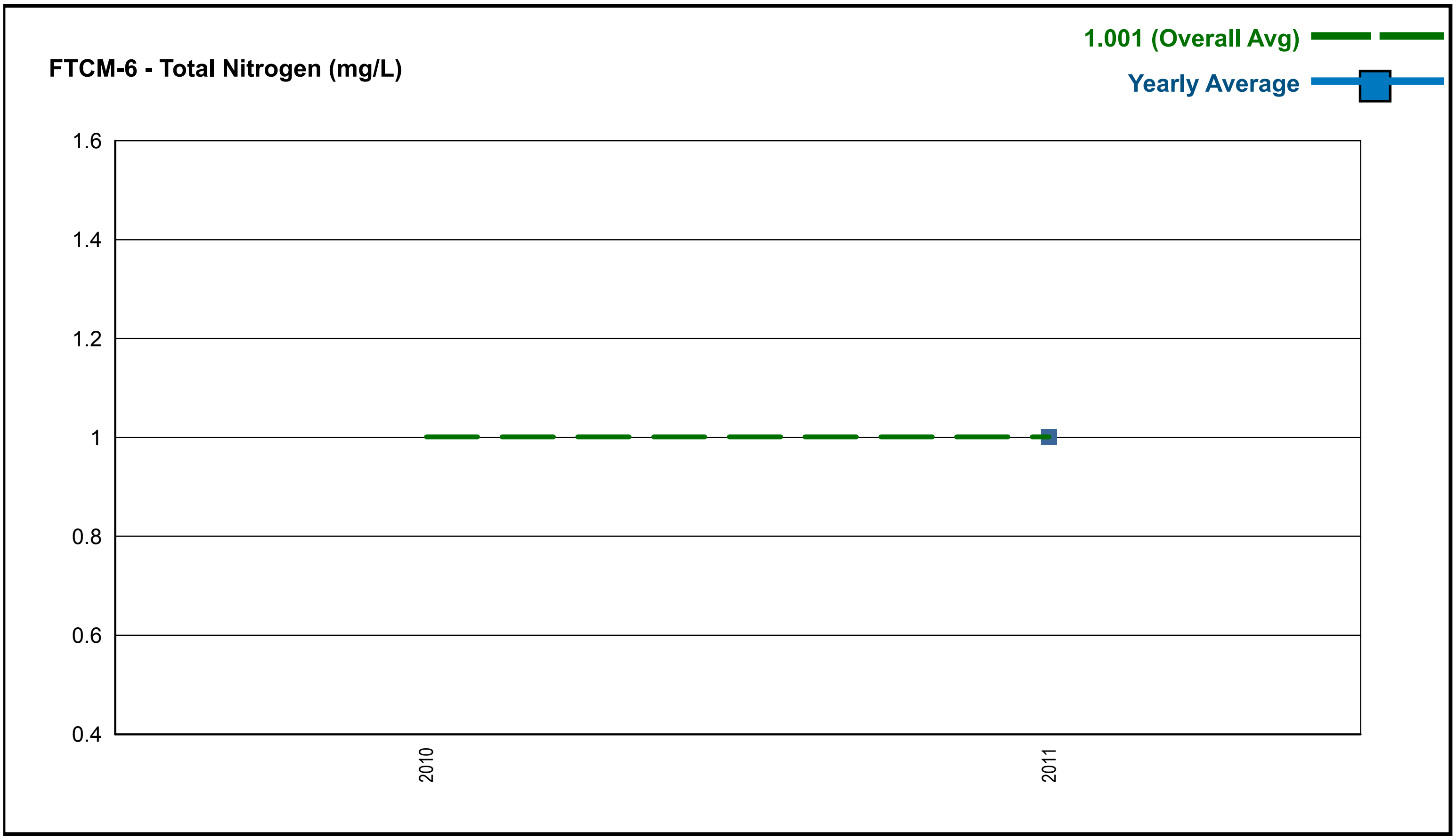

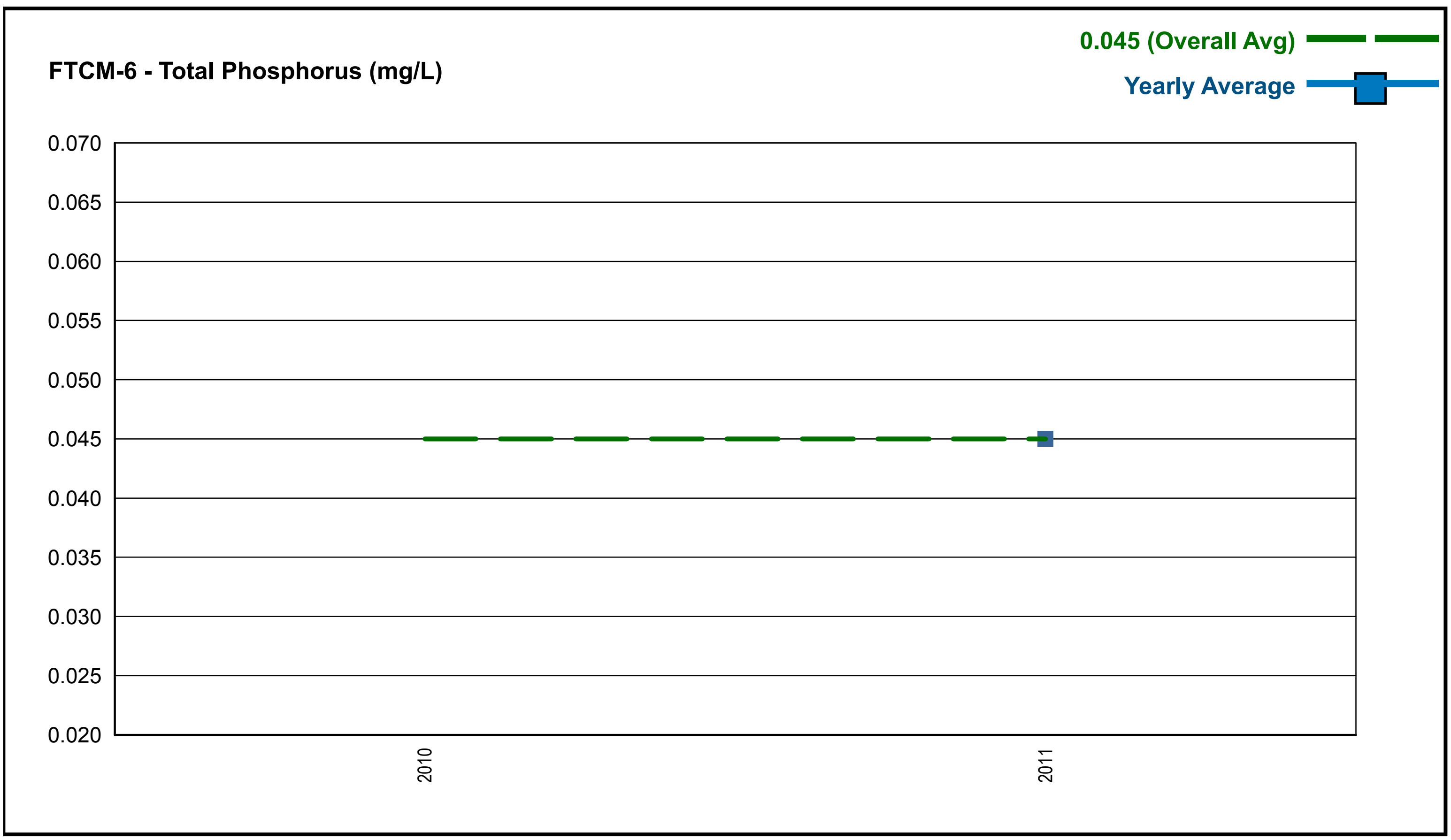

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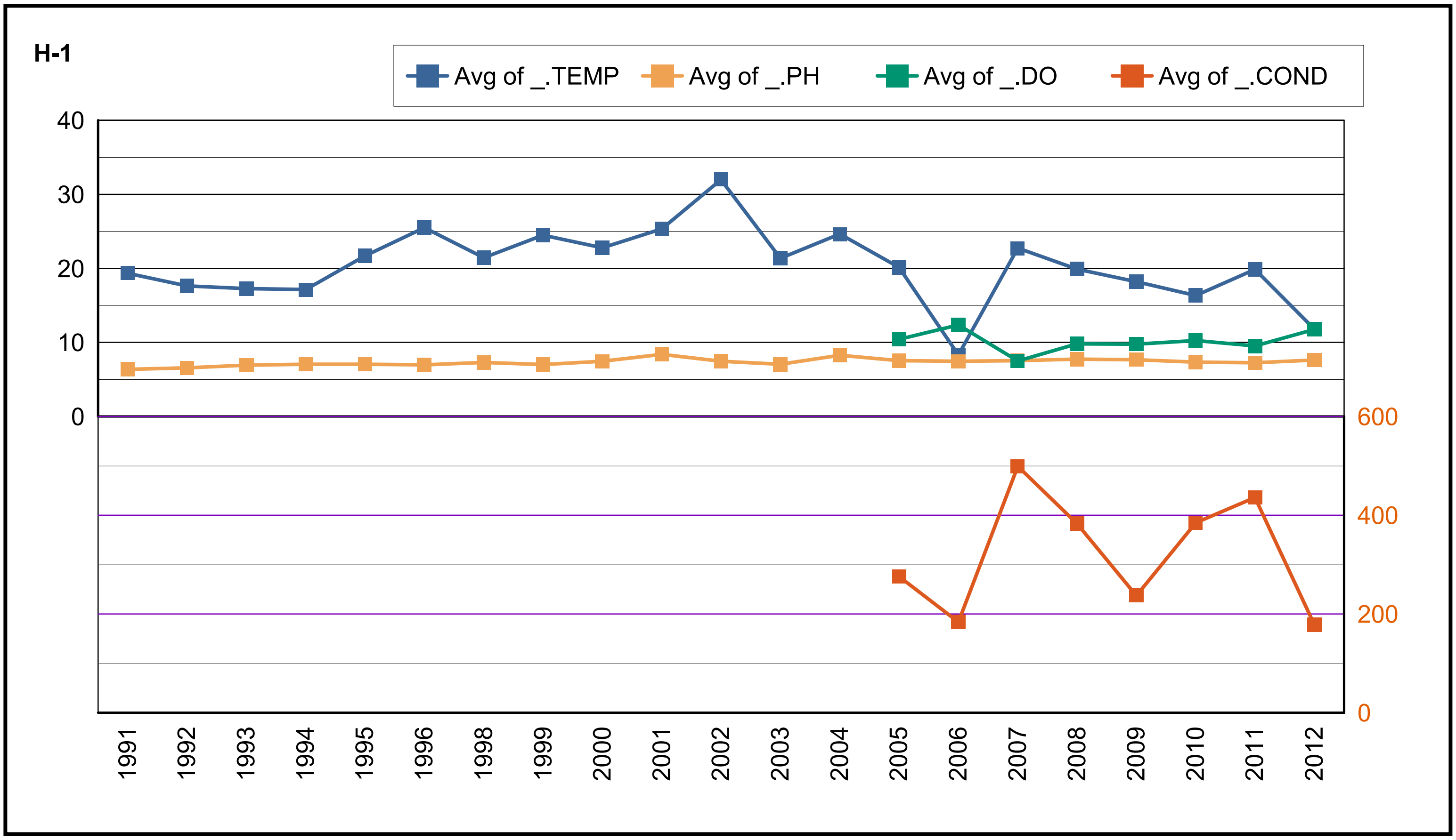

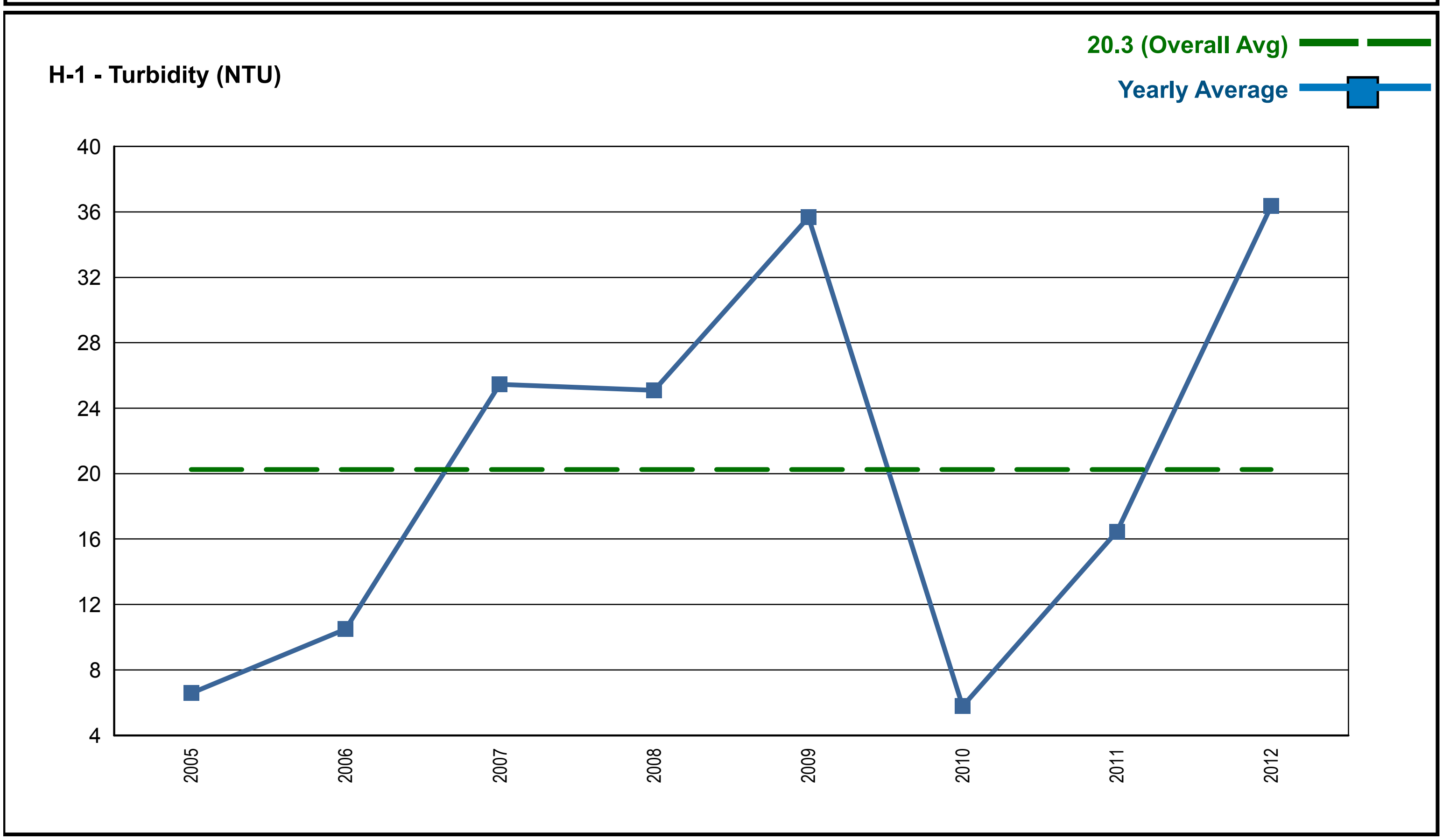

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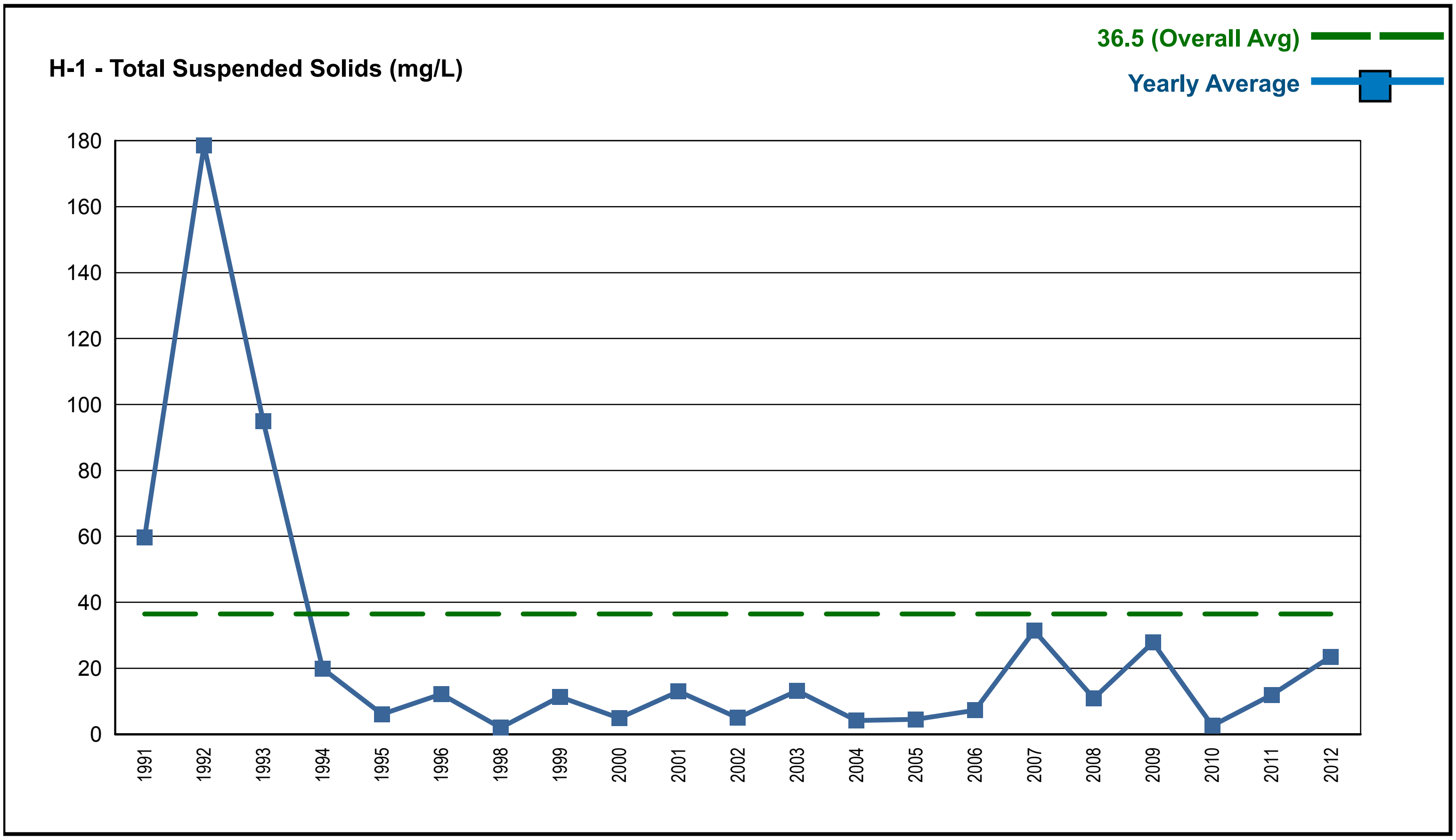

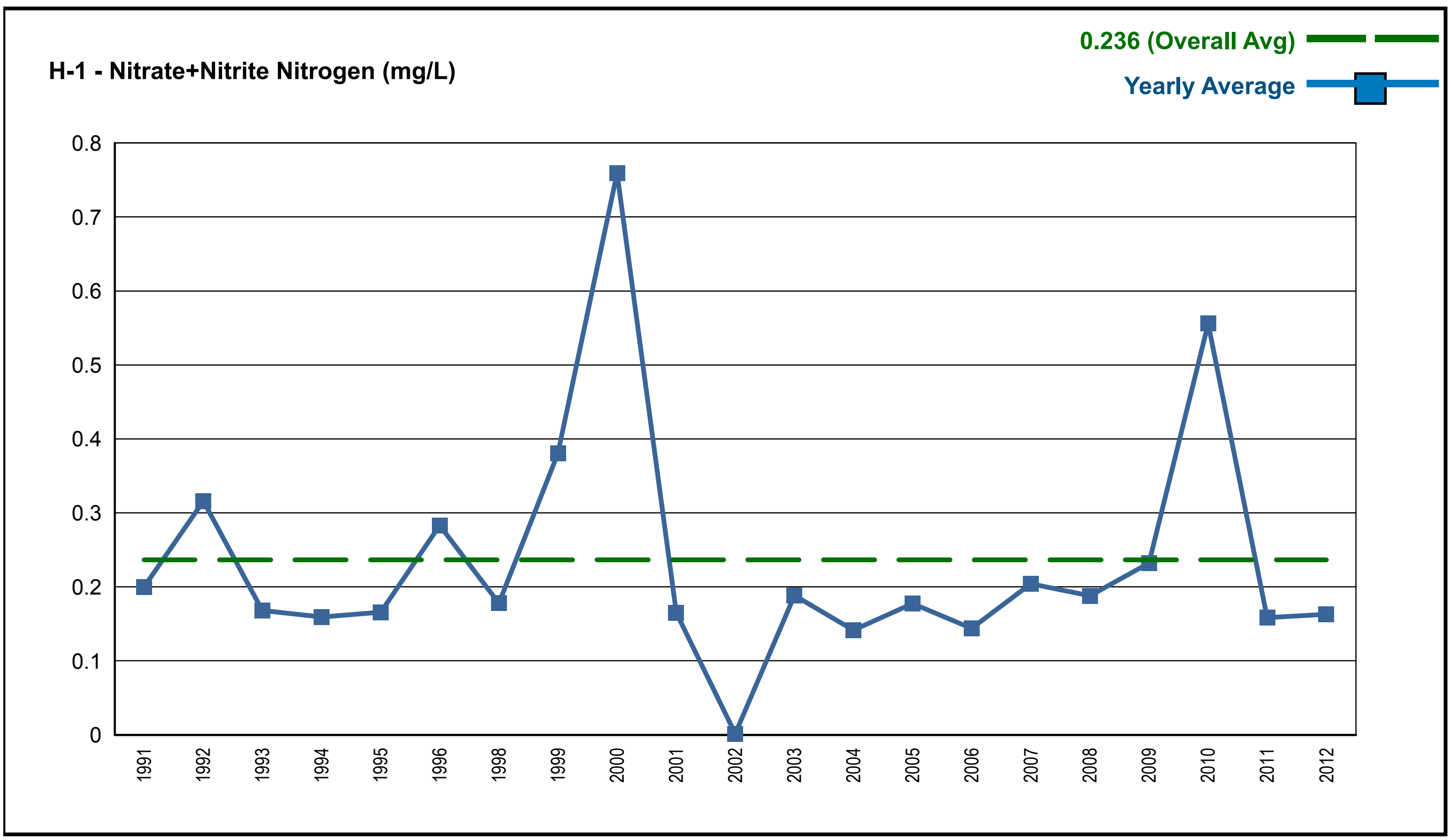

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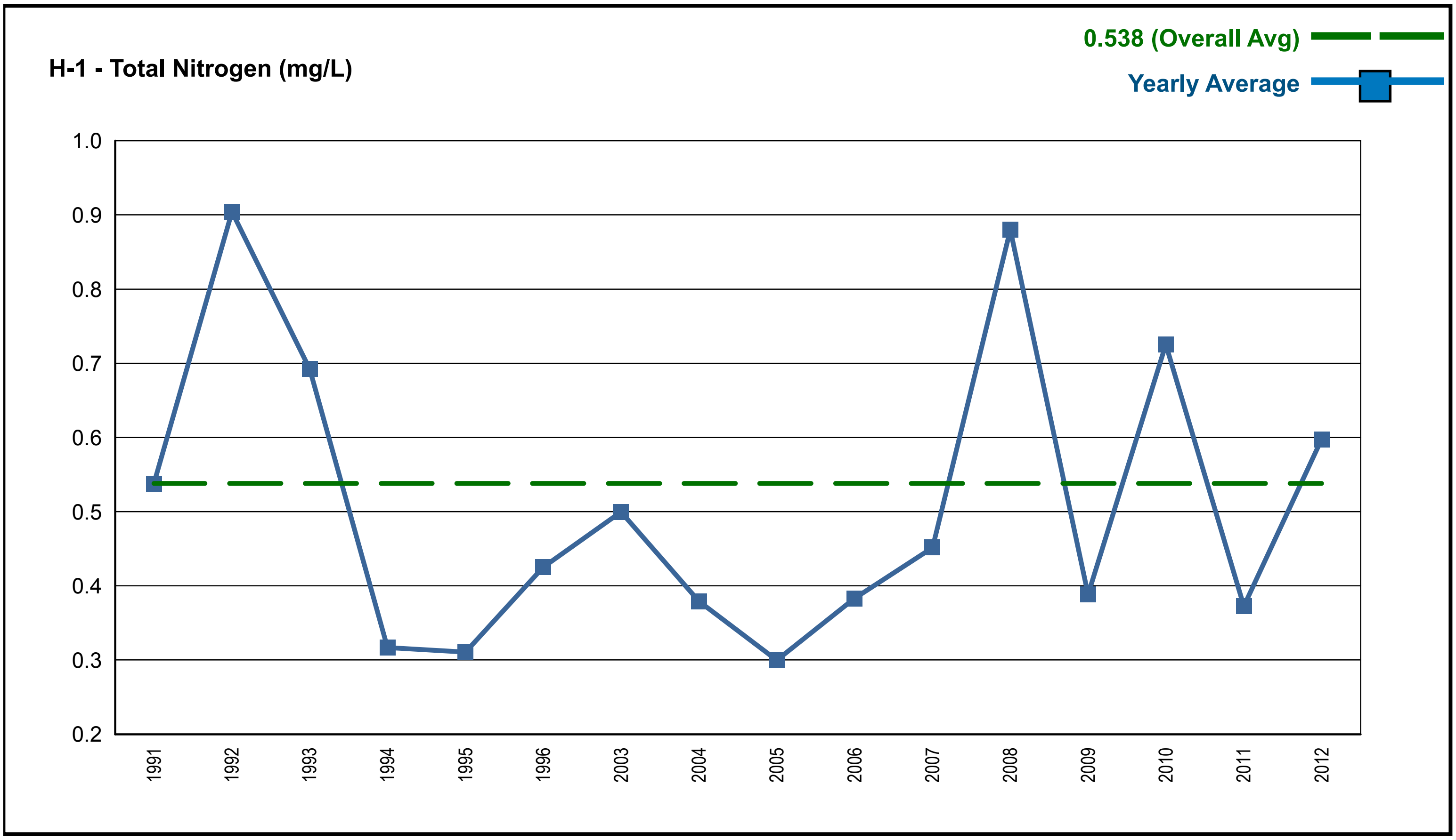

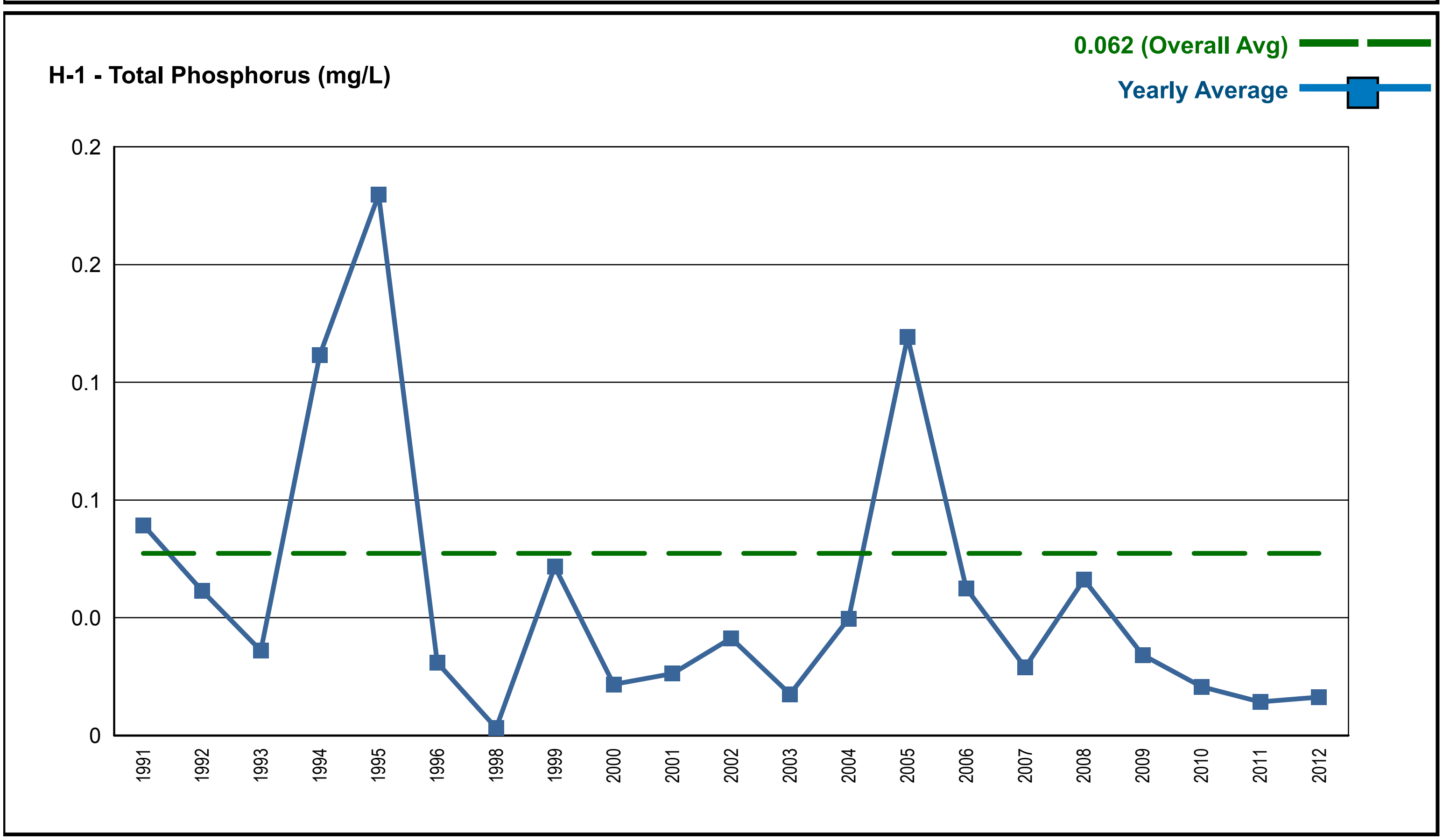

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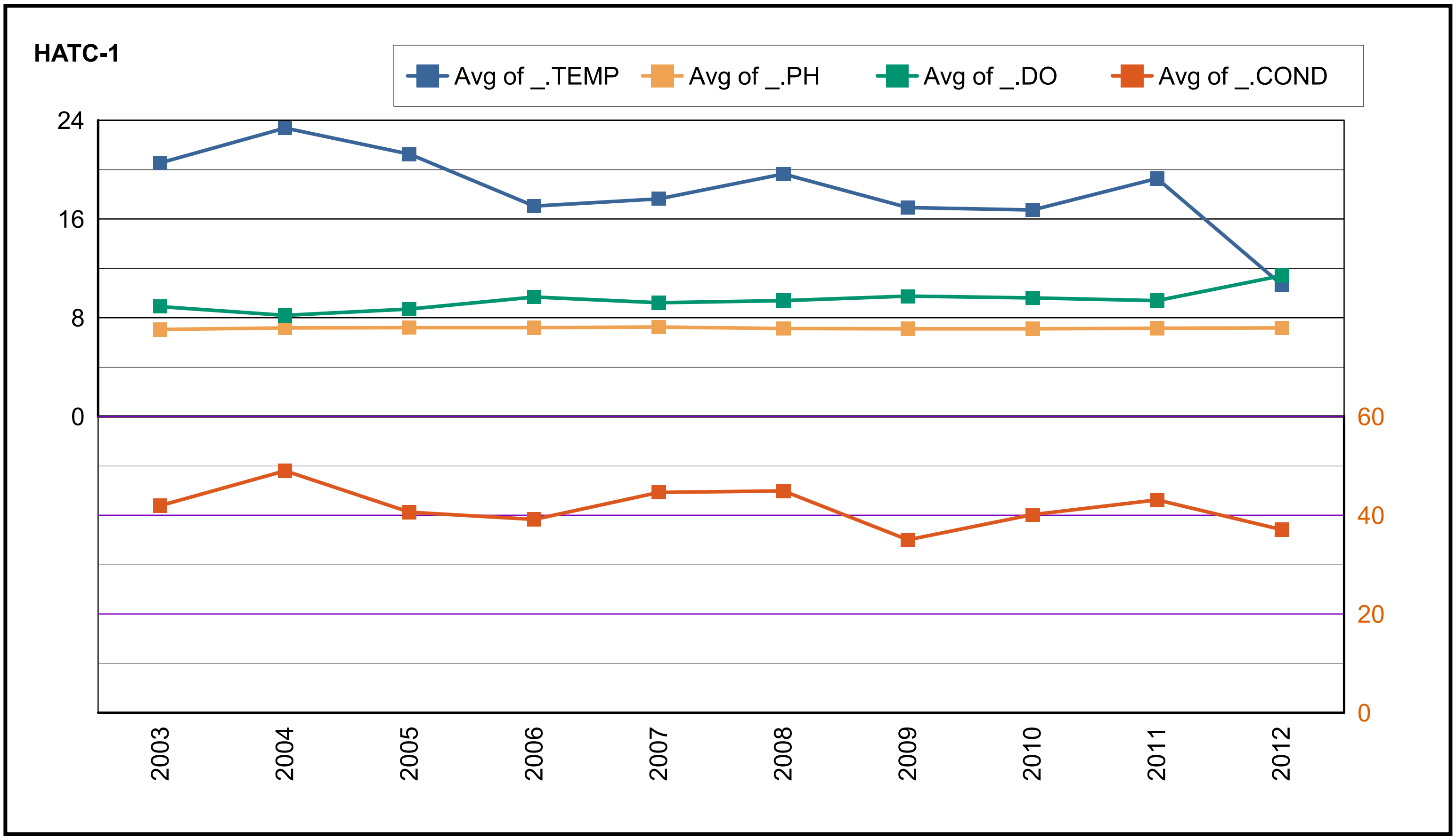

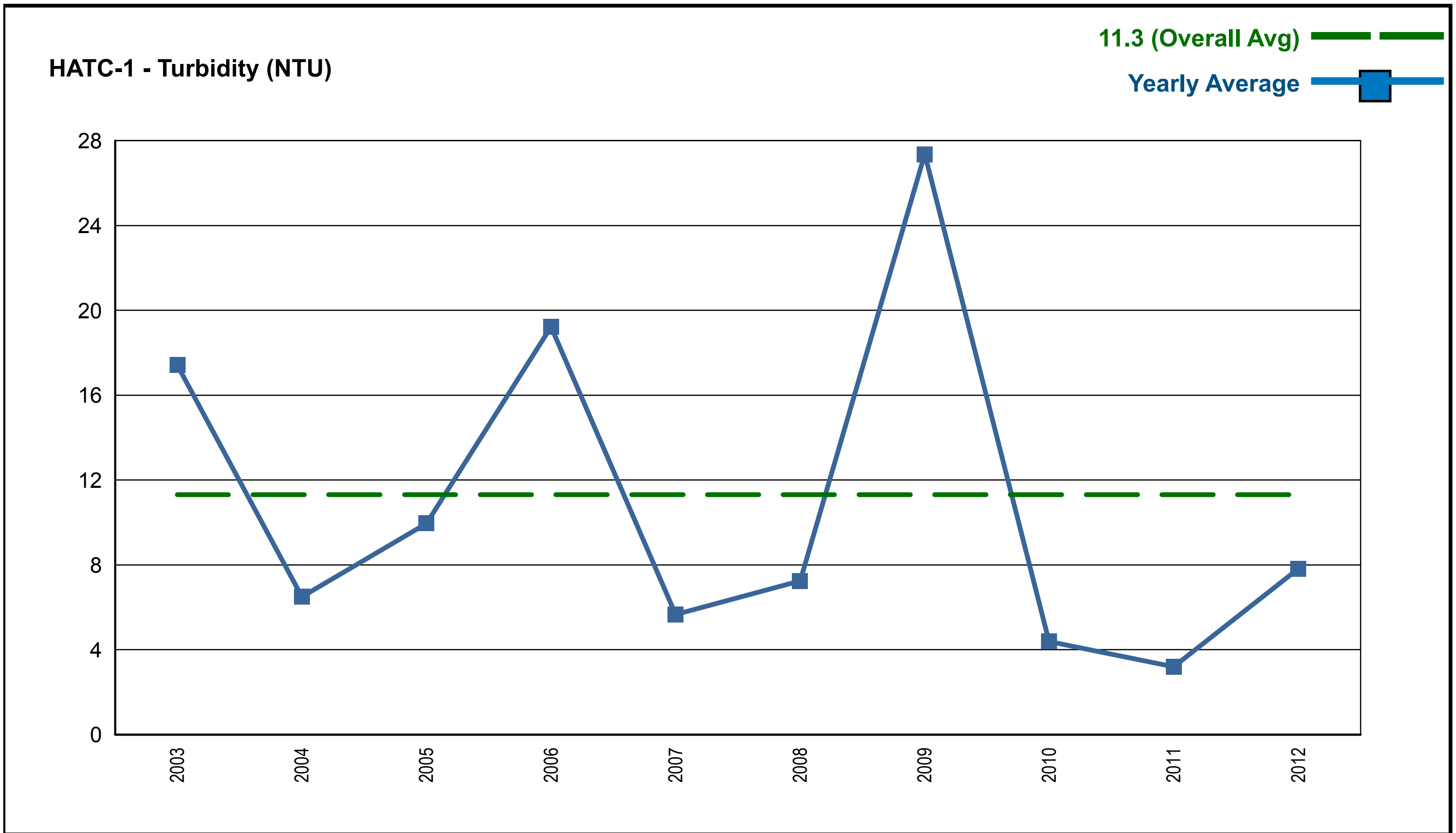

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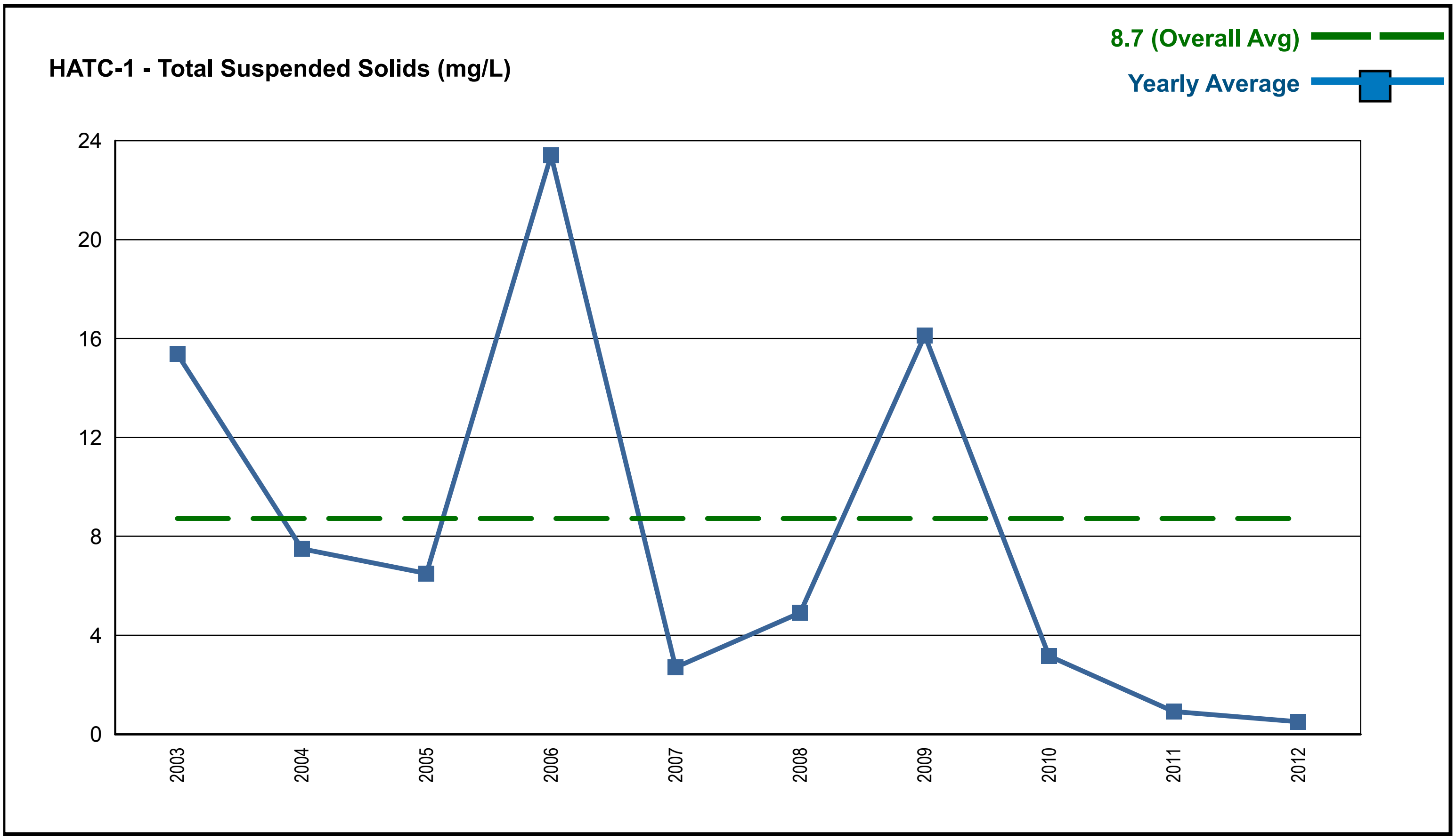

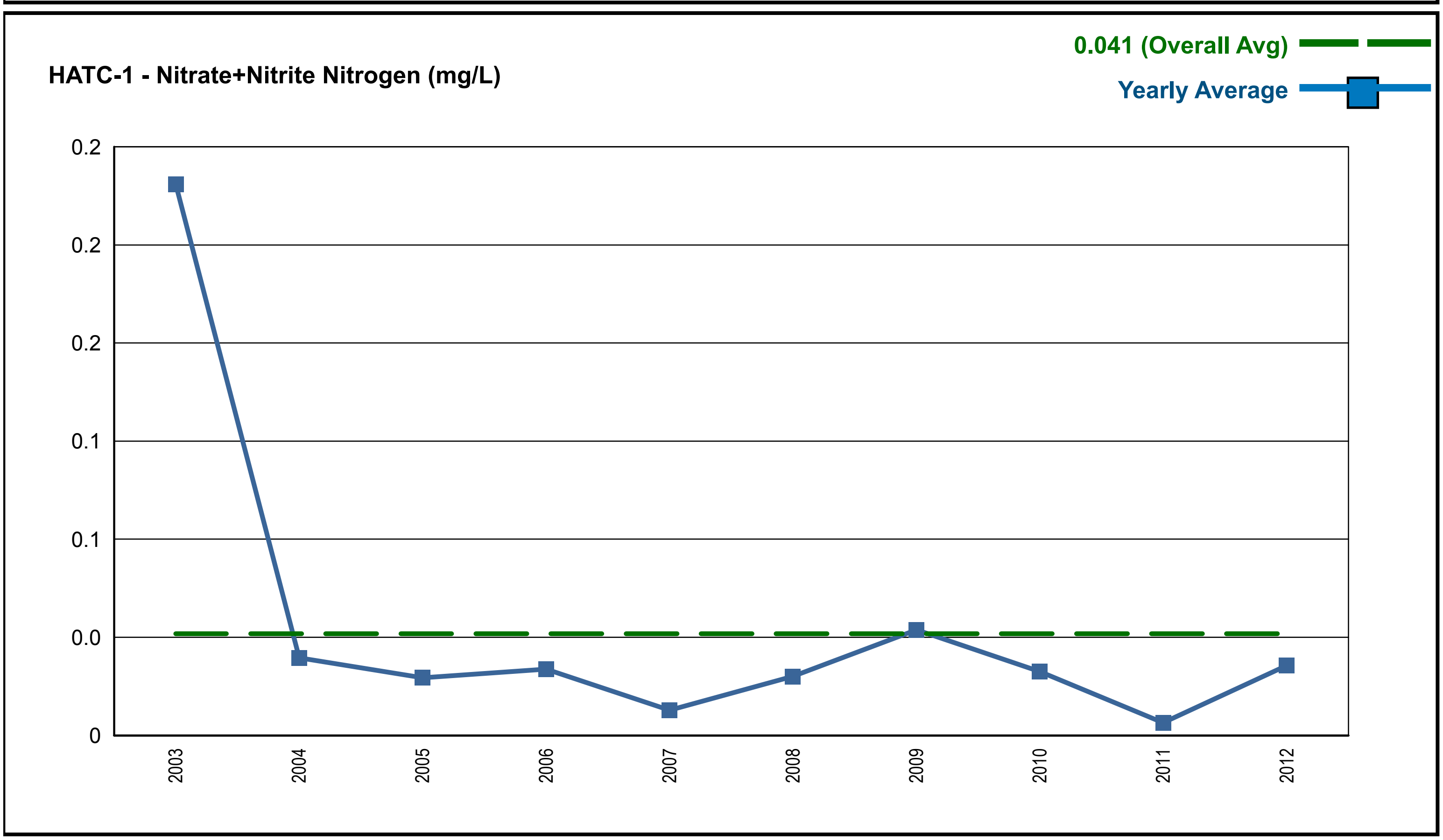

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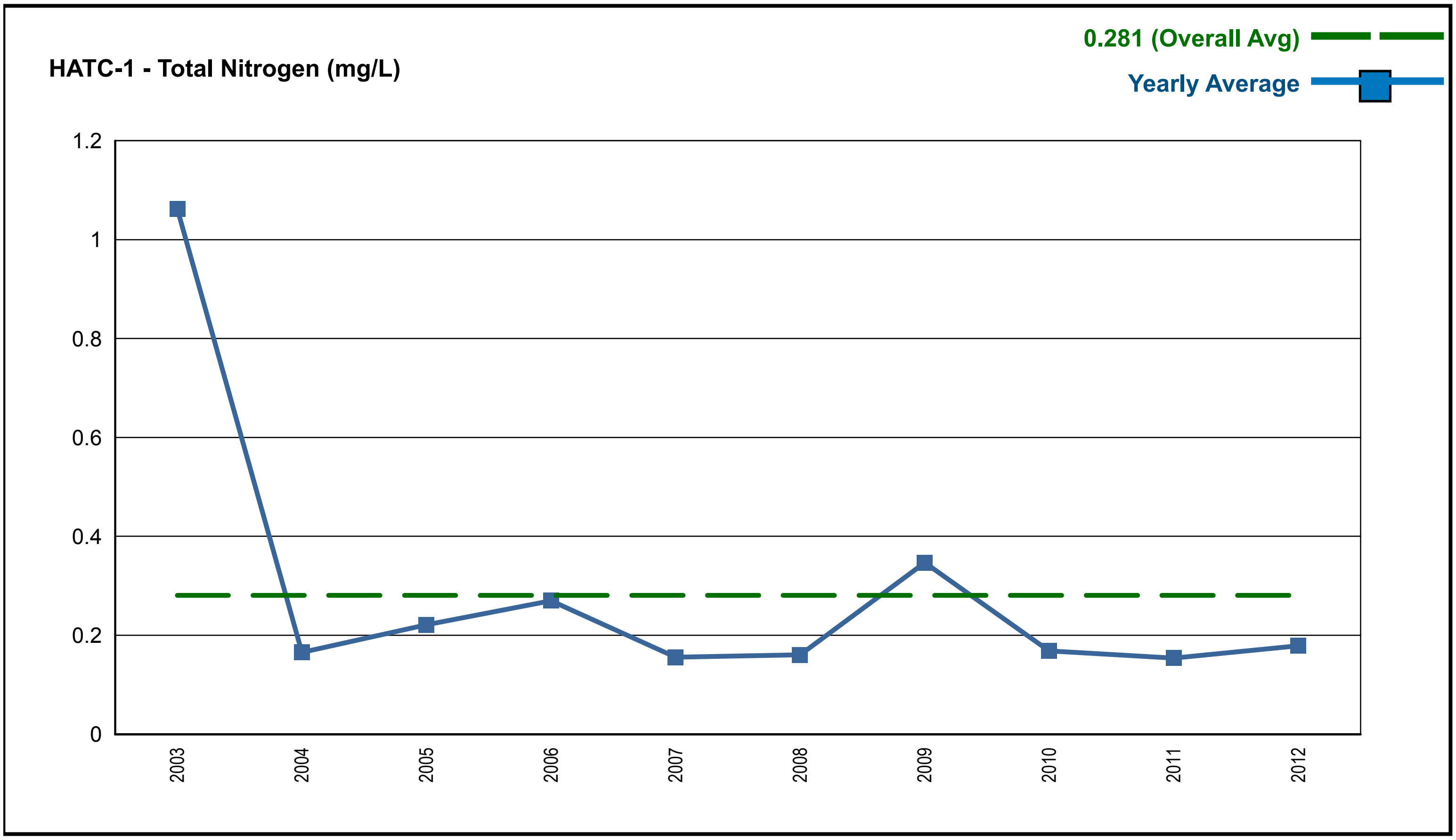
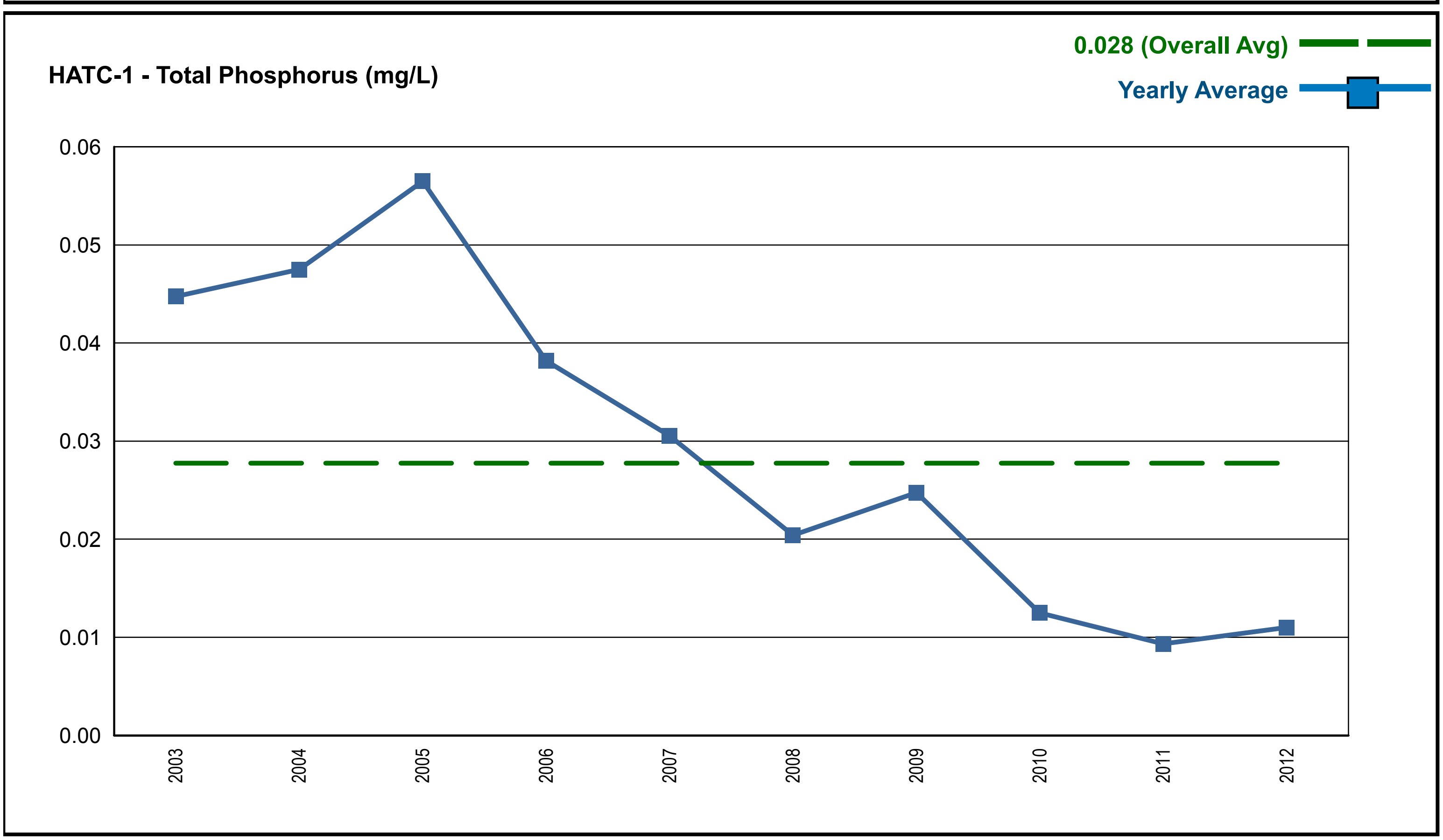
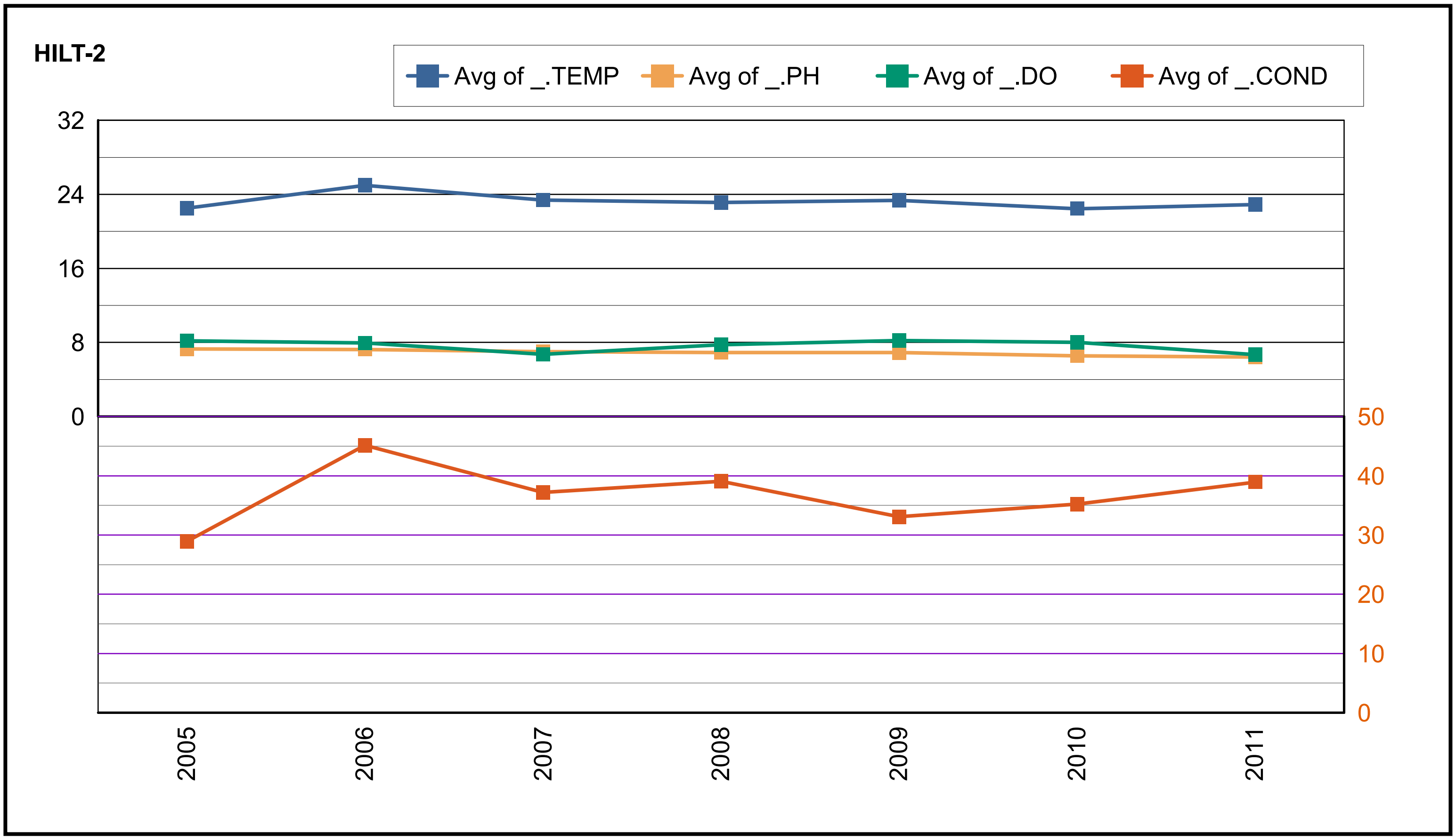
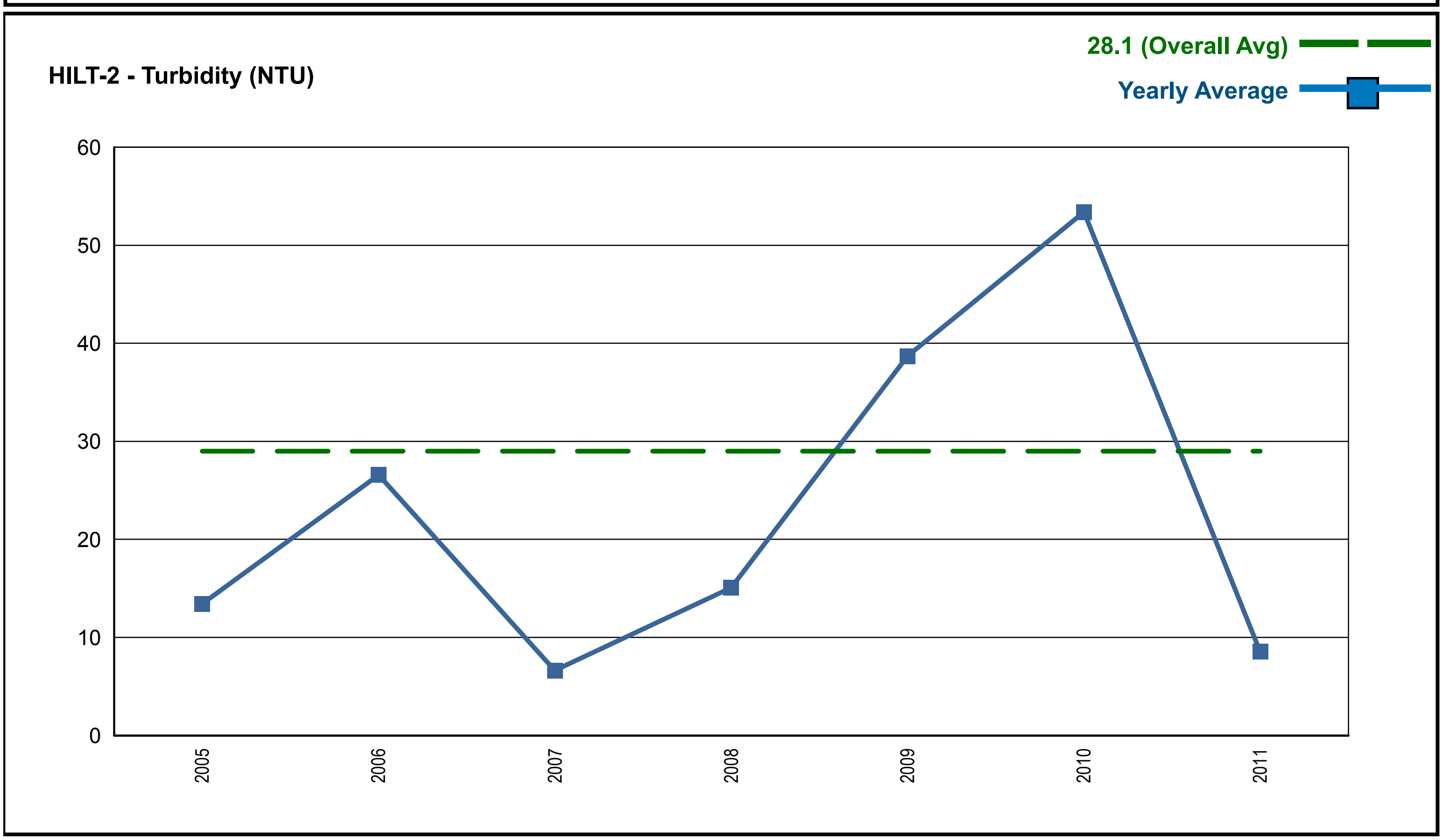




ADEM Ambient Trend Stations - Sampled 1977 - 2012





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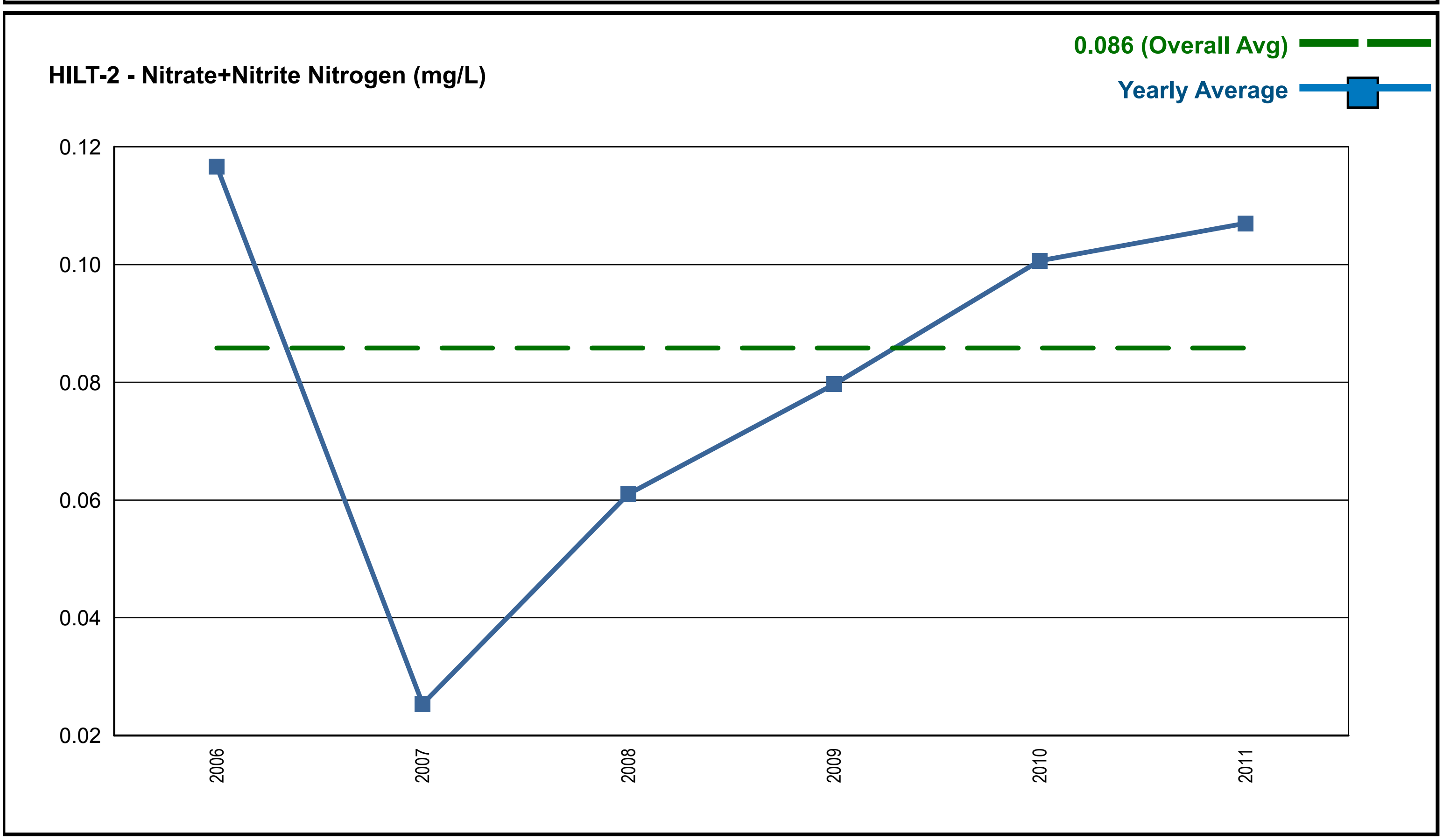

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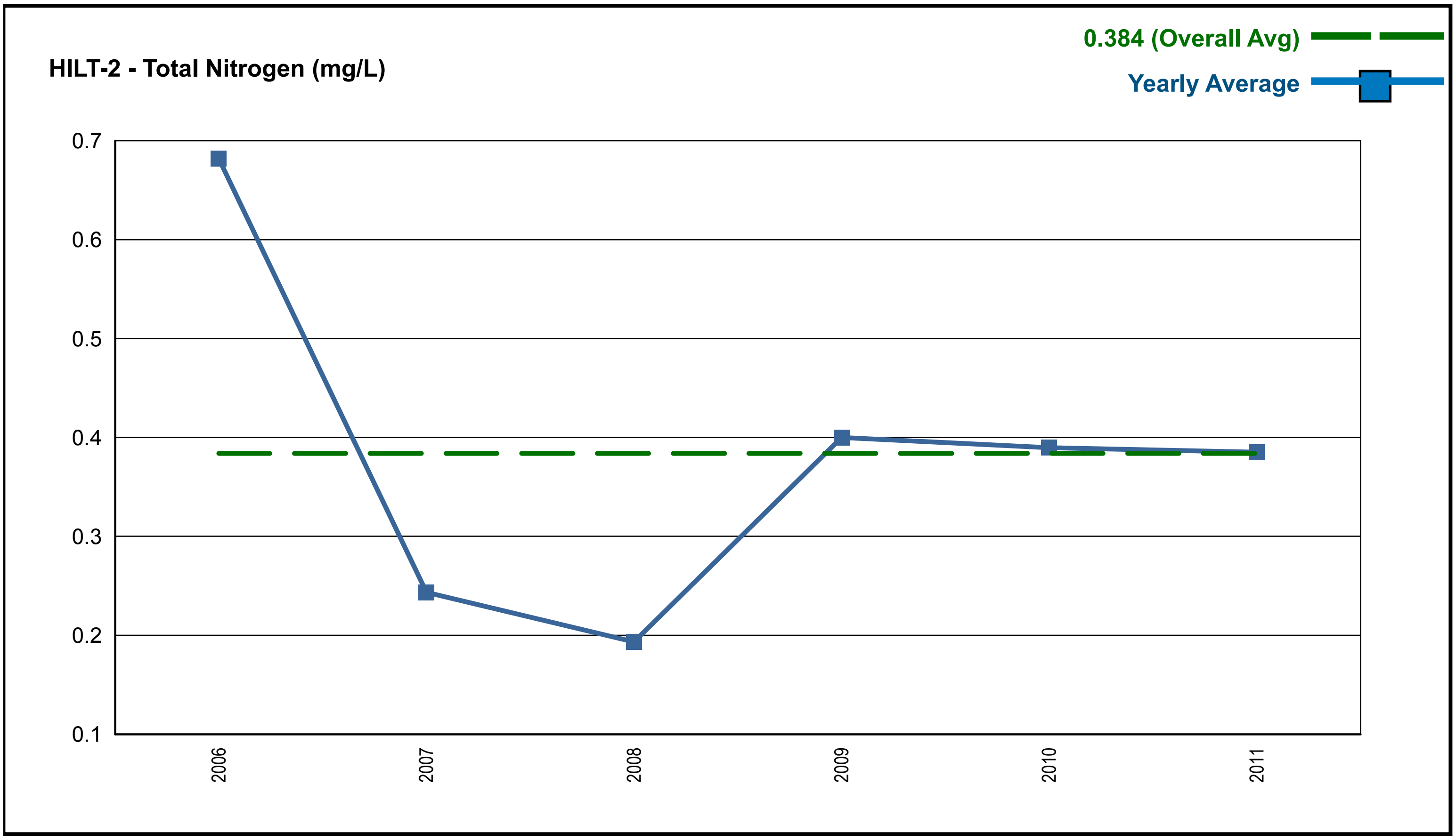
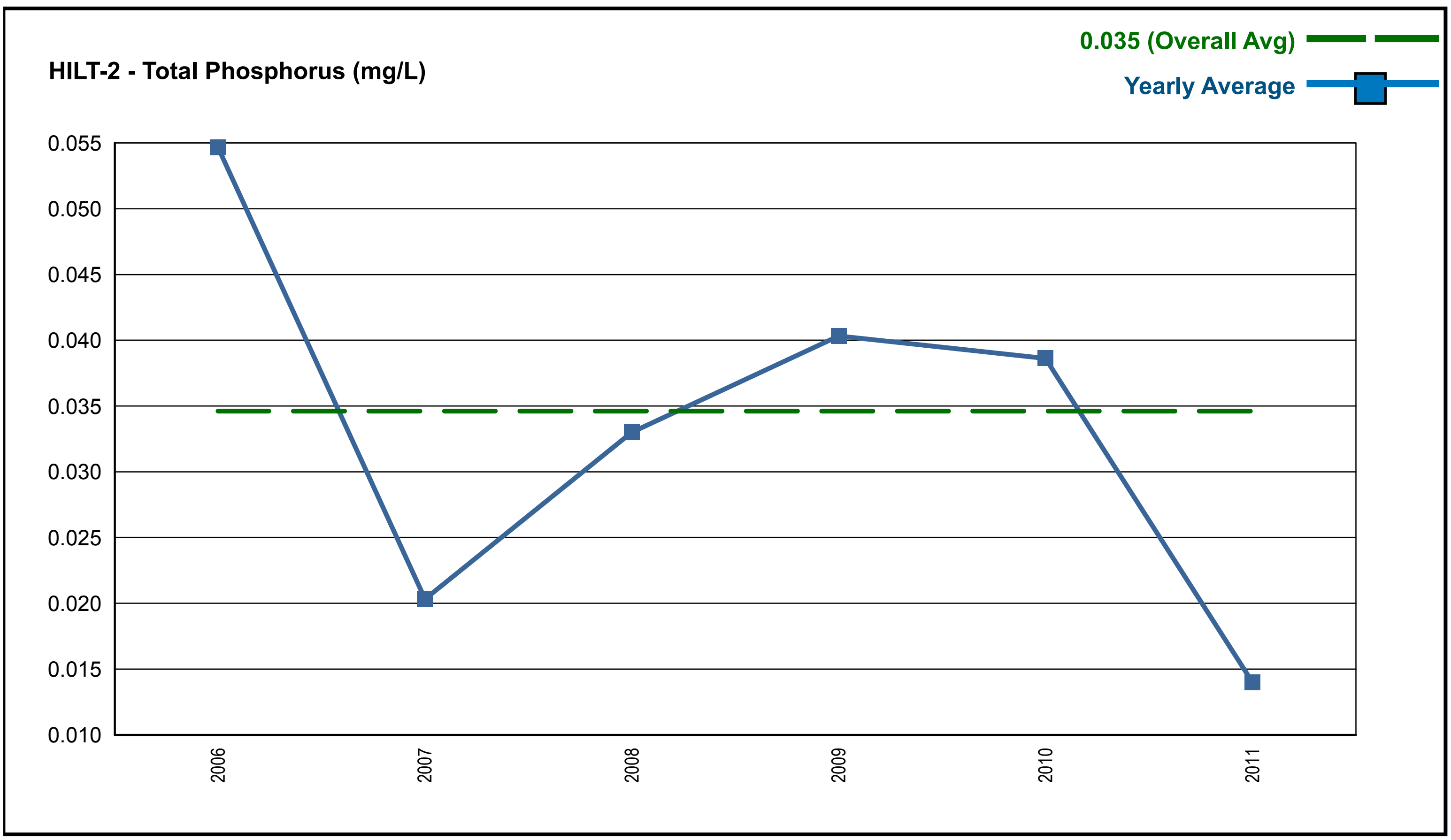
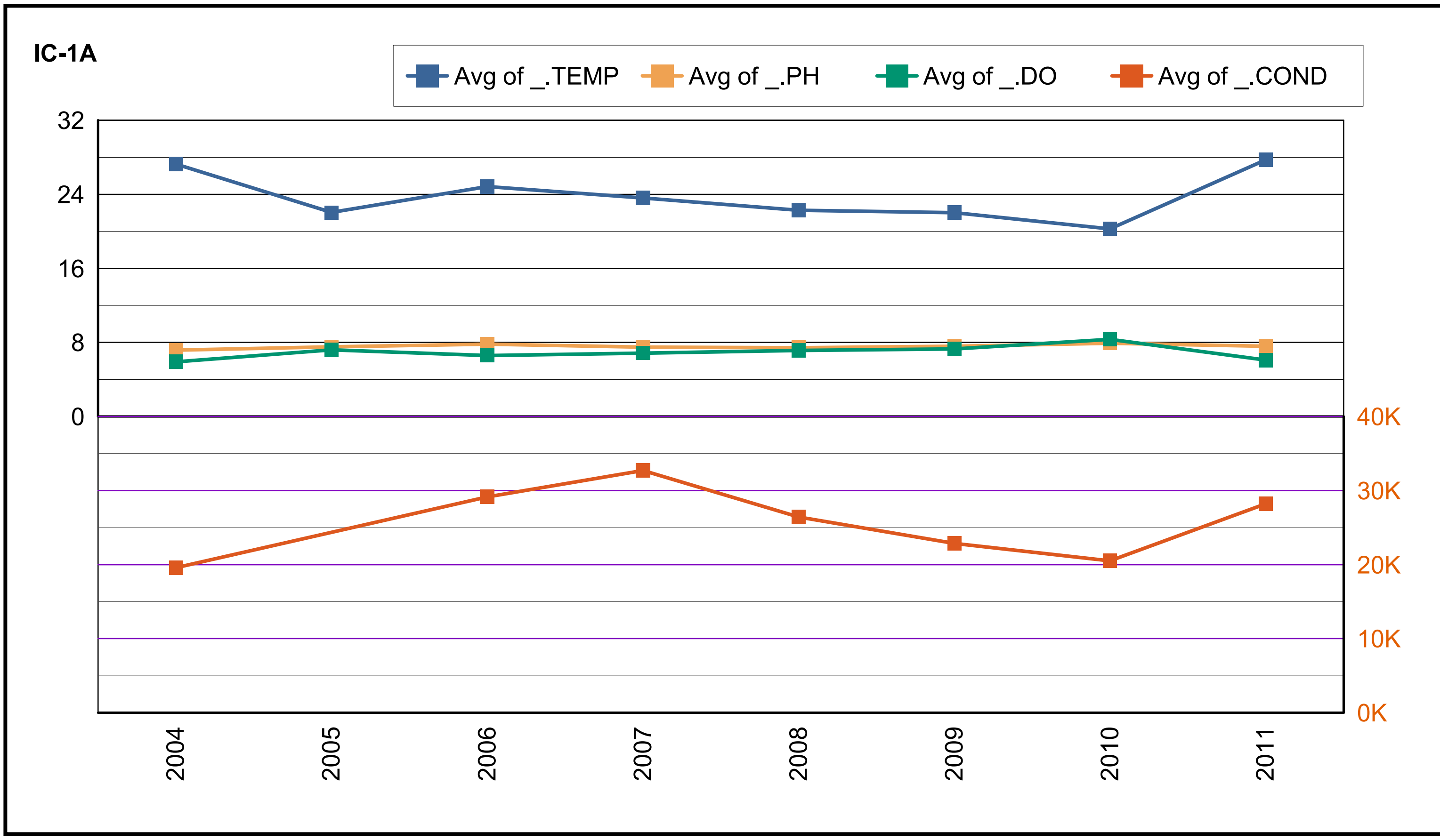
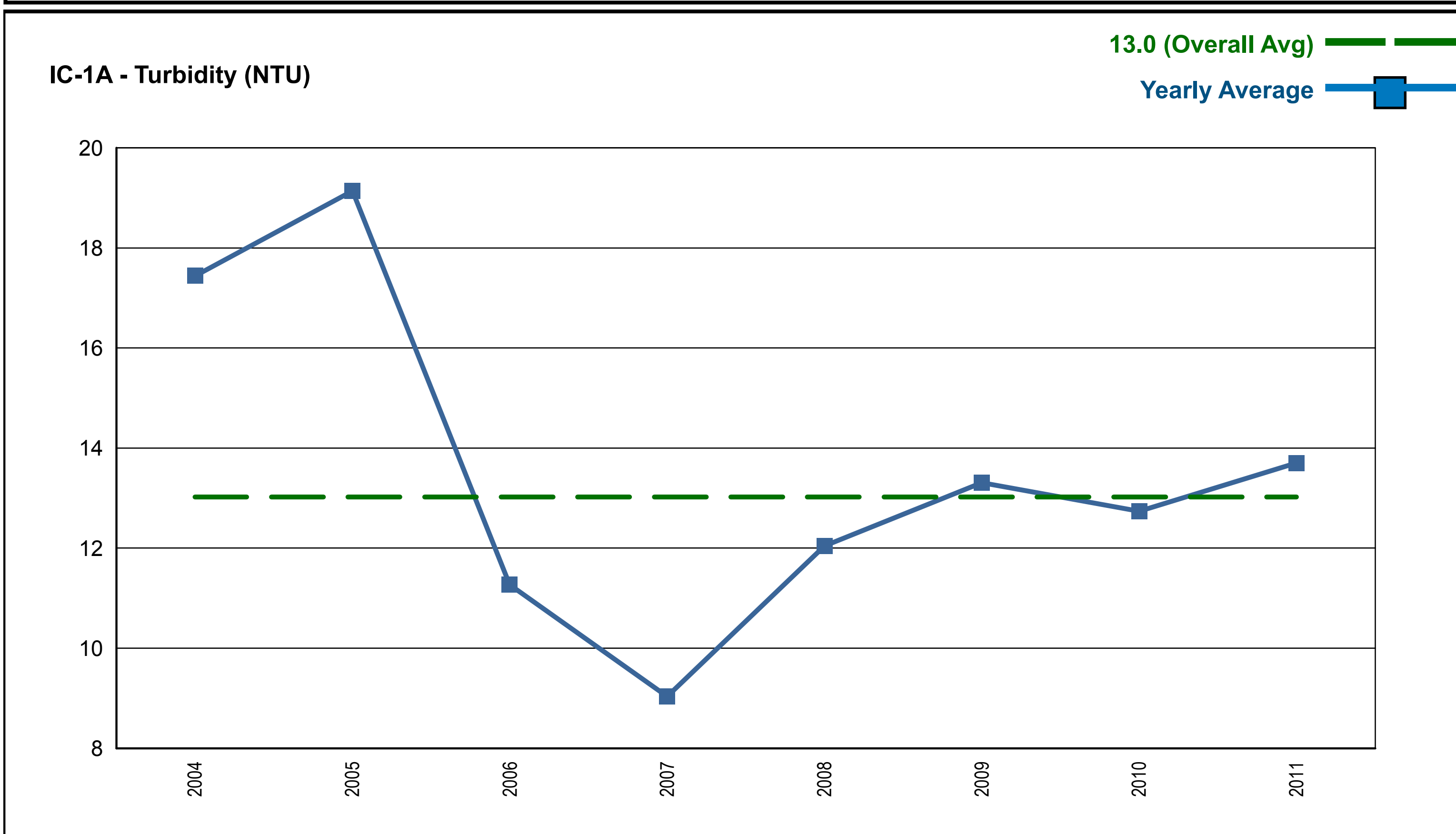




ADEM Ambient Trend Stations - Sampled 1977 - 2012





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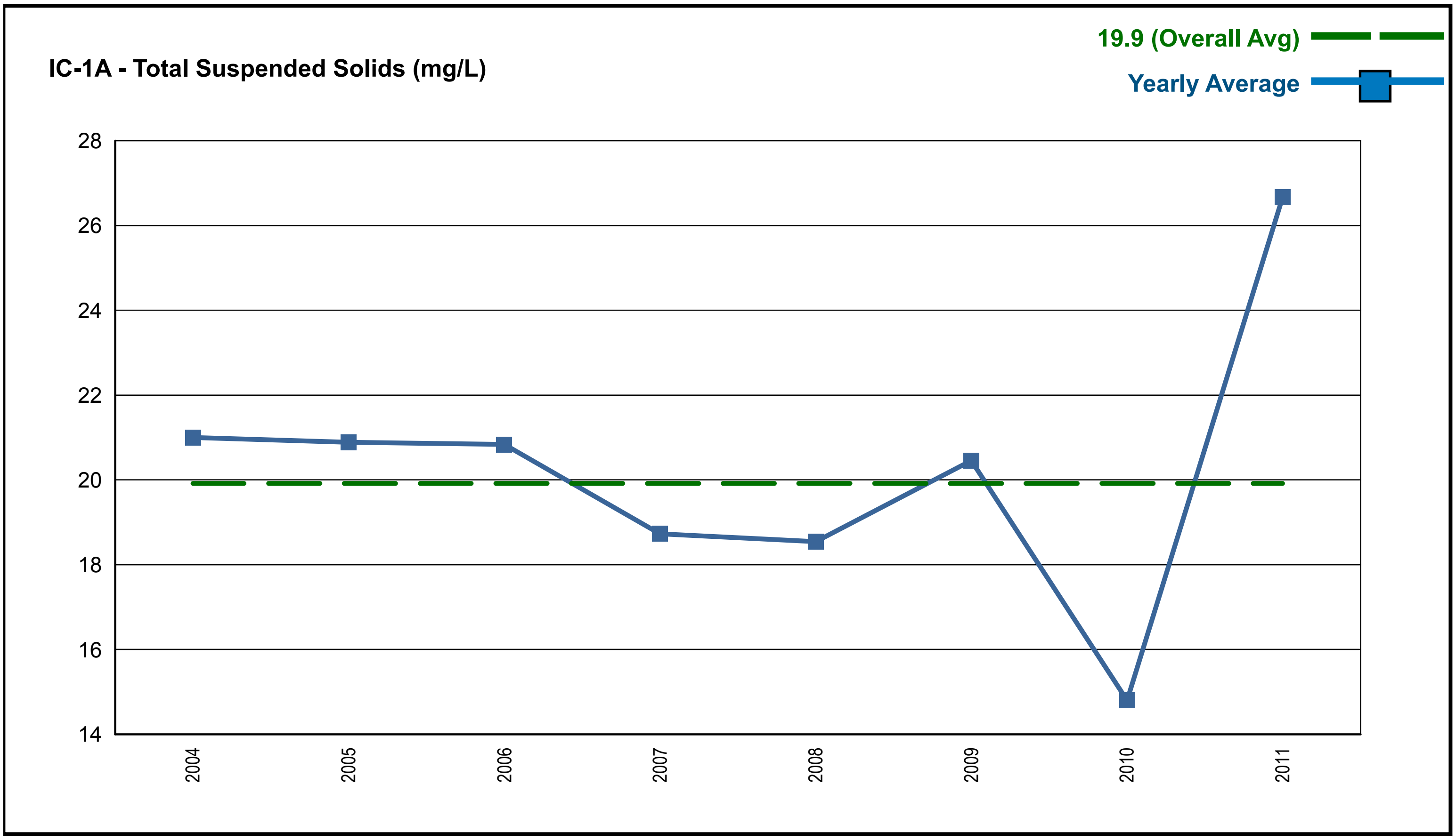

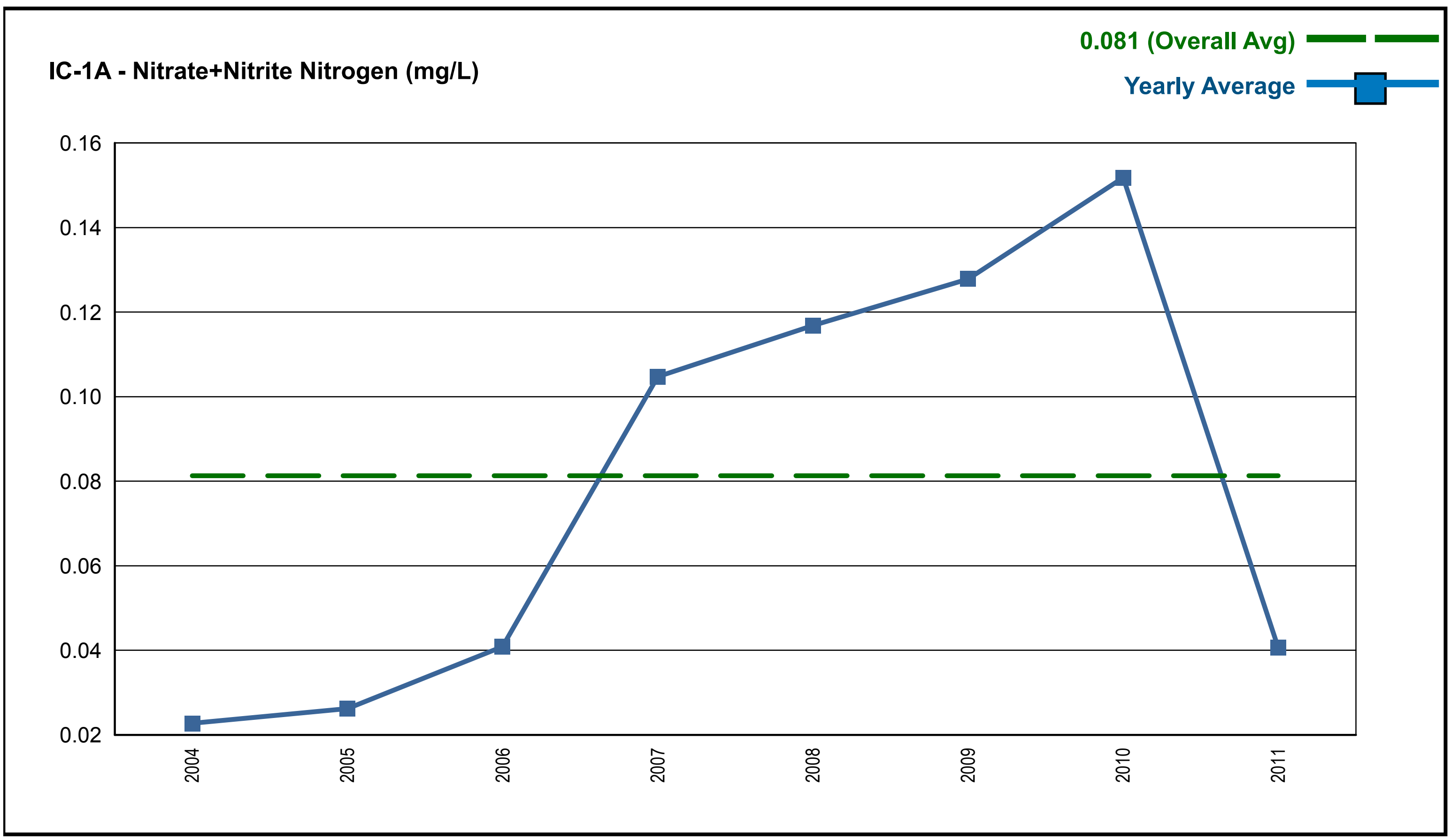

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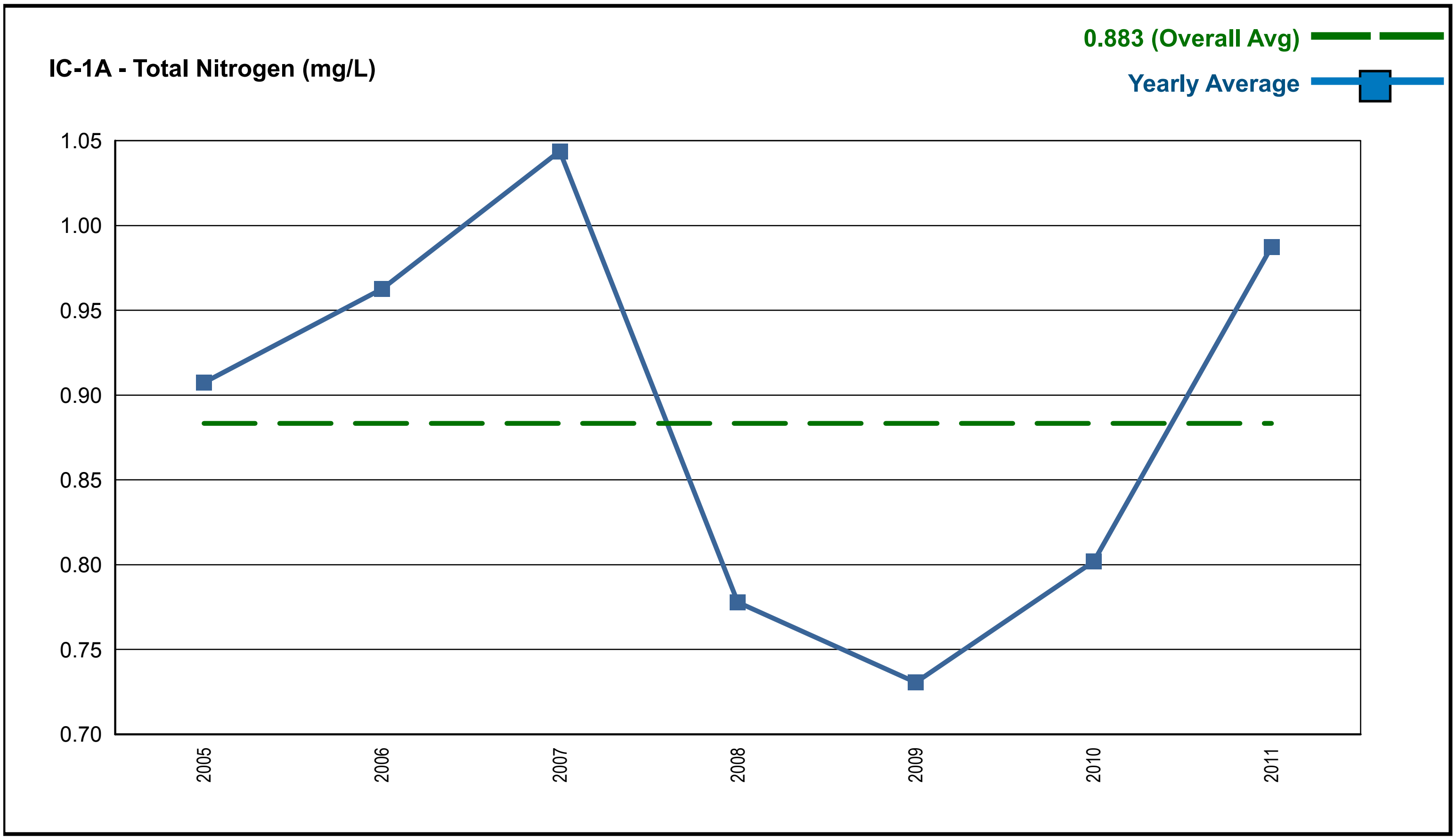

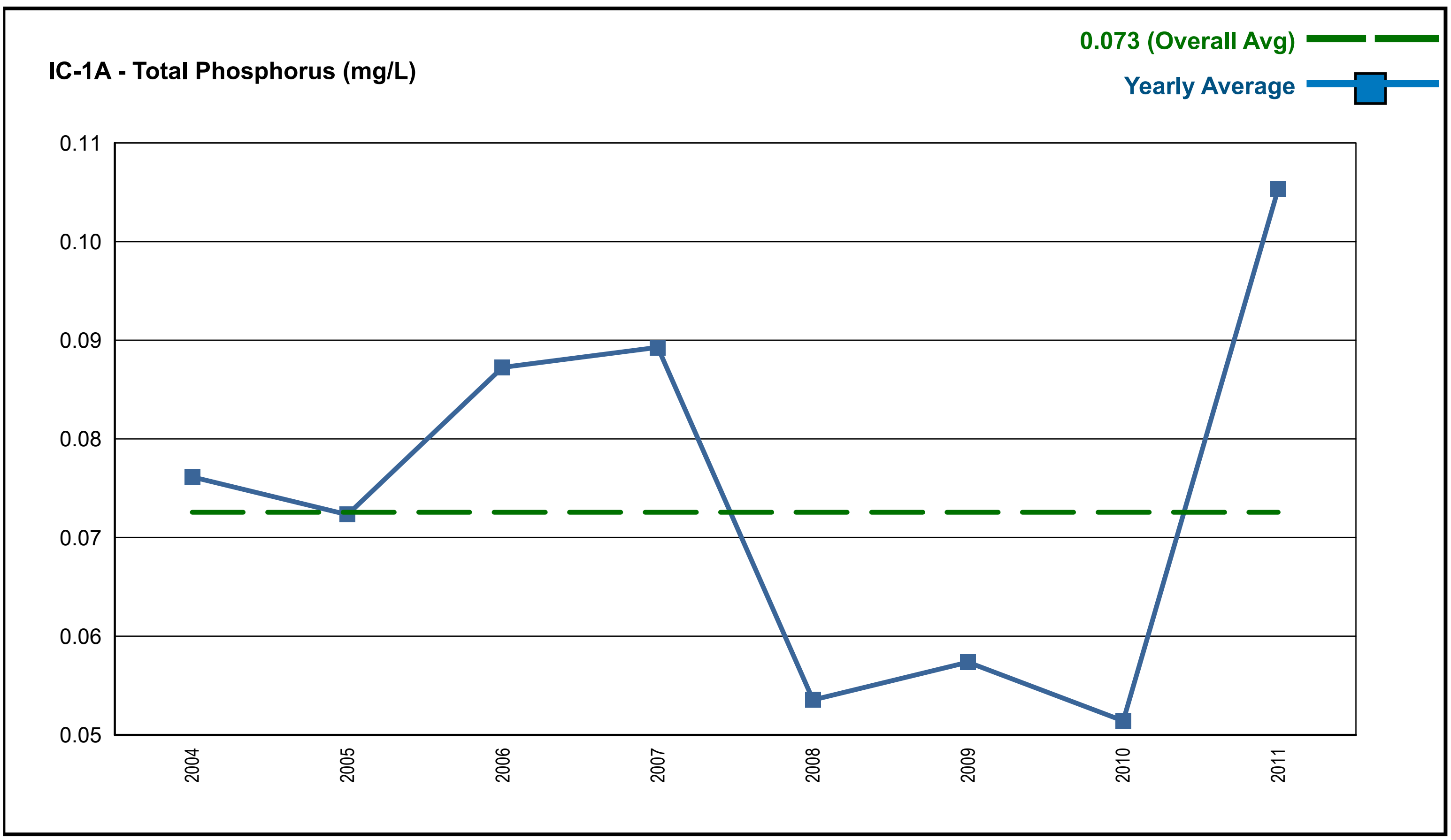

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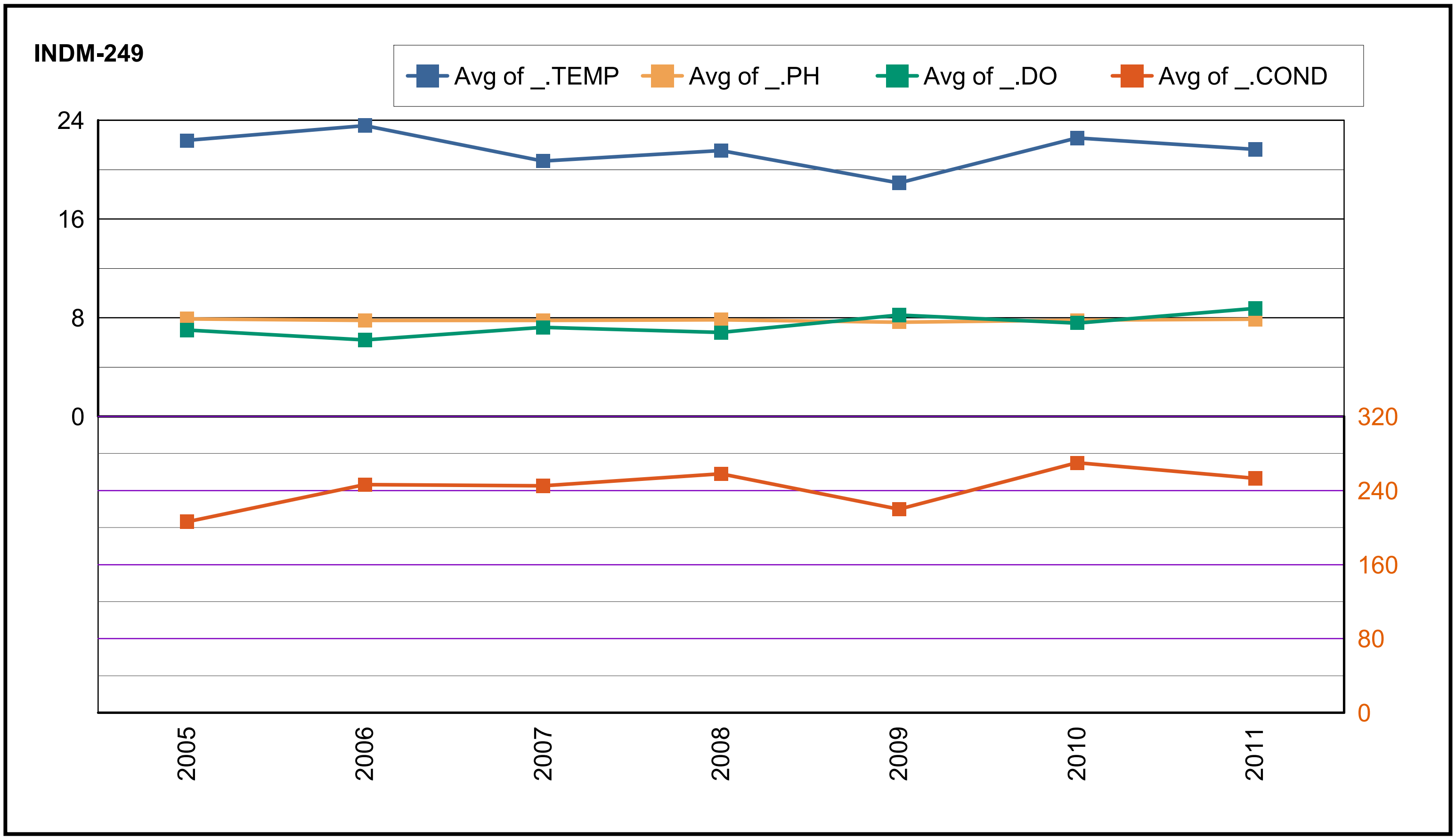

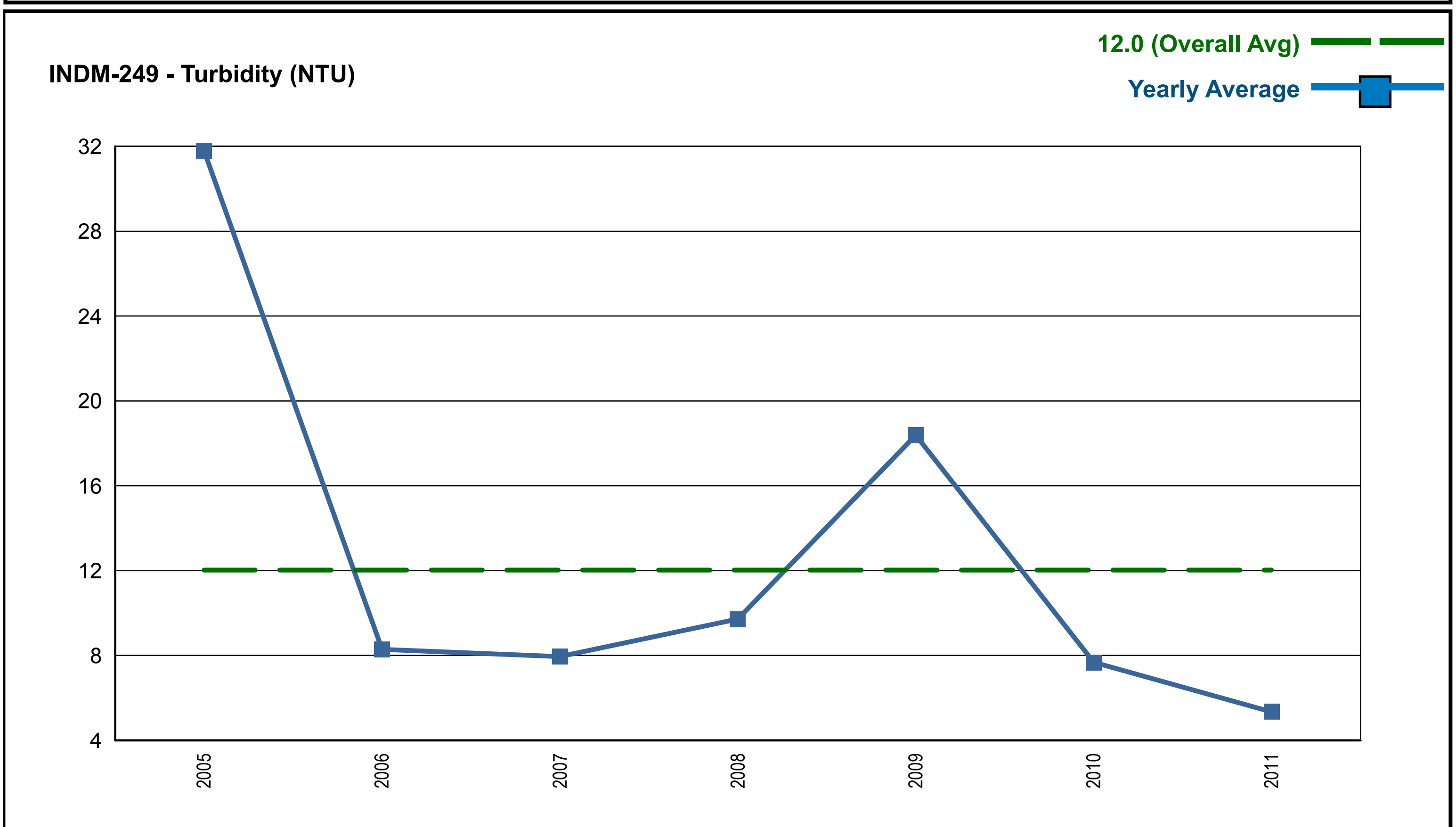

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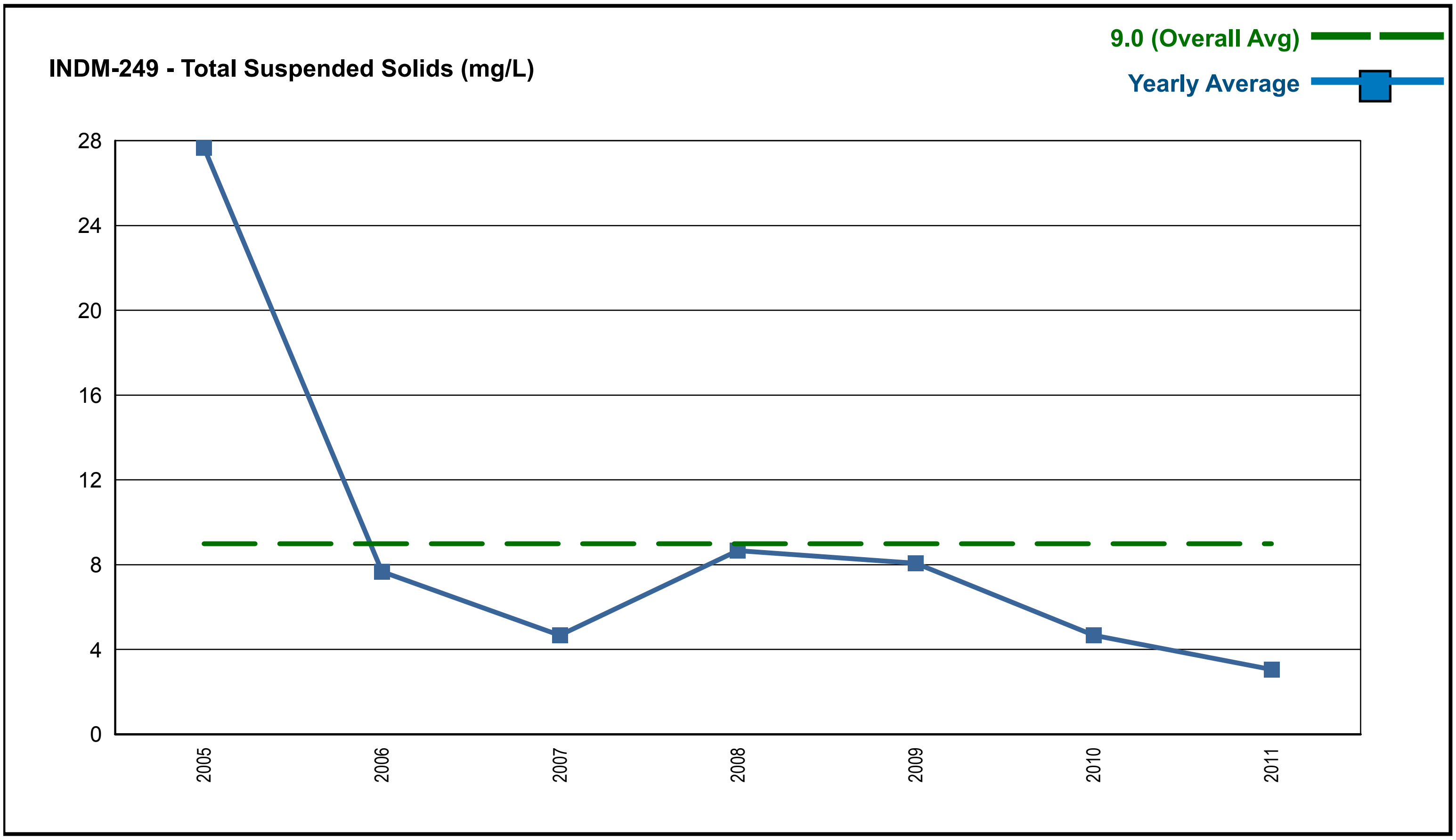

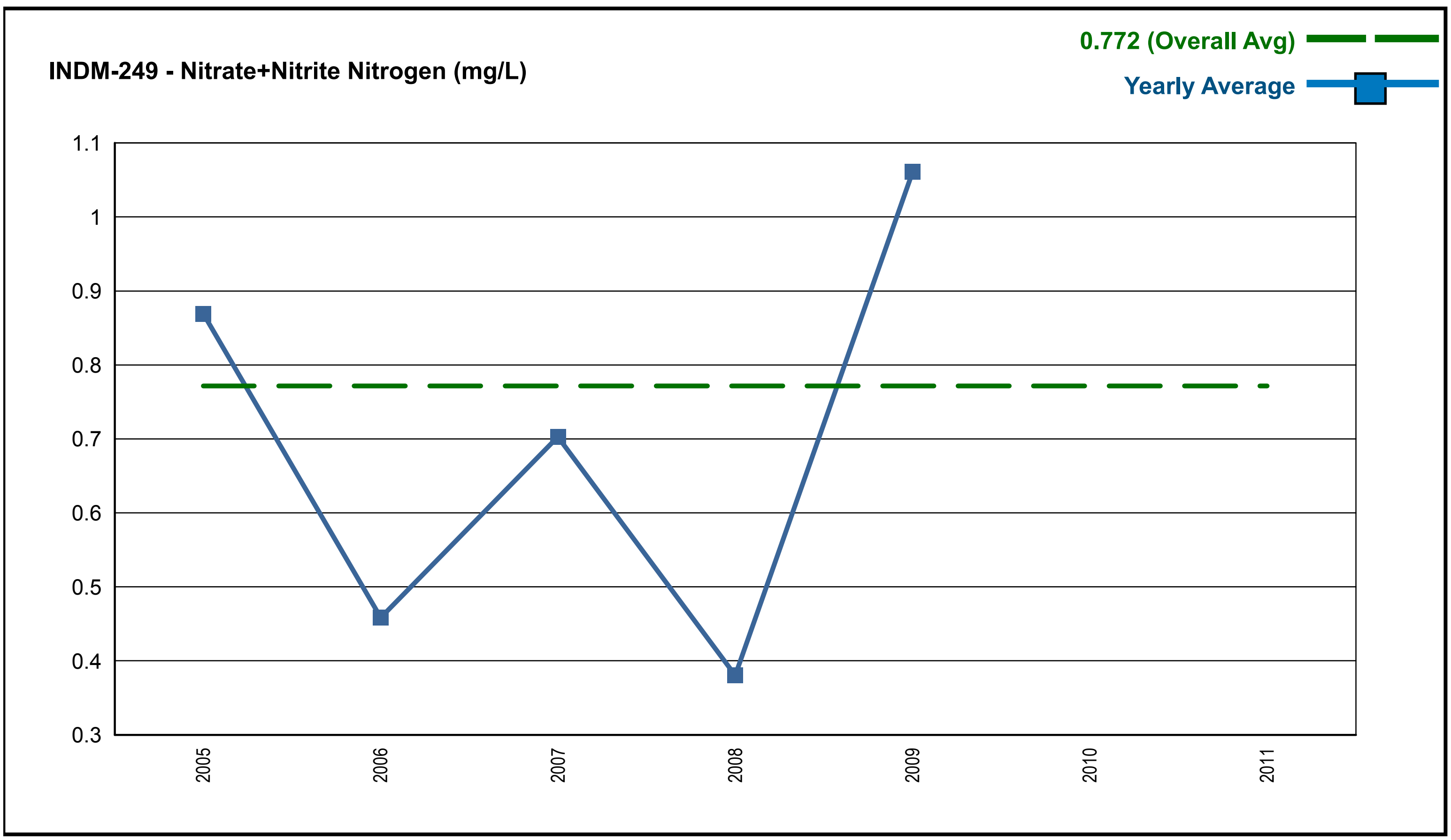

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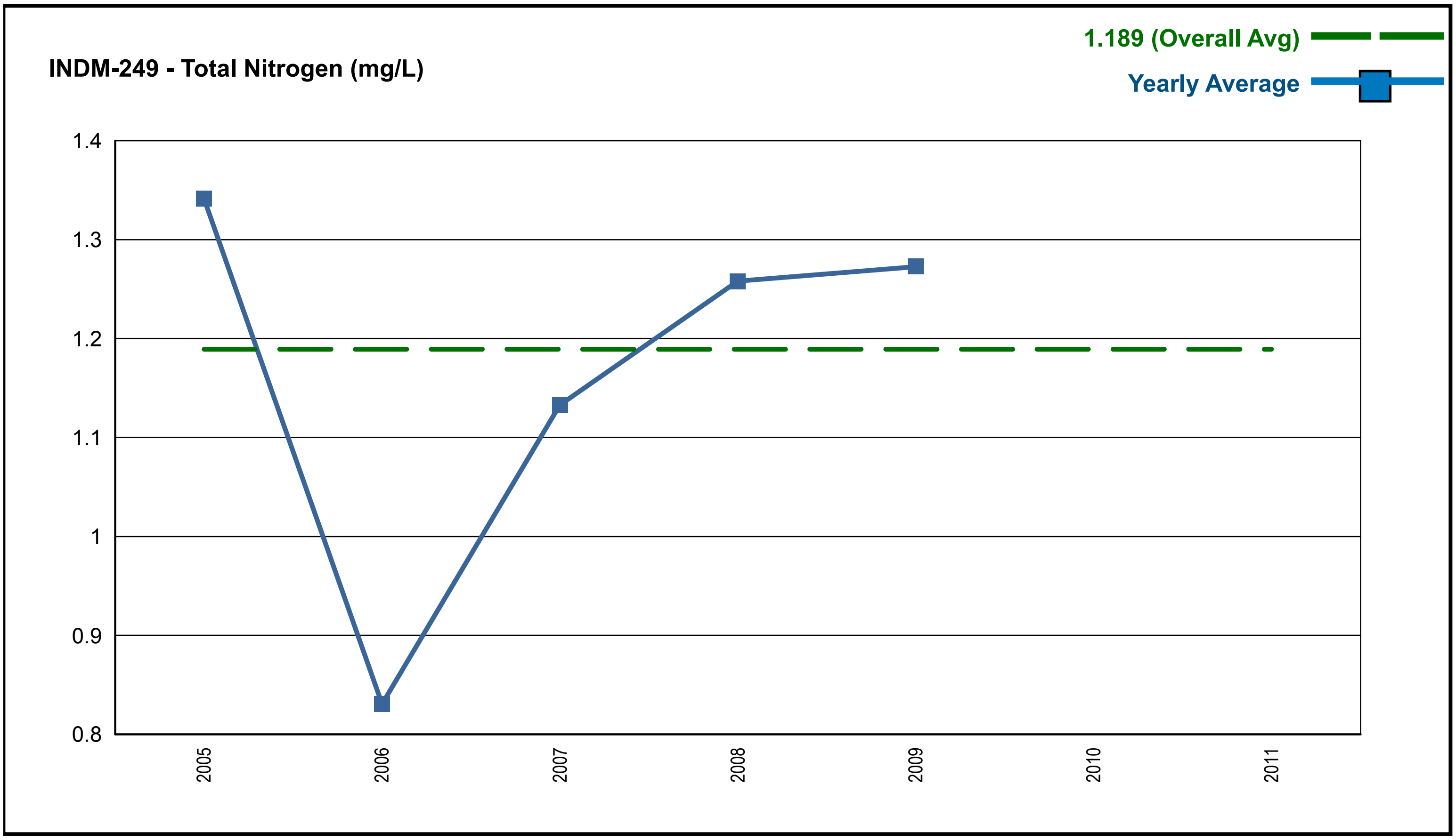

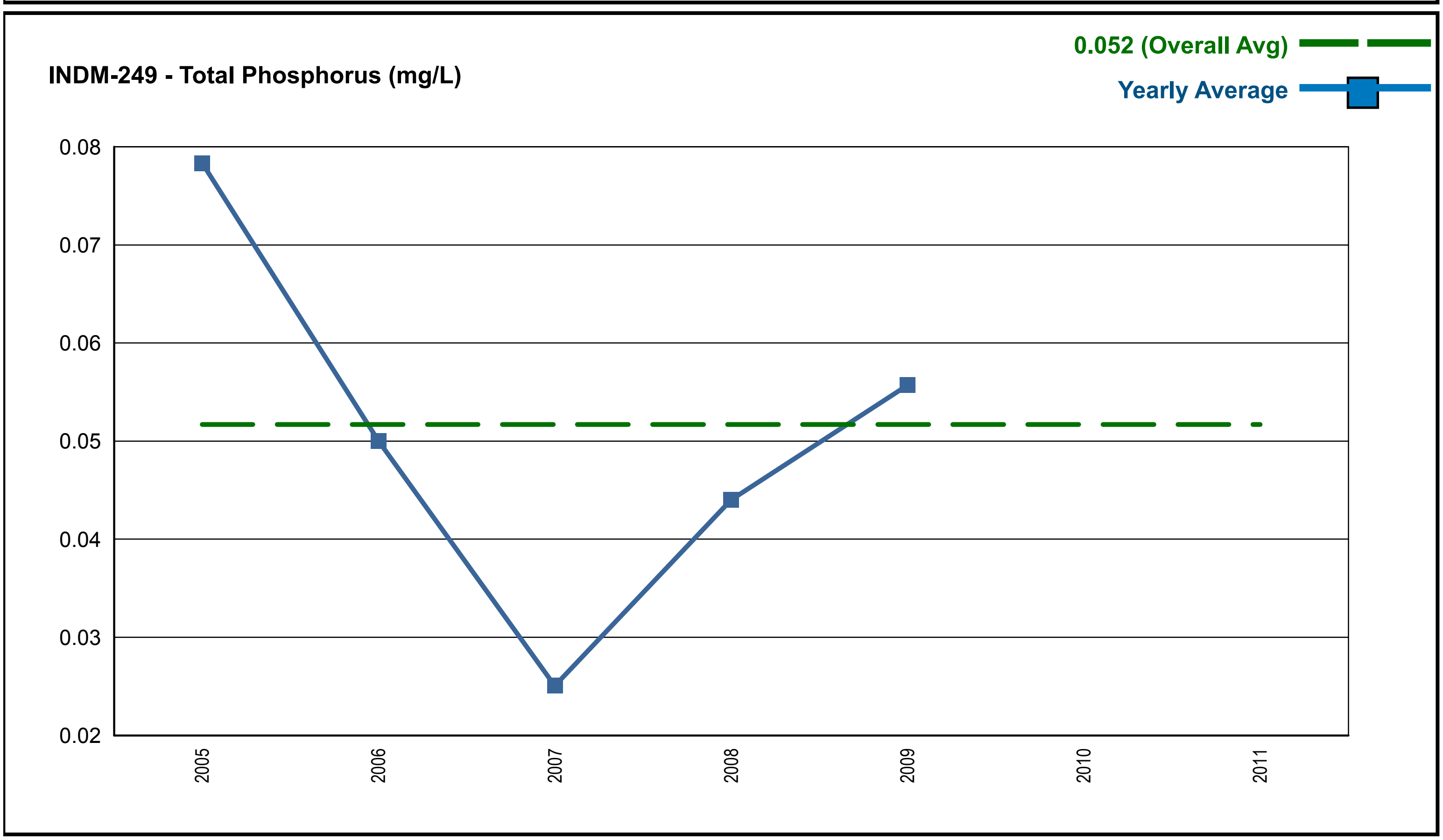

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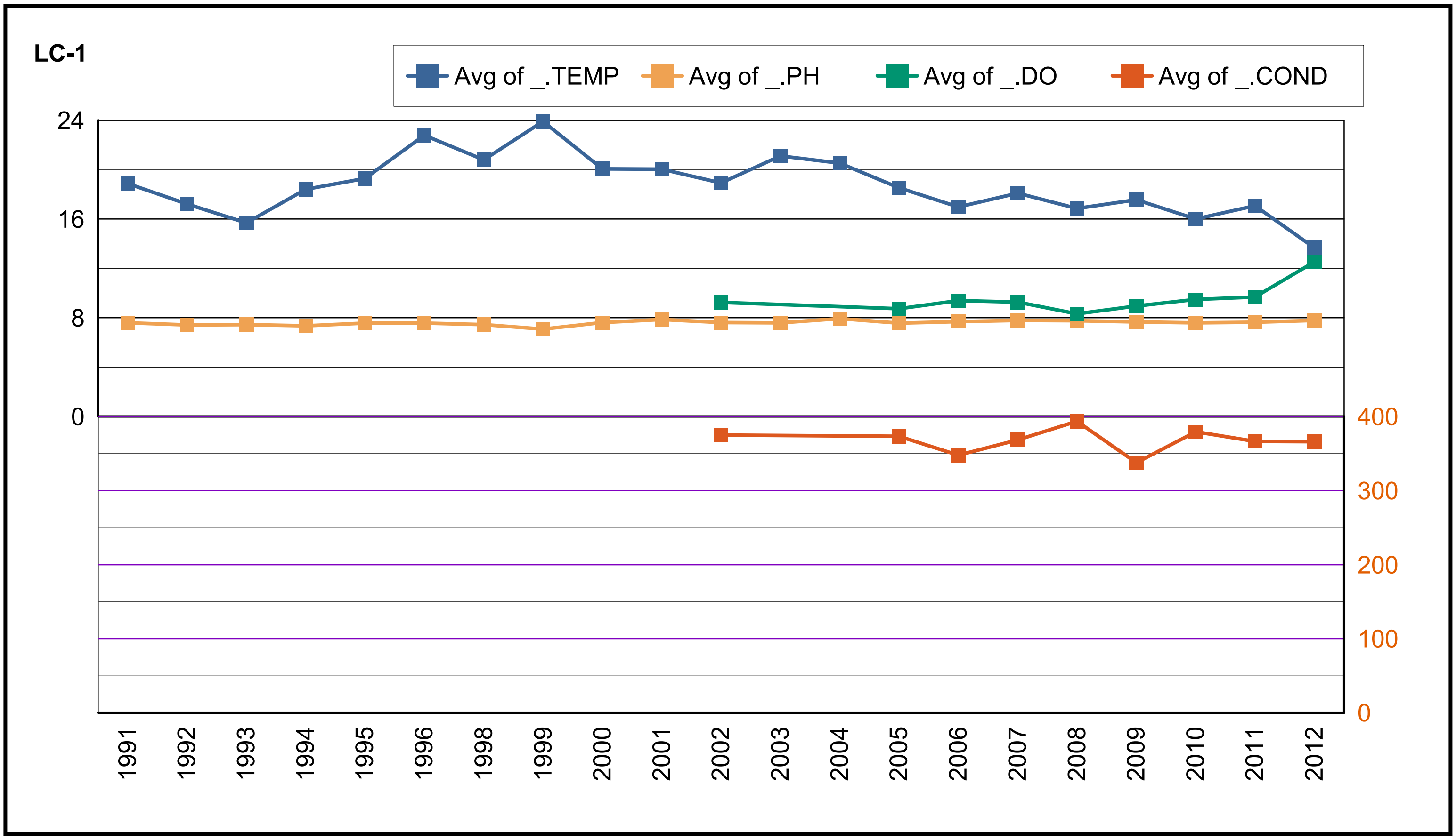

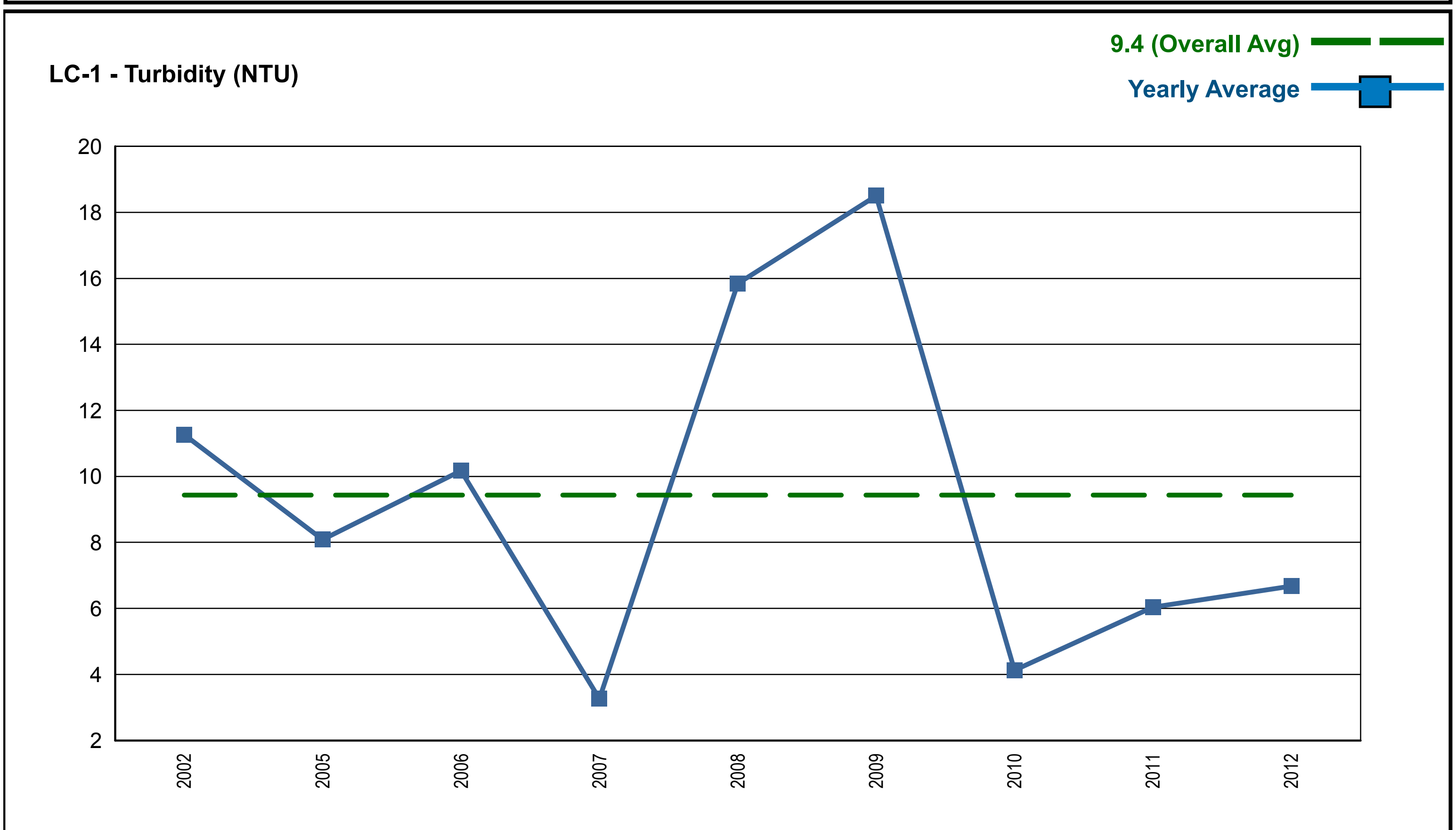

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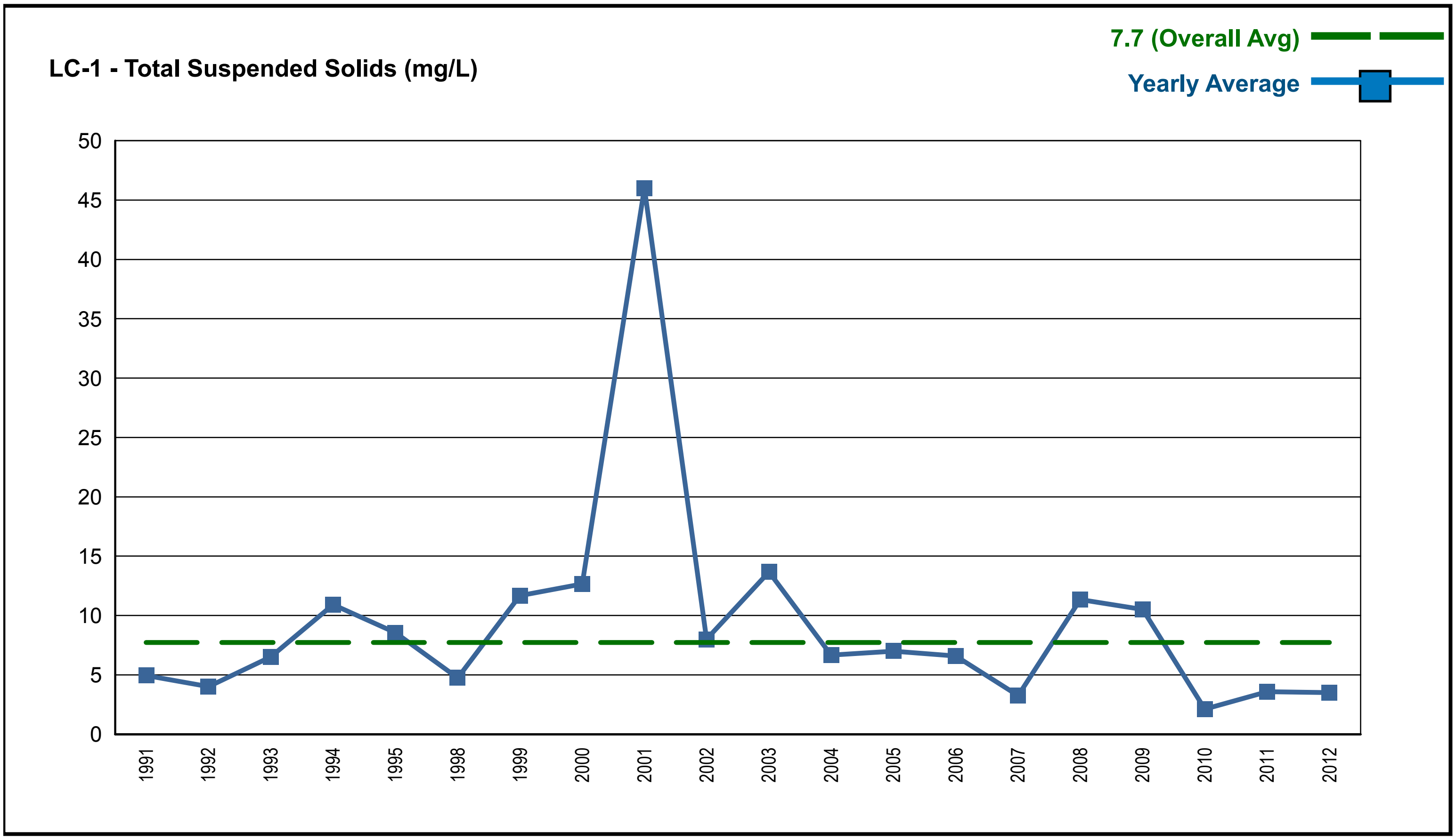

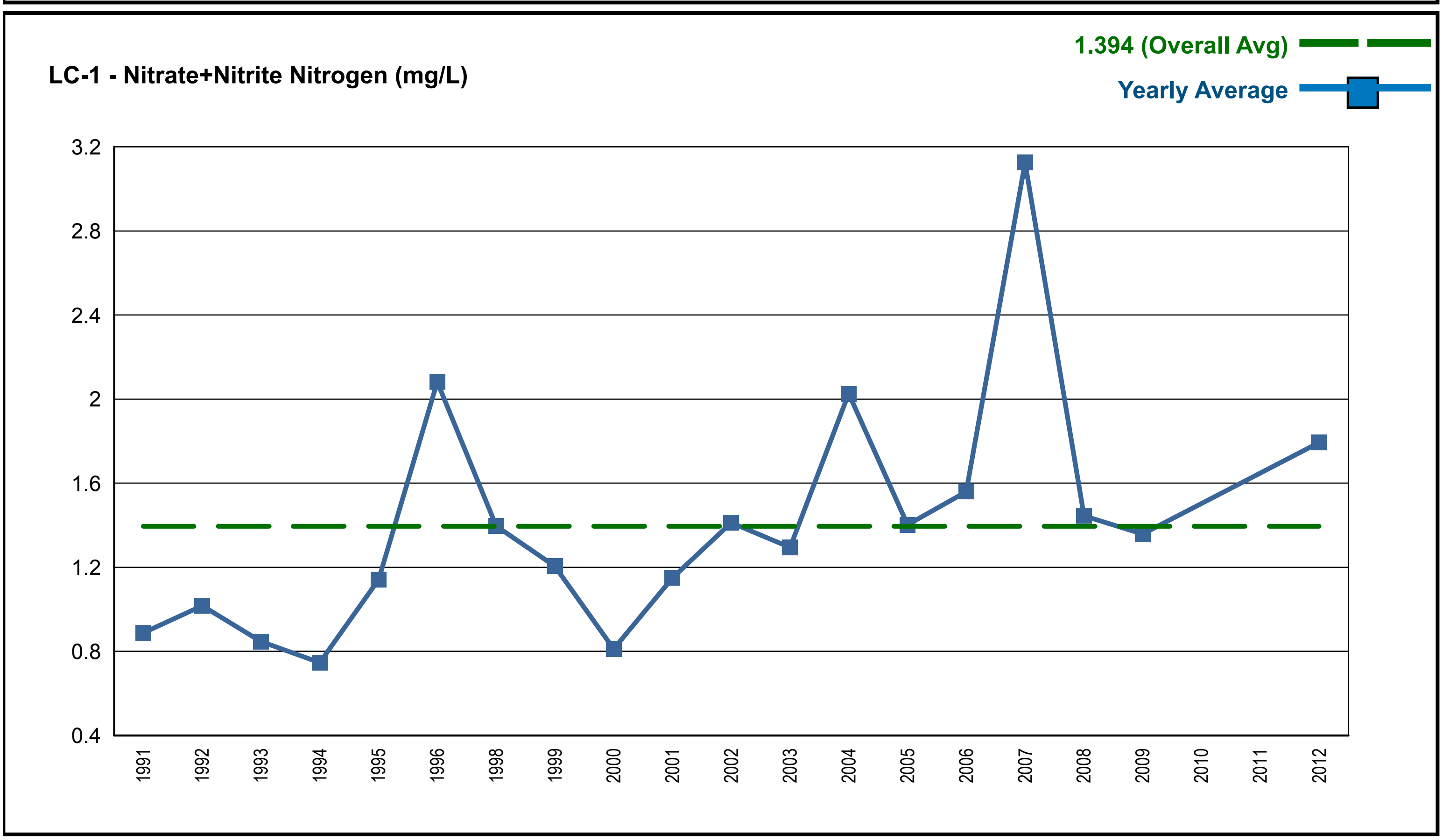

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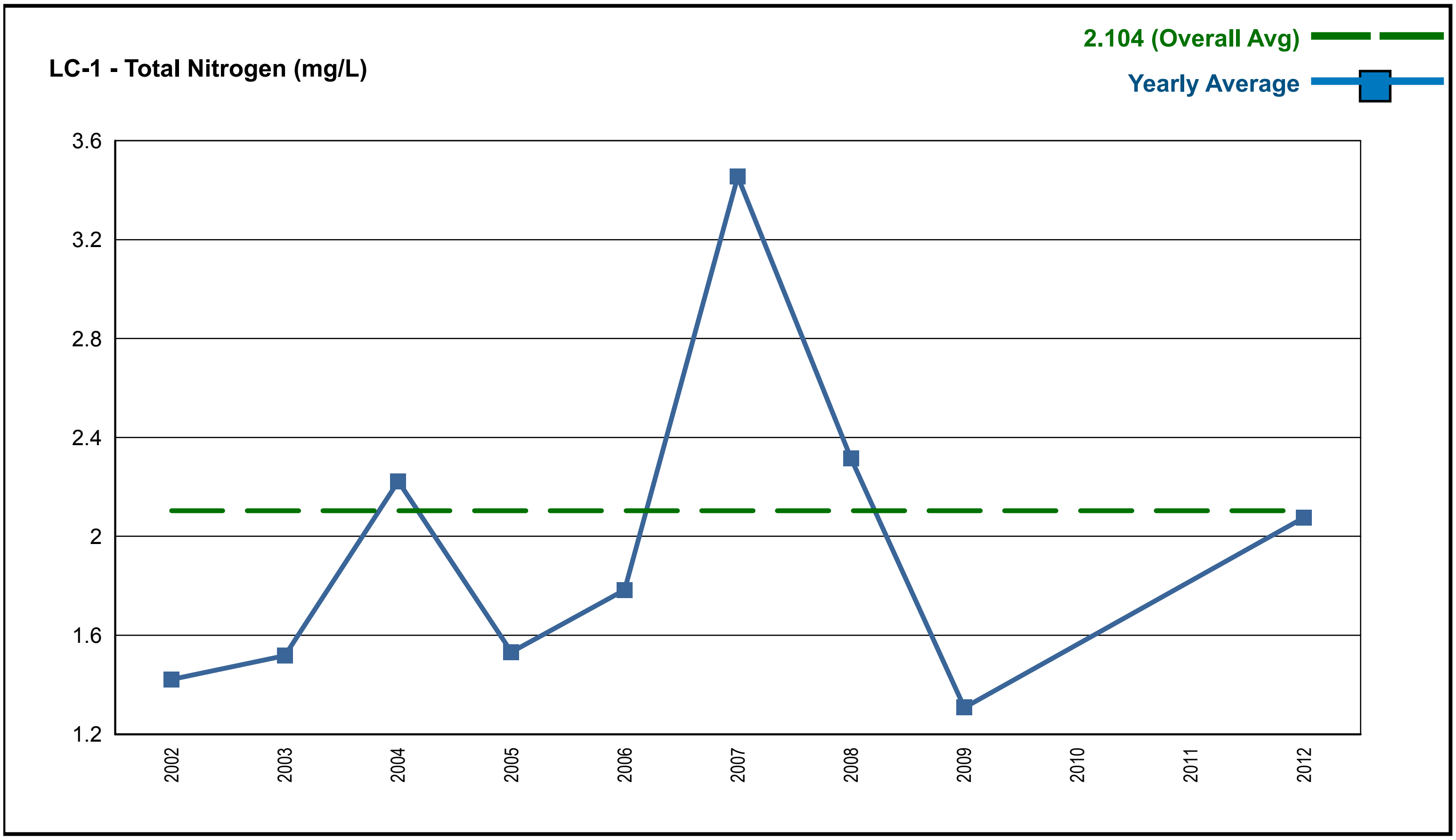

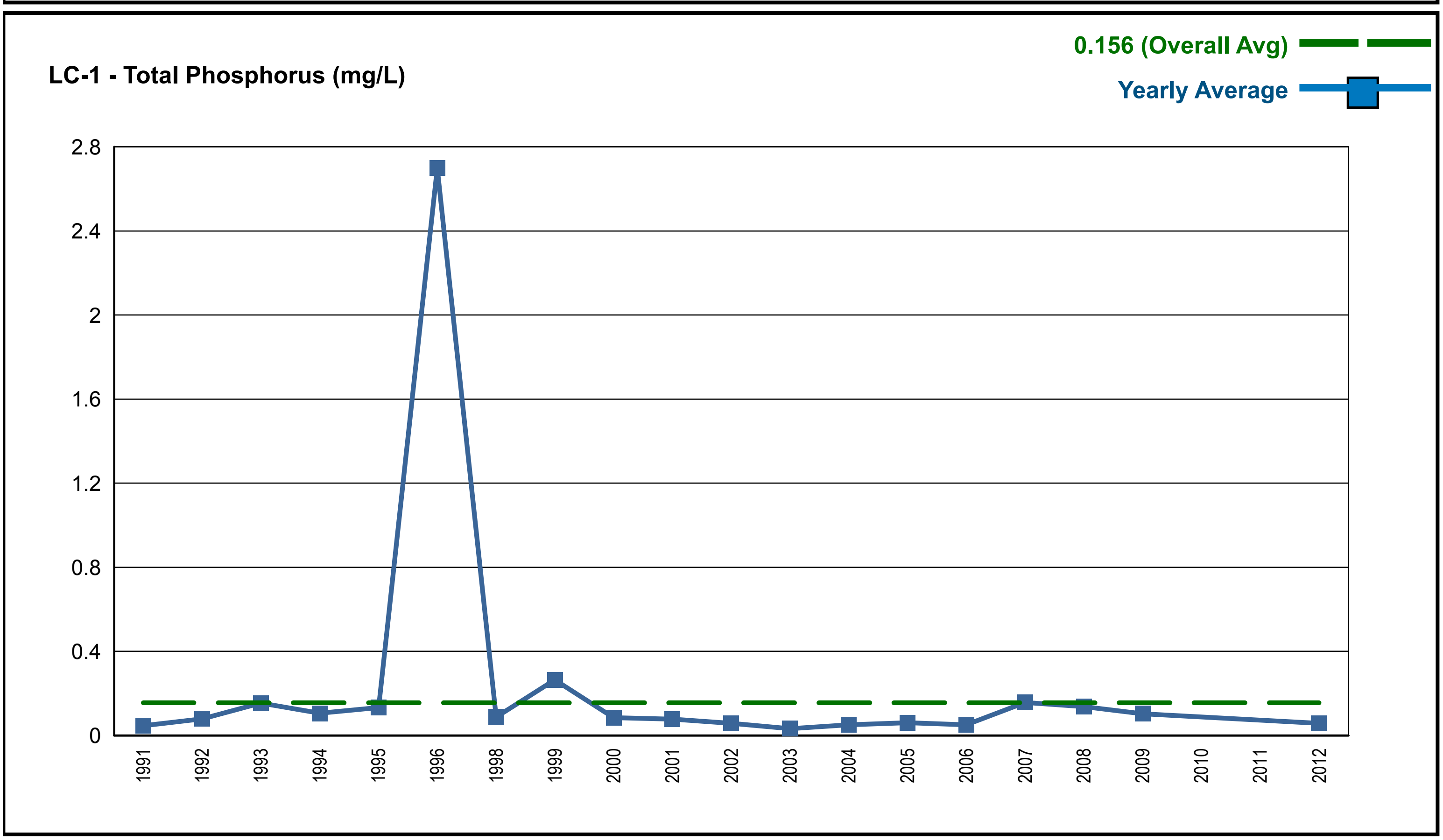

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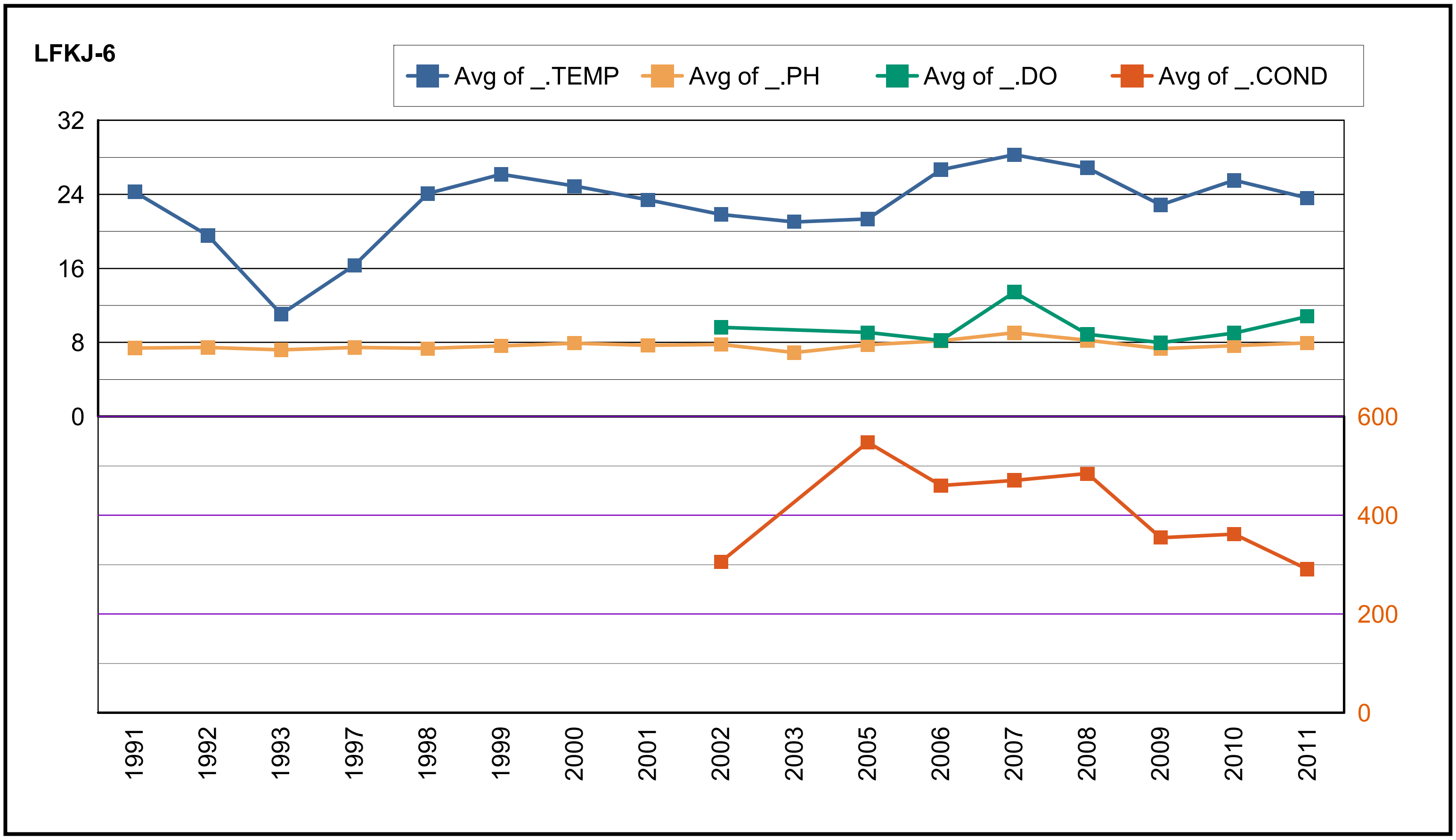

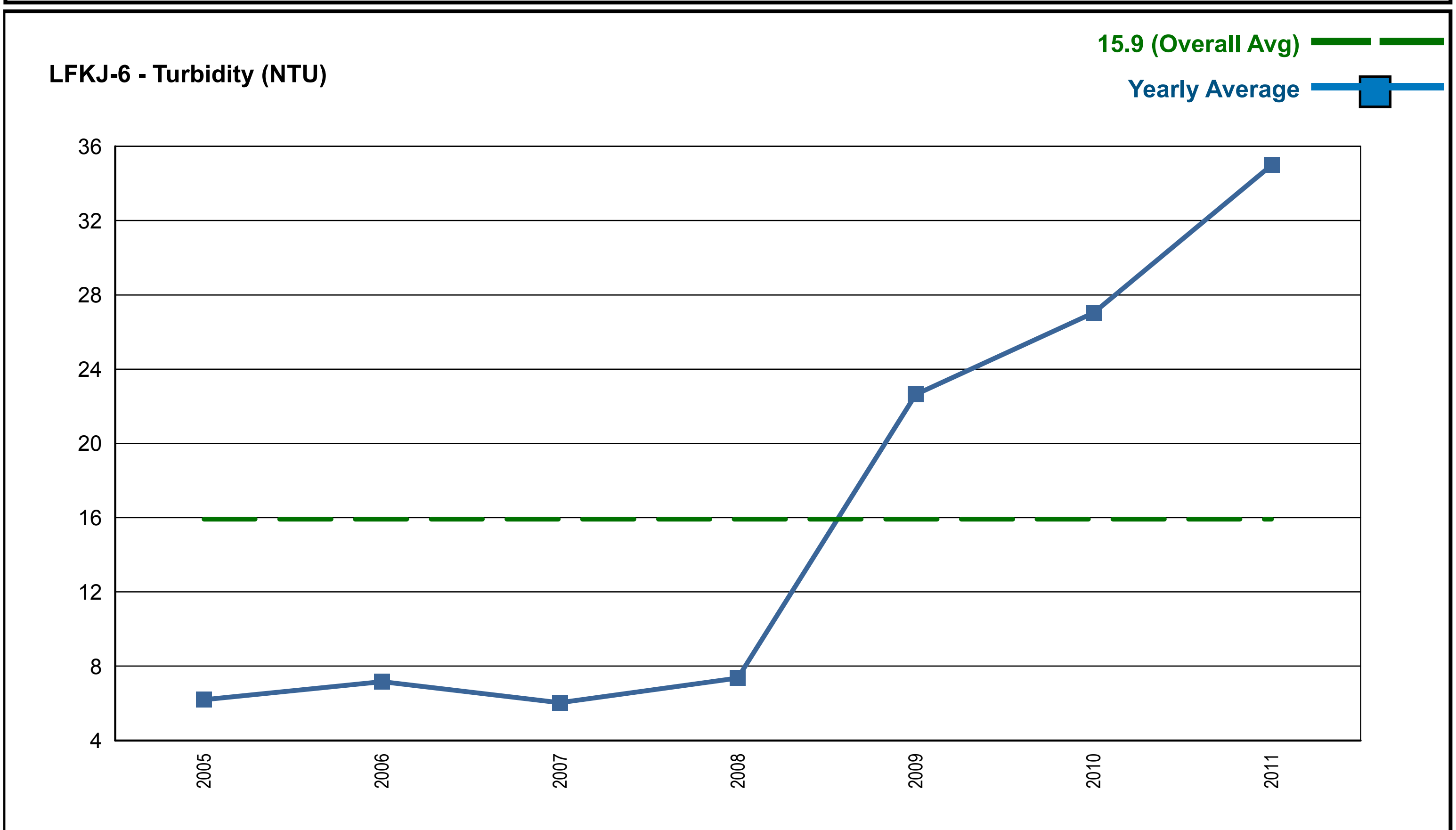

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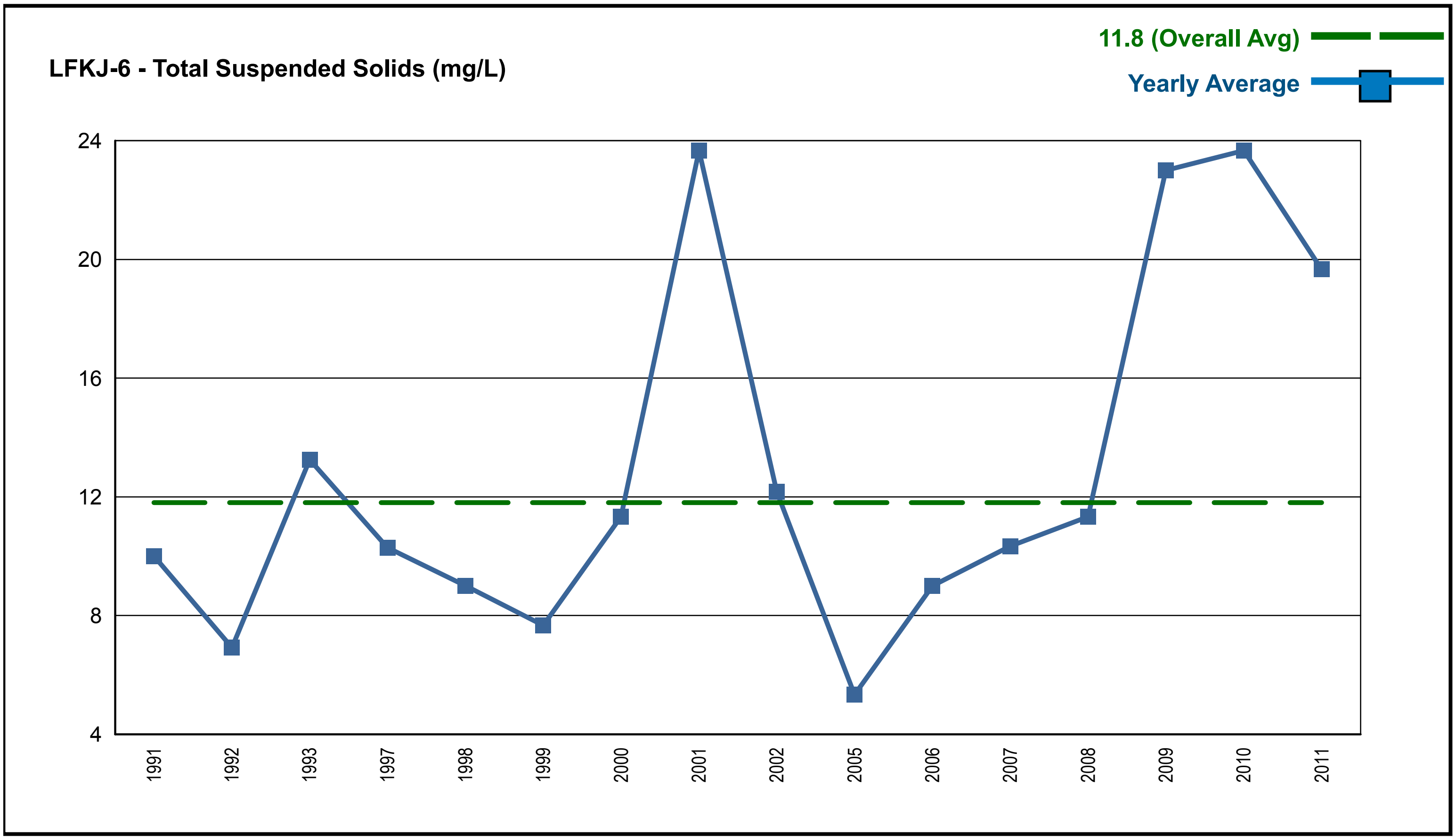

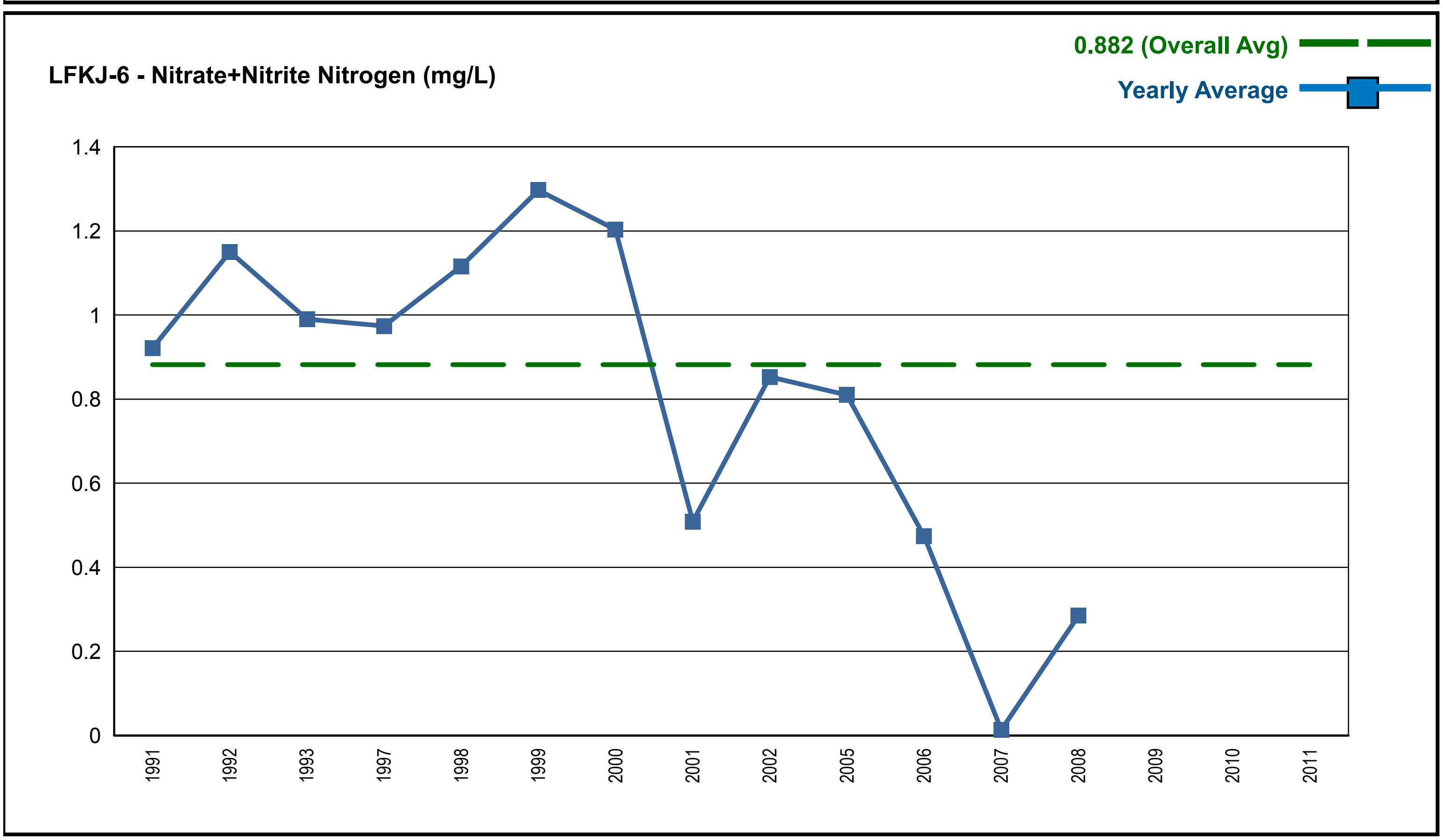

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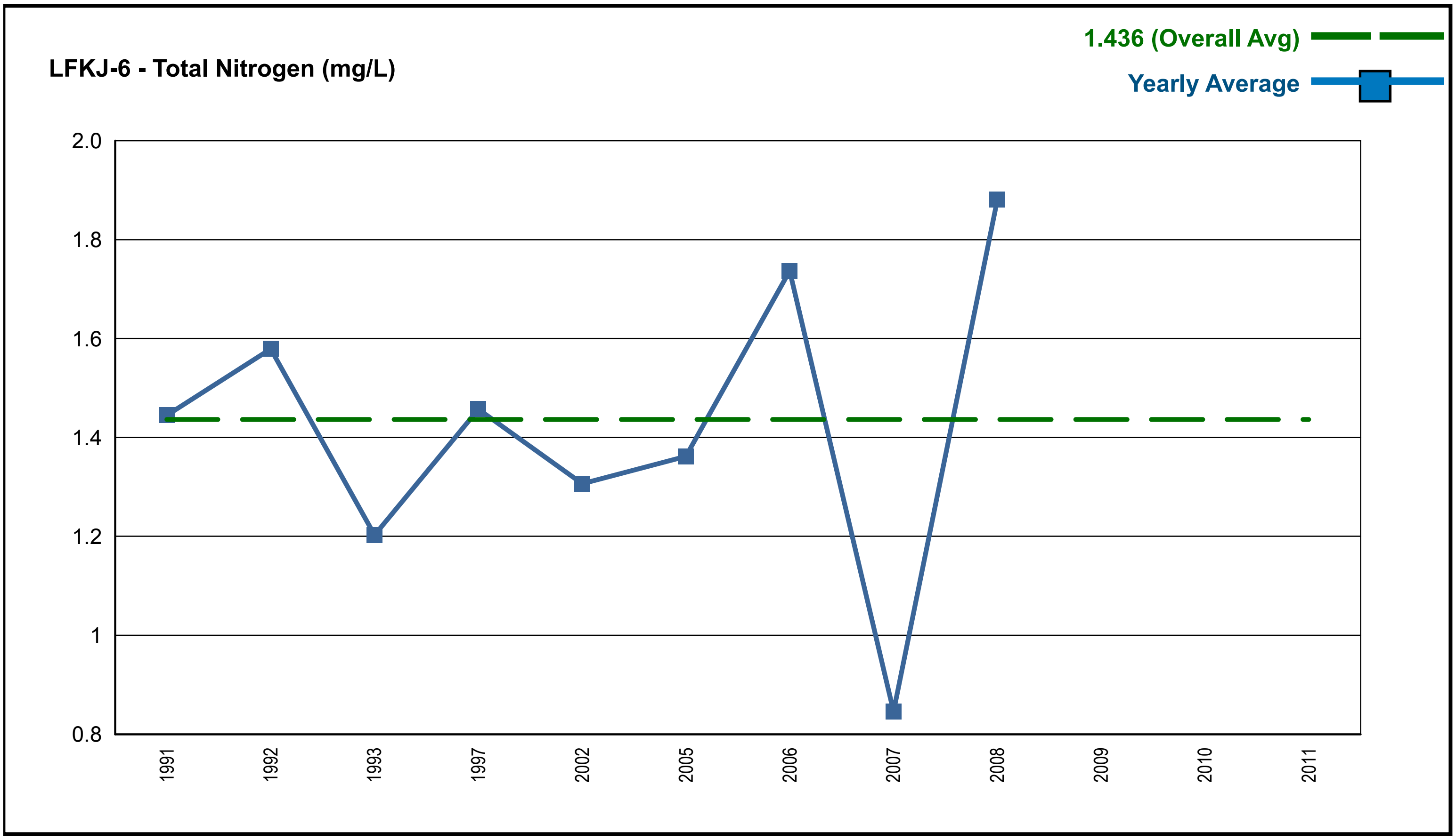

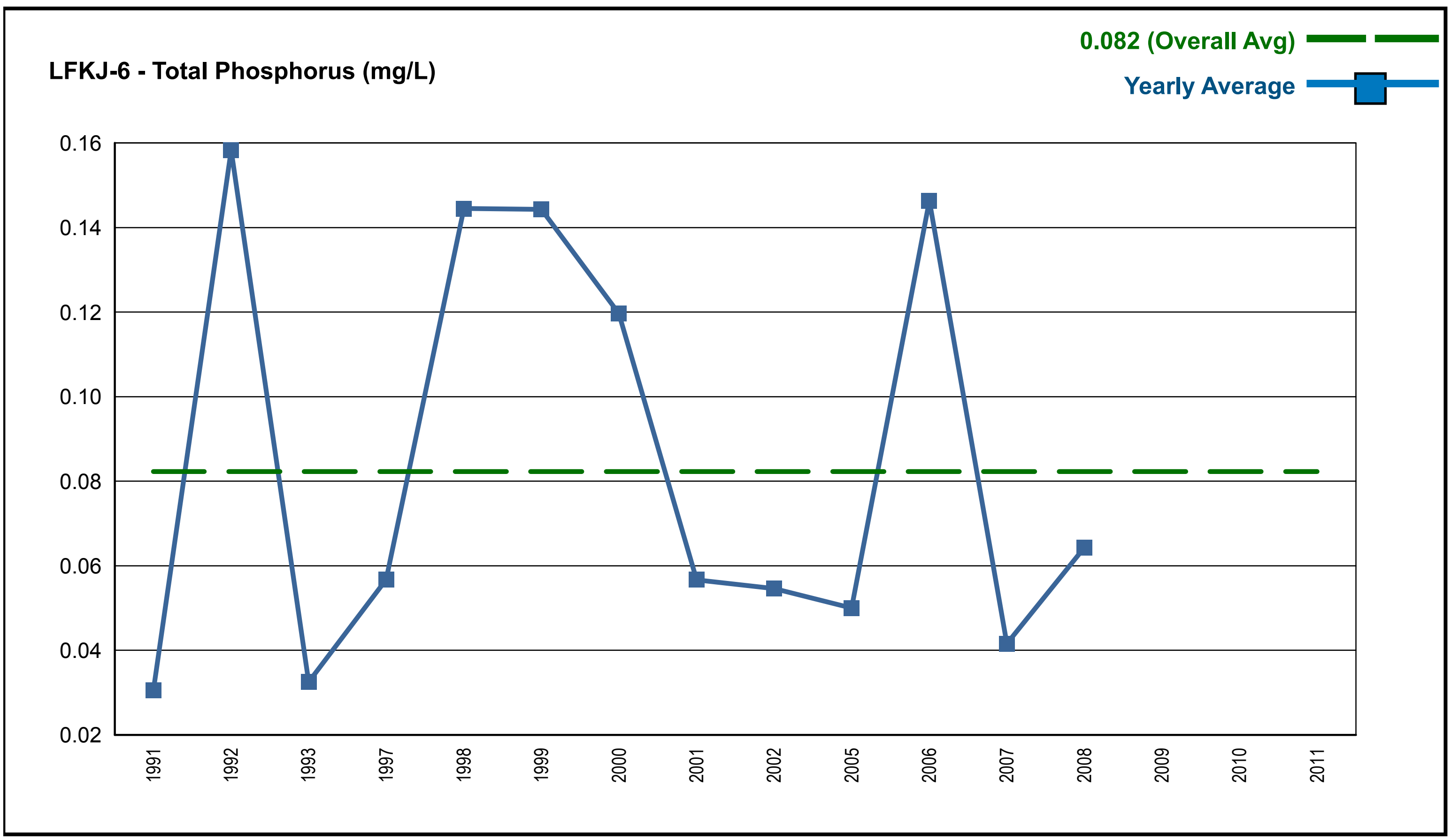

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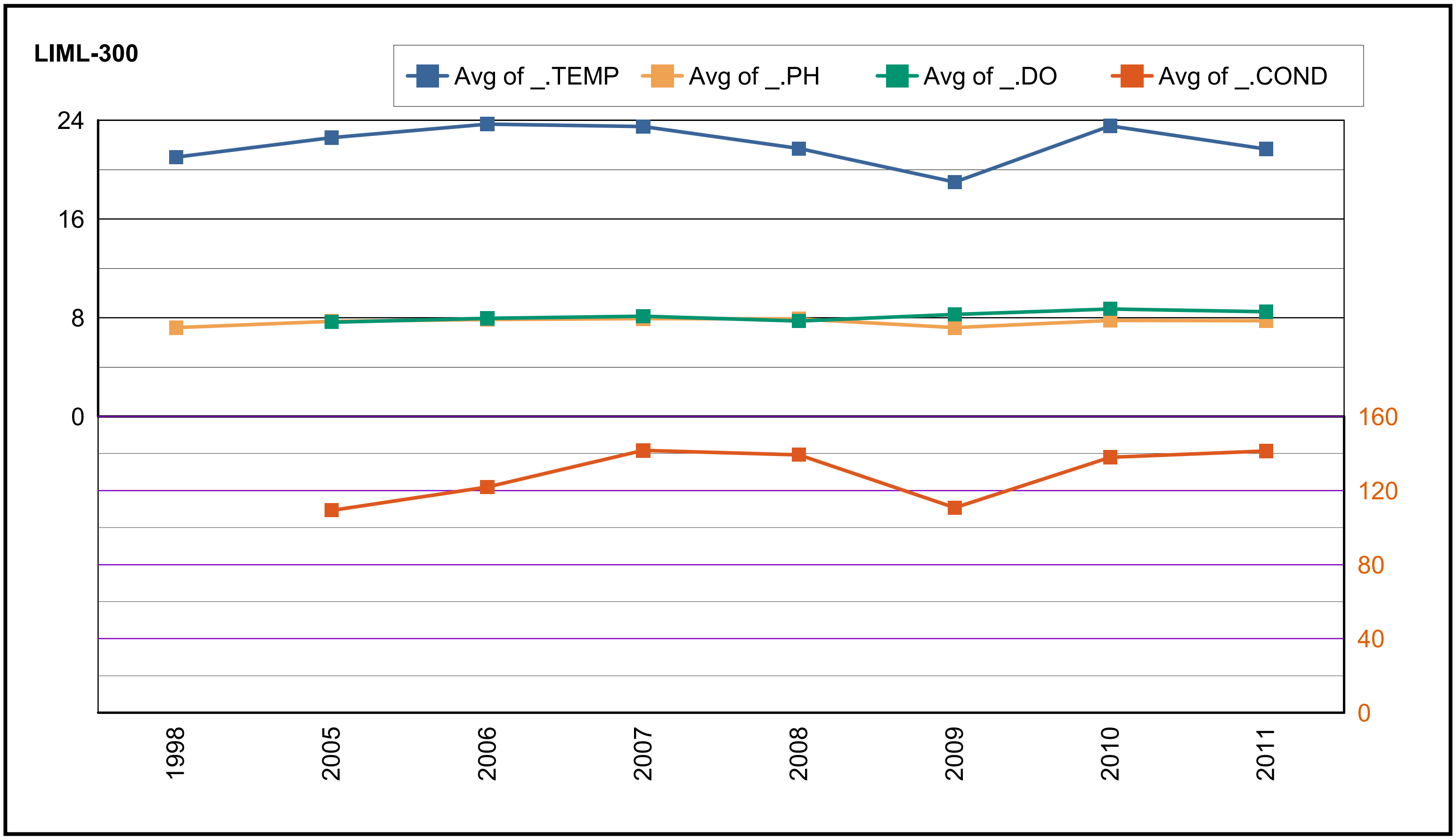

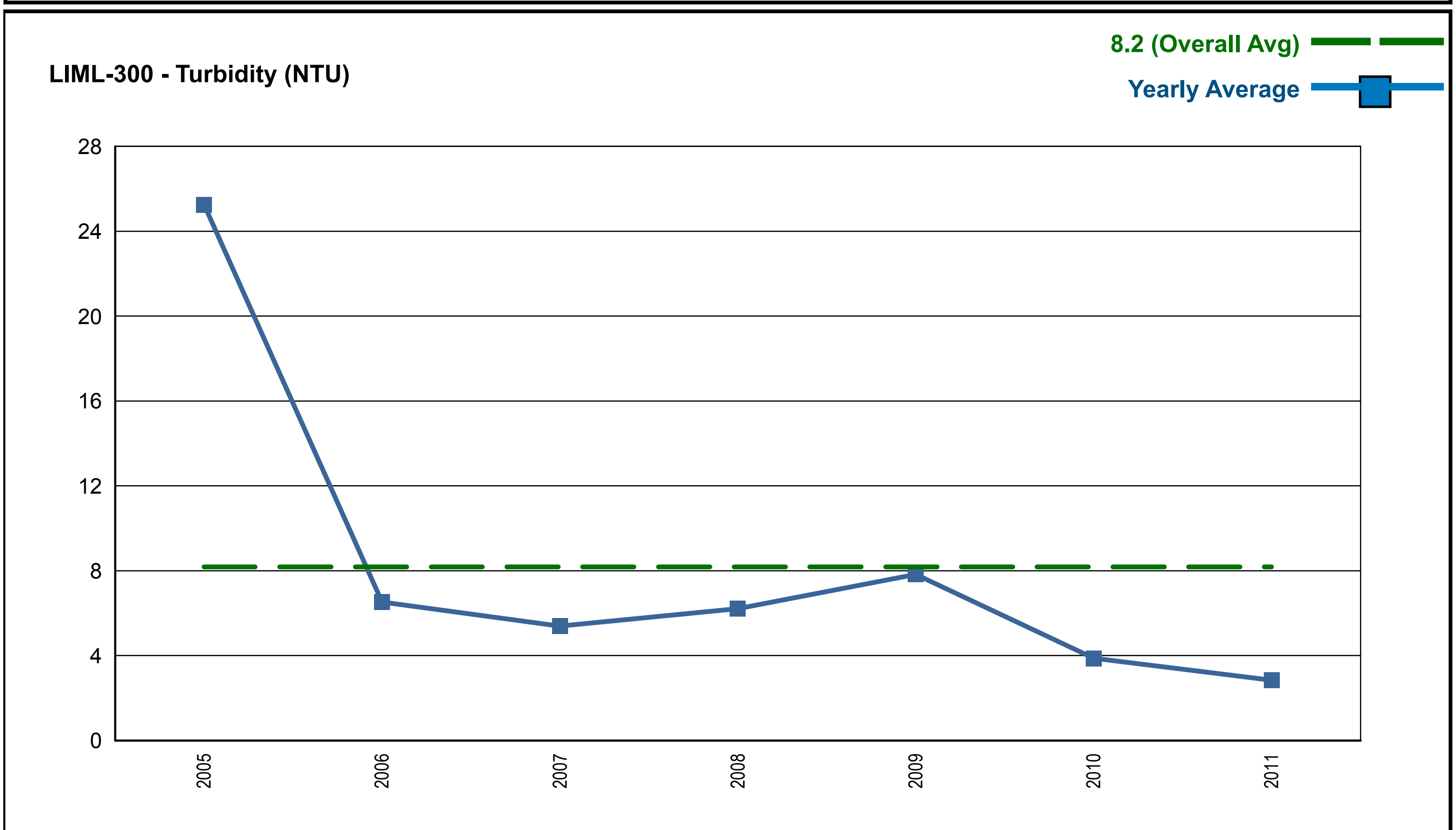

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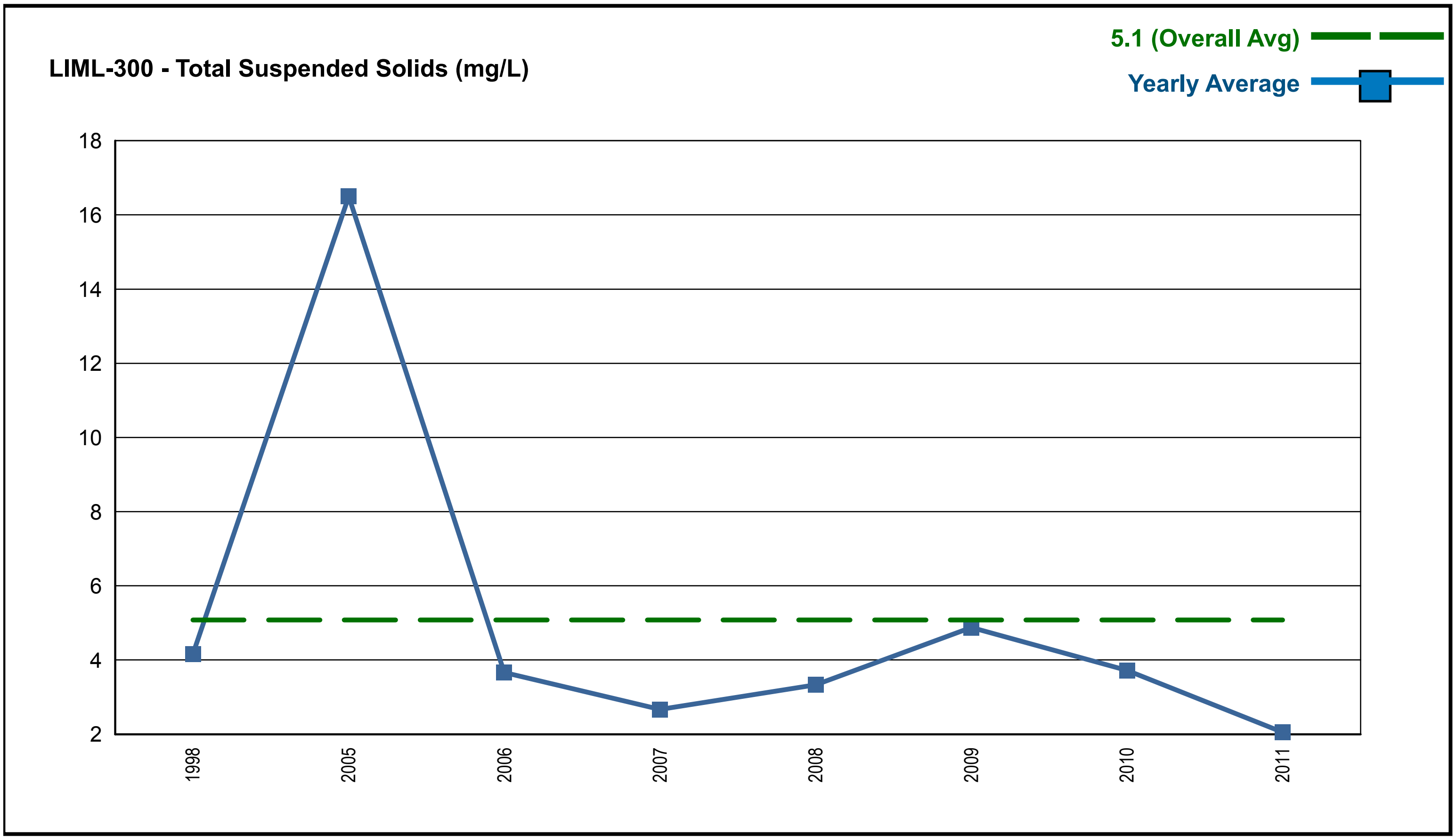

