

Response to November 16, 2010 Comments

**Draft Statewide General National Pollutant Discharge
Elimination System (NPDES) Permit for Residual Pesticide
Discharges to Waters of the United States from Aquatic
Animal Invasive Species Control Applications**

**State Water Resources Control Board
March 1, 2011**

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A. Comment Letters Received

Letter Number	Affiliation	Representative
1	Association of California Water Agencies	Mark S. Rentz
2	California State Lands Commission	Maurya Falkner
3	City of Los Angeles Department of Water and Power	Katherine Rubin
4	Coachella Valley Water District	Steve Bigley
5	Marin Municipal Water District	Michael J. Ban
6	Metropolitan Water District of Southern California	Bart Koch
7	San Francisco Baykeeper	Naomi Kim Melver
8	Pesticide Watch Education Fund Environment California Pesticide Action Network of North America Californians for Pesticide Reform Health and Habitat Pesticide-Free Sacramento Stop the Spray East Bay Mothers of Marin Against the Spray Stop West Nile Spraying Now Center for Environmental Health Better Urban Green Strategies (BUGS) Play Not Spray Butte Environment Council	Paul S. Towers Dan Jacobsen Katherine Gilje David Chatfield Sandy Ross Amy Barden Nan Wishner Debbie Friedman Don Mooney Caroline Cox Samantha McCarthy Lynn Murphy Maggi Barry
9	Regional Board 6	Daniel Sussman Mary Fiore-Wagner
10	San Diego County Water Authority	Frank Belock, Jr.

B. Responses to Comments

In the comments and responses below, Draft Permit refers to the public notice version of the permit which was posted on October 1, 2010; and Permit refers to the current version of the permit that the State Water Board is considering for adoption or the permit that will have been adopted by the State Water Board at its March 1, 2011 meeting. Receiving water has the same meaning as water of the US.

At the November 2010 public hearing for the Aquatic Animal Invasive Species Permit and Spray Applications Permit, Chair Hoppin of the State Water Board directed staff to provide options for the toxicity requirements in the pesticide permits including the Vector Control Permit. In response, staff revised Section III of the Monitoring and Reporting Program to provide the options that State Water Board can choose from. Staff recommends Option D, which is described below:

For the first application, the discharger shall collect one Background sample and one Post-Event sample in the application area for toxicity testing. If the Background sample result shows no toxicity, the discharger shall continue taking only Post-Event samples until a total of six consecutive Post-Event sample results show no toxicity in the receiving water. Thereafter, no further testing for toxicity will be required for the active ingredient used at that representative site. However, the presence of toxicity in the Post-Event sample at anytime indicates that: (1) there is pre-existing toxicity in the receiving water, but the application is not adding to the pre existing toxicity; (2) there is pre-existing toxicity in the receiving water and the application is adding toxicity to the pre-existing toxicity; or (3) there is no pre-existing toxicity in the receiving water, but the application itself is responsible for the toxicity. To determine whether the discharger is causing or adding toxicity to the Background receiving water, the discharger shall collect paired Background and Post-Event samples. When a total of six consecutive paired Background and Post-Event sample results show that the discharger is not causing or adding toxicity to the receiving water, no further testing for toxicity will be required for the active ingredient used at that representative site. However, if any paired Background and Post-Event sample result shows that the discharger is causing or adding toxicity to the receiving water, the discharger shall evaluate its application methods, BMPs, or the use of alternative products.

1. Comment Letter 1 - Association of California Water Agencies

Comment 1.01:

The State Water Board needs to fully consider the environmental and economic tradeoffs between utilization of the necessary pest management tools to immediately and successfully control invasive aquatic species as compared to future adverse consequences that may result from restricting a water agency's present ability to fully respond.

Response:

Noted.

Comment 1.02:

The presence of pesticides in surface water as envisioned in the Draft Permit involves the intentional application of pesticides directly to the waters of U.S. to control or eliminate invasive animal species. These applications have nothing to do with drift, runoff or some other non-intentional or accidental release.

Response:

Staff agrees.

Comment 1.03:

The aquatic pesticide products our members use have been reviewed and approved by both the United States Environmental Protection Agency (USEPA) and the California Department of Pesticide Regulations (DPR) specifically for aquatic applications. Because of the demanding environmental fate and toxicity criteria required for approval of a pesticide for aquatic use, less than 1% (79 out of 12,574) of all products registered for use in California are approved for aquatic use.

