

MEA

WASTEWATER TREATMENT PLANT DESIGN AND OPERATIONS

QUALIFICATIONS/EXPERIENCE SUMMARY

MARTINAGE ENGINEERING
ASSOCIATES, INC.

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ABOUT US:

Martinage Engineering Associates, Inc. (MEA) was founded in 1991 with one company philosophy in mind, provide consistently superior service to our clients. Over the years we have expanded both our capabilities and our team to address the ever-changing complexities and challenges of projects in both the public and private sectors.

MEA has assisted towns, industries and commercial developers to evaluate and design wastewater treatment solutions, as well as troubleshoot and implement results to bring existing wastewater treatment systems into compliance. The scope of activities encompasses problem definition and engineering design as well as construction observation, start-up and facility inspection for local and state permit compliance.

By combining the resources of our experienced professional team of engineering professionals, MEA stays at the forefront of emerging technologies and maintains a track record of solid accomplishment able to undertake wastewater treatment projects with efficient, responsive and innovative service.

QUALIFICATIONS AND EXPERIENCE:

MEA offers over 40 years experience in wastewater treatment plant design, modifications, compliance monitoring and engineering inspections of Wastewater Treatment Plants (WWTPs) within the State of Massachusetts. Our team is knowledgeable of many different types of Waste Treatment Processes. Through the years we have developed an excellent relationship with the permit enforcement personnel of the MA Department of Environmental Protection (Mass DEP).

The company comprises qualified engineering professionals, certified operators with knowledge and experience in Wastewater Treatment, our Massachusetts certified laboratory and Project Manager for routine Wastewater Treatment Plant inspection, compliance monitoring and troubleshooting. MEA's experience includes studying proposed facilities in flow variations (both flow quantity and organic strength) with present and future populations (minimum and maximum) and developing preliminary or feasibility designs, reviewing these alternatives with various equipment manufacturers to obtain favorable pricing, evaluate capital and energy costs of the alternatives and make recommendations to the owner. MEA has also performed targeted improvements for many wastewater treatment facilities not meeting their present groundwater permit discharge limits. Once a treatment concept approval from the owner is received, we present the chosen method of treatment to approving authorities for approval through preparation of a detailed engineering report as well as permit level drawings and specifications.

MEA was the first to include wastewater treatment using reverse osmosis in order to

meet new effluent Total Organic Carbon (TOC) limit of less than 1 mg/l. MEA working with Mass DEP received approval for recycle of treated water for toilet flushing at a public school using membrane technology for recycle which included carbon filtration to address color removal and low dose chlorination for disinfection of recycled water. Due to site specific limiting soil conditions this technology allowed a portion of highly treated sewage effluent to be recycled back for toilet flushing water as part of our design. Recently, MEA has again modified this method for a new Middle/Senior High School on this same site to continue the recycle advantage.

Testimonials

“ Since early 2004 MEA has provided us with outstanding technical advice and engineering services related to wastewater treatment facilities on a number of important projects in Massachusetts. Don Martinage is our “go to guy” when we need solutions to complicated problems that have to be done right the first time at a reasonable cost”

“In closing, I can without hesitation recommend MEA to anyone seeking thoughtful, experienced based, practical engineering services related to civil engineering, wastewater treatment, and land surveying projects large and small. In our 38 years as Owner’s Project Managers we have worked with many engineering firms around the country-local and national-large and small- and, given our experience, we rank MEA at the top of the list both as to reliability and expertise”

Andrew Burns, LEED AP BD & C, CSI, Principal
The Burns Companies

“We have found his firm to be experienced and responsive to our needs. He has a hands on approach to problem solving. His relationships with contractors, suppliers, operators and regulators have served us well when addressing a number of complicated issues that have arisen with our treatment plant. “

James E. McLoughlin, PE
President
Benchmark Engineering Corp.

“Your construction experience with managing successful project was evident through every phase of the job. Although you always protected the owner’s interest, you also

realized that it was in the owner's interest to foster a team attitude with the contractor. This attitude allowed us to complete the work profitably in complete accordance with the contract documents. We look forward to working with you and your company on a future job"

Anthony DiGiovanni
Project Manager
Waterline Industries Corporation

" It is with pleasure and without hesitation that I would recommend Martinage Engineering Associates Inc. for any and all environmental engineering and related services"

Linda J. Marquis
As Agent and Property Manager
Andover's Colonial Drive Condominium Trust

MEET THE MEA TEAM:

Donald E. Martinage, P.E., M.S. in Sanitary Engineering, President of MEA
Registered engineer in Massachusetts, New Hampshire, Rhode Island, Connecticut, Maine and New York.

Mr. Donald Martinage's experience in advanced wastewater treatment design dates back to 1960's and has continued through the years with numerous individual designs meeting all state and governmental requirements. Based on his experience, Mr. Donald Martinage was asked by the Massachusetts Department of Environmental Protection to participate in a draft review prior to its issuance of the original Wastewater Treatment Plant Guidelines in 1988. The second edition of these guidelines (2004) is the standard of advanced wastewater treatment plant design in Massachusetts.