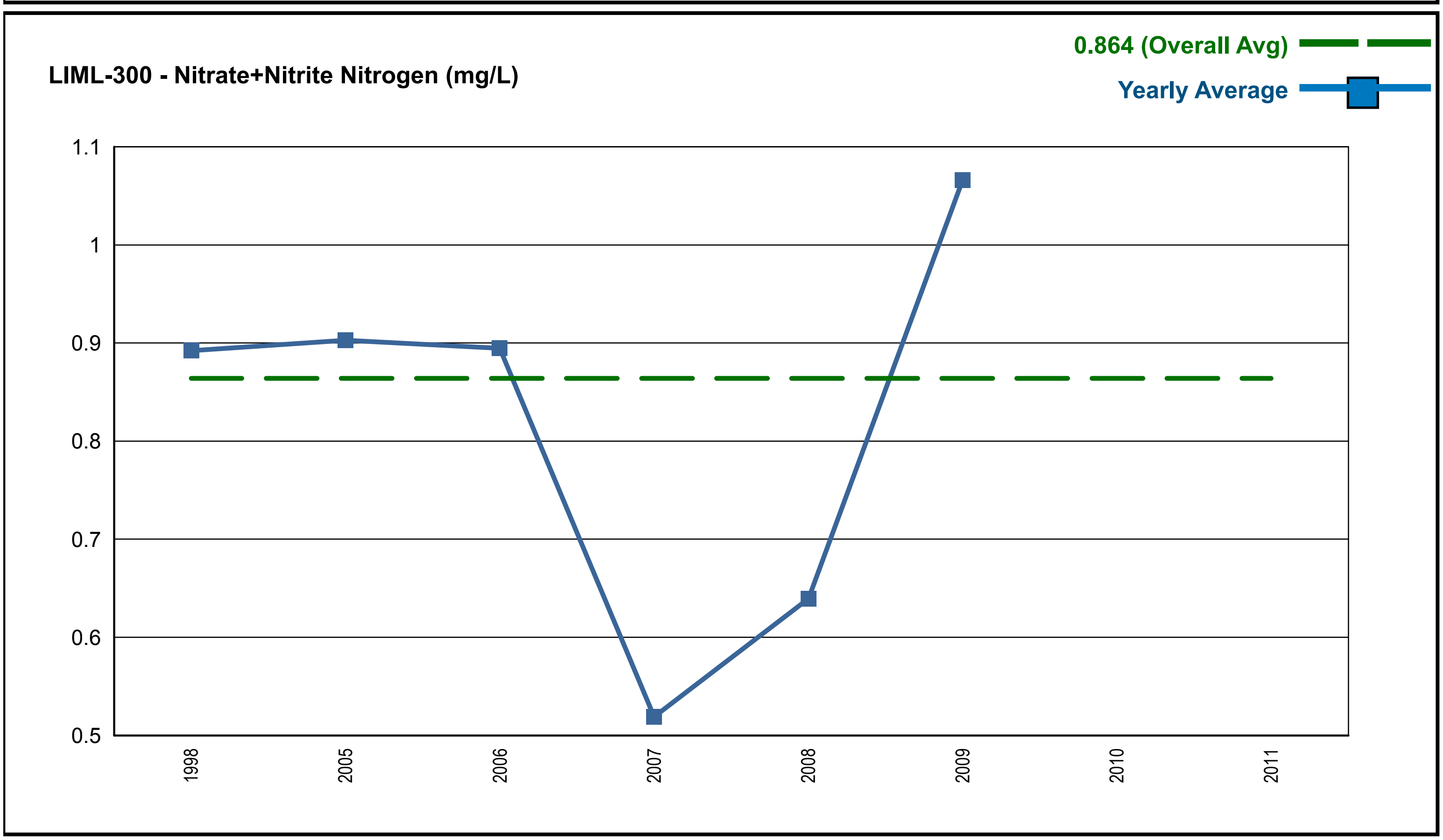

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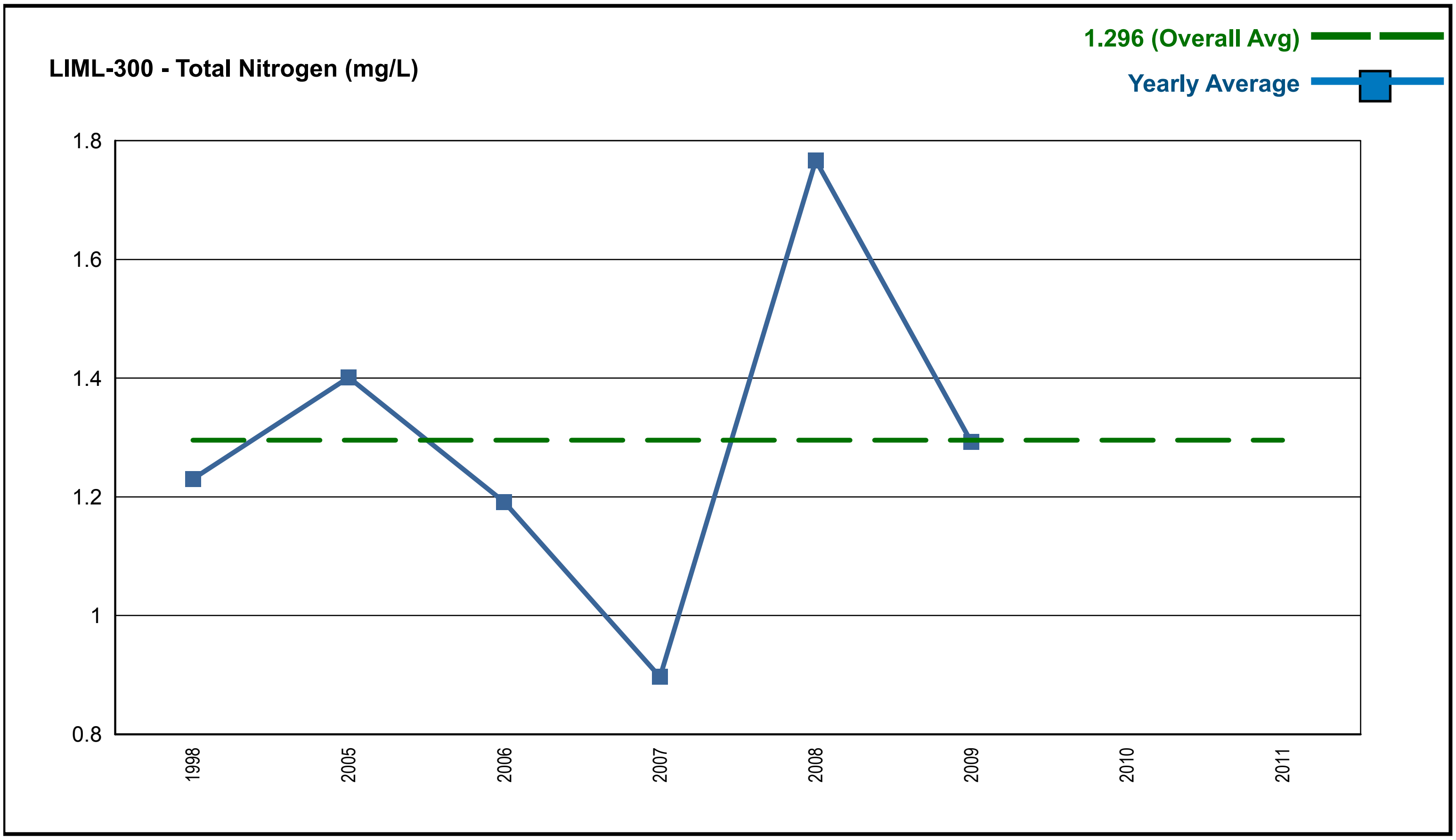

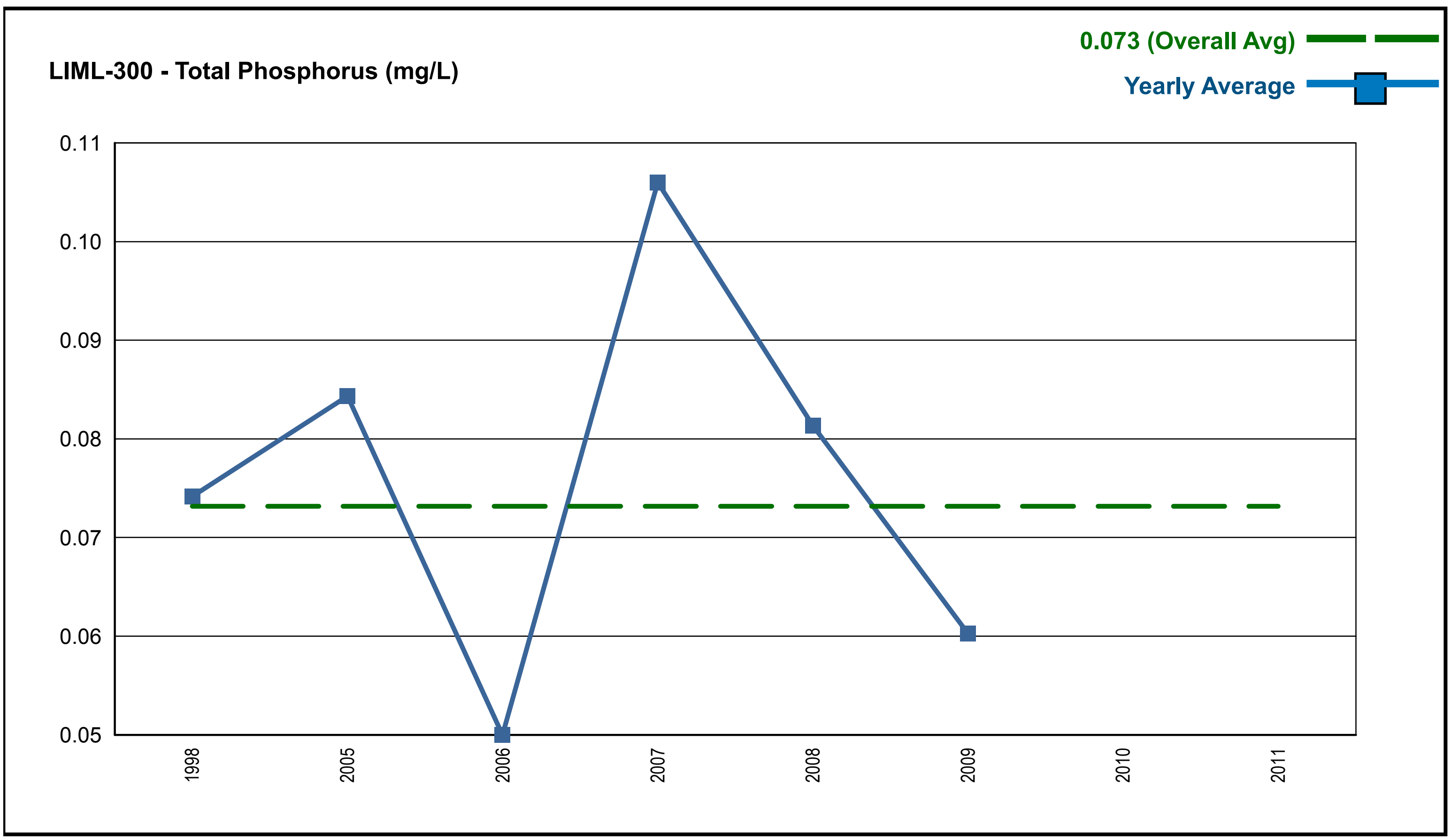

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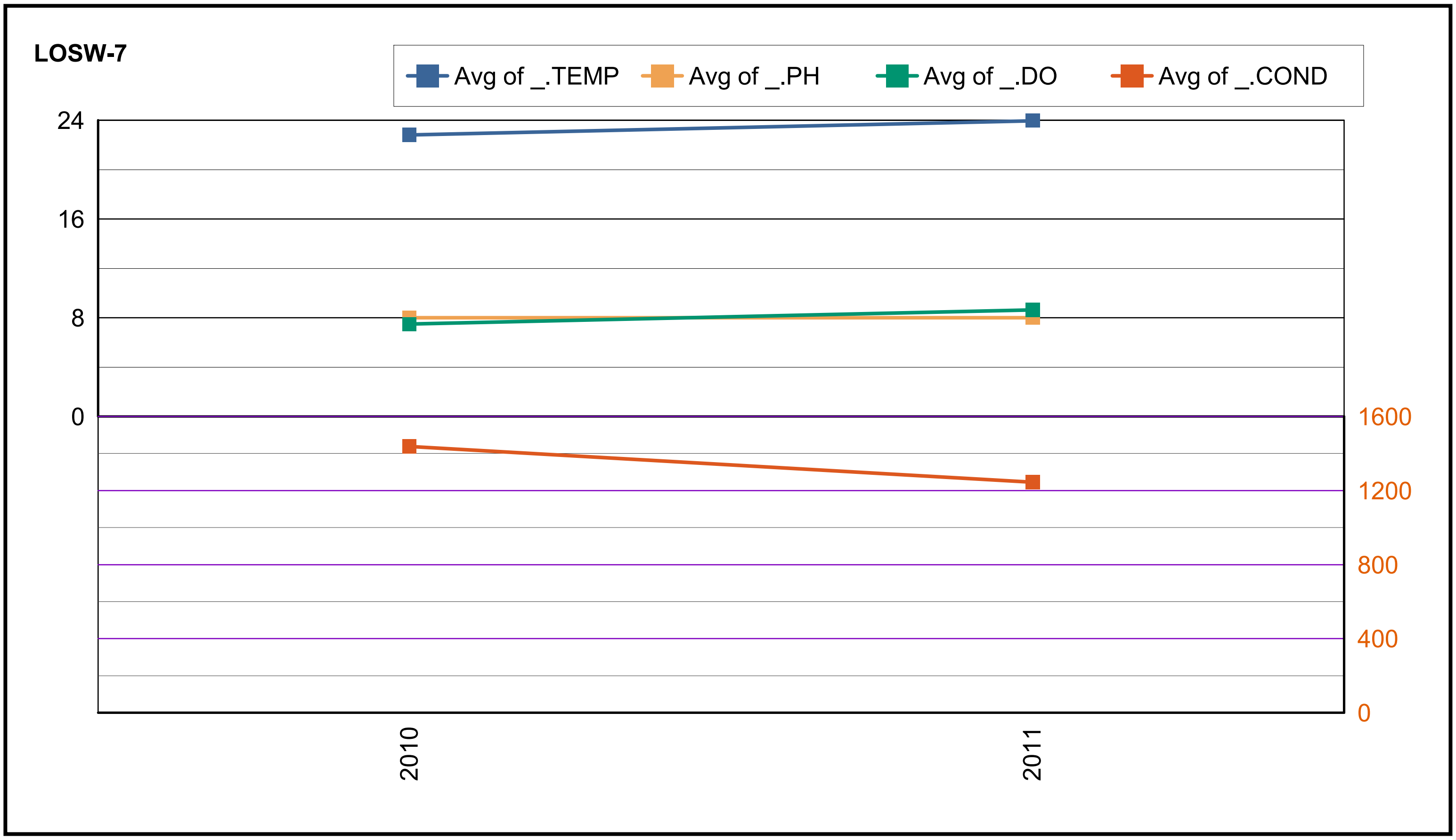

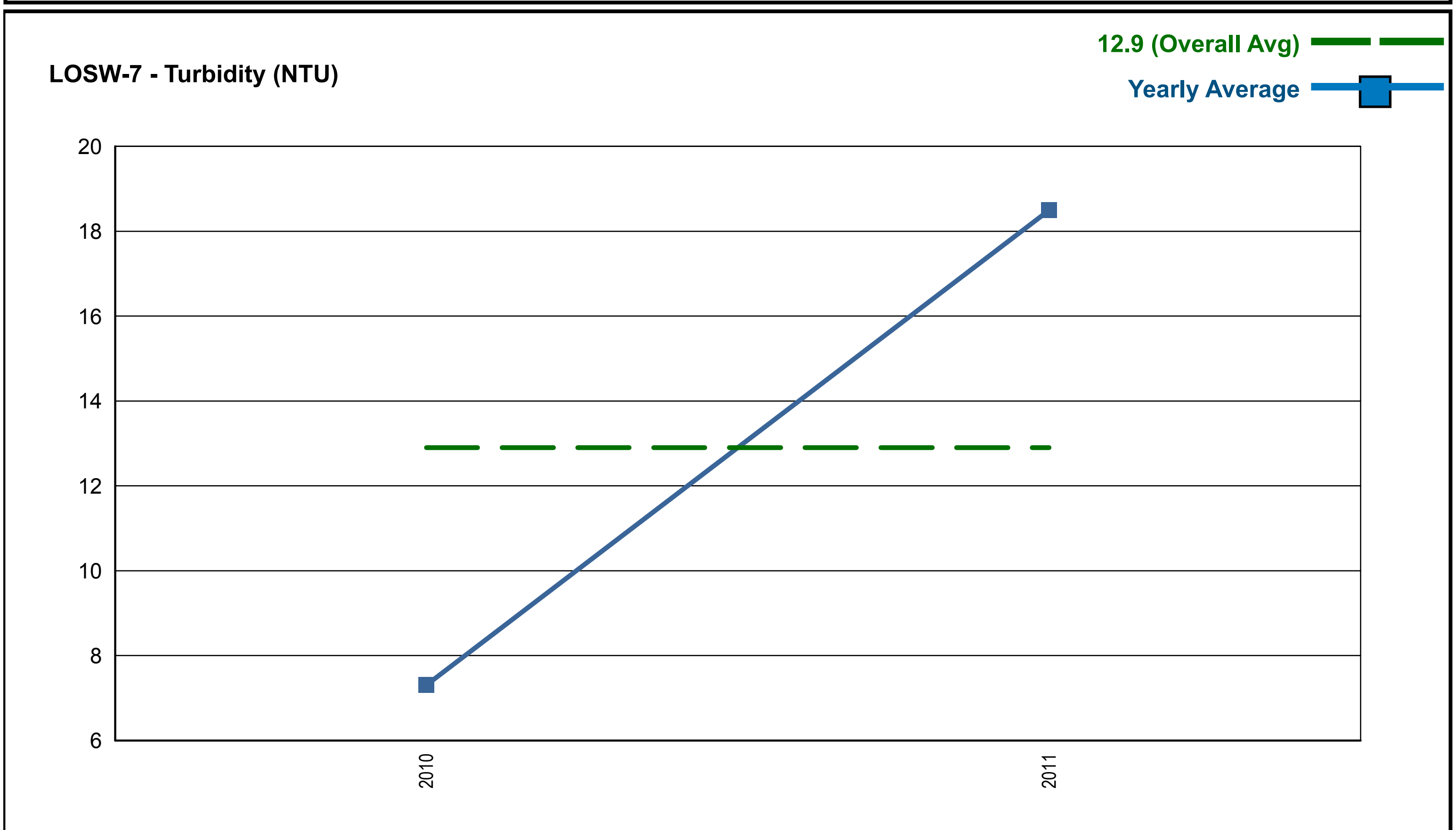

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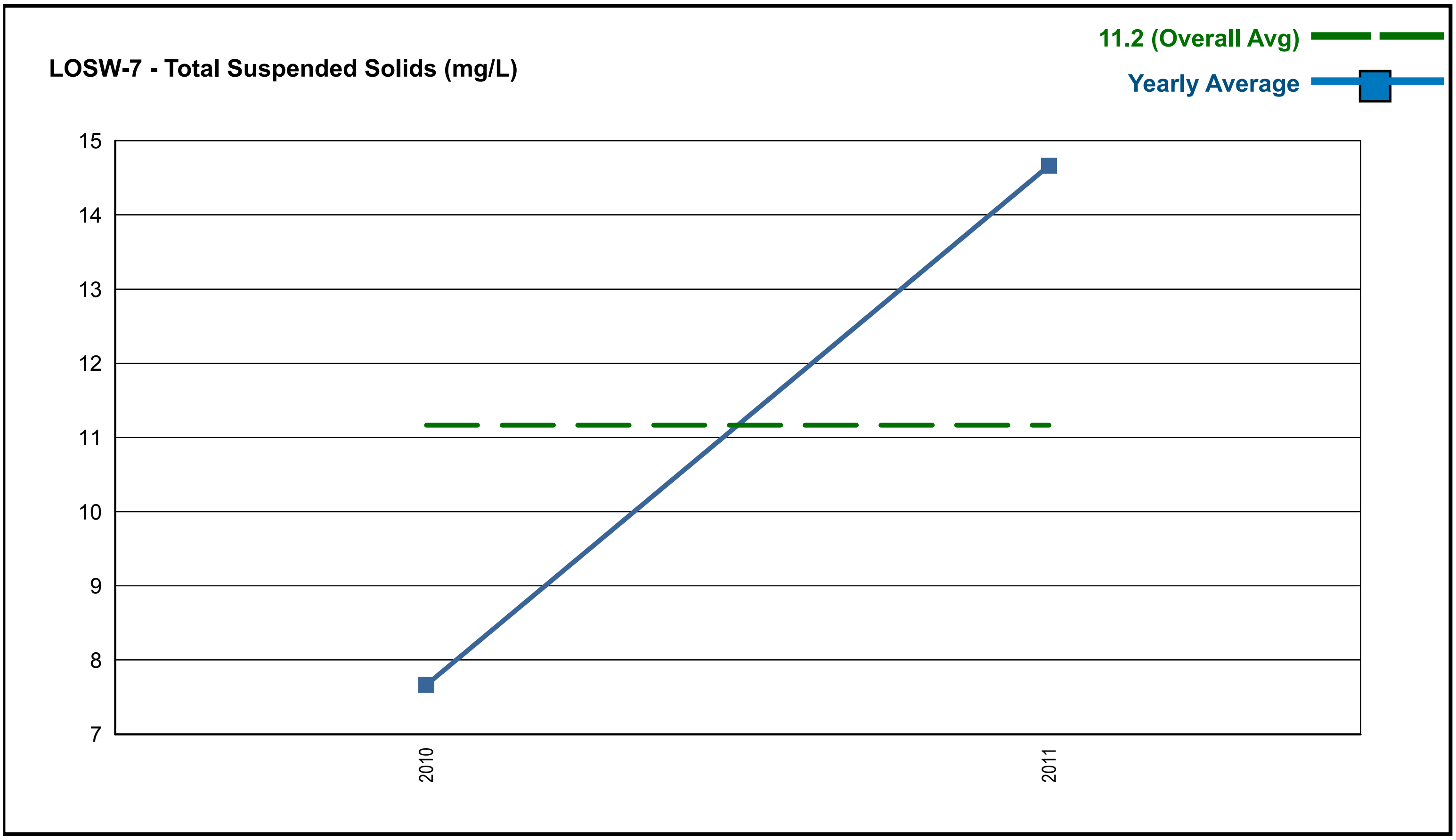

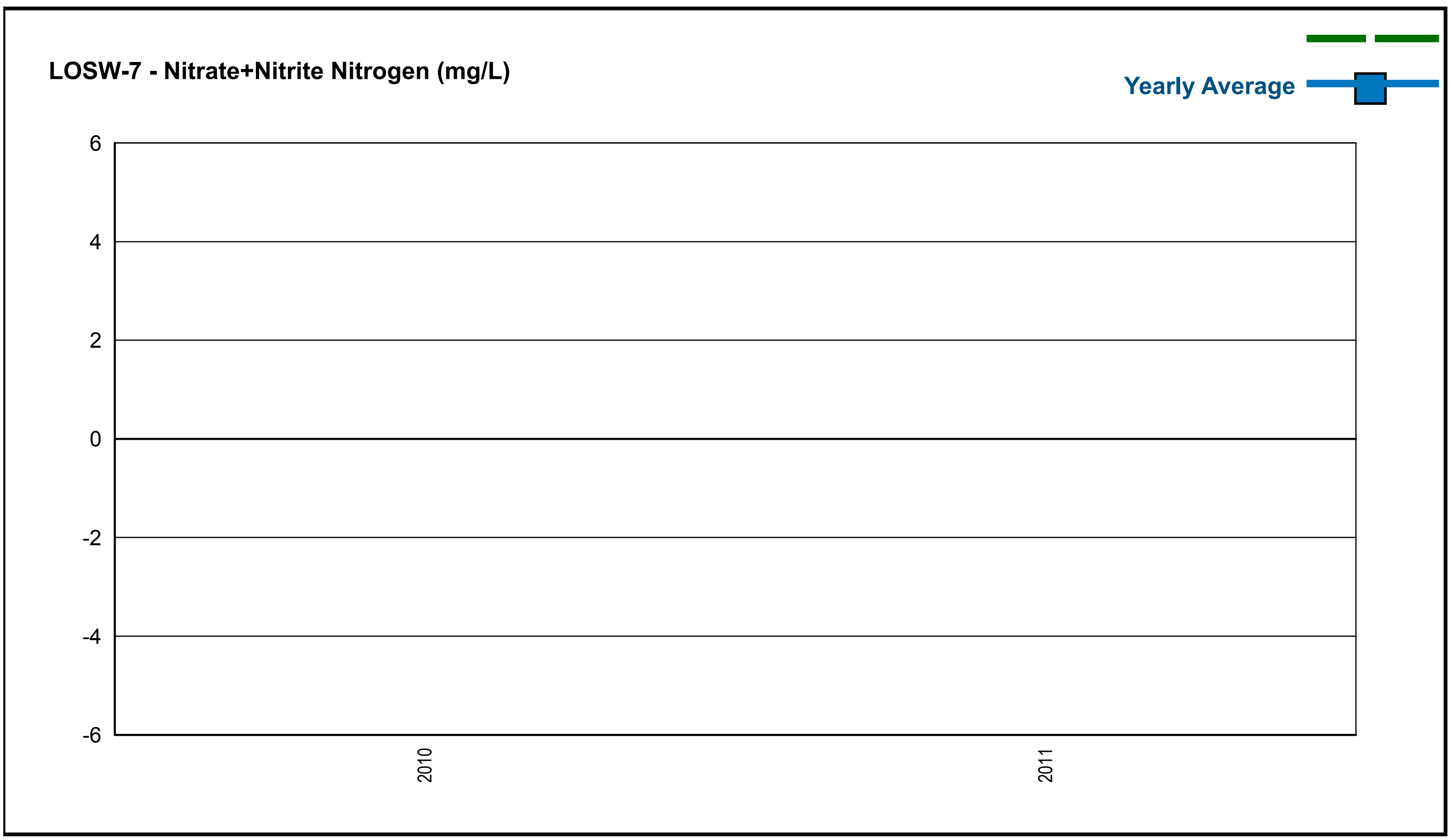

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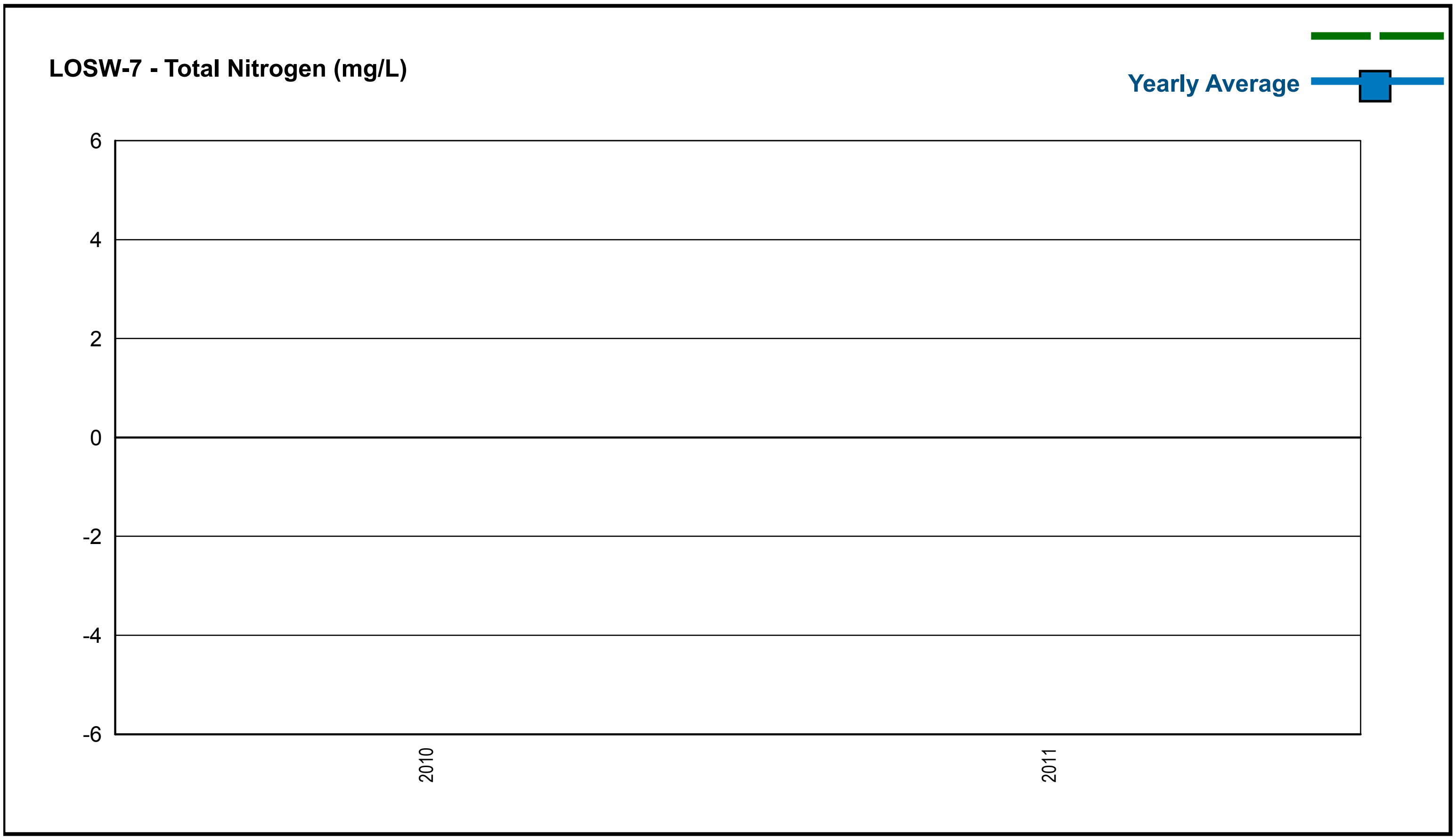

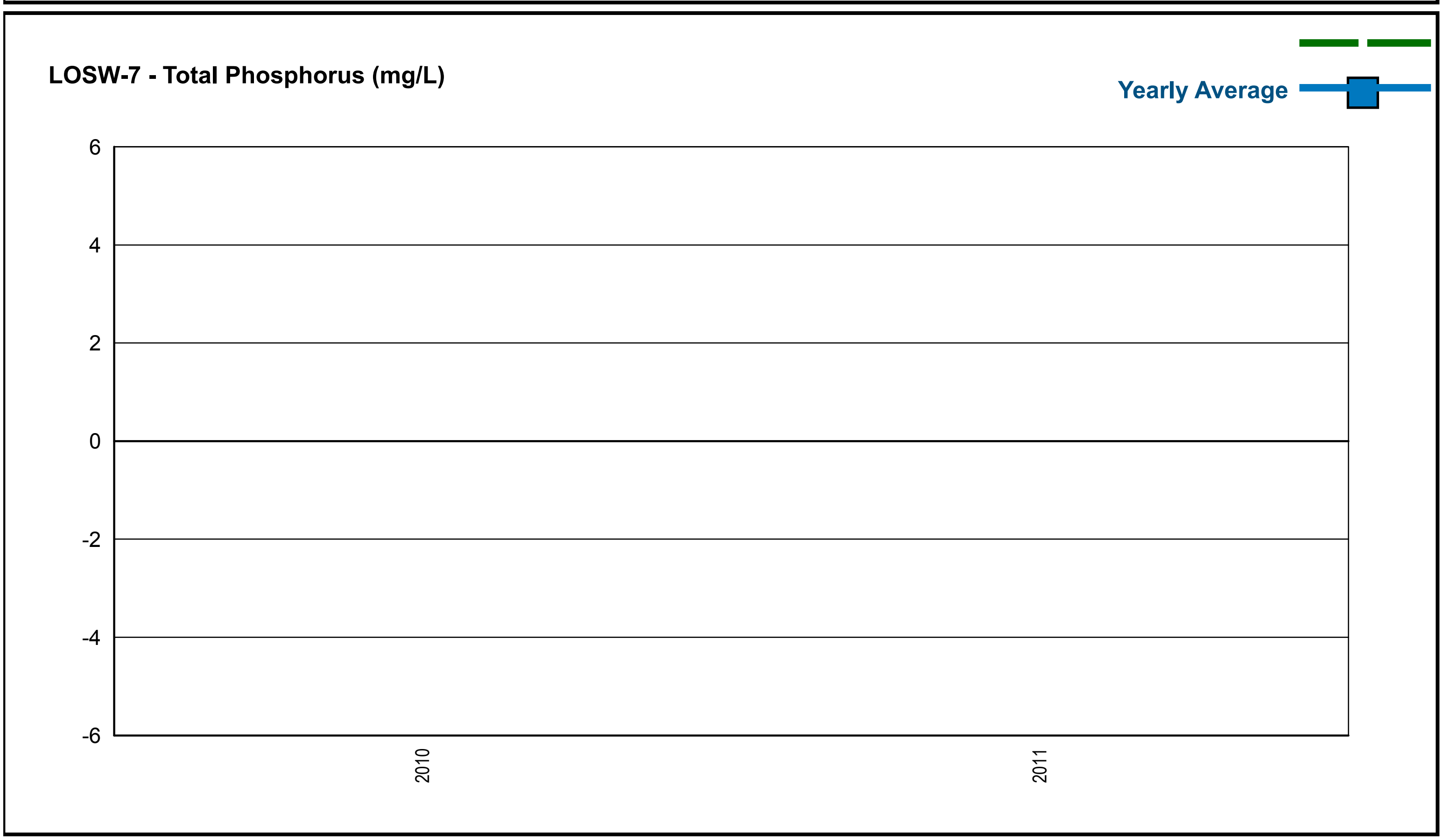

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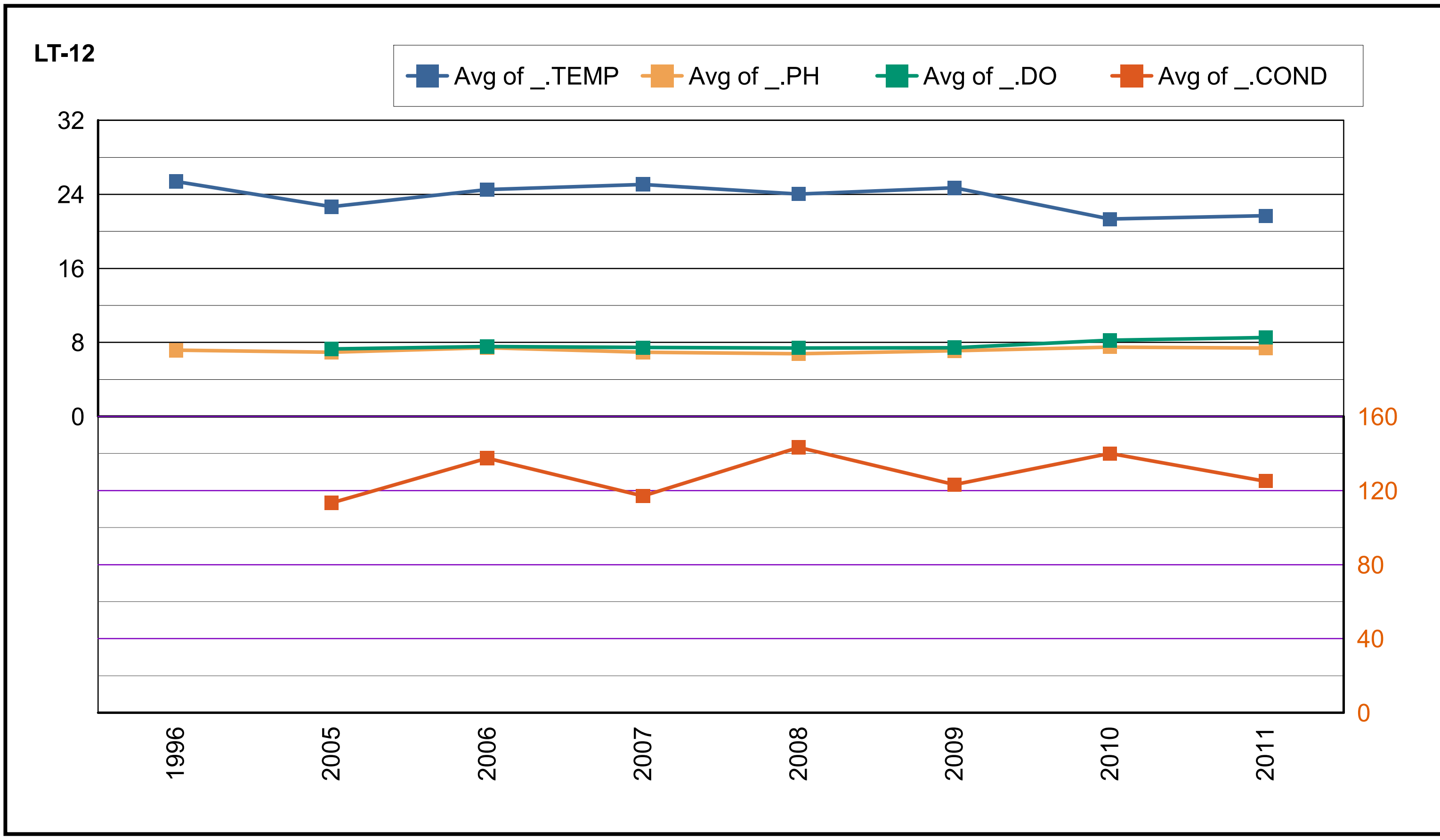

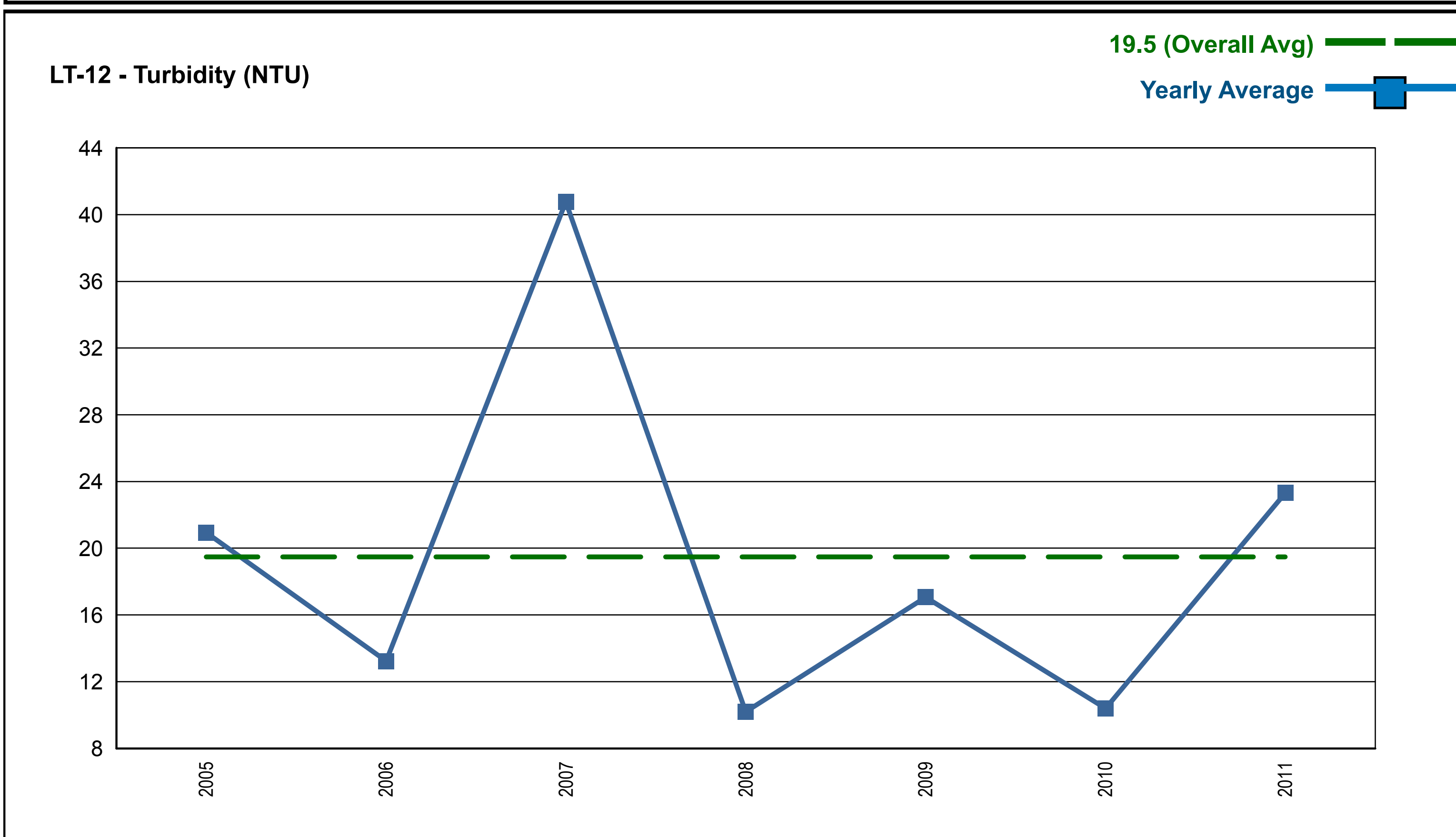

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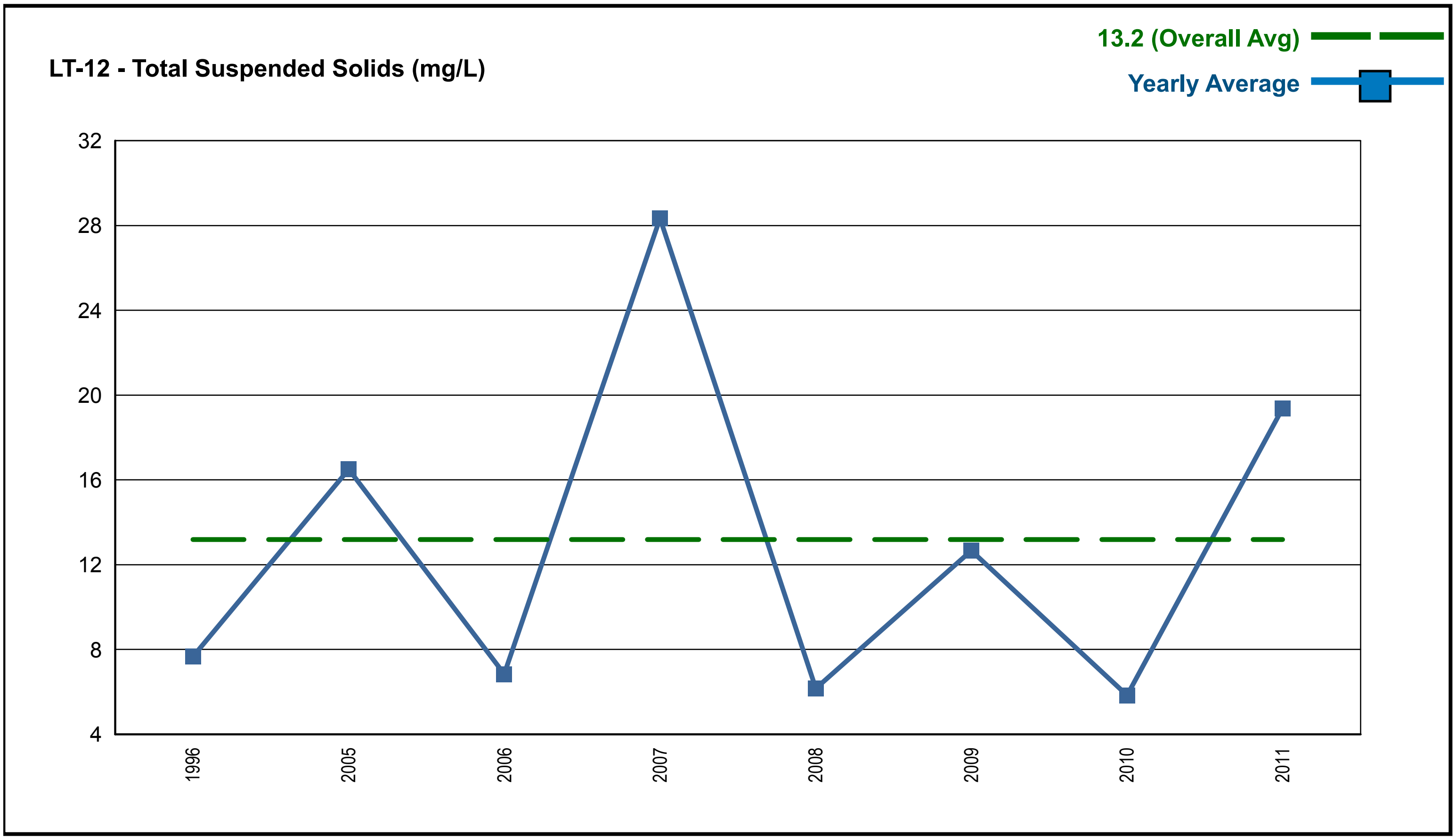

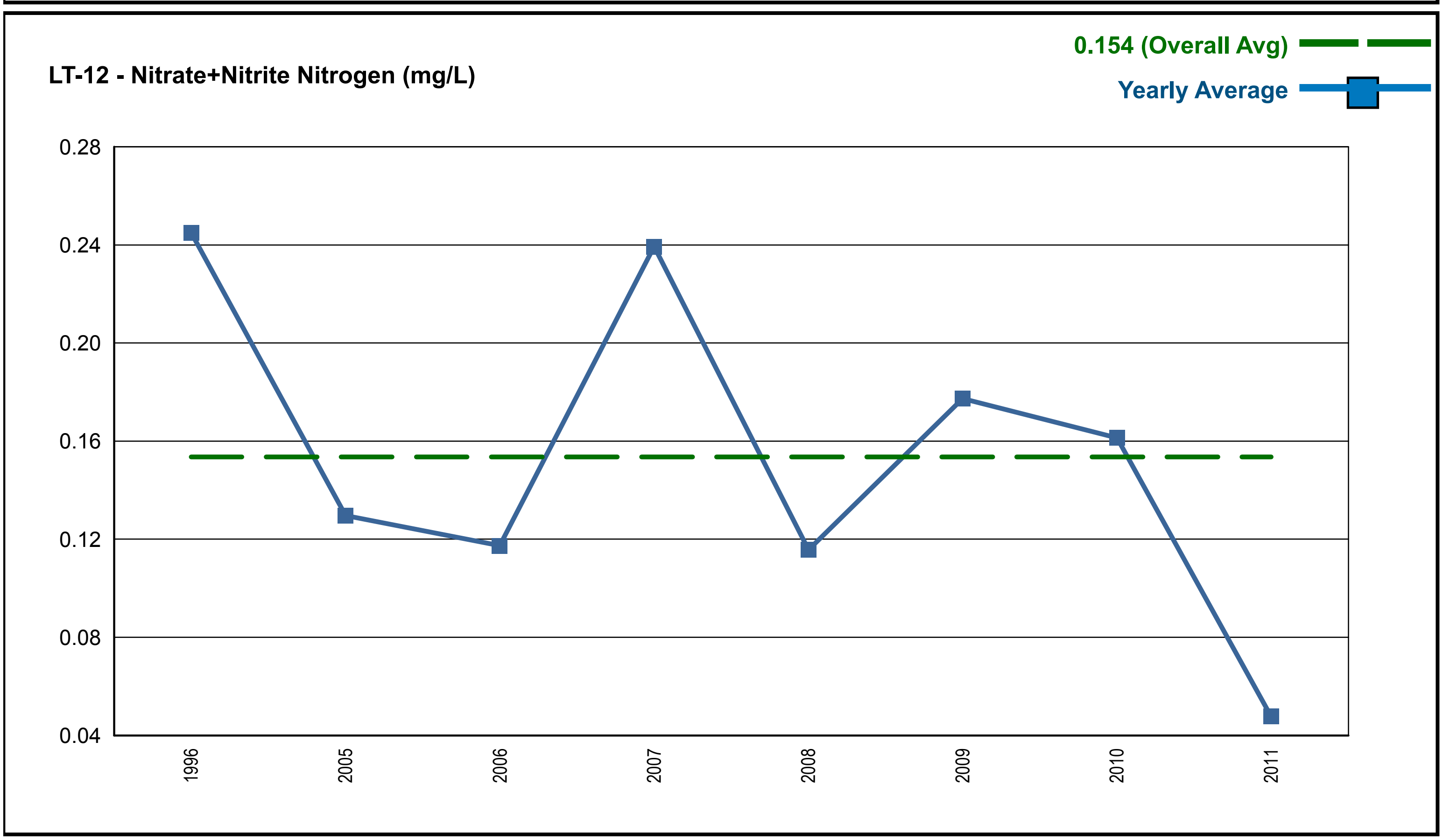

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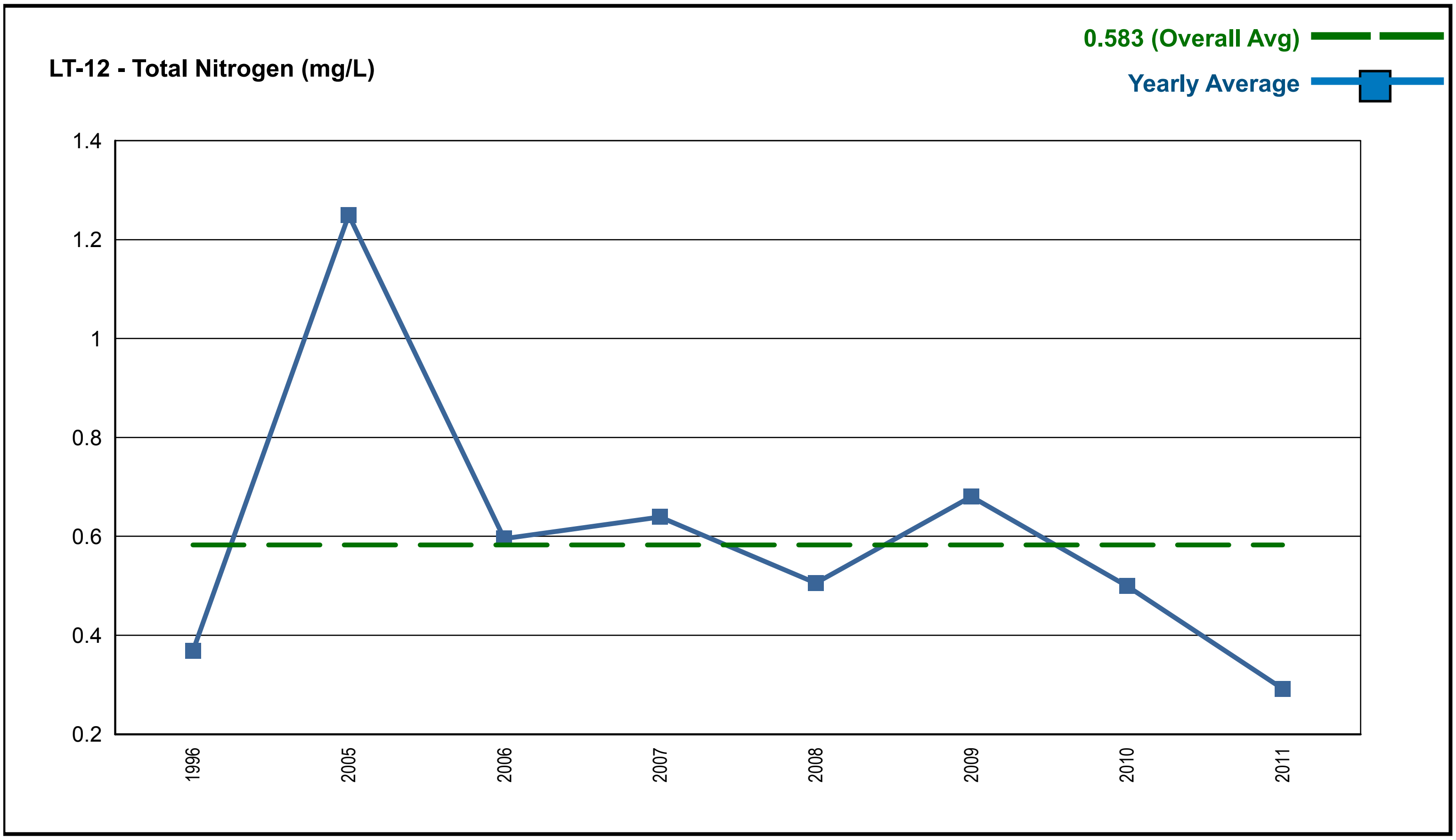

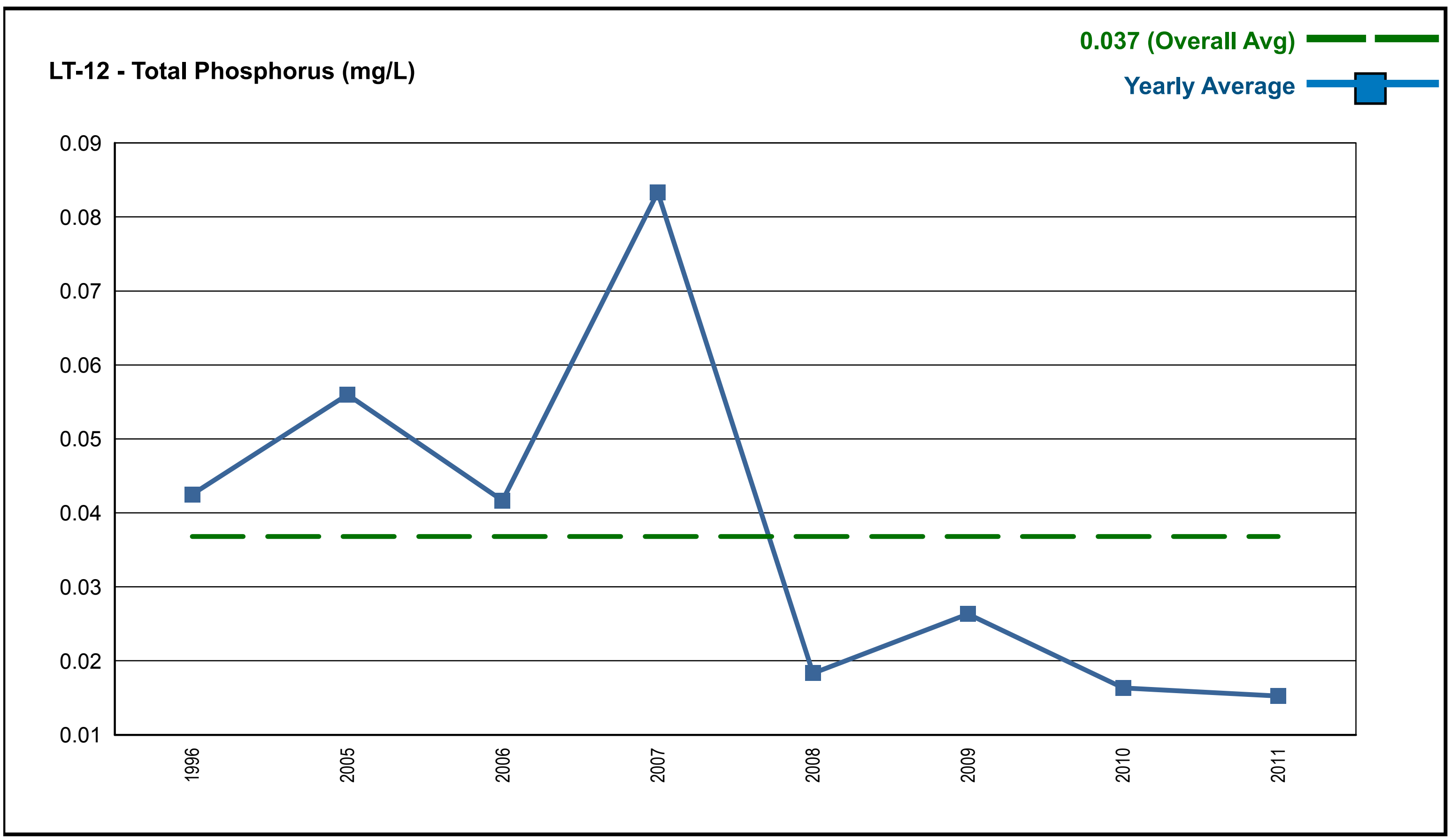

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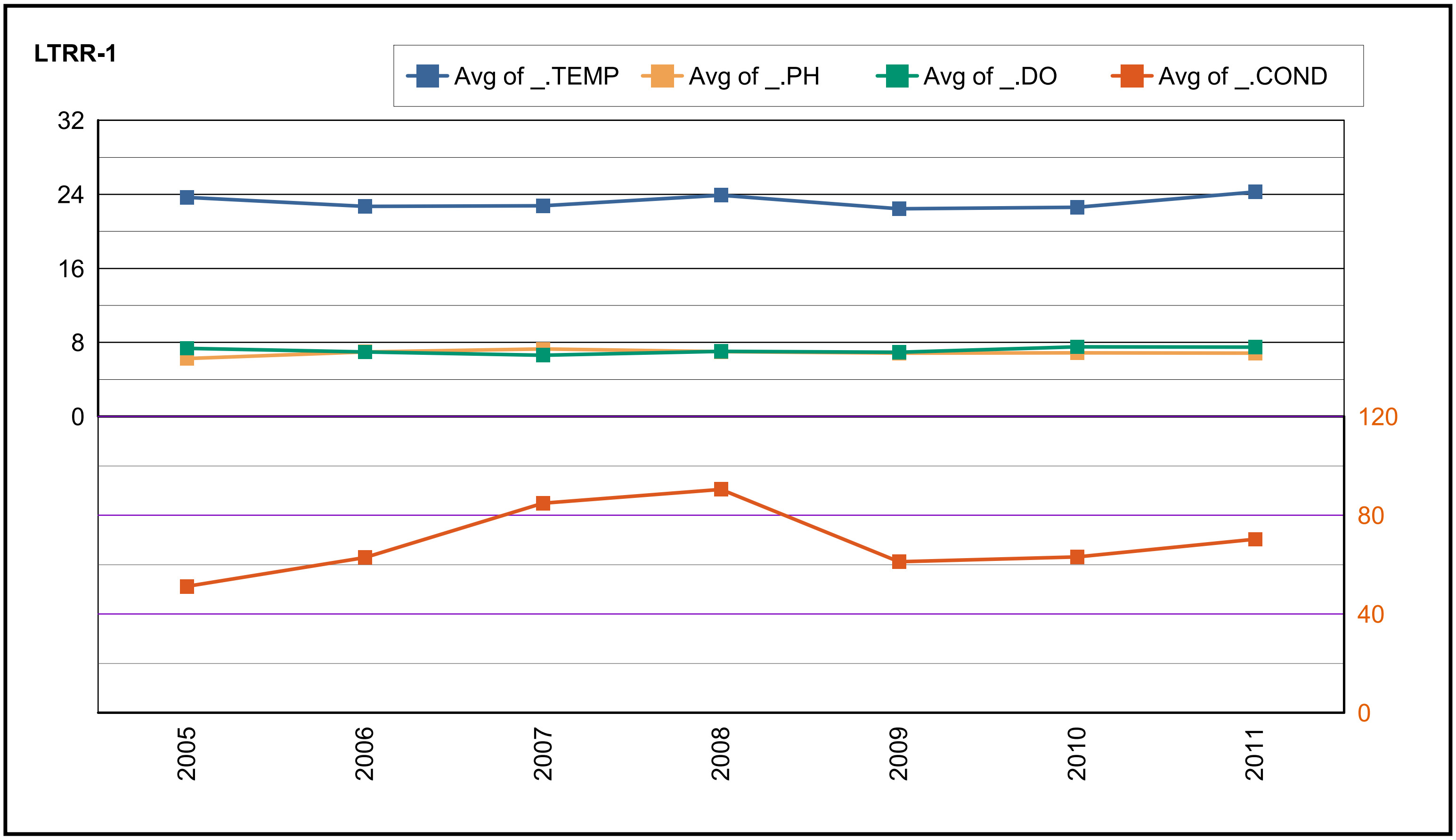

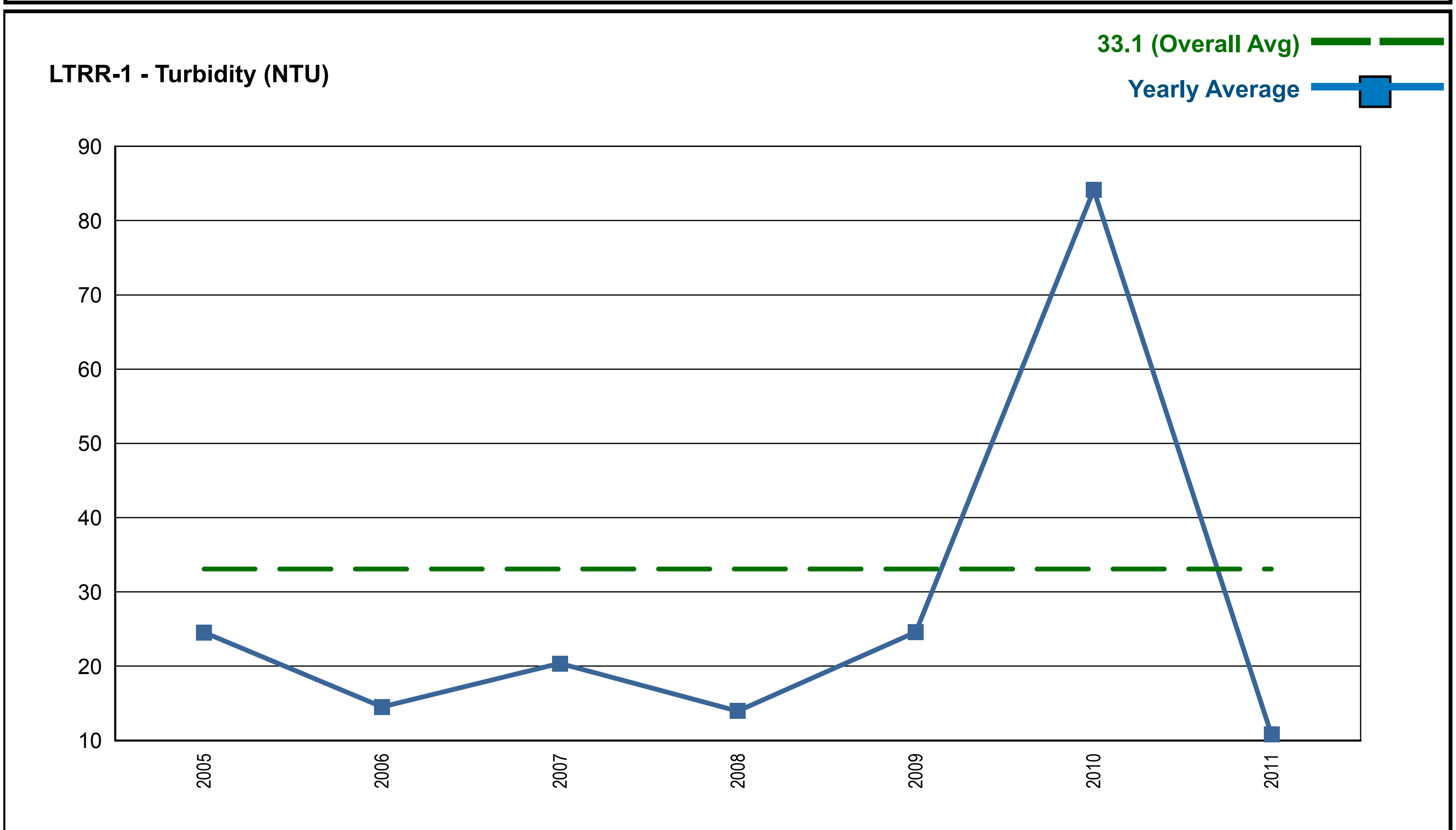

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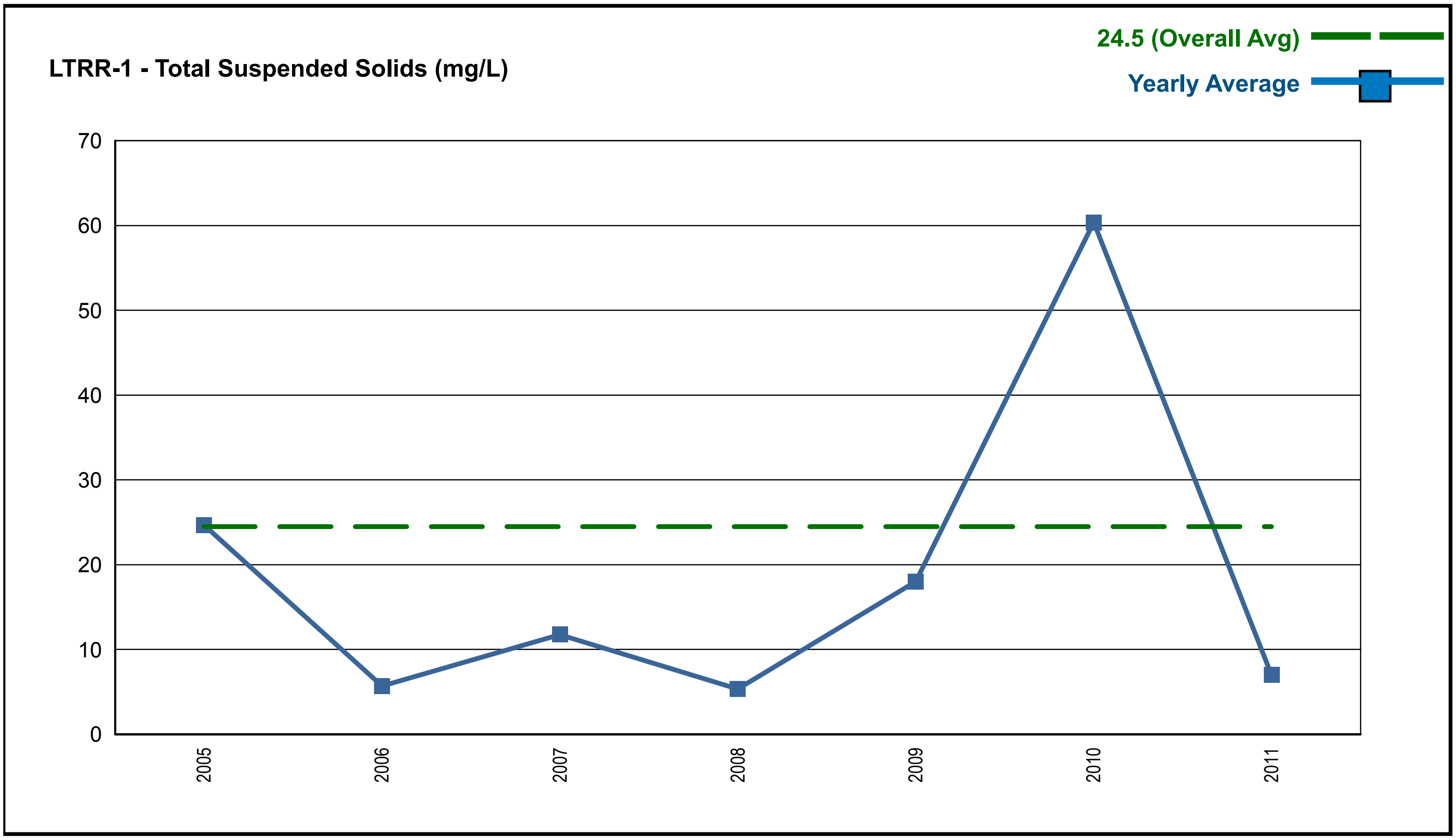

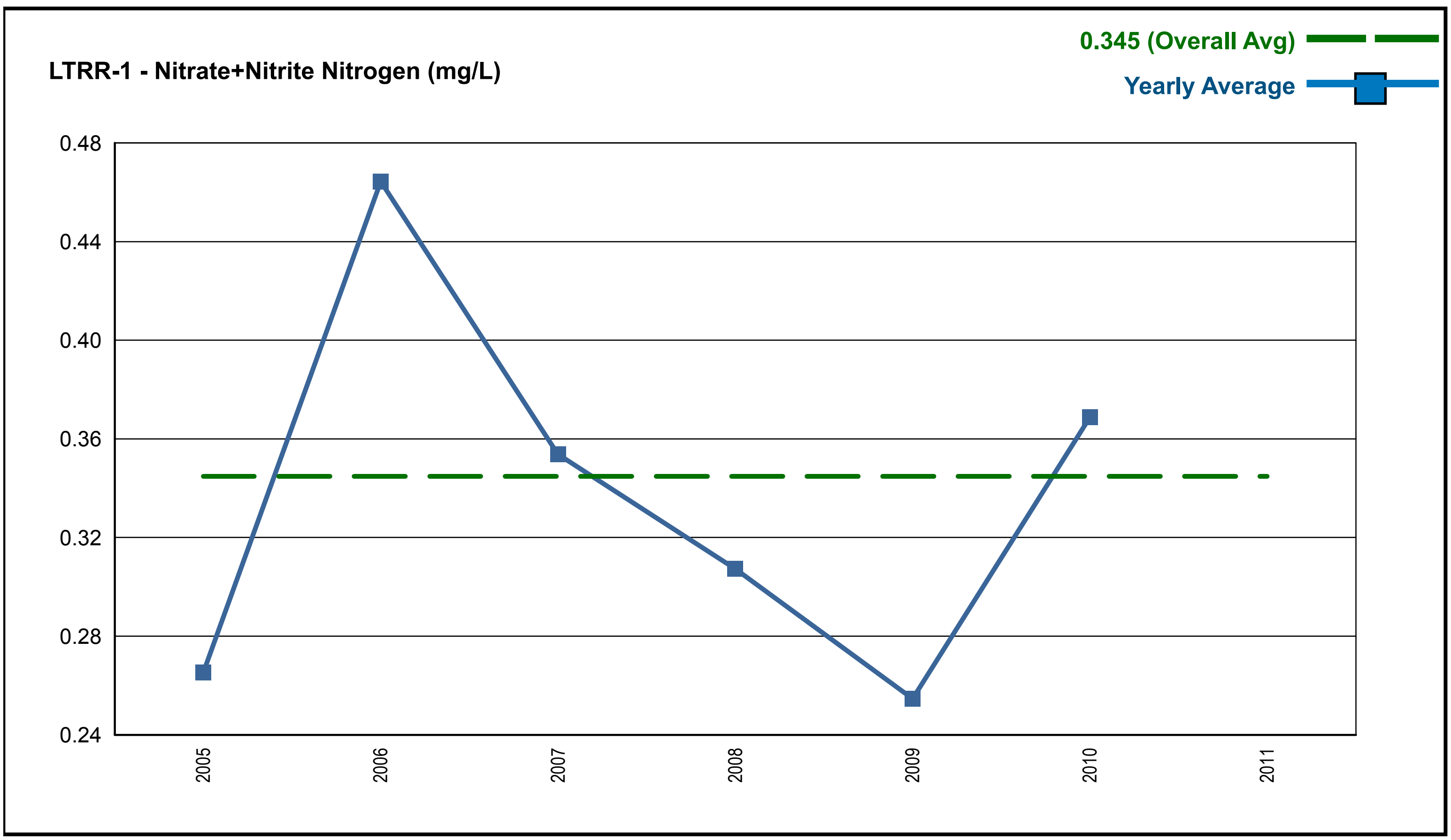

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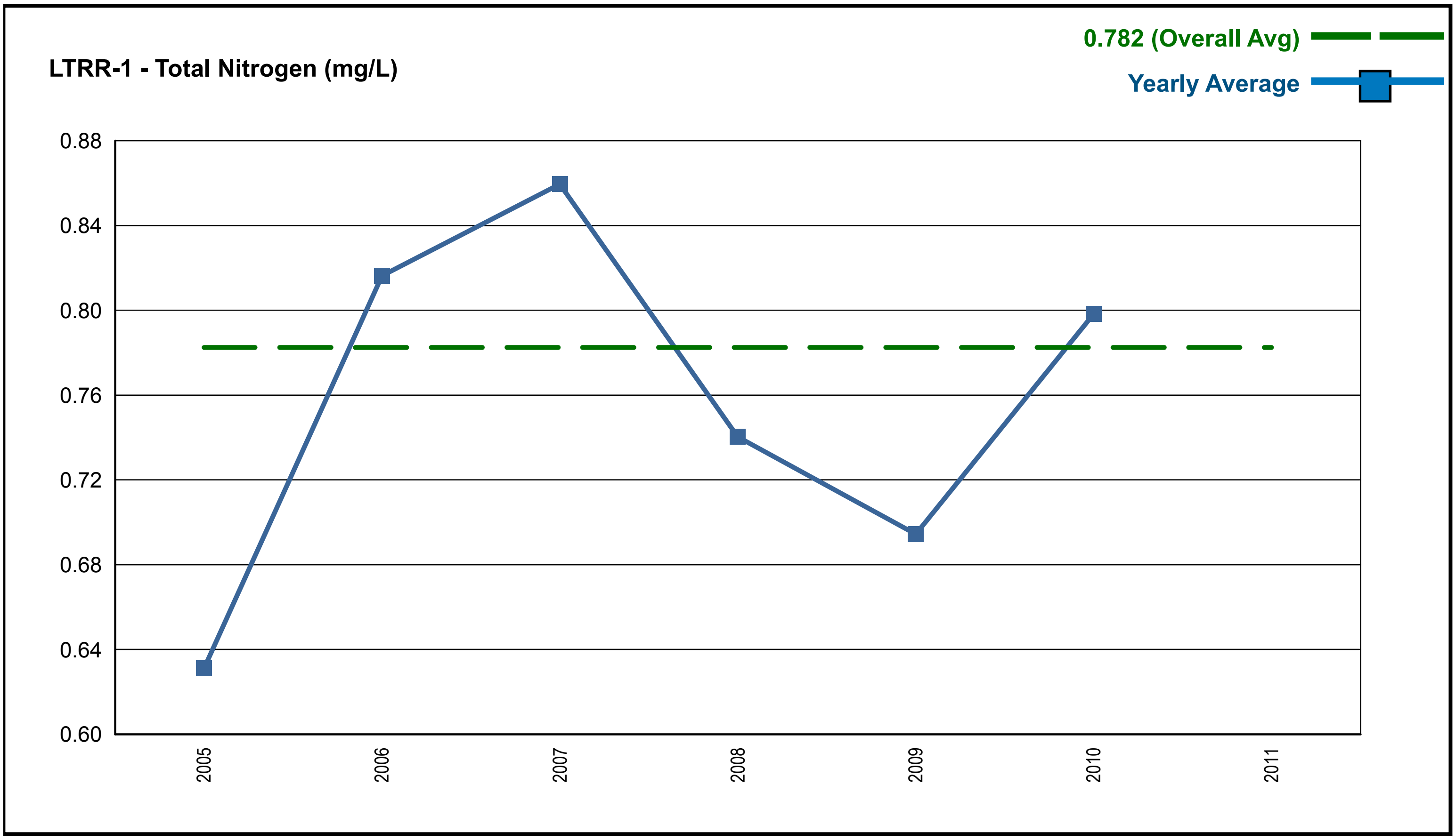

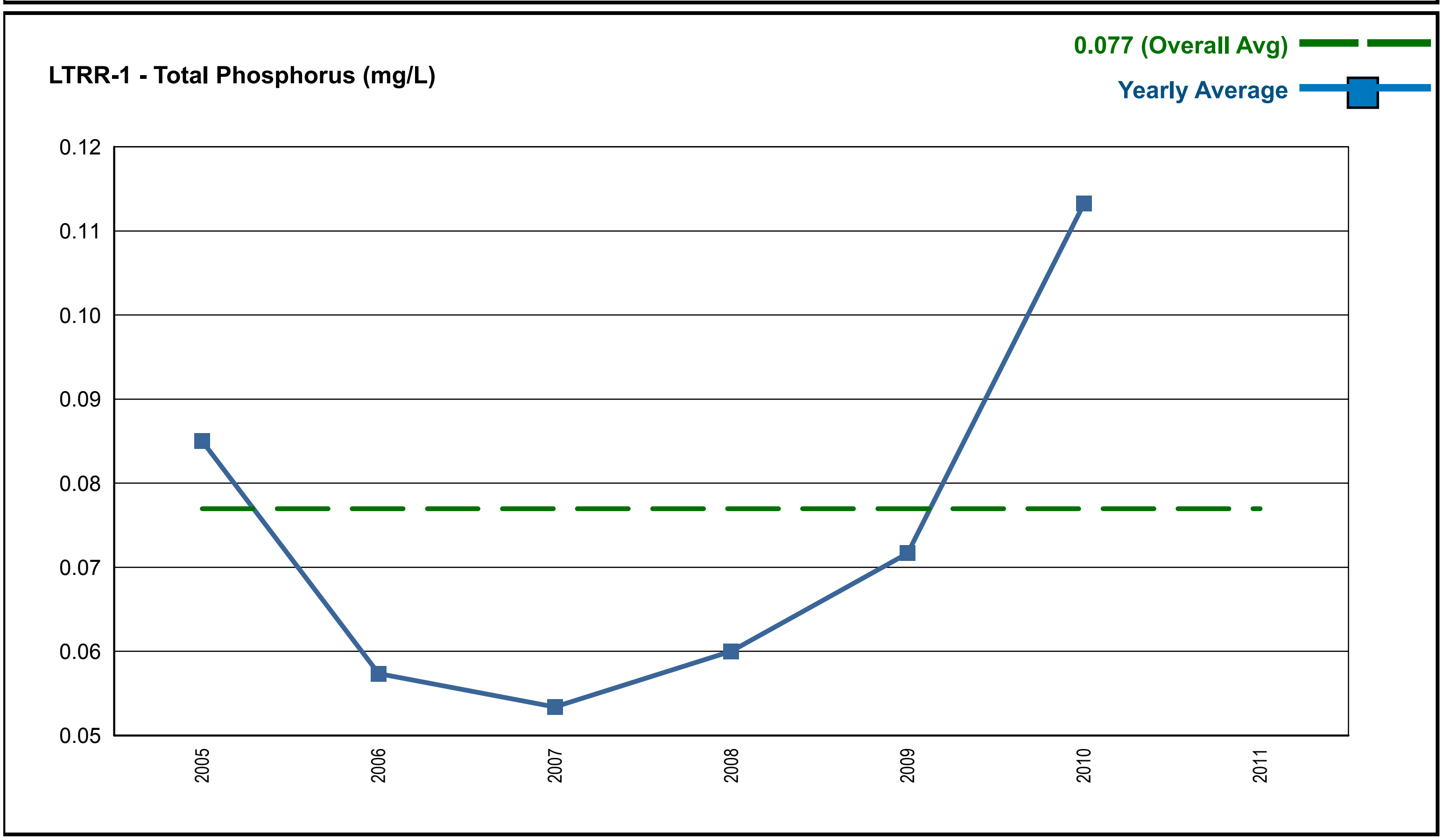

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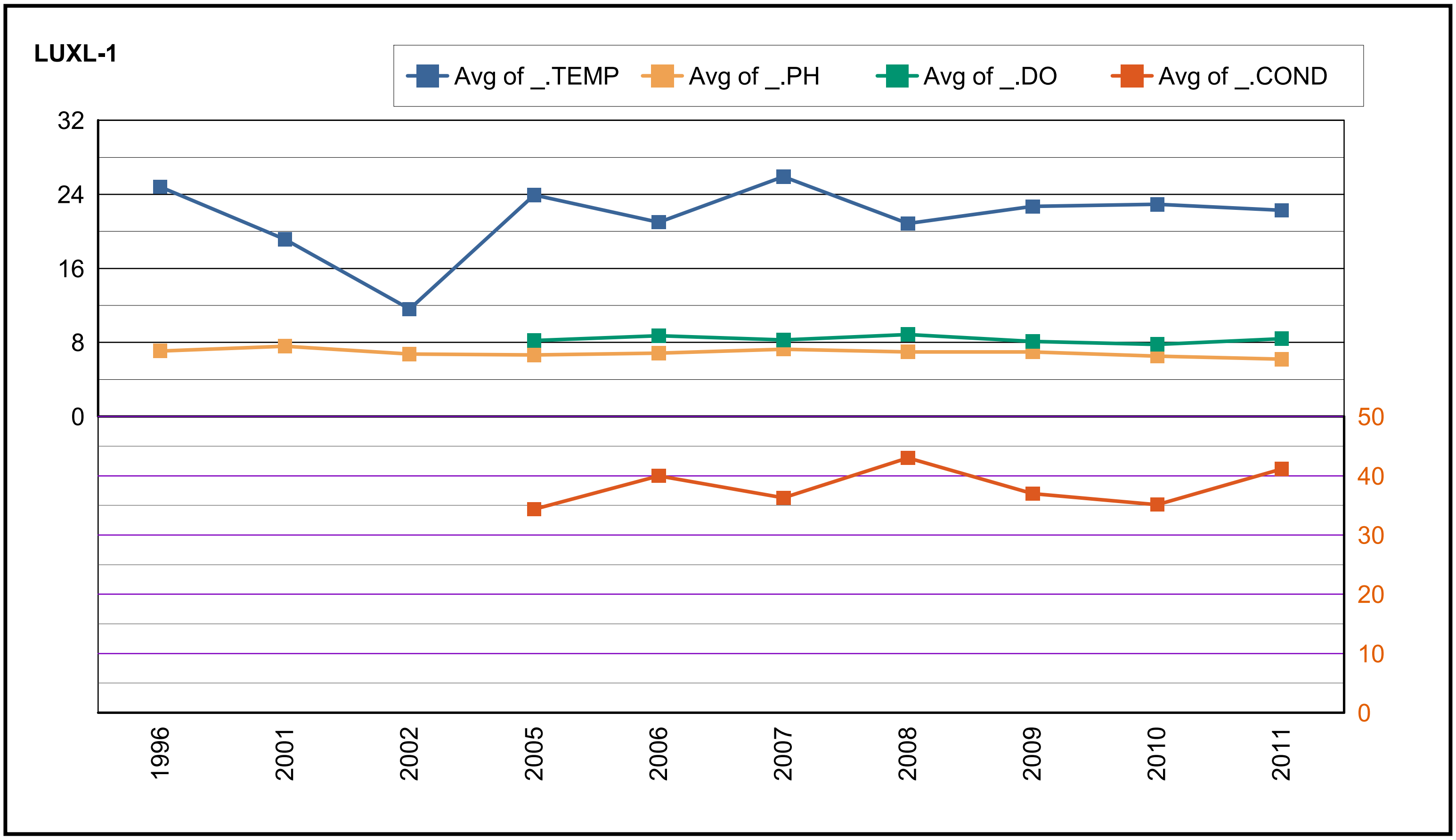

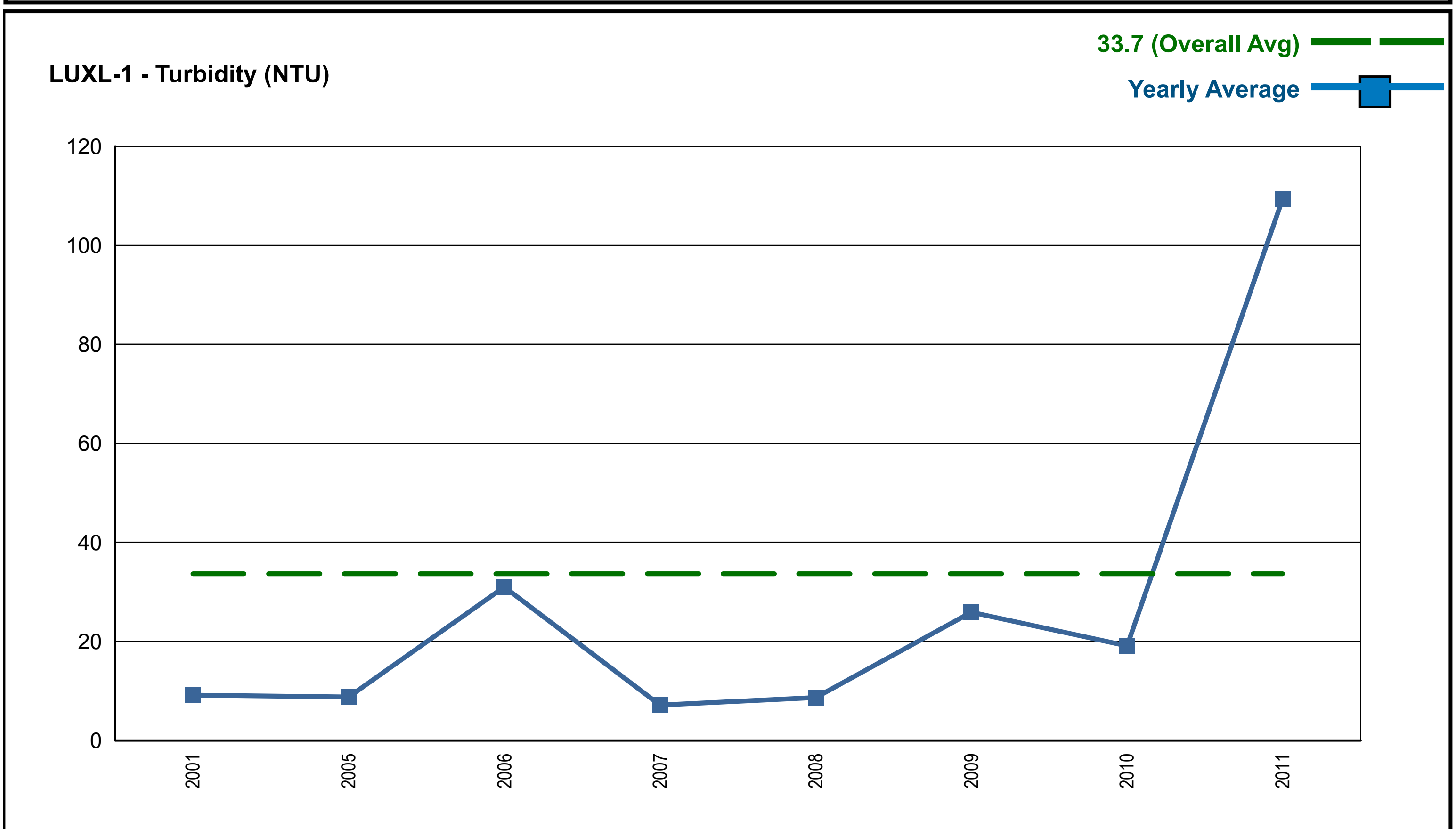

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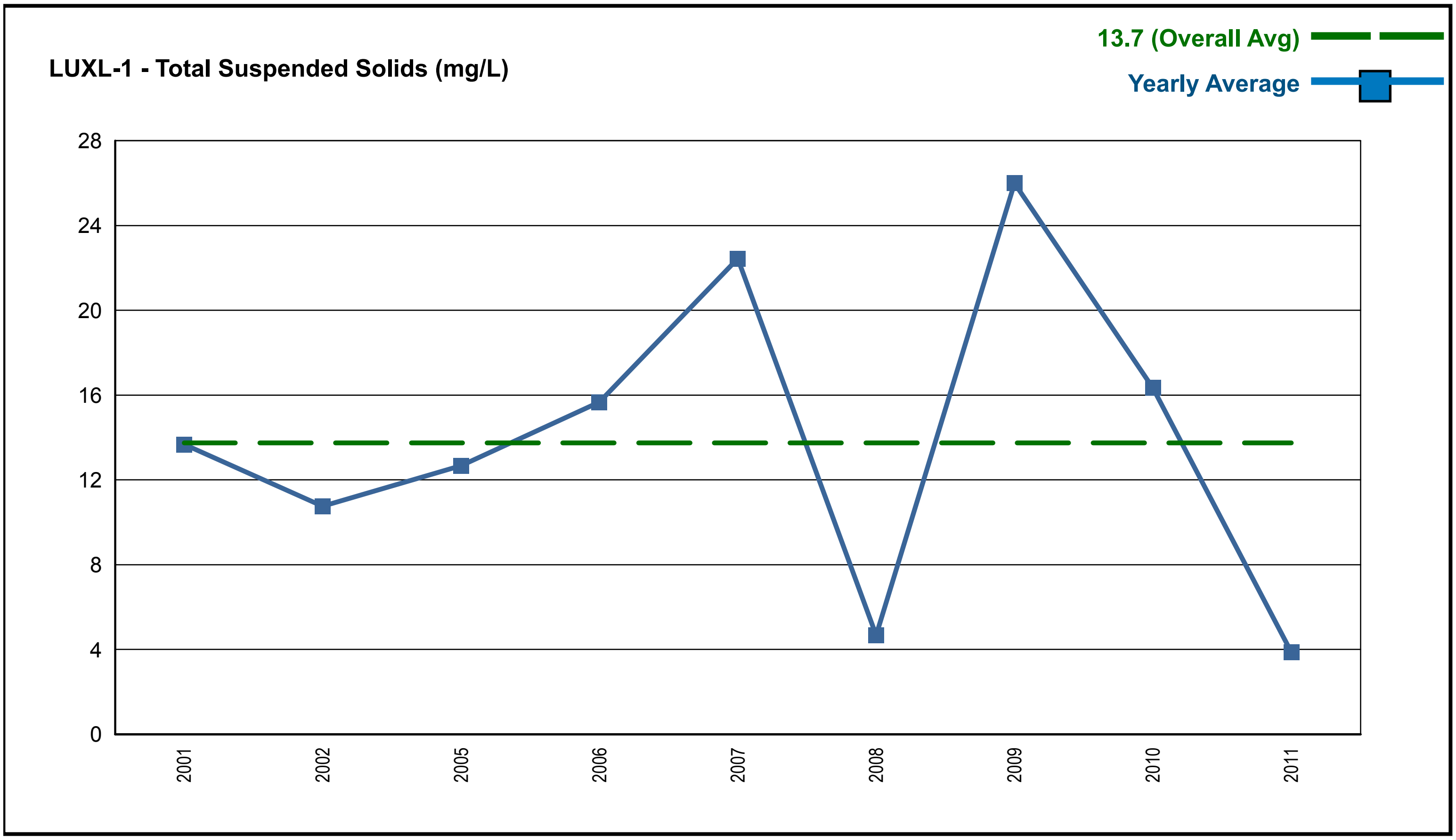

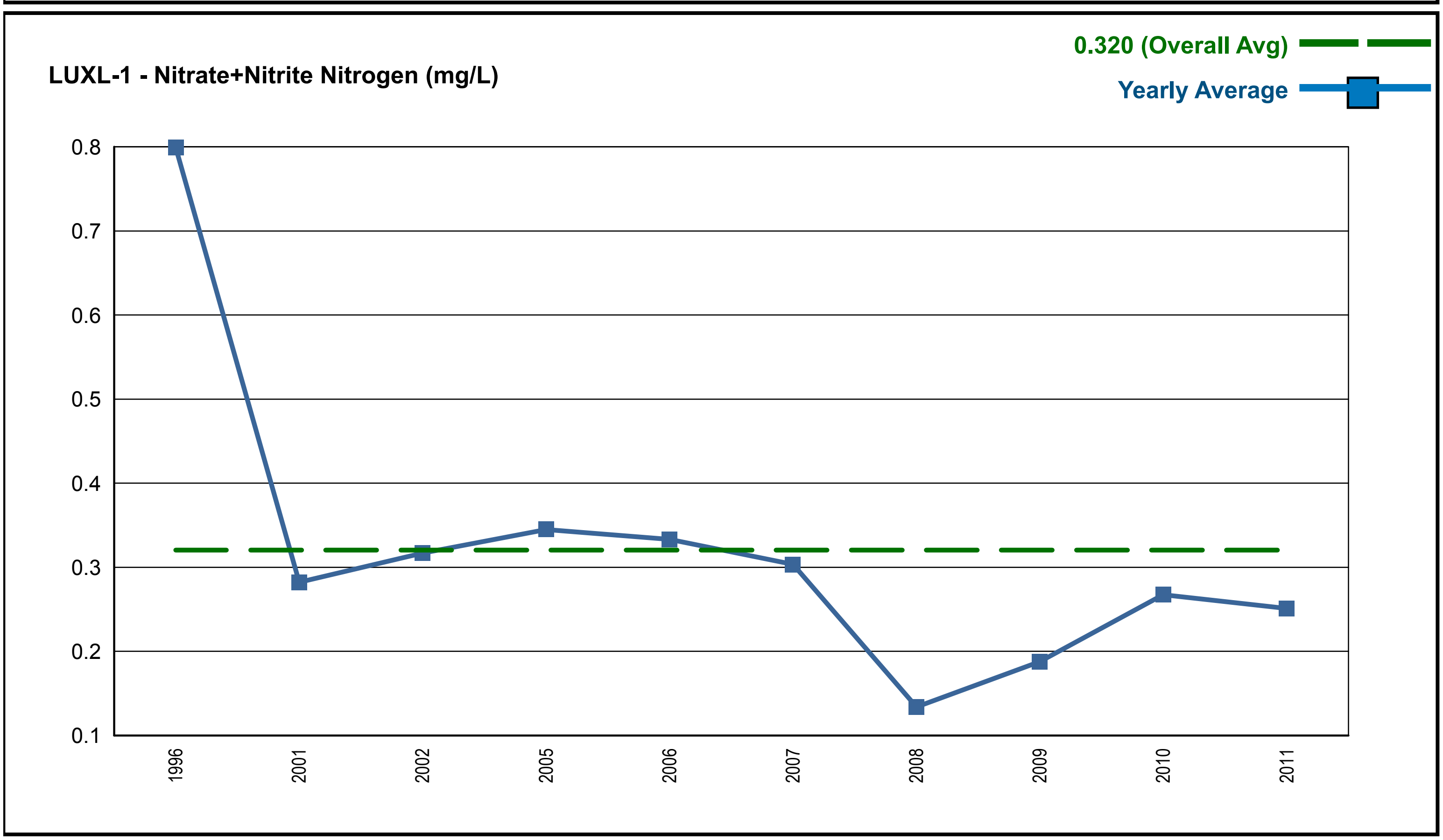

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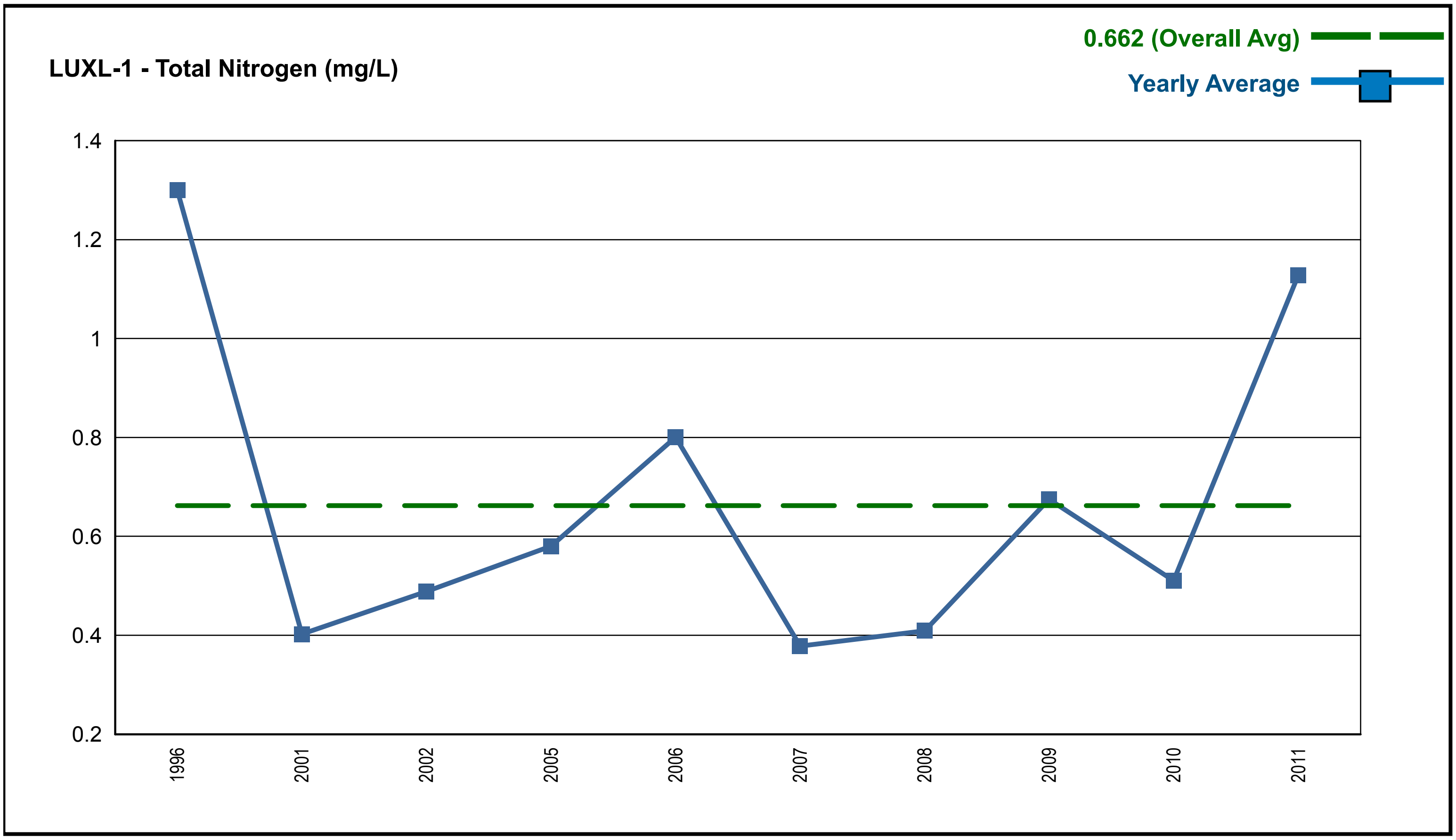

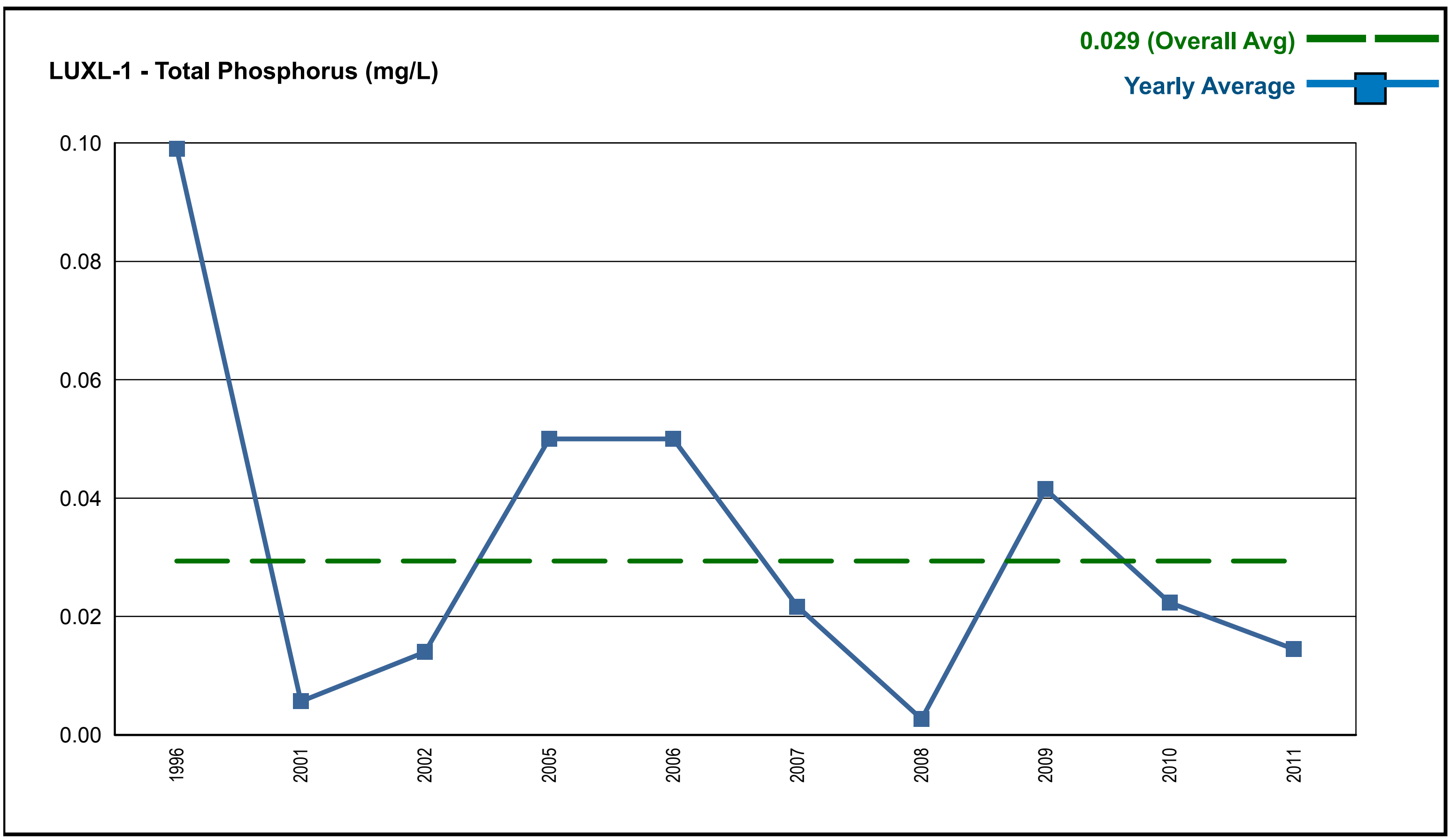

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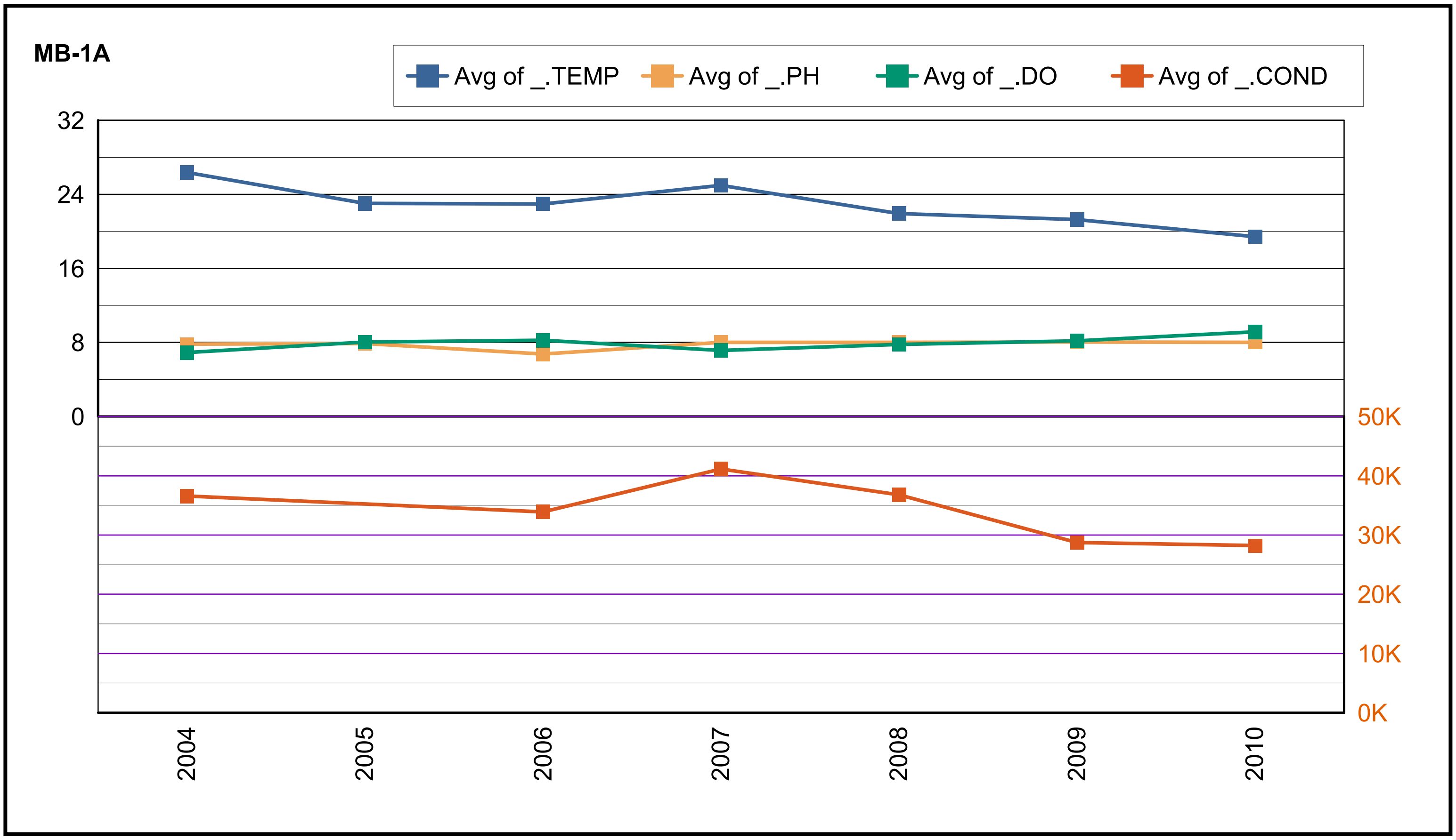

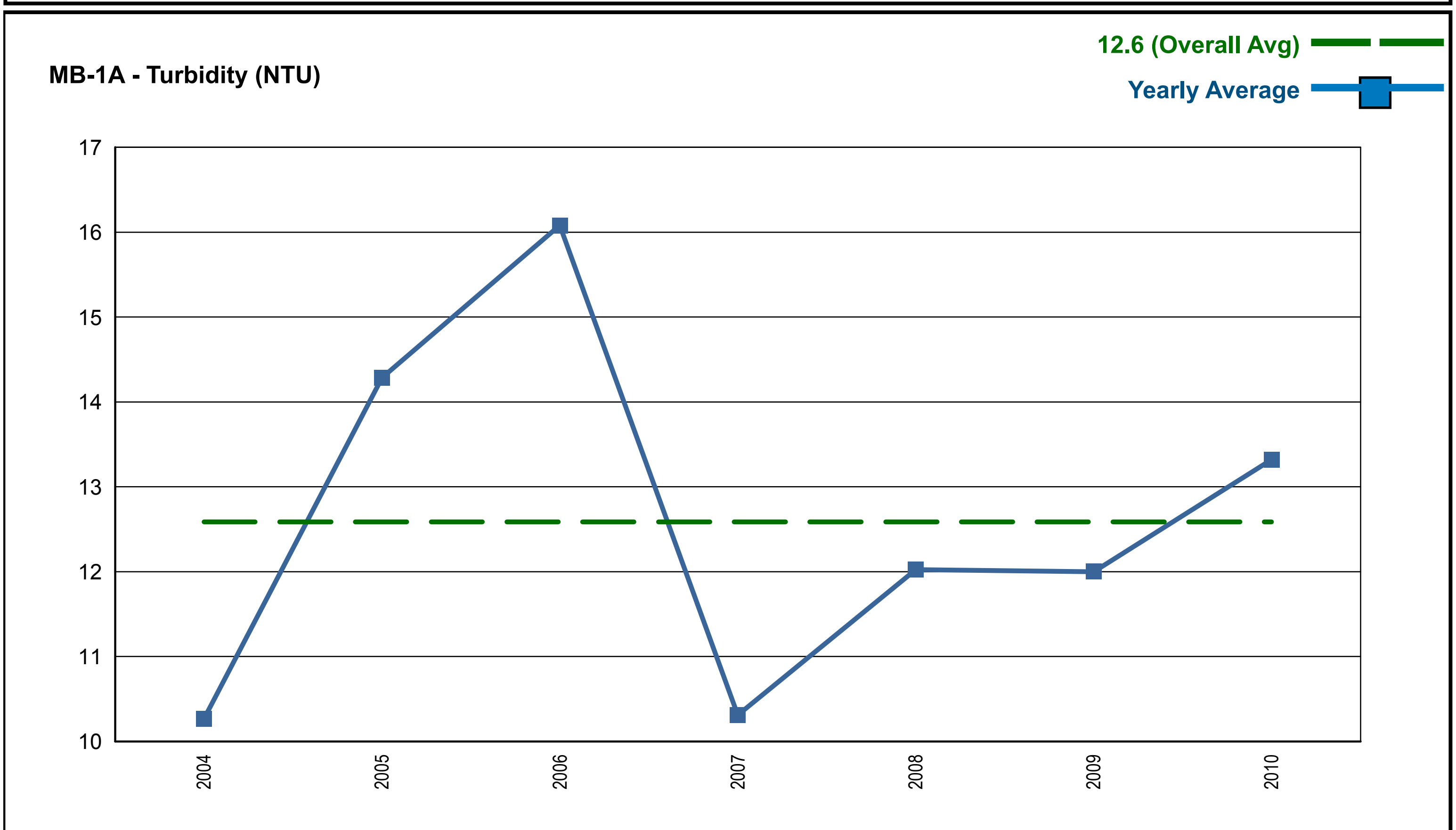

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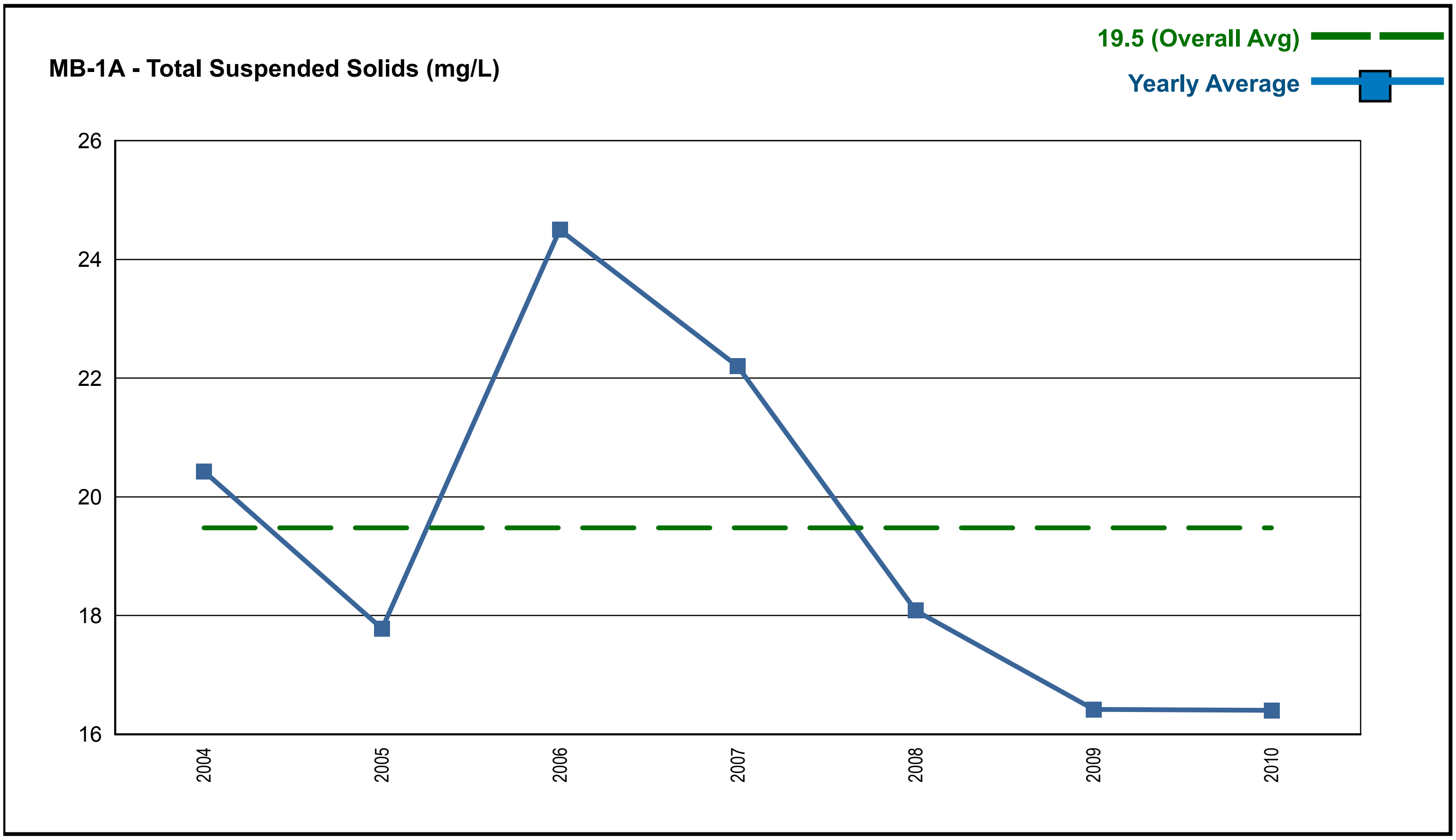

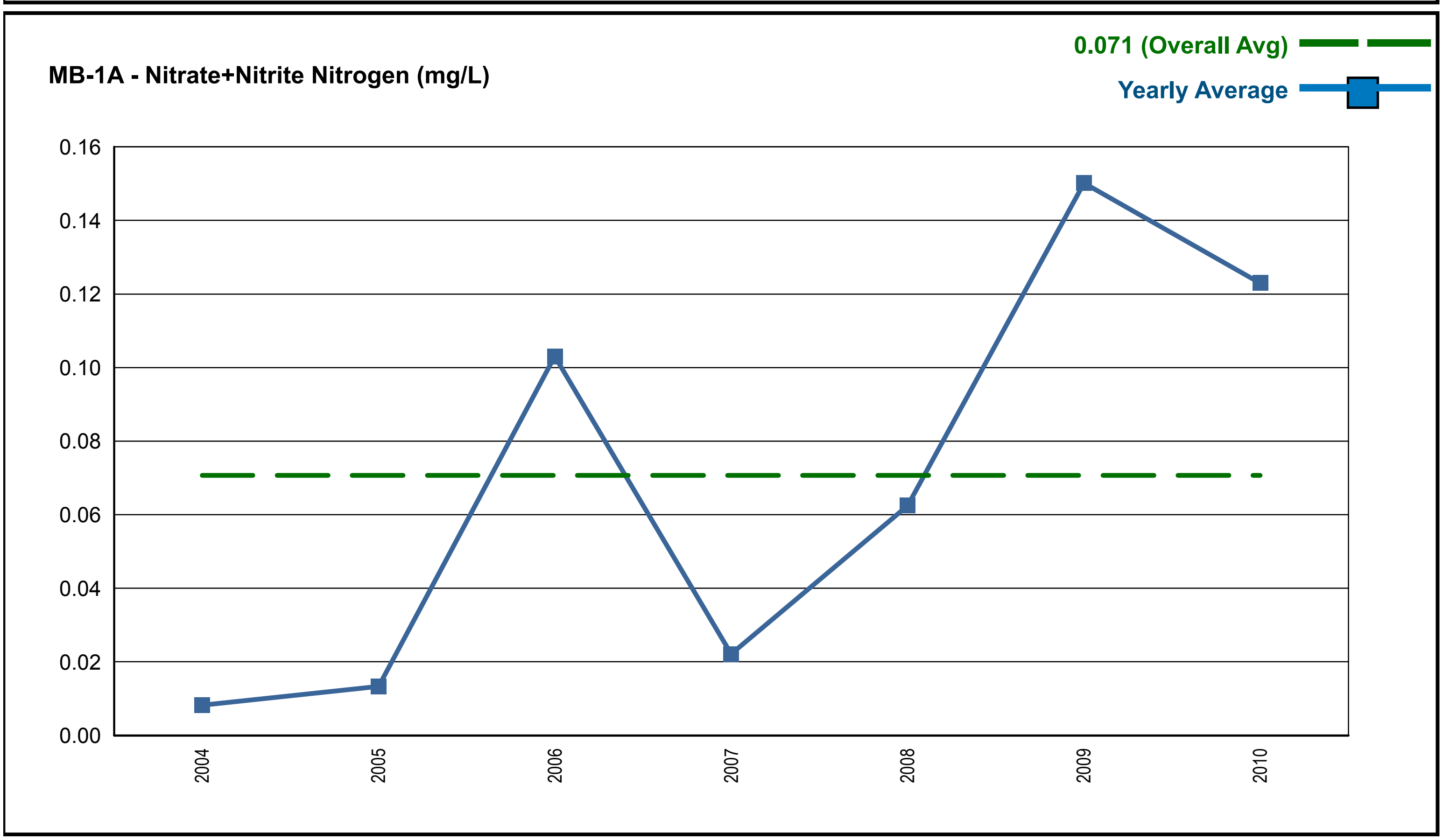

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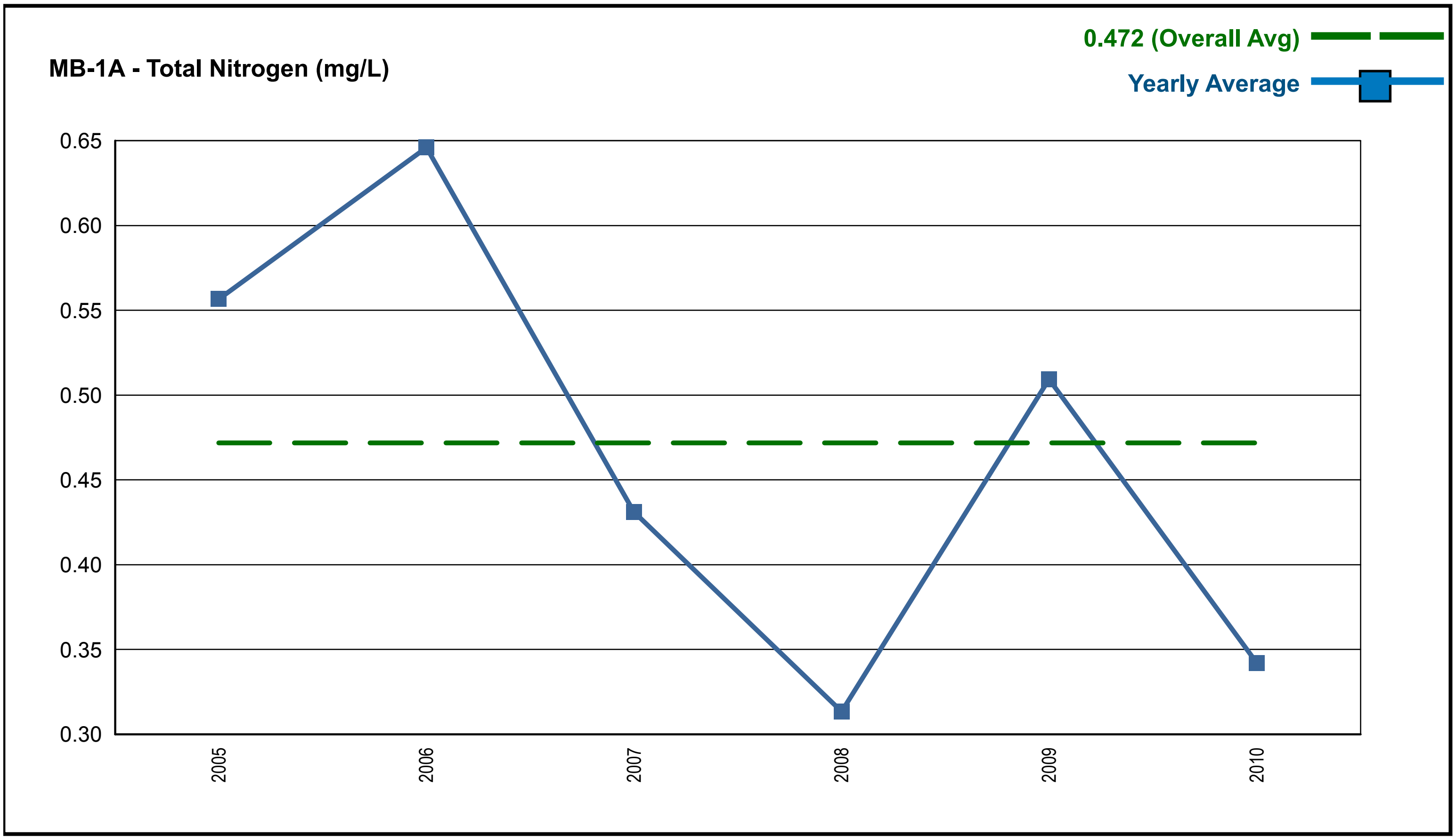

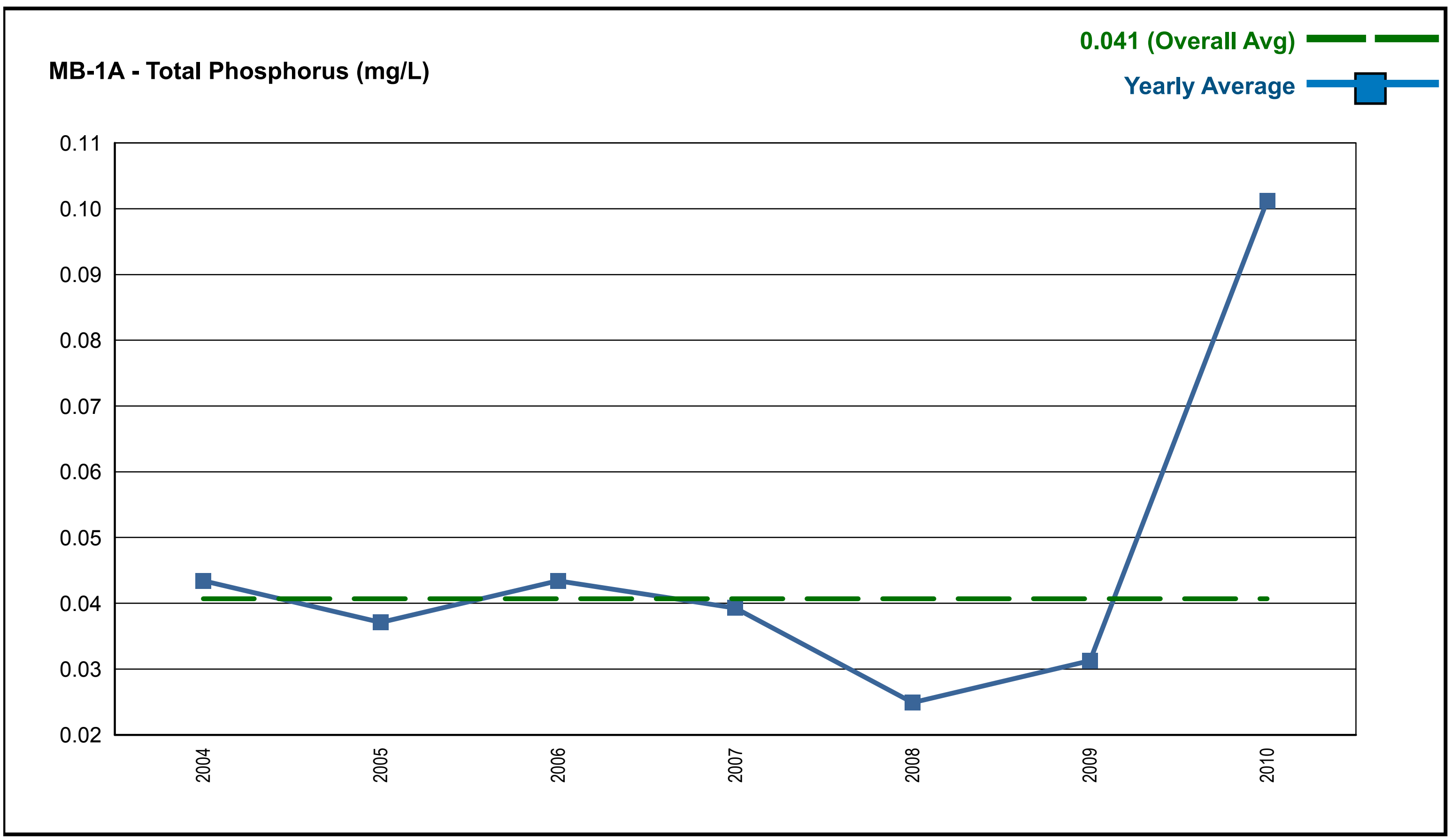

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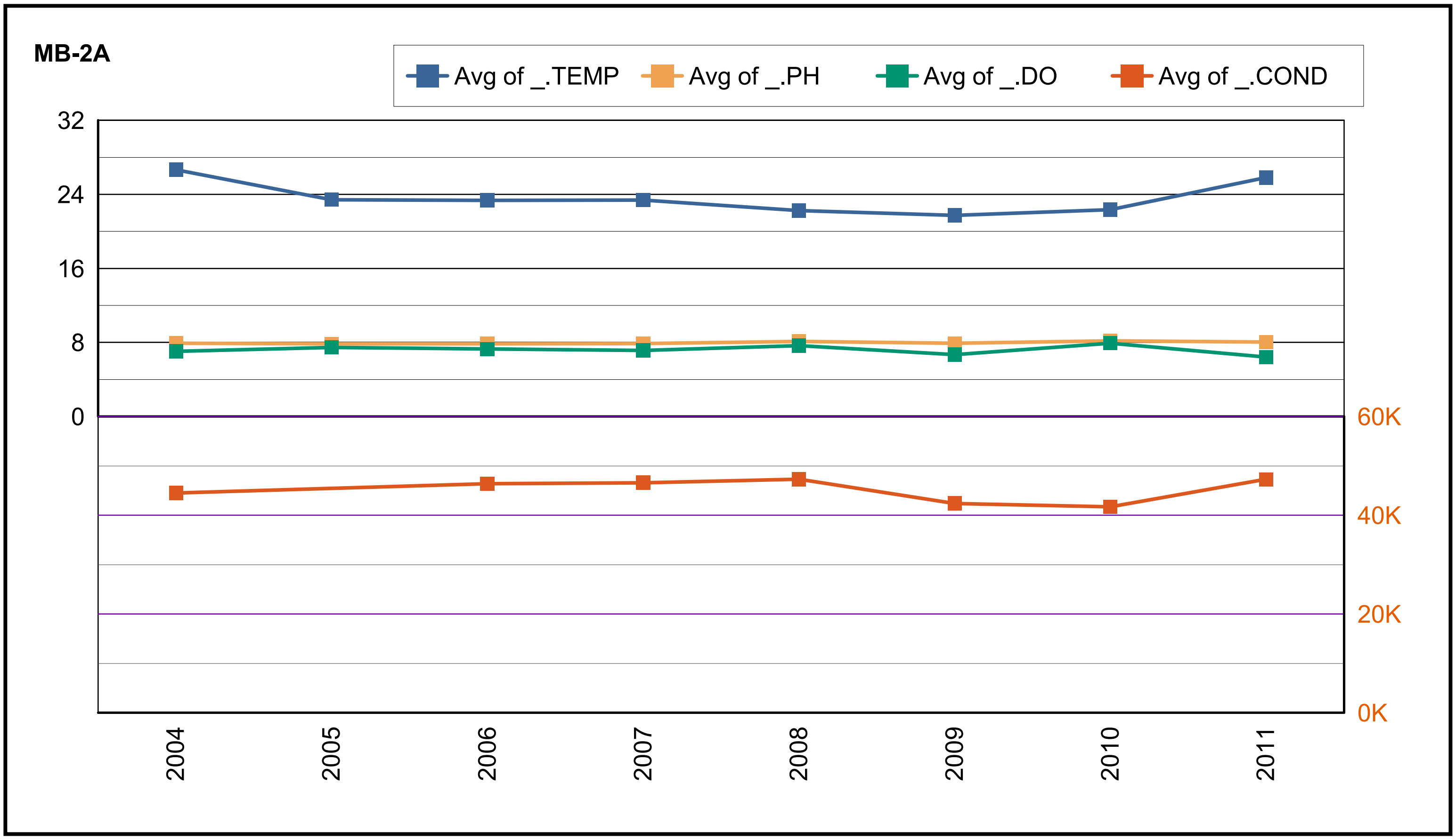

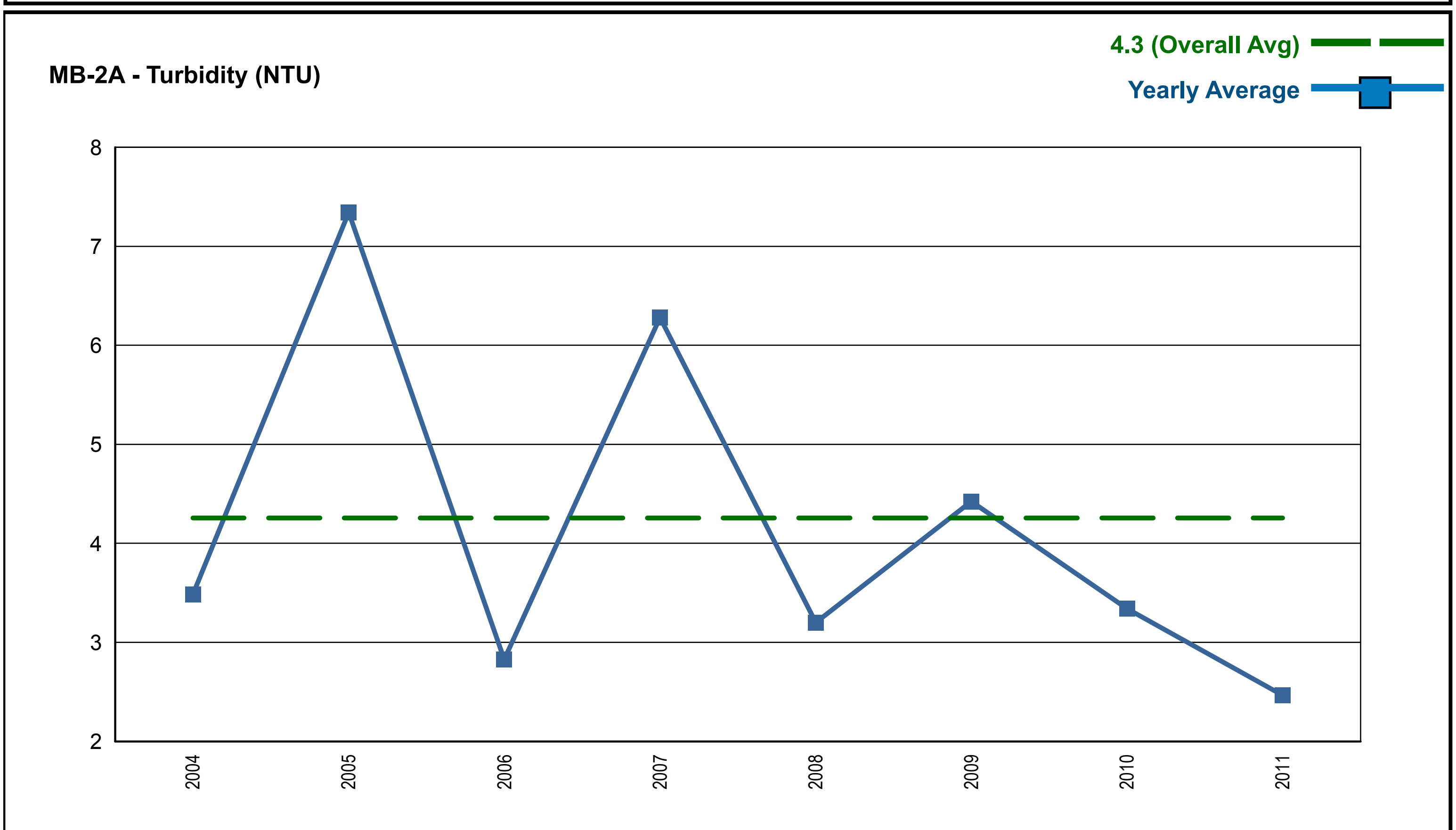

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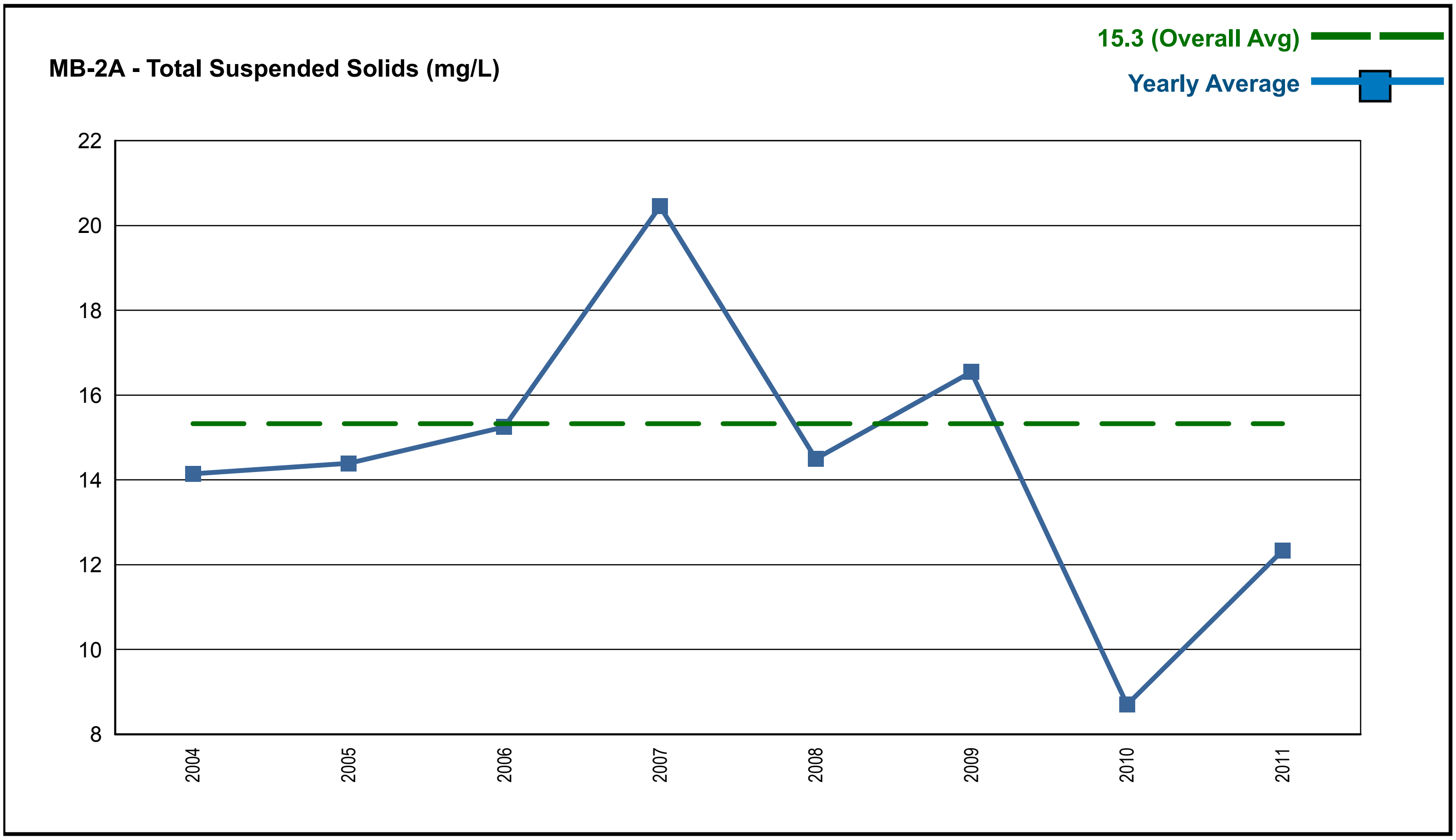

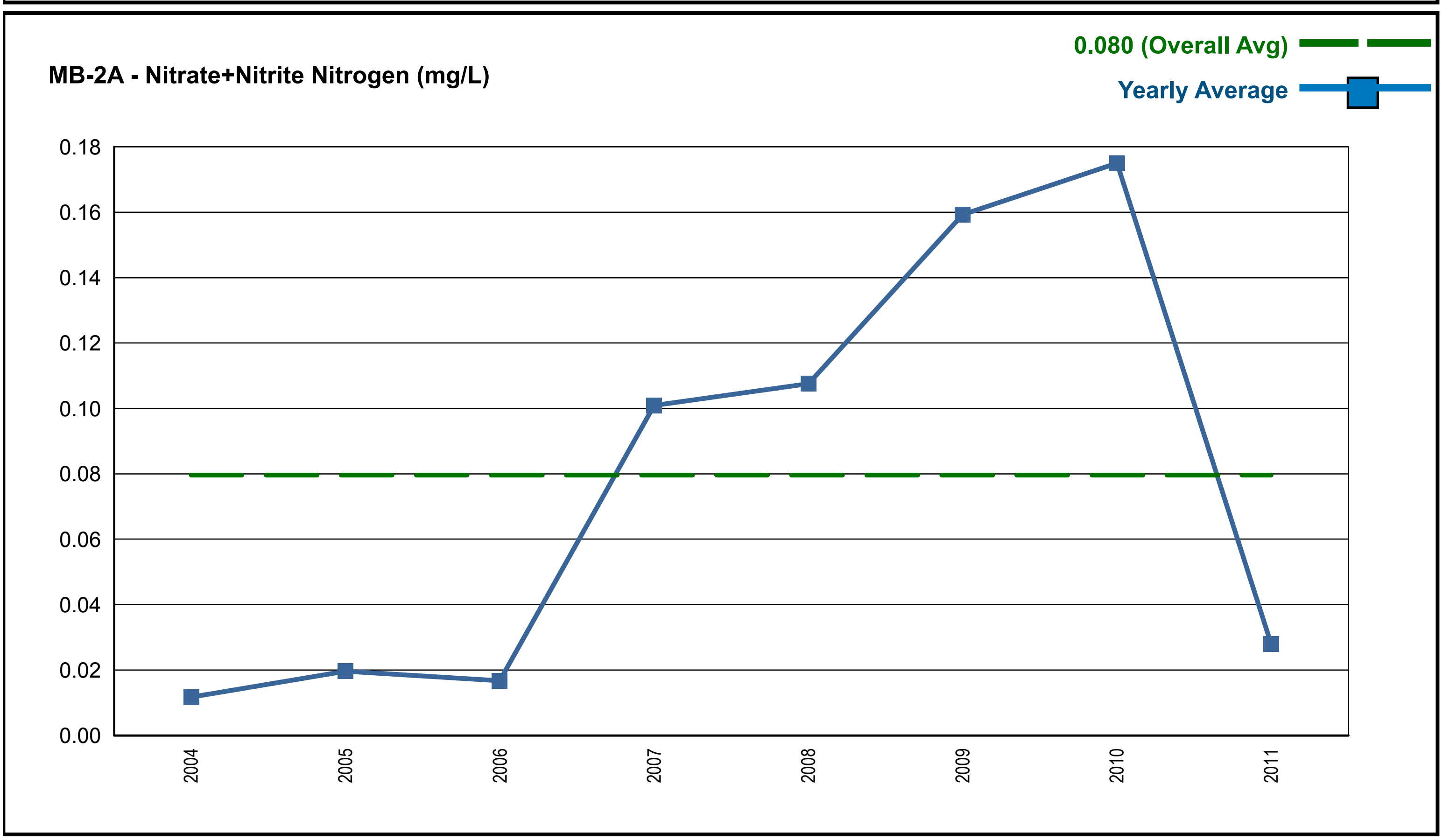

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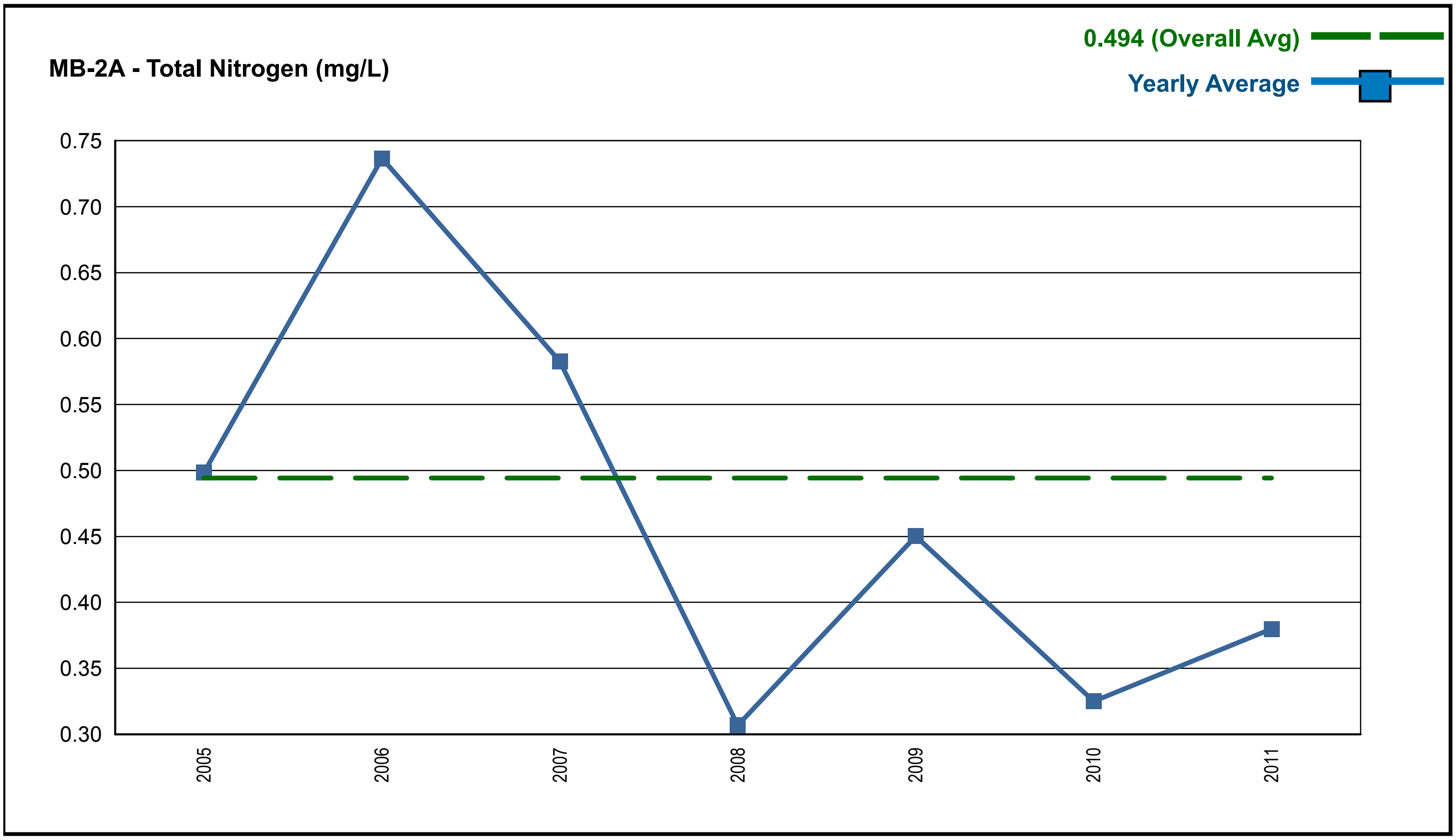

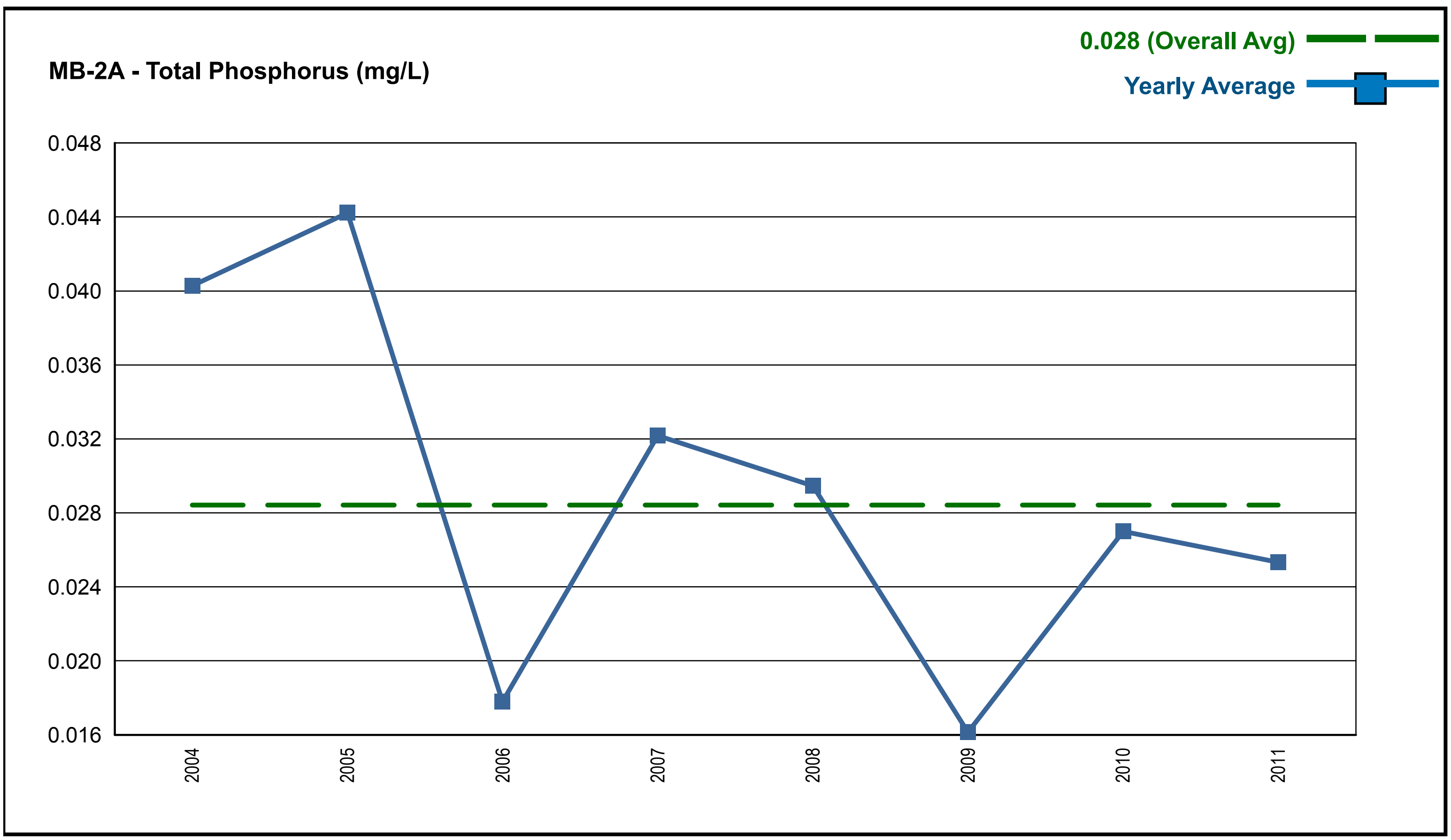

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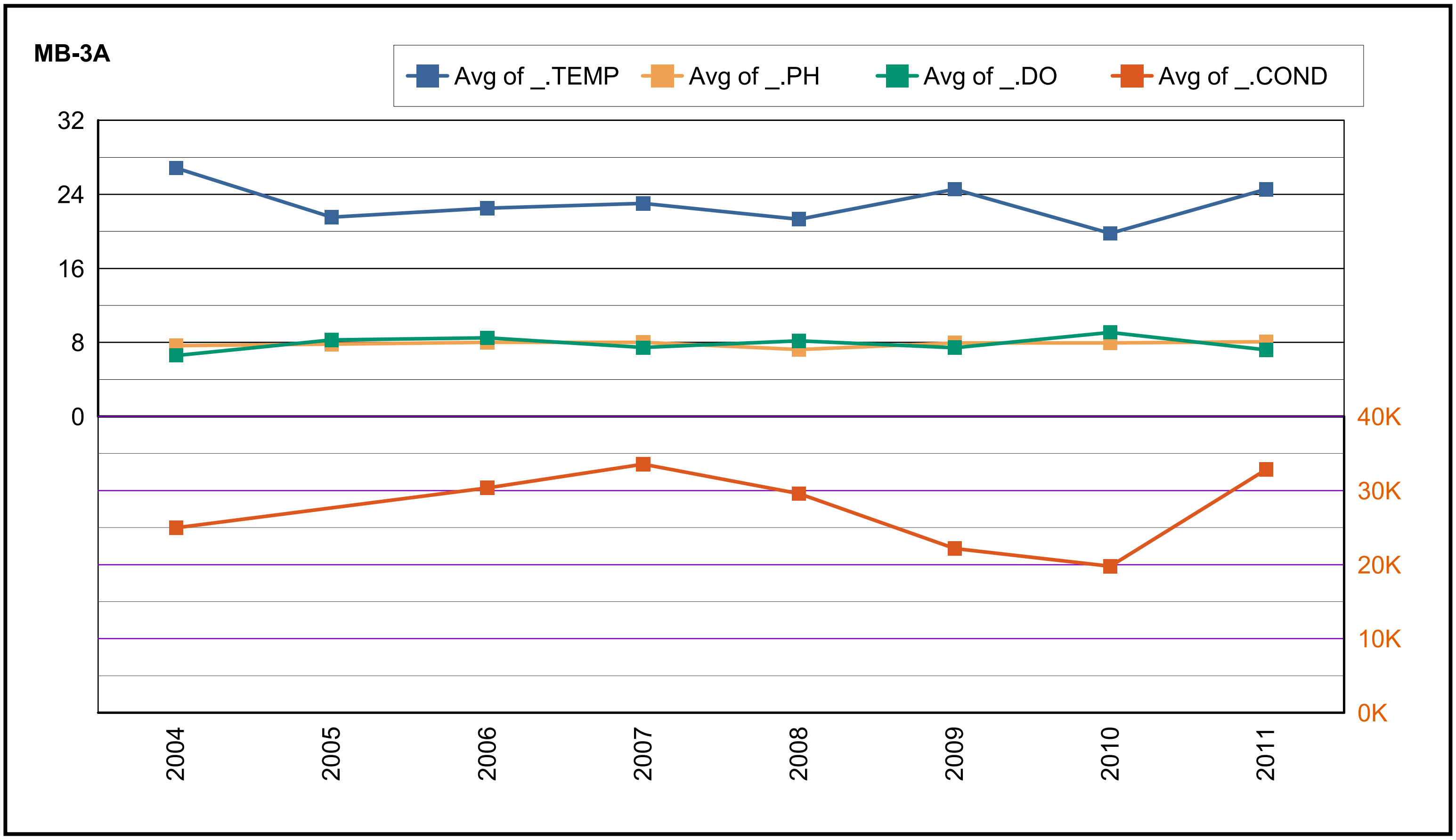

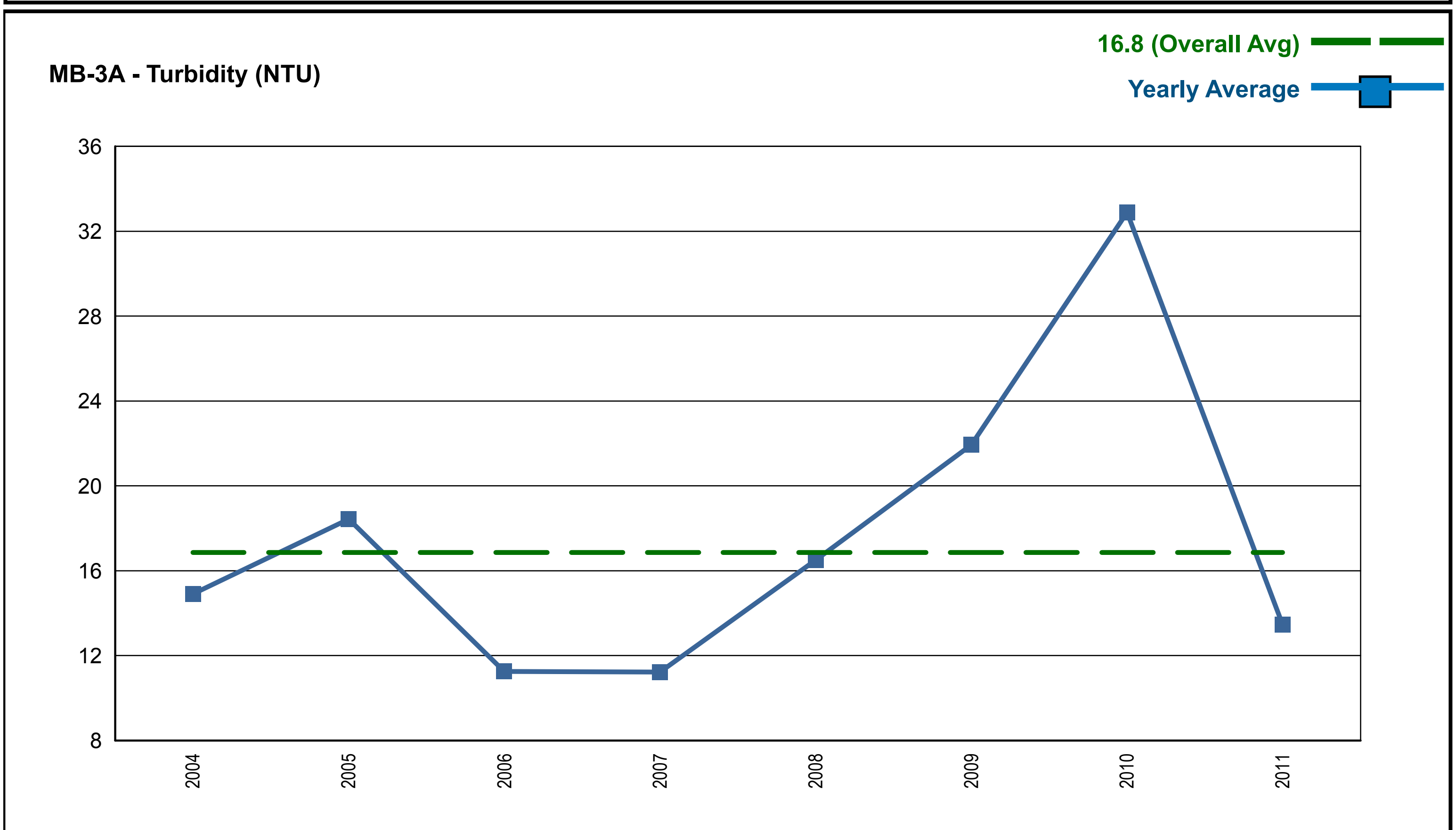

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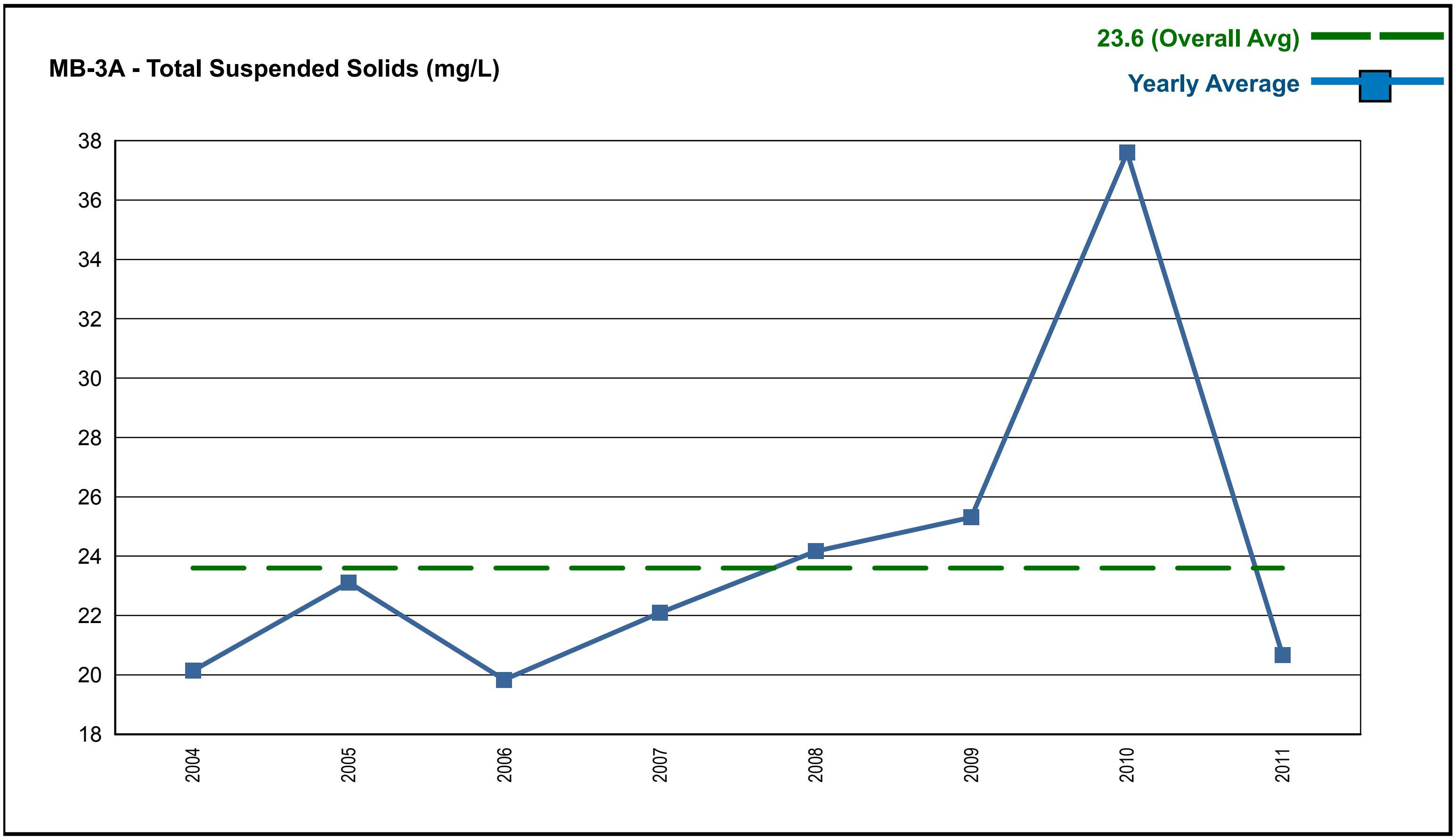

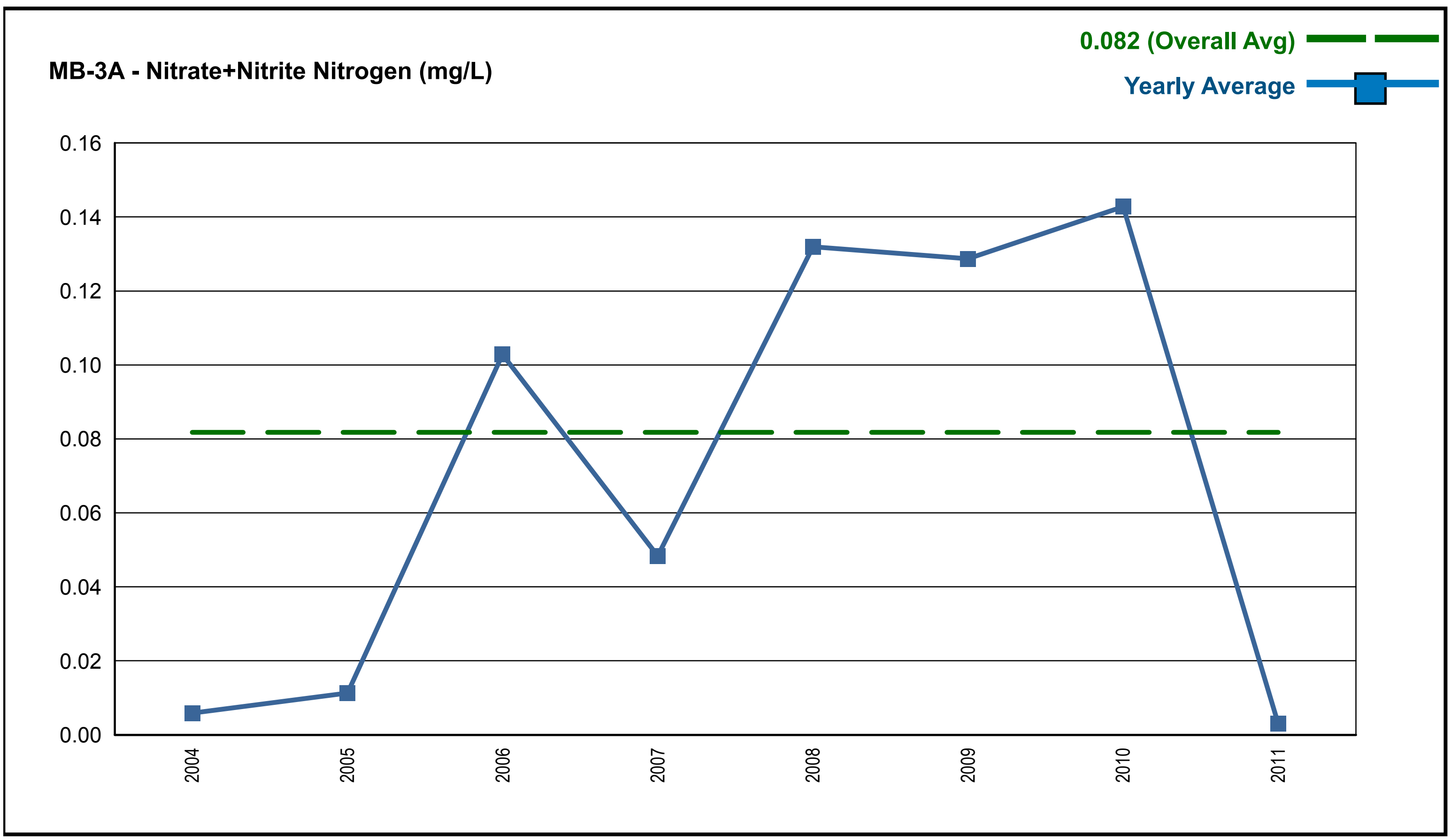

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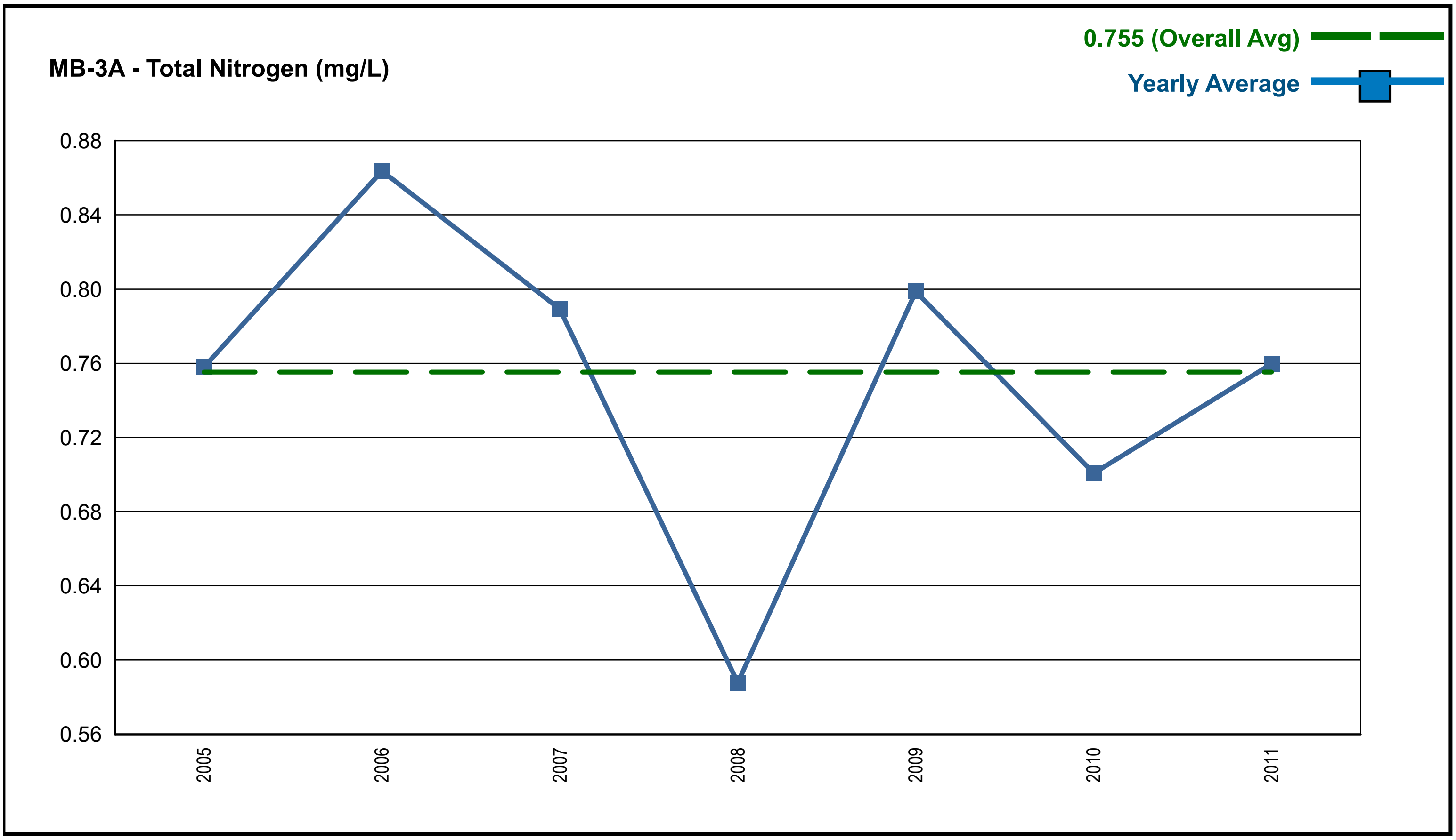

