

# Martha's Vineyard Airport Water Quality Reports

## Drinking Water Testing

Martha's Vineyard Airport uses State Certified Laboratories to perform our water testing per DEP sampling requirements. We have several laboratories that perform all of our water and wastewater tests including volatile organic compound testing. Laboratory results and Chain of Custody are available upon request.

## Water Quality Tables

The following tables indicate the results of any detectable Coliforms from our monthly bacteriological testing along with our Lead and Copper sampling results. The Oak Bluffs Water Department does many more tests as our water supplier which is included with their Water Quality Report.

### 2009

Lead & Copper	Date Collected	90 <sup>th</sup> Percentile of Sample	Action Level	MCLG	Violation	Possible Source of Contamination
Lead (ppb)	7/21/2009	3.7	15	0	No	Corrosion of household plumbing systems
Copper (ppm)	7/21/2009	0.077	1.300	1.3	No	Corrosion of household plumbing systems

**ppb:** parts per billion

**ppm:** parts per million

**ND:** non-detected

**AL:** action level is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

**Lead and Copper 90<sup>th</sup> Percentile:** Out of ten samples, nine were at or below this level.

### 2010

Microbial Results	Highest # of Positive Samples in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal Coliform-E. coli	0	*	0	No	Human and animal Fecal waste

\*Compliance with the Fecal Coliform/E. coli MCL is determined upon additional testing.

**MCL: Maximum Contaminant Level** is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG: Maximum Contaminant Level Goal** is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

## Water Quality Tables 2011

Microbial Results	Highest # of Positive Samples in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal Coliform-E. coli	0	*	0	No	Human and animal Fecal waste

\*Compliance with the Fecal Coliform/E-coli MCL is determined upon additional testing.

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## Water Quality Tables

### 2012

Microbial Results	Highest # of Positive Samples in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal Coliform-E. coli	0	*	0	No	Human and animal Fecal waste

\*Compliance with the Fecal Coliform/E-coli MCL is determined upon additional testing.

**MCL: Maximum Contaminant Level** is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG: Maximum Contaminant Level Goal** is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

### 2012

Lead & Copper	Date Collected	90 <sup>th</sup> Percentile of Sample	Action Level	MCLG	Violation	Possible Source of Contamination
Lead (ppb)	7/24/2012	9	15	0	No	Corrosion of household plumbing systems
Copper (ppm)	7/24/2012	0.074	1.300	1.3	No	Corrosion of household plumbing systems

**ppb:** parts per billion

**ppm:** parts per million

**ND:** non-detected

**AL:** action level is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

**Lead and Copper 90<sup>th</sup> Percentile:** Out of ten samples, nine were at or below this level.

**Next sampling for lead and copper due 2015**

# Water Quality Tables

## 2013

Microbial Results	Highest # of Positive Samples in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal Coliform-E. coli	0	*	0	No	Human and animal Fecal waste

\*Compliance with the Fecal Coliform/E-coli MCL is determined upon additional testing.

**MCL: Maximum Contaminant Level** is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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**Although it is believed that there is no asbestos drinking water distribution piping in our system. The Martha's Vineyard Water Department tests the drinking water to confirm this.**

### Determination of Asbestos Structures >10um in Drinking Water Performed by the 100.2 Method (EPA 600/R-94/134)

## 2013

Location	Date Collected	Asbestos Types	Fibers Detected	Analytical Sensitivity MFL	Violation	Possible Source of Contamination
At Start of Distribution System	4/25/2013	None Detected	ND	0.19	No	Asbestos water distribution pipes
At End of Distribution System	4/25/2013	None Detected	ND	0.19	No	Asbestos water distribution pipes

MFL: million fibers per liter  
ND: non-detected

Next sampling for asbestos due 2022

# Water Quality Tables

## 2014

Microbial Results	Highest # of Positive Samples in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal Coliform-E. coli	0	*	0	No	Human and animal Fecal waste

\*Compliance with the Fecal Coliform/E-coli MCL is determined upon additional testing.

