ATTACHMENT G – NOTICE OF INTENT

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

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			
Delta Vector Control District			
B. Mailing Address			
PO Box 310			
C. City	D. County	E. State	F. Zip Code
Visalia	Tulare	CA	93279
G. Contact Person	H. Email address	I. Title	J. Phone
Michael W. Alburn	alburnm@deltavcd.com	Manager	559-732-8606

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	

VII. NOTIFICATION

Have potentially affected governmental agencies been notified?

☒ Yes ☐ No

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

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: Michael W. Alburn

B. Signature: _____ **Date:** 10-5-2011

C. Title: Manager

X. FOR STATE WATER BOARD USE ONLY

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

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: _____

2. ☒ Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.
   Owner's name: See Attachment IV.A.2
   Name of the conveyance system: _____

3. ☒ Directly to river, lake, creek, stream, bay, ocean, etc.
   Name of water body: See Attachment IV.A.3

   * 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 5
(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: X Vector Larvae X Adult Vector

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

See Attachment V.B

C. Period of Application: Start Date October 5, 2011 End Date ongoing

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

Pesticide Application Plan (PAP) for the NPDES Vector Control Permit Application of the Delta Vector Control District (DVCD).

1. **Target areas:** surface waters and waters of the U.S. within the Delta Vector Control District (DVCD) boundary in Tulare County, CA. See: Map of DVCD boundaries Appendix PAP 1.1.

   In prior years, the District has applied adulticides and/or larvicides directly to or in the vicinity of the following water bodies.

Kaweah	Lake
Bravo	Lake
Antelope Creek	Intermittent stream, river, or wash
Badger Creek	Intermittent stream, river, or wash
Bear Creek	Intermittent stream, river, or wash
Cedar Creek	Intermittent stream, river, or wash
Cross Creek	Intermittent stream, river, or wash
Cottonwood Creek	Intermittent stream, river, or wash
Deep Creek	Intermittent stream, river, or wash
Dry Creek East Fork	Intermittent stream, river, or wash
Elbow Creek	Intermittent stream, river, or wash
Farmers Ditch	Intermittent stream, river, or wash
Fleming Ditch	Intermittent stream, river, or wash
Goetzman Creek	Intermittent stream, river, or wash
Grapevine Creek	Intermittent stream, river, or wash
Indian Creek	Intermittent stream, river, or wash
Johnson Slough	Intermittent stream, river, or wash
Lemon Cove Ditch	Intermittent stream, river, or wash
Lewis Creek	Intermittent stream, river, or wash
Long Creek	Intermittent stream, river, or wash
Minnehaha Creek	Intermittent stream, river, or wash
Murry Creek	Intermittent stream, river, or wash
Negro Slough	Intermittent stream, river, or wash
Outside Creek	Intermittent stream, river, or wash
Persian Creek	Intermittent stream, river, or wash
Rattlesnake Creek	Intermittent stream, river, or wash
Ridenhour Creek	Intermittent stream, river, or wash
Sontag Ditch	Intermittent stream, river, or wash
Stocker Creek	Intermittent stream, river, or wash
Story Creek	Intermittent stream, river, or wash
Van Gordon Creek	Intermittent stream, river, or wash
Williams Ditch	Intermittent stream, river, or wash
Wilcox Creek	Intermittent stream, river, or wash
Yokohl Creek	Intermittent stream, river, or wash
Bump and Edmiston	Perennial stream or river

Cameron Creek	Perennial stream or river
Cole Slough	Perennial stream or river
Cherokee Creek	Perennial stream or river
Dry Creek	Perennial stream or river
Greasy Creek	Perennial stream or river
Kaweah River	Perennial stream or river
Kaweah River North Fork	Perennial stream or river
Kaweah River South Fork	Perennial stream or river
Kennedy Wasteway	Perennial stream or river
Kings River	Perennial stream or river
Kingsburg Branch	Perennial stream or river
Long Canal	Perennial stream or river
Mankins Creek	Perennial stream or river
Mill Creek	Perennial stream or river
Packwood Creek	Perennial stream or river
Saint Johns River	Perennial stream or river
Sand Creek	Perennial stream or river
Smyrna	Perennial stream or river
Travers Creek	Perennial stream or river
Wooten Creek	Perennial stream or river

In prior years, the District has applied adulticides and/or larvicides directly to or in the vicinity of the following canals, ditches, or other constructed conveyance facilities:

Banks Ditch	Intermittent canal, ditch, or aqueduct
Button Ditch	Intermittent canal, ditch, or aqueduct
Catron Ditch	Intermittent canal, ditch, or aqueduct
Clements	Intermittent canal, ditch, or aqueduct
Cross Creek Waste Way	Intermittent canal, ditch, or aqueduct
Foothill Ditch	Intermittent canal, ditch, or aqueduct
Gray Ditch	Intermittent canal, ditch, or aqueduct
Horseman Ditch	Intermittent canal, ditch, or aqueduct
Ketchum Ditch	Intermittent canal, ditch, or aqueduct
King Ditch	Intermittent canal, ditch, or aqueduct
Lindsay Strathmore canal	Intermittent canal, ditch, or aqueduct
Locust Grove Ditch	Intermittent canal, ditch, or aqueduct
Mill Creek Ditch	Intermittent canal, ditch, or aqueduct
Modoc Ditch	Intermittent canal, ditch, or aqueduct
Packwood Canal	Intermittent canal, ditch, or aqueduct
Persian Ditch North Fork	Intermittent canal, ditch, or aqueduct
Persian Ditch South Fork	Intermittent canal, ditch, or aqueduct
Rice Ditch	Intermittent canal, ditch, or aqueduct
Tout Ditch	Intermittent canal, ditch, or aqueduct
Tulare Colony Ditch	Intermittent canal, ditch, or aqueduct
Van Noy Ditch	Intermittent canal, ditch, or aqueduct
Watson Ditch	Intermittent canal, ditch, or aqueduct

Wilson Ditch	Intermittent canal, ditch, or aqueduct
Alta East Branch Canal	Perennial canal, ditch, or aqueduct
Andrews Ditch	Perennial canal, ditch, or aqueduct
Bowhay Ditch	Perennial canal, ditch, or aqueduct
Buttonwillow Ditch	Perennial canal, ditch, or aqueduct
Bishop Canal	Perennial canal, ditch, or aqueduct
California Vineyard Ditch	Perennial canal, ditch, or aqueduct
Cary Hunter Ditch	Perennial canal, ditch, or aqueduct
Ceaser Ditch	Perennial canal, ditch, or aqueduct
Clark Ditch	Perennial canal, ditch, or aqueduct
Clough Ditch	Perennial canal, ditch, or aqueduct
Driver Ditch	Perennial canal, ditch, or aqueduct
Floyd Ditch	Perennial canal, ditch, or aqueduct
Friant Kern Canal	Perennial canal, ditch, or aqueduct
Island Canal	Perennial canal, ditch, or aqueduct
Kennedy School House Ditch	Perennial canal, ditch, or aqueduct
Kirk Ditch	Perennial canal, ditch, or aqueduct
Lakeland Canal	Perennial canal, ditch, or aqueduct
Loper Ditch	Perennial canal, ditch, or aqueduct
Lovel Ditch	Perennial canal, ditch, or aqueduct
Mc Clanahan Ditch	Perennial canal, ditch, or aqueduct
Mc Gee Ditch	Perennial canal, ditch, or aqueduct
Monson Ditch	Perennial canal, ditch, or aqueduct
Montague Ditch	Perennial canal, ditch, or aqueduct
Peoples Ditch	Perennial canal, ditch, or aqueduct
Riverside Ditch	Perennial canal, ditch, or aqueduct
Sand Ridge Aqueduct Ditch	Perennial canal, ditch, or aqueduct
Smith Mountain Ditch	Perennial canal, ditch, or aqueduct
Tulare Canal	Perennial canal, ditch, or aqueduct
Tulare Ditch	Perennial canal, ditch, or aqueduct
Tulare Irrigation Canal	Perennial canal, ditch, or aqueduct
Traver Canal	Perennial canal, ditch, or aqueduct
Wachumna	Perennial canal, ditch, or aqueduct
Wilson Dinuba Ditch	Perennial canal, ditch, or aqueduct
Wilson Ditch	Perennial canal, ditch, or aqueduct
Wilson Hunter Ditch	Perennial canal, ditch, or aqueduct

In prior years, the District has applied adulticides and/or larvicides directly to or in the vicinity of canals, ditches, or other constructed conveyance facilities owned and controlled by:

Dinuba	City
Exeter	City

Farmersville	City
Visalia	City
Woodlake	City
East Orosi	Community Services District
Goshen	Community Services District
London	Community Services District
Patterson Tract	Community Services District
Sultana	Community Services District
Three Rivers	Community Services District
Tract 92	Community Services District
Kings River	Conservation District
Selma-Kingsburg-Fowler	County Sanitation District
St. John's	Water District
Lewis Creek	Water District
Tulare County	Flood Control District
Alta	Irrigation District
Consolidated	Irrigation District
Exeter	Irrigation District
Hills Valley	Irrigation District
Ivanhoe	Irrigation District
Lindmore	Irrigation District
Lindsay-Strathmore	Irrigation District
Orange Cove	Irrigation District
Stone Corral	Irrigation District
Levee District No. 1	Levee District
Levee District No. 2	Levee District
Cutler	Public Utility District
Ivanhoe	Public Utility District
Orosi	Public Utility District
Tulare County	Resource Conservation District
Lemon Cove	Sanitary District
Kaweah Delta	Water Conservation District

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

- **Best Management Practices for Mosquito Control in California**. 2011. California Department of Health Services, Vector-Borne Disease Section. Pages 1, 4-19.

- **California Mosquito-Borne Virus Surveillance & Response Plan**. 2011. California Department of Health Services, Vector-Borne Disease Section. Pages 3-9.

- **Operational Plan for Emergency Response to Mosquito-Borne Disease Outbreaks**. 2010. California Department of Public Health, Vector-Borne Disease Section. Pages 6-10, 19-20.

- **Overview of Mosquito Control Practices in California**. 2008. California Department of Public Health, Vector-Borne Disease Section. Pages 3, 6-15, 18-19, 21-22.

- **Epidemic/Epizootic West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control**. 2003. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Pages 5-13, 15-17, 27-35.

The use of pesticides to control adult and immature stages of mosquitoes is determined when other control methods cannot or will not be feasible. Following are but some examples of the limitations that other control methods present that may then trigger the need for a pesticide application:

Biological control (use of mosquitofish) has definite limitations. For example:

- They can seldom inhabit two important larval sites: small containers and highly polluted water. In temporary water sites, repeated introduction of fish will be required.
- Mosquito-eating fish can harm beneficial organisms (e.g., other fish or insect predators) by eating their eggs and young or by superior competition for food. Their release carries the potential to reduce or eliminate non-target species.
- Larvivorous fish may be preyed upon by larger fish. Their vulnerability to fungi and other pathogens may keep their populations in check.
- Where larvivorous fish are harvested or removed, their populations could be reduced to a level inadequate for mosquito control.
- Mosquito-eating fish may prefer food other than mosquito larvae. In some situations, mosquito larvae production outruns the increase in fish population that would be necessary for control.
- The District can only rear certain amounts of mosquitofish per year in. All mosquitofish produced are used in the District's biological control element of the IPM program.

Natural control (a pest management strategy whereby the environment is disturbed as little as possible) has definite limitations. For example:

- Natural control is sometimes difficult to implement or assess due to the amount of man-made or manipulated vector sources found in the District. Natural control is advocated for

sites that are remote and undisturbed, to the least amount practical, for the individual vector species being contemplated for control.

Physical control (or mosquito habitat modification) has definite limitations. For example:

- Only man-made or managed mosquito sources are capable of being physically altered to reduce mosquito abundance. In some cases physically altered lands will reduce, but not eliminate mosquito breeding, requiring the implementation of other forms of control, including biological and chemical control.

3. **Pesticide products or types expected to be used and if known, their degradation byproducts, the method in which they are applied, and if applicable, the adjuvant and surfactants used;**

The following list of products may be used by the District for larval or adult control. All of these products may be applied by ground (hand, truck, backpack, hand can, all terrain vehicle, amphibious vehicle, etc) or by air (helicopter, or fixed wing aircraft) according to label directions.