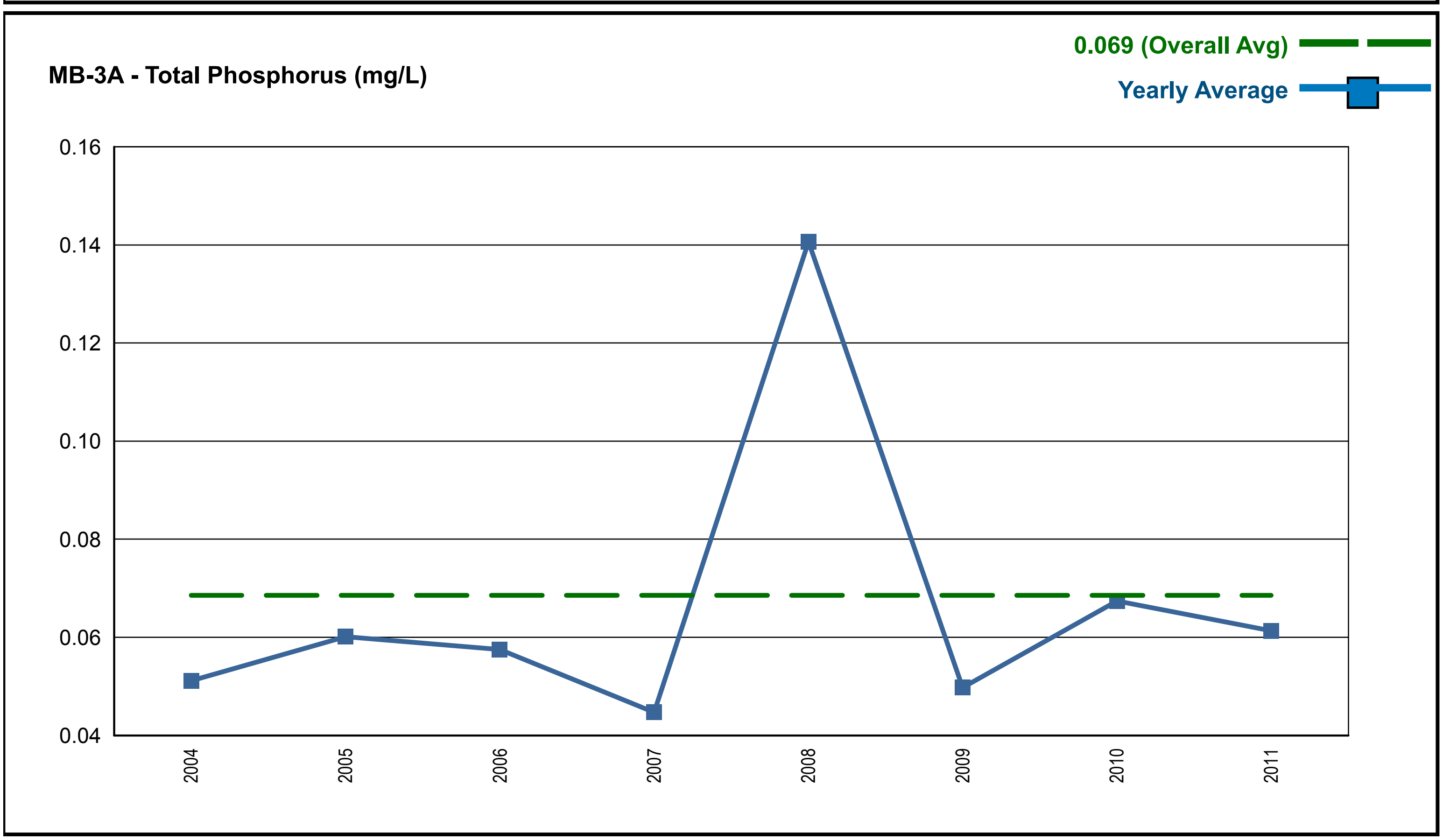

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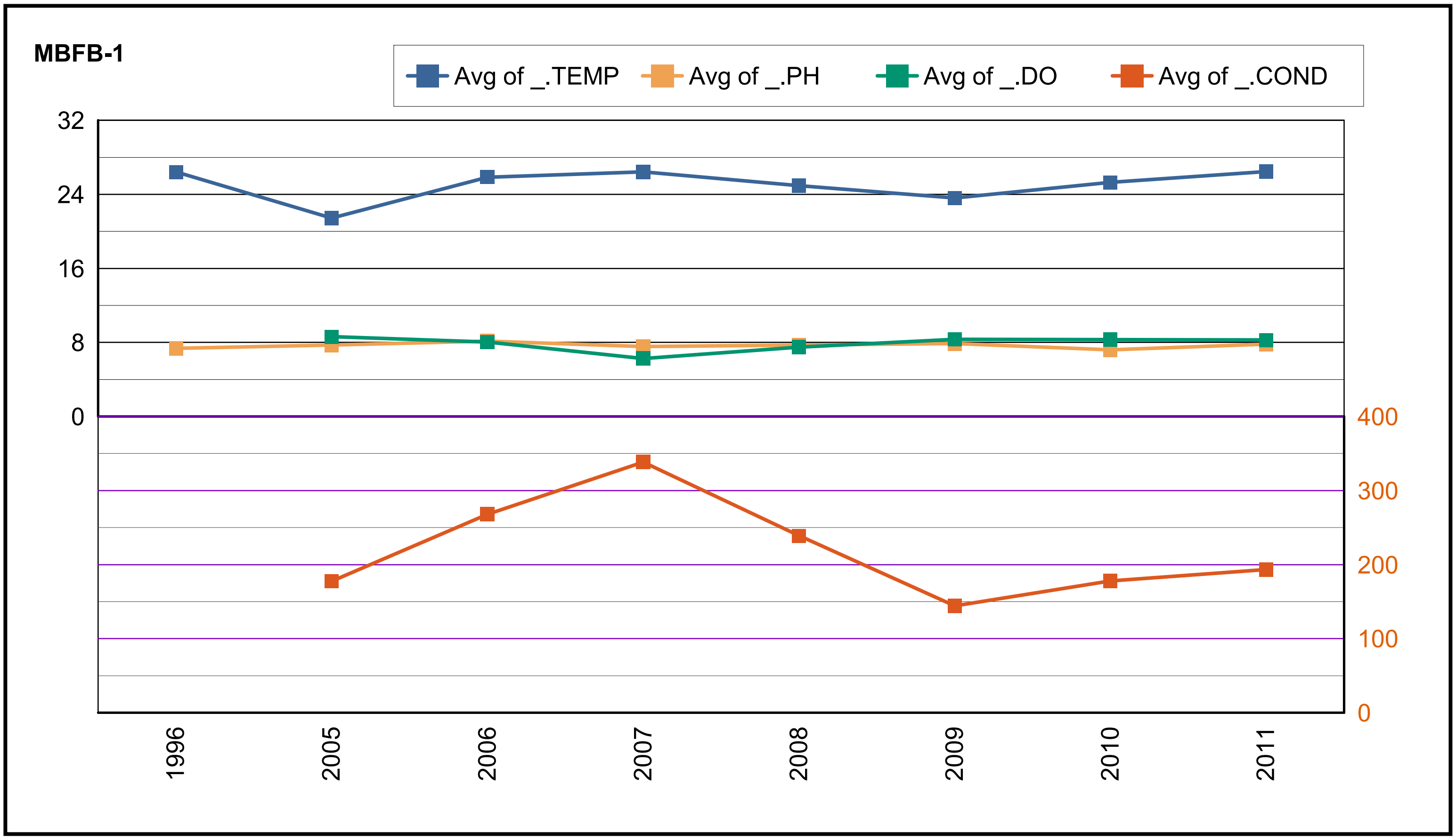

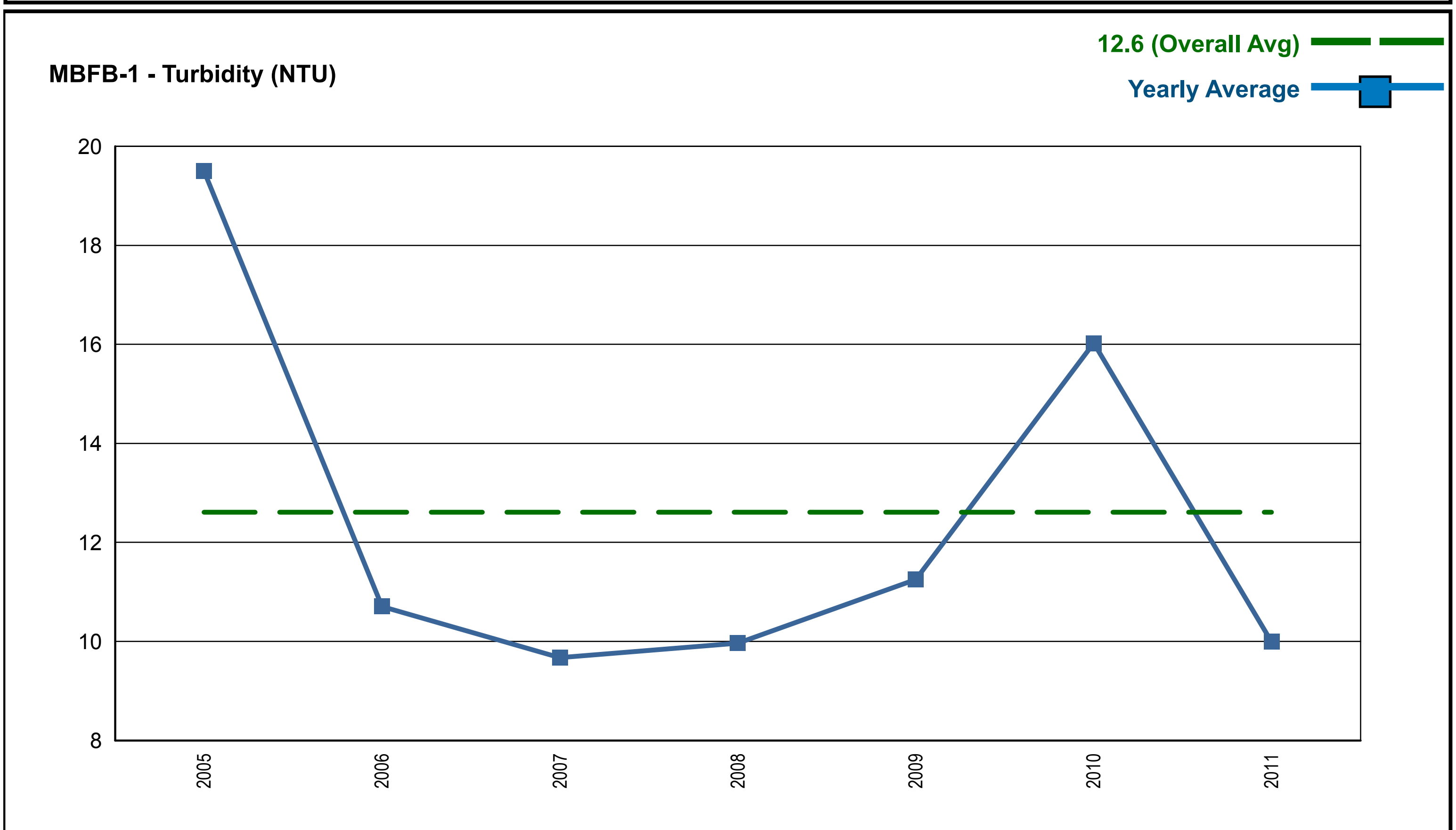

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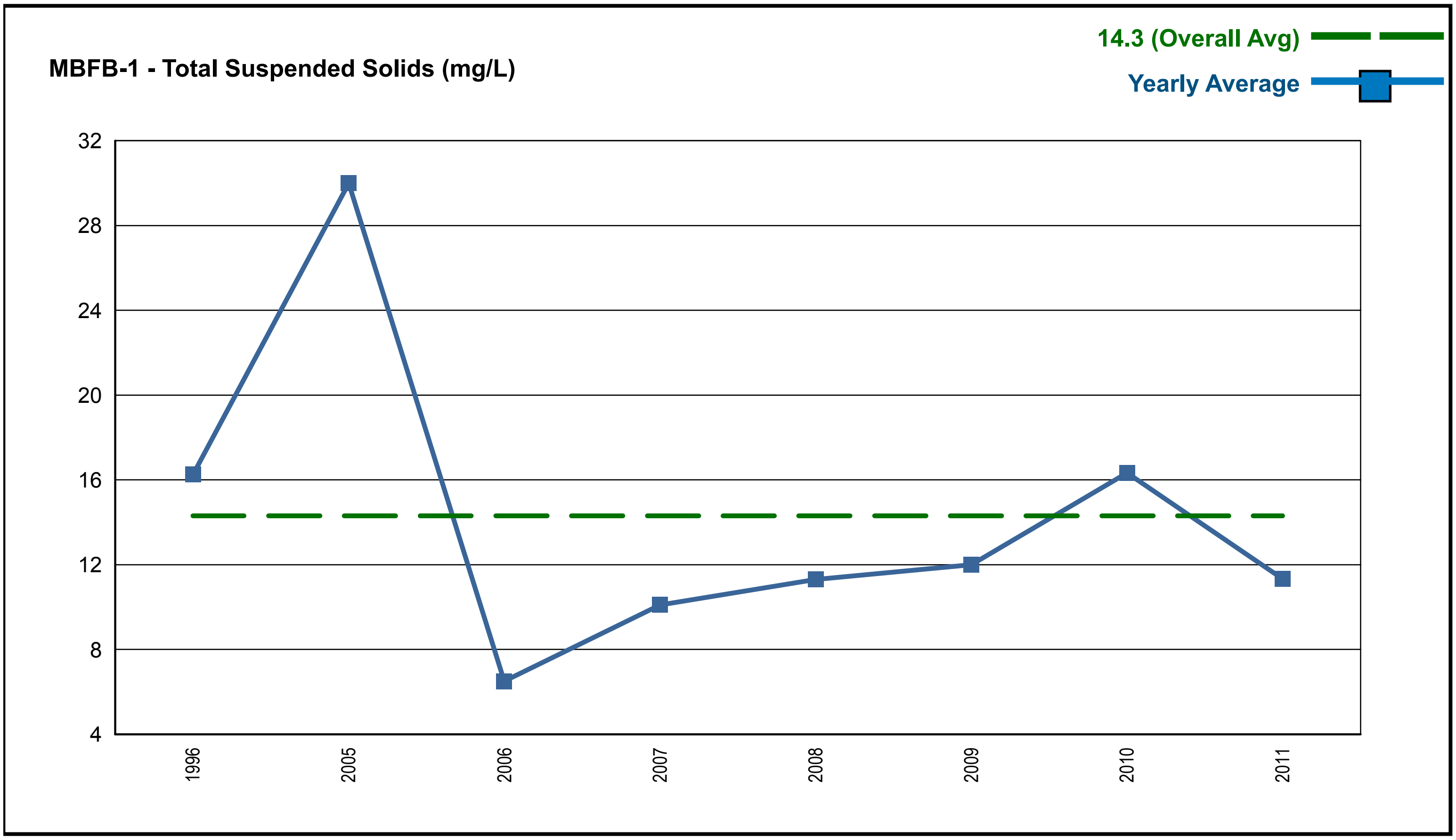

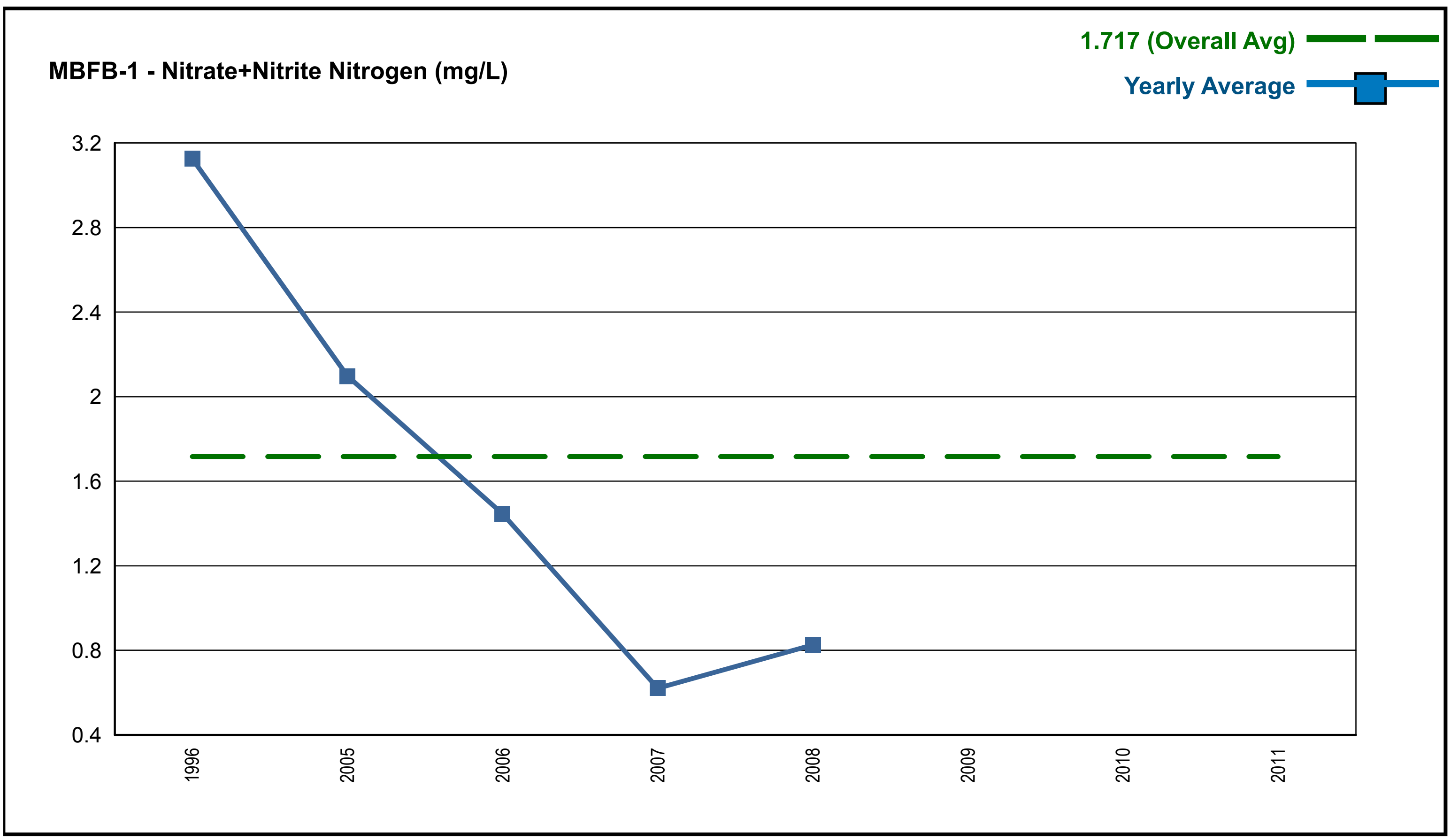

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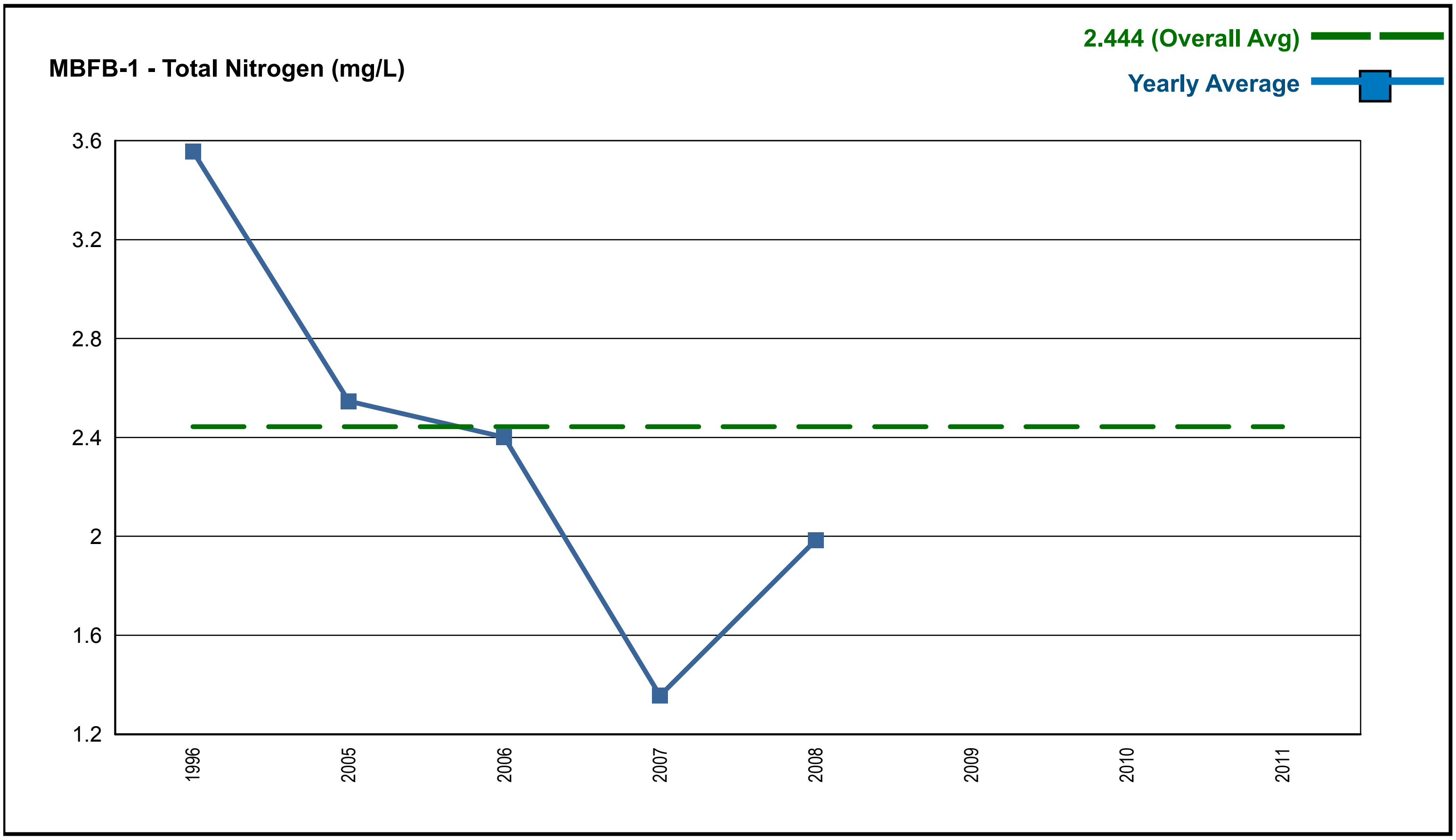

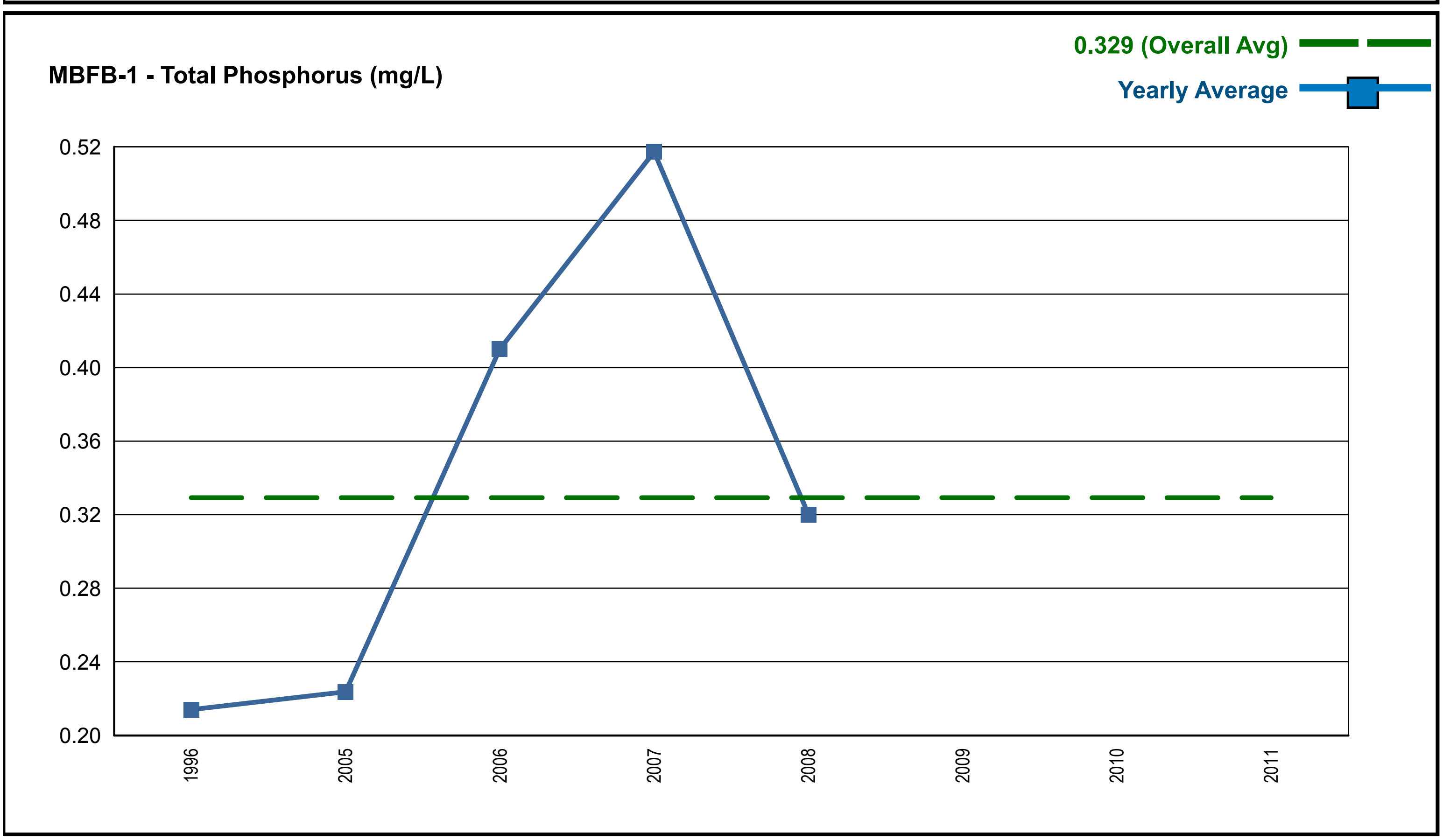

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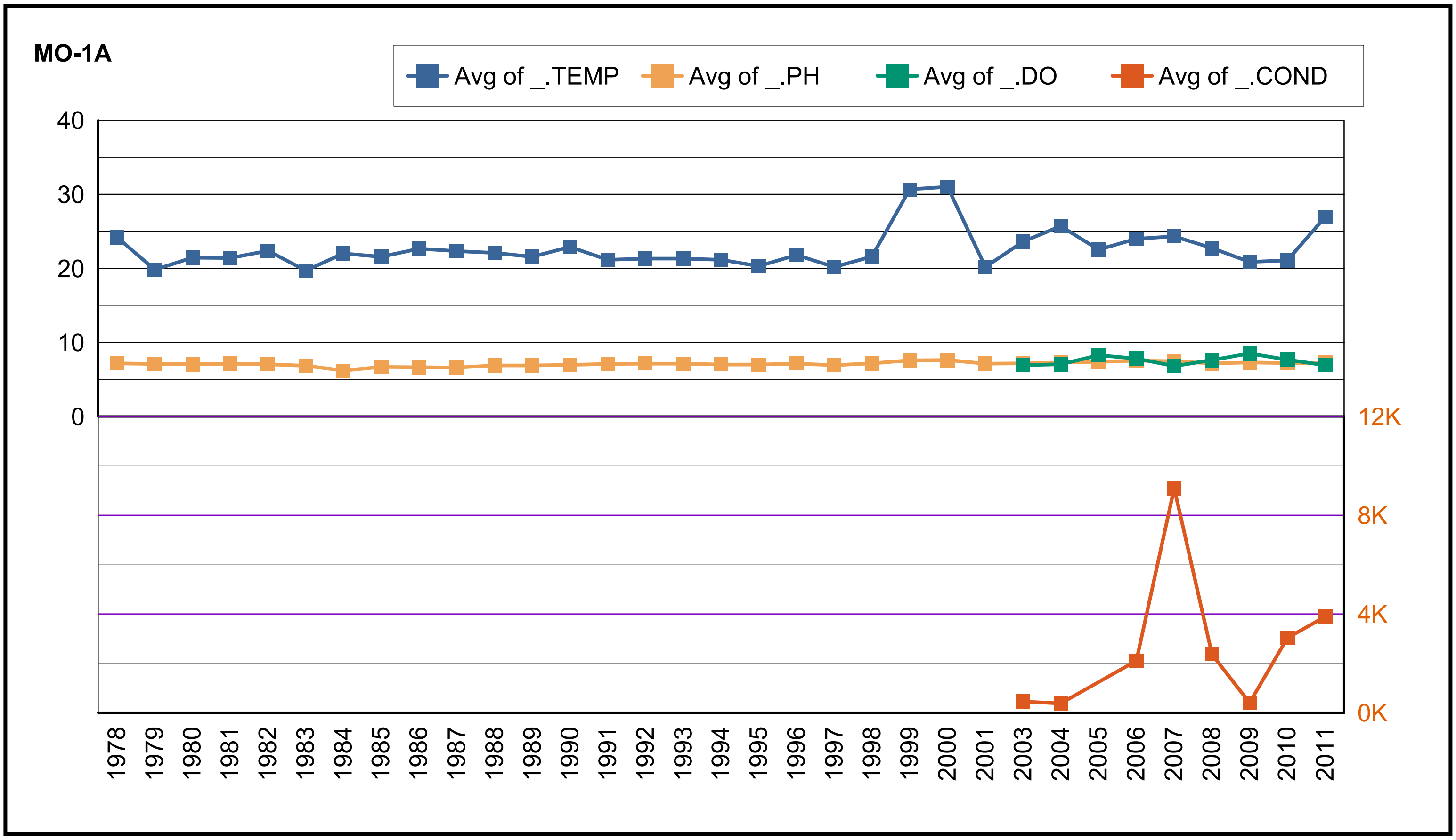

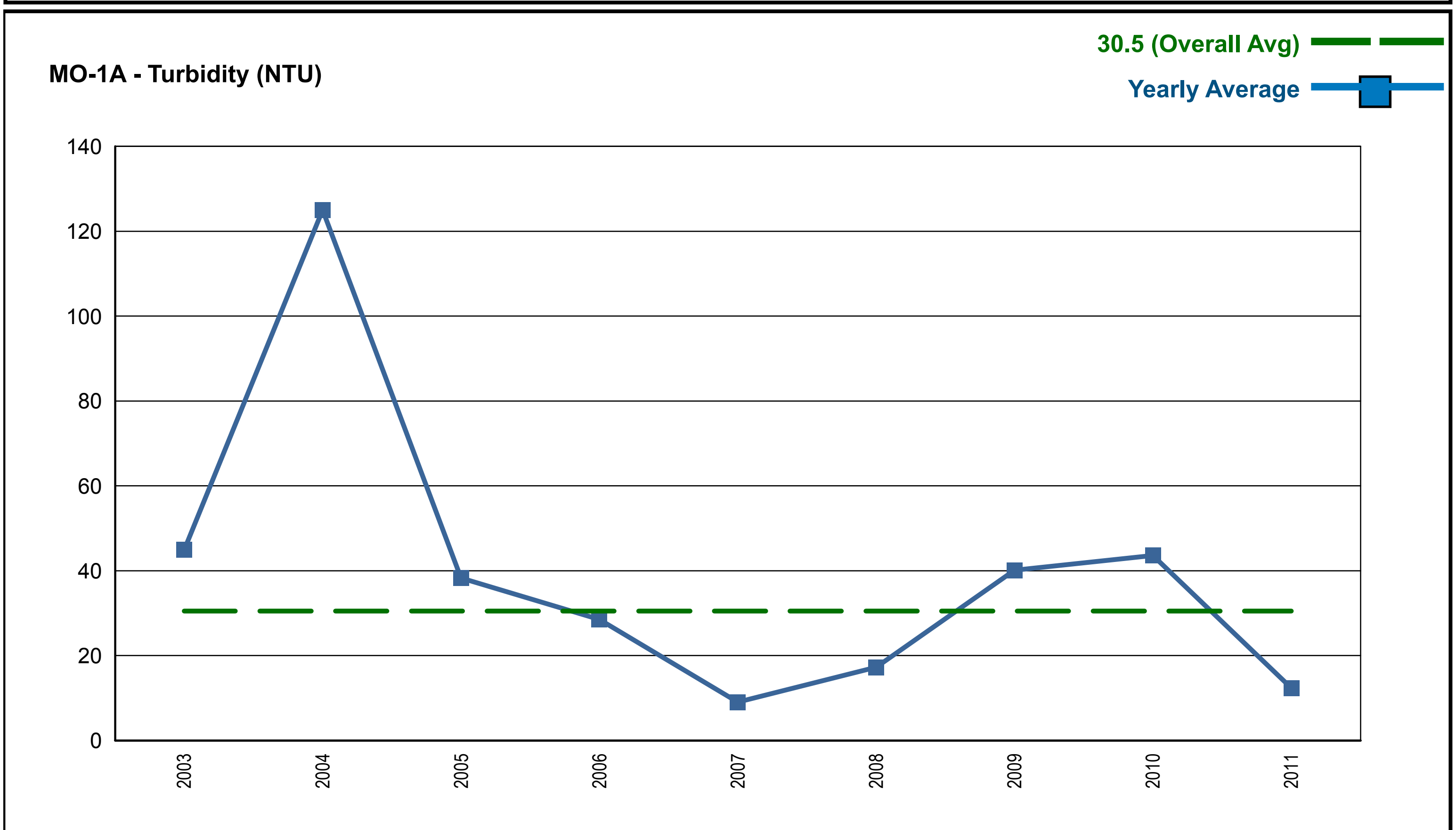

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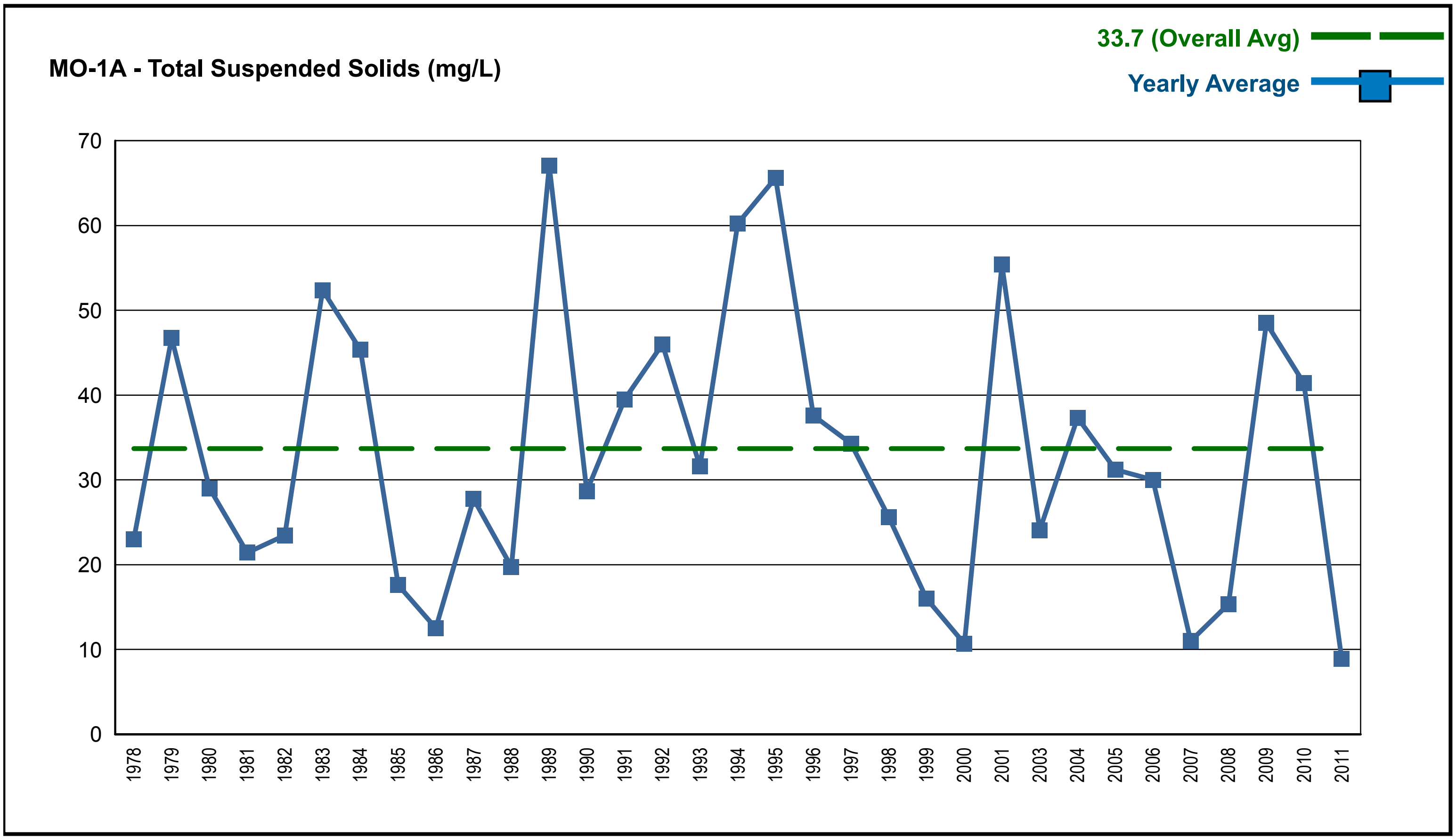

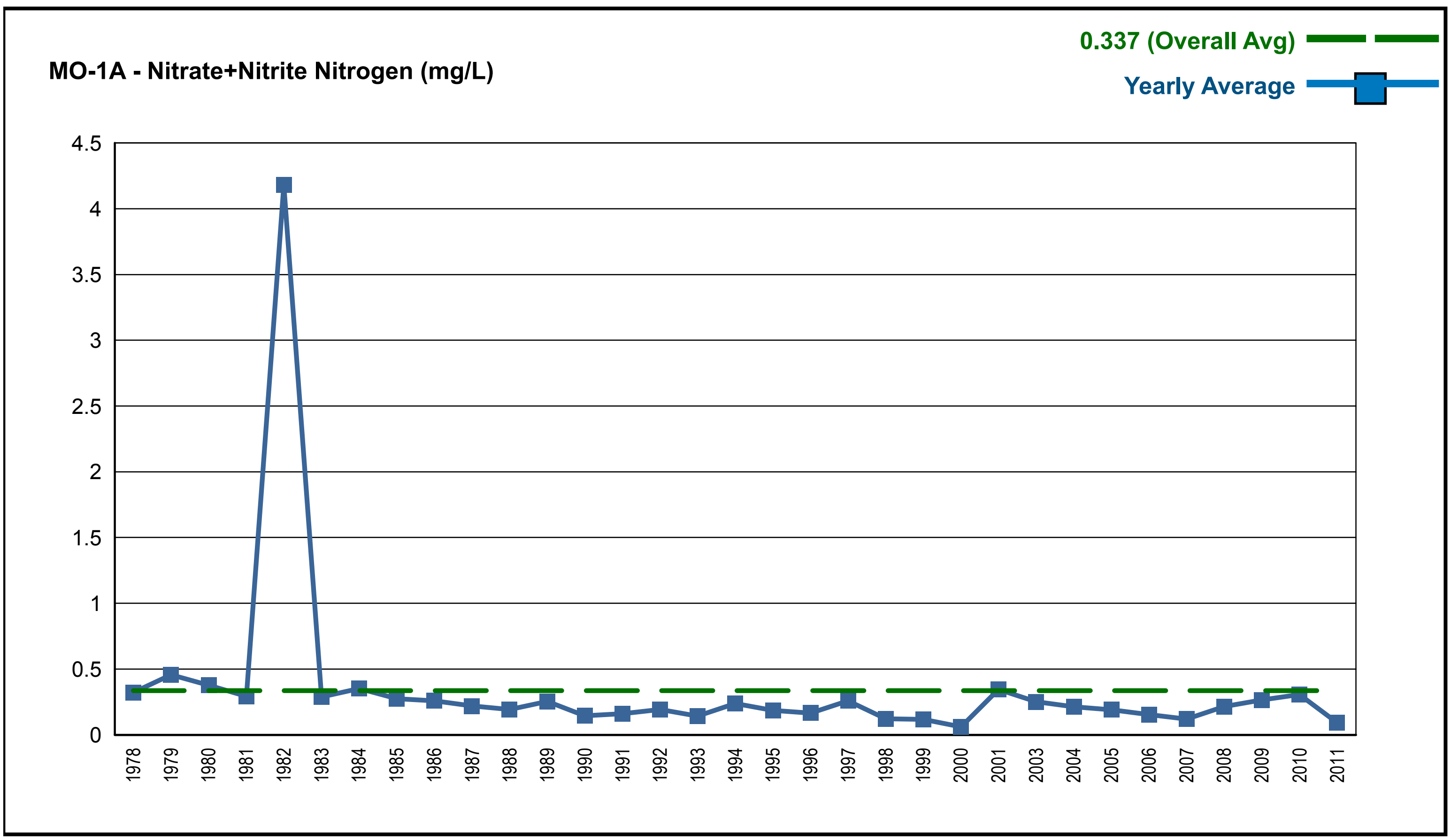

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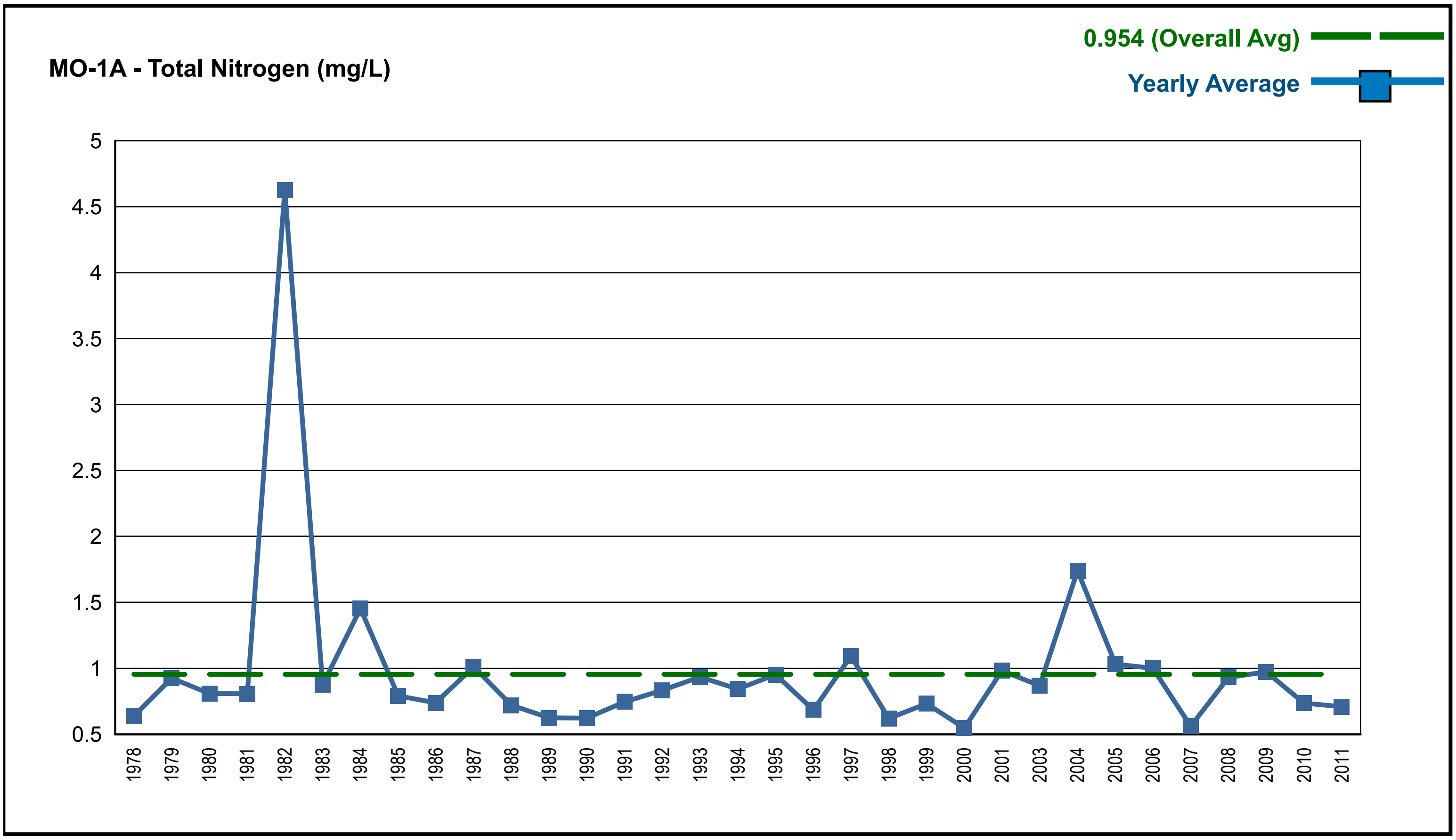

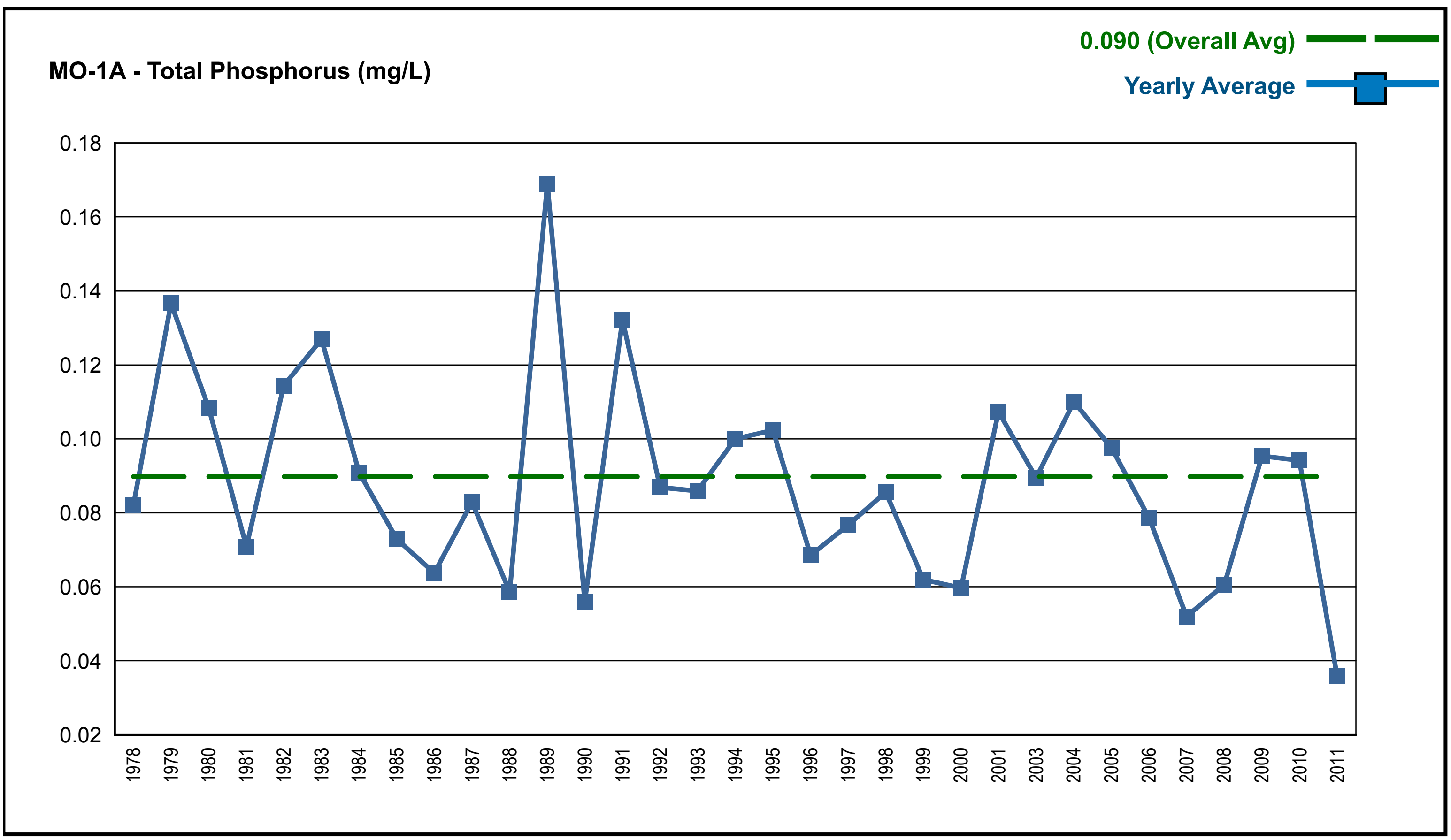

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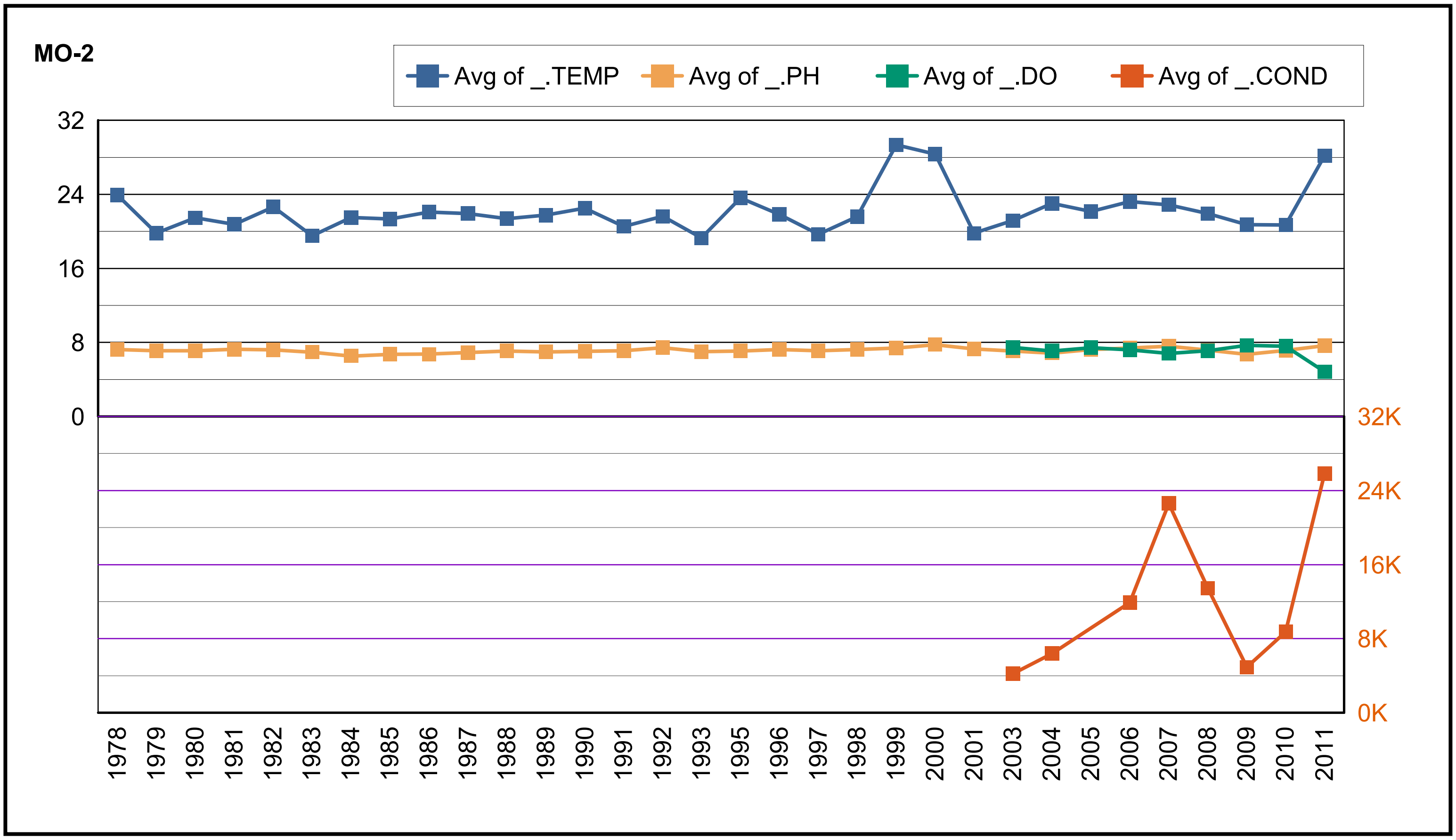

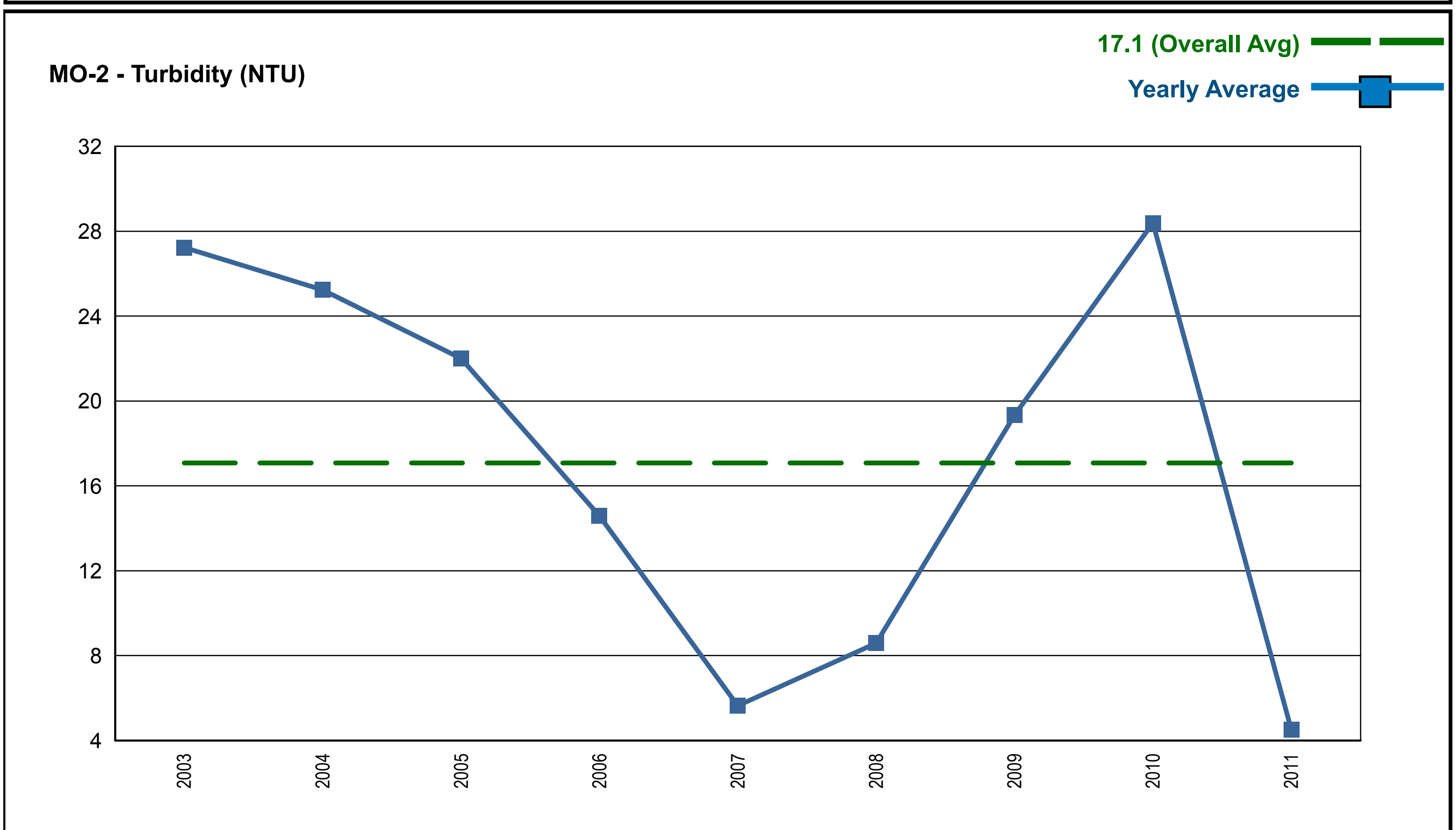

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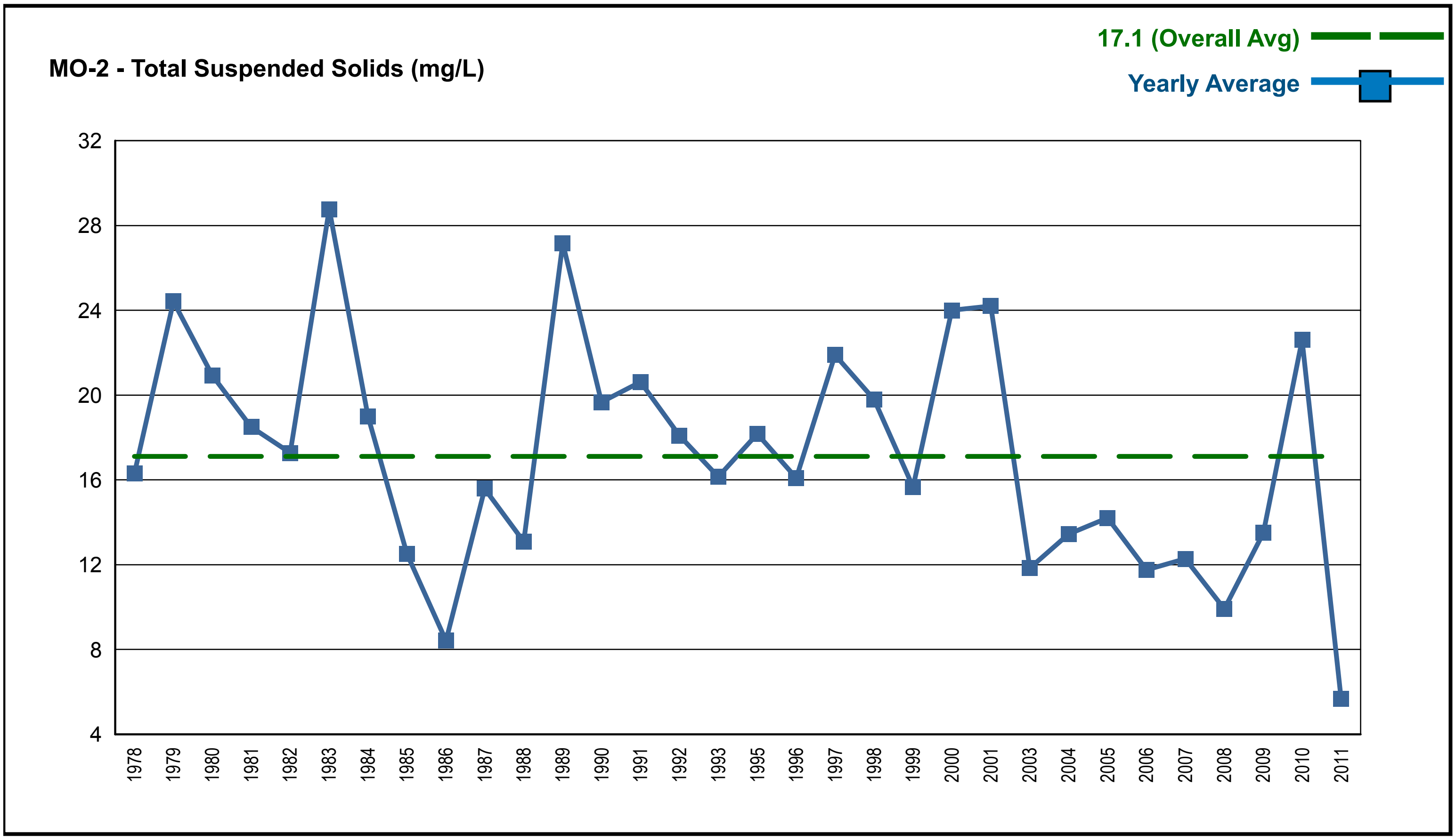

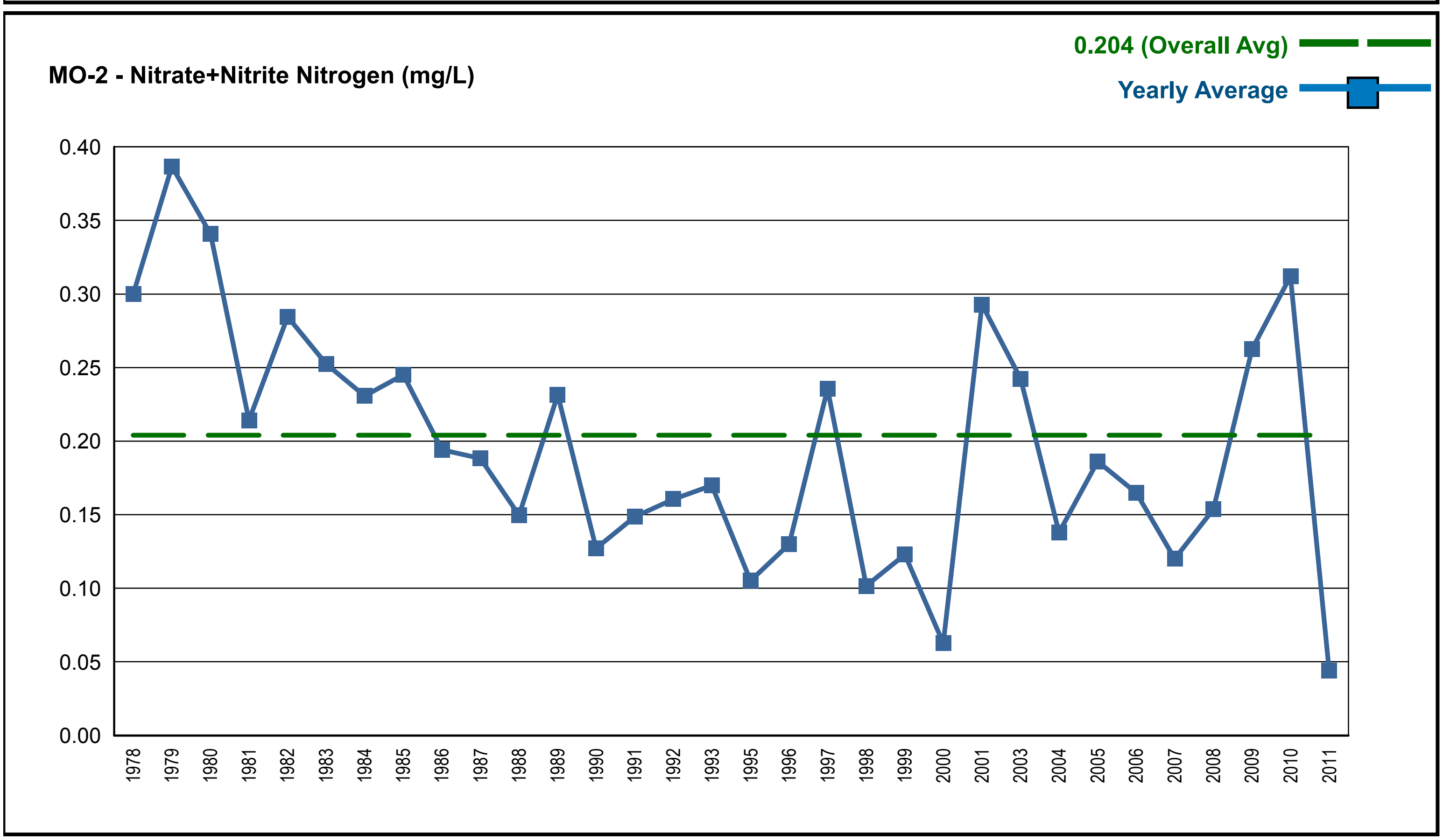

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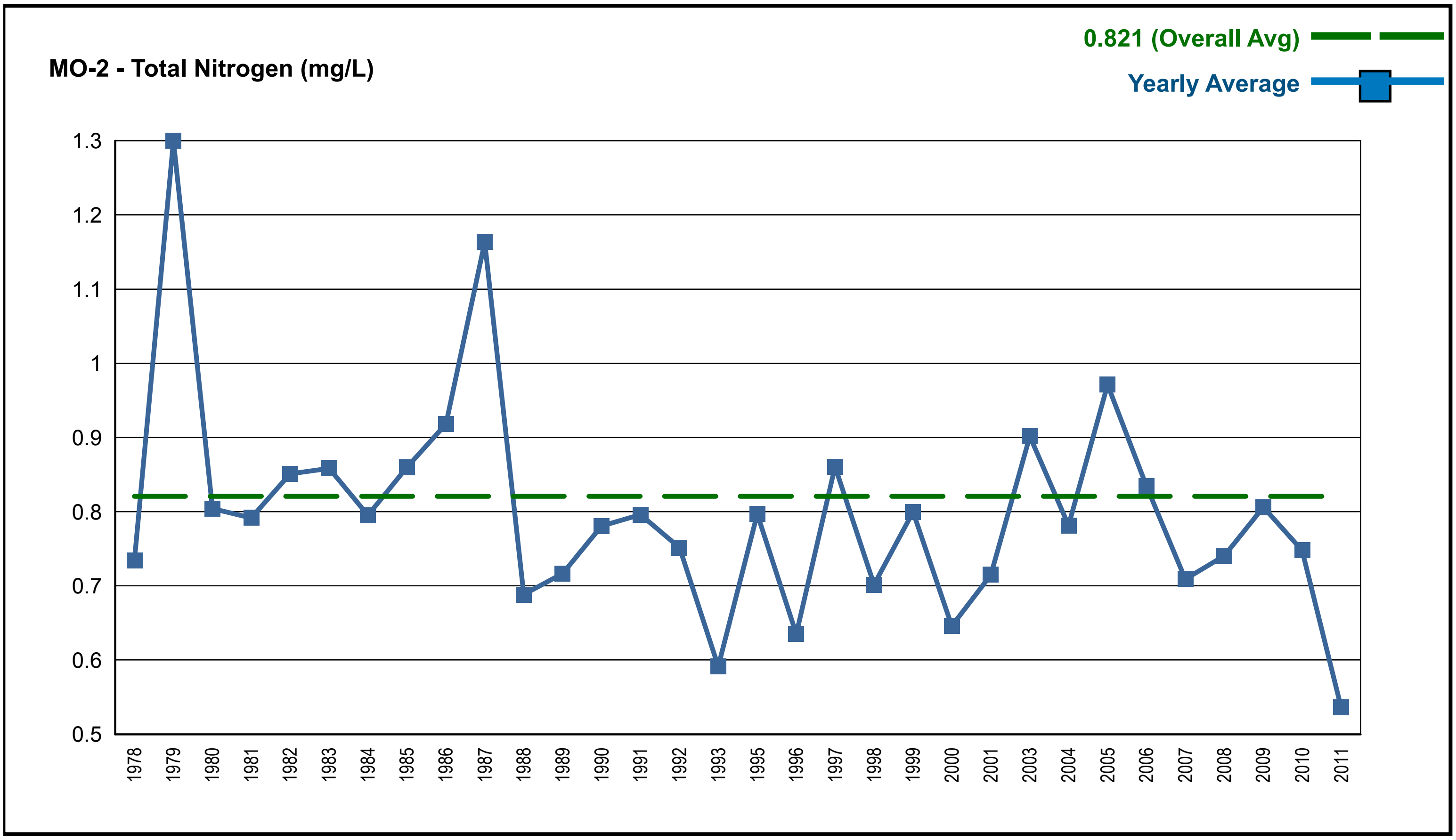

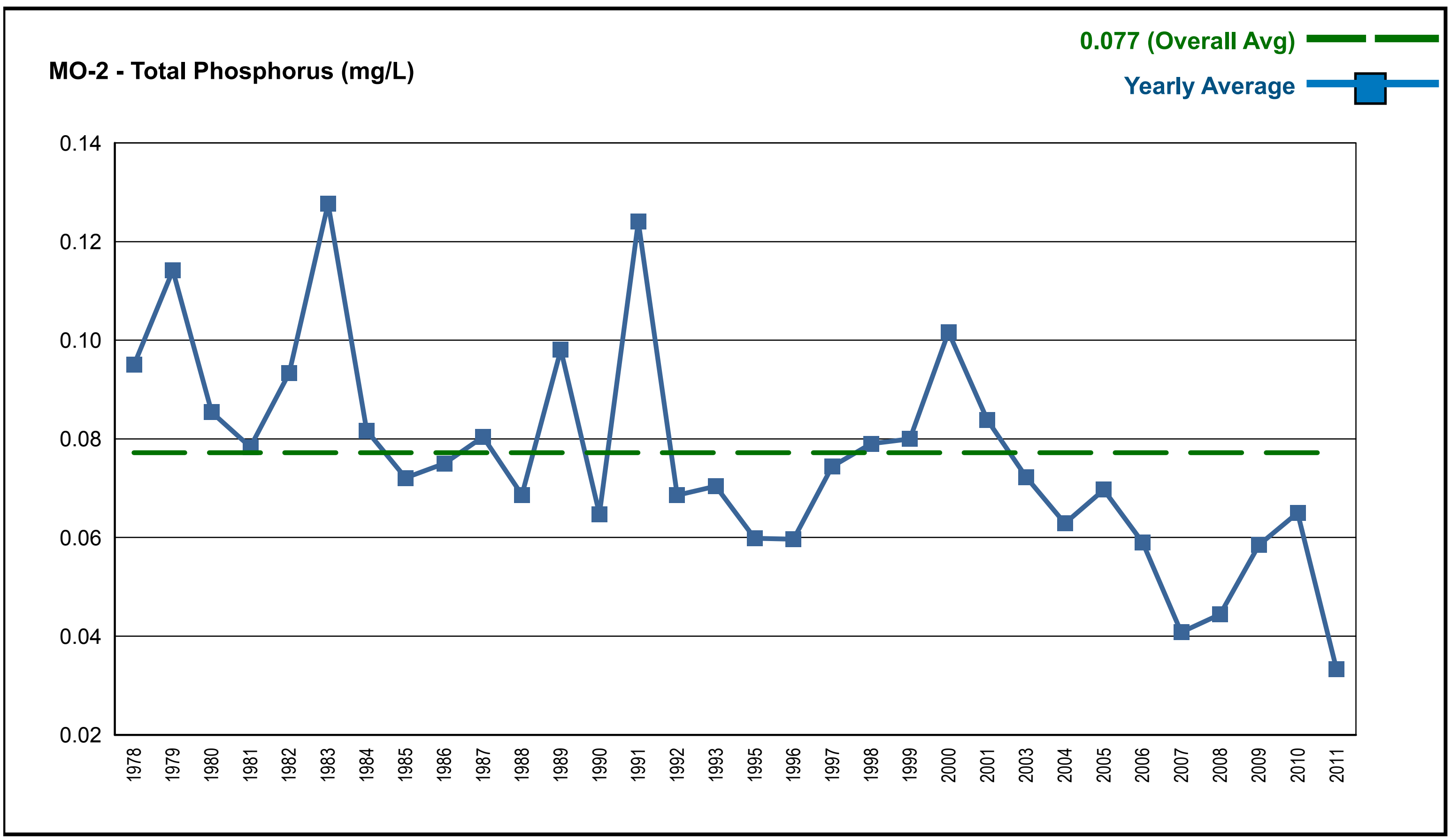

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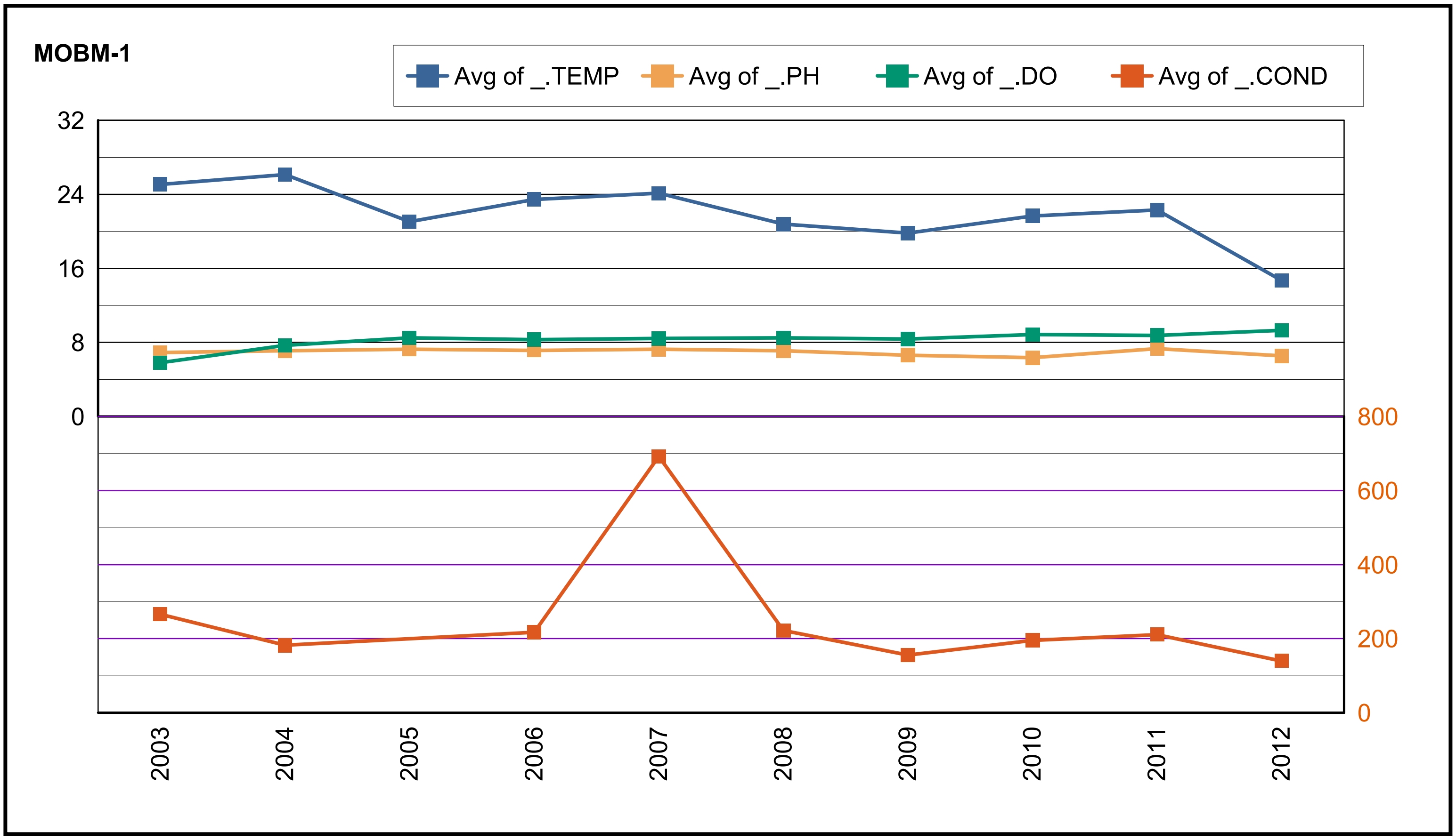

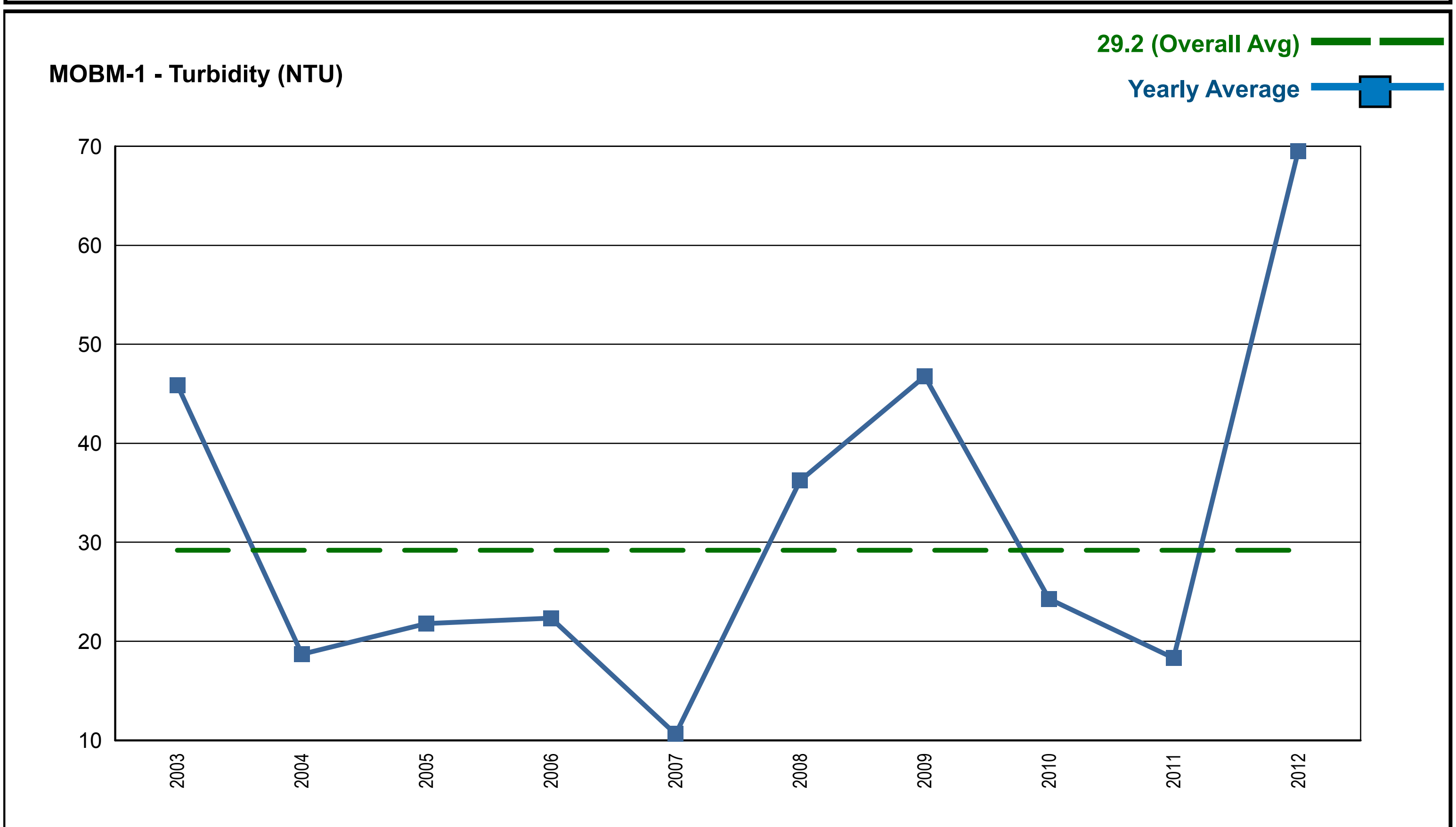

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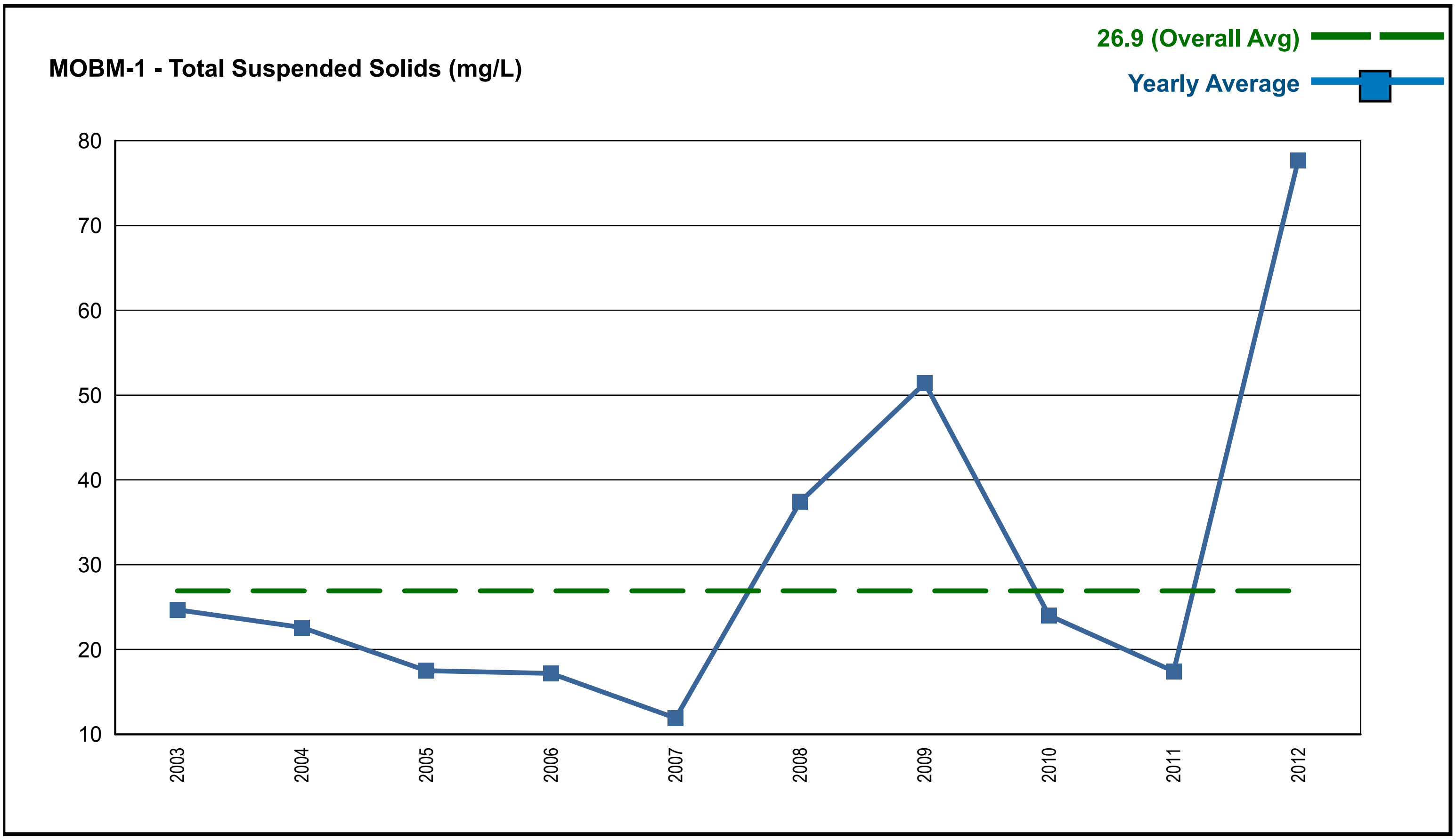

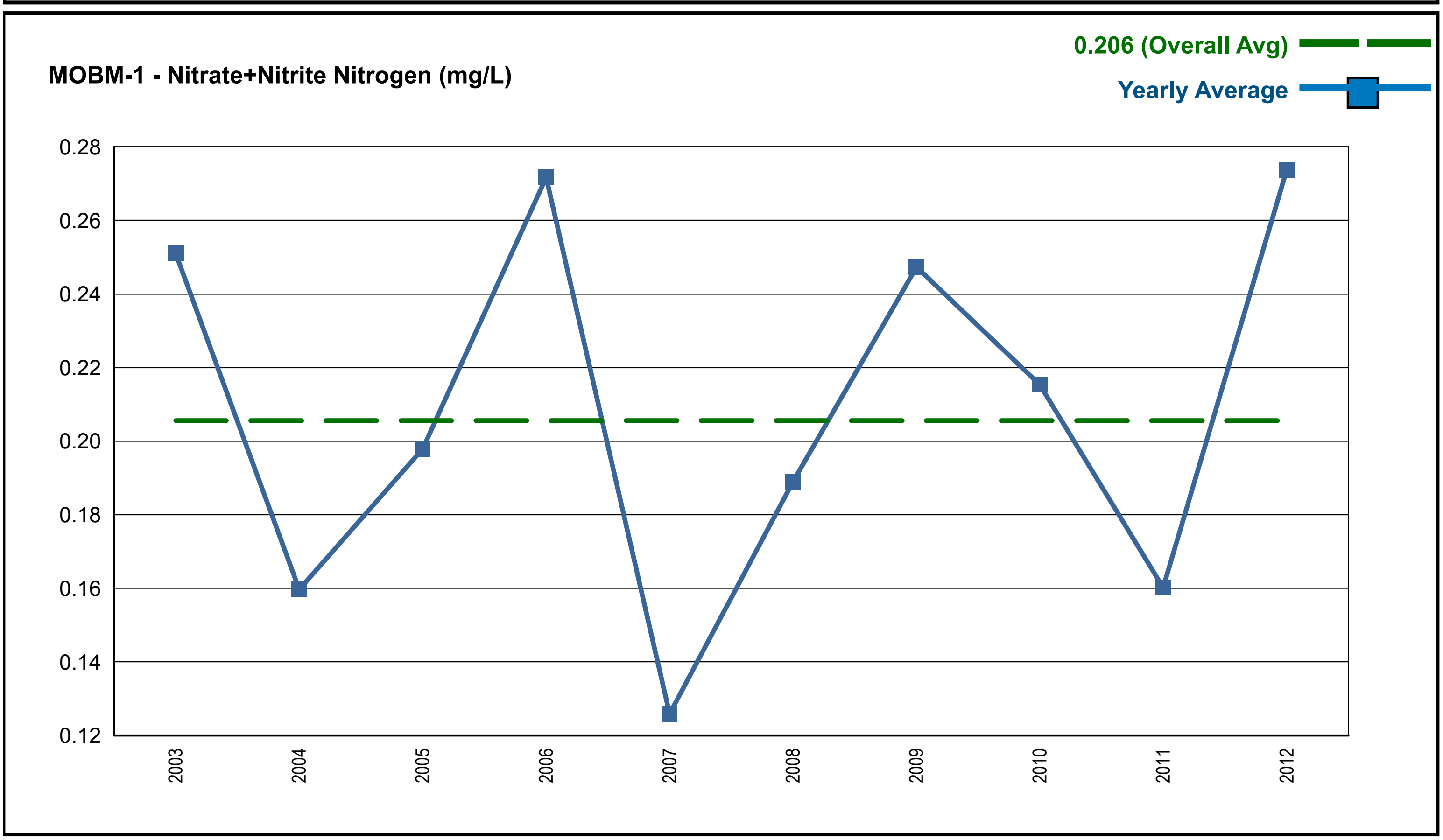

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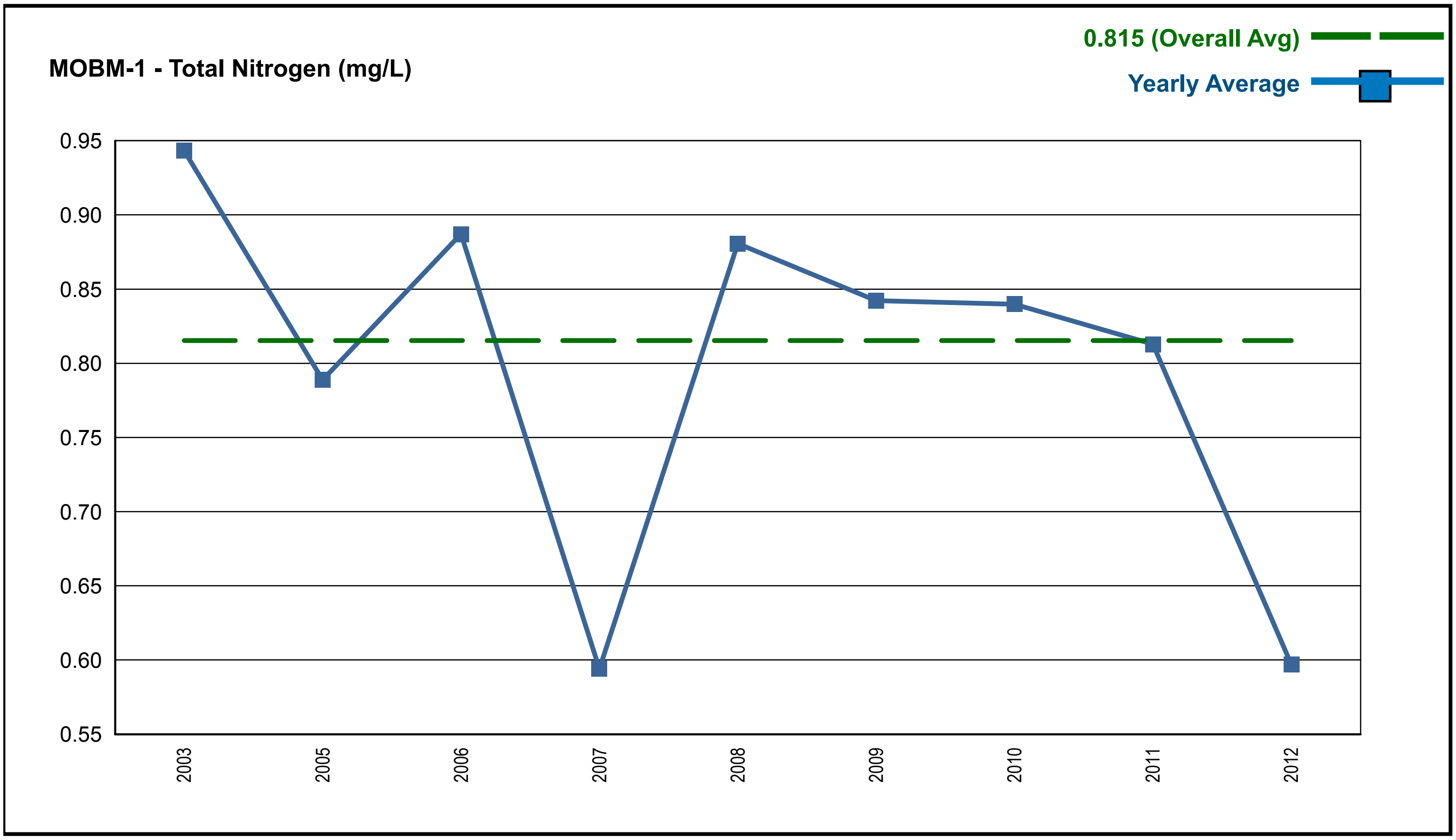

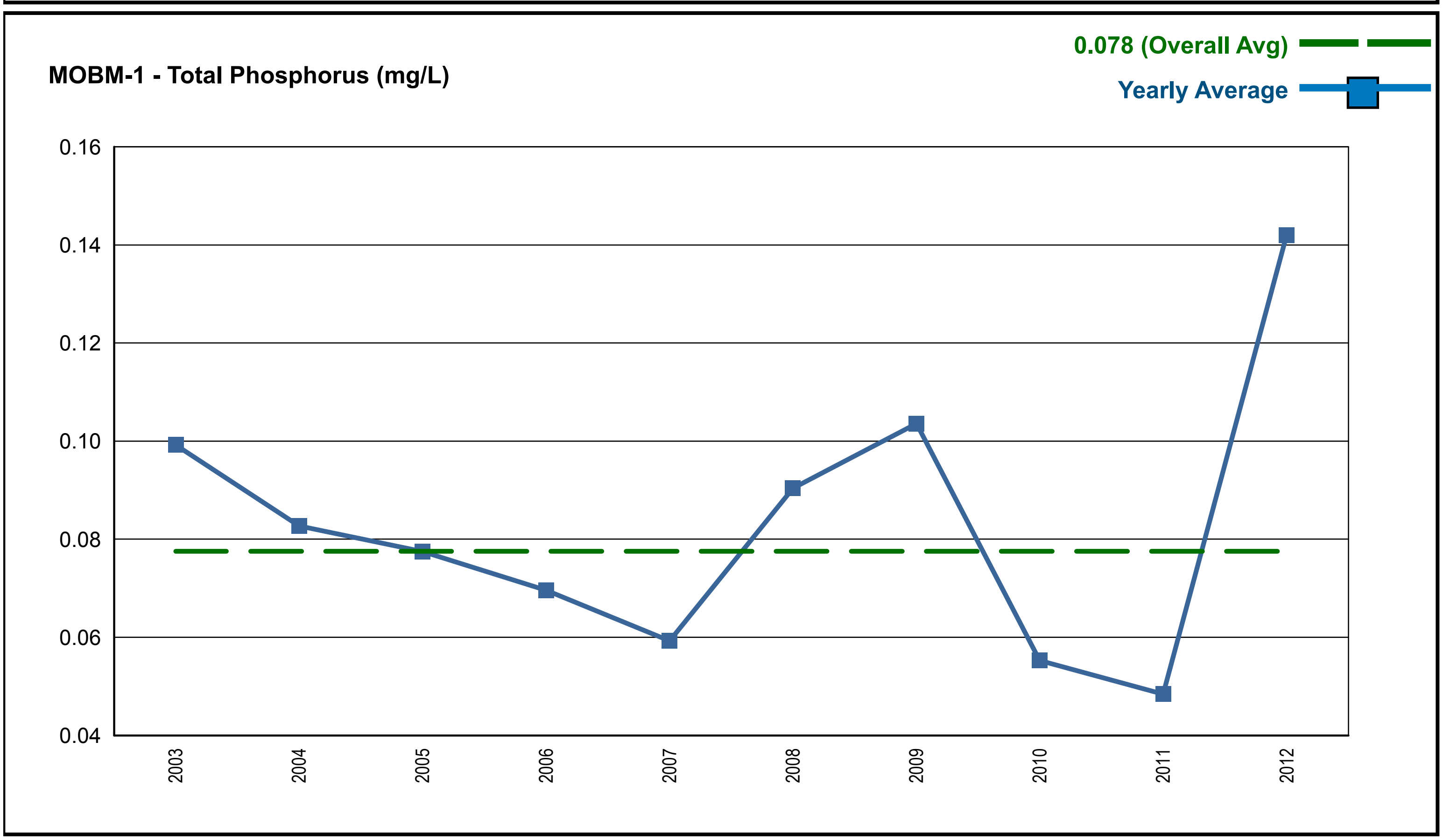

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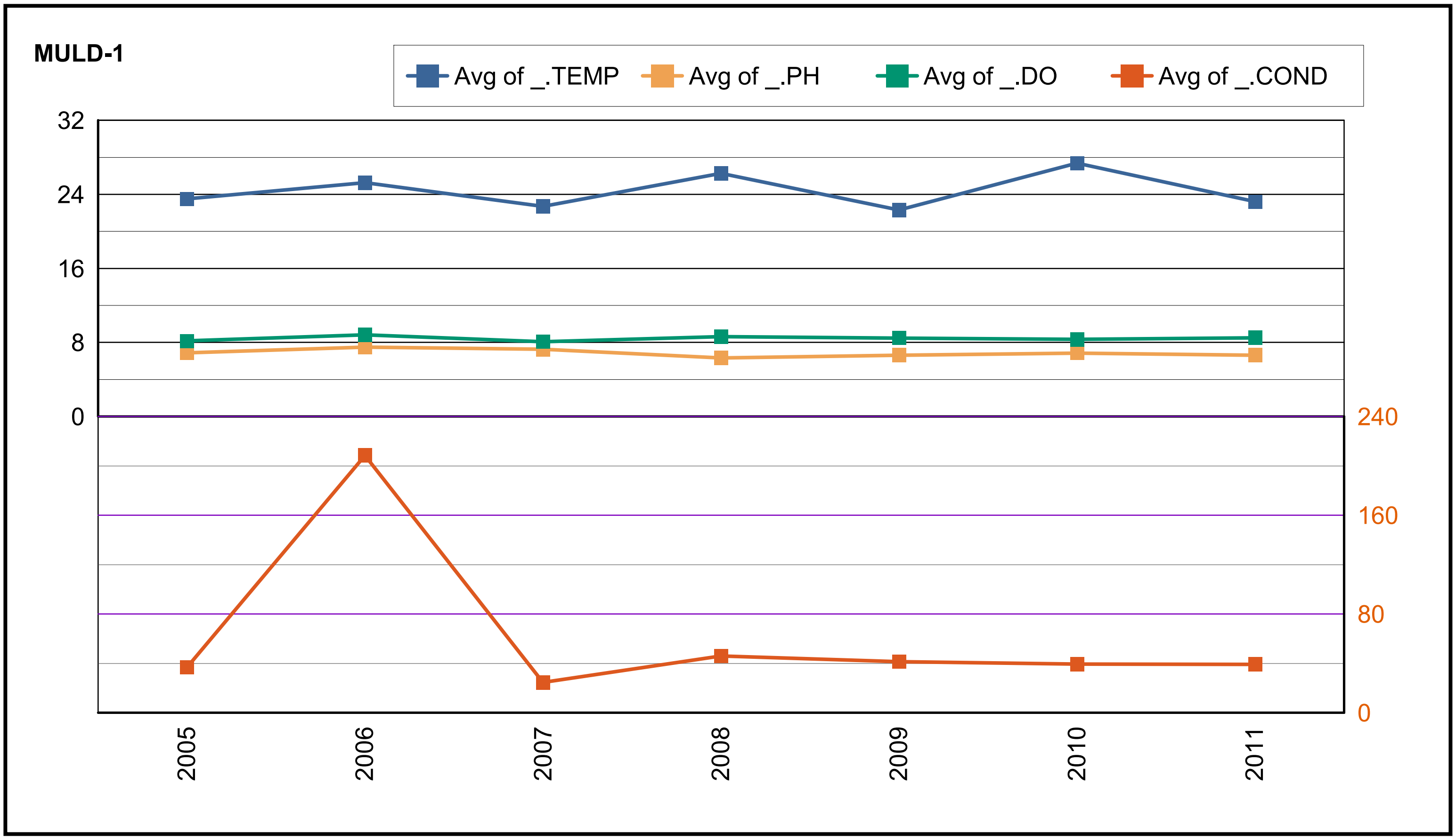

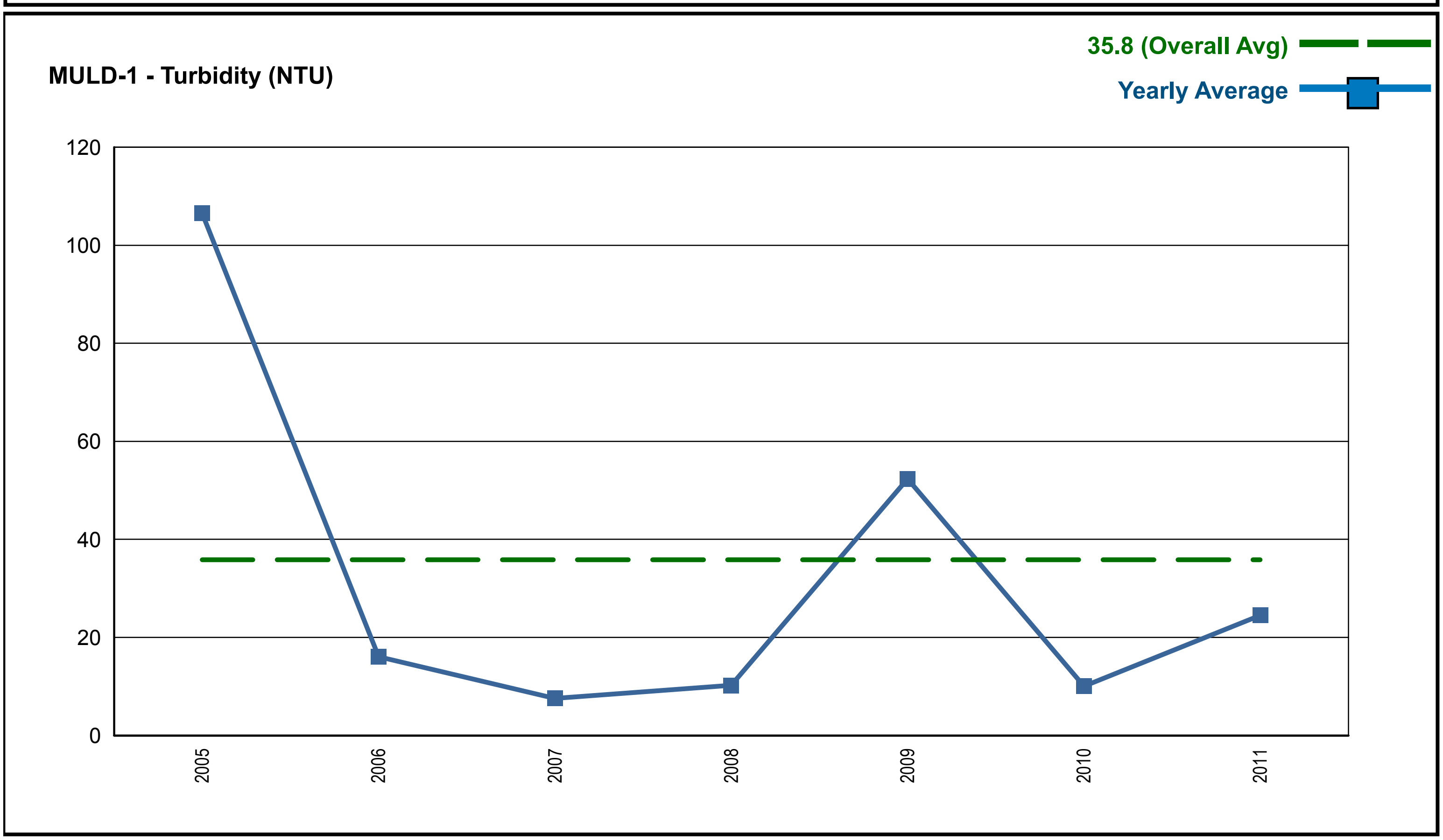

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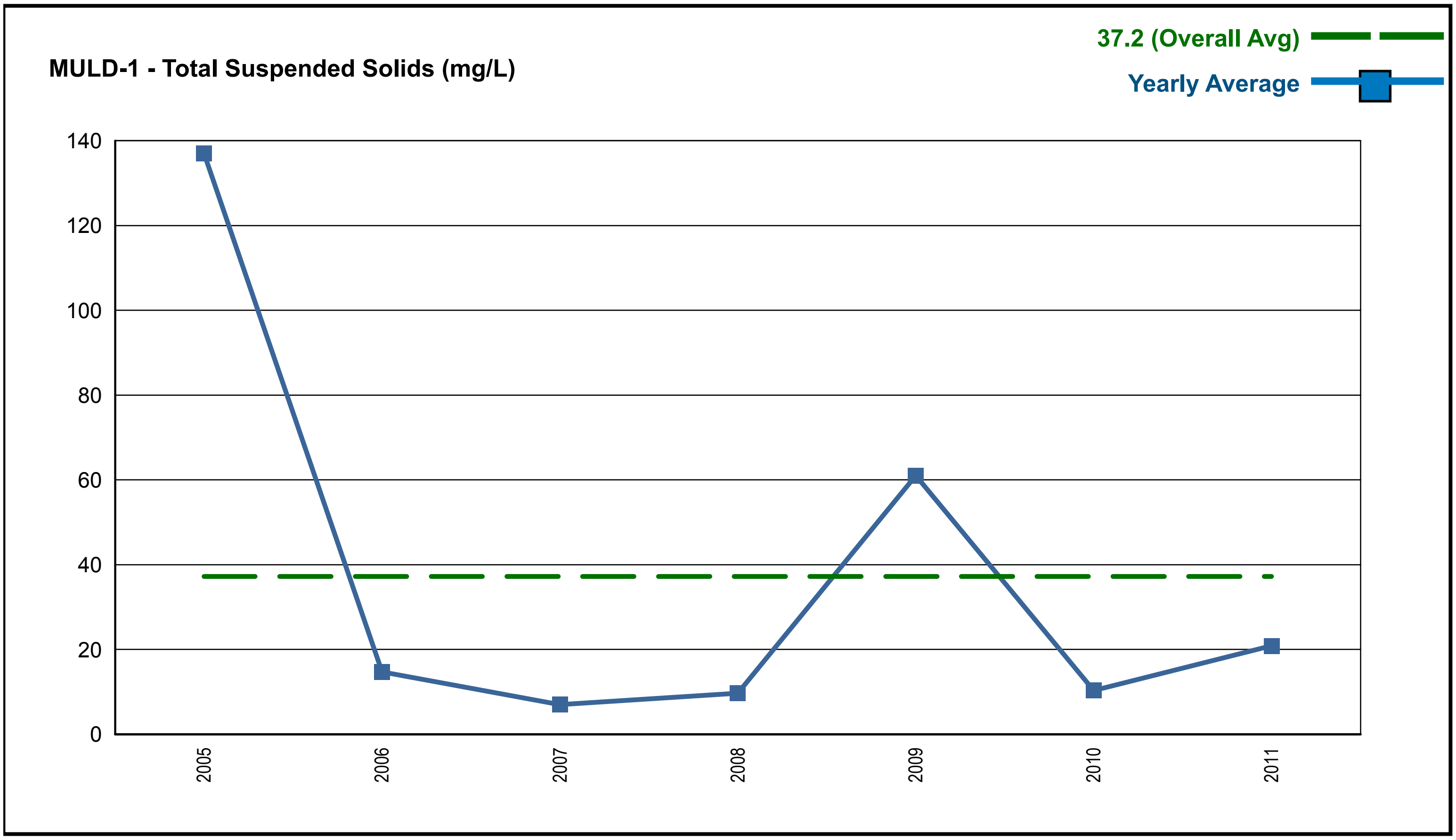

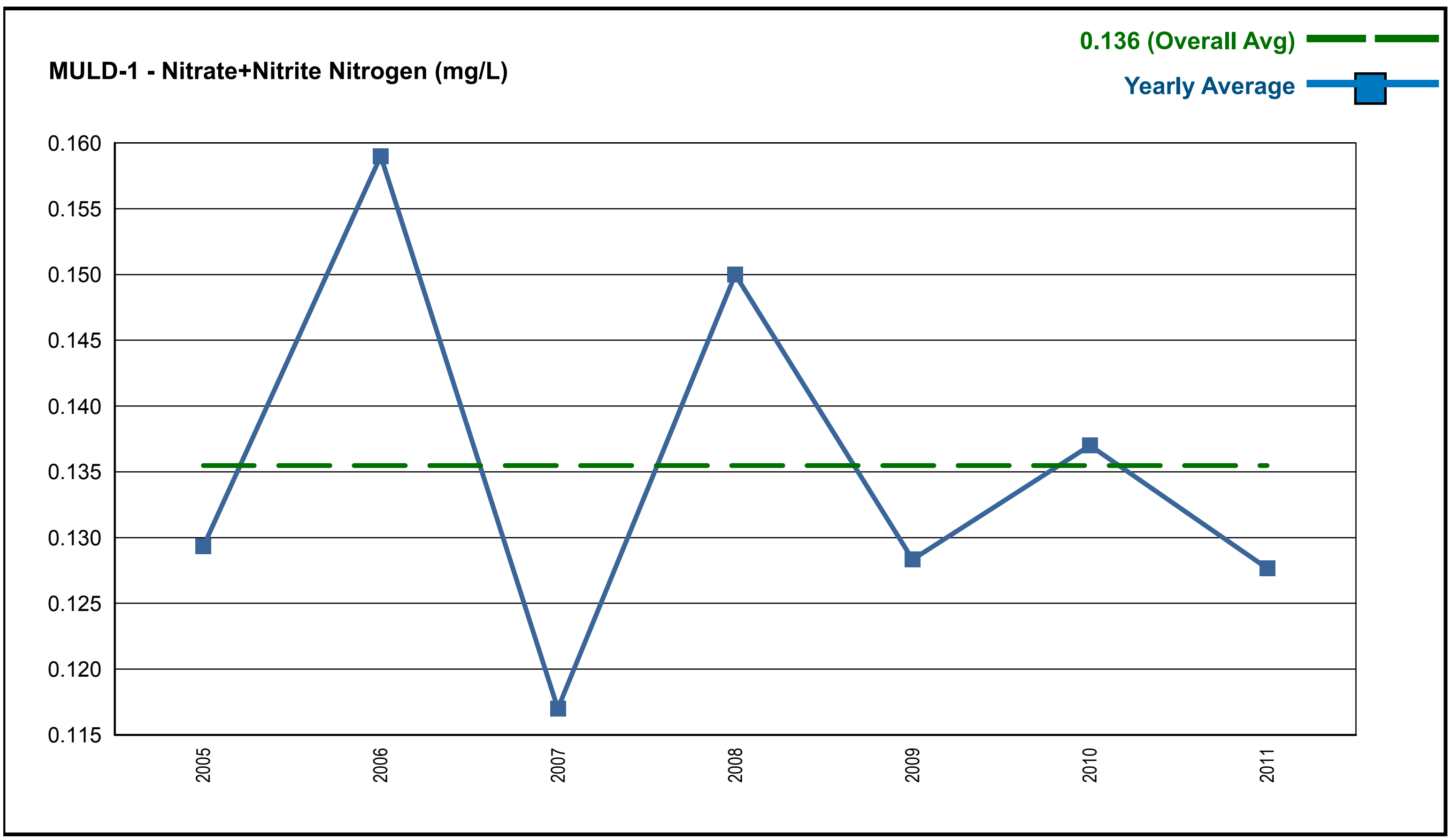

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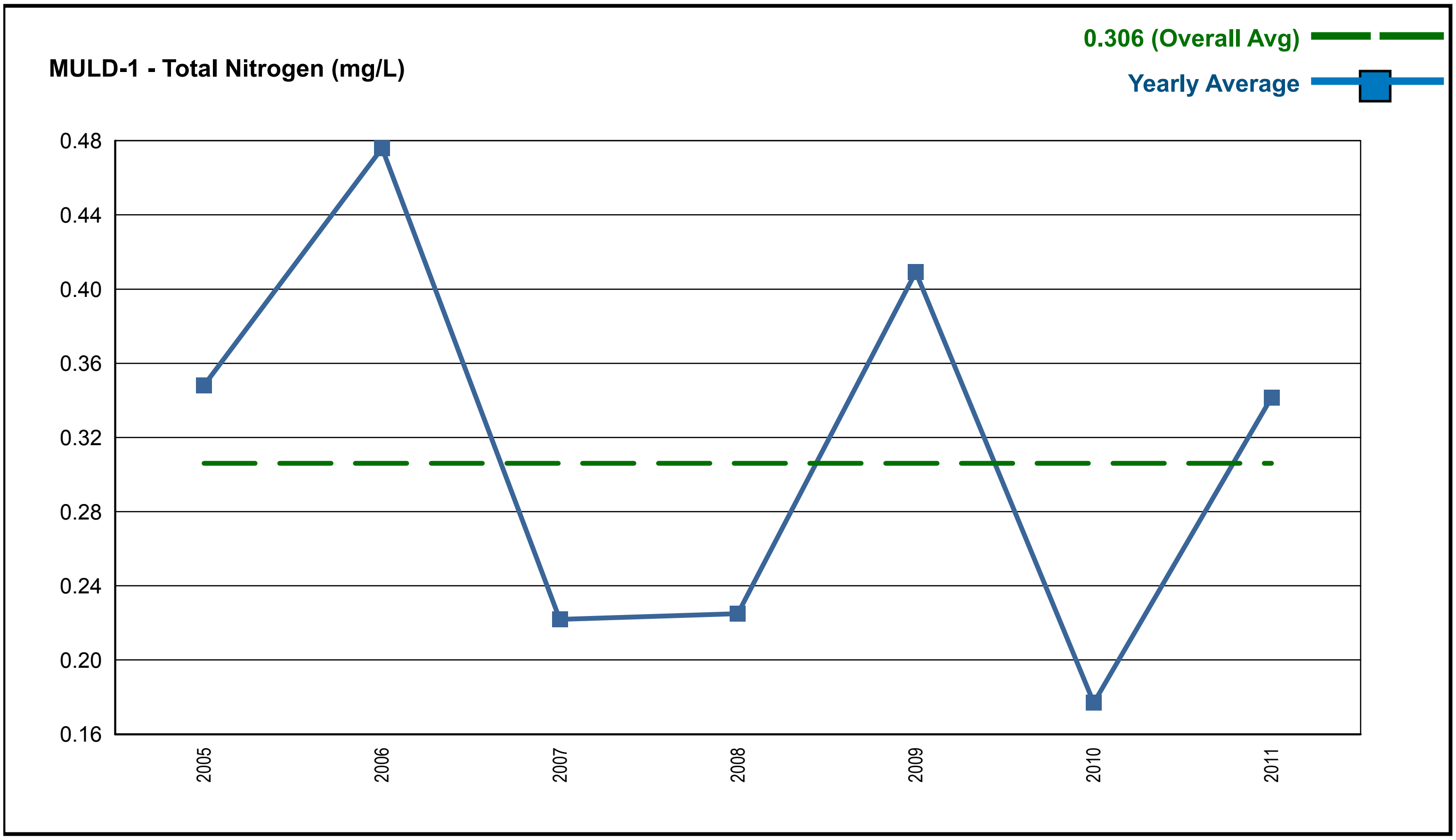

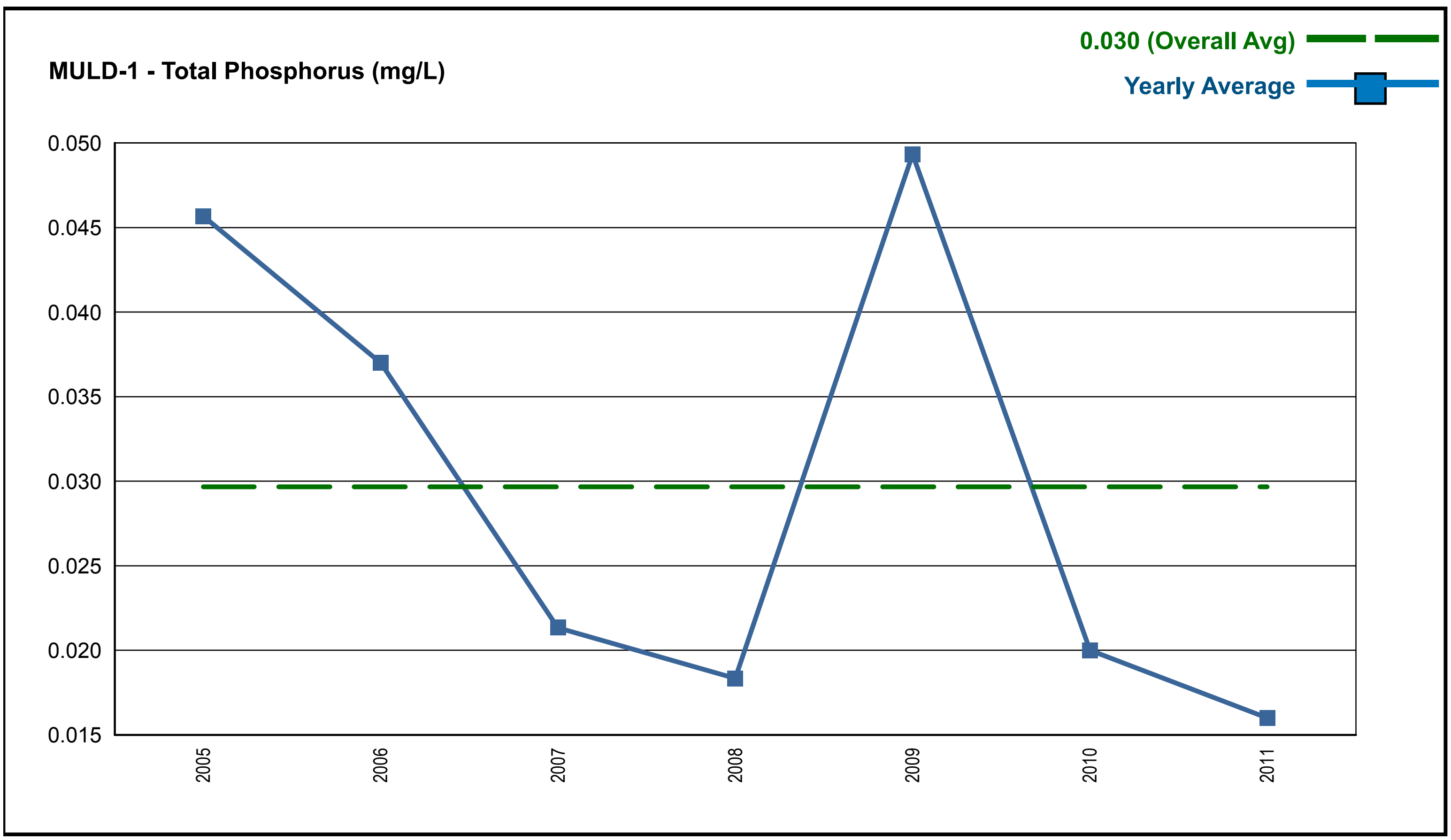

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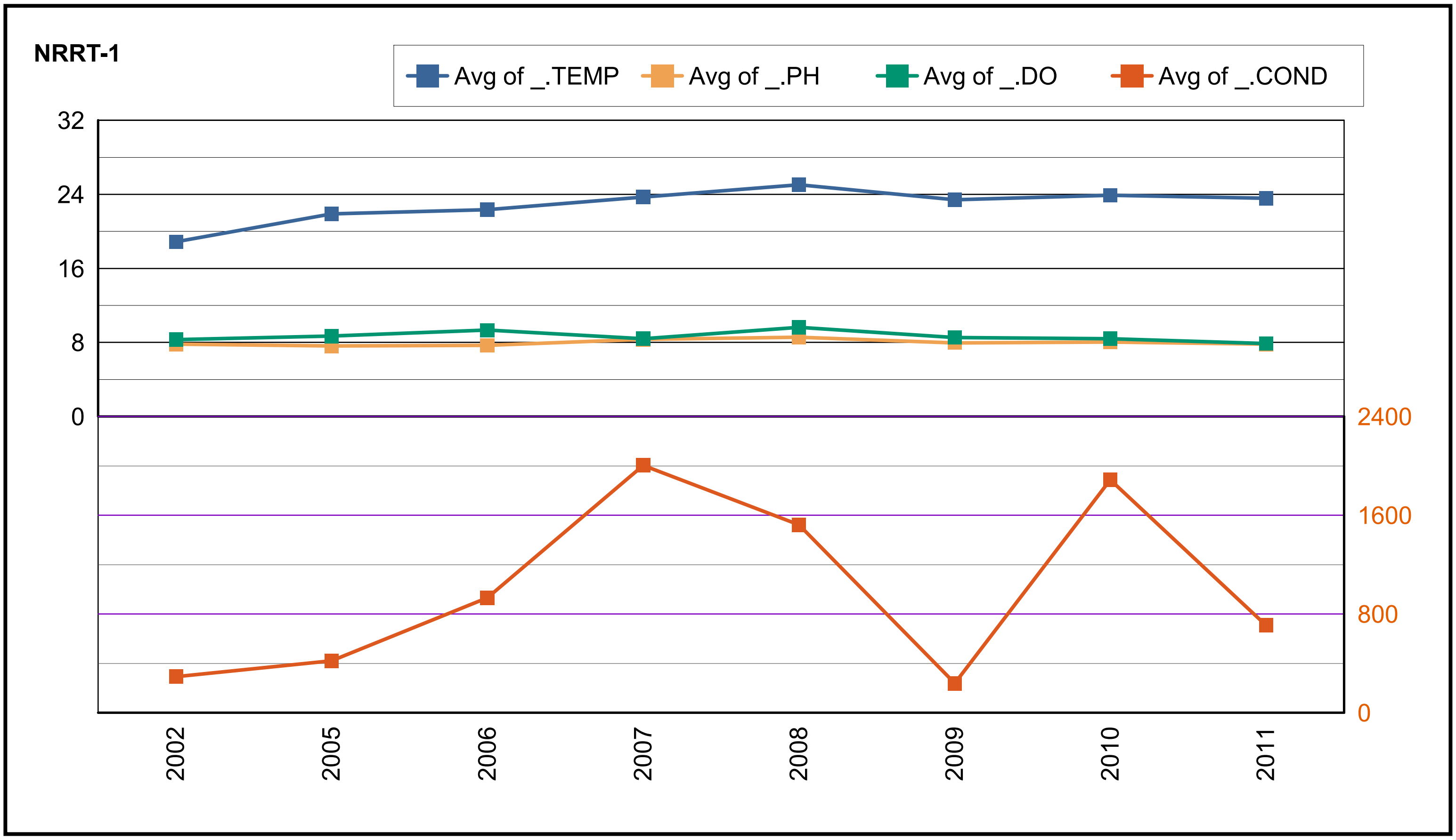

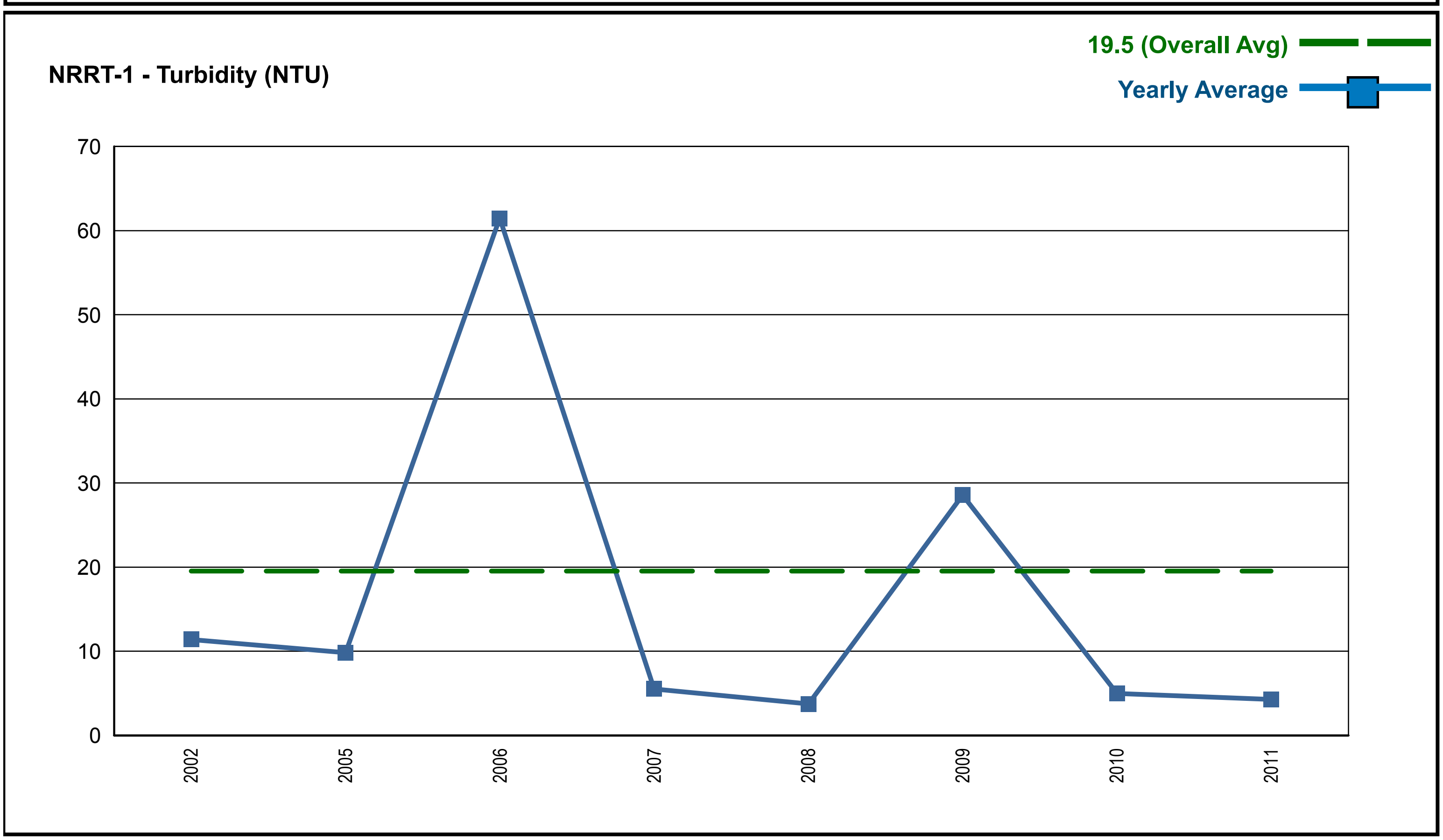

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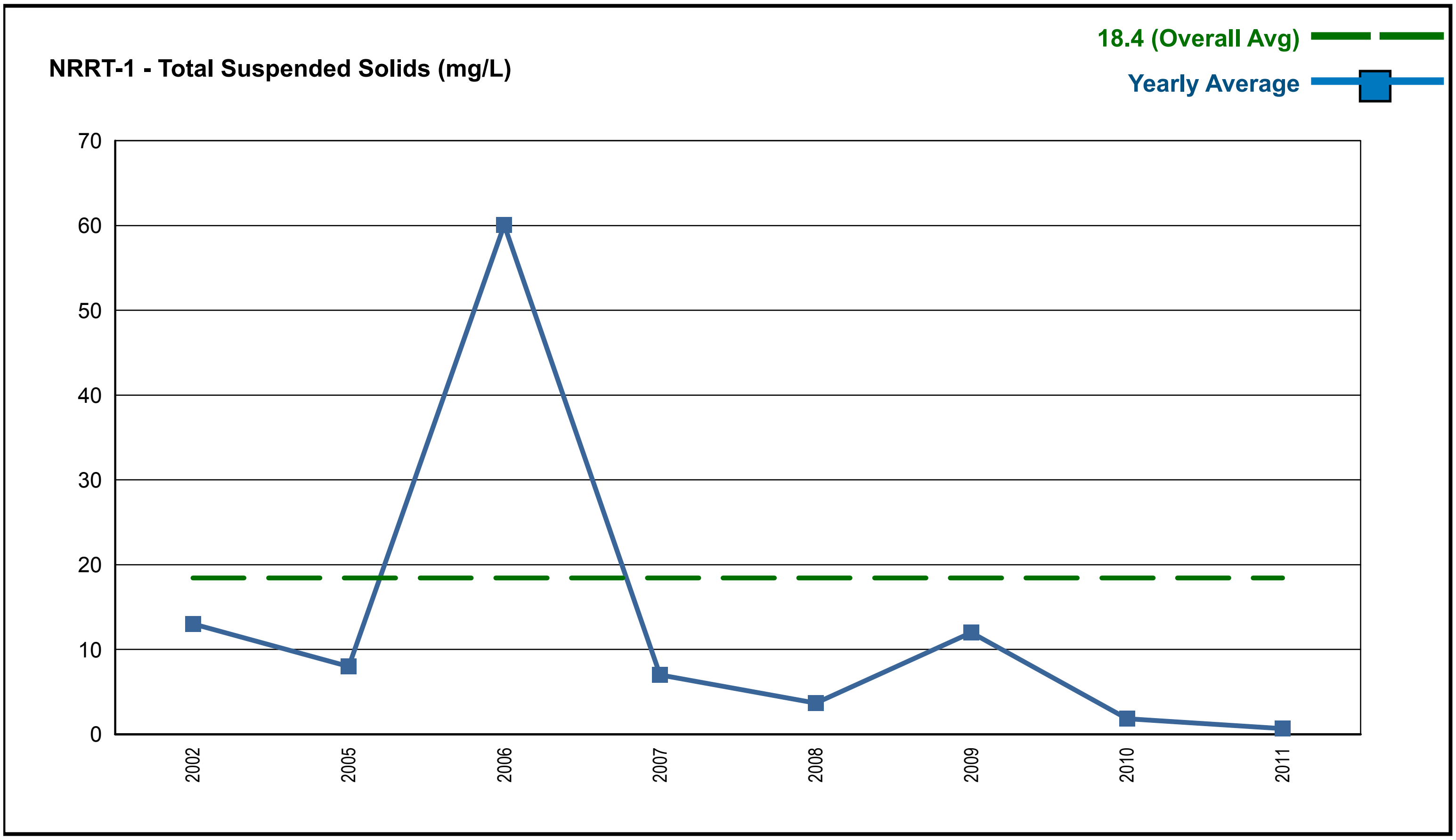

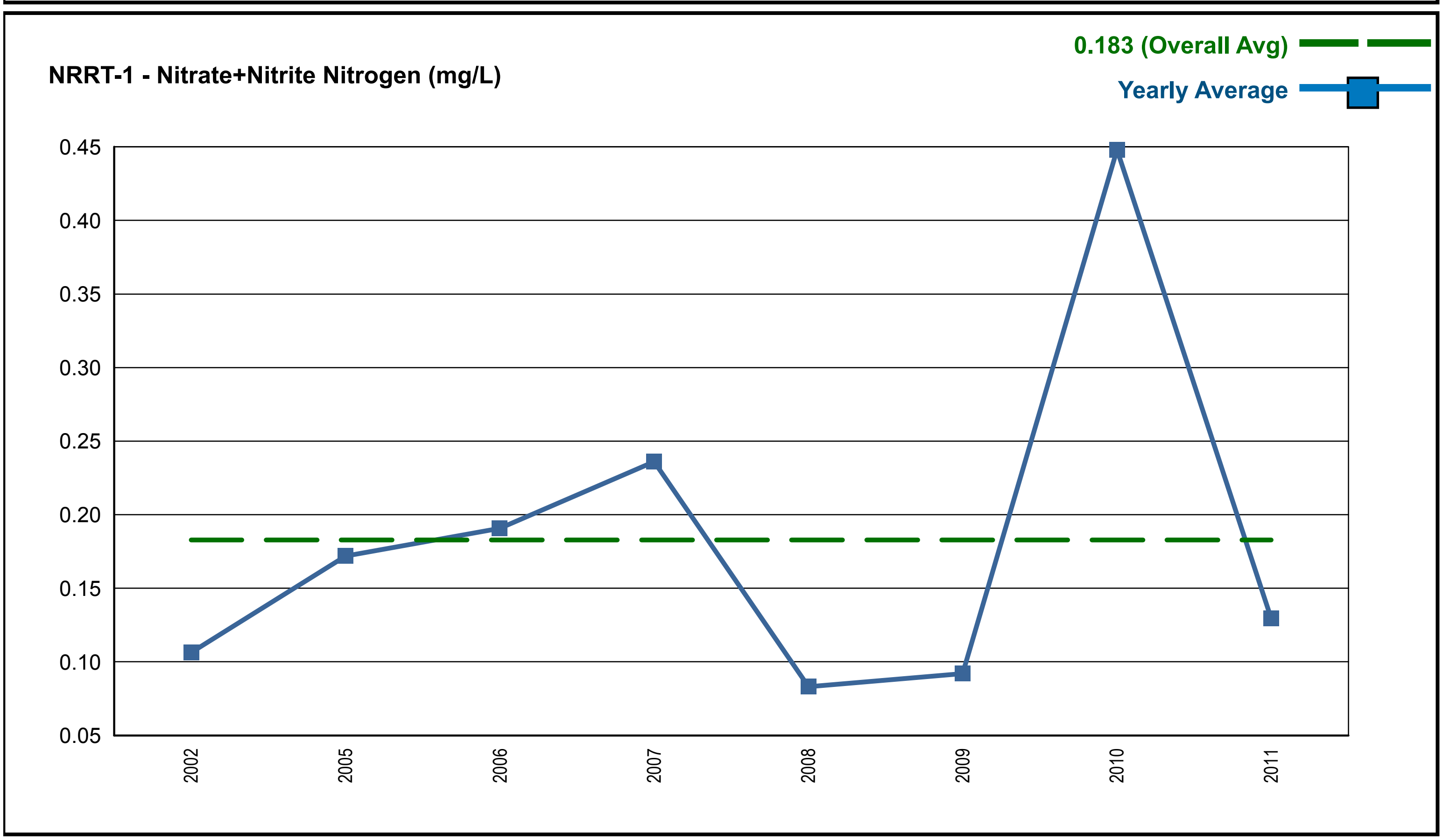

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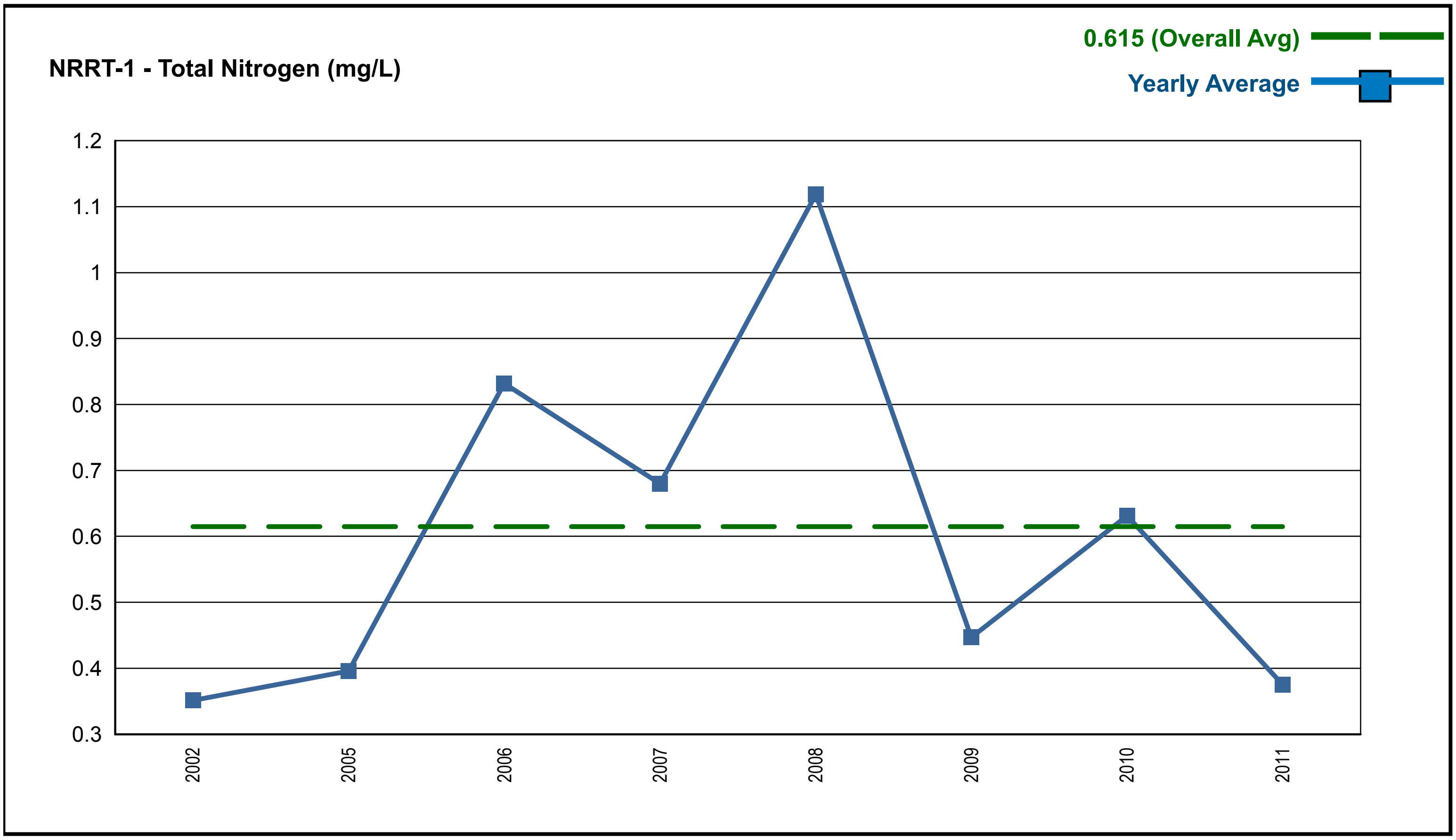

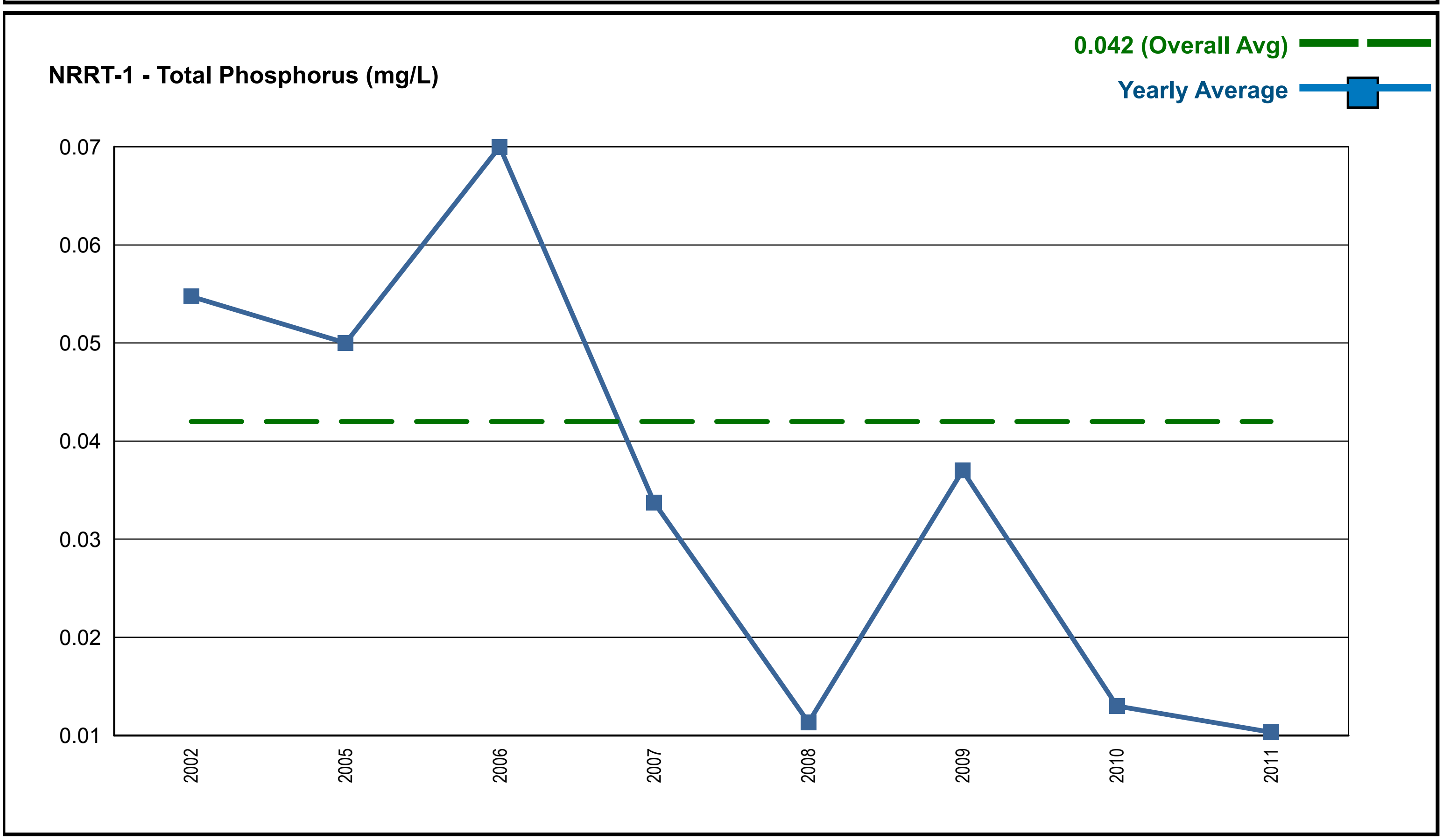

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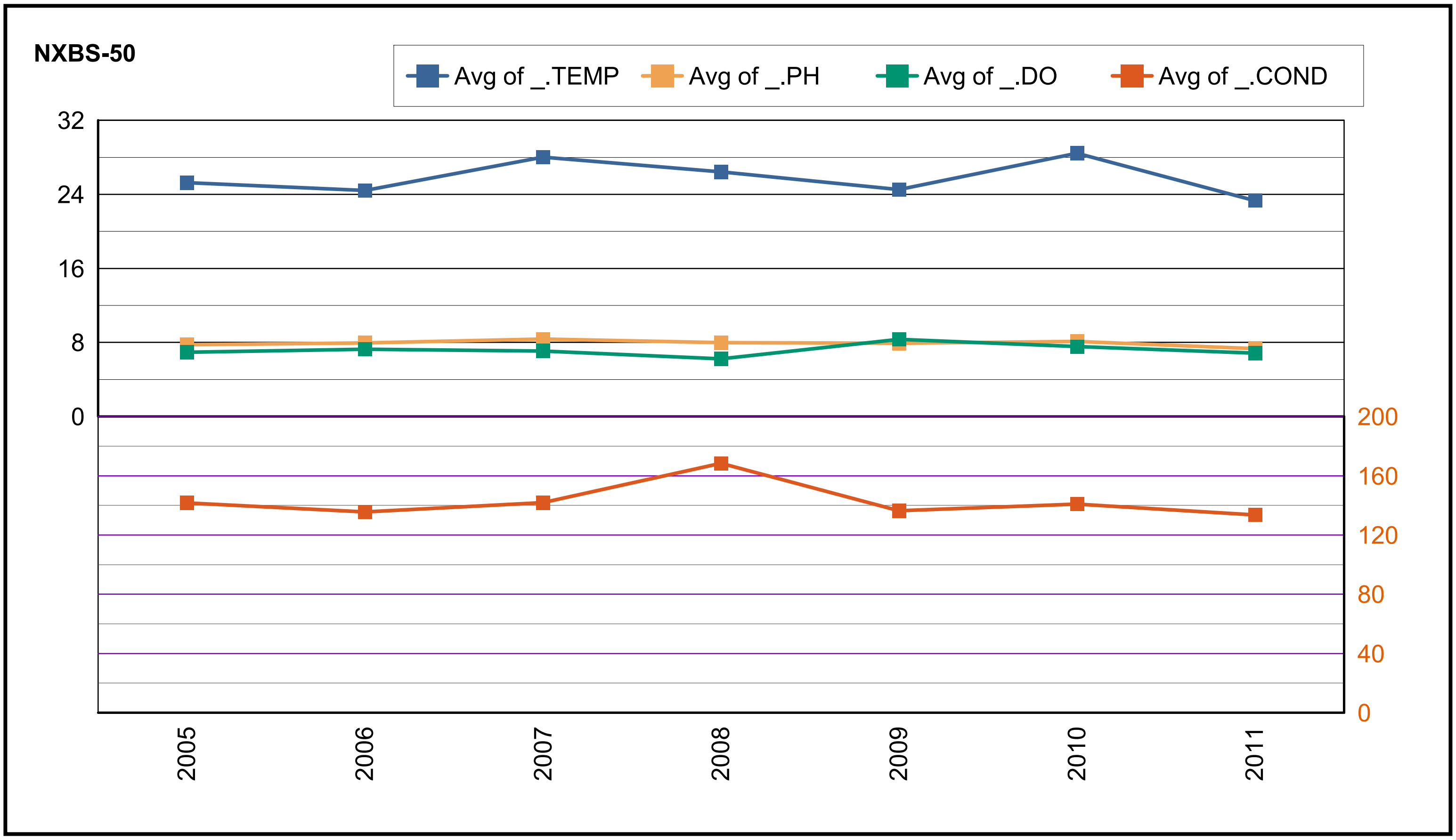

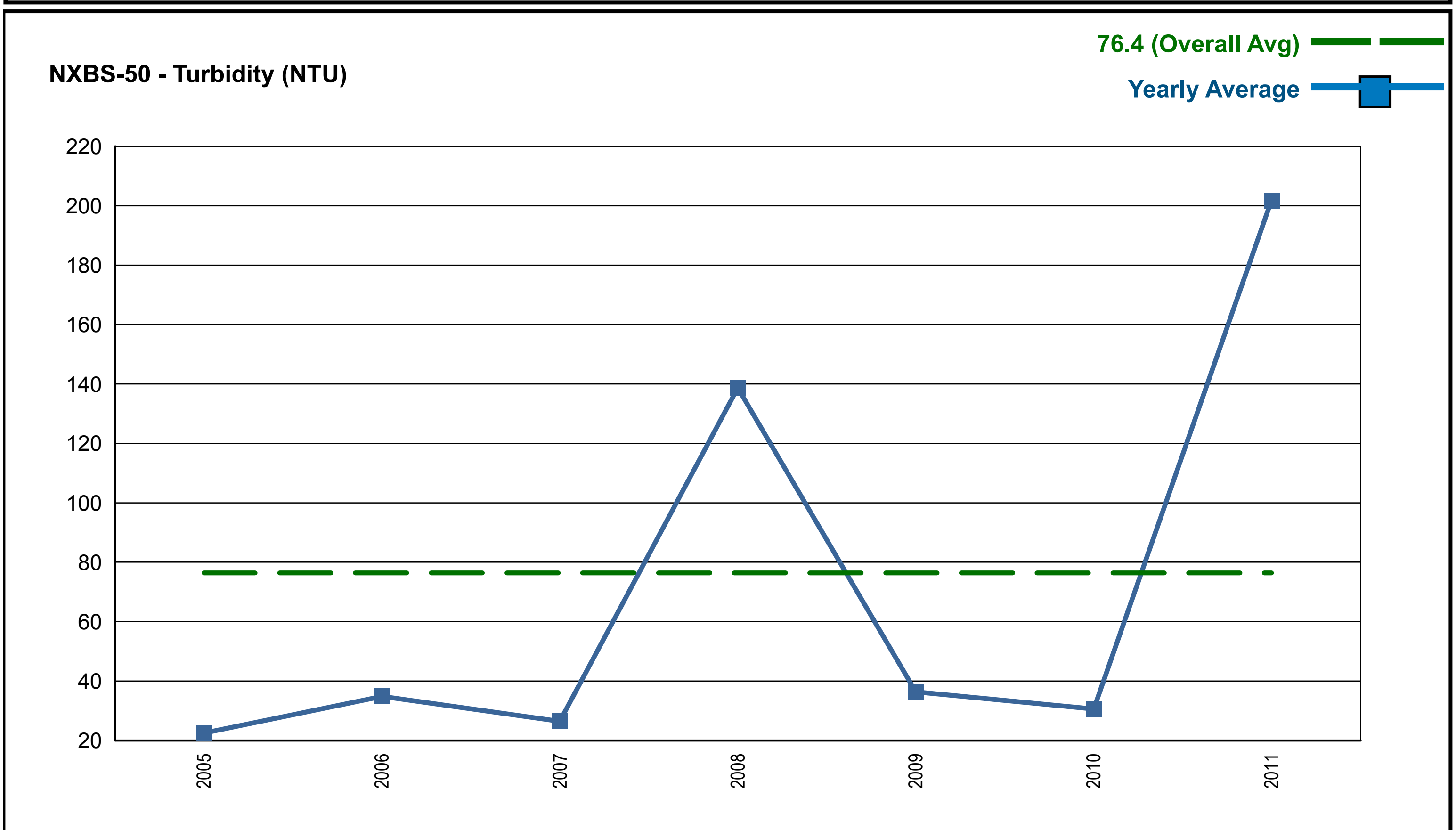

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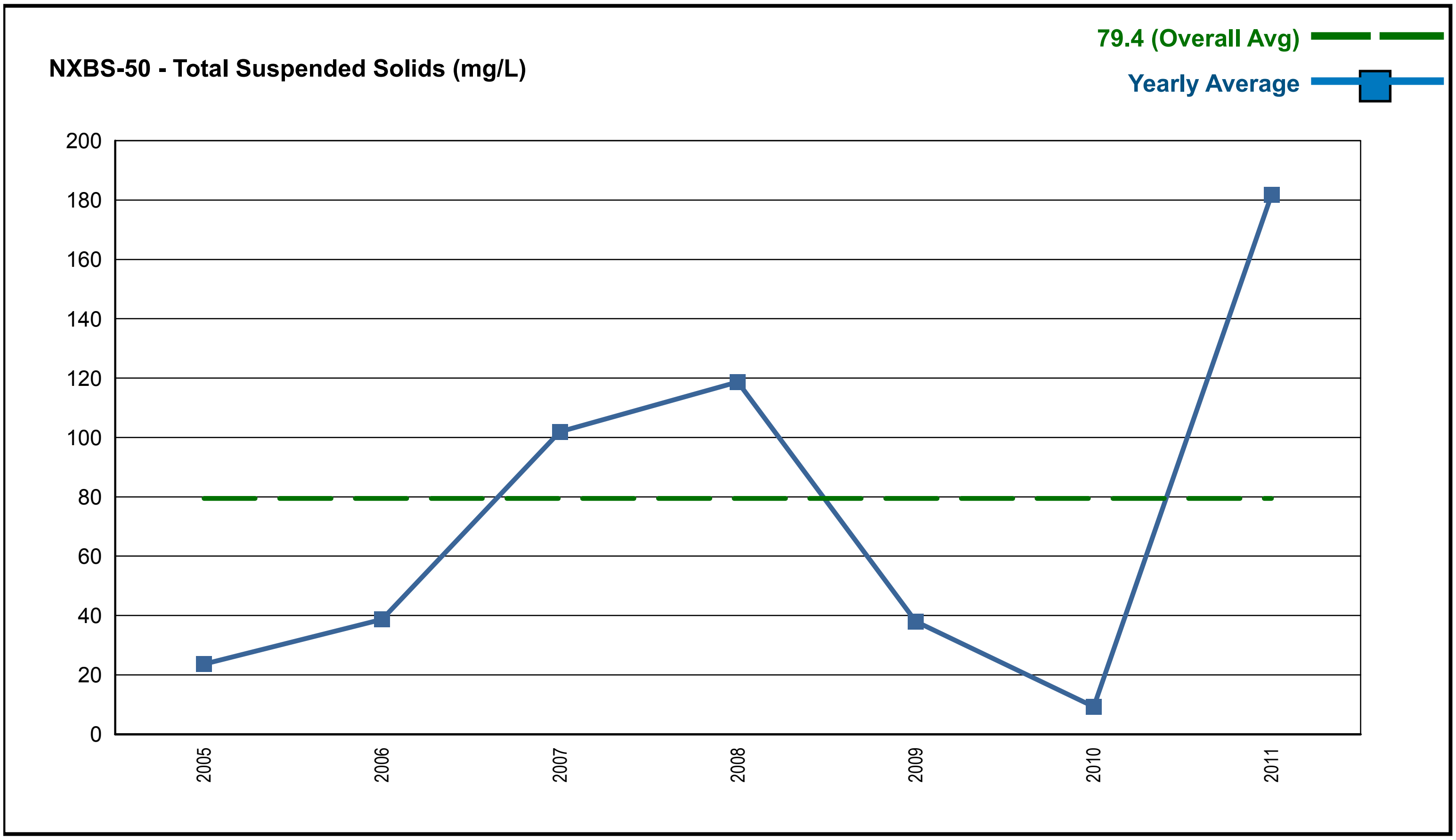

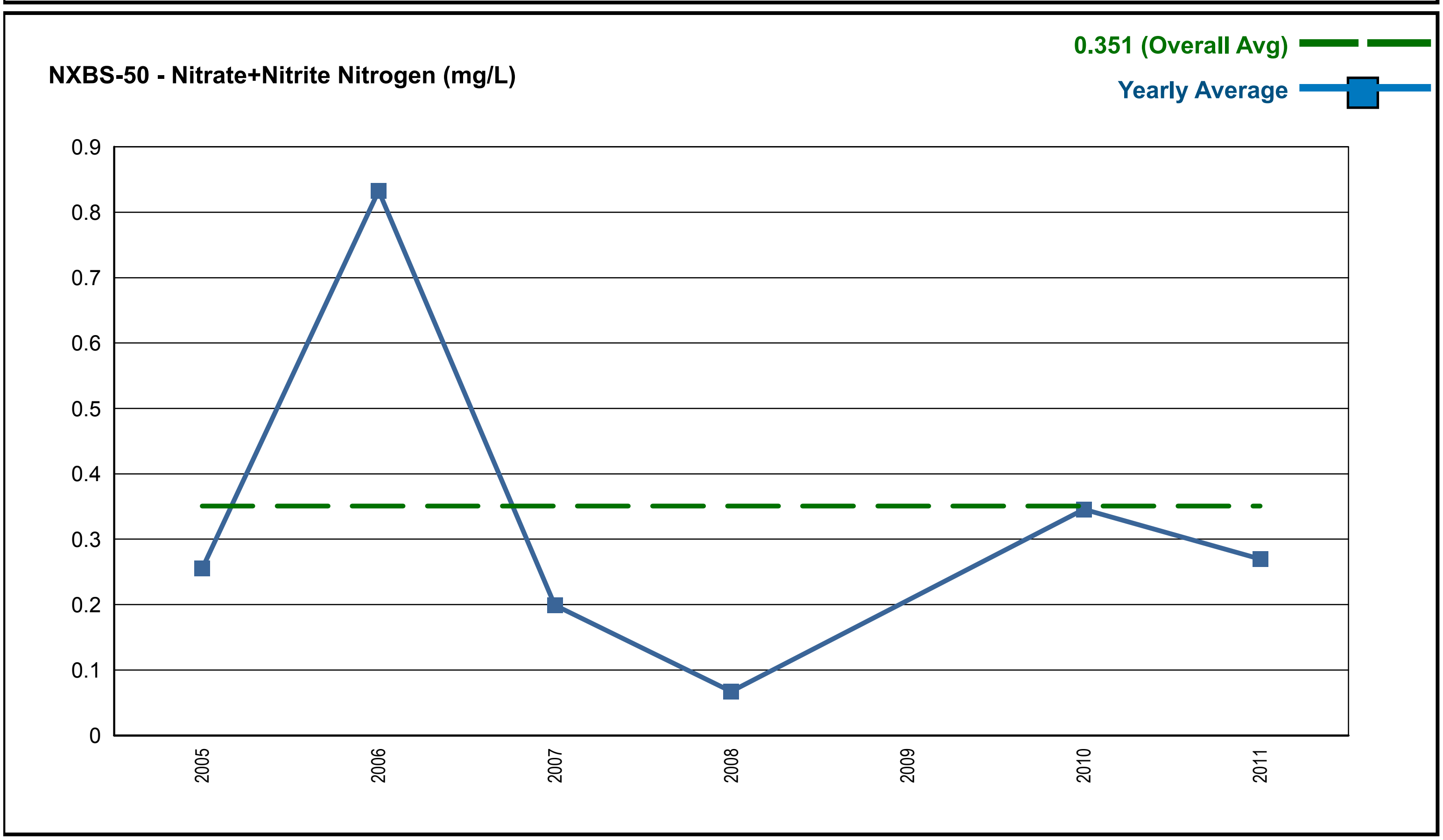

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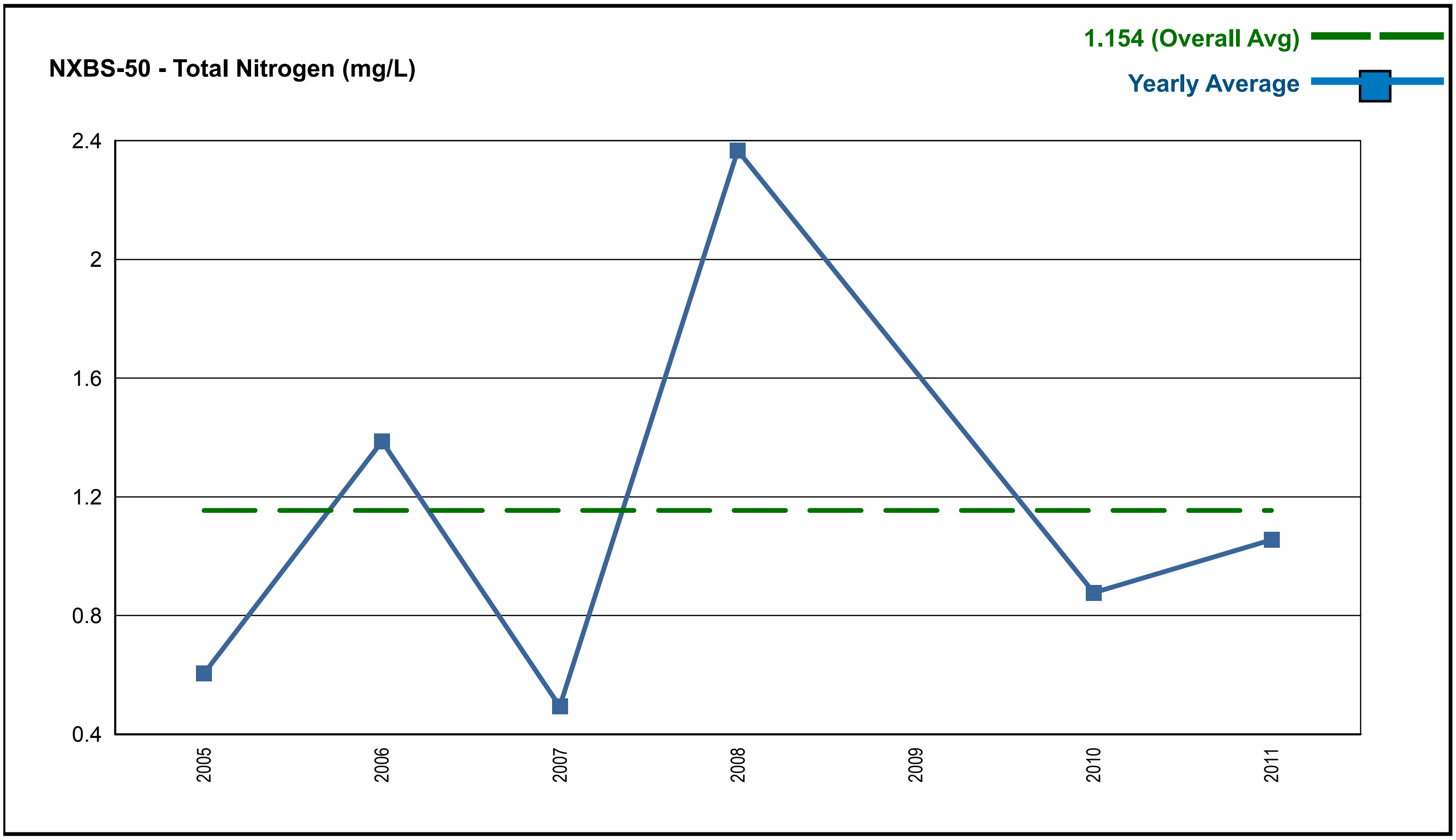

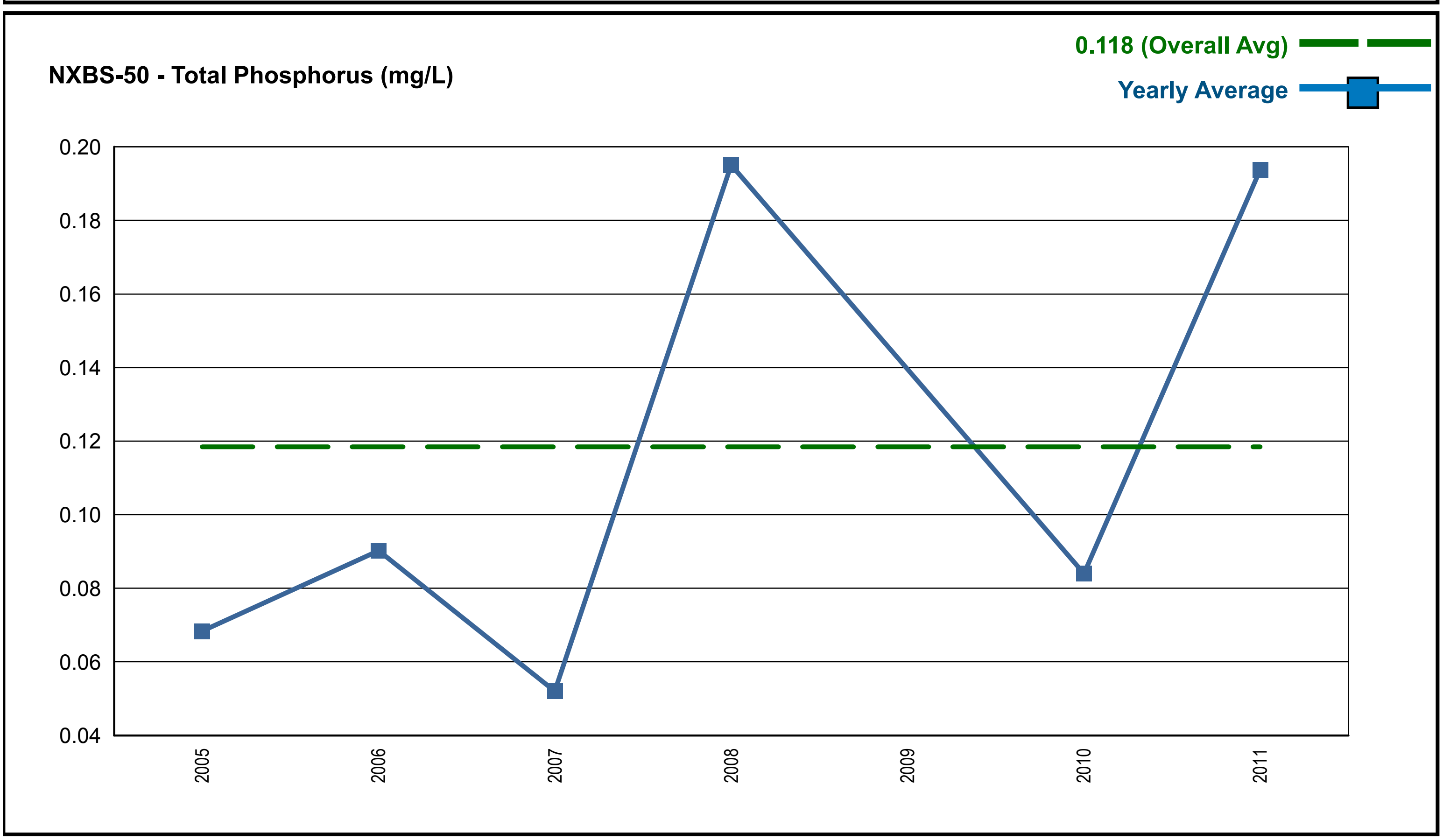

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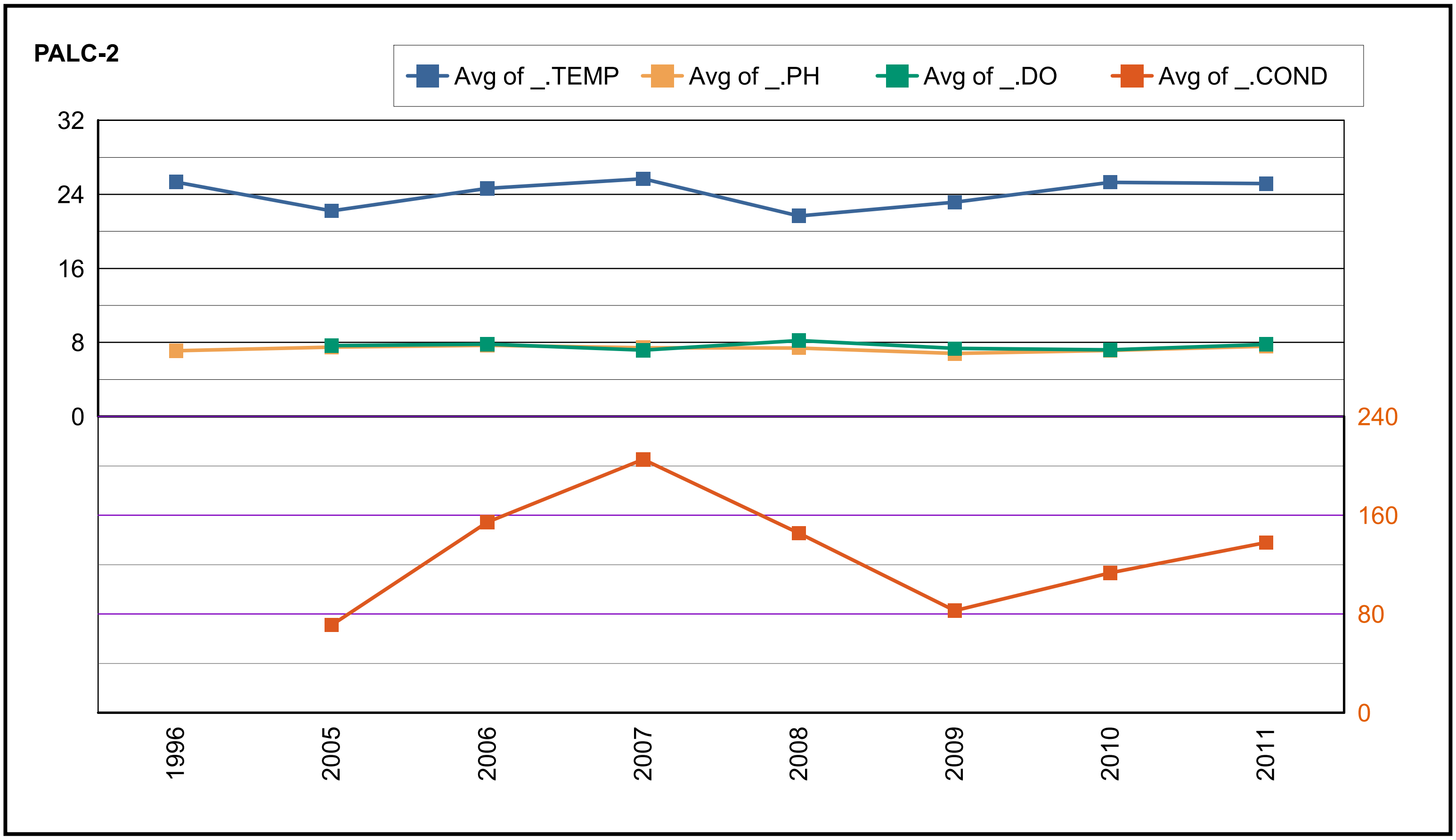

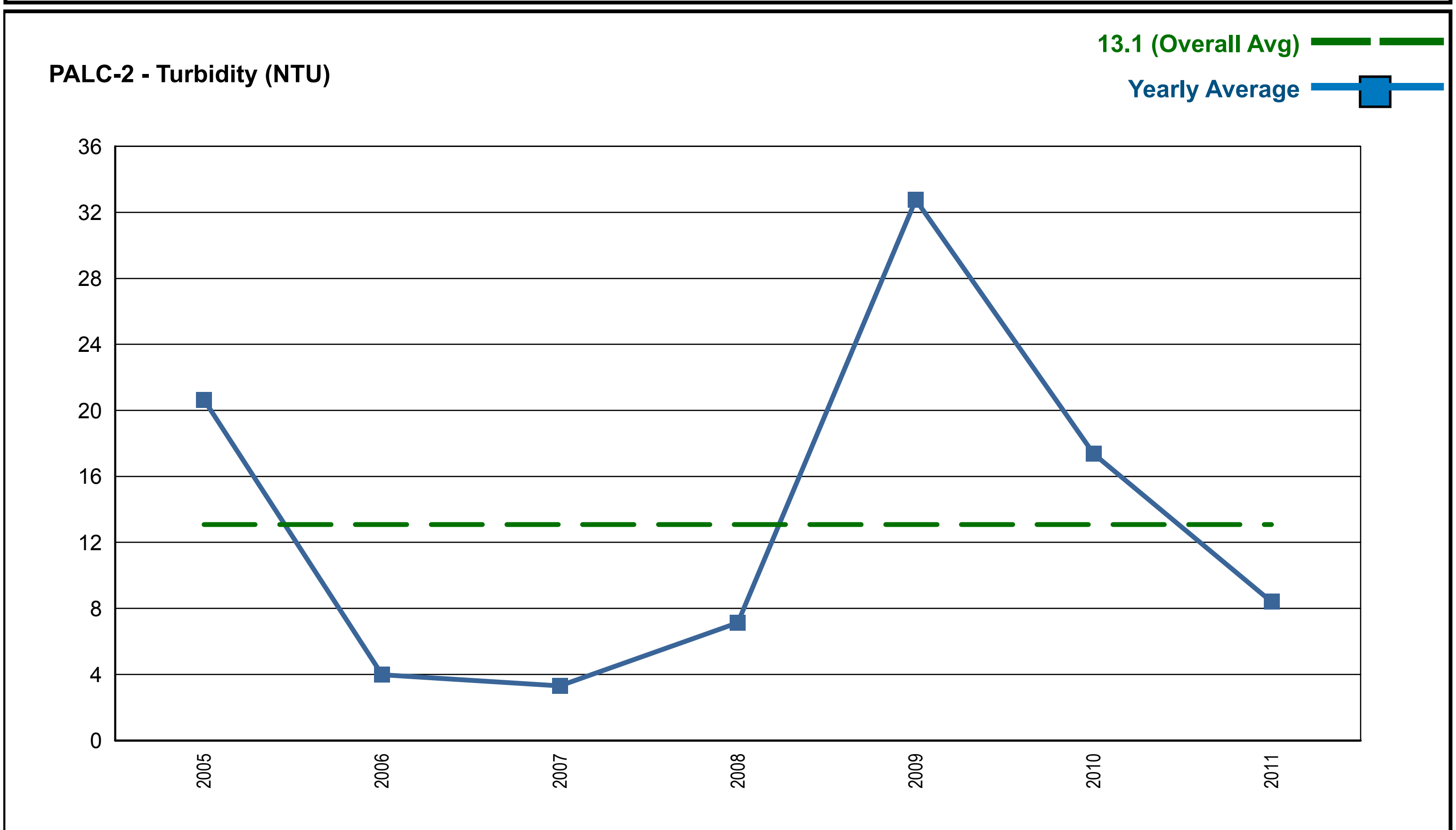

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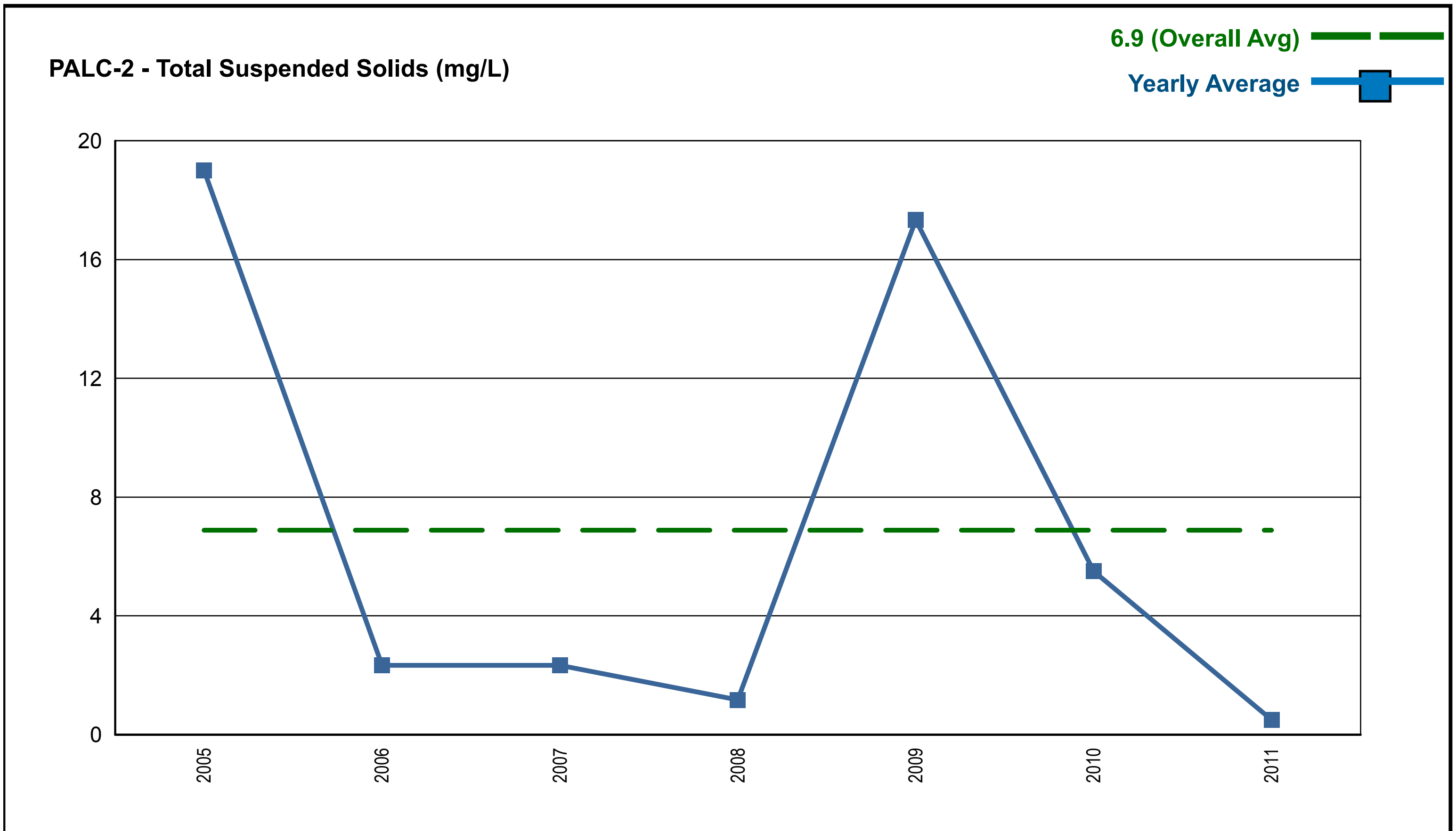

