Level 3 Project Study Plan

2009 Lake Erie Bacteriological Sampling of Edgewater, Euclid and Villa Angela Beaches

(1) Objective

The purpose of this study is to evaluate the impact of Northeast Ohio Regional Sewer District (NEORSD) facilities and other sources on water quality in Lake Erie at Edgewater, Euclid, and Villa Angela beaches and to support the NEORSD Combined Sewer System Operational Plan. Microorganisms from urban runoff, combined sewer overflows (CSOs), wildlife, bather shedding, and nonpoint sources are potentially a determinant of illness for individuals swimming in contaminated water. The U.S. Environmental Protection Agency has defined *Escherichia coli (E. coli)* as one of the best indicator organisms at freshwater bathing beaches because the presence of these bacteria indicates that pathogenic microorganisms may also be present. *E. coli* densities will be monitored at these three beaches during the recreation season. The data obtained from this sampling will be reported to the Ohio Department of Health (ODH) and may be used for public notification of water quality advisories. As in the past, the data will most likely to be used by Ohio EPA to assess attainment in the Integrated Report.

In addition to beach sampling, water samples will be collected from Euclid Creek to determine the impact on water quality at Villa Angela and Euclid Beaches. NEORSD will use the results of this study to determine water quality standards attainment in Lake Erie. Additionally, NEORSD will assist the United States Geological Survey (USGS) in research and development of alternative methods for prediction of *E. coli* and assist with utilizing the "Nowcast" system to predict water quality at Edgewater Beach based on a predictive model developed over the past three years.

(2) Nonpoint/Point Sources

Edgewater Beach
Point Sources:
Publicly Owned Treatment Works, CSOs, storm sewers and area streams

Nonpoint Sources: urban runoff (specifically also runoff from Route 2), bathers, feces from birds, dogs and other wildlife

Euclid Beach and Villa Angela Beach
Point Sources:
Publicly Owned Treatment Works, CSOs, storm sewers and area streams

Nonpoint Sources: urban runoff, bathers, feces from birds, dogs and other wildlife

(3) Parameters Covered

Samples collected will be analyzed for *E. coli* densities as outlined by NEORSD SOP 2014-2, Analysis of *E. coli,* effective date 6/11/2008. Field parameters to be measured during the study will include: pH, water temperature, conductivity and turbidity. Dissolved oxygen may be analyzed as necessary, but will not be a routine analysis. In addition, overall beach observations will be assessed and recorded such as: number of swimmers and birds, wave direction, minimum/maximum wave height, and category, wind speed and direction, water clarity, weather/sky conditions.

(4) Field Collection and Data Assessment Techniques

Individual water samples will be collected from an east and west location at each of the three beaches. Results from each beach sample location will be compared to the Ohio water quality standards to determine whether any excursions from the applicable water quality criteria have occurred. A portion of each of the east and west samples will be combined at the laboratory to serve as an integrated grab sample. The integrated grab sample results will be used by ODH to determine applicable beach advisory postings and for Quantitative Polymerase Chain Reaction (qPCR) analysis study by NEORSD and USGS.

The samples will be collected at a depth of 3 feet at each location and approximately 6-12 inches below the surface (approximately two feet form the bottom) as stated in Section 7.4.4 of Attachment A. At the time of collection, field parameters will be taken. Notes and observations pertaining to the beach and water conditions will be recorded using the observation sheet included in SOP 3004-5 Beach Sampling. All water samples and field parameters will be collected as specified in NEORSD SOP 3004 Beach Sampling (Attachment A), the most recent edition of *The Ohio Department of Health, Ohio Bathing Beach Monitoring Program Quality Assurance Project Plan*, and *Manual of Ohio EPA Surveillance Methods and Quality Assurance*, 2009.

E. coli results will be compared to the bathing water quality standard to determine when water quality criteria have been exceeded. The Edgewater Beach data will be reported to the ODH as an integrated grab for a daily assessment of bathing

water quality and in support of the "Nowcast" system. The ODH will use this data to determine whether a beach advisory posting should occur. NEORSD will use the data from all samples to determine possible trends in water quality.

NEORSD will use a predictive model developed by USGS to predict the water quality at Edgewater Beach. The model uses water quality variables expected to affect *E. coli* densities including turbidity, wave height, water temperature, lake level, and rainfall. Upon entering a combination of these variables, the model calculates the probability that the *E. coli* densities will be exceeded. Water quality variables and results from the model are entered onto the NOWCAST Website located at http://www.ohionowcast.info.

Source Tracking work and research

In continued coordinated efforts with the USGS to identify sources of *E. coli* contamination and work to validate and refine the Edgewater predictive model, NEORSD will take additional samples for research purposes. Samples will be collected at two locations at Euclid Creek, Monday thru Friday to monitor its impact on Villa Angela beach during wet and dry weather events.

A portion of the integrated grab sample will be prepared for Quantitative Polymerase Chain Reaction (qPCR) Monday through Friday. Additional aliquots will be prepared for comparative analysis by the USGS at their laboratory in Columbus. The research work will compare results obtained from the qPPR analysis with the standard plate count method to determine the correlation between methodologies and determine the viability of the rapid methods.

An integrated grab sample will be a sample obtained by combining aliquots from the samples collected from the east and west sampling locations from each beach. These samples will be combined at the laboratory into a single sample for each beach. The combined samples will be analyzed for *E. coli* and turbidity. The results obtained from the integrated grab sample and individual samples at Villa Angela and Euclid Beaches will be compared and analyzed statistically to validate that integrated grab samples provide a realistic representation of the water quality while reducing analytical cost.

NEORSD has a defined Emergency Response Plan and will take additional samples at Edgewater Beach after a discharge has occurred from CSO 069 (3PA0002069), a storm water outlet for the Northwest Interceptor. The CSO location is near a highly utilized public recreation area; therefore, such sampling is necessary in the event of a CSO discharge. These samples will be taken at three locations on the west side of Edgewater beach near the CSO outfall and at several

near shore and far shore locations to determine the impact of the CSO discharge on the water quality at Edgewater Beach. Further sampling locations may be added depending upon environmental conditions. An outline for actions and sampling during a discharge at CSO-069 is located in ERP 2.2.4 Edgewater Overflow. All samples are collected as specified in the *Manual of Ohio EPA Surveillance Methods and Quality Assurance*, 2009. All samples will be analyzed using an approved EPA method as specified by the Analytical Services Quality Manual.

(5) Sampling Locations

Two locations each will be sampled at Edgewater Beach and Euclid and Villa Angela Beaches in Cleveland for the duration of the study. Locations for the sampling are included in SOP 3004-5 Beach Sampling as Attachment A. One of the sampling locations will be on the east side of the beach, while the other will be on the west side. Additional samples will be taken from two (2) locations within Euclid Creek. The following table details the sampling locations and additional pictures to facilitate sampling can be found in SOP 3004-5 Beach Sampling as Attachment A.

Location	Latitude	Longitude	River Mile	Description	Quadrangle	Purpose
Edgewater Beach	N41.4893°	W81.7392°	NA	Eastern half of beach in line with the brick stack on the other side of the freeway.	Cleveland South	Impact determination of point and nonpoint sources, Public swimming safety awareness and determination of water quality standard attainment
Edgewater Beach	N41.4887°	W81.7404°	NA	Western half of beach in line with the large metal pole that is on the other side of the freeway.	Cleveland South	
Euclid Beach	N41.5843°	W81.5686°	NA	Eastern half of beach inline with the East side of the pile of stones on the beach.	East Cleveland	

Location	Latitude	Longitude	River Mile	Description	Quadrangle	Purpose
Euclid Beach	N41.5838°	W81.5694	NA	Western half of beach between the 2 break walls at the second set of stairs from the structure at Euclid Beach.	East Cleveland	
Euclid Creek	N41.5831°	W81.5594°	0.55	Downstream of Lakeshore Avenue	East Cleveland	
Euclid Creek	N41.5854°	W81.5641°	0.16	Downstream of Wildwood Bridge	East Cleveland	
Villa Angela Beach	N41.5851°	W81.5677°	NA	Eastern half of beach mid-distance between the 3rd and 4th break walls.	East Cleveland	
Villa Angela Beach	N41.5861°	W81.5667°	NA	Western half of beach at the beginning of the 2nd break wall.	East Cleveland	

(6) Schedule

Sampling will be performed Monday through Thursday beginning May 4, 2009 until May 14, 2009, for Edgewater, Euclid and Villa Angela Beaches. Sampling will be increased to Monday thru Sunday beginning May 18, 2009, until September 11, 2009. Sampling will then be reduced to Monday through Thursday until October 31, 2009. Samples will be collected from each beach during the Memorial Day, Independence Day and Labor Day holidays. Sampling will begin no later than June 1, 2009 for Euclid Creek and continue until September 11, 2009.

Samples will be collected as scheduled, unless surface water conditions are deemed unsafe. All sampling will be dependent of weather conditions. A detailed sample schedule is in included Attachment D.

(7) QA/QC

A signed copy of our Quality Manual and SOPs is being submitted to EPA in 2009. The specific SOPs are referenced below. Controlled copies of all SOPs can be audited or reviewed on-site. Due to the fact that all SOP information is time

sensitive and may be revised at any time, copies of SOPs given to third parties are uncontrolled documents. Copies of the SOPs submitted with this study plan are considered valid at the time of submission. Updated and revised copies can be obtained by contacting Carol Turner, Quality Assurance Officer for Analytical Services 216-641-6000 ext. 2502.

All field equipment and laboratory instrumentation utilized throughout the project will be calibrated, validated and maintained as defined within the standard operating procedures referenced below. Routine calibration or maintenance will be recorded in the appropriate logbook and equipment malfunction will be noted.

- SOP 6000-0 Hanna pH EC/TDS Effective 6/20/2005
- SOP 2007-1 Turbidity Effective 12/4/2008

NEORSD quality control procedures utilized for sampling and analysis procedures are outlined in the following SOPs:

- SOP 5001-5 Quality Manual Effective 2/26/2009
- SOP 3004-5 Beach Sampling Effective 5/1/2009
- SOP 2016-1 Bacteria Counting Methods Effective 6/11/2008
- SOP 2014-2 Analysis of *E. coli* Effective 6/11/2008

All *E. coli* Quality Control guidelines will be met based on the specific USEPA: *Microbiological Methods for Monitoring the Environment (EPA 600/8-78-017)*, NEORSD's Standard Operating Procedures (SOP #2016-Bacteria Counting and #2014 *E. Coli*), and standards outlined by the National Environmental Laboratory Accreditation Committee (NELAC) Chapter 5.0 "Quality Systems".

Field measurements

pH measurements below 6.0 and above 9.0 will be re-analyzed immediately in the field. If after re-analysis the sample is still out of range the measurement will be verified upon return to the laboratory on another instrument. If the laboratory results do not concur with the field results corrective action will be taken. If the laboratory results concur with the field results an investigation will occur.

Conductivity measurements greater than 800 umhos/cm will be re-measured in the field. If after re-analysis the sample result is still greater than 800 umhos/cm, the measurement will be verified upon return to the laboratory on another instrument. If the laboratory results do not concur with the field results corrective action will be taken. If the laboratory results concur with the field results an investigation will occur.