List of Permitted Larvicide Products

Larvicide Product Name	Registration Number
Vectolex CG Biological Larvicide	73049-20
Vectolex WDG Biological Larvicide	73049-57
Vectolex WSP Biological Larvicide	73049-20
Vectobac Technical Powder	73049-13
Vectobac-12 AS	73049-38
Aquabac 200G	62637-3
Teknar HP-D	73049-404
Vectobac-G Biological Mosquito Larvicide Granules	73049-10
Vectomax CG Biological Larvicide	73049-429
Vectomax WSP Biological Larvicide	73049-429
Vectomax G Biological Larvicide/Granules	73949-429
Zoecon Altosid Pellets	2724-448
Zoecon Altosid Pellets	2724-375
Zoecon Altosid Liquid Larvicide Mosquito Growth Regulator	2724-392
Zoecon Altosid XR Entended Residual Briquets	2724-421
Zoecon Altosid Liquid Larvicide Concentrate	2724-446
Zoecon Altosid XR-G	2724-451
Zoecon Altosid SBG Single Brood Granule	2724-489
Mosquito Larvicide GB-1111	8329-72
BVA 2 Mosquito Larvicide Oil	70589-1
BVA Spray 13	55206-2
Agnique MMF Mosquito Larvicide & Pupicide	53263-28
Agnique MMF G	53263-30
Abate 2-BG	8329-71
5% Skeeter Abate	8329-70

Larvicide Product Name	Registration Number
Natular 2EC	8329-82
Natular G	8329-80
Natular XRG	8329-83
Natular XRT	8329-84
FourStar Briquets	83362-3
FourStar SBG	85685-1
Aquabac xt	62637-1
Spheratax SPH (50 G) WSP	84268-2
Spheratax SPH (50 G)	84268-2

List of Permitted Adulticide Products

Adulticide Product Name	Registration Number
Pyrocide Mosquito Adulticiding Concentrate for ULV Fogging 7395	1021-1570
Evergreen Crop Protection EC 60-6	1021-1770
Pyrenone Crop Spray	432-1033
Prentox Pyronyl Crop Spray	655-489
Pyrocide Mosquito Adulticiding Concentrate for ULV Fogging 7396	1021-1569
Aquahalt Water-Based Adulticide	1021-1803
Pyrocide Mosquito Adulticide 7453	1021-1803
Pyrenone 25-5 Public Health Insecticide	432-1050
Prentox Pyronyl Oil Concentrate #525	655-471
Prentox Pyronyl Oil Concentrate or 3610A	655-501
Permanone 31-66	432-1250
Kontrol 30-30 Concentrate	73748-5
Aqualuer 20-20	769-985
Aqua-Reslin	432-796
Aqua-Kontrol Concentrate	73748-1
Kontrol 4-4	73748-4
Biomist 4+12 ULV	8329-34
Permanone RTU 4%	432-1277
Prentox Perm-X UL 4-4	655-898
Allpro Evoluer 4-4 ULV	769-982
Biomist 4+4	8329-35
Kontrol 2-2	73748-3
Scourge Insecticide with Resmethrin/Piperonyl Butoxide	432-667

Adulticide Product Name	Registration Number
18%+54% MF Formula II	
Scourge Insecticide with Resmethrin/Piperonyl Butoxide 4%+12% MF Formula II	432-716
Anvil 10+10 ULV	1021-1688
AquaANVIL Water-based Adulticide	1021-1807
Duet Dual-Action Adulticide	1021-1795
Anvil 2+2 ULV	1021-1687
Zenivex E20	2724-791
Trumpet EC Insecticide	5481-481
Fyfanon ULV Mosquito	67760-34

4. **Description of all the application areas and the target areas in the system that are being planned to be applied or may be applied. Provide a map showing these areas;**

Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the Delta Vector Control District's preferred solution, and whenever possible the District works with property owners to effect long-term solutions to reduce or eliminate the need for continued applications as described in item 2 above. Mosquito breeding sources and areas that require adult mosquito control are difficult to predict from year to year based on the weather and environmental conditions. However, typical sources treated by this District include: permanent & semi-permanent seasonal wetlands, streams, rivers, lakes, canals & ditches, irrigated pasture & crops, flood control containment basins and associated water conveyance systems, livestock and sewer impoundments, manmade aquatic containments, and tributary waters of the Kings, St. Johns, and Kaweah Rivers.

Source Type	Source Description
110	Alfalfa
120	Irrigated Pasture
130	Orchard
140	Corn
150	Cotton
160	Grain
170	Vine Crop
180	Sudan Grass
190	Other Ag crop
210	Irrigation Pipe
220	Irrigation Pond
230	Irrigation Canal
310	Misc. Open land
320	Misc. Native Pasture
330	Misc. Trough
410	Swimming Pool -Private
411	Pool Above Ground
412	Spa
415	Fountain
418	Aerial Spot
420	Pond -Private
430	Wash drain/sink -Private
440	Container -Private
450	Cesspool -Private
460	Other source -Private
510	Gutter/Storm drain/Sump
530	Golf Course/Park
540	Roadside/Railroad
550	School
560	Other public domain
610	Other Commercial