Mr. Bernard DeFelice, Grade IV , Compliance Manager

Mr. DeFelice's experience dates back to 1979 in the field.

John E. Martinage, Environmental Project Engineer with over 26 years of experience.

Glenn D. Sprague, Environmental Project Engineer with over 29 years of experience.

SERVICES:

Based on MEA expertise and to meet the growing need for answers to environmental problems. Our services include:

ENVIRONMENTAL ENGINEERING :

Site Investigations	Sewage Disposal System Design
Feasibility Studies	Percolation & Deep Test Pits
Soil and Groundwater Mapping	Sewage Pumping Station Design
Wastewater Flow Metering	Certified Testing Laboratory
Wastewater Sampling	Industrial Wastewater Sampling
Pollution Studies	

Wastewater Treatment Plant Design (Industrial and Domestic)
Wastewater Treatment Plant Startup and Operations Assistance
Wastewater Treatment Plant Permit Compliance Testing/Monitoring
Wastewater Treatment Plant Modifications for Nutrient Removal and Advanced Treatment
Wastewater Treatment Plant Operations and Process Trouble Shooting
NPDES Permit Sampling & Applications
MWRA Industrial Sewer User Permit Compliance Monitoring
MWRA Industrial Sewer User Permit Applications
Sampling Plan Design & Development

PROJECTS:

MEA can provide a total coordinated team approach relative to wastewater treatment permit compliance or peer review of waste treatment designs by others. The bulk of our experience for the last 41 years has been focused on wastewater treatment facilities with subsurface discharge. Our in-house wastewater laboratory, certified for PH, specific conductance measurements, operator training capability and long term operational assistance and monitoring after initial plant start-up, provide a complete and total design, permitting, and a construction observation and operation team. Our experience through the years has made us very aware that designs should not only meet the technical governmental requirements and regulations but should also be considerate of the everyday operations of the facility. We are also sensitive to balancing initial capital expenditure costs with continuing operational costs as well as providing flexibility for future operations or expansion.

Many of our present wastewater treatment projects involve evaluation and troubleshooting

facilities that do not meet their groundwater discharge permit. In addition, we provide peer review of proposed Wastewater Treatment Plants (WWTP) for owners and financial institutions.

Among the company's typical projects:

School or campus sewage disposal systems:

Gordon College (Septic System)	Wenham, MA
Bolton Elementary School	Bolton, MA
Sparrow Elementary School (Septic System)	Norwell, MA
Westford Academy (Septic System)	Westford, MA
Robinson Elementary School (Septic System)	Westford, MA
Lawrence Academy (Septic System)	Groton, MA
Brooks School (Septic System)	North Andover, MA
Hanson Middle School (Enhanced Treatment)	Hanson, MA
Hanson Indian Head School (Septic System)	Hanson MA
Summer Street and Huckleberry Schools (Septic Upgrade System)	Lynnfield, MA
Pembroke Middle School	Pembroke, MA

Advanced Wastewater Treatment Plant Projects

Martinage Engineering Associates, Inc., has the experience and technical capabilities to review alternatives, prepare preliminary and final design plans, prepare construction documents, obtain permits and oversee the construction of state of the art advanced wastewater treatment facilities.

The following is a recent typical list of completed projects representing the experience of MEA with various Wastewater Treatment technologies:

Colonial Drive Condominiums	Smith & Loveless FAST	Andover, MA
Greenbriar Condominiums	Extended Air-Denite Filter	North Reading, MA
Wilmington Realty Trust	RBC	Wilmington, MA
Hildreth Hills Condominiums	Extended Aeration-Denite Filter	Westford, MA
Fuller Pond Condominiums	RBC w/Denite Filter	Middleton, MA
Gordon Conwell Theological Seminary	S&L FAST w/Denitrification	Hamilton, MA
Nagog Woods Condominium Complex	Extended Air/Denite Filter	Acton, MA
Wells Reit LLC-550 King Street LLC	S&L FAST w/Denitrification	Littleton, MA
Masconomet Regional High School	RBC	Boxford, MA

