SCAVENGER 2000
Decontamination Vessel

Report
Scavenger2000 Operations Report

Prepared By
Water Management Technologies, Inc.
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954-668-6937
(March 8th, 2010)

Prepared For
City of Miami Mayor's Office
The City of Miami Commissioners Offices
City of Miami Manager's Office
City of Miami Public Works Director
Miami-Dade County Mayor's Office
Miami-Dade County Commissioners Offices
Miami River Commission
Congresswoman Ileana Ros-Lehtinen

It has been a pleasure for us to clean and help rejuvenate the City of Miami Waterways and Miami River for the past several years. Our objective is to help clean the waters of the world.

These are the results for the operation of the Scavenger2000 Decontamination Vessel performed on the City of Miami and Miami-Dade County waterways for the period of last five years. The City of Miami has contracted $200,000.00 per fiscal year for the Scavenger2000 Decontamination Vessel Services to operate 20 hours per week (reduced to $176,000.00 in the fiscal year 2009-2010), and some additional funds for more service hours are periodically provided from Miami-Dade County and other grants when available. In addition to these funds, a contribution of 5 or more free service hours per week is made to the City of Miami and Miami-Dade County from the Scavenger2000 owners at no cost to the City of Miami or Miami-Dade County. This contribution amounts to over $250,000 value over the past 5 years.

Please see below a general report of amounts of debris collected, injected oxygen, and gallons of water disinfected through our patented Oxy-Plus system equipped Scavenger2000.

An average of 48,572 of cubic feet of trash have been swept from the waters under the jurisdiction of the City of Miami and Miami-Dade County over the last five years. By removing this surface debris, we reduce contaminants in the waterways; eliminate potential navigational collisions with normal boating traffic and prevent debris from washing up on our shorelines. The Scavenger2000 removes debris as small as bottle caps to large debris, such as 55 gallon drums, large dock pilings, wooden pallets, mattresses, large wood boards, and such. Please see attached pictures.

Mother Nature provides her own set of trash items. Some of these include coconuts; palm fronds, tree limbs, small branches, leaves and sea grass which are all collected on a regular basis. Very strong foul odors are emitted from the floatable debris where bacteria and other contaminants lodge themselves. The Scavenger2000's ability to remove floatable debris and trash from the surface of the water allows nature's ability to oxygenate the water.

Approximately 1-2% of our trash includes carcasses of dogs, cats, and a few small fish but mostly chickens, and bags of rotting meat from local fishing fleets.

We are also working closely with USCG when we find navigational hazards too large for collection. We have found that the Coast Guard has very little resources to help discard any navigational hazard, therefore leaving the task generally to the Scavenger2000. We also report directly to the Department of Homeland Security in order to report any suspicious activities under the territory of the City of Miami and Miami-Dade County. Please attached letter from Homeland Security Department.

The Scavenger2000 has injected an average of 635 millions of liters of oxygen into the area waters we have been working in. Attached you will find a brief description of the benefits of oxygenation. Please find attached report for Dissolved Oxygen Levels before and after performance of the Scavenger2000.

The Scavenger2000 has treated an average of 3,225 millions of gallons of water that were disinfected through our Oxy-Plus decontamination system at a rate of **10 thousand**

gallons of water per minute oxidizing bacteria, viruses, algae, and some nutrients. Please see attached rate of efficiency of the Oxy-Plus System.

The Department of Environmental Resource Management (DERM) monitors the City of Miami and Miami-Dade water quality by performing monthly e-coli and turbidity samples which were taken at several set testing locations for the last 10 years. The Scavenger2000 originally started its services on the Miami River in 2003. Since the Implementation of the services of the scavenger2000 DERM's testing results indicate a noticeable decrease in e-coli and turbidity concentration. Please see attached report from DERM.

In the case of Turbidity tracking also provided by DERM, positive results were immediately noticeable. Please refer to the attached Turbidity tracking report.

Because of the City of Miami's fiscal budget and yearly maintenance schedule of the Scavenger2000 taking place in the month of September of every year, services were not rendered over the years in the month of September. DERM's water quality testing results indicate increases in fecal coliform and turbidity in the months of September over the last 5 years. When the Scavenger2000 services resume in October the water Quality results indicate improvements in water quality.

Our company has conducted research on obtaining reports on the Biological Oxygen Demand (BOD) for the City of Miami and Miami-Dade County. According to a representative from DERM, the department does not test for BOD, therefore, no records were found. In addition, the tests for BOD are not cost effective, and therefore not a test performed by our company.

Please see attached letter from FDEP to the City of Miami stating, "The department has determined that the City has met all of the requirements of this condition with the implementation of the Scavenger2000 pollution boat and is considered to be in compliance with this section of the consent to order".

The Scavenger's multi-purpose capabilities are a proven cost-effective addition to the continued effort of the City of Miami to keep the waterways both clean and safe.

We have received compliments and gratitude from the following businesses along the City of Miami Waterways including; Hurricane Cove Marina, Merrill-Stevens, Bassas Cargo, Fennigan's River, Garcia's, Bayside Marina, Davis Canal residents, Ademar canal residents, Grove Key Marina, just to name a few.

We are proud to be part of the City of Miami and Miami-Dade County's efforts in combating water pollution.

We have hosted many delegations from around the world to witness the Scavenger2000 in action in our waterways, and all praise the City of Miami and Miami-Dade County for the conscientiousness and foresight to keep our waterways clean.

Please see enclosed just a few pictures of the Scavenger2000 performing its duties on the City of Miami and Miami-Dade County waterways… A picture is worth a thousand

words… Enjoy your accomplishments…

If you would like to see additional information or pictures, or should you have any questions, please do not hesitate to contact me.

Sincerely,

Sophie Mastriano
President
WATER MANAGEMENT TECHNOLOGIES, Inc.
sophie@scavenger2000.com

Scavenger2000's Technology

THE SYSTEM:

When ozone and UV light is added to the aeration/oxygenation process of the Scavenger2000 water decontamination and regeneration vessel, several unique abilities result in being greater than either of the processes applied in solo. Rather than having simply an aeration stream, a very powerful and yet, environmentally safe, disinfection process is carried out in the waters where the Scavenger2000 operates.

Ozone and UV Light have been applied with great benefit in the municipal sewer treatment process worldwide, because of its ability to disinfect water without leaving any harmful by-products as, does chlorine. In fact, ozone was found through laboratory examination to be over 100 times as powerful as chlorine in destroying E-Coli bacteria.

There are no other vessels in the world today that have all the capabilities of the Scavenger2000 water decontamination and regeneration vessel.

BENEFITS OF COMBINED AERATION, OXYGENATION and OZONE IN WATER

Physical:

Reduces turbidity: Ozone alters the surface charge which allows suspended particles to coagulate, they then are removed by sedimentation, filtration or flotation.

Odor removal: Organic and inorganic compounds containing sulfur and nitrogen are oxidized to simple odor free compounds.

Color removal: Ozone treatment oxidizes double bonds to single bonds which are simple compounds, generally clear. Tests at Nova University show that water clarity improved by more than 50%.

Algae control: Algae is a natural odor generator. Ozone indirectly kills algae by oxidizing the organic chemicals and some nutrients that algae feeds on.

Red Tides: Ozone oxidizes the toxic algae that cause red tides.