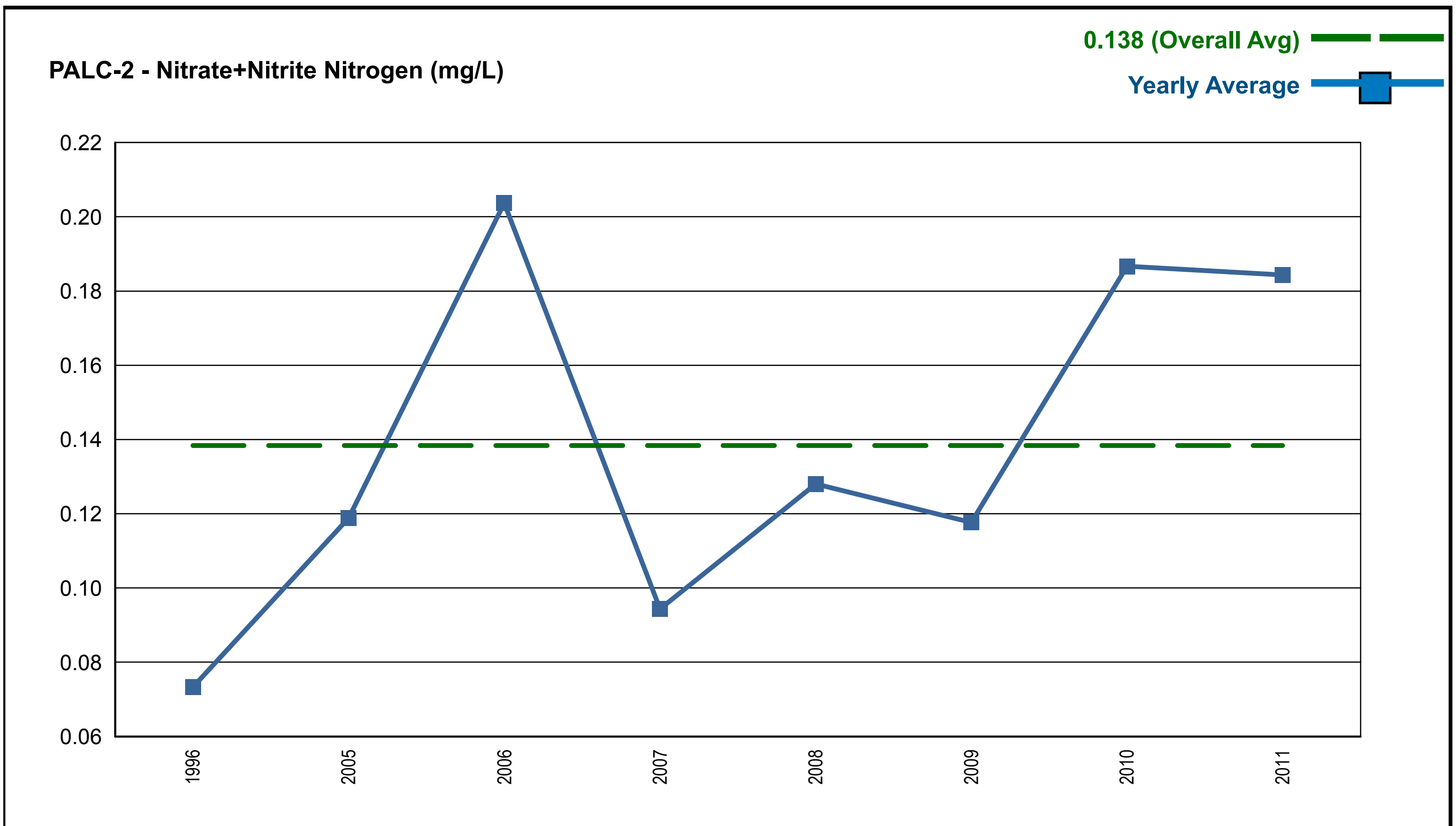

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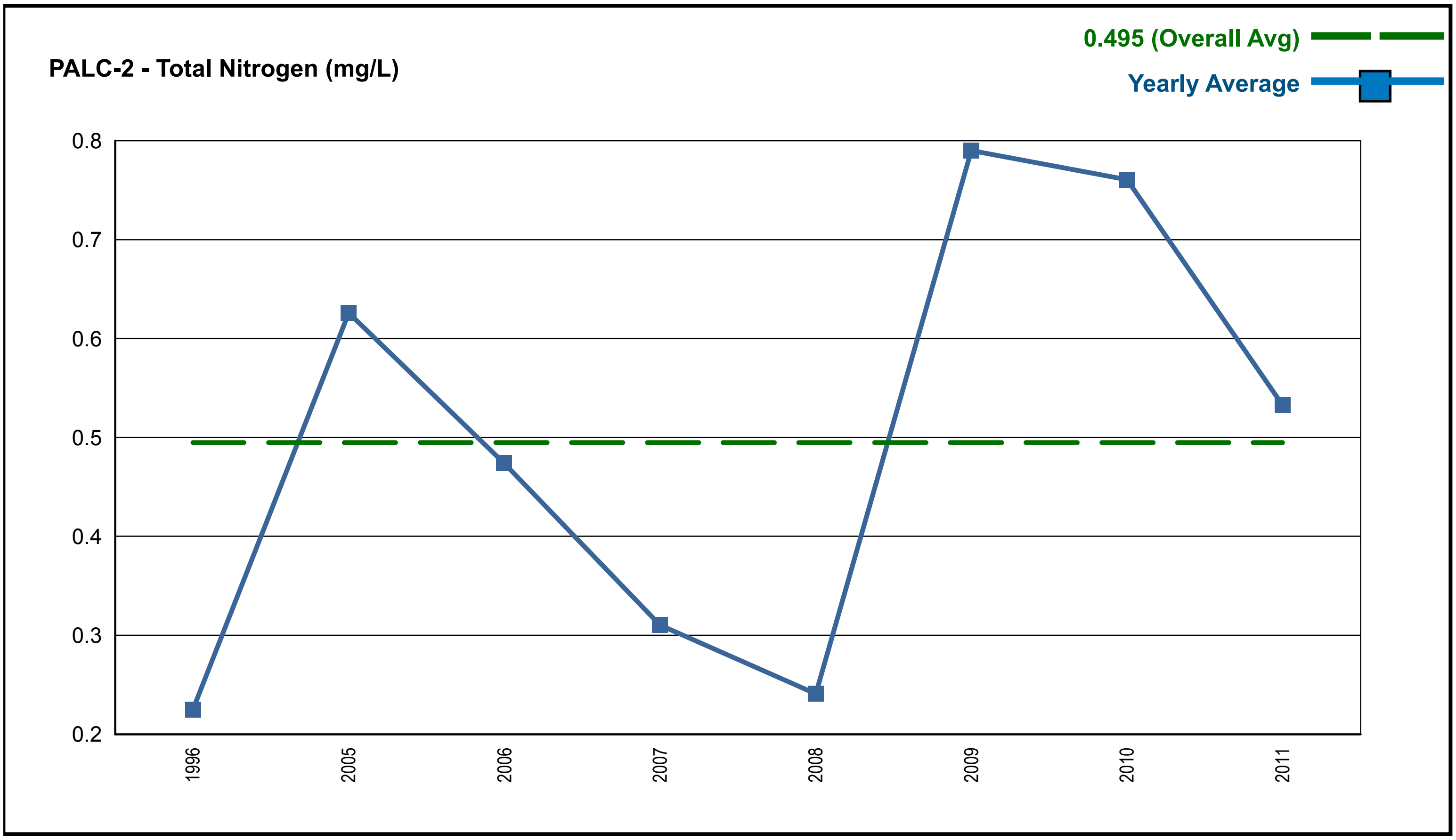

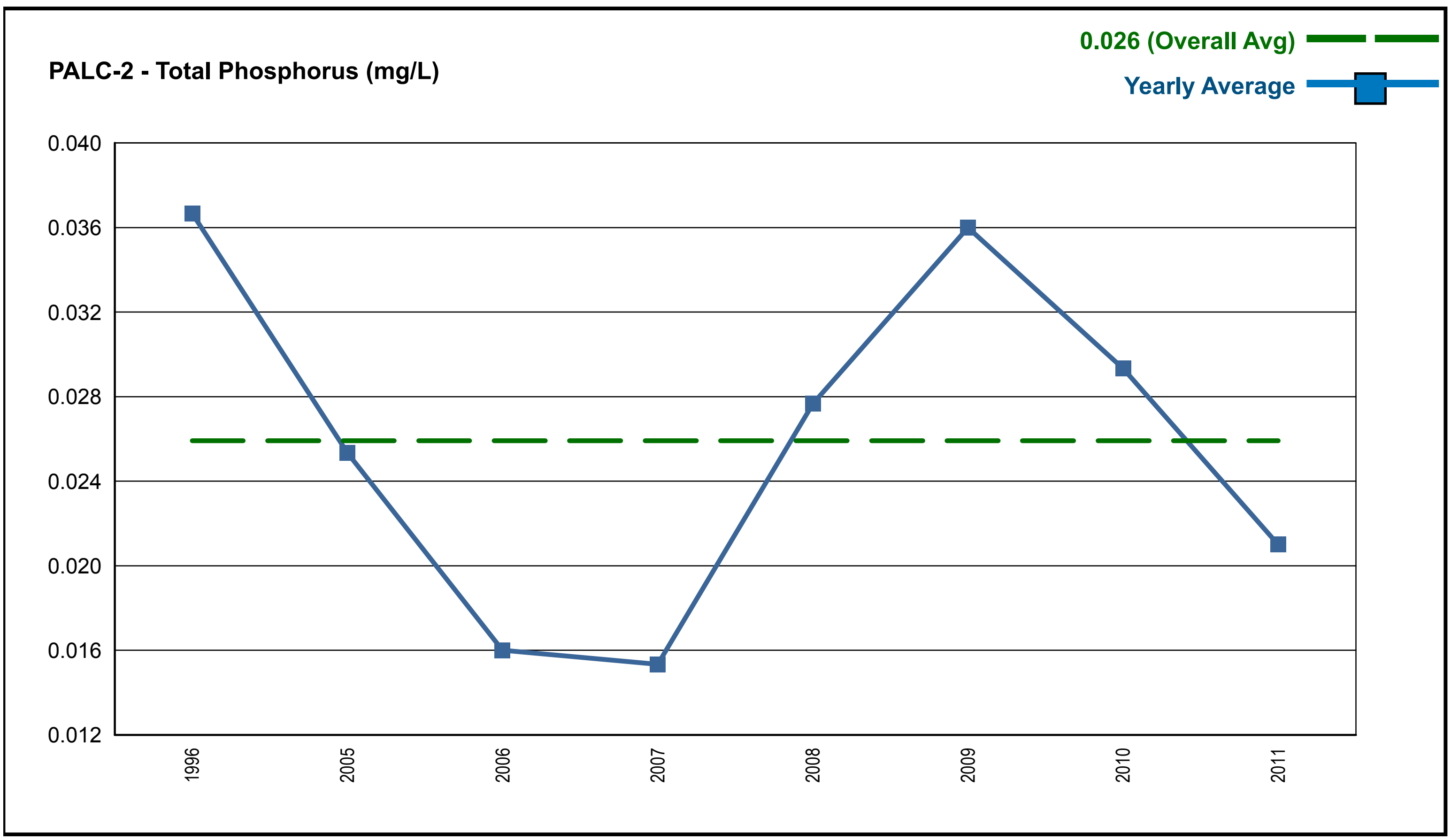

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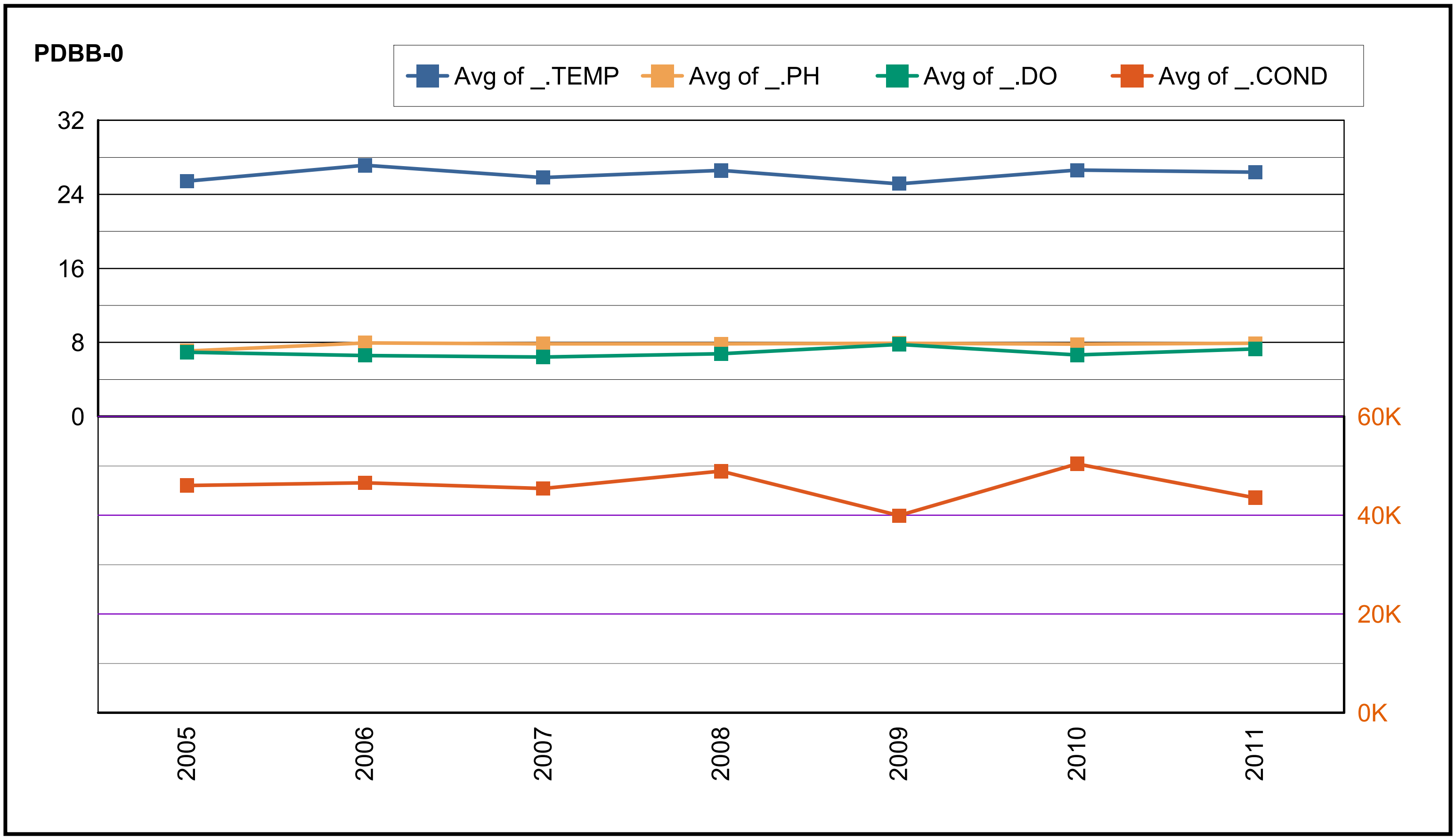

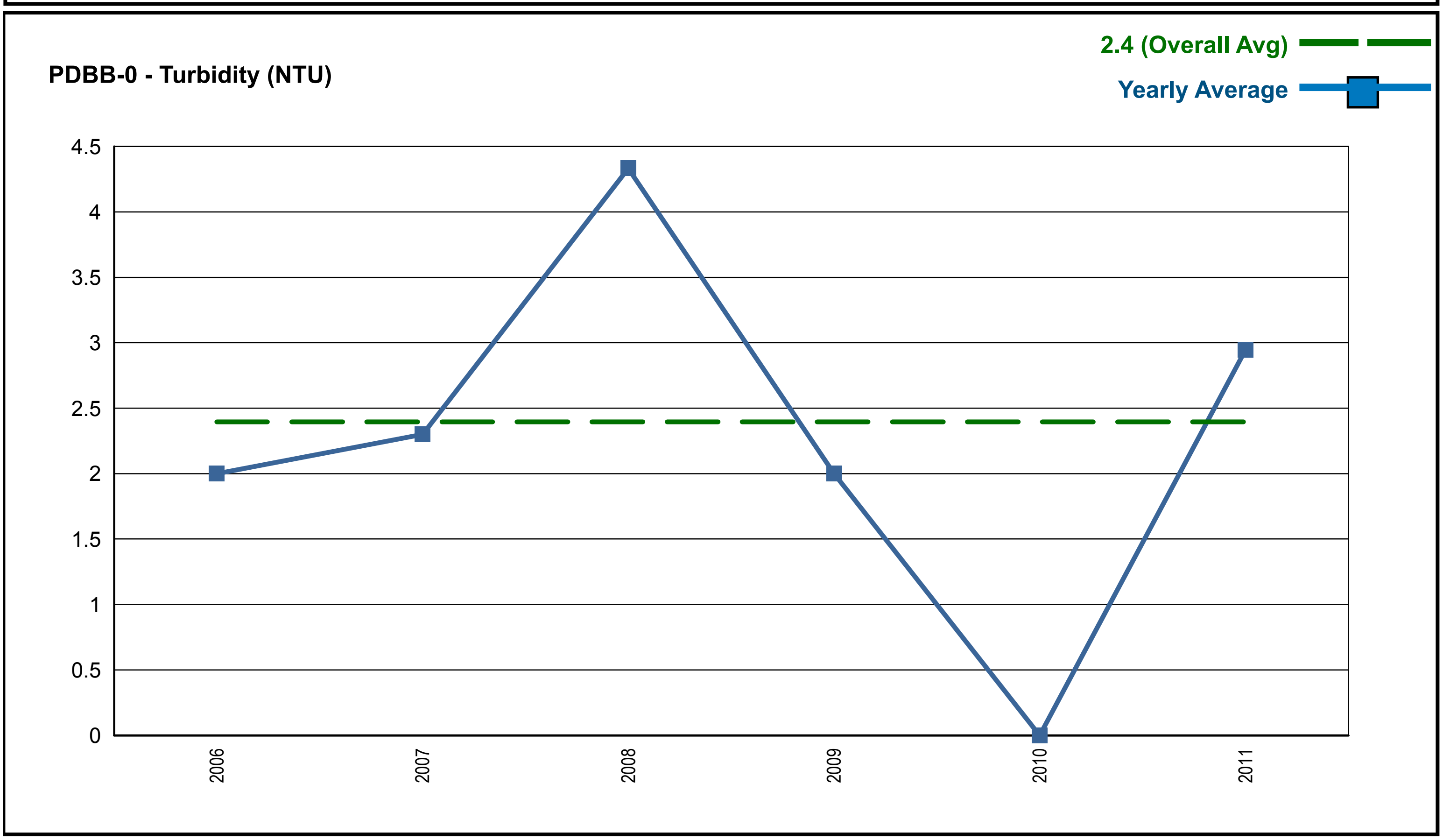

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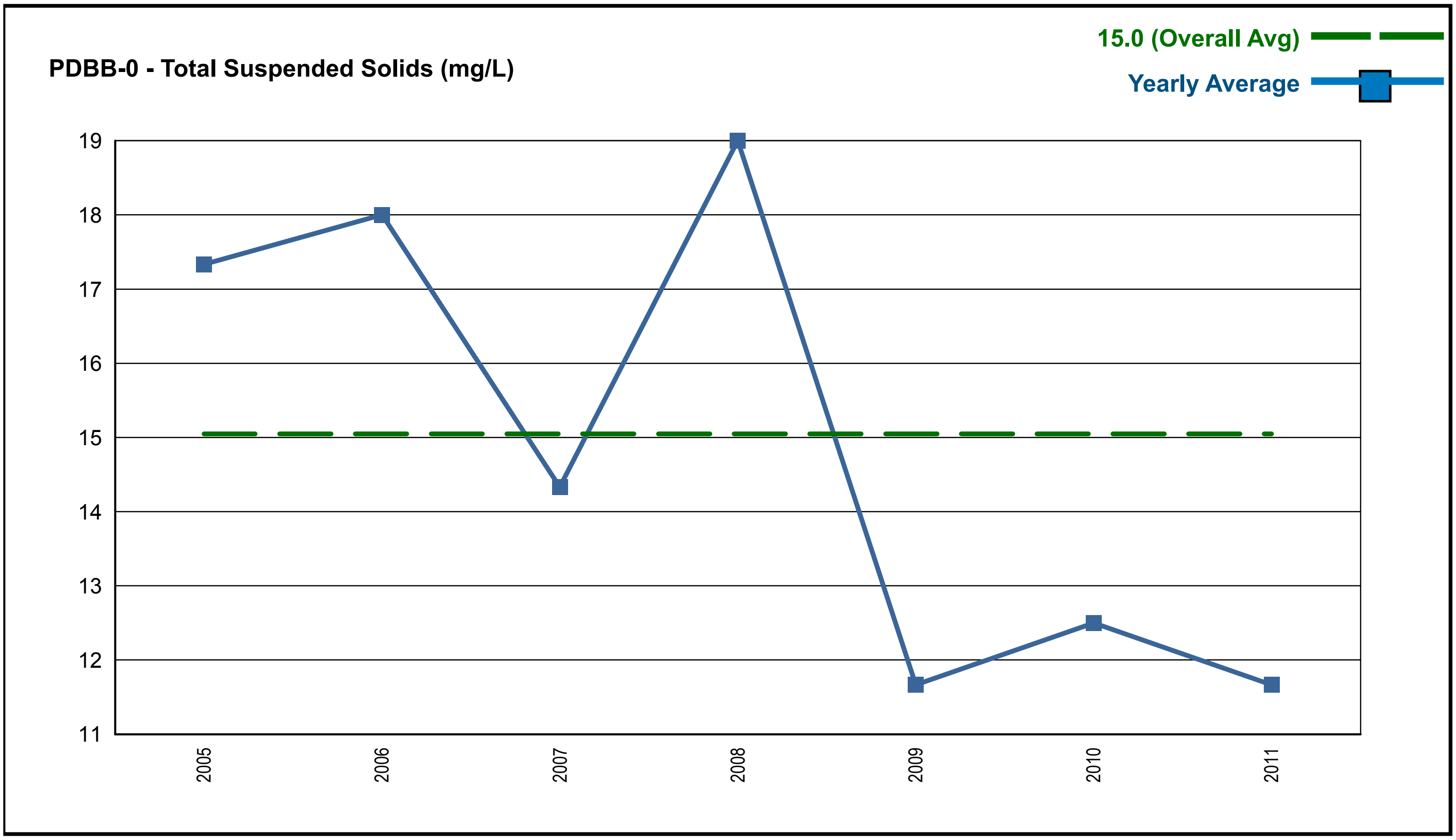

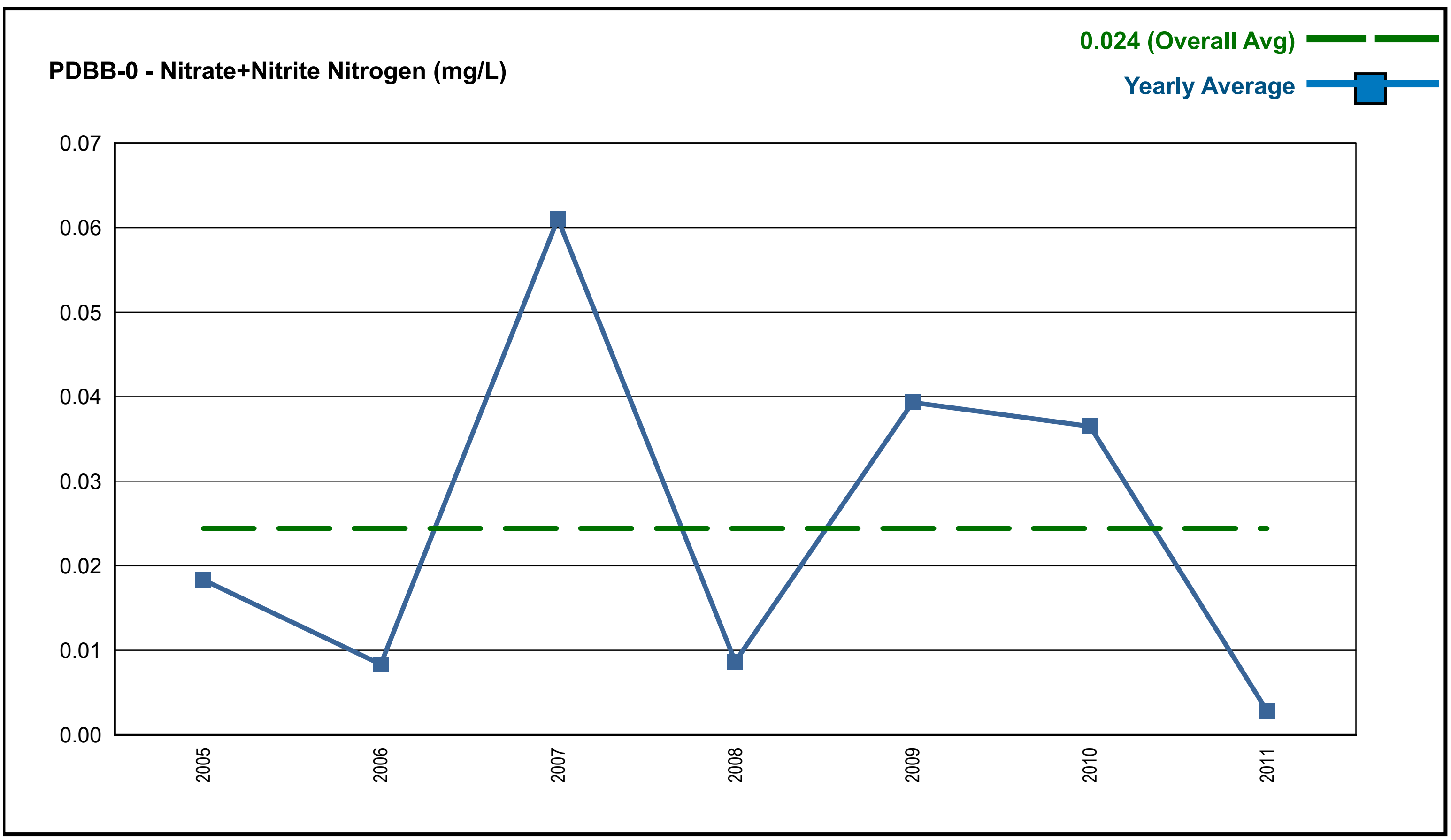

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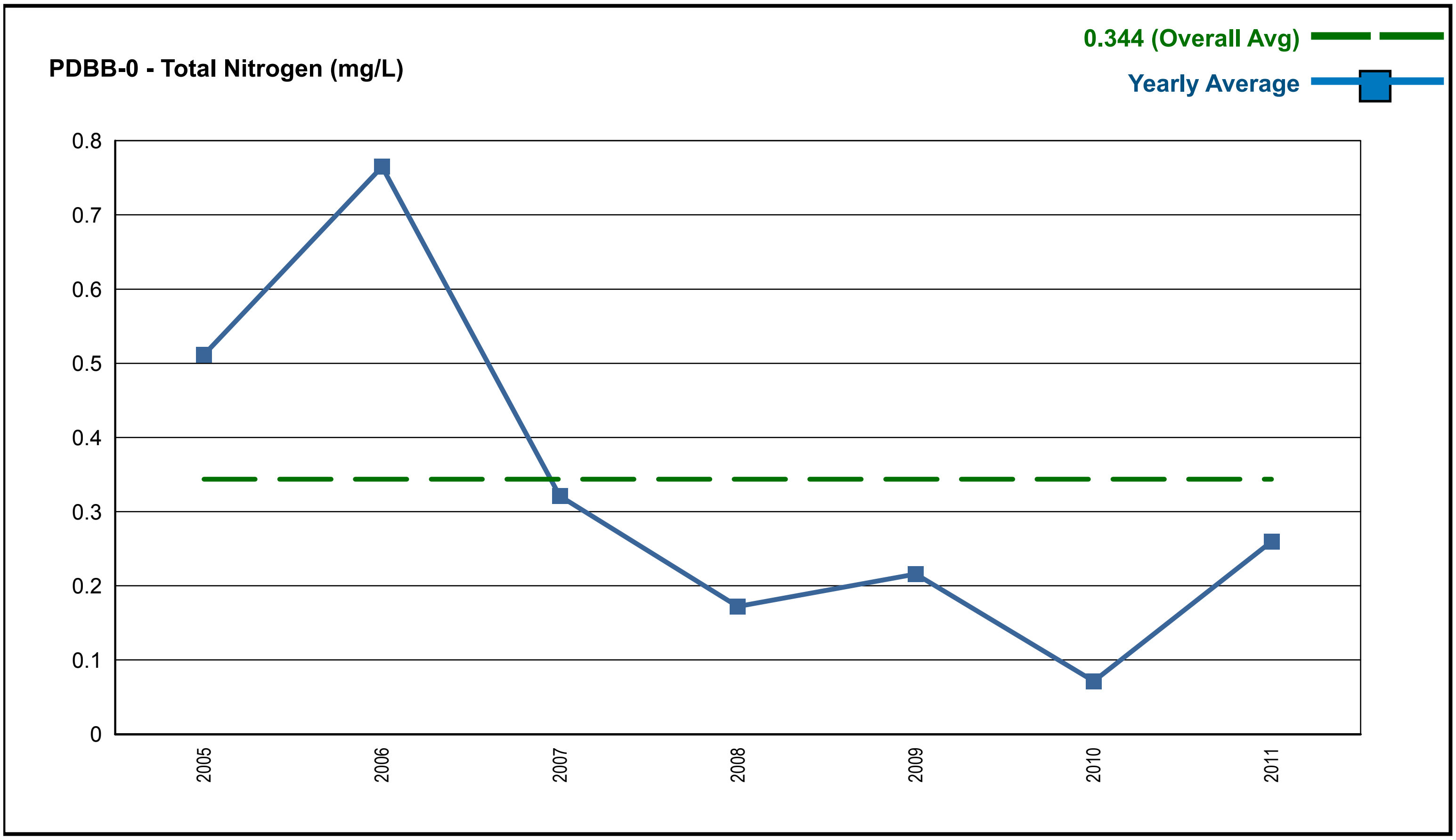

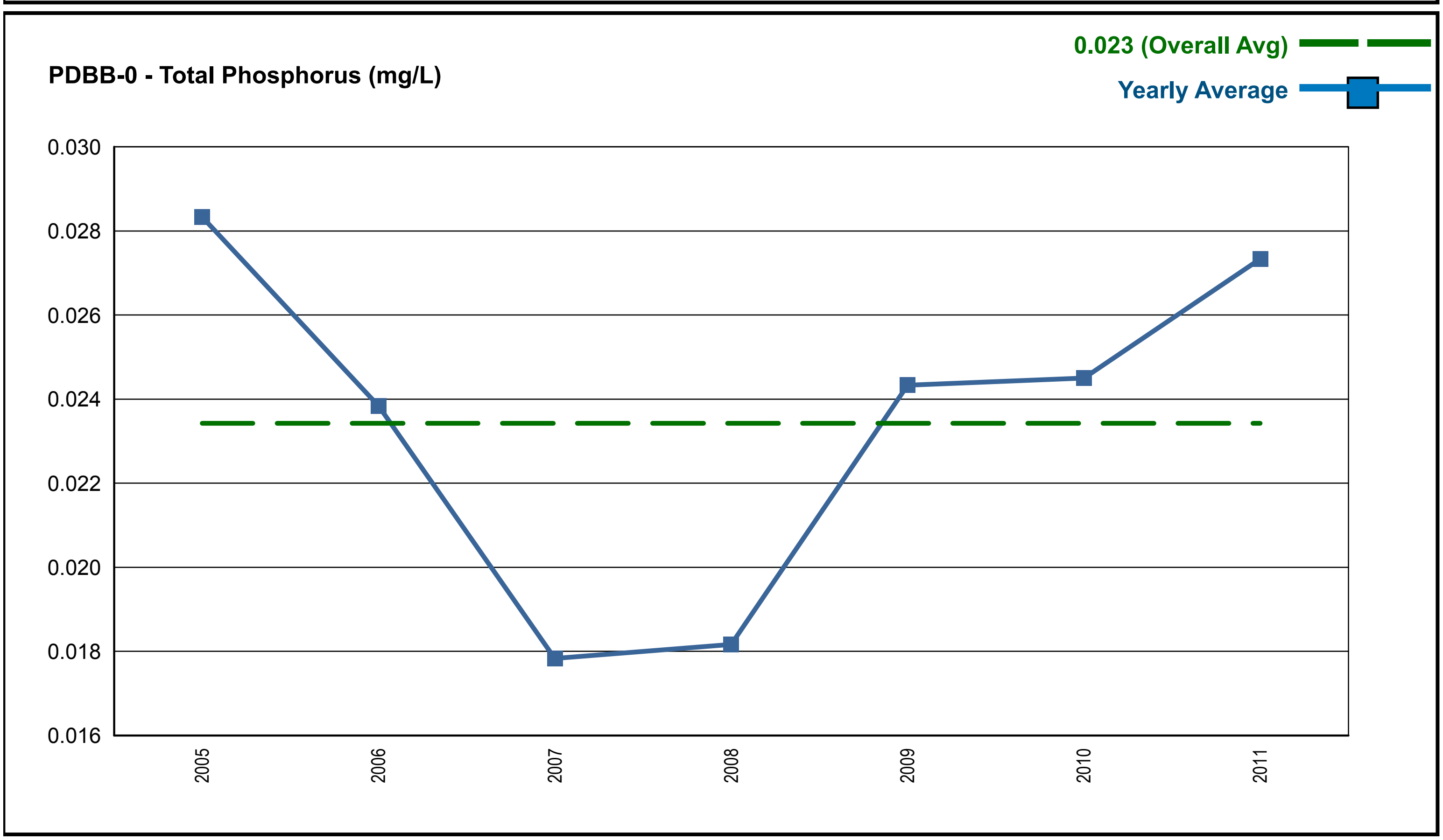

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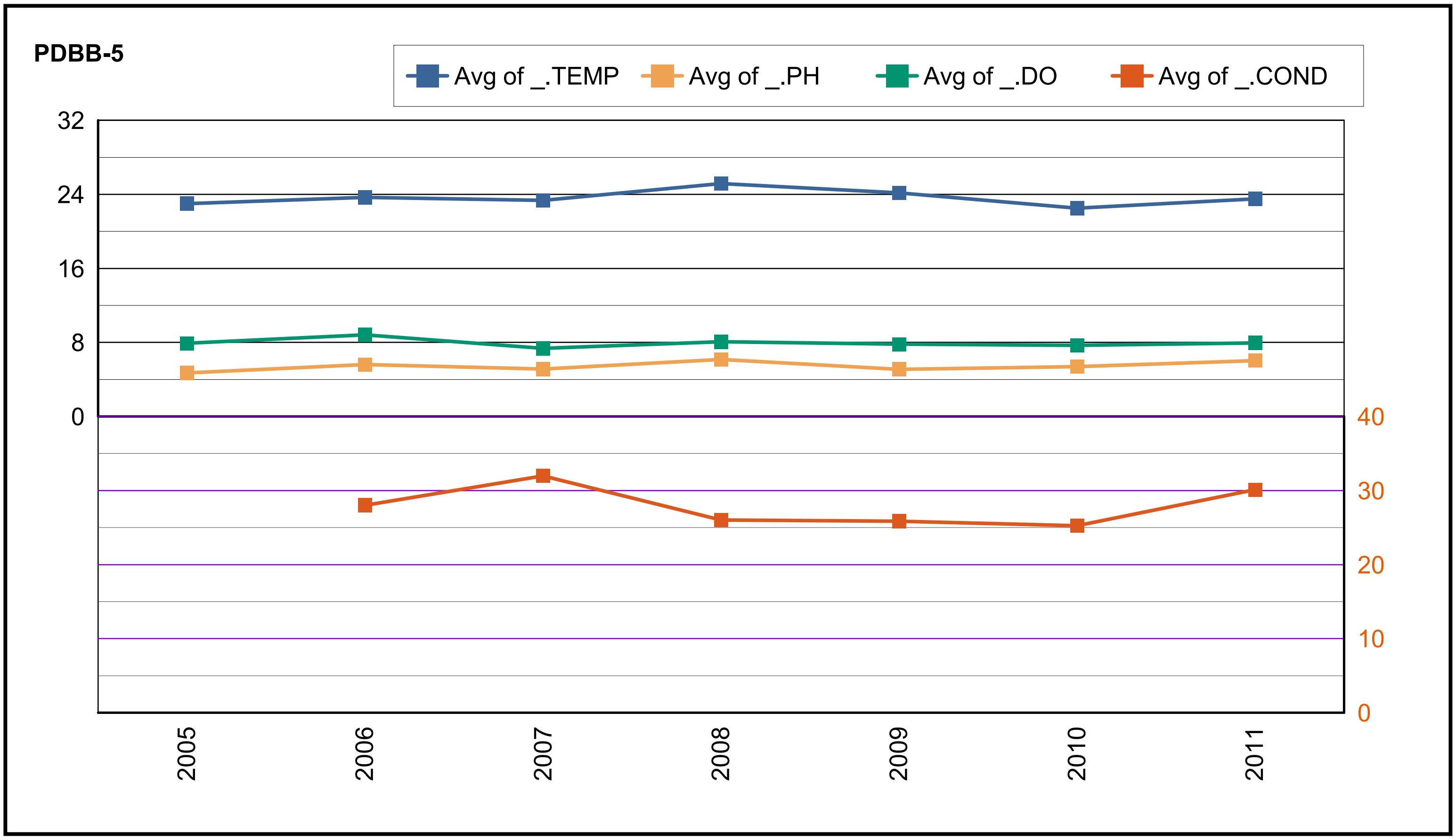

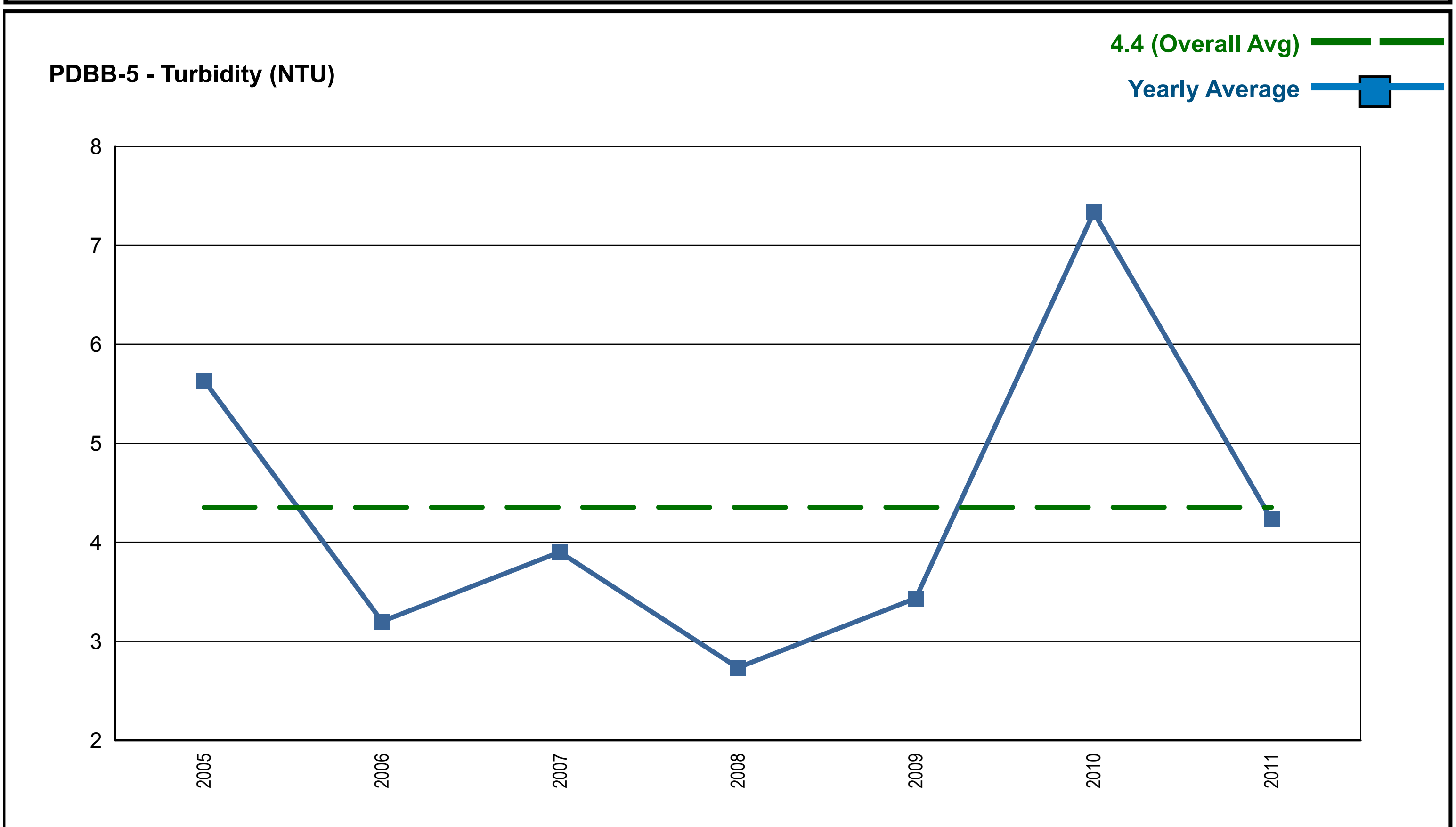

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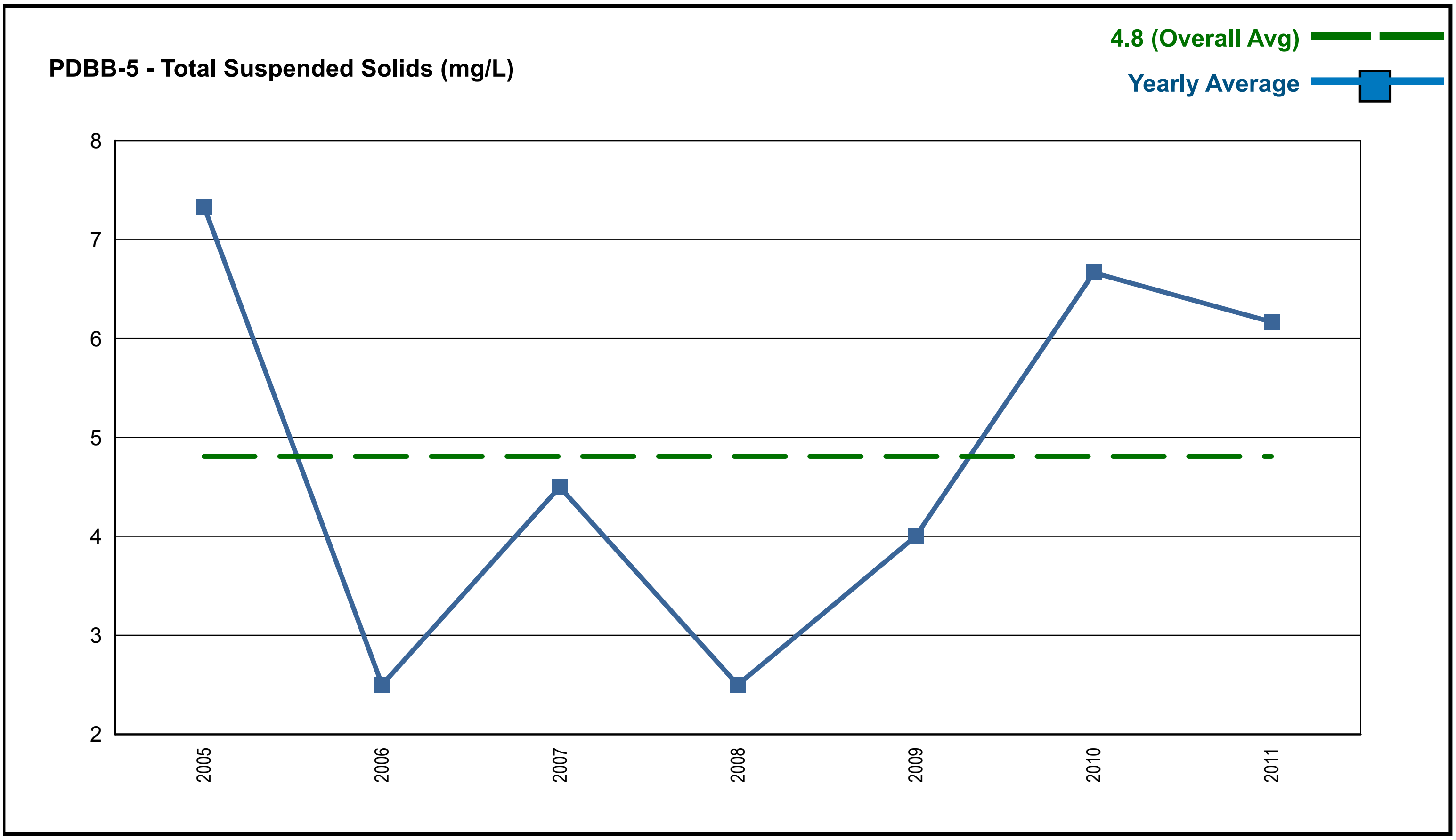

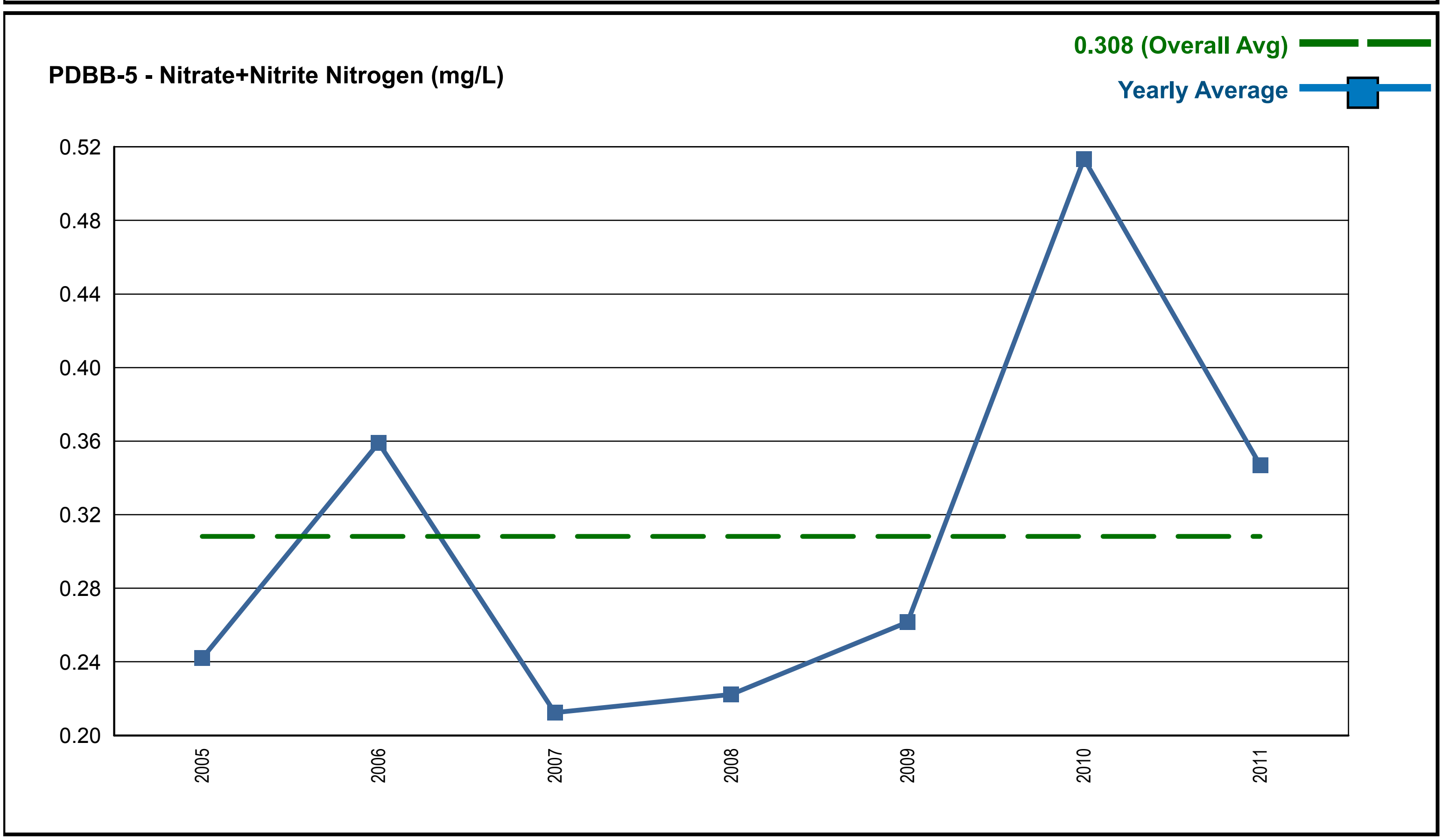

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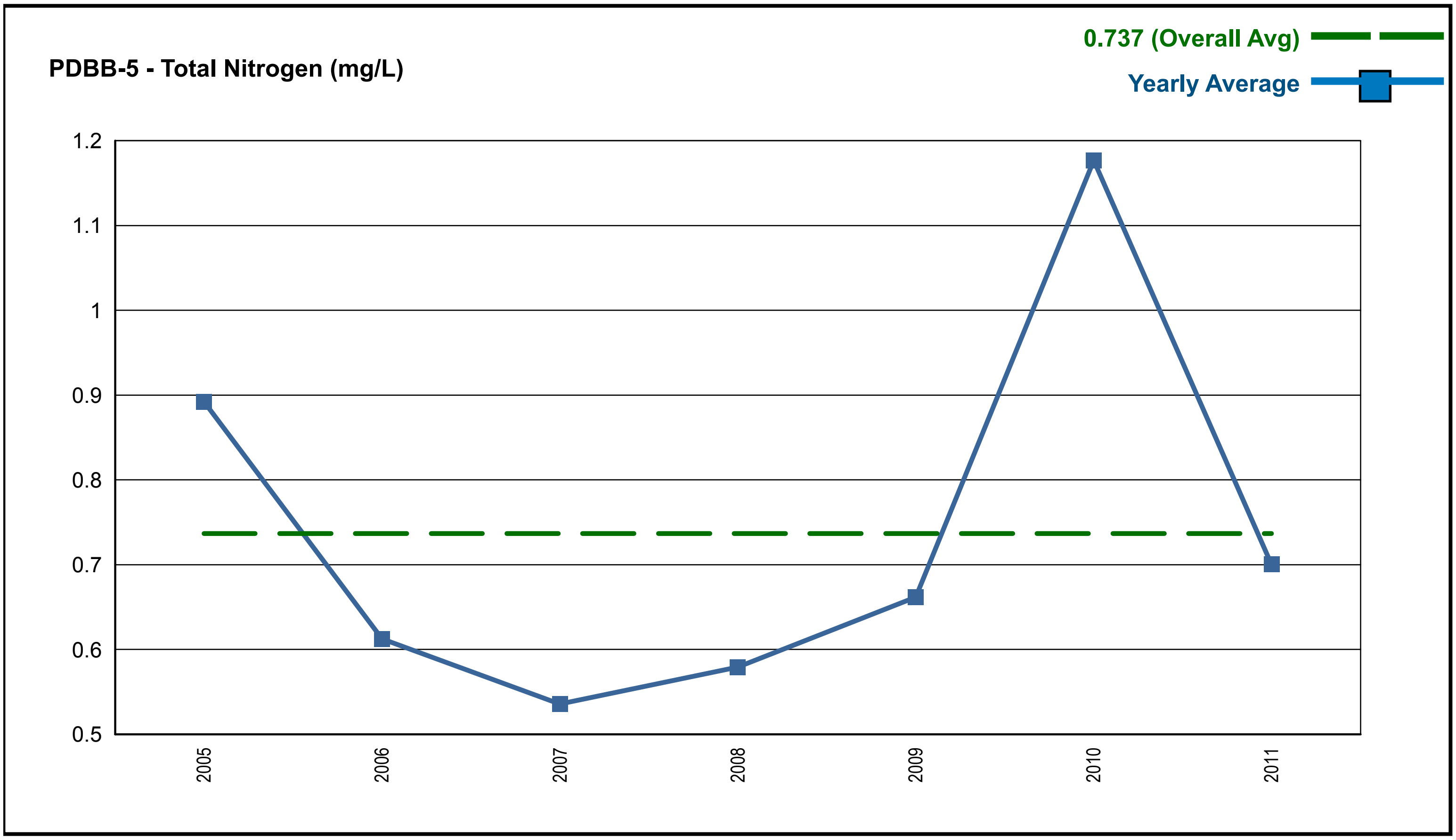

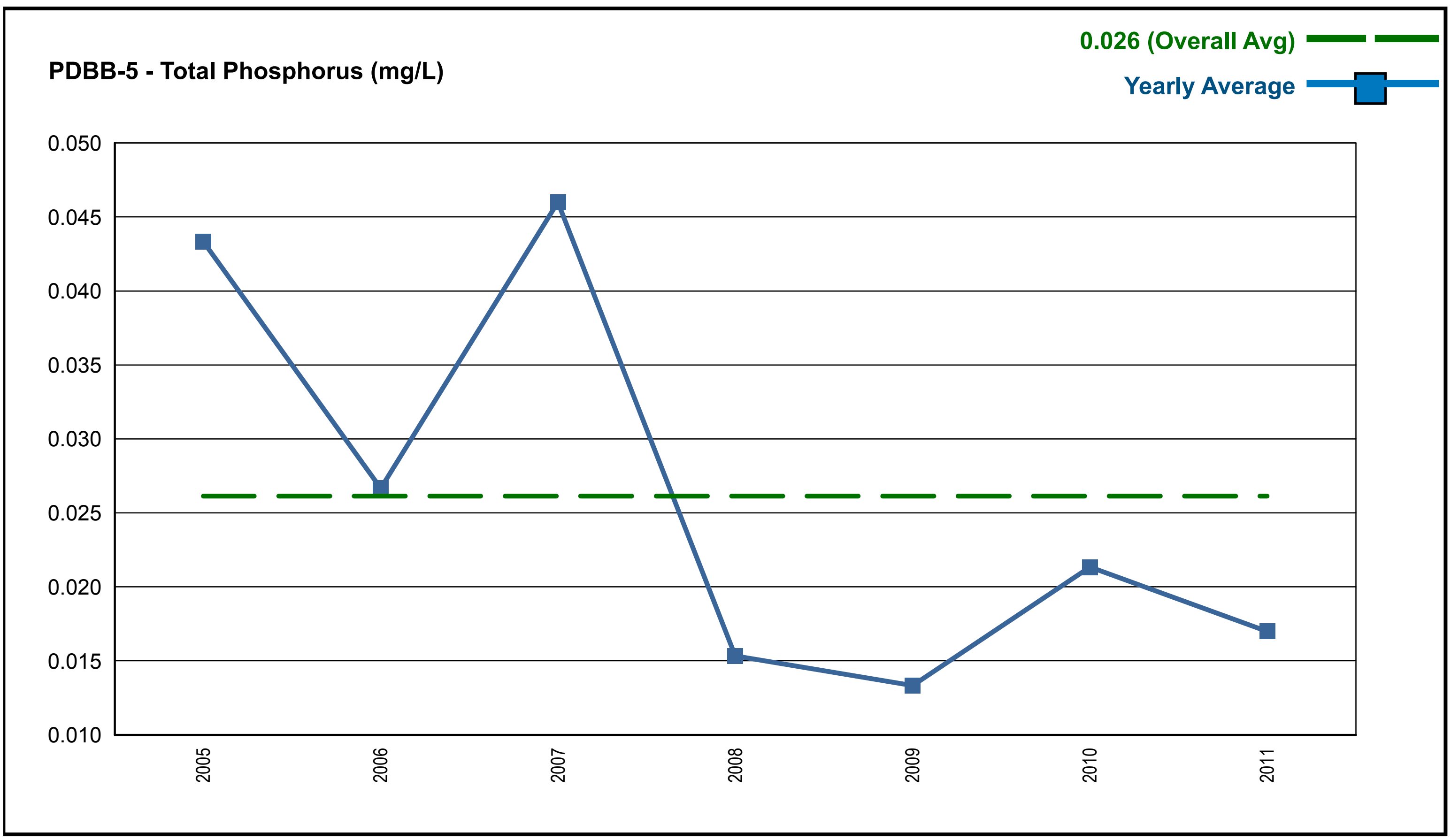

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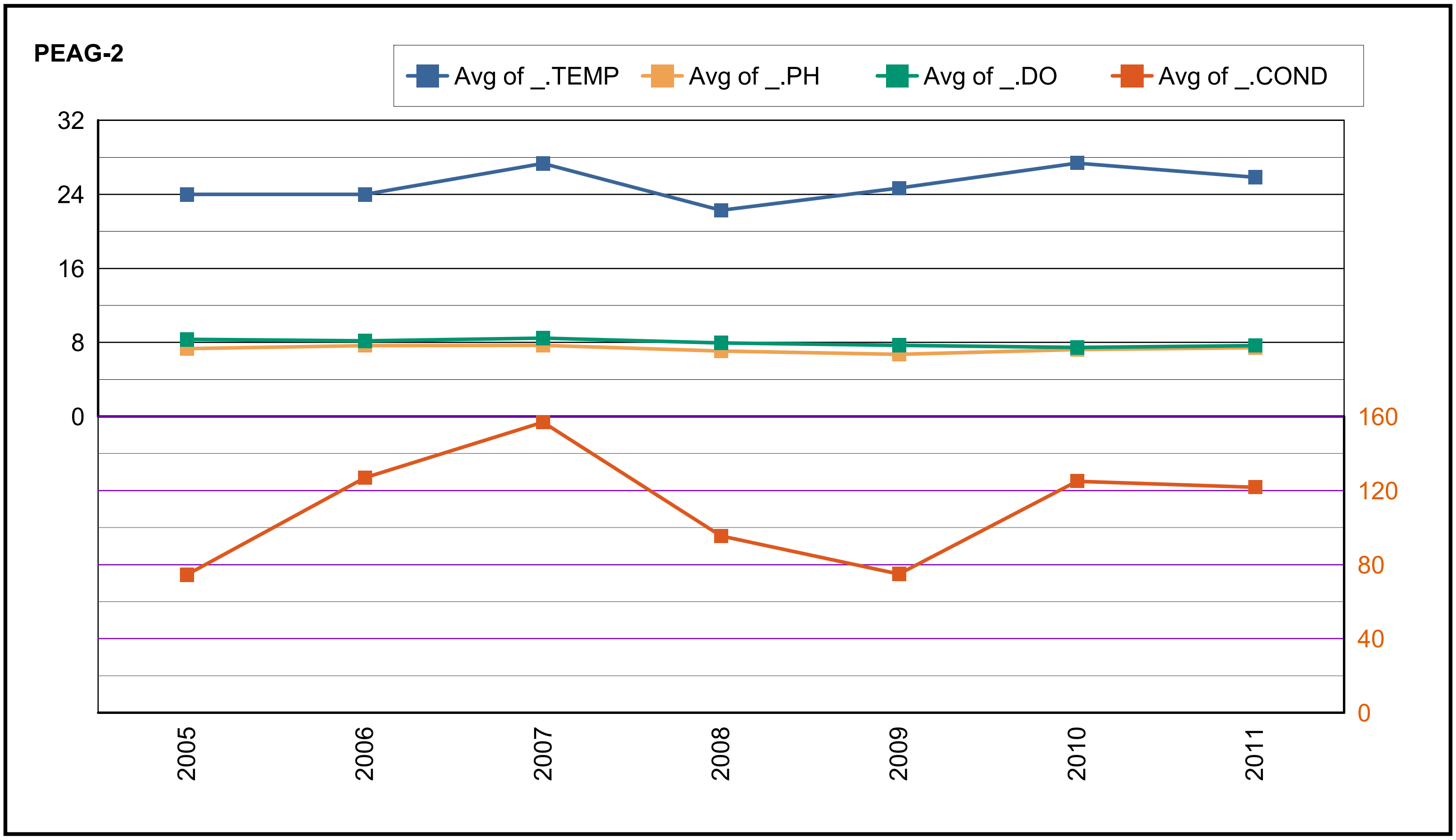

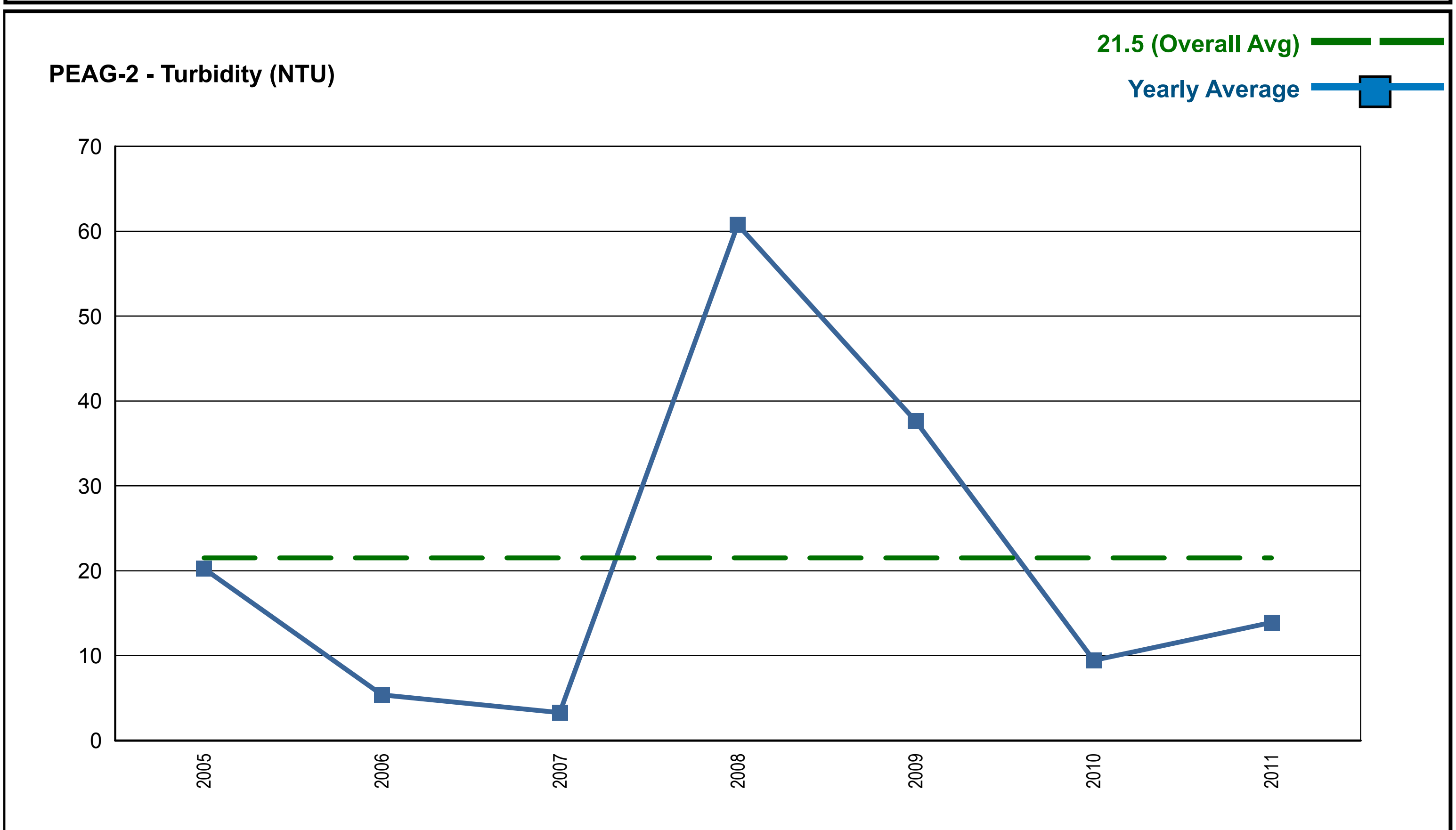

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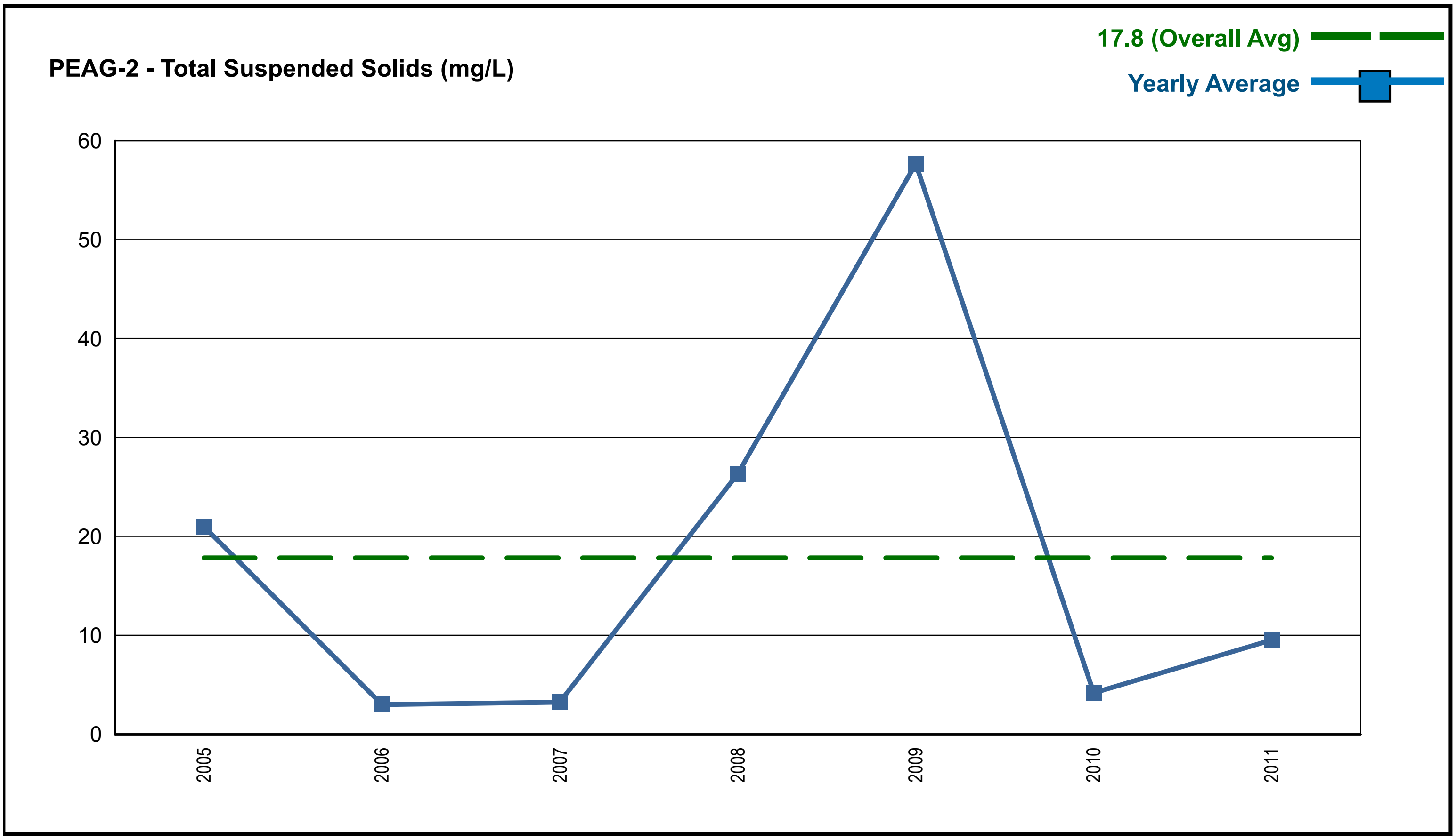

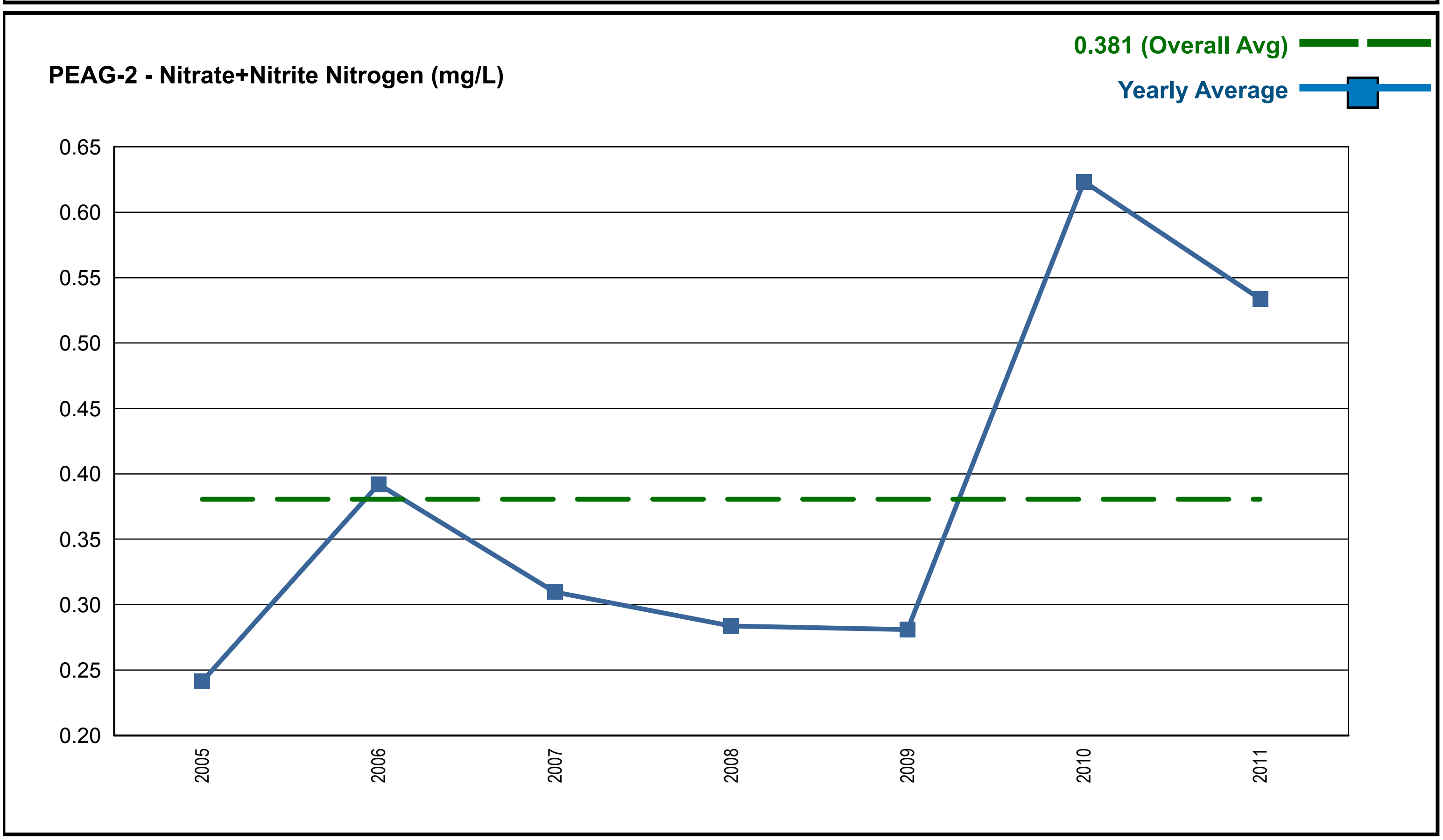

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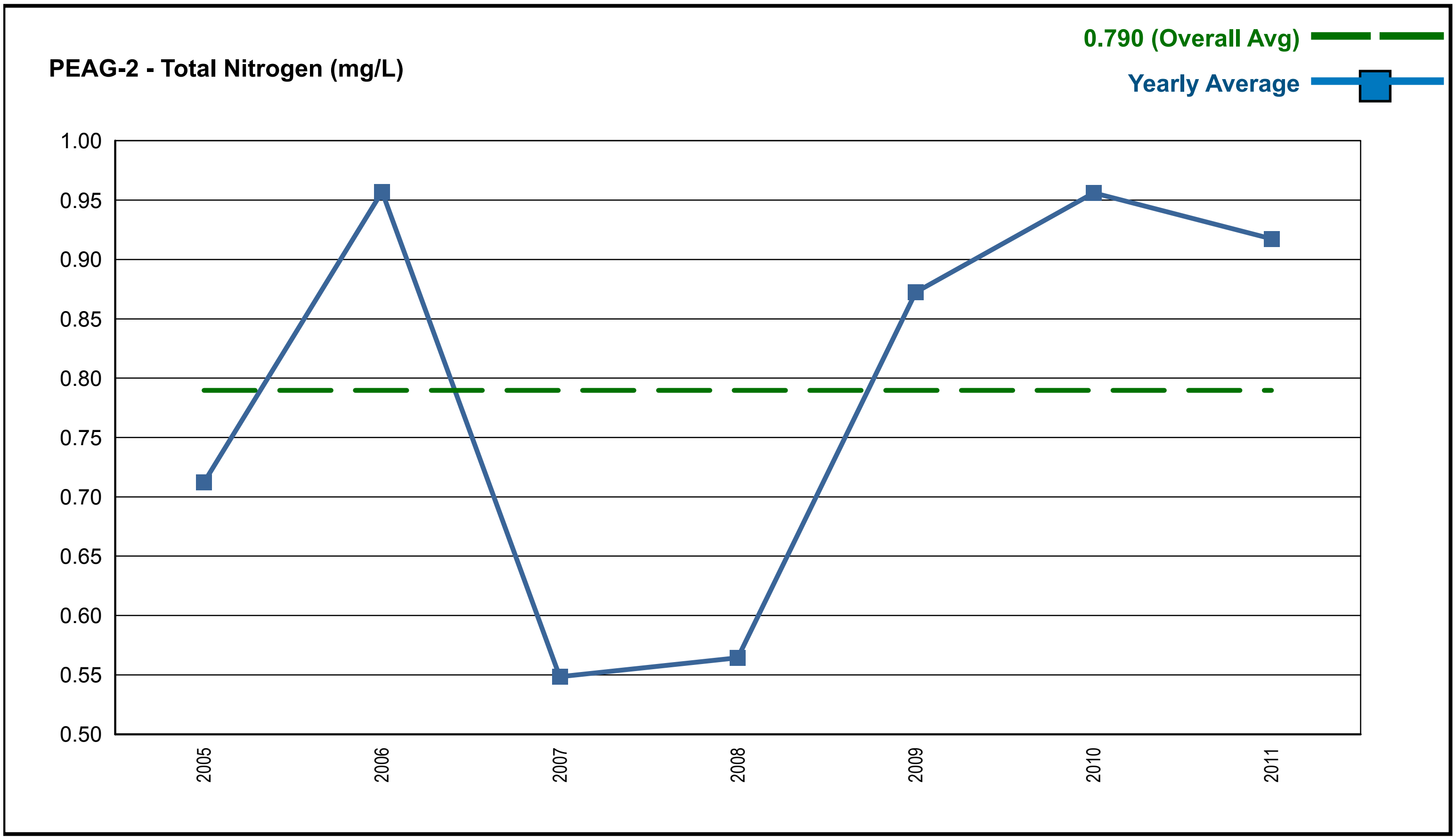

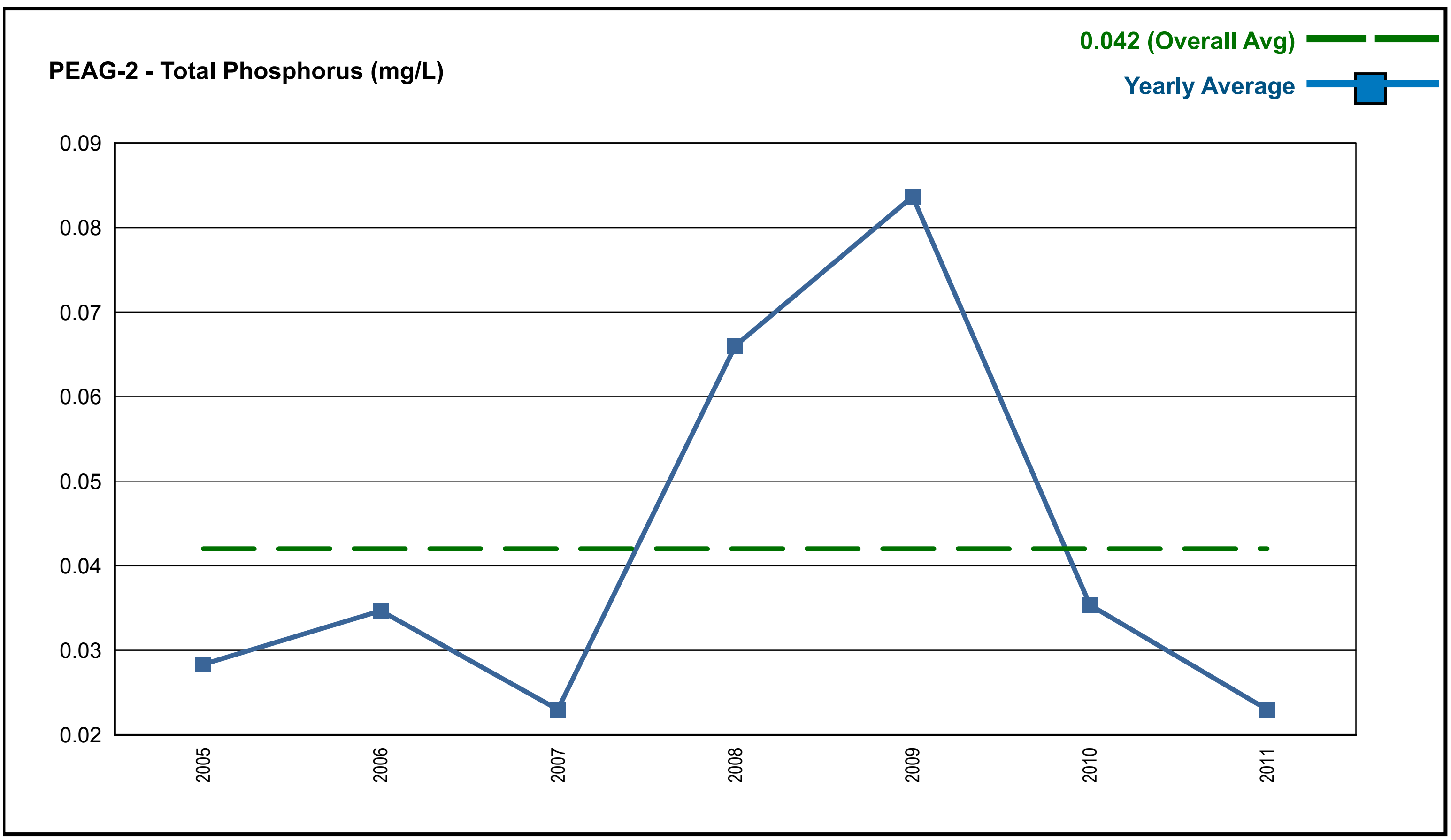

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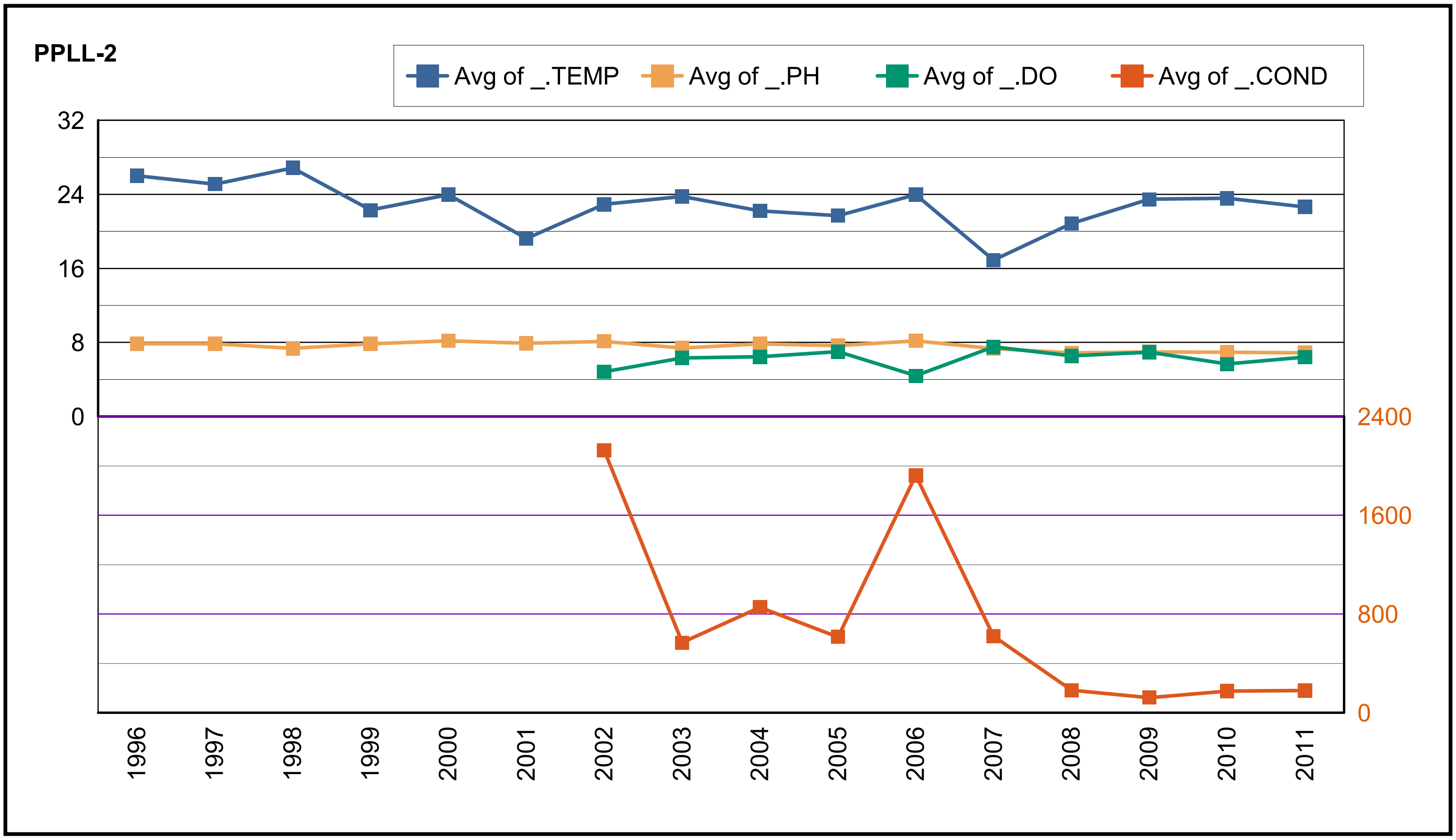

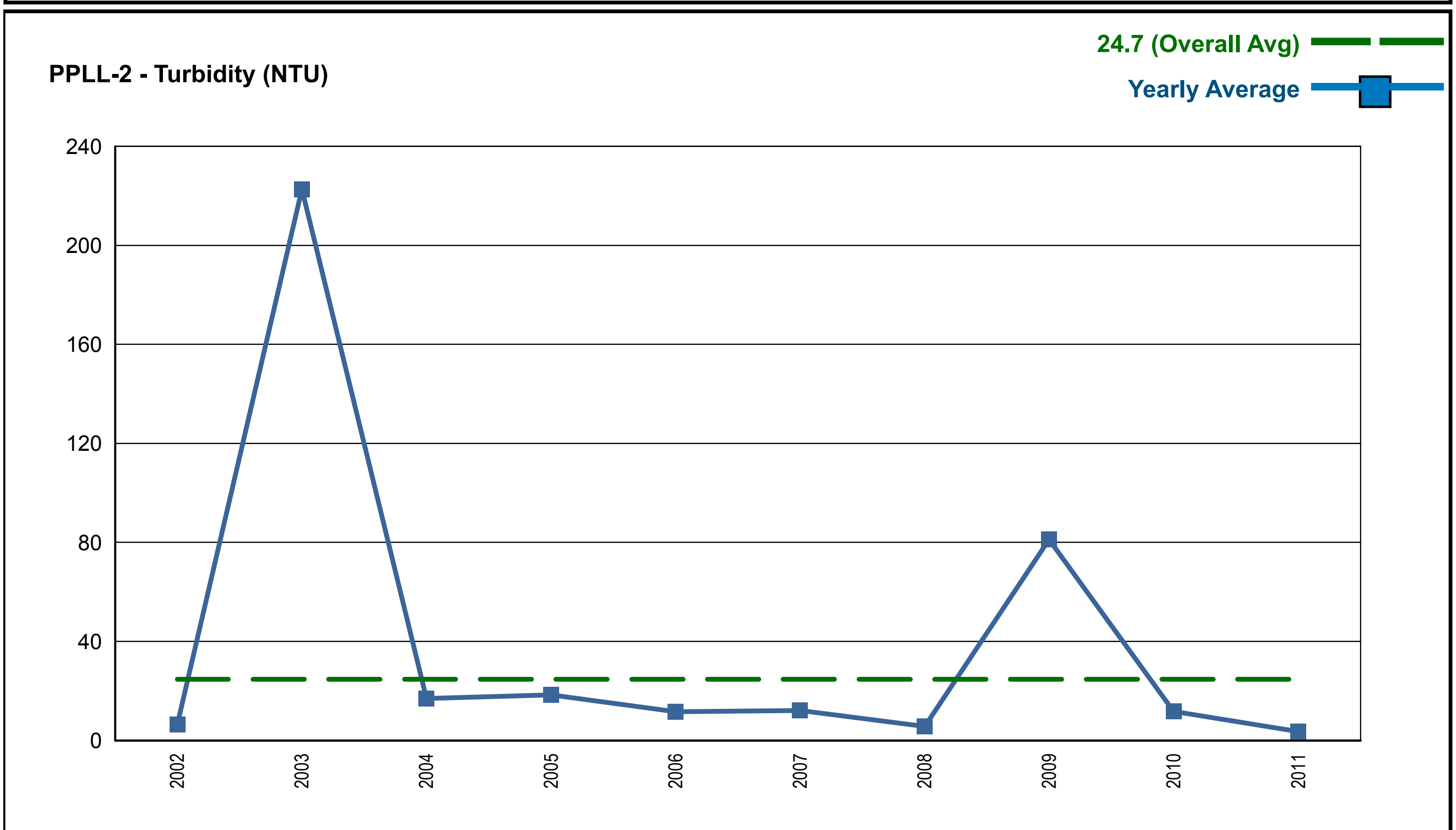

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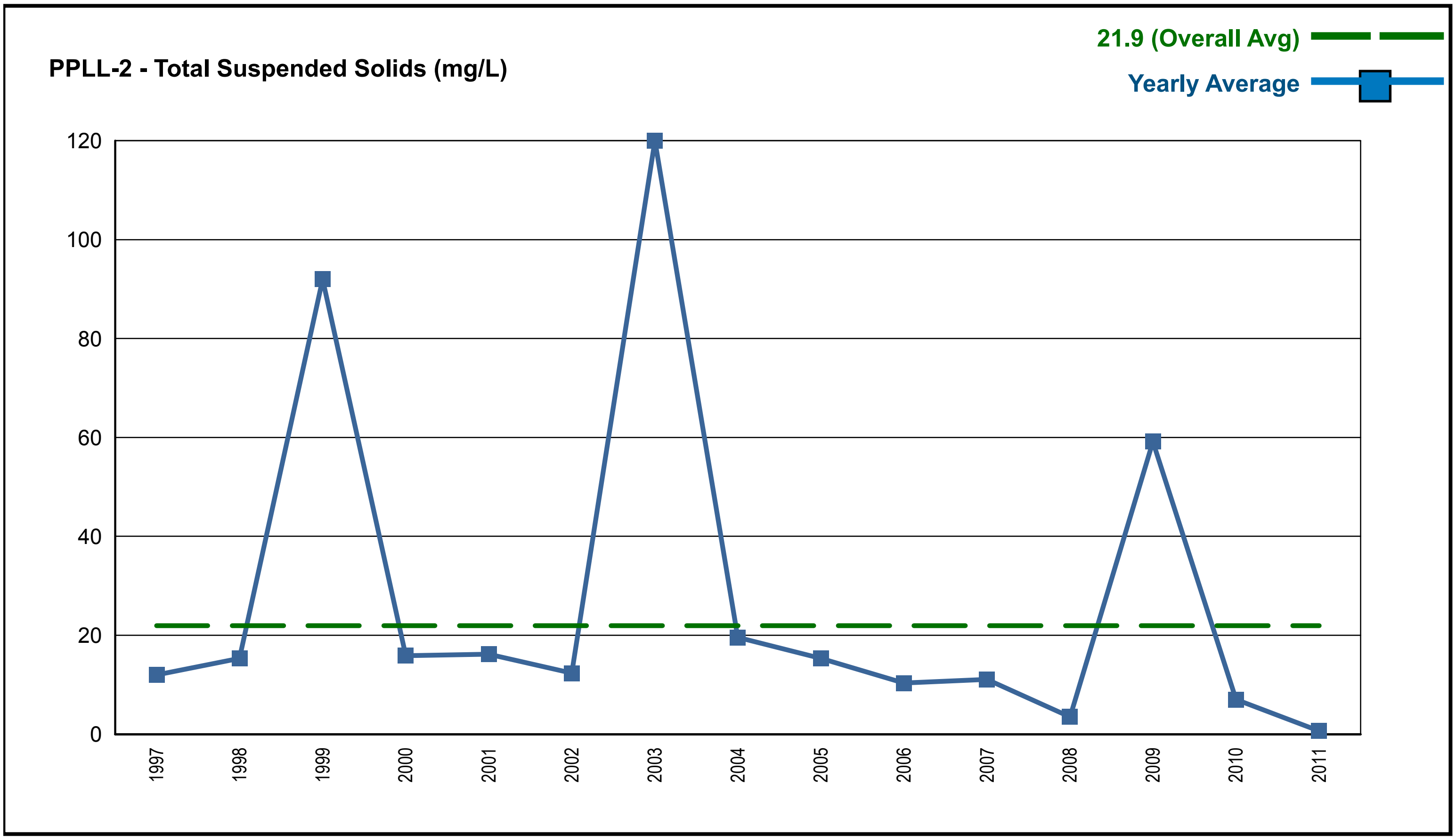

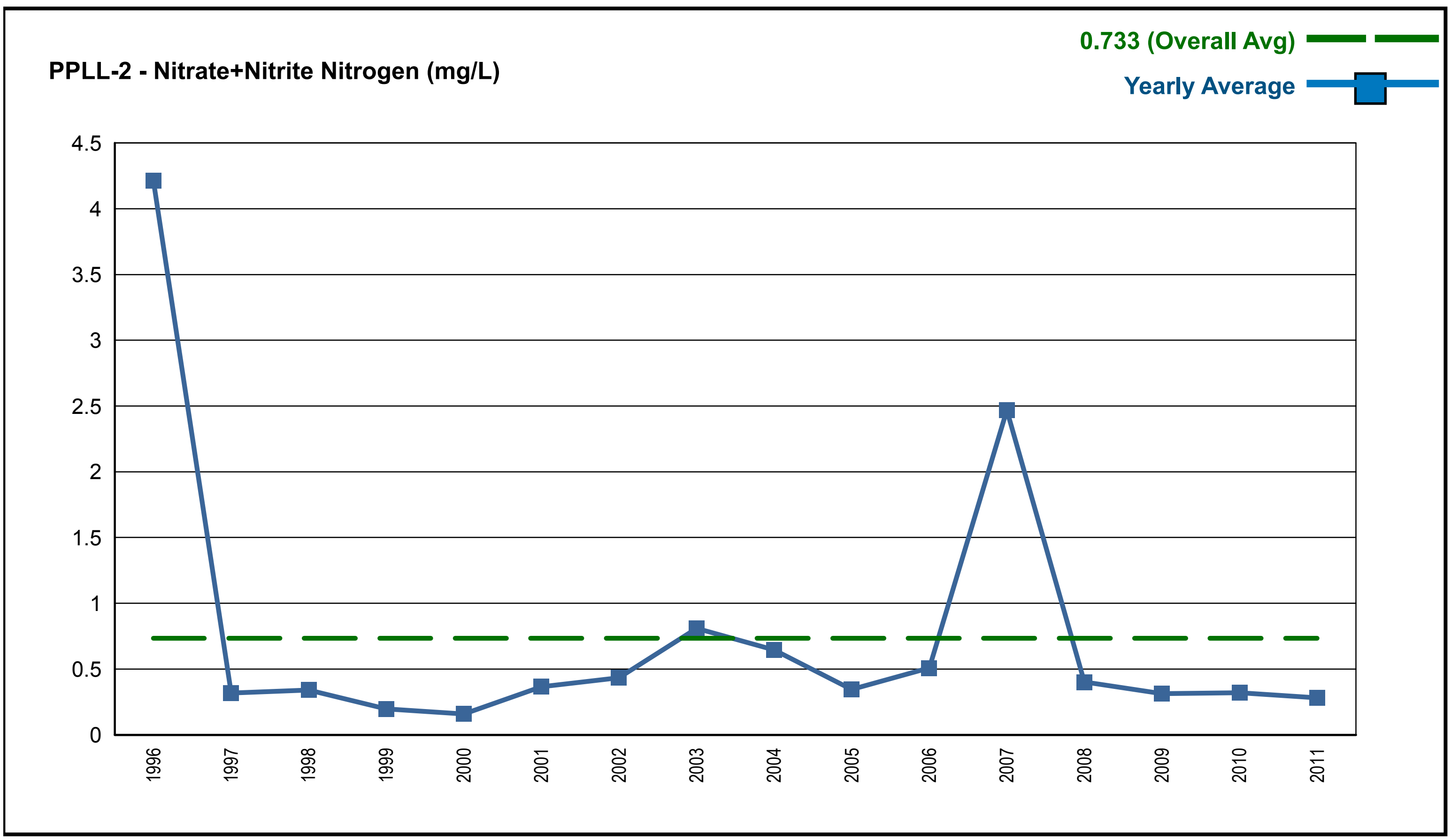

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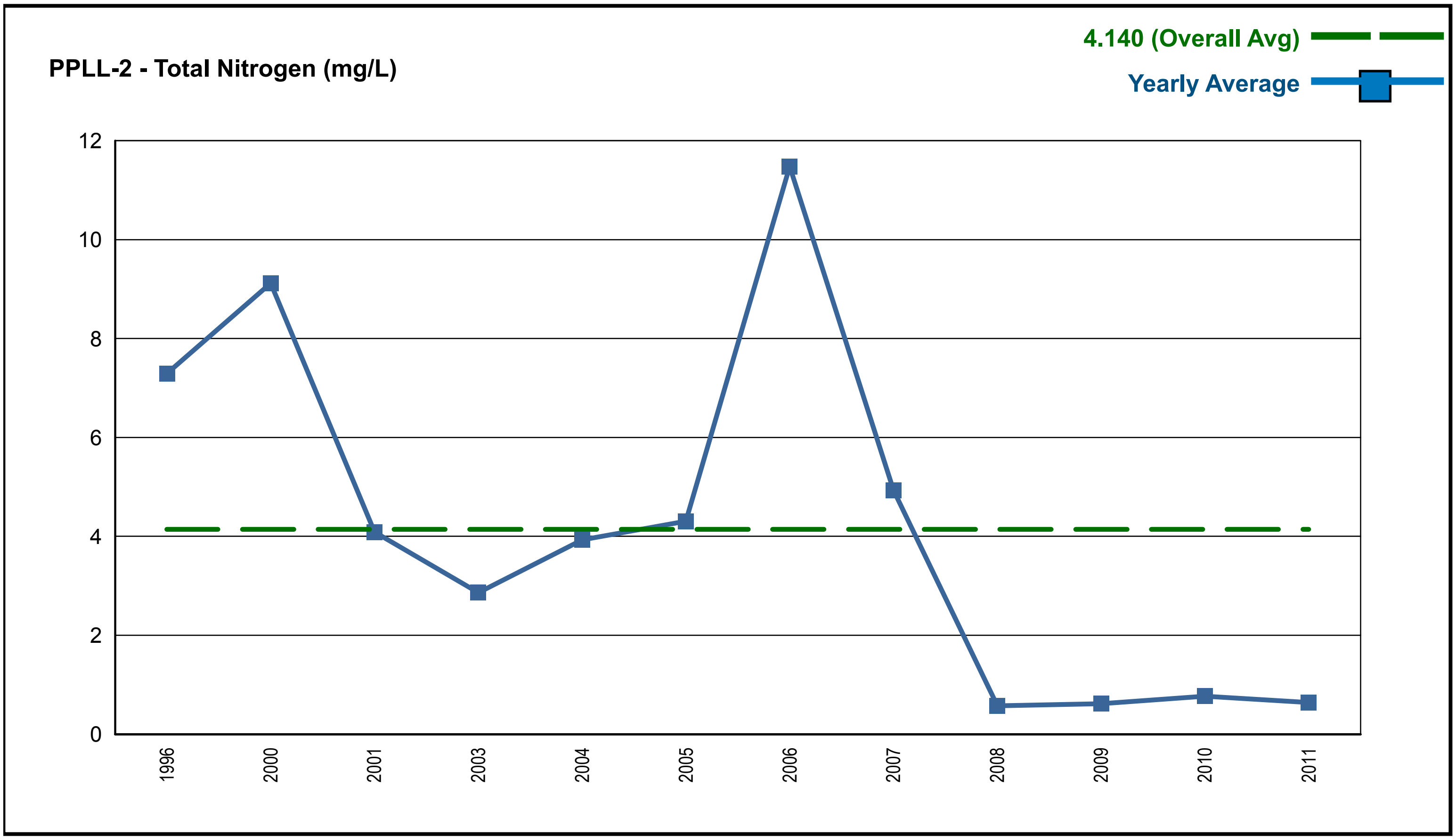

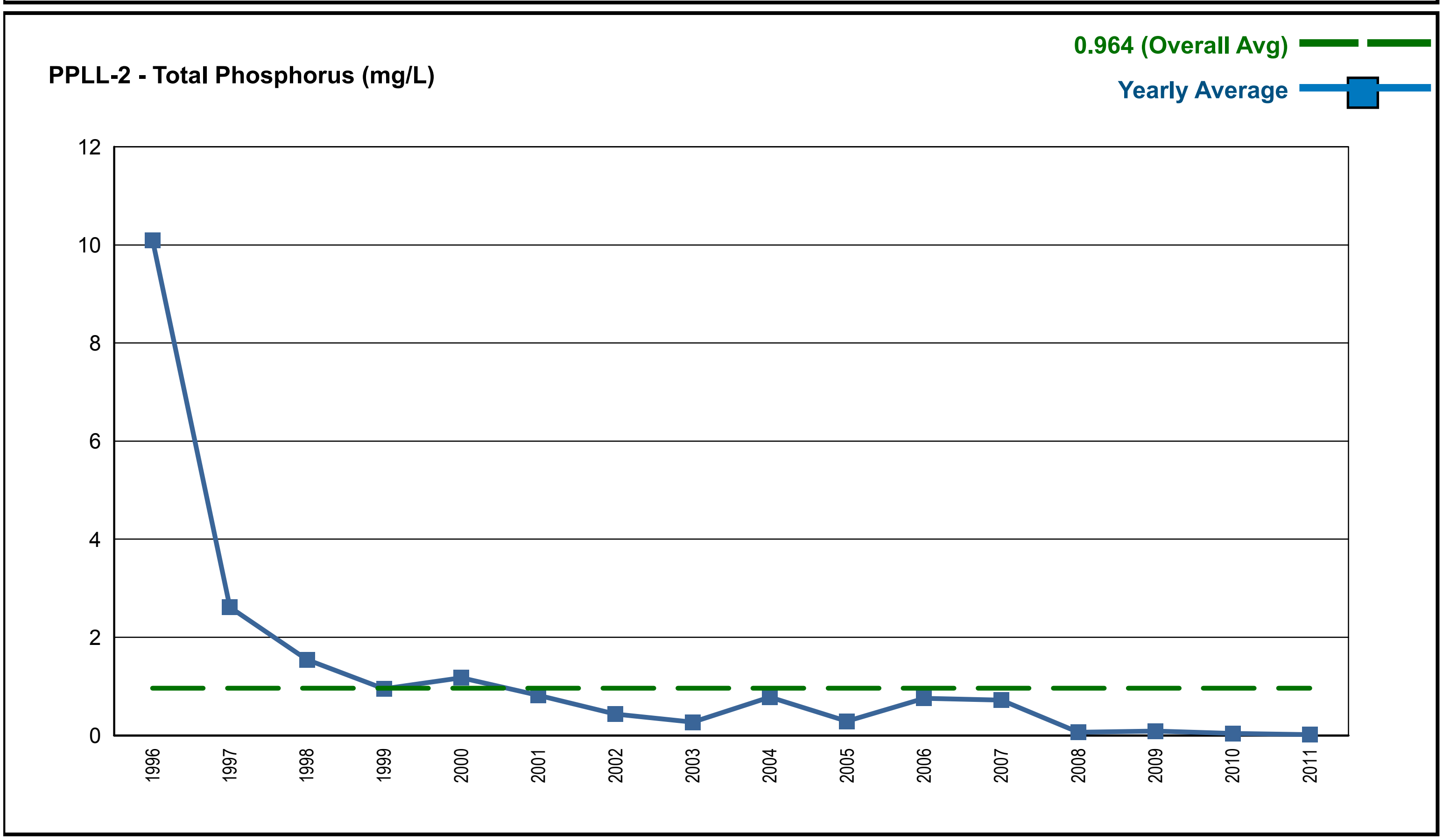

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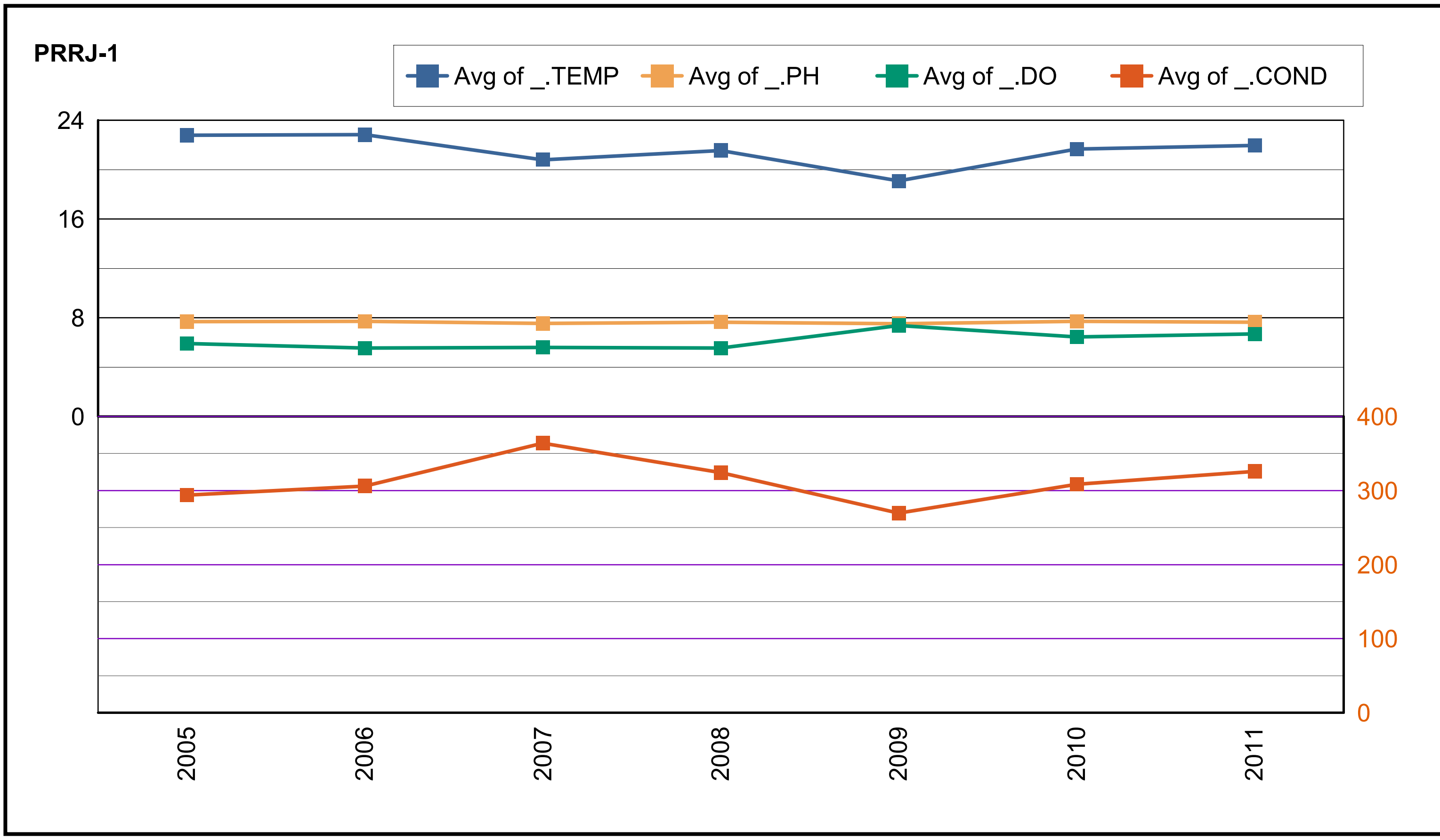

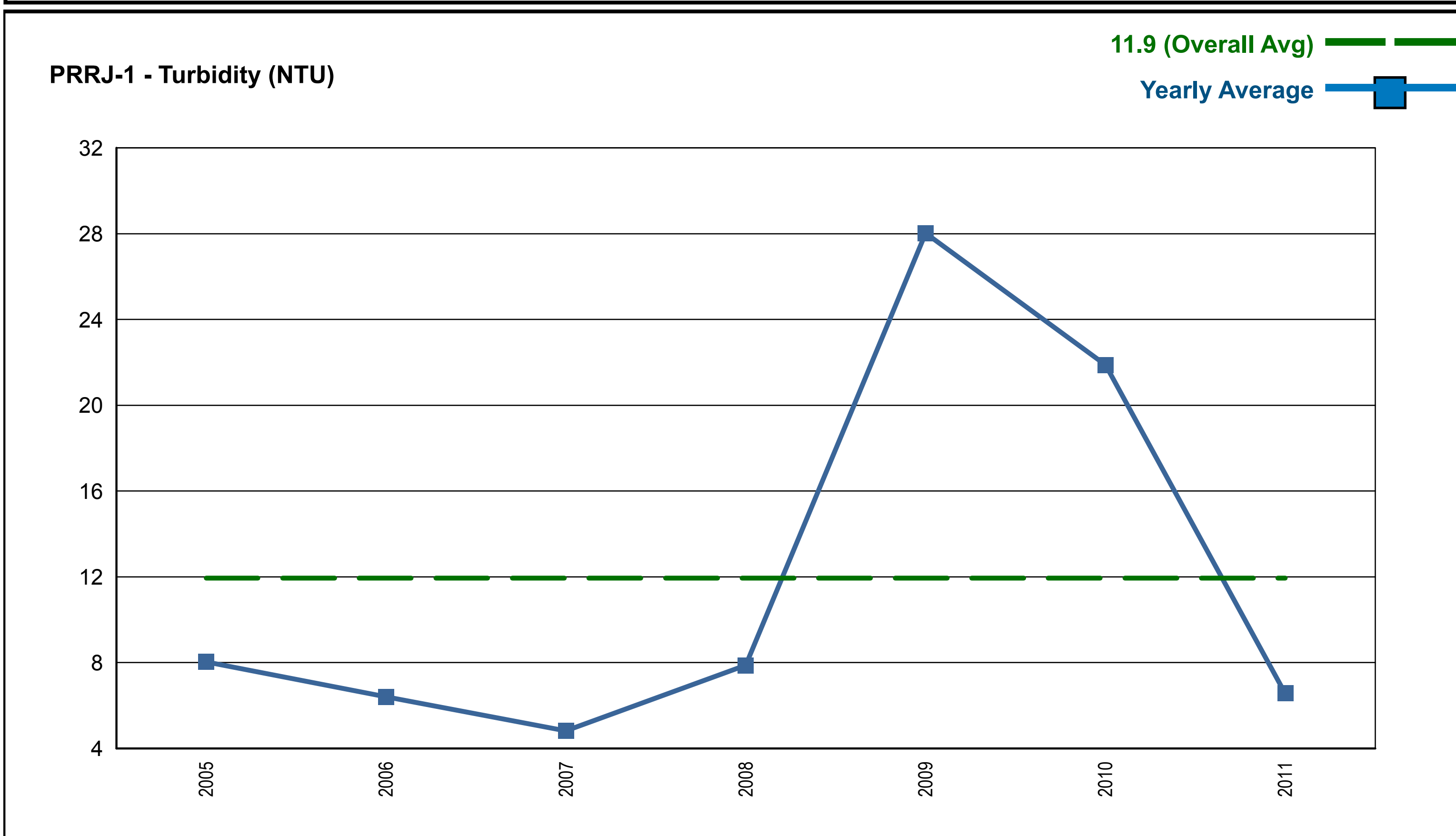

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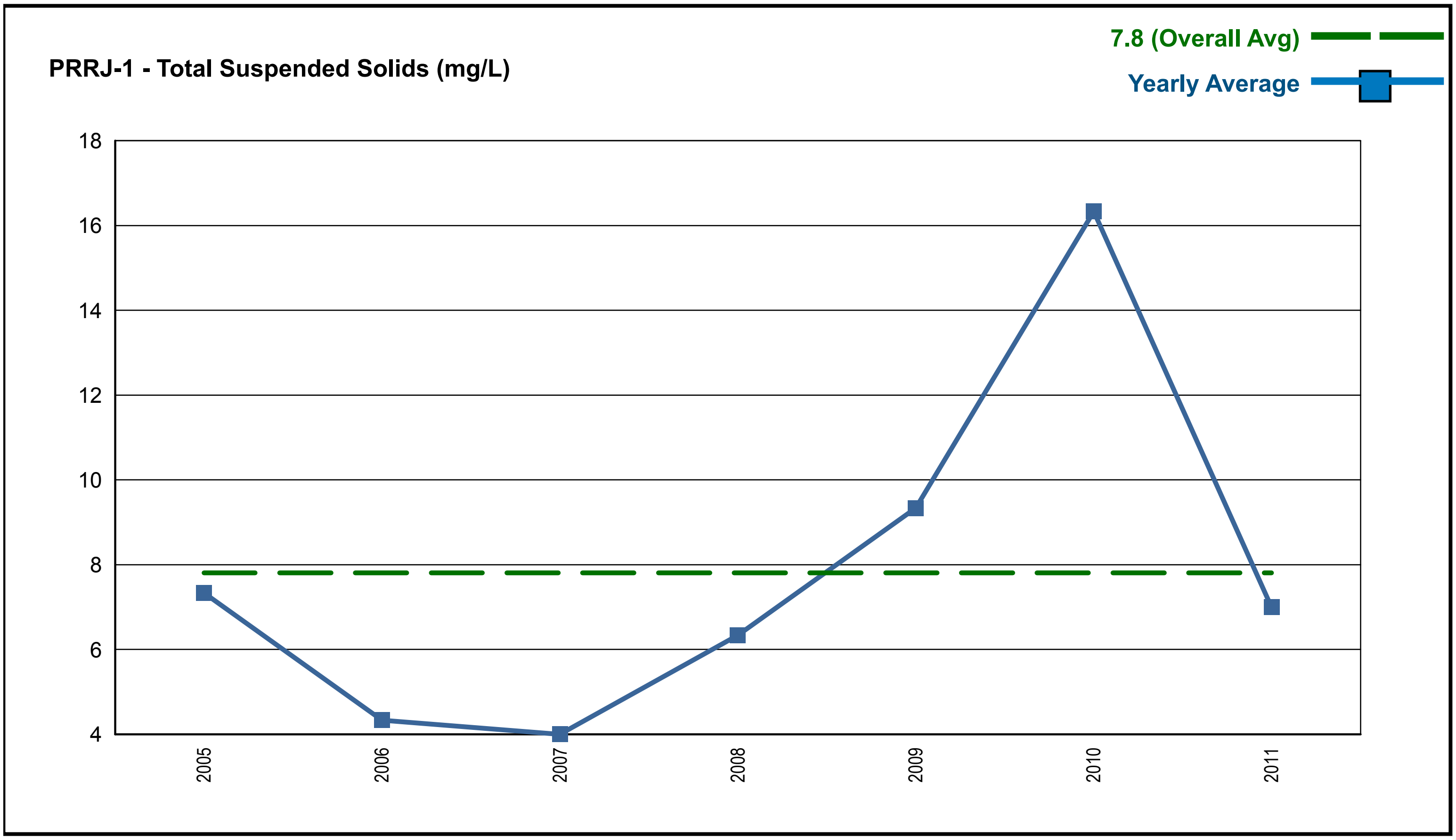

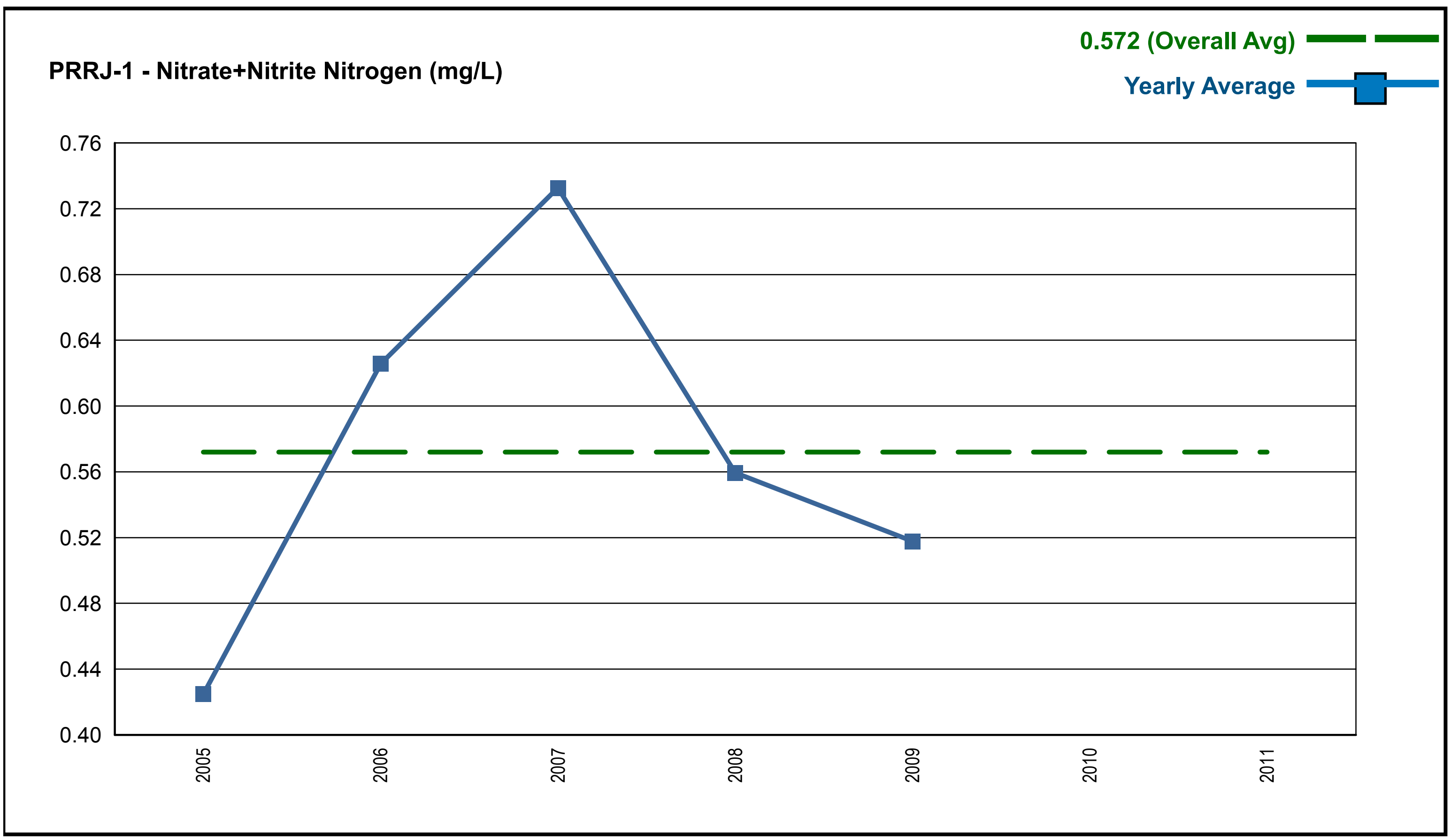

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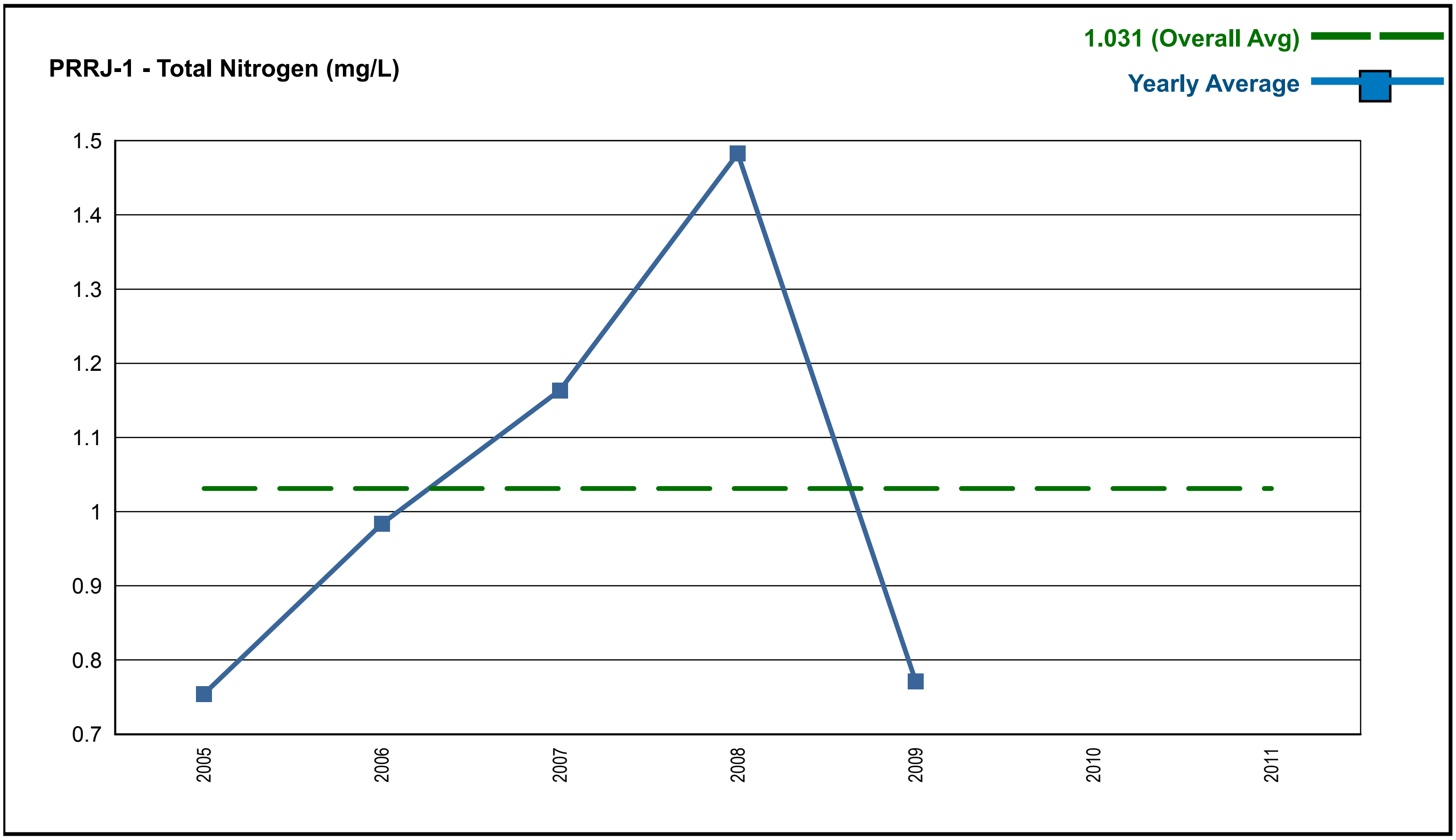

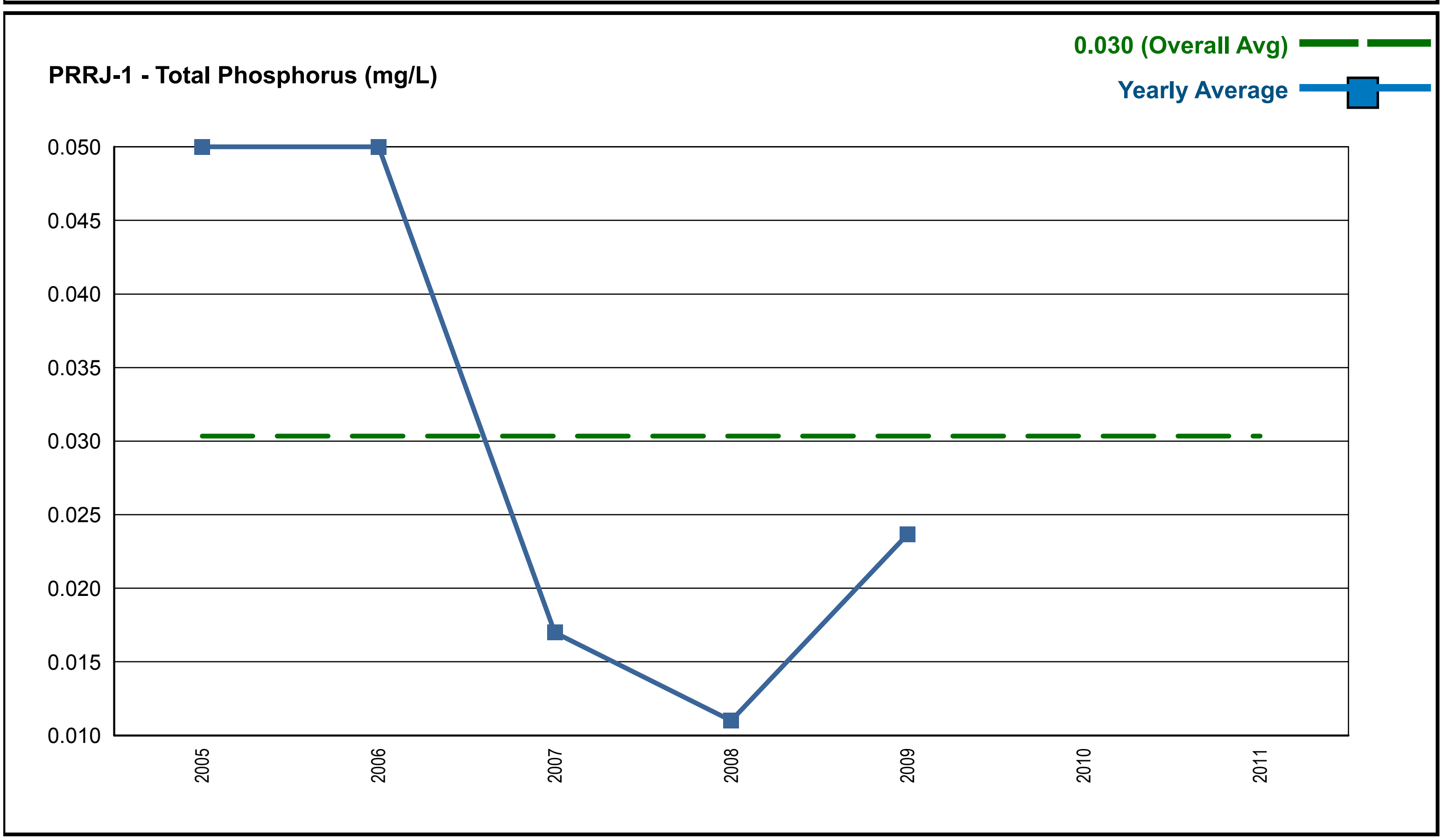

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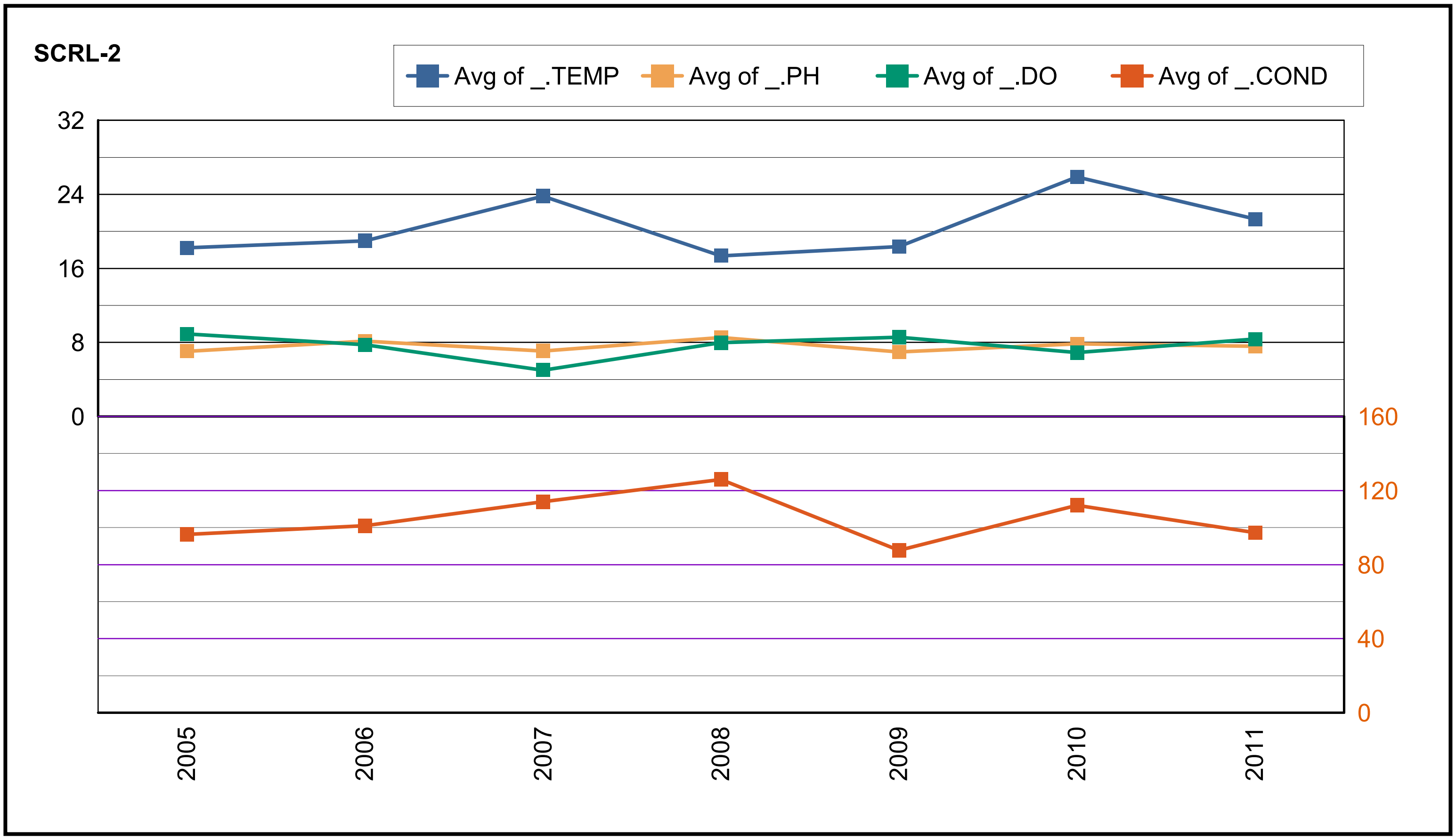

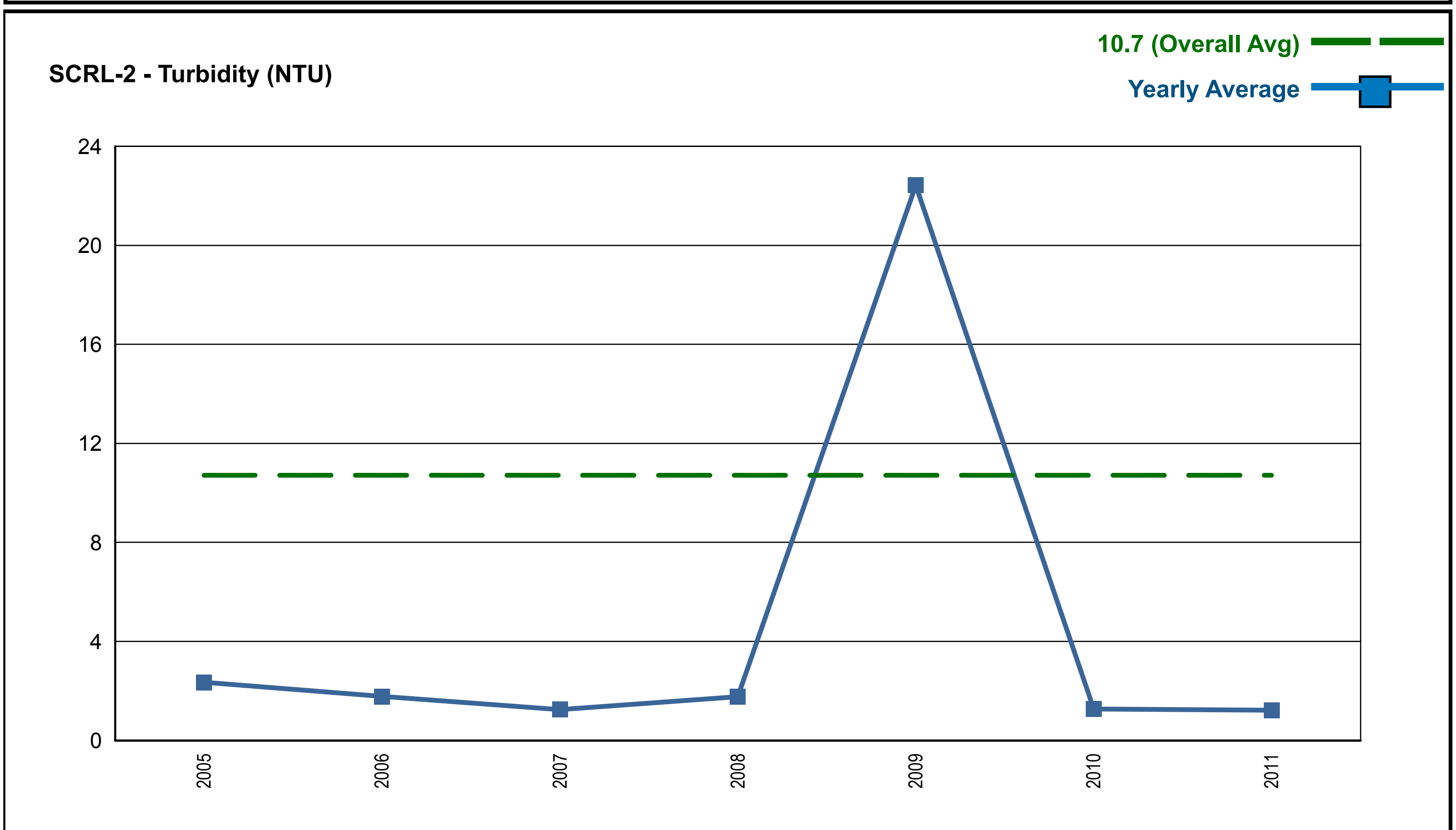

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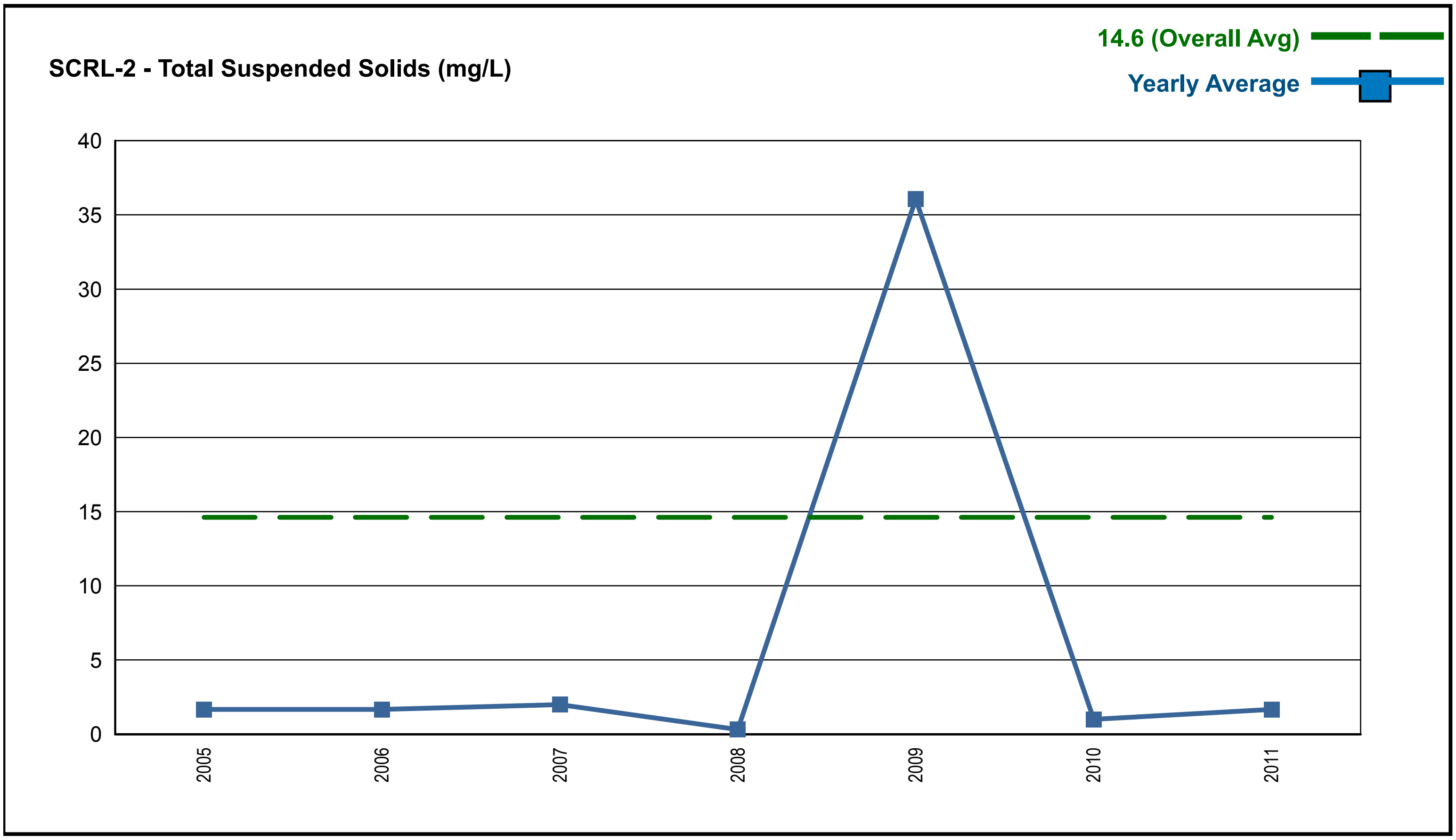

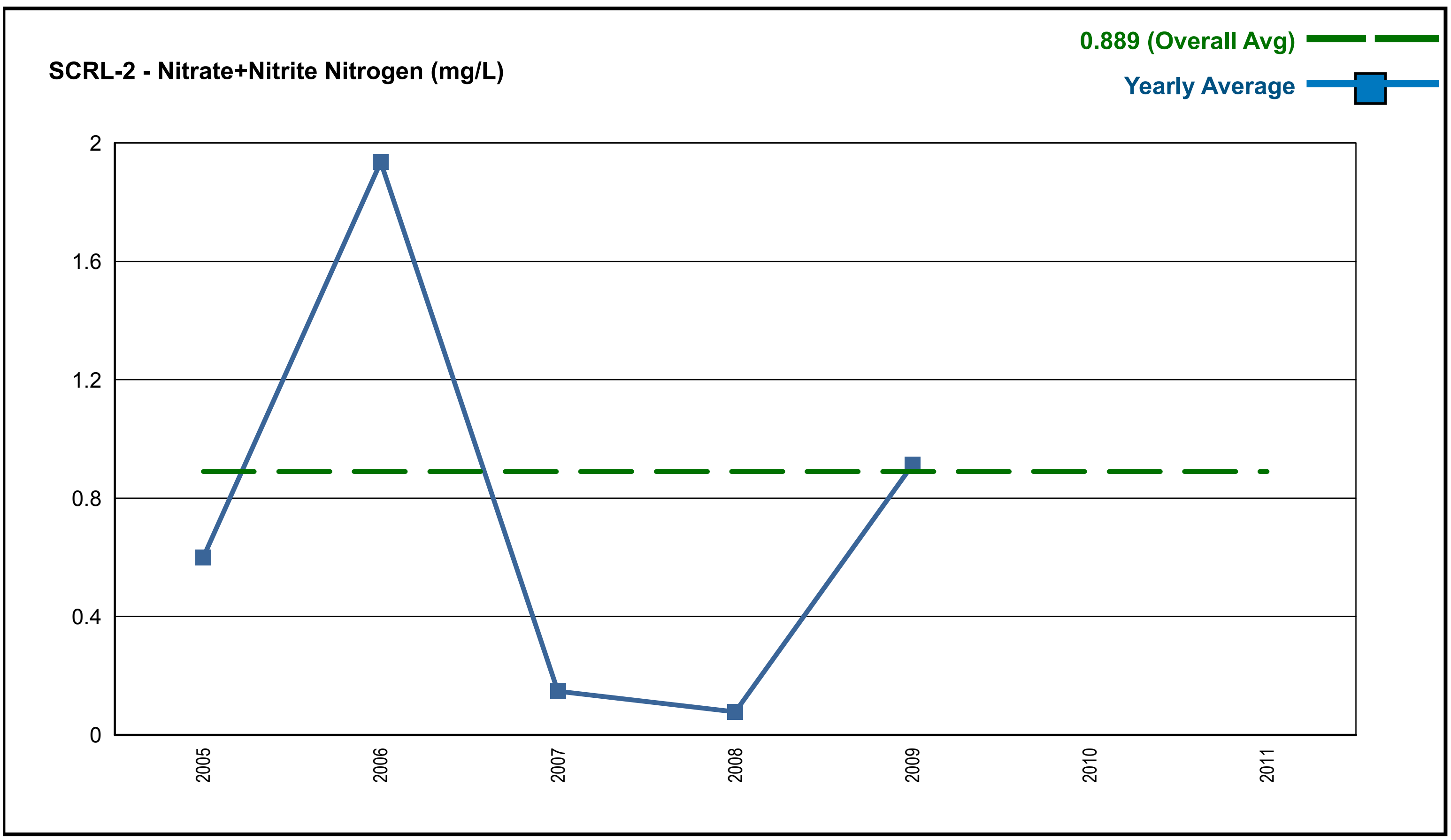

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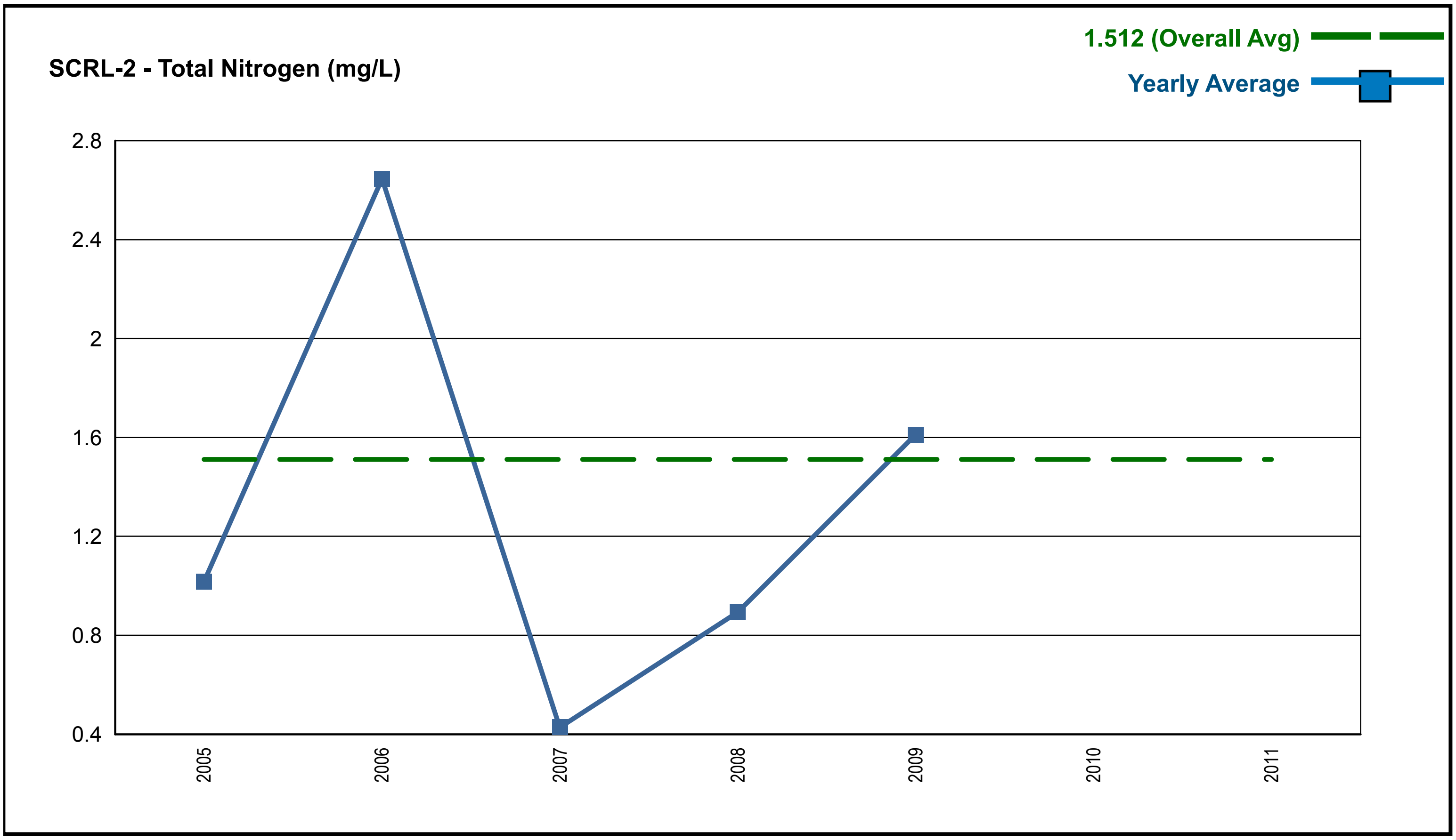

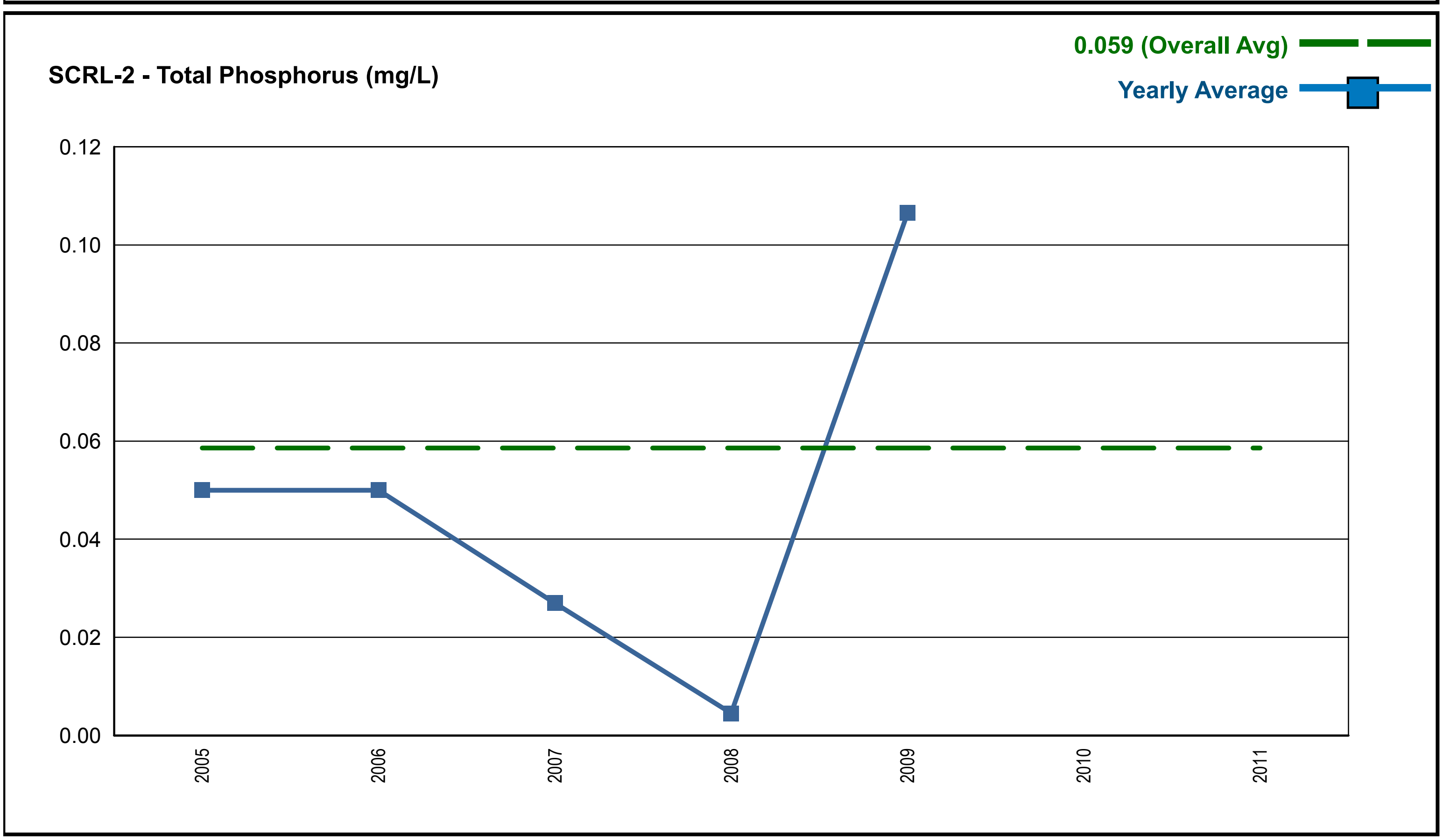

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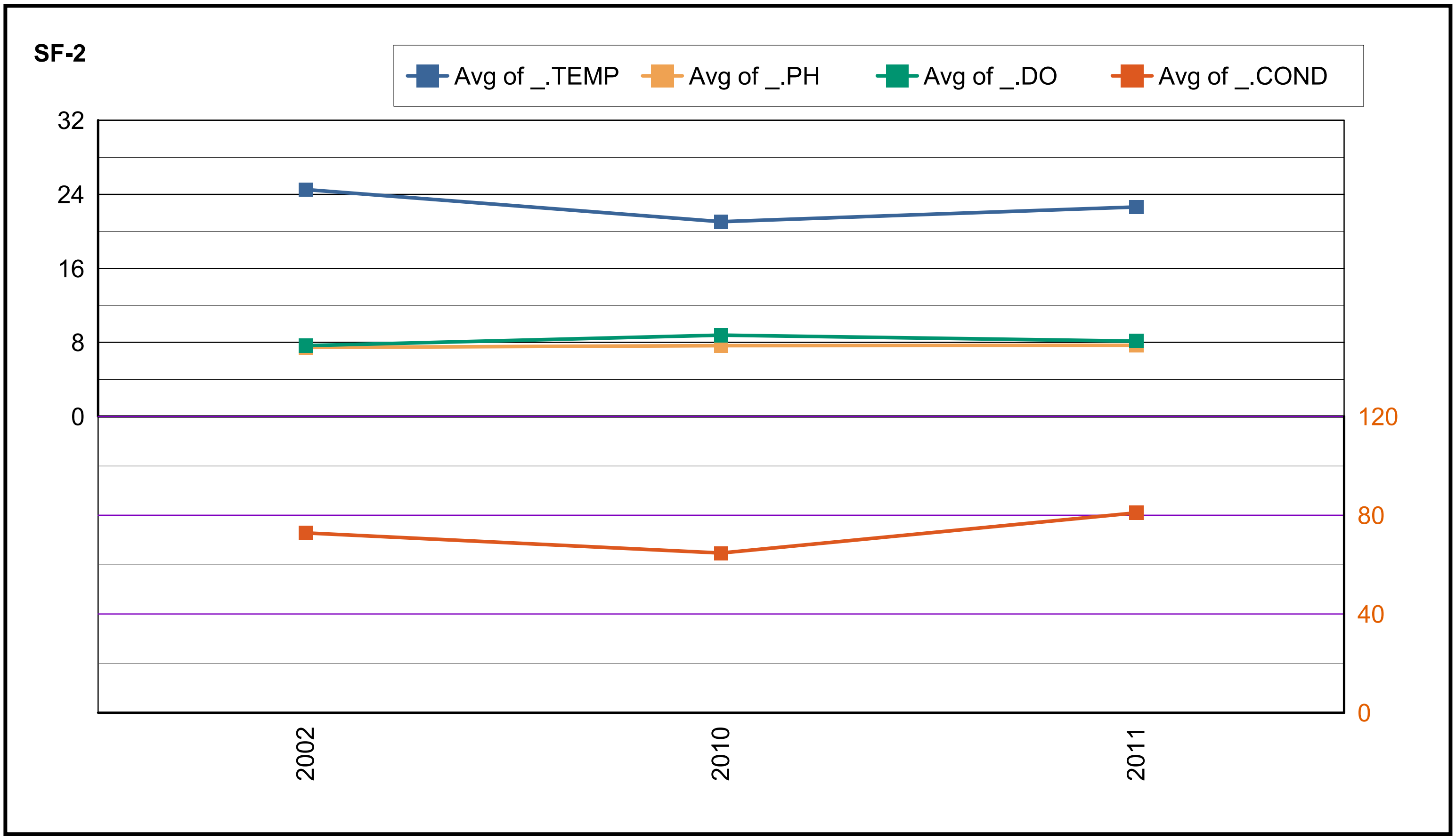

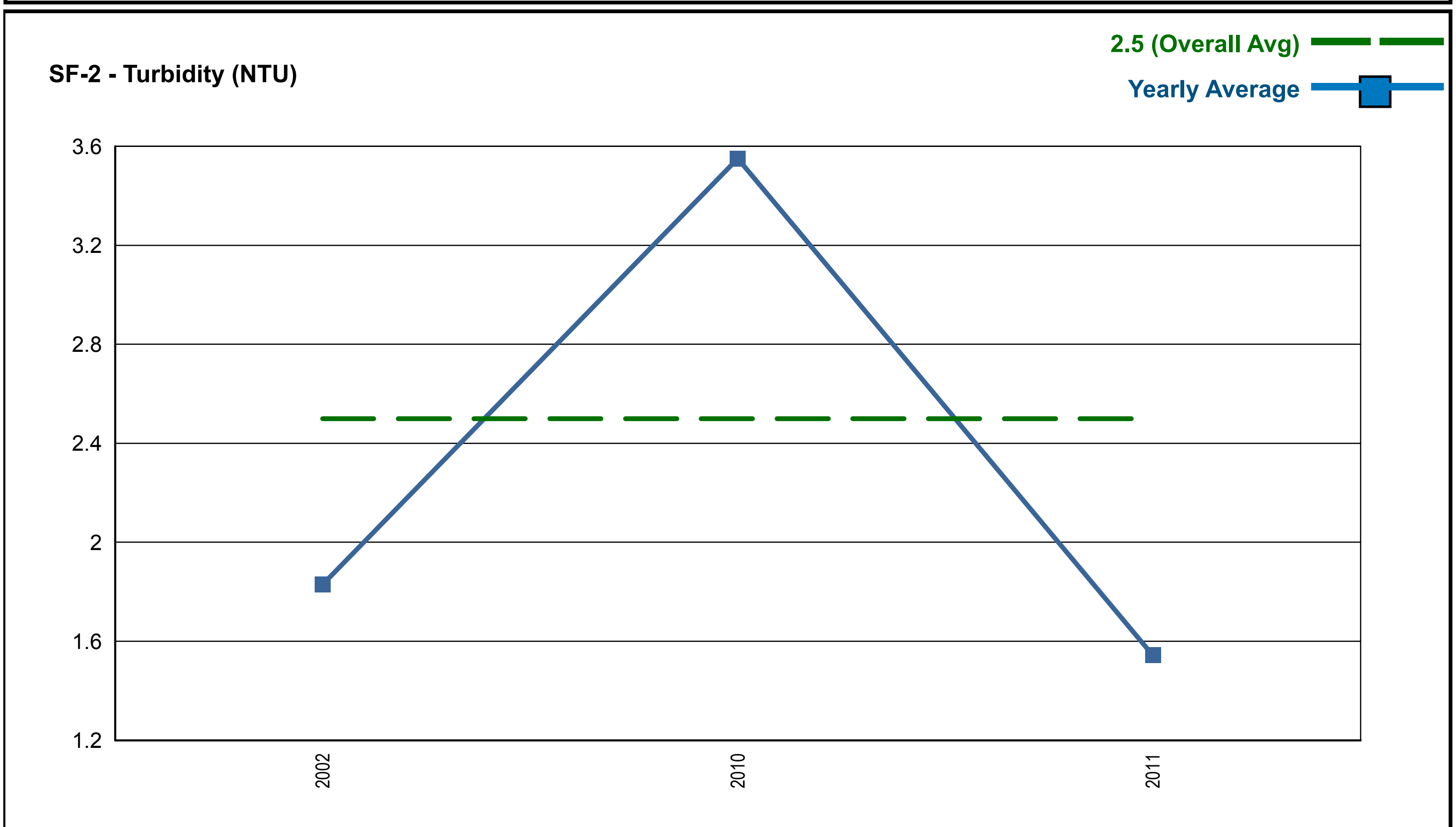

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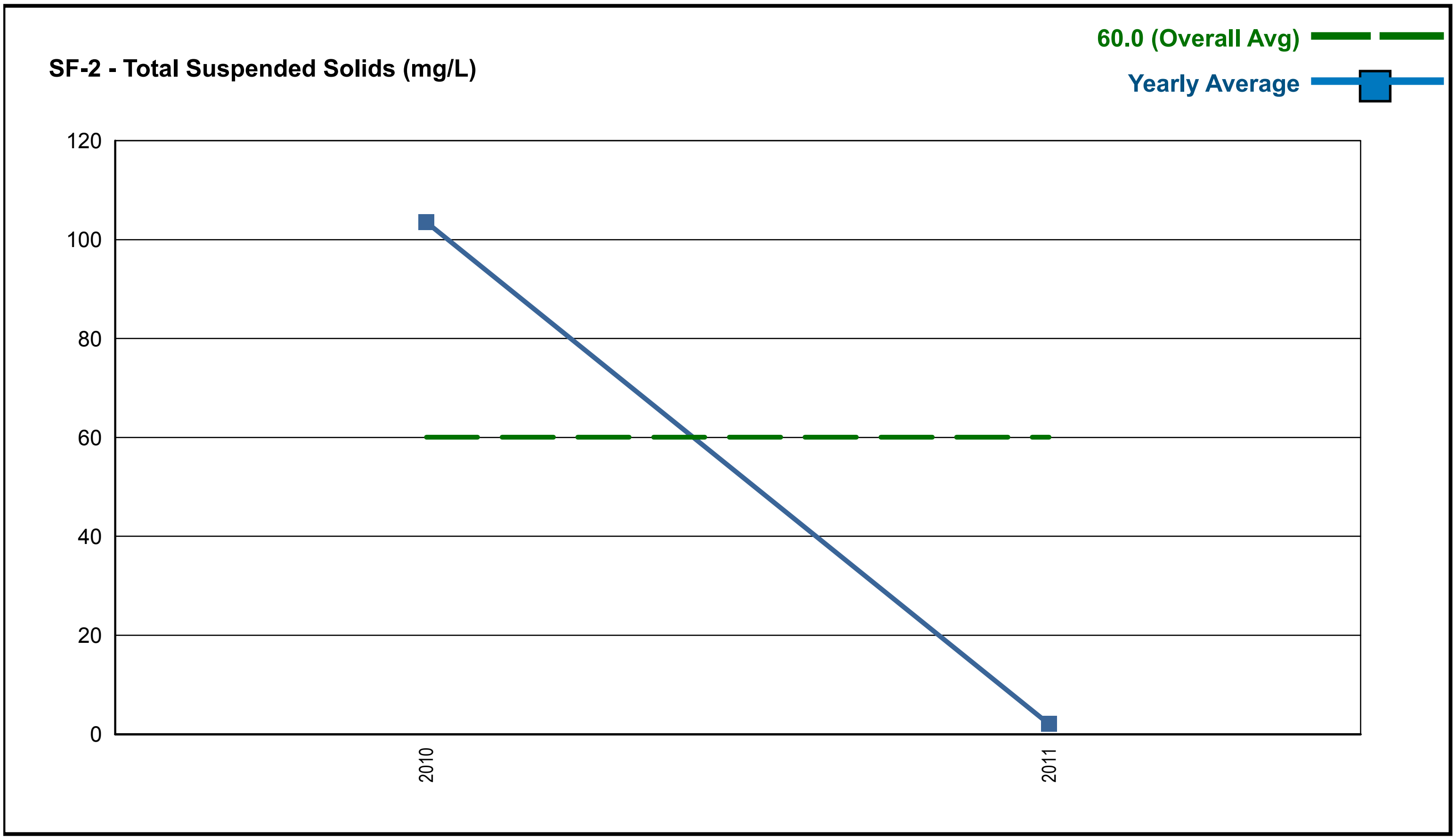

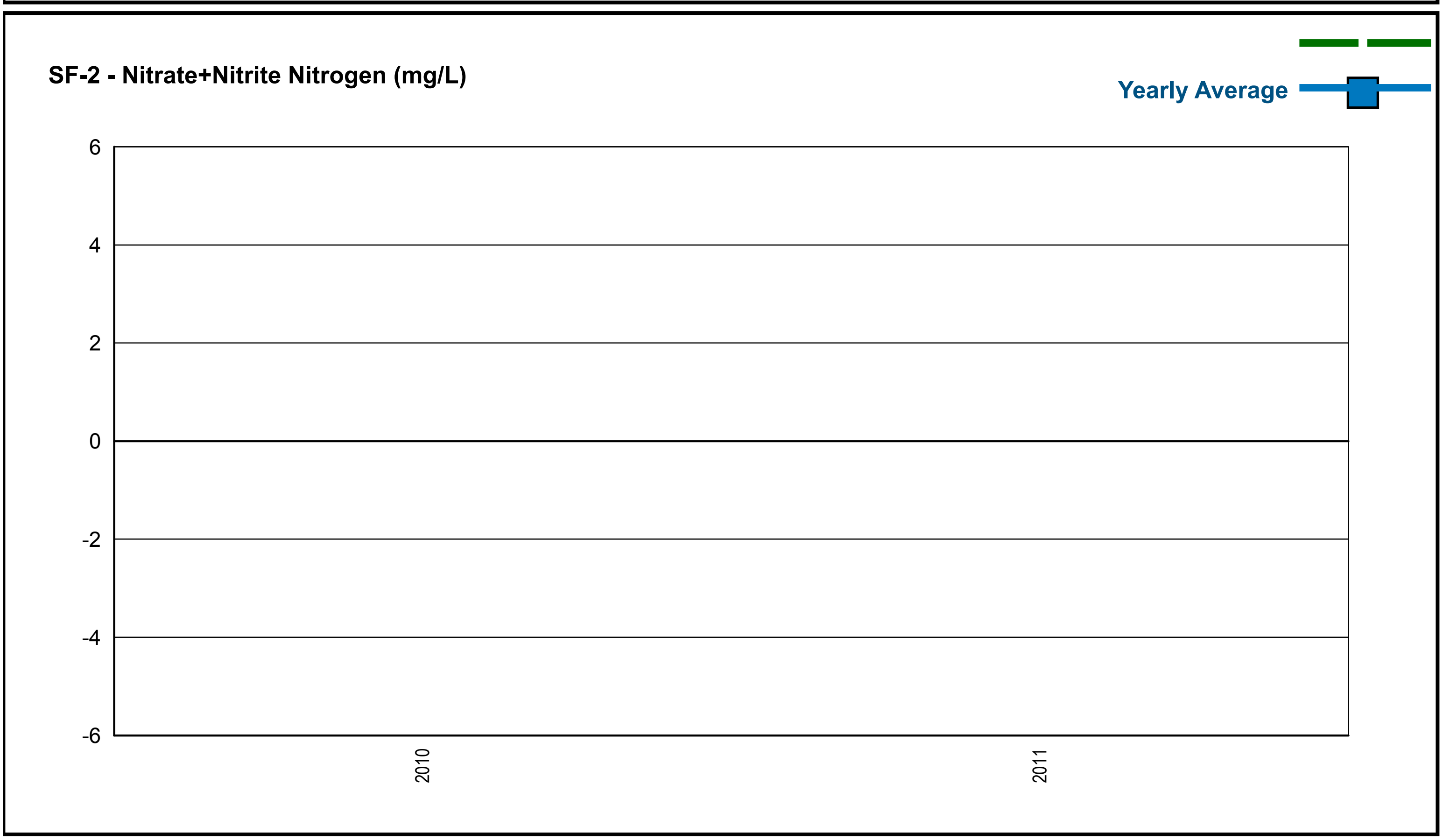

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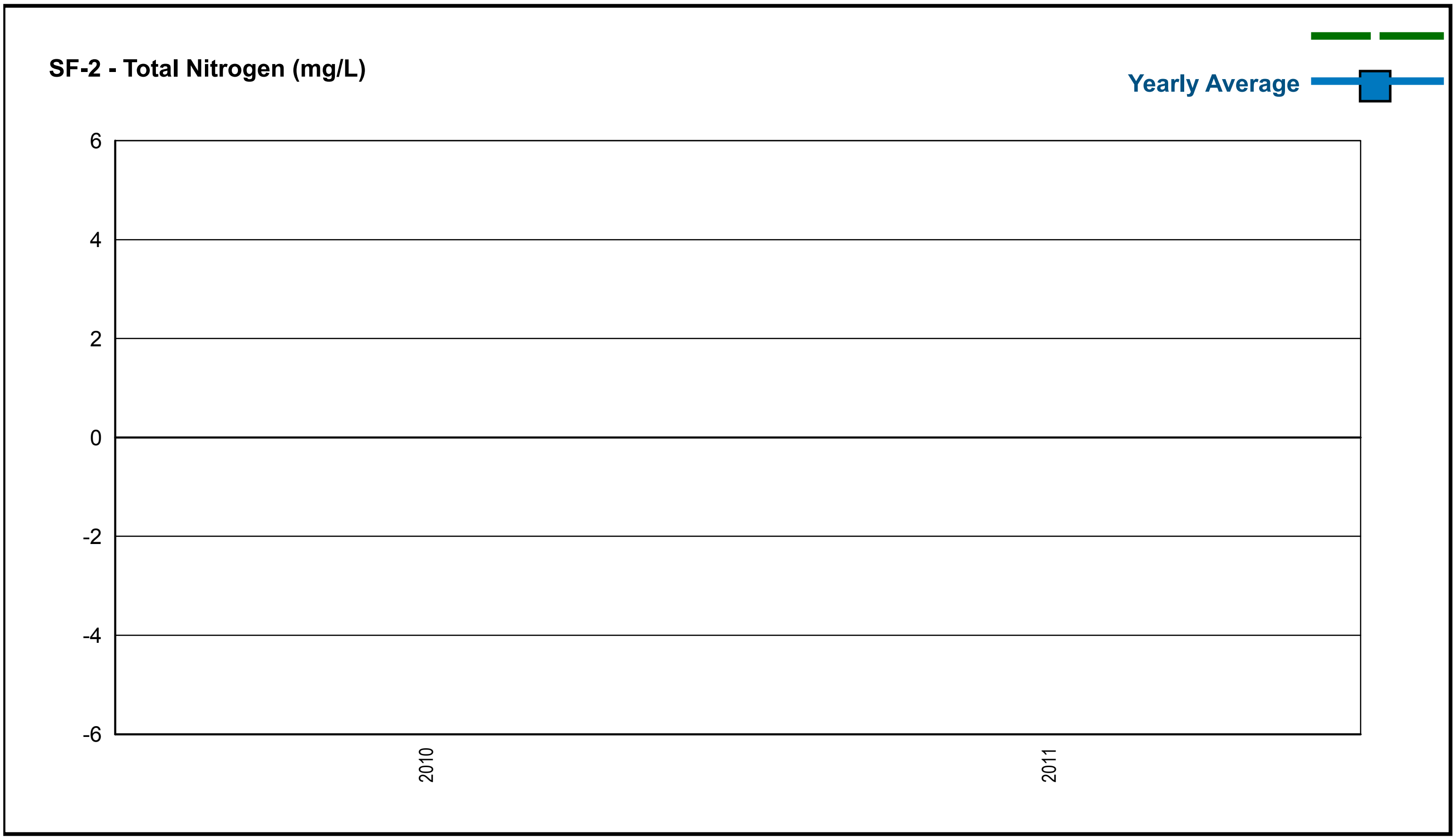

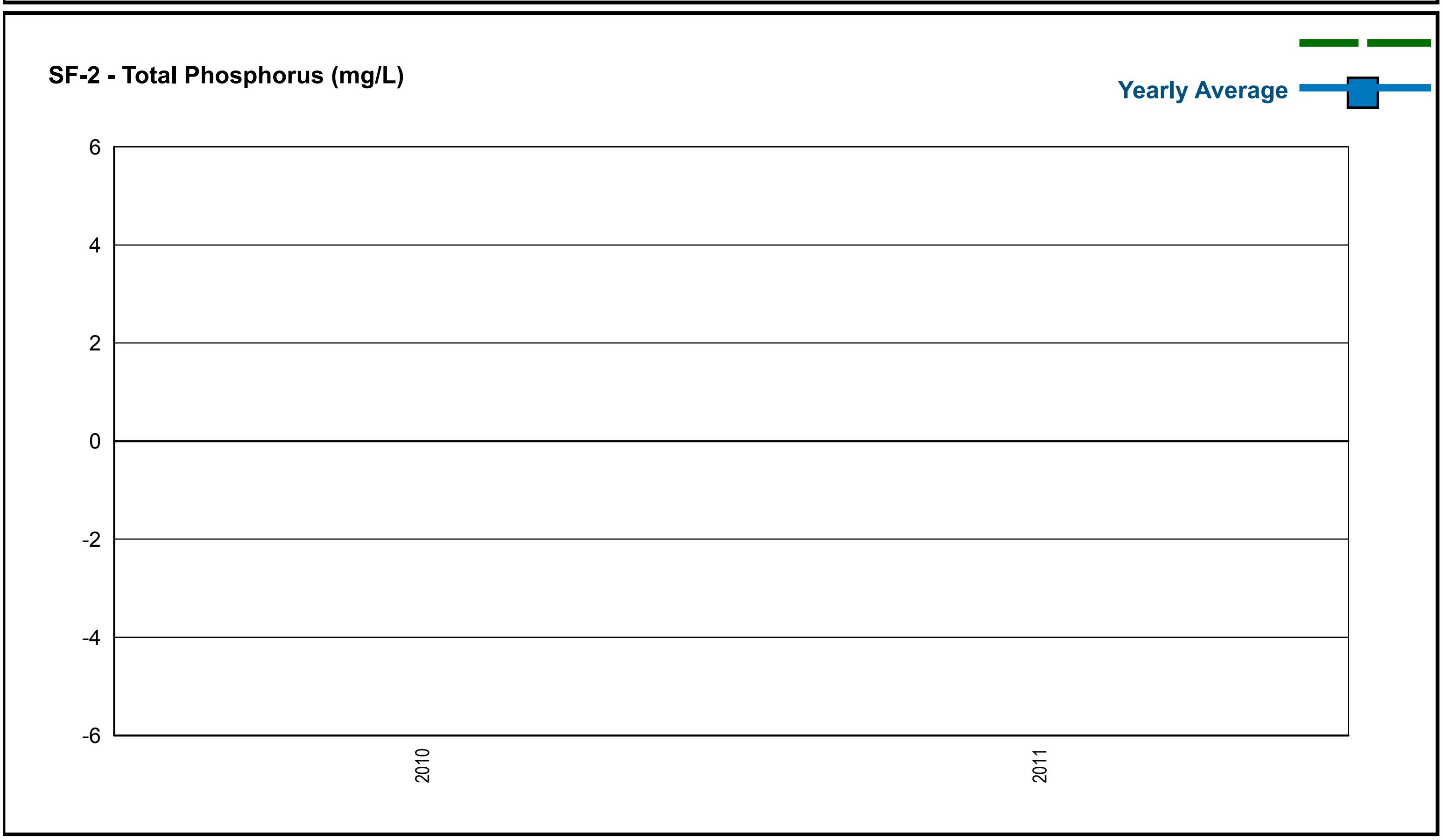

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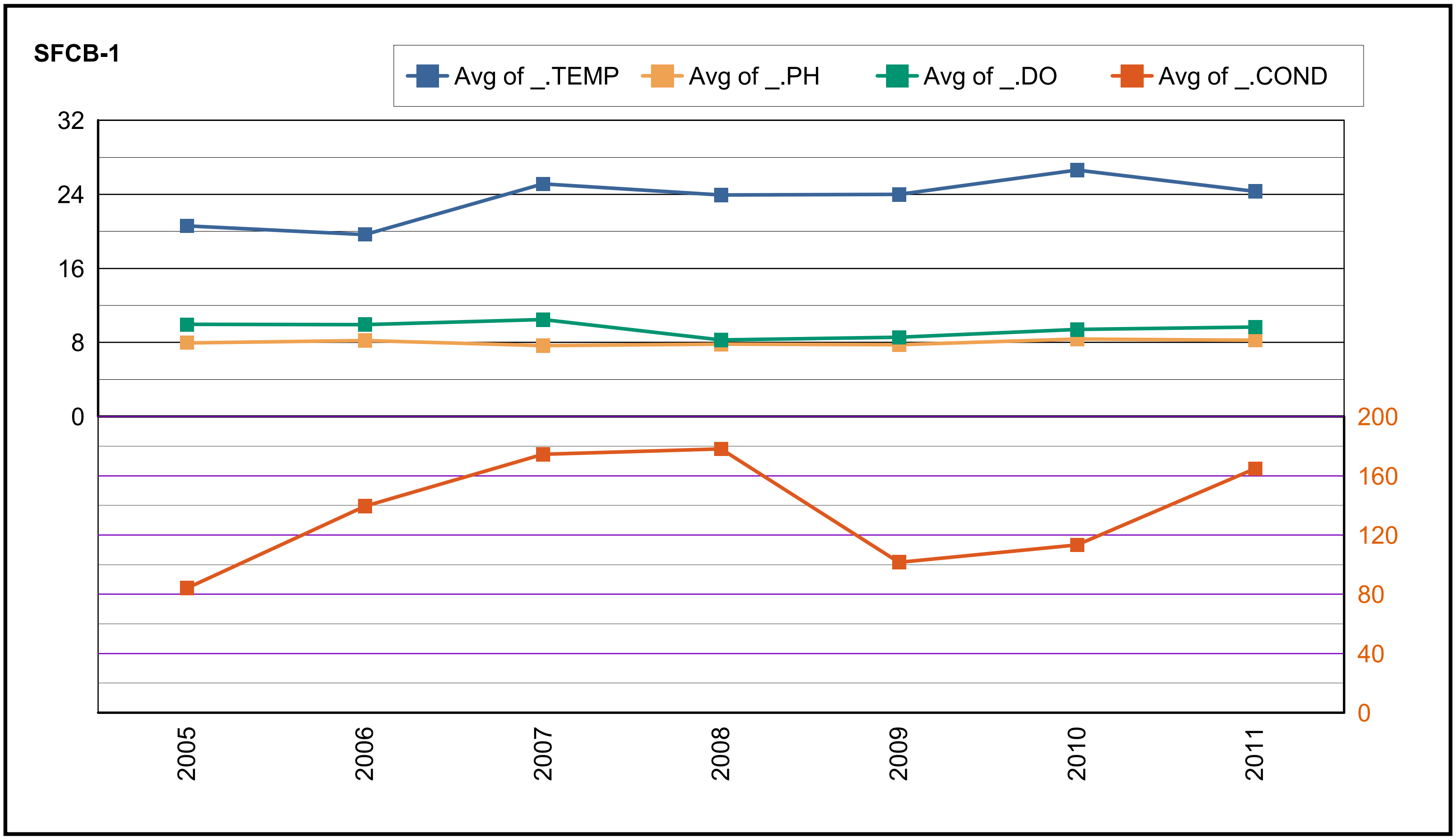

