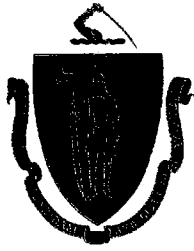


Received
4-16-09



The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Mental Retardation
Wrentham Developmental Center
P.O. Box 144

Wrentham, MA 02093

Tel. (508) 384-3114 Fax (508) 384-1619

Deval L. Patrick
Governor

Elin M. Howe
Commissioner

Timothy P. Murray
Lieutenant Governor

Diane Enochs
Assistant Commissioner
Facilities Management

JudyAnn Bigby, M.D.
Secretary

April 15, 2009

Nicholas J. D'Aluisio
Facility Director

Ms. Thelma Murphy
Regional Storm Water Coordinator
U.S. Environmental Protection Agency
1 Congress Street - Suite 1100
Boston, MA 02114-2023

Dear Ms. Murphy:

RE: Annual Storm Water Report, April 1, 2008 to March 31, 2009
NPDES General Permit for Storm Water Discharges from Small MS4s
Permit # MAR042030; MA DEP BRP WM 08A NOI Transmittal # W035610
Wrentham Developmental Center, Wrentham, MA

In compliance with the NPDES General Permit for Storm Water Discharges from Small MS4s, the Wrentham Developmental Center (WDC) is submitting the 2008-2009 Annual Storm Water Report.

If you have any questions, please feel free to contact me at 508-384-1656.

Sincerely,

A handwritten signature in cursive script, reading "Stephen Legendre".

Stephen Legendre
Director of Operations

SL: rstl

Enclosure

Cc: Nicholas J. D'Aluisio, DMR, WDC
Brian Sullivan, DMR, WDC
John Sites, DMR, Boston

Paul Beaton, DMR, Boston
Ann Herrick, EPA, Boston
Fred Civian, DEP, Boston

Municipality/Organization: Wrentham Developmental Center

EPA NPDES Permit Number: MAR042030

MassDEP Transmittal Number: W035610

Annual Report Number

& Reporting Period:

April 1, 2008 – March 31, 2009

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2009)

Part I. General Information

Contact Person: Stephen Legendre

Title: Director of Operations

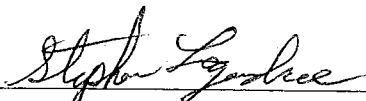
Telephone #: 508-384-1600, ext.1656

Email: Steve.Legendre@state.ma.us

Mailing Address: Wrentham Developmental Center, P.O. Box 144, Wrentham, MA 02093

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 

Printed Name: Stephen Legendre

Title: Director of Operations

Date: April 15, 2008

Wrentham Developmental Center: Permit # MAR042030, DEP Transmittal # W035610, Permit Year 6, 2003 to 2008

Part II. Self-Assessment: The Wrentham Developmental Center has completed the required self-assessment and has determined that our municipality is in compliance with all general permit conditions, effective May 1, 2003, to 2008 to present.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Action for Next Permit Year
1-01	Fact Sheet in newsletter	Steve Legendre/ Director of Operations	Awareness / feedback	Fact Sheet in newsletter distributed to all buildings and employees of facility	Maintain and update Water Fact Sheet <u>CROSSROADS</u>
Revised					
1-02	Notice posted in food and cleaning services buildings	Steve Legendre/ Director of Operations	Awareness of proper disposal practices	Posters remain in visually conspicuous area for the employees of these subcontracted service providers	Maintain storm water designated areas
Revised					
1-03	Present a storm water fact sheet at each new employee orientation	Steve Legendre/ Director of Operations	Awareness / improved work habits	Fact sheet distributed during each employee orientation	Continue to provide each orientation with awareness of SWMP, and encourage participation
Revised					
1-04	Establish storm water education center in Operations Dept. Office	Steve Legendre/ Director of Operations	Availability of educational materials and SWMP reference materials	Storm Water education center established in Operations Dept. Office	Maintain storm water educational materials center
Revised					

Wrentham Developmental Center: Permit # MAR042030, DEP Transmittal # W035610, Permit Year 6, 2008-2009