All samples will be analyzed in duplicate for turbidity. If any turbidity measurement exceeds 100 NTU the sample will be reanalyzed and/or re-sampled. For values less than 10 NTU, the duplicate measurements must agree within 1 NTU. For results greater than 10 NTU, the duplicate measurements must agree within 10 percent. If the duplicates do not agree, with the criteria of 1 NTU or 10%, the analysis must be repeated until the criteria are met. If results can not be obtained, corrective action will be initiated to determine the cause.
Laboratory Tests

One field blank will be collected each month (May, June, July, August, September and October) for *E. coli* analysis. If contamination is found, additional field blanks will be collected. If the contamination continues, a corrective action will begin to find the cause.

One duplicate sample is analyzed per batch on a daily basis for *E. coli* analysis using the membrane filtration method. Poor duplication indicates the need for additional training and monitoring by the supervisor. Since the test does not allow for re-analysis results will be accepted based on method performance. If the *E. coli* density exceeds the water quality criteria for an extended period of time, additional afternoon sampling may occur in addition to the routine morning sampling. If necessary, investigations will be conducted with coordination of the WQIS department.

All analysts performing the membrane filtration technique go through an extensive hands-on training. Training includes reviewing the SOP, shadowing another analyst, and setting up samples while being supervised and reading out while being supervised. After training, they need to complete a demonstration of capability by performing the test on externally purchased performance standards. Analysts will not be permitted to perform the test until demonstration of capabilities is shown. Monthly analyst variability is measured by having multiple analysts reading the colonies on the same plate. Analyst must demonstrate that the values obtained from the multiple readings are with 10% of the initial analyst count. Failure to meet performance levels of these samples will result in initiation of a correct action to determine where the deficiencies are.

(8) Work Products

A summary report will be prepared and sent to ODH Monday through Friday before 3:00 pm. This report will contain the sampling results from the integrated samples from each beach. A copy of this report is included as Attachment C. A second internal report and the field observation sheets will be sent to personnel

from NEORSD and the USGS Monday through Friday before 3:00 pm. This internal report will contain the data from all samples collected and various parameters analyzed for the previous day. A copy of this report is included as Attachment C. Following the completion of the project, a summary report that includes all the data collected during the study will be prepared. This summary report, along with the field observation sheets, laboratory bench sheets and chain of custody information, will be sent to the ODH. Results will also be submitted to the Ohio EPA as specified in the Ohio Revised Code 3745-4-06. Other reports summarizing, interpreting, graphically presenting, and discussing the data will also be prepared and used for internal discussions.

Pictures will be taken during each sampling event to document the conditions at the beach. These pictures will be stored electronically and posted on NEORSD's intranet site. Copies of the field observation sheets, daily reports, and pictures will be stored electronically. Additionally, field observations will also be entered into the Laboratory Information Management Systems (LIMS).

Results obtained from the east and west locations for Edgewater, Villa Angela and Euclid Beaches will be compared to the combined results of those locations. The analysis reported will be utilized to validate that integrated grab samples provide a realistic representation of the water quality, while reducing analytical cost. This report will be complied and distributed internally.

(9) Qualified Data Collectors

The following QDCs will oversee and coordinate the scheduling of field activities during the study period. The project managers, will be responsible for training, and field data review.

*- denotes project managers

Name	Address	Email Address	Phone Number
Ben Tedrick* (QDC number 048)	4747 E. 49th St., Cuyahoga Heights, OH 44125	tedrickb@neorsd.org	216-641-6000
Eva Hatvani* (QDC number 180)	4747 E. 49th St., Cuyahoga Heights, OH 44125	hatvanie@neorsd.org	216-641-6000
John Rhoades (QDC number 008)	4747 E. 49th St., Cuyahoga Heights, OH 44125	rhoadesj@neorsd.org	216-641-6000
Francisco Rivera (QDC number 262)	4747 E. 49th St., Cuyahoga Heights, OH 44125	riveraf@neorsd.org	216-641-6000

The following is a list of persons who may be involved in the project. Prior to the start of sampling, the project managers will explain to each individual the proper sampling methodology and analytical operating procedures, and conduct the monthly audits. The project managers will also be responsible for the final review all reports and data analysis prepared by these individuals prior to completion.

Non QDCs listed below will receive extensive training. Training consists of videos on safety; review all of the pertinent SOPs, completion of all required demonstrations of capabilities for parameters measured in the field. Training on sampling techniques and field analysis is demonstrated by accompanying the QDC to all sites and shadowing while the techniques are being demonstrated. Proficiency with the techniques will be determined by the QDC while observing sampling performed and by assessing the sampler's techniques. All samplers must meet and complete all requirements satisfactorily to be permitted to sample. A complete checklist of training is provided in Appendix D *(Beach Sampling Training Checklist)*. Once samplers have met the outlined criteria, they will be permitted to sample. The QDC will perform monthly audits of the sampling and correct deficiencies through re-training. Re-training will consist of accompaniment to the sampling site, instruction and observation by the QDC until deficiencies are no longer noted. A complete list of the beach sampling auditing is provided in Appendix E.

Name	Address	Email Address	Phone Number
Cathy Perciado (QDC 045)	4747 E. 49th St., Cuyahoga Heights, OH 44125	perciadoc@neorsd.org	216-641-6000
Atemus Carter	4747 E. 49th St., Cuyahoga Heights, OH 44125	cartera@neorsd.org	216-641-6000
Brandy Kristophel	4747 E. 49th St., Cuyahoga Heights, OH 44125	kristophelb@neorsd.org	216-641-6000
Ildiko Kubiak	4747 E. 49th St., Cuyahoga Heights, OH 44125	kubiaki@neorsd.org	216-641-6000

2009 Lake Erie Bacteriological Sampling of Edgewater, Euclid and Villa Angela Beaches
March 4, 2009

Name	Address	Email Address	Phone Number
Steve Lizewski	4747 E. 49th St., Cuyahoga Heights, OH 44125	lizewskis@neorsd.org	216-641-6000
Gina Senes	4747 E. 49th St., Cuyahoga Heights, OH 44125	senesg@neorsd.org	216-641-6000
Cathy Zamborsky (QDC 009)	4747 East 49th Street Cuyahoga Hts., Ohio 44125	zamborskyc@neorsd.org	216-641-6000
Seth Hothem (QDC 010)	4747 East 49th Street Cuyahoga Hts., Ohio 44125	hothems@neorsd.org	216-641-6000
Kathryn Crestani (QDC 011)	4747 East 49th Street Cuyahoga Hts., Ohio 44125	crestanik@neorsd.org	216-641-6000
Tom Zablotny (QDC 018)	4747 East 49th Street Cuyahoga Hts., Ohio 44125	zablotnyt@neorsd.org	216-641-6000
Ron Maichle (QDC 145)	4747 East 49th Street Cuyahoga Hts., Ohio 44125	maichler@neorsd.org	216-641-6000
Jillian Novak	4747 E. 49th St., Cuyahoga Heights, OH 44125	novakj@neorsd.org	216-641-6000
Coop #1	4747 E. 49th St., Cuyahoga Heights, OH 44125		216-641-6000

Name	Address	Email Address	Phone Number
Coop #2	4747 E. 49th St., Cuyahoga Heights, OH 44125		216-641-6000
Coop #3	4747 E. 49th St., Cuyahoga Heights, OH 44125		216-641-6000
Coop #4	4747 E. 49th St., Cuyahoga Heights, OH 44125		216-641-6000
Coop #5	4747 E. 49th St., Cuyahoga Heights, OH 44125		216-641-6000
Coop #6	4747 E. 49th St., Cuyahoga Heights, OH 44125		216-641-6000

The following individuals will be responsible for the compilation, approval and distribution of the data to the appropriate internal and external parties.

Name	Address	Email Address	Phone Number
Mark Citriglia*	4747 E. 49th St., Cuyahoga Heights, OH 44125	citrigliam@neorsd.org	216-641-6000
Eva Hatvani*	4747 E. 49th St., Cuyahoga Heights, OH 44125	hatvanie@neorsd.org	216-641-6000
Kristen Greenwood	4747 E. 49th St., Cuyahoga Heights, OH	greenwoodk@neorsd.org	216-641-6000

Name	Address	Email Address	Phone Number
	44125		
Laura Quinones	4747 E. 49th St., Cuyahoga Heights, OH 44125	quinonesl@neorsd.org	216-641-6000
Cheryl Soltis-Muth	4747 E. 49th St., Cuyahoga Heights OH 44125	soltismuthc@neorsd.org	216-641-6000
Carol Turner	4747 E. 49th St., Cuyahoga Heights, OH 44125	turnerc@neorsd.org	216-641-6000

* Project Managers

(10) Documentation of approval of project manager and other personnel as level 3 qualified data collector is included as Attachment B.

(11) Contract laboratory contact information

Not applicable.

(12) Copy of ODNR collector's permit

Not applicable.

(13) Catalog Statement

A digital photo catalog of all sampling locations will be maintained for 10 years and will include photos of the specific sampling location(s), the riparian zone adjacent to the sampling location(s) and the general land use in the immediate vicinity of the sampling location(s).

Signature: _____ Date: 3/4/09

Signature: _____ Date: 3/4/09

(14) Voucher Specimen Statement

Not applicable.

(15) Trespassing Statement

I have not been convicted or pleaded guilty to a Violation of section 2911.21 of the Revised Code (criminal trespass) or a substantially similar municipal ordinance within the previous five years.

Print/Signature: Ben Tedrick / Ben Tedrick Date: 3/4/09

Print/Signature: Eva Hatvani / Eva Hatvani Date: 3/4/09

Print/Signature: John W. Rhoades / John W. Rhoades Date: 03/04/09

Print/Signature: Francisco Rivera / Francisco J Rivera Date: 3/4/09

ATTACHMENTS

A-F

Northeast Ohio Regional
Sewer District
Protecting Your Health and Environment

Analytical Services
4747 East 49th. Street
Cuyahoga Hts., OH 44125

Title

Beach Sampling

SOP–3004-05

Effective Date: March 5, 2009

Approvals

Prepared By: Eva Hatvani Date: 3/5/09

Reviewed By QA Specialist: Carol Turner Date: 3/5/09

Approved By Manager: Mark Citriglia Date: 3/5/09

Analytical Services
4747 East 49th. Street
Cuyahoga Hts., OH 44125

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1. Scope and Application

1.1. This SOP describes the procedure for the collection of beach water samples.

1.2. Beaches are sampled during the recreational season to monitor levels of bacteria in order to warn the public of a possible risk of exposure to high levels of bacteria.

1.3. E. coli are commonly associated with sewage contamination resulting from a number of sources including rain events, overflows of sewage systems, warm-blooded animal waste and bird contamination. The presence of the bacteria only indicates that other pathogenic bacteria may be present.

1.4. Comparing E.coli concentrations to recreational water quality standards initiates possible beach advisories. The standards are based on single sample concentrations of E. coli bacteria. The EPA has determined that E. coli are one of the best indicator organisms of water quality for freshwater bathing beaches.