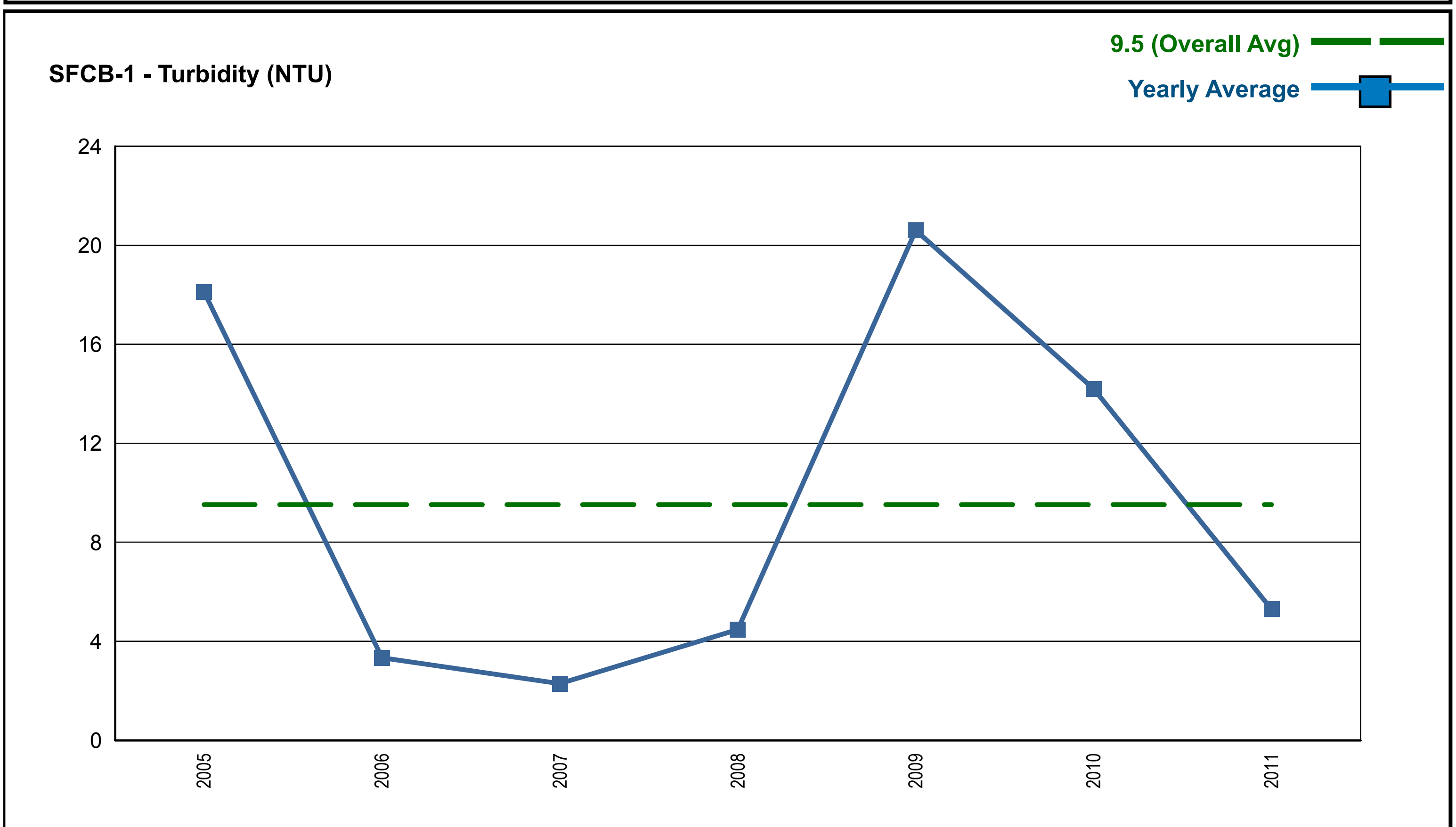

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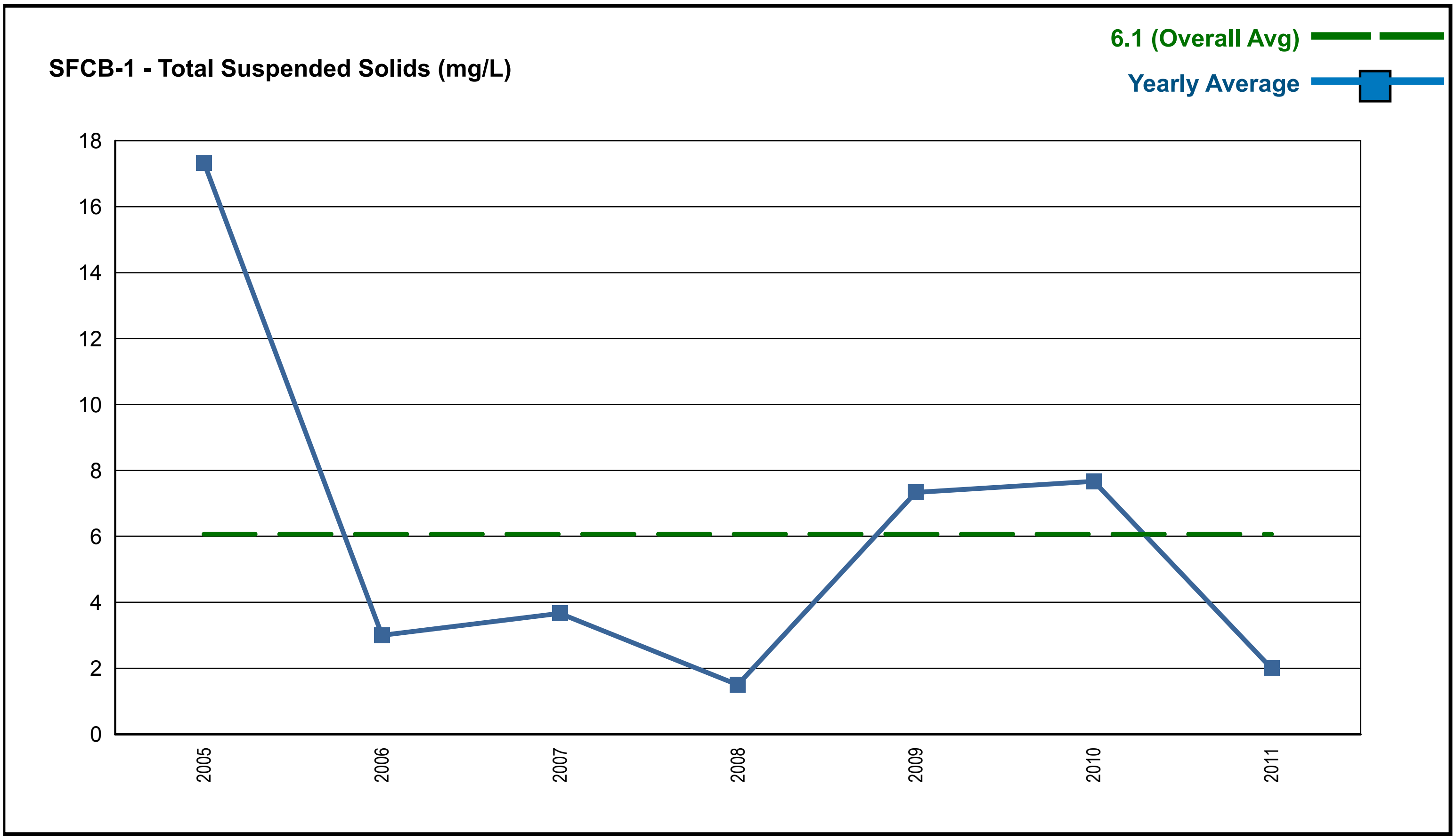

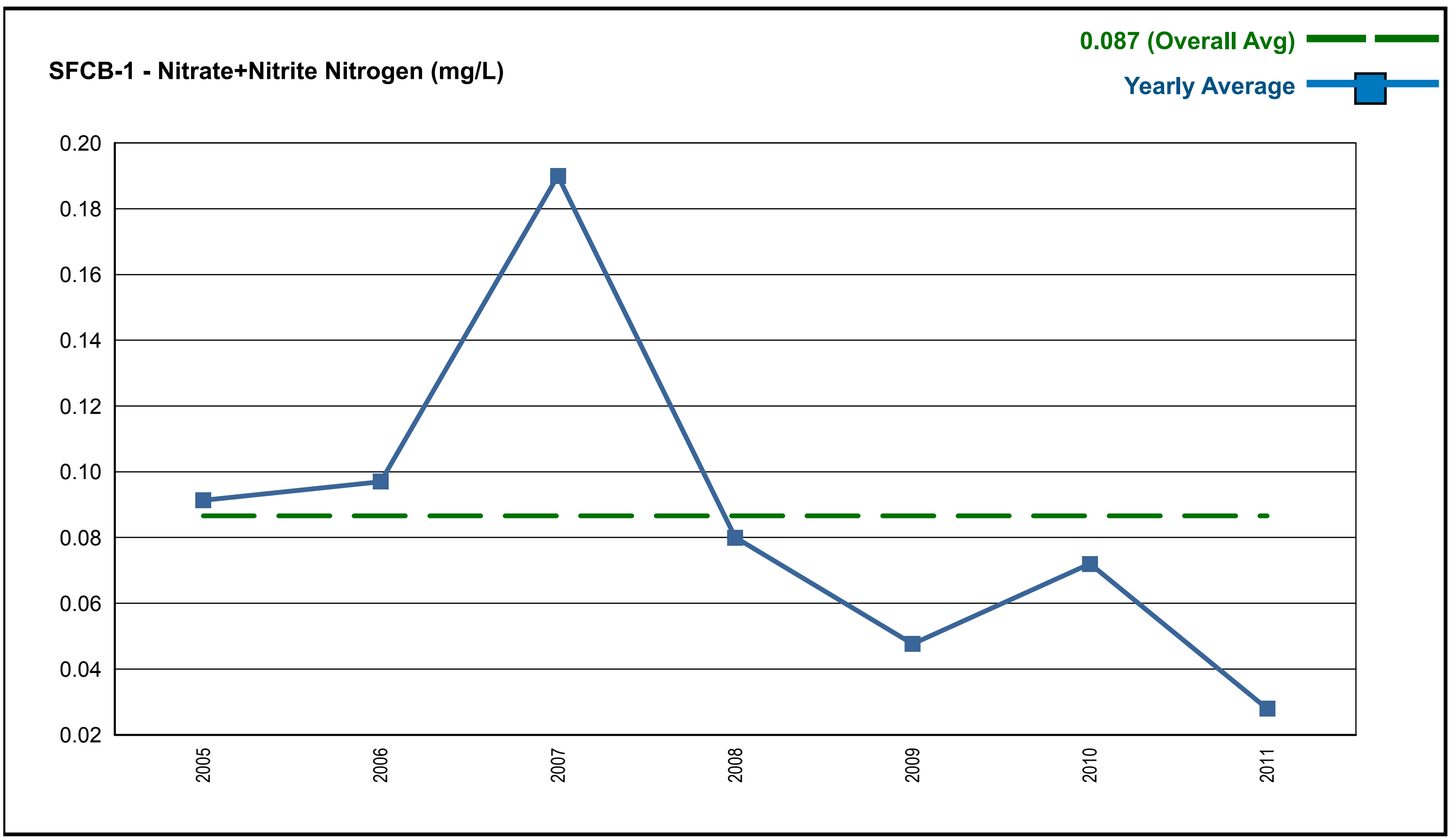

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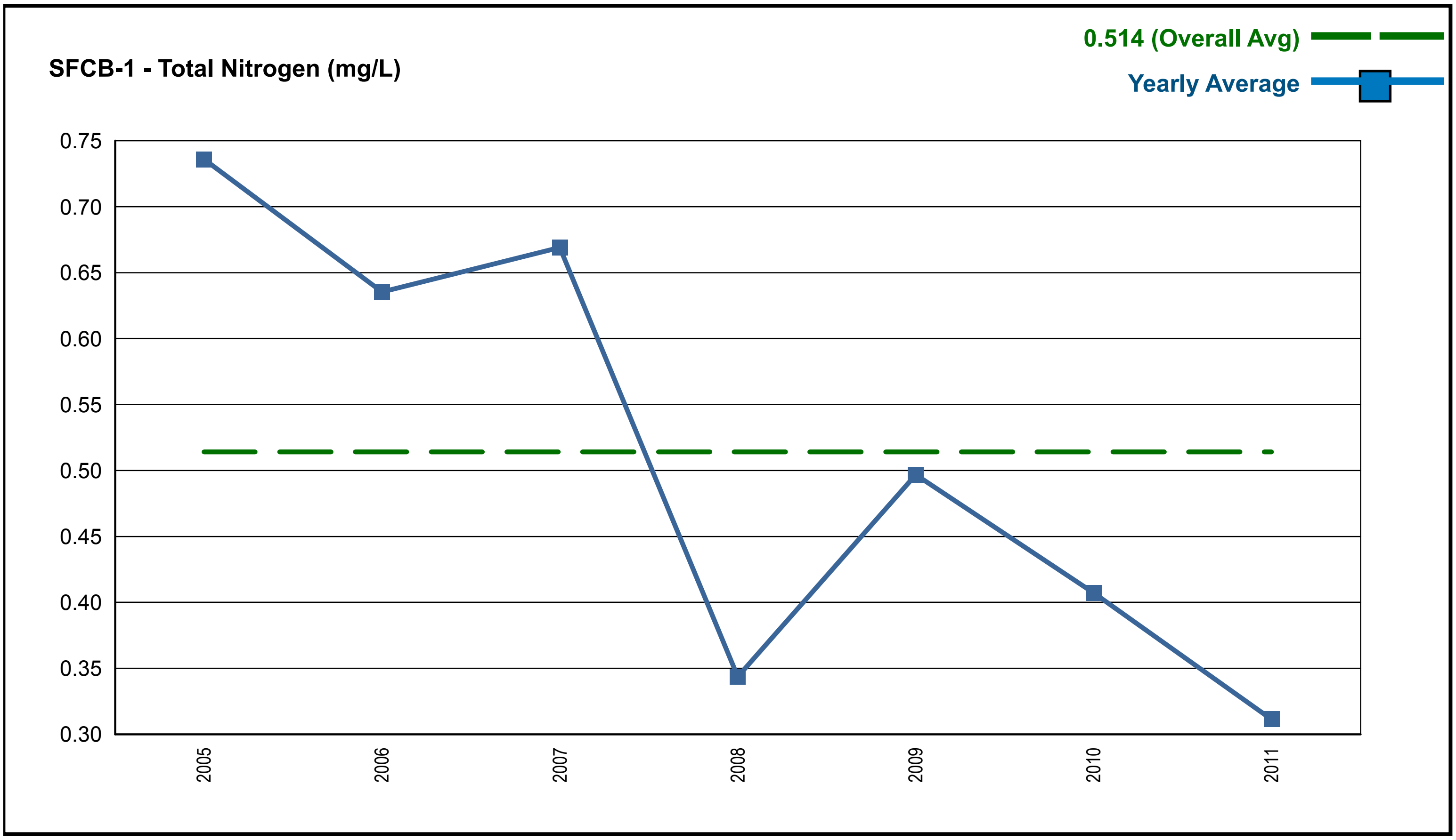

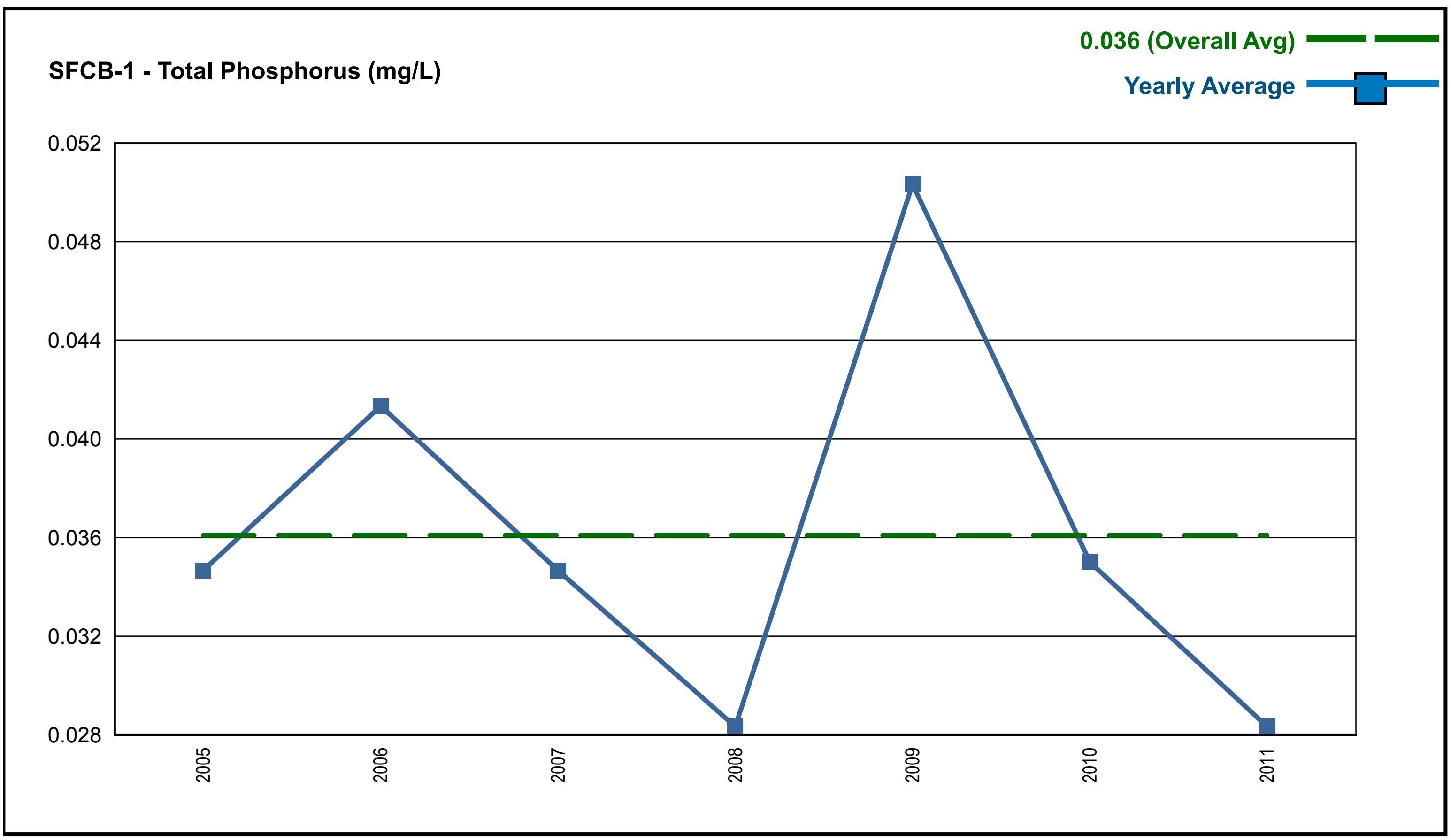

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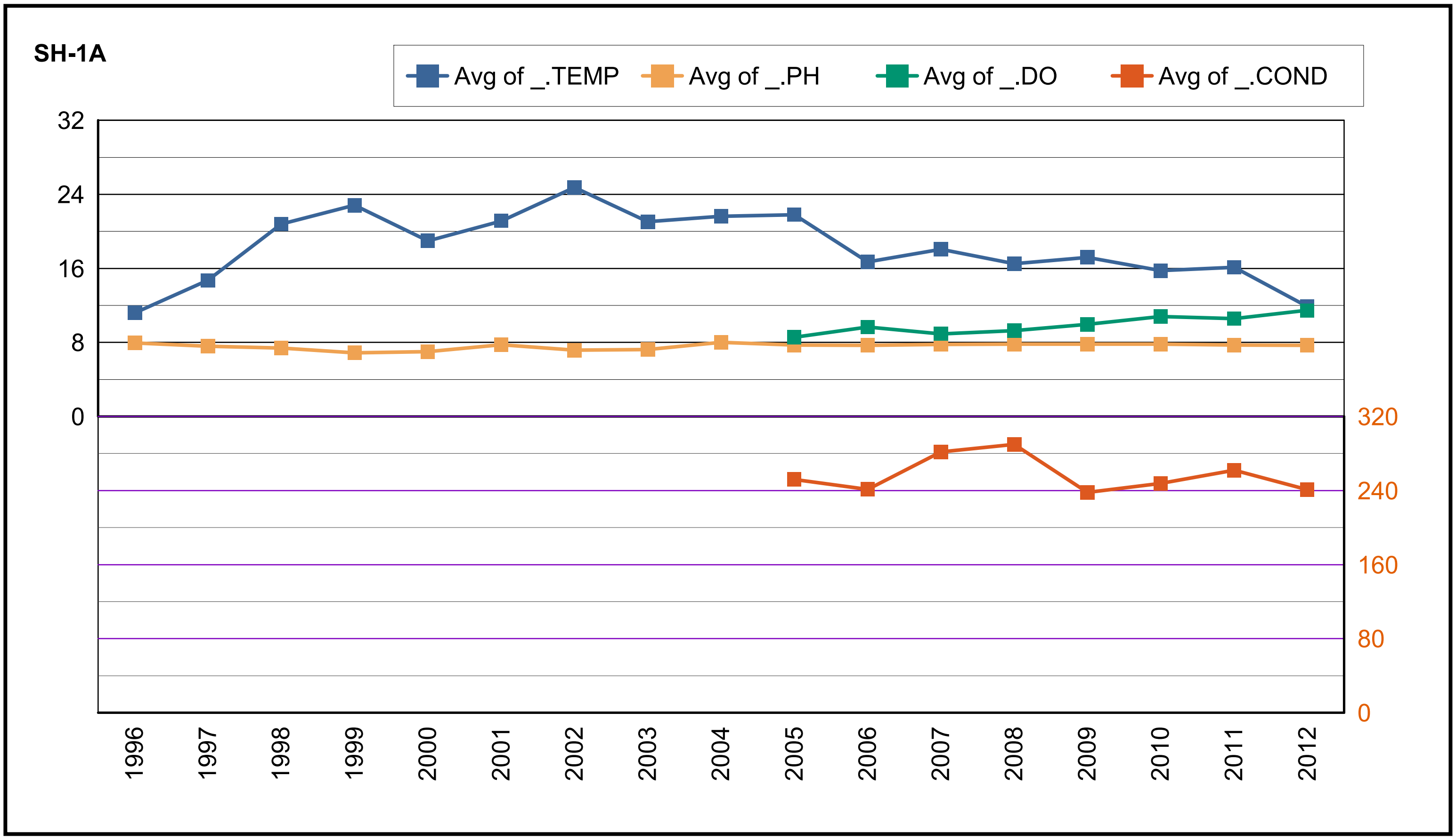

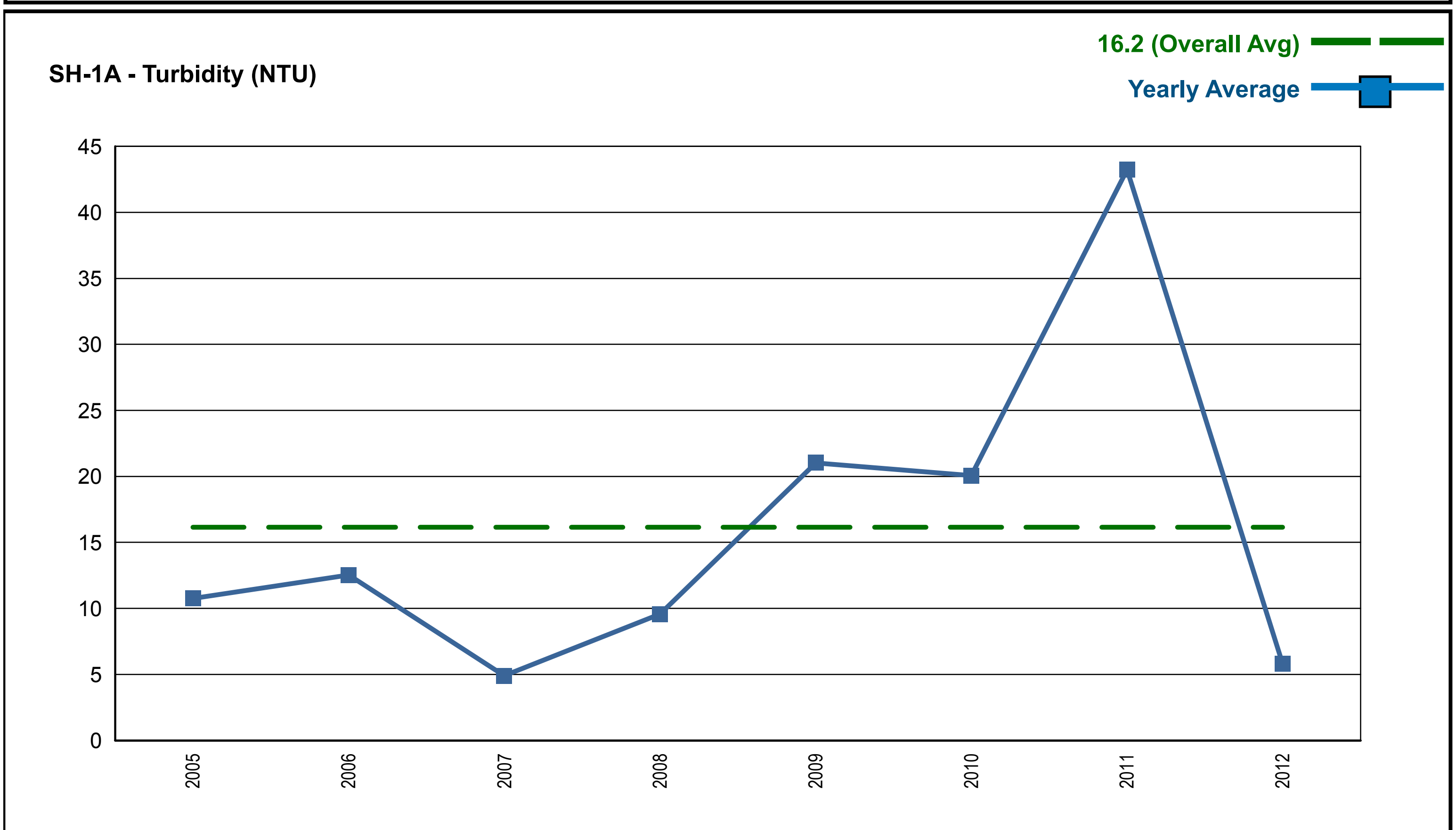

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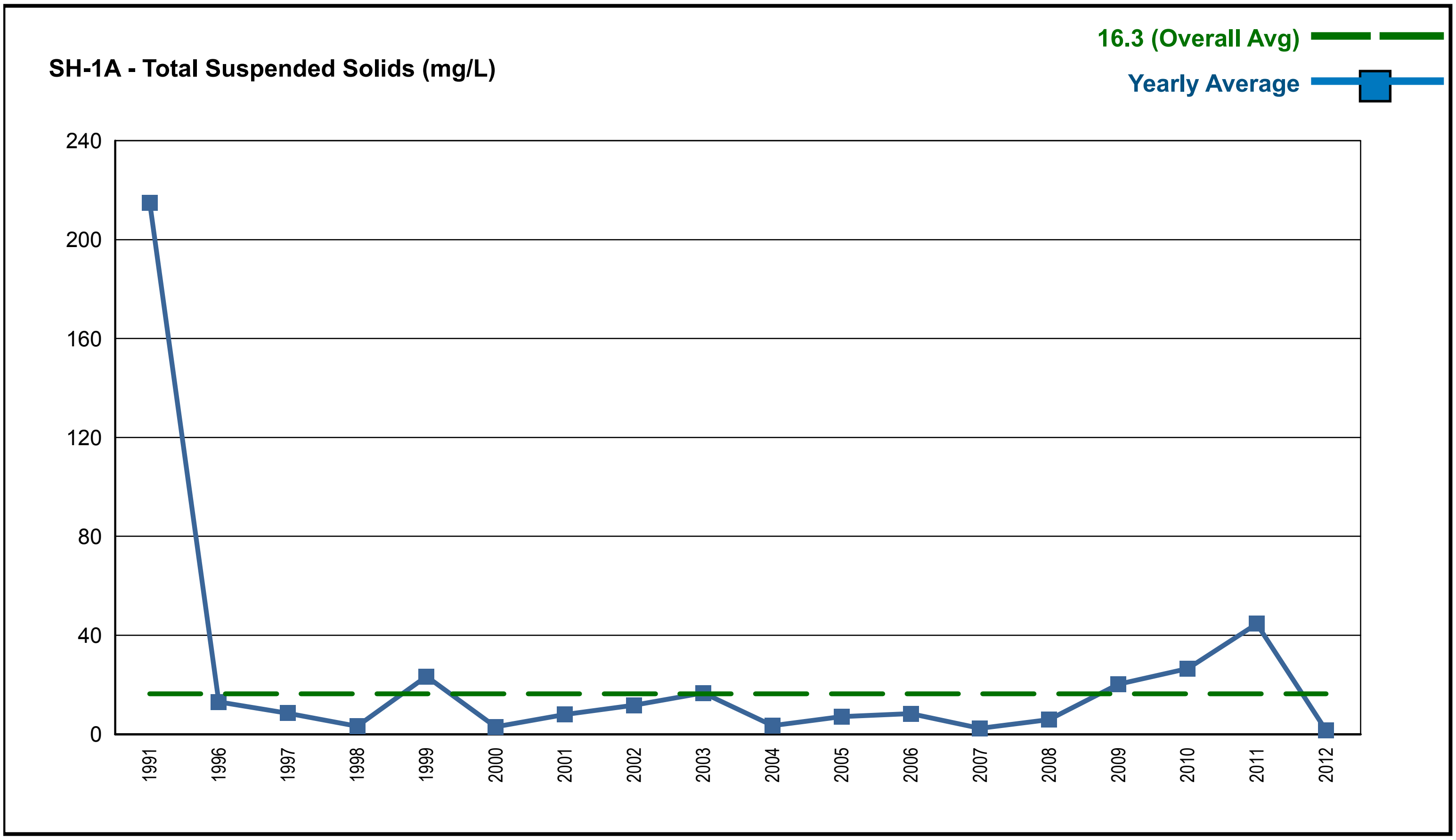

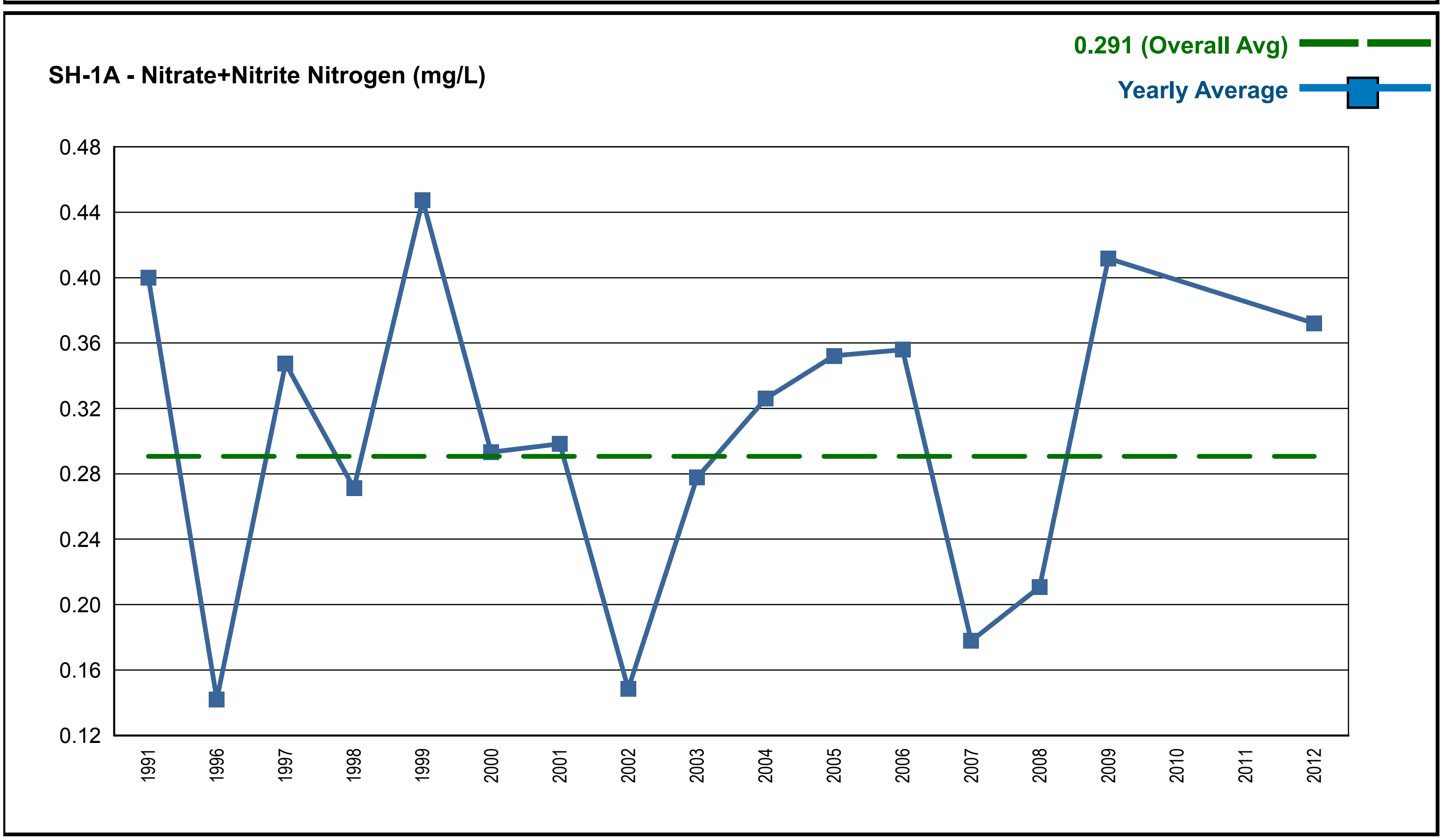

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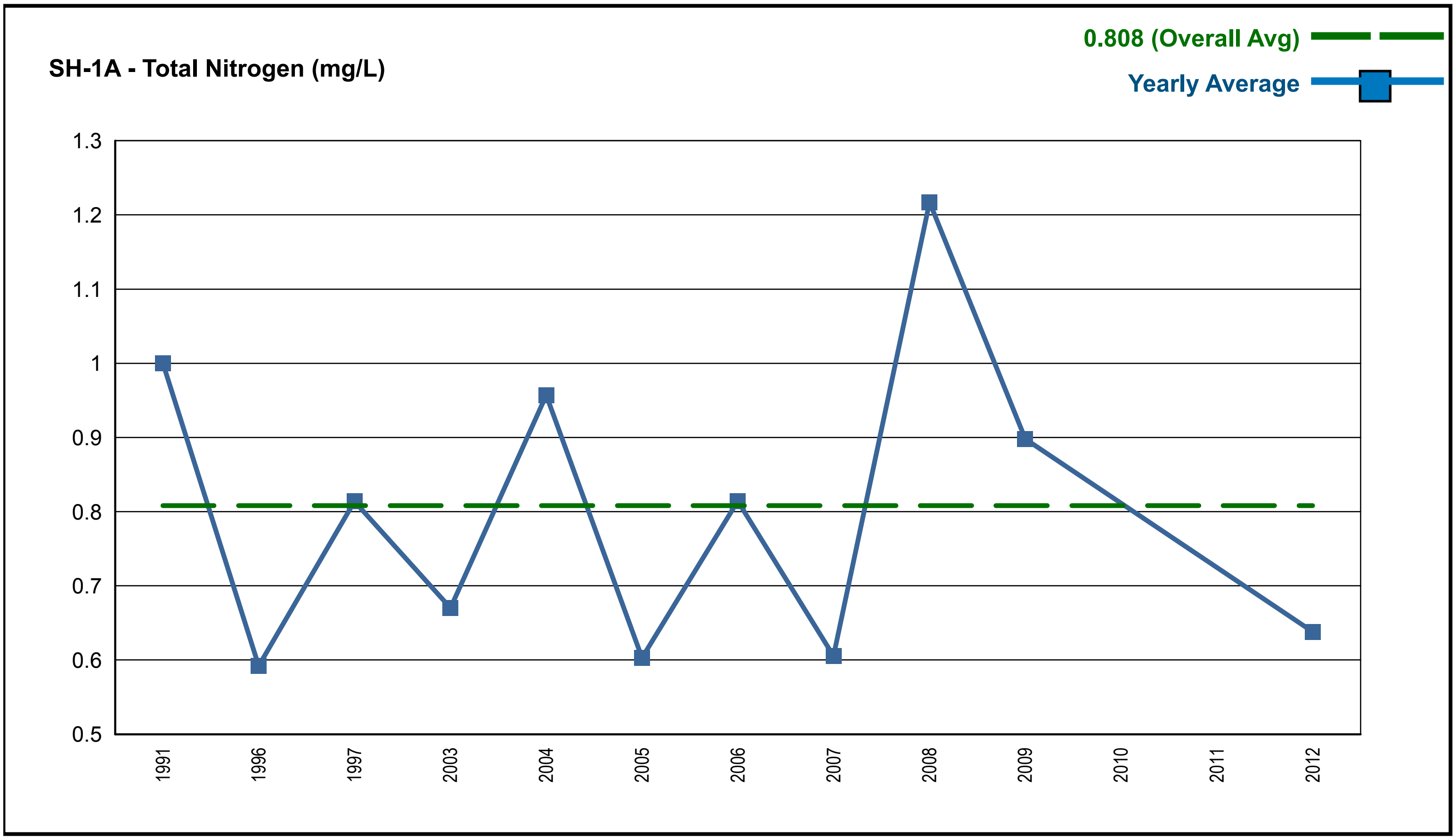

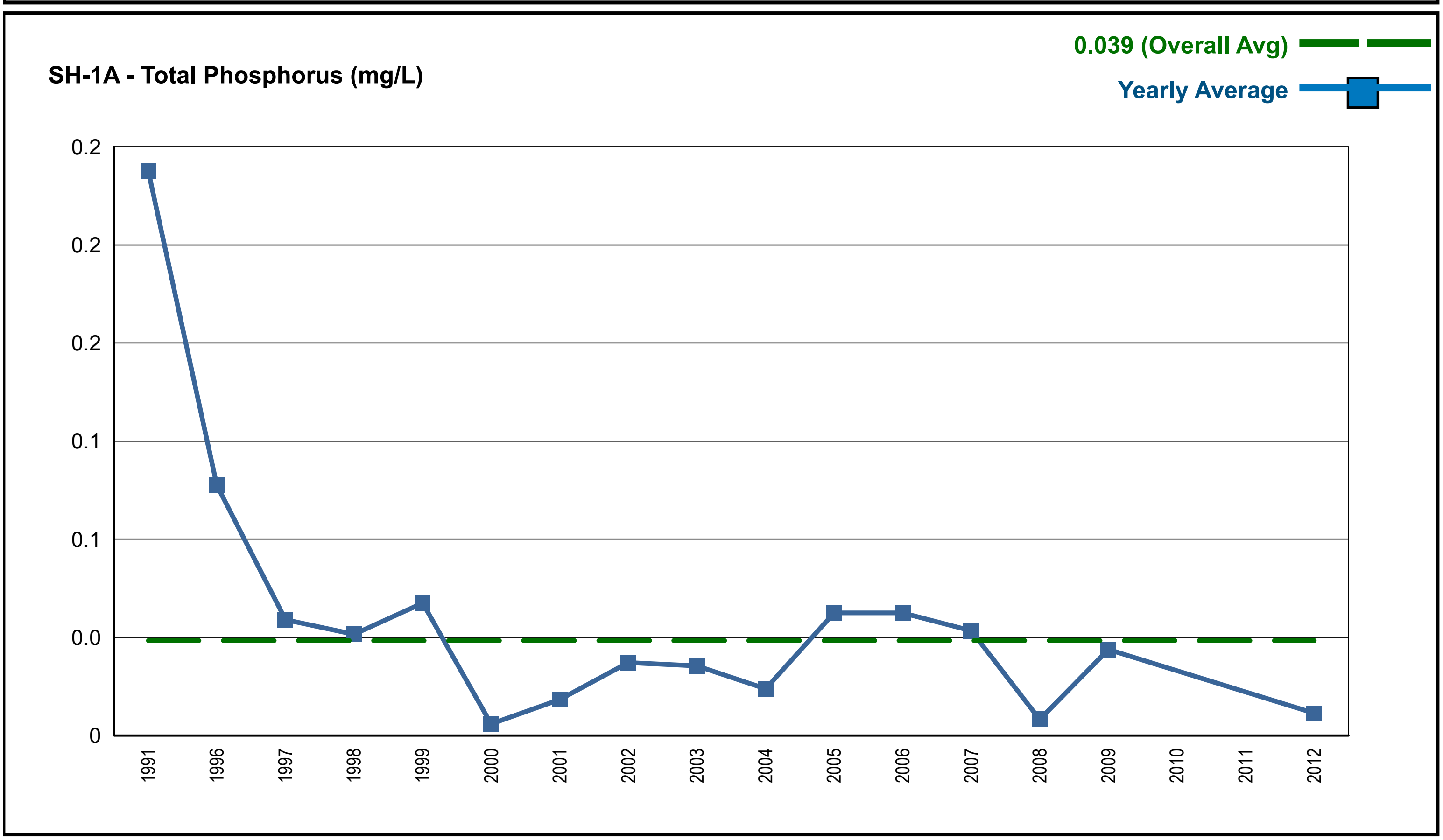

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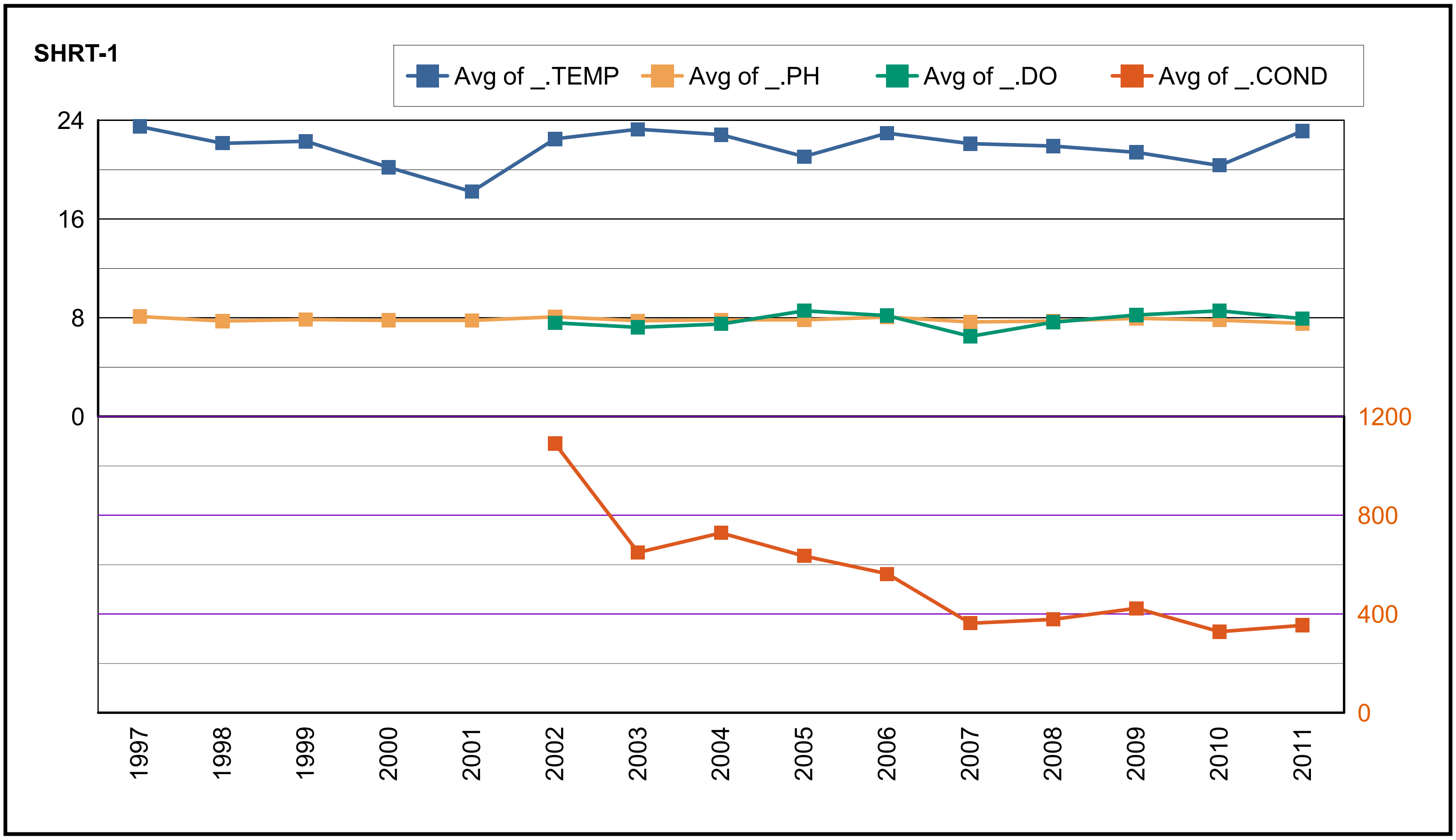

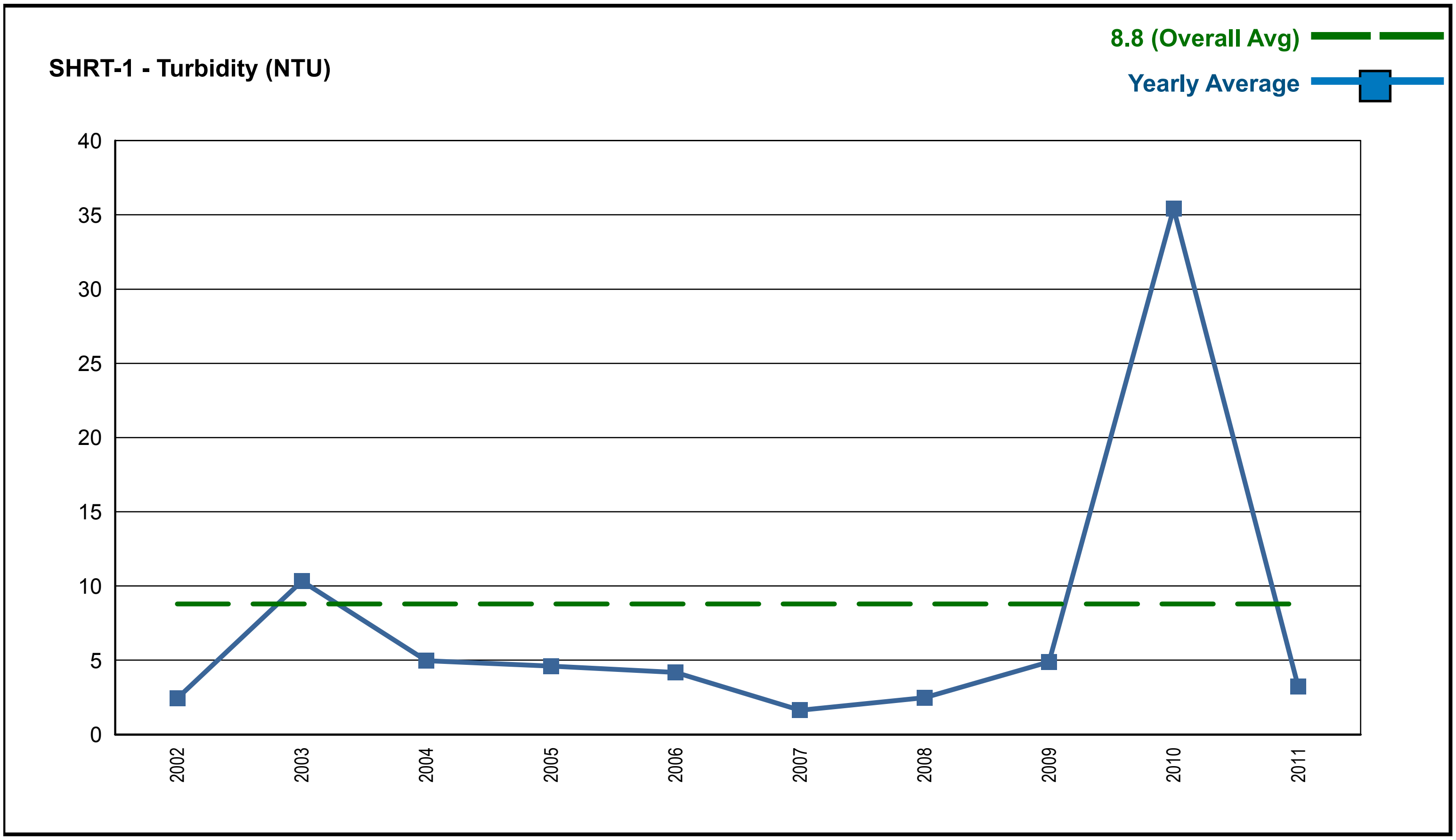

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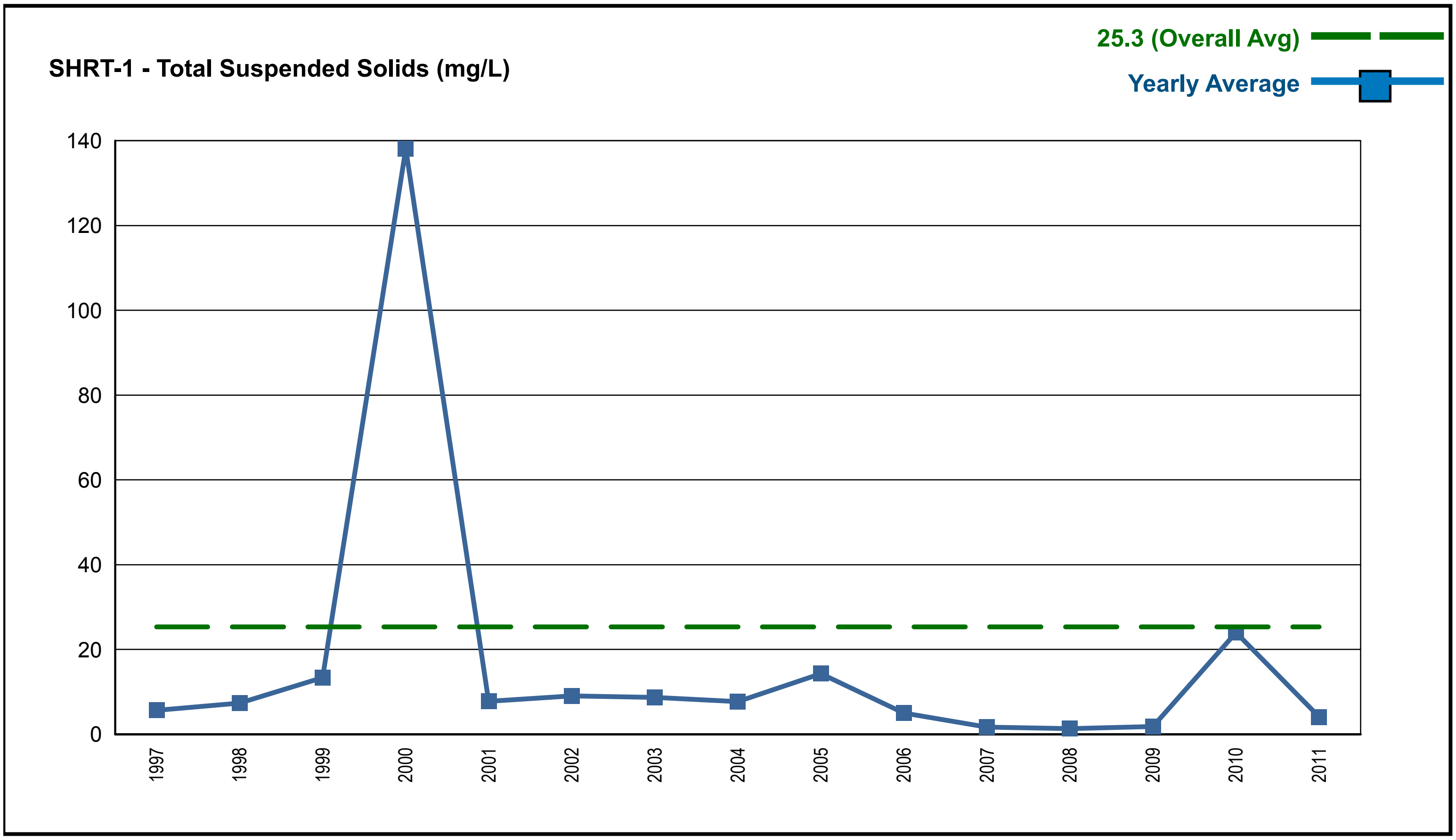

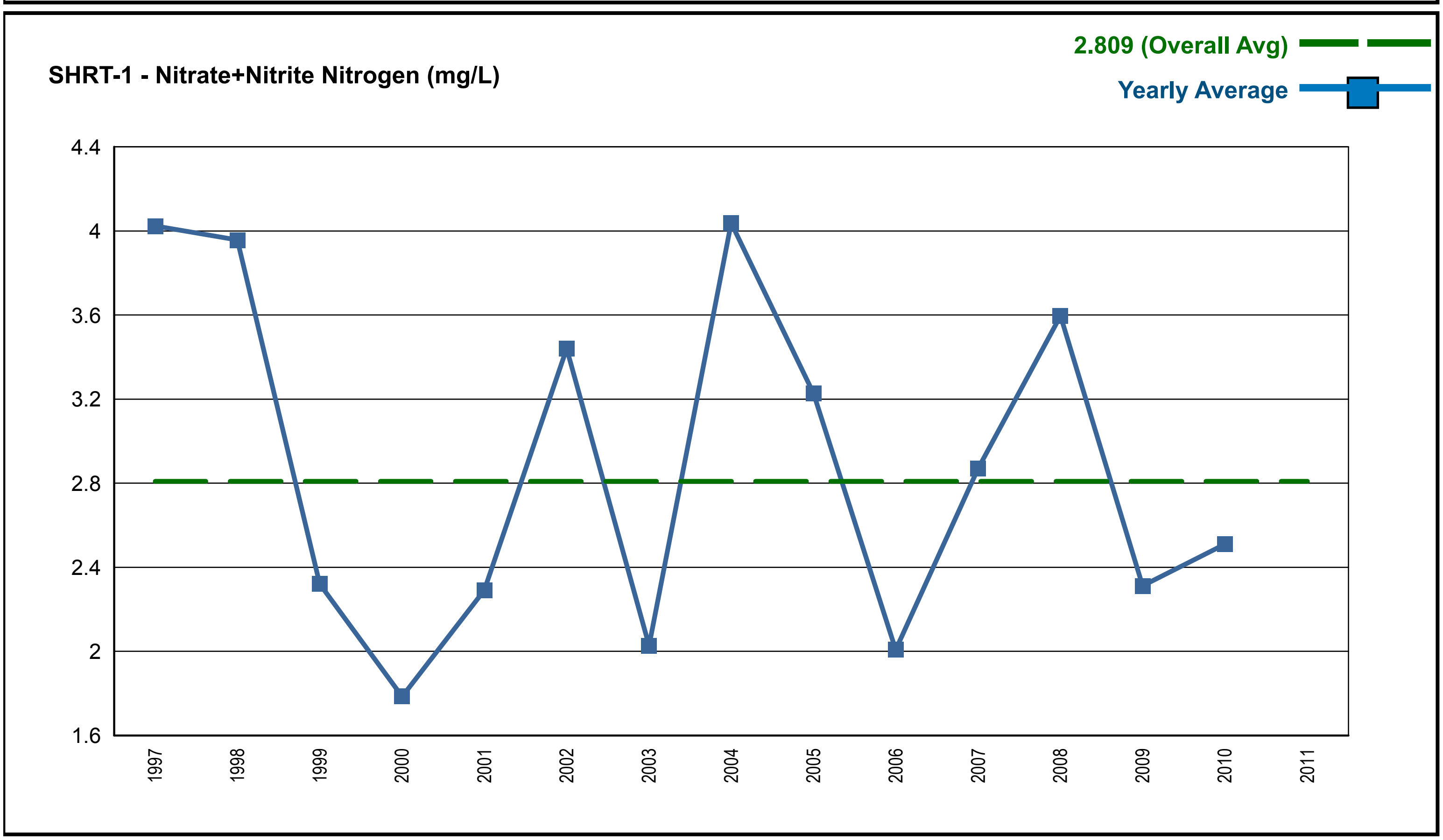

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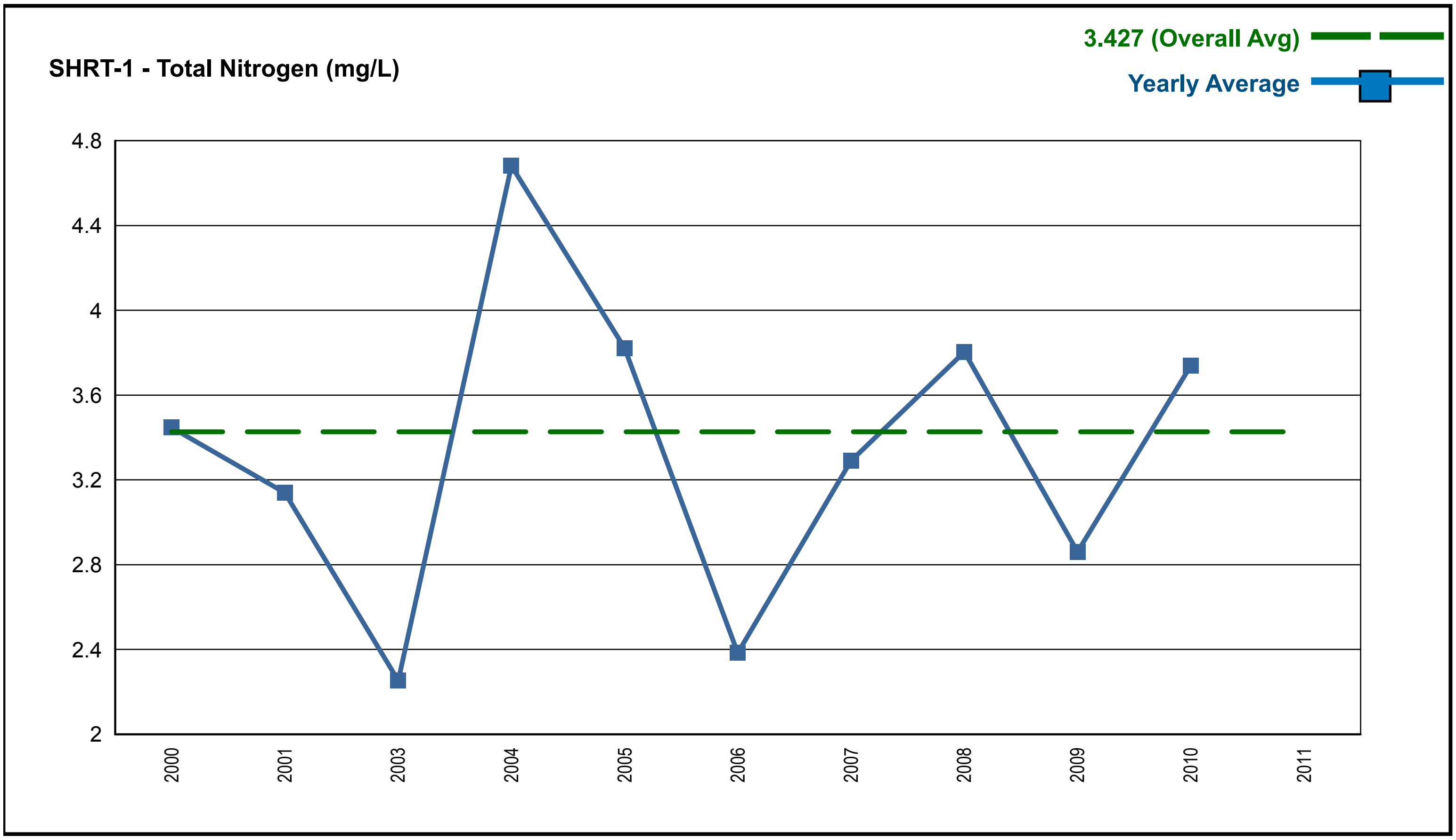

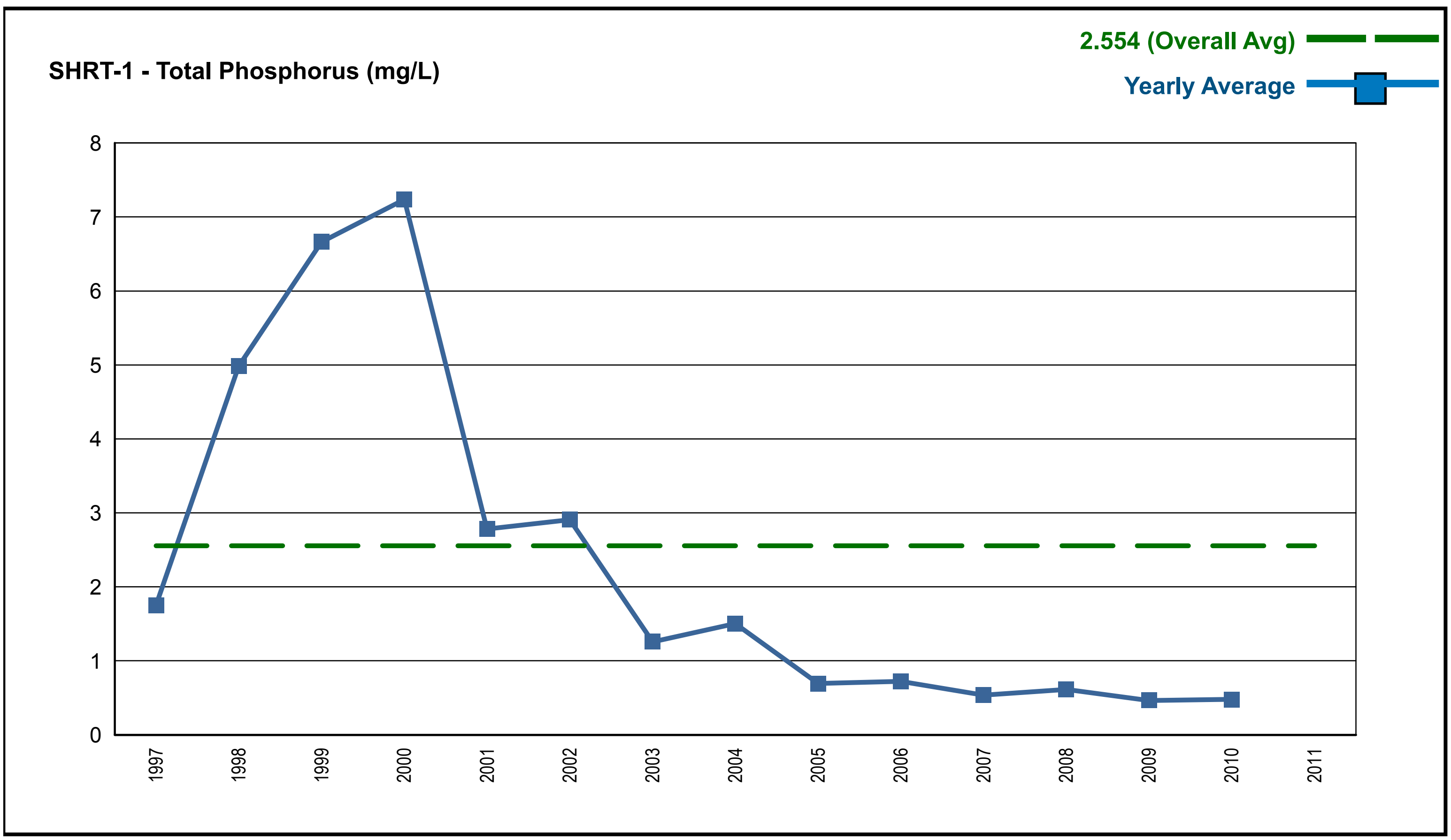

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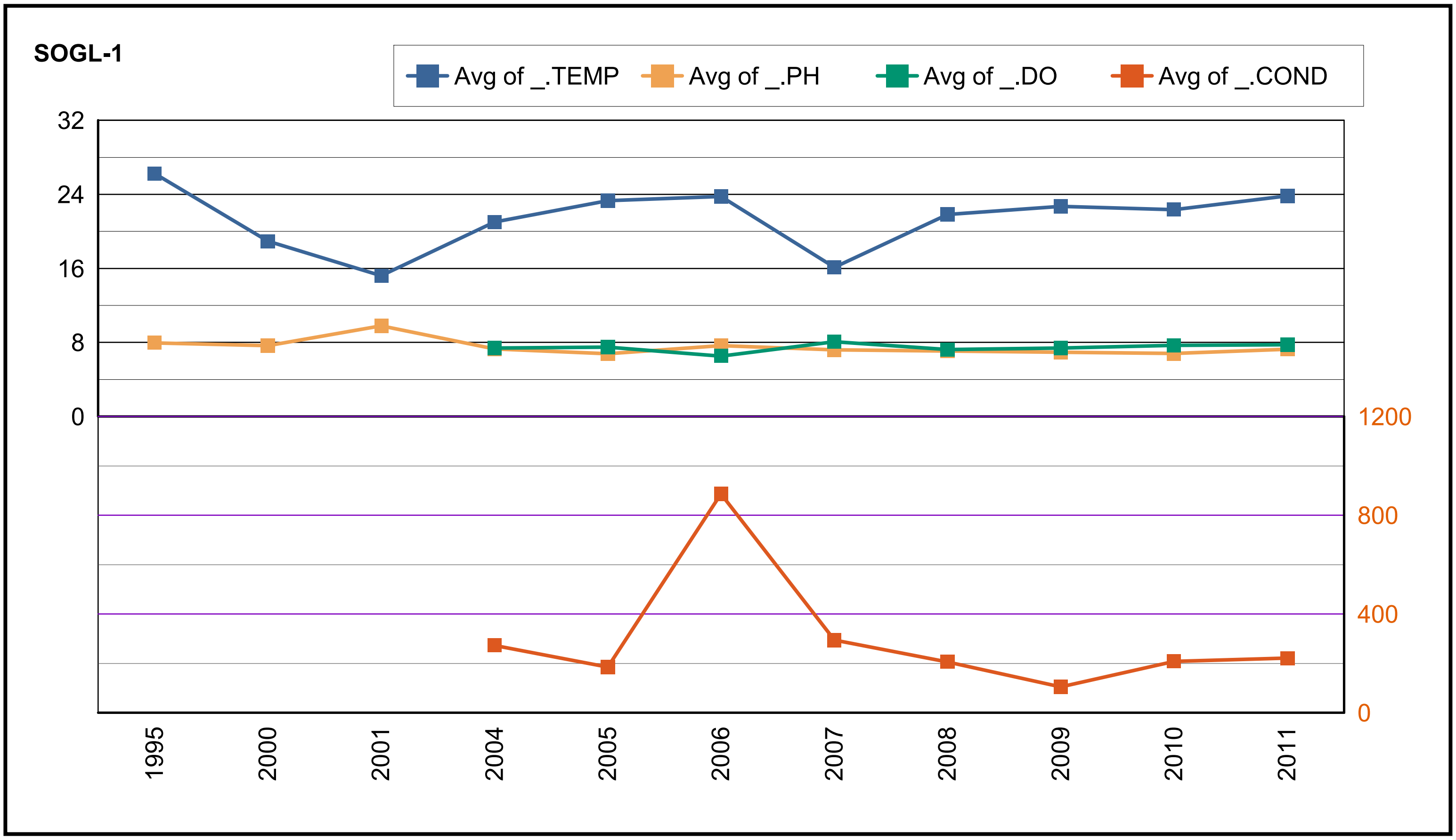

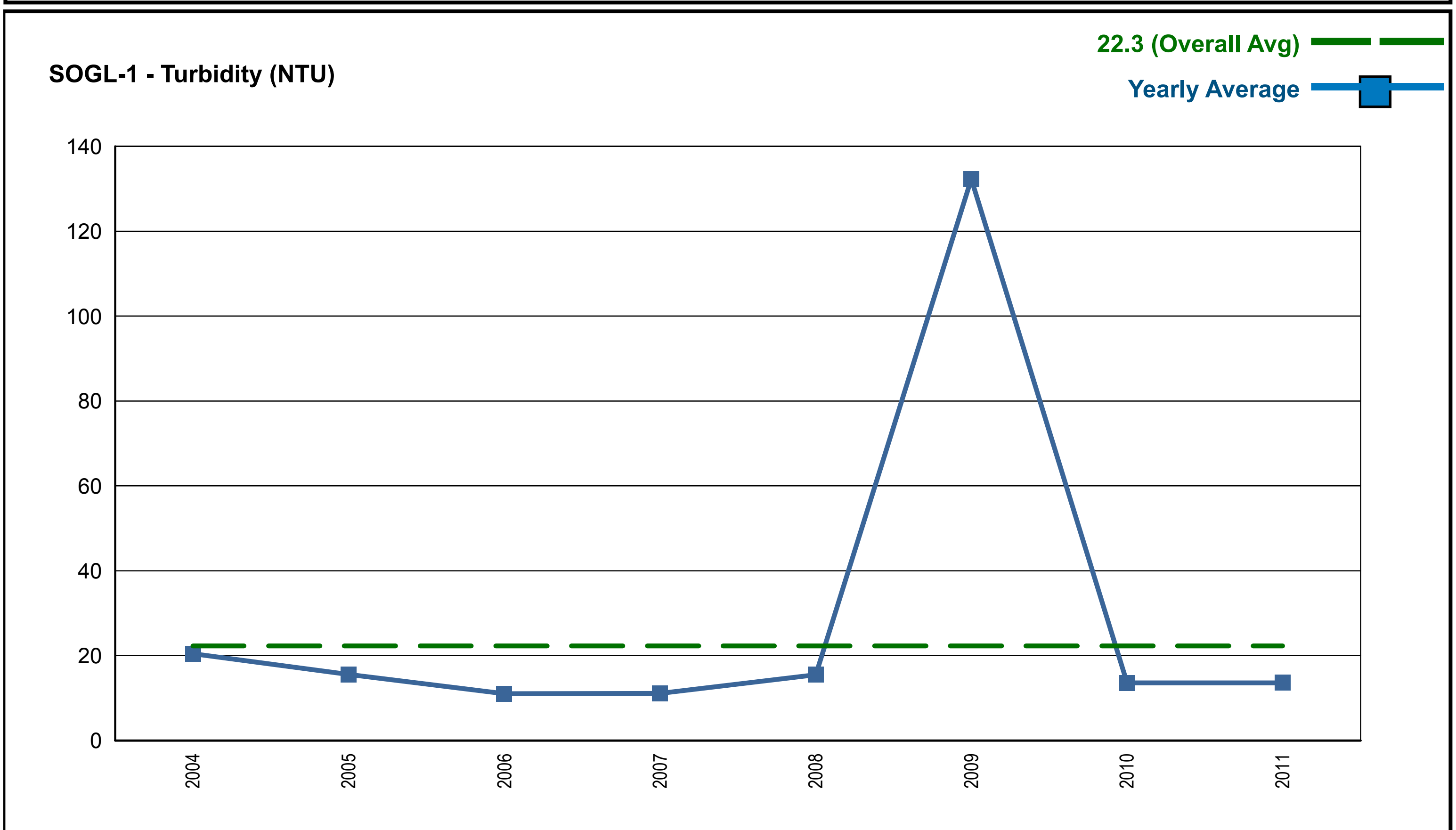

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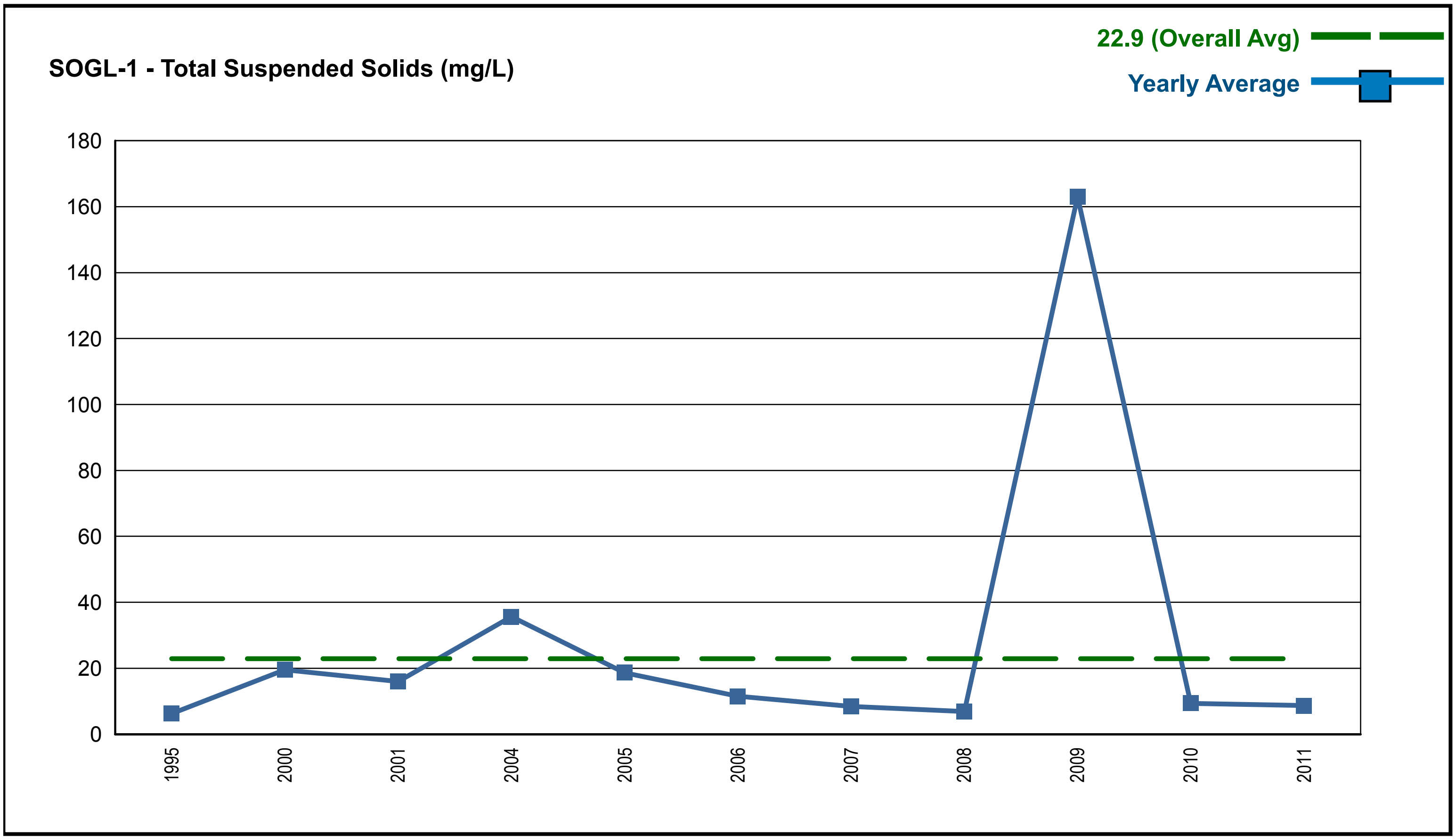

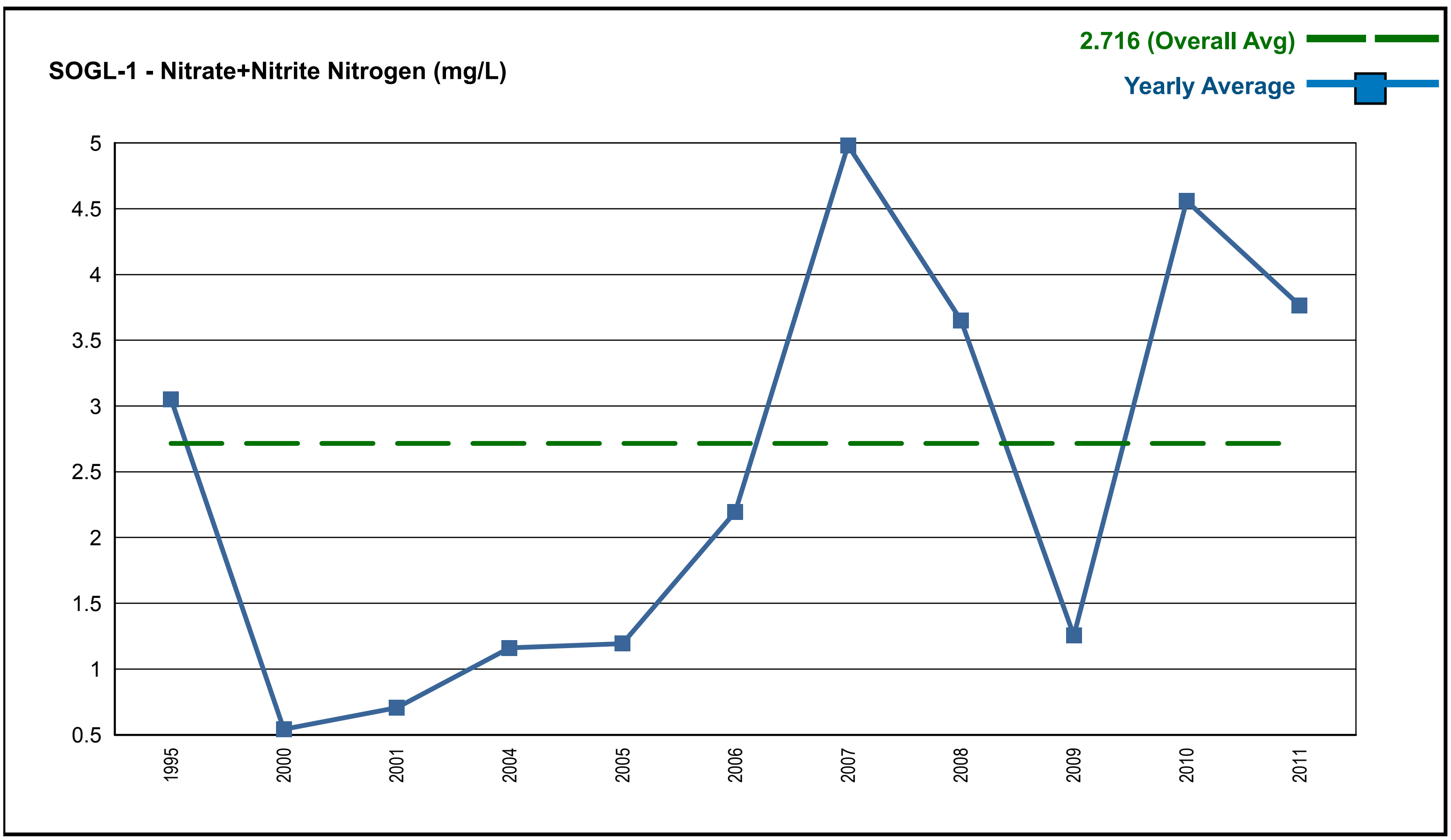

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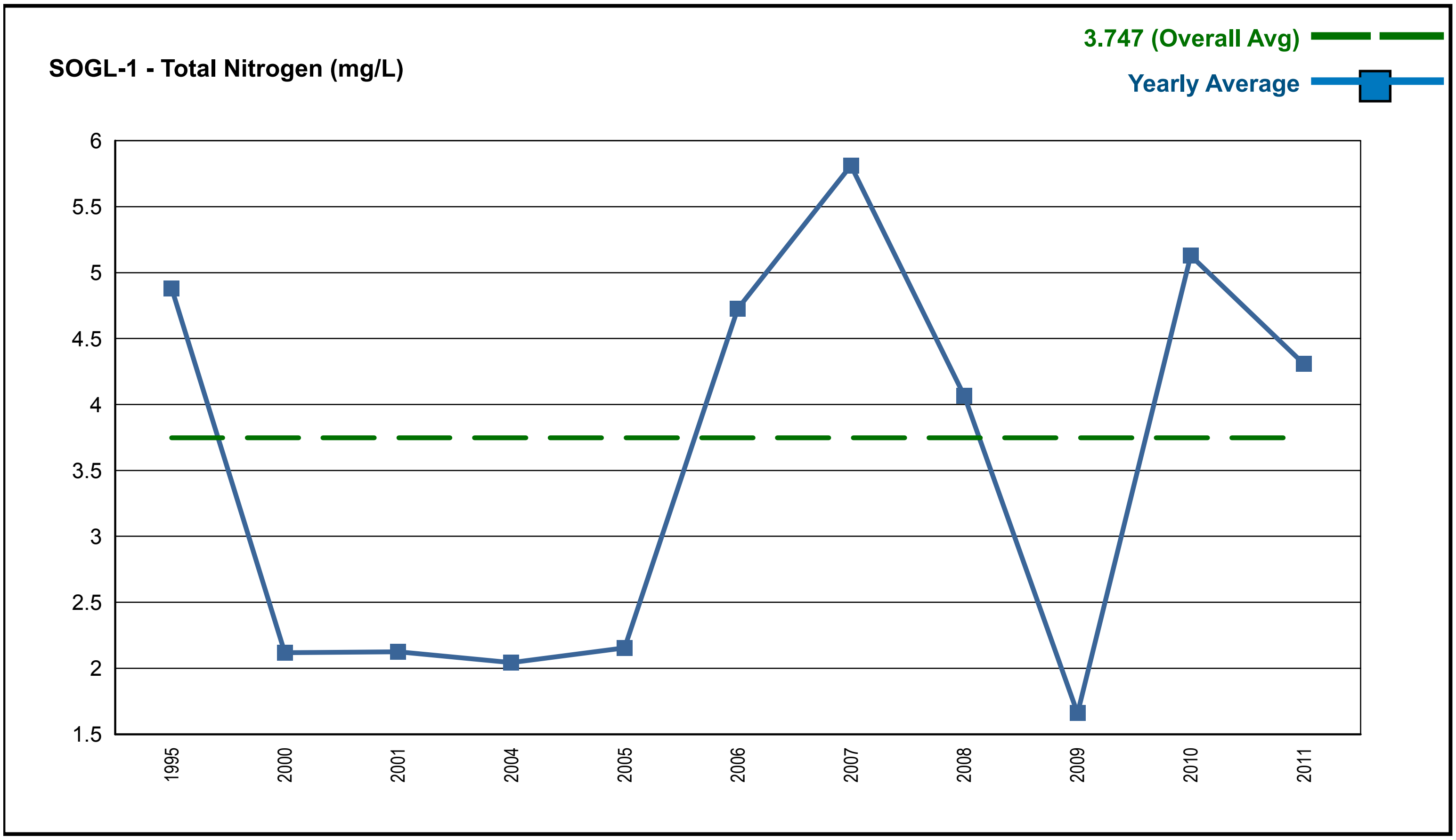

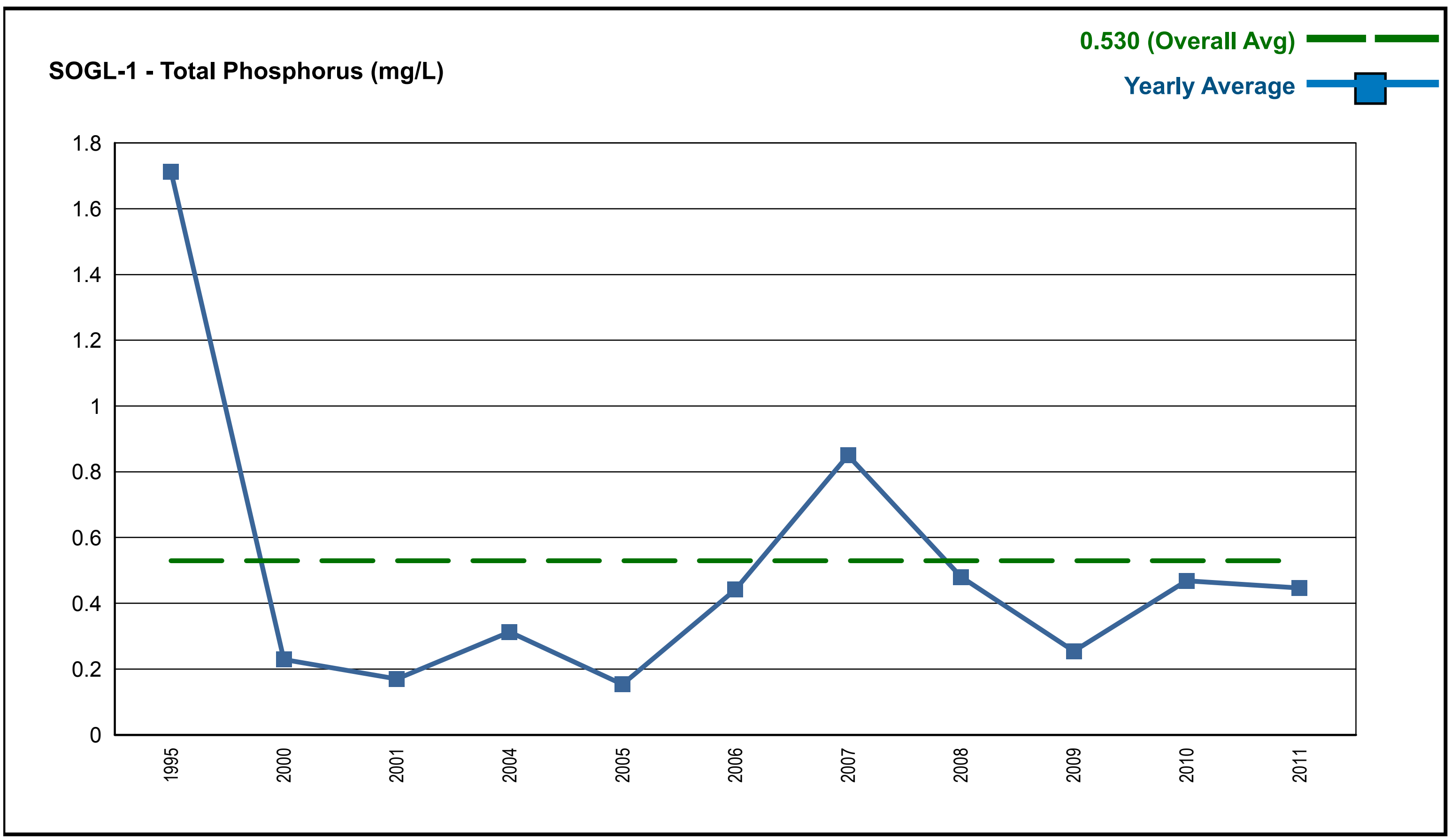

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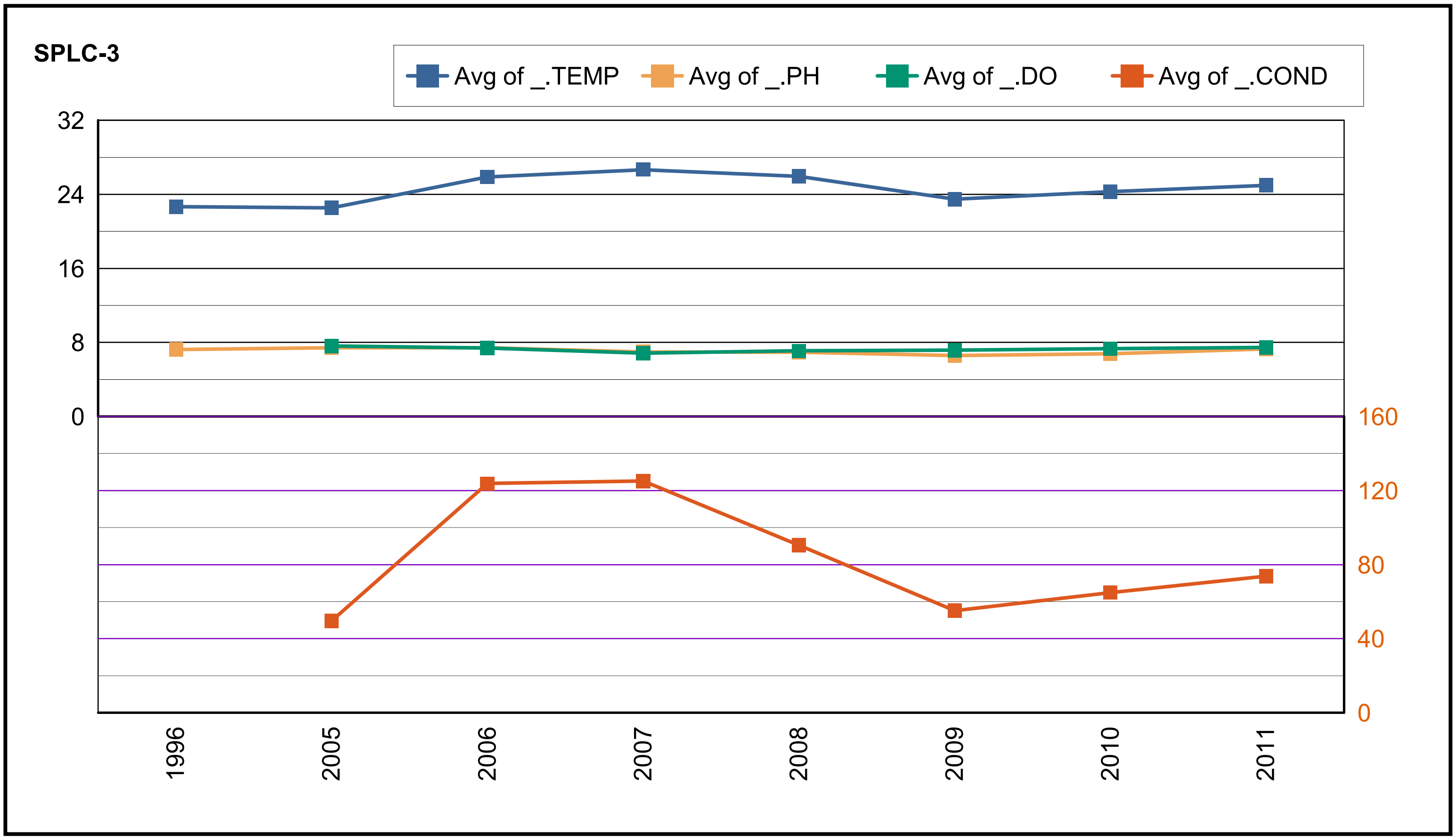

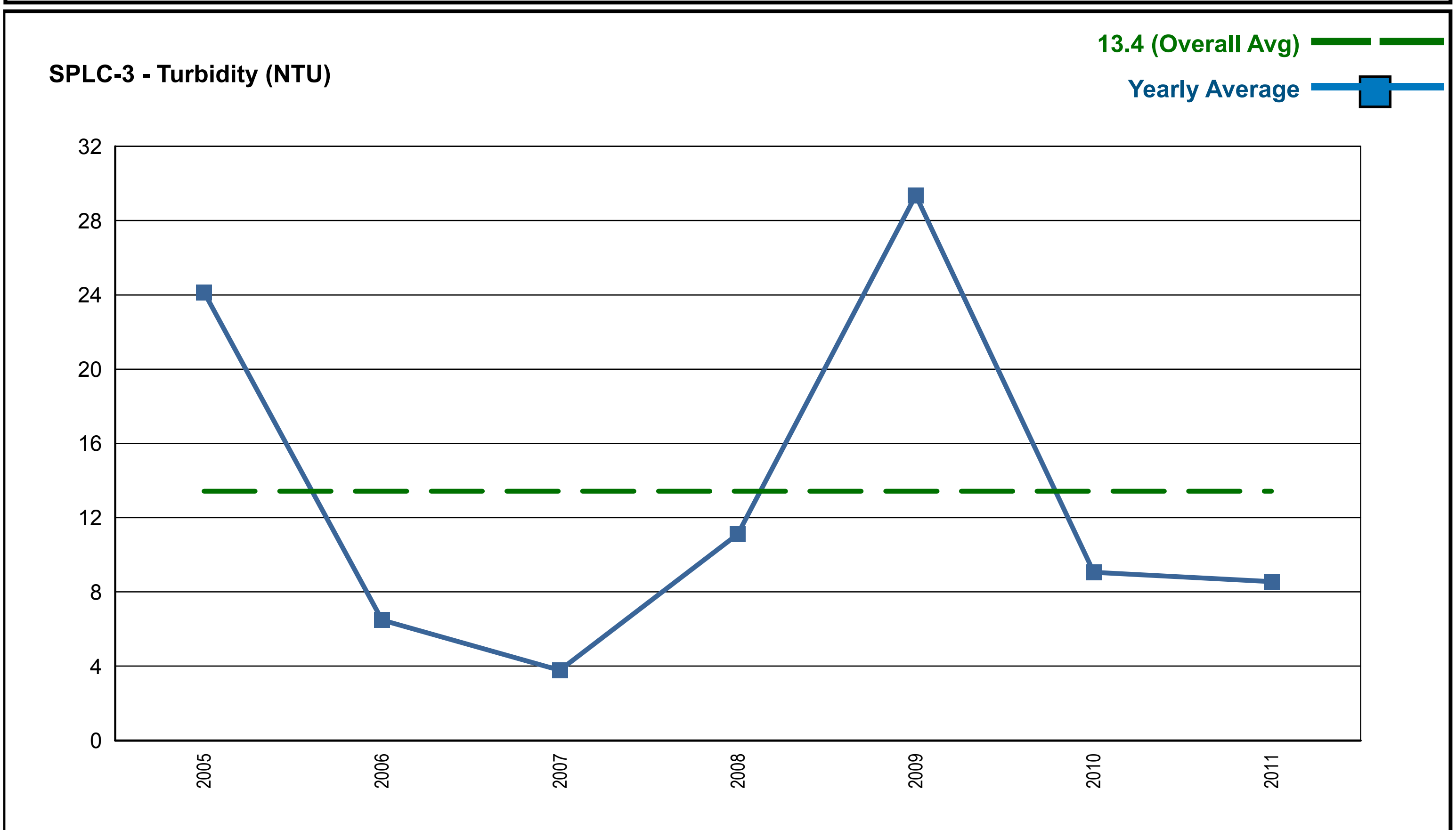

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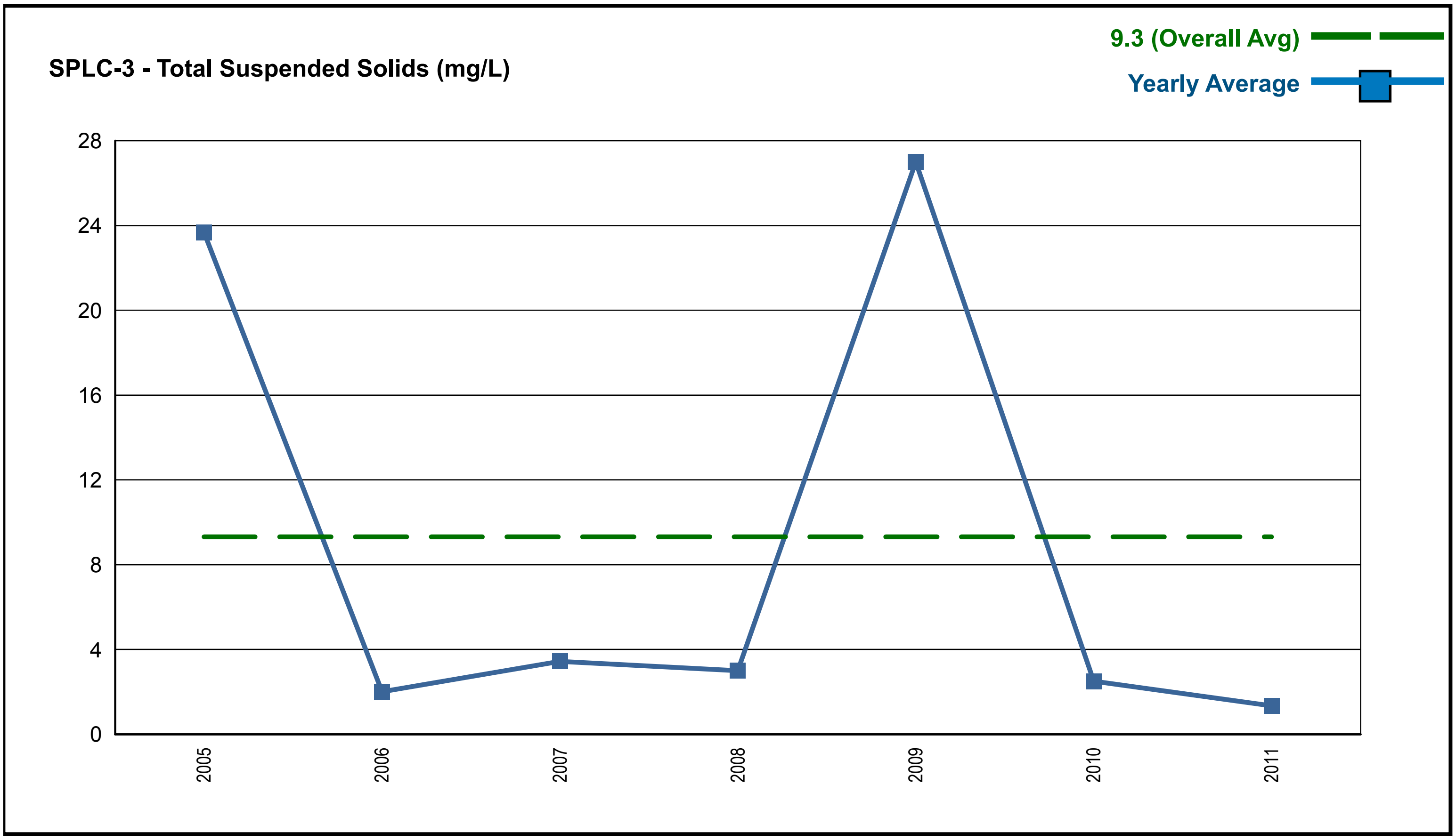

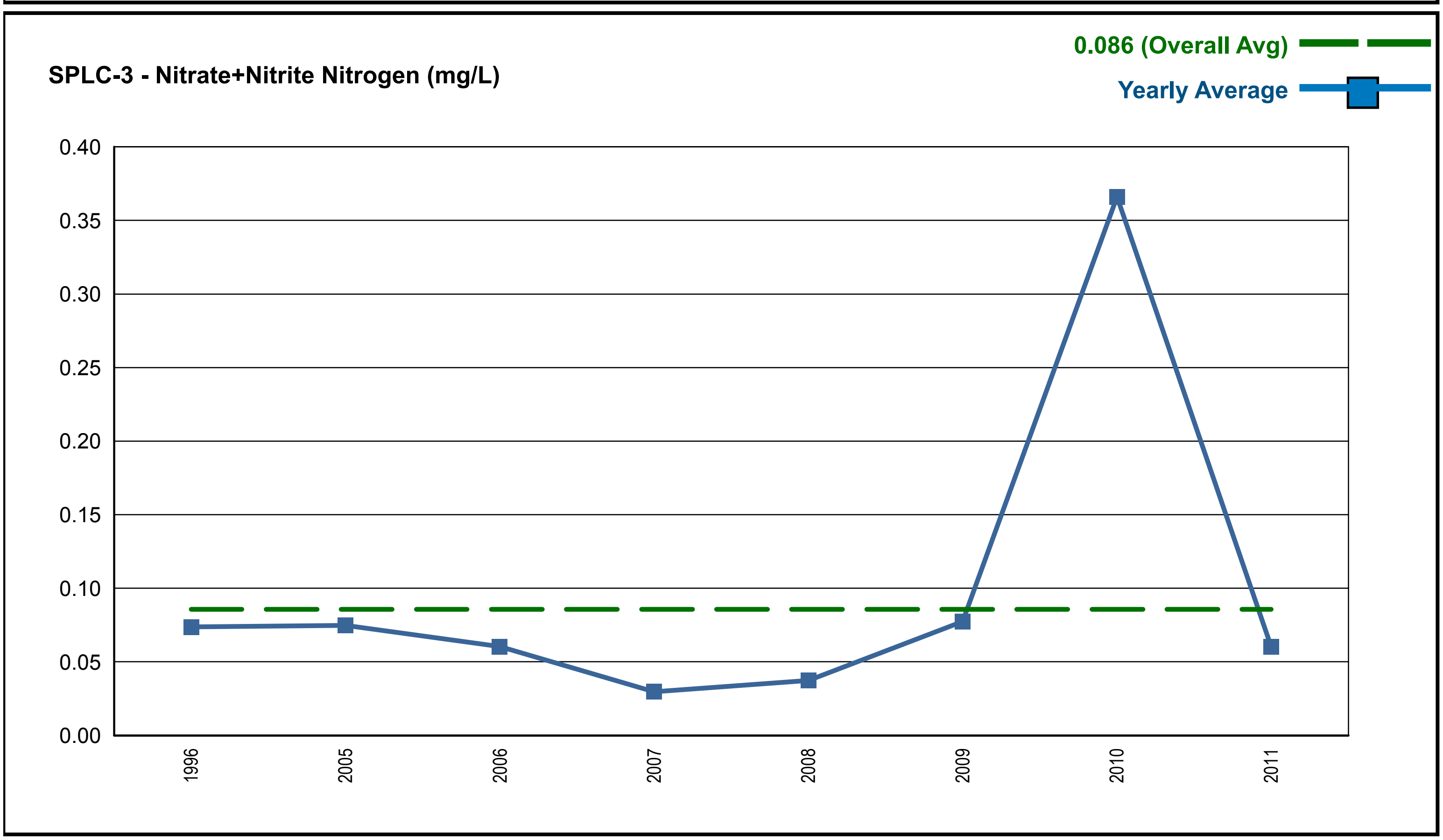

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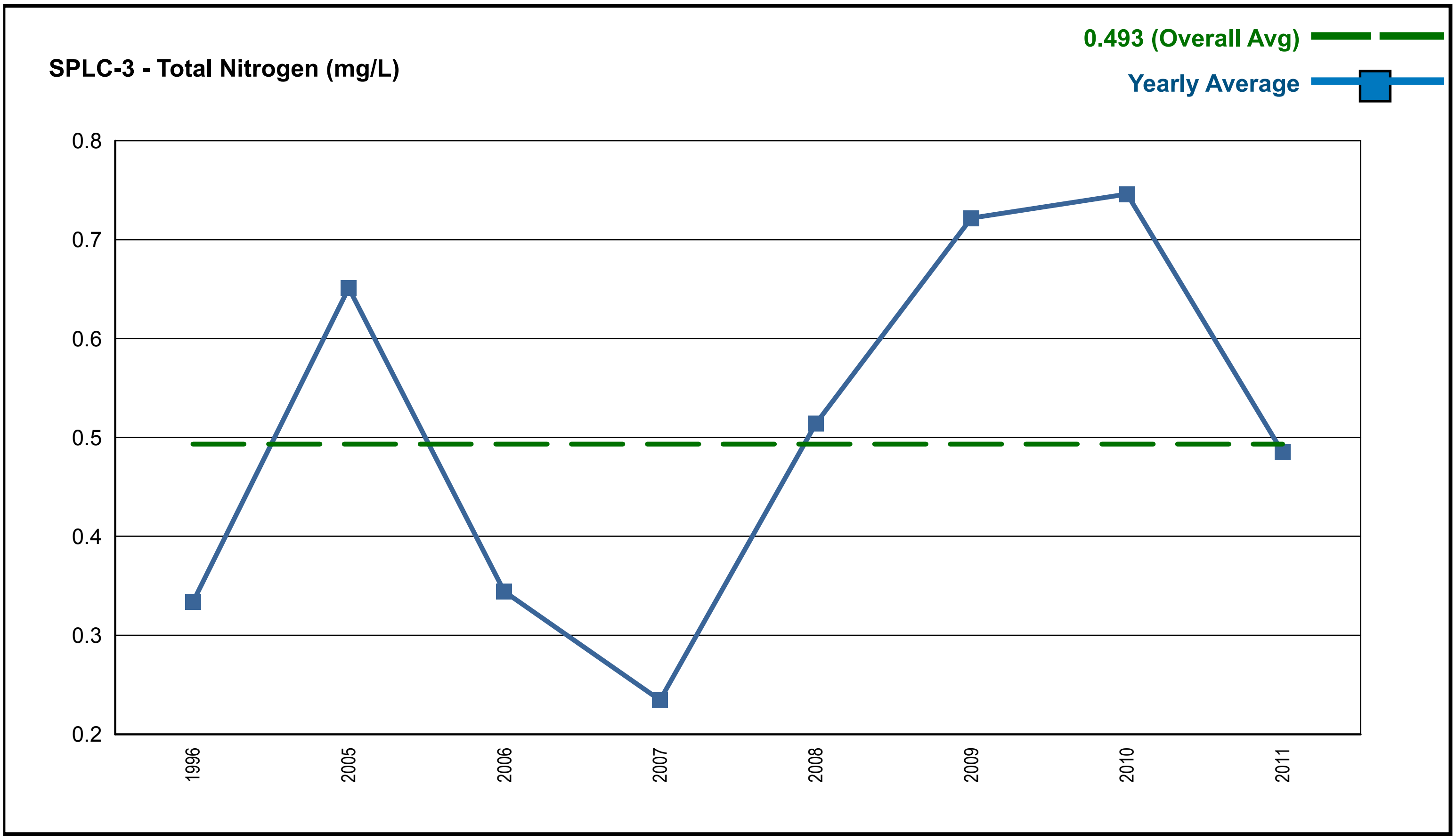

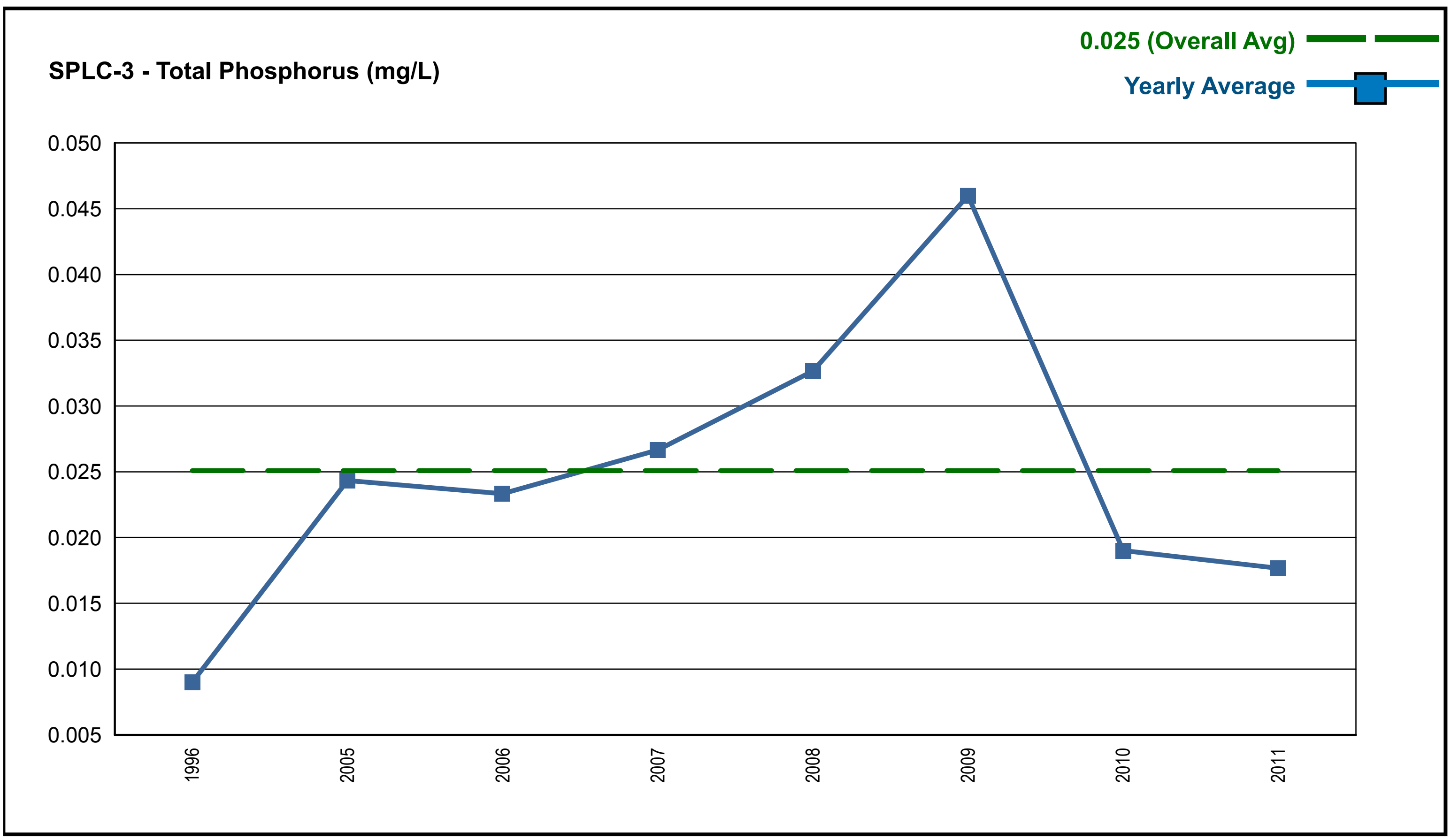

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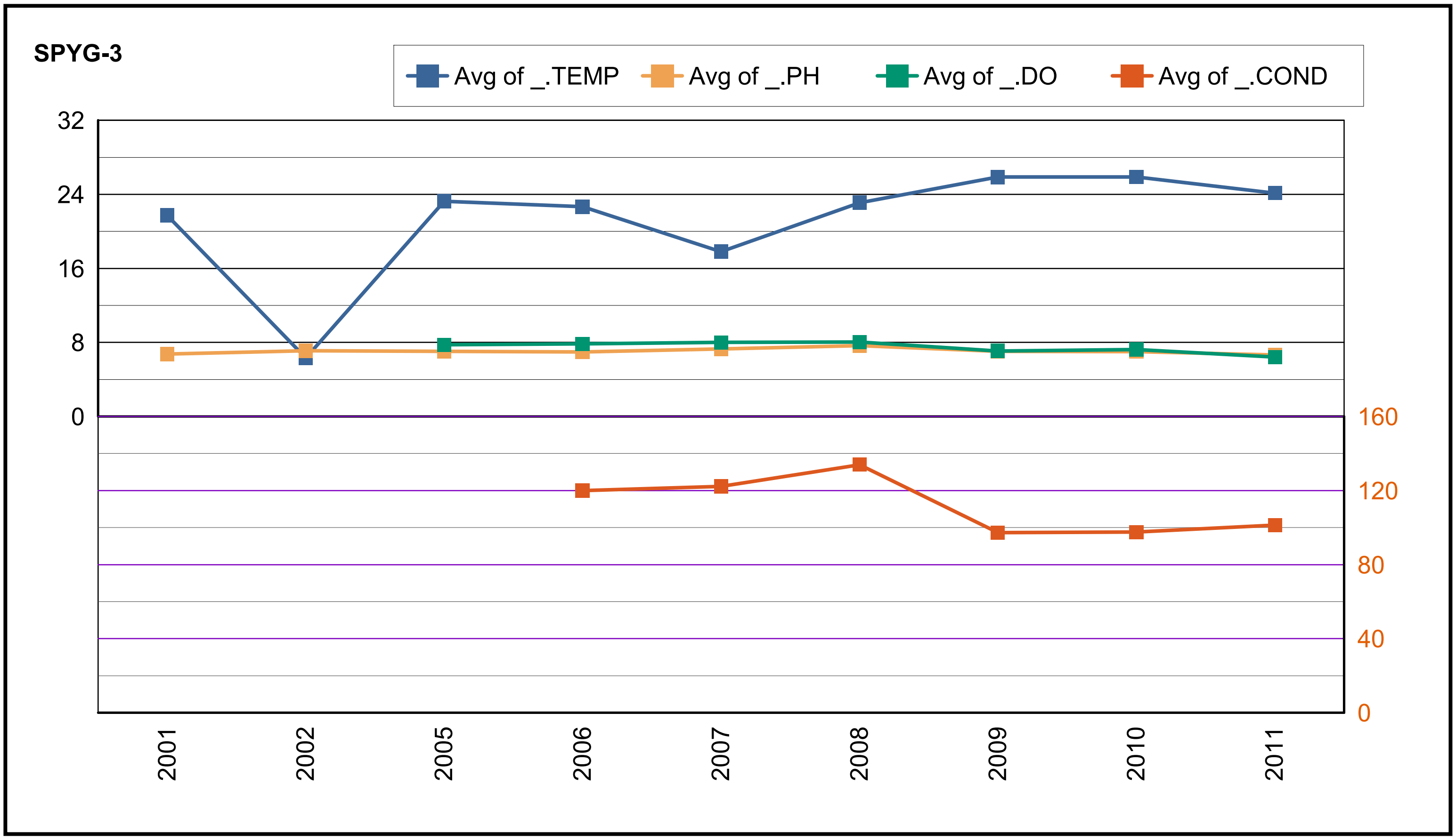

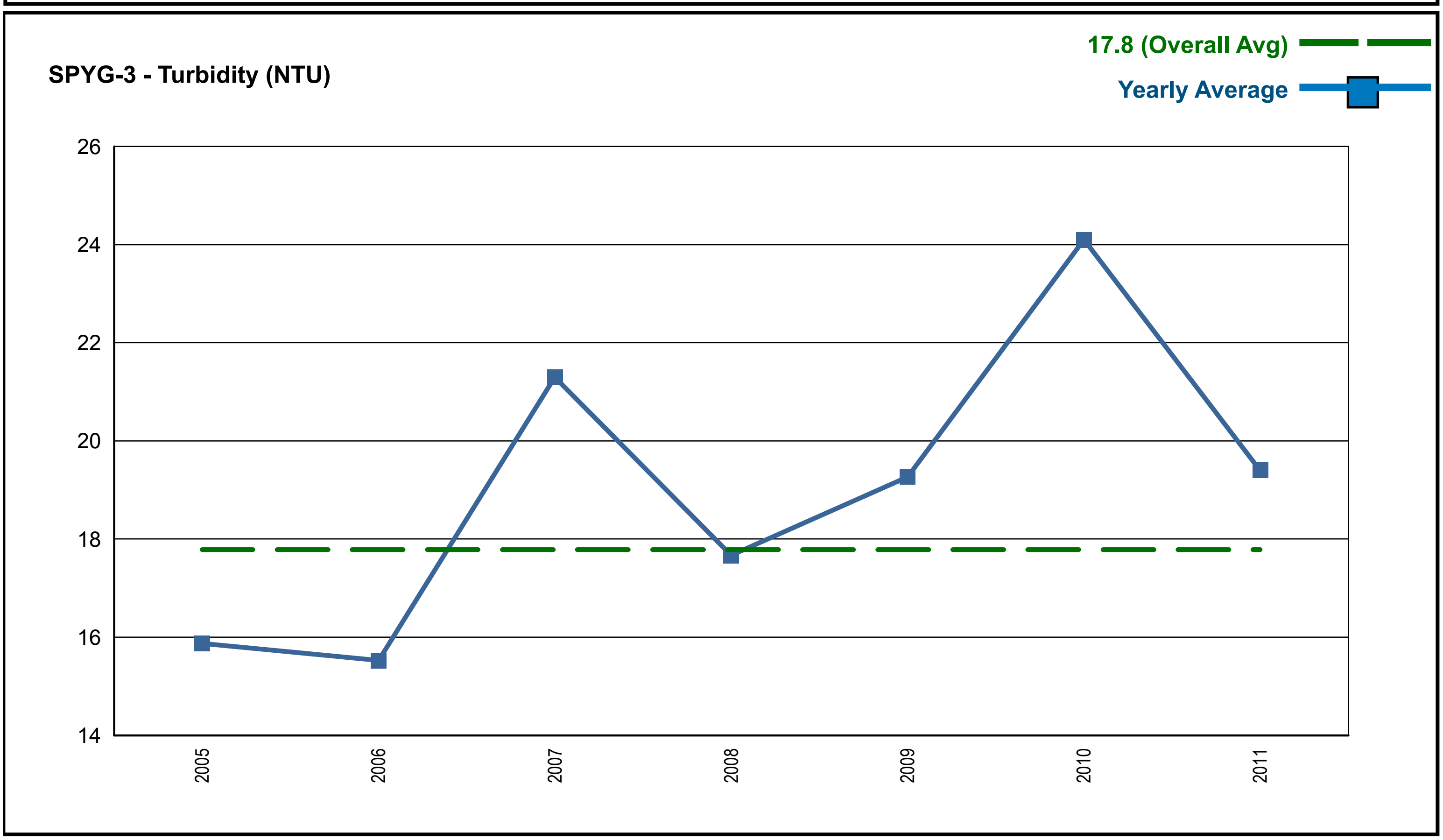

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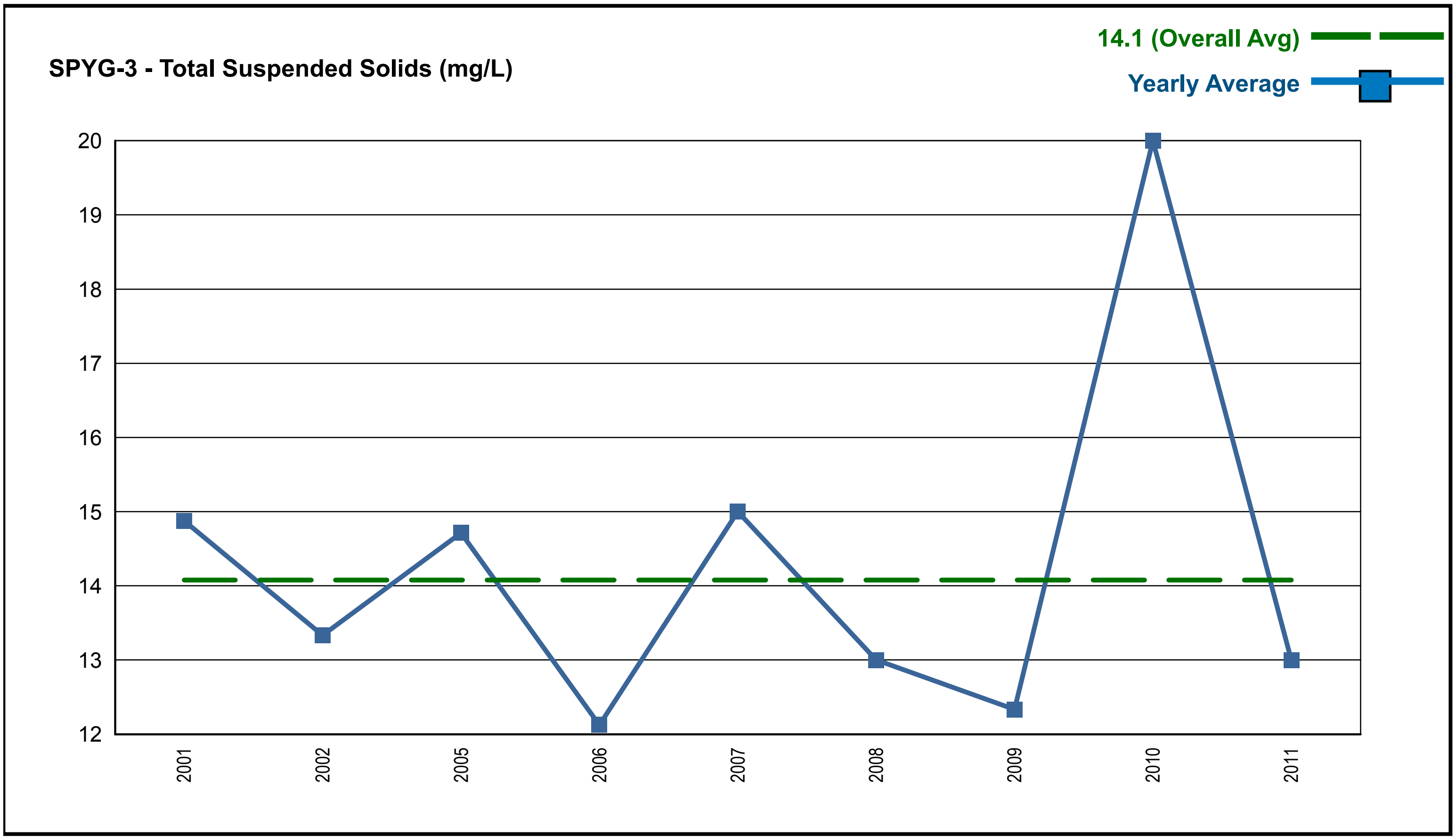

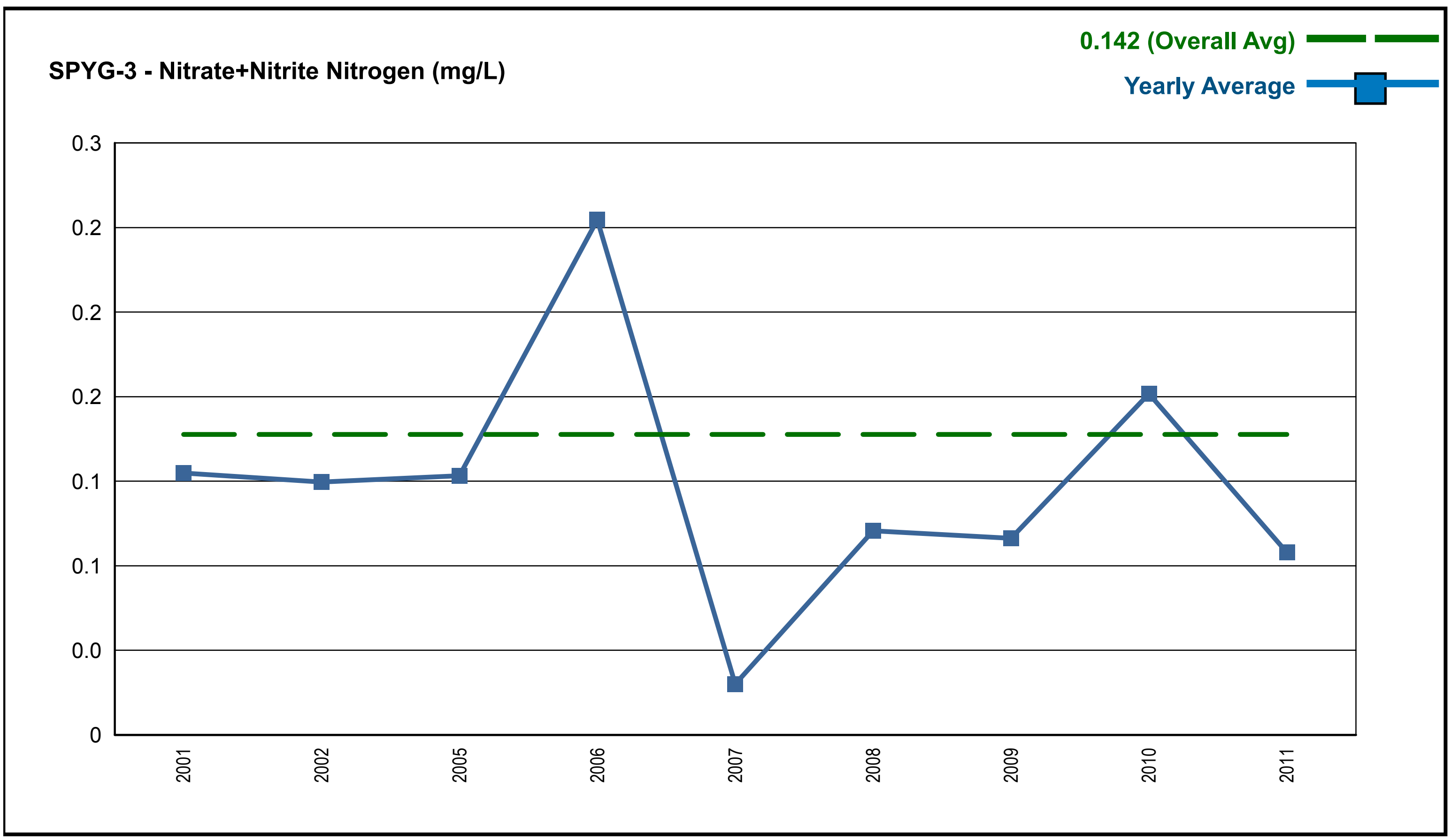

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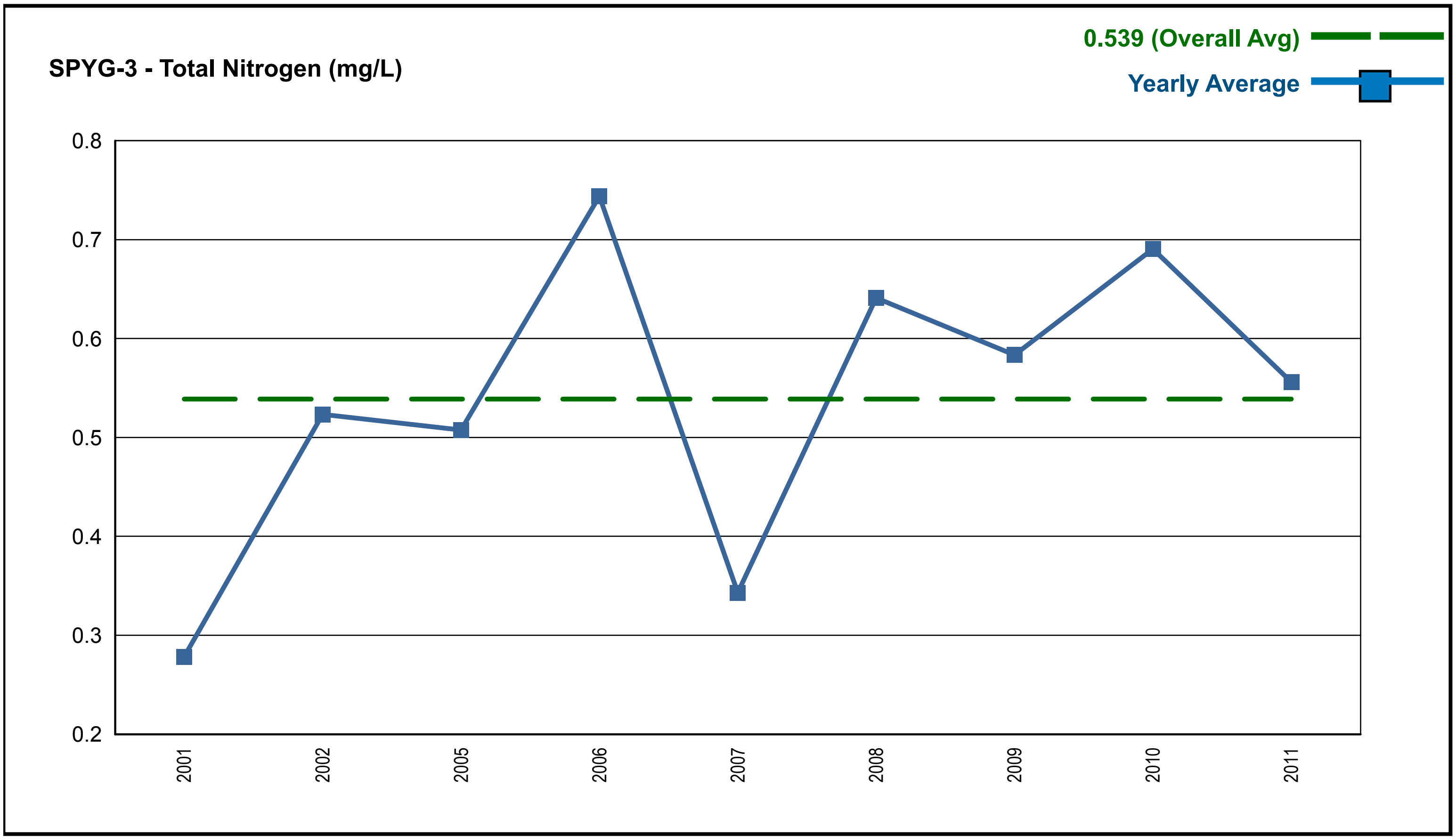

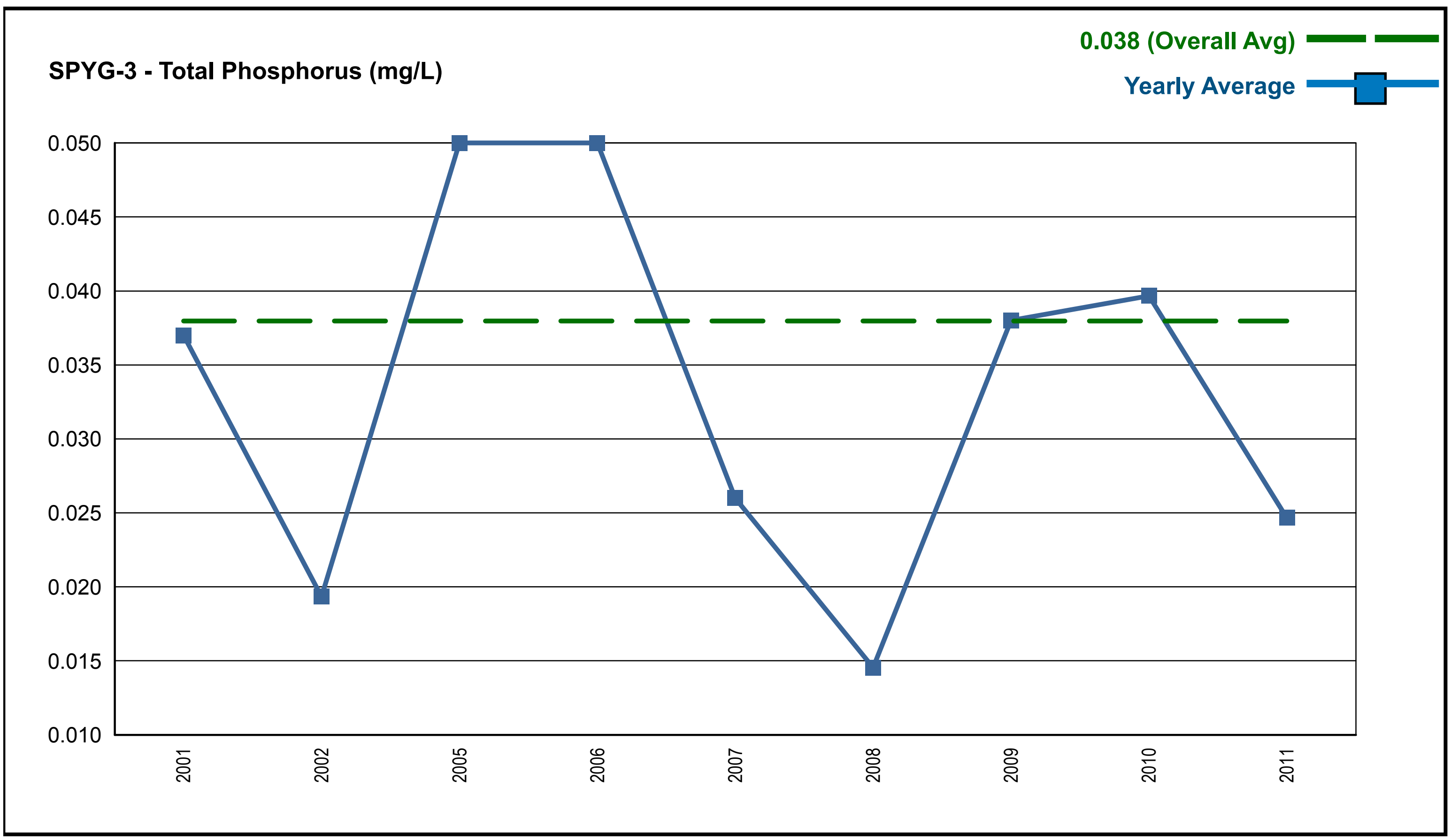

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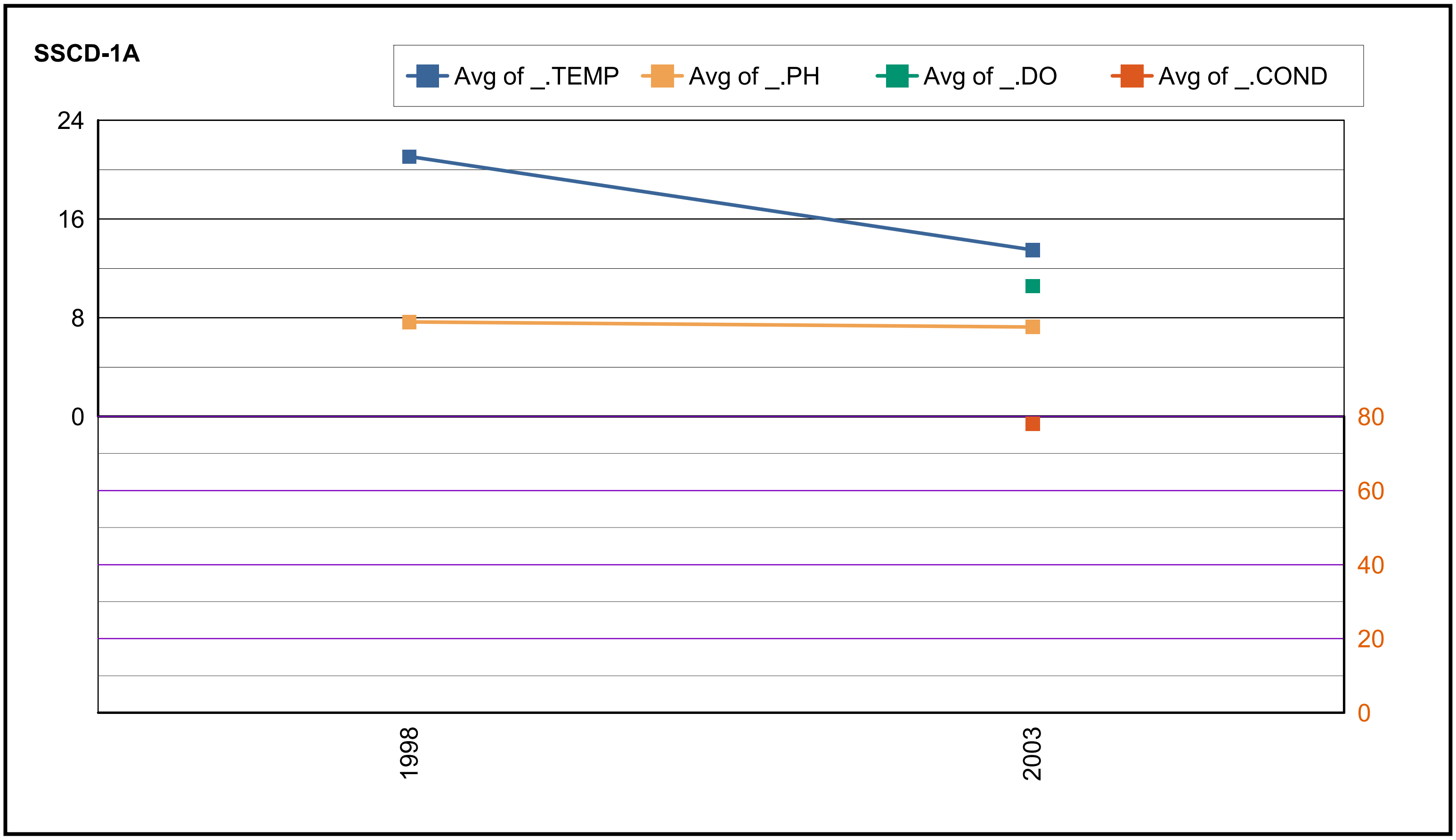

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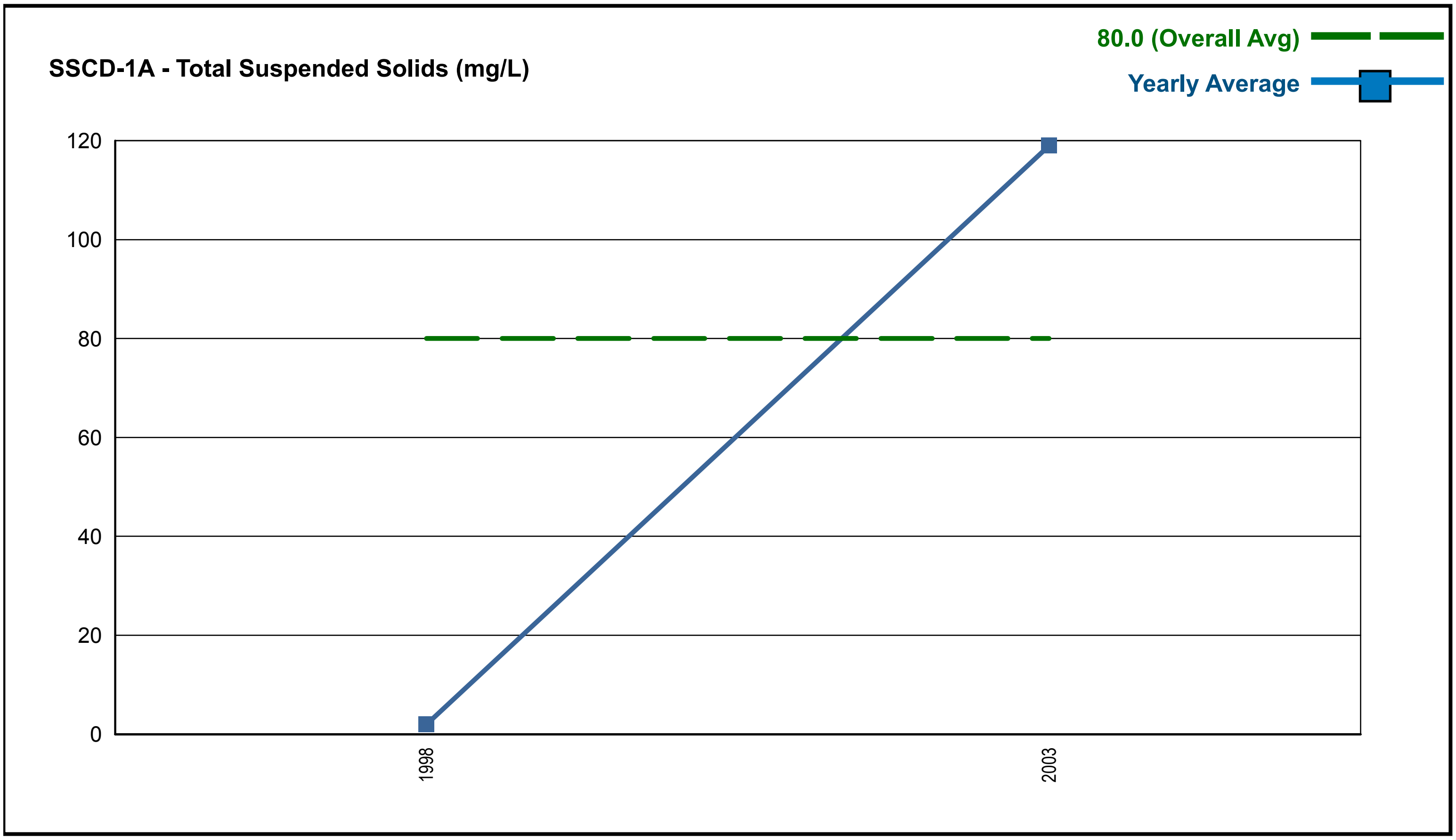

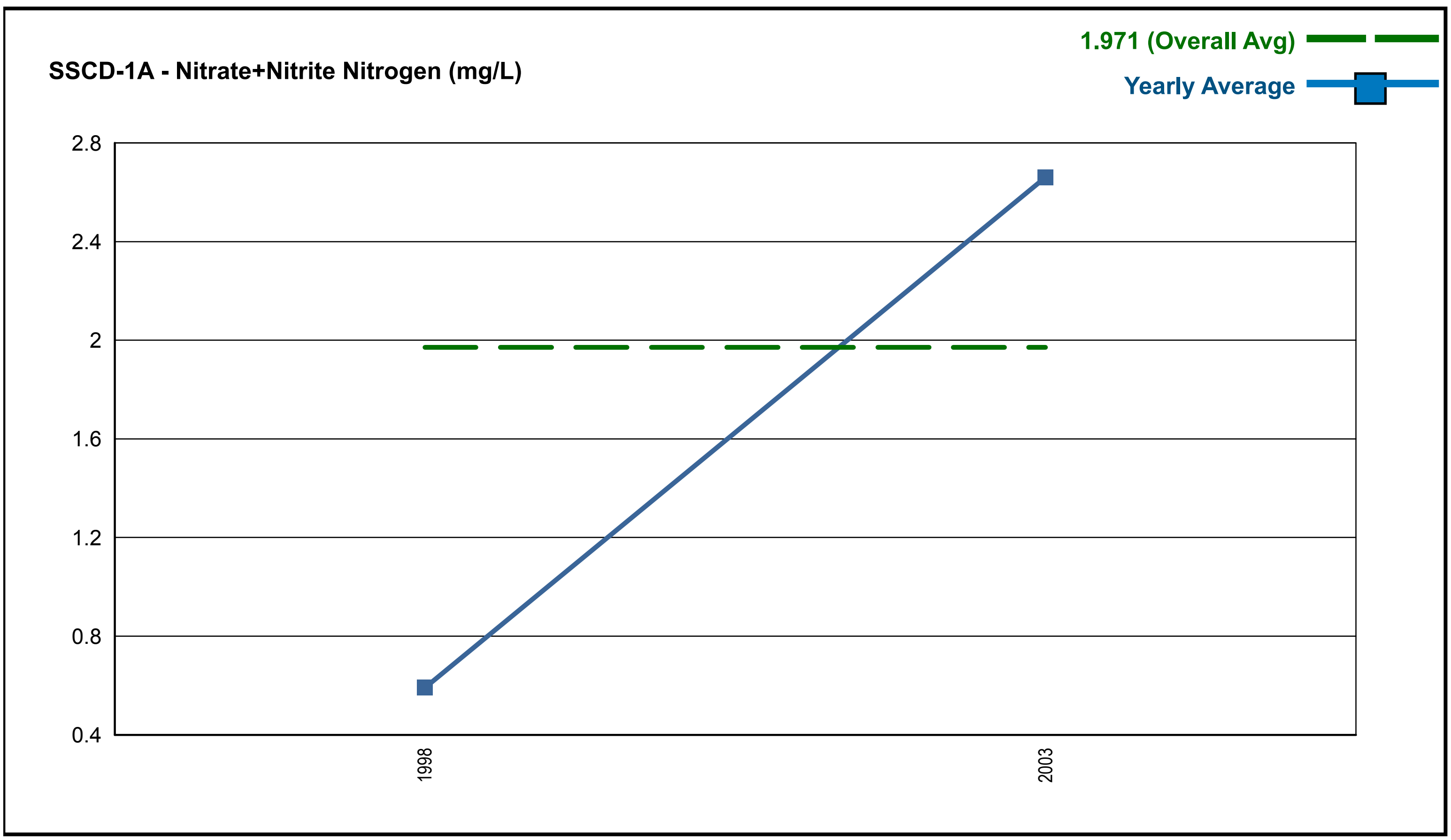

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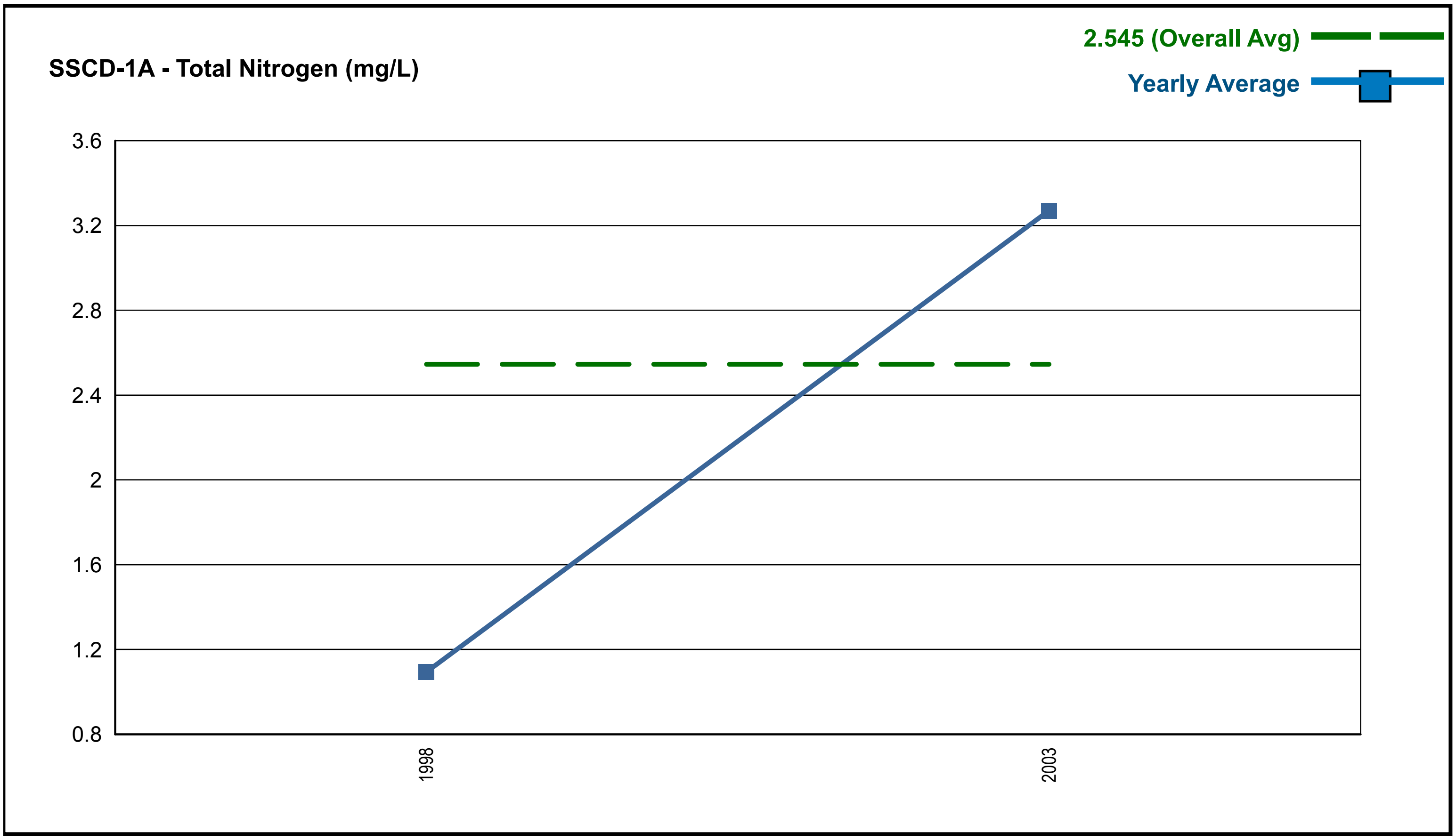

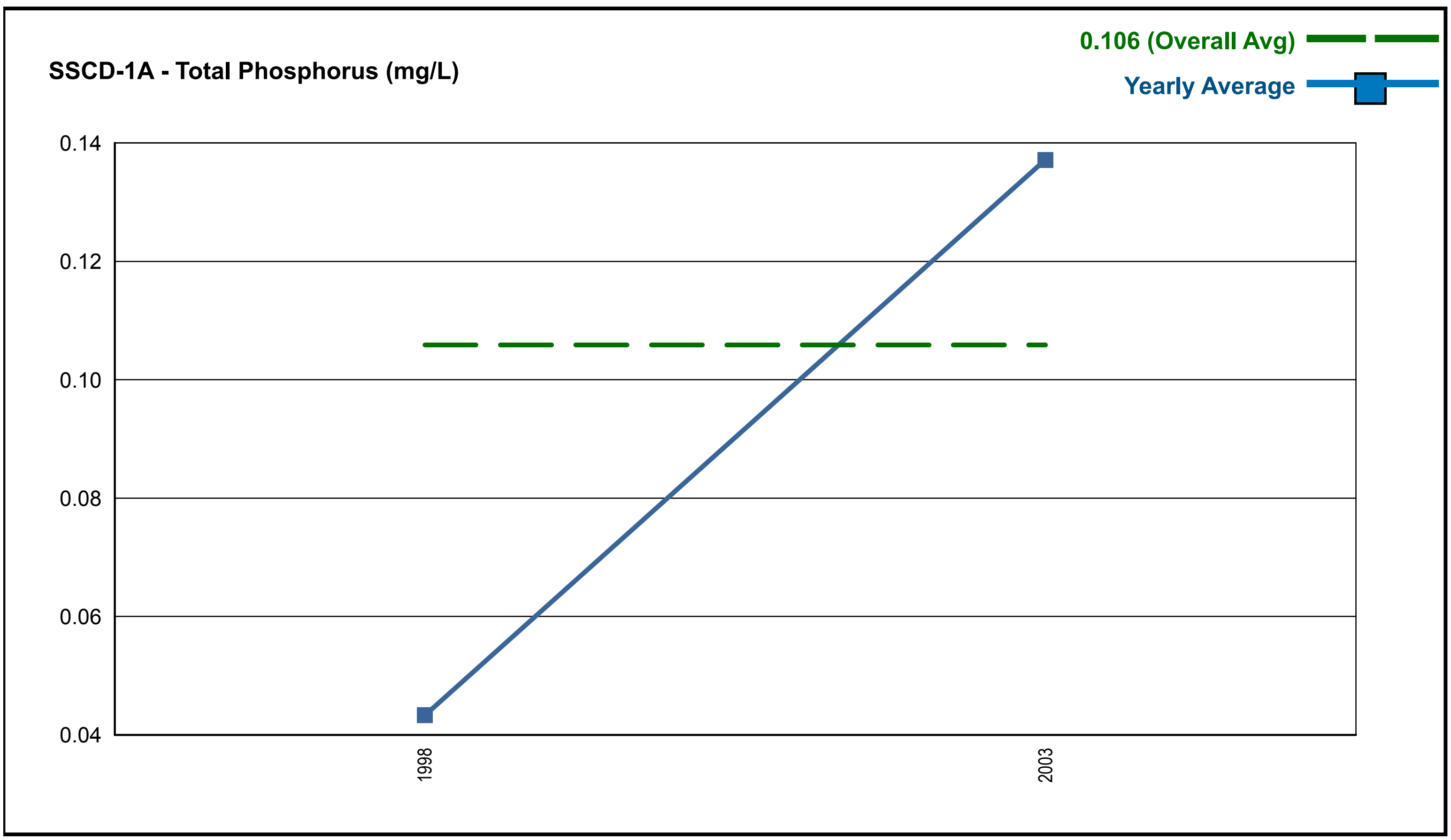

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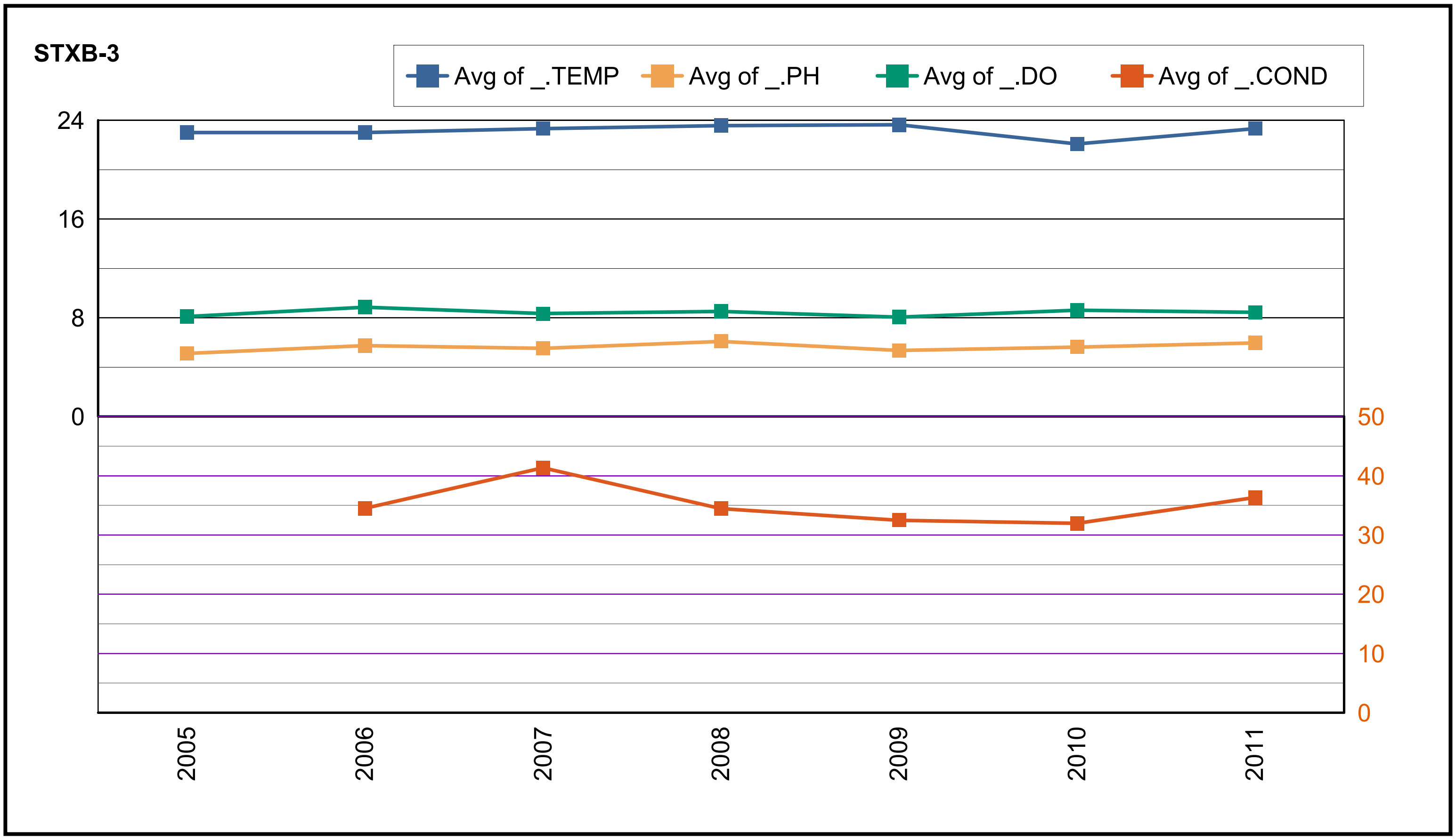

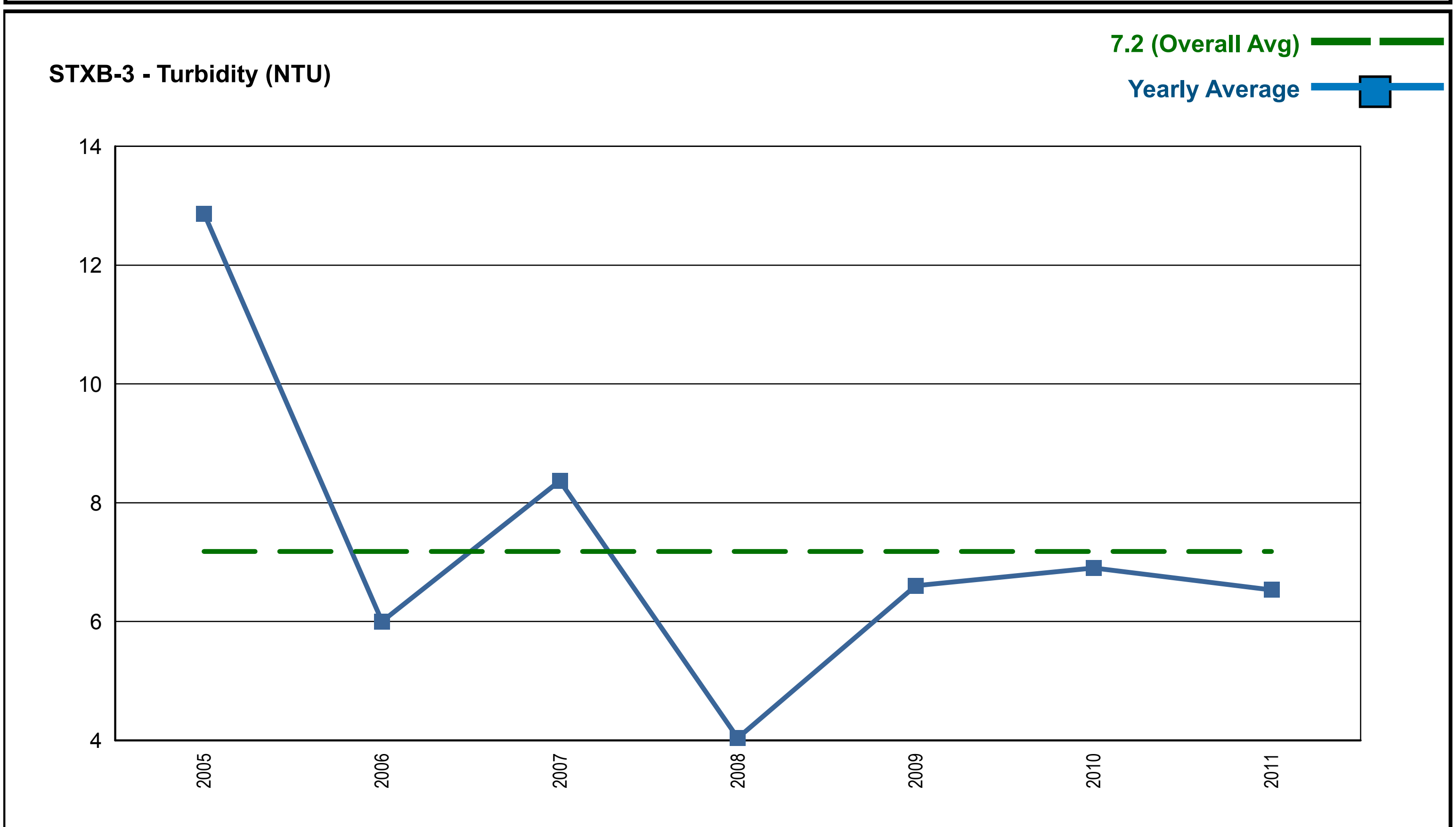

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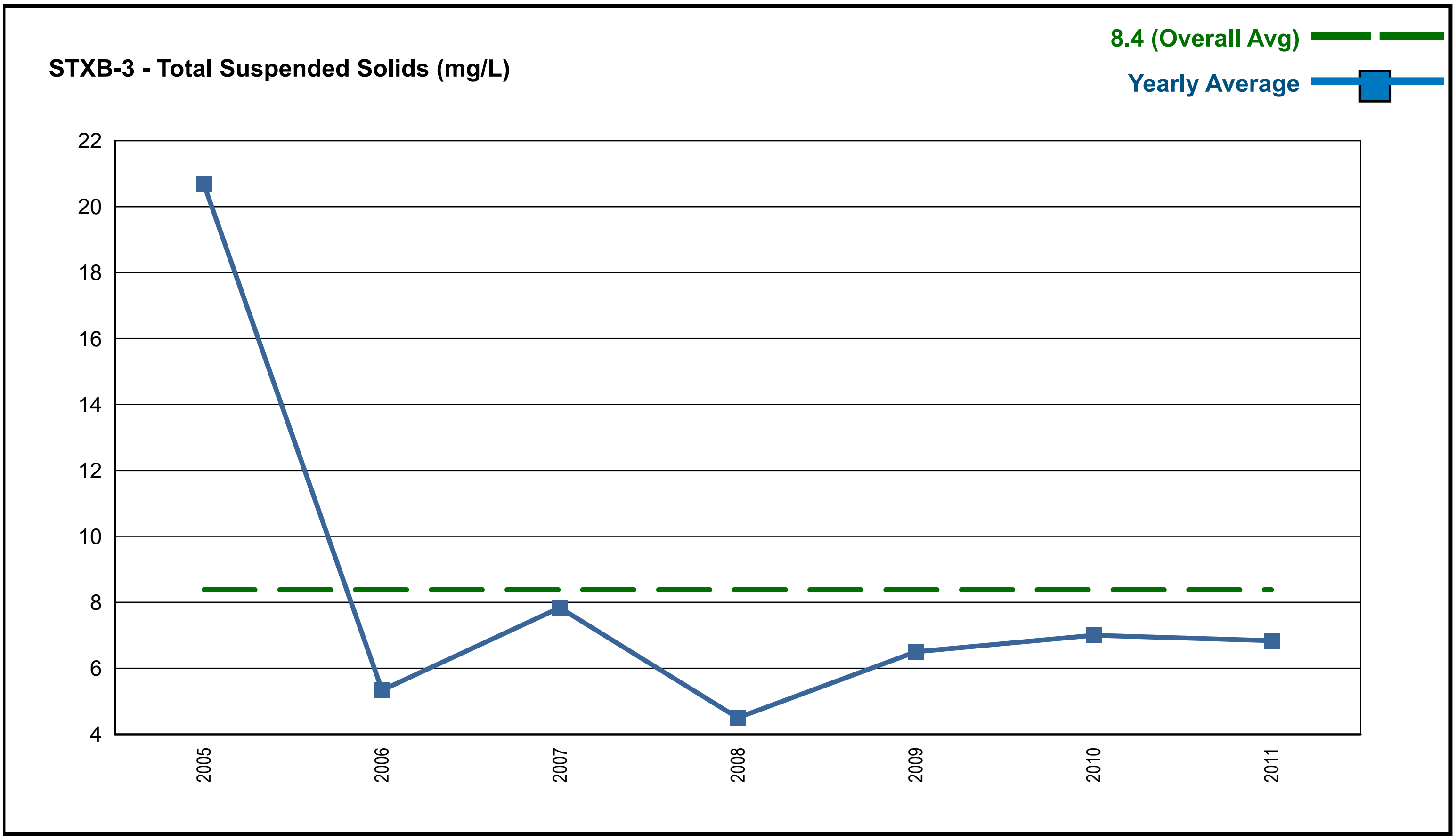

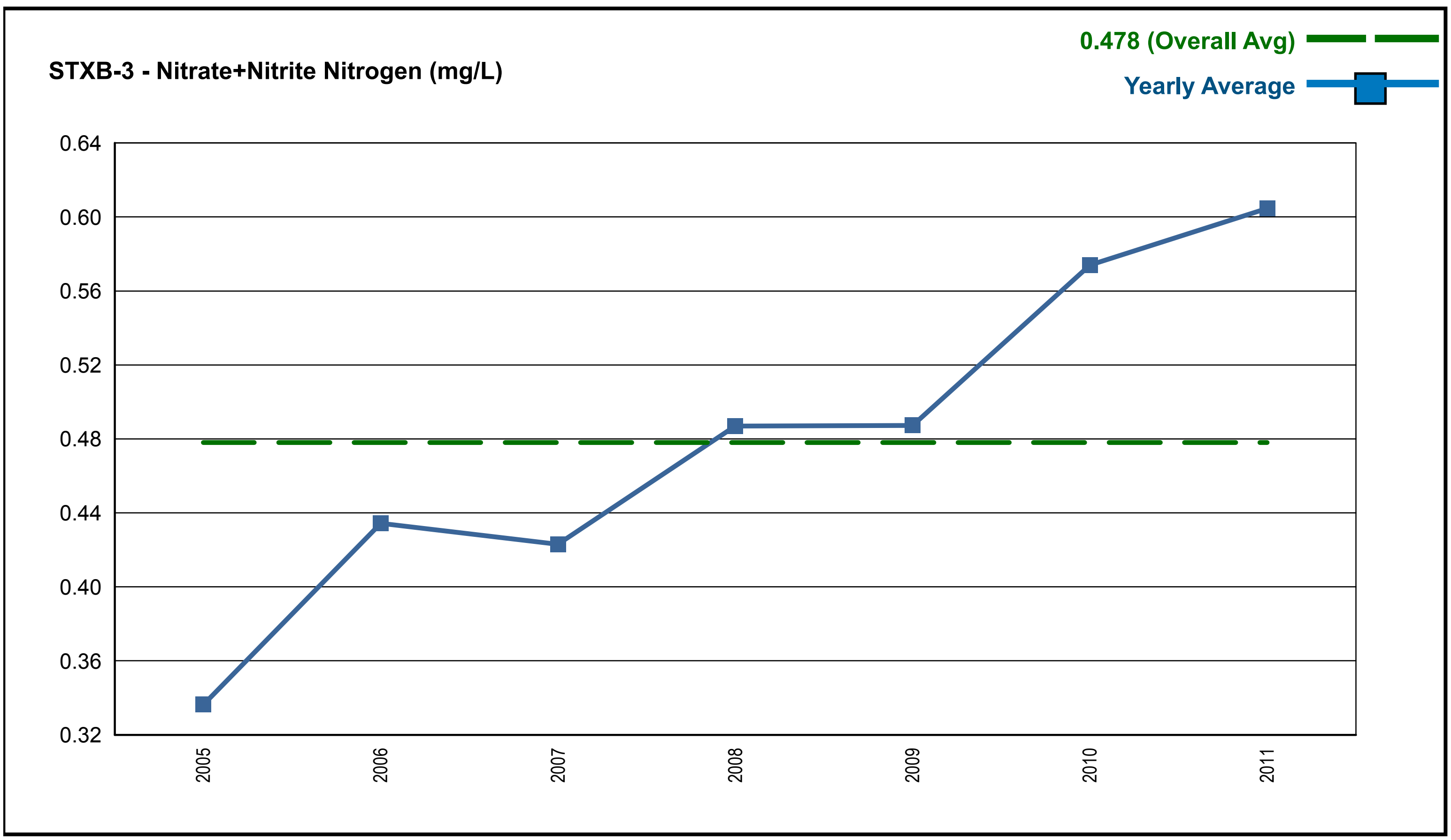

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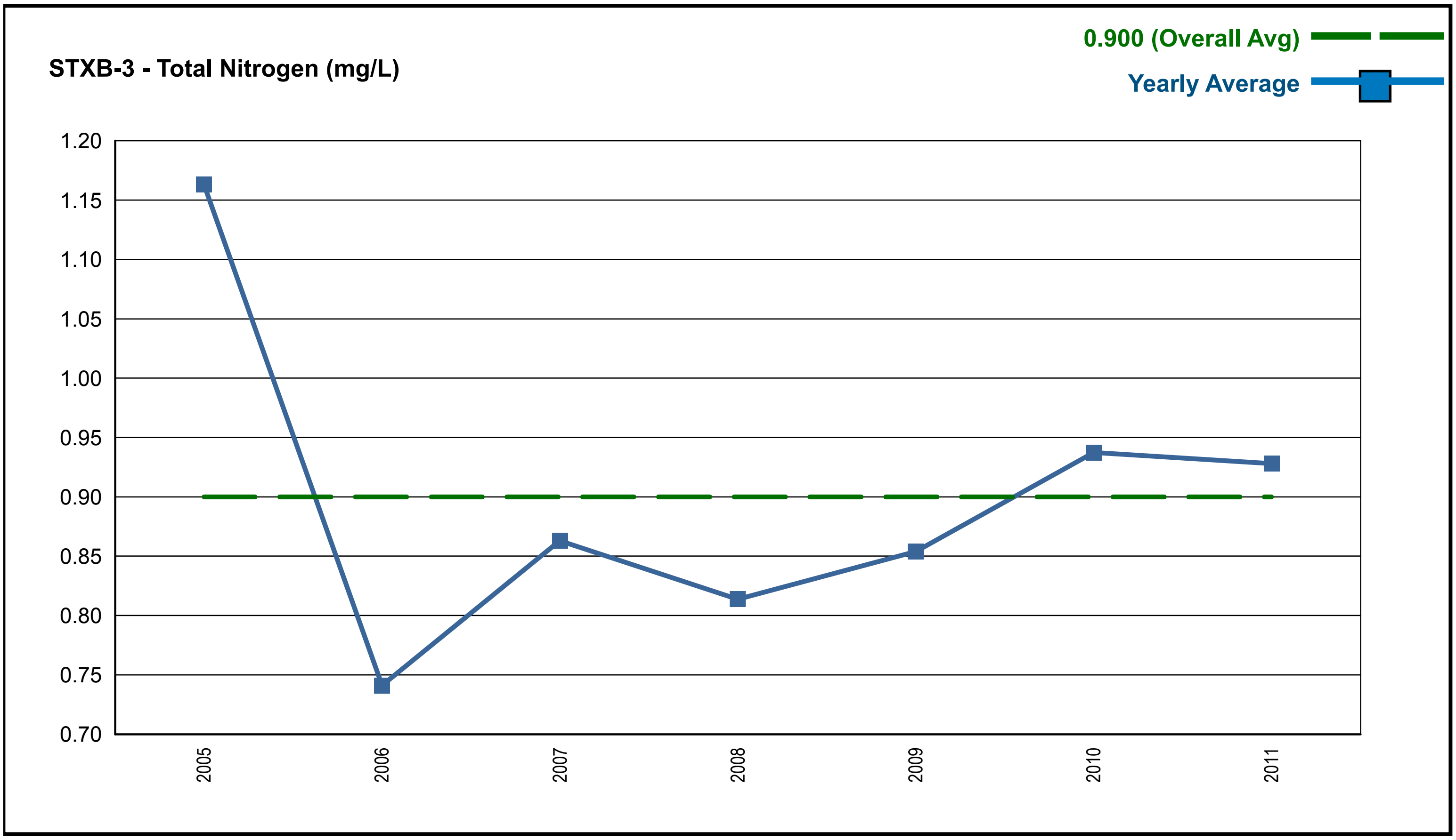