CHEMICAL:

Pesticide removal: Ozone effectively oxidizes most pesticides, insecticides, herbicides, and fungicides that get washed into the watershed.

Increases DOC: (Dissolved Oxygen Content). The life force of the water is oxygen. Ozone is a triatomic oxygen that becomes oxygen anywhere from a few seconds to a few minutes. This increases the oxygen in the water.

Sheen: Ozone oxidizes some of the oil sheen in the water.

BIOLOGICAL:

Kills pathogens: Ozone is a powerful defense against the microbial contamination of water. Cryptosporidium, a parasite, is one of many dangerous micro-organisms that ozone will kill. It also kills pathogens such as physteria.

Kills fecal coliform: Often in storm water run off, there are sewage spills or agricultural waste going directly into the waterways. Ozone can be a defense mechanism against such pollution. Tests effectuated at Nova University have demonstrated that Fecal Coliform decreased 95% with the use of oxygen and ozone combined..

Inactivates virus: A virus cannot survive when exposed to the ozone molecules. Tests have proven that viruses of all kinds are inactivated when mixed with ozone. Waterborne virus is a serious concern in our waterways.'

Ozone is safe: Chlorine and Ozone are disinfectants, but unlike chlorine, ozone is non-toxic. Ozone also inactivates viruses in water whereas chlorine ineffective. The ***Scavenger2OOO*** uses special techniques to generate ozone and oxygen on board then drives the ozone into the water. Depending on conditions, the ozone life expectancy can vary from a few seconds to a few minutes where upon ozone goes back into its normal oxygen state.

The amount of dissolved ozone is so minute it only affects micro-biological pollutants. The natural plant life is not affected due to the short contact and small concentration of ozone. Ozone

converts into oxygen in seconds. This procedure supports chemical oxygen demand (COD) removal, cracks undegradable substances so that they become digestible to bacteria, and supports the aerobic oxidation of toxic nitrogen compounds, allowing extremely high fish loads while at the same time maintaining excellent water quality.

The Scavenger2000

Scavenger2000 in full decontamination mode

Navigational hazard and typical trash collected

55 gallon drum and other trash

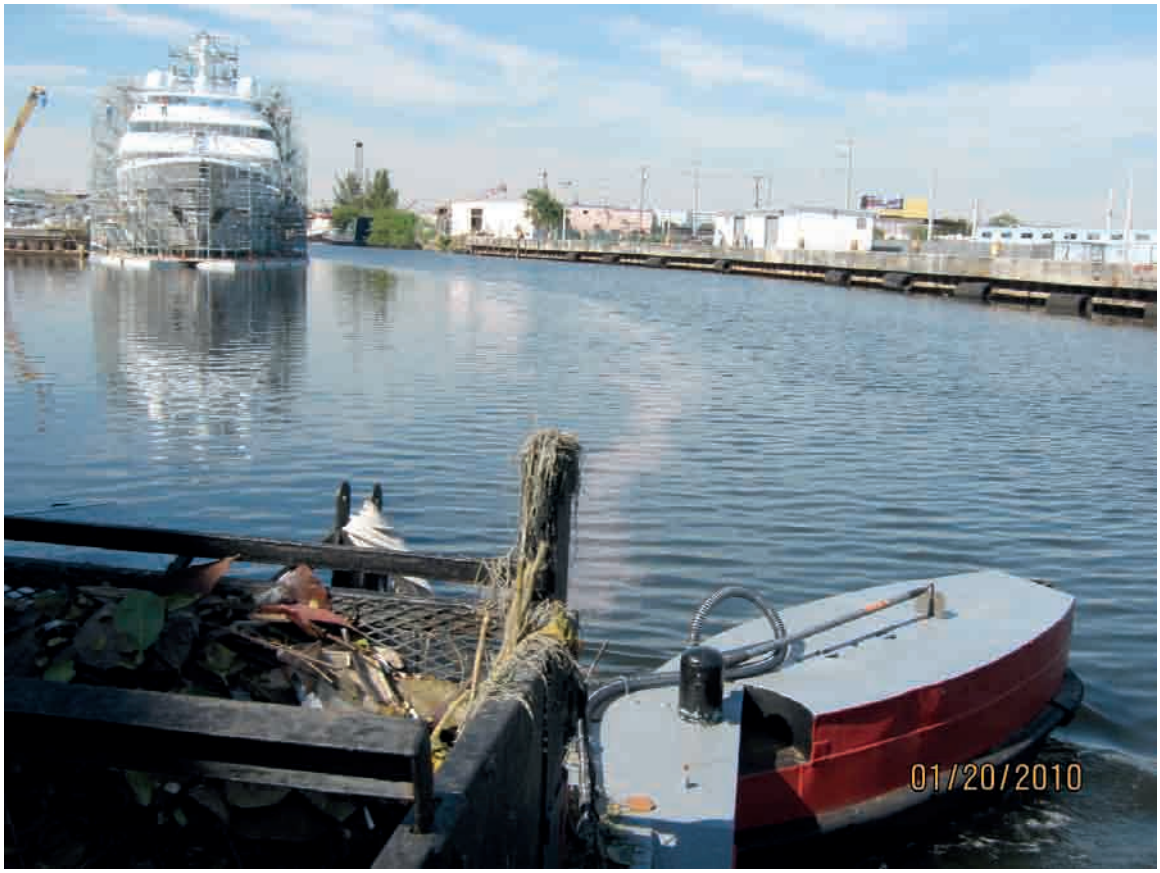
Long beam floating on surface water removed by Scavenger and hauled away

Typical trash collected on a daily basis

Another Hazard floating

Scavenger2000 normal operation removing debris

Various surface debris collected



Sheen coming from vessel refit oxidized by the Scavenger2000

Debris collected

Scavenger2000 decontaminating and oxygenating

Scavenger full of debris

Typical day for debris collecting

Many tires end up in our waterways, we pick them up.

Scavenger2000 removing debris

Shipping pallets end up in our waterways. We pick them up

Typical day of work for the Scavenger2000

The Scavenger2000 really recovers a little bit of everything!

WATER MANAGEMENT TECHONOLOGIES

SCAVENGER 2000 DECONTAMINATION REPORT

On May 21, 2009, Water Management Technologies conducted a test to determine the effectiveness of the onboard OXYPLUS DECONTAMINATION SYSTEM. These tests took place at the Riverside Center, located at the junction of SW 2nd Avenue and the Miami River; Miami, Florida. The system was activated for one hour of operation: an explanation of the conditions and results are included in this report.