**MCL: Maximum Contaminant Level** is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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## Water Quality Tables

### 2015

Microbial Results	Highest # of Positive Samples in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal Coliform-E. coli	0	*	0	No	Human and animal Fecal waste

\*Compliance with the Fecal Coliform/E-coli MCL is determined upon additional testing.

**MCL: Maximum Contaminant Level** is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG: Maximum Contaminant Level Goal** is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

### 2015

Lead & Copper	Date Collected	90 <sup>th</sup> Percentile of Sample	Action Level	MCLG	Violation	Possible Source of Contamination
Lead (ppb)	9/22/2015	0	15	0	No	Corrosion of household plumbing systems
Copper (ppm)	9/22/2015	0.190	1.300	1.3	No	Corrosion of household plumbing systems

**ppb:** parts per billion

**ppm:** parts per million

**ND:** non-detected

**AL:** action level is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

**Lead and Copper 90<sup>th</sup> Percentile:** Out of ten samples, nine were at or below this level.

**Next sampling for lead and copper due 2018**

# Water Quality Tables

## 2016

Microbial Results	Highest # of Positive Samples in a Month	MCL	MCLG	Violation	Possible Source of Contamination
Total Coliform	0	1	0	No	Naturally present in the environment
Fecal Coliform-E. coli	0	*	0	No	Human and animal Fecal waste

\*Compliance with the Fecal Coliform/E-coli MCL is determined upon additional testing.

**MCL: Maximum Contaminant Level** is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG: Maximum Contaminant Level Goal** is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

## Wastewater Department Overview

The State Department of Environmental Protection's Bureau of Resource Protection oversees the wastewater facility and its operation.

The State DEP issued a Ground Water Discharge Permit to the Martha's Vineyard Airport to operate the WWTF with conditions that the airport must follow. A copy of the seven page permit is distributed to the chief operator, the airport commission, the West Tisbury Board of Health and the Boston DEP.

The Martha's Vineyard Wastewater Treatment Facility has been in operation since the early 1940's. It was built to serve the Naval Air Station that was created during the war.

The WWTF is located on approximately five acres of fenced in land located in West Tisbury on the southwest corner of the airport.

The WWTF originally consisted of a settling tank. The settling tank water flowed to a dosing tank before being discharged underground.

Due to concerns about the islands sole source aquifer, the WWTF was upgraded to a small advanced facility. The WWTF upgrade was finished and went online in June of 1992. The new facility consists of a process, utility, office and storage rooms along with a laboratory and restroom.

The process room contains a single four stage aerobic Rotating Biological Contactor (with space for a second RBC), dual anoxic RBCs, two secondary clarifiers and dual sand filters followed by ultraviolet disinfection before discharge to the new surface rapid infiltration beds.

Outside the facility, the following units have been added: a coarse bar rack, a primary settling tank (or clarifier), flow equalization tank with two pumps, a sludge holding tank and the original dosing tank that discharges to the original discharge beds that can be used if needed.

Excess sludge is removed from the holding tank by tanker and brought off-island for further treatment.

The facility is connected through a series of sewer pipes ranging in size from four inch to twelve inch gravity as well as a four inch force main from the business park pump station. There are approximately two miles of main sewer lines.

WWTF specifications:

Combined Grade 4 Facility as of May 2017, Previously Grade 5

Flow capacity for the current Phase 1 is 37,000 gallons per day, for Phase 2 it is 61,000 GPD with the addition of the second aerobic RBC.

Staff is three fulltime employees, consisting of one chief operator, one operator, and one operator in training.