1a. Additions

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Year
2-01 Revised	Recruit designated person per shift, food and cleaning services	Steve Legendre/ Director of Operations	Oversight with increased awareness	Annual Stormwater and Spill Prevention Meeting of all department heads, supervisory administrative personnel, food services manager, and cleaning services manager. (sign-in required)	Continue to administer Annual Storm Water and Spill Prevention Meeting.
2-02 Revised	Request volunteers per Unit per shift by supervisory personnel	Steve Legendre/ Director of Operations	Oversight with increased awareness	Requests made by supervisory personnel attending Annual Storm Water Meeting	Continue to request volunteers per Unit/Dept. per shift be watchful for proper disposal practices
2-03 Revised	Security Training/Awareness	Steve Legendre/ Director of Operations	Reporting of incidents	Security supervisor attendance at Annual Storm Water / Spill Prevention Meeting. Establish procedure for the reporting and response to incidents	Security supervisor to attend Annual Storm Water Meeting and maintain documentation of incidents as needed
2-04 Revised	Training for Transport, Grounds, Paint, and all Maintenance Depts.	Steve Legendre/ Director of Operations	Awareness/improved work habits	Tailgate meetings to promote proper work habits as related to SWMP	Tailgate meetings to promote proper work habits as related to SWMP

2a. Additions

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Year
3-01	Regularly inspect outfalls for dry weather discharges	Steve Legendre/ Director of Operations	Early detection and correction	Continued monitoring of outfalls	Continued monitoring of outfalls
Revised				No dry weather discharges detected	
3-02	Use test kits for pH, nitrate, phosphate, during severe wet weather	Steve Legendre/ Director of Operations	Early detection and correction	Annual testing conducted during heavy rainfall event on 7-24-08. Tests seem to indicate normal outfall conditions. Additional tests performed for copper and ammonia nitrogen from same samples seem to indicate normal background levels for these substances.	Continue sampling during severe wet weather event each year
Revised				Annual Storm Water / Spill Prevention Meeting did address Spill Response Plan. Additional spill control kits in each maintenance shop.	
3-03	Spill Response Plan	Steve Legendre/ Director of Operations	Spill Control Kit(s) on site; E.Q Northeast for clean-up and Emergency Response	Annual Storm Water / Spill Prevention Meeting did address Spill Response Plan. Additional spill control kits in each maintenance shop.	Continue to administer Annual Storm Water/ Spill Prevention (and response) Meeting with required attendance by designated supervisory personnel. Maintain spill control kits at appropriate locations.
Revised					

3a. Additions

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Year
4-01	Insert standard construction controls and penalties into contract documentation	Steve Legendre/ Director of Operations	Erosion, sediment, and waste control	Standard construction controls maintained in contract documentation	Standard construction controls to be maintained in contract documentation
Revised					
4-02	Perform site inspections and impose penalties as required	Steve Legendre/ Director of Operations	Erosion, sediment, and waste control	Site inspections performed as required	Site inspections performed as required
Revised					

4a. Additions

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Year
5-01	Standard post-construction controls and penalties into contract documentation	Steve Legendre/ Director of Operations	Erosion, sediment, and waste control. Soil depth restored.	Standard post-construction controls maintained in contract documentation	Standard post-construction controls to be maintained in contract documentation
Revised					

5a. Additions

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Year
6-01 Revised	Contract for catch basin cleaning, inspection and repair	Steve Legendre/ Director of Operations	Proper operation of storm water collection system	Contract activities satisfied	Contract activities to be satisfied
6-02 Revised	Town of Wrentham to clean public roads and some parking areas	Steve Legendre/ Director of Operations	Proper operation of system with reduction of sand in catch basins	Town of Wrentham cleaning/sweeping of public roadways and certain parking areas completed	Town of Wrentham to cleaning/sweep public roadways and certain parking areas
6-03 Revised	Contract for remaining parking areas to be cleaned	Steve Legendre/ Director of Operations	Proper operation of system with reduction of sand in catch basins	Contract for cleaning/sweeping of remaining parking areas completed	Contract to continue for cleaning/sweeping of remaining parking areas
6-04 Revised	Limit salt use; store salt/sand mixtures under roofed area	Steve Legendre/ Director of Operations	Limit salt to water table	Salt use controlled. Salt/sand mixture stored under roofed area.	Salt use controlled. Salt/sand mixture to be stored under roofed area
6-05 Revised	Inspect and clean trash and debris from roadsides and culverts	Steve Legendre/ Director of Operations	Proper operation of storm-drain system	Regular inspection and cleaning of debris from roadside and culverts completed.	Regular inspection and cleaning of debris from roadside and culverts completed.