The tests were conducted under the following conditions:

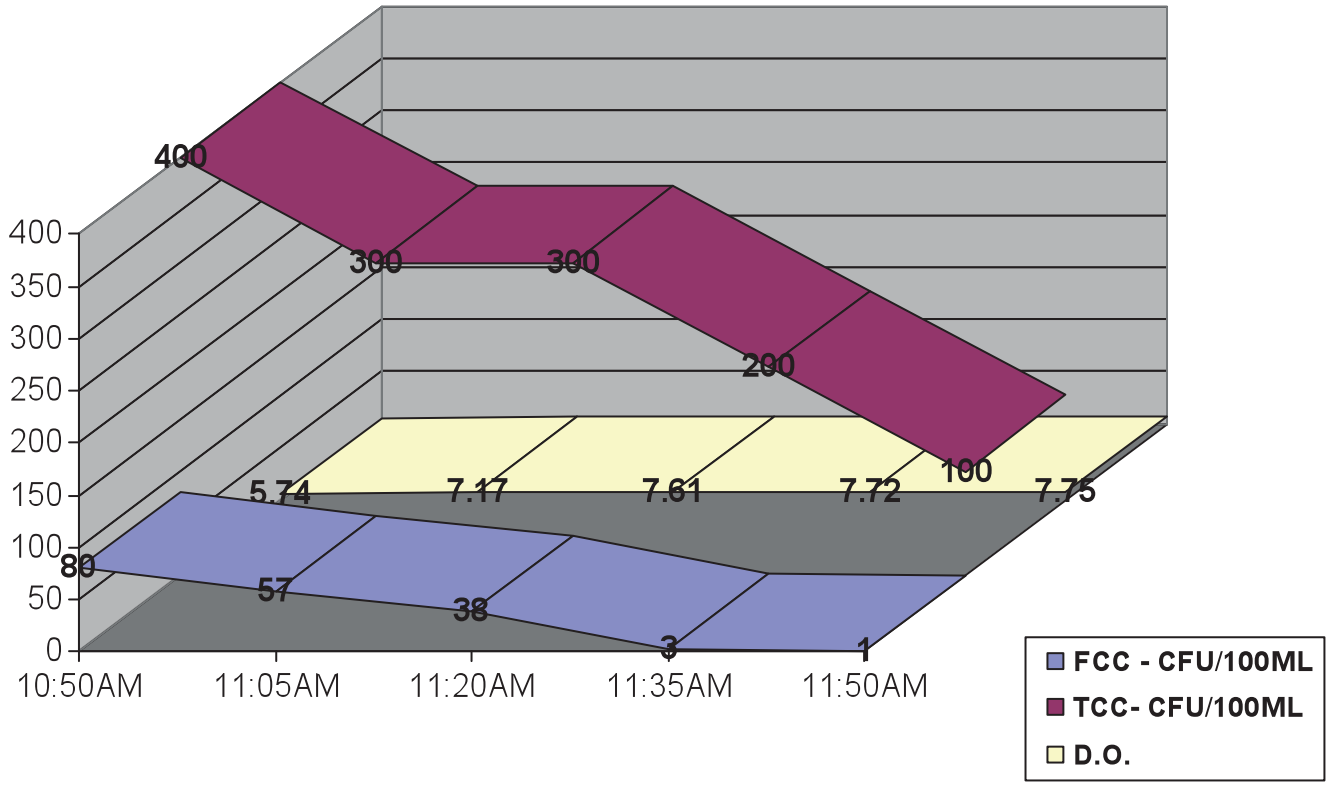
Slack Water
High Tide
Sunny skies
Wind – 4 to 5 MPH / ENE
Air temp. 92.2º
Water temp. 86.7º

At 10:50PM a test sample of water was taken from the starboard bow door; a dissolved oxygen reading was also taken. At 10:50PM the Scavenger was placed in the working mode – main engine 1,200 RPMs and Oxy-Plus at 2,300 RPMs. The vessel was held in place with 4 mooring lines. Additional samples were taken at 15 minute intervals.

At the conclusion of the tests all samples were immediately taken to **MICRIM LABS INC.**: the samples were analyzed for fecal coli form and total coli form content.

CONCLUSION

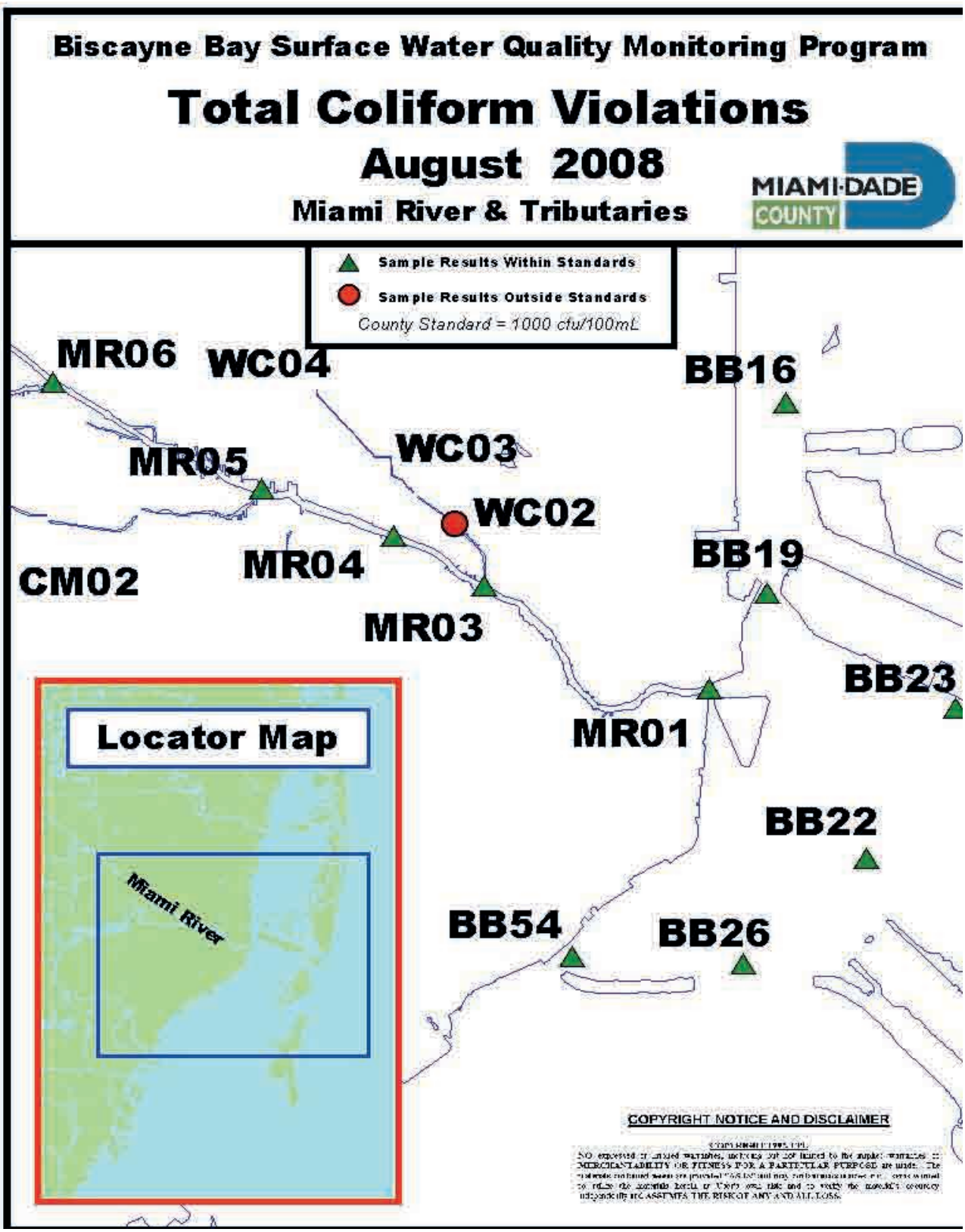
The results showed that after one hour of operation the fecal coli form count was decreased by 99%, the total coli form count reduced by 75% and the dissolved oxygen levels were increased by 32%. The results are expressed in the following graph:



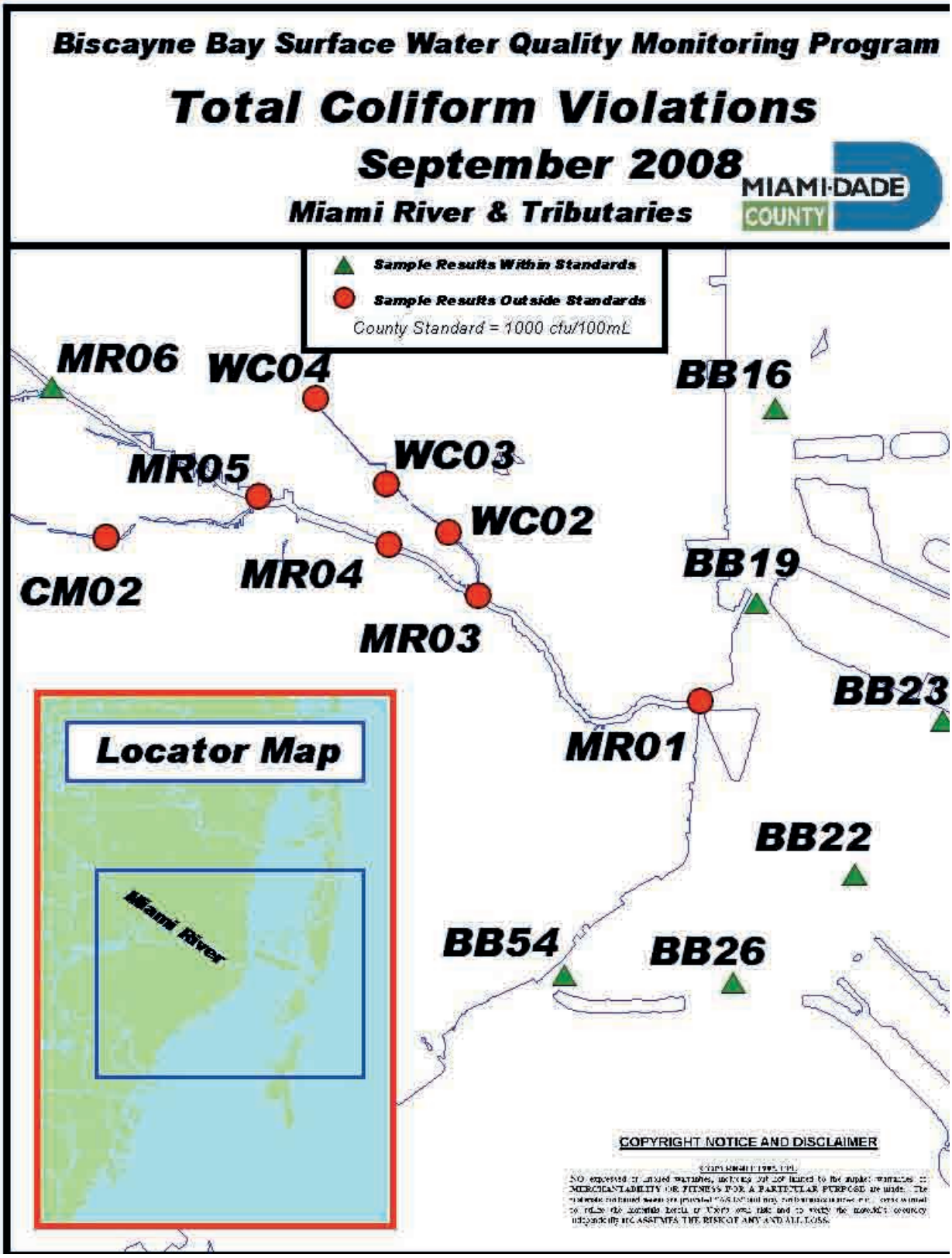
Notes:

1. The dissolved oxygen analysis was performed by the on-board testing equipment.
2. MICRIM LABS INC. 800 NE 62nd St. Suite 202, Ft. Lauderdale, FL 33334
   Ph. 954-776-9479, 800-330-4376, Fax 954-776-9481

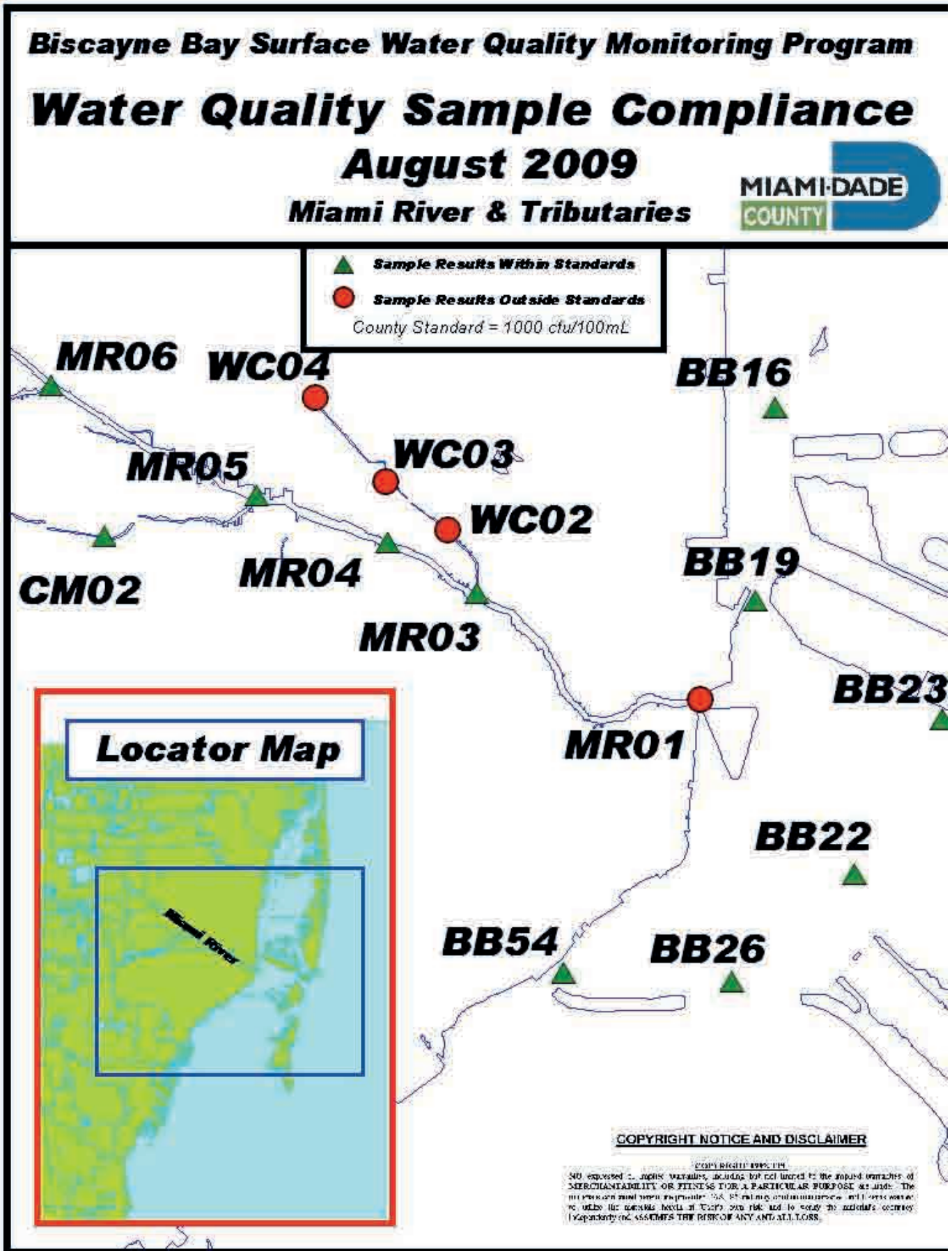
SAMPLE	TIME OF DAY	DISSOLVED OXYGEN	TOTAL FECAL COLIFORM	TOTAL COLIFORM
A	10:50AM	5.74	80	400
B	11:05AM	7.17	57	300
C	11:20AM	7.61	38	300
D	11:35AM	7.72	3	200
E	11:50AM	7.75	1	100