1.5. The data from beach sampling are sent to the Ohio Department of Health for a daily assessment of bathing water quality. The Ohio Department of Health and the Ohio Department of Natural Resources use this data to determine when postings should be made.

2. Interferences

2.1. The use of a sample bottle that is not autoclaved may cause elevated bacteria counts or false positives. Autoclaving kills any residual bacteria that may be present in the bottle.

2.2. Do not touch the inside of the bottle or the inside of the cap. This can contaminate the sample.

2.3. Sampling at a distance to close to the shoreline may cause elevated bacteria counts or false positives. Avoid sampling near bird feces, sediment, and floating debris and trash.

2.4. Avoid disturbing and kicking up bottom material at the sampling station.

3. Definitions

3.1. May – This action, activity or procedural step is neither required nor prohibited.

3.2. May not – This action, activity, or procedural step is prohibited.

3.3. Must – This action, activity, or procedural step is required.

3.4. Shall – This action, activity, or procedural step is required.

3.5. Should - This action, activity or procedural step is suggested but not required.

4. Safety

4.1. Safety Equipment

4.1.1. Safety equipment is required while sampling

4.1.2. Life Jacket or inflatable Safety Vest

4.1.3. Chest Waders

4.1.4. Gloves

4.1.5. Ring buoy with a 50 foot of nylon rope

4.1.6. District Cell phone

4.2. Sampling Safety Procedures

4.2.1. While traveling in the District vehicle, all employees should stay in contact with the base station via the mobile radio. Refer to SOP-3003 Vehicle and Mobile Radio Operation for the procedures.

4.2.2. A District cell phone has been provided for additional safety. The phone should be charged and turned on while off District premises.

4.2.3. Sampling may not occur during a thunderstorm. During times of inclement weather, check with a supervisor or Manager of Analytical Services prior to sampling.

4.2.4. If inclement weather occurs while sampling seek safety and call a laboratory supervisor for instructions.

4.2.5. Samples will not be taken when wave heights are over 3.5 feet.

4.2.6. The sampler MUST put on the chest waders before entering the water.

4.2.7. An inflatable life vest is provided for the sampler and must be worn during sampling. The safety vest is for the protection of the sampler.

4.2.8. The sampler must wade out to 3-ft. deep water to collect samples. The wave stick is used as a depth indicator. Do not wade out farther than recommended.

4.2.9. When the water is rough the sampler may use a 12-foot sampling pole to assist with sampling. The sampler should wade out to a safe distance and then extend the sampling pole to obtain a representative sample.

4.2.10. Safety training will be given to all employees sampling.

5. Equipment and Supplies

5.1. Sample Bottles – (sterilized 500ml or 1000ml)

5.2. Sample Tags and Chain of Custody Sheet

5.3. Beach Observation Sheet for each location

5.4. Field Meters Conductivity/pH/Temperature/Probe, Anemometer

5.5. Turbidity Meter or Field Turbidity Meter

5.6. Sample Pole, 12 ft./with pull ties and rubber bands

5.7. Cooler with Ice

5.8. Digital Camera.

5.9. GPS

5.10. Wave Height Stick, marked at inch and foot increments

5.11. Ziploc Bags

5.12. Laptop computer with wireless connection for Edgewater Sample Collection

5.13. Graduated cylinder, 100 ml plastic

5.14. Deionized water bottle, 1 L

5.15. Kimwipes

5.16. Gloves, plastic nitrile

5.17. Hand sanitizer

6. Calibration and Standardization

6.1. All field meters must be calibrated daily or verified that the instrument is in calibration by an independent standard.

6.1.1. See SOP 7002 for use and calibration of Hanna pH EC/TDS Meter.

6.1.2. See SOP 2007 for the calibration of the bench Turbidity meter and field turbidity meter.

6.2. A log of the calibration history is to be maintained to assure that the meter is working properly.

7. Procedure

7.1. Directions to Beaches

7.1.1. Edgewater Beach – (From 4747 E. 49th Street)

- Take E. 49th Street to Harvard Avenue

- Make a right turn at Harvard Avenue
- Make a left onto I-77 N.
- Take I-77 N. to I-90 E.
- Take I-90 E. to Route 2 W.
- Take Route 2 to the Edgewater Park exit.
- Take the exit and follow the signs to the beach area.
- Take the entrance to the bike path on the left and follow it around to the edge of the beach.

7.1.2. Villa Angela Beach/Euclid Beach (From 4747 E. 49th Street)

- Take E. 49th Street to Harvard Avenue
- Make a right turn at Harvard Avenue
- Make a left onto I-77 N.
- Take I-77 N. to I-90 E.
- Take I-90 E. to the Lakeshore exit
- Make a right onto Lakeshore Blvd.
- Follow Lakeshore Blvd. until you see the Euclid Beach entrance sign on the left side of the road.
- Take the entrance to the bike path.
- Go onto the bike path very slowly; Watch out for pedestrians.

7.2. Sampling Locations

7.2.1. Additional Sampling locations may be added as needed.

7.2.2. See attached site diagrams for sampling locations. Appendix A and B.

7.2.3. Edgewater Beach – There are 5 buoys and 3 lifeguard stations at this beach. Count them from left to right.

7.2.3.1. **West Sample** – The West sample is taken in line with the large metal pole that is on the other side of the freeway. This pole is lined up perpendicular to the shoreline.

7.2.3.2. **GPS Location**:41° 29.320 N 81° 44.422 W

7.2.3.3. **East Sample** –The East sample is taken in line with the brick stack on the other side of the freeway.

7.2.3.4. **GPS Location**: 41° 29.357 N 81° 44.350 W

7.2.4. Villa Angela Beach – There are 4 stone break walls at this beach. Count them left to right.

7.2.4.1. **West Sample** – The West sample is taken at the beginning of the 2nd break wall.

7.2.4.2. **GPS Location:** 41° 35.108 N 81° 34.060 W

7.2.4.3. **East Sample** – The East sample is taken mid-distance between the 3rd and 4th break walls.

7.2.4.4. **GPS Locations:** 41° 35.166 N 81° 33.998 W

7.2.5. Euclid Beach – There are 2 stone break walls at this beach.

7.2.5.1. **West Sample –** The West sample is taken between the 2 break walls at the second set of stairs from the structure at Euclid Beach.

7.2.5.2. **GPS Location:** 41° 35.029 N 81° 34.162 W

7.2.5.3. **East Sample –**The East sample is taken inline with the East side of the pile of stones on the beach.

7.2.5.4. **GPS Location: 41° 35.058 N 81°** 34.118 W Euclid Creek

7.2.6. Euclid Creek - A sample will be taken from two locations on Euclid creek.

7.2.6.1. **Euclid Creek** – 0.5 location

7.2.6.2. **GPS Location:** 41.5831°N 81.5594°W

7.2.6.3. **Euclid Creek** – 30 ft. North of the foot bridge

7.2.6.4. **GPS Location:** 41.5854° N 81.5641°W

7.3. Field Analysis/Observations – All Sampling Locations

7.3.1. Complete all information on the sample tags with permanent marker or pen.

7.3.2. Digital pictures are to be taken prior to any sampling to avoid causing any disturbances of the bird activity.

7.3.2.1. Pictures of the east, west, central and overall views of the beach are to be taken noting the picture number on the observation sheet. Additional pictures of beach conditions that could impact the outcome of the testing should be taken as well as noted on the field observation form.

7.3.3. The sample tag must be completed at the sampling site with the following information:

- Signature
- Employee ID
- Start Time (time of sampling)
- Field Parameters (conductivity, pH, temperature (°C), turbidity if measured in the field)

7.3.4. Field observation notes must be entered onto the observations sheets at the sampling site. One sheet is used for each location. The form must be filled out completely.

7.3.5. Field parameters must be measured on the sample that is collected in the 100 ml disposable bottle. Measure pH, conductivity, temperature and turbidity.

7.3.6. The sample collected in the 500 ml or 1 L bottle will be used for microbiological tests at the laboratory.

7.3.7. Once the field analyses have been performed place the sample into a Ziploc bag and place it into the cooler filled with ice.

7.3.8. Record the results from all field analyses.

7.3.9. The samples must remain in the cooler until delivered to the Sample Custodian at Analytical Services.

7.3.10. The field observations sheets are given to the supervisor of the microbiology area for review. See Appendix C, D, E and F for examples of the forms. Use current revisions of FORMS numbered 3154-3157.

7.3.11. After review, the field data is entered into Lablynx. The observation sheets are uploaded through Lablynx to the District's intranet page. Please see SOP-1005 LIMS Image and File Upload for Beach.

7.4. Sample Collection

7.4.1. Locate the sampling location by the markers on the beach as indicated in section 7.2.

7.4.2. Take a GPS reading to verify the location, record the coordinates on the field observation sheet.

7.4.3. Wade out to a water depth of at least 3 feet. Use the wave stick to verify the depth. The distance from the shoreline will vary based on the depth of Lake Erie and wave height.

7.4.4. The sampler must remove the cap, invert the sample bottle and plunge the sample bottle 6-12 inches below the surface of the water.

7.4.5. The bottle should be rotated with the opening facing the surface to allow sample to fill the bottle. Make sure to leave headspace in order to provide sufficient space for shaking the sample for analysis.

7.4.6. The sample container should be capped and secured.

7.4.7. Collect the second sample for field analysis by repeating steps 7.5.5 through 7.5.7.

7.4.8. Take the maximum and minimum wave heights before returning to the shoreline by using a measuring stick. This is done by observing the minimum and maximum height of waves for one minute. Record the minimum and maximum wave heights on the observation sheet in inches. Perform the following calculation to get the wave height for the model:

Maximum height (in) – minimum height(in) = wave height (in)

Convert inches to feet.

7.4.9. If you are unable to enter the water because of unsafe conditions, estimate the wave height as follows:

(1) 0-2 ft, (2) 1-3 ft, (3) 2-4 ft, (4) 3-6 ft.

7.4.10. The bottles are placed in a Ziploc bag and placed into the cooler containing ice.

7.5. Sample Collection Inclement Weather

7.5.1. Locate the sampling location by the markers on the beach.

7.5.2. Take a GPS reading to verify the location, record the coordinates on the field observation sheet.

7.5.3. A sampling pole must be used to obtain the sample when the wave height is over 3 feet.

7.5.4. Remove the cap and secure the sampling bottle to the pole with at least three rubber bands.

7.5.5. Wade out into the water to a safe depth, at least 1.5 feet. The distance from the shoreline will vary based on the depth of Lake Erie and wave height.

7.5.6. The sample pole should be extended to maximum length and the sample bottle is inverted and plunged below the surface of the water.

7.5.7. Cap and secure the sample and obtain a second sample for field analysis.

7.5.8. Return to the shoreline, tag the samples and place one the sample in a Ziploc bag and into the cooler for microbiological analysis.

7.6. Integrated Grab Sample for Microbiology and Turbidity Samples

7.6.1. When integrated grab sampling is required, equal portions of each beach site are combined for each beach. For example, the East and West sites are Edgewater are combined or the East and West sites of Villa Angela Beach are combined.