620	Dairy Lagoon
621	Sludge field
625	Livestock pens
630	Flood control basin
640	Mining
650	Lumber Yard
660	Sewer Treatment
670	Tires
710	Natural Marsh
720	Natural River / Slough
730	Natural Creek

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

With any source of mosquitoes or other vector's, the Delta Vector Control District's first goal is to look for ways to eliminate the source, or, if that is not possible, for ways to reduce the potential for vectors. The most commonly used methods and their limitations are included in the Best Management Practices for Mosquito Control in California, 2011. Pages 1, 4-19.

Specific methods used by the District include stocking mosquito fish (*Gambusia affinis*), educating residents that mosquitoes develop in standing water and encouraging them to remove 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.

6. How much product is needed and how this amount was determined;

The need to apply product is determined by surveillance. The Delta Vector Control District cannot speculate on the amount of product required to be used on a prospective basis. Actual use varies annually depending on mosquito abundance. The pesticide amounts presented below were taken from the Delta Vector Control District's 2010 Pesticide Use Report as an estimate of pesticide use in 2011 and outlying years. Total Use and Waters of the US are identified in the chart below and in Appendix PAP 6.1.

Total District Use 2010

MANUFACTURER	NAME OF PRODUCT	EPA/CALIFORNIA REG #	TOTAL PRODUCT	USED	# OF APPLICATIONS
Cognis Corp	**Agnique Gal**	**53263-28-AA**	**345.79**	**gal**	**3134**
Cognis Corp	**Agnique MMF G**	**5326-330-AA**	**44.00**	**lb**	**1**
Zoecon	**Altosid Briq150day**	**2724-421-ZA**	**38.80**	**lb**	**246**
Zoecon	**Altosid Liquid**	**2724-392-ZA**	**31.91**	**gal**	**864**
Zoecon	**Altosid Pellets WSP**	**2724-448-ZC**	**1,106.28**	**lb**	**1273**
Zoecon	**Altosid XRG**	**2724-451-ZA**	**733.00**	**lb**	**20**
Clarke	**GoldenBear1111**	**8329-72-AA**	**1,333.00**	**gal**	**887**
BVA Oils	**BVA2 Larvicide**	**70589-1**	**6,702.00**	**gal**	**932**
Prentiss Inc.	**Pyronyl 525**	**655-471-AA**	**3.34**	**gal**	**27**
Valent BioScience	**VectoBac 12AS**	**73049-38-AA**	**605.16**	**gal**	**1935**
Valent BioScience	**VectoBac Granules**	**73049-10-AA**	**746.00**	**lb**	**52**
Valent BioScience	**VectoBac TP (SandMixed)**	**73049-13-AA**	**555.36**	**lb**	**649**
Valent BioScience	**VectoLex Granules**	**73049-20-AA**	**600.00**	**lb**	**36**
Valent BioScience	**VectoLex WSP**	**73049-20-ZA**	**54.19**	**lb**	**584**

Used under Waters of the US 2010

MANUFACTURER	NAME OF PRODUCT	EPA/CALIFORNIA REG#	TOTAL PRODUCT	USED	# OF APPLICATIONS
Cognis Corp	**Agnique Gal**	**53263-28-AA**	**4.13**	**gal**	**4**
Zoecon	**Altosid Briq150day**	**2724-421-ZA**	**2.90**	**lb**	**12**
Zoecon	**Altosid Liquid**	**2724-392-ZA**	**7.73**	**gal**	**157**
Zoecon	**Altosid Pellets WSP**	**2724-448-ZC**	**0.60**	**lb**	**17**
Zoecon	**Altosid XRG**	**2724-451-ZA**	**74.00**	**lb**	**2**
Clarke	**GoldenBear1111**	**8329-72-AA**	**137.25**	**gal**	**142**
BVA Oils	**BVA2 Larvicide**	**70589-1**	**140.75**	**gal**	**102**
Valent BioScience	**VectoBac 12AS**	**73049-38-AA**	**33.88**	**gal**	**226**
Valent BioScience	**VectoBac Granules**	**73049-10-AA**	**602.00**	**lb**	**44**
Valent BioScience	**VectoBac TP (SandMixed)**	**73049-13-AA**	**204.92**	**lb**	**210**
Valent BioScience	**VectoLex Granules**	**73049-20-AA**	**545.00**	**lb**	**32**
Valent BioScience	**VectoLex WSP**	**73049-20-ZA**	**2.68**	**lb**	**44**

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

   Please see the MVCAC NPDES Coalition Monitoring Plan.