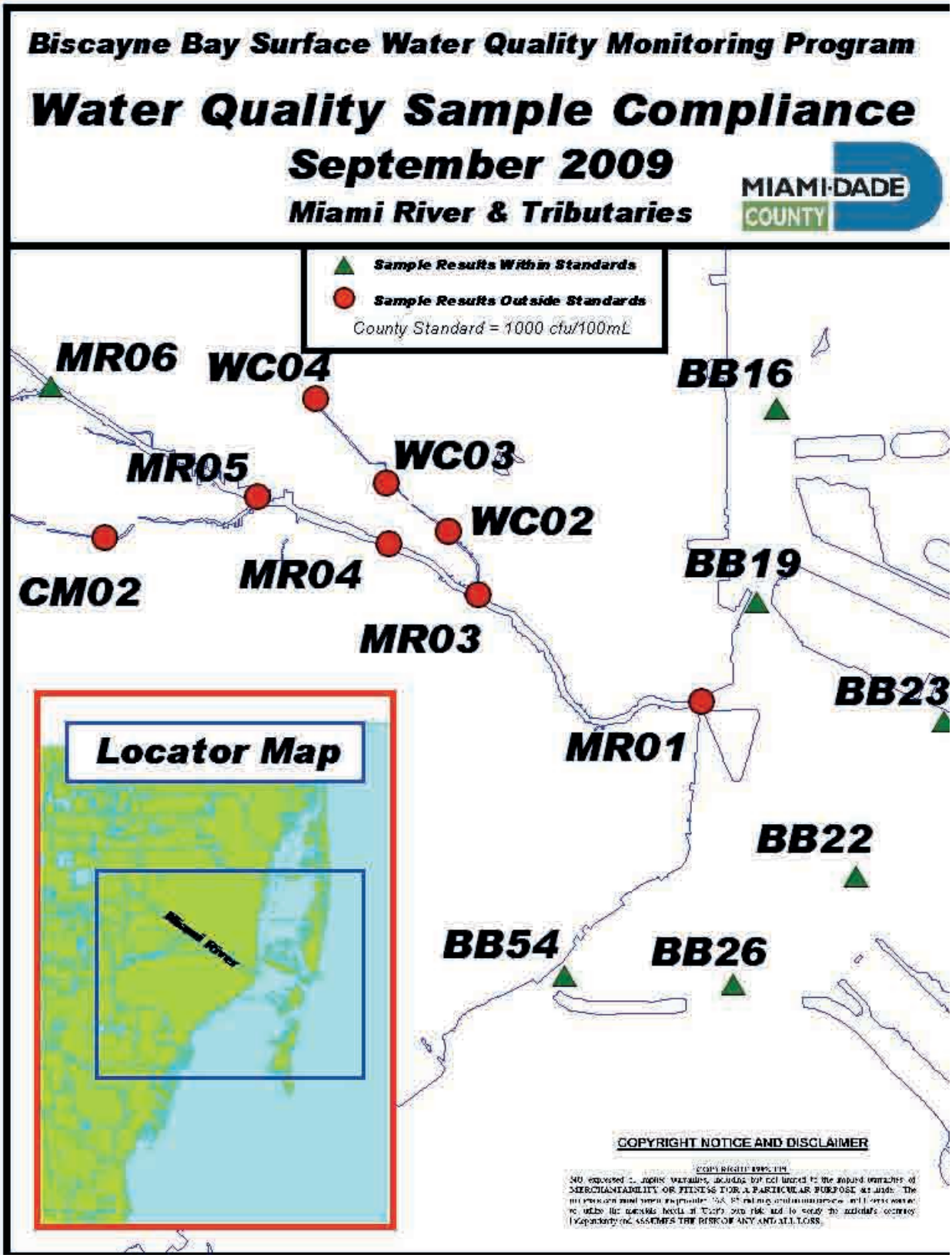
NOTE: The Scavenger2000 does not go up Wagner Creek, it is too shallow



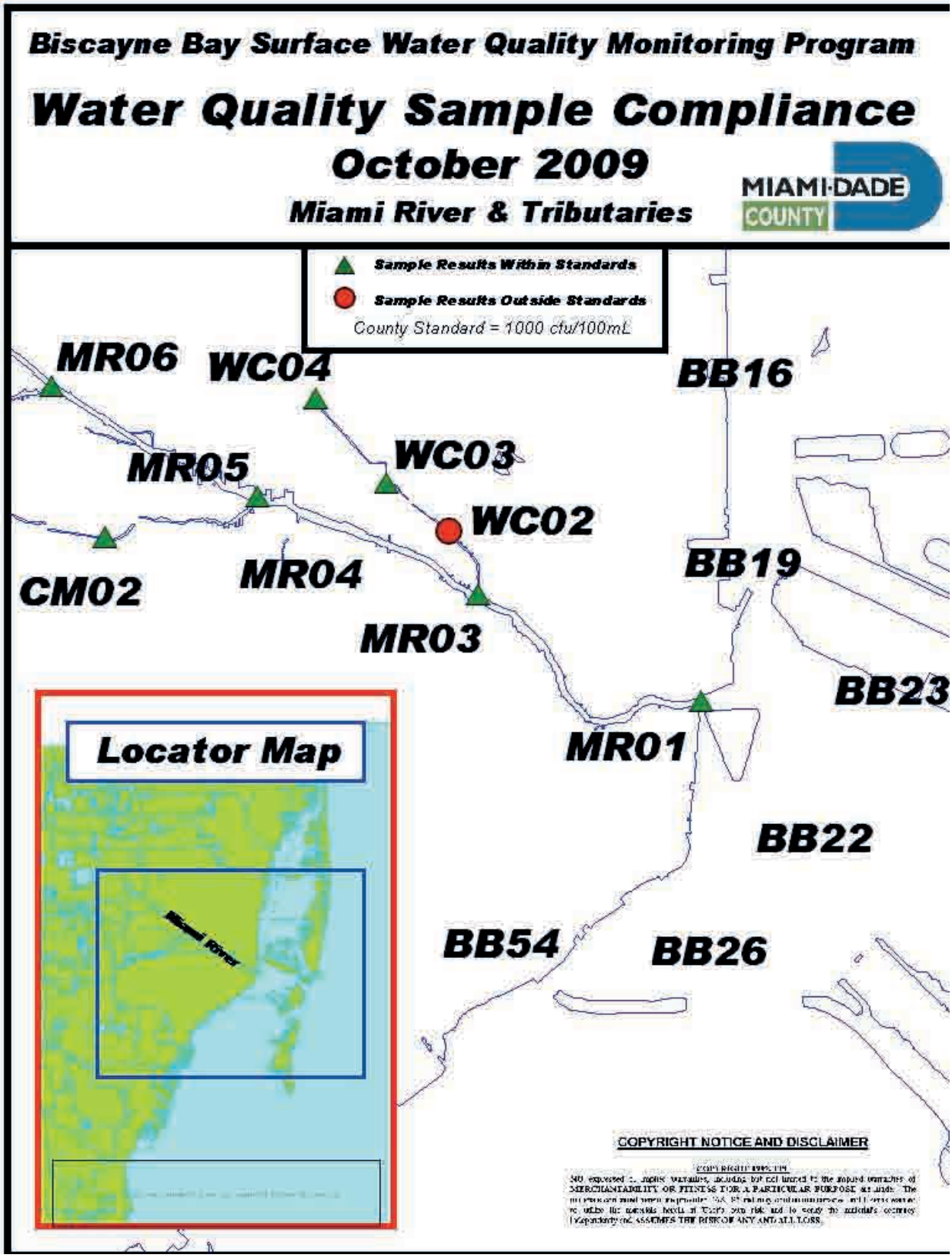
NOTE: Scavenger2000 on stand by for renewal of fiscal year contract.