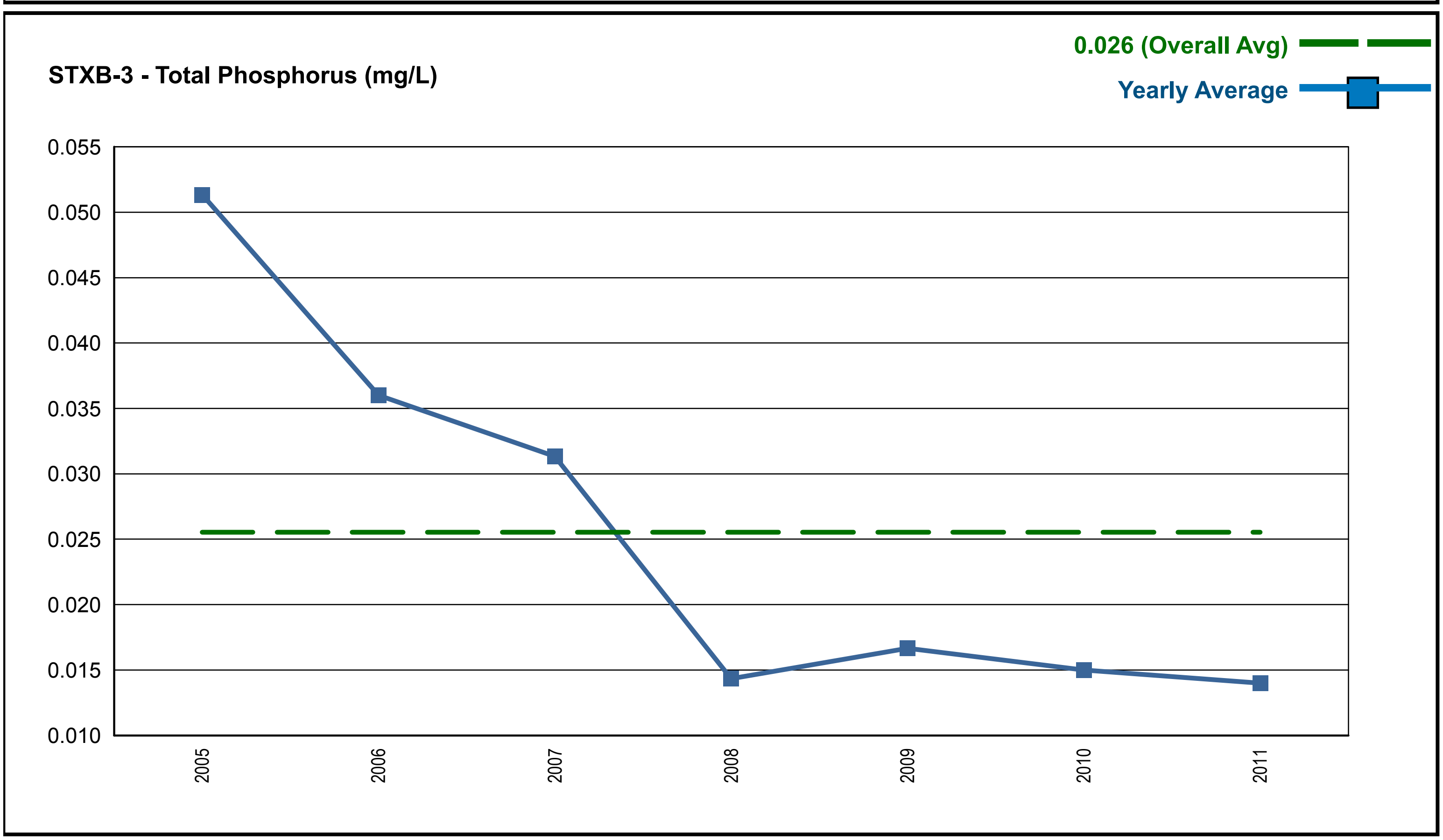

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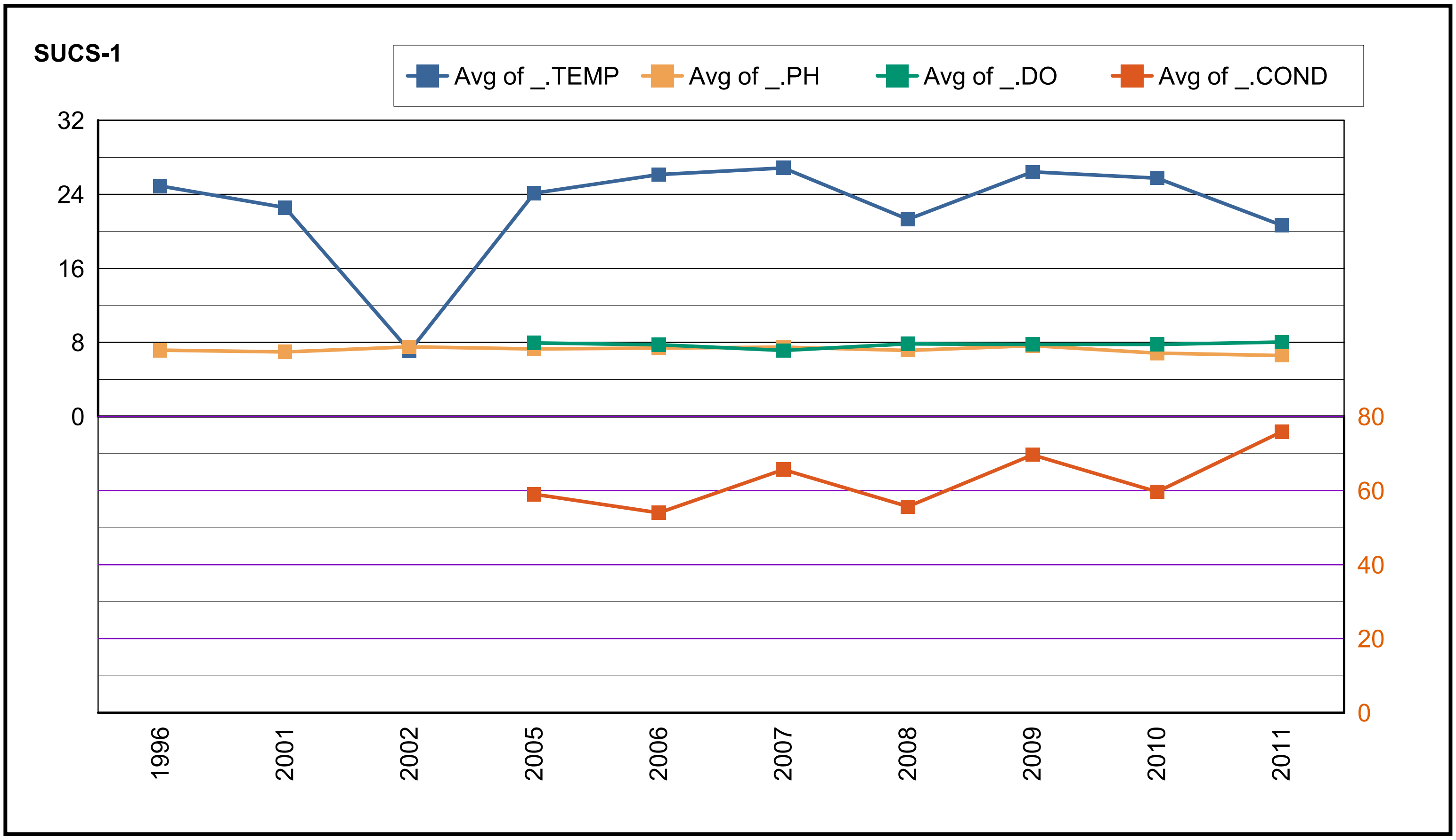

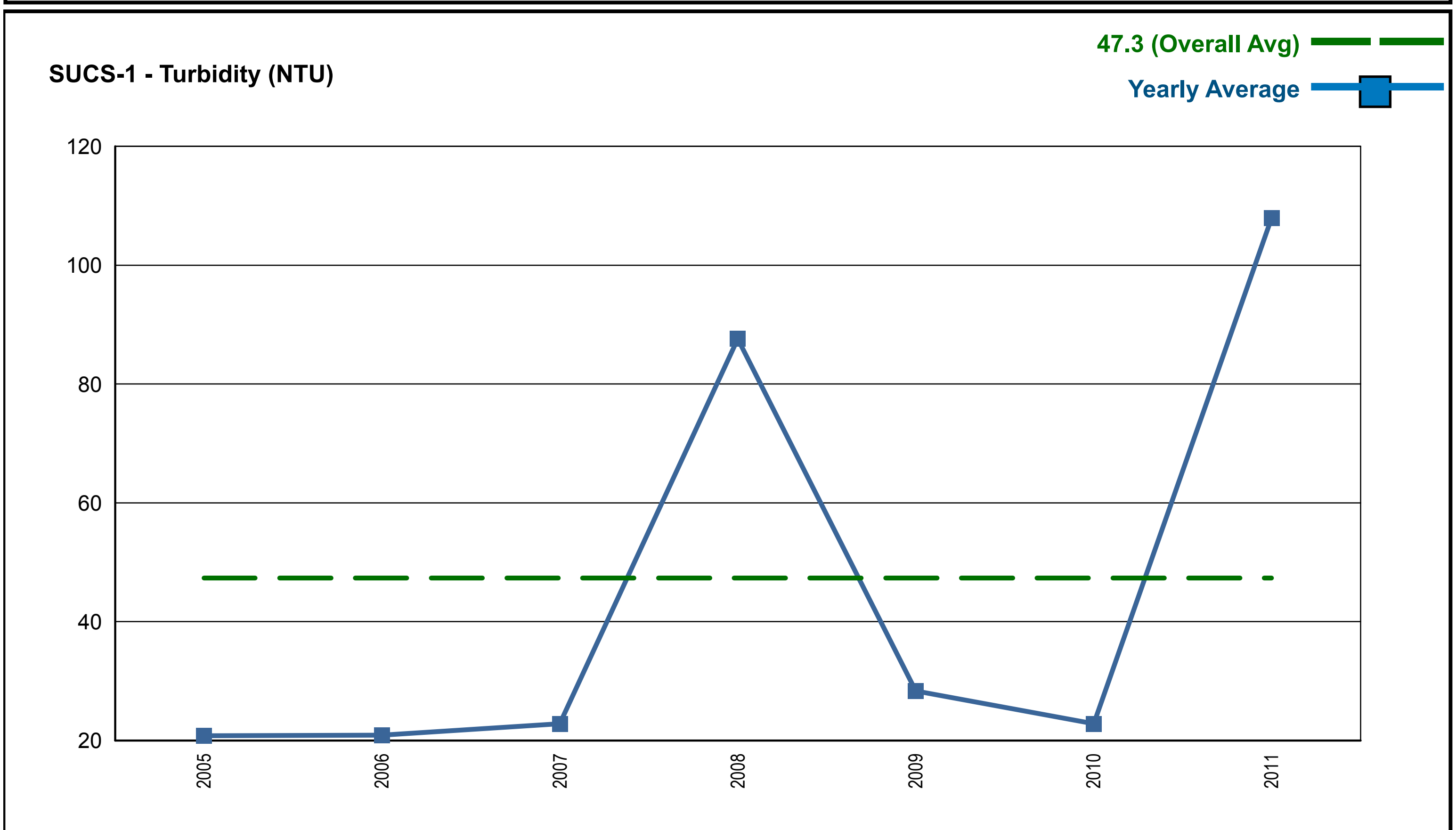

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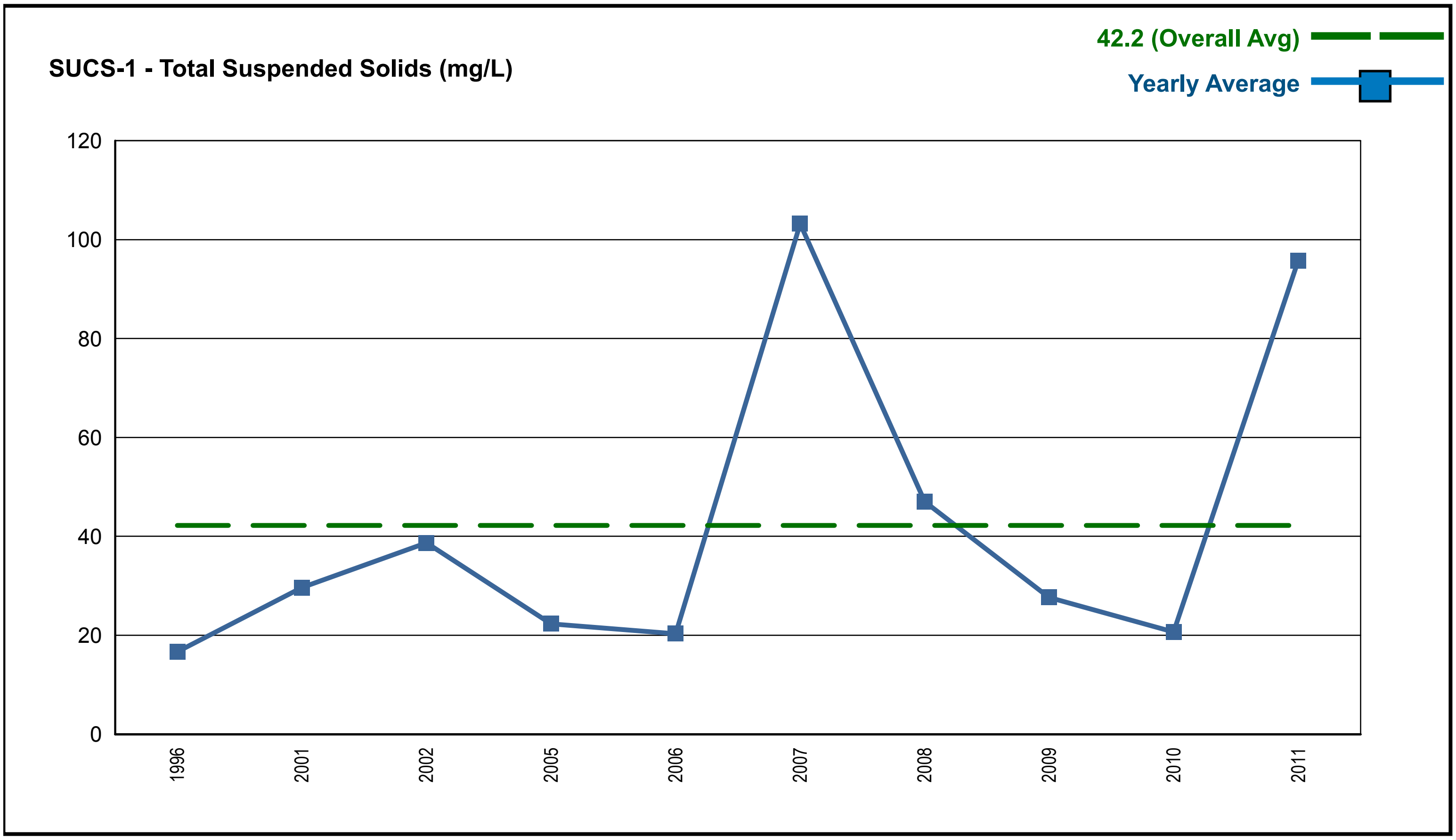

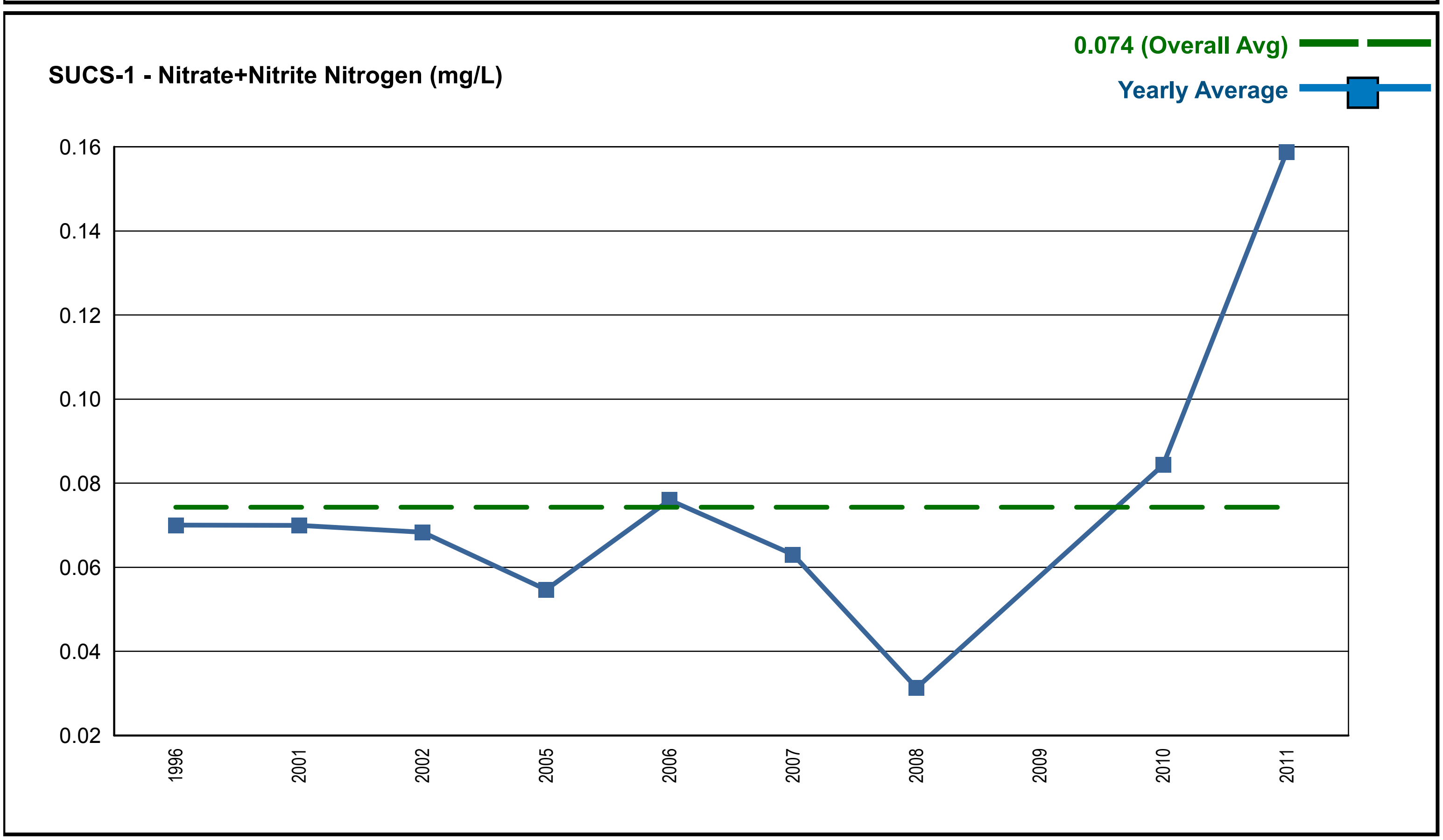

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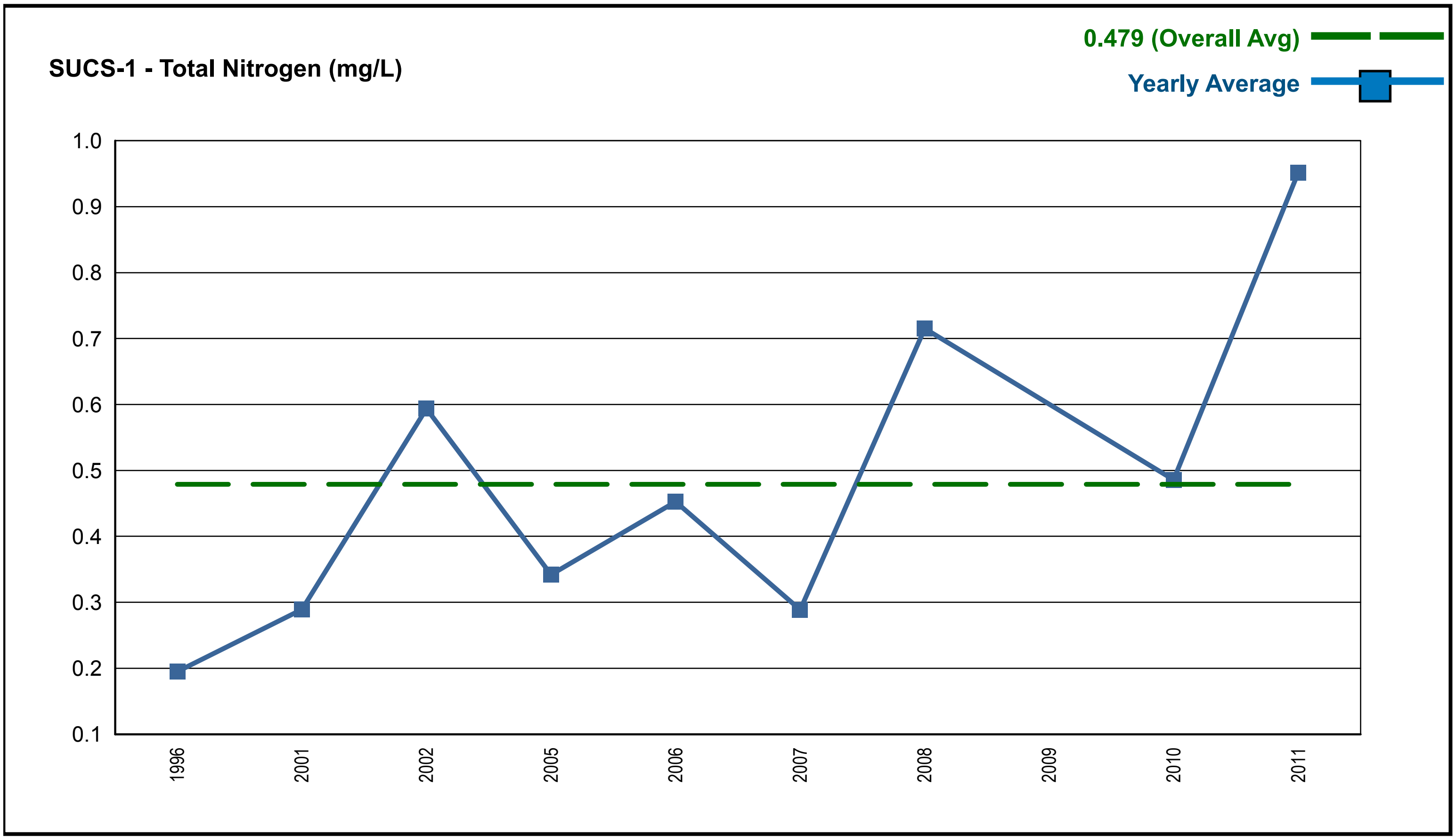
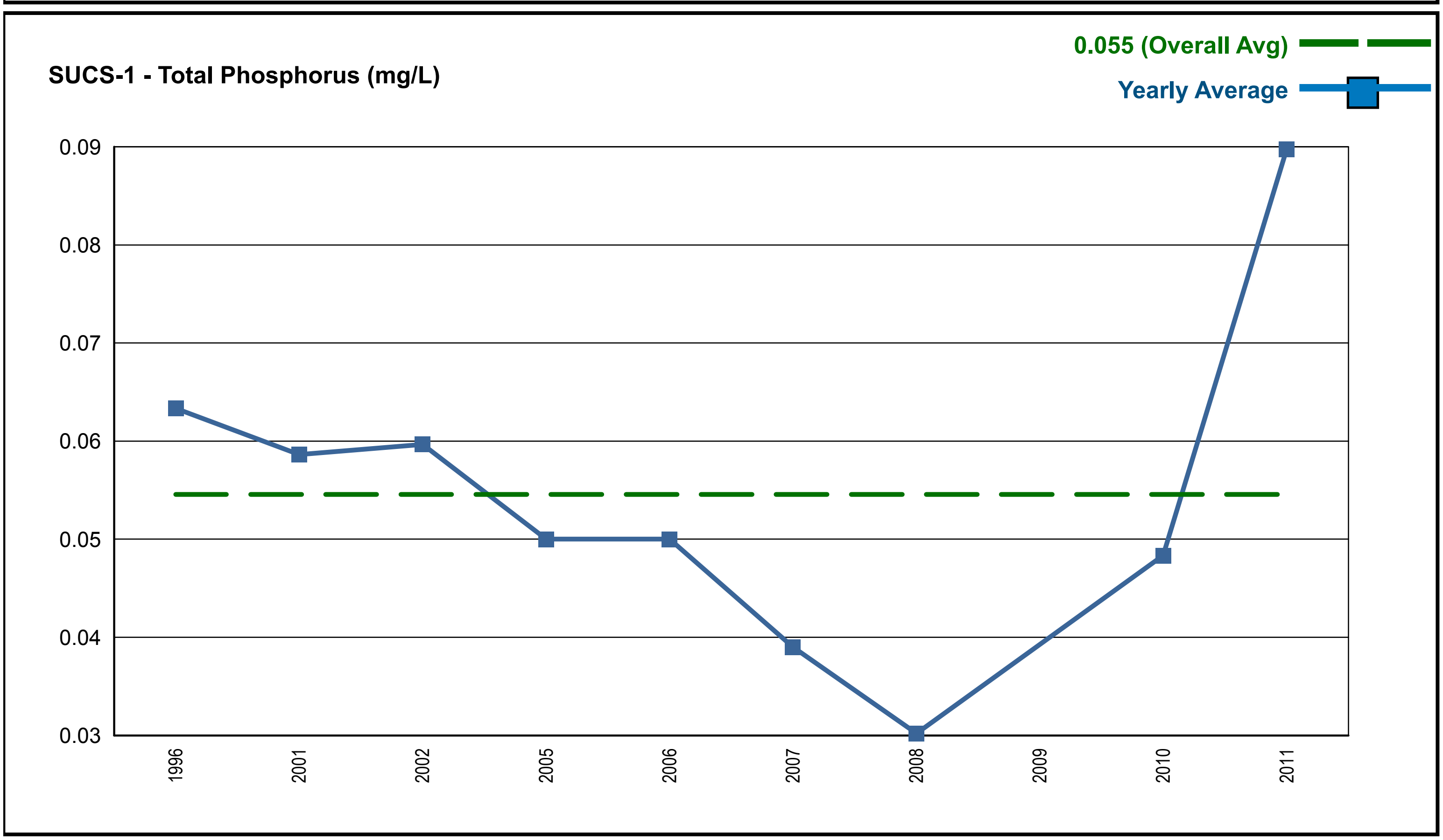
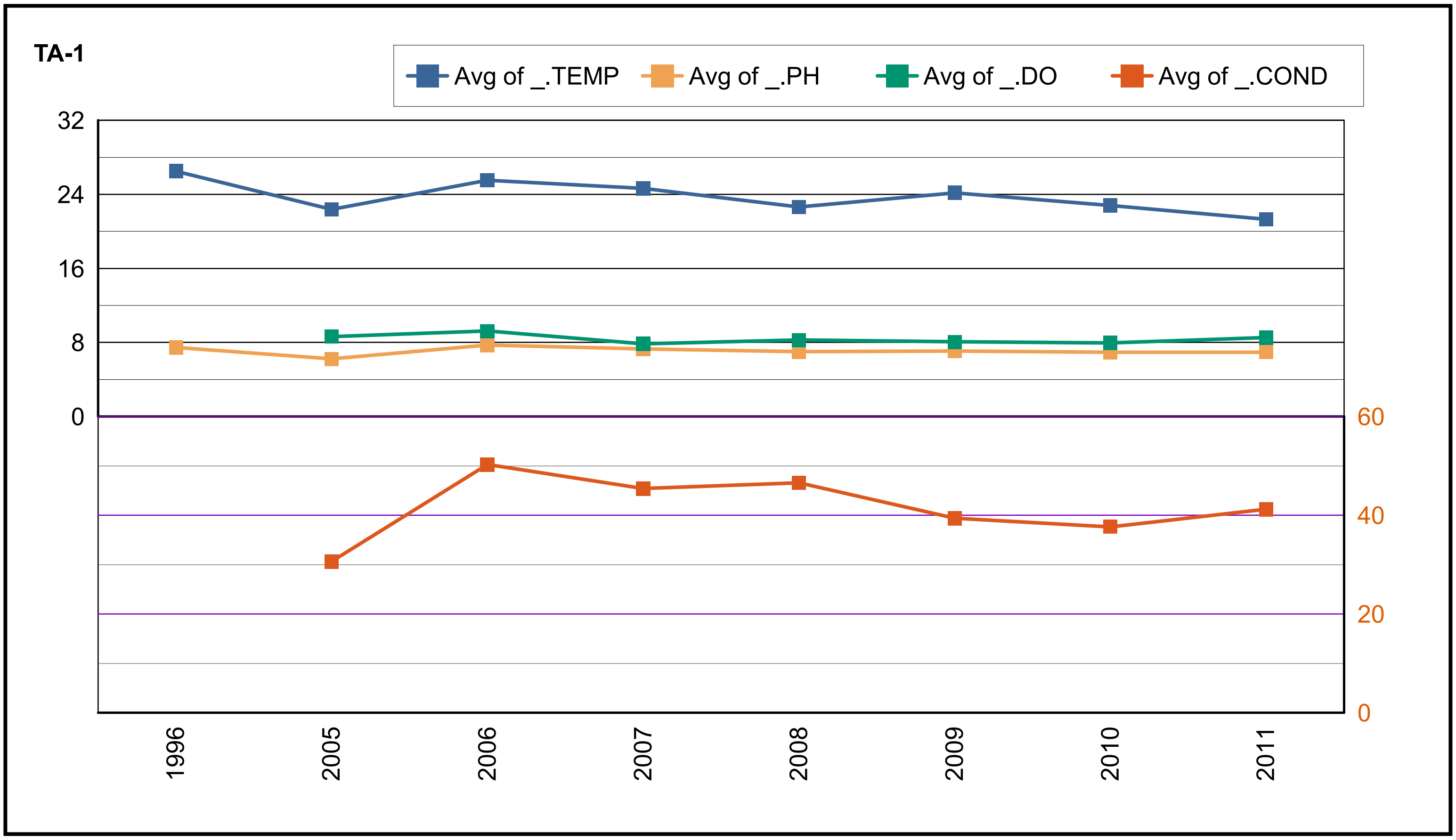
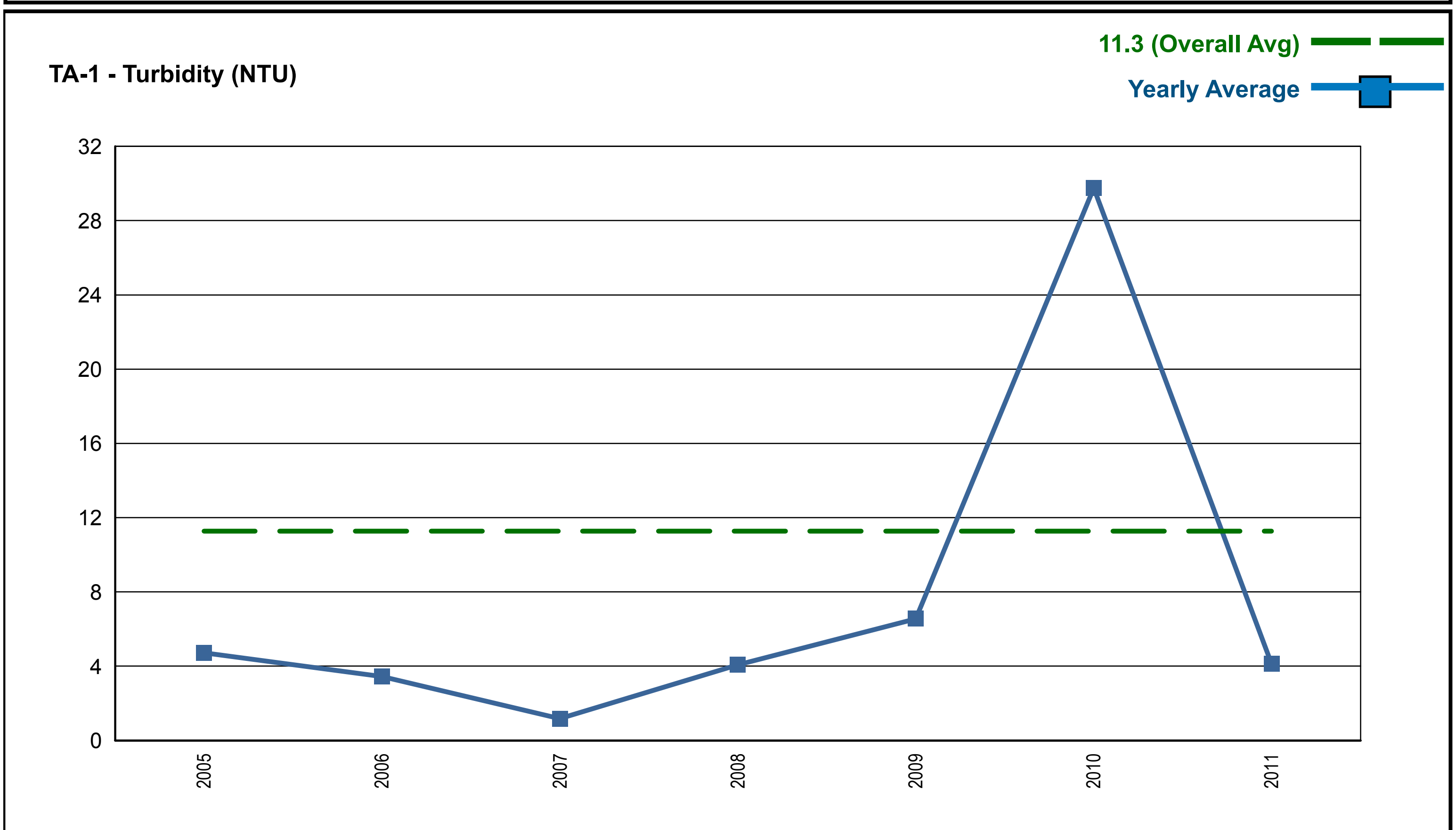


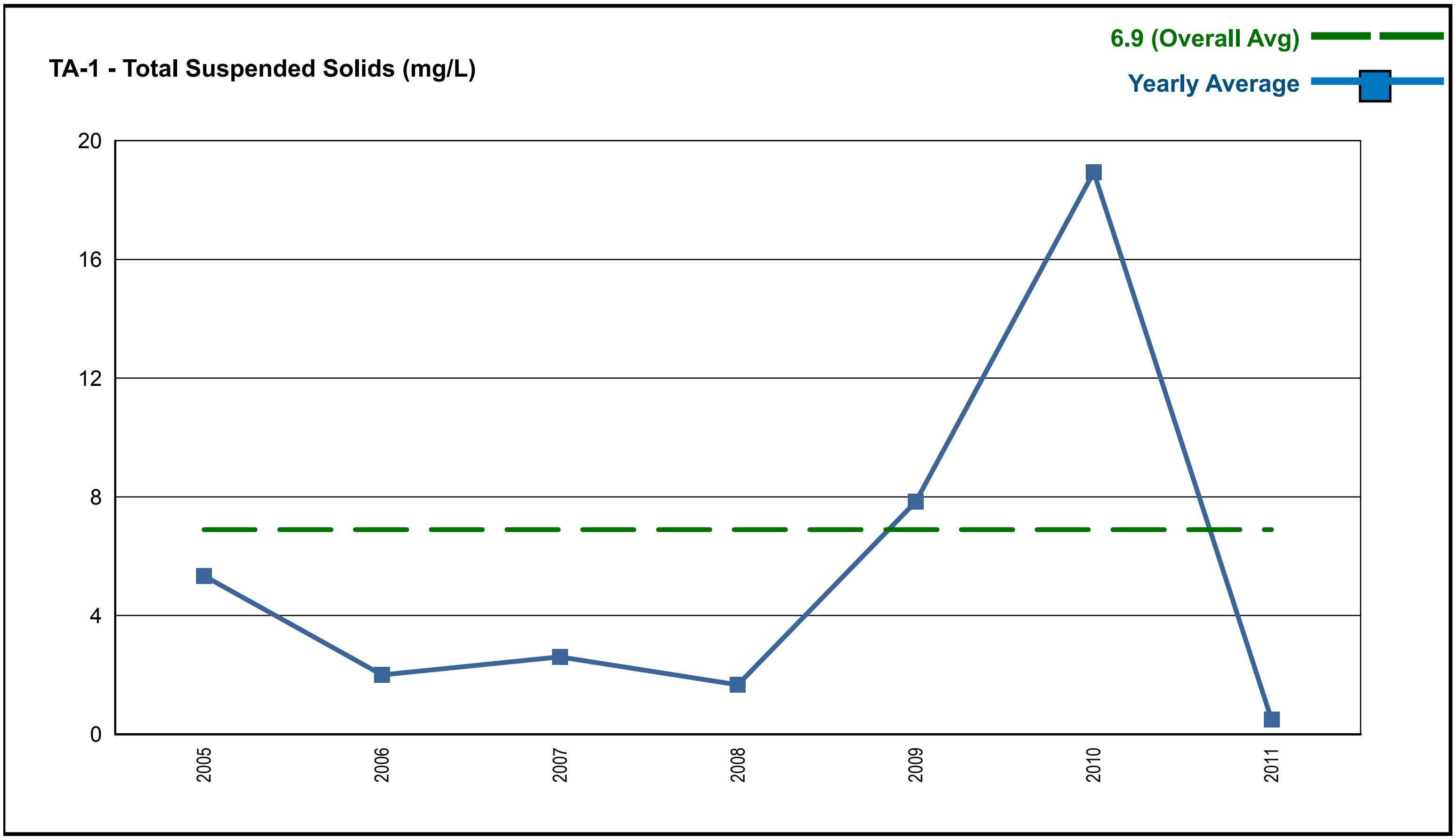


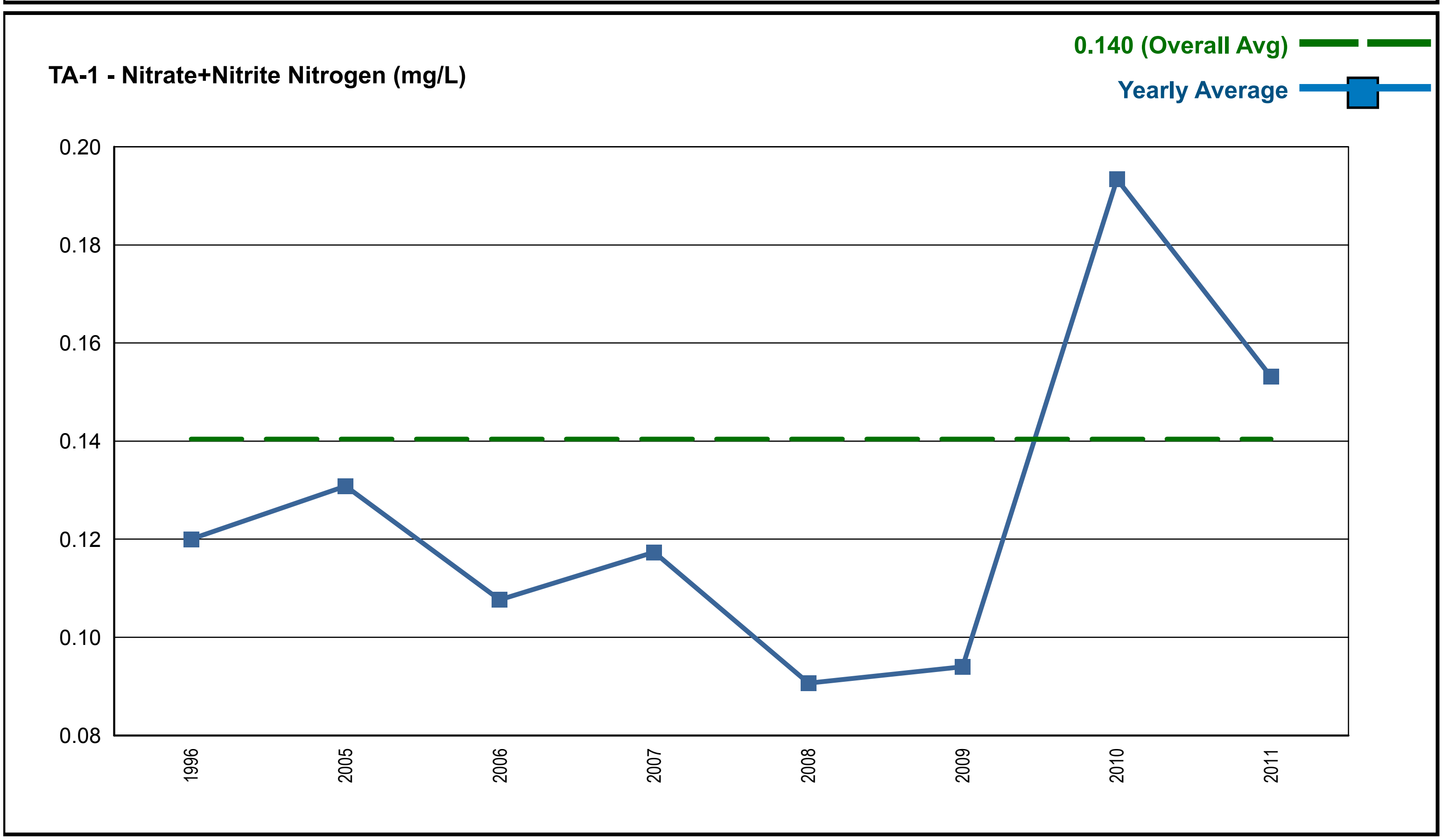
ADEM Ambient Trend Stations - Sampled 1977 - 2012



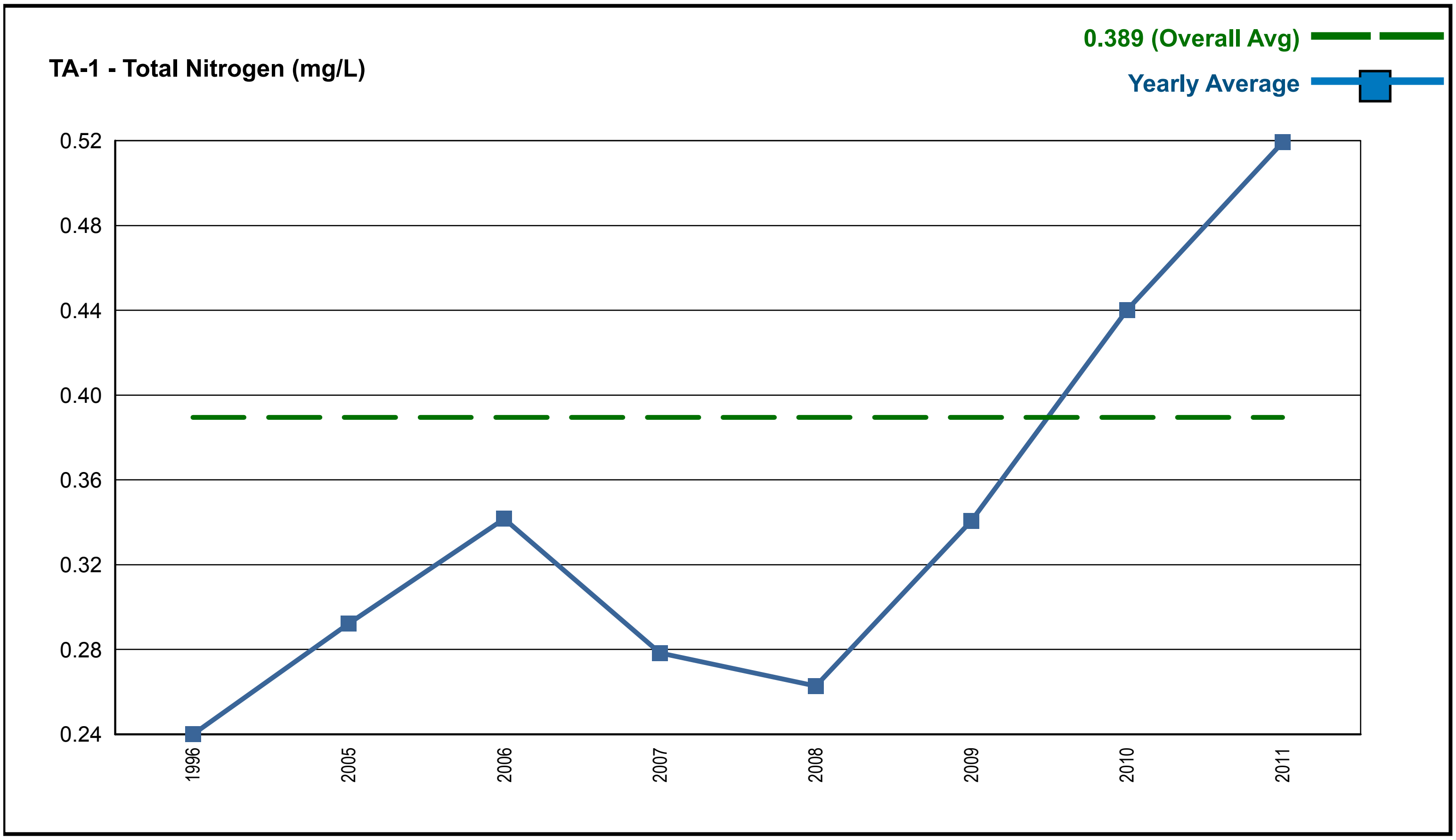


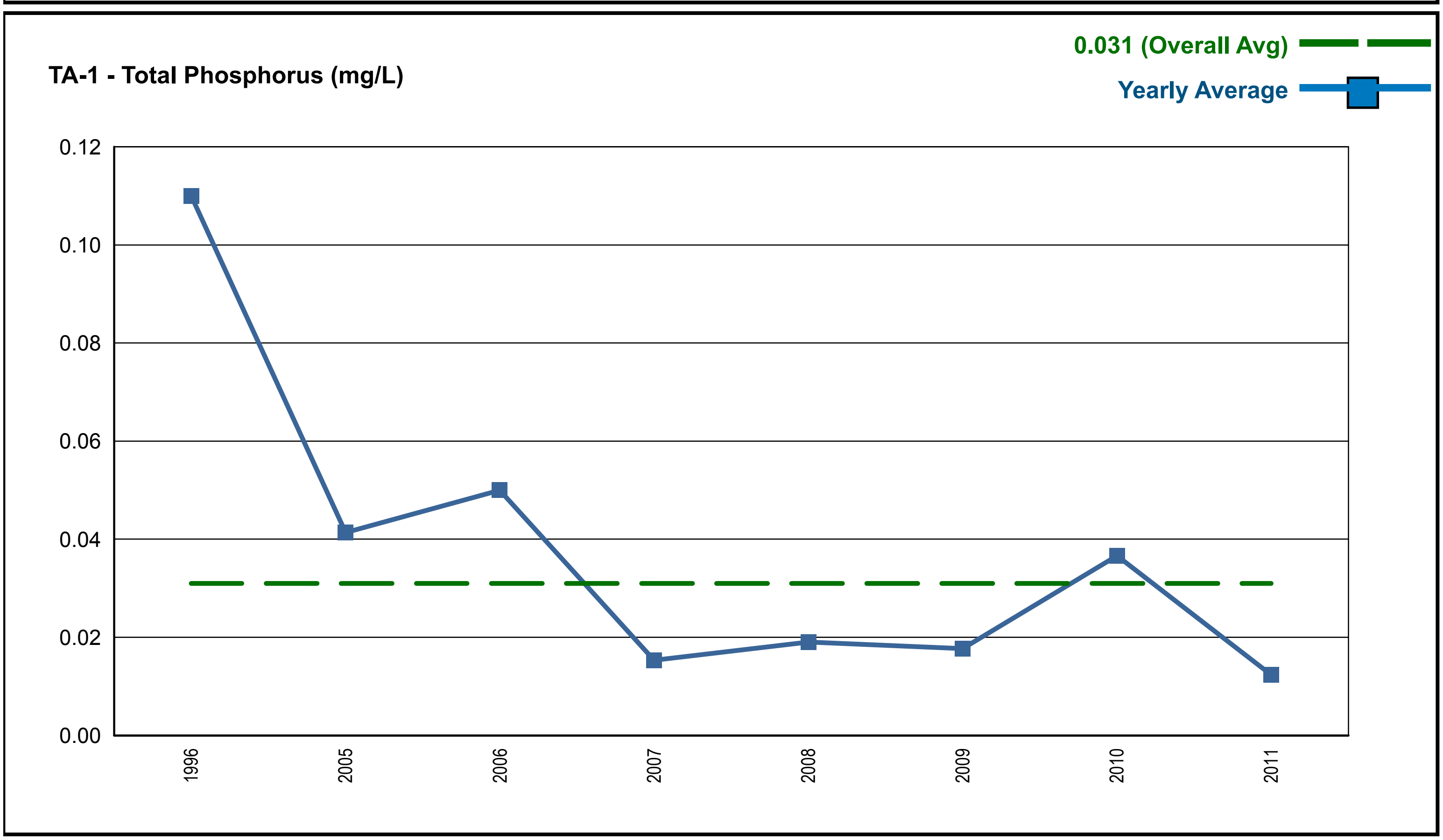
ADEM Ambient Trend Stations - Sampled 1977 - 2012



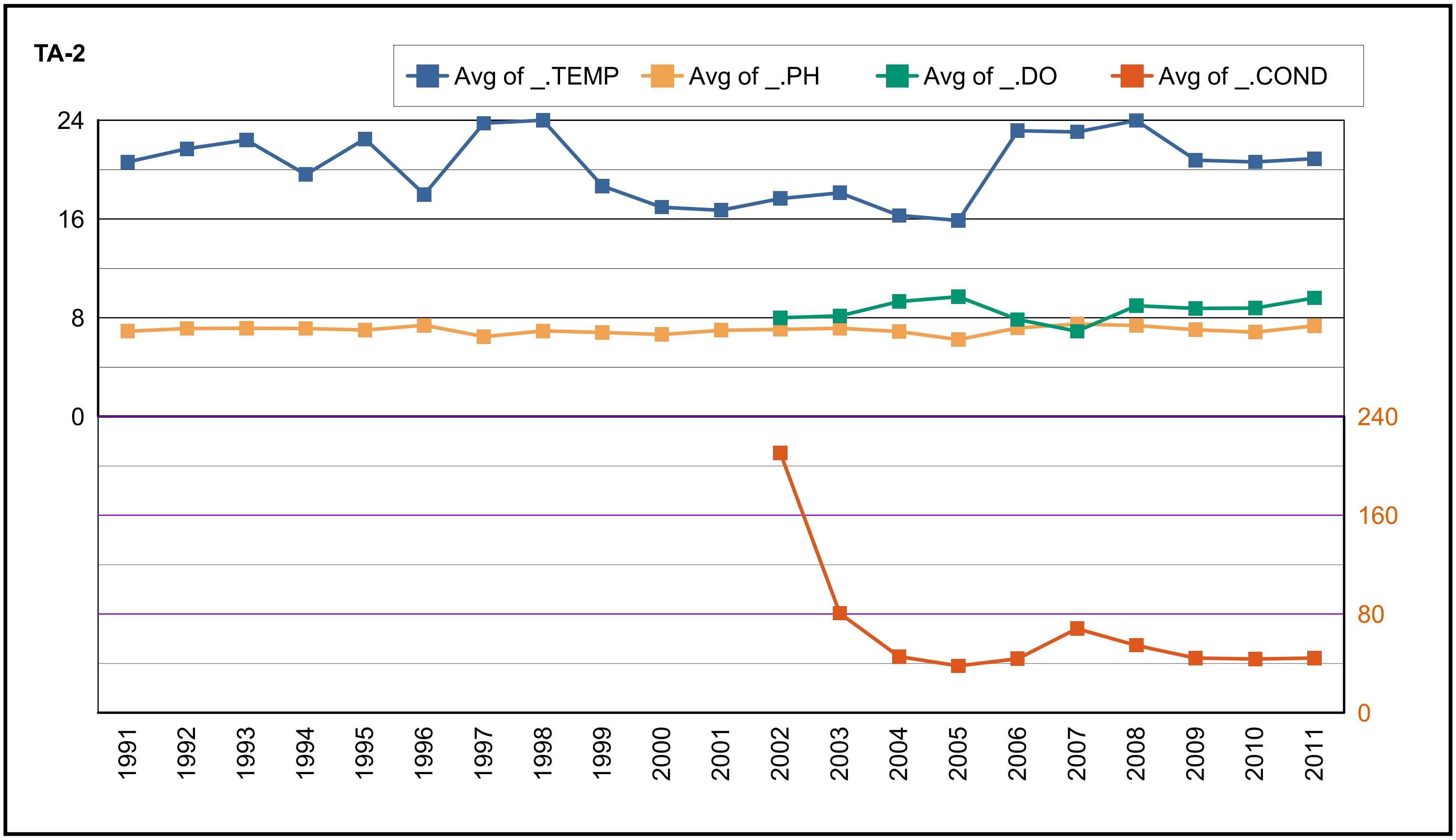


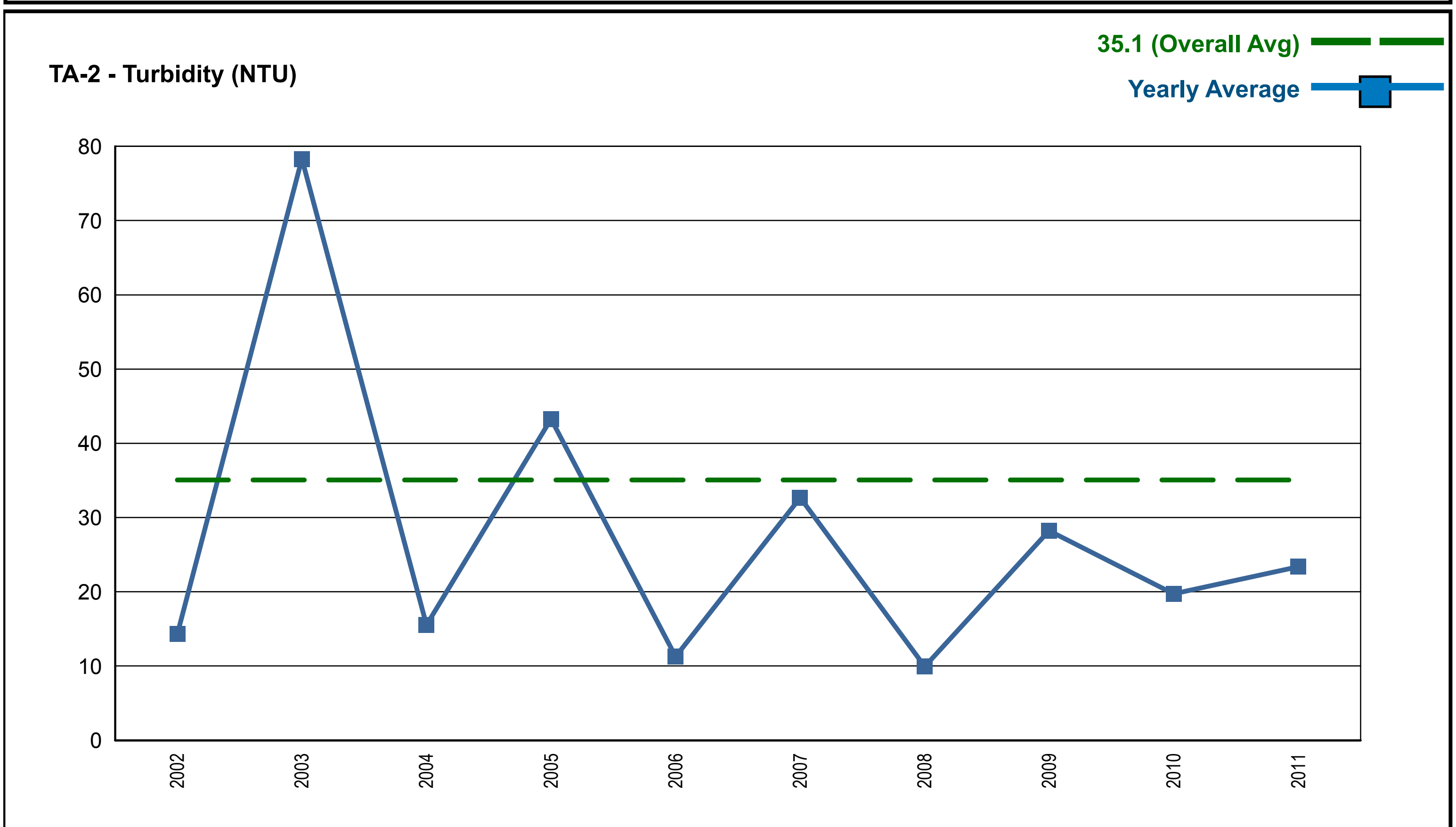
ADEM Ambient Trend Stations - Sampled 1977 - 2012



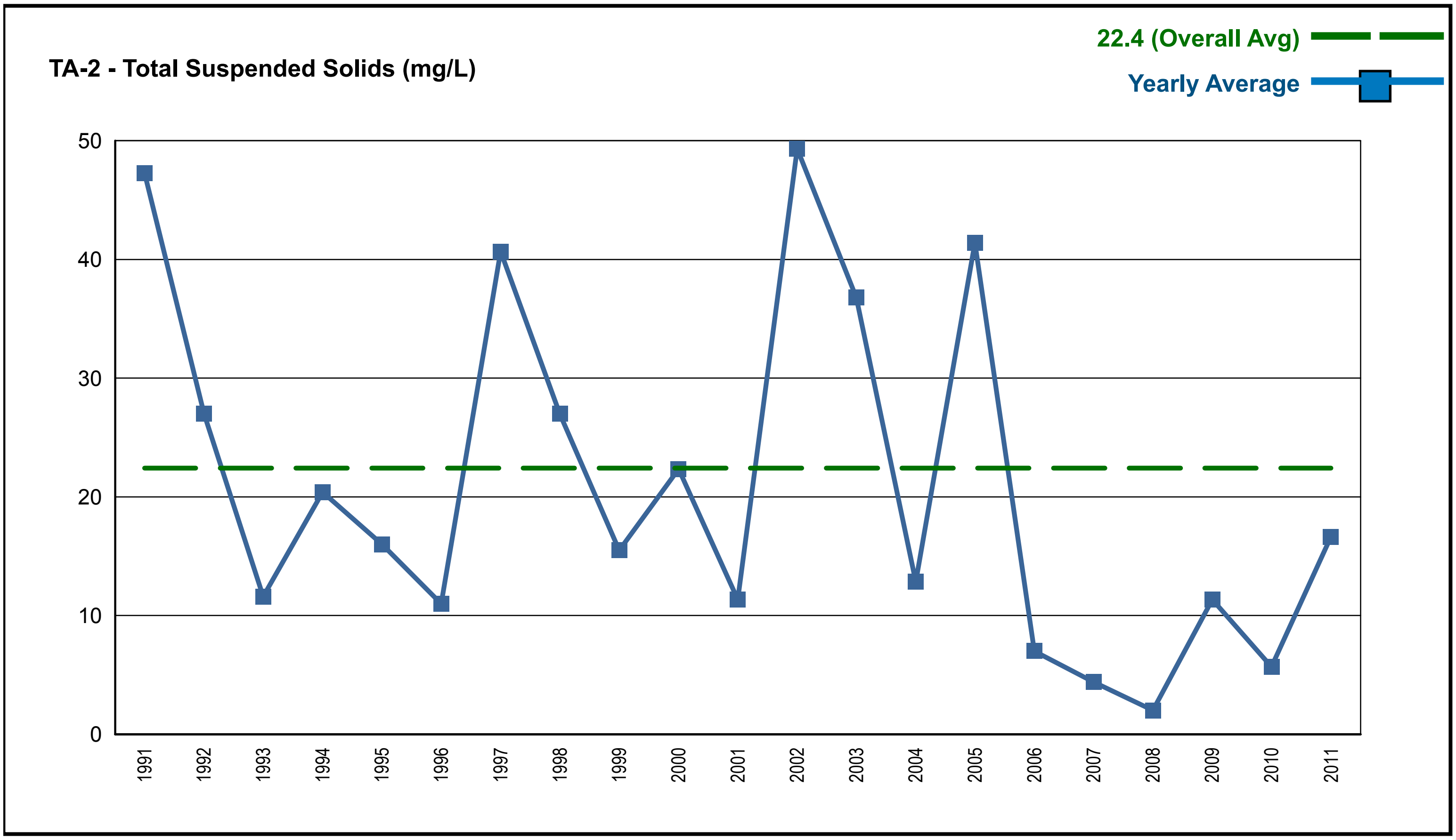


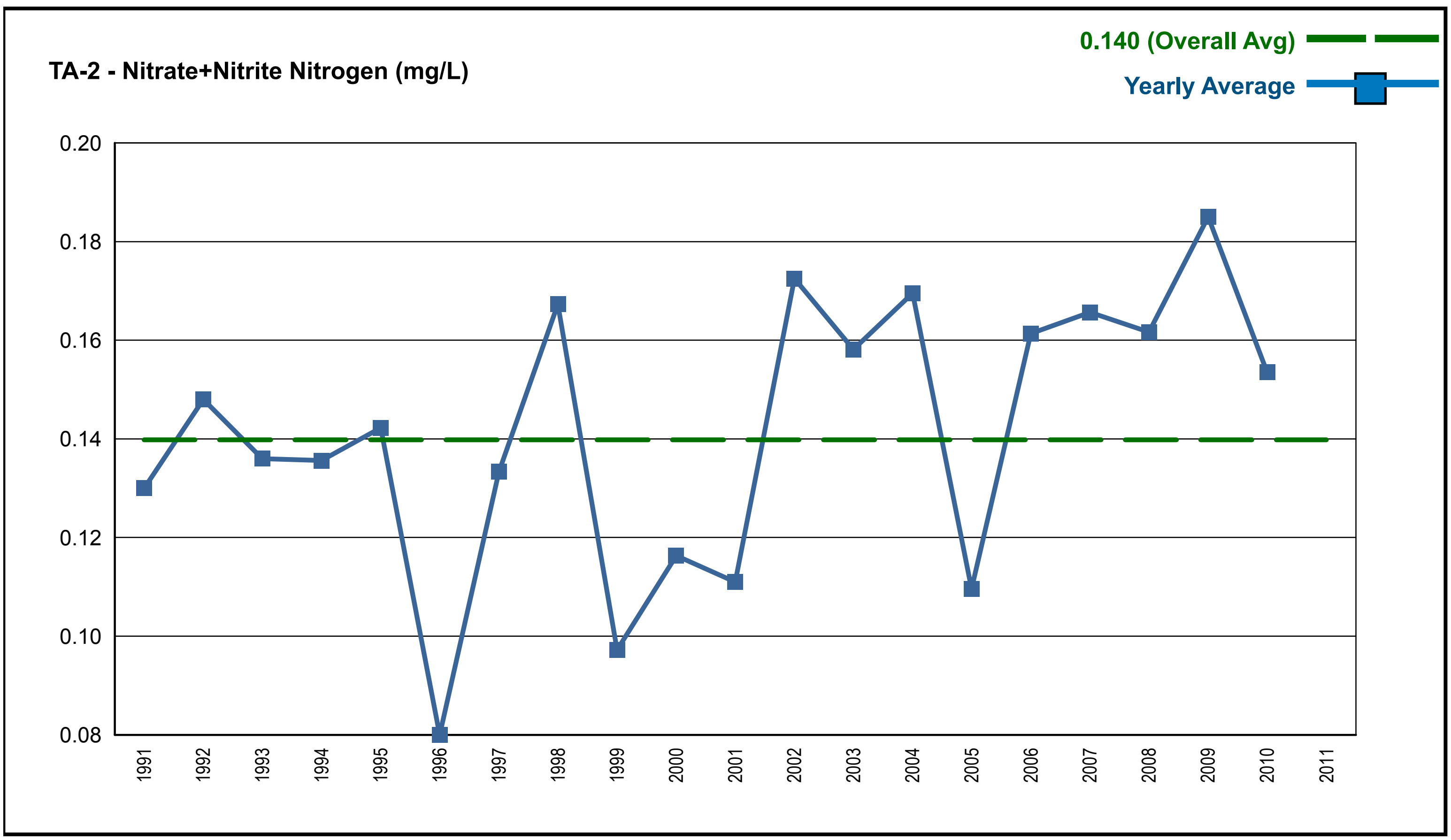
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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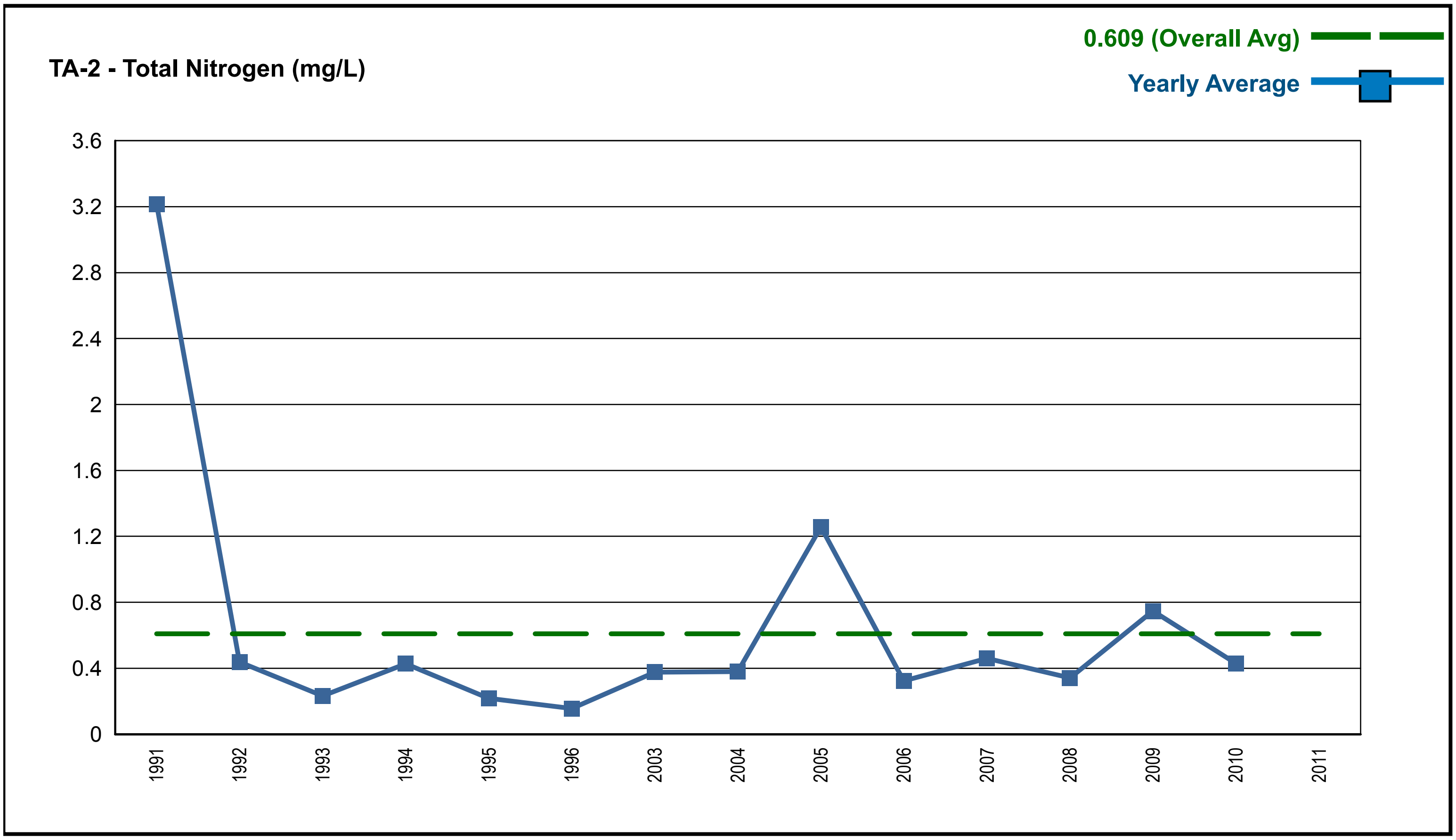
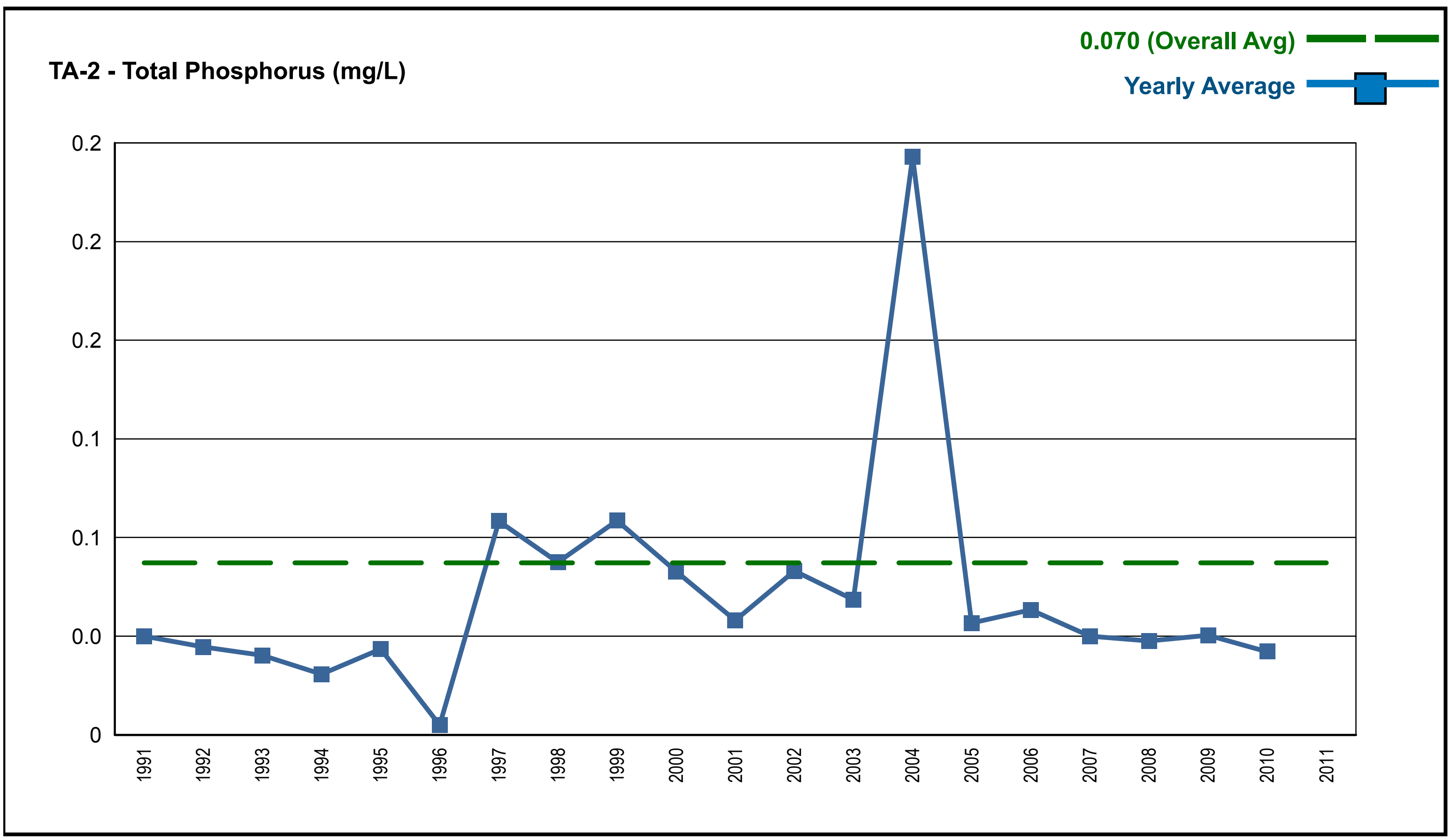
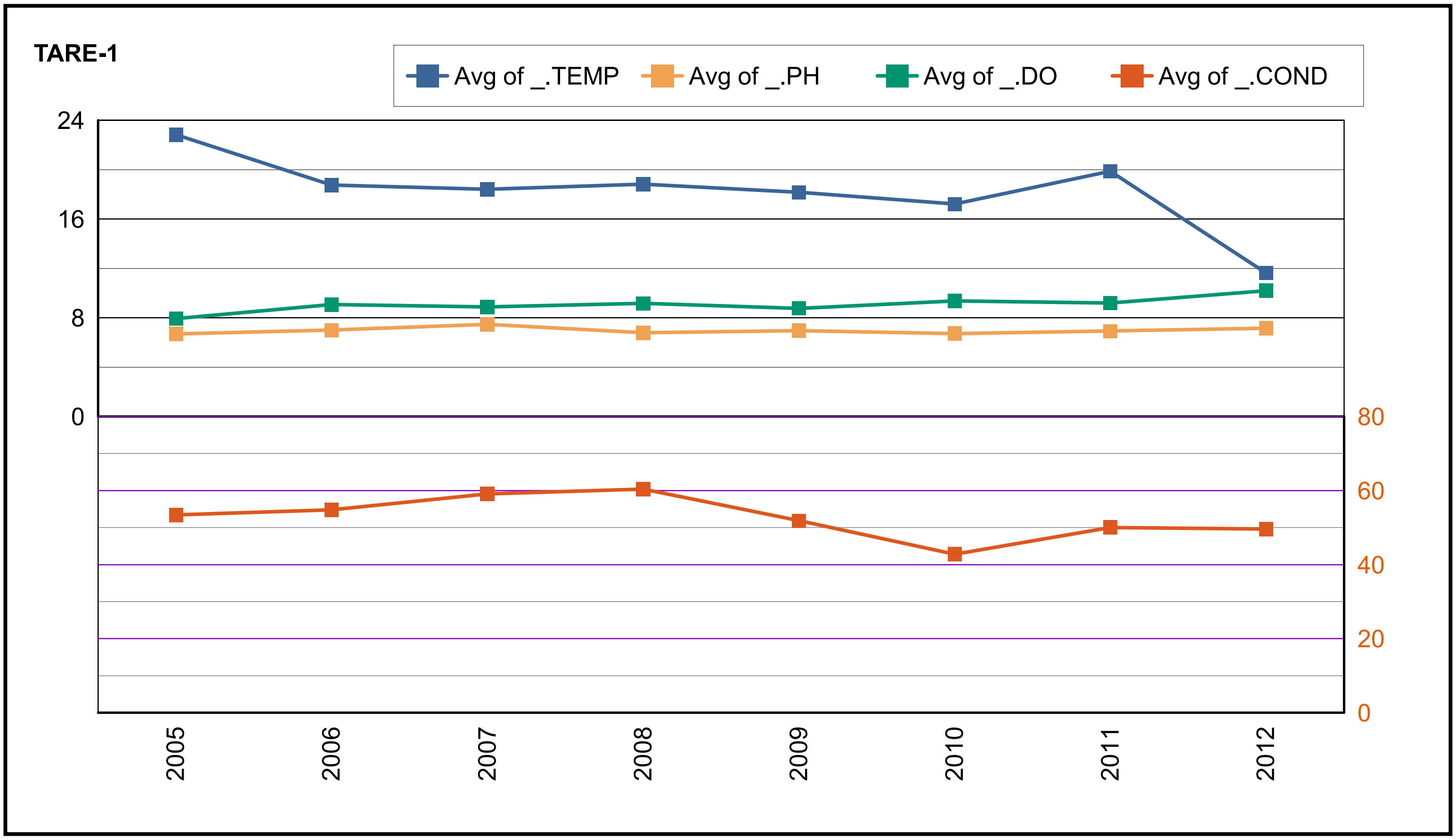
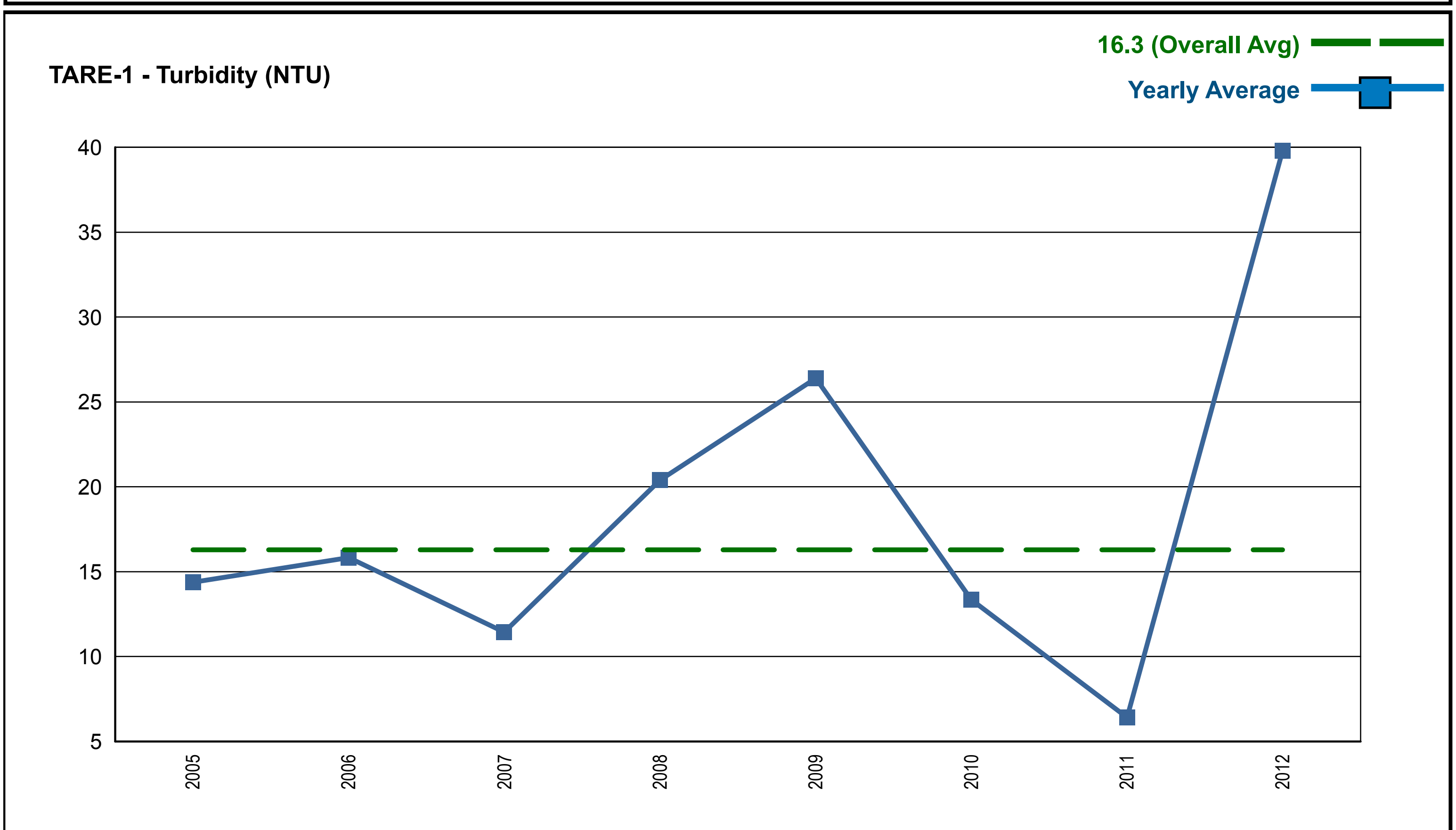


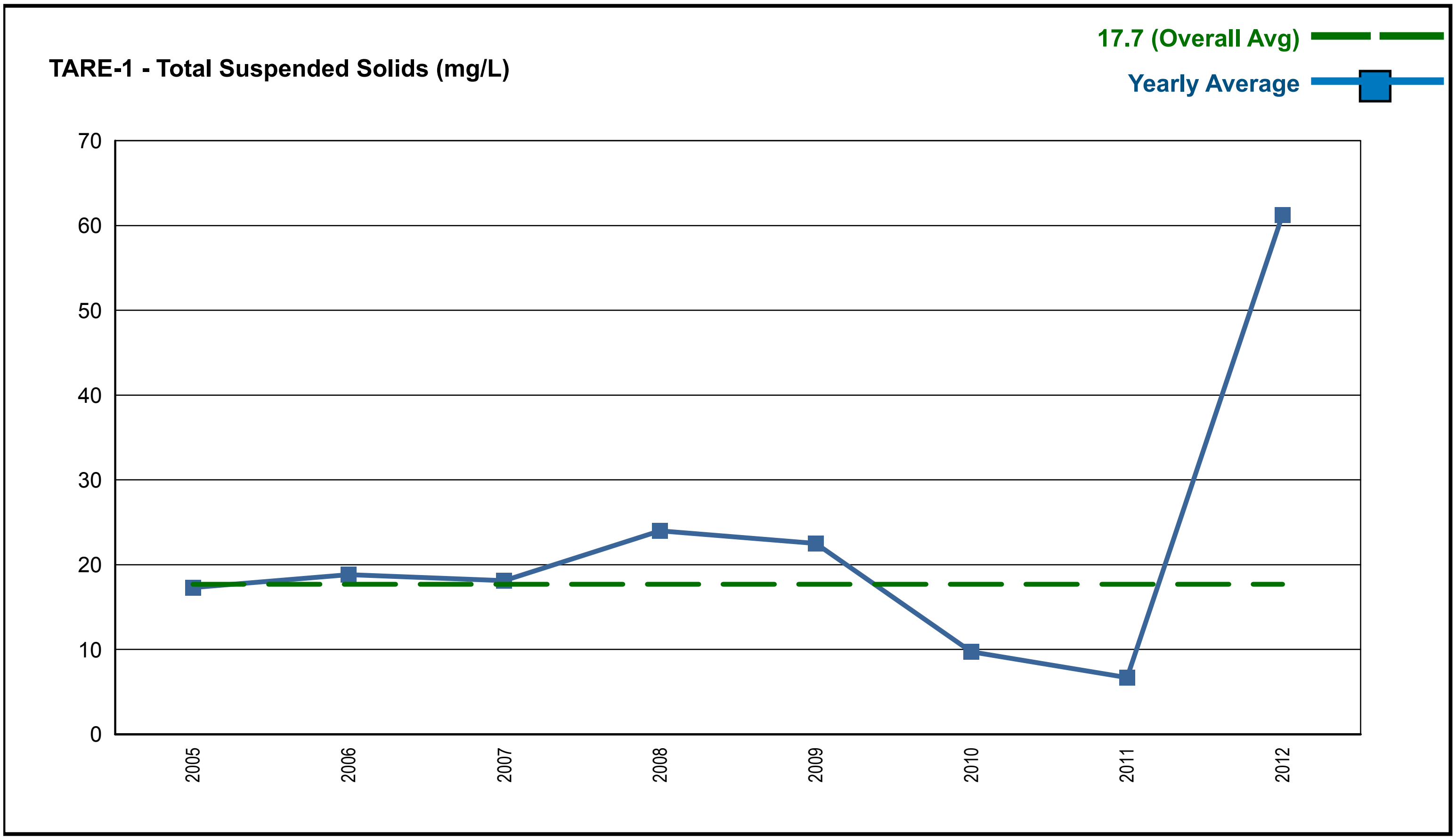


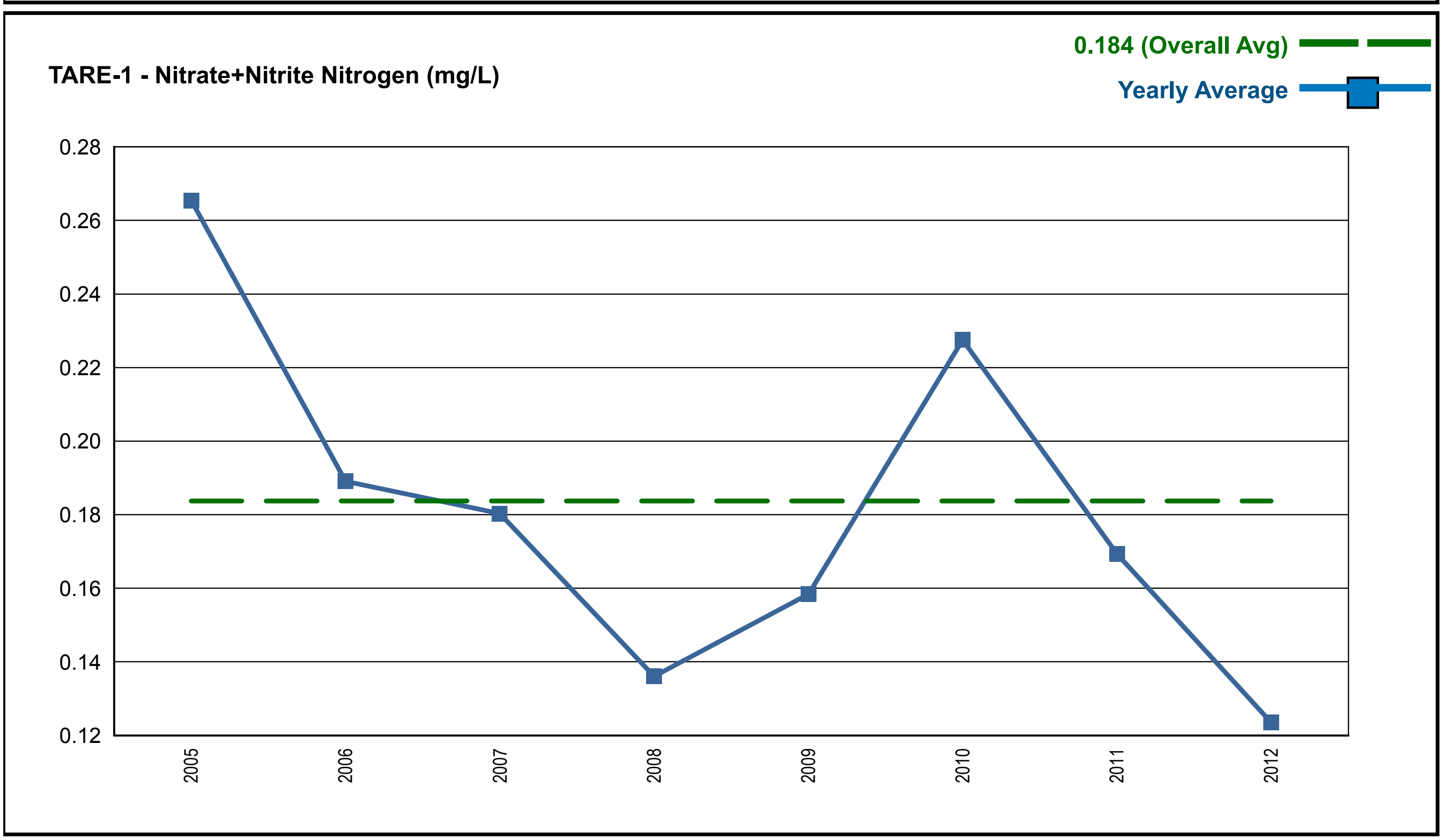
ADEM Ambient Trend Stations - Sampled 1977 - 2012



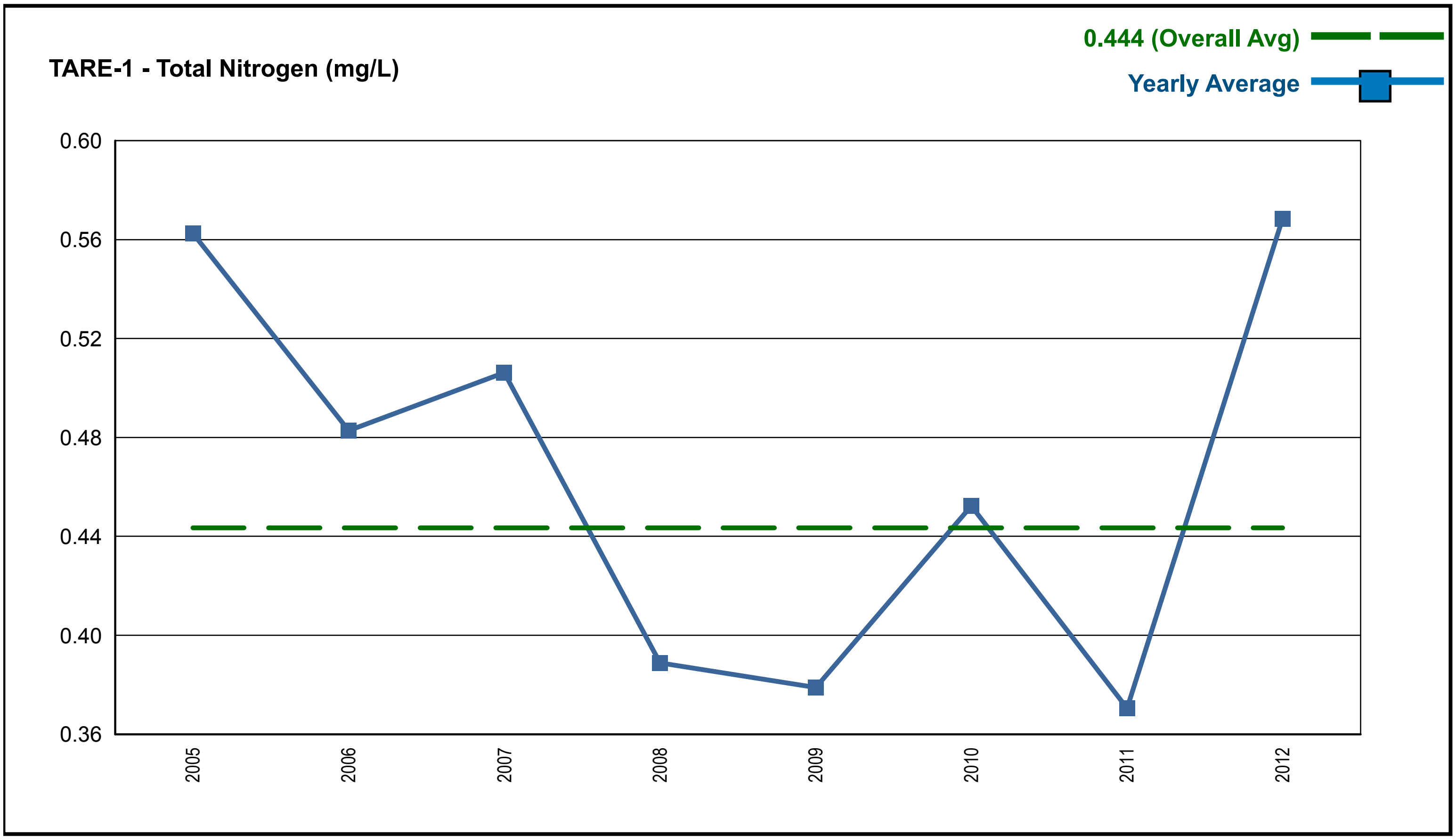


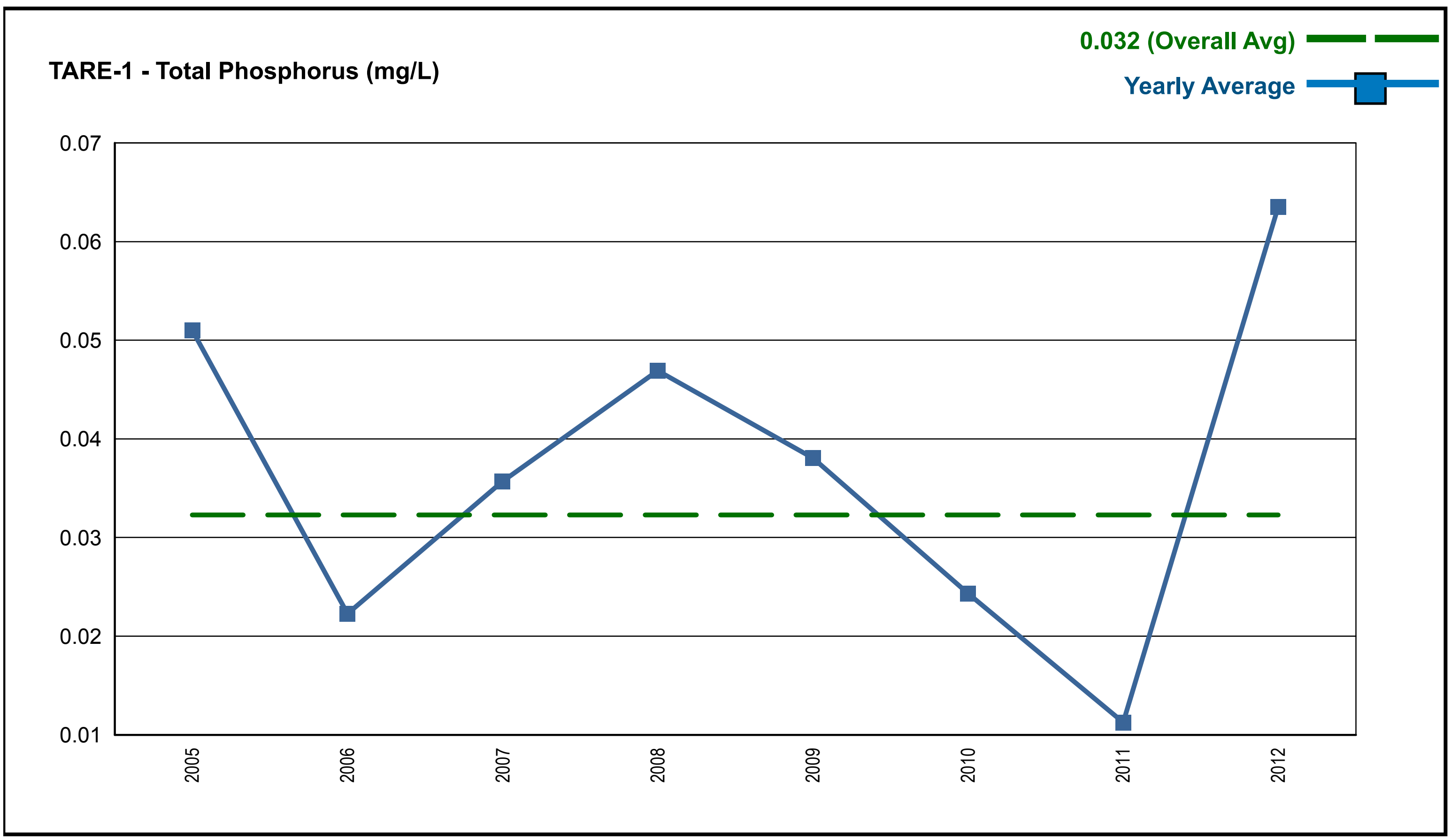
ADEM Ambient Trend Stations - Sampled 1977 - 2012



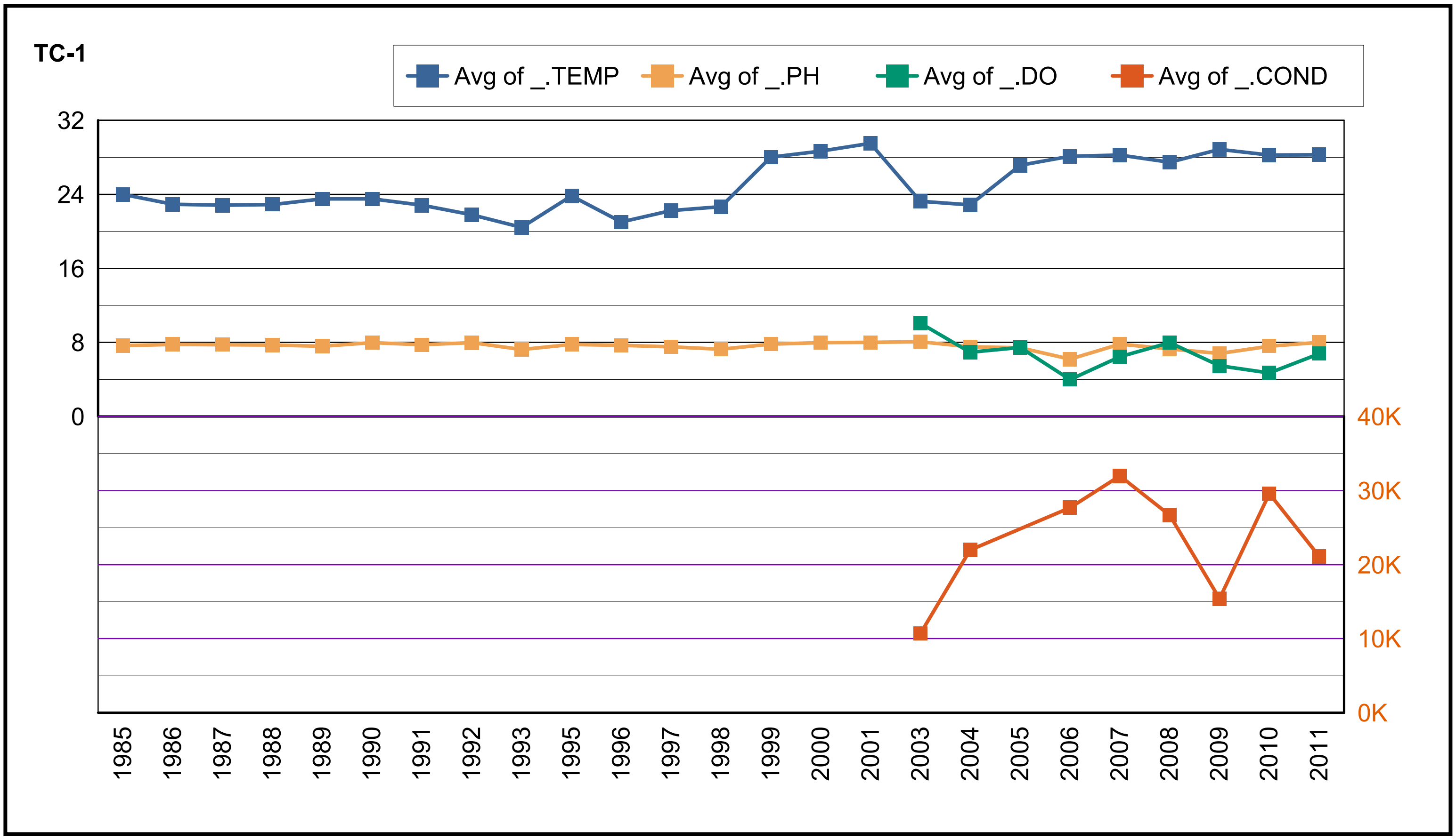


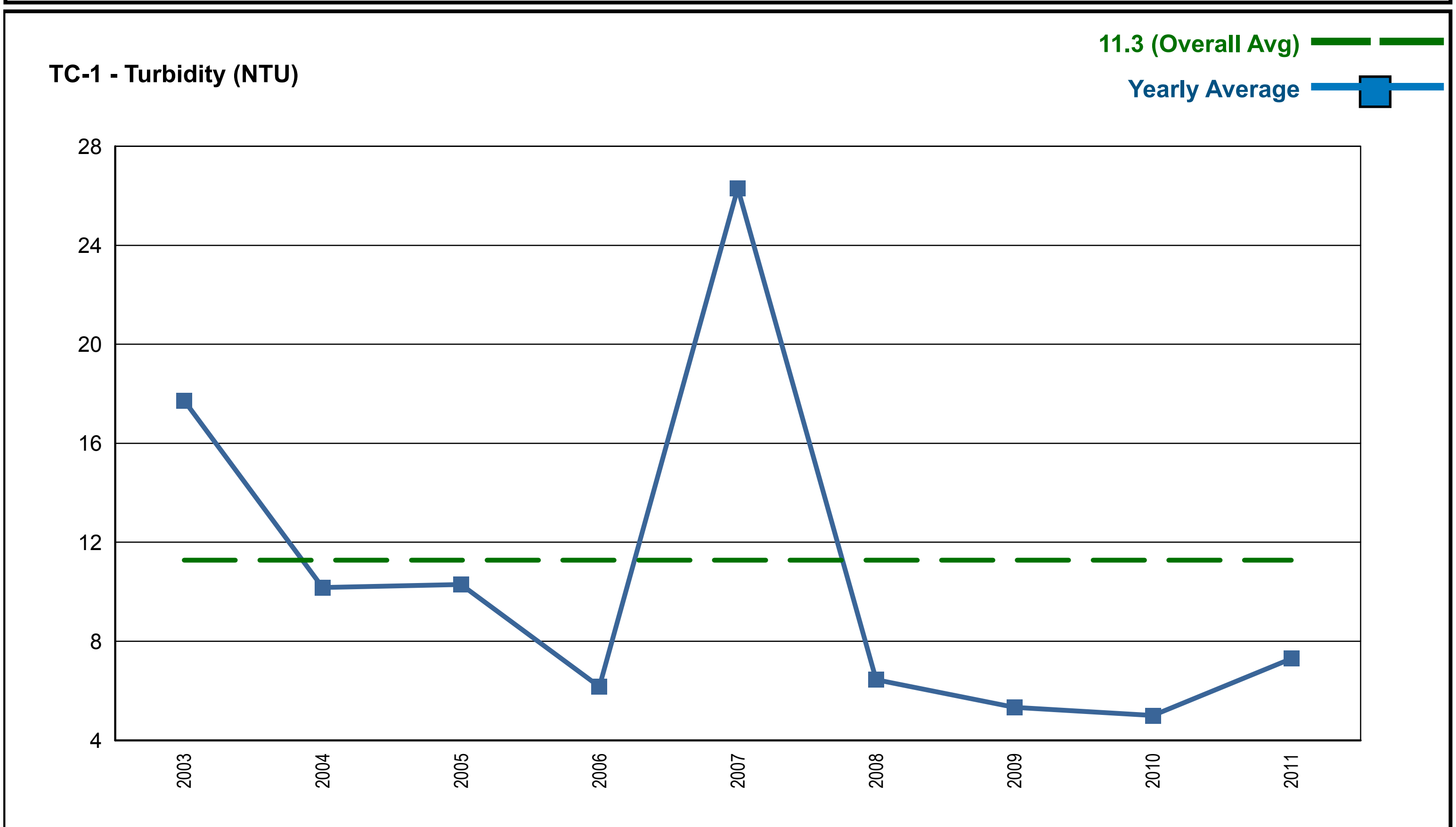
ADEM Ambient Trend Stations - Sampled 1977 - 2012



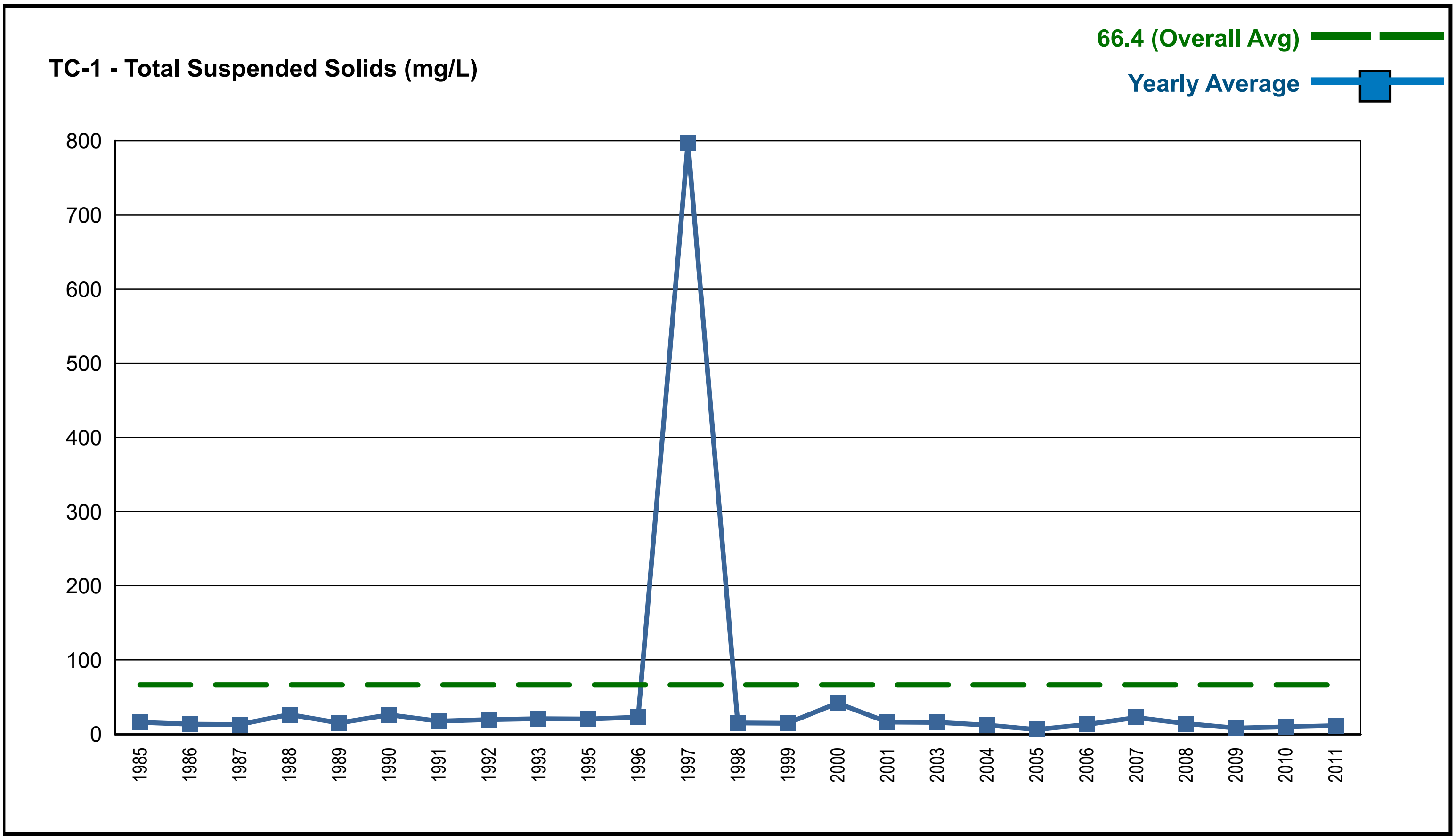


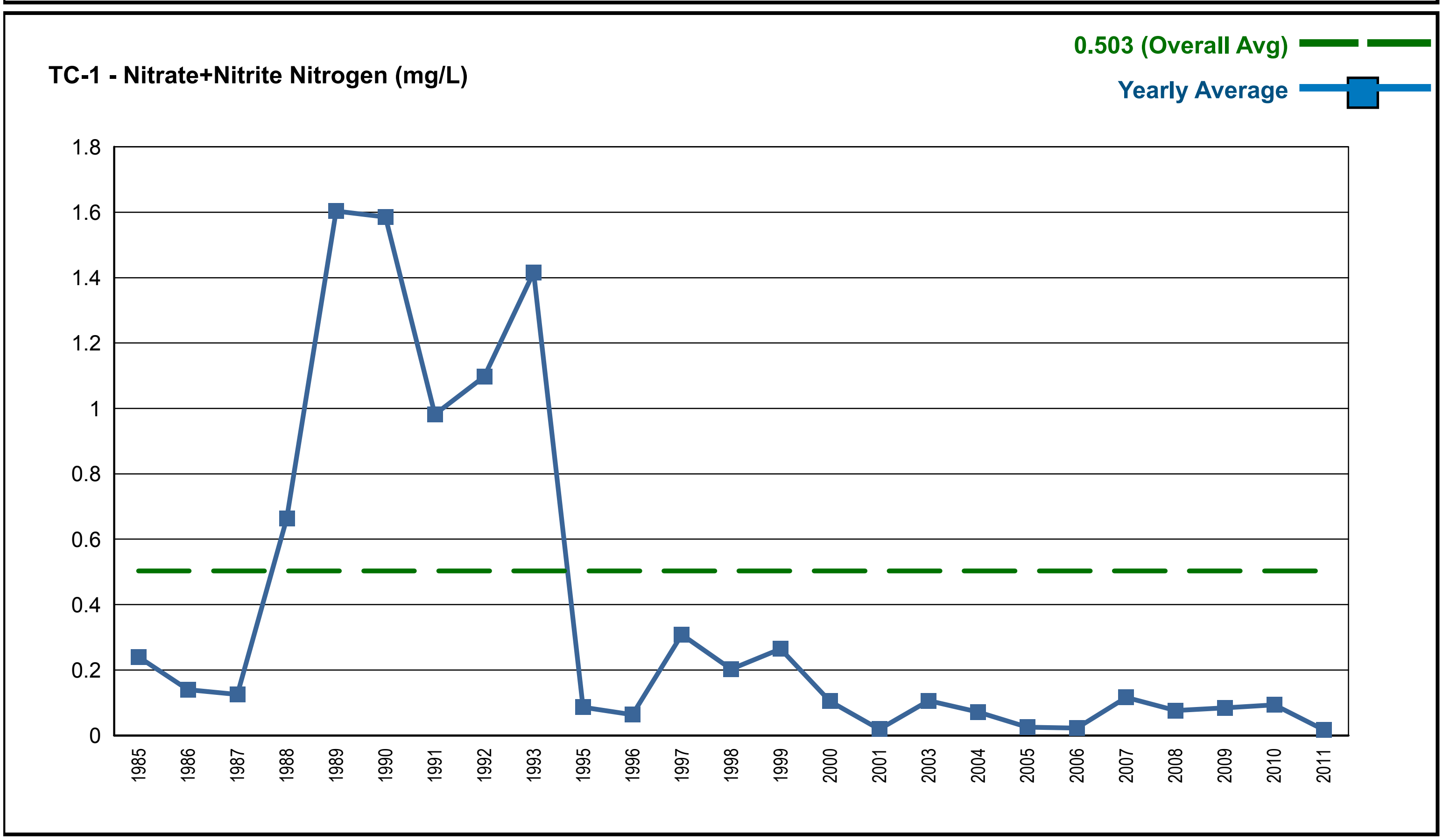
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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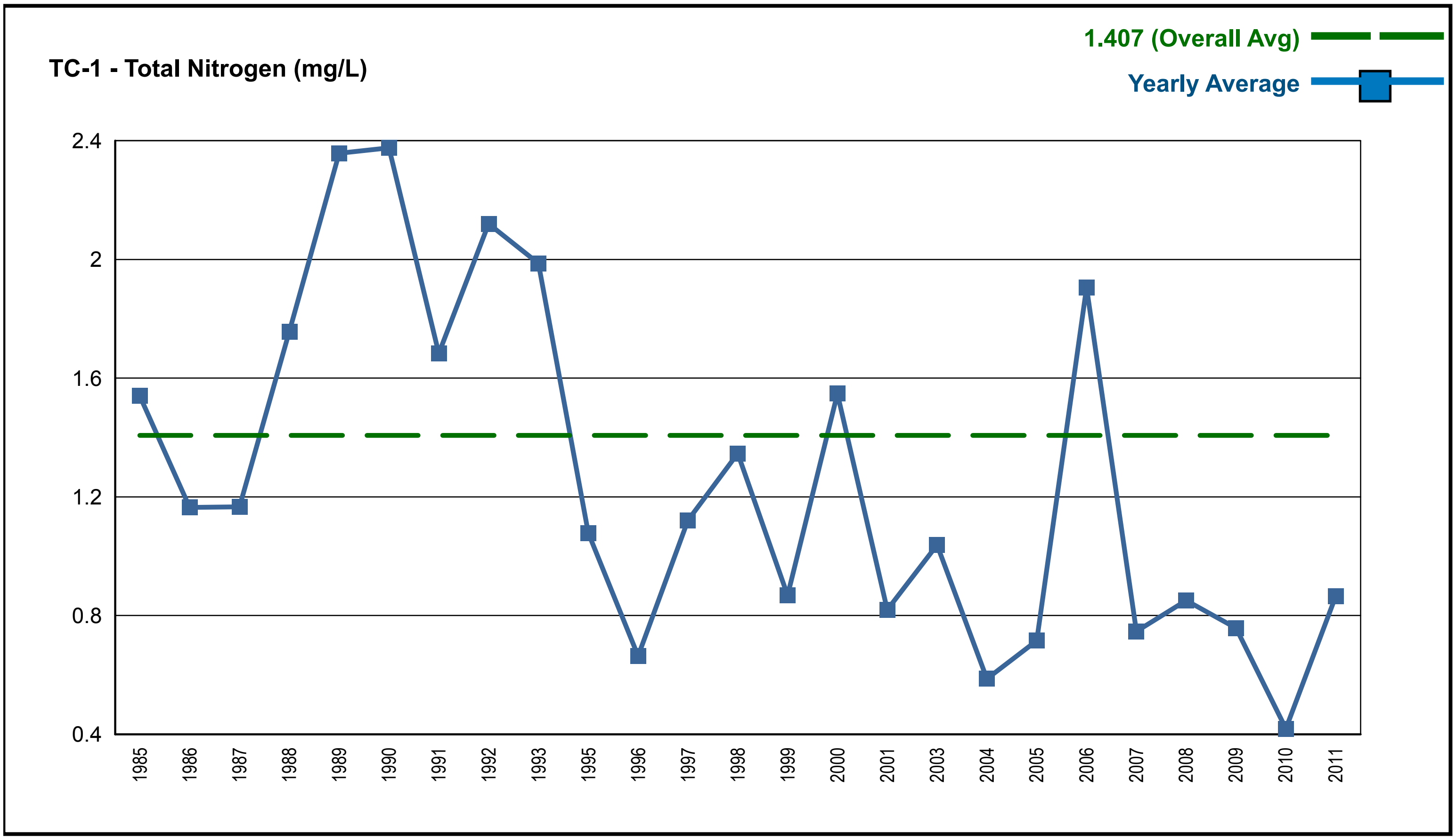
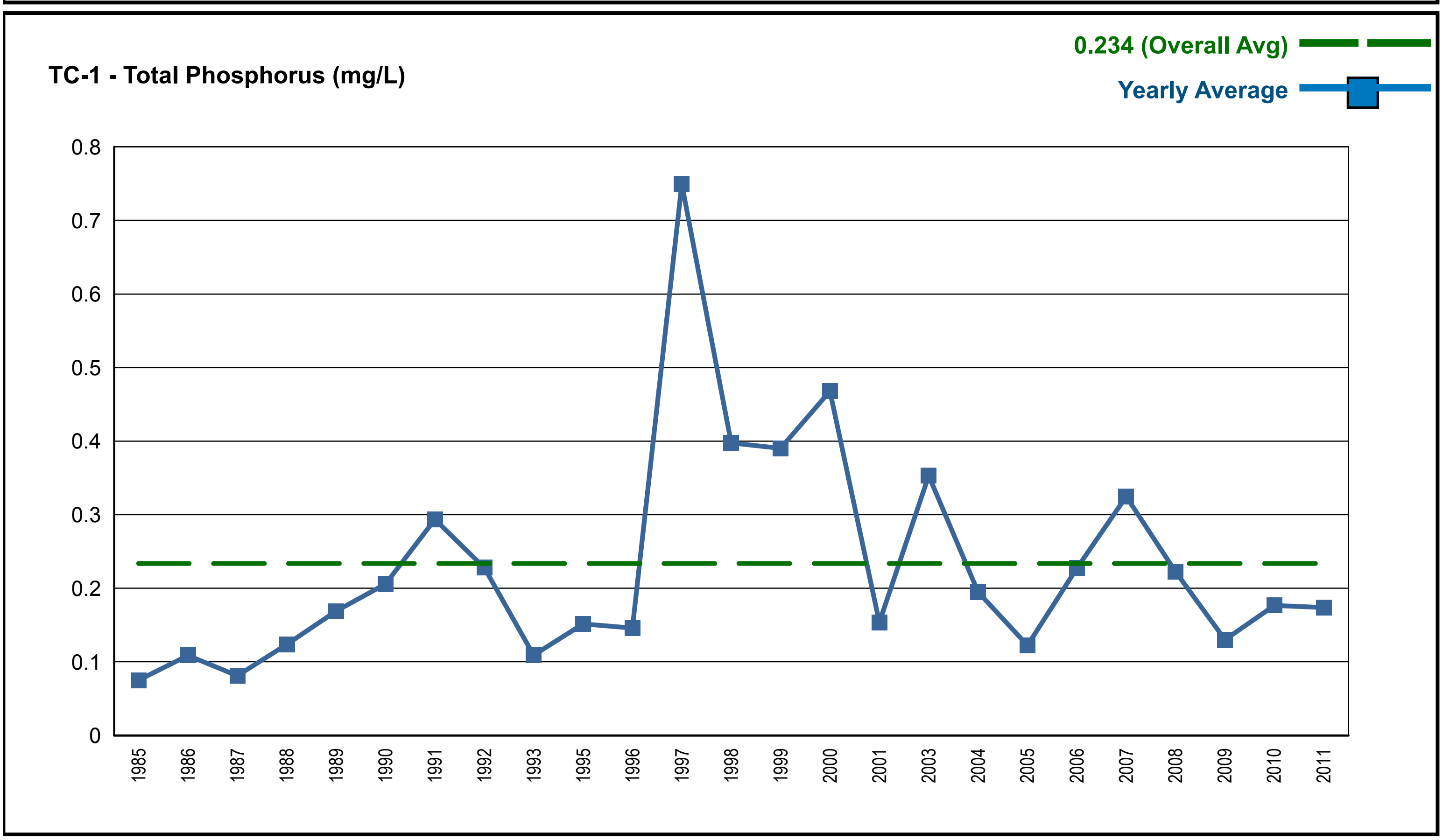
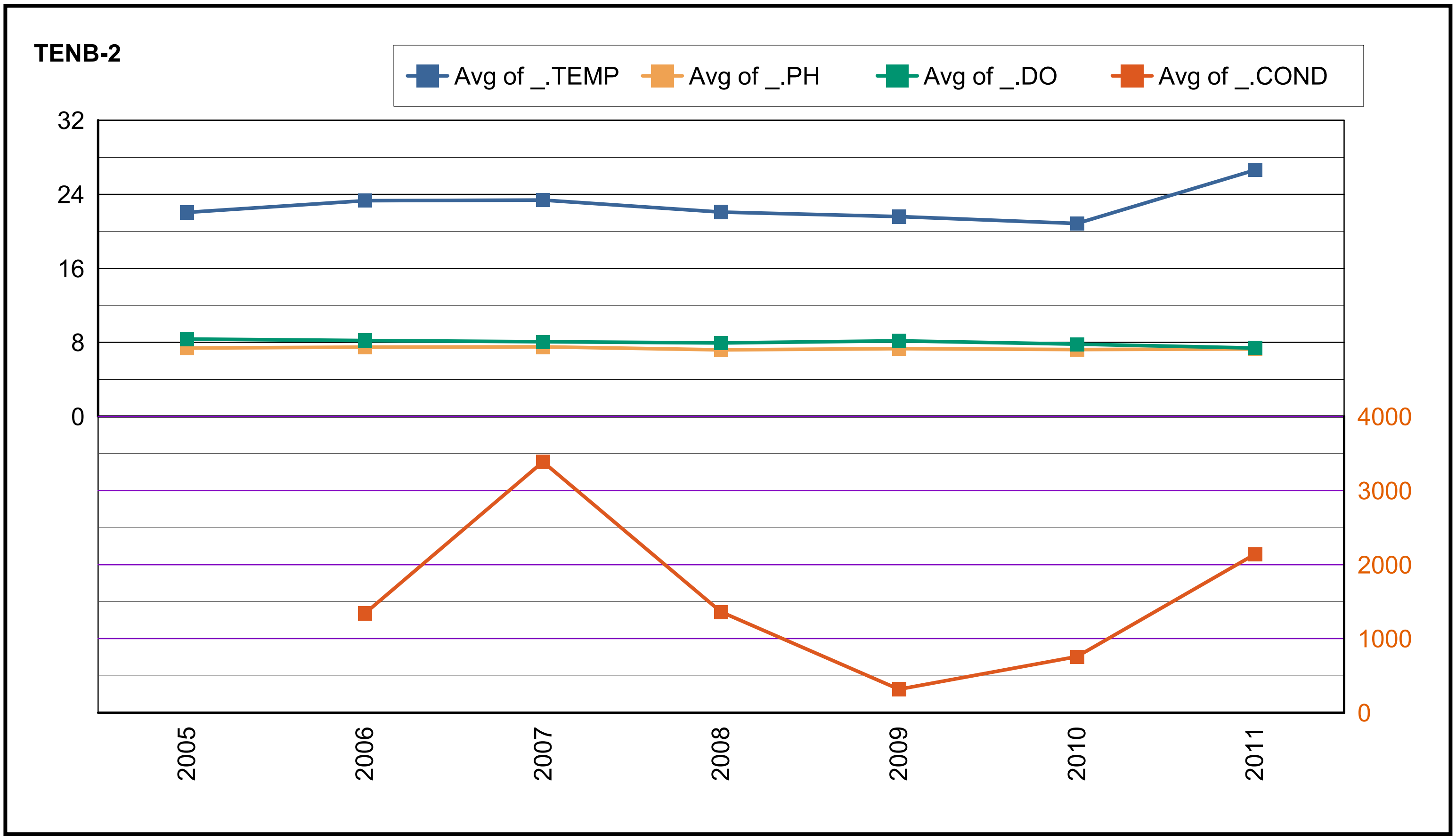
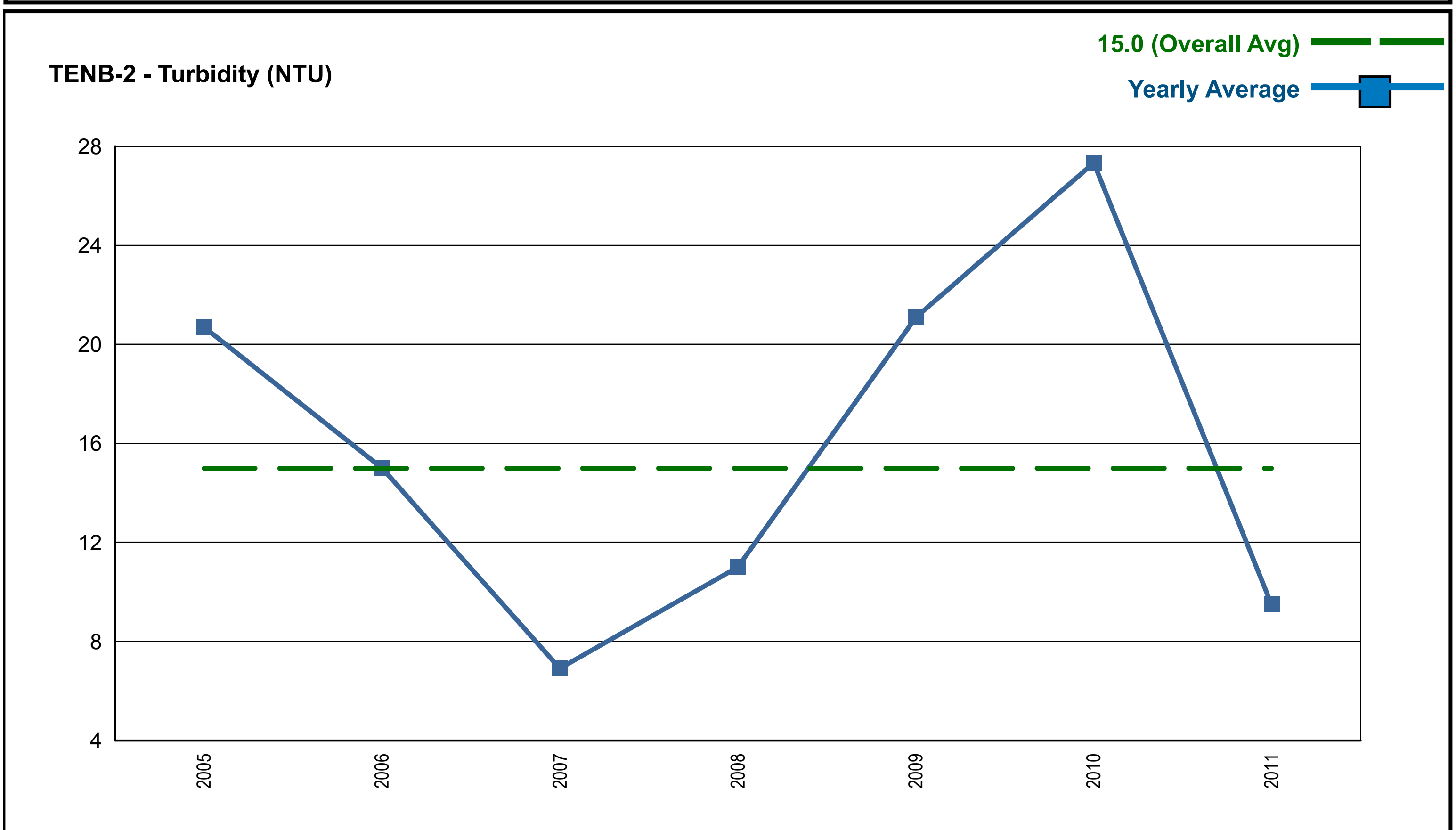




ADEM Ambient Trend Stations - Sampled 1977 - 2012





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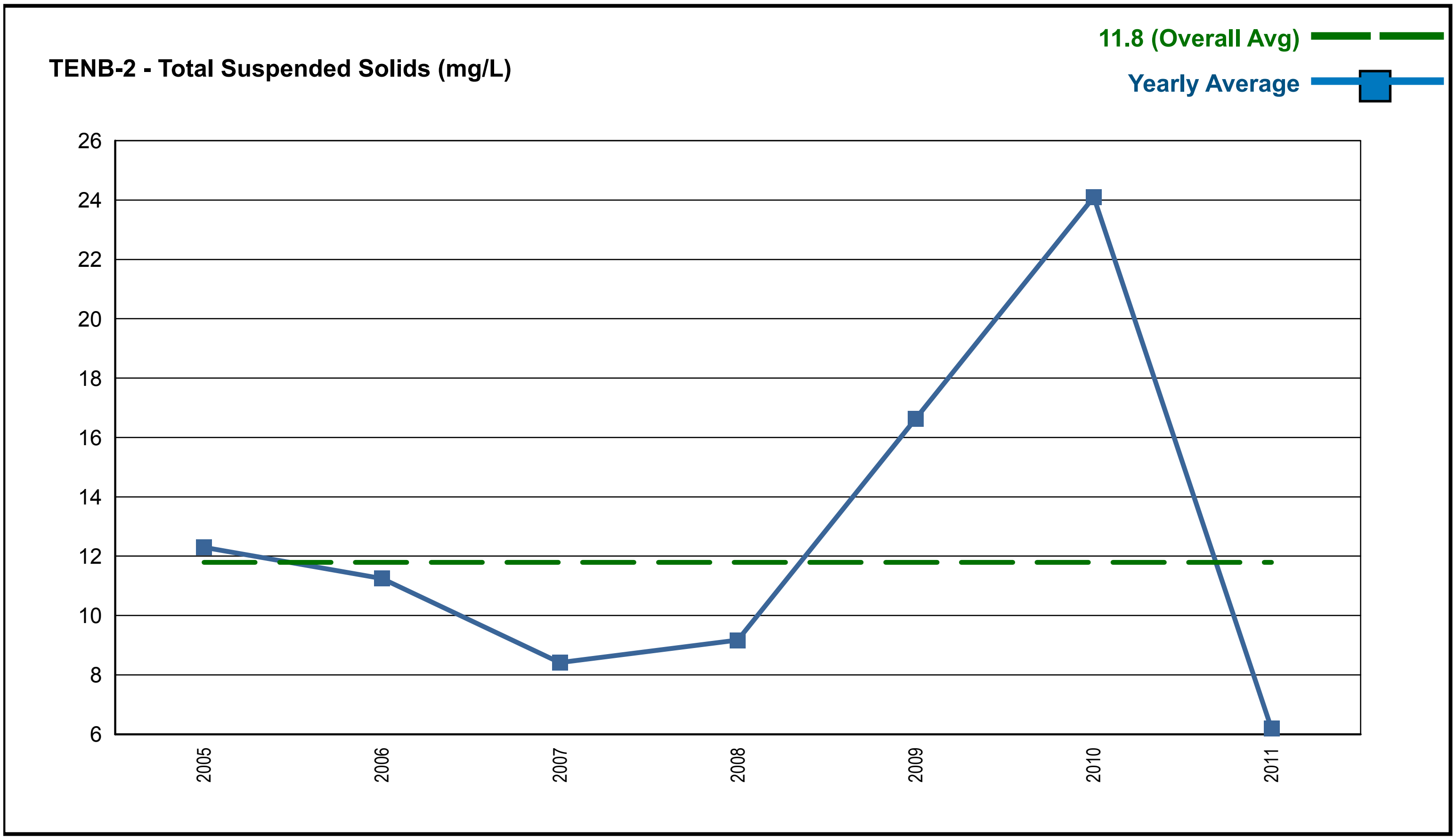
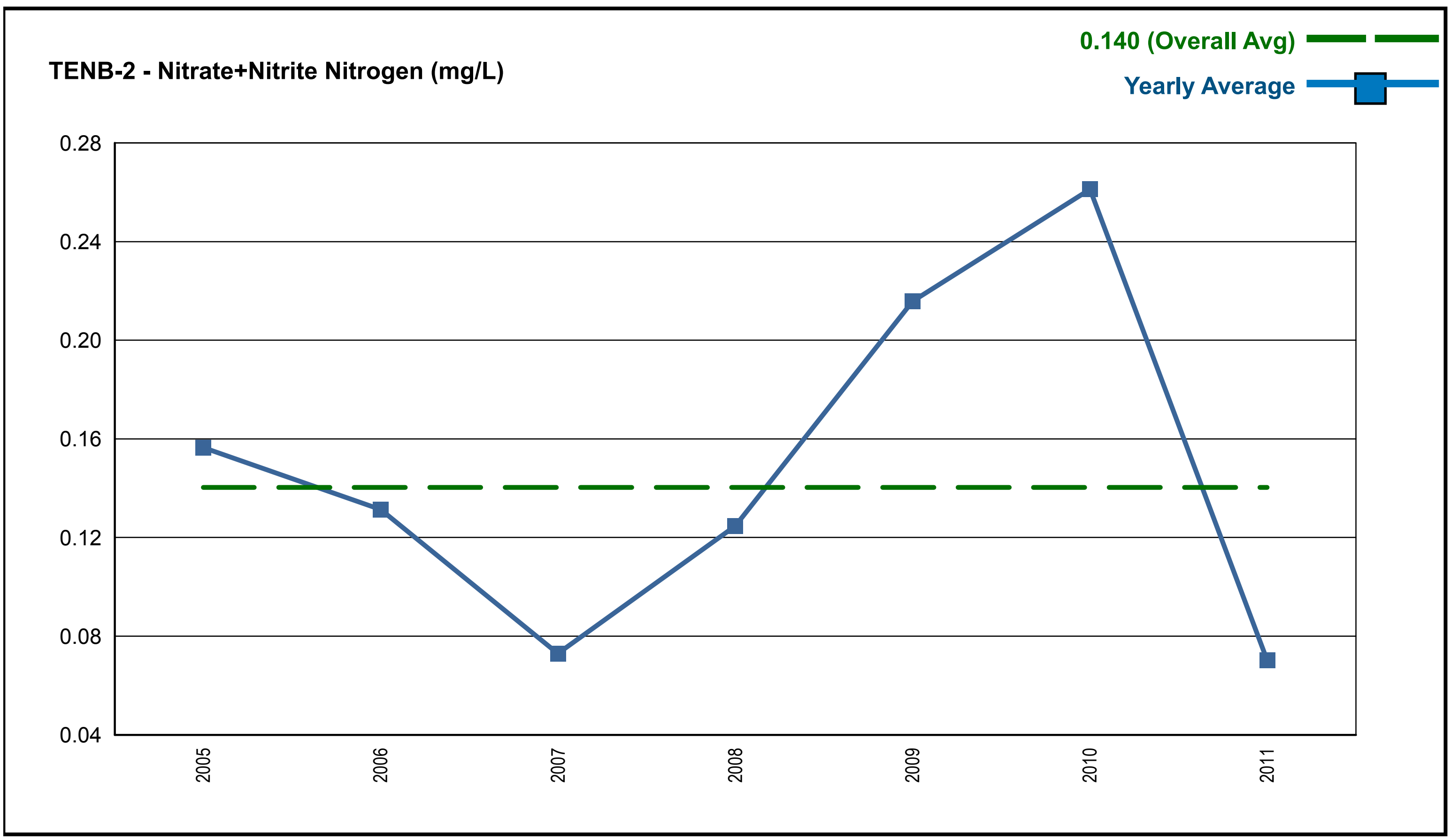
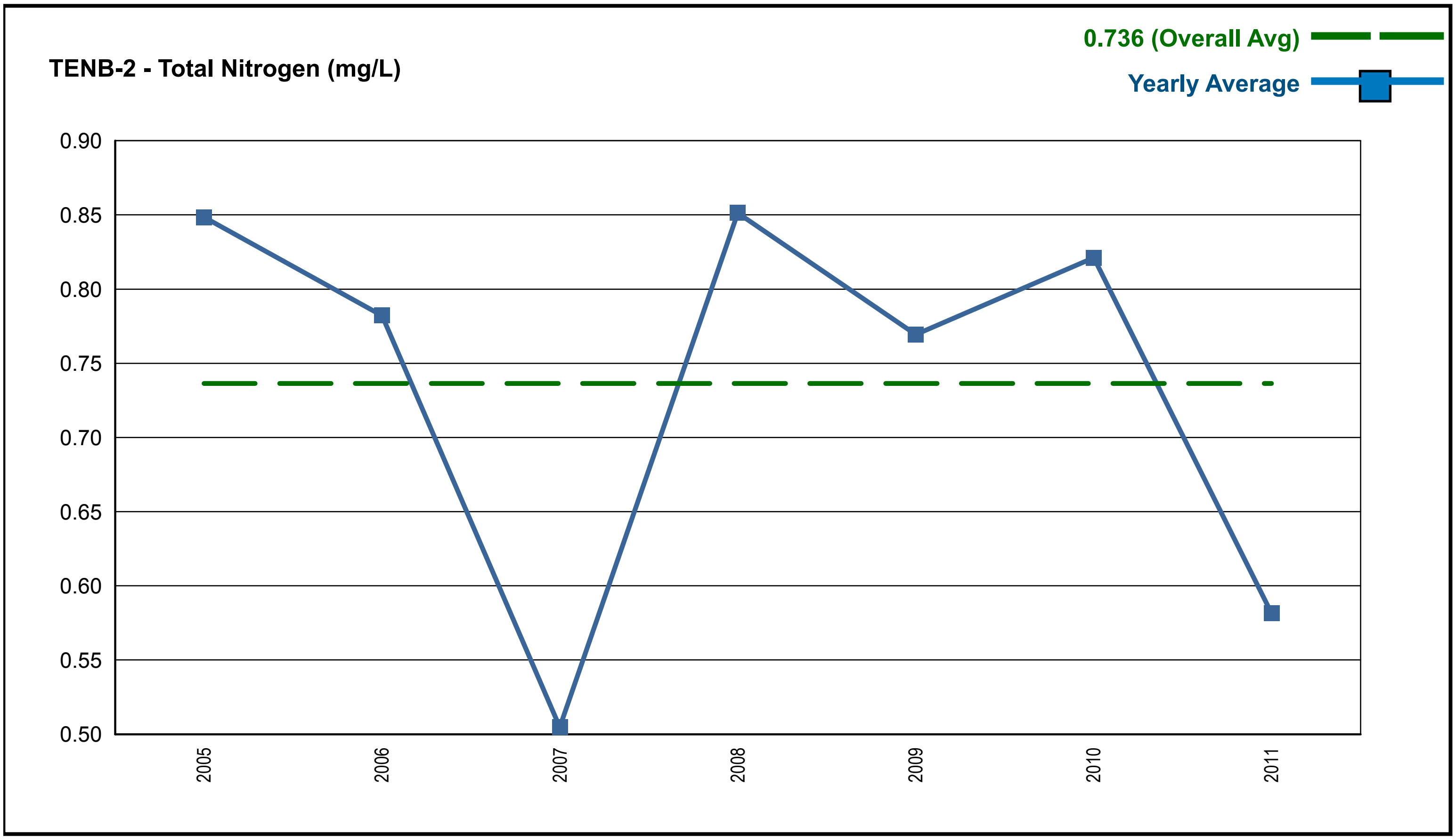
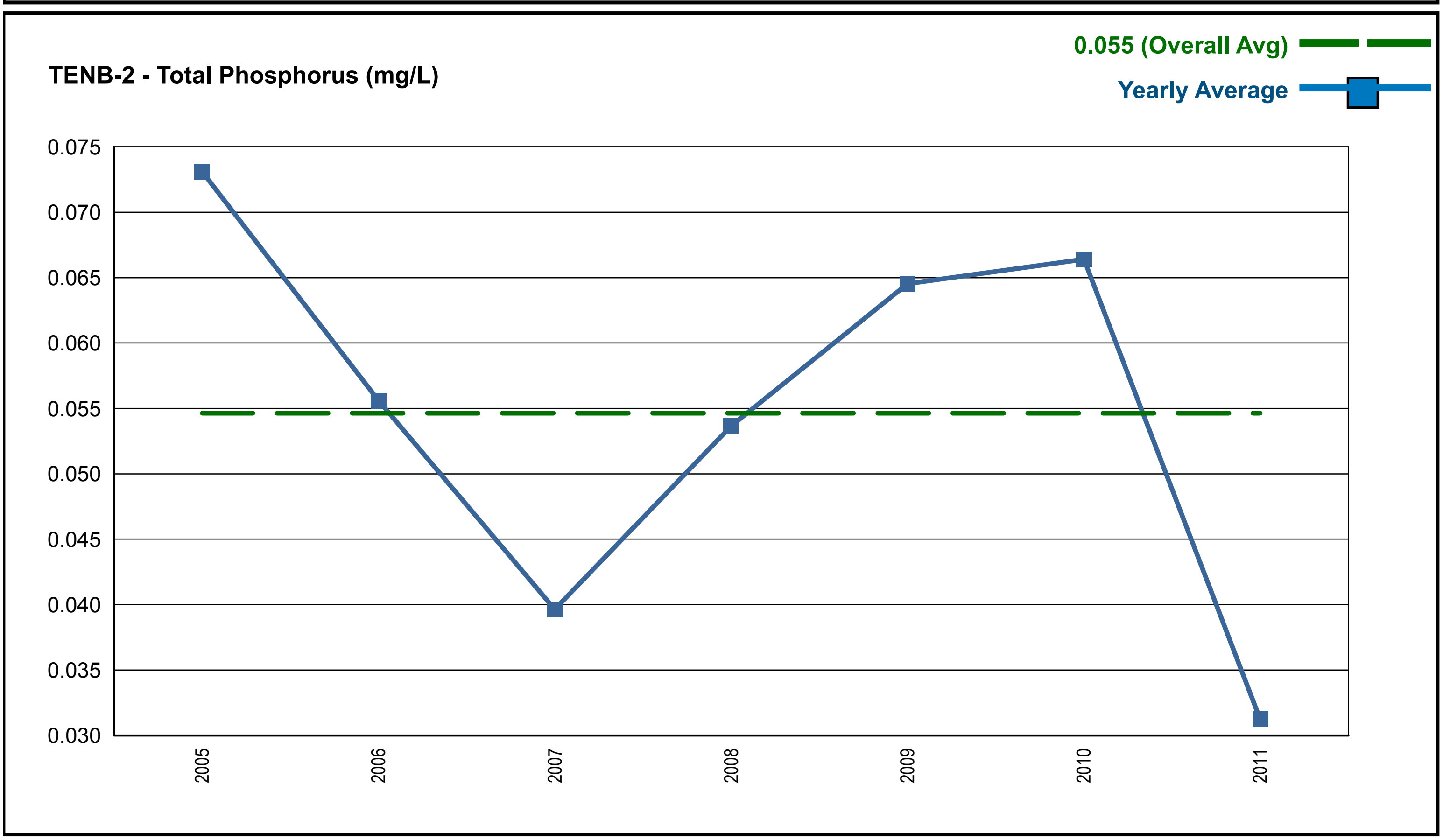




ADEM Ambient Trend Stations - Sampled 1977 - 2012





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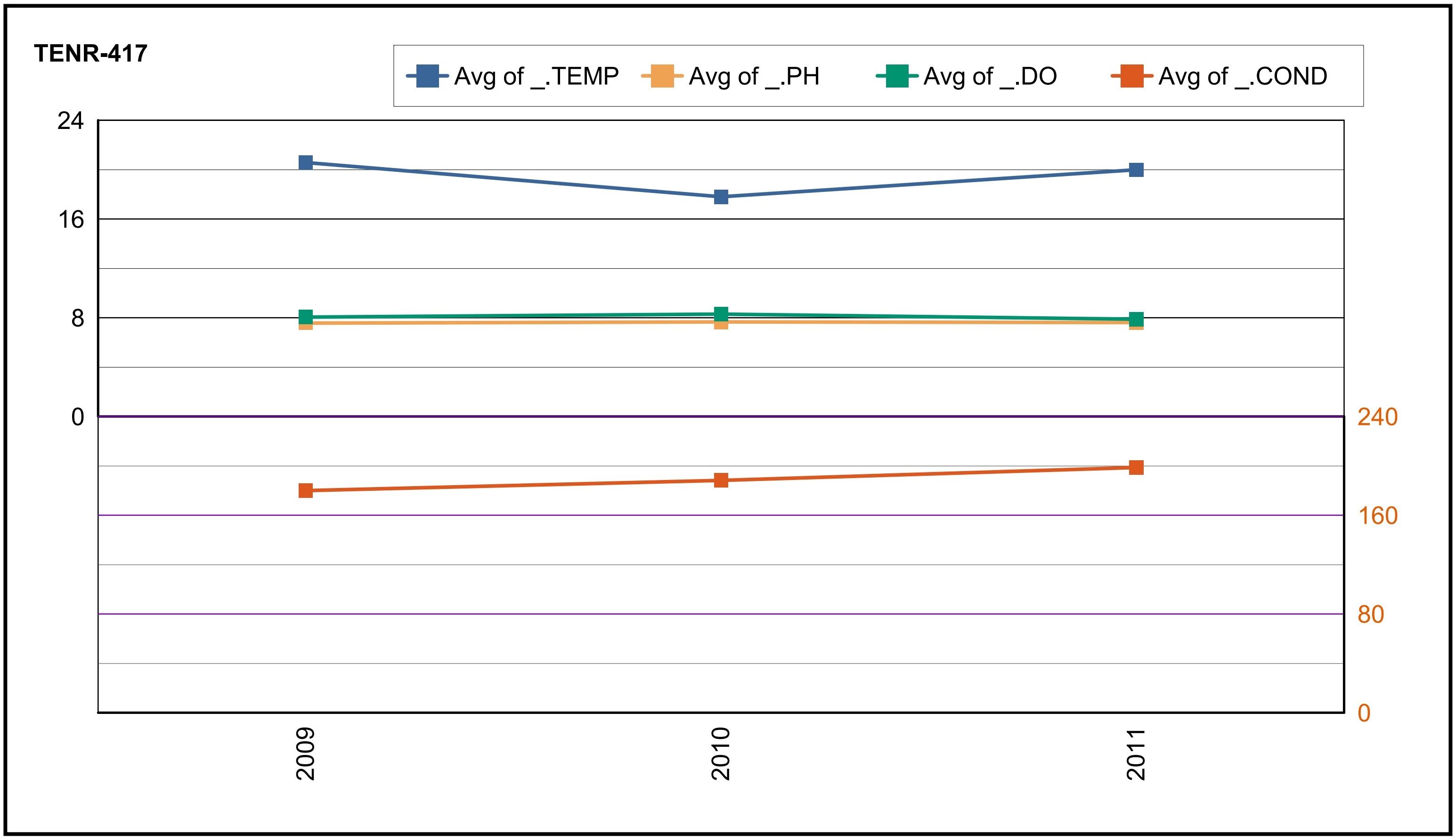

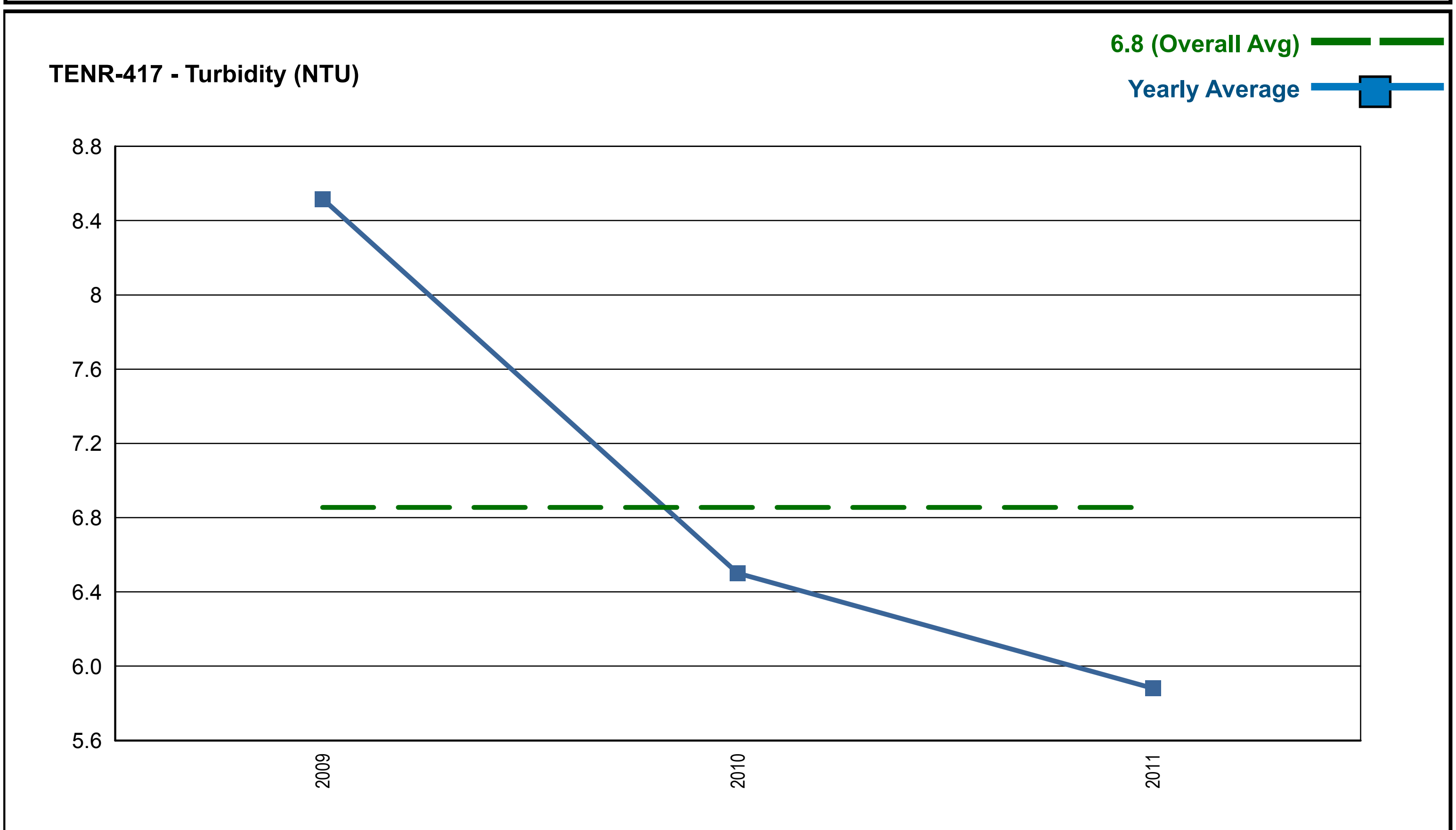

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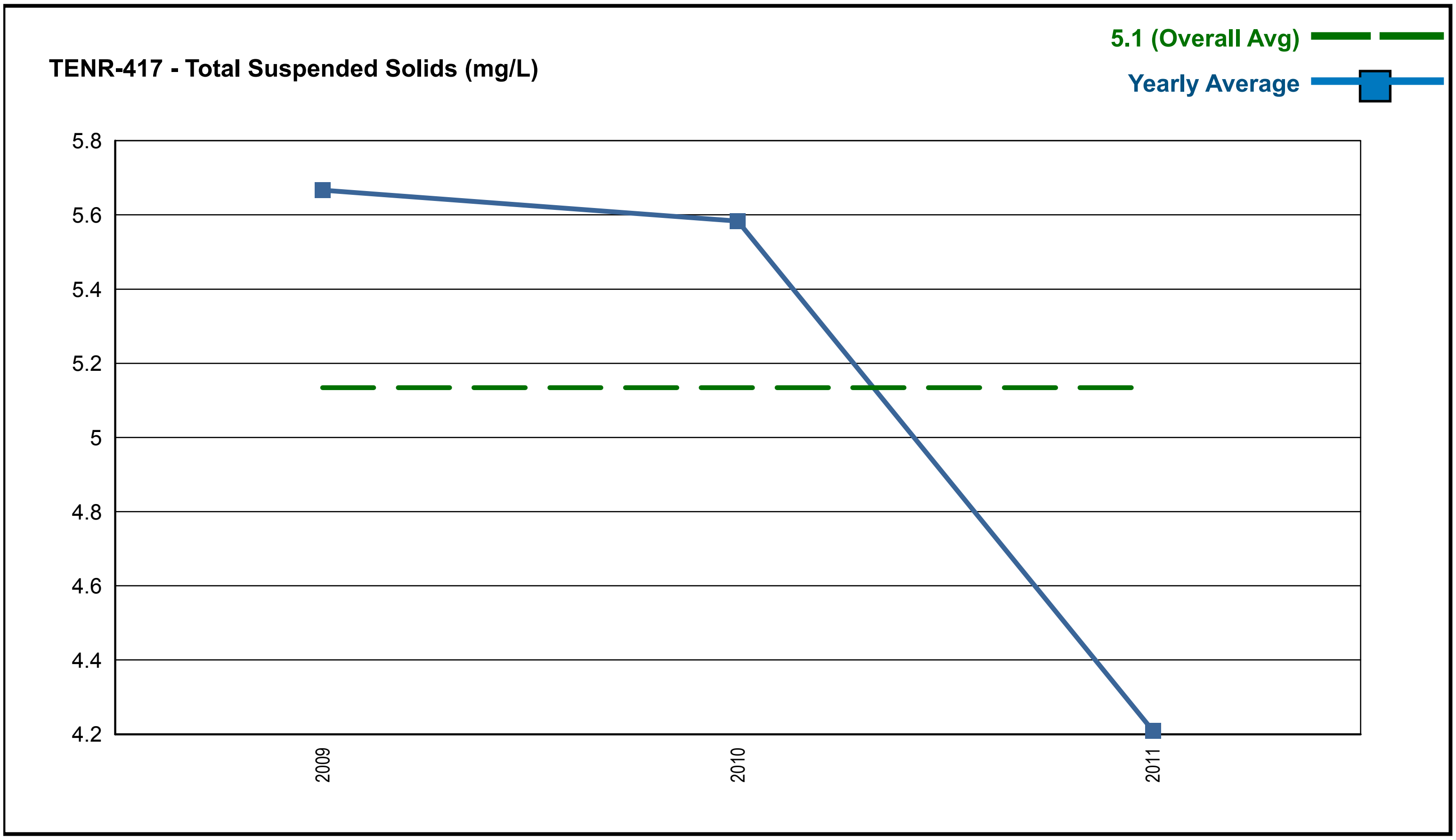
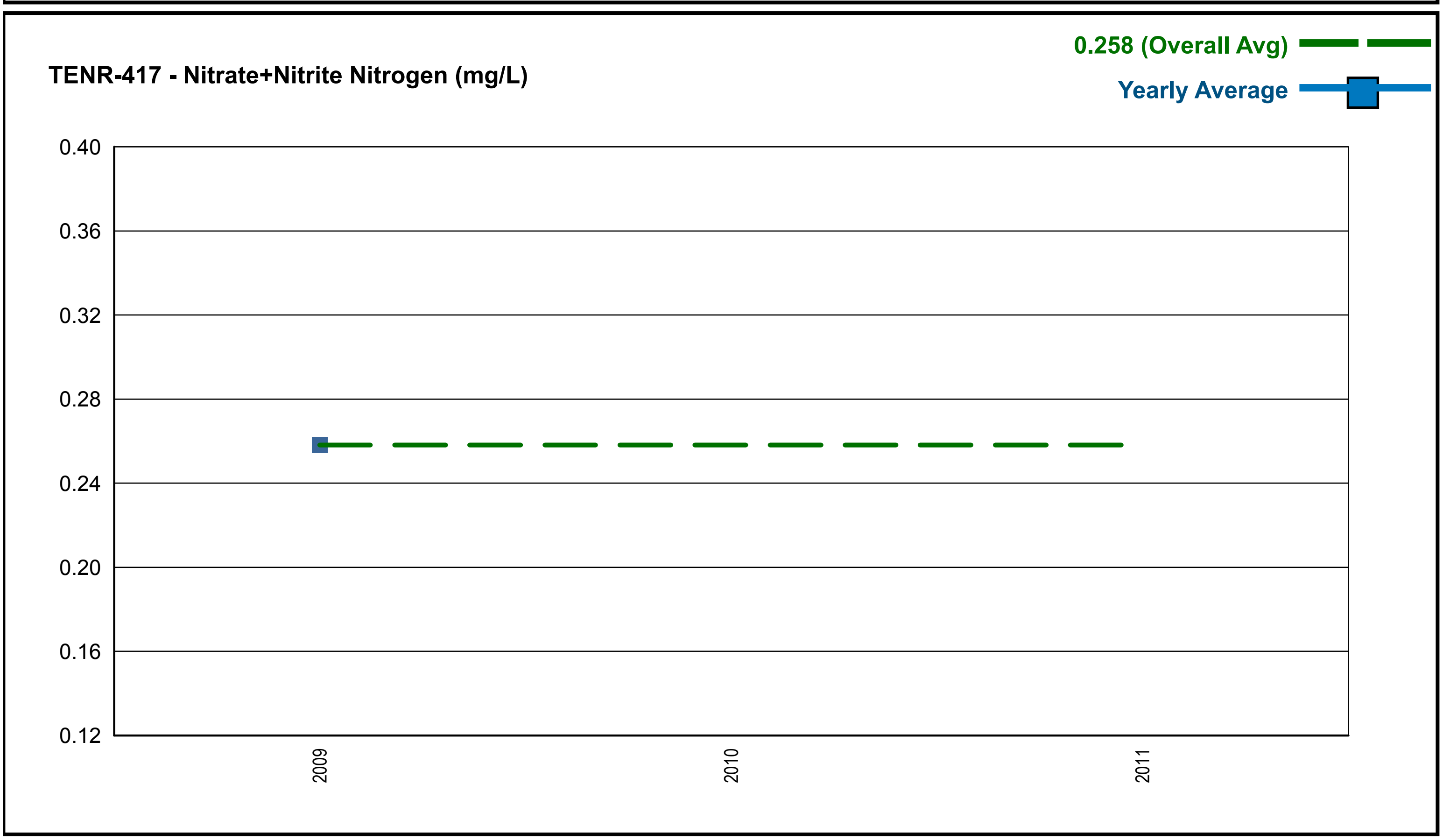
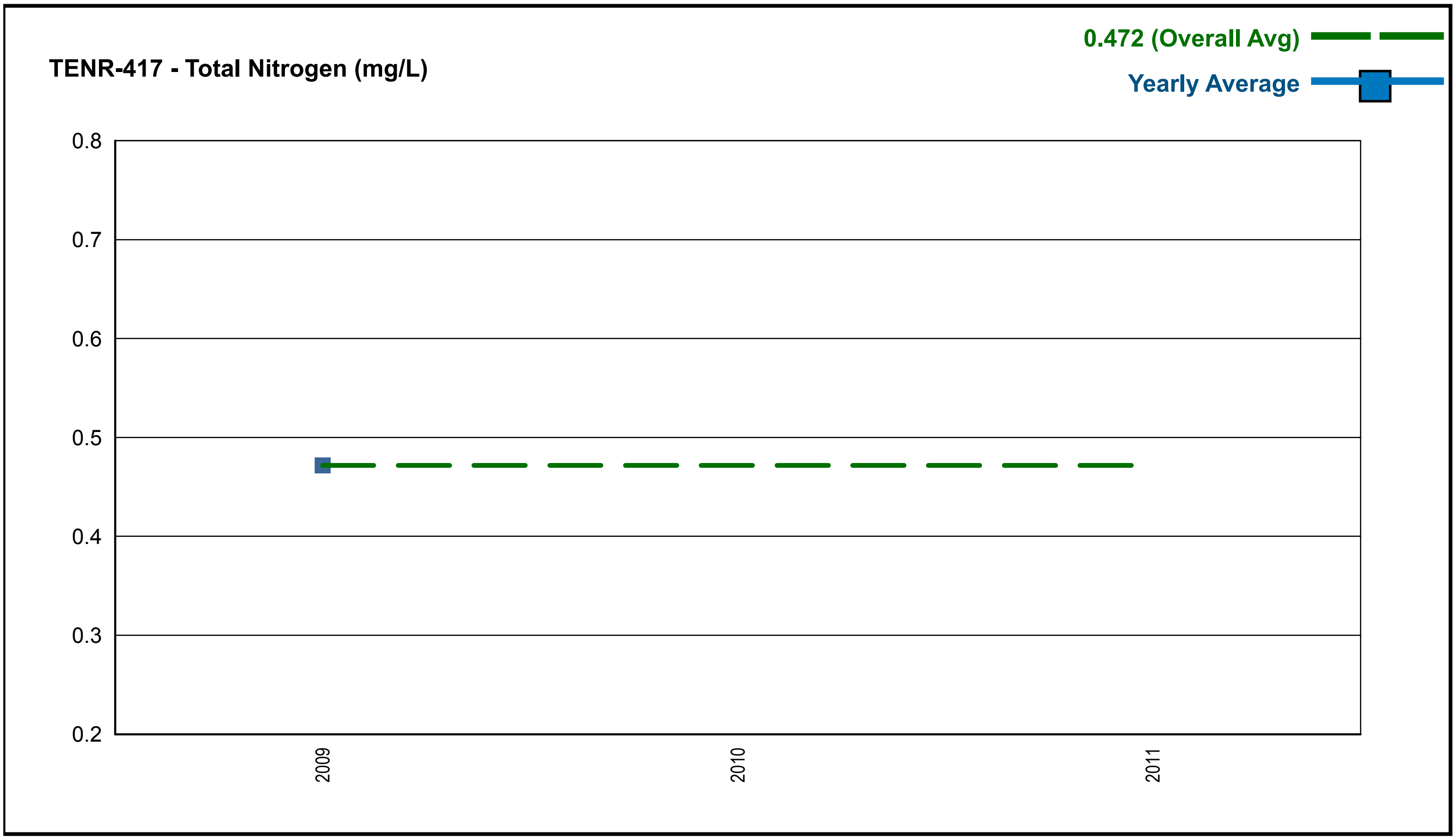
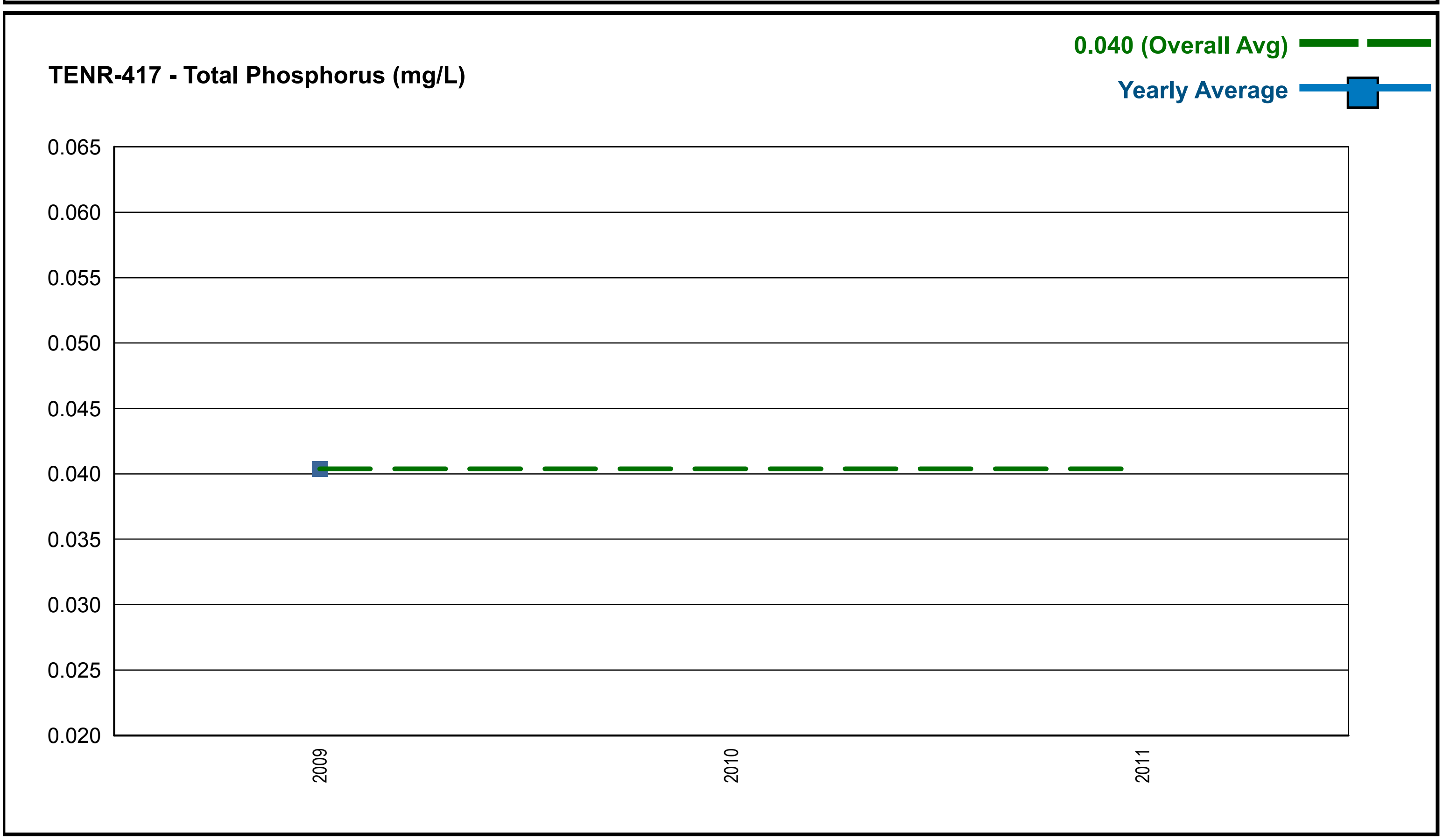


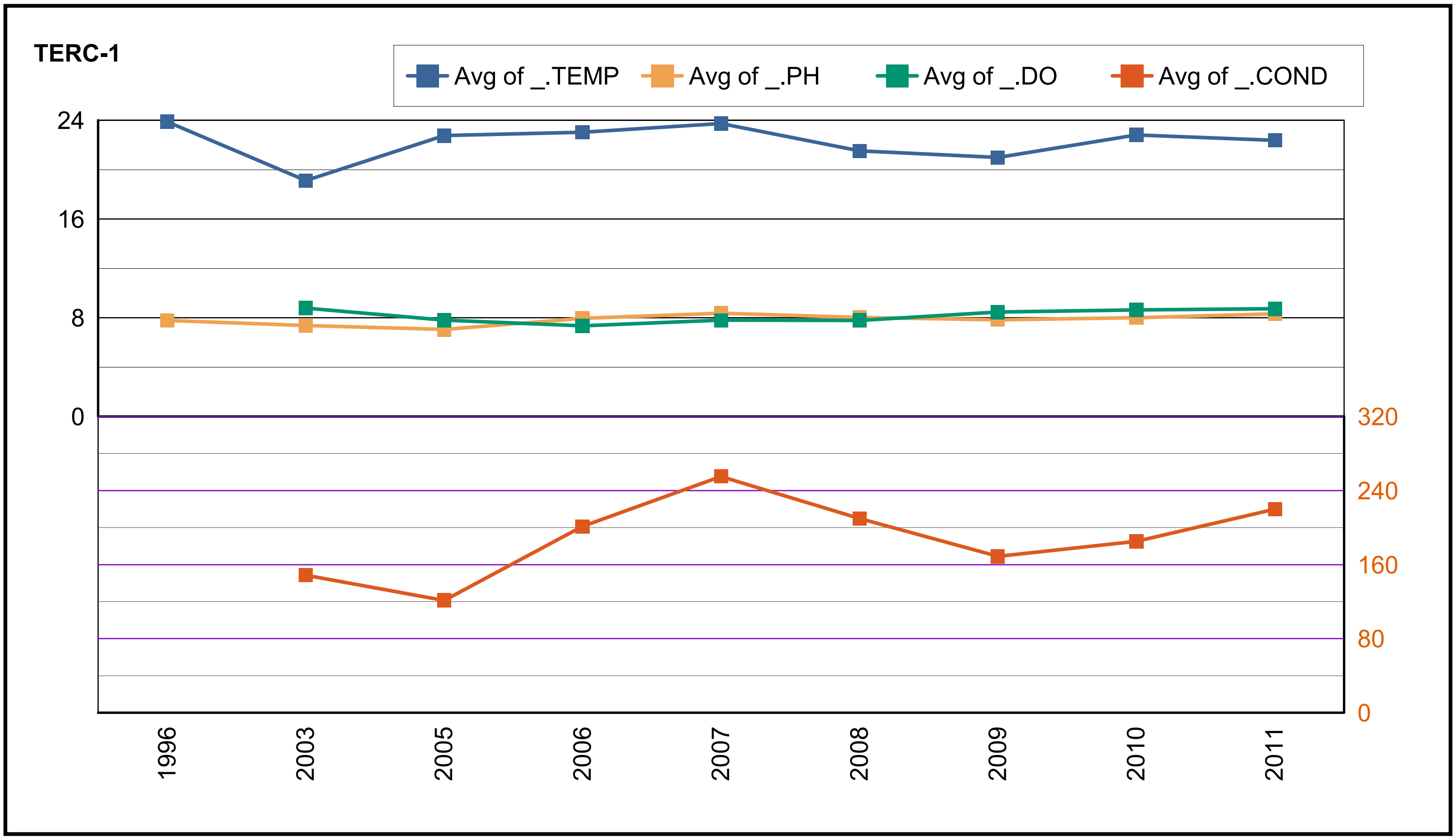


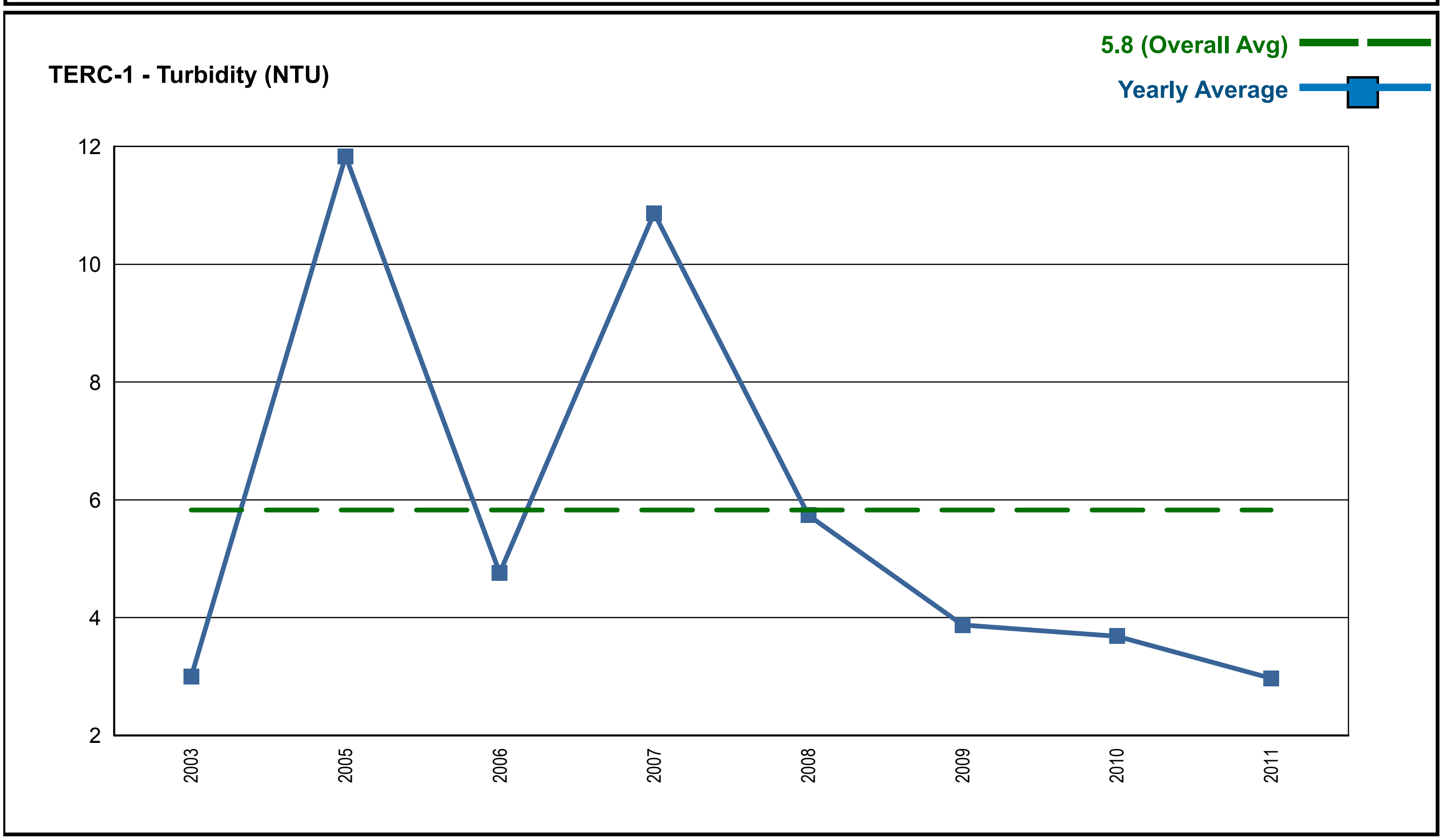
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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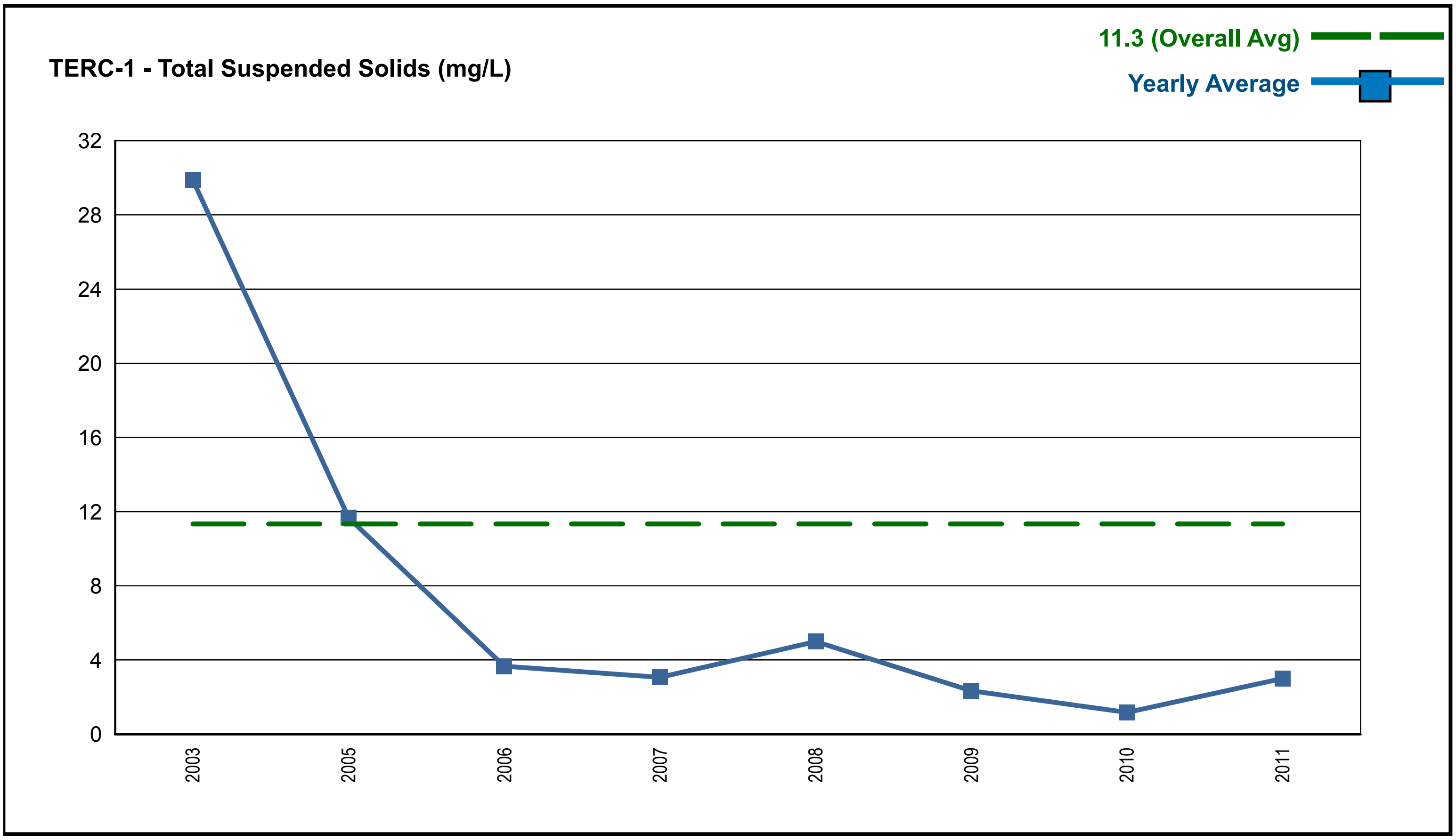