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 Delta Vector Control District performs source reduction through physical control efforts through Memorandum(s) of Understanding with the California Department of Fish and Game. Examples that have resulted in the reduction of pesticide applications are the following:

- Memorandum of Understanding between the California Department of Fish and Game, the California Regional Water Quality Control Board and Mosquito Abatement and Vector Control Districts of the South San Joaquin Valley regarding vegetation management in wastewater treatment facilities, 1993 (See Appendix PAP 8.1).

- Stream Alteration Agreement No. 2005-0151-R4 Kings, St. Johns, and Kaweah Rivers – Tulare County. March 28, 2006 (See Appendix PAP 8.2).

9. **Description of the BMPs to be implemented. The BMPs shall include at a minimum:**
The Delta Vector Control District's BMP's are described in Item 2 above. Specific elements have been highlighted below under items a –f:

a. **measures to prevent a pesticide spill;**
All pesticide applicators receive annual spill prevention and response annually. District employees monitor application equipment daily to ensure it remains in proper working order. Spill mitigation devices are placed in all spray vehicles and pesticide storage areas to respond to spills.

b. **measures to ensure that only a minimum and consistent amount is used;**
Application equipment is calibrated each year as part of the terms of a cooperative agreement with the California Department of Public Health (CDPH).
Please see Appendix PAP 9.b.

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:**
Applicators are required to complete pesticide training on an annual basis. Records are kept of these training sessions for review by the local agricultural commissioner and/ or CDPH. Employees certified by the CDPH must perform at least 20 hours of Continuing Education units to maintain their certification.

d. **descriptions of specific BMPs for each application mode, e.g. aerial spray, truck, hand, etc.;**
The Delta Vector Control District calibrates truck mounted and handheld larviciding equipment each year to meet application specifications. Supervisors review application records daily 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. Aerial adulticide equipment is calibrated at a minimum of once per year and as needed based on efficacy results and total amount of product used per event. Droplet sizes are monitored by the District to ensure droplets meet label requirements. Airplanes used in urban ULV applications and the primary airplane use 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 spray 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; and**
Please see the Best Management Practices for Mosquito Control in California, 2011- Pages 1, 4-19, for general pesticide application BMP's, and current approved pesticide labels for application BMP's for specific products.

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

Employees evaluate the ability of a given mosquito breeding source to be reduced or eliminated per biological and/or physical control strategies outlined in CDPH's Best Management Practices for Mosquito Control in California, 2011- Pages 1, 4-19, after determining: 1) the species of mosquito, 2) the immediate population of mosquitoes, and 3) the current public health threat posed by the mosquito specie(s), the current mosquito population, and related arbovirus activity. Additional information regarding arbovirus activity is also used in determining what type of control technique should be implemented and when.

10. Identification of the problem.

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

The Delta Vector Control District staff only applies pesticide 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 District'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
- Pest, nuisance, or disease potential
- 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 Item 2 above and Appendix PAP 10.b: Delta Vector Control District Larval Treatment Criteria.

c. **Identify known breeding areas for source reduction, larval control program, and habitat management; and**
Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the Delta Vector Control District's preferred solution, and whenever possible the District works with property owners to implement long-term solutions to reduce or eliminate the need for continued pesticide applications as described in Item 2 above. The following are known breeding areas where source reduction reduces the need for larval control through habitat management options.

Name	TRS	Source #
Kingsburg Gun Club	16-22-25	4001
Kingsburg Sewer Farm	16-22-36	2001-2003
Lindy's Landing	16-23-08	2001, 4001-4002
Brandt's	16-23-09	1001-1002
416 Bridge	16-23-17	2001-2002
Jacksons	16-23-17	3001
Beaver Pond	16-23-19	2001
Kings River Golf and Country Club	16-23-29	1001

Tulare County Park	16-23-30	3001
Brickyard	16-23-30	3002
Mary & Gary Johnson's	16-23-30	4001
Royal Oak Park and Island	16-23-30	4003
St. John's River	18-27-04	3001

d. **Analyze existing surveillance data to identify new or unidentified sources of vector problems as well as areas that have recurring vector problems.**
The District continually collects adult and larval mosquito surveillance data, dead bird reports, 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/decisions (see Appendix PAP 10.d Summary of WNV/SLE Incidence 1989/2011).