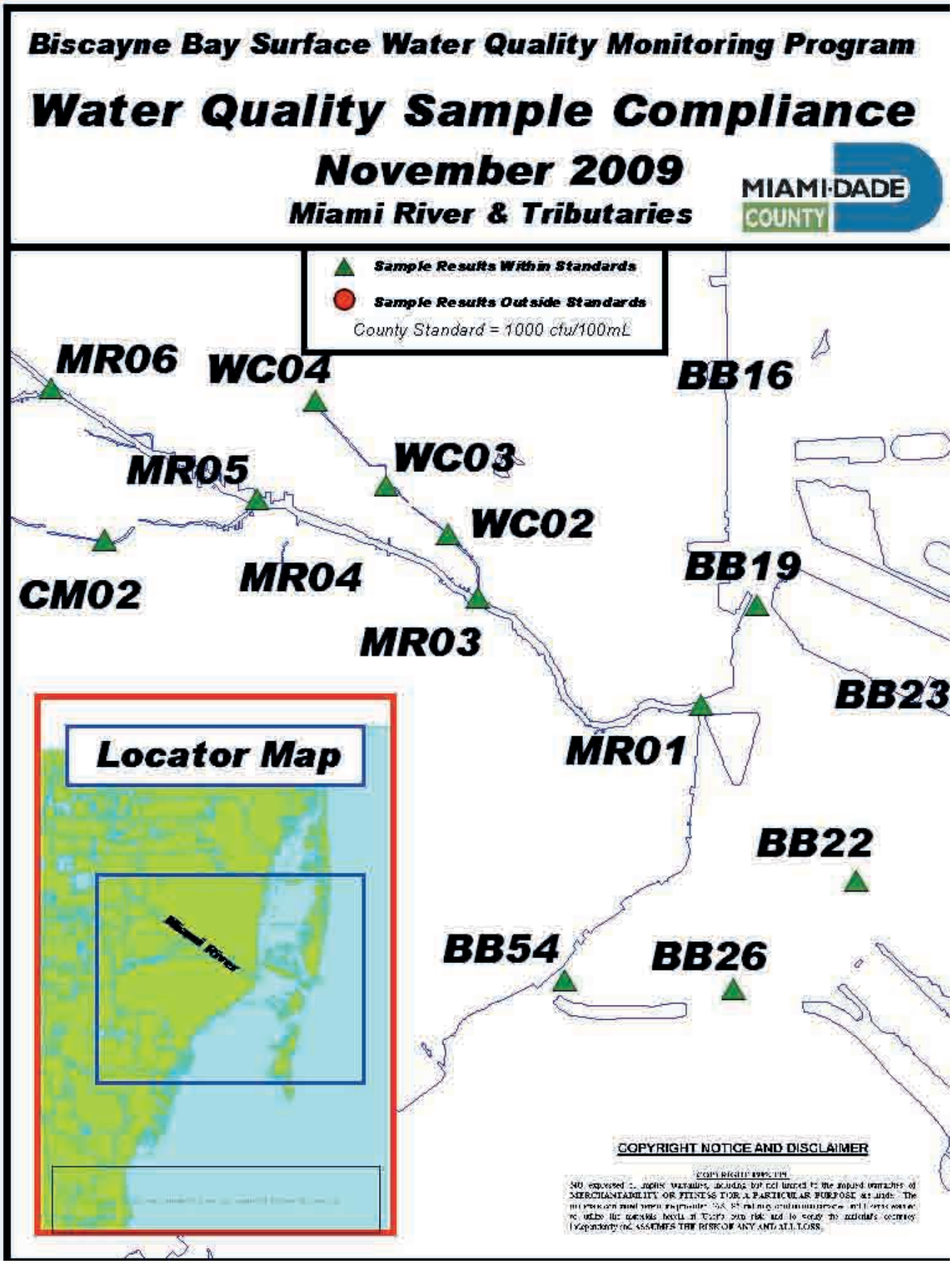
NOTE: The Scavenger2000 is in operation



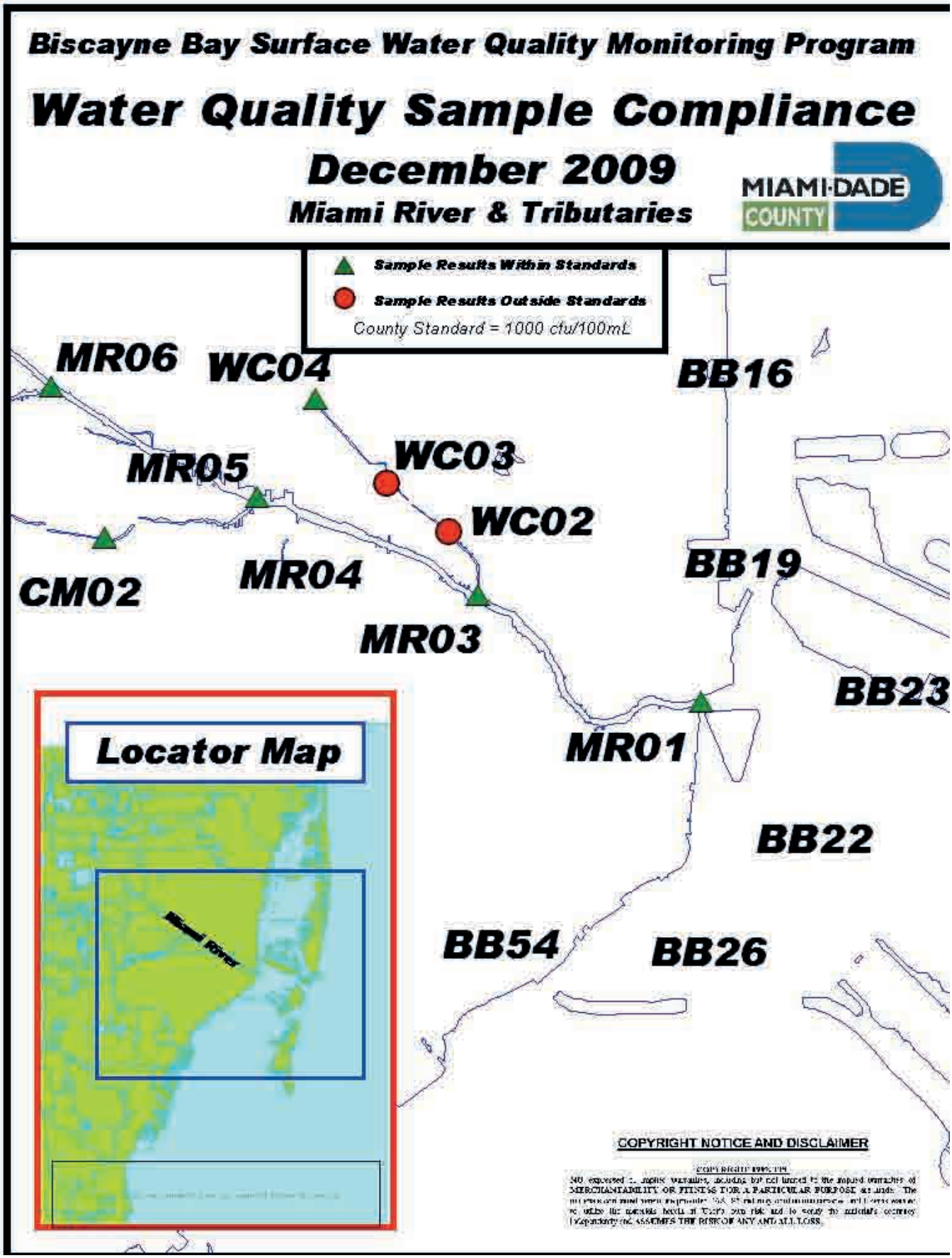
NOTE: The Scavenger2000 is on stand-by awaiting renewal of fiscal year contract