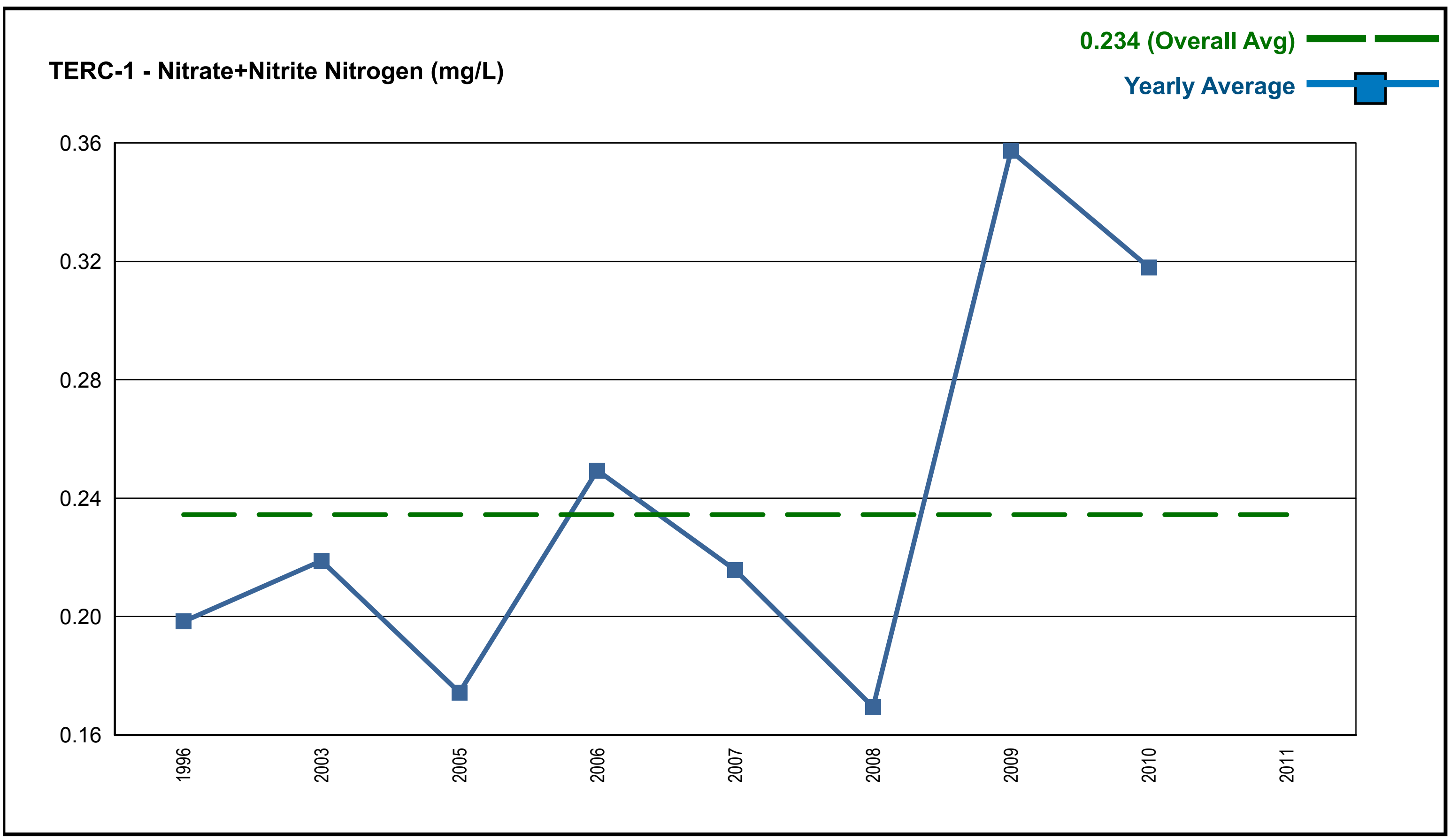

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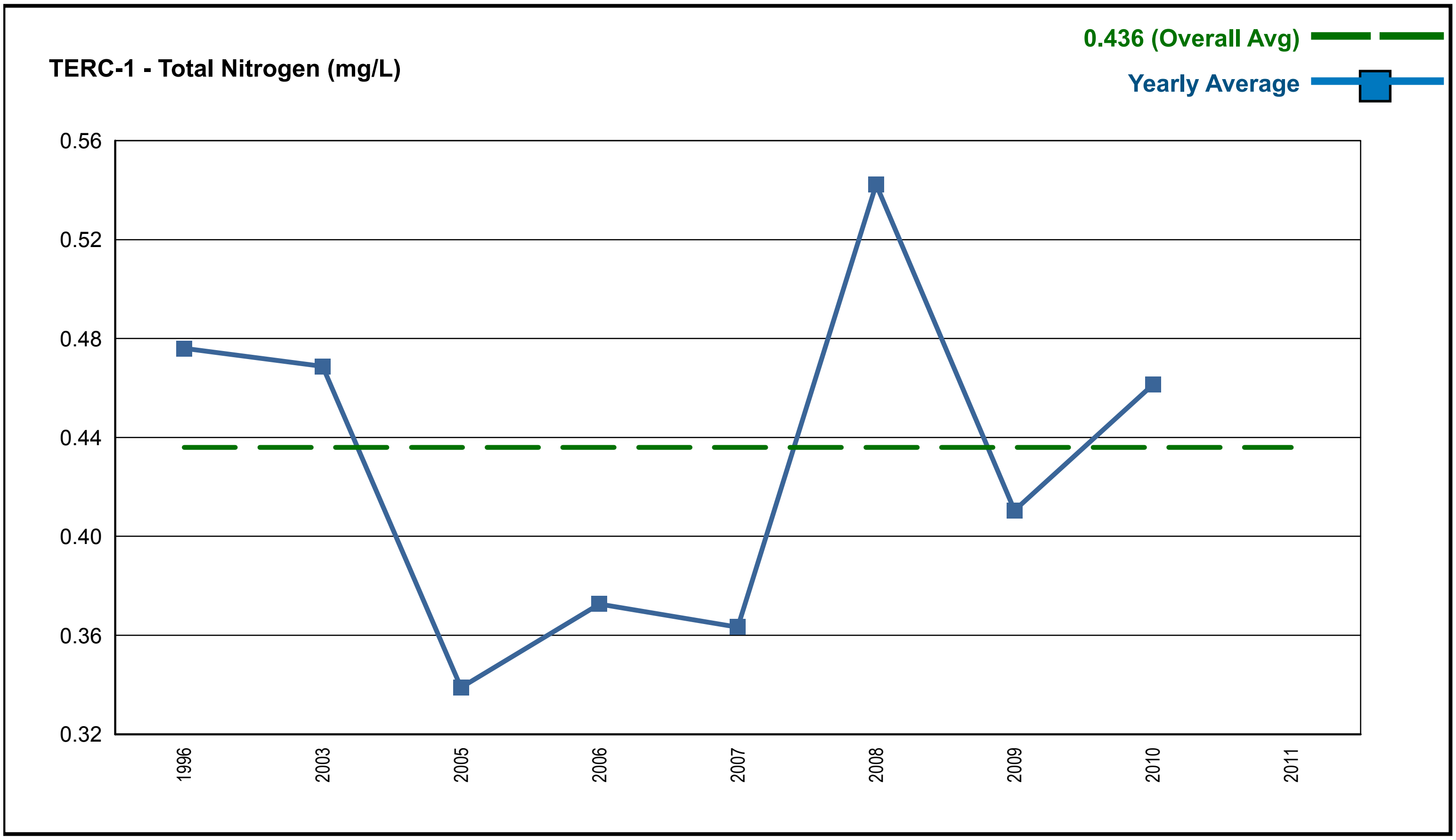

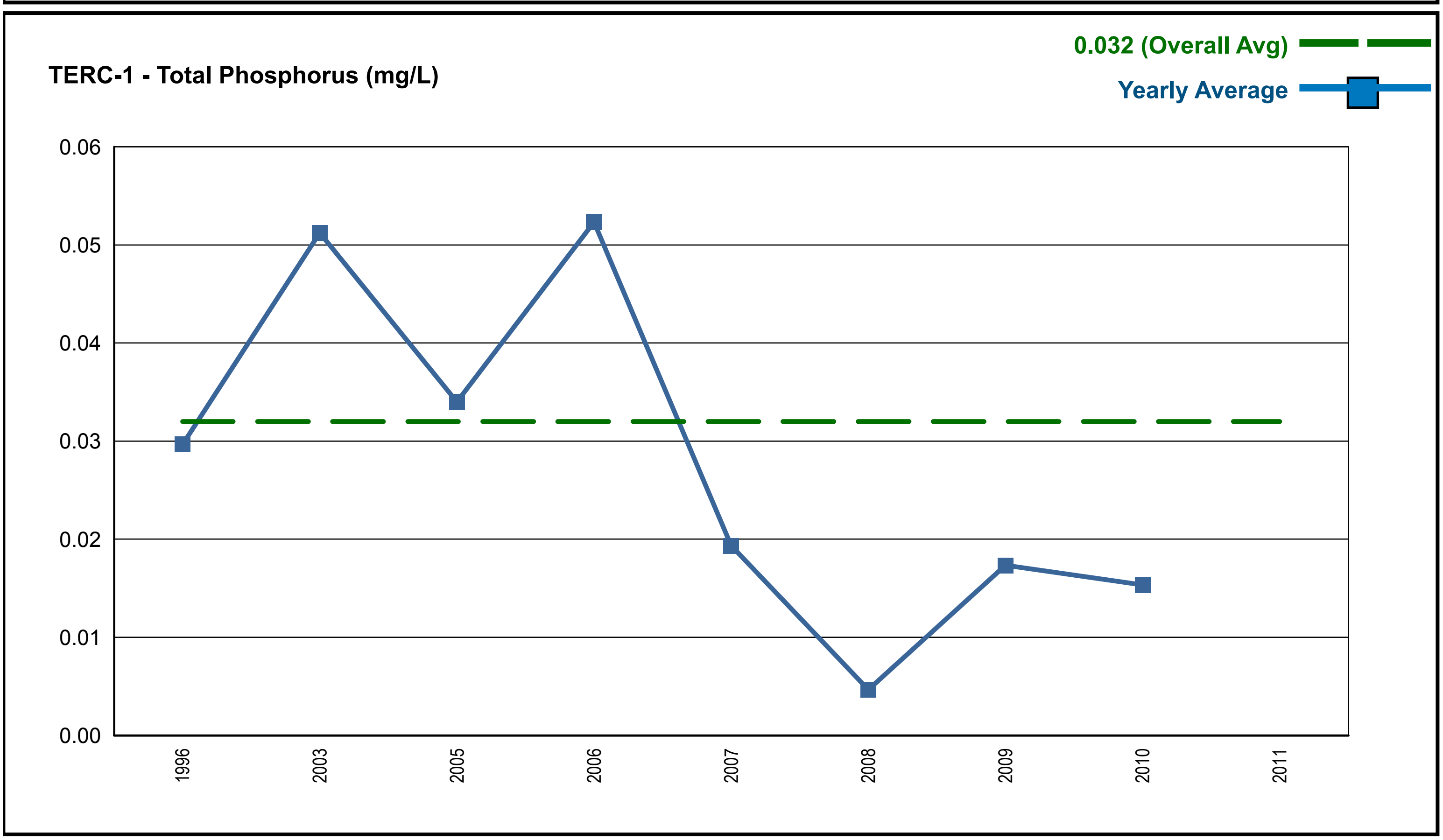

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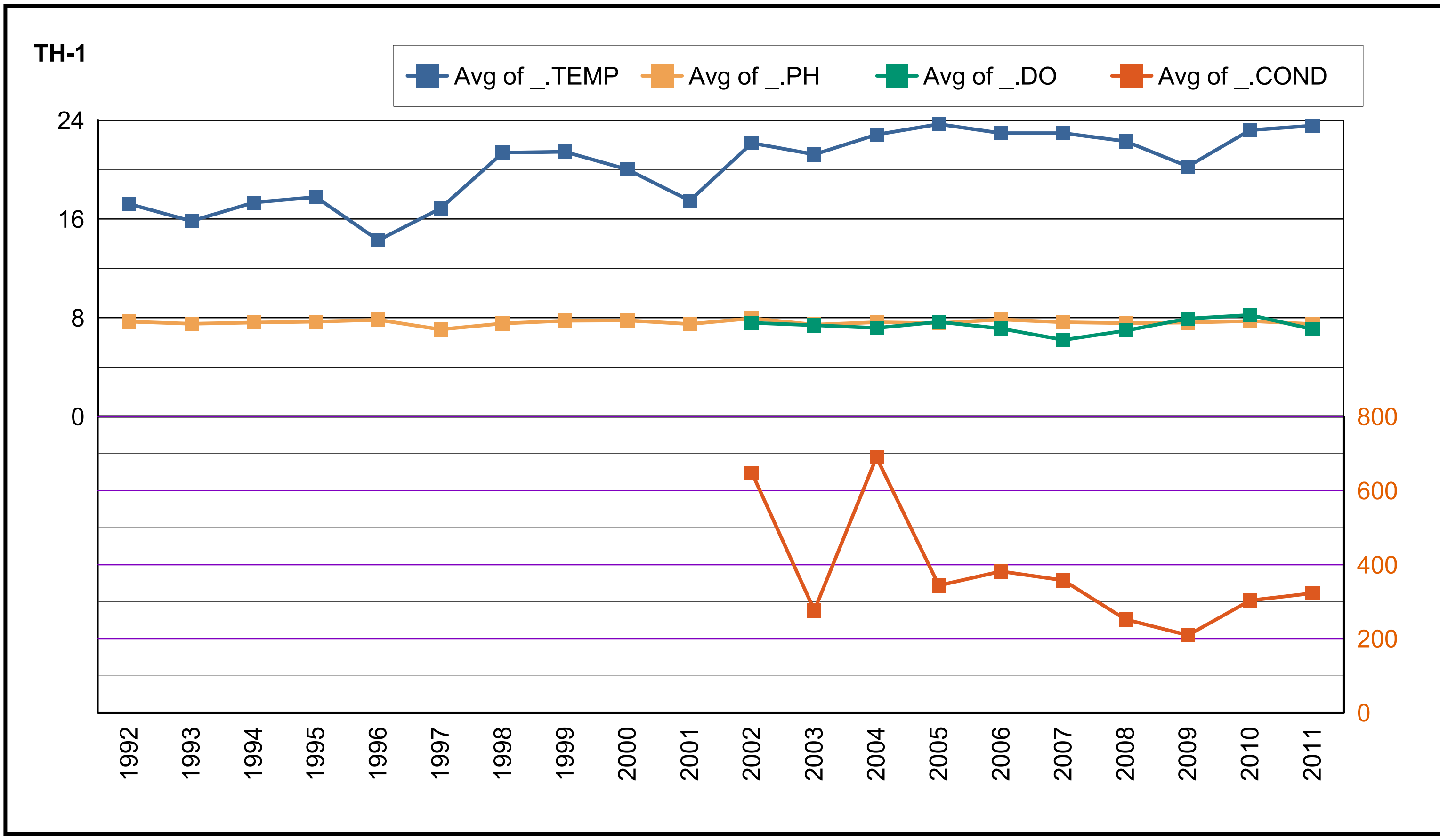

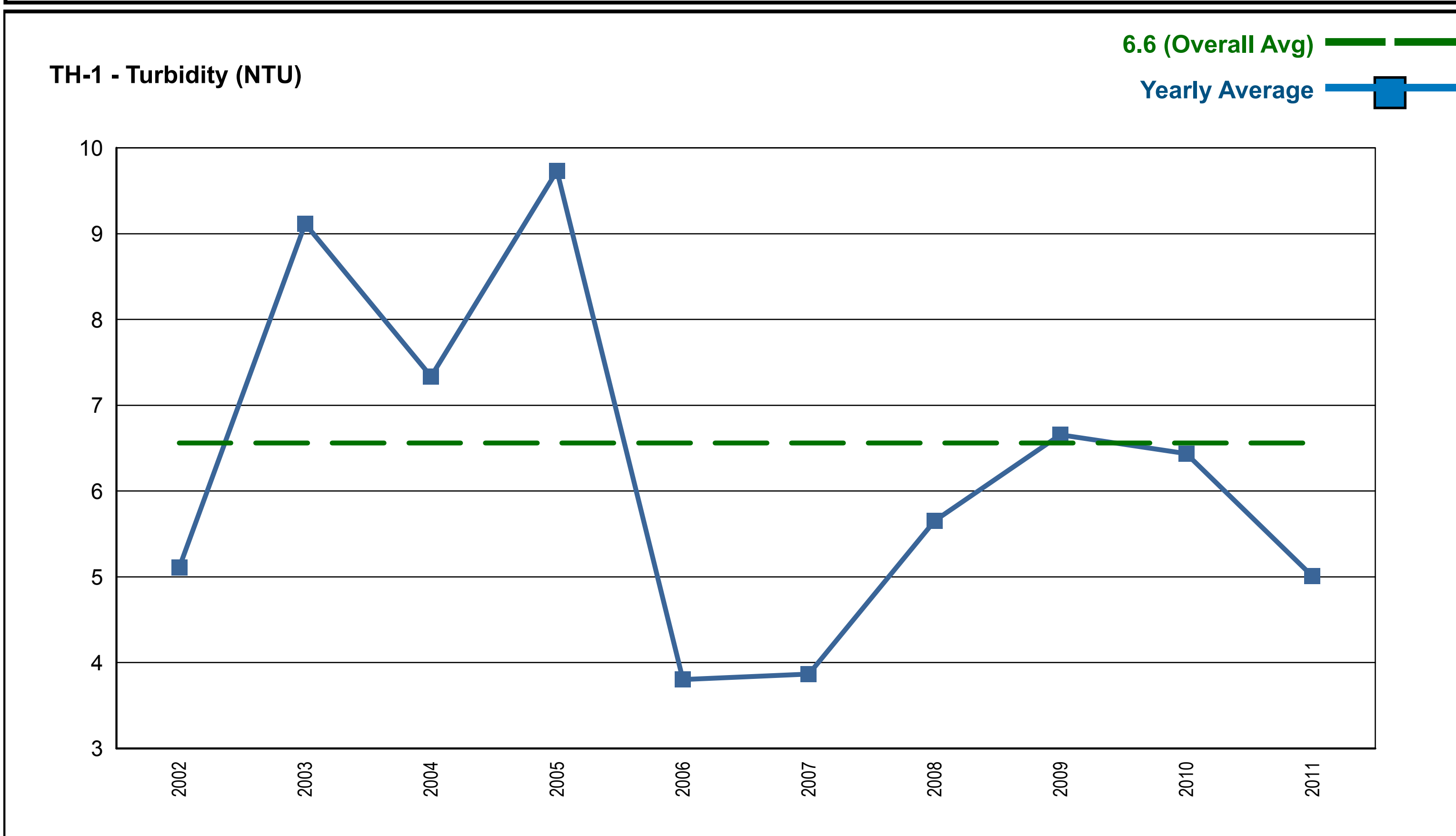

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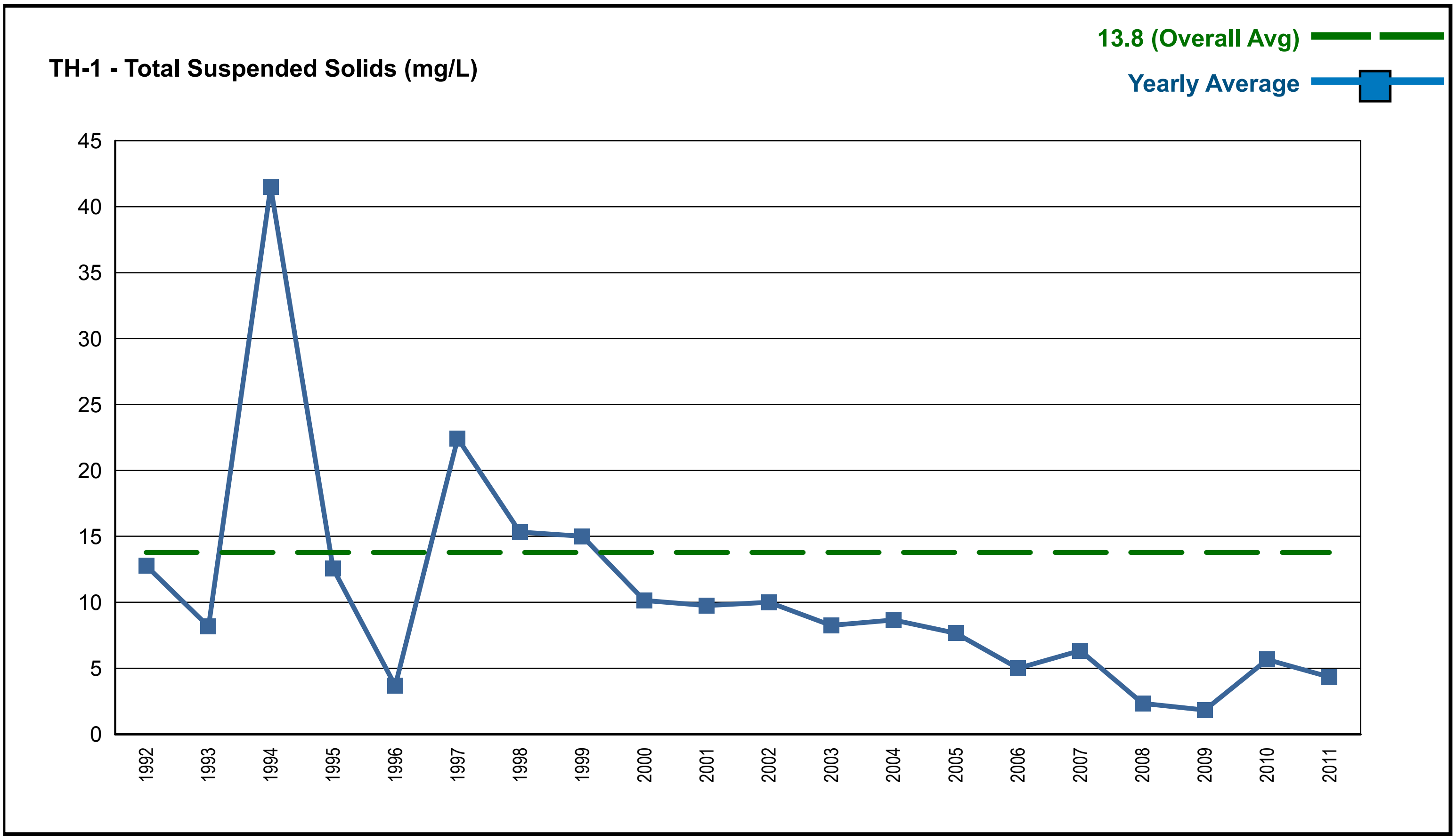

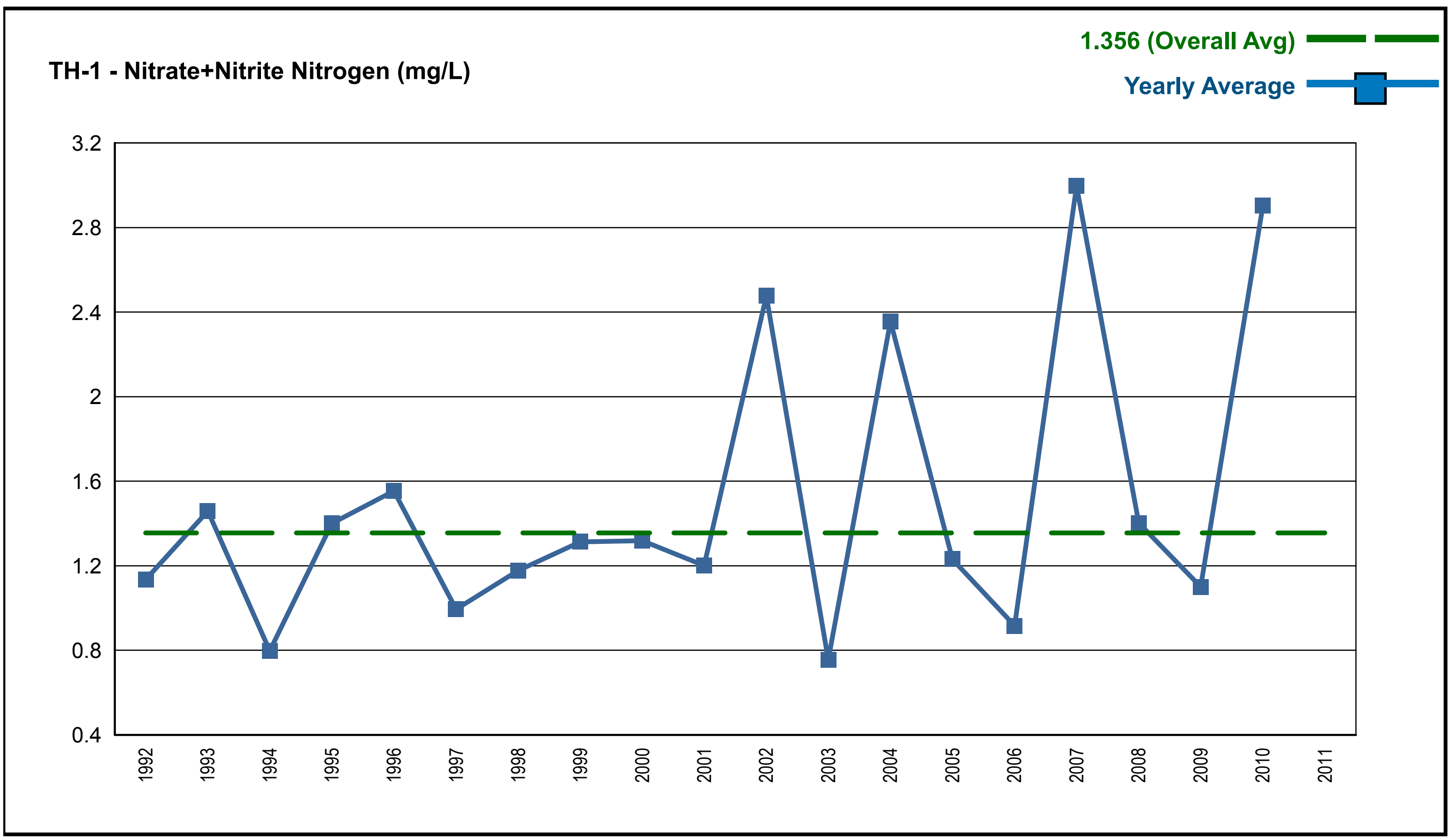

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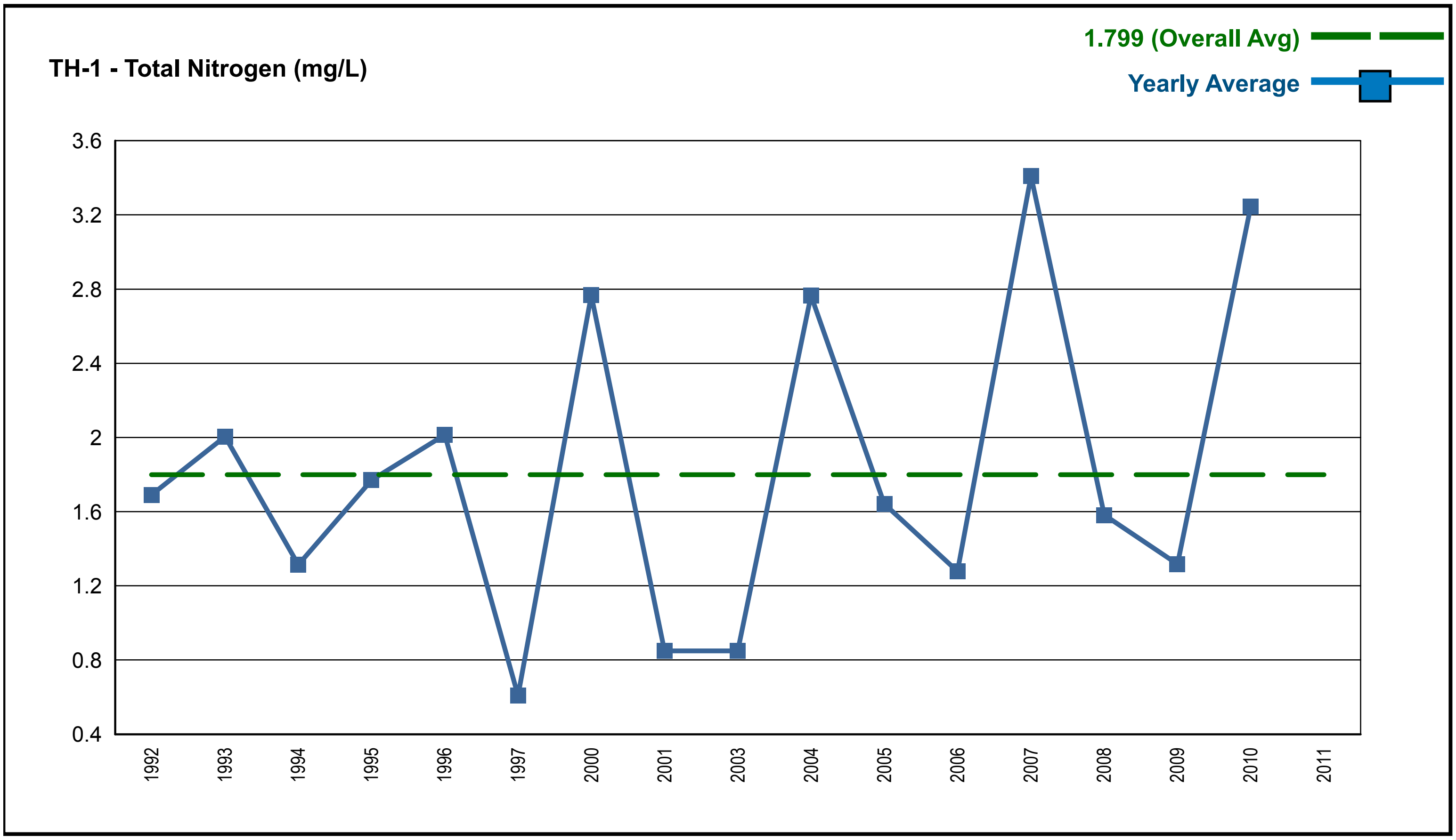

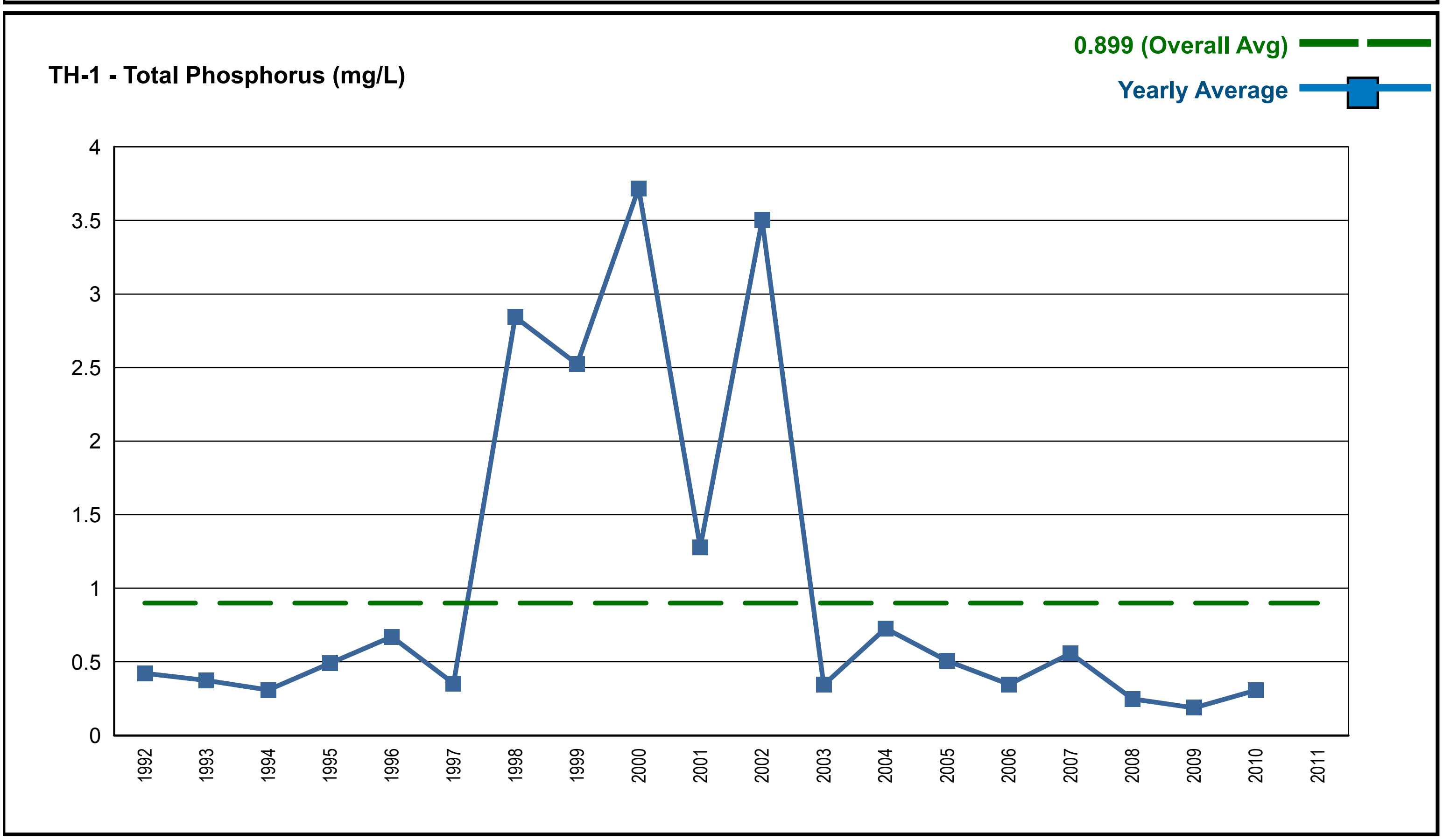

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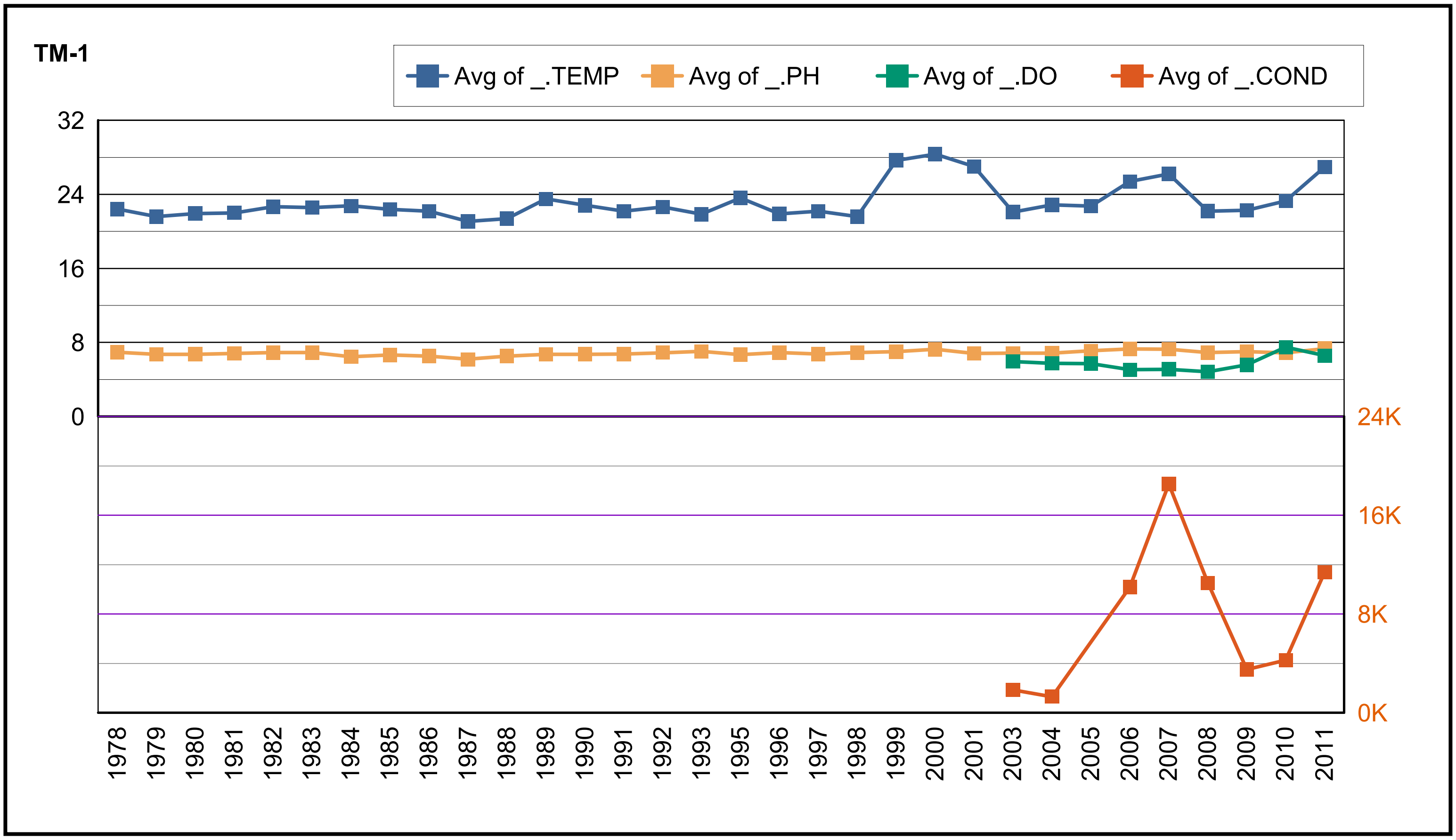

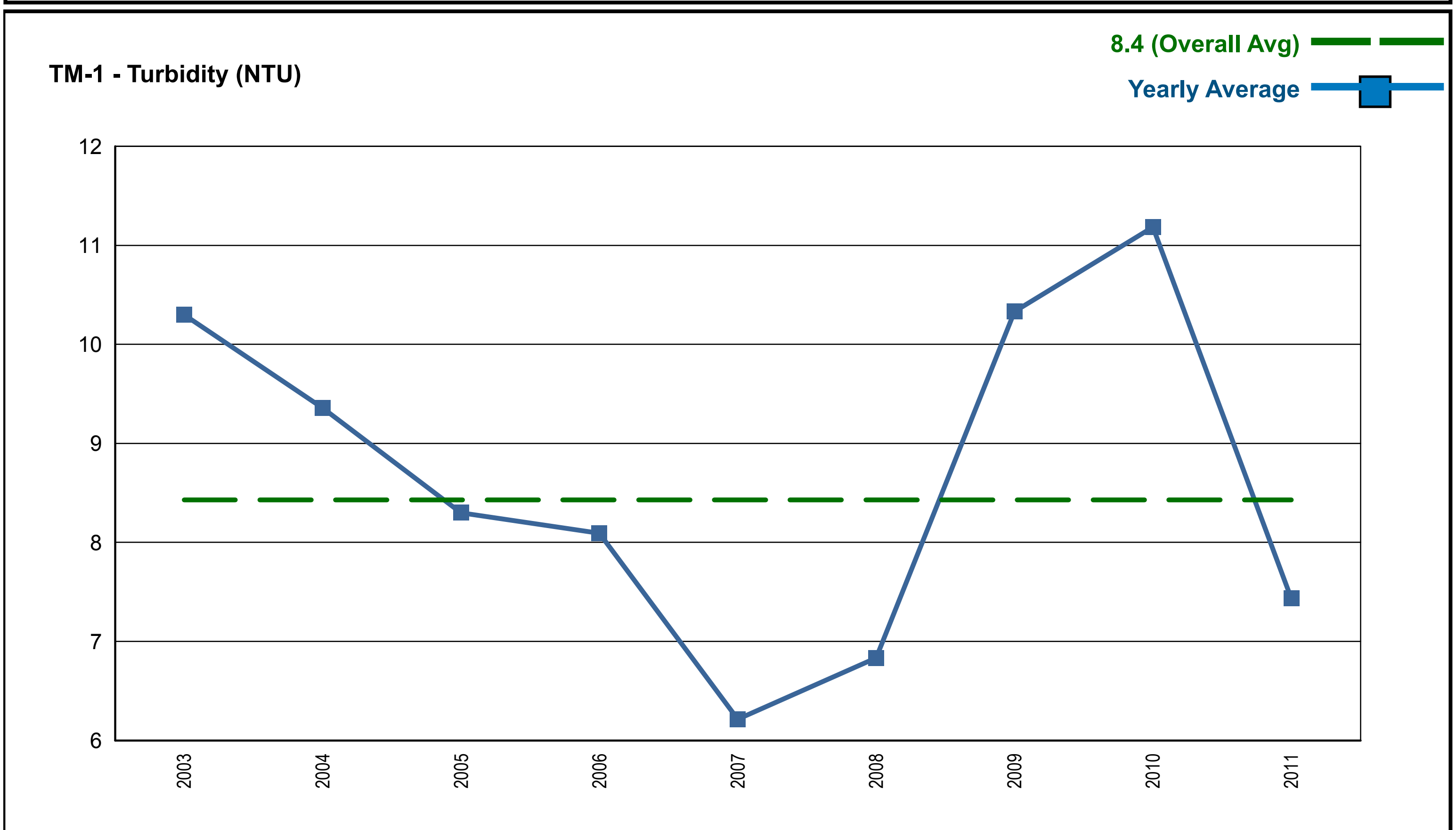

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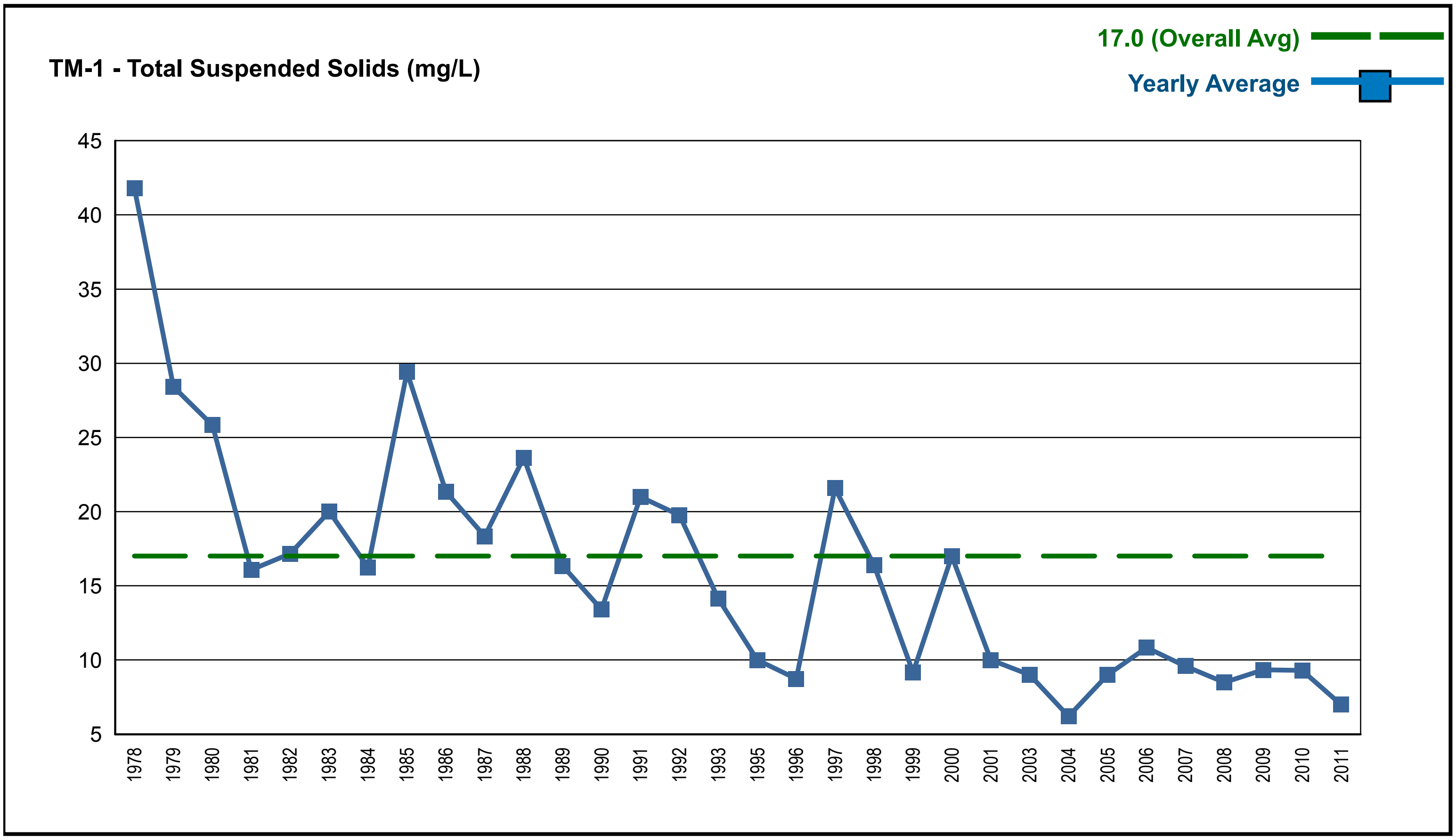
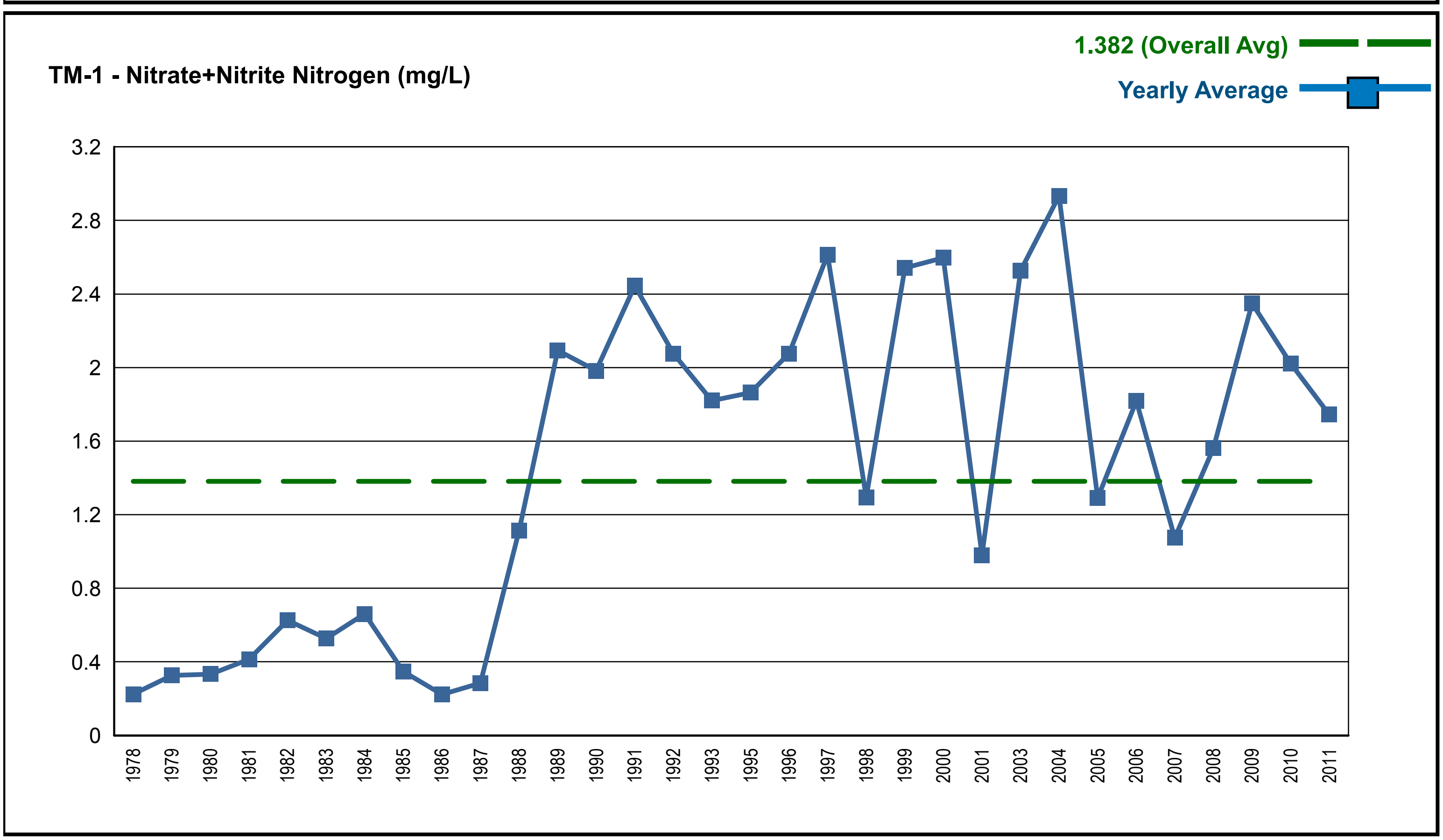
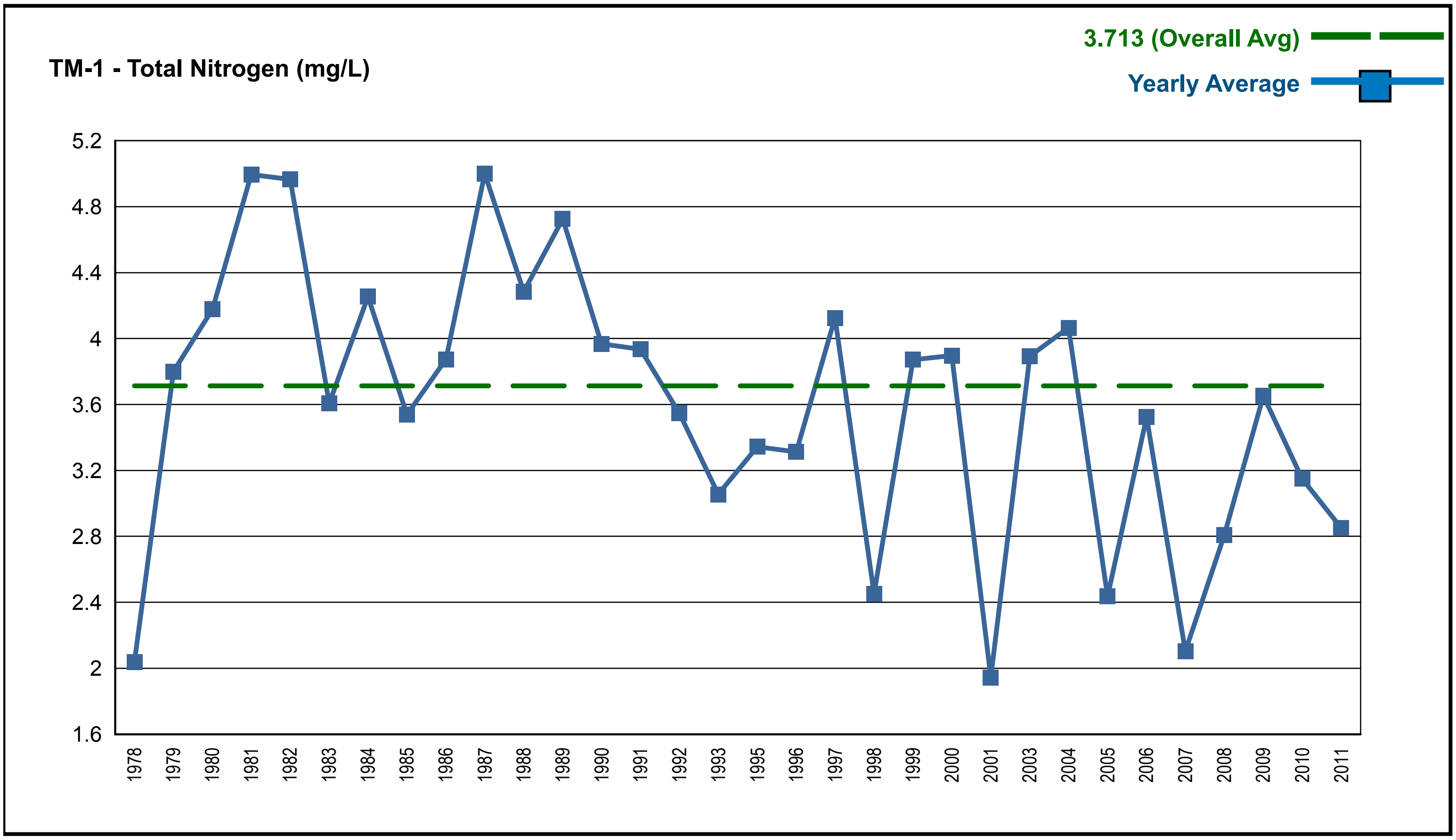
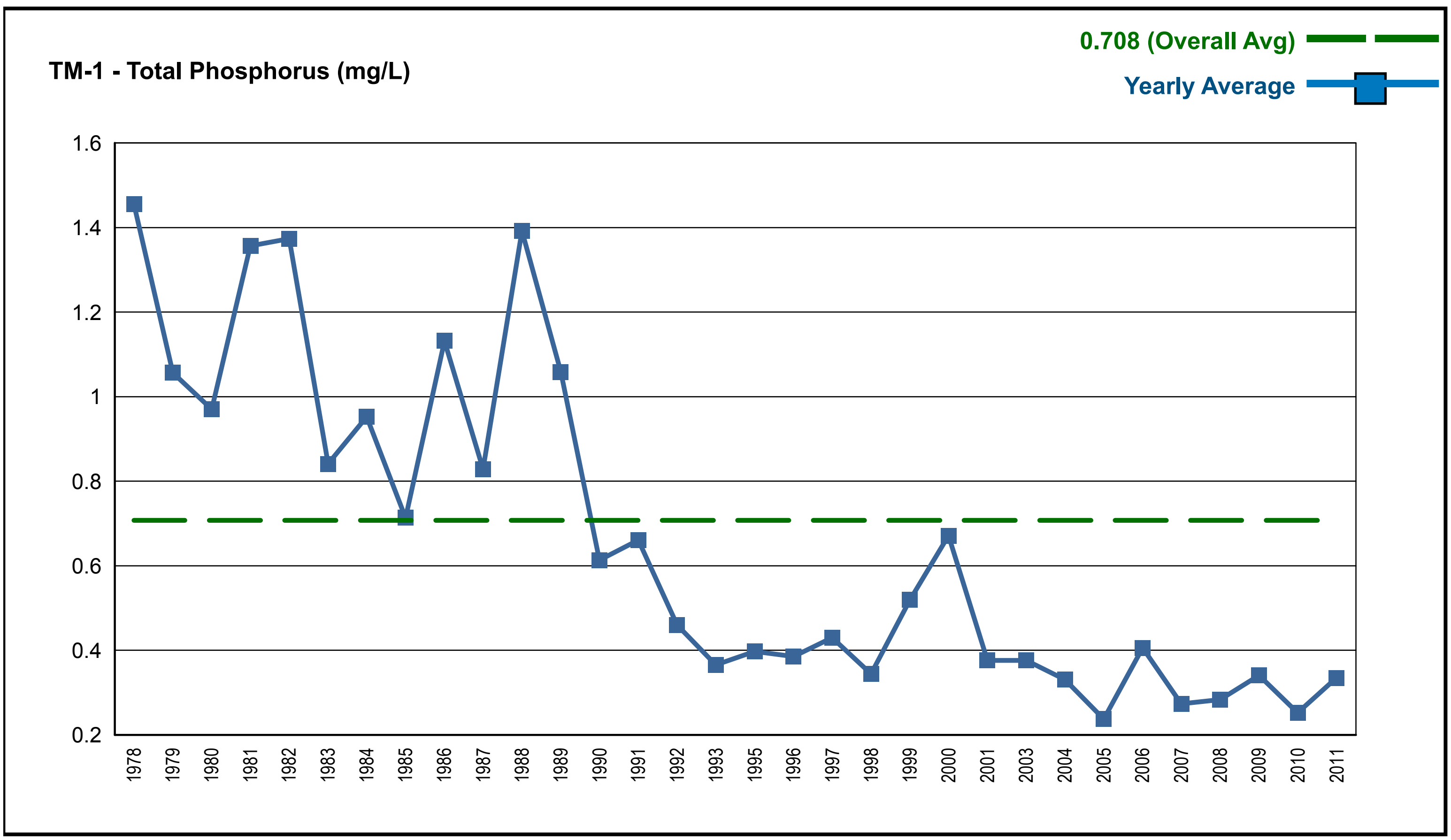


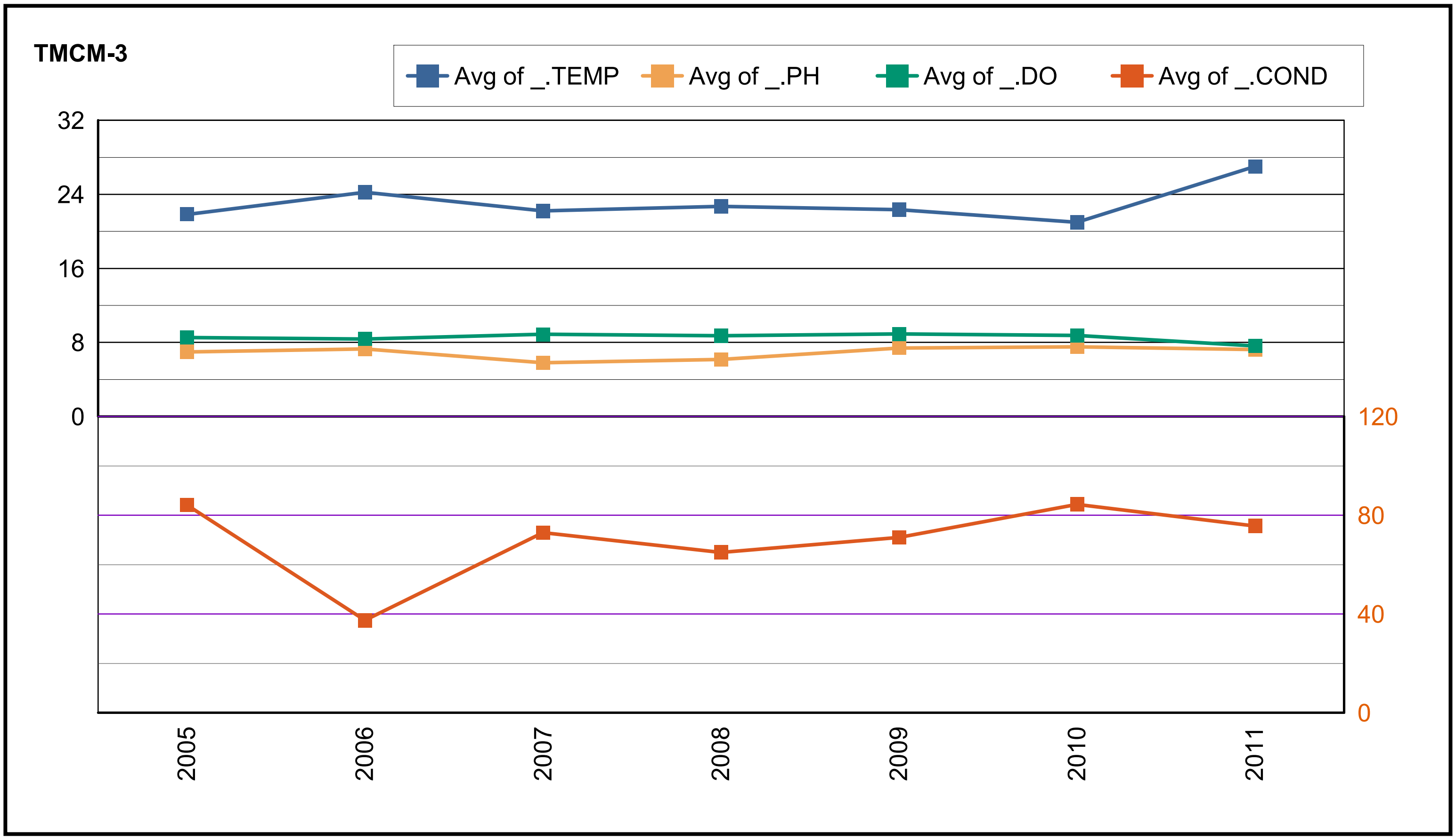


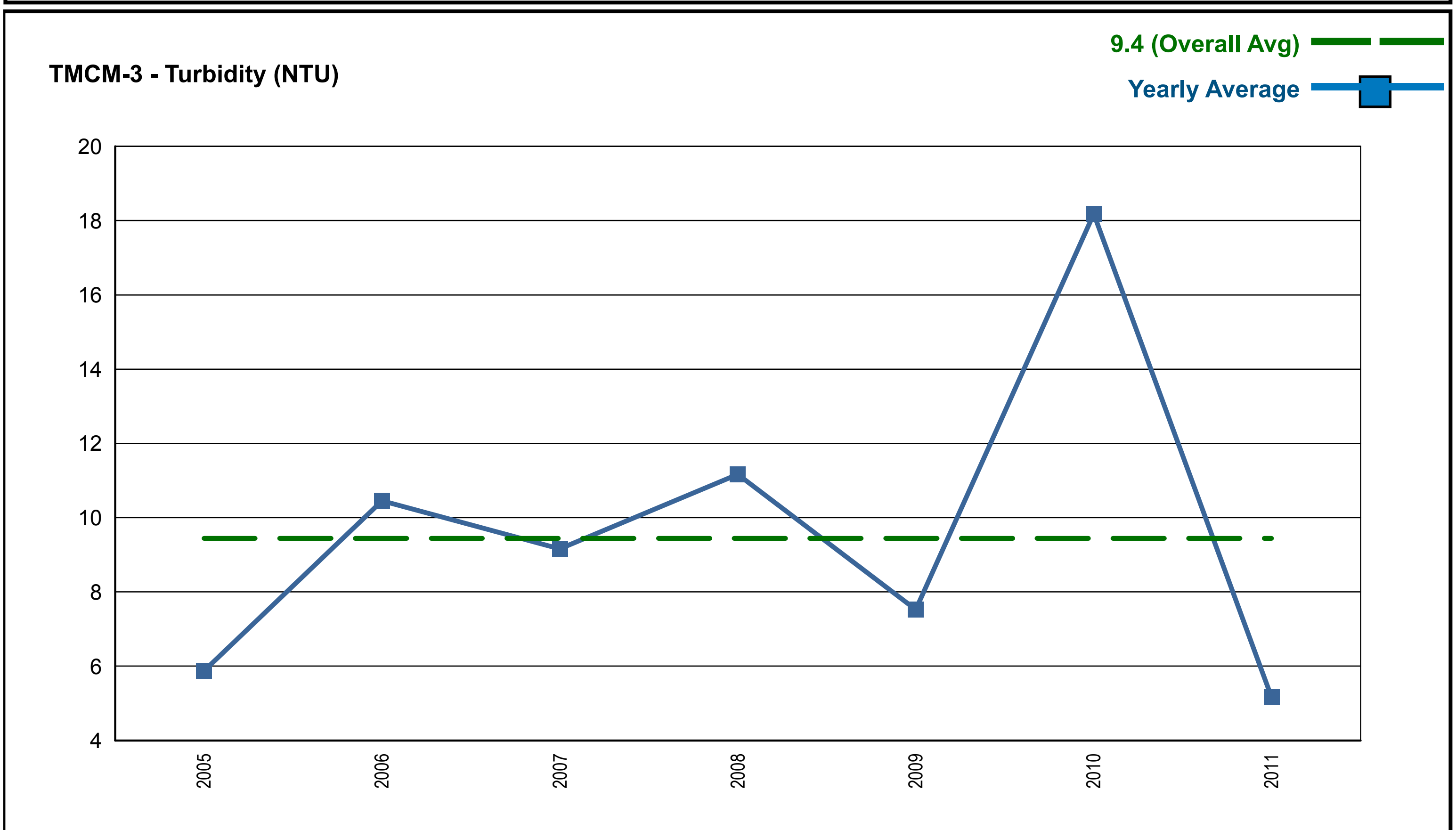
ADEM Ambient Trend Stations - Sampled 1977 - 2012





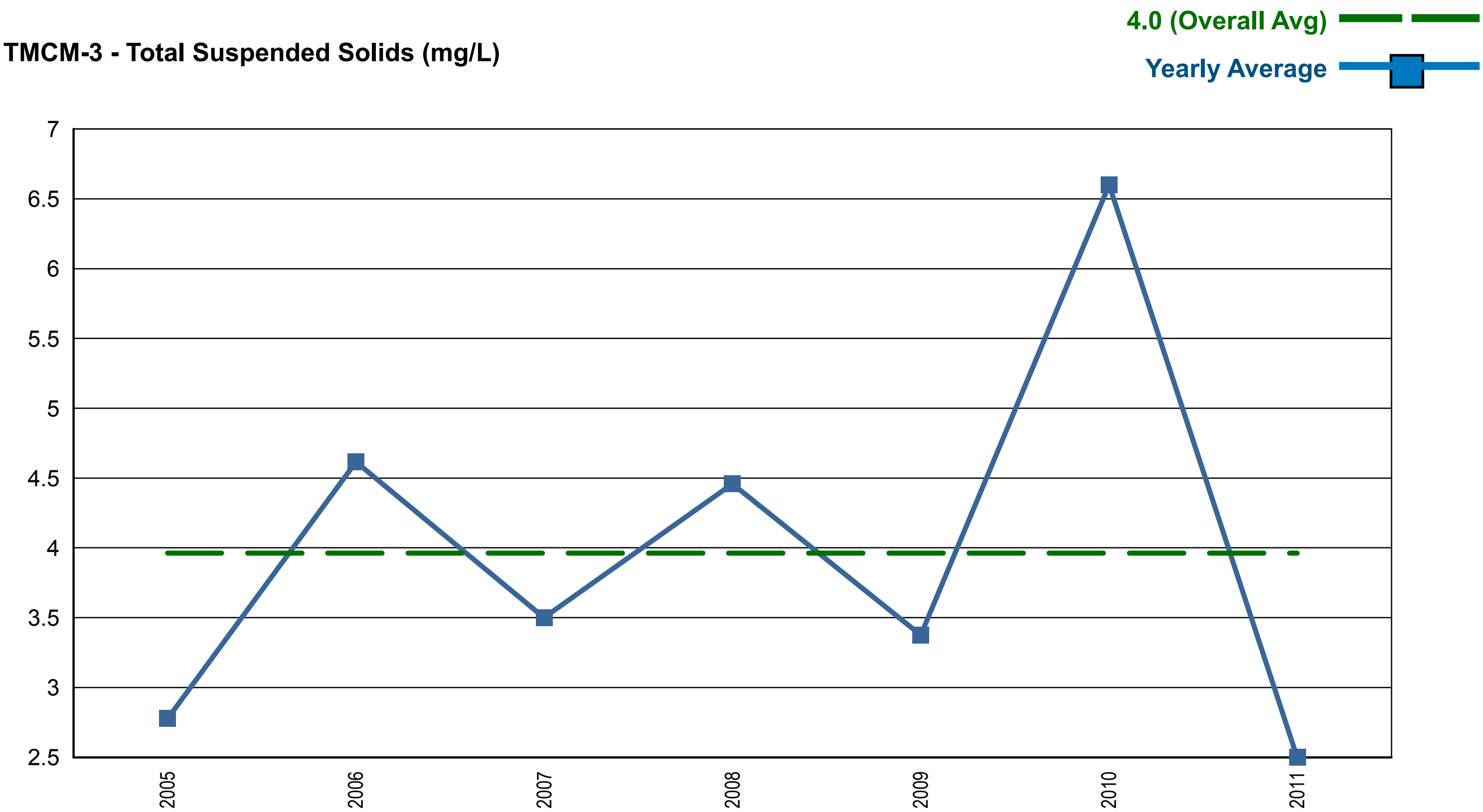
ADEM Ambient Trend Stations - Sampled 1977 - 2012



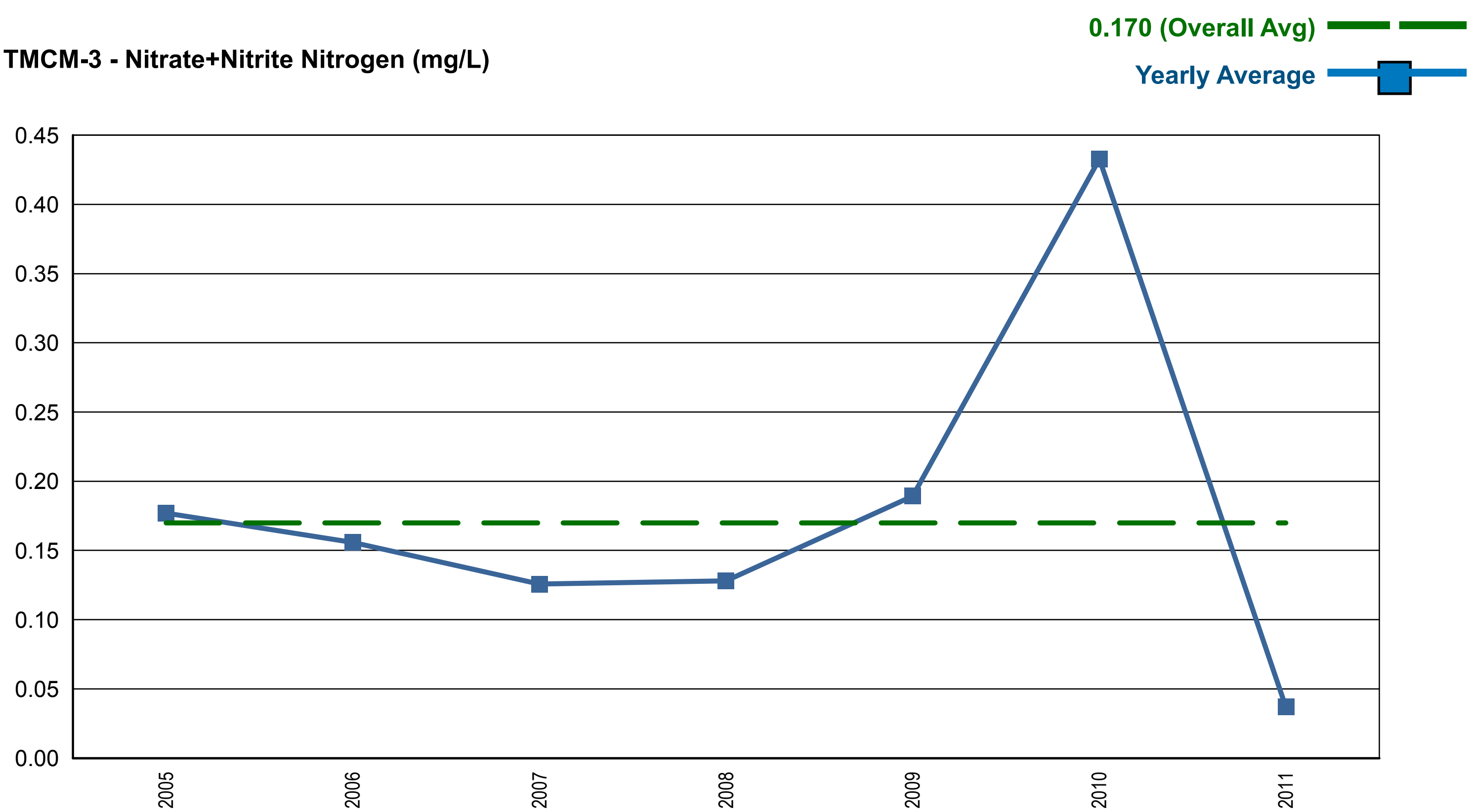


ADEM Ambient Trend Stations - Sampled 1977 - 2012

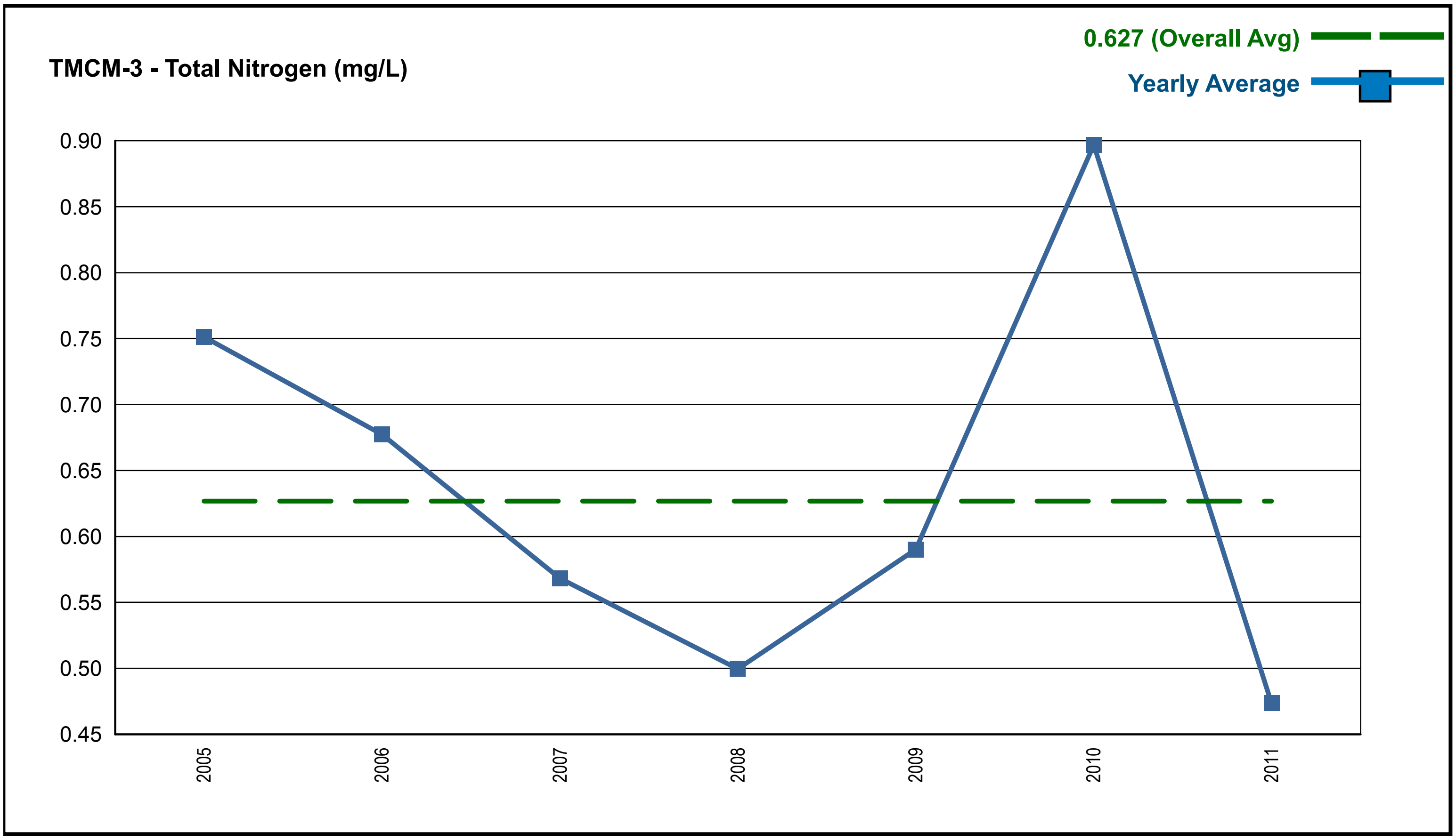
TMCM-3 - Total Suspended Solids (mg/L)

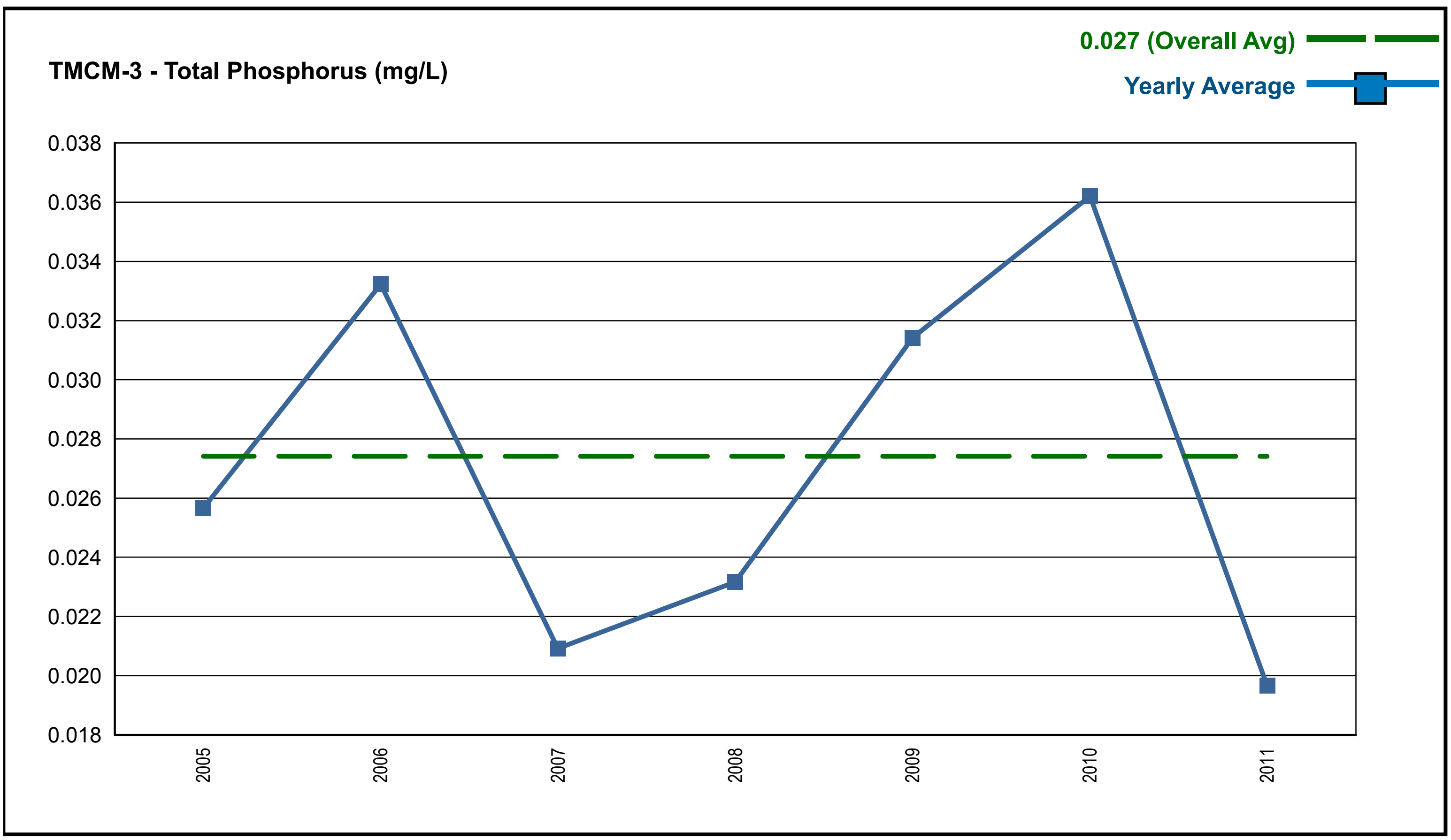


TMCM-3 - Nitrate+Nitrite Nitrogen (mg/L)

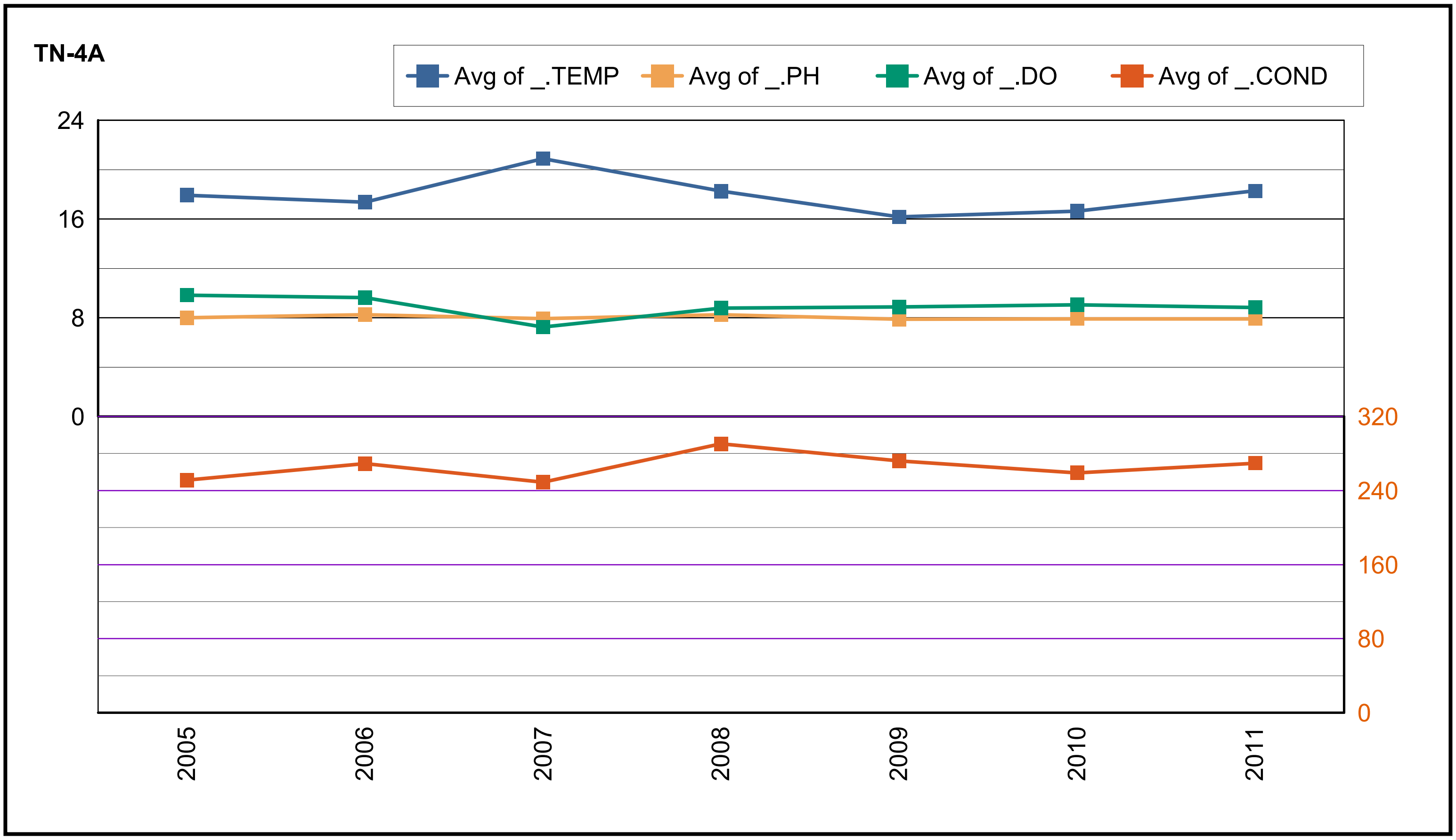


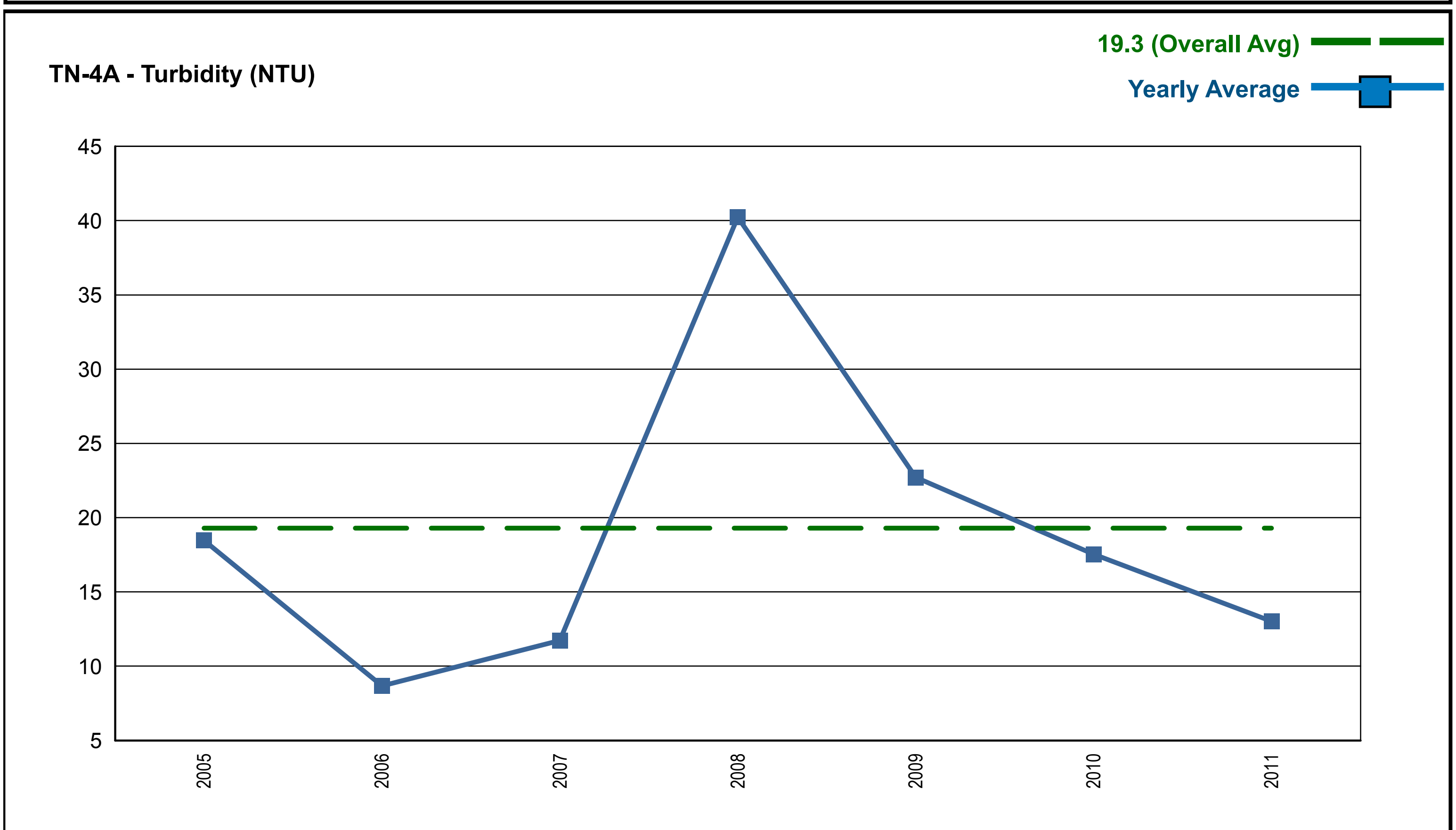
ADEM Ambient Trend Stations - Sampled 1977 - 2012



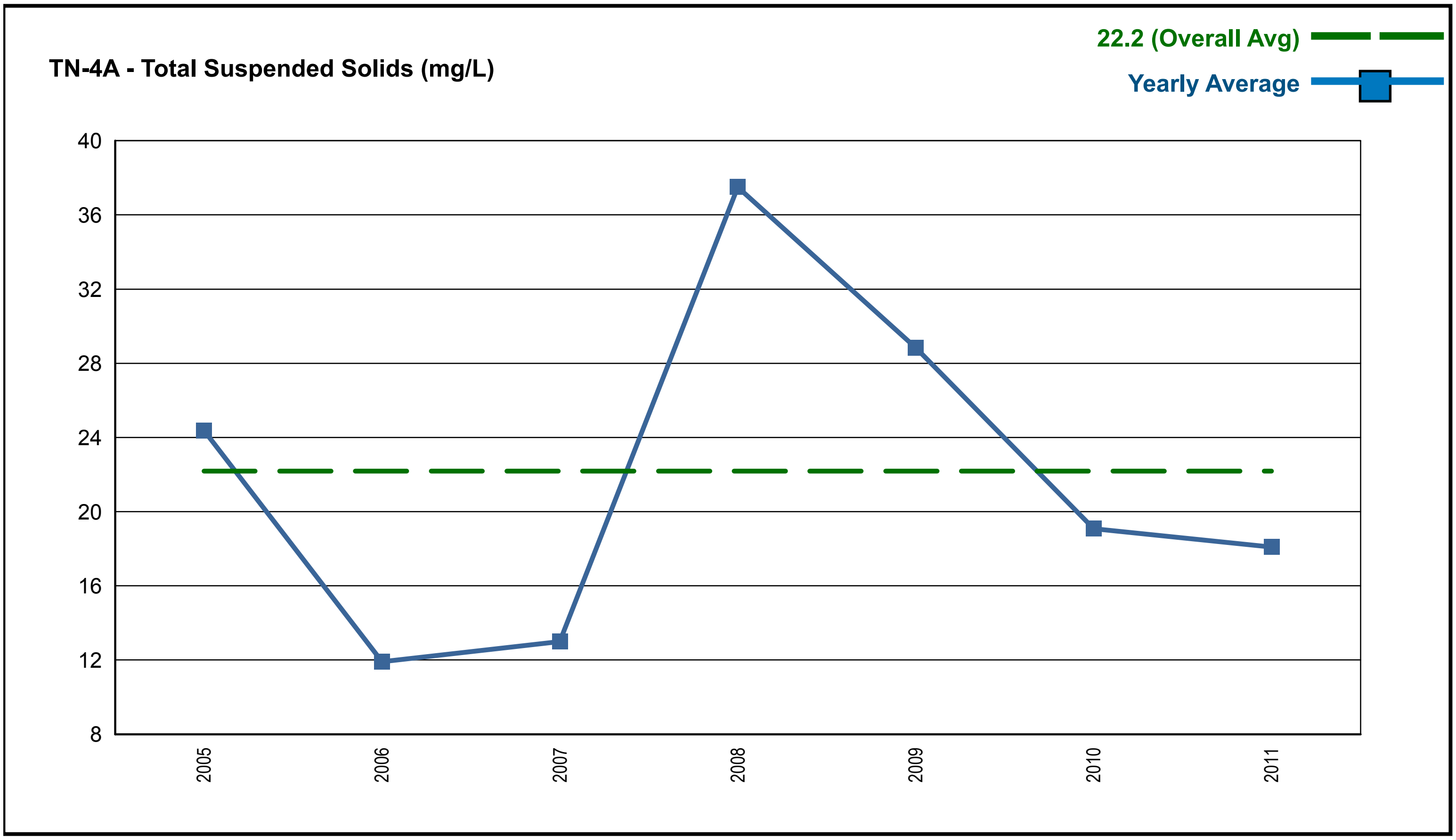


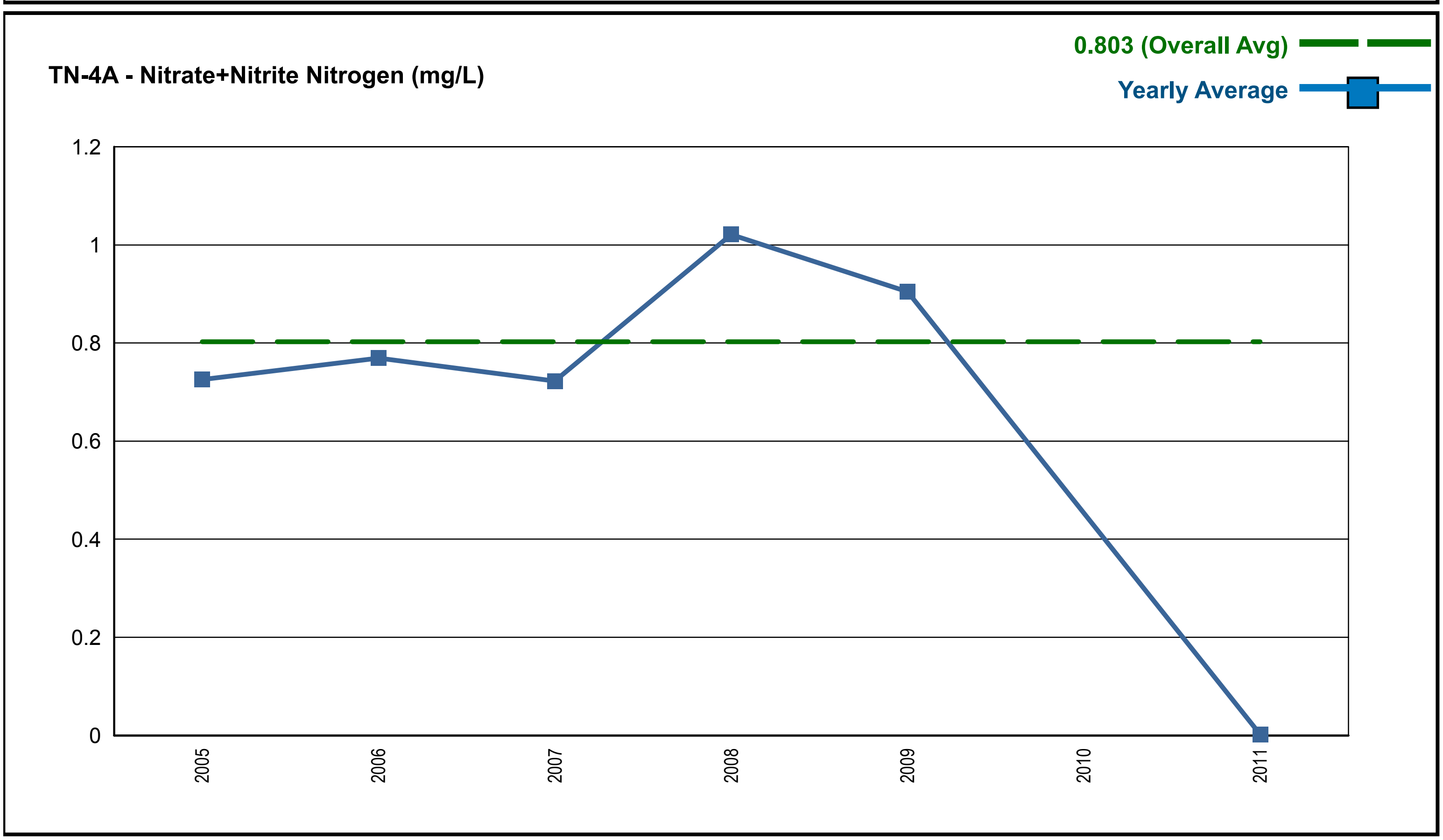
ADEM Ambient Trend Stations - Sampled 1977 - 2012



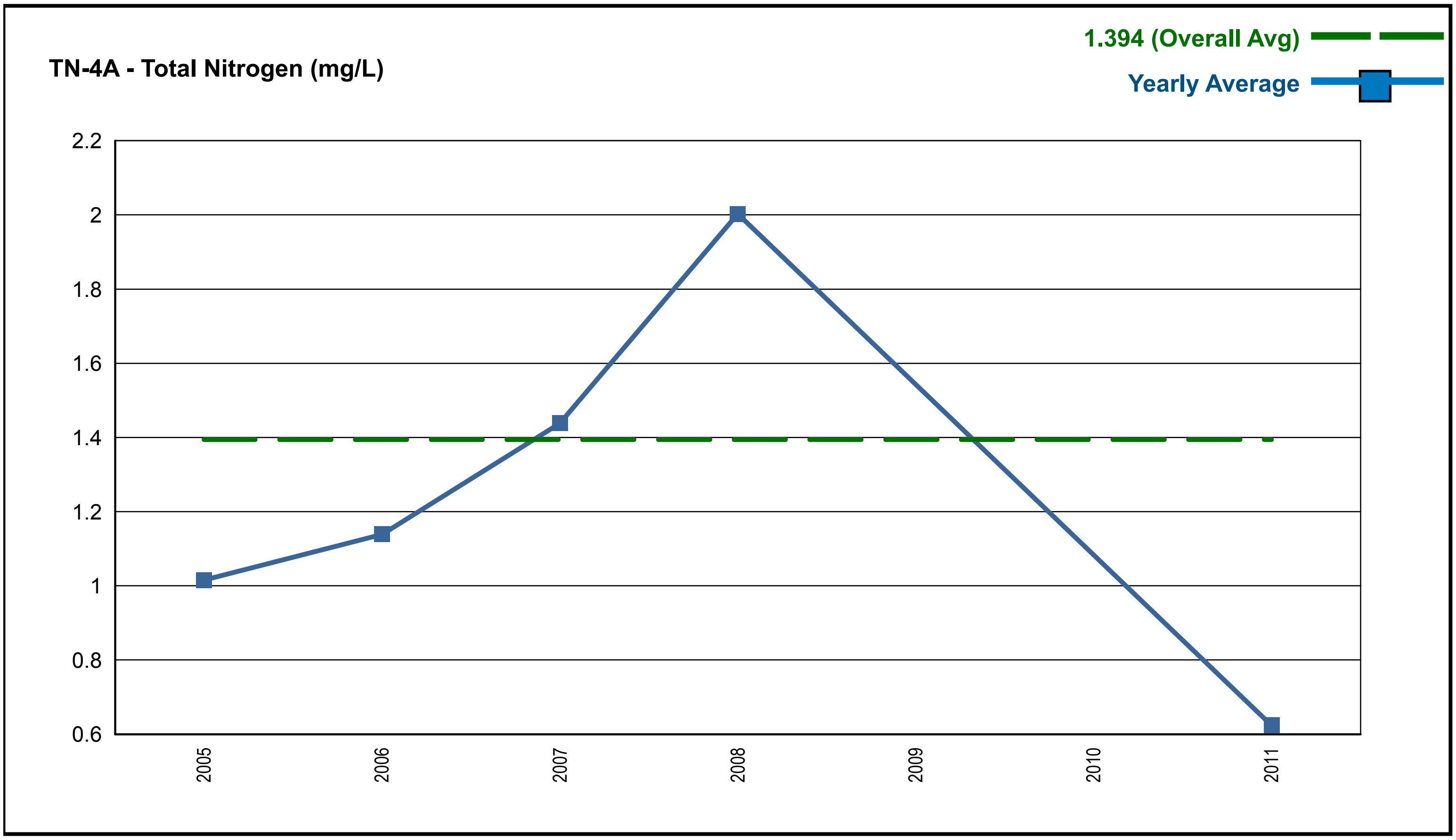


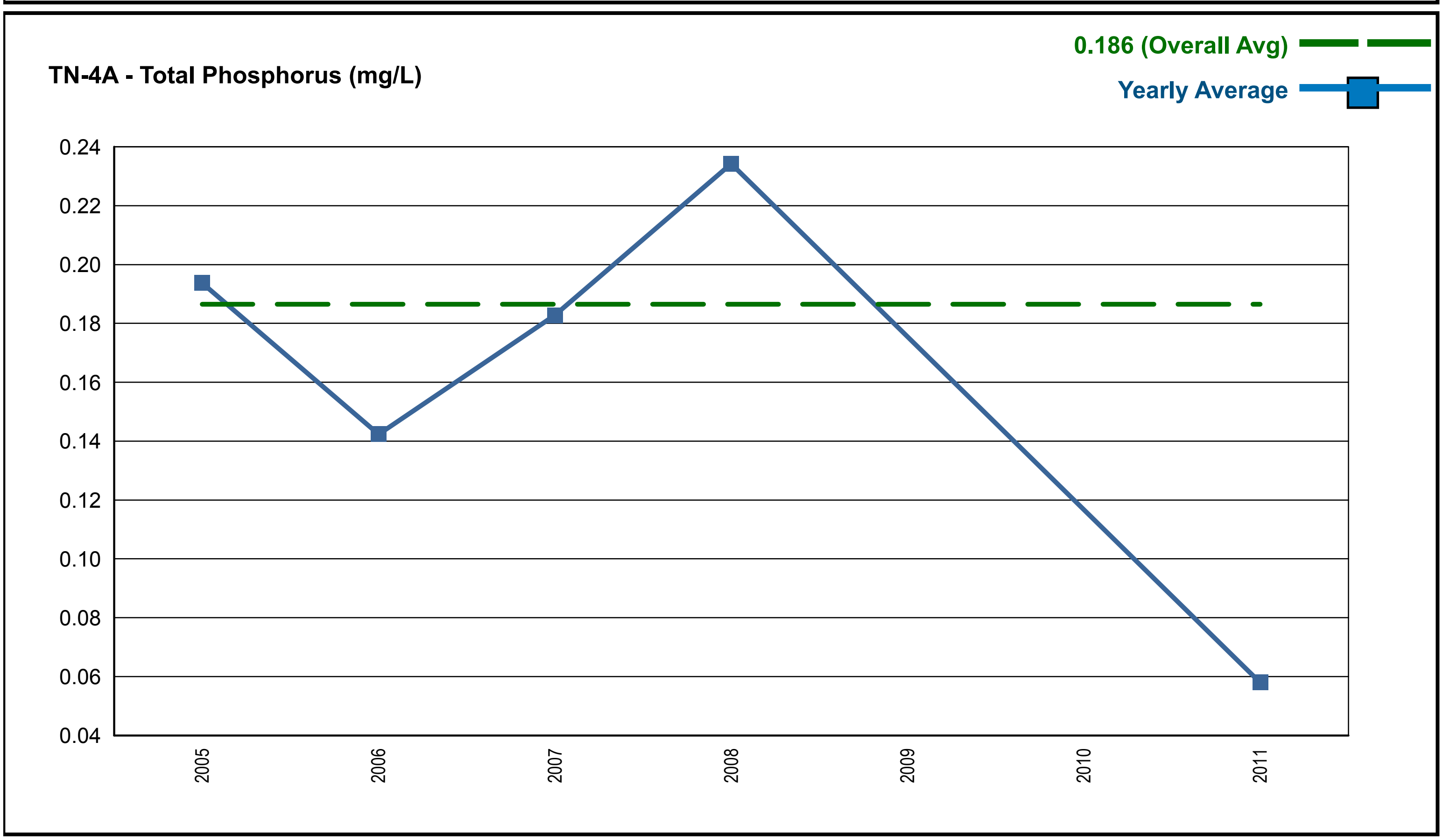
ADEM Ambient Trend Stations - Sampled 1977 - 2012



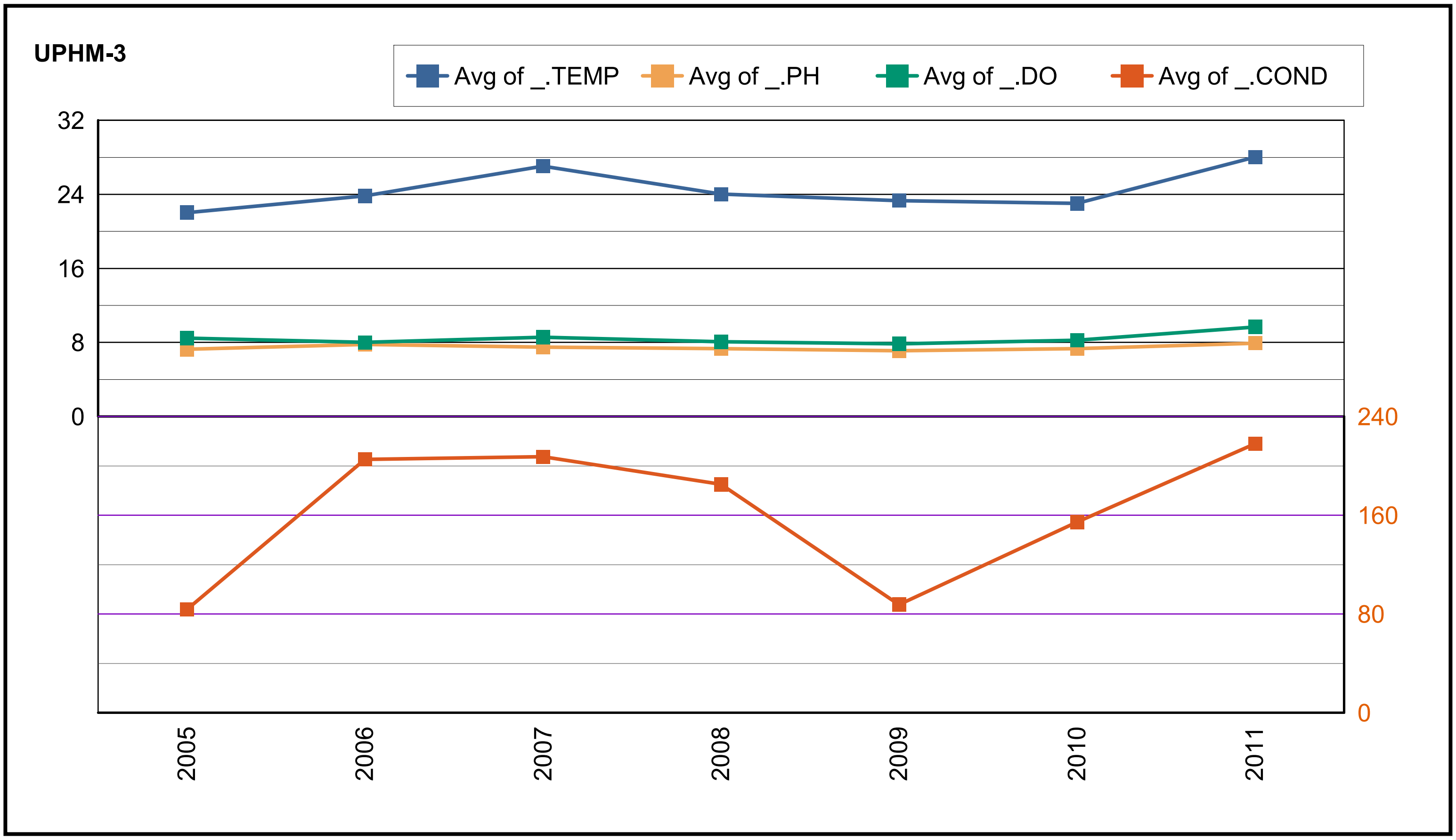


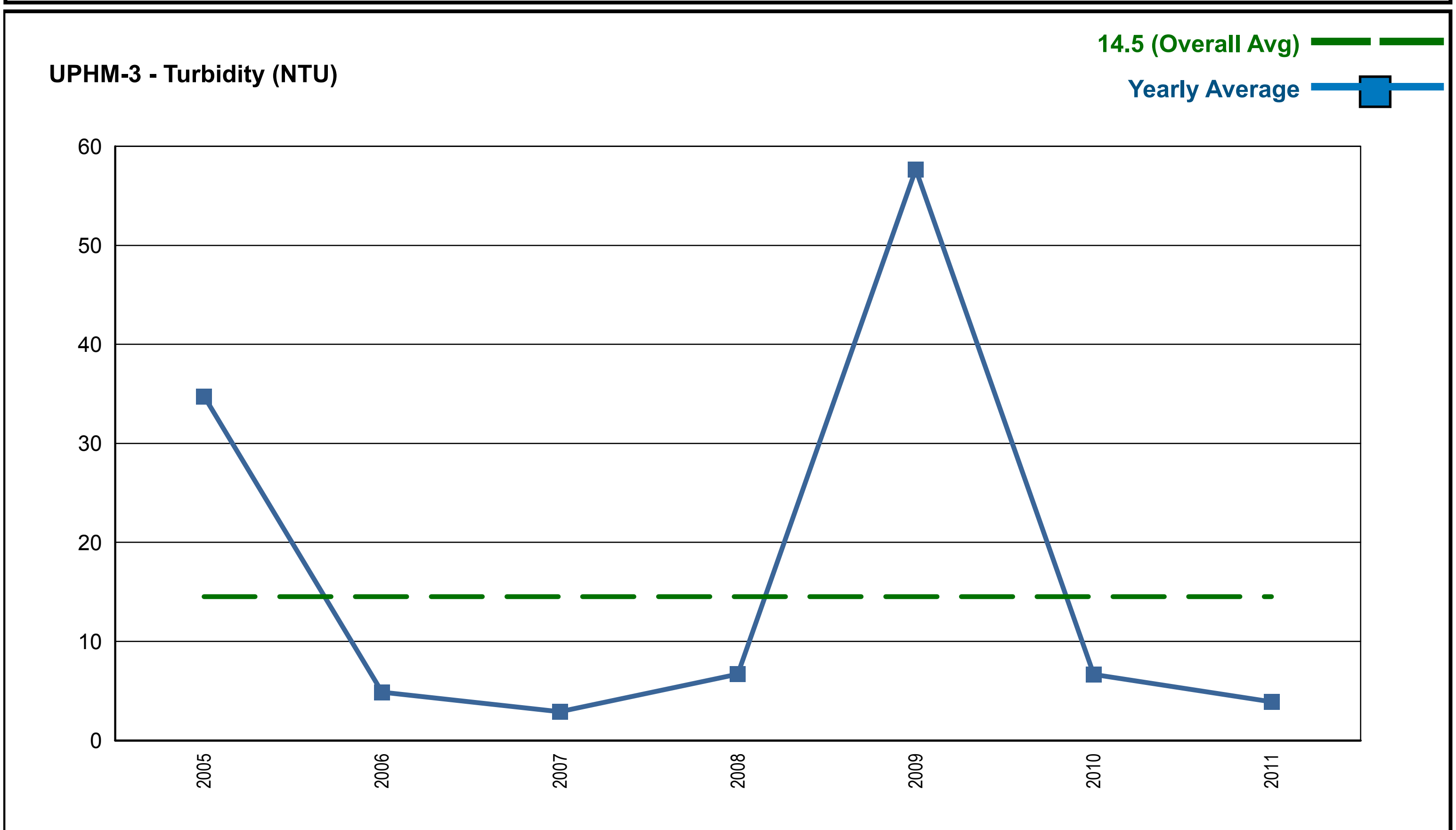
ADEM Ambient Trend Stations - Sampled 1977 - 2012



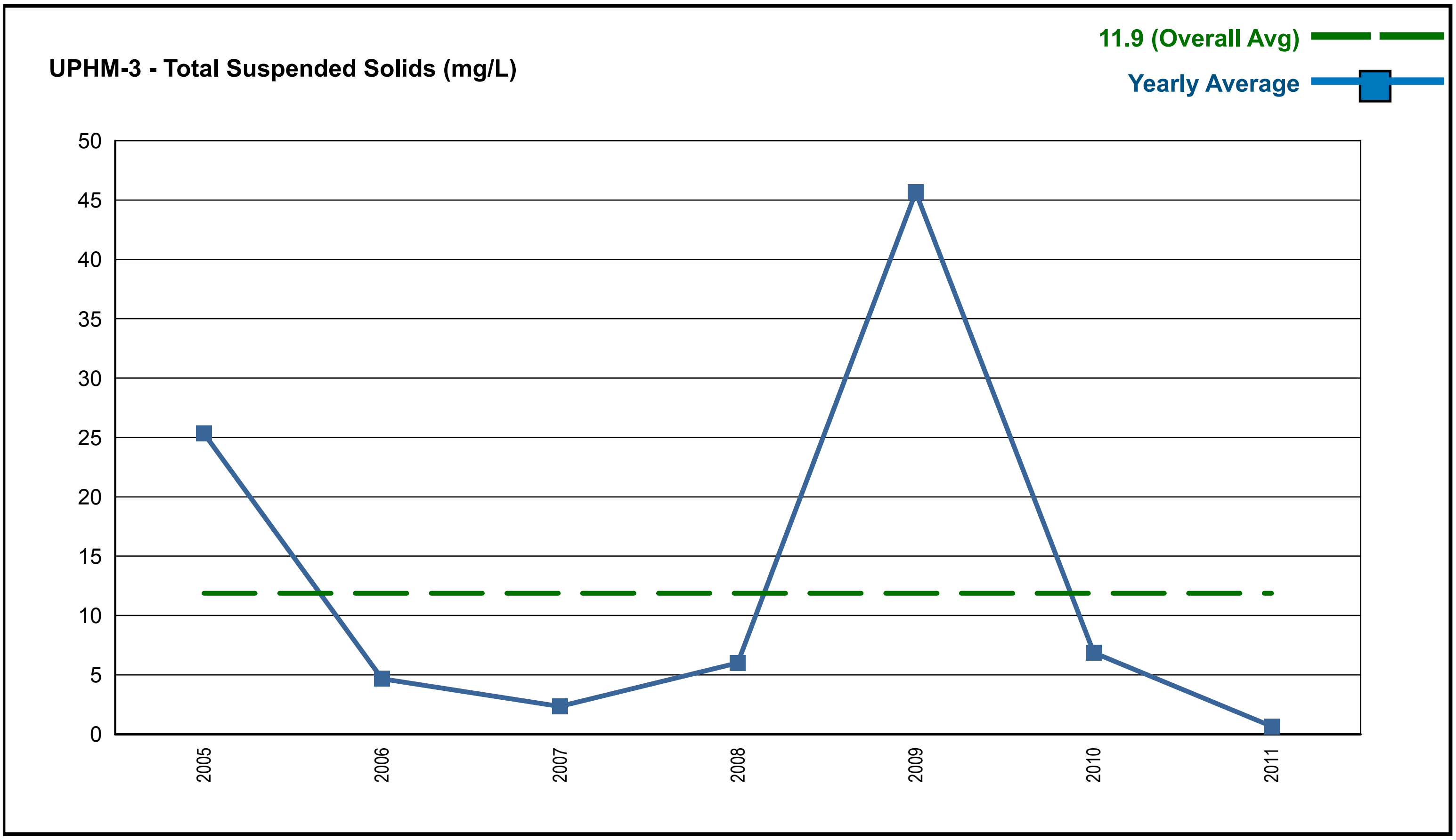


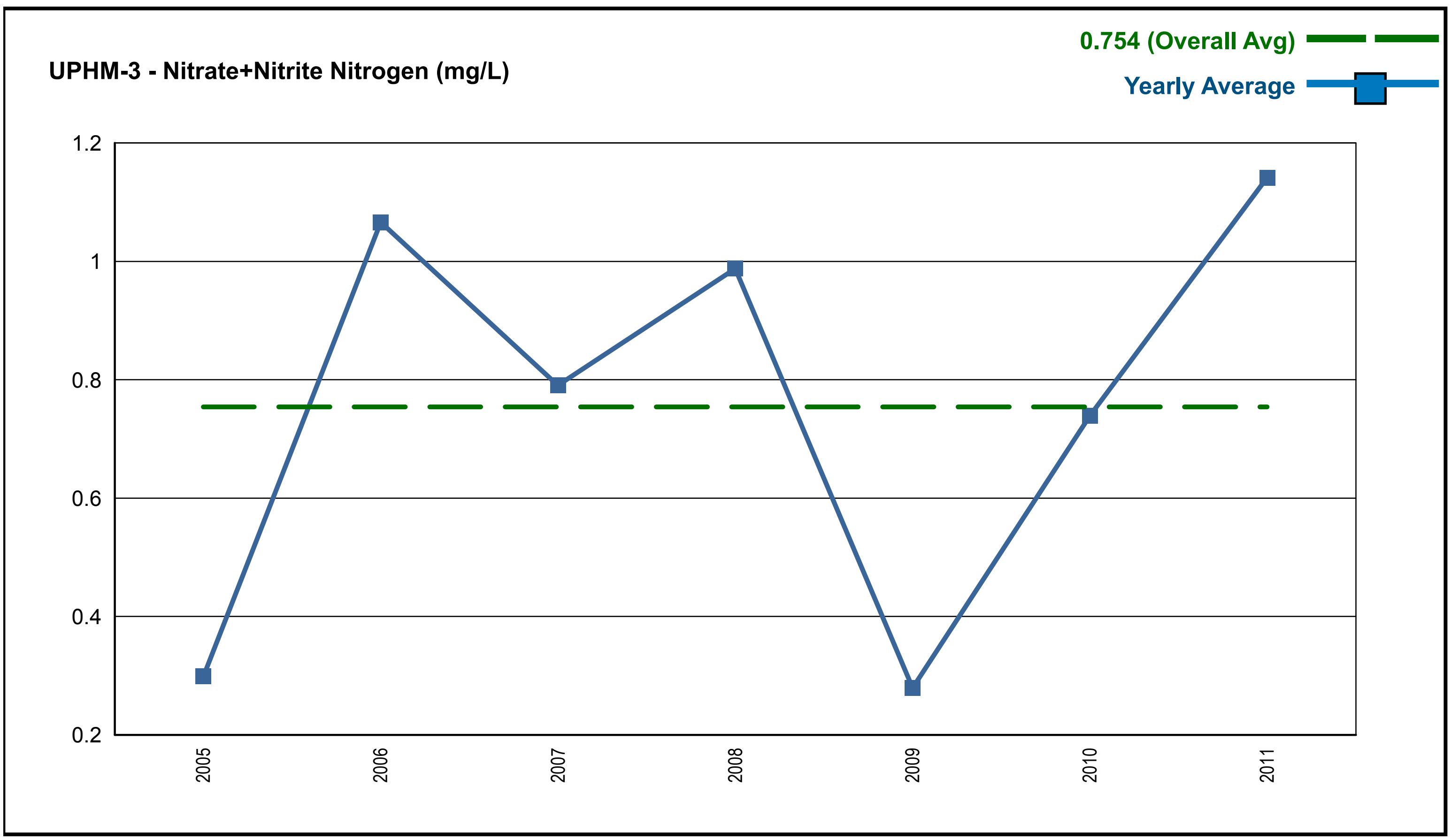
ADEM Ambient Trend Stations - Sampled 1977 - 2012



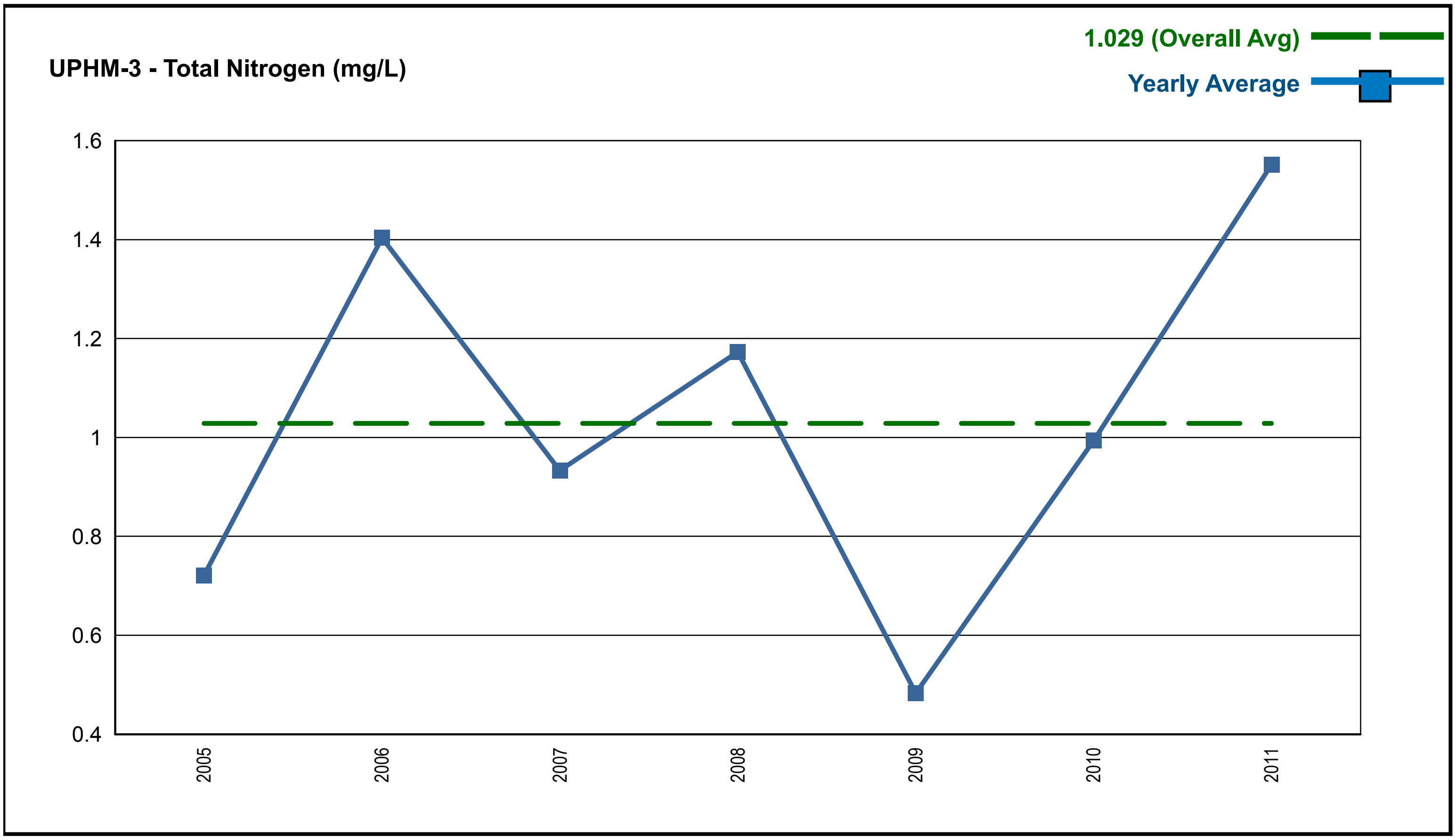


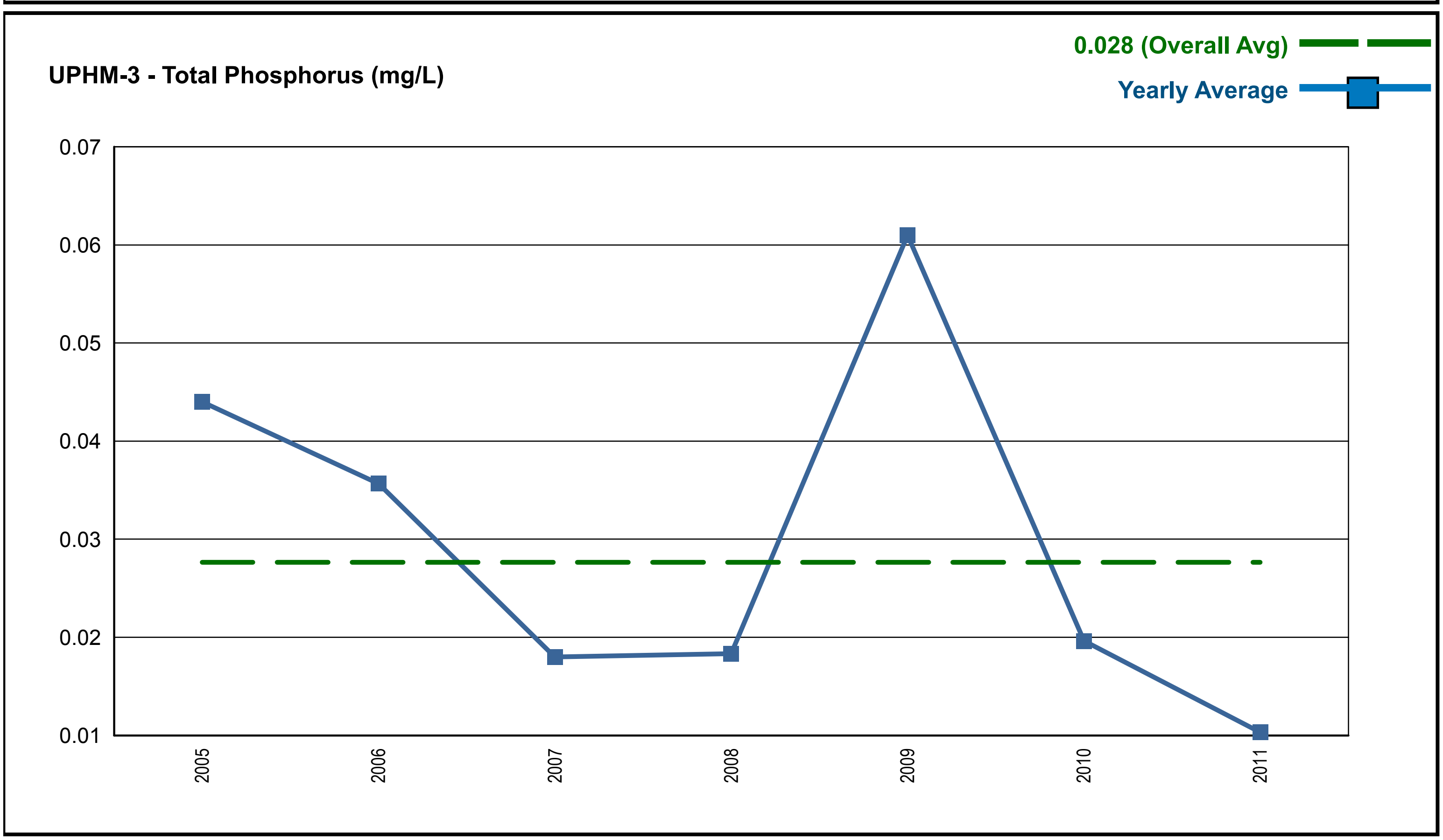
ADEM Ambient Trend Stations - Sampled 1977 - 2012



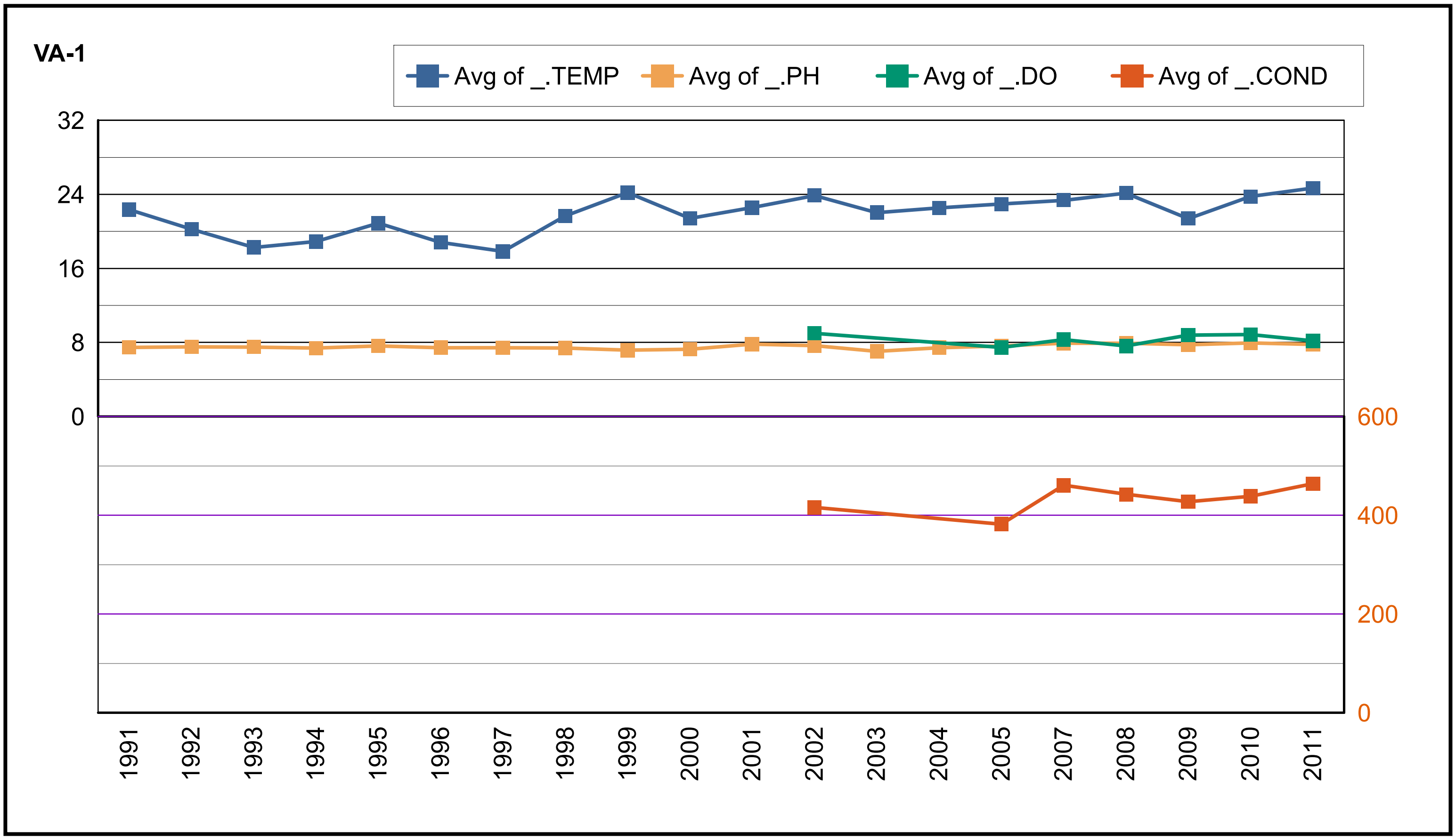


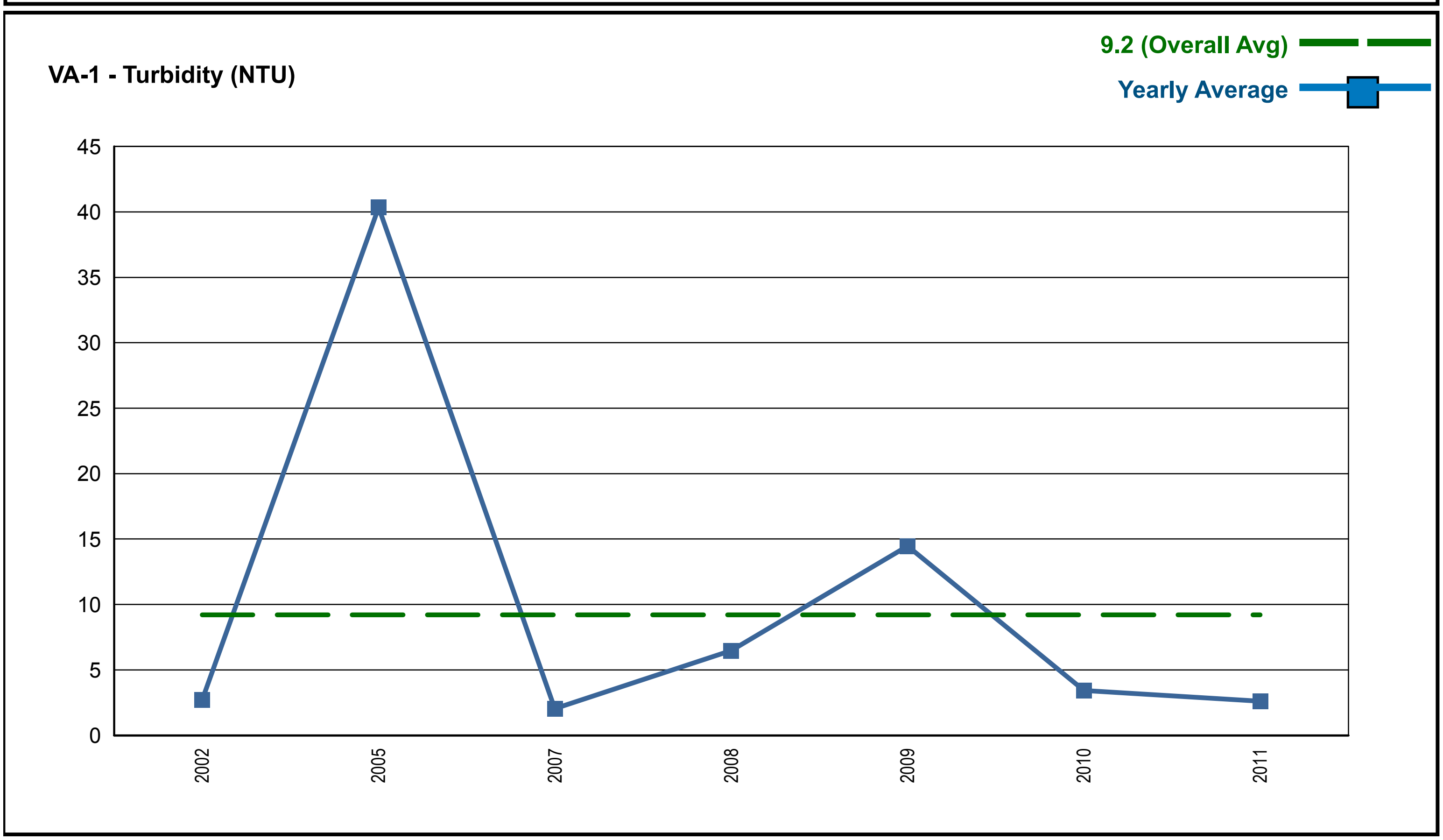
ADEM Ambient Trend Stations - Sampled 1977 - 2012



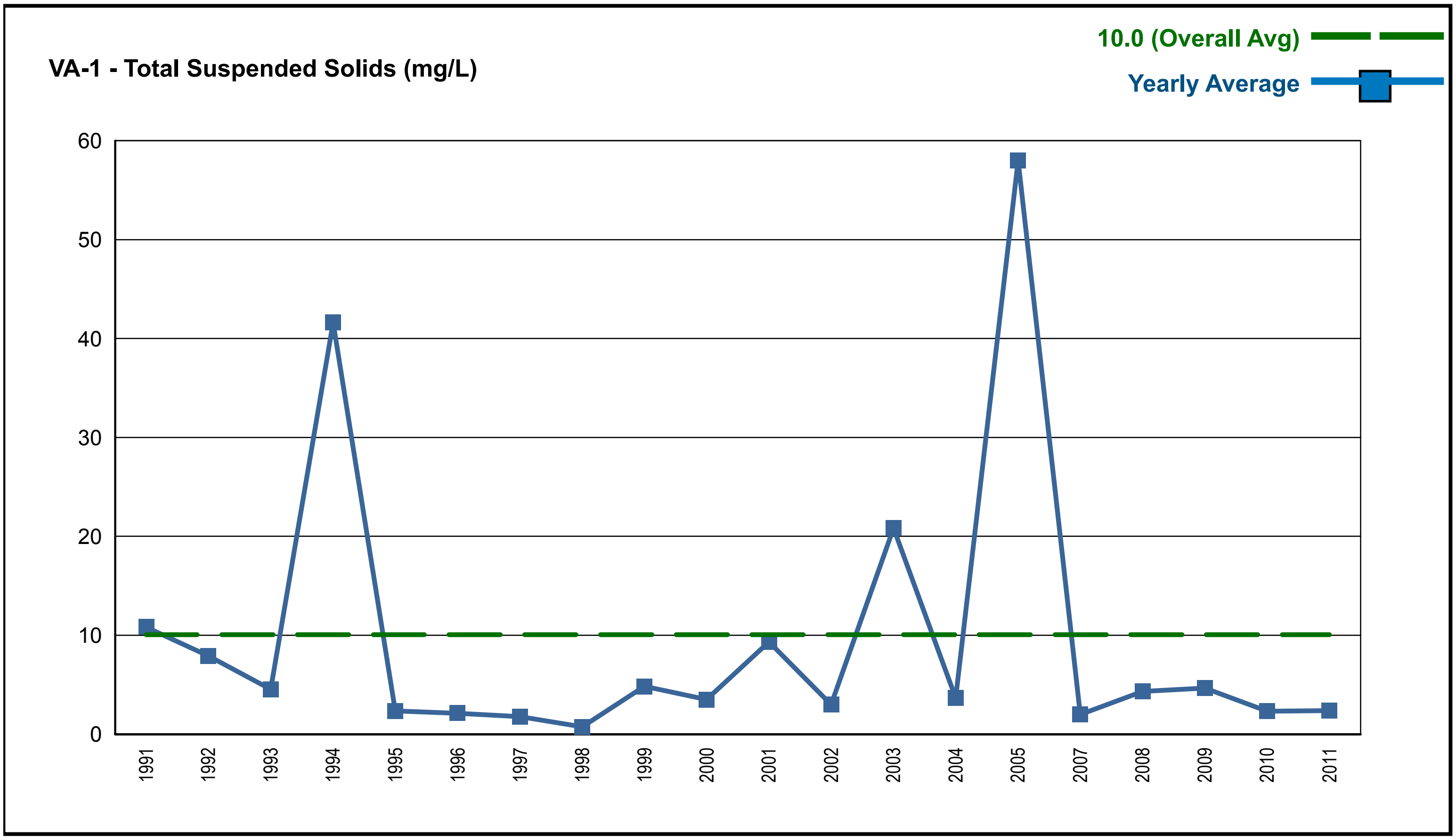


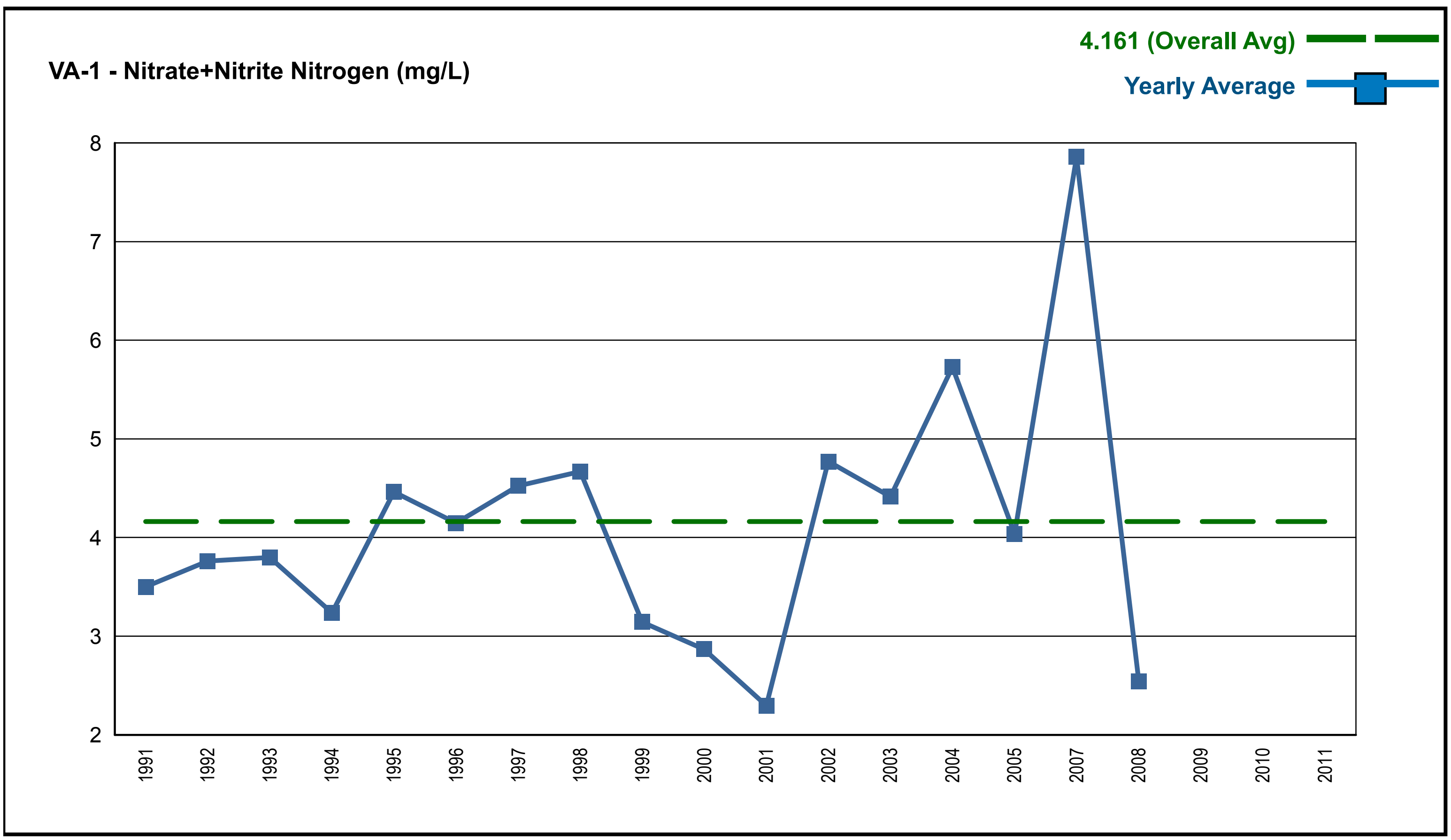
ADEM Ambient Trend Stations - Sampled 1977 - 2012



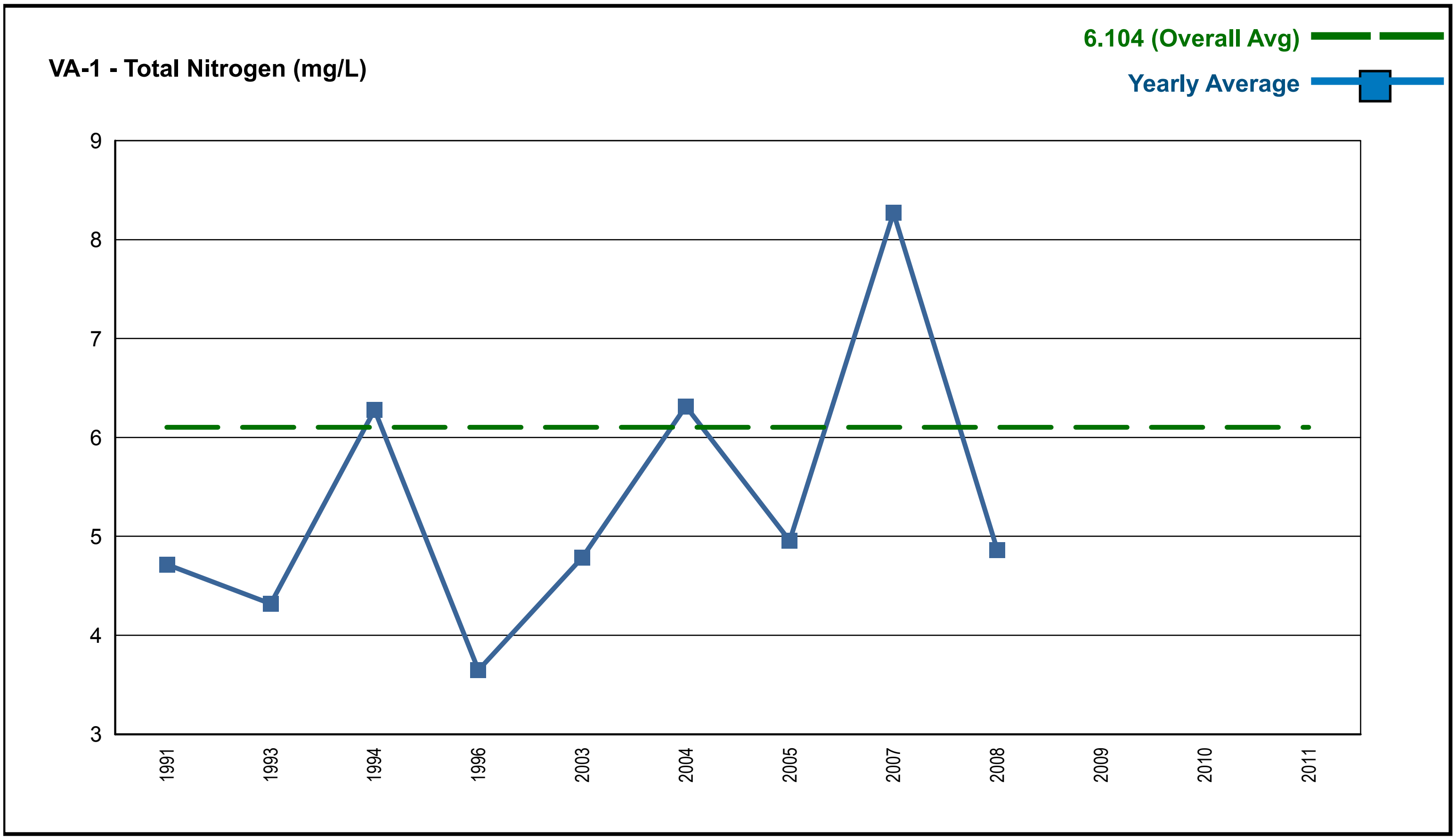


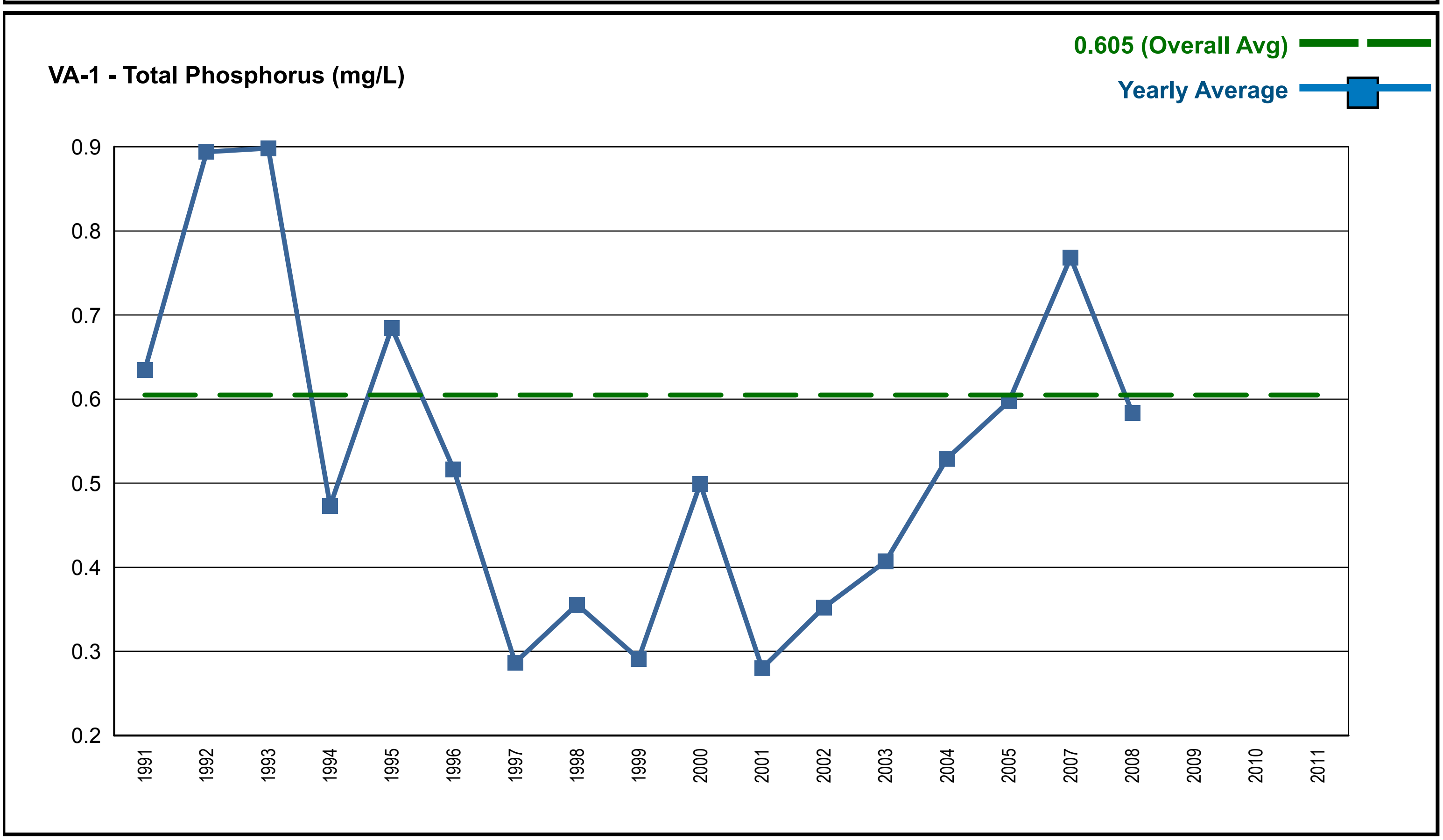
ADEM Ambient Trend Stations - Sampled 1977 - 2012



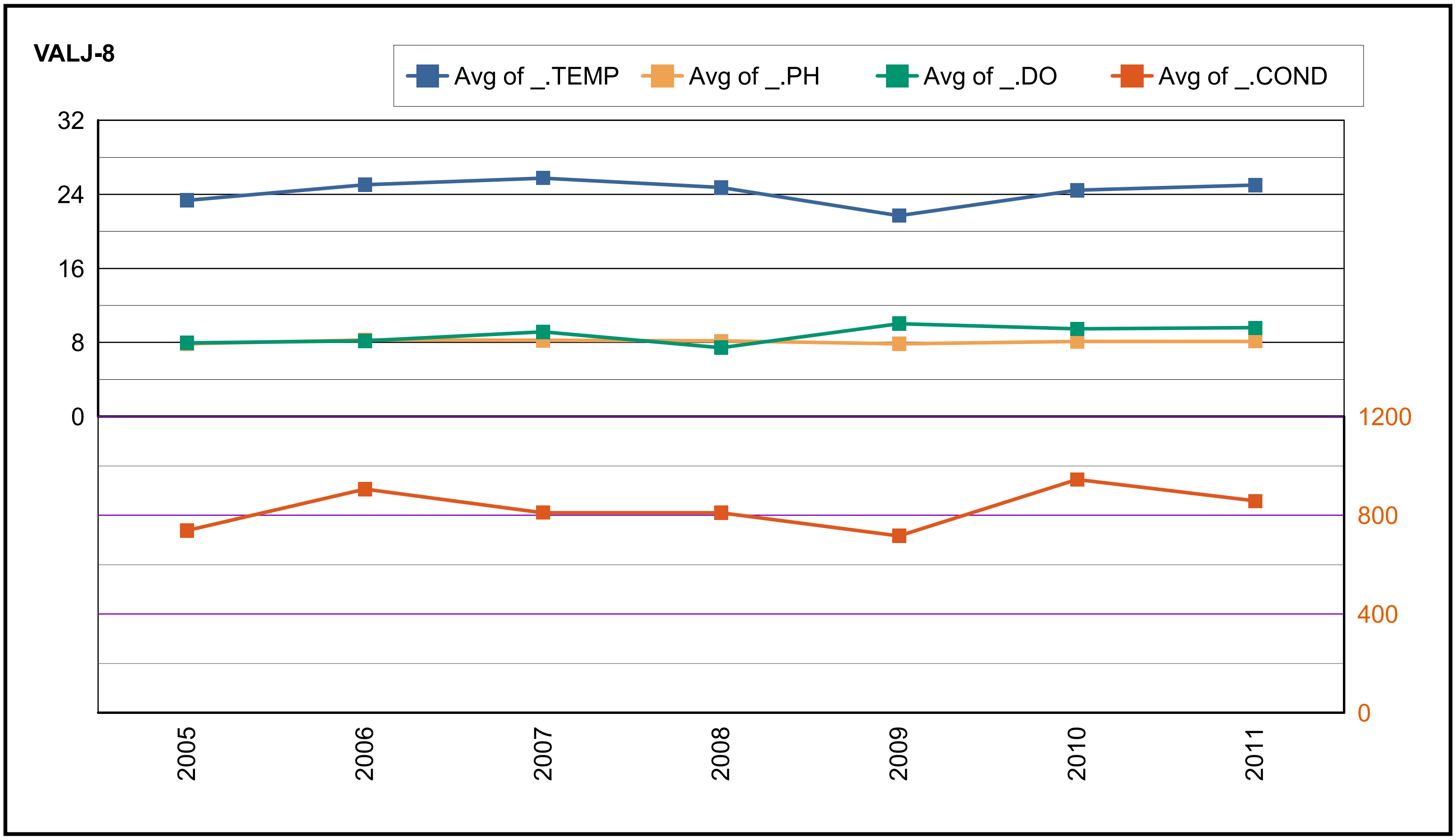


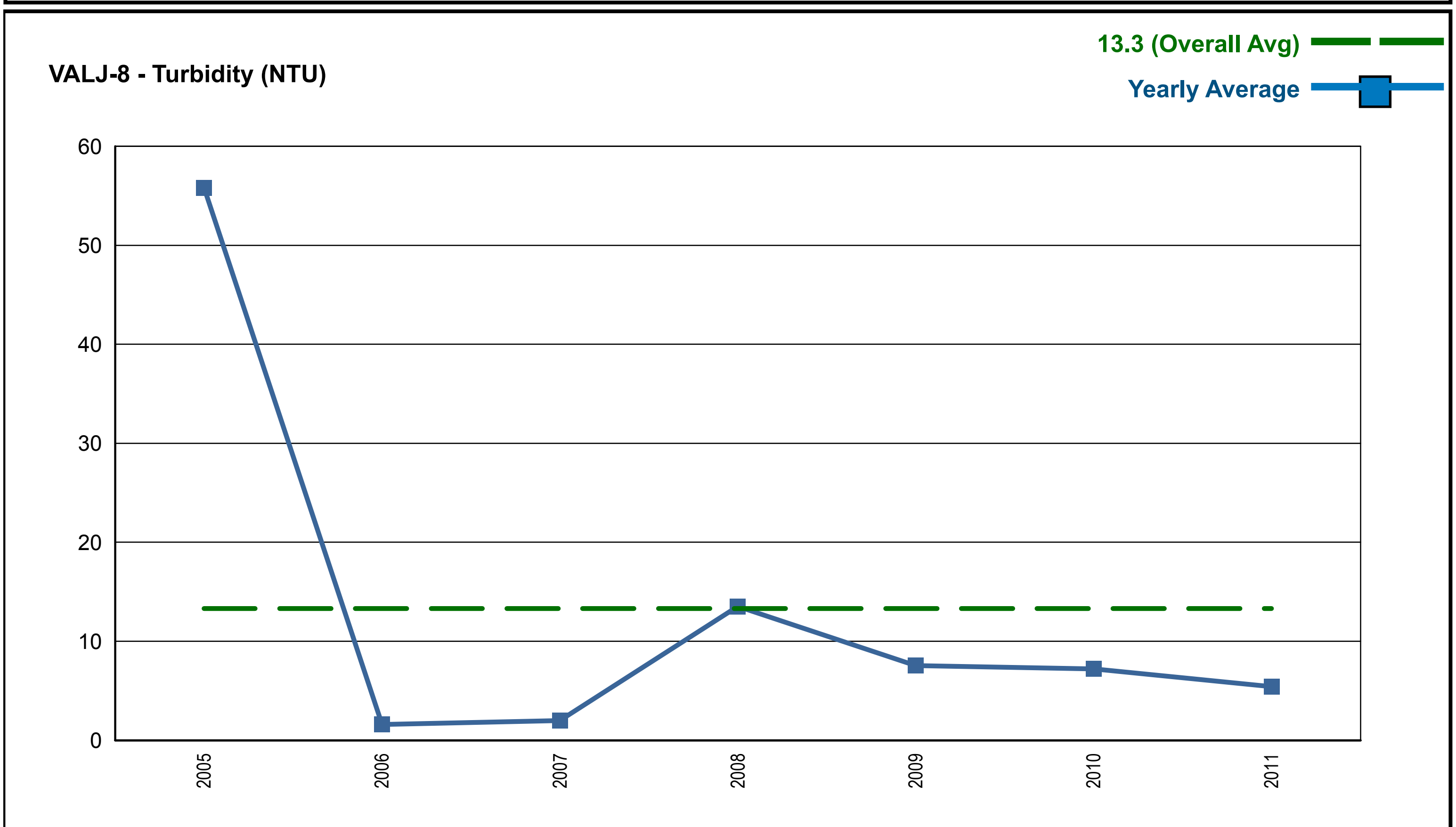
ADEM Ambient Trend Stations - Sampled 1977 - 2012



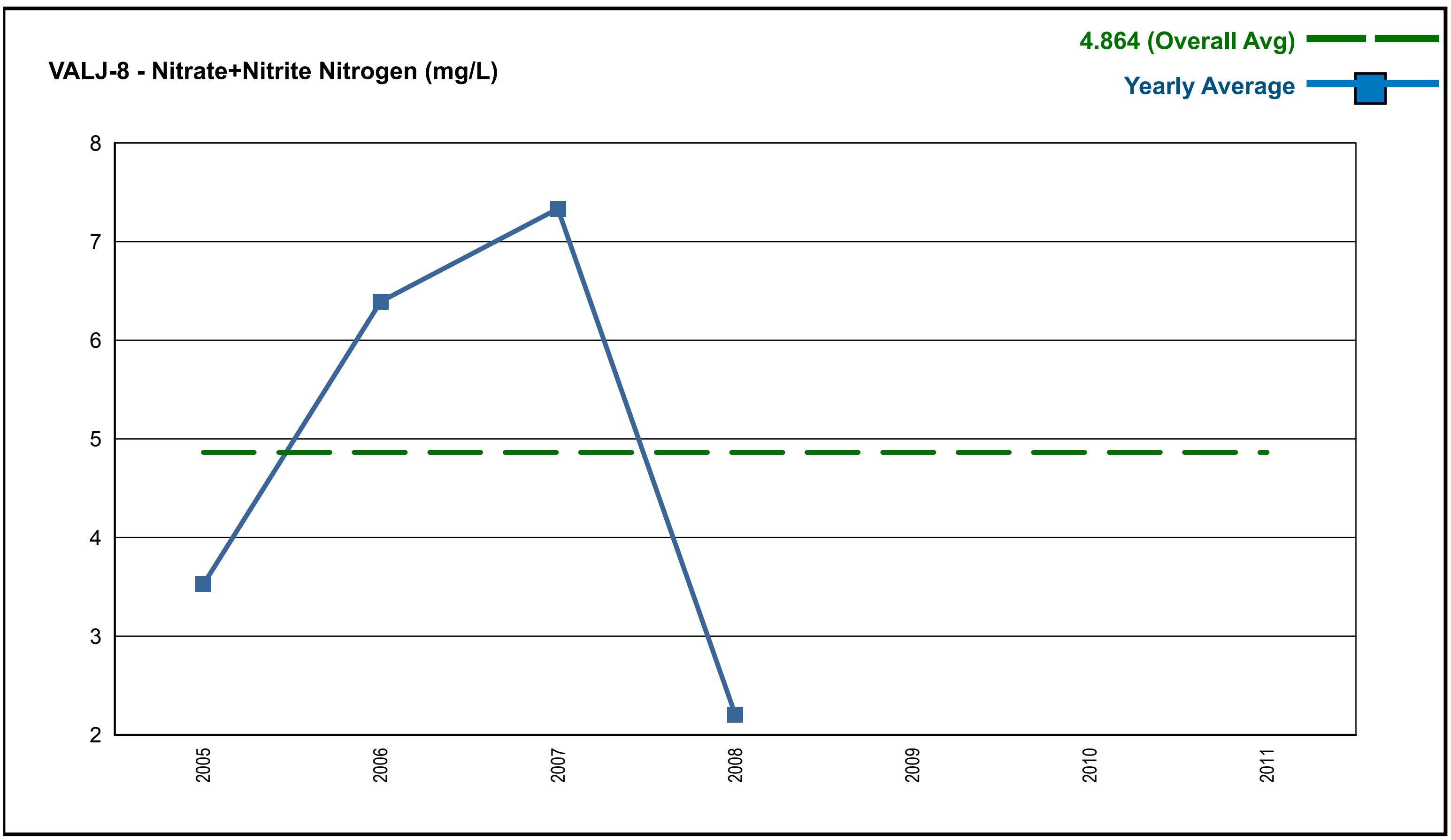


ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012



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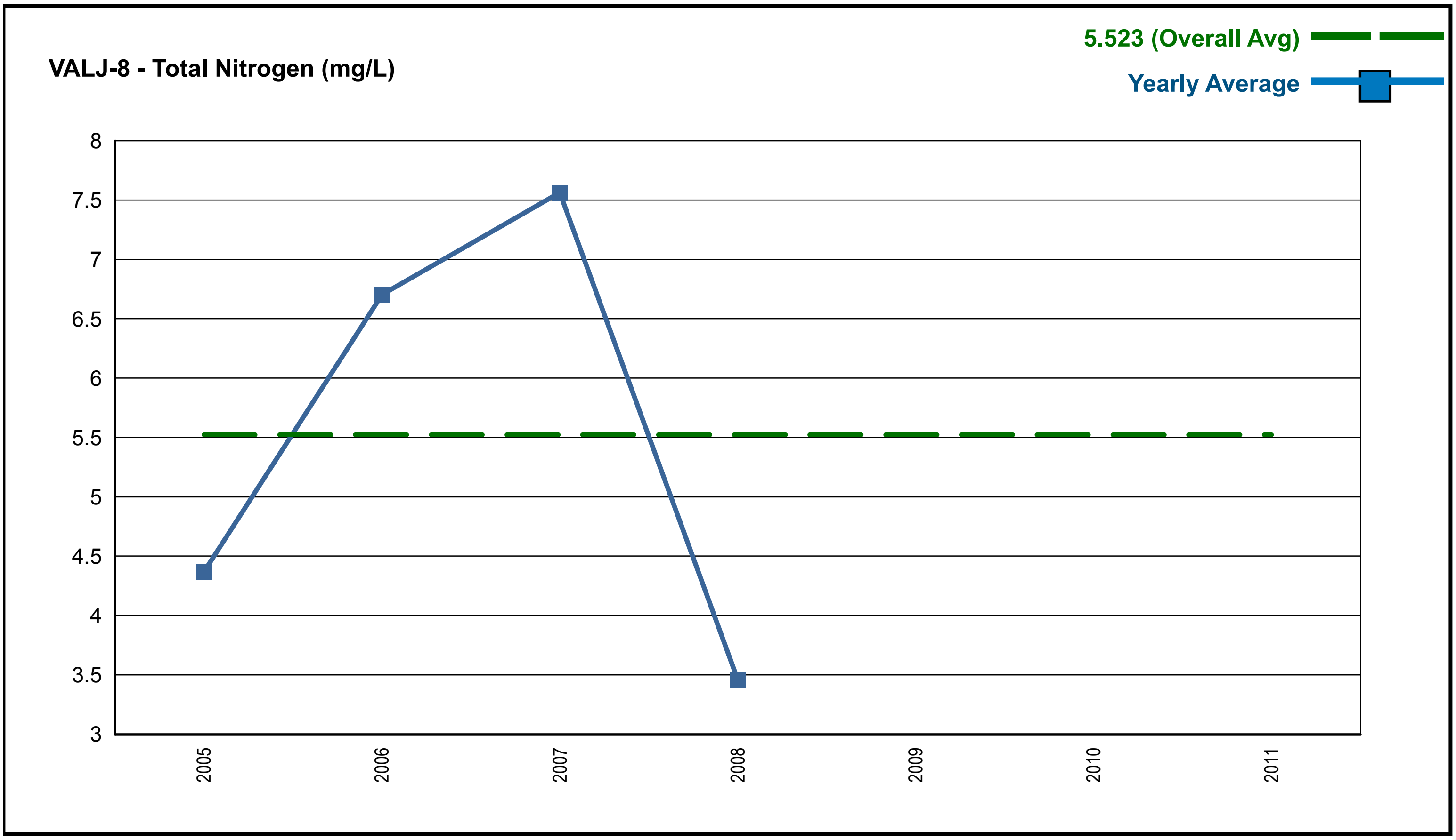

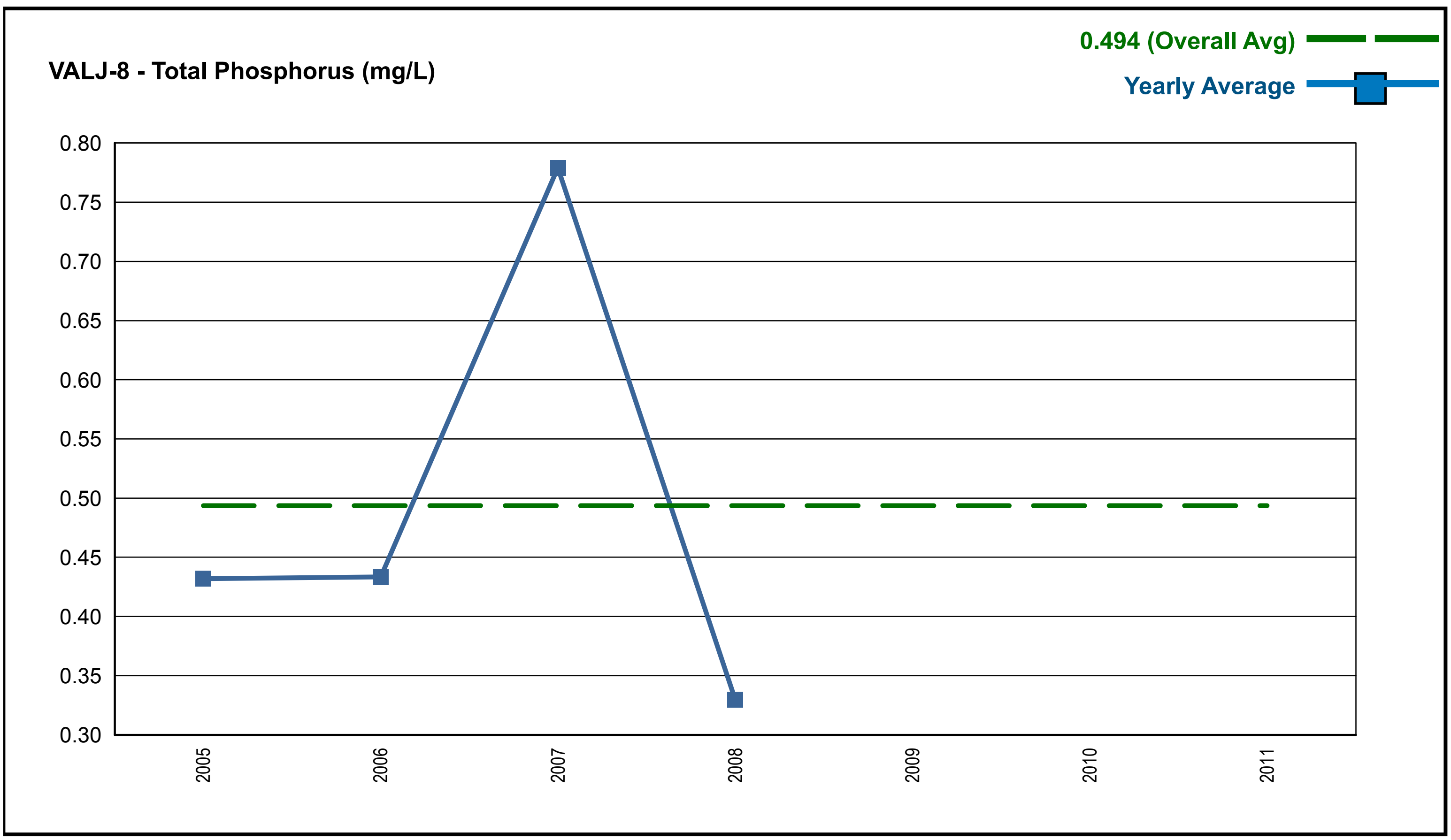

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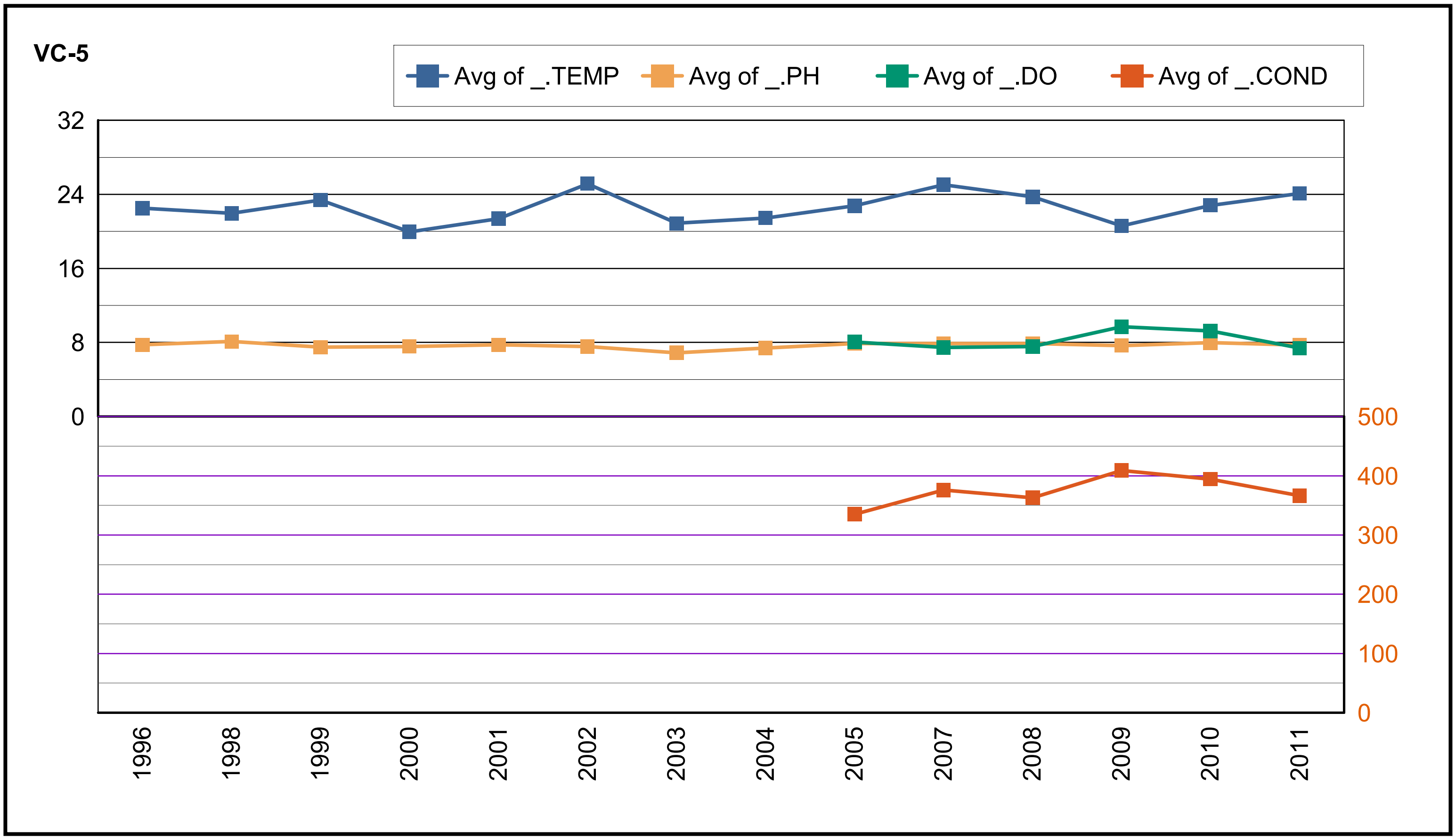