Response:

Noted.

Comment 1.04:

The Best Management Practices (BMPs) described on the label are required by USEPA and DPR and must be followed. These BMPs were developed specifically for aquatic applications, again for purposes of protecting beneficial uses.

Response:

The BMPs on pesticide labels are not adequate to protect the beneficial uses of California's surface waters.

Comment 1.05:

It is important to realize that water quality objectives set for aquatic pesticides in surface water are derived in part from ex-situ (i.e., laboratory) toxicity testing, human health or other appropriate studies on relevant species times a safety factor, typically of 10. Therefore, appropriate sampling, analysis and comparison of results to water quality objectives derived from toxicity testing is "de facto" toxicity testing. The benefit of the ex-situ approach to toxicity testing done in a laboratory is that it allows for precise control of variables so that measured toxicity can be attributed to the presence of the chemical of interest and not other factors. It is for this reason, i.e., the uncontrolled nature of factors that may influence the outcome, that in-situ (i.e. field) toxicity testing can be very unreliable.

Response:

Toxicity testing results will not be compared with water quality objectives or standards set for the active ingredient of the aquatic pesticides covered in the Permit. Toxicity results from the post-event monitoring will be compared with the background toxicity testing results, which will provide information on toxicity in the receiving water prior to application of the aquatic pesticide.

Comment 1.06:

ACWA encourages the SWRCB to remove the numeric receiving water limitations for chlorine and the toxicity testing requirements from the subject permit. Chlorine residual monitoring included in the draft permit provides a monitoring approach that is consistent with monitoring currently required under the Weed Permit, and in other existing NPDES and MS4 permits for potable water discharges. This approach provides a greater opportunity to analyze and determine whether adverse impacts associated with a specific application have occurred, and if so, ensure a timely response to minimize the impacts, and modify future operations to avoid repetition.

Response:

The existing Weed Control Permit (Water Quality Order No. 2004-0009-DWQ) sets receiving water limitations for the active ingredients contained in the pesticides for aquatic weed and algae control in order to protect the beneficial uses of California's surface waters when those aquatic pesticides are applied. Similarly, the Aquatic Animal Invasive Species Control Permit contains receiving water limitations to protect California's surface waters when aquatic pesticides for aquatic animal invasive species control are applied.

Comment 1.07:

Numeric receiving water limitations for chlorine in the draft permit will prohibit the activity that the permit is intended to allow. The proposed numeric receiving water limitations for chlorine would essentially prohibit any detectable chlorine residual in a receiving water. In order to control aquatic animal invasive species, sodium hypochlorite will need to be applied in amounts to achieve chlorine residuals in the targeted receiving waters in excess of the numeric receiving water limitations for chlorine proposed in the draft permit. Since the control of aquatic animal invasive species in the waters of the U.S. requires direct application of sodium hypochlorite to the receiving waters, the numeric receiving water limitations for chlorine need to be removed or adjusted to account for the dosage of chlorine applied to achieve effective aquatic animal species control. It should be consistent with chlorine limitations in other existing NPDES and MS4 permits that regulate potable water discharges.

Response:

The amount of sodium hypochlorite needed to control aquatic animal invasive species is not restricted to the numeric receiving water limitations for chlorine. The numeric receiving water limitations only apply to residual pesticides, defined as pesticide ingredients or breakdown products that are present after the intended use of the pesticide. Compliance with receiving water limitations are only considered at post-event monitoring, which is collected within one week after project completion. The project completion date is determined by the discharger based on the appropriate time required for the aquatic pesticide to be effective in order to control aquatic animal invasive species.

Comment 1.08:

Numeric receiving water limitations for chlorine cannot be measured. The Method Detection Limit (MDL), as noted in C-11 and generated by the procedure referenced in the draft permit (40 C.F.R. Part 136), is higher than the receiving water limitations noted on 3.H. page 10, and on page D-26 of the tentative order. Additionally, the minimum level (ML) is by definition higher than the MDL. This is due to the fact that chlorine (hypochlorous acid and hypochlorite ion) residuals must be taken in the field, and field methodologies do not generate the precision required to generate an MDL low enough to characterize the numeric receiving water limitations stated, as the MDL is based on the precision of replicate analyses.