7.6.2. **TURBIDITY Analysis**

7.6.2.1. Prepare the integrated grab sample by combining 50 ml of the East site and 50 ml of the West site in a clean 125 ml disposable bottle.

7.6.3. Do turbidity analysis in field if required. Analyze the sample for turbidity. *See current version of SOP 2007.*

7.6.4. **MICROBIOLOGY**

7.6.4.1. The sample for microbiology testing will be combined upon returning to the laboratory.

7.6.4.2. Mark and label a new, sterile 1000-mL bottle as. Shake each sample a minimum of 15 times before measuring.

7.6.4.3. Using a sterile 500-mL graduated cylinder, measure 400 mL of the east sample and pour into the composite bottle.

7.6.4.4. Using a sterile 500-mL graduated cylinder, measure 400 mL of the west sample and pour into the composite bottle.

7.6.4.5. Place the sample tag onto the bottle.

7.6.4.6. Submit the sample for analysis.

8. Data Handling and Review

8.1. The Supervisor will review all tags and beach logs for accuracy and neatness.

8.2. The Supervisor will periodically audit the sampling process.

8.3. Report any unusual circumstances to a supervisor.

8.4. At Edgewater, the analyst must enter the field measurements into Lablynx in the field.

8.5. All all other beach sites, the analyst must enter the field measurements in the Lablynx application upon returning to the lab.

8.6. If the turbidity is not measured in the field, the turbidity analysis must be completed within 1 hour of returning to EMSC. See SOP 2007-00.

9. Additional Information

9.1. NOWCASTING PROTOCOL for EDGEWATER 2008

9.1.1. See Appendix H for Protocol for the Edgewater Model

9.2. Using the Anemometer to Measure Wind Speed

9.2.1. Use a digital anemometer
9.2.2. Turn the unit ON by sliding the Off/ON/HOLD switch to the ON position.
9.2.3. Turn the temperature switch to the °C position.
9.2.4. Slide the selector switch to the knots setting.
9.2.5. Place the anemometer vane probe into the air flow and read the measurement on the display. **NOTE: do not get the probe wet.**
9.2.6. Turn the unit off when not using to conserve the battery.

10. References

10.1. USEPA National Beach Guidance and Performance Criteria for Recreational Waters (EPA-823-B-02-004) July 2002, Chapter 4-Beach Monitoring and Assessment.

10.2. Website:http://www.epa.gov/waterscience/beaches/grants/index.html.

10.3. Microbiological Methods for Monitoring the Environment Water and Wastes, EPA-600/8-78-017, December 1978, Cincinnati, OH.

10.4. USGS, Nowcasting Protocol for Edgewater, April 29, 2008.

10.5. USGS, Nowcast at Huntington and Edgewater quality Assurance/quality Plan 2008, April 29, 2008

11. Revision History

11.1. Section 1.4 deleted fecal coliform as a beach standard (E. Hatvani, 5/5/06)

11.2. Section 4.3.2 added reference to SOP-3003 (E. Hatvani 5/5/06)

11.3. Section 5.0 added equipment:

11.4. Section 5.4 added Anemometer, E. Hatvani 5/5/06).

11.5. Section 5.10 added Wave Height Stick, E. Hatvani 5/5/06).

11.6. Section 7.2.2

11.7. Section 7.7.2 added information on analysis, E. Hatvani 5/5/06).

11.8. Section 1.3 single sample concentrations of E. coli bacteria (E. Hatvani 6/6/2007)

11.9. Section 5.1 Sample Bottles – changed volume and added second bottle type (E. Hatvani 6/6/2007)

11.10. Section 5.2 Added Chain of Custody Sheet (E. Hatvani 6/6/2007)

11.11. Section 5.11 Added Ziploc Bags (E. Hatvani 6/6/2007)

11.12. Section 7.5.1 Complete all information on the sample tags with permanent marker or pen. (E. Hatvani 6/6/2007)

11.13. Section 7.5.4 added to use the wave height stick to verify the depth. (E. Hatvani 6/6/2007)

11.14. Section 7.5.6. Make sure to leave headspace in order to provide sufficient space for shaking the sample for analysis. (E. Hatvani 6/6/2007)

11.15. Section 7.5.9 Added (E. Hatvani 6/6/2007) Take the maximum and minimum wave heights before returning to the shoreline.

11.16. Section 7.5.10 Added the bottles are placed in a Ziploc bag and placed into the cooler containing ice. (E. Hatvani 6/6/2007)

11.17. Section 7.7.6 Added Appendix A,B,C, and D. (E. Hatvani 6/6/2007)

11.18. Section 7.6.8 Added place the bottle into a Ziploc bag. (E. Hatvani 6/6/2007)

11.19. Section 8.4 Revised to state that field observations are entered into LabLynx upon returning to the lab. (E. Hatvani 6/6/2007)

11.20. Section 9.1 and 9.2 Corrected to References to USEPA (E.Hatvani6/6/2007).

11.21. Moved Previously numbered Section 11.1 to 7.8 Composite Sampling (E. Hatvani 6/6/2007)

11.22. Revised Section 7.5.5 to read plunge the sample bottle 6-12 inches below the surface of the water.6-12 inches. (E. Hatvani 12/18/2007)

11.23. Revised date of the field observations sheets (Appendix C-F) to 2008 (E. Hatvani 12/18/2007)

11.24. Removed Section 4.3. (E. Hatvani 4/23/2008)

11.25. Moved 4.3.2 and 4.3.3 to Section 4.1 Safety. (E. Hatvani 4/23/2008)

11.26. Revised bottle size to 100 ml disposable plastic bottles. (E. Hatvani 4/23/2008)

11.27. Modified 5.5 to include Field Turbidity Meter. (E. Hatvani 4/23/2008)

11.28. Modified Section 6 to include calibration of Turbidity and Filed Turbidity meters in SOP 2007. (E. Hatvani 4/23/2008)

11.29. Removed 11.1. Euclid Creek Sampling and added it to Section 7.3. Also added the GPS locations. (E. Hatvani 4/23/2008)

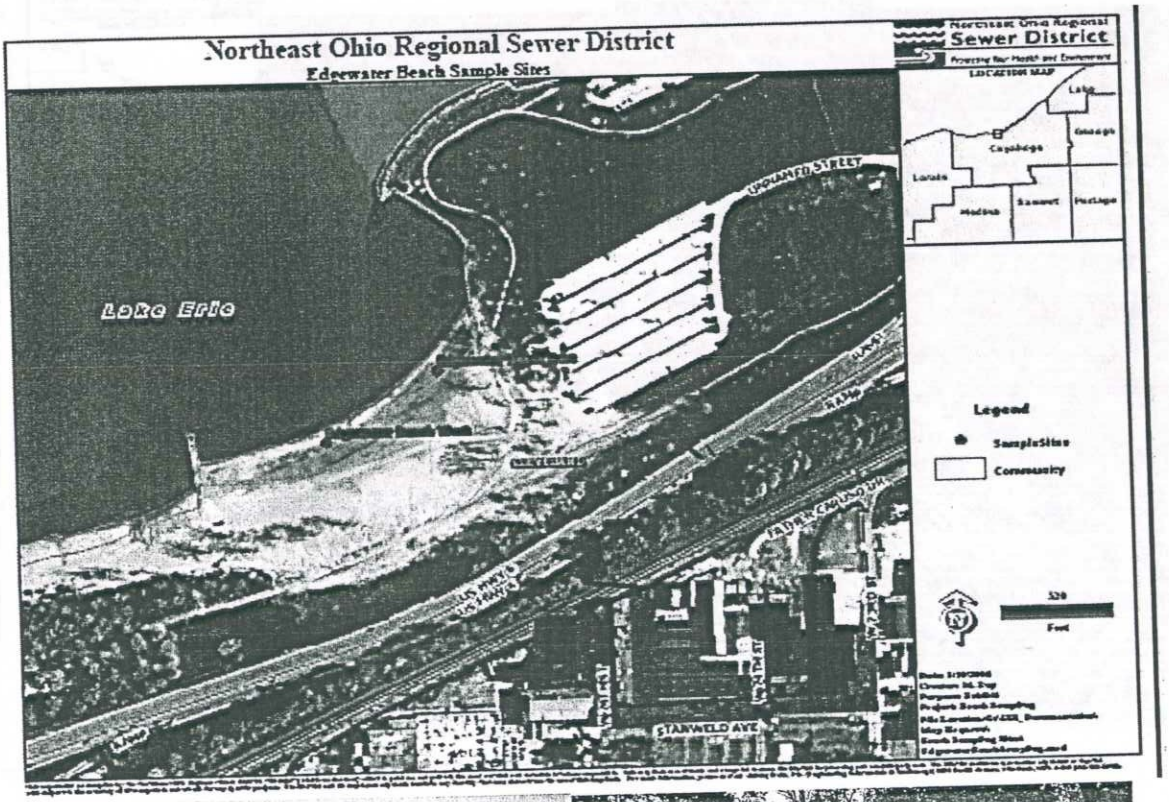
11.30. Moved Section 7.6 into Section 7.4. (E. Hatvani 4/23/2008)

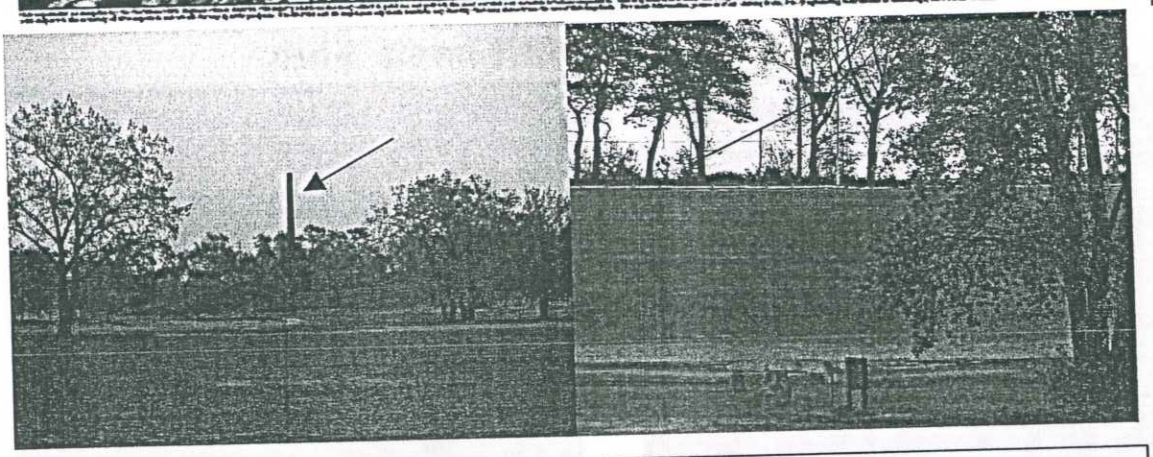
11.31. Revised 7.4.9 to include the calculation for wave height. And convert to feet.(e. Hatvani 4/29/2008)