6a. Additions

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) -- Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities -- Next Permit Year
7-01	Maintain status of all discharges being "Allowable"	Steve Legendre/ Director of Operations	No significant nutrient or sediment loading	All discharges remain "Allowable" No illicit discharges detected	All discharges maintained as "Allowable." Continue to monitor for illicit discharges
Revised					
7-02	Non-Storm Water Discharges not a significant contributor of pollutants				No direct receiving waters where TMDL is applicable
Revised					

7a. Additions

7b. WLA Assessment: Not Applicable

Part IV. Summary of Information Collected and Analyzed

Water quality testing was conducted on 7-24-08 during a heavy rainfall event. Testing results for pH, Phosphate, Nitrogen Nitrate, Ammonia as Nitrogen, and Copper are attached. All testing is done at our waste water treatment plant by a certified operator in accordance with NPDES and MassDEP testing standards*. (*)Note: Copper tested using colorimetric test kit, SM Vol. 21, 3500- Cu B.

Part V. Program Outputs & Accomplishments (OPTIONAL)

(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2008 through March 31, 2009)

Programmatic

	(y/n)	n	Response
Stormwater management position created/staffed			
Annual program budget/expenditures **	(\$)		\$14,491.70
Total program expenditures since beginning of permit coverage	(\$)		\$87,570.70
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)			Gen Fund

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	n/a
Stormwater management committee established	(y/n)	y
Stream teams established or supported	(# or y/n)	n
Shoreline clean-up participation or quantity of shoreline miles cleaned ** -- Meadow Brook--	(y/n or mi.)	0.15 (all)
Shoreline cleaned since beginning of permit coverage	(mi.)	0.15
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	n/a
▪ community participation **	(# or %)	n/a
▪ material collected **	(tons or gal)	unknown
School curricula implemented	(y/n)	n/a

Wrentham Developmental Center: Permit # MAR042030, DEP Transmittal # W035610, Permit Year 6, 2008-2009

Legal/Regulatory

		In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "X")		**state contracts specify		standard	construction	controls
▪ Illicit Discharge Detection & Elimination		X				
▪ Erosion & Sediment Control		X				
▪ Post-Development Stormwater Management		X				
Accompanying Regulation Status (indicate with "X")						
▪ Illicit Discharge Detection & Elimination						
▪ Erosion & Sediment Control						
▪ Post-Development Stormwater Management						
Mapping and Illicit Discharges						
					(Preferred Units)	Response
Outfall mapping complete					(%)	100
Estimated or actual number of outfalls					(#)	10
System-Wide mapping complete (complete storm sewer infrastructure)					(%)	98
Mapping method(s)						
▪ Paper/Mylar					(%)	98
▪ CADD					(%)	98
▪ GIS					(%)	0
Outfalls inspected/screened **					(# or %)	10
Outfalls inspected/screened (Since beginning of permit coverage)					(# or %)	10
Illicit discharges identified **					(#)	0
Illicit discharges identified (Since beginning of permit coverage)					(#)	0
Illicit connections removed **					(#); and (est. gpd)	0
Illicit connections removed (Since beginning of permit coverage)					(#); and (est. gpd)	0
% of population on sewer					(%)	98
% of population on septic systems					(%)	1

Wrentham Developmental Center: Permit # MAR042030, DEP Transmittal # W035610, Permit Year 6, 2008-2009

Construction		(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)		0
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)		0
Site inspections completed **	(# or %)		0
Tickets/Stop work orders issued **	(# or %)		0
Fines collected **	(# and \$)		0
Complaints/concerns received from public **	(#)		0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)		0
Site inspections (for proper BMP installation & operation) completed **	(# or %)		0
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)		0
Low-impact development (LID) practices permitted and encouraged	(y/n)		0

