

MASSACHUSETTS MOSQUITO CONTROL ANNUAL OPERATIONS REPORT



2011 Year of Report

Date of Report: 1/12/2012

Project/District Name: **East Middlesex Mosquito Control Project**

Address: 11 Sun St.

City/Town: Waltham

Zip: 02453

Phone: 781-899-5730

Fax: 781-647-4988

E-mail: emmcp.ma@verizon.net

Report prepared by: *David Henley*

If you have a mission statement, please include it here: The East Middlesex Mosquito Control Commission (the Commission) represents the interests of the participating communities and their residents in providing guidance and oversight to the East Middlesex Mosquito Control Project (the Project). The Commission strives to ensure that the member communities receive services that are consistent with applicable laws and justified by the tenets of public health, vector control, environmental safety and fiscal responsibility. Integrated mosquito management services provided by the Project and approved by the Commission will be based on the State's Generic Environmental Impact Report on Mosquito Control in Massachusetts, the Massachusetts Arbovirus Surveillance and Response Plan and the policies of the State Reclamation and Mosquito Control Board.

The Project's integrated mosquito management plan will consist of mosquito surveillance, larval mosquito control of wetlands and catchbasins, adult mosquito control, wetlands management/ ditch maintenance and public education.

ORGANIZATION SETUP:

Please list your Commissioner's names:

Executive Committee: Leonard Izzo, Chair, Wellesley; Kevin Sweet, Maynard; Karen Rose, Medford; Ruth Clay, Melrose, Reading and Wakefield; and Jennifer Murphy, Winchester. Other members: Christine Connolly, Arlington; John Zupkus, Bedford; Stefan Russakow, Belmont; Patrick Maloney, Brookline; Susan Lumenello, Burlington; Wendy Robinson, Cambridge; Anthony Kiszewski, PhD., Concord; Roberto Santamaria, Everett; Ethan Mascoop, Framingham; Gerard Cody, Lexington; Arnold Weinberg, MD.,

Lincoln; Christopher Webb, Malden; John McNally, Newton; Martin Fair, North Reading; Robert Leupold, Sudbury; Thomas Creonte, Waltham; Steven Ward, Watertown; Julia Junghanns, Wayland; and Rich Sullivan, Weston.

Please list the Supt./Director's name: David Henley

Please list the Supt./Director's contact phone number: 781-899-5730

Please list your Asst. Supt./Asst. Director's name: Michael Bryant

Do you have a website? Yes

If yes, please list the web address here: <http://sudbury.ma.us/services/health/emmcpc>

Please list your staffing levels for the year of this report:

Full time: 5

Part time: 1

Seasonal: 5 full-time and 1 part-time.

Other: (please describe)

Please break these down into the following areas:

Administrative staff: Superintendent and part-time Administrative Assistant

Field staff: Assistant Superintendent, Entomologist, Skilled Equipment Operator, Grade 1, Skilled Equipment Operator, Grade 2 and 5 full-time and 1 part-time seasonal catchbasin applicators.

Please check off all that apply, and list employee name(s) next to each category:

Public relations : David Henley

Information technology

Entomologist : Douglas Bidlack

Wetland Scientist

Biologist

Education

Laboratory

Operations - Full Time: Michal Bryant, Christopher Gagnon and Michael Sweder.

Seasonal: Timothy Deschamps, Jr., Stephen Feeney, Thomas Foti, Gregory Hegel,

Cameron Kelley and Charles King.

Facilities : David Henley and Michael Bryant.

Other (please list)

For the year of this report, we maintained:

7 vehicles

1 modified wetland equipment (list type) LinkBelt 75 track mounted excavator.

4 ULV sprayers (list type) 1 Clarke Cougar Smartflow with radar and Datamaster, 1 Clarke Grizzly Smartflow with radar and 2 Leco ULV sprayers with CVs.

Larval control equipment (list type)

Other (please be specific):

Comments: _____

How many cities & towns in your service area? 26

Please list: Arlington, Bedford, Belmont, Brookline, Burlington, Cambridge, Concord, Everett, Framingham, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Newton, North Reading, Reading, Sudbury, Wakefield, Waltham, Watertown, Wayland, Wellesley, Weston and Winchester.

***Please attach a link to a map of your service area if possible.**

INTEGRATED PEST MANAGEMENT (IPM):

DEFINITION: a comprehensive strategy of pest control whose major objective is to achieve desired levels of pest control in an environmentally responsible manner by combining multiple pest control measures to reduce the need for reliance on chemical pesticides; more specifically, a combination of pest controls which addresses conditions that support pests and may include, but is not limited to, the use of monitoring techniques to determine immediate and ongoing need for pest control, increased sanitation, physical barrier methods, the use of natural pest enemies and a judicious use of lowest risk pesticides when necessary.

Please check off all of the services that you currently provide to your member cities and towns as part of your IPM program; details of these services are in the next sections.

- Larval mosquito control
- Adult mosquito control
- Source reduction
- Ditch maintenance
- Open Marsh Water Management
- Adult mosquito surveillance
- Education, Outreach & Public education
- Research
- Other (please list): Review of plans for stormwater runoff structures.

Comments: On occasion the Project receives requests to review plans for stormwater runoff at developments planned adjacent to wetlands or for underground stormwater treatment devices.

LARVAL MOSQUITO CONTROL:

Do you have a larval mosquito suppression program? Yes

If yes, please describe the purpose of this program: Culex larvae in catchbasins, neglected swimming pools and other water-holding containers are controlled to reduce the number of West Nile Virus vector mosquitoes. Spring and summer floodwater mosquitoes are controlled to reduce the number of mammal biting mosquitoes and to reduce populations of potential human vectors for EEE.

Please give the time frame for this program: Culex larval control is done from June through early September. Spring floodwater mosquito larvae are controlled in April and May. Summer floodwater mosquito larvae are controlled from June through September.

Describe the areas that this program is used: Catchbasins, neglected swimming pools and intermittently flooded wetlands.

Do you use:

Ground applied (includes hand, portable and/or backpack)

Helicopter applications

Other (please list):

Comments: _____

What products do you use in – (please use product name and EPA#)

Wetlands: Vectobac G - EPA #73049-10, Vectobac 12AS - EPA #275-102, Altosid Pellets - EPA #2724-448, and Altosid Pellets WSP- EPA #2724-448.

Catch basins: Vectolex WSP - EPA #73049-20, Altosid Pellets - EPA #2724-448, Altosid Pellets WSP - EPA #2724-448 and Altosid XR Ingot Briquets - EPA #2724-421.

Containers: Vectolex WSP - EPA #73049-20, Altosid Pellets - EPA #2724-448 and Altosid Pellets WSP - EPA #2724-448.

Other (please list):

Please list the rates of application for the areas listed above:

Wetlands: Vectobac G was applied by helicopter at a rate of 5 lbs. per acre. Vectobac 12AS was applied by portable sprayer at rates of 8 oz. of Bti per acre and 12 oz. of Bti per acre. Altosid Pellets WSP were applied at the rate of 1 pouch per 135 square feet.

Catch basins: Vectolex WSP and Altosid Pellets WSP were applied at the rate of 1 pouch per catchbasin. Altosid Pellets were applied at a rate of 8 grams per catchbasin. Altosid XR Ingot Briquets were applied at the rate of 1 briquet per catchbasin.

Containers: Vectolex WSP was applied to neglected swimming pools at the rate of 1 pouch per 50 square feet of surface area. Altosid WSP was applied to swimming pools at the rate of 1 pouch per 135 square feet of surface area. Vectobac 12AS was applied to water in rimless tires at the rate of 8 oz. per acre.

Other:

What is your trigger for larviciding operations? (check all that apply)

- Larval dip counts – please list trigger for application: one larvae per three dips.
- Historical records
- Best professional judgment

Comments: Larval control in wetlands is funded by 26 communities. Catchbasin larval control is funded by 21 communities. Larval control in neglected swimming pools is done in cooperation with municipal health departments. Altosid Pellets WSP, Altosid Pellets and Altosid XR Ingot Briquets are applied to catchbasins during the month of June as a pre-emergence treatment. In 2011 due to budget constraints, there was an increased use of Altosid Pellets instead of more costly products such as Altosid Pellets WSP and Vectolex WSP. All larval control in wetlands requires that larval dip counts be used to trigger larval control applications.

***Please attach a link to maps of treatment areas if possible.**

ADULT MOSQUITO CONTROL:

Do you have an adult mosquito suppression program? Yes

If yes, please describe the purpose of this program: To reduce the number of mammal biting, EEE human vector or secondary WNV human vector mosquitoes.

Please give the time frame for this program: June through September.

Describe the areas that this program is used: Suburban residential neighborhoods with a relatively dense configuration of streets.

Do you use:

- Truck applications**
- Portable applications**
- Aerial applications**
- Other (please list):**

Comments: _____

Please list the names of the products used with EPA #:

- 1). Anvil 10 + 10 ULV, EPA #1021-1688-8329
- 2). Suspend SC, EPA #432-763
- 3).
- 4).

- 5).
- 6).

Please list your application rates for each product:

- 1). Anvil 10 + 10 ULV is applied at .0024 lbs. per acre.
- 2). Suspend SC is applied at 1 fl. oz. per 1,000 square feet.
- 3).
- 4).
- 5).
- 6).

Please describe the maximum amounts or frequency used in a particular time frame such as season and areas

In 2011 the maximum number of times that wide area adult mosquito control occurred in any neighborhood was seven applications. In 2011 applications were scheduled with a minimum of 13 days between applications.

What is your trigger for adulticiding operations? (check all that apply)

- Landing rates - please list trigger for application
- Light trap data - please list trigger for application
- Complaint calls - please list trigger for application
- Arbovirus data
- Best professional judgment

Comments: Scheduling adult mosquito control applications is based on mosquito population data. Spraying in the vicinity of an EEE or West Nile Virus isolation or case may be done if the community where the isolation or case occurs is willing to support the application. Citizen complaints are regarded as supplemental data that may influence the shape of the area, where control is scheduled.

***Please attach a link to maps of treatment areas if possible.**

SOURCE REDUCTION

Do you perform source reduction methods such as tire/container removal? Yes

If yes, please describe your program: During ditch maintenance activities, tires may be removed from work areas, if the municipality where the work is being done is willing to accept the tires and fund their disposal.

What time frame during the year is this method employed? October through March.

Comments: _____

DITCH MAINTENANCE

Do you have a ditch maintenance program? Yes

Please check all that apply:

- Inland/freshwater
 Saltmarsh

If yes, please describe: Ditch maintenance is done using either a LinkBelt 75 track mounted excavator or with hand tools. When planning ditch maintenance activities, the Project follows the protocols contained in the Massachusetts Best Management Practices and Guidance for Freshwater Mosquito Control.

Please check off all that apply INLAND DITCH MAINTENANCE:

- Hand tools
 Mechanized equipment
 Other (please list):

Comments: _____

Please check off all that apply SALTMARSH DITCH MAINTENANCE:

- Hand cleaning
 Mechanized cleaning
 Other (please list):

Comments: _____

Please give an estimate of cumulative length of ditches maintained from the list above **INLAND**:

Hand cleaning 4,582 linear feet
Mechanized cleaning 1,856 linear feet
Other (please list):

Comments: _____

Please give an estimate of cumulative length of ditches maintained from the list above **SALTMARSH**:

Hand cleaning
Mechanized cleaning

Other (please list):

What time frame during the year is this method employed?

Comments: _____

***Please attach a link to maps of ditch maintenance areas if possible.**

MONITORING (Measures of Efficacy)

Please describe monitoring efforts for each of the following:

Aerial Larvicide – wetlands: The Project conducted pre-application surveys at 84 sites with a minimum of 26 samples at each site. Post-application surveys were conducted at 32 sites with a minimum of 26 samples at each site. The post application surveys indicated that the application reduced larval populations by 86%.

Larvicide – catch basins: Sampling is done during June to determine the appropriate time when *Bacillus sphaericus* can be used. Random pre and post application surveys are done in July and August. When applying larvicides to catchbasins, applicators are required to mark the catchbasin cover with a spot of paint applied from a line marker paint sprayer. Random monitoring is done by verifying paint marks to determine whether applicators have completed catchbasins in assigned areas.

Larvicide-hand/small area A minimum of 10 pre-application samples are required at each site. A minimum of 1 larvae per 3 samples is required before treatment can occur. Random post application surveys are conducted following small area treatments.

Ground ULV Adulticide: Three to five light trap sites are monitored in each of the 9 cities and towns that fund ground ULV adulticide. There is a minimum of 100 - 200 mammal biting mosquitoes that must be collected at a trap site before spraying can be scheduled in neighborhoods near the trap site. The variation in trap collection totals required to spray an area is related to the average mosquito population at each site. Trap collections below the minimum size result in a determination that spraying does not need to be scheduled in that neighborhood or re-scheduled if the neighborhood has recently been sprayed.

Source Reduction:

Open Marsh Water Management:

Other (please list):

Provide or list standard steps, criterion, or protocols regarding the documentation of efficacy, (pre and post data) and resistance testing (if any):

OPEN MARSH WATER MANAGEMENT

Do you have an OMWM program? No

If yes, please describe:

Please give an estimate of total square feet or acreage:

What time frame during the year is this method employed?

Comments: _____

***Please attach a link to maps of OMWM areas if possible.**

ADULT MOSQUITO SURVEILLANCE

Do you have an adult mosquito surveillance program? Yes

Please list the number (not location) of MDPH traps in your service area: MDPH maintains 3 gravid trap sites within our district.

Please check off all the types of surveillance that apply to your program:

- | | |
|---|---------------------------------|
| <input checked="" type="checkbox"/> Gravid traps | |
| <input type="checkbox"/> Resting boxes | |
| <input type="checkbox"/> CDC light traps | <input type="checkbox"/> Canopy |
| <input checked="" type="checkbox"/> CDC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> ABC light traps w/CO ₂ | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps | <input type="checkbox"/> Canopy |
| <input type="checkbox"/> NJ light traps w/CO ₂ | <input type="checkbox"/> Canopy |

Other (please describe):

Please describe the purpose of this program: The purpose is to measure mammal biting populations and EEE and West Nile Virus vector populations. The data is used to evaluate the need for control. When funding is available, Culex collections are submitted to DPH to be tested for West Nile Virus. During risk periods of EEE, large collections of Cs. melanura are submitted for testing.

Do you maintain long-term trap sites in any of your areas? Yes

If yes, please describe how you chose these long-term sites. In most municipalities there are 3 - 5 trap sites. In municipalities with significant wetland acreage, light trap sites are located in yards that are in close proximity to major mosquito habitats for spring and summer floodwater mosquitoes, *Cq. perturbans* and *Cs. melanura*. In densely populated areas without significant wetland acreage, gravid trap sites are located in yards or municipal properties with the goal of providing geographic spacing within the community. Light traps and gravid traps are also located near properties where in the past people or horses are believed to have contracted EEE or West Nile Virus.

Please check off the species of concern in your service area:

- | | |
|--|---|
| <input type="checkbox"/> <i>Ae. albopictus</i> | <input checked="" type="checkbox"/> <i>Oc. cantator</i> |
| <input checked="" type="checkbox"/> <i>Ae. cinereus</i> | <input checked="" type="checkbox"/> <i>Oc. excrucians</i> |
| <input checked="" type="checkbox"/> <i>Ae. vexans</i> | <input checked="" type="checkbox"/> <i>Oc. fitchii</i> |
| <input checked="" type="checkbox"/> <i>An. punctipennis</i> | <input checked="" type="checkbox"/> <i>Oc. j. japonicus</i> |
| <input checked="" type="checkbox"/> <i>An. quadrimaculatus</i> | <input checked="" type="checkbox"/> <i>Oc. punctor</i> |
| <input checked="" type="checkbox"/> <i>Cq. perturbans</i> | <input type="checkbox"/> <i>Oc. sollicitans</i> |
| <input checked="" type="checkbox"/> <i>Cx. pipiens</i> | <input type="checkbox"/> <i>Oc. stimulans</i> |
| <input checked="" type="checkbox"/> <i>Cx. restuans</i> | <input type="checkbox"/> <i>Oc. taeniorhynchus</i> |
| <input checked="" type="checkbox"/> <i>Cx. salinarius</i> | <input checked="" type="checkbox"/> <i>Oc. triseriatus</i> |
| <input checked="" type="checkbox"/> <i>Cs. melanura</i> | <input checked="" type="checkbox"/> <i>Oc. trivittatus</i> |
| <input checked="" type="checkbox"/> <i>Cs. morsitans</i> | <input checked="" type="checkbox"/> <i>Ps. ferox</i> |
| <input checked="" type="checkbox"/> <i>Oc. abserratus</i> | <input type="checkbox"/> <i>Ur. sapphirina</i> |
| <input checked="" type="checkbox"/> <i>Oc. canadensis</i> | |

Other (please list):

Do you participate in the MDPH Arboviral Surveillance program? Yes

How many pools do you submit weekly on average? The EMMCP submitted 93 pools between 7/1/2011 and 9/30/2011 for an average of 7.15 pools per week.

Please check off the arboviruses found in your area in the past 5 years:

- West Nile Virus
 Eastern Equine Encephalitis
 Other Please list:

Did the above listed diseases cause human or horse illnesses? Yes

Please explain: In the past 5 years, there have been 7 human West Nile Virus cases within the district. The following provides the breakdown of cases by year and by community:

2011 - 3 WNV cases from Brookline, Newton and Melrose.

2010 - 1 WNV case from Lexington.
2009 - No human or horse WNV or EEE cases.
2008 - 1 WNV case from Cambridge.
2007 - 2 WNV cases from Arlington and Medford.

At what arbovirus risk level did the year begin in your area? (If more than one please list)

WNV: Lexington began the year at a moderate risk level, the remainder of the Project began the year in the low risk area.

EEE: The entire district was classified as remote risk.

At what arbovirus risk level did the year end in your area? (If more than one please list)

WNV: Brookline, Melrose and Newton were classified as high risk. Cambridge, Lexington, Malden, Wakefield, Waltham, Watertown, Wellesley and Weston are classified as moderate risk. Arlington, Bedford, Belmont, Burlington, Concord, Everett, Lincoln, Maynard, Medford, North Reading, Reading, Sudbury, Wayland and Winchester are classified as low risk. Framingham was classified as remote risk.

EEE: The district was classified as remote risk.

What time frame during the year is this method employed? Adult mosquito surveillance is conducted from late May through late September.

Comments: _____

***Please attach a link to maps of surveillance areas if possible.**

EDUCATION, OUTREACH & PUBLIC RELATIONS

Do you have an education/public outreach program? Yes

If yes, please describe: The Project's public education program is designed to develop awareness within the public and the private sectors as to their roles in mosquito control. The Project serves as a resource to residents, municipal officials and the local media on controlling mosquitoes, larval mosquito habitats and mosquito borne diseases.

Please check off all that apply:

School based program

- Website
- PR brochures/handouts
- Community events
- Science fairs
- Meeting presentations
- Other (please describe): The Project sends out press releases to community and regional newspapers related to aerial Bti applications, ground based adult mosquito control applications, personal protection from mosquitoes and preventative actions that homeowners can take to reduce mosquito development on their property. Notices on the pesticide exclusion process and notices on ground based adult mosquito control are regularly posted on municipal websites. Memos and reports on mosquito control activities, local disease risk and other items of interest are sent to municipal officials of each participating community. Annual reports and appropriation requests that include schedules and costs of mosquito control services are sent to participating communities. The Superintendent attends municipal meetings of Boards of Health, Finance Committees and Conservation Commissions upon request. Project representatives are periodically interviewed by newspaper, radio, television and local access cable reporters. A previously recorded episode of the PBS program, Curious George, that includes Project representatives describing mosquito biology to Newton elementary school students is periodically aired.

Please give an estimate of attendance/participants in this program:

Please list some events you participated in for the year of this report: The Entomologist and the Superintendent provided a presentation to students from a Harvard University Climate and Public Health class. The Superintendent attended Board of Health meetings in Bedford, Concord and Wayland. Several staff members participated in an independent film on mosquitoes that was being made by Jesse Epstein and others.

What time frame during the year is this method employed? Year round

Have you performed any research projects, efficacy, bottle assays, etc.? Not at this time

If yes, please elaborate on your research projects:

Are you involved in any collaboration with academia, industry, environmental groups, etc.? Yes

If yes, please elaborate on your collaborations this past year: A graduate public health student from Boston University monitored recently constructed rain gardens and bioretention basins to determine whether they held stormwater longer than their design intended and whether they produced mosquito species that are considered disease vectors. The practicum yielded information that following substantial rain events and during periods with frequent rain events, a significant portion of the bio-retention basins produce mosquitoes that are associated with EEE or West Nile Virus.

Please provide a list of technical reports, white/grey papers, publication in journal or trade magazines, etc.

Does your staff participate in educational opportunities? Yes

If yes, please list the training and education your staff received this year: Five employees attended the annual meeting of the Northeastern Mosquito Control Association (NMCA). Four employees attended the NMCA workshop for field workers that covered safe pesticide handling, personal protection equipment, spill response and risk communication. The Superintendent participated in an emergency preparedness drill with Bedford Town employees that involved a mock helicopter crash.

Please list the certifications and degrees held by your staff: Mike Bryant, Chris Gagnon, David Henley and Mike Sweder are Certified Pesticide Applicators. Tim Deschamps, Jr., Steve Feeney, Thomas Foti, Gregory Hegel, Cameron Kelley and Charles King are Licensed Pesticide Applicators. Mike Sweder has a Hoist Operator License. David Henley has a B. B.A. in Management, Mike Bryant has an A.B. in Turf Management. Doug Bidlack has a Ph.D. in Entomology, an M.S. in Entomology and Plant Pathology and a B.S. in Biological Sciences. Chris Gagnon has a B.S. in Wildlife Biology. Mike Sweder has an M.S. in Environmental Health and Safety and a B.S. in Entomology.

Comments: _____

BIOLOGICAL CONTROL EFFORTS

Do you have a biological control program? Yes

If yes, please describe: Bacillus sphaericus used to control Culex mosquitoes in catchbasins and neglected swimming pools is a live bacteria that recycles in water that supports Culex larvae.

Is this program the introduction of mosquito predators or the enhancement of habitat for native predators? no

Please check off all that apply:

- Predatory fish
- Predatory invertebrates
- Other (please describe): Bacillus sphaericus

What time frame during the year is this method employed? July and August

Comments: _____

INFORMATION TECHNOLOGY

Does your program use (check all that applies):

- Computers
- GIS mapping
- GPS equipment
- Computer databases
- Aerial Photography
- Other (please describe):

Please describe your capabilities in these areas: Databases are maintained on adult mosquito populations, mosquito habitats, larval mosquito surveys, pesticide usage and ditch maintenance. GPS equipment is used on one of the aerosol sprayers to record time, location and rate of spraying. The Project is equipped with 2 desktop and 1 laptop computers. The Project uses aerial photography of the district with delineated wetlands as a layer in our Arcview software. GIS maps are used to identify property owners when planning ditch maintenance activities. Our helicopter contractor, JBI Helicopters, uses Ag-Nav swath guidance equipment to record swath data during larviciding applications.

Please describe your current GIS abilities: Intermediate

Give details if possible on your GIS abilities: Arcview is used in our wetland database, helicopter larval control program and our wetlands management program.

Please describe any changes/enhancements in this area from the previous year: The Project acquired a new computer equipped with an updated version of ArcView (10.0)

Comments: _____

REVENUES & EXPENDITURES

Please give a concise statement of revenues & expenditures for the prior fiscal year ending June 30.

FY 2011 regular and supplemental appropriations received: \$658,651.22

FY 2011 expenditures: \$639,990.44

List each **member municipality along with the corresponding (cherry sheet) funding assessment** dollar amount for the prior fiscal year.

Comments: The following are the regular FY 2011 appropriations from the communities participating in the East Middlesex MCP: Arlington - \$5,800, Bedford - \$33,489, Belmont - \$15,612, Brookline - \$14,547, Burlington - \$39,639, Cambridge - \$16,262, Concord - \$18,500, Everett - \$11,000, Framingham - \$48,059, Lexington - \$23,225, Lincoln - \$10,300, Malden - \$18,807, Maynard - \$12,800, Medford - \$21,790, Melrose - \$11,542, Newton - \$16,231, North Reading - \$44,795, Reading - \$26,000, Sudbury - \$45,415, Wakefield - \$17,420, Waltham - \$30,025, Watertown - \$12,875, Wayland - \$21,000, Wellesley - \$18,388, Weston - \$35,504 and Winchester - \$14,845.

PESTICIDE USAGE

Please total your pesticide usage with information from your Mass. Pesticide Use Report, WNV Larvicide Use records and contracted pesticide applications. Applications methods include; hand/backpack, aerial, ULV, mistblower, other (please explain)

Product Name: Vectobac G
EPA Reg. #: 73049-10
Application method: aerial
Targeted life stage: Larvae
Total amount of concentrate applied: 10,73
0 lbs.
Comments: _____

Product Name: Vectobac 12AS
EPA Reg. #: 275-102
Application method: portable hand held sprayer
Targeted life stage: Larvae
Total amount of concentrate applied: 26.4 gals.
Comments: _____

Product Name: Altosid Pellets WSP
EPA Reg. #: 2724-448
Application method: hand applied
Targeted life stage: Larvae
Total amount of concentrate applied: 55 lbs.
Comments: _____

Product Name: Altosid Pellets
EPA Reg. #: 2724-448
Application method: hand applied
Targeted life stage: Larvae
Total amount of concentrate applied: 702 lbs.

Comments: _____

Product Name: Altosid Ingot XR Briquets
EPA Reg. #: 2724-421
Application method: hand applied
Targeted life stage: Larvae
Total amount of concentrate applied: 222 lbs.
Comments: _____

Product Name: Vectolex WSP
EPA Reg. #: 73049-20
Application method: hand applied
Targeted life stage: Larvae
Total amount of concentrate applied: 257 lbs.
Comments: _____

Product Name: Anvil 10 + 10
EPA Reg. #: 1021-1688-8329
Application method: Truck mounted aerosol sprayer
Targeted life stage: Adult
Total amount of concentrate applied: 138 gals.
Comments: _____

Product Name: Suspend SC Insecticide
EPA Reg. #: 432-763
Application method: portable mistblower
Targeted life stage: Adult
Total amount of concentrate applied: 4 fluid ounces
Comments: _____

Product Name:
EPA Reg. #:
Application method:
Targeted life stage: Choose one
Total amount of concentrate applied:
Comments: _____

LARGE AREA EXCLUSIONS

Do you have large areas of pesticide exclusion, such as estimated or priority habitats?
Yes

If yes, please explain, and attach maps or a web link if possible. Great Meadows National Wildlife Refuge and the Assabet River National Wildlife Refuge manage large tracts of wetland acreage in Bedford, Concord, Lincoln, Maynard, Sudbury and Wayland that is excluded from larval and adult mosquito control pesticide applications. The only

exception occurs when the Refuge manager determines that there is an imminent risk from mosquito borne disease and issues a permit. The Sudbury Valley Trustees, a private land trust that owns wetlands in Concord, Framingham, Sudbury and Wayland has excluded their property from pesticide exclusions.

Assabet River National Wildlife Refuge map:

<http://www.fws.gov/northeast/assabetriver/pdf/may07maphandout.pdf>

Great Meadows National Wildlife Refuge map:

<http://www.fws.gov/northeast/greatmeadows/greatmeadows.pdf>

Sudbury Valley Trustees trail maps:

<http://www.sudburyvalleytrustees.org/maps>

SPECIAL PROJECTS

Do you perform any inspectional services such as inspections at sewage treatment facilities or review sub division plans? Yes

If yes, please elaborate : Periodically municipal officials will request that site plans for a subdivision or other proposed development be reviewed for the purpose of mitigating the development of new mosquito habitats. Sewage treatment facilities have been inspected to determine whether mosquitoes are developing on their properties.

Do you work with DPW departments or other local or state officials to address stormwater systems, clogged culverts or other areas that you have identified as man-made mosquito problem areas? Yes

If yes, please elaborate: Municipal officials have requested that we identify and remove excessive sedimentation and debris that is obstructing ditches and culverts.

Have you worked with these departments on long term solutions? Yes

If yes, please elaborate: Reviewing site plans for subdivisions and developments have provided some long term solutions.

Did you conduct or participate in any cooperative research or restoration projects?

If yes, please elaborate:

Did you or participate on any **State/Regional/National workgroups or panels or attend any meeting pertaining to the above?**

If yes, please elaborate: The Superintendent is a member of the Northeastern Mosquito Control Association program committee and has participated in identifying speakers to present information at the annual conference.

CHILDREN AND FAMILIES PROTECTION ACT

Is your program impacted by the Children and Families Protection Act? Yes

If yes, please explain: Per the provisions of the Act, the Project excludes schools, day care centers and school age child care programs from adult mosquito control pesticide applications unless the pre-requisites for spraying are fulfilled.

If you have data on compliance with this Act and your program, please list here:

If you had difficulties with implementation of your program due to this law, please elaborate here:

Comments:

GENERAL COMMENTS

Please list any comments not covered in this report: _____

East Middlesex Mosquito Control Project
Pesticide Discharge Management Plan
October 2011

East Middlesex Mosquito Control Project
11 Sun St., Waltham, MA 02453
781-899-5730
emmcp.ma@verizon.net

- A. Pesticide Discharge Management Team – All persons may be contacted at the East Middlesex Mosquito Control Project located at 11 Sun St., Waltham, MA 02453. Contact information includes: Tel: 781-899-5730, Fax: 781-647-4988 and Email: emmcp.ma@verizon.net
1. Persons responsible for managing mosquitoes in relation to the mosquito management area.
 - a. David Henley – Superintendent
 - b. Michael Bryant – Assistant Superintendent
 2. Persons responsible for developing and revising the Pesticide Discharge Management Plan (PDMP).
 - a. David Henley – Superintendent
 - b. Douglas Bidlack – Entomologist
 3. Persons responsible for developing, revising and implementing corrective actions and other effluent limitation requirements.
 - a. David Henley – Superintendent
 - b. Michael Bryant – Assistant Superintendent
 4. Persons responsible for pesticide applications (mix, load and apply).
 - a. David Henley – Superintendent
 - b. Michael Bryant – Assistant Superintendent
 - c. Christopher Gagnon – Skilled Equipment Operator 1
 - d. Michael Sweder – Skilled Equipment Operator 2
 - e. Timothy Deschamps, Jr. – Contracted Seasonal Field Technician
 - f. Stephen Feeney – Contracted Seasonal Field Technician
 - g. Thomas Foti – Contracted Seasonal Field Technician
 - h. Gregory Hegel – Contracted Seasonal Field Technician
 - i. Cameron Kelley – Contracted Seasonal Field Technician
 - j. Charles King – Contracted Seasonal Field Technician
- B. Pest Management Area Description
1. The East Middlesex Mosquito Control Project (EMMCP) is charged with managing mosquito populations in 26 communities in both Middlesex and Norfolk counties. Participating cities and towns are located in the following watersheds: Boston Harbor Basin, Charles

River watershed, Ipswich River watershed, Shawsheen River watershed and the Sudbury, Assabet and Concord Rivers watershed. The area encompassed by the participating communities of the EMMCP is 294.3 square miles.

2. Pest Management Habitats can be divided into natural habitats and habitats related to stormwater structures and water holding containers.
 - a. Natural habitats include flood plains, forested wetlands, shrub swamps and permanent water marshes.
 - b. Habitats related to stormwater structures include detention basins, and catchbasins. Habitats relating to water holding containers include neglected swimming pools, rimless tires and any container capable of holding water for at least a week.

3. Description of Pest Species
 - a. *Aedes cinereus* is a very common mosquito of temporary and semi-permanent woodland pools. It peaks in late spring and usually in late summer as well. Adults feed on mammals, including humans, and they especially like to feed around the ankles. *Aedes cinereus* overwinters in the egg stage.

 - b. *Aedes vexans* is an abundant mosquito of river floodplains and other temporary wetlands. It is a multivoltine species and a suspect in the transmission of EEEV from birds to humans. *Aedes vexans* overwinters in the egg stage.

 - c. *Anopheles punctipennis* is a very common mosquito that develops in many wetlands from the edges of weedy, slow-moving streams and ponds to various water-holding containers. It is a multivoltine species that bites birds as well as mammals but prefers mammals. *Anopheles punctipennis* overwinter as adults.

 - d. *Anopheles quadrimaculatus* is a common mosquito that develops among the weedy edges of ponds, canals and slow-moving streams. In the past, this multivoltine species was the primary vector of malaria in the region. Mammals are the preferred hosts and they overwinter in the adult stage.

 - e. *Anopheles walkeri* is an uncommon mosquito of permanent or temporary grass-lined pools, weedy edges of ponds and lakes as well as cattail marshes. This multivoltine species is primarily a mammal biter but it will also feed on birds. *Anopheles walkeri* overwinters in the egg stage.

- f. *Coquillettidia perturbans* is our most abundant mosquito species. It develops in densely vegetated, permanent marshes, especially cattail marshes. *Coquillettidia perturbans* is a univoltine species that peaks in late June to mid-July and it readily bites mammals, birds and even reptiles and amphibians. This species is thought to be the most important vector of EEEV between birds and humans in Massachusetts. It overwinters in the larval stage.
- g. *Culex pipiens* is an abundant mosquito that develops in almost every kind of water-holding container as well as in many polluted waters. It is a multivoltine species that primarily bites birds but it also frequently bites humans and other mammals. *Culex pipiens* frequently enters homes but it is a shy biter, typically biting people only when they are motionless and usually while they are sleeping. It is one of the primary vectors of WNV from bird to bird and it is suspected as the most important mosquito transmitting WNV from birds to humans. *Culex pipiens* overwinter as adults.
- h. *Culex restuans* is another abundant mosquito that develops in almost every kind of water-holding container as well as polluted waters. It is multivoltine and generally breeds earlier in the season than *Cx. pipiens*. It is also primarily a bird biter, but it bites humans and other mammals much less frequently than *Cx. pipiens*. *Culex restuans* is a primary vector of WNV from bird to bird but it is likely of little importance in transmitting WNV from birds to humans. This species overwinters in the adult stage.
- i. *Culex salinarius* is a very common mosquito of both fresh and polluted grassy hummock areas of permanent water swamps and they can tolerate salt water as well as fresh water. It is a multivoltine species that generally increases during the season to a peak in August. *Culex salinarius* is a fierce biting pest of birds, humans and other mammals and it is a suspect in the transmission of WNV from birds to humans. It overwinters in the adult stage.
- j. *Culiseta melanura* is a common mosquito that develops in holes (crypts) in the root structures of Atlantic white cedar and red maple trees in swamps. This species was previously thought to have several generations a year, but it is now believed to have only two generations per year. *Culiseta melanura* is a bird feeding mosquito that is the primary vector of EEEV throughout the bird population. It overwinters in the larval stage.
- k. *Culiseta morsitans* is an uncommon mosquito that develops in cold-water pools, both in shaded forests and in open marshes. This univoltine species is primarily a bird biter that transmits EEEV

within the bird population and possibly also from birds to humans. *Culiseta morsitans* overwinters in the egg stage.

- l. *Ochlerotatus abserratus* is a very common mosquito of temporary, cool-water woodland pools. It is a univoltine species that peaks in early May and is a pest of humans and other mammals, especially in forested areas. *Ochlerotatus abserratus* overwinters in the egg stage.
- m. *Ochlerotatus aurifer* is an uncommon mosquito that typically develops in shaded as well as open bogs. This univoltine species is a vicious biter of humans and other mammals and they have a strong preference for feeding on the head, especially around the ears. *Ochlerotatus aurifer* overwinters in the egg stage.
- n. *Ochlerotatus canadensis* is an abundant mosquito of woodland pools, swamp borders and grassy hummock areas. It peaks in late spring and usually in late summer as well. *Ochlerotatus canadensis* feeds on humans, other mammals, birds, reptiles and amphibians and is a primary suspect in the transmission of heartworm to dogs and a possible suspect in the transmission of EEEV from birds to humans. This species overwinters in the egg stage.
- o. *Ochlerotatus cantator* is a common mosquito that is most commonly associated with coastal freshwater and brackish marshes. In our area it is usually found in freshwater marshes, especially if they are somewhat polluted. *Ochlerotatus cantator* is a multivoltine species that feeds equally on birds and mammals, including humans. It overwinters in the egg stage.
- p. *Ochlerotatus excrucians* Complex is a group of three closely related species including *Oc. excrucians*, *Oc. fitchii* and *Oc. stimulans*. In our area *Oc. fitchii* is the most common of these species and *Oc. stimulans* is the least common. Taken together, these three species are a very common species complex and the larvae can be found in a wide range of wetland habitats. The *Oc. excrucians* Complex are all univoltine spring species that prefer to feed on large mammals, including humans, but they also feed on birds. All three species overwinter in the egg stage.
- q. *Ochlerotatus japonicus* is an uncommon mosquito species that prefers to develop in rock pools but often breeds in many other types of containers. This is a multivoltine species that was first collected in our district in 2001 and has become more common and widespread each year since then. *Ochlerotatus japonicus* prefers

to feed on birds but it also feeds on mammals including humans. Because it is active during the day, it is rarely captured in light traps even where it is abundant. This species is a suspect in the transmission of WNV from birds to humans and it overwinters in the egg stage.

- r. *Ochlerotatus sollicitans* develops on the edges of salt marshes and for this reason it is typically rare in our district. However, since this species can be locally very abundant, can fly much greater distances than most other mosquitoes and is a very aggressive biter even on hot, sunny days, this species can be an important pest even in our area. *Ochlerotatus sollicitans* is a multivoltine species that prefers to feed on large mammals but it will also feed on other mammals, birds and even reptiles and amphibians. It overwinters in the egg stage.
 - s. *Ochlerotatus triseriatus* is an uncommon mosquito that develops in tree holes as well as old rimless tires and many other artificial containers, especially if they are partially shaded. This multivoltine species indiscriminately feeds on humans, other mammals, birds, reptiles and amphibians. *Ochlerotatus triseriatus* is a suspect in the transmission of WNV to humans and it overwinters in the egg stage.
 - t. *Ochlerotatus trivittatus* is a common mosquito of floodwater pools in swamps and especially marshes. It is a multivoltine species that feeds on mammals and birds. *Ochlerotatus trivittatus* overwinters in the egg stage.
 - u. *Psorophora ferox* is a common mosquito that typically develops in wooded floodplains. This is a multivoltine species that feeds on humans and other animals and it overwinters in the egg stage.
4. Action Thresholds
- a. The minimum threshold for either ground or aerial larviciding applications is one larva per ten samples. Samples are collected using a standard 12 oz. dipper. A minimum of 10 samples are recorded at each wetland before ground applied larviciding. Historical data and sampling are used to prioritize sites included in aerial larval control applications. Standard sampling prior to an aerial larval control application involves recording 30 samples per wetland.
 - b. Historical information on the emergence of *Culex* larvae is used to determine the appropriate time to begin applying time release formulations of methoprene to stormwater catchbasins. Time-release formulations of methoprene can be used as either a pre-

emergence treatment or a treatment when larvae are present. Larval surveys at catchbasins are done using a Landers Ladle, a device designed to collect a water sample of 5 ounces, which can fit through most catchbasin grates. Surveys using a Landers Ladle are used to determine when Culex larvae can be commonly found in catchbasins before beginning applications of the larvicide, *Bacillus sphaericus*, to catchbasins.

- c. The action threshold for adult mosquito control using area wide applications involving truck mounted aerosol sprayers is determined using data from carbon dioxide baited CDC light traps. Three to five light trap sites are monitored in each of the 9 cities and towns that fund adult mosquito control. A minimum of 100 – 200 mammal biting mosquitoes must be collected at a trap site before spraying can be scheduled in neighborhoods near the trap site. The variation in trap collection totals required to spray an area is based on historical data.

5. Water Quality Standards – Waterways in the EMMCP district are not impaired with any pesticides used by the EMMCP.

C. Control Measure Description

1. The EMMCP uses an integrated mosquito management program that consists of public education, source reduction, wetlands management/ditch maintenance, larval mosquito control in wetlands and catchbasins and adult mosquito control to meet the applicable technology-based or water quality- based effluent limitations.
 - a. The EMMCP's public education program is designed to develop awareness within the public and the private sectors as to their roles in mosquito control. The EMMCP serves as a resource to residents, municipal officials and the local media on mosquitoes and mosquito borne diseases. Press releases to the media and memorandums to municipal officials provide strategies for personal protection from mosquitoes and recommended practices that will prevent mosquitoes from developing on residential, municipal and commercial properties. The EMMCP staff conducts educational and informational presentations at schools and at municipal meetings.
 - b. Source reduction includes working with municipal public works departments to remove rimless tires from ditch maintenance sites and removing water from containers during residential inspections.
 - c. Excavators and hand tools are used in a wetlands management program to maintain drainage at wetlands. The goal of wetlands management is to remove debris, sand and sediment that is obstructing water flow in intermittently flooded wetlands, thereby increasing the likelihood that flooded wetland areas will dry down before mosquitoes can complete their development.

- d. The EMMCP uses the biological larvicide, *Bacillus thuringiensis var. israelensis* (Bti), to control mosquito larvae by helicopter at large wetlands. Bti is the primary larvicide used for ground applications at small wetlands. Time release formulations of methoprene are used on occasion at small, remote sites. *Bacillus sphaericus* and time release formulations of methoprene are used to control Culex mosquito larvae in catchbasins. Culex mosquitoes are the primary vectors of West Nile Virus. All larvicides are applied per the directions on the EPA approved label.
- e. Adult mosquito control is the final step in an integrated mosquito management plan. Adult mosquito control is only scheduled after surveillance indicates mosquito populations exceed threshold levels. The pesticides are applied per the directions on the EPA approved label. All adult mosquito control equipment is closely monitored and calibrated by EMMCP staff.

EMMCP staff considers impact to non-target organisms, impact to water quality, pest resistance and cost effectiveness when evaluating and selecting mosquito management methods that will minimize pesticide discharge to waters of the U. S.

2. A brief explanation of the control measures used at the site to reduce pesticide discharge, including evaluation and implementation of the six mosquito management tools.
 - a. no action
 - b. public education
 - c. source reduction
 - d. Wetlands management
 - e. Larval mosquito control
 - f. Adult mosquito control

Operators will consider impact to non-target organisms, impact to water quality, mosquito resistance, feasibility and cost effectiveness when evaluating and selecting the most efficient and effective means of mosquito management to minimize pesticide discharge to waters of the U.S.

3. Control measures are evaluated separately on the basis of mosquito life stage as follows.
 - a. For aerial larval control using Bti, pre treatment surveys are done to determine whether an application is necessary. Post treatment surveys are done at a limited number of sites to characterize the effectiveness of the application. The aerial contractor provides a GPS recording of the route of the helicopter over the targeted wetland, which provides data of the coverage attained. For ground

larval control using Bti, pre treatment surveys are conducted to determine whether an application is necessary. Random post application surveys are conducted to determine the efficacy of the applications. For catchbasin larval control, surveys are conducted prior to beginning applications of *Bacillus sphaericus* and then random surveys are conducted to determine post application efficacy.

- b. Efficacy is determined from pre and post treatment trap counts when a trap site is located in the vicinity of a treatment area. Pre treatment surveillance determines whether control is required at a site. Post treatment surveillance determines the efficacy of a treatment and whether future adult mosquito control is required.

D. Schedules and Procedures

1. Pertaining to control measures used to comply with the effluent limitations in Part 2.
 - a. Application rate and frequency procedures
 - (1.) Application rate determination
 - (a.) Determine species and age of target mosquitoes
 - (b.) Evaluate environmental conditions
 - (c.) Consider target area flora and fauna
 - (d.) Determine appropriate application rate based on product label recommendations, previous experience and efficacy tests.
 - (2.) Frequency determination
 - (a.) Determine target site treatment history with selected pesticide
 - (b.) Evaluate effect of selected pesticide use on frequency and quantity thresholds for active ingredient
 - (c.) Consider alternate treatment options.
 - (3.) Resistance considerations
 - (a.) Consider documented resistance of target species to selected pesticide and/or any other compounds that are in the same class or exhibit similar modes of action. Also consider the possibility of cross-resistance.
 - (b.) Consider the use of alternate control options and/or product rotation. After 3 years of *Bacillus sphaericus* use in catchbasins in a community, the EMMCP switches to time release formulations of methoprene for at least one year.
 - b. Spill prevention procedures
 - (1.) Perform routine inspections of pesticide storage areas.
 - (2.) The following procedures are followed related to spill prevention.
 - (a.) All applicators are instructed on spill response procedures

- (b.) All applicators are equipped with cell phones.
- (c.) The police dispatcher is contacted prior to all aerial larval control and truck mounted adult mosquito control activities and given contact information for the EMMCP.
- (3.) All vehicles are equipped with MSDS sheets and labels, as well as product fact sheets. All trucks are equipped with an emergency spill response kit.
- (4.) Chemical spill response plan
 - (a.) Contain the spill and notify a supervisor.
 - (b.) Notify emergency personnel of the community, if applicable.
 - (c.) Isolate contaminated area.
 - (d.) Soak up spill with absorbent pads and/ or absorbent granules. Collect material for disposal.
 - (e.) Dispose of contaminated material according to the EPA label.
 - (f.) Record the details of the incident in a report.
 - (g.) Notify the Dept. of Crop and Pest Services, if applicable, per the regulations of the Massachusetts Pesticide Board.
 - (h.) EMMCP chemical list and PPE requirements attached.
- c. Pesticide Application Equipment Procedures
 - (1.) Ground applied larviciding
 - (a.) Operations
 - i. A visual inspection of backpack and hand held pump sprayers is done prior to the startup of the spray equipment.
 - ii. Routine cleaning and maintenance of the backpack and hand held pump sprayers are performed to ensure the equipment is operating properly.
 - (b.) Maintenance

Daily checks are done that include a visual inspection of the sprayers before use and any necessary adjustments and/ or repairs are made.
 - (2.) Ground adulticiding
 - (a.) Operations
 - i. Application equipment must be calibrated annually to confirm the Volume Median Diameter is within the specifications required in the EPA label.
 - ii. A visual inspection of spray equipment for leaks or wear in the lines, tanks and nozzle is done prior to the start up of spray equipment
 - iii. Routine cleaning and maintenance of the spray system must be performed to ensure system is operating properly.

- (b.) Maintenance
 - i. Visually check the aerosol ULV generator each day before use and make any necessary adjustments and/ or repairs. Before making any repairs ensure that required PPE is worn.
 - ii. Check all gasoline hoses, insecticide lines and fittings for cracks, leaks or wear. Replace, if needed.
 - iii. Check all bolts and fasteners and tighten, as necessary.
 - iv. Ensure that pesticide tanks have sufficient insecticide for the assigned spray area.
 - v. Check all nozzle parts for wear or physical damage. Replace damaged parts.
 - vi. Inspect blower air filter for cleanliness and serviceability.
- d. Pest Surveillance Procedures.
 - (1.) Adult mosquito surveillance
 - (a.) Carbon dioxide baited CDC light traps monitor mammal biting and EEE enzootic vector populations. *Cs. melanura* specimens, the EEE enzootic vector, may be submitted to the State Public Health Lab for virus testing. Currently up to 32 CDC light traps are deployed on a weekly basis.
 - (b.) Gravid traps monitor the populations of the WNV vector species, *Cx. pipiens* and *Cx. restuans*. Specimens of *Cx. pipiens* and *Cx. restuans* may be submitted to the State Public Health laboratory for virus testing. Currently up to 32 gravid traps are deployed on a weekly basis.
 - (2.) Larval mosquito surveillance
 - (a.) Wetland larval habitat site inspections are conducted by our Field Technicians to monitor spring and summer floodwater species. Larval mosquito surveillance entails locating the mosquito habitat, sampling for mosquito larvae and recording the larval density and the larval development stage. Some larval samples are collected for identification purposes. Other observations that are recorded include water depth and drainage obstructions.
 - (b.) Catchbasin larval habitat site inspections are conducted by our Field Technicians to monitor *Culex* larval populations. Larval mosquito surveillance at catchbasins includes recording the larval density, larval development stage and the water depth.
 - (3.) Disease surveillance

The EMMCP submits batches of *Culex pipiens*, *Culex restuans* and *Ochlerotatus japonicus* from gravid traps to the

Mass Dept. of Public Health and *Culiseta melanura* from CDC light traps that are tested for West Nile virus and EEE.

- e. Procedures for assessing environmental conditions
 - (1.) Larval mosquito control – Two major environmental conditions affecting aerial applications of larvicides are tree canopy and the amount of aquatic vegetation present within the treatment area. Tree canopy may deflect Bti granules or otherwise prevent the penetration of the pesticide from reaching the target area. Dense stands of aquatic vegetation can limit the amount of Bti granules that reach the water surface.
 - (2.) Adult mosquito control applications are conducted in both suburban and rural areas of the district. Applicators are provided lists and maps of areas to be excluded and turn spray equipment off to prevent drift into such areas. Equipment is also turned off when approaching lakes, ponds and rivers to avoid any adverse reactions to non-target organisms. The following are procedures for adult mosquito control:
 - (a.) Apply when mosquitoes are most active and meteorological conditions are conducive to keeping the aerosol spray in the air column close to the ground.
 - (b.) Applications are done after sunset per the policy of the State Reclamation & Mosquito Control Board.
 - (c.) Aerosol applications are scheduled when temperatures at night are expected to remain above 60 degrees. No applications are conducted when ambient temperatures are less than 50 degrees.
 - (d.) Applications are conducted when wind speeds are greater than 1 mph but less than 20 mph.
 - (e.) Per the EPA label, applications are not conducted over bodies of water (lakes, rivers, permanent streams, natural ponds, swamps or marshes) except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate the movement of applied material beyond the water in order to minimize incidental deposition into the water body.
 - (f.) Per the EPA label, adult mosquito control applications can be toxic to bees exposed to direct treatment on blooming crops and weeds. The adult mosquito control products are not applied or allowed to drift onto blooming crops or weeds when bees are visiting the treatment area, except when applications are made to prevent or control a threat to public and/ or animal health determined by a state, tribal or local health or vector control agency on the basis of documented

evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or if specifically approved by the state or tribe during a natural recovery effort.

- (g.) Applicators carry lists of pesticide exclusion areas as well as a map depicting the excluded properties.
 - (h.) To help minimize adverse incidents, EMMCP applicators turn off spray equipment when people are observed along the spray route.
2. Pertaining to other actions necessary to minimize discharges.
- a. Spill response procedures
Pesticide spill response training is provided to staff handling, loading or applying pesticides
 - b. Adverse incident response procedures.
 - (1.) Procedures for responding to any incident resulting from pesticide applications.
 - (2.) Procedures for notification from an incident
 - (a.) Applicator notifies emergency personnel from the community, if applicable.
 - (b.) Applicator notifies Supervisor, who notifies the Div. of Crop and Pest Services, if applicable, per the regulations of the Massachusetts Pesticide Board.
 - (3.) Pesticide monitoring schedules and procedures.
For application by licensed and certified pesticide applicators, a record must be kept that includes:
 - (a.) Place of application
 - (b.) Date of application
 - (c.) The brand or registered name of the pesticide.
 - (d.) The EPA registration number of the pesticide.
 - (e.) The amount of the pesticide applied.
 - (f.) The purpose for which the pesticide was applied.
 - (g.) Method of application.
 - (h.) The persons certified or licensed by the Div. of Crop & Pest Services who participated in the planning and execution of the application.
 - (i.) Accidents or incidents resulting from the use of a pesticide which caused pollution.
 - (j.) Any illnesses or injuries caused by or suspected to have been caused by pesticides and reported to the applicator.
 - (k.) Records must be maintained for a period of 3 years from the date of application.

Pesticides and Required PPE

Pesticide	EPA Registration Number	PPE Requirement
Altosid Pellets	2724-448	Under ordinary use, no special protection is required
Altosid XR Briquets	2724-421	Under ordinary use, no special protection is required
Altosid WSP	2724-448	Under ordinary use, no special protection is required
Anvil 10 + 10	1021-1688-8329	All prudent precautions
VectoBac G	62637-3	Dust Mask – N-95, R-95 or P-95
VectoBac 12AS	275-102	Dust Mask – N-95,R-95 or P-95
Vectolex WSP	73049-20	Under ordinary use, no special protection is required

PERMIT NUMBER: MAG87A020

Your Permit Number will be used to identify this record and the associated Pest Management Areas. Record the permit number above for use when modifying or terminating your record in the future.

Permit Status: **Submitted to EPA**

Operator Information

Operator Name:East Middlesex Mosquito Control Project

IRS Employer Identification Number (EIN):04-6002284

Operator Type:State Government

Are you a large entity as defined in Appendix A of the PGP? (check one):Yes

Mailing Address

11 Sun Street

Waltham, Massachusetts 02453-4101

Phone:7818995730

Fax:

Email: emmcp.dh@verizon.net

Contact Name:David Henley

Pest Management Area Name:East Middlesex Mosquito Control Project

Pest Management Area Description:

All water within the following Massachusetts cities and towns: Arlington, Bedford, Belmont, Brookline, Burlington, Cambridge, Concord, Everett, Framingham, Lexington, Lincoln, Malden, Maynard, Medford, Newton, North Reading, Reading, Sudbury, Wakefield, Waltham, Watertown, Wayland, Wellesley, Weston and Winchester.

Mailing Address

11 Sun Street

Waltham, Massachusetts02453-4101

Phone:7818995730

Fax:

Email:emmcp.dh@verizon.net

Will Pesticide applications occur on Indian Country Lands?

No

Are any of your activities (in this pest management area) for which you are requesting coverage under this NOI considered “federal facilities” as defined by the PGP?

Yes

Pesticide Use Patterns to be included in this Pest Management Area

Mosquitoes and Other Flying insect Pests

Receiving Waters

Coverage requested for all waters of the United States within the Pest Management Area identified above.

Is coverage requested for discharge to a Tier 3 (Outstanding National Resource Water) water of the United States?

No

Water Quality Impaired Waters

Waters are NOT impaired by any substance which is either an active ingredient of a pesticide to be discharged or a degradate of such an active ingredient

Endangered Species Protection:

Pesticide application activities will not result in a point source discharge to one or more Waters of the United States containing National Marine Fisheries Service (NMFS) Listed Resources of Concern, as defined in Appendix A, of the PGP.

Certifier

Printed Name:David M Henley

Title:Superintendent

Email:emmcp.dh@verizon.net

Preparer

Preparer Name:David M Henley

Organization:East Middlesex Mosquito Control Project

Phone:7818995730

Email:emmcp.dh@verizon.net