11.32. Added 5.12 Laptop computers with wireless connection for Edgewater Sample Collection. (E. Hatvani 4/29/2008)

11.33. Added 9.4 and 9.5 two USGS references for Nowacast Model Protocol. (E. Hatvani 4/29/2008)
11.34. Added 5.13 – 5.17 – 100 ml plastic graduated cylinder, deioinzed water bottle, kimwipes, gloves and hand sanitizer. (E. Hatvani 5/28/2008)
11.35. Revised 7.6.4.3 to read, "Shake each sample a minimum of 15 times before measuring." .(E. Hatvani 5/28/2008)
11.36. Revised 7.3.11 to include field parameters are to be entered into Lablynx. (E. Hatvani 5/28/2008)
11.37. Revised Appendix A to include additional pictures of the sampling sites at Edgewater. (E. Hatvani 5/28/2008)
11.38. Revised Appendix B to include additional pictures of the sampling sites at Villa Angela, Euclid and Euclid Creek sites. (E. Hatvani 5/28/2008)
11.39. Revised Appendices C-F - Edgewater, Villa Angela, Euclid Beaches and Euclid Creek observation sheets to latest version. (E. Hatvani 6/5/2008).
11.40. Removed Sampling Schedule Appendix G. (E. Hatvani 3/3/2009).
11.41. Revised 5.10 Wave Height Stick, marked at inch and foot increments. (E. Hatvani 3/3/2009).
11.42. Revised 4.2.6 to read, "The wave stick is used as a depth indicator". (E. Hatvani 3/3/2009)
11.43. Revised Appendices C, D, E and F. Removed date and forms. Listed them as examples. (E. Hatvani 3/3/2009)
11.44. Revised 7.3.10 to read, "See Appendix C, D, E and F for examples of the forms. Use current revisions of FORMS numbered 3154-3157. (E. Hatvani 3/3/2009)

APPENDIX A – EDGEWATER BEACH SAMPLING SITES

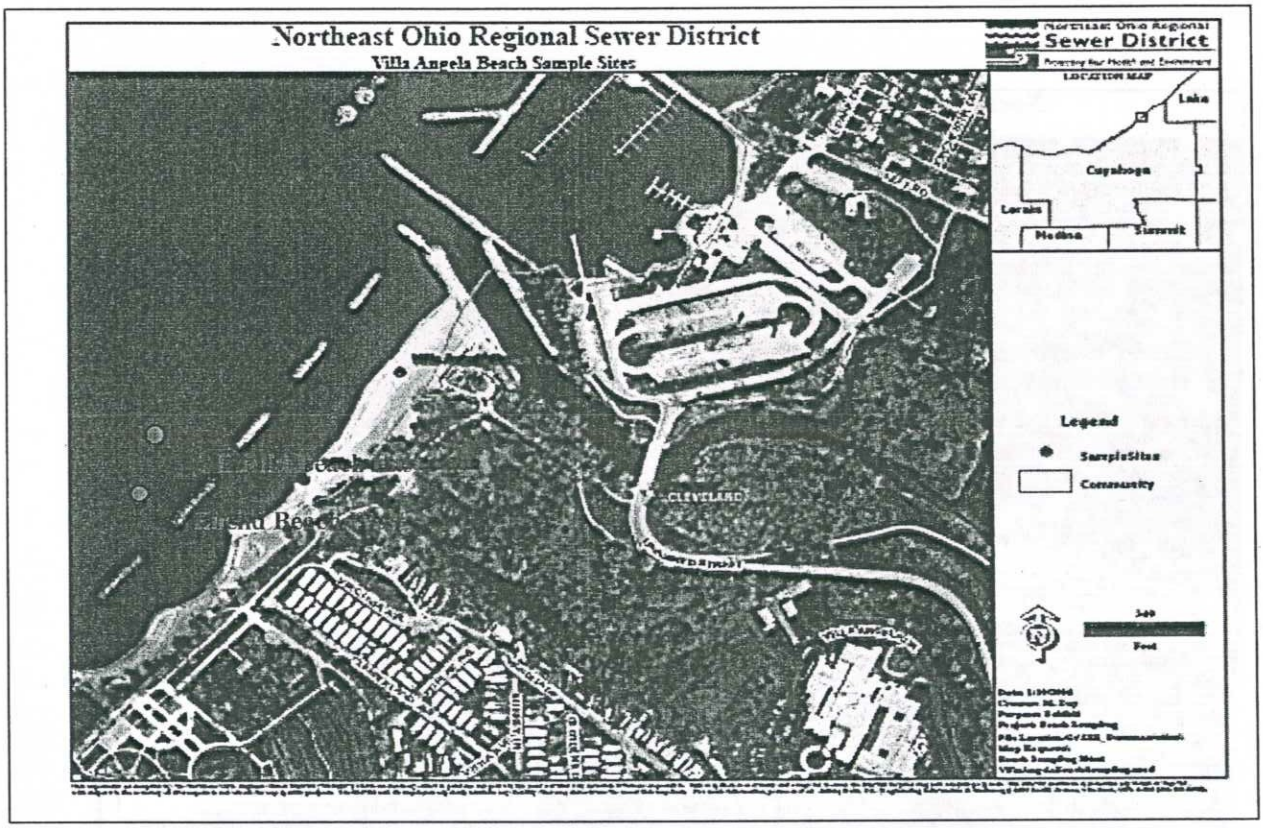




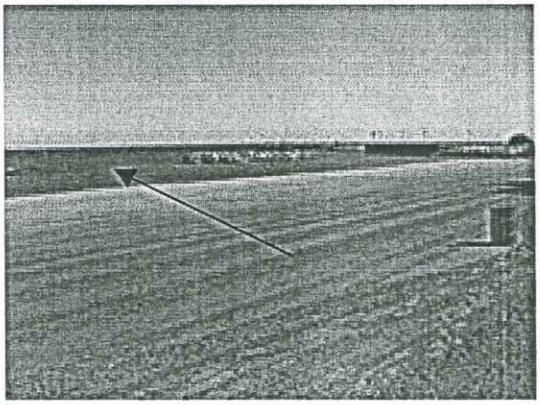
EAST SAMPLE SITE
Brick stack on other side of freeway

WEST SAMPLE SITE
Large Metal pole on other side of the freeway

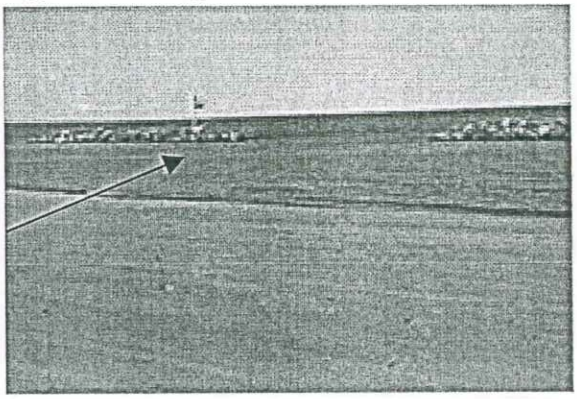
APPENDIX B – VILLA ANGELA AND EUCLID BEACHES SAMPLING SITES



Villa Angela Sample Sites

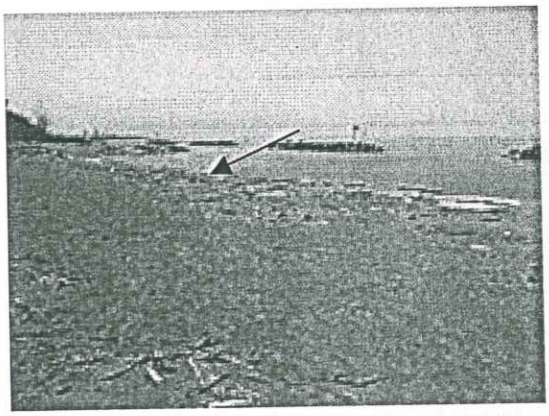


EAST SAMPLE SITE
Mid-didtance between 3rd and 4th break walls

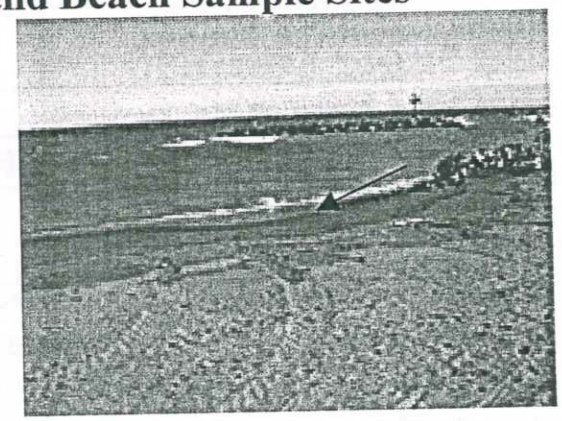


WEST SAMPLE SITE
Beginning of 2nd break wall

Euclid Beach Sample Sites

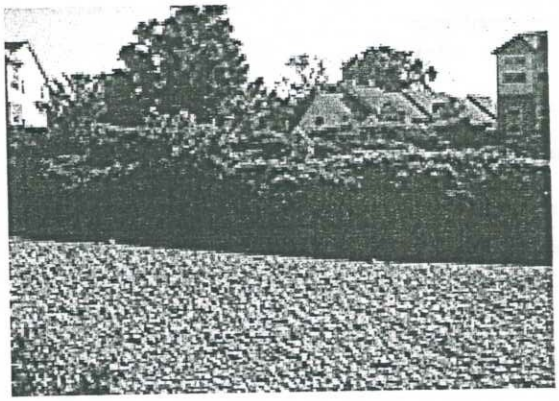


EAST SAMPLE SITE
Pile of stones

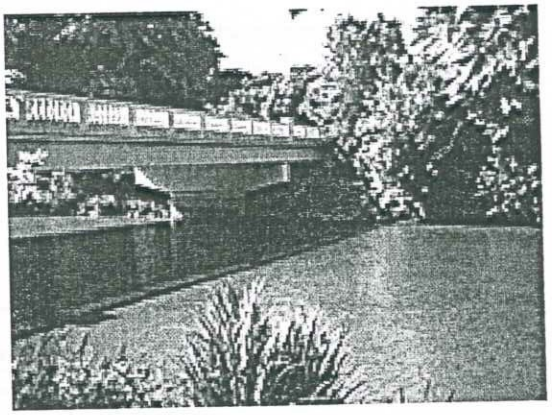


WEST SAMPLE SITE
Midway between breakwalls 1 and 2

EUCLID CREEK SAMPLING SITES



EUCLID CREEK



EUCLID CREEK BRIDGE
30 FT. North of the foot bridge

APPENDIX C- Edgewater Beach Observation Sheet

Northeast Ohio Regional Sewer District

Protecting Your Health and Environment

Field Notes – EDGEWATER BEACH

To be filled out at time of collection: Collection Time:

Sampled by: _____ Date: ___/___/___ East _____ West _____

Model parameters: **Water Temp** _____ **°F** **Wave Ht. (ft)** _____ **Backup?** ☐ **Category** _____

Radar Rain (in) 24 hr _____ **48 hr** _____ **Backup?** ☐ **NWS Rain (in) 24 hr** _____ **48 hr** _____