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)		1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)		1
Qty of structures cleaned **	(#)		86
Qty. of storm drain cleaned **	(%, LF or mi.)		0
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)		26 lbs
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)		compost

Wrentham Developmental Center: Permit # MAR042030, DEP Transmittal # W035610, Permit Year 6, 2008-2009

Basin Cleaning Costs			
• Annual budget/expenditure (labor & equipment)**	(\$)		\$1,113.70
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)		\$12.95 per basin
• Disposal cost**	(\$)		0
Cleaning Equipment			
• Clam shell truck(s) owned/leased	(#)		0
• Vacuum truck(s) owned/leased	(#)		0
• Vacuum trucks specified in contracts	(y/n)		n
• % Structures cleaned with clam shells **	(%)		100
• % Structures cleaned with vacor **	(%)		0

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	1
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	1
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	unknown
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	compost
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$1,770.00
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	n/a
• Disposal cost**	(\$)	0
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	0
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	n
• % Roads swept with rotary brush sweepers **	%	100
• % Roads swept with vacuum sweepers **	%	0

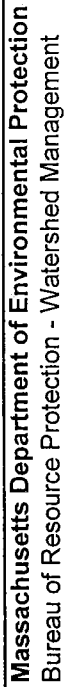
Wrentham Developmental Center: Permit # MAR042030, DEP Transmittal # W035610, Permit Year 6, 2008-2009

Reduction (since beginning of permit coverage) in application on public land of: (“N/A” = never used; “100%” = elimination)			
■ Fertilizers	(lbs. or %)	2%	
■ Herbicides	(lbs. or %)	n/a	
■ Pesticides	(lbs. or %)	n/a	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	n	
(Preferred Units)			
Average Ratio of Anti-/De-Icing products used **	% NaCl	23%	
(also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% CaCl ₂	0	
	% MgCl ₂	0	
	% CMA	0	
	% Kac	0	
	% KCl	0	
	% Sand	77%	
Pre-wetting techniques utilized **	(y/n or %)	n	
Manual control spreaders used **	(y/n or %)	y	
Zero-velocity spreaders used **	(y/n or %)	n	
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	0	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	0	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100	
Storage shed(s) in design or under construction	(y/n or #)	0	
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	y	

Wrentham Developmental Center: Permit # MAR042030, DEP Transmittal # W035610, Permit Year 6, 2008-2009

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	0
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	0
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	0



**BRP WM 08A NPDES Stormwater General Permit Notice of Intent
for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)**

F. Example Storm Water Management Program TIME FRAMES (Wrentham Developmental Center)

[illegible]



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Watershed Management
BRP WM 08A NPDES Stormwater General Permit Notice of Intent
for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)
F. Example Storm Water Management Program TIME FRAMES (Wrentham Developmental Center)

BMP ID #	PERMIT YEAR ONE				PERMIT YEAR TWO				PERMIT YEAR THREE				PERMIT YEAR FOUR				PERMIT YEAR FIVE				Next Permit
	Spring 03	Summer 03	Fall 03	Winter 03-04	Spring 04	Summer 04	Fall 04	Winter 04-05	Spring 05	Summer 05	Fall 05	Winter 05-06	Spring 06	Summer 06	Fall 06	Winter 06-07	Spring 07	Summer 07	Fall 07	Winter 07-08	
1 01	X		X		X		X		X				X				X				X
1 02							X						X				X				X
1 03																					X
1 04																					X
2 01							X		X				X				X				X
2 02							X		X				X				X				X
2 03							X		X				X				X				X
2 04							X		X				X				X				X
3 01									X					X				X			X
3 02																					X
3 03																					X
4 01																					X
4 02																					X
5 01																					X
6 01	X				X				X				X				X				X
6 02					X				X				X				X				X
6 03									X				X				X				X
6 04																					X
6 05																					X

Transmittal Number WO35610

Facility ID (if known)

Page 1 of 1

Announcement



The annual Water Quality Report for calendar year 2007 will be published in the upcoming 6/13/2008 issue of the CROSSROADS newsletter. Additional copies of the annual Water Quality Report will be made available upon request.