Response:

The numeric receiving water limitations are selected to protect the beneficial uses of California's surface waters; they are not based on the capability of testing methodologies. If the MDL is lower than Receiving Water Limitations, any detection of the pollutant would be considered non-compliance with the Permit.

Comment 1.09:

The current monitoring approach under the Weed Permit is superior to toxicity testing in terms of addressing potential impacts associated with specific pesticide applications. Toxicity testing is designed to assess water quality in the broader context. It gives a general assessment of the water without initially addressing specific potential toxicants. With toxicity monitoring, once it is determined that water quality standards have been exceeded, one still has to conduct Toxicity Identification Evaluations (TIEs) to determine the specific toxicant(s) causing the mortality to the test species. All this has to occur before you can develop and implement mitigation measures. In other words, aquatic toxicity approaches are extremely difficult to apply to the specific actions approved under the NPDES permit. Many water characteristics (e.g. pH, temperature, dissolved oxygen, other contaminants) completely unrelated to an aquatic pesticide application can affect the health of the test organisms making it extremely difficult to establish a cause-and-effect nexus between an aquatic pesticide application and the mortality of lab specimens.

Response:

The current monitoring approach under the Weed Permit does not provide information on whether the pesticide residue, including active ingredients, inert ingredients, and degradation by-products, in any combination, cause or contribute to toxicity in the receiving water. Also, see Response to Comment 1.05.

Comment 1.10:

Inherent in aquatic pesticide applications are dilution and degradation and often times significant mixing during water storage and delivery. As a result, if sampling is not done at the specific time and place of pesticide application, results may not reflect the impacts, if any, from that particular application. For example, toxicity testing done on samples collected after an aquatic pesticide application in a flowing water district canal may report toxicity that results not from the aquatic pesticide, but from some toxicant(s) upstream of the sampling

location. Without knowledge of the presence or absence of the specific aquatic pesticide, the erroneous conclusion might be reached that the aquatic pesticide was the cause of test organism mortality.

Response:

See Response to Comment 1.05.

Comment 1.11:

The monitoring approach set forth in the Weed Permit focuses on a specific application and the monitoring is designed so that the analytical laboratory analysis and subsequent comparison of data to water quality objectives can determine if there are any undesirable impacts associated with that application. Three monitoring stages are involved: (1) pre-application monitoring to establish the baseline condition (in terms of pesticide presence) of the waterbody where the pesticide is to be applied; (2) operation monitoring immediately downstream of the treated area immediately after the application to confirm that the pesticide was applied in the approved manner; and (3) monitoring within and immediately downstream of the treatment area within 1 week of application to assess the presence, if any, of the pesticide. The monitoring and reporting mechanisms provide for a timely and pesticide-specific response to address any unacceptable impacts associated with the specific pesticide application and to modify future operations to avoid a repeat of any impacts. This is the intent of an NPDES permit – to ensure approved activities are conducted in a manner that is compliant with the permit, and in those limited situations when exceedances do occur, ensure that the responsible party has an opportunity to respond in a timely manner to minimize the adverse impacts caused by the specific chemical(s) identified in the permit, in this case, aquatic pesticides. We do not believe that the intention of a NPDES permit is to obligate the discharger to assess the overall environmental condition of the waterbody for factors unrelated to the chemical that is the subject of the permit.

Response:

The three monitoring stages are being proposed in the Draft Permit except that post-event sampling shall be taken in the treatment area, not downstream of it. Also, see Response to Comment 1.09.

Comment 1.12:

Staff has failed to establish any legitimate justification for requiring dischargers to perform toxicity testing as a condition of the permit. During the course of our conversations with staff, and again during their presentation to the Board on November 2, staff asserted that toxicity testing is necessary because pesticides are second most significant cause water quality impairments. This conclusion is based on the number of impaired water bodies listed under the Clean Water Act section 303(d) Total Maximum Daily Load (TMDL) program. We have reviewed the most recent 303(d) impaired waterbody list and have found no water bodies listed as a result of our members' applications of aquatic pesticides. The pesticide-impaired water bodies on the 303(d) list, are those that those involving pesticides that are strictly