Turbidity (NTU) _____ **Lake Level (ft)** _____ **Predicted E. coli col/100 ml** _____

Probability >235 _____ **(May 19-June 17 - ≥ 27%, June 18-July 20 - ≥30, July 21-Sept. 5 - ≥34)**

Predicted *E. coli* - Lower: _____ **Upper:** _____ **NOWCAST? GOOD** ☐ **POOR** ☐ **Beach Posted?** ☐

Field Measurements and observations: ***East*** ***West*** ***Composite***

(East Sample)

Water Temperature *(nearest 0.1)* _____ °C

Water pH *(nearest 0.1)* _____

Water Conductivity (umhos/cm) _____

Turbidity NTU _____ _____ _____

Turbidity NTU _____ _____ _____

Average _____ _____ _____

Wave Height (measuring stick): (in inches)

	East	West	Average
Maximum	_____	_____	_____
Minimum	_____	_____	_____

Wave Height Category: (circle one)

(1) 0-2 ft (2) 1-3 ft

(3) 2-4 ft (4) 3-6 ft

Wind Direction _____

Wind speed *max.* _____

Ave. _____

Number of Swimmers: _____

Number of Birds:

	Geese	Gulls	Total
Area 1 and 2 (E)	_____	_____	_____
Area 3 and 4 (W)	_____	_____	_____

Sky conditions: clear partly cloudy overcast hazy foggy rain

Water clarity (circle category): **1.** clear **2.** low sediment **3.** medium sediment **4.** high sediment **5.** floating debris **6.** algae

Other observed (weather, shore conditions, and unusual sightings)

NOTES:

GPS East 41°29.357 N 81° 44.350 W Picture ID: Overall _____ VP West _____

GPS West 41°29.320 N 81° 44.422 W VP Central _____ VP East _____

APPENDIX D- Villa Angela Beach Observation Sheet

Northeast Ohio Regional Sewer District
Protecting Your Health and Environment

Field Notes – VILLA ANGELA BEACH

To be filled out at time of collection:

Sampled by: _____ Date: ___/___/___ Time: East _____

West _____

Field measurements and observations:

Water Temperature: East _____ °C *(nearest 0.1)*

Water pH *(nearest 0.1)* _____

Water Conductivity _____ _____
(umhos/cm)

Number of Swimmers: _____

Number of Birds: *(manual count)*

	Geese	Gulls
Area 1 and 2 (E)	_____	_____
Area 3 and 4 (W)	_____	_____

	East	*West*	*Composite*
Turbidity NTU	_____	_____	_____
Turbidity NTU	_____	_____	_____
Average	_____	_____	_____

Wind Direction_____

Wind Speed max. _____
ave. _____

Wave Height (measuring stick): (in inches)

	East	West	Average
Maximum	_____	_____	_____
Minimum	_____	_____	_____

	Yes	No
Beach posted?	____	____

Sky conditions: clear partly cloudy overcast hazy foggy rain

Water clarity (circle category): **1.** clear **2.** low sediment **3.** medium sediment **4.** high sediment **5.** floating debris **6.** algae

Other observed (weather, shore conditions, and unusual sightings):

GPS East 41°35.108 N 81°33.998W Overall _____ VP West _____

GPS West 41°35.166 N 81°34.060W VP Central _____ VP East _____

Notes:

APPENDIX E - Euclid Beach Observation Sheet

Northeast Ohio Regional Sewer District
Protecting Your Health and Environment

Field Notes - EUCLID BEACH

To be filled out at time of collection:

Sampled by: _____ Date: ___/___/___ Time: East _____

West _____

Field measurements and observations:

(East Sample)

Water Temperature: _____ °C
(nearest 0.1)

(nearest 0.1)

Water pH *(nearest 0.1)* _____

Water Conductivity _____
(umhos/cm)

Number of Swimmers: _____

Number of Birds: *(manual count)*

	Geese	Gulls	Total
Area 1 and 2 (E)	_____	_____	_____
Area 3 and 4 (W)	_____	_____	_____

	East	*West*	*Composite*
Turbidity NTU	_____	_____	_____
Turbidity NTU	_____	_____	_____
Average	_____	_____	_____

Wind Direction_____

Wind Speed max. _____
ave. _____

Wave Height (measuring stick): (in inches)

	East	West	Average
Maximum	_____	_____	_____
Minimum	_____	_____	_____

Wave Ht. = Ave. Max. - Ave Min. _____

Sky conditions: clear partly cloudy overcast hazy foggy rain

Water clarity (circle category): **1.** clear **2.** low sediment **3.** medium sediment **4.** high sediment **5.** floating debris **6.** algae

Other observed (weather, shore conditions, and unusual sightings):

Picture Names

GPS East 41° 35.058 N 81° 34.118 W Overall _____ VP West _____

GPS West 41° 35.029 N 81° 34.162 W VP Central _____ VP East _____

Notes:

APPENDIX F - Euclid Creek Observation Sheet

Northeast Ohio Regional Sewer District
Protecting Your Health and Environment

Field Notes – EUCLID CREEK

To be filled out at time of collection:

Sampled by: _____ Date: ___/___/___ Time: R- _____

VAB1 - _____

Field measurements and observations:

	R-	VAB1
Water Temperature: *(nearest 0.1)*	_____ °C	**Water Temperature:** _____ °C
Water pH *(nearest 0.1)*	_____	**Water pH** *(nearest 0.1)* _____
Water Conductivity	_____(umhos/cm)	**Water Conductivity** _____(umhos/cm)
Turbidity NTU	_____	**Turbidity NTU** _____

Bird Count: Geese _____ Gulls _____

Observations: _____

R- GPS: 41.5831°N 81.5594°W Picture Name _____

VAB 1 GPS: 41.5854° N 81.5641° W Picture Name: _____

APPENDIX G - NOWCASTING PROTOCOL FOR EDGEWATER BEACH

NOWCASTING PROTOCOL FOR EDGEWATER BEACH – 2008

COLLECT SAMPLE DATA

- Use Beach Sampling SOP-3004-04

SET UP COMPUTER

- Insert Sprint card into PC
- Power ON
- Log on using information on sticker (bottom left of keyboard)
  * Make sure *workstation only* is checked
- Connect to internet using Sprint PCS shortcut on desktop
  * Click *GO* when it says *connected*

CHECK EMAIL

- Open Edgewater Beach shortcut on desktop
- Open GroupWise and log in
- Check for *radar rainfall* and *wave height* data
- Record 24 and 48 hour rainfall data onto field sheet
- Record wave height data onto field sheet
- Exit email
  * BACKUP: If no email is received…

· Open NWS Rainfall in Edgewater Beach folder
· For 24 hour data: Add up the numbers in the 6 hour column from 8:51am yesterday to 7:51am today
· For 48 hour data: Add up the numbers in the 6 hour column from 8:51am the *day before* yesterday to 7:51am today
· Check *backup* box on field sheet

OBTAIN LAKE LEVEL DATA

- Open Tides & Currents in Edgewater Beach folder
- Change data units to *feet*; change time zone to *local*
- Change both date boxes to current date
- Click *view data*
- Check lake level at 8:30am
- Record on data sheet
- Close site

OBTAIN TURBIDITY DATA

- Use Turbidity SOP-2007

RUN MODEL

- Open Edgewater Model 2008 in Edgewater Beach folder
- Enter model parameters
- NOTE: precipitation from email – *Y* if email received, *N* if email not received
- Enter E. coli lower, upper, and probability on field sheet
- CALL Eva @ (216) 641-6000, ext. 2513 – She will check the model
- Close model and proceed to Nowcast

NOWCAST

- Open Nowcast link in Edgewater Beach folder
- Click on *data upload* (top right)
- Username = neorsd; password = mark2008
- Click *add record*
- Enter data
  - Use collection time from EAST sample
  - Rain at Hopkins = NWS data; radar rain = email
  - Copy and paste correct advisory
- Click *update*. Review and click *edit/modify* if a mistake was made

PROCEDURE TO UPDATE NOWCAST INFORMATION LINE – 2008

* MUST be done at Edgewater Beach, after Nowcast website is updated.
* You need to know the Nowcast prediction for Huntington also, so check it on the Nowcast web site before proceeding.

TO CHANGE NOWCAST MESSAGE

- Call **(216) 881-6600** on a cell phone
  - If at EMSC, press the **Audix/Voicemail button** on a building phone
- Ask for extension **6890** (if on cell phone), or dial **6890** (if on EMSC phone)
- Dial **6003** and press **#**
- Enter password **13579** and press **#**
- Press **3** to administer a new greeting
- Press **3** again to activate a new greeting
- Enter one of the following options (**1-7**) to change the greeting for the day:

Option Selection Number	Edgewater Conditions	Huntington Conditions	Message Text (below)
1	Good	Good	A
2	Good	Poor	B
3	Poor	Good	C
4	Poor	Poor	D
5	Good	Not Available	E
6	Not Available	Not Available	F
7	Record special message for the day		G

MESSAGE TEXT (WHAT CALLER WILL HEAR)

A "Today's nowcast prediction for water quality at **Edgewater is Good**. Today's nowcast prediction for **Huntington is Good**.
Be aware that water quality can quickly change from Good to Poor in response to rain and wind storm conditions."

B "Today's nowcast prediction for water quality at **Edgewater is Good**. Today's now cast prediction for **Huntington is Poor**.
A nowcast prediction of Poor means that bacteria levels are likely to be high. Swimming is not advised, especially for children, the elderly, and those in ill health. Full body water contact may result in illness. Be aware that water quality can quickly change from Good to Poor in response to rain and wind storm conditions."