If you have any questions, please feel to call
• Robert St. Laurent, our drinking water operator, at
ext. 1657

LIST OF PUBLIC LOCATIONS FOR POSTING of Wrentham Developmental Center's Water Quality Report 2007

June 2008

Water Quality Report 2007

--For Calendar Year 2007--

In addition to being published in the 6/13/2008 edition of the Crossroads Newsletter, the Wrentham Developmental Center will be posting a copy of its Water system's **Water Quality Report 2007** during the month of June 2008 at the following location within the facility:

(Continued)

INSIDE THIS ISSUE

- 1 Water Quality Report Announcement
- 2 Good Cleaning Practices

- Administration building, 1st floor hallway
- Good Times Café, entrance hallway

- Cottage 9, new employee Orientation Center and staff training, 1st floor

- Cottage 8, Maintenance Office, front entrance hallway

- Cottage 8, Recreation Office, 2nd floor, hallway

- The Peggy Jelinek Volunteer Services Center, main office

- Morrison Food Services, employee information posting board

- FM&M Cleaning Services, employee information posting board

- Cottage 3, EDCO PT Offices

- Jolly Farm Day Care Center

- King Philip Youth Football, field utility building, North Street, Wrentham

- Fair-Grounds, outside sinks on utility building

- Tufts Dental Clinic

As always, additional copies of the Water Quality Report are available throughout the year. If you have any questions about your drinking water, please feel free to call Mr. St. Laurent, our drinking water operator, at ext. 1657.



Consider It Dunn, Inc.

35 Louis Road
Attleboro, MA 02703
1-800-950-4514
consideritdunn@comcast.net

INVOICE

DATE	INVOICE #
6/2/2008	1810

BILL TO
Wrentham Development Center P.O. Box 144 Wrentham, MA 02093 Attn: Steve Legendre

YOUR P.O. #	TERMS
8143M02	Net 30

SERVICED	ITEM	DESCRIPTION	AMOUNT
	Service	Re: Sweeper Rental Sweeping of roadway and parking areas as agreed to and designated by Steve Legendre.	1,770.00
Thank you for your business. Please write Invoice # on your check. Thank You			Total \$1,770.00
			Payments/Credits \$0.00
			Balance Due \$1,770.00

**Truax Corporation**

10 Paddock Hill Drive
Lakeville, MA 02347

Invoice

Date	Invoice #
6/16/2008	3113

Bill To

Wrentham Development Center
PO Box 144
Wrentham, MA 02093
Attention: Steve Levenere

Terms

Net 15

Date	Service Performed	Location	Amount
6/14/2008	Catch Basin	Wrentham Development Center. Cleaned 86 basins @ \$12.95 each PO# 8162MO3	1,113.70

We appreciate your prompt payment

Total \$1,113.70

Phone #	Fax #	E-mail	Web Site
508.946.3394	508.946.3441	truaxcorporation@comcast.net	www.truaxcorporation.com

W D C

7/24/28

STORM WATER OUTFALLS

	<u>E W A I T</u>	<u>m m H # 1</u>	<u>m m H # 2</u>
P. H.	6.08	6.51	6.49
PHOSPHATE	0.13	< 0.10	0.32
COPPER	0.06	< 0.01	0.07
AMMONIA AS NITROGEN	0.74	0.75	0.50
NITROGEN NITRATE	< 0.01	0.03	< 0.01
Temp °C	21°	21°	21°

WORKSEET

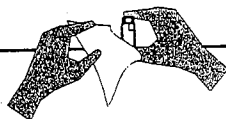
Analysis Date 7/24/08 Time 1:35 pm By BS

	P.H.	Temp
E WAIT	6.08	
mm H ^{#1}	6.51	
mm H ^{#2}	6.49	

Comments: _____

AMMONIA NITROGEN TEST PROCEDURE: NESSLER METHOD

Read the 1200 Colorimeter Manual before proceeding. Carefully wipe tubes dry before inserting into the colorimeter chamber.



AMMONIA NITROGEN

1. Fill the Water Sample Collecting Bottle (0688) with sample water. This will be used to dispense sample water for the tests.