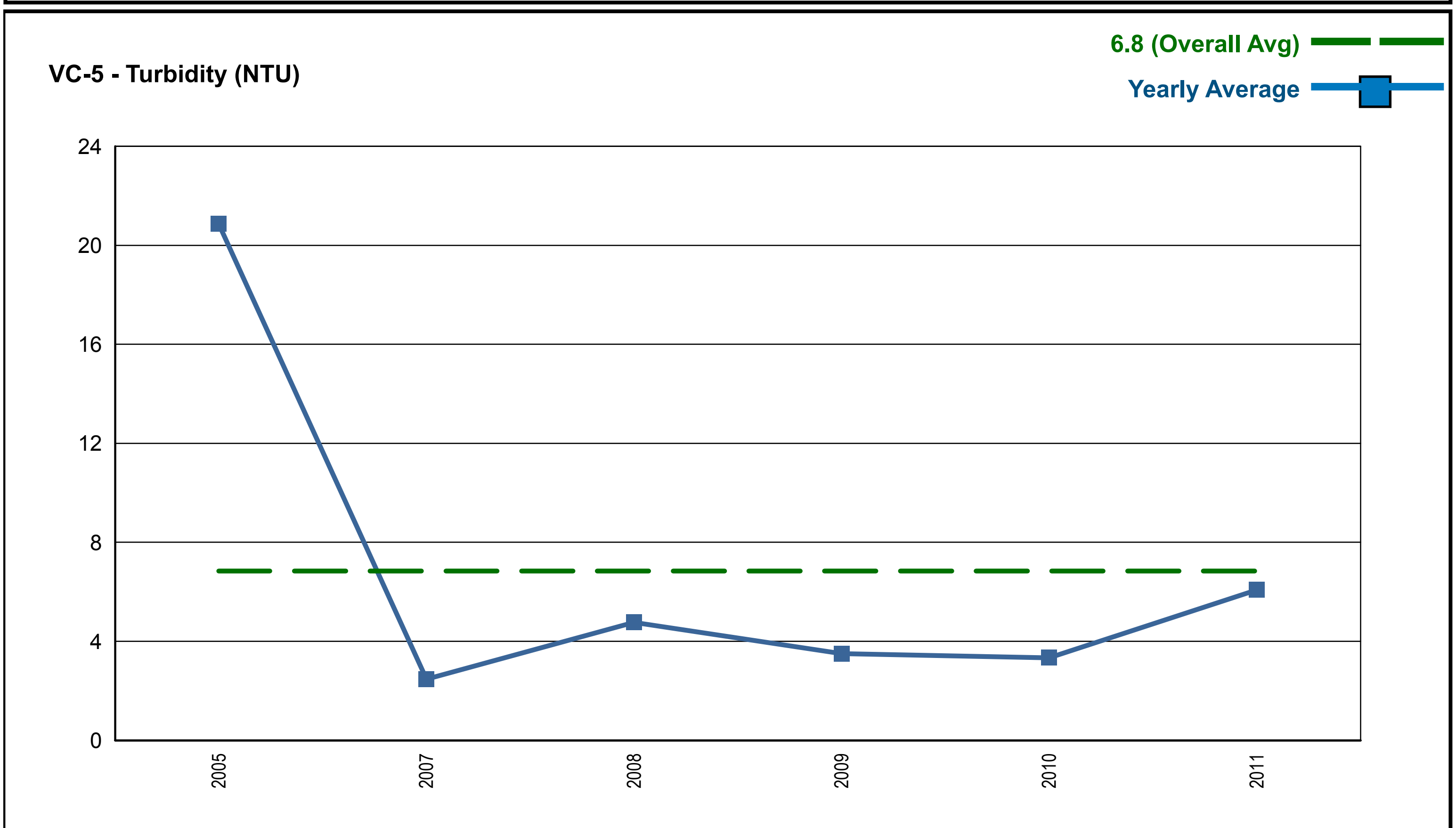

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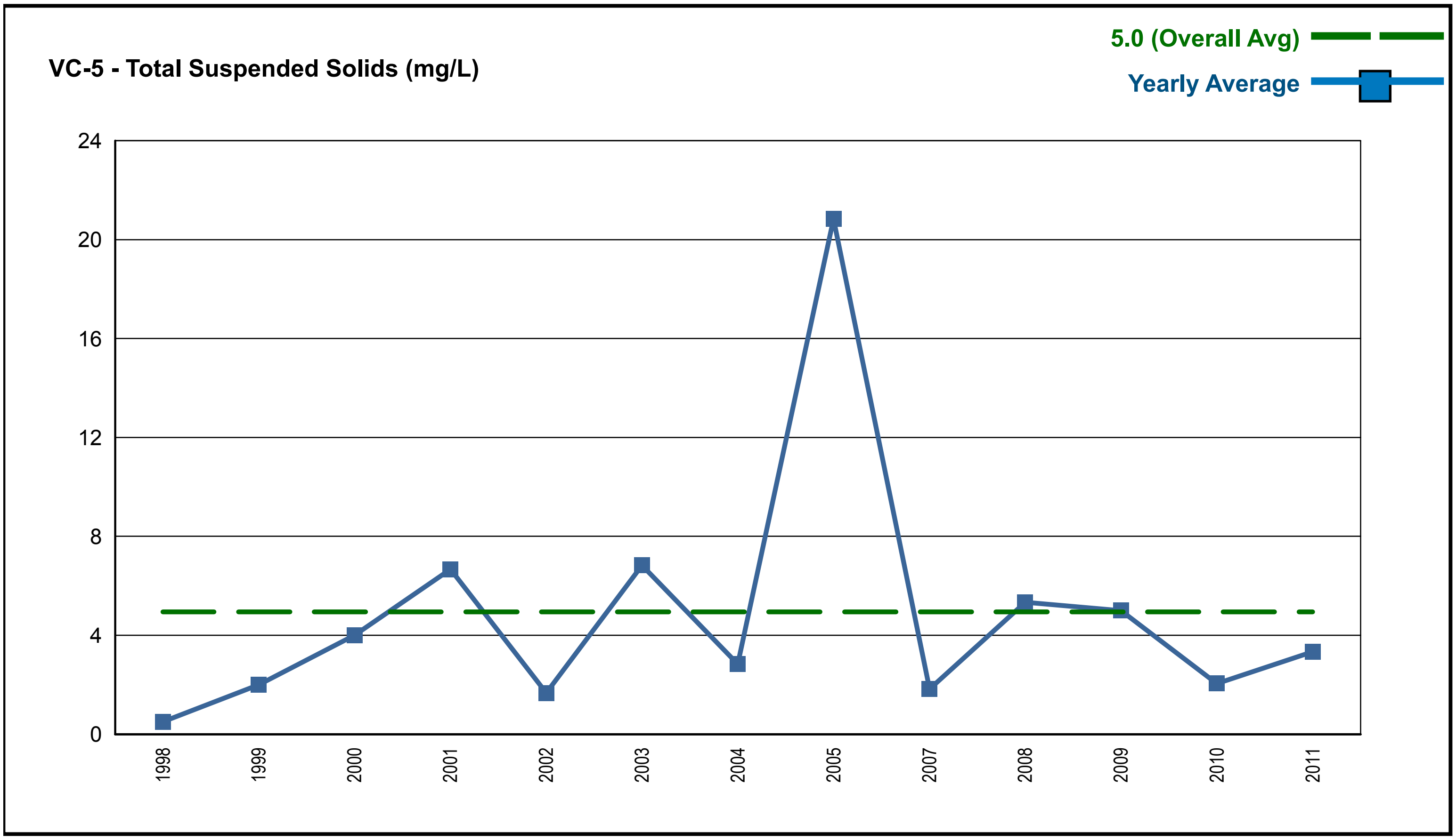

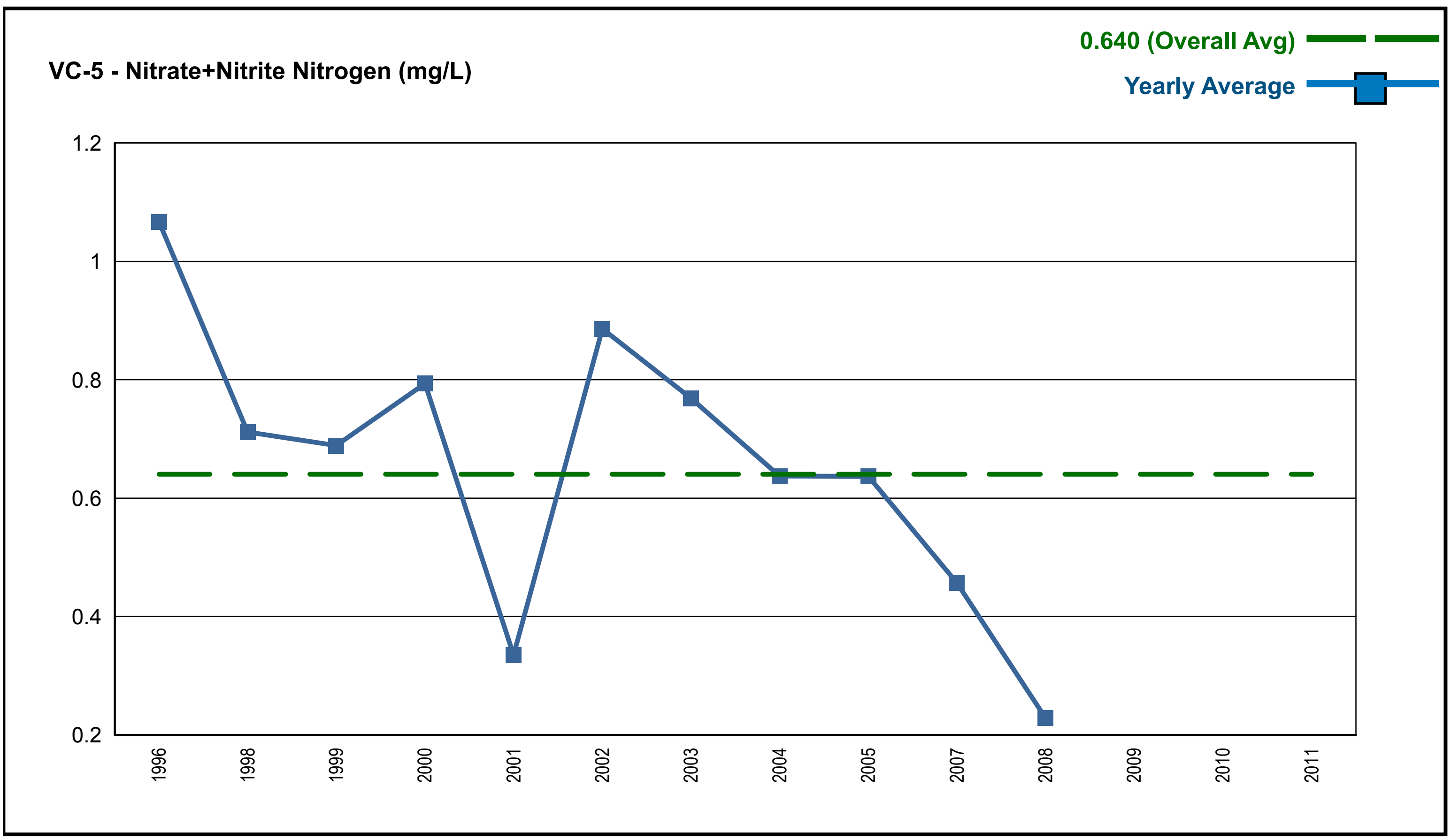

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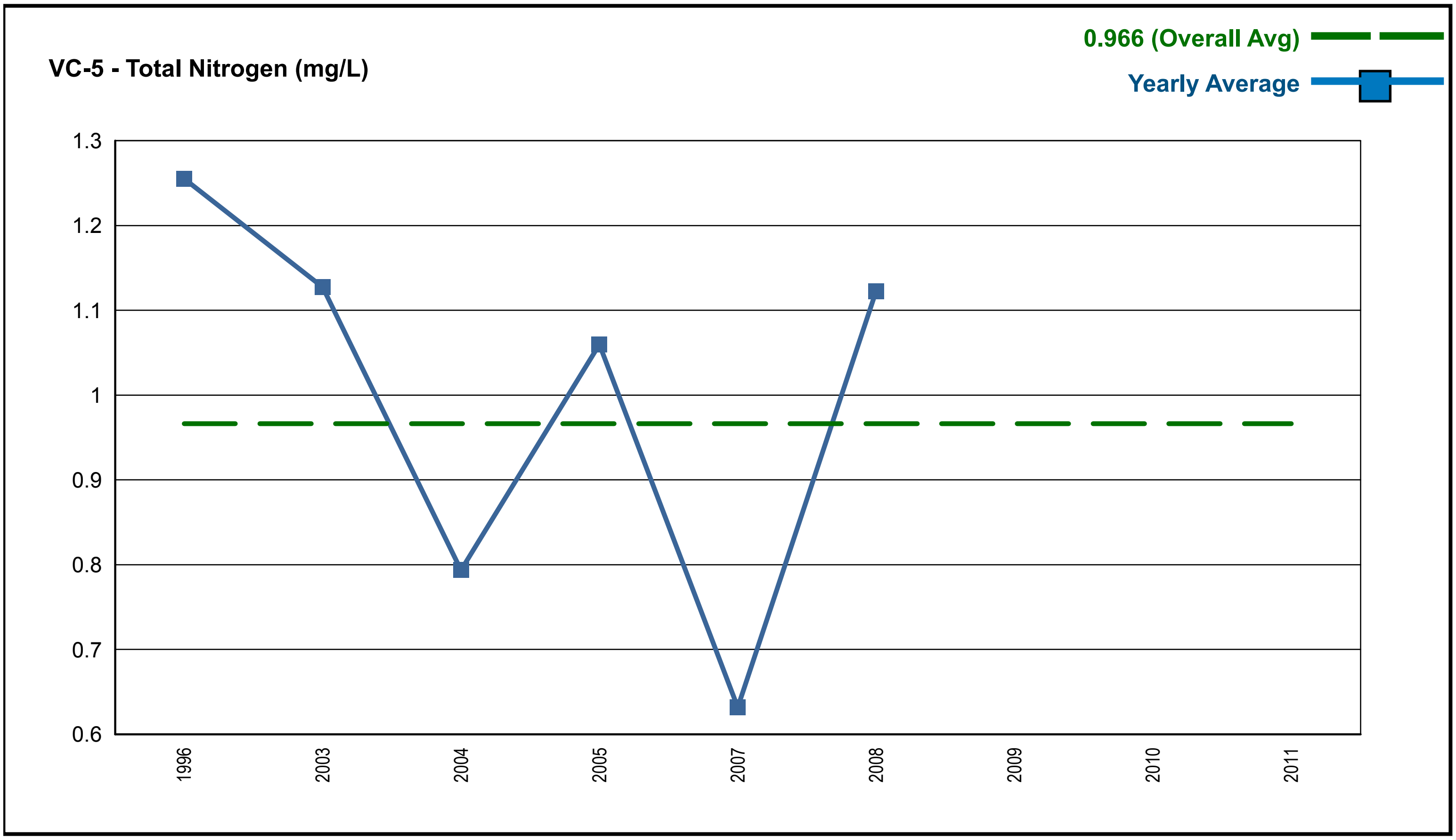

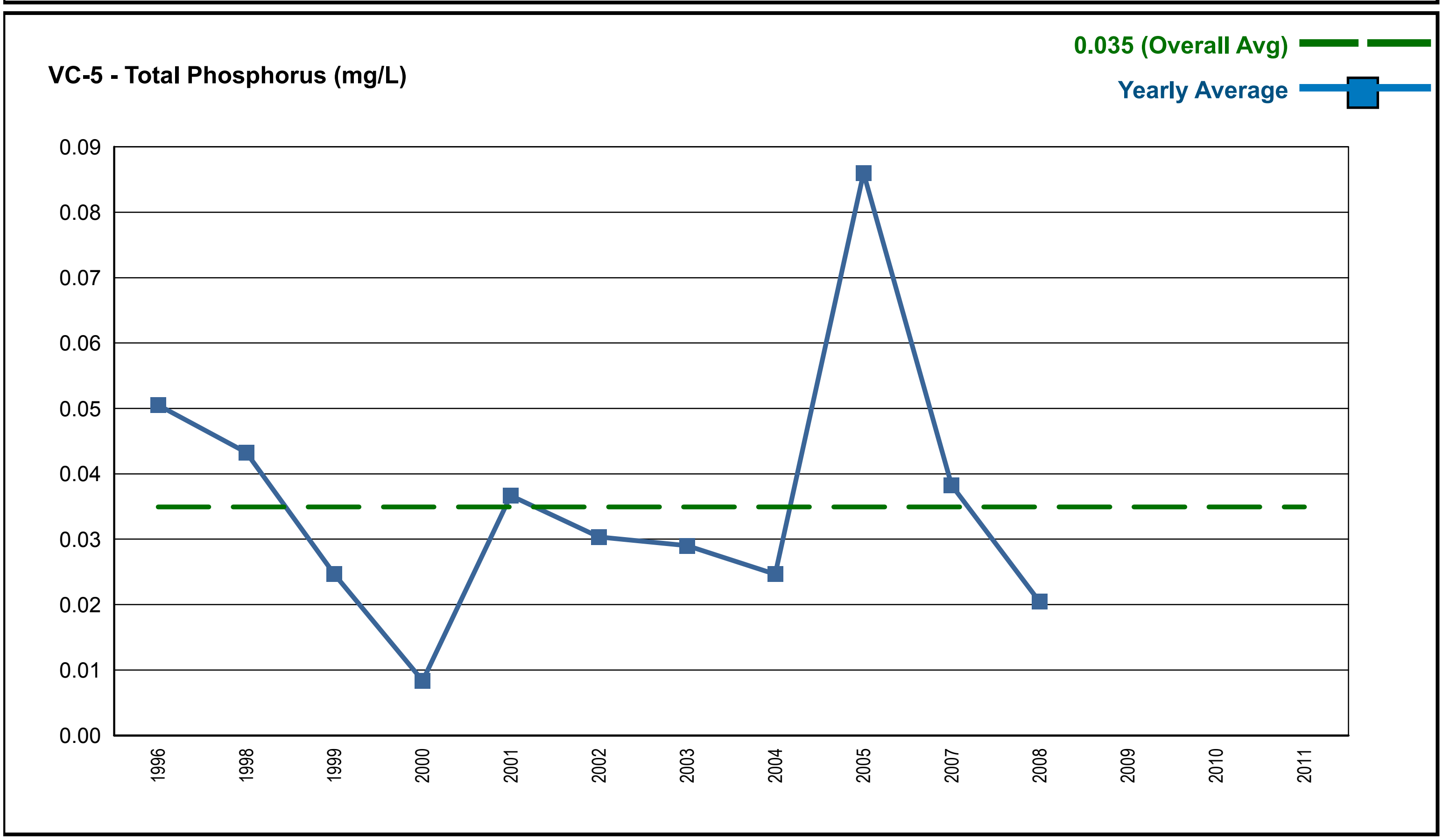

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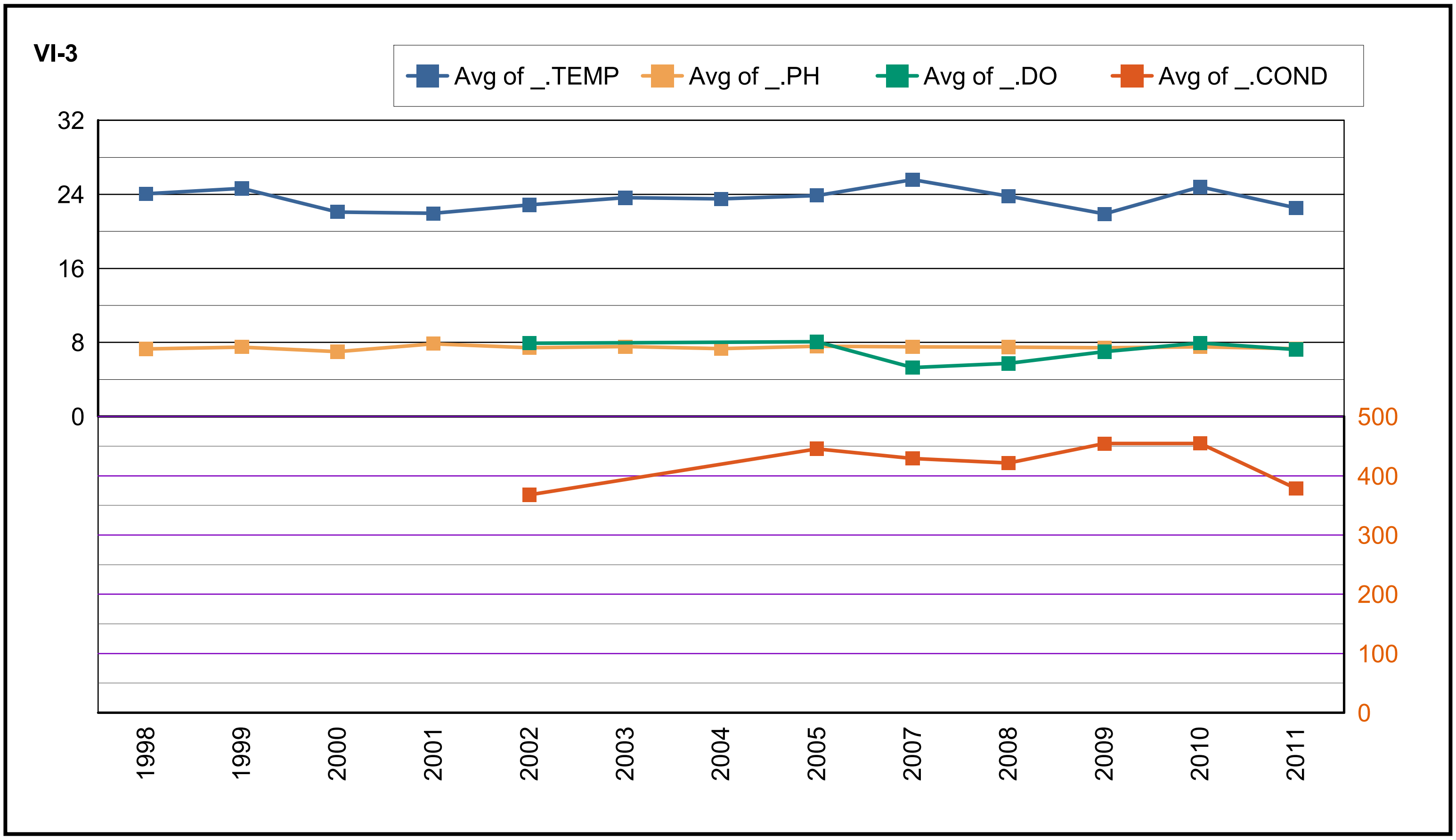

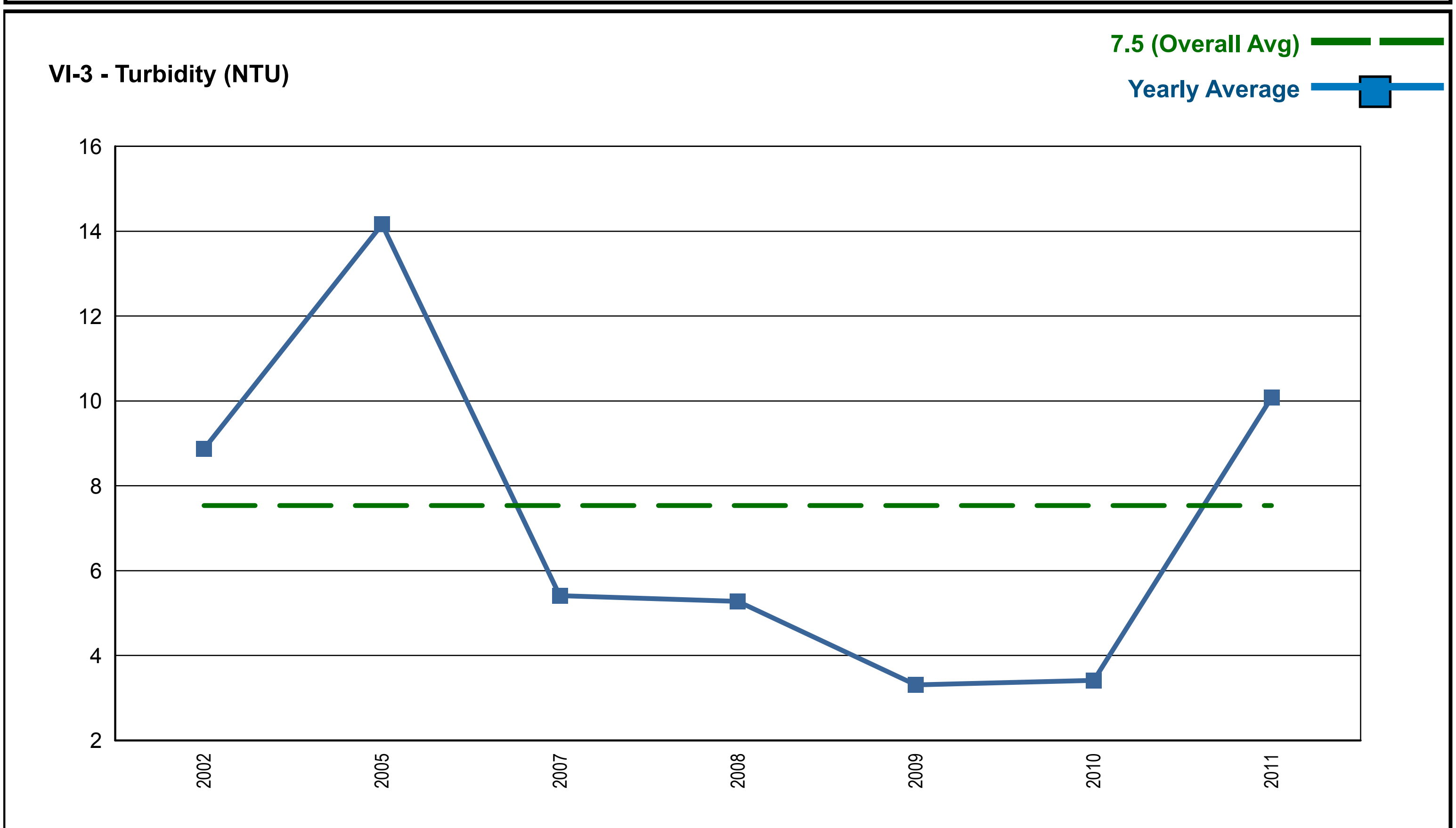

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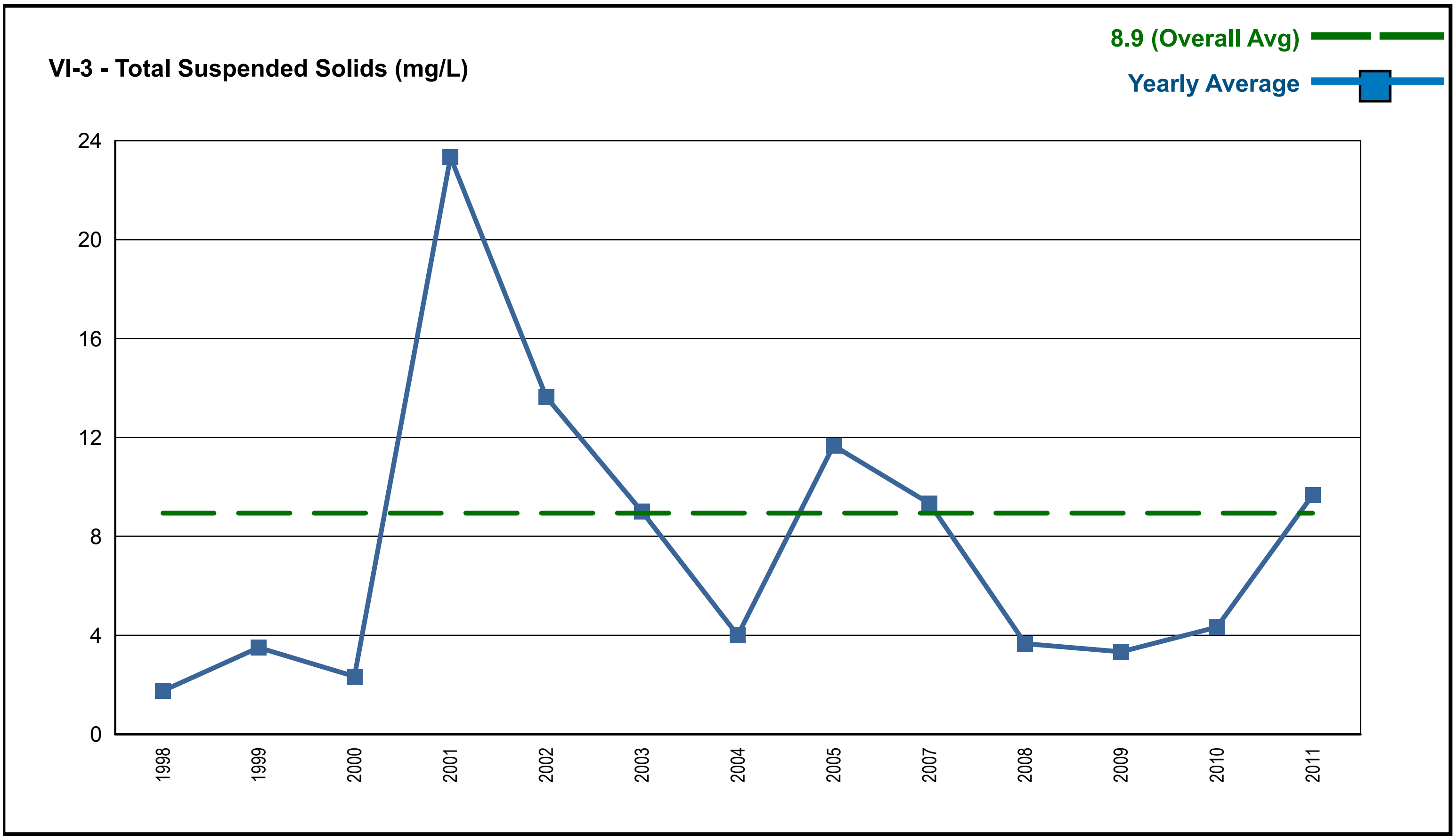

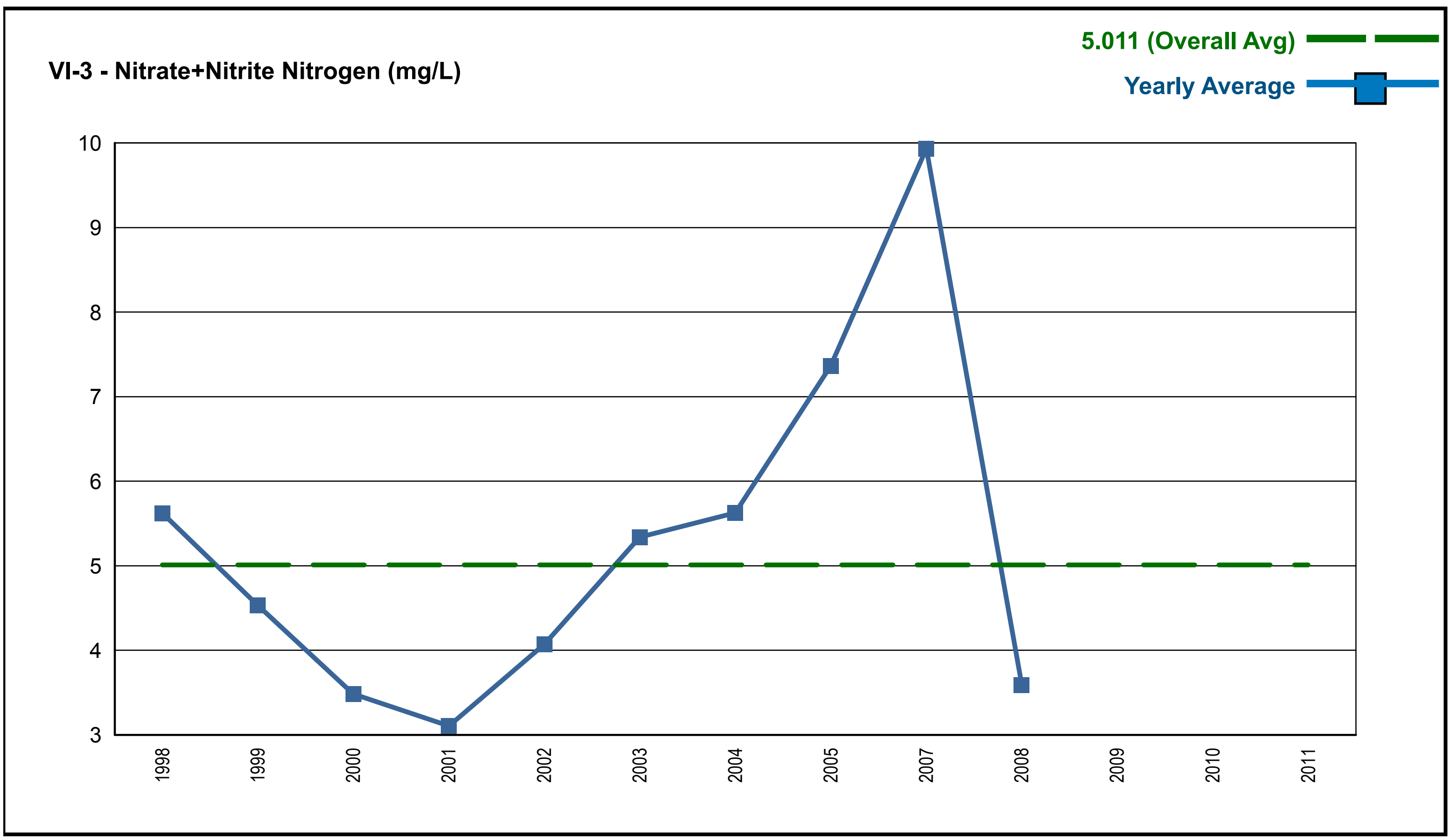

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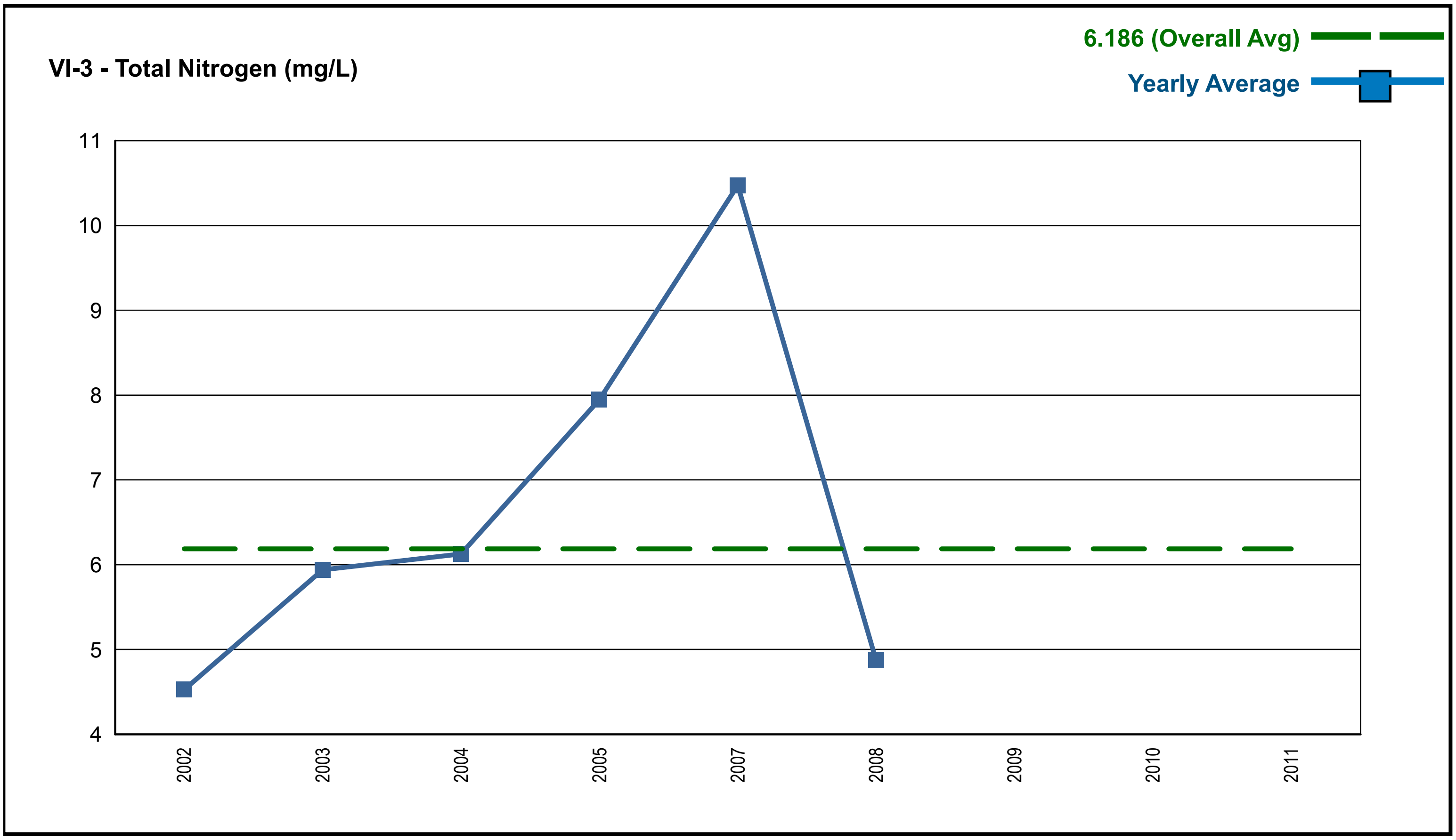

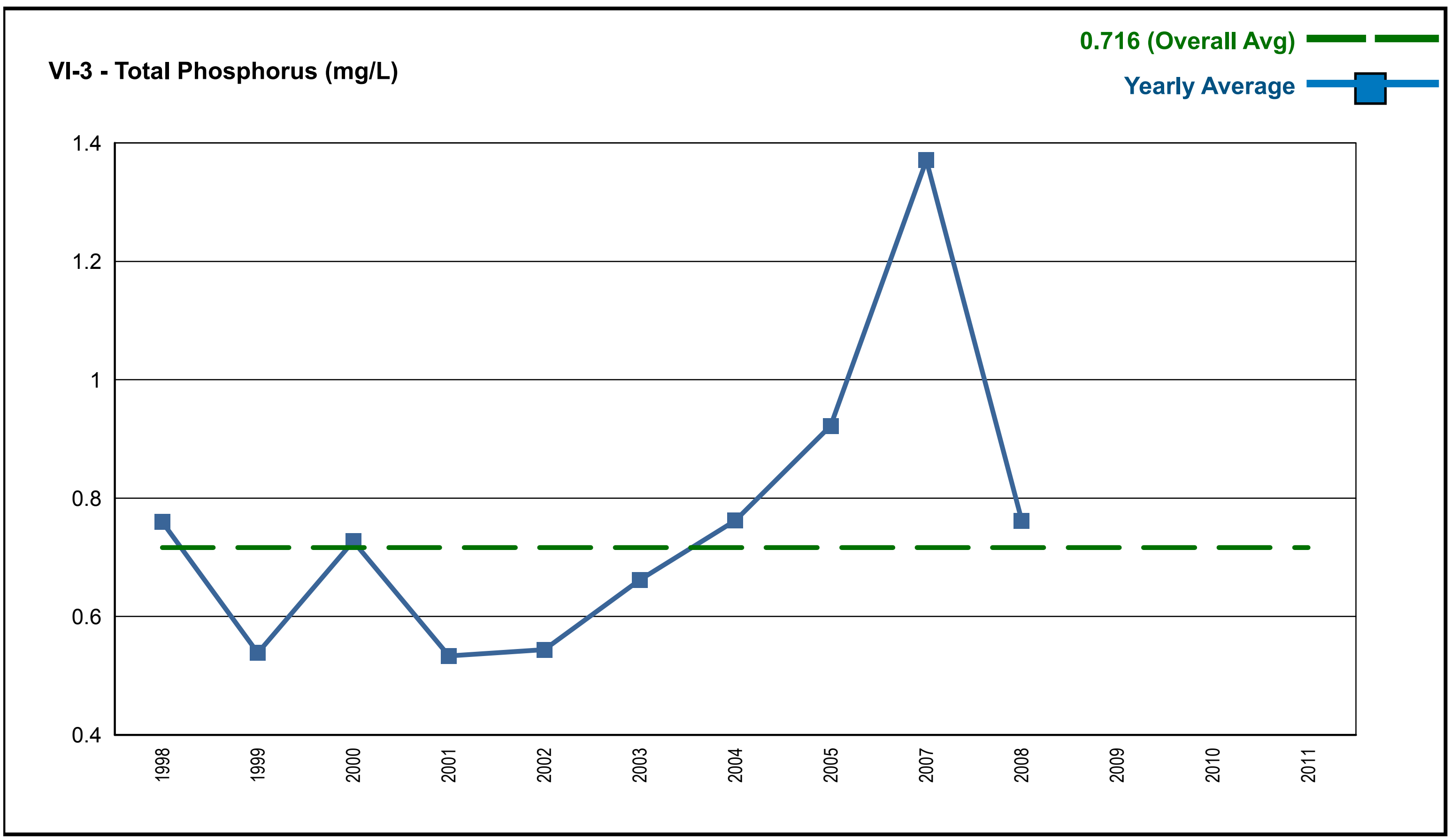

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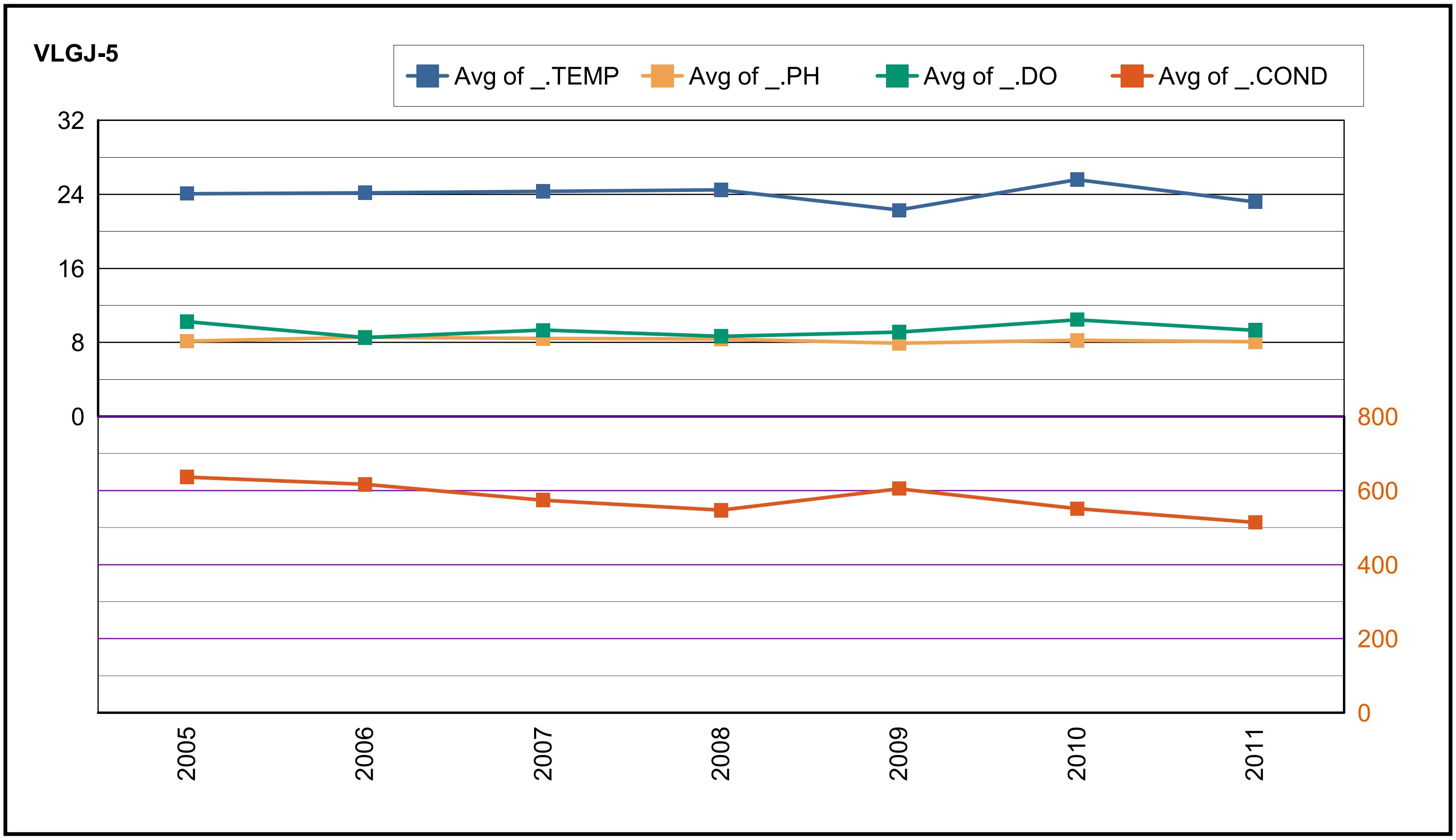

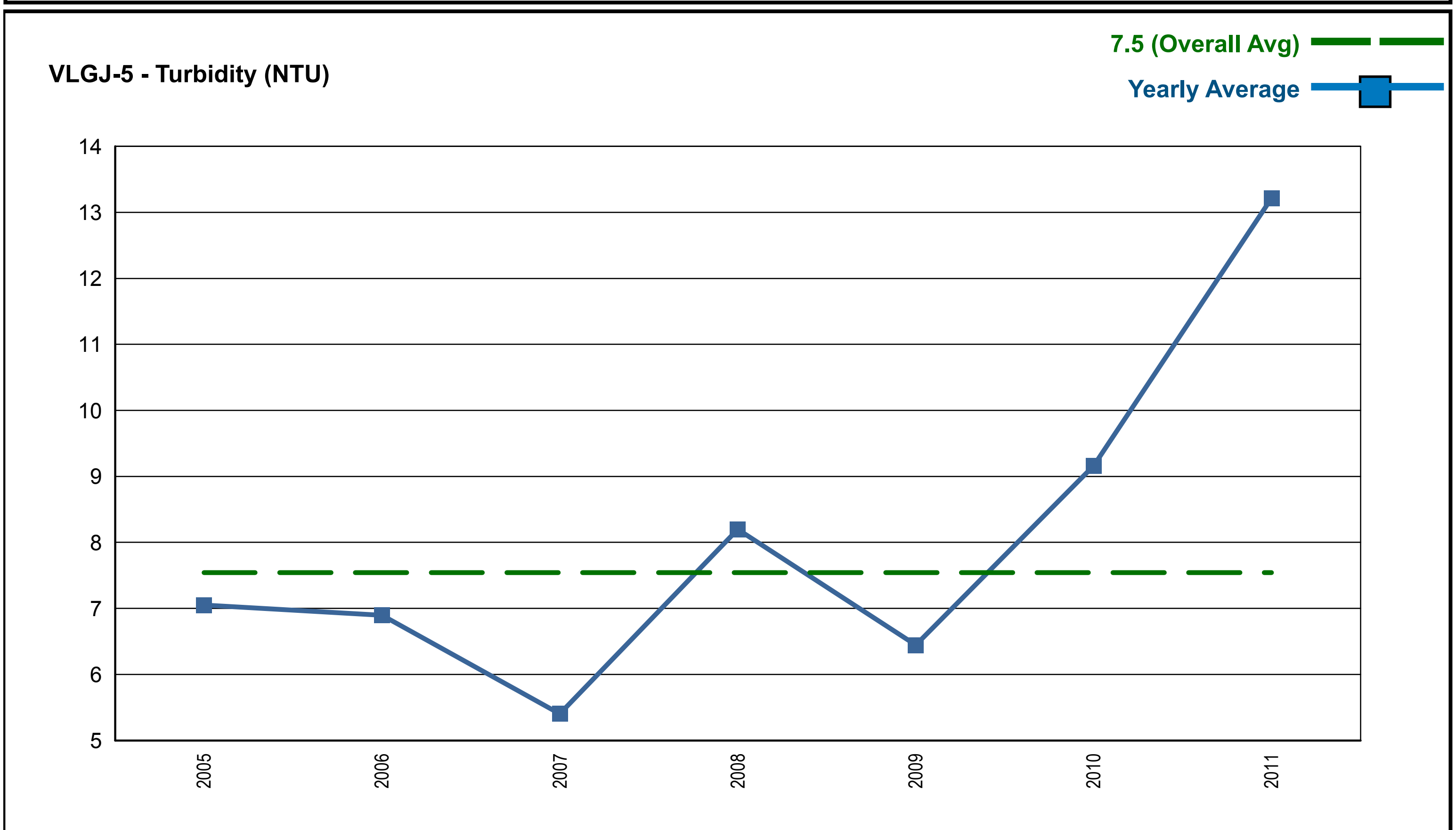

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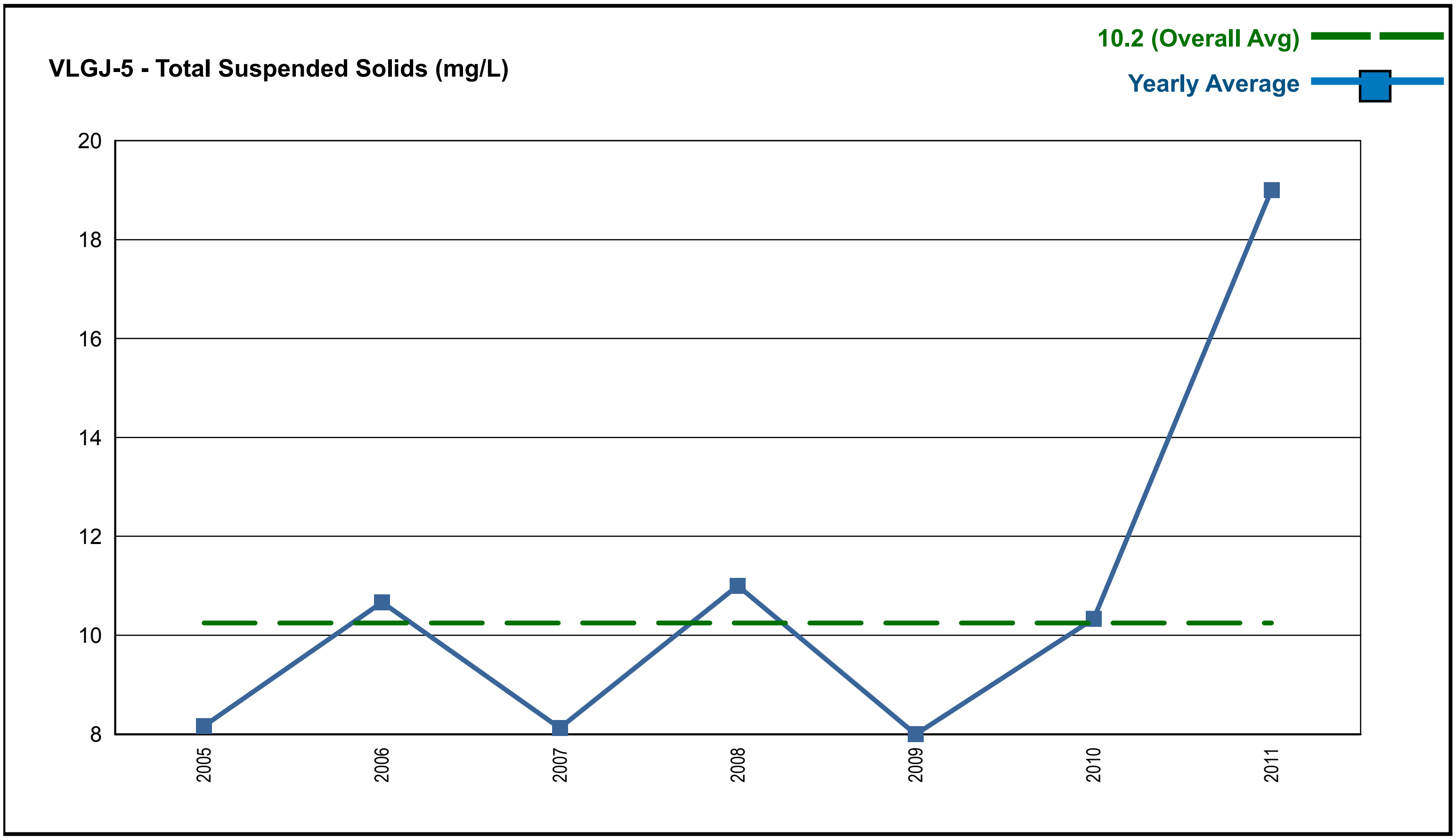

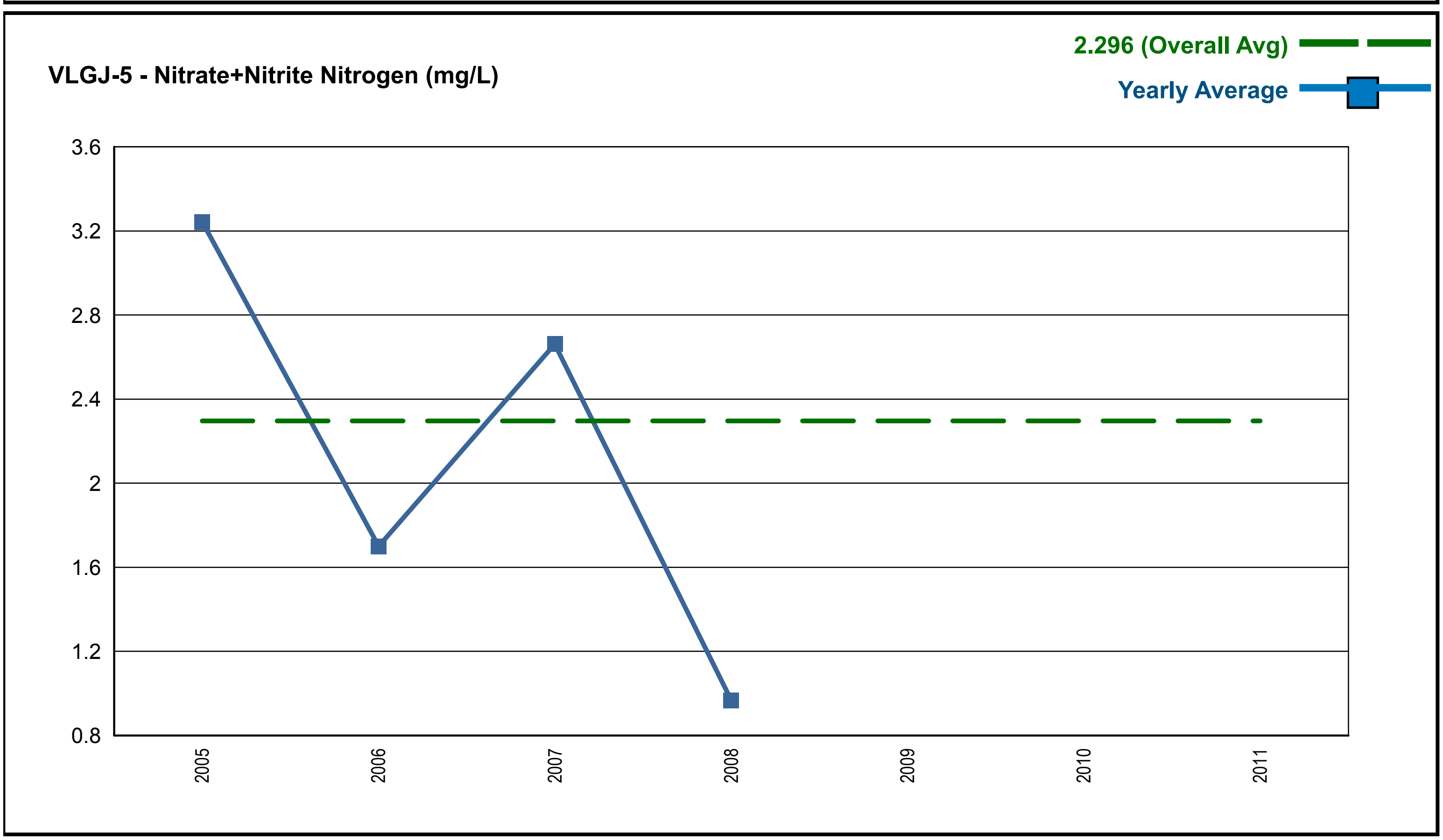

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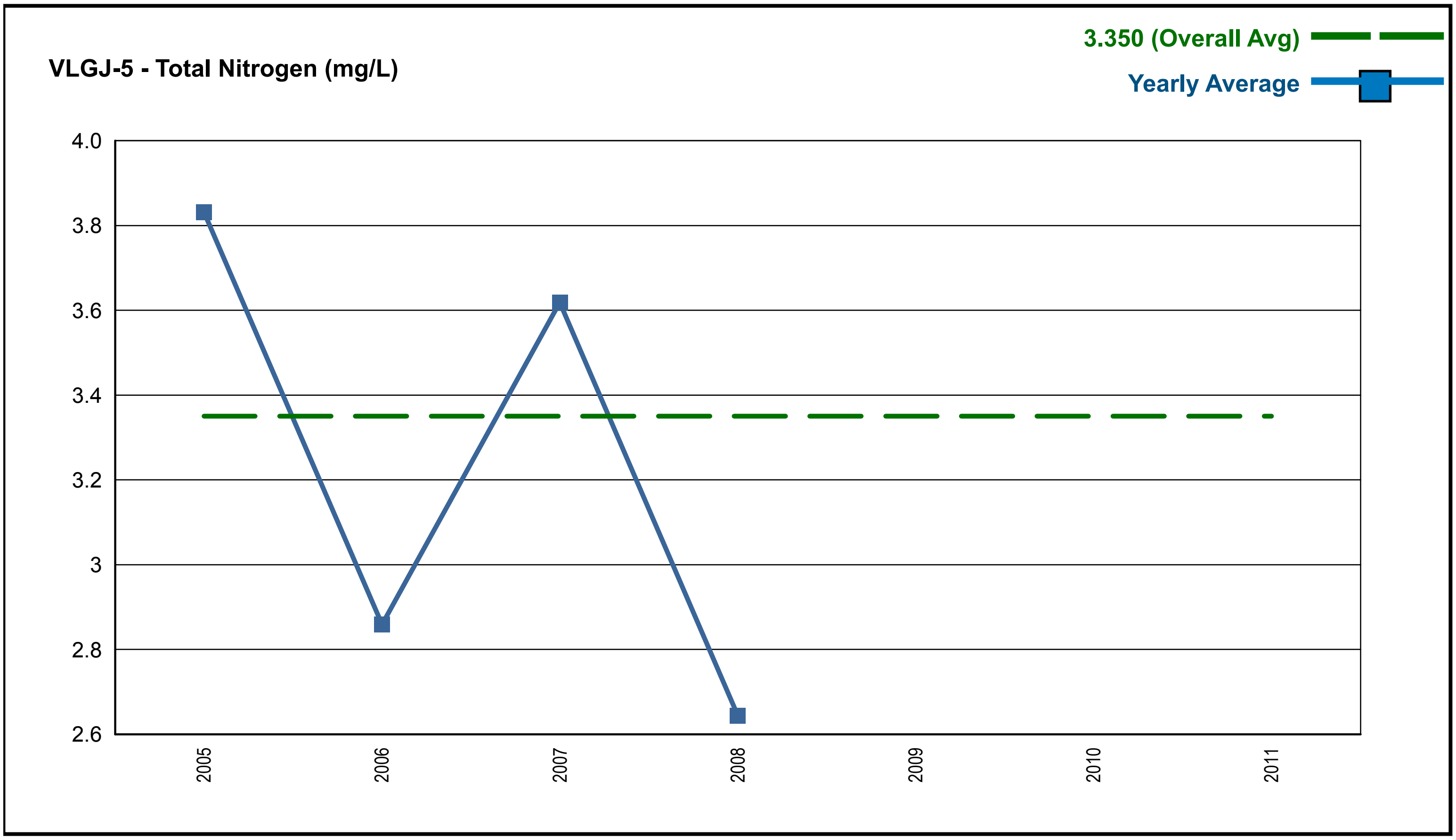

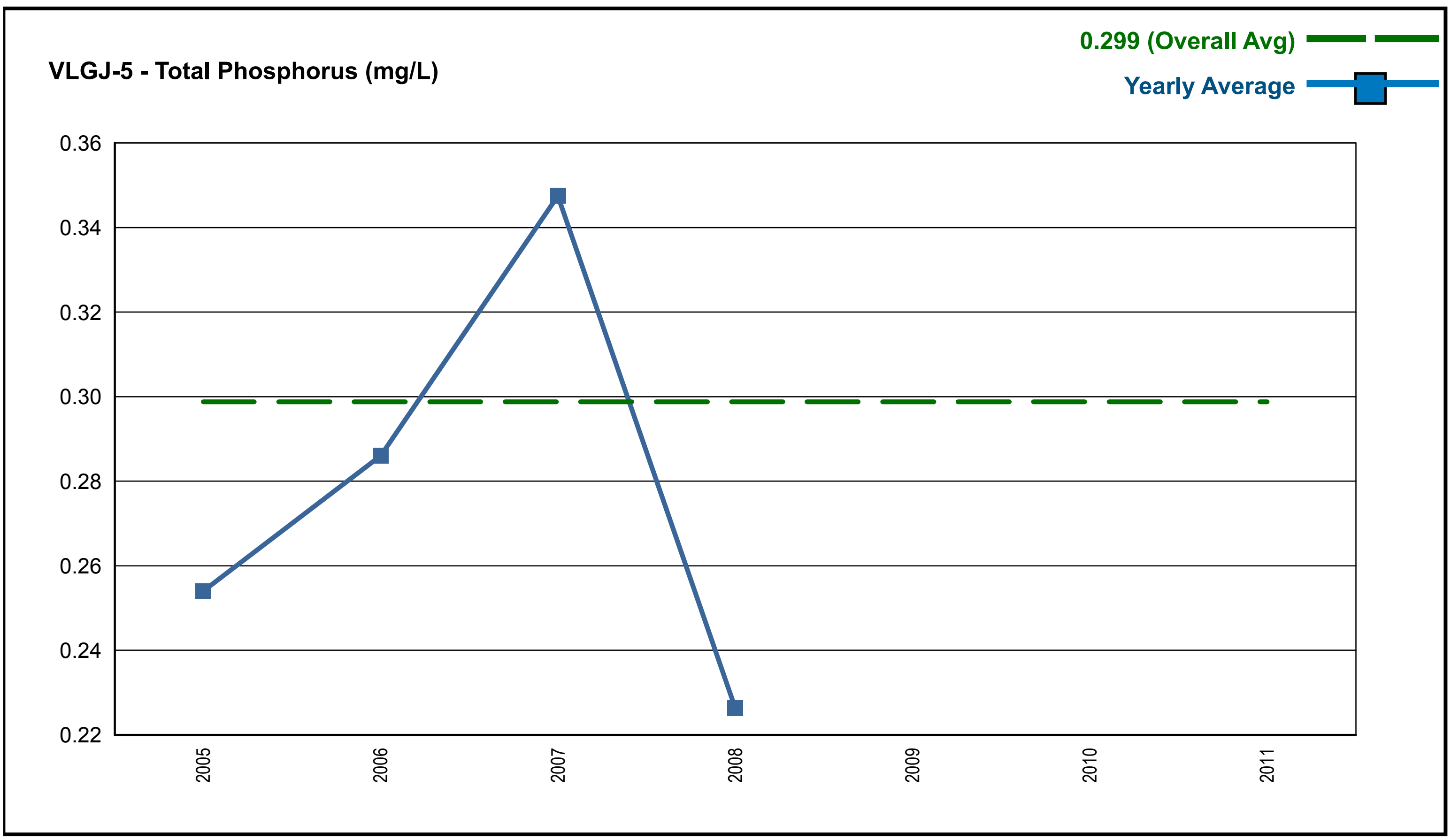

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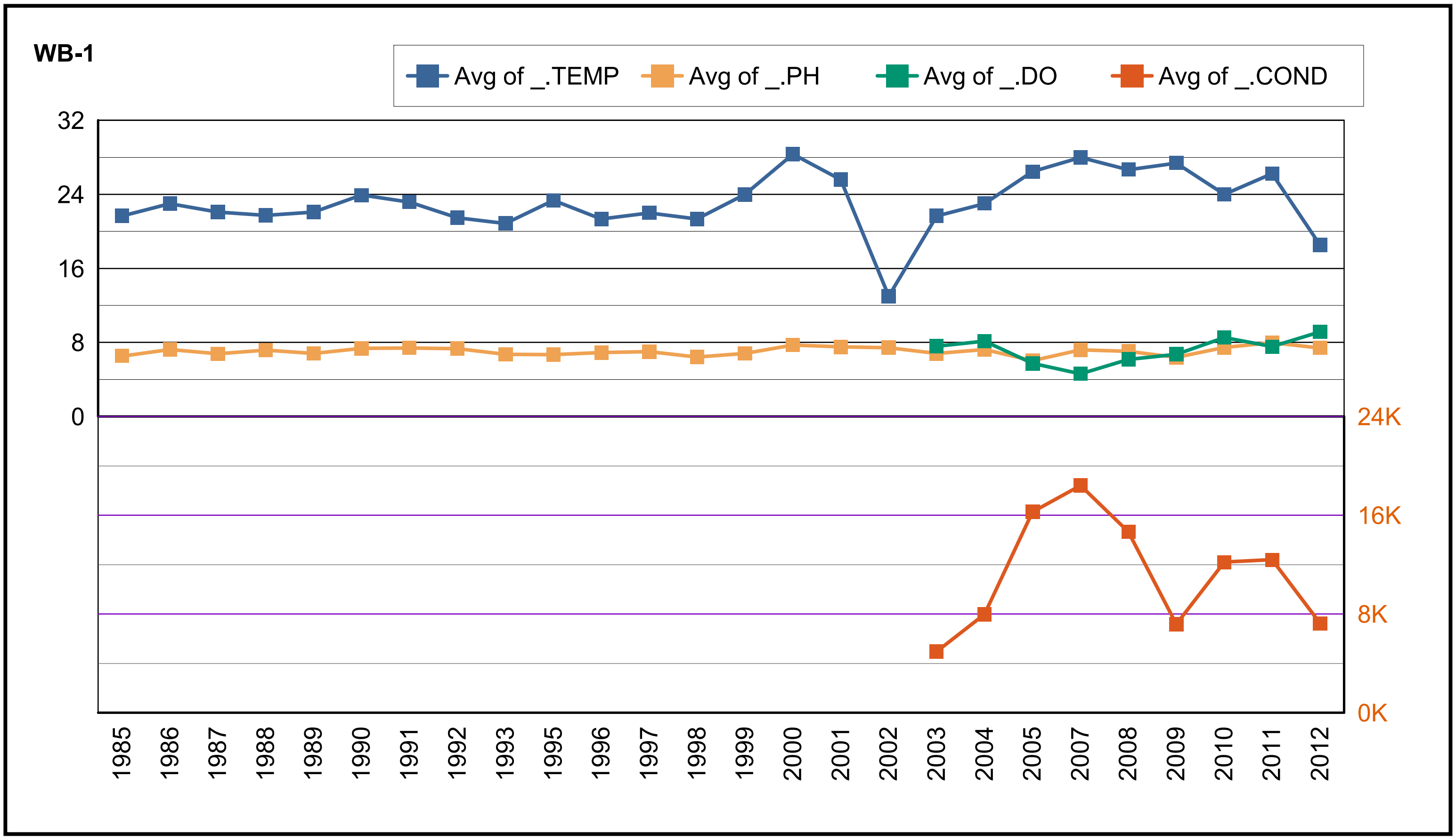
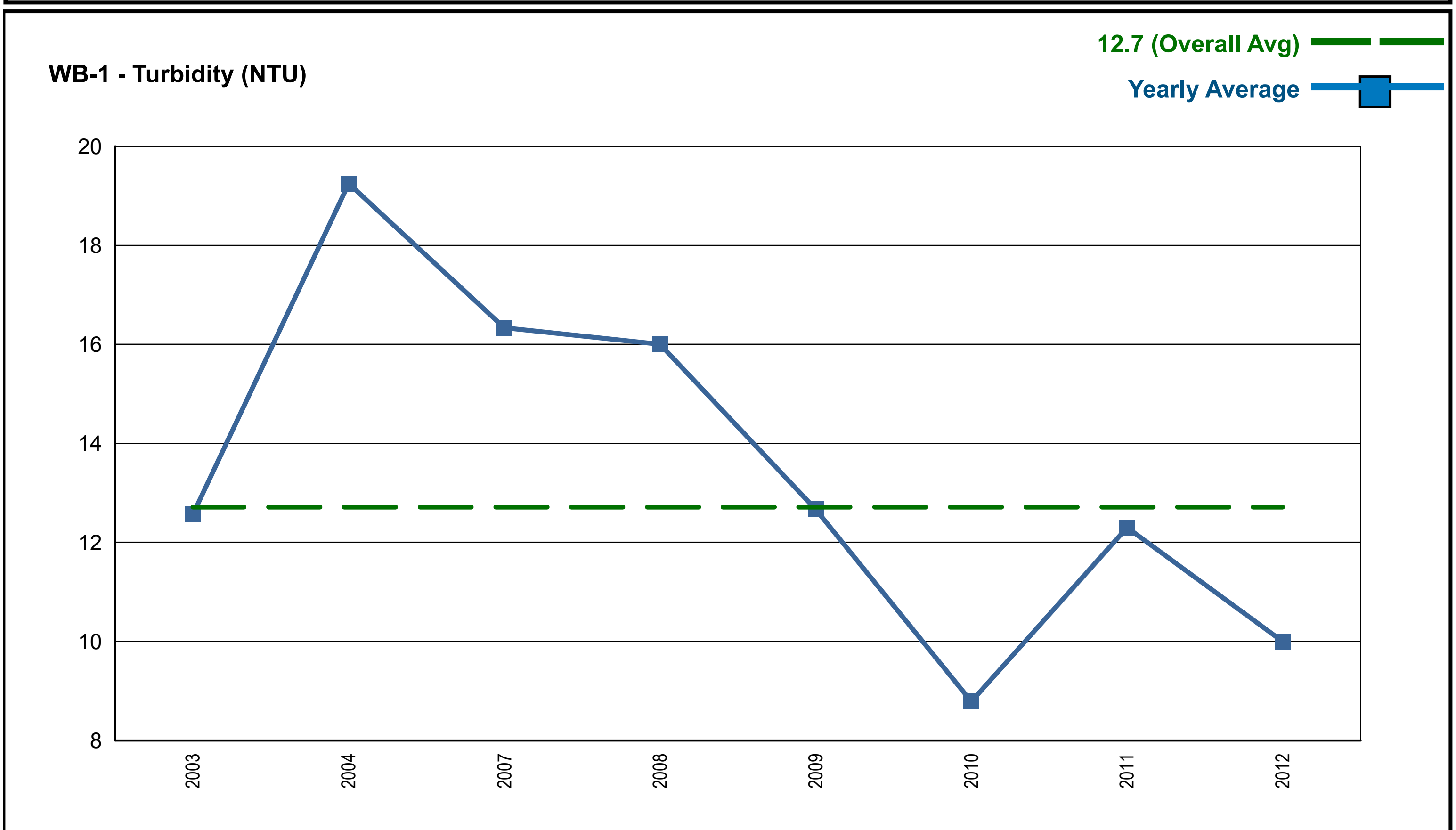
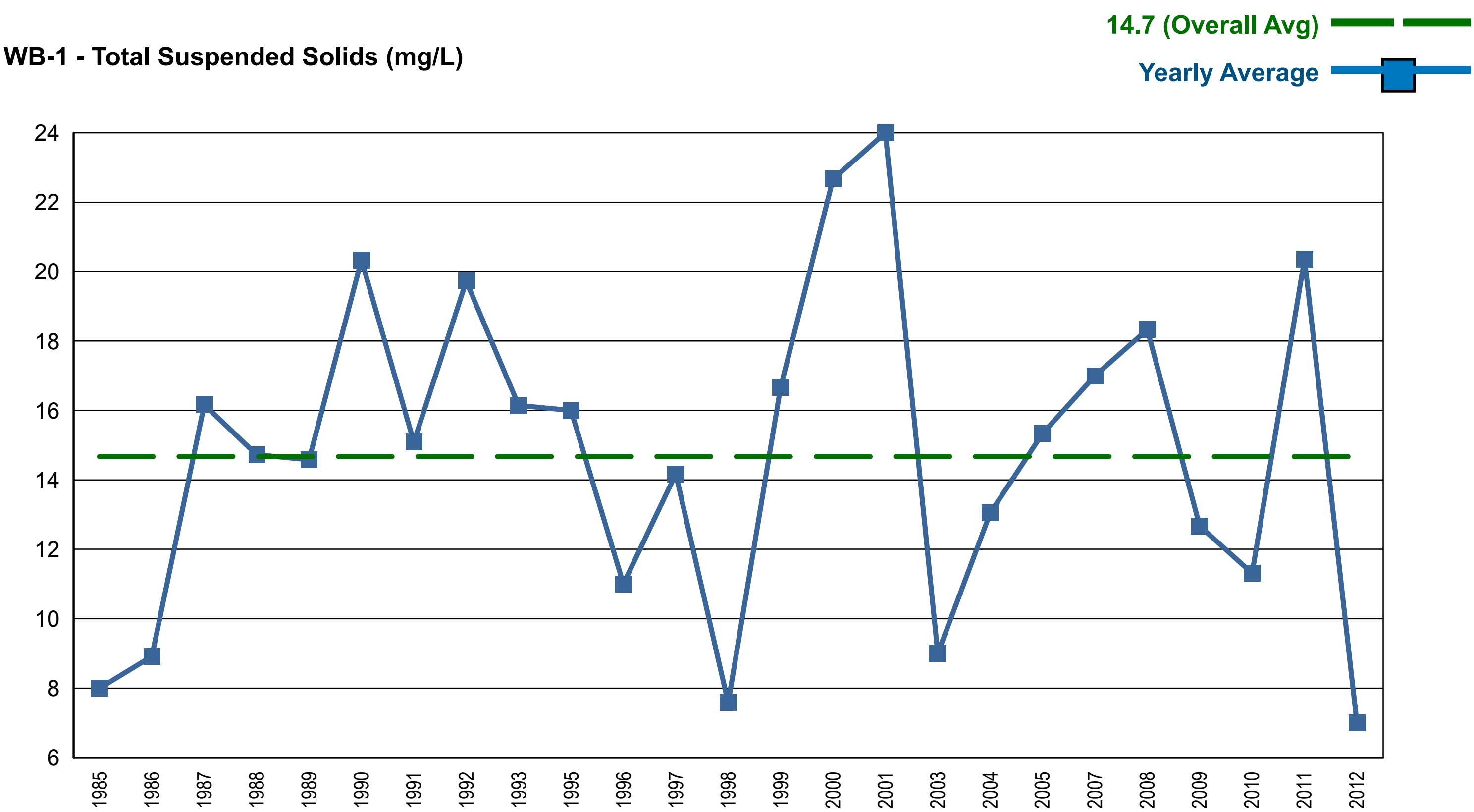


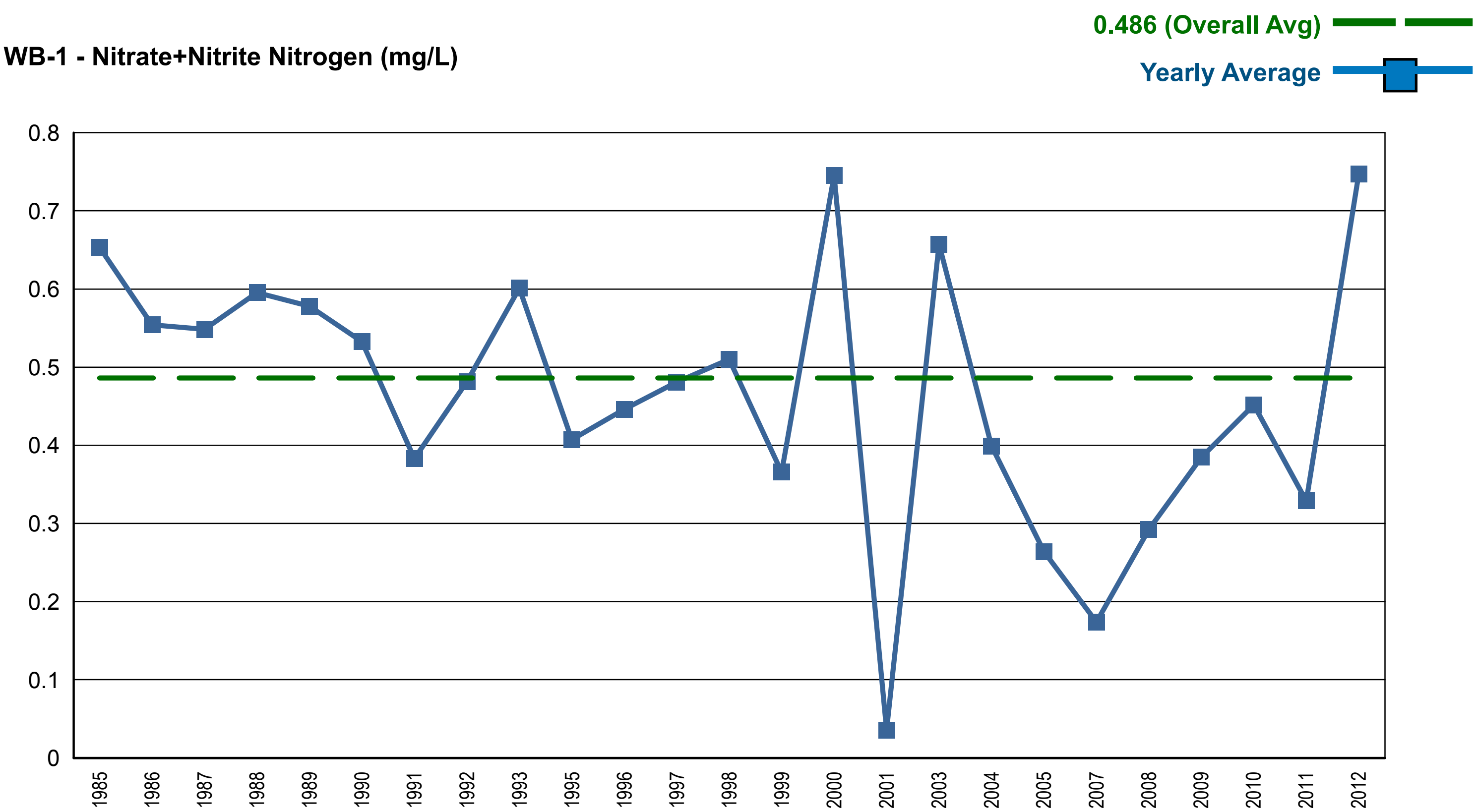


ADEM Ambient Trend Stations - Sampled 1977 - 2012

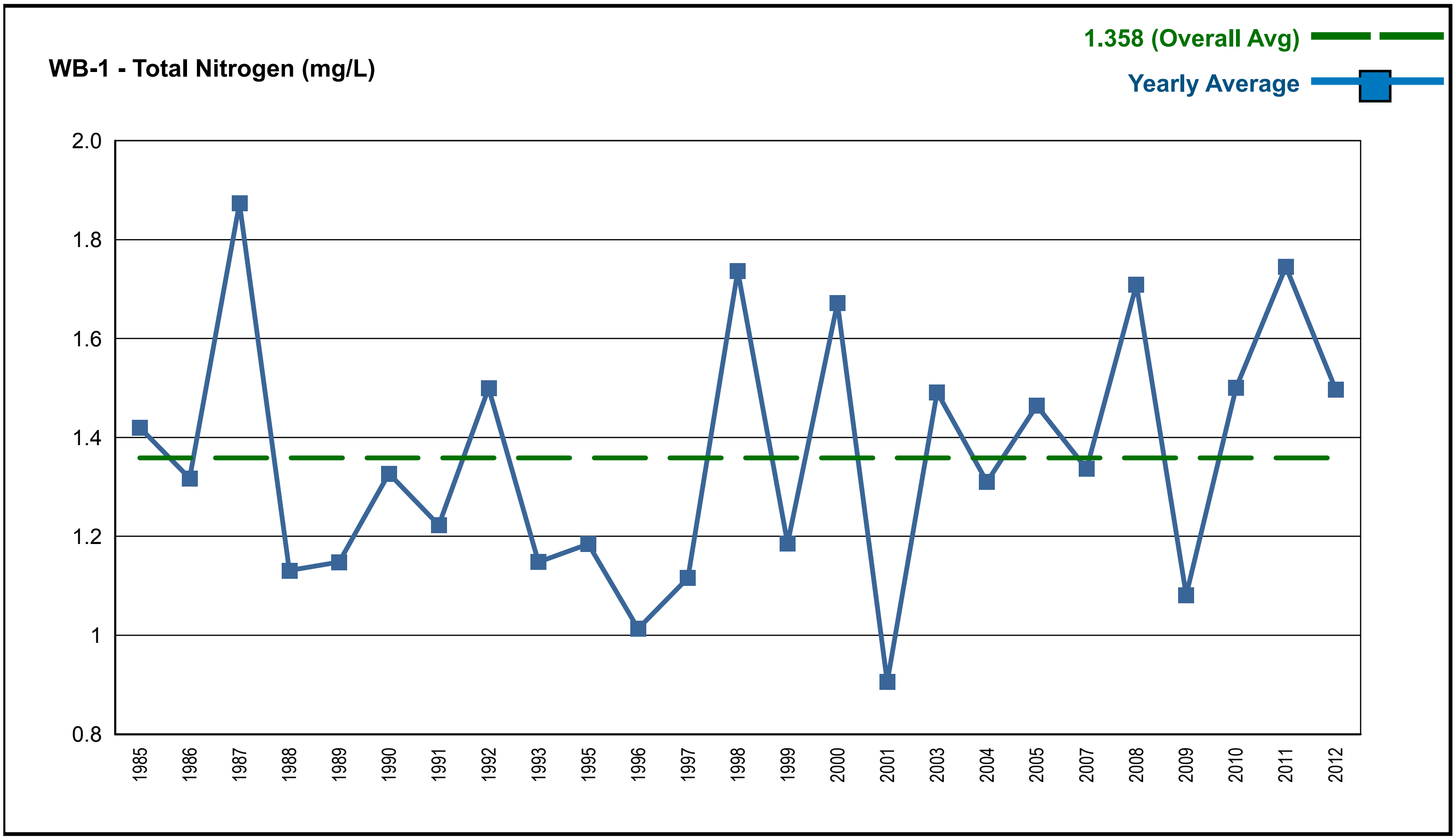
WB-1 - Total Suspended Solids (mg/L)

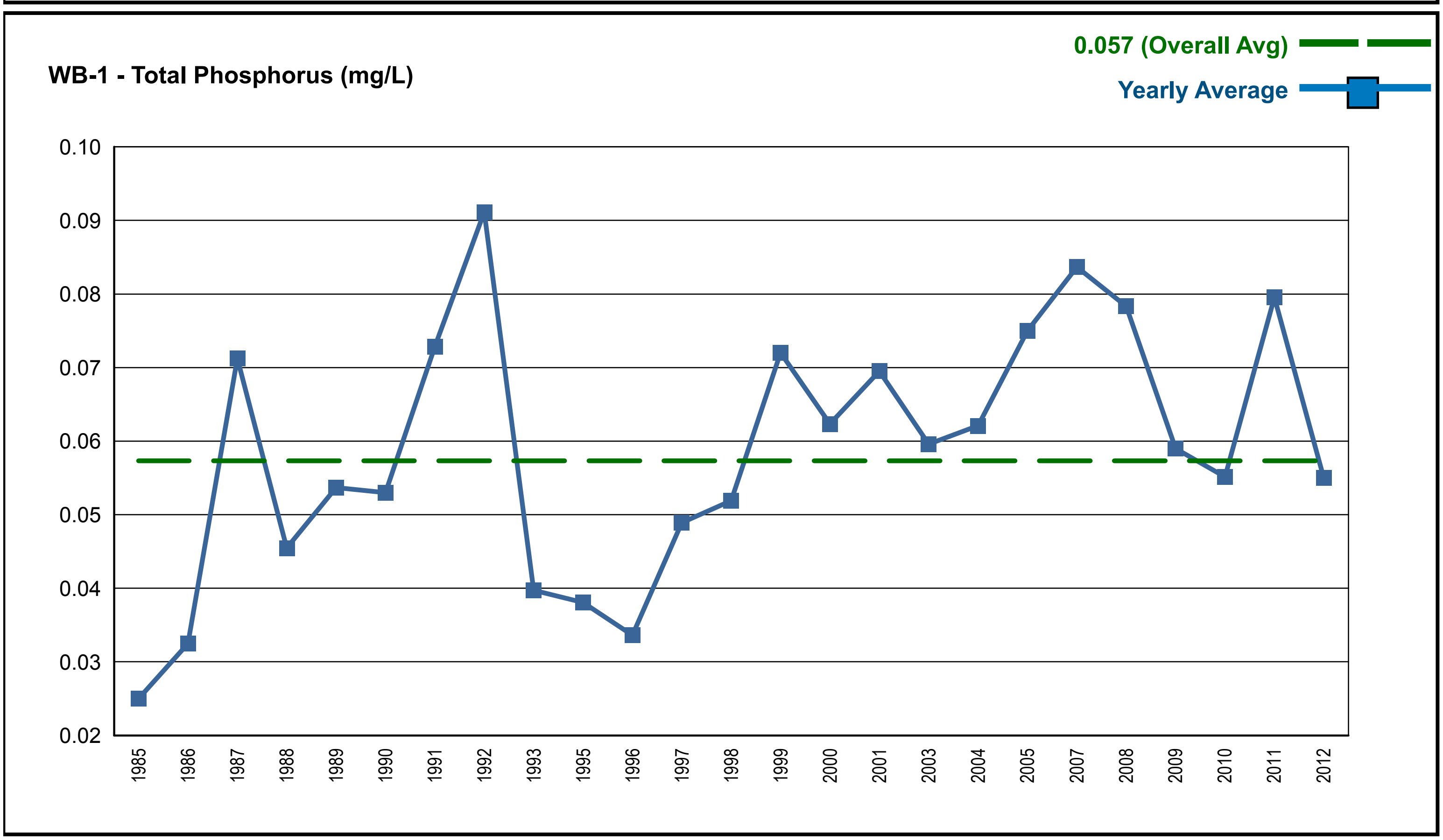


WB-1 - Nitrate+Nitrite Nitrogen (mg/L)

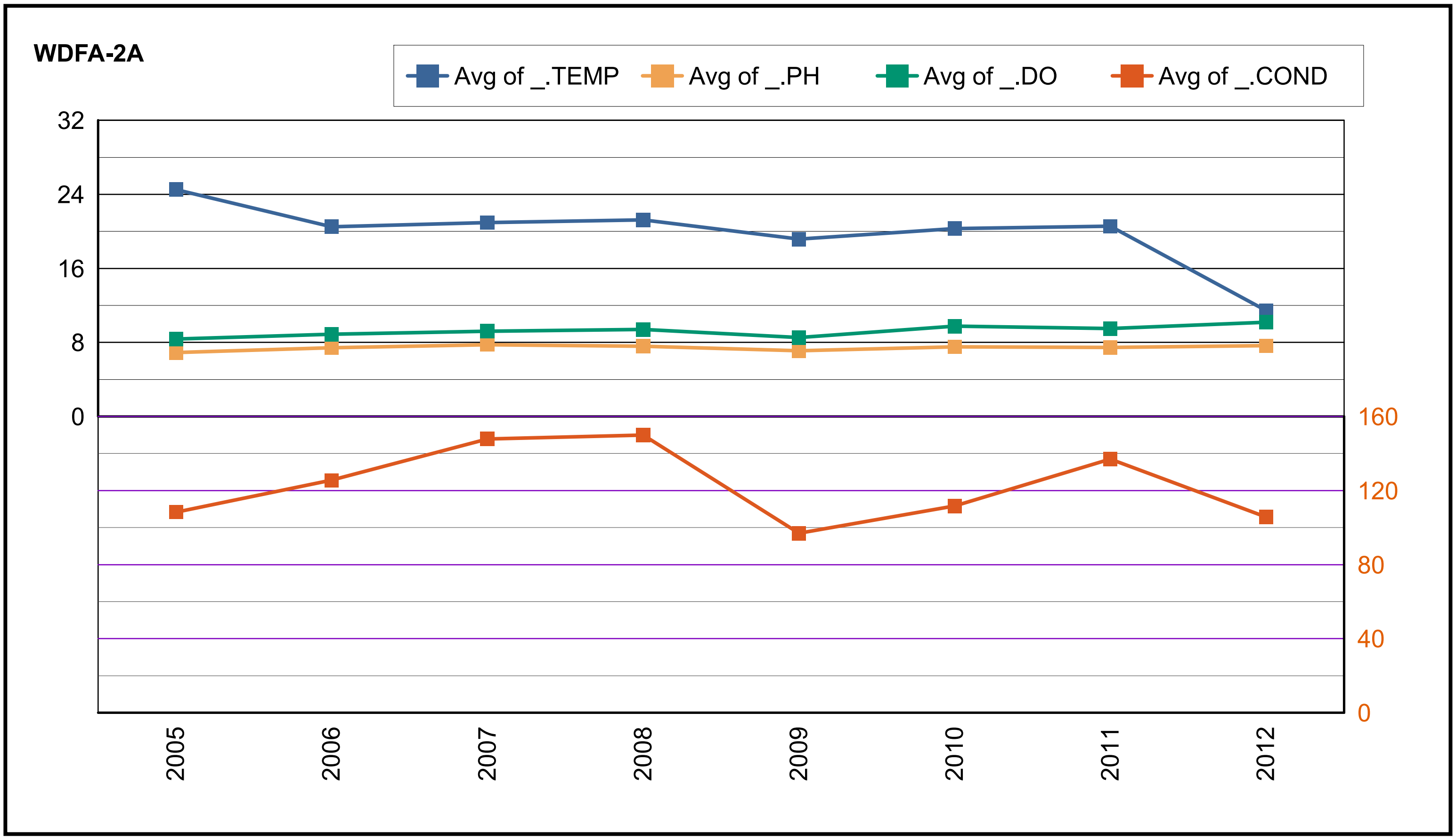


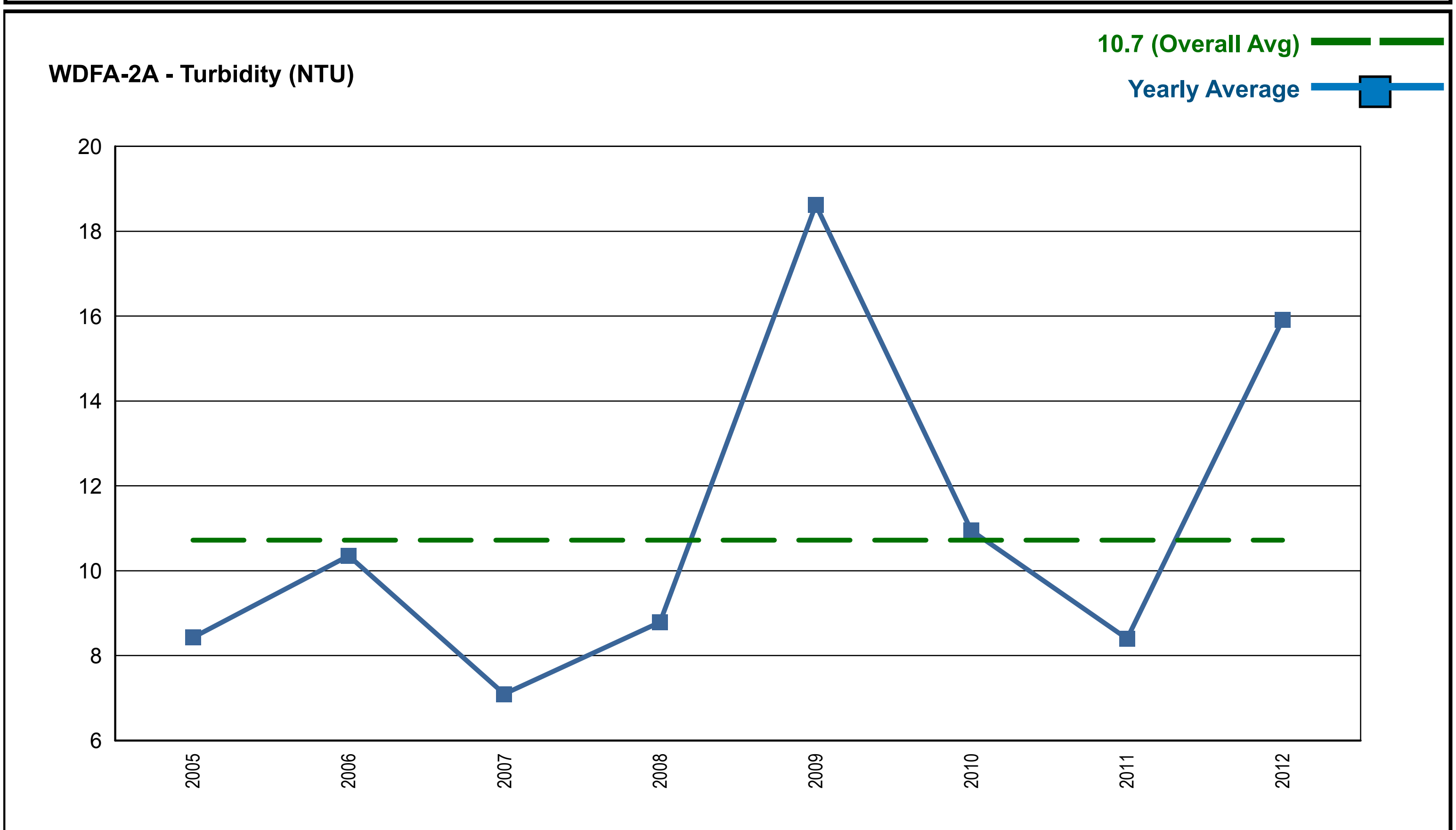
ADEM Ambient Trend Stations - Sampled 1977 - 2012



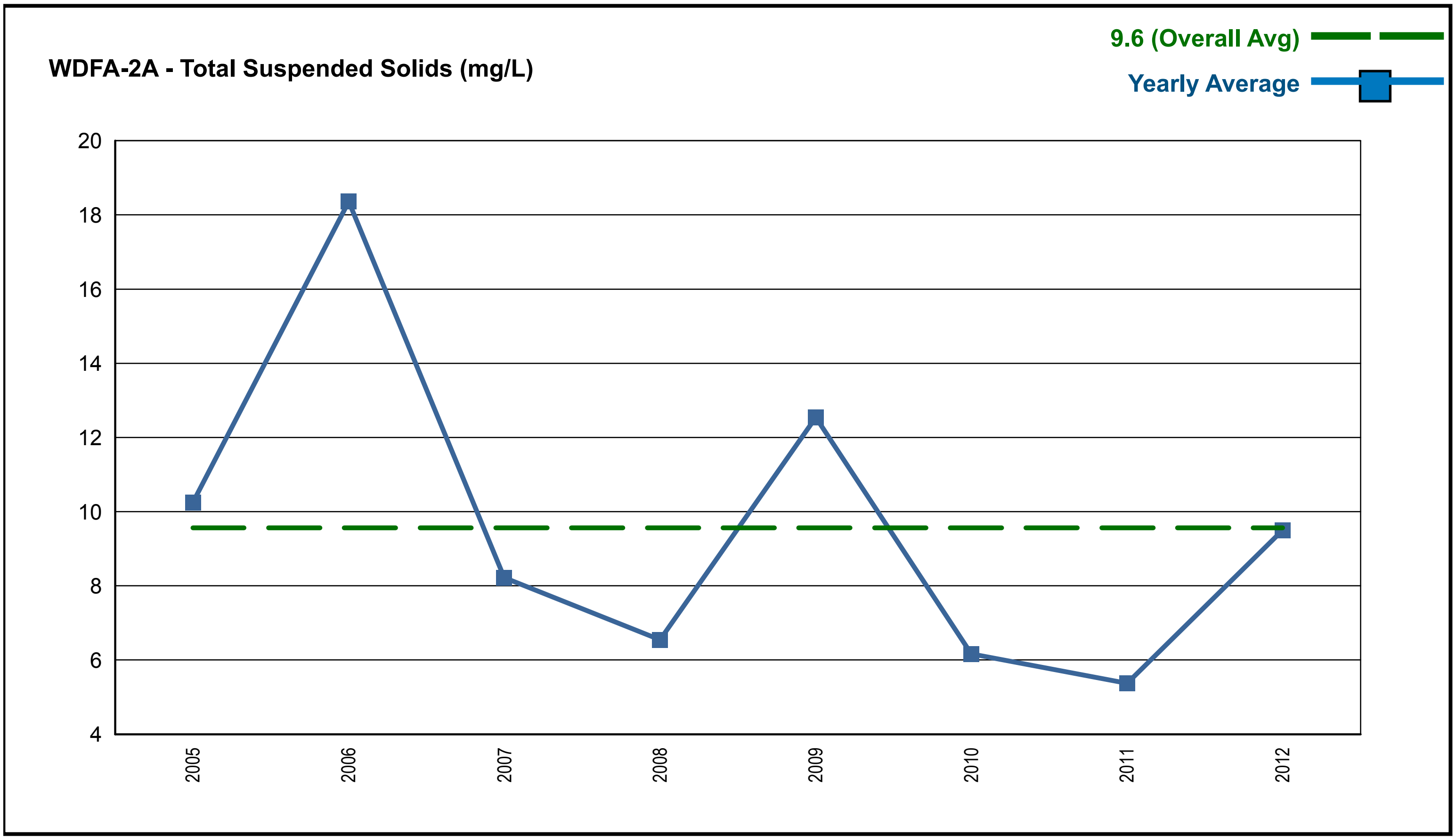


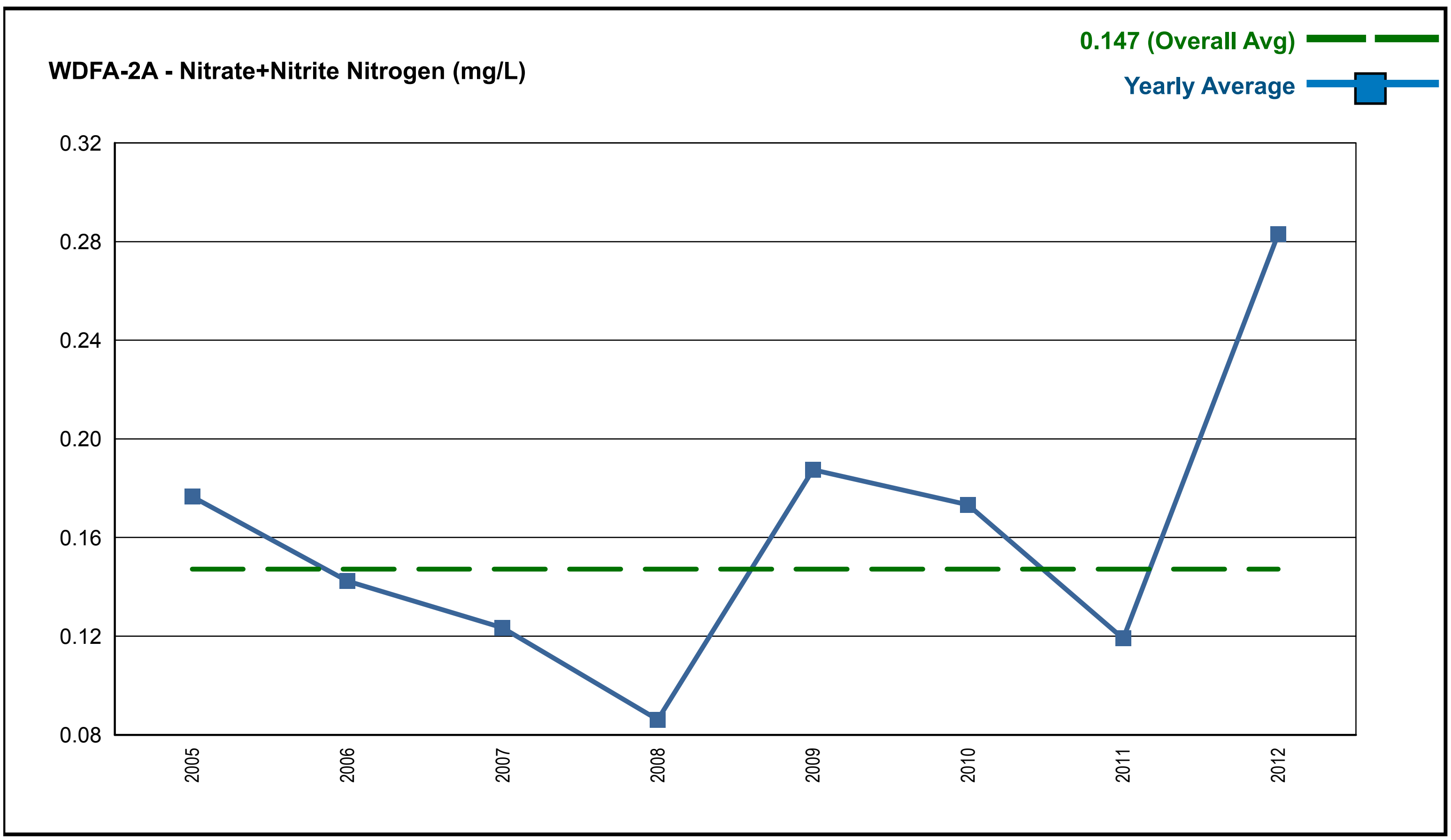
ADEM Ambient Trend Stations - Sampled 1977 - 2012



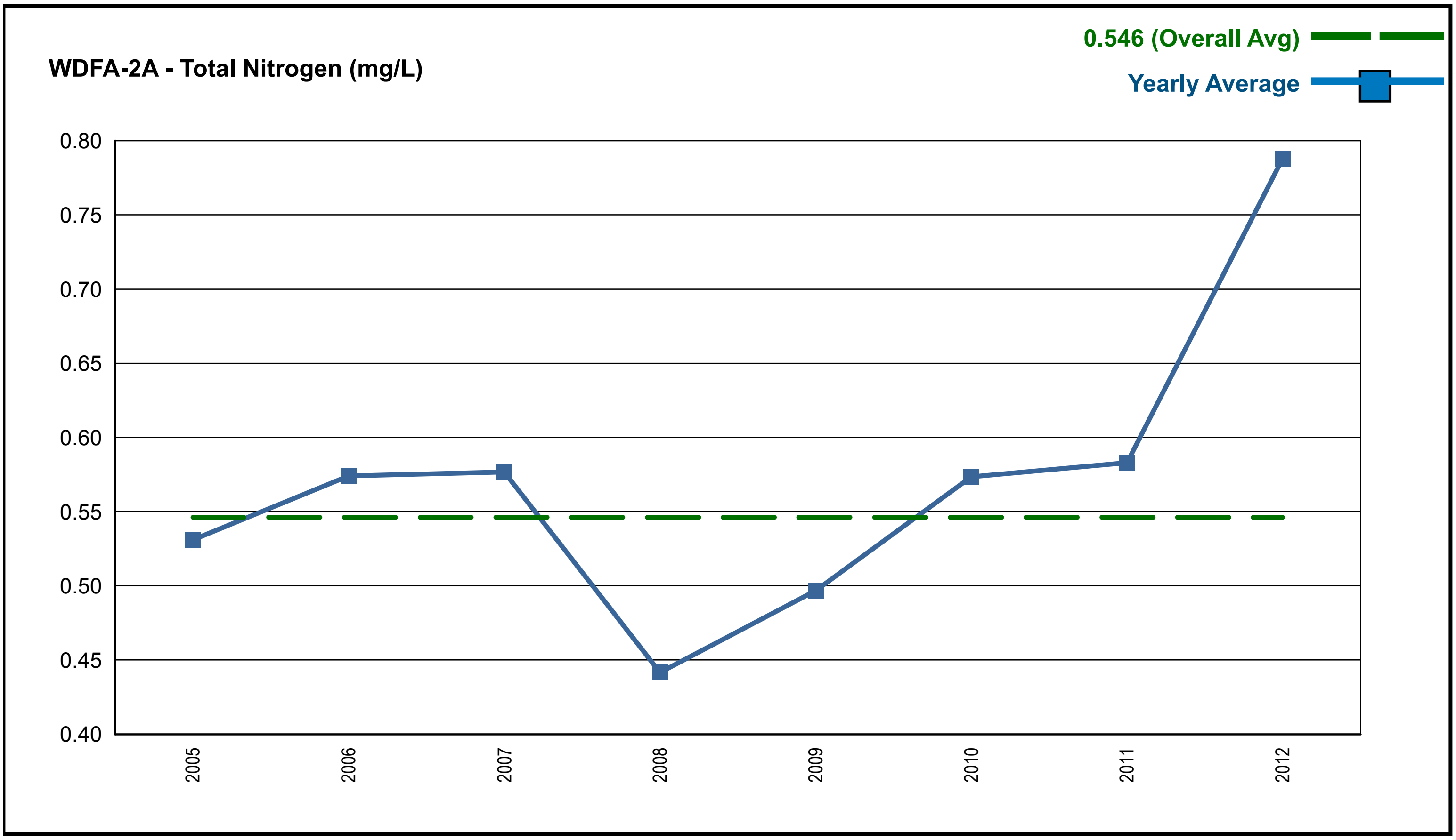


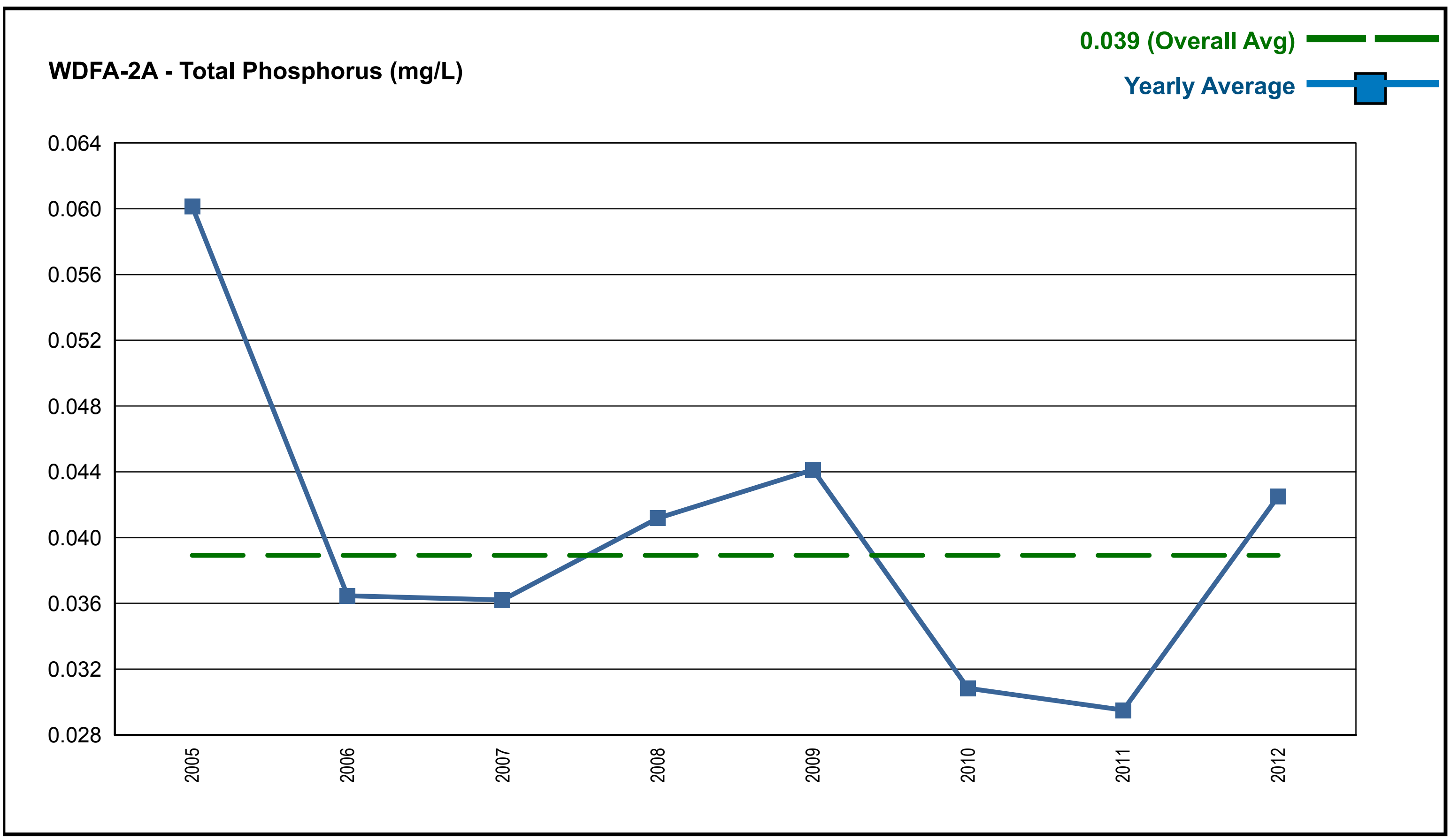
ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012





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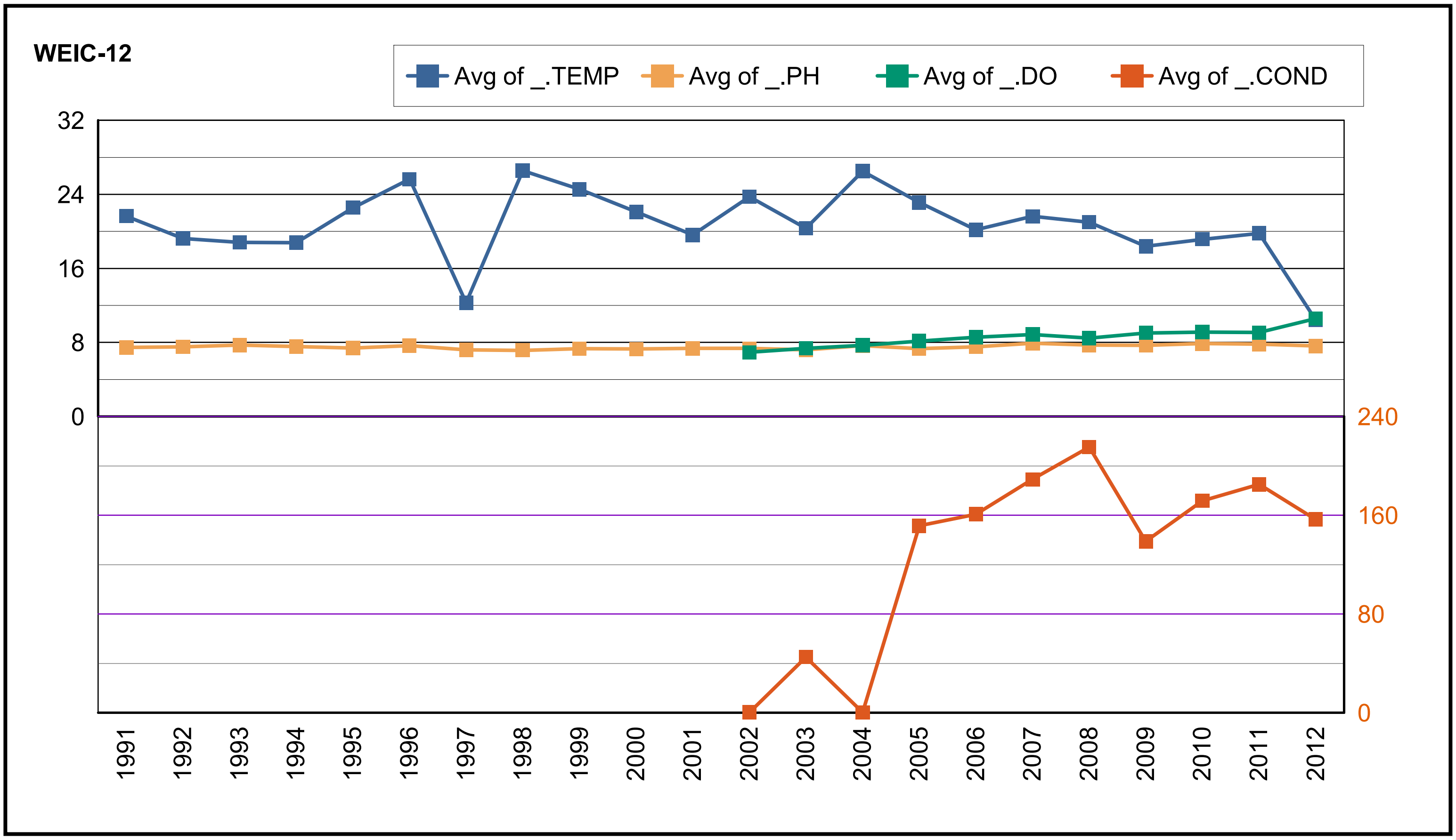

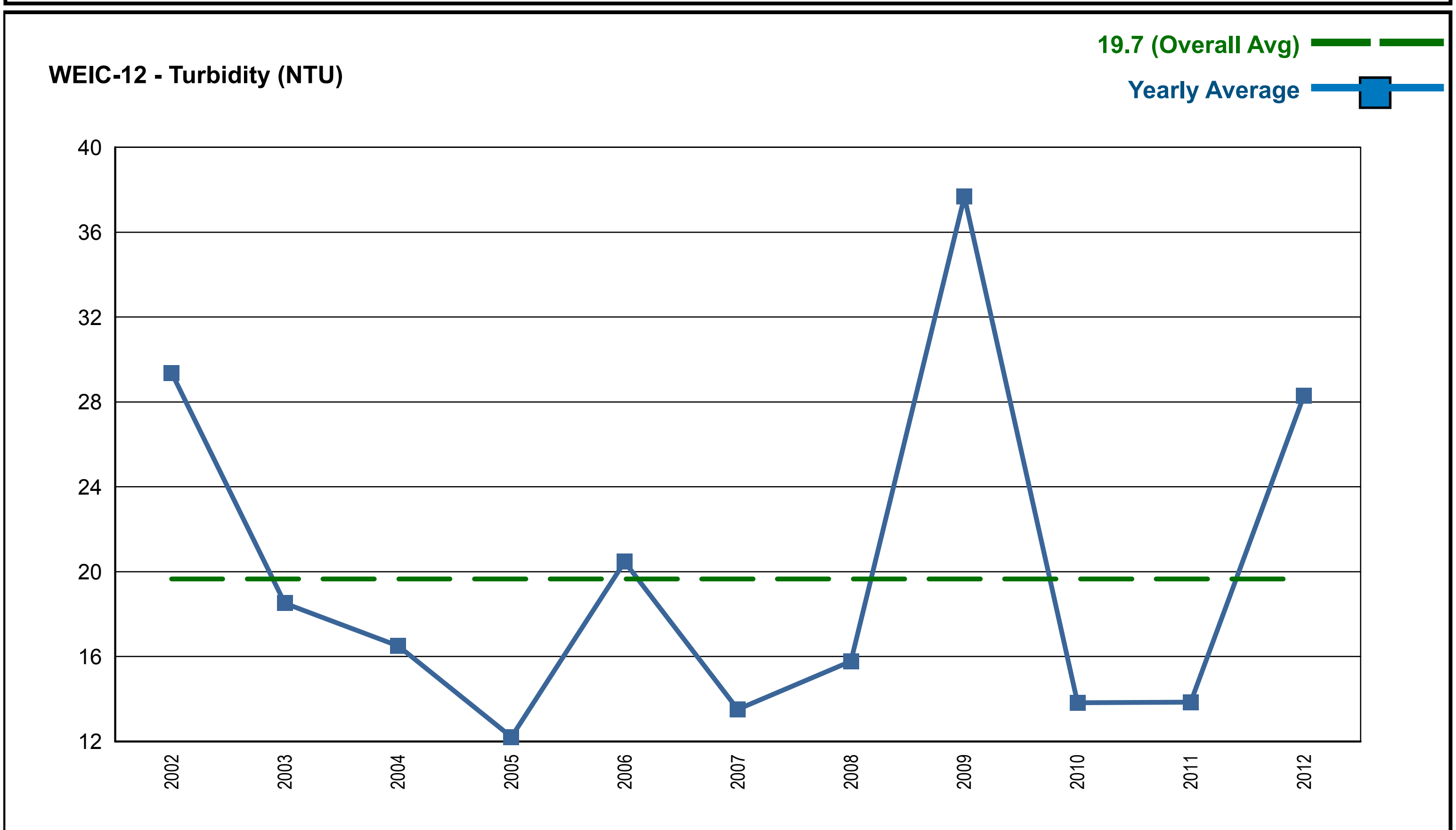

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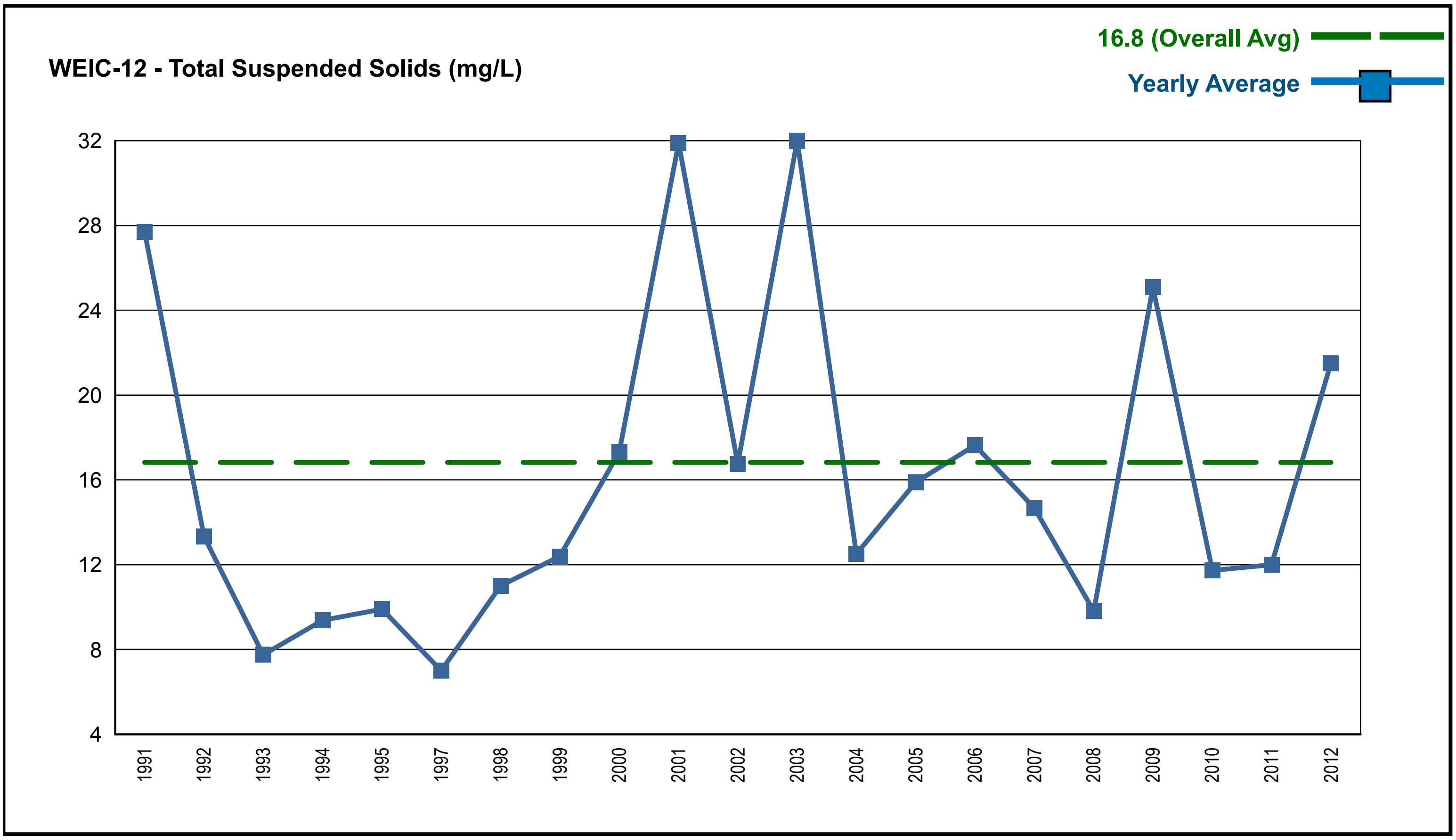
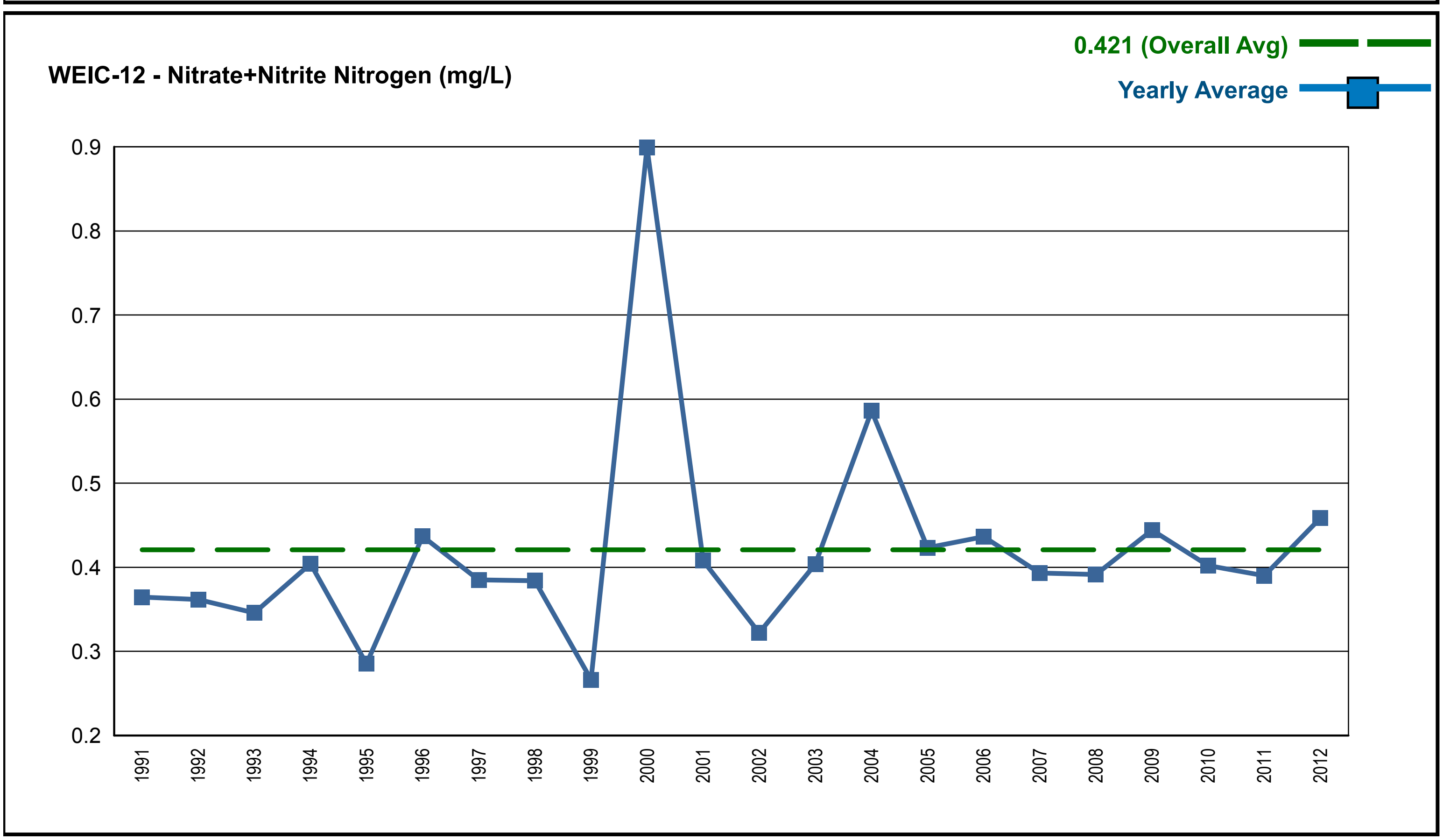
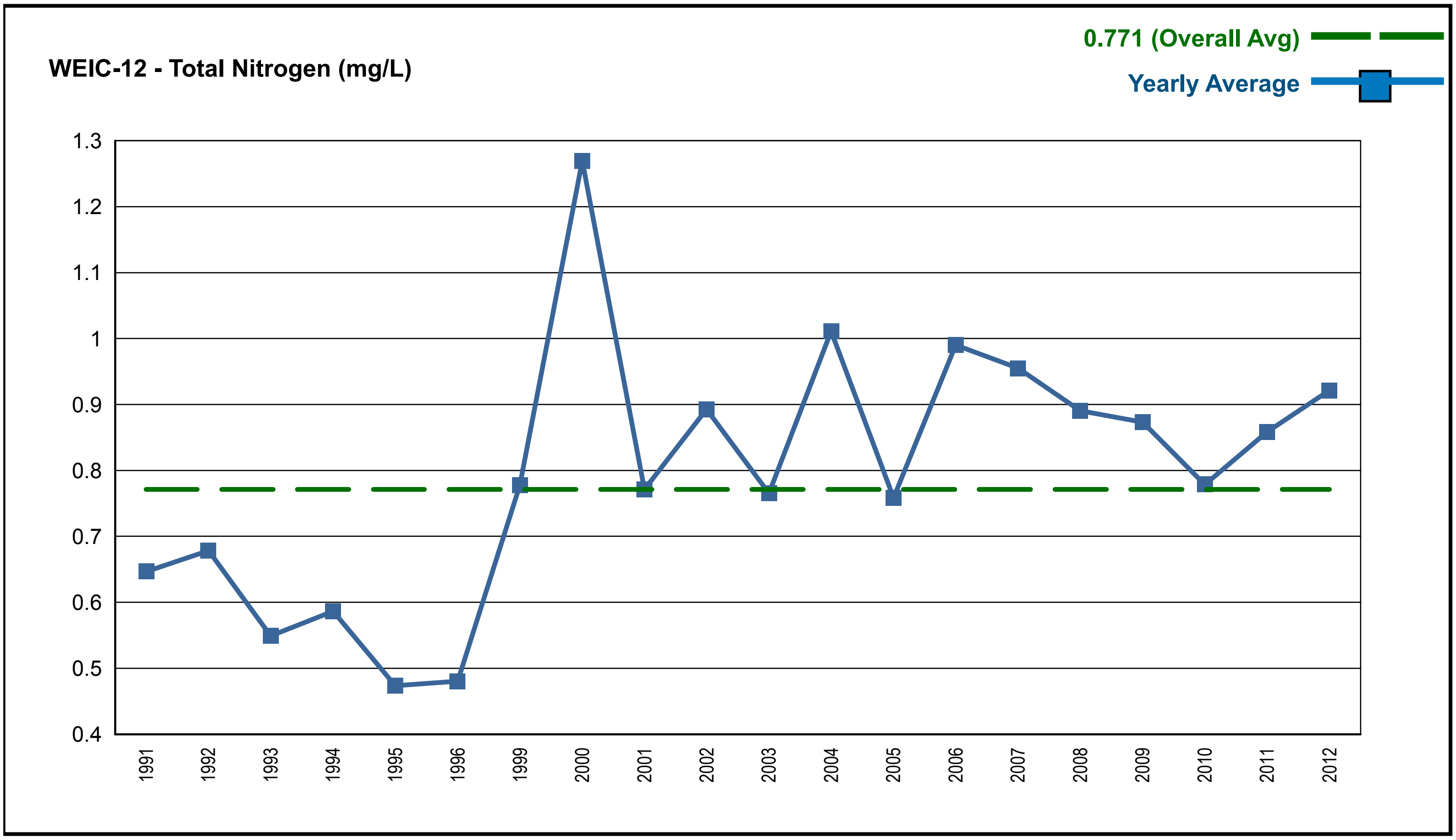
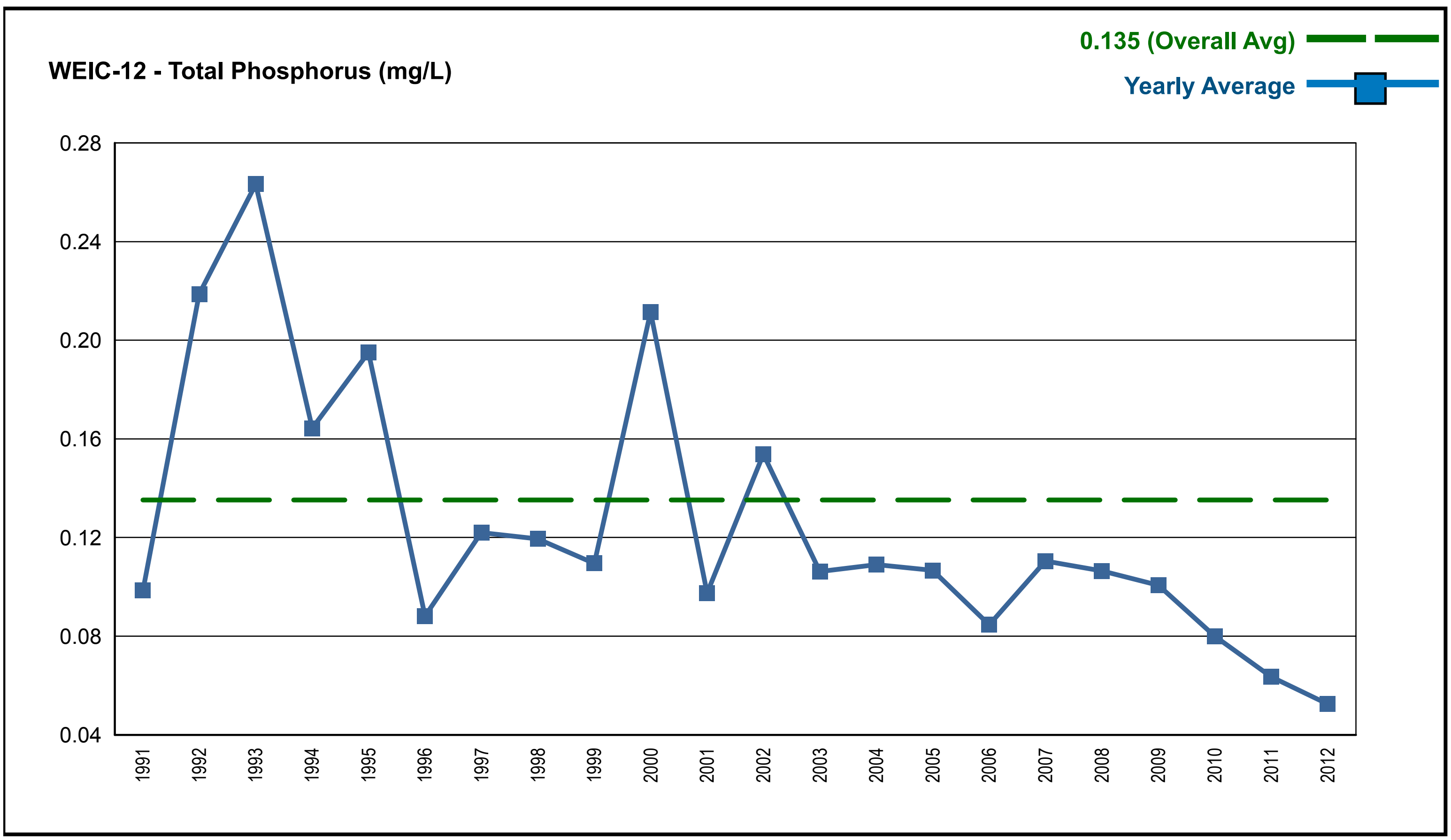




ADEM Ambient Trend Stations - Sampled 1977 - 2012





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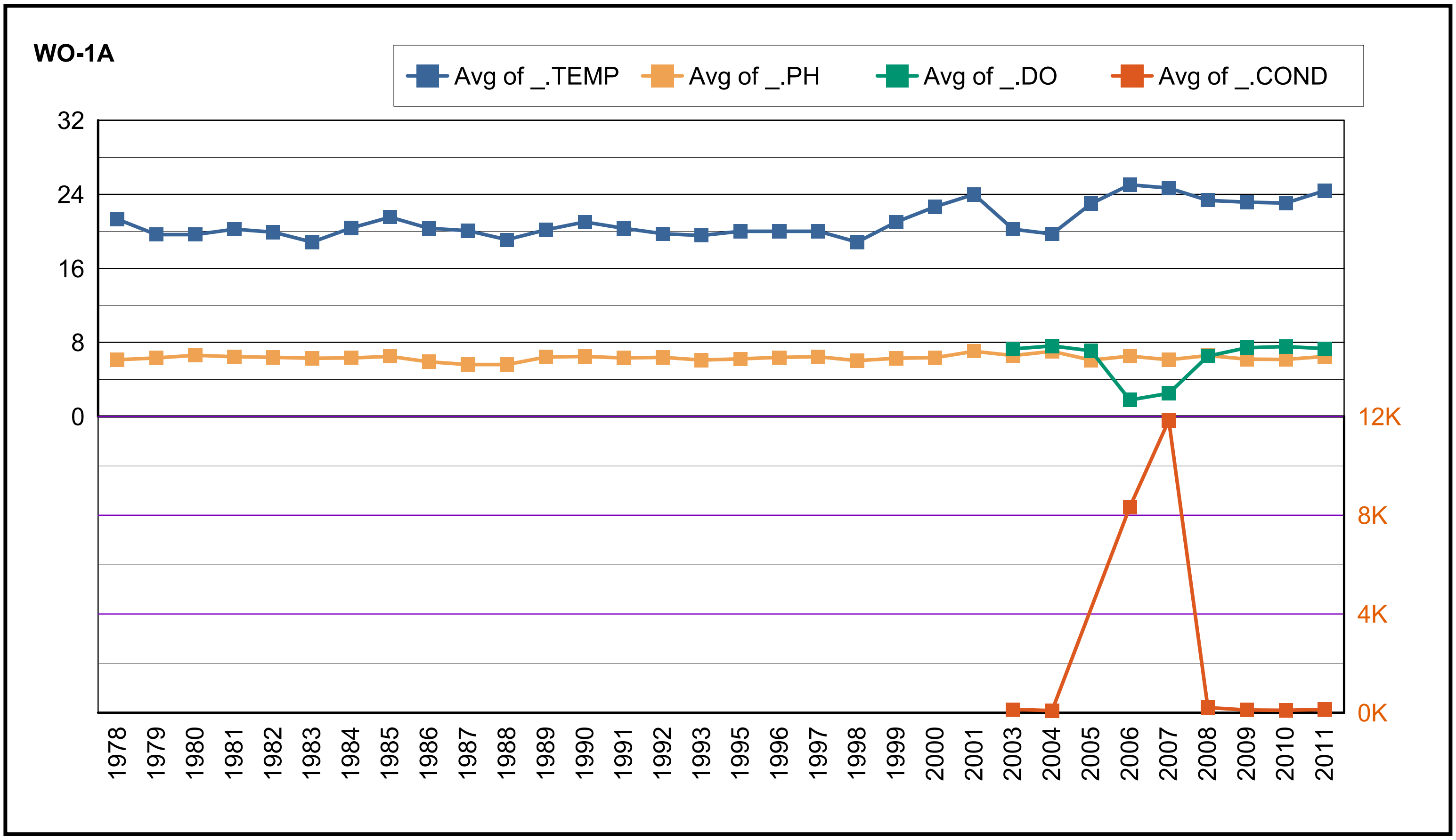

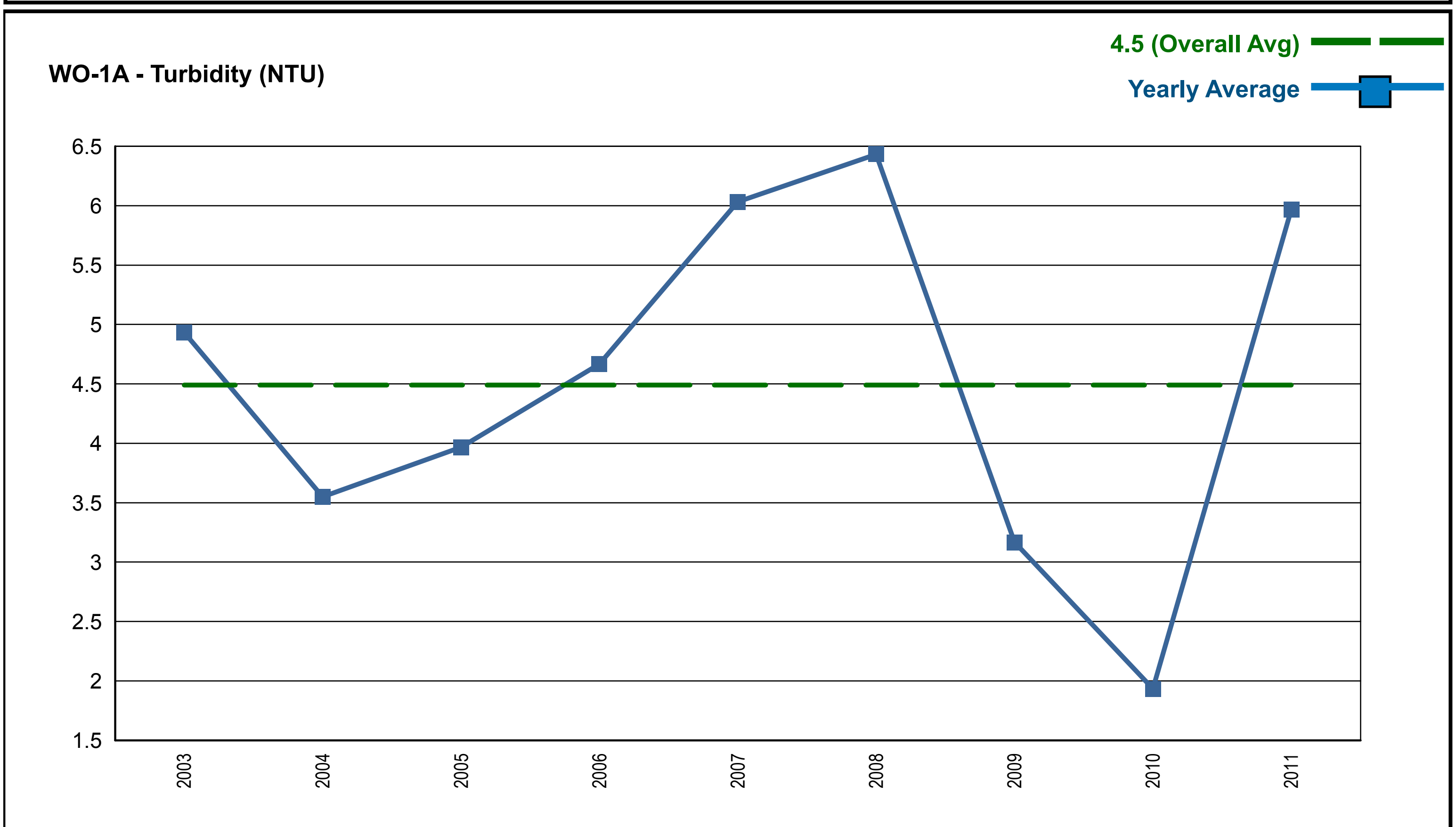

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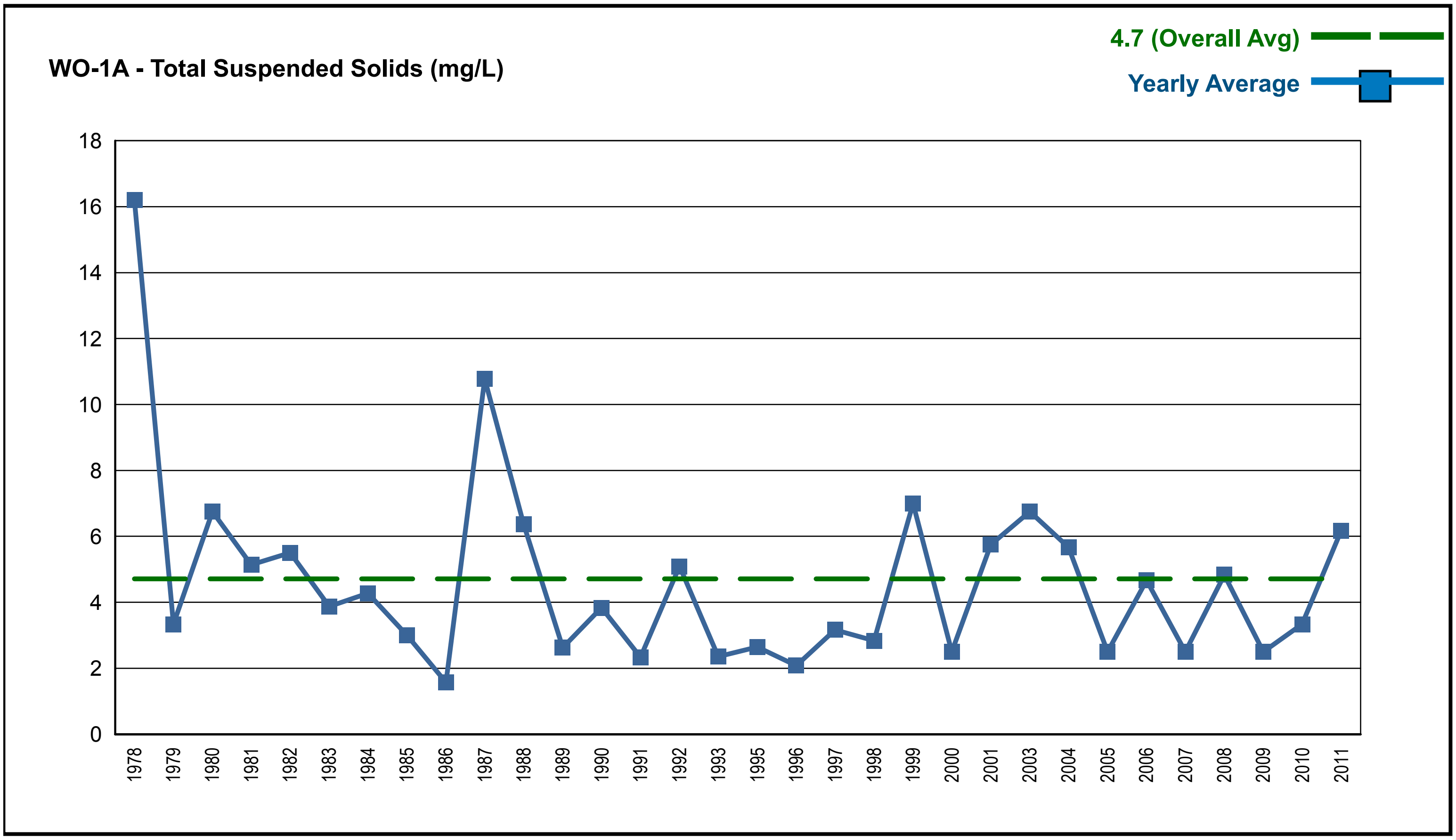
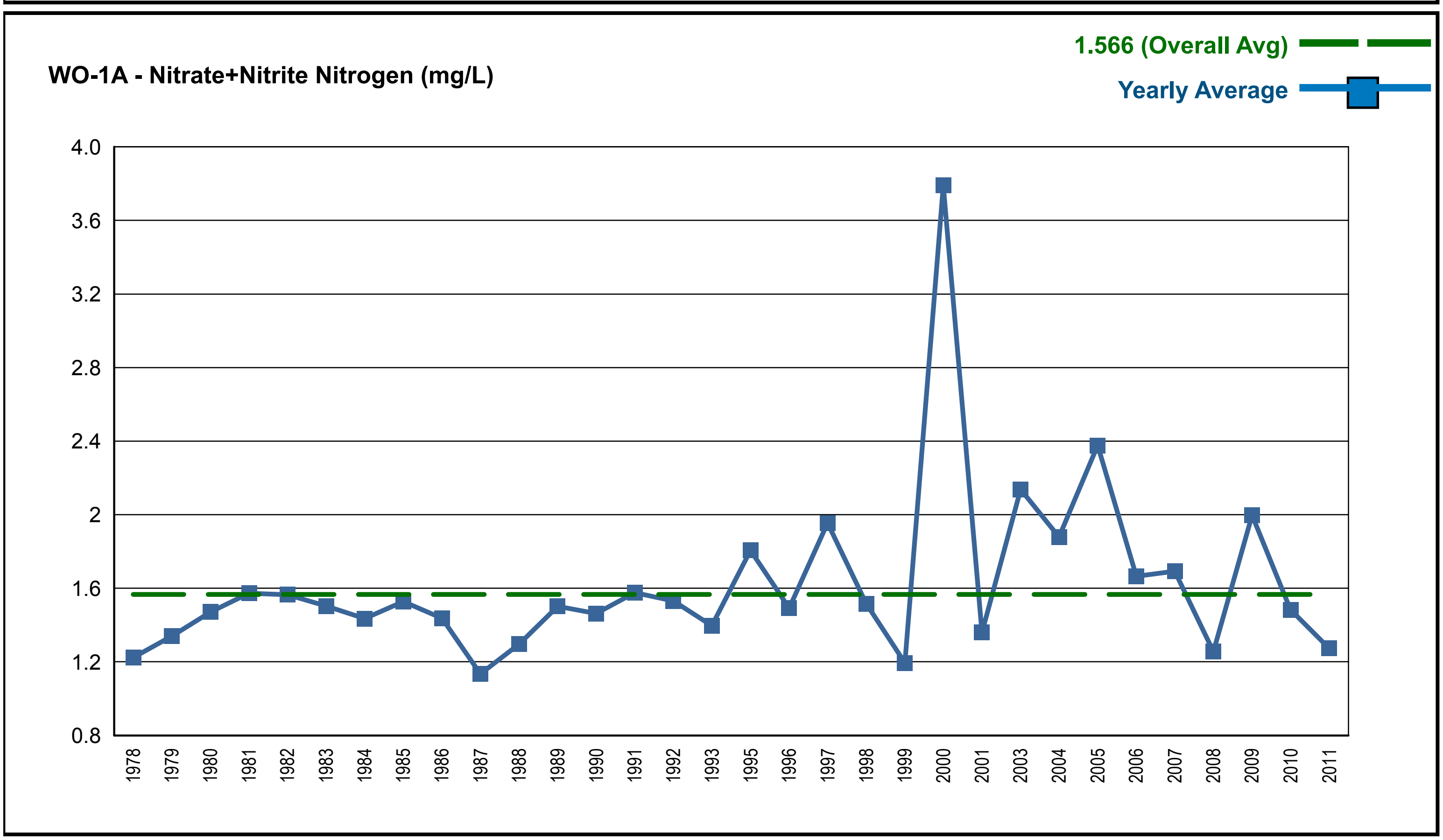
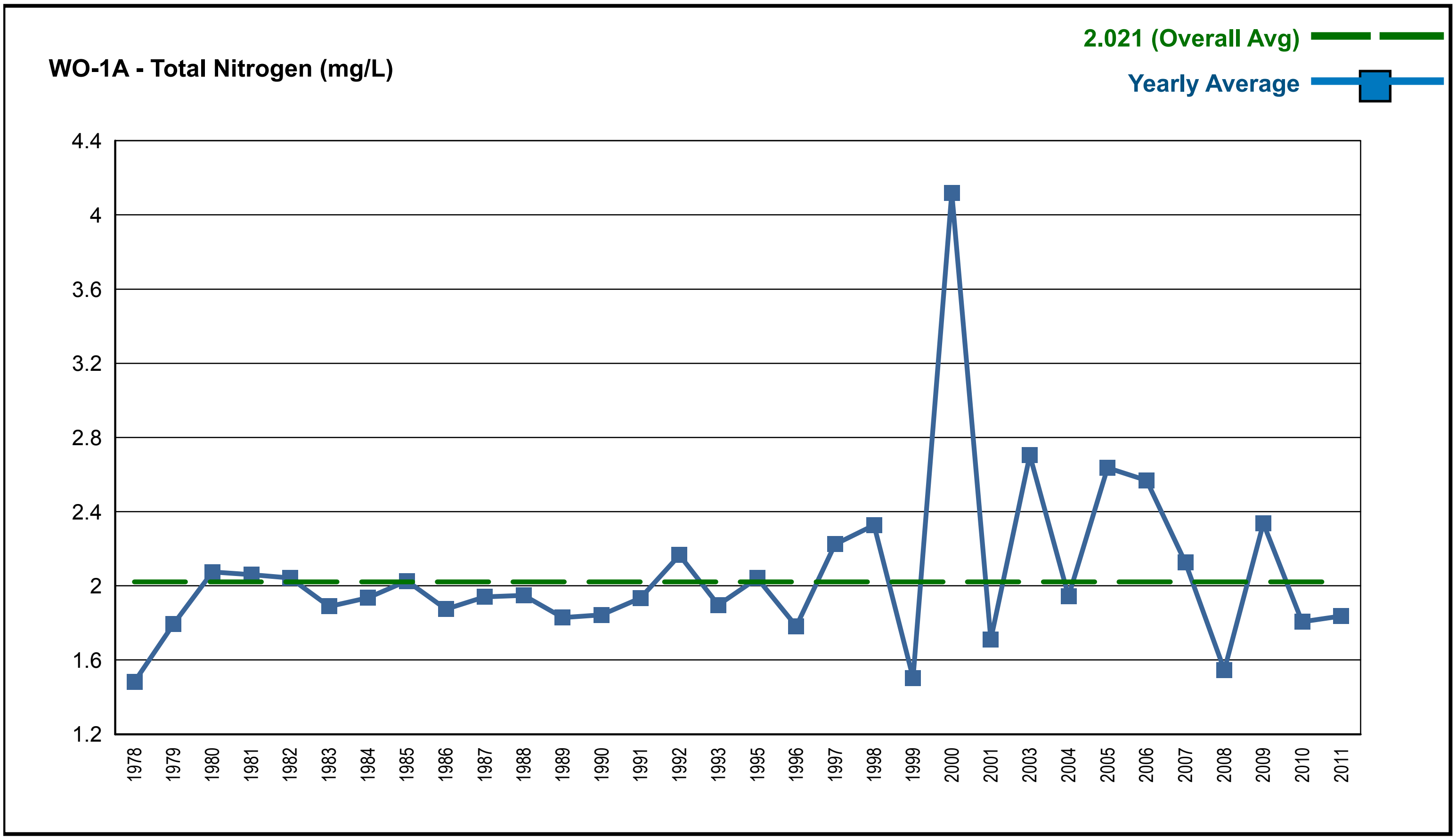
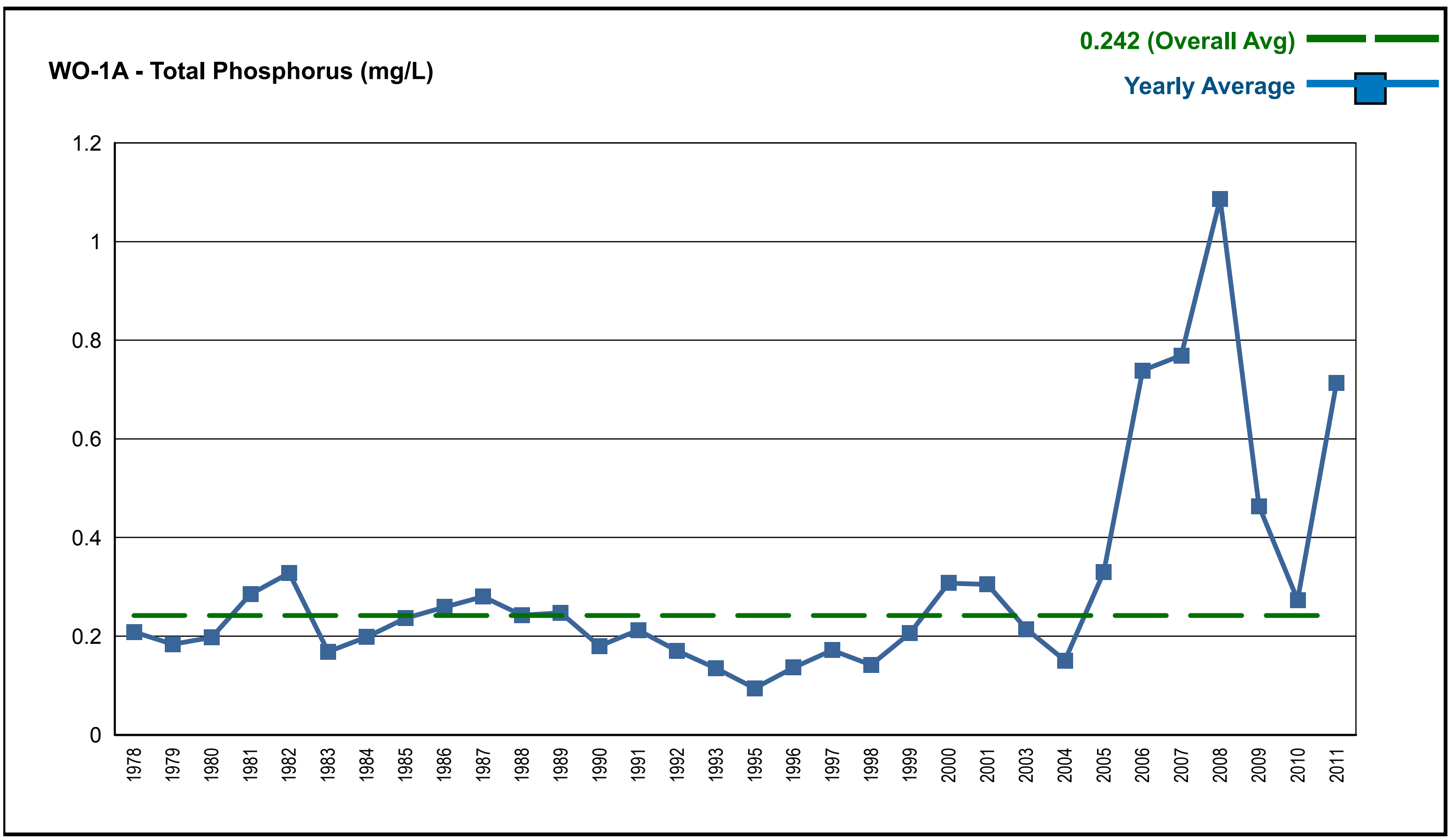




ADEM Ambient Trend Stations - Sampled 1977 - 2012





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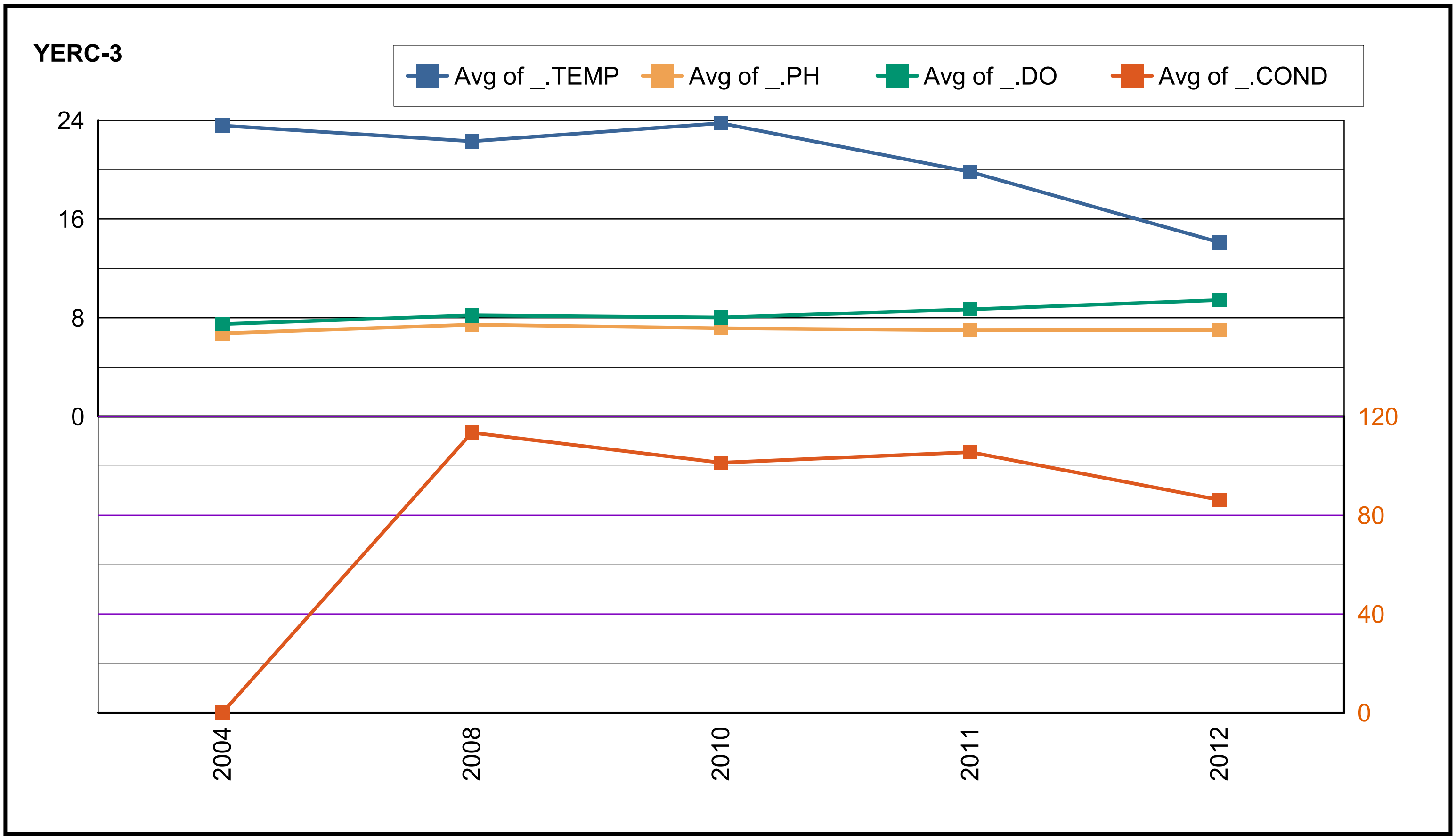
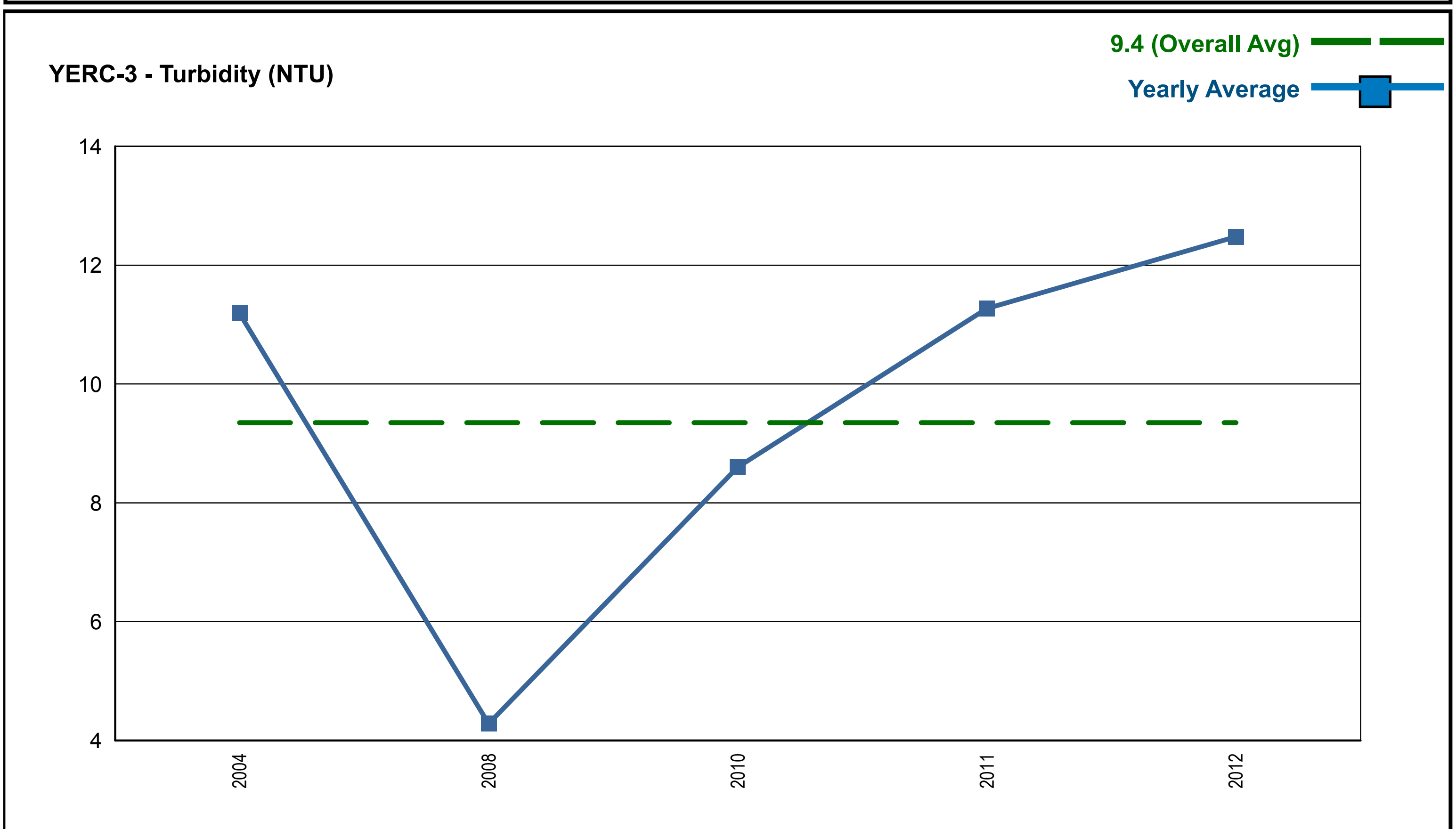
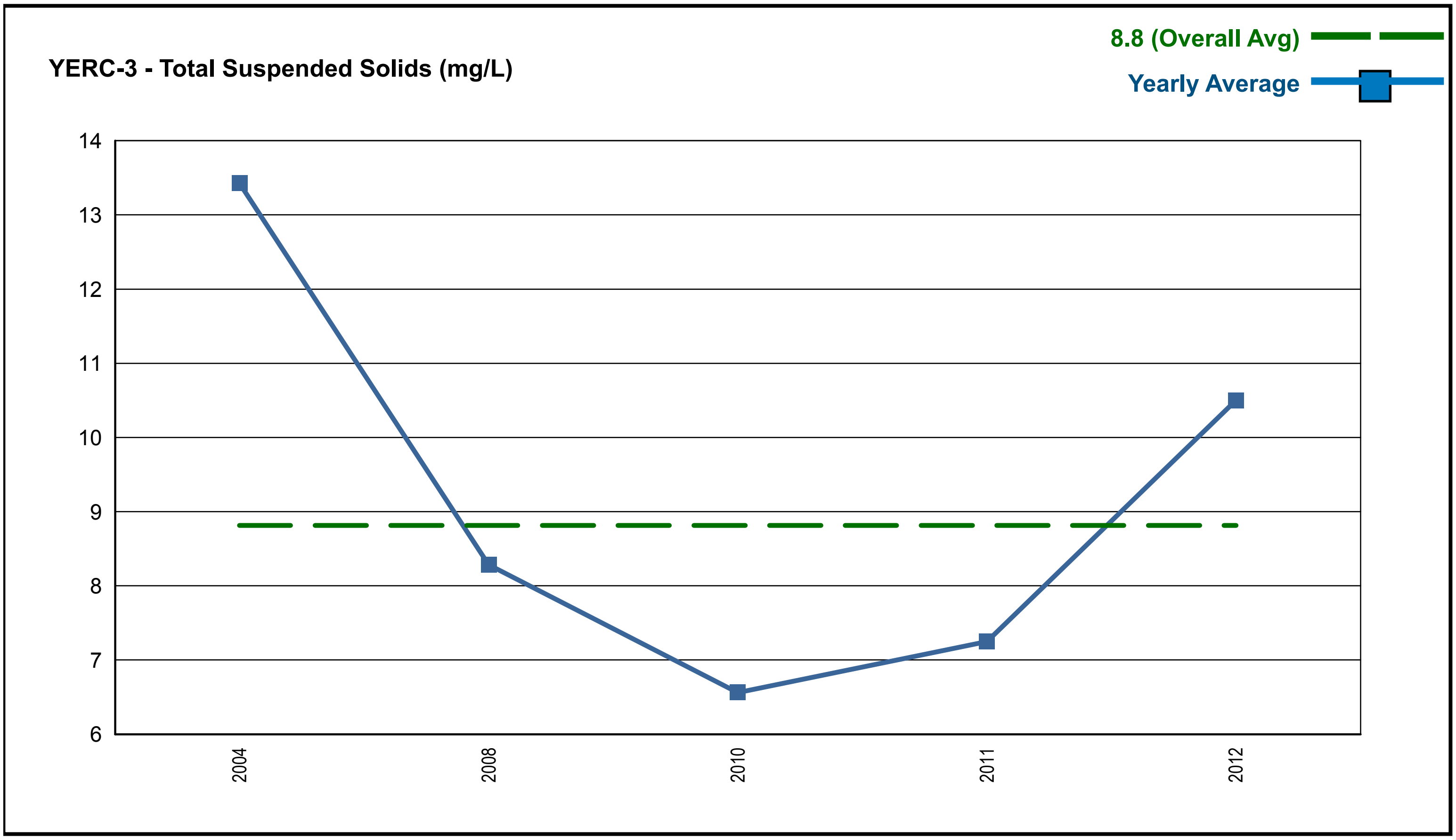
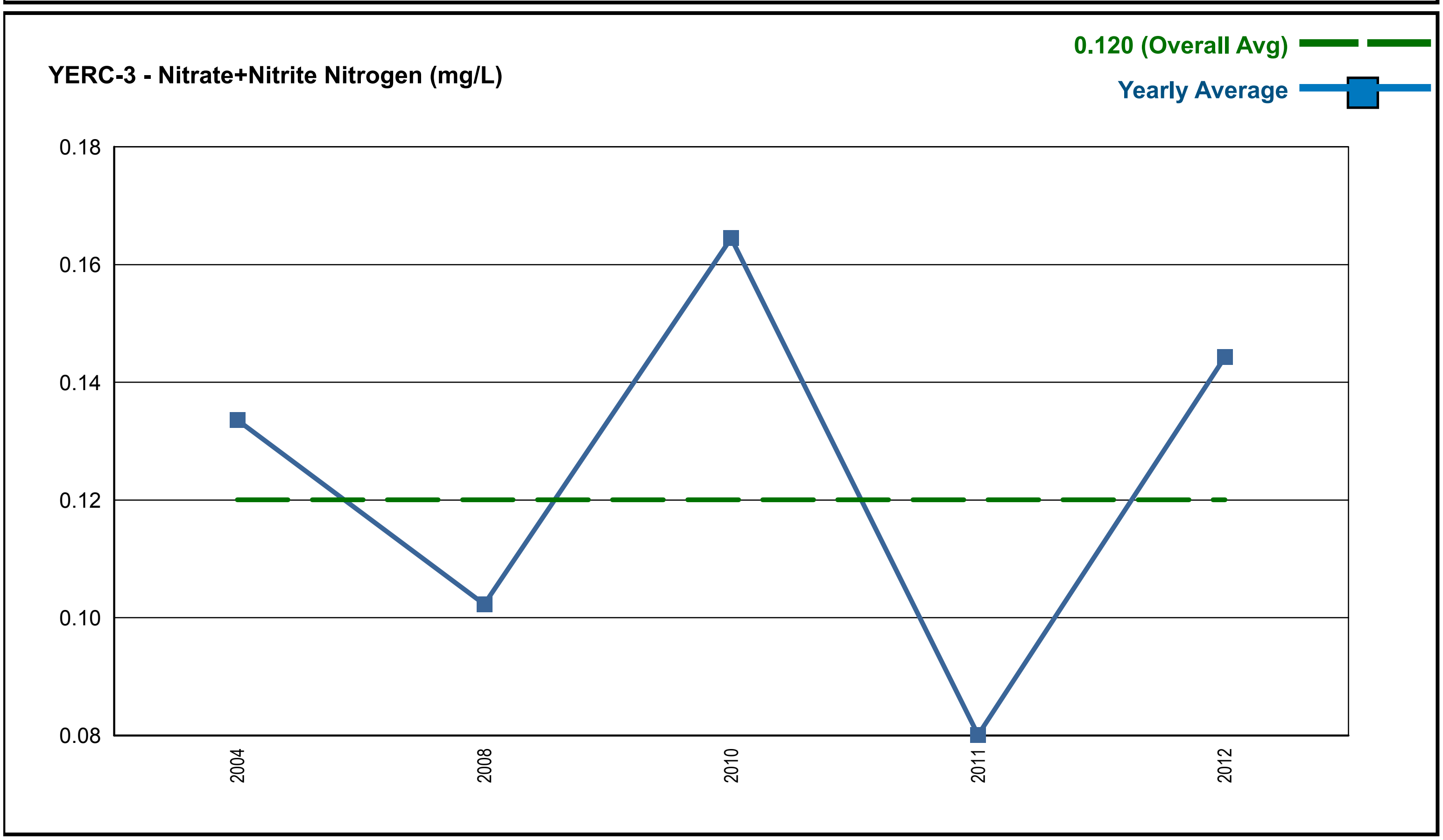




ADEM Ambient Trend Stations - Sampled 1977 - 2012





ADEM Ambient Trend Stations - Sampled 1977 - 2012