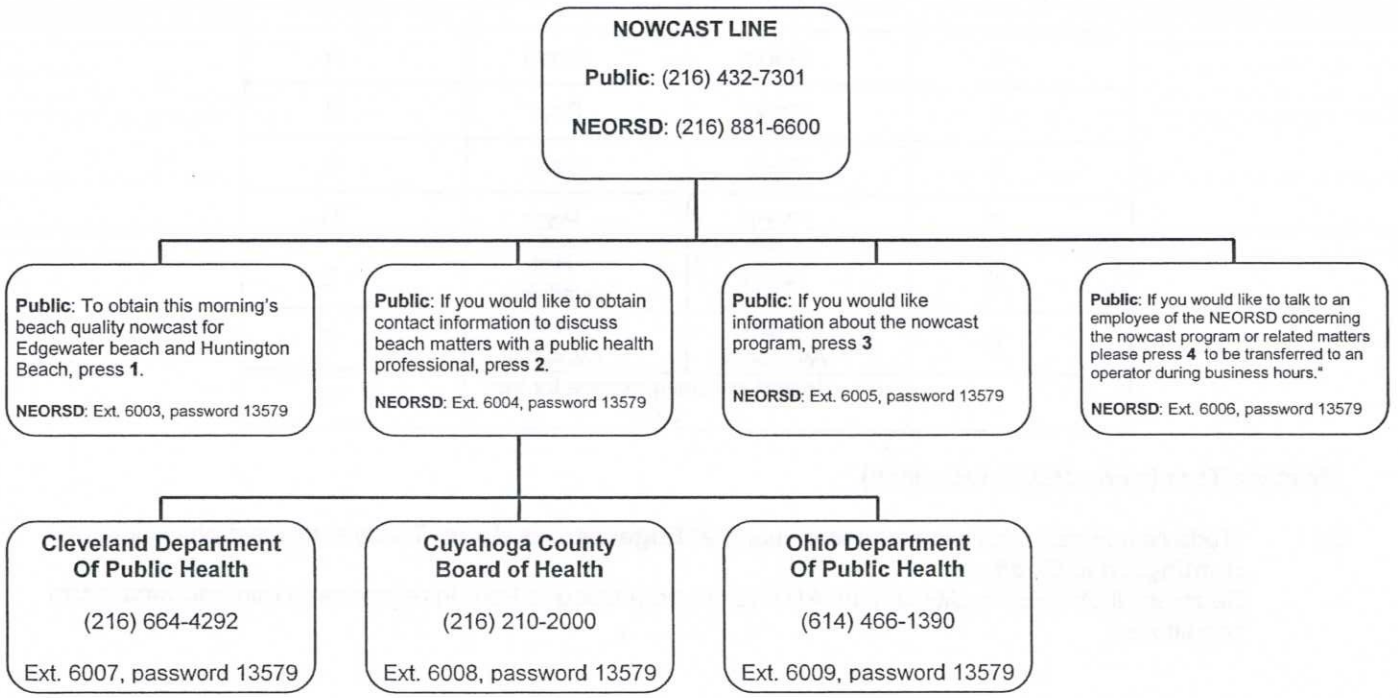
C "Today's nowcast prediction for water quality at **Edgewater is Poor**. Today's now cast prediction for **Huntington is Good**.
A nowcast prediction of Poor means that bacteria levels are likely to be high. Swimming is not advised, especially for children, the elderly, and those in ill health. Full body water contact may result in illness. Be aware that water quality can quickly change from Good to Poor in response to rain and wind storm conditions."

D "Today's now cast prediction for water quality at **Edgewater is Poor**. Today's nowcast prediction for **Huntington is Poor**.
A nowcast prediction of Poor means that bacteria levels are likely to be high. Swimming is not advised, especially for children, the elderly, and those in ill health. Full body water contact may result in illness."

E "Today's nowcast prediction for water quality at **Edgewater is Good**. There is **no prediction** available for Huntington Beach.
Be aware that water quality can quickly change from Good to Poor in response to rain and wind storm conditions."

F "Due to technical problems we are unable to provide nowcast services today."

G This option would allow for the creation (recording) of a special message for unusual circumstances.



ATTACHMENT B

OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

OHIO E.P.A. MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

MAR 13 2007

ENTERED DIRECTOR'S JOURNAL

CERTIFIED MAIL

Effective Date: March 13, 2007
Expiration Date: March 12, 2009

Benjamin Tedrick
Northeast Ohio Regional Sewer District
1801 East 12th Street #1415
Cleveland, Ohio 44114

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Mr. Tedrick:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 048

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By: _____ Date: 3-13-07

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of seventy dollars ($70.00) which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal must be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,

Chris Korleski
Director

ATTACHMENT B

Ohio EPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

CERTIFIED MAIL

Effective Date: May 14, 2008
Expiration Date: May 13, 2010

Eva Hatvani
Northeast Ohio Regional Sewer District
4747 East 49th Street
Cleveland, Ohio 44125

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Eva:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: **180**

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of seventy dollars ($70.00) which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal must be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,

Chris Korleski
Director

ATTACHMENT B

OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

CERTIFIED MAIL

Effective Date: August 22, 2008
Expiration Date: August 21, 2010

John W. Rhoades
Northeast Ohio Regional Sewer District
22370 Blossom Drive
Rocky River, Ohio 44116

Re: Qualified Data Collector Renewal, Surface Water Volunteer Monitoring Program

Dear John:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) renewal application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level:	3
QDC Specialty:	Chemical Water Quality Assessment
QDC number:	**008**

Please continue to use your QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date.

At that time, another renewal application must be submitted in accordance with OAC 3745-4-03(C). As rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

ATTACHMENT B

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of seventy dollars ($70.00) which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal must be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,

Chris Korleski
Director

ATTACHMENT B

OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

OHIO E.P.A.

Effective Date: November 4, 2008
Expiration Date: November 3, 2010

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By: [signature] Date: 11-4-08

CERTIFIED MAIL

Francisco Rivera
Northeast Ohio Regional Sewer District
951 Center Road
Eastlake, Ohio 44095

Re: Qualified Data Collector Approval, Surface Water Volunteer Monitoring Program

Dear Francisco:

The Division of Surface Water Volunteer Monitoring (Credible Data) Program has reviewed your Qualified Data Collector (QDC) application. Pursuant to Ohio Revised Code (ORC) 6111.53 and Ohio Administrative Code (OAC) 3745-4-03, you are approved as a QDC for the following level and specialty:

QDC Level: 3
QDC Specialty: Chemical Water Quality Assessment
QDC number: 262

Please use this QDC number on all correspondence, study plans, etc. submitted to Ohio EPA.

As noted at the top of this letter, this status is effective as of the date of this letter and expires two years from that date. You may now submit study plans to the Volunteer Monitoring Program.

A renewal application must be submitted in accordance with OAC 3745-4-03(C). As provided in this rule, renewal of status is contingent upon active participation in the Volunteer Monitoring Program at the designated level and specialty. Lack of such participation will prevent you from renewing your status, but you may re-apply for initial QDC status.

As a reminder, your status is contingent upon the absence of any trespassing violation (within the previous five years) by you or any person sampling under your supervision. Always obtain land owner permission prior to sampling.

Additionally, collection (and retention) of aquatic biological samples (this includes fish, macroinvertebrates, mollusks, and shells) requires a collector's permit from the Ohio Department of Natural Resources/Division of Wildlife. Obtain this permit prior to collection of any biological samples.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of seventy dollars ($70.00) which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal must be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Commission at the following address: 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

Sincerely,

Chris Korleski
Director

ATTACHMENT C

External Report

Northeast Ohio Regional Sewer District

Protecting Your Health and Environment

Daily Beach Data

Sample ID	Collection Date	Location	E. coli cfu/ 100ml	pH S.U.	Temp °C	Turbidity NTU
VABC0807010001	7/1/2008 9:53:00 AM	Villa Angela	355	7.7	21.8	4.77
EUBC0807010001	7/1/2008 10:08:00 AM	Euclid Beach	560	7.9	21.9	4.66
EDGC0807010001	7/1/2008 8:42:00 AM	Edgewater	57	7	21.3	9.3

ATTACHMENT C

Internal Report

Northeast Ohio Regional Sewer District

Protecting Your Health and Environment

Internal Daily Beach Data Report

Location	Time	E. coli cfu/100ml	pH S.U.	Temp °C	Turbidity NTU	Wave Ht. Feet	Prediction E. Coli cfu/100ml	Prob.	Water Quality
Collection Date: 7/1/2008									
Edgewater Beach									
Edgewater Beach West	8:50 AM	*37*			11.82				
Edgewater Beach East	8:42 AM	*39*			9.95				
Edgewater	8:42 AM	*57*	7	21.3	9.3	.7	46	4	Good
Euclid Beach									
Euclid Beach East	10:08 AM	*265*			4.37				
Euclid Beach West	10:14 AM	*1040*			5.2				
Euclid Beach	10:08 AM	*560*	7.9	21.9	4.66	.38			
Villa Angela Beach									
Villa Angela-West	10:01 AM	*275*			4.34				
Villa Angela-East	9:53 AM	*270*			5.1				
Villa Angela	9:53 AM	*355*	7.7	21.8	4.77	.33			
Euclid Creek 30ft N. Brid	9:37 AM	*3000*	7.4		9.43				
Euclid Creek Site 0.5	9:30 AM	*1650*	7.2		4.24				

Wednesday, July 02, 2008 *Page 1 of 1*

ATTACHMENT D

Schedule for Beach Sampling 2009

		Edgewater Beach			Villa Angela			Euclid Beach			Euclid Creek	
	Date	EDGE	EDGW	EDGC	VABE	VABW	VABC	EUBE	EUBW	EUBC	R-	VAB1
Monday	5/4/2009	X	X	X	X	X	X	X	X	X		
Tuesday	5/5/2009	X	X	X	X	X	X	X	X	X		
Wednesday	5/6/2009	X	X	X	X	X	X	X	X	X		
Thursday	5/7/2009	X	X	X	X	X	X	X	X	X		
Friday	5/8/2009											
Saturday	5/9/2009											
Sunday	5/10/2009											
Monday	5/11/2009	X	X	X	X	X	X	X	X	X		
Tuesday	5/12/2009	X	X	X	X	X	X	X	X	X		
Wednesday	5/13/2009	X	X	X	X	X	X	X	X	X		
Thursday	5/14/2009	X	X	X	X	X	X	X	X	X		
Friday	5/15/2009											
Saturday	5/16/2009											
Sunday	5/17/2009											
Monday	5/18/2009	X	X	X	X	X	X	X	X	X		
Tuesday	5/19/2009	X	X	X	X	X	X	X	X	X		
Wednesday	5/20/2009	X	X	X	X	X	X	X	X	X		
Thursday	5/21/2009	X	X	X	X	X	X	X	X	X		
Friday	5/22/2009	X	X	X	X	X	X	X	X	X		
Saturday	5/23/2009	X	X	X	X	X	X	X	X	X		
Sunday	5/24/2009	X	X	X	X	X	X	X	X	X		
Monday	5/25/2009	X	X	X	X	X	X	X	X	X		
Tuesday	5/26/2009	X	X	X	X	X	X	X	X	X		
Wednesday	5/27/2009	X	X	X	X	X	X	X	X	X		
Thursday	5/28/2009	X	X	X	X	X	X	X	X	X		
Friday	5/29/2009	X	X	X	X	X	X	X	X	X		
Saturday	5/30/2009	X	X	X	X	X	X	X	X	X		
Sunday	5/31/2009	X	X	X	X	X	X	X	X	X	X	X
Monday	6/1/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	6/2/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	6/3/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	6/4/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	6/5/2009	X	X	X	X	X	X	X	X	X		
Saturday	6/6/2009	X	X	X	X	X	X	X	X	X		
Sunday	6/7/2009	X	X	X	X	X	X	X	X	X	X	X
Monday	6/8/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	6/9/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	6/10/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	6/11/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	6/12/2009	X	X	X	X	X	X	X	X	X		
Saturday	6/13/2009	X	X	X	X	X	X	X	X	X		
Sunday	6/14/2009	X	X	X	X	X	X	X	X	X	X	X
Monday	6/15/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	6/16/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	6/17/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	6/18/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	6/19/2009	X	X	X	X	X	X	X	X	X		
Saturday	6/20/2009	X	X	X	X	X	X	X	X	X		
Sunday	6/21/2009	X	X	X	X	X	X	X	X	X	X	X
Monday	6/22/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	6/23/2009	X	X	X	X	X	X	X	X	X	X	X

