

**2017 ANNUAL REPORT**

**Water Quality Order No. 2013-0002-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Residual Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications, General Permit No. CAG990005**

**Redwood City Public Works Department – Redwood Shores Lagoon**



**Prepared By  
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**Prepared For  
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Public Work Services Department  
1400 Broadway  
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**February 2018**

**Purpose: To meet the 2017 Annual Reporting requirements of Water Quality Order No. 2013-0002-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications, General Permit No. CAG990005**

CERTIFICATION

In accordance with Section B. Monitoring and Reporting Requirements - Signatory Requirements - of Attachment D, Standard Provisions and Reporting for Waste Discharge Requirements, Water Quality Order No. 2013-0002-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Residual Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications, General Permit No. CAG990005

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



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2/22/2018  
Date



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2/22/18  
Date

**Executive Summary:** Per the General Permit requirements, a Notice of Intent (NOI) and a comprehensive Aquatic Pesticide Application Plan (APAP) was developed and filed with the State Water Resource Control Board in August 2013, to comply with the provisions of Water Quality Order No. 2013-0002-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, General Permit No. CAG990005.

The use of aquatic pesticides within the Redwood Shores Lagoon was necessary to manage the lagoon and maintain the beneficial uses that include recreation, aesthetics, and habitat for wildlife. The Aquatic Vegetation Control Program was an undertaking necessary to control specific types of aquatic vegetation and algae that have become a nuisance to the management of the water body and are impacting its health and beneficial uses. The need for aquatic pesticide application events as part of this program vary from week to week and from season to season due to such things as water temperature, sunlight, nutrient levels, plant and algae growth and other factors. The APAP per the General Permit requirements described below provides the outline to ensure that the Aquatic Vegetation Control Program is successful.

The Aquatic Herbicides and Algaecides diquat and copper were used to prevent nuisance growths of aquatic vegetation that would have impacted the beneficial uses of the waterways. The plants present and controlled within the system include Widgeon Grass, Filamentous and Planktonic Algae.

The APAP prevented the discharge of pollutants associated with the aquatic pesticide application.

Per Attachment C, State Water Resource Control Board Monitoring and Reporting Program (MRP), Section D, Reporting, the Annual Reporting information required for the General Permit is outlined below:

**Summary of Monitoring Data:** A summary of monitoring data is provided below. The control of the nuisance growths of aquatic vegetation resulted in maintaining open waterways, and thus water quality improvements associated with the reduction in plant or algae biomass in the treatment area. With regard to recommendations for improvements to the APAP or the implemented BMPs based on the monitoring results, we feel the results indicate that treatments were effectively carried out and protective of beneficial uses.

As outlined in the General Permit, the State or USEPA based numeric objectives or criteria for the herbicides used are provided in the table below:

Constituent/ Parameter	BENEFICIAL USE			
	MUN	WARM or COLD	Other than MUN, WARM, or COLD	All Designations
Diquat	20 µg/L			
Copper				Maximum Copper Concentration = $\exp[0.8545 (\ln(\text{hardness}) - 1.702)]$
Toxicity				Applications shall not cause or contribute to toxicity

Active ingredient	Date	Sample	Lab Results (µg/l) or ppb	Hardness (mg/l)	Receiving Water Limit (µg/l)	Exceedance (N/Y)
<b>Diquat</b>						
TA-1	8/31/17	PRE	ND	N/A	20	N
OTA-1	8/31/17	2HAT	ND	N/A	20	N
TA-2	9/6/17	7DAT	ND	N/A	20	N
OTA-2	9/6/17	7DAT	ND	N/A	20	N
<b>Copper</b>						
TA-1	8/31/17	PRE	ND	4480	29.28	N
OTA-1	8/31/17	2HAT	ND	4480	29.28	N
TA-2	9/6/17	7DAT	ND	4750	29.28	N
OTA-2	9/6/17	7DAT	ND	4690	29.28	N

**Discussion of BMPs Effectiveness and Modifications:** The BMP's as outlined in the APAP were effective at meeting the General Permit requirements. There were no exceedance discharges from the lake system during or after the treatment periods.

**Type and Amount of Herbicide/Algaecide Used:** The active ingredients for the Aquatic Herbicide/Algaecides diquat and copper were used for the control of the nuisance species outlined above. The quantity of herbicide and algaecides used and the number of applications of each are listed in the table below:

Active Ingredient	Name	Total Quantity Used (gallons or lbs.)	Total Applications
Diquat	Reward	27.5 gallons	2
Copper	Earth Tec	270 gallons	12

**Treatment Area Calculations:** Information on surface area of the treatment area that was used to calculate the dosage and quantity of each pesticide used is available in the treatment planning records kept in archive at Waterworks Industries, Inc.

**Recommendations:** There are no current recommendations to improve the monitoring program, alter the BMPs or the APAP to achieve compliance with the General Permit.

**Proposed APAP Changes:** There are no proposed changes to the APAP at this time.

**END OF ANNUAL REPORT**