2. Rinse and fill a colorimeter tube (0290) to the 10 mL line with sample water. Cap and wipe dry.

3. Insert the tube into the chamber, being sure to align the index line with the arrow on the meter. Close the lid. This tube is the blank or zero.

4. Push the **READ** button to turn the meter on. Press the **ZERO** button and hold it for 2 seconds until **BLA** is displayed. Release the button to take a blank reading (0.0 ppm).

5. Remove tube from colorimeter. Add 8 drops of Ammonia Nitrogen Reagent #1 (V-4797). Cap and mix.

6. Use 1.0 mL pipet (0354) to add 1.0 mL of *Ammonia Nitrogen Reagent #2 (V-4798).

7. Cap and invert to mix. Wait 5 minutes for full color development. Wipe tube dry.

8. Align the index line with the arrow on the meter, insert tube into chamber. Close the lid. Push the **READ** button. Record results as ppm Ammonia Nitrogen ($\text{NH}_3\text{-N}$).

AMMONIA NITROGEN

WORKSHEET

Sample Date 7/24/08 Time 1:00

Sample ELAIT
Location MNH #1

24 Hour Compost Sample GRAB

Analysis Date 7/24/08 Time 1:00

Test Results ELAIT (0.74)
MNH #1 (0.75)
MNH #2 (0.50)

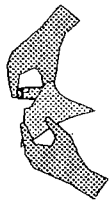
Comments: _____

Volume Used: 10 mL

Calculations _____

COPPER TEST PROCEDURE - DIETHYLDITHIOCARBAMATE

Read the 1200 Colorimeter Manual before proceeding. Carefully wipe tubes dry before inserting into the colorimeter chamber.



COPPER

1. Fill the Water Sample Collecting Bottle (0688) with sample water. This will be used to dispense sample water for the tests.

2. Rinse and fill a colorimeter tube (0290) to the 10 mL line with sample water. Cap and wipe dry.

3. Insert the tube into the chamber, being sure to align the index line with the arrow on the meter. Close the lid. This tube is the blank or zero.

4. Push the **READ** button to turn the meter on. Press the **ZERO** button and hold it for 2 seconds until **BLA** is displayed. Release the button to take a blank reading (0.0 ppm).

5. Remove tube from colorimeter. Add 5 drops of *Copper 1 (6446).

6. Cap and invert to mix. Wipe tube dry.

7. Align the index line with the arrow on the meter, insert tube into chamber. Close the lid. Push the **READ** button. Record results as ppm Copper.

COPPER TEST

WORKSHEET

Sample Date 7/24/08 Time 1:20 pm BY R.H.D.

Sample Location EWAIT MHH #1 MHH #2 Temp _____

24 Hour Compost Sample GRAB Other _____

Analysis Date 7/24/08 Time 1:45 pm By BS

Test Results EWAIT (0.06) MHH #1 (0.00) MHH #2 (0.07) Duplicate Results _____

Comments: _____

Volume Used: 10 mL

Calculations: _____

PROCEDURE

☒ NOTE: Place Dispenser Cap (0692) on *Mixed Acid Reagent (V-6278). Save this cap for refill reagents.

1. Press and hold **ON** button until colorimeter turns on.
2. Press **ENTER** to start.
3. Press **ENTER** to select **TESTING MENU**.
4. Select **ALL TESTS** (or another sequence containing 67 Nitrite-N LR) from **TESTING MENU**.
5. Scroll to and select 67 Nitrite-N LR from menu.
6. Rinse a clean tube (0290) with sample water. Fill to the 10 mL line with sample.
7. Insert tube into chamber, close lid and select **SCAN BLANK**.
8. Remove tube from colorimeter and pour off 5 mL into a graduated cylinder or similar. Discard the remaining sample.
9. Pour the 5 mL sample from the graduated cylinder into the colorimeter tube. Use graduated cylinder or similar to measure 5 mL of *Mixed Acid Reagent (V-6278) and add to tube. Cap and mix.
10. Use the 0.1 g spoon (0699) to add two measures of *Color Developing Reagent (V-6281). Cap and mix by gently inverting for 1 minute. Wait 5 minutes for maximum color development.
11. At the end of the 5 minute waiting period, mix, insert tube into chamber, close lid and select **SCAN SAMPLE**. Record result.
12. Press **OFF** button to turn colorimeter off or press **EXIT** button to exit to a previous menu or make another menu selection.