11. Examination of Alternatives. Dischargers shall continue to examine alternatives to pesticide use in order to reduce the need for applying larvicides that contain temephos and 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 methods**
- **Cultural methods**
- **Biological methods**
- **Pesticides**

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

The Delta Vector Control District uses the principles and practices of Integrated Vector Management program (IVM) as described on pages 26-27 of the Best Management Practices for Mosquito Control in California, 2011, and discussed in item 2 above. 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 District 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.**
The Delta Vector Control District follows an existing IVM program which includes practices described in Item 2 above.

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 a "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 Surveillance and 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 right spraying techniques and equipment, taking account of weather conditions and the need to protect the environment.

This is an existing practice of the Delta Vector Control District, and is required to comply with the Department of Pesticide Regulation's (DPR) requirements and the terms of our California Department of Public Health (CDPH) Cooperative Agreement (Please see Appendix PAP 9.b). All pesticide applicators receive annual safety and spill training in addition to their regular continuing education.

13. **If applicable, specify a website where public notices, required in Section VIII.B, may be found.**

The Delta Vector Control District maintains a web site that provides public documents for public viewing; required public notices will be made a part of that web site.

14. Pesticide Application Log.

The Discharger shall maintain a log for each pesticide application. The application log shall contain, at a minimum, the following information, when practical, for larvicides or adulticide applications:

a. **Date of application;**
b. **Location of the application and target areas (e.g., address, crossroads, or map coordinates);**
c. **Name of applicator;**
d. **The names of the water bodies treated (i.e., canal, creek, lake, etc.)**
e. **Application details, such as application started and stopped, pesticide application rate and concentration, flow rate of the target area, surface water area, volume of water treated, pesticide(s) and adjuvants used by the Discharger, and volume of mass of each component discharged;**

This is an existing practice of the Delta Vector Control District, and is required to comply with the Department of Pesticide Regulation's (DPR) requirements and the terms of our California Department of Public Health (CDPH) Cooperative Agreement (Please see Appendix PAP 9.b).

References:

Best Management Practices for Mosquito Control in California. 2011. Available by download from the California Department of Public Health – Vector-Borne Disease Section at 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 Delta Vector Control District at (559) 732-8606.

California Mosquito-borne Virus Surveillance and Response Plan. 2011. [Note: this document is updated annually by CDPH]. Available by download from the California Department of Public Health – Vector-Borne Disease Section at 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 Delta Vector Control District at (559) 732-8606.

Operational Plan for Emergency Response to Mosquito-Borne Disease Outbreaks. 2010. Available by download from the California Department of Public Health – Vector-Borne Disease Section at 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 Delta Vector Control District at (559) 732-8606.

Overview of Mosquito Control Practices in California. 2008. California Department of Public Health, Vector-Borne Disease Section. Available by download from the California Department of Public Health – Vector-Borne Disease Section at 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 Delta Vector Control District at (559) 732-8606.

Epidemic/Epizootic West Nile Virus in the United States: Guidelines for Surveillance, Prevention, and Control. 2003. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Available by download from the California Department of Public Health – Vector-Borne Disease Section at 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 Delta Vector Control District at (559) 732-8606.

MVCAC NPDES Coalition Monitoring Plan. 2011. [In development]

Memorandum of Understanding Between the California Department of Fish and Game, the California Regional Water Quality Control Board and Mosquito and Vector Control Districts of the South San Joaquin Valley Regarding Vegetation Management in Wastewater Treatment Facilities. 1993. Copies may be requested by calling the Delta Vector Control District at (559) 732-8606.

Stream Alteration Agreement No. 2005-0151-R4 Kings, St. Johns, and Kaweah Rivers – Tuláre County. March 28, 2006. Copies may be requested by calling the Delta Vector Control District at (559) 732-8606.

Cooperative Agreement between the California Department of Public Health and the Delta Vector Control District pursuant to Section 116180, Health and Safety Code. Effective January 1, 2012. Copies may be requested by calling the Delta Vector Control District at (559) 732-8606.

Delta Vector Control District Larval Treatment Criteria. Copies may be requested by calling the Delta Vector Control District at (559) 732-8606.

Delta Vector Control District Summary of WNV/SLE Incidence 1989/2011. Copies may be requested by calling the Delta Vector Control District at (559) 732-8606.