Sutton Middle and High School and two Elementary Schools (includes recycle of water for toilet flushing)	MBR Technology	Sutton, MA
Lynnfield High School	S&L FAST w/Denitrification	Lynnfield, MA
Lynnfield Middle School	S&L FAST w/Denitrification	Lynnfield, MA
Pembroke High School	RBC w/Denitrification	Pembroke, MA
Silver Lake Regional H.S.	RBC w/Denitrification	Pembroke, MA
Triton Regional High School	S&L FAST w/Denitrification	Byfield, MA
Regency Place Condominiums	MBR Technology	Wilmington, MA
Wayland High School	MBR Technology with Reverse Osmosis	Wayland, MA
Hamilton/Wenham	Amphidrome Upgrade	Hamilton, MA
Dover Sherborn School District	Bioclere Upgrade	Dover, MA
Hingham Middle School	MBBR Upgrade	Hingham, MA
Marshfield High School	Membrane filtrations upgrade	Marshfield, MA
East Bridgewater High School	Aerobic./Anoxic/Membrane filtration	East Bridgewater, MA
North Reading Middle/High School	Aerobic./Anoxic/Membrane filtration	North Reading, MA
Whittier Regional Vocational Technical H.S.	Anoxic MBBR upgrade	Haverhill, MA
Meeting House, Stow	Bioclere/Anoxic MBBR	Stow, MA
Maplebrook Condominiums	Ultra sand Effluent/Polishing filter upgrade	Bellingham, MA
Abbott Mills, Apartment Complex	MBR Process	Westford, MA
J.P.I. Apartments	Amphidrome Upgrade	Bellingham, MA
Derby Street Shoppes	RBC	Hingham, MA

Compliance Projects

Martirage Engineering conducts monthly, quarterly and annual compliance monitoring on these systems:

Colonial Drive Condominiums	Wells Reit LLC-550 King Street LLC
Fuller Pond Condominiums	Wilmington Realty Trust
Gordon Conwell Theological Seminary	Ipswich Country Club
Greenbriar Condominiums	
Harvard Ridge Condominiums	
Hildreth Hills Condominiums	
Littleton High School	
Lynnfield High School	
Lynnfield Middle School	
Masconomet Regional High School	
Park Colony	
Triton Regional High School	

RECENT WASTEWATER TREATMENT PLANT PROJECTS

MAPLEBROOK APARTMENTS, BELLINGHAM, MA

The treatment process serving this facility was designed by others in early 2002. The treatment system had continued difficulty meeting the MA DEP Discharge Permit. By evaluation of the original design and actual sewage flow conditions in 2009, our firm provided engineering consultation to the operator relative to meeting the discharge permit. Initial modifications were made in 2009 with long term modifications designed and approved in 2010. These improvements are underway at this time.

HAMILTON-WENHAM REGIONAL SCHOOL DISTRICT

This school district WWTP originally designed by others had difficulty since going on line in early 2000. In March of 2009 our firm was retained by Hamilton Wenham Regional School District to prepare a wastewater treatment Evaluation Report. This report was completed and approved by MA DEP in July 2009. Our firm was retained in September 2009 to prepare construction level drawings and specifications for the major modifications. The DEP ACOP required construction to be completed during the summer of 2010. Construction was started in June 2010 and approved to be placed in operation August 15, 2010, meeting the DEP ACOP timetable.

WAYLAND HIGH SCHOOL

Martinage Engineering provided the design of a wastewater treatment facility capable of treating the sanitary waste stream to very restrictive discharge standards, required by Mass DEP for discharge within a Zone II protection area. The treatment process included the latest membrane filtration process, as well as reverse osmosis technology (R.O.) to meet these stringent DEP standards, facility design, construction and service.

MARSHFIELD HIGH SCHOOL

Our firm was contracted to upgrade the existing WWTP facility by the school architect in order to meet the current discharge standards for discharge a Zone II area. This upgrade is presently under construction using membrane filtration.

HINGHAM MIDDLE SCHOOL

Scope of services included evaluations of existing sewage treatment system, as well as recommendations for required treatment upgrade to meet DEP Zone II discharge requirements. Project under construction.

EAST BRIDGEWATER HIGH SCHOOL

Wastewater design which includes aerobic, anaerobic and membrane filtration to meet groundwater discharge requirement. Design included connections of adjacement, elementary school, town hall, police station and fire stations to this central WWTP. (Under construction)

NORTH READING HIGH SCHOOL

Wastewater treatment includes membrane technology, in addition to a secondary treatment to meet DEP discharge requirements. (in final permit stage)

WHITTIER REGIONAL VOCATIONAL TECHNICAL H. S.

Services include evaluation of an existing WWTP built in the 1970's, various alternatives to upgrade, along with cost effective solutions. This project involved a two phase construction program to bring the facility into compliance with present groundwater discharge standard. Phase I completed, Phase II is in construction.

J.P.I. APARTMENTS, BELLINGHAM, MA (AMPHIDROME)

This system is a dual process train within a Zone II groundwater recharge area which was designed by others. MEA was retained by A.A. Burns & Associates who represented the buyer of this project. We were asked to review the design and construction of this 54,000 gpd system. We found deficiencies in the design and construction which caused difficulties meeting the strict discharge permit. We recommended a sizable dollar escrow to be set aside from the sale in order to design and construct certain modifications. These modifications have been designed and constructed. Operation of the Wastewater Treatment plant (WWTP) with the modifications provides control of the treatment process as well as the ability to meet the strict DEP Discharge Permit.