☒ NOTE: To convert nitrite-nitrogen ($\text{NO}_2\text{-N}$) results to ppm nitrite (NO_2), multiply results by 3.3.

WORK SHEET

Sample Date 7/21/08 Time 1:50 pm By RMZ

Sample Location E WAIT
MNH #1
MNH #2 Temp _____

24 Hour Compost Sample Grab Other _____

Analysis Date 7/21/08 Time 1:50 pm By BS

Test Results EVALT (0.0)
MNH #1 (0.03)
MNH #2 (0.01) Duplicate Results _____

Comments: _____

Volume Used: 10 mL

Calculations: _____

PHOSPHATE PROCEDURE - ASCORBIC ACID METHOD

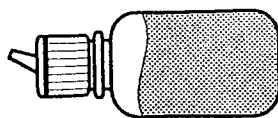


Read the 1200 Colorimeter Manual before proceeding. Carefully wipe tubes dry before inserting into the colorimeter chamber.

PHOSPHATE

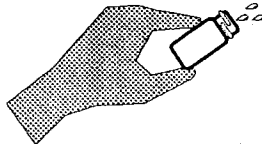
1.

Fill the Water Sample Collecting Bottle (0688) with sample water. This will be used to dispense sample water for the tests.



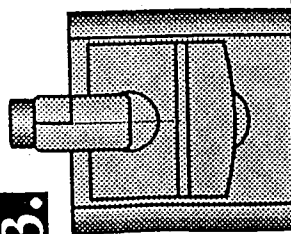
2.

Rinse and fill a colorimeter tube (0290) to the 10 mL line with sample water. Cap and wipe dry.



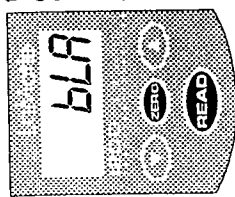
3.

Insert the tube into the chamber, being sure to align the index line with the arrow on the meter. Close the lid. This tube is the sample blank or zero.



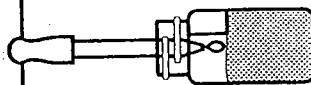
4.

Push the **READ** button to turn the meter on. Press the **ZERO** button and hold it for 2 seconds until **BLR** is displayed. Release the button to take a blank reading (0.0 ppm).



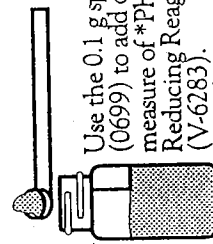
5.

Remove tube from colorimeter. Use 1.0 mL pipet (0354) to add 1.0 mL of *Phosphate Acid Reagent (V-6282). Cap and mix.



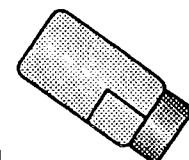
6.

Use the 0.1 g spoon (0699) to add one measure of *Phosphate Reducing Reagent (V-6283).



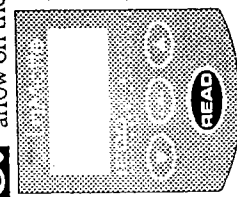
7.

Cap and shake until powder dissolves. Wait 5 minutes for full color development. Solution will turn blue if phosphates are present. Wipe tube dry.



8.

Align the index line with the arrow on the meter, insert tube into chamber. Close the lid. Push the **READ** button. Record results as ppm Orthophosphate.



PHOSPHATE TEST

WORKSHEET

Sample Date 7/24/68 Time 1:20 pm By RMA

Sample Location EWALL #1 Temp ---
MNH #2

24 Hour Compost Sample GRAB Other ---

Analysis Date 7/24/68 Time 1:55 pm By BS

Test EWALL (0.13) Duplicate
MNH #1 (0.11) Results
MNH #2 (0.32)

Comments: ---

Volume Used: 10 mL

Calculations: ---