ATTACHMENT D

Schedule for Beach Sampling 2009

		Edgewater Beach			Villa Angela			Euclid Beach			Euclid Creek	
	Date	EDGE	EDGW	EDGC	VABE	VABW	VABC	EUBE	EUBW	EUBC	R-	VAB1
Wednesday	6/24/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	6/25/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	6/26/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	6/27/2009	X	X	X	X	X	X	X	X	X		
Sunday	6/28/2009	X	X	X	X	X	X	X	X	X		
Monday	6/29/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	6/30/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	7/1/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	7/2/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	7/3/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	7/4/2009	X	X	X	X	X	X	X	X	X		
Sunday	7/5/2009	X	X	X	X	X	X	X	X	X		
Monday	7/6/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	7/7/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	7/8/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	7/9/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	7/10/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	7/11/2009	X	X	X	X	X	X	X	X	X		
Sunday	7/12/2009	X	X	X	X	X	X	X	X	X		
Monday	7/13/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	7/14/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	7/15/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	7/16/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	7/17/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	7/18/2009	X	X	X	X	X	X	X	X	X		
Sunday	7/19/2009	X	X	X	X	X	X	X	X	X		
Monday	7/20/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	7/21/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	7/22/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	7/23/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	7/24/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	7/25/2009	X	X	X	X	X	X	X	X	X		
Sunday	7/26/2009	X	X	X	X	X	X	X	X	X		
Monday	7/27/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	7/28/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	7/29/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	7/30/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	7/31/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	8/1/2009	X	X	X	X	X	X	X	X	X		
Sunday	8/2/2009	X	X	X	X	X	X	X	X	X		
Monday	8/3/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	8/4/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	8/5/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	8/6/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	8/7/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	8/8/2009	X	X	X	X	X	X	X	X	X		
Sunday	8/9/2009	X	X	X	X	X	X	X	X	X		
Monday	8/10/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	8/11/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	8/12/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	8/13/2009	X	X	X	X	X	X	X	X	X	X	X

ATTACHMENT D

Schedule for Beach Sampling 2009

		Edgewater Beach			Villa Angela			Euclid Beach			Euclid Creek	
	Date	EDGE	EDGW	EDGC	VABE	VABW	VABC	EUBE	EUBW	EUBC	R-	VAB1
Friday	8/14/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	8/15/2009	X	X	X	X	X	X	X	X	X		
Sunday	8/16/2009	X	X	X	X	X	X	X	X	X		
Monday	8/17/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	8/18/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	8/19/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	8/20/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	8/21/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	8/22/2009	X	X	X	X	X	X	X	X	X		
Sunday	8/23/2009	X	X	X	X	X	X	X	X	X		
Monday	8/24/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	8/25/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	8/26/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	8/27/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	8/28/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	8/29/2009	X	X	X	X	X	X	X	X	X		
Sunday	8/30/2009	X	X	X	X	X	X	X	X	X		
Monday	8/31/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	9/1/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	9/2/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	9/3/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	9/4/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	9/5/2009	X	X	X	X	X	X	X	X	X		
Sunday	9/6/2009	X	X	X	X	X	X	X	X	X		
Monday	9/7/2009	X	X	X	X	X	X	X	X	X	X	X
Tuesday	9/8/2009	X	X	X	X	X	X	X	X	X	X	X
Wednesday	9/9/2009	X	X	X	X	X	X	X	X	X	X	X
Thursday	9/10/2009	X	X	X	X	X	X	X	X	X	X	X
Friday	9/11/2009	X	X	X	X	X	X	X	X	X	X	X
Saturday	9/12/2009											
Sunday	9/13/2009											
Monday	9/14/2009	X	X	X	X	X	X	X	X	X		
Tuesday	9/15/2009	X	X	X	X	X	X	X	X	X		
Wednesday	9/16/2009	X	X	X	X	X	X	X	X	X		
Thursday	9/17/2009	X	X	X	X	X	X	X	X	X		
Friday	9/18/2009											
Saturday	9/19/2009											
Sunday	9/20/2009											
Monday	9/21/2009	X	X	X	X	X	X	X	X	X		
Tuesday	9/22/2009	X	X	X	X	X	X	X	X	X		
Wednesday	9/23/2009	X	X	X	X	X	X	X	X	X		
Thursday	9/24/2009	X	X	X	X	X	X	X	X	X		
Friday	9/25/2009											
Saturday	9/26/2009											
Sunday	9/27/2009											
Monday	9/28/2009	X	X	X	X	X	X	X	X	X		
Tuesday	9/29/2009	X	X	X	X	X	X	X	X	X		
Wednesday	9/30/2009	X	X	X	X	X	X	X	X	X		
Thursday	10/1/2009	X	X	X	X	X	X	X	X	X		
Friday	10/2/2009											
Saturday	10/3/2009											

ATTACHMENT D

Schedule for Beach Sampling 2009

		Edgewater Beach			Villa Angela			Euclid Beach			Euclid Creek	
	Date	**EDGE**	**EDGW**	**EDGC**	**VABE**	**VABW**	**VABC**	**EUBE**	**EUBW**	**EUBC**	**R-**	**VAB1**
Sunday	10/4/2009											
Monday	10/5/2009	X	X	X	X	X	X	X	X	X		
Tuesday	10/6/2009	X	X	X	X	X	X	X	X	X		
Wednesday	10/7/2009	X	X	X	X	X	X	X	X	X		
Thursday	10/8/2009	X	X	X	X	X	X	X	X	X		
Friday	10/9/2009											
Saturday	10/10/2009											
Sunday	10/11/2009											
Monday	10/12/2009	X	X	X	X	X	X	X	X	X		
Tuesday	10/13/2009	X	X	X	X	X	X	X	X	X		
Wednesday	10/14/2009	X	X	X	X	X	X	X	X	X		
Thursday	10/15/2009	X	X	X	X	X	X	X	X	X		
Friday	10/16/2009											
Saturday	10/17/2009											
Sunday	10/18/2009											
Monday	10/19/2009	X	X	X	X	X	X	X	X	X		
Tuesday	10/20/2009	X	X	X	X	X	X	X	X	X		
Wednesday	10/21/2009	X	X	X	X	X	X	X	X	X		
Thursday	10/22/2009	X	X	X	X	X	X	X	X	X		
Friday	10/23/2009											
Saturday	10/24/2009											
Sunday	10/25/2009											
Monday	10/26/2009	X	X	X	X	X	X	X	X	X		
Tuesday	10/27/2009	X	X	X	X	X	X	X	X	X		
Wednesday	10/28/2009	X	X	X	X	X	X	X	X	X		
Thursday	10/29/2009	X	X	X	X	X	X	X	X	X		
Friday	10/30/2009											
Saturday	10/31/2009											

ATTACHMENT E

Analytical Services

Northeast Ohio Regional SEWER DISTRICT

Beach Sampling Training

Form 4018-00

Analyst Signature: _____ Supervisor: _____

	Yes	No	Initials	Date
Method Review				
1. Review "Beach Sampling" SOP				
2. Review "Vehicle and Mobile Radio Operation" SOP				
3. Review "Operation of the Hanna pH EC/TDS Meter" SOP				
4. Review "Image and File Upload for Beach Project" SOP				
Safety Equipment				
1. Life Jacket or inflatable safety vest				
2. Chest Waders				
3. Gloves				
4. Ring buoy with 50ft of nylon rope				
5. Cell phone				
6. Sampling pole for inclement weather sampling				
Video				
1. Wader Safety				
2. Sampling Techniques for Microbiology				
Equipment				
1. Can calibrate and use the Hanna pH EC/TDS Meter				
2. Can use digital camera				
3. Can upload images from camera to computer				
4. Can scan beach observation sheets from copier to w:/scans				
5. Can use GPS				
6. Can use wind anemometer				
7. Uses wave height stick to measure wave height				
Sampling				
1. Site visit				
2. Uses proper Sample Bottles and Technique to Sample				
3. Fills out Sample Tags appropriately				
4. Can fill out Chain of Custody and Beach Observation Sheets				
5. Uses cooler with ice				
6. Understand how to composite East and West Samples				
LabLynx Skills				
1. Can log in new samples				
2. Can assign applications and add tests to samples				
3. Can enter field data into LabLynx				

Comments:

ATTACHMENT F

Analytical Services

Northeast Ohio Regional SEWER DISTRICT

Beach Sampling Audit

Form 3180-00

Beach Audited: _____ QDC Auditing: _____

Safety Equipment with Field Crew	Yes	No	Initials	Date
1. Life Jacket or inflatable safety vest				
2. Chest Waders				
3. Gloves				
4. Ring buoy with 50ft of nylon rope				
5. Raincoats				
6. Cell phone				
7. Sampling pole for inclement weather sampling				

Sampling Equipment Checklist	Yes	No	Initials	Date
1. Chain of Custody				
2. Field Observation Sheet				
3. Sterile Bacti Bottles				
4. Sample Tags				
5. Bottles for Turbidity Samples				
6. pH/Conductivity/Temp Meter				
7. Wind Aenometer				
8. Wave Height Stick				
9. Camera				
10. GPS				
11. Cooler				
12. Ice				
13. Ziploc Bags				
14. Calculator				
15. Laptop - Edgewater Crew Only				
16. Keys for office for signs				

Method Review	Yes	No	Initials	Date
1. Samplers are using the GPS to locate sampling sites				
2. Samplers Attained Samples at Appropriate Sites				
East				
West				
Creek				
3. Sampled at appropriate depth of 3 ft.using wave height stick to verify.				
4. Samples exhibited proper sampling technique				
a. Uses sterile bottles				
b. Bottle inverted before it enters the water.				
c. Bottle is plunged 6-12 inches below the surface of the water				
d. Bottle rotated with the opening facing the surface.				
e. Headspace left				

ATTACHMENT F

Method Review Continued	Yes	No	Initials	Date
f. Bottle capped securely				
g. Second bottle collected for Turbidity analysis				
h. Fills out Sample Tags appropriately				
i. Can fill out Chain of Custody and Beach Observation Sheets				
j. Uses cooler with ice				
k. Understand how to composite East and West Samples				
Equipment Skills	**Yes**	**No**	**Initials**	**Date**
1. Can calibrate and use the Hanna pH EC/TDS Meter				
2. Can use digital camera				
3. Can upload images from camera to computer				
4. Can scan beach observation sheets from copier to w:/scans				
5. Can use GPS				
6. Can use wind anemometer to measure wind speed				
7. Uses wave height stick to measure wave height				
LabLynx Skills	**Yes**	**No**	**Initials**	**Date**
1. Can log in new samples				
2. Can assign applications and add tests to samples				
3. Can enter field data into LabLynx				
Edgewater NOWCAST Model	**Yes**	**No**	**Initials**	**Date**
1. Can access email for 24 and 48 hour rainfall.				
2. Obtains Lake level and Hopkins Rainfall from internet				
3. Can plug in appropriate parameters into the model.				
4. Can post to the NOWCAST website.				
5. Sends email to distribution of GOOD or POOR prediction.				
6. Updates NEORSD internet page to reflect forecast.				
7. Changes signs at beach to GOOD or POOR as appropriate				

Comments: