

**RECEIVED**

MAR 22 2016

**ATTACHMENT G – NOTICE OF INTENT**

*2016 xxxx*  
**WATER QUALITY ORDER NO. 2011-0002-DWQ**  
**GENERAL PERMIT NO. CAG 990004**

DIVISION OF WATER QUALITY

**STATEWIDE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT  
 FOR BIOLOGICAL AND RESIDUAL PESTICIDE DISCHARGES  
 TO WATERS OF THE UNITED STATES  
 FROM VECTOR CONTROL APPLICATIONS**

**I. NOTICE OF INTENT STATUS (see Instructions)**

Mark only one item  A. New Applicator  B. Change of Information: WDID# \_\_\_\_\_  
 C. Change of ownership or responsibility: WDID# \_\_\_\_\_

**II. DISCHARGER INFORMATION**

A. Name <i>Marin/Sonoma Mosquito and Vector Control District</i>			
B. Mailing Address <i>595 Helman Lane</i>			
C. City <i>Cotati</i>	D. County <i>Sonoma</i>	E. State <i>CA.</i>	F. Zip Code <i>94931</i>
G. Contact Person <i>Erik Hawk</i>	H. Email address <i>erikh@msmosquito.com</i>	I. Title <i>Assistant manager</i>	J. Phone <i>707-285-2200</i>

**III. BILLING ADDRESS (Enter Information only if different from Section II above)**

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip Code
G. Email address	H. Title	I. Phone	

**IV. RECEIVING WATER INFORMATION**

A. Biological and residual pesticides discharge to (check all that apply)\*:

1. Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.  
 Name of the conveyance system: n/a

2. Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.  
 Owner's name: Various see Attachment A  
Name of the conveyance system: Applications may be made to various conveyance systems within Marin and Sonoma Counties

3. Directly to river, lake, creek, stream, bay, ocean, etc.  
 Name of water body: Various see Attachment A -

\* A map showing the affected areas for items 1 to 3 above may be included.

B. Regional Water Quality Control Board(s) where application areas are located (REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region 1 and 2  
(List all regions where pesticide application is proposed.)

A map showing the locations of A1-A3 in each Regional Water Board shall be included.

**V. PESTICIDE APPLICATION INFORMATION**

A. Target Organisms:  Vector Larvae  Adult Vector

B. Pesticides Used: List name, active ingredients and, if known, degradation by-products  
See Attachment C

C. Period of Application: Start Date January 1 End Date December 31

D. Types of Adjuvants Added by the Discharger:

**VI. PESTICIDES APPLICATION PLAN**

A. Has a Pesticides Application Plan been prepared?\*

Yes  No

If not, when will it be prepared? \_\_\_\_\_

\* A copy of the PAP shall be included with the NOI.

B. Is the applicator familiar with its contents?

Yes  No

**VII. NOTIFICATION**

Have potentially affected governmental agencies been notified?

Yes  No

*Notification details are outlined through CEQA document filed 2004, Draft EIR 2015, and are available online at www.ms.mosquito.com*

\* If yes, a copy of the notifications shall be attached to the NOI.

**VIII. FEE**

Have you included payment of the filing fee (for first-time enrollees only) with this submittal?

Yes  NO  NA

**IX. CERTIFICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure 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 or imprisonment. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: Erik Hawk

B. Signature: *Erik Hawk*

Date: 03/01/16

C. Title: Assistant Manager

**X. FOR STATE WATER BOARD USE ONLY**

WDID:	Date NOI Received:	Date NOI Processed:
Case Handler's Initial:	Fee Amount Received: \$	Check #:

January 15<sup>th</sup>, 2016

**Notice of Intent to Apply Public Health Pesticides for Vector Control Purposes to Surface Waters and Waters of the U.S. Within Marin and Sonoma Counties.**

- The Marin/Sonoma Mosquito and Vector Control District intends to make public health pesticide applications to, over and adjacent to constructed conveyances, surface waters and other waters of the U.S. owned and controlled by an entity other than the District for vector control purposes per the requirements of the General NPDES Permit for Biological and Residual Pesticide Discharges for Vector Control Applications.
- The NPDES Permit requirements for listing of the Public Health Pesticides anticipated to be used were modified from the previous permit, to the new permit which will be issued in 2016. The newer requirements specify that any pesticide product can be used that contains approved active ingredients, provided all pesticide label restrictions and instructions are followed. In addition, pesticides which fall under the “minimum risk” category can be used. The minimum risk pesticides have been exempted from FIFRA requirements. The following tables list the active ingredients approved for the FIFRA regulated pesticides.

Active Ingredients for larval mosquito control:

<i>Bacillus thuringiensis</i> subsp. <i>israelensis</i> ( <i>Bti</i> )
<i>Bacillus sphaericus</i> ( <i>Bs</i> )
Methoprene
Monomolecular Films
Petroleum Distillates
Spinosad
Temephos

Active Ingredients for adult mosquito control:

Deltamethrin
Etofenprox
Lambda-Cyhalothrin
Malathion
Naled
N-octyl bicycloheptene dicarboximide (MGK-264)
Piperonyl butoxide (PBO)
Permethrin
Prallethrin
Pyrethrin
Resmethrin
Sumithrin

- The purpose of the use of larvicide and adulticide pesticides containing these active ingredients is for the control of larval and adult mosquitoes to minimize the threat of mosquito-borne pathogens and diseases including health issues related to mosquito biting.
- The general time period for the application of the pesticides is January through December, 2016. Locations of expected use will be constructed conveyances, surface waters and other waters of the U.S. located within Marin and Sonoma counties.
- There are no known water use restrictions or precautions during treatment.
- Interested persons may contact the District at 1-800-231-3236 for additional information.

Erik Hawk, Assistant Manager  
Marin/Sonoma Mosquito and Vector Control District  
595 Helman Lane  
Cotati, CA 94954  
[www.ms mosquito.com](http://www.ms mosquito.com)

## **Examples of Receiving Water Bodies (Mosquito and Vector Control) in Regional Water Quality Control Boards One and Two in Marin and Sonoma Counties**

Any water body (natural or artificial) that has standing water for 72 to 96 hours can potentially provide mosquito habitat and require mosquito control (i.e. mitigated wetlands, seasonal wetlands, tidal marshes, storm water BMP's, ponds, lakes, creeks, rivers, flood control channels, low areas, roadside conveyance channels, etc). It is important to note that some of these may be permanent or temporary; therefore it is not possible to provide an all inclusive list in both RWQCBs regions 1 and 2 for the Marin/Sonoma Mosquito and Vector Control service area (a map has been included as Attachment B which defines the District's service area). The list below includes examples of water bodies in RWQCB regions 1 and 2 that may be receiving waters relative to mosquito control applications and a detailed list is included as Attachment A.

### **Examples of water receiving bodies located in the service area for Region 1: North Coast RWQCB (map attached)**

- Tidal Marshes - Immediately adjacent to San Pablo Bay, Petaluma River and surrounding marshland, Sonoma Creek, Tolay Creek and Bodega Bay.
- Seasonal Wetlands – Vernal pools in the Santa Rosa Plain and the Laguna de Santa Rosa watershed.
- Lake and Ponds – Spring Lake Recreational Area, Lake Sonoma, various agricultural ponds for dairy, farm/cropland and winery use.

### **Examples of water receiving bodies located in the service area for Region 2: San Francisco Bay RWQB (map attached)**

- Tidal Marshes – Immediately adjacent to San Pablo Bay, Bel Marin Keys, Hamilton AFB, Drakes Bay, Bolinas Lagoon, Santa Venetia marsh, and McNears marsh.
- Seasonal Wetlands – Point Reyes National Seashore, Rush Creek marsh, Tomales Bay State Park and China Camp State Park.
- Lake and Ponds – Stafford Lake, Nicasio Reservoir, Marin Municipal Watershed lakes (Alpine, Lagunitas, Bon Tempe, etc.) and various agricultural ponds for dairy, farm/cropland and winery use.

**Attachment A: Detailed list of receiving water bodies within the Marin/Sonoma Mosquito Control District boundaries under the jurisdiction of Regional Water Quality Control Boards One and Two**

This list of watercourses in the San Francisco Bay Area groups rivers, creeks, sloughs, etc. according to the bodies of water they flow into. Tributaries are listed under the watercourses they feed, sorted by the elevation of the confluence so that tributaries entering nearest the sea appear they first. Numbers in parentheses are Geographic Nantes Information System feature ids.

Watercourses which feed into the Pacific Ocean in Sonoma County north of Bodega Head, listed from north to south.<sup>w</sup>

**The Gualala River and its tributaries**

- Gualala River (253221):
  - o North Fork (229679) - flows from Mendocino County.
  - o South Fork (235010):
    - Big Pepperwood Creek (219227) - flows from Mendocino County.
    - Rockpile Creek (231751) - flows from Mendocino County.
    - Buckeye Creek (220029):
      - Little Creek (227239)
      - North Fork Buckeye Creek (229647):
        - Osser Creek (230143)
        - Roy Creek (231987)
      - Soda Springs Creek (234853)
    - Wheatfield Fork (237594):
      - Fuller Creek (223983):
        - Sullivan Creek (235693)
        - Boyd Creek (219738)
        - North Fork Fuller Creek (229676)
        - South Fork Fuller Creek (235005)
      - Haupt Creek (225023)
      - Tobacco Creek (236406)
      - Elk Creek (223108)
      - House Creek (225688):
        - Soda Spring Creek (234845)
        - Allen Creek (218142)
        - Peppeawood** Creek (230514):
          - Danfield Creek (222007):
            - Cow Creek (221691)
          - Jim Creek (226237)
          - Grasshopper Creek (224470)
        - Britain Creek (219851)
        - Cedar Creek (220760)
      - Wolf Creek (238086)
      - Tombs Crock (236448)
    - Marshall Creek (228139):
      - McKenzie Creek (228391)

## Northern Sonoma Coast

Watercourses which feed into the Pacific Ocean in Sonoma County between the Gualala and Russian Rivers, numbered from north to south:

1. Deadman Gulch (222120)
  2. Cannon Gulch (220545)
  3. Chinese Gulch (221069)
  4. Phillips Gulch (230598)
  5. Miller Creek (228727)
  6. Warren Creek (237257)
  7. Wildcat Creek (237784)
  8. Stockhoff Creek (235498)
  9. Timber Cove Creek (236355)
  10. Kolmer Gulch (226673)
  11. Fort Ross Creek (223705)
  12. Russian Gulch Creek (1723332):
    - o East Branch Russian Gulch (222861):
      - Middle Branch Russian Gulch (228574)
      - West Branch Russian Gulch (237436)
- Russian River (267200): - flows from Mendocino County.
- o Willow Creek (237879)
  - o Sheephouse Creek (232916)
  - o Orrs Creek (230114)
  - o Freezeout Creek (223863)
  - o Austin Creek (218466):
    - Kohute Gulch (226672)
    - Kidd Creek (226569)
    - East Austin Creek (222846):
      - Black Rock Creek (219403)
      - Gilliam Creek (224171):
        - Schoolhouse Creek (232673)
        - Thompson Creek (236259)
        - Gray Creek (224517):
          - Lawhead Creek (234146)
          - Devil Creek (222279)
          - Conshea Creek (221468):
            - Tiny Creek (236385)
            - Sulphur Creek (235703)



- Ward Creek (237225):
- Big Oat Creek (219223)
- Blue Jay Creek (219496)
  - Pole Mountain Creek (230900)
    - Bearpen Creek (218919)
  - Red Slide Creek (231390)
- o Dutch Bill Creek (222756):
  - Lance] Creek (226842):
    - North Fork Lancel Creek (229689)
- Smith Creek (233315)
- o Hulbert Creek (253871):
  - Mission Creek (246001)
- Livereau Creek (227433)
- o Fife Creek (223491):
  - Redwood Creek (231420)
- o Pocket Canyon (230836):
  - Mays Canyon (228268)
- Hobson Creek (225380)
- o Green Valley Creek (224576):
  - Atascadero Creek (218443)
  - Purrington Creek (231100)
- o Mark West Creek (228118):
- o Windsor Creek (238013):
  - Pool Creek (230927)
- Laguna de Santa Rosa (226766):
  - Santa Rosa Flood Control Channel (232565):
    - Abramson Creek
    - Piner Creek
      - Paulin Creek
    - Santa Rosa Creek (232563):
      - Matanzas Creek (228216):
        - Spring Creek (235241)
        - South Fork Matanzas Creek (235025)
    - Brush Creek
    - Salt Creek (232297)
- Blucher Creek (219480)
- Five Creek (223565)
- Hinebaugh Creek (225359):
  - Crane Creek (221795)
- Washoe Creek (237318):
  - Gossage Creek (224355)
- Copeland Creek (221533)
  - Porter Creek (230952)
  - Humbug Creek (225753)
  - Van Buren Creek (236996)
- o Porter Creek (230951):

- Press Creek (231039)
  - o Drv Creek (222623): - flows from Mendocino County.
    - West Slough:
      - Foss Creek (1657225): ■ Norton Slough (1657226)
    - Mill Creek (228686):
      - Felta Creek (223436)
      - Wallace Creek (237193)
      - Palmer Creek (230265)
    - Pine Ridge Canyon (230719)
    - Kelley Creek (226456)
    - Crane Creek (221794)
    - Grape Creek (224441):
      - Wine Creek (238037)
    - Pena Creek (230478):
      - = Chapman Branch (220914)
      - Boyer Creek (219744)
      - Pechaco Creek (230457)
      - Redwood Log Creek (231443)
    - Dutcher Creek (222780)
    - Fall Creek (223368)
    - Schoolhouse Creek (232676)
    - Warm Springs Creek (237246):
      - Little Warm Springs Creek (227406)
      - Picnic Creek (230623)
      - Seven Oaks Creek (232821)
      - Bear Creek (218806)
      - Rancheria Creek (231215):
        - Little Rancheria Creek (234172)
      - Strawberry Creek (235583)
      - Little Strawberry Creek (227381)
      - Willow Springs Creek (237952)
      - Wild Cattle Creek (237748)
      - Bearpen Creek (218918)
      - Fall Creek (223365)
    - Brush Creek (219923)
      - Yorty Creek (238273)
    - Smith Creek (233325)
    - Cherry Creek (233660)
    - Galloway Creek (224021) - flows from Mendocino County.
    - Rail Creek (231170)
  - o Maacama Creek (227883):
    - Franz Creek (223840):
      - Bidwell Creek (219108)
    - Redwood Creek (231421):
      - Foote Creek (223653)

- Kellogg Creek (226462)
      - Yellowjacket Creek (238248)
    - Briggs Creek (219834):
      - Little Briggs Creek (227202)
      - Coon Creek (221498)
    - McDonnell Creek (228350)
  - o Sausal Creek (232603):
    - George Young Creek (224117)
    - Burns Creek (220208)
    - Grapevine Creek (224446)
  - o Gird Creek (224187)
  - o Miller Creek (228731)
  - o Gill Creek (224167)
  - o Crocker Creek (221835)
  - o Barrelli Creek (218695)
  - o Porterfield Creek (230956)
  - o Cloverdale Creek (221256)
  - o **Big Sulphur Creek** (254619):
    - Little Sulphur Creek (227384):
      - North Branch (229605)
      - Lovers Gulch Creek (227735)
      - Anna Belcher Creek (218287)
    - Frasier Creek (223845) - flows from Mendocino County.
    - Squaw Creek (235310):
      - Alder Creek (218097) - flows from Mendocino County.
      - Hummingbird Creek (225758) - flows from Mendocino County.
  - o Ash Creek (218427) - flows from Mendocino County.

Watercourses which feed into the Pacific Ocean in Sonoma County between the Gualala and Russian Rivers, numbered from north to south:

1. Deadman Gulch (222120)
2. Cannon Gulch (220545)
3. Chinese Gulch (221069)
4. Phillips Gulch (230598)
5. Miller Creek (228727)
6. Warren Creek (237257)
7. Wildcat Creek (237784)
8. Stockhoff Creek (235498)
9. Timber Cove Creek (236355)
10. Kolmer Gulch (226673)
11. Fort Ross Creek (223705)
12. Russian Gulch Creek (1723332):
  - o East Branch Russian Gulch (222861):
    - Middle Branch Russian Gulch (228574) ■

## West Branch Russian Gulch (237436)

Watercourses which feed into the Pacific Ocean in Sonoma County between Goat Rock Beach and Bodega Head, numbered from north to south:

1. Scotty Creek (232742):
  - o Rough Creek (231923)
2. Salmon Creek (232281):
  - o Finley Creek (223507)
  - o Coleman Valley Creek (221373)
  - o Fay Creek (223419)
  - o Tannery Creek (236018)
  - o Nolan Creek (229570)
  - o Thurston Creek (236333)

Watercourses which feed into Bodega Bay, numbered clockwise from Bodega Head to Sand Point:

1. Cheney Gulch (220937)
2. Shorttail Gulch (233054)
3. Estero Americano (223257):
  - o Ebabias Creek (253711)
  - o Americano Creek (254563)
4. Estero de San Antonio (253212):
  - o Stemple Creek (253932)

Watercourses which feed into the Pacific Ocean in Mann County south of Sand Point, listed from north to south:

### **Tomales Bay**

Watercourses which feed into Tomales Bay, numbered clockwise from Sand Point to Tamales Point:

1. Walker Creek (255208):
  - o Keys Creek (254852)
  - o Chileno Creek (254740)
  - o Frink Canyon (223952)
  - o Verde Canyon (237053)
  - o Salmon Creek (232280)
  - o Arroyo Sousa] (254577)
2. Millerton Gulch (228754)
3. Grand Canyon (224386)

4. Tomasini Canyon (236446)
5. Lagunitas Creek (255208):
  - o Olema Creek (234410)
  - o Nicasio Creek (229534):
    - Halleck Creek (224814):
      - Redwood Canyon (231415)
  - o San Geronimo Creek (232400)
  - o Big Carson Creek (219156)
  - o Cataract Creek (220721)
  - o East Fork Lagunitas Creek (222888)
6. White Gulch (237641)

### **Point Reyes Peninsula**

Watercourses which feed into the Pacific Ocean between Tomales Point and Bolinas, numbered north to south:<sup>U</sup>

1. Home Ranch Creek (225499)
2. Glennbrook Creek
3. Santa Maria Creek
4. Coast Creek (233695)
5. Alamere Creek (233404)
6. Arroyo Hondo

### **Bolinas Lagoon**

Watercourses which feed into Bolinas Lagoon, numbered clockwise from Bolinas to Stinson Beach:

1. Pine Gulch Creek (234476): o Copper Mine Gulch (221541)
2. Wilkins Gulch (237829)
3. Pike County Gulch (230651)
4. Audubon Canyon (218457)
5. Volunteer Canyon (1808968)
6. Morses Gulch (229094)
7. McKinnan Gulch (228412)
8. Stinson Gulch (235491)

## Southern Marin Coast

Watercourses which feed into the Pacific Ocean between Stinson Beach and the Golden Gate, numbered north to south:

1. Webb Creek (237375)
2. Lone Tree Creek (227525)
3. Cold Stream (221345)
4. Redwood Creek (231428)
  - o Fern Creek (223455)
5. Tennessee Valley (255127)

## San Francisco Bay and its tributaries

### **[edit]** Northern San Francisco Bay

Watercourses which feed into San Francisco Bay and its tributary bays between the Golden Gate and Point San Pedro, numbered south to north:

1. Coyote Creek (221733)
2. Arroyo Corte Madera del Presidio (254575):
  - o Old Mill Creek (229976)
    - Cascade Creek (220661)
3. San Clemente Creek (217925)
4. Corte Madera Creek (Marin County, California) (258743):
  - o Tamalpais Creek (235983)
  - o Ross Creek (231905)
  - o San Anselmo Creek (232364)
    - Sleepy Hollow Creek (249570)
    - Fairfax Creek (223329)
    - Carey Camp Creek (220595)
    - Cascade Creek (220663)
5. San Rafael Creek (232467)

## Northern [San Pablo Bay](#) and [Carquinez Strait](#)

Watercourses which feed into San Pablo Bay or the Carquinez Strait between Point San Pedro and the [Benicia-Martinez Bridge](#), numbered west to east:

1. Gallinas Creek (224018):
  - South Fork Gallinas Creek (235006)
2. [Miller Creek](#) (228730)
3. [Novato Creek](#) (229802):
  - Arroyo San Jose (218406)
  - Bowman Canyon (219721)
4. [Petaluma River](#) (253749):
  - Black John Slough (219372):
    - [Rush Creek](#) (232023)
    - Basalt Creek (218716)
  - Tule Slough (236607)
  - [San Antonio Creek](#) (253817)
  - Schultz Slough (232702)
  - [Adobe Creek](#) (217990)
  - [Washington Creek](#)
    - East Washington Creek
  - [Lynch Creek](#) (234217)
  - Capri Creek
  - [Lichau Creek](#) (234157):
    - Willow Brook (269133)
5. [Tolay Creek](#) (236414)
6. [Sonoma Creek](#) (234882):
  - Napa Slough (229414)
  - East Branch (222851)
  - Second Napa Slough (232776):

- Third Napa Slough (236244):
    - Railroad Slough (231180)
    - Steamboat Slough (235419):
      - Schell Slough (232647):
        - Schell Creek (232645):
          - [Arroyo Seco Creek](#) (218408):
            - Nathanson Creek (229419)
            - Haraszthy Creek (224911)
- China Slough (221058)
- [Fowler Creek](#) (223770):
  - Rodgers Creek (231809):
    - Champlin Creek (220901)
  - Felder Creek (223431):
    - Lewis Creek (262425)
  - [Carriger Creek](#) (220639)
- Agua Caliente Creek (218327)
- Hooker Creek (225537):
  - Wilson Creek (237965):
    - Butler Canyon (220277)
    - Whitman Canyon (237706)
- [Calabazas Creek](#) (254687):
  - Stuart Creek (235613)
- [Graham Creek](#) (224379)
- [Yulupa Creek](#) (238301)
- [Bear Creek](#) (218803)
- [Napa River](#) (255110):
  7. Napa Slough (229414):
    - Devils Slough (222329)



- Huichica Creek (225741)
- 8. White Slough (237683)
  - [Rindler Creek](#) (231615)
    - [Blue Rock Springs Creek](#) (219520)
- 9. American Canyon Creek (218229)
- 10. Carneros Creek (220626)
- 11. Suscol Creek (235838)
- 12. Tulucay Creek (255164):
  - Kreuse Creek (226687)
  - Murphy Creek (229347)
- 13. [Milliken Creek](#) (234307):
  - Sarco Creek (232579)
- 14. Napa Creek (229413):
  - Redwood Creek (231429)
- 15. Soda Creek (234828)
- 16. Dry Creek (233800)
- 17. Conn Creek (233707):
  - Rector Creek (234547)
  - Sage Creek (234602):
    - Clear Creek (233687)
  - Chiles Creek (233665):
    - Moore Creek (229017)
- 18. Bale Slough (218624)
- 19. Sulphur Creek (235712)
- 20. York Creek (238269)
- 21. Mill Creek (228685)
- 22. Ritchey Creek (252565)
- 23. Nash Creek (229417)

**Source:** [http://en.wikipedia.org/wiki/List\\_of\\_watercourses\\_in\\_the\\_San\\_Francisco\\_Bay\\_Area](http://en.wikipedia.org/wiki/List_of_watercourses_in_the_San_Francisco_Bay_Area)



Attachment C

Marin/Sonoma Mosquito and Vector Control District

V. Pesticide Application Information

List of Active Ingredients that may be used under NPDES Permit.

<b>Active Ingredient</b>
Bacillus thuringiensis var. israelensis
Bacillus sphaericus (Lysinibacillus sphaericus)
Deltamethrin
Etofenprox
Lambda-Cyhalothrin
Malathion
Methoprene
Monomolecular Films
Naled
N-octyl Bicycloheptene Dicarboximide (MGK-264)
Petroleum Distillates
Permethrin
Piperonyl butoxide
Prallethrin
Pyrethrin
Resmethrin
Spinosad
Sumithrin
Temephos
Any "minimum risk category" pesticides that are FIFRA exempt and registered for use in California and used in a manner specified in 40 C.F.R. section 152.25.

## Marin/Sonoma Mosquito and Vector Control District

### Pesticide Application Plan

- 1. Description of the target area and adjacent areas, if different from the water body of the target area, in to which larvicides and adulticides are being planned to be applied or may be applied to control vectors. The description shall include adjacent areas, if different from the water body of the target areas;**

The Marin/Sonoma Mosquito and Vector Control District (MSMVCD) boundaries extend north to the Mendocino County Line (just north of the town of Cloverdale), to San Francisco County to the South (just south of Sausalito), Lake, Napa, and Solano Counties to the east, and the Pacific Ocean to the west. Please see attached map and map on page 27, Best Management Practices for Mosquito Control in California (California Department of Public Health, 2012) and MSMVCD CEQA 2004 (CEQA 2004 available at [www.msmosquito.com](http://www.msmosquito.com)), attached Notice of Intent and attached list of receiving water bodies.

- 2. Discussion of the factors influencing the decision to select pesticide applications for mosquito control:**

MSMVCD utilizes an Integrated Vector Management Program to control mosquitoes. For example, mosquito larvicides are used when mosquito source reduction or biological controls (e.g. mosquito fish) are not applicable or larval control is necessary while mosquito source reduction solutions are being planned or implemented. For example, with reference to adult mosquito control, adulticides are considered when larval control has not been effective, a new source is discovered where adult mosquitoes are present, adult mosquito trap counts and/or landing rate counts deem adult mosquito control necessary (e.g. in conjunction with service requests and/or mosquito species known to transmit disease). Please see CEQA 2004 (pgs.14-17, 33).

- 3. Pesticides products or types expected to be used and if known, their degradation by-products, the method in which they are applied, and if applicable, the adjuvants and surfactants used:**

The NPDES Permit for Biological and Residual Discharges to Waters of the U.S. from Vector Control Applications was amended to list the approved active ingredients rather than having specific products named. All pesticide label instructions and restrictions will be followed for products containing the active ingredients listed below. In addition, pesticides which fall under the "minimum risk" category may be used. The minimum risk pesticides have been exempted from FIFRA requirements. Products may be applied by

ground (hand, truck, ATV, backpack etc.), watercraft, or by air (helicopter or fixed wing aircraft).

<b>Active Ingredient</b>
Bacillus thuringiensis var. israelensis
Bacillus sphaericus (Lysinibacillus sphaericus)
Deltamethrin
Etofenprox
Lambda-Cyhalothrin
Malathion
Methoprene
Monomolecular Films
Naled
N-octyl Bicycloheptene Dicarboximide (MGK-264)
Petroleum Distillates
Permethrin
Piperonyl butoxide
Prallethrin
Pyrethrin
Resmethrin
Spinosad
Sumithrin
Temephos
Any "minimum risk category" pesticides that are FIFRA exempt and registered for use in California and used in a manner specified in 40 C.F.R. section 152.25.

**4. Description of the application areas and the target areas in the system that are being planned to be applied to or may be applied.**

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is MSMVCD's preferred solution, and whenever possible MSMVCD works with agencies and property owners to effect long-term solutions to reduce or eliminate the need for continued applications as described in item 2 above. Please see attached map, CEQA 2004, and Notice of Intent. Sources of mosquito production and areas that require adult mosquito control are difficult to predict from year to year based on the weather and variations in local environmental conditions. However, the typical sources treated by MSMVCD include:

Seasonal wetlands

Tidal marshes

Storm water treatment, hydro modification control, and conveyance systems

Agricultural and recycled water irrigation practices (fields/pastures)

Ponds (ornamental, wildlife, recycled water irrigation recovery, frost protection...)

Low area/seasonal depressions

Septic tanks

Standing water under buildings

Containers (livestock tanks, rain barrels, planters, etc...)

Oak woodlands with populations of tree hole mosquitoes

**5. Other control methods used (alternatives) and their limitations:**

With any mosquito or other vector source, MSMVCD's first goal is to look for ways to eliminate the source, or, if that is not possible, for ways to reduce the vector potential. The most commonly used methods and their limitations are included in CEQA 2004 ([www.msamosquito.com](http://www.msamosquito.com)).

Specific methods used by MSMVCD include educating the public regarding mosquito biology and encouraging residents to eliminate sources of standing water on their property, and working with property owners to find long-term water management strategies that meet their needs while minimizing the need for public health pesticide applications. Public relations methods utilized in this program include, newspaper articles, radio commercials, billboards, brochures, education booths (fairs, home shows, and other community events), and MSMVCD open house events. MSMVCD has an educational program that includes presentations at schools to educate students regarding mosquito biology, vector-borne diseases, and mosquito source reduction. MSMVCD also works collaboratively with municipalities and regulatory agencies in the design and review of projects with the intent of minimizing the potential for mosquito production and the need for repeated pesticide applications. For example, MSMVCD participates in the design and review processes for storm water conveyance, treatment, and control systems and is involved with the wetland community with regard to planning, design, and management of seasonal wetlands and tidal marshes. MSMVCD also stocks mosquito fish (*Gambusia affinis*) when and where appropriate as a biological control tool.

**6. How much product is needed and how these amounts are determined:**

March 1, 2016

<b>Description</b>	<b>Total Product Used</b>	<b>Unit Of Measure</b>
Monomolecular Film Liquid	7.5	GAL
Monomolecular Film Granule	4.0	LB
Methoprene Briquets (small)	24.2	LB
Methoprene Briquets XR	1426.7	LB
Methoprene Liquid Larvicide	41.8	GAL
Methoprene Pellets	906.2	LB
Methoprene Granule	249.4	LB
Petroleum Distillate	907.7	GAL
Bti Liquid	446.1	GAL
Bti Granule	2,506.6	LB
Bs Granule	12,831.3	LB
Bti/Bs Granule	9,456.0	LB
Spinosad Granule	93.0	LB
Pyrethrin	48.5	GAL
Etofenprox	11.7	GAL
Resmethrin	6.1	GAL

The above totals represent mosquito larvicide and adulticide applications made in Marin and Sonoma counties in 2015. The amount of materials applied will vary annually depending on the applications that are required to control mosquito populations. This data is provided as an example of the materials used in one year.

The need to apply product is determined by surveillance. Actual use varies annually depending on mosquito abundance. Other public health pesticides in addition to those listed above may be used as part of the agency's best management practices.

**7. Representative monitoring locations and the justification for selecting these monitoring locations:**

Please see the Mosquito and Vector Control Association of California (MVCAC) NPDES Coalition Monitoring Plan.

March 1, 2016

**8. Evaluation of available BMPs to determine if there are feasible alternatives to the selected pesticide application project that could reduce potential water quality impacts:**

The District operates under an Integrated Vector Management Program. Please see CEQA 2004 (e.g. pgs. 5-8, 14-20), and items 2 and 5 above.

**9. Description of the BMPs to be implemented. The BMPs shall include at a minimum:** MSMVCD's BMPs are described in CEQA 2004 and items 2 and 5 above. Specific elements have been highlighted below under items a-f.

**a. Measures to prevent pesticide spill;**

All pesticide applicators receive annual spill prevention and response training. Agency employees ensure daily that application equipment is in proper working order. Spill mitigation devices are placed in all vehicles and pesticide storage areas.

**b. Measures to ensure that only a minimum and consistent amount is used;** Application equipment is calibrated at least annually as required by the Department of Pesticide Regulations (DPR) and the terms of a cooperative agreement with the California Department of Public Health (CDPH).

**c. A plan to educate Coalition's or Discharger's staff and pesticide applicator on any potential adverse effects to waters of the U.S. from the pesticide application;** This will be included in our pesticide applicators annual pesticide application and safety training, continuing education programs. Employees certified by the CDPH must complete continuing education units to maintain their certification.

**d. Descriptions of specific BMPs for each application mode, e.g. aerial, truck, hand, etc.;** MSMVCD calibrates vehicle-mounted and handheld larviciding equipment each year to meet application specifications. Supervisors review application records to ensure appropriate amounts of material are being used. Ultra-low volume (ULV) application equipment is calibrated for output and droplet size to meet label requirements. Aerial larviciding equipment is calibrated by the Contractor. If aerial adulticide equipment is utilized it will be calibrated regularly and droplet size will be monitored by the agency to ensure droplets meet label requirements. Airplanes used in urban ULV applications and the primary airplane used for rural ULV application is equipped with advanced guidance and drift management equipment to ensure the best available technology is being used to place product in the intended area. If a secondary airplane is used in rural ULV applications it will be equipped with an advanced guidance system.



**e. Descriptions of specific BMPs for each pesticide product used;**

Please see the Best Management Practices for Mosquito Control in California for the current approved pesticide labels for application BMPs for specific products. Current pesticide labels can also be viewed at [www.msamosquito.com](http://www.msamosquito.com).

**f. Descriptions of specific BMPs for each type of environmental setting (agricultural, urban, and wetland).**

Please see CEQA 2004 and items 2 and 5 above. In addition, MSMVCD's operations include a wastewater irrigation program that works collaboratively with private property owners and municipalities to minimize (i.e. source reduction) associated mosquito production and pesticide applications. MSMVCD staff also works with agricultural operations to achieve source reduction in relation to general irrigation.

**10. Identification of the problem. Prior to first pesticide application covered under the General Permit that will result in a discharge of biological and residual pesticides to waters of the US, and at least once each calendar year thereafter prior to the first pesticide application for that calendar year, the Discharger must do the following for each vector management area:**

**a. If applicable establish densities for larval and adult vector populations to serve as action threshold(s) for implementing pest management strategies**

MSMVCD staff only applies pesticides to sources of mosquitoes that represent imminent threats to public health or quality of life. The presence of any mosquito may necessitate treatment, however higher thresholds may be applied depending on the agency's resources, disease activity, surveillance data, or local needs. Treatment thresholds are based on a combination of one or more of the following criteria:

- Mosquito species present
- Mosquito stage of development
- Potential to transmit a pathogen or cause disease
- Disease activity
- Mosquito abundance
- Flight range
- Proximity to populated areas
- Size of source
- Presence/absence of natural enemies or predators
- Presence of sensitive/endangered species or habitats

**b. Identify target vector species to develop species-specific pest management strategies based on developmental and behavioral considerations for each species;**

Please see the Best Management Practices for Mosquito Control in California and the California Mosquito-borne Virus Surveillance and Response Plan, CEQA 2004, and items 2 and 5 above. Target vector species include, *Aedes* sp., *Culex* sp, *Culiseta* sp., and *Anopheles* sp..

**c. Identify known breeding areas for source reduction, larval control program, and habitat management:**

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is MSMVCD's preferred solution, and whenever possible MSMVCD works with property owners to implement long-term solutions to reduce or eliminate the need for continued applications as described in Best Management Practices for Mosquito Control in California and CEQA 2004 (e.g. pages 16 and 17).

**d. Analyze existing surveillance data to identify new or unidentified sources of vector problems as well as areas that have recurring vector problems.**

This is included in the Best Management Practices for Mosquito Control in California, CEQA 2004, and the California Mosquito-borne Virus Surveillance and Response Plan. MSMVCD continually collects adult and larval mosquito surveillance data, and monitors regional mosquito-borne disease activity detected in humans, horses, birds, and/or other animals, and uses these data to guide mosquito control activities.