## Wastewater Test Results Summary

### Influent (incoming) Wastewater is tested for the following:

**pH** (acidity)

**Total Suspended Solids**

**Biological Oxygen Demand** (strength of wastewater)

**Oil and Grease** (coats piping, hard to break down)

**Ammonia as Nitrogen** (eutrophication in ponds)

**Volatile Organic Compounds** (can be vaporized in air or dissolved in water, causes cancer and other health problems)

### Effluent (outgoing) Wastewater is tested or measured for the following:

**Flow** (gallons per day must stay within limits for the WWTF design flows)

**pH**

**Total Nitrogen** (includes ammonia, nitrites and nitrates; causes eutrophication)

**Total Suspended Solids**

**Total Solids**

**Oil and Grease**

**Biological Oxygen Demand** (oxygen used by organisms to breakdown waste)

**Nitrate Nitrogen**

**Fecal Coliform**

**Total Phosphorus** (eutrophication)

**Orthophosphate** (eutrophication)

**Volatile Organic Compounds**

### Effluent Monitoring Wells are tested or measured for the following:

**Static water level**

**Specific Conductance** (amount of solids and salts)

**pH**

**Total Nitrogen**

**Nitrate as Nitrogen**

**Total Phosphorus**

**Orthophosphate**

**Volatile Organic Compounds**

The wastewater department test results have consistently been within the parameters required by the State.

The efficiency of the WWTF for BOD and TSS has been in the high 90%. There have been no violations or notice of non-compliances issued to this department for many years.

## **How Your Money Is Spent For Wastewater Service** (Just the Highlights)

On a daily basis we check the process for alarms and run conditions, check emergency generator status, change 24 hour flow chart, check UV operation, take influent wastewater and effluent wastewater pH and temperature readings, add lime to primary tank for alkalinity control, check Business Park Pump Station status, clean influent coarse bar rack, check equalization tank for proper water level, drain down sludge lines, perform laboratory tests for process control such as nitrogen, check methanol level in storage drums and dosing pump operation.

On a weekly basis we clean the UV light assembly, transition boxes and effluent flume. The flume is used in conjunction with flow measuring equipment that is calibrated annually. Weekly laboratory tests that we perform are for total and/or fecal coliform, alkalinity and ammonia. Flush the emergency shower and eye wash station, maintenance on equipment, order supplies and materials, pump primary tank sludge to sludge holding tank for further dewatering. Decant excess water from sludge holding tank back to the primary tank to save on shipping cost with a thicker sludge. The Business Park Pump Station is checked for proper operation of wet well pumps, wet well water level, propane tank level and status of emergency generator.

As needed the grass is cut, supplies are checked, maintenance on truck, building cleaned, trash disposed, paperwork filed, building or equipment painted and service scheduled.

On a monthly basis we exchange two of the discharge beds that are in service with the two that were off-line. This introduces air into the beds to promote better filtration within the sand.

Twice a month we collect influent and effluent wastewater samples and send them out to a State certified laboratory to test for contaminants in the wastewater that must meet our Discharge Permit. These test results and process data that we collect daily are entered into the computer at the WWTF and reported to the State DEP, Airport Management as requested, and the West Tisbury Board of Health.

Quarterly we collect groundwater samples from the effluent discharge monitoring wells located up-gradient and down-gradient of the discharge beds. Volatile Organic Compounds (gasoline, cleaning solvents, etc.) sampling is also done. These samples are sent out and the test results reported to above agencies.

Once a year all the laboratory equipment is tested and calibrated. A sludge sample is taken and sent out for analysis.

The State also has requirements that we take educational courses to stay current with technology and practices.

Besides providing safe water that is disposed of safely, we (the airport) strive to do it in a way that is as cost effective as possible.

Any questions please feel free to contact us at 508-693-3783

The Facilities Department was added to the Water and Wastewater Departments in November 2016 when Jeremy Osborn and Christina Colarusso were hired to join Mike Eldridge. The departments are responsible for maintaining the Airport's water distribution system, drinking water sampling, maintaining the airport's wastewater collection system and treatment plant, wastewater sampling and testing, and maintaining and overseeing mechanical systems in the airport terminal, General Aviation, and other ancillary buildings.