NOTE: The scavenger2000 resumed its operations

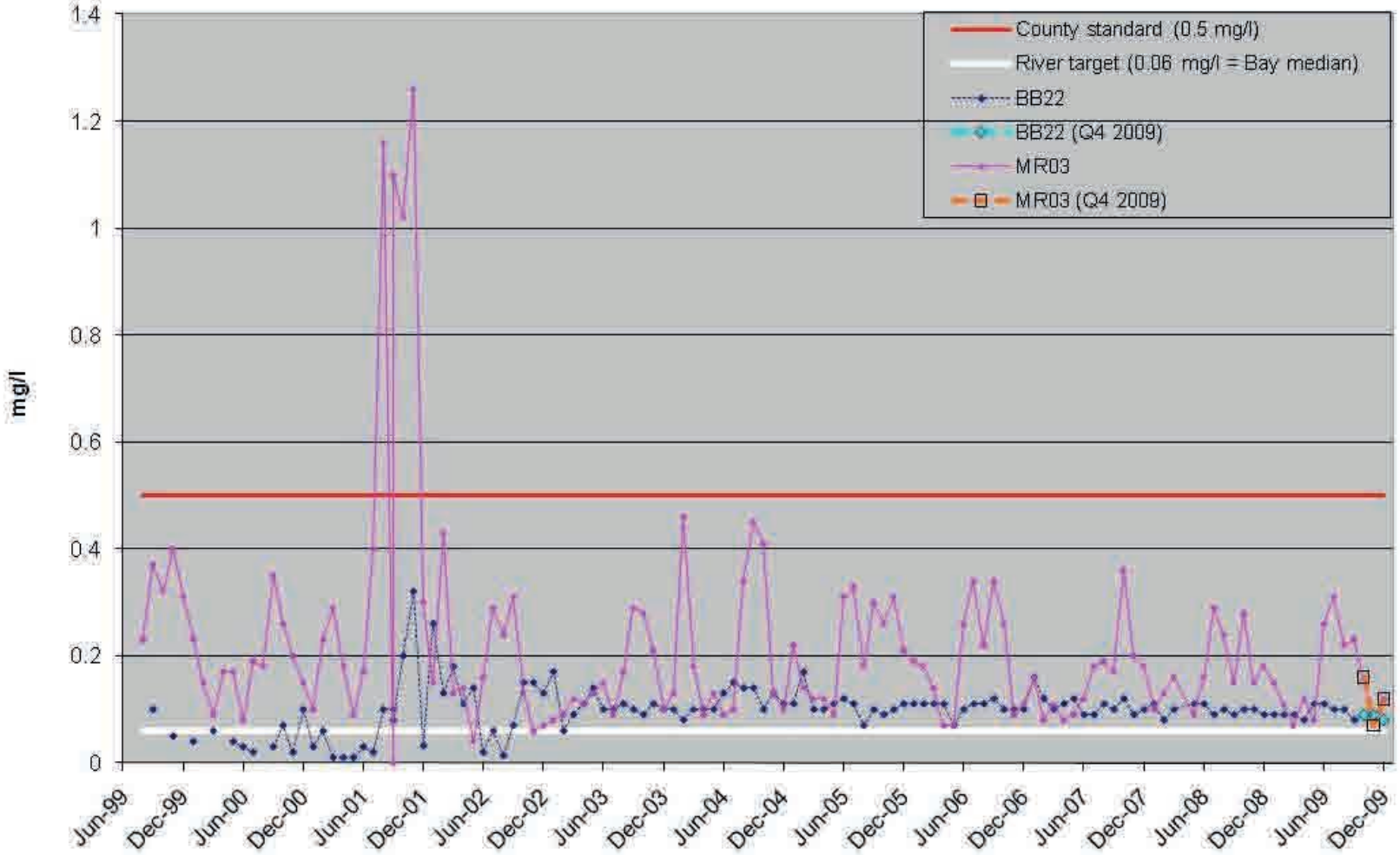


NOTE: The Scavenger2000 is in operation

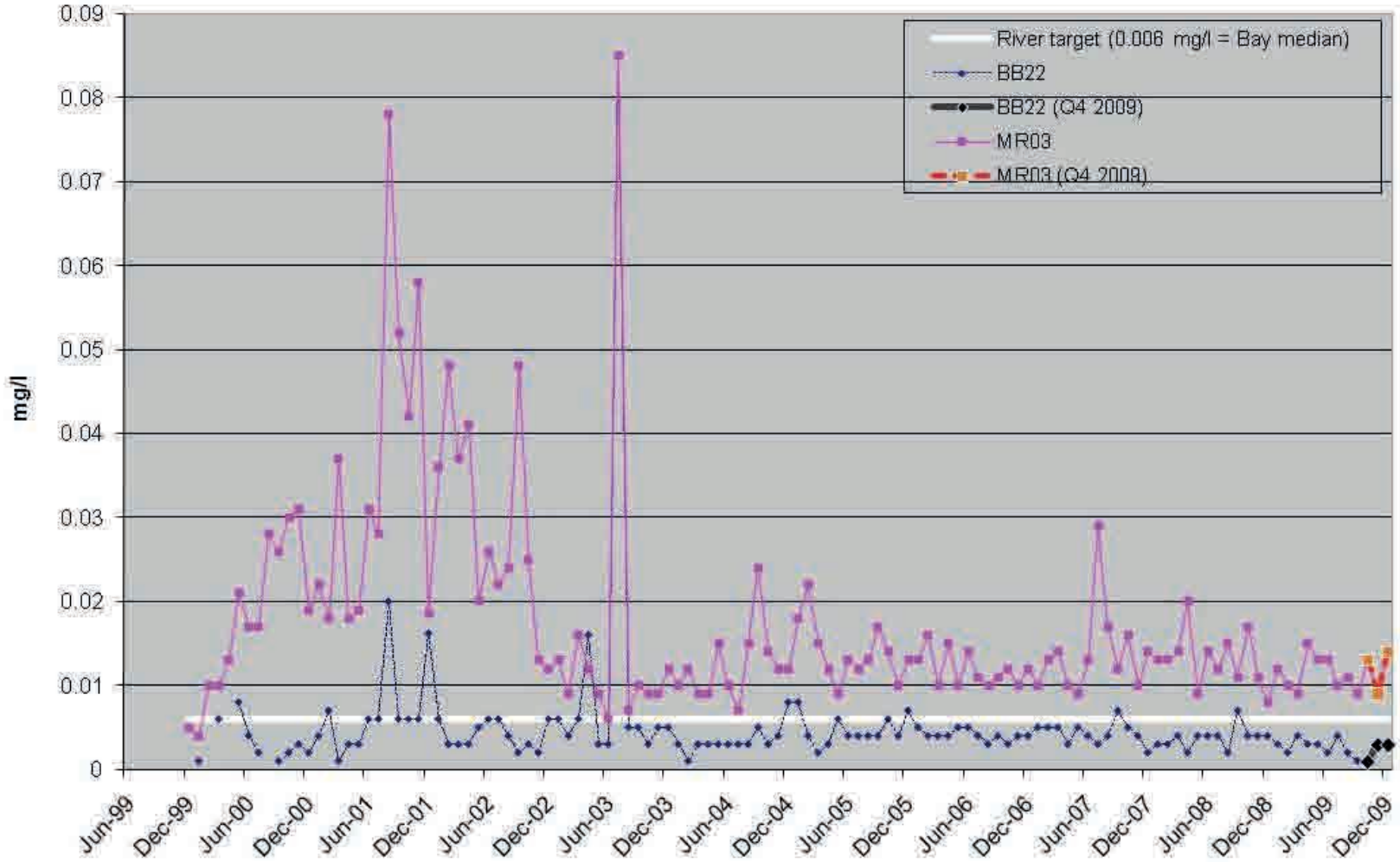


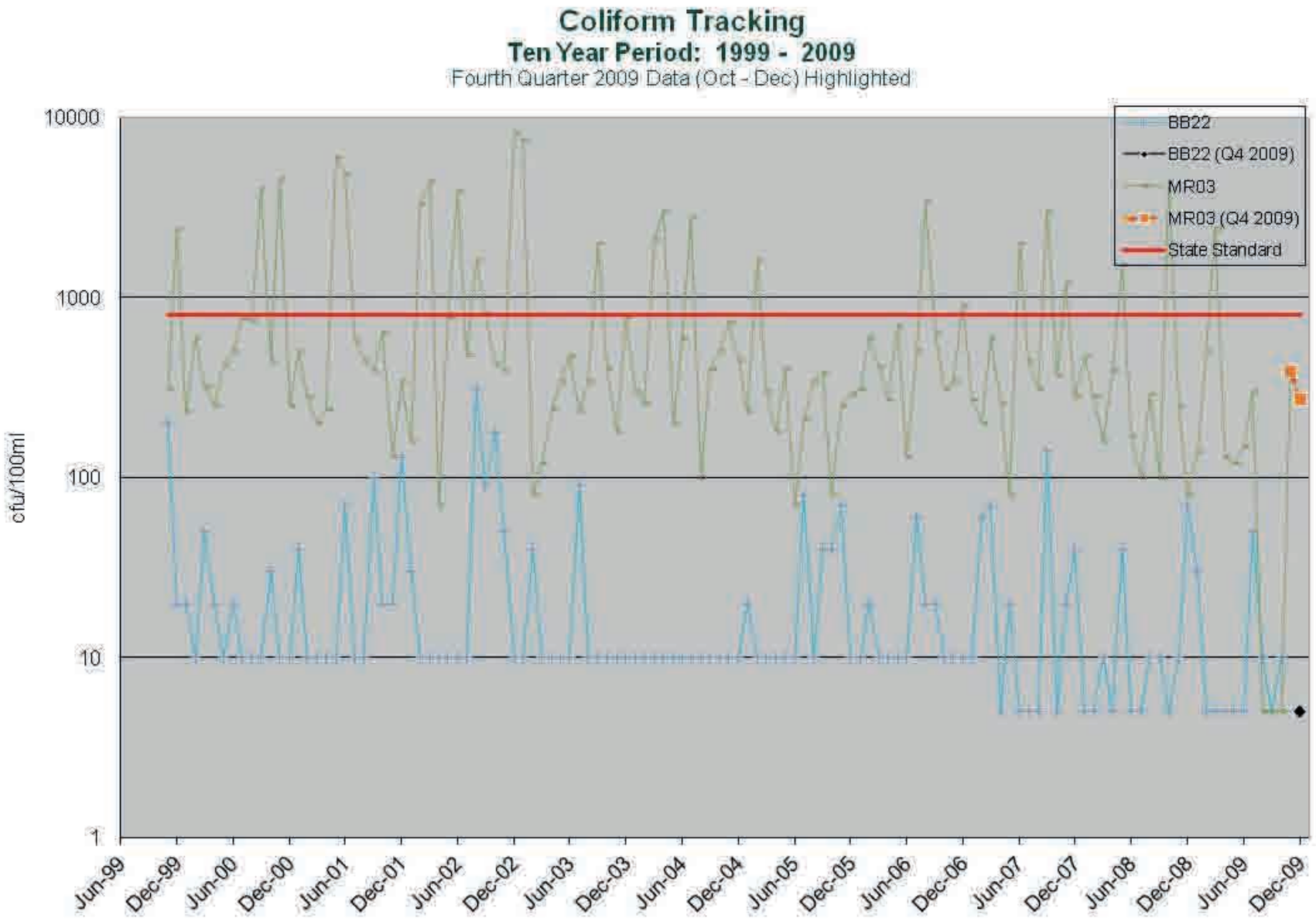
The Scavenger2000 is in operation

Ammonia Nitrogen Tracking
Ten Year Period: 1999 - 2009
Fourth Quarter 2009 Data (Oct- Dec Highlighted



Total Phosphate Tracking
Ten Year Period: 1999 - 2009
FourthQuarter 2009 Data (Oct - Dec) Highlighted




Coliform Tracking
Ten Year Period: 1999 - 2009
Fourth Quarter 2009 Data (Oct - Dec) Highlighted
cfu/100ml
10000
1000
100
10
1
BB22
BB22 (Q4 2009)
MR03
MR03 (Q4 2009)
State Standard
Jun-99
Dec-99
Jun-00
Dec-00
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Dec-09

Turbidity Tracking
Ten Year Period: 1999 - 2009
Fourth Quarter 2009 Data (Oct - Dec) Highlighted