**11. Examine of Alternatives. Dischargers shall continue to examine alternatives to pesticide use in order to reduce the need for applying larvicides that contain temephos and for spraying adulticides. Such methods include:**

**a. Evaluating the following management options, in which the impact to water quality, impact to non-target organisms, vector resistance, feasibility, and cost effectiveness should be considered:**

- No action
- Prevention
- Mechanical or physical source reduction methods
- Cultural methods
- Biological control agents
- Pesticides

**If there are no alternatives to pesticides, dischargers shall use the least amount of pesticide necessary to effectively control the target pest.**

MSMVCD uses the principles and practices of Integrated Vector Management (IVM). MSMVCD's IVM program includes the following:

- Education
- Surveillance
- Source Reduction (physical control and vegetation management)
- Biological Control (e.g. mosquitofish)
- Chemical Control
  - o Larval mosquito Control (including biological materials)
  - o Adult Mosquito Control

MSMVCD's IVM program is discussed in its CEQA document (CEQA 2004) and practices are also discussed in Best Management Practices for Mosquito Control in California. As stated in item #10 above, locations where vectors may exist are assessed, and the potential for using alternatives to pesticides is determined on a case-by-case basis. Commonly considered alternatives include: 1.) Eliminate artificial sources of standing water; 2.) Ensure temporary sources of surface water drain within four days (96 hours) to prevent adult mosquitoes from developing; 3.) Control plant growth in ponds, ditches, and shallow wetlands; 4.) Design facilities and water conveyance and/or holding structures to minimize the potential for producing mosquitoes; and 5.) Use appropriate biological control methods that are available. Additional alternatives to using pesticides for managing mosquitoes are listed on pages 4-19 of the Best Management Practices for Mosquito Control in California.

Implementing preferred alternatives depends on a variety of factors including availability of agency resources, cooperation with stakeholders, coordination with other regulatory agencies, and the anticipated efficacy of the alternative. If a pesticide-free alternative does not sufficiently reduce the risk to public health, pesticides are considered, beginning with the least amount necessary to effectively control the target vector.

**b. Applying pesticides only when vectors are present at a level that will constitute a nuisance or threat to public health.**

MSMVCD follows an existing IVM program (see a. above and CEQA 2004) which includes practices described in the California Mosquito-borne Virus Surveillance and Response Plan and Best Management Practices for Mosquito Control in California.

A "nuisance" is specifically defined in California Health and Safety Code (HSC) §2002(j). This definition allows vector control agencies to address situations where even a low number of vectors may pose a substantial threat to public health and quality of life. In practice, the definition of "nuisance" is generally only part of a decision to apply pesticides to areas covered under this permit. As summarized in the California Mosquito-borne Virus Response Plan, the overall risk to the public when vectors and/or vector-borne disease are present is used to select an available and appropriate material, rate, and application method to address that risk in the context of our IVM program.

**12. Correct Use of Pesticides**

**Coalition's or Discharger's use of pesticides must ensure that all reasonable precautions are taken to minimize the impacts caused by pesticide applications. Reasonable precautions include using the proper spraying techniques and equipment, taking account of weather conditions and the need to protect the environment.**

This is an existing practice of MSMVCD, and is required to comply with the Department of Pesticide regulations (DPR) requirements and the terms of our California Department of Public Health (CDPH) Cooperative Agreement. All pesticide applicators receive annual safety and spill training in addition to their regular continuing education. Each applicator receives forty hours of continuing education units (CEU) in a two year cycle.

**13. If applicable, specify a website where public notices, required in Section VIII.B, may be found. [www.msmosquito.com](http://www.msmosquito.com)**

**References:**

Best Management Practices for Mosquito Control in California. 2012. Available by download from the California Department of Public Health—Vector-Borne Disease Section at <https://www.cdph.ca.gov/HealthInfo/discond/Documents/BMPforMosquitoControl07-12.pdf> or <http://www.westnile.ca.gov/resources.php> under the heading Mosquito Control and Repellent Information. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or the Marin/Sonoma Mosquito and Vector Control District at 800-231-3236.

California Mosquito-borne Virus Surveillance and Response Plan. 2015. [Note: this document is updated annually by CDPH]. Available by download from the California Department of Public Health—Vector-Borne Disease Section at <https://www.cdph.ca.gov/programs/vbds/Documents/2015CAResponsePlan.pdf> or <http://www.westnile.ca.gov/resources.php> under the heading Response Plans and Guidelines. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or the Marin/Sonoma Mosquito and Vector Control District at 800-231-3236

Marin/Sonoma Mosquito and Vector Control District, California Environmental Quality Act (CEQA), Revised June 14, 2004. Available at [www.msmosquito.com](http://www.msmosquito.com)

MVCAC NPDES Coalition Monitoring Plan. 2011.

Statement of Best Management Practices and Proposed Monitoring Plan for Coastal Region Mosquito and Vector Control Districts. 2002.

# RECEIPT

DATE 3/22/16

NO. **617375**

RECEIVED FROM Armando Martinez

\$ 241.00

Marin / Sonoma Mosquito & Vector Control DOLLARS

FOR RENT

FOR

ck# 7360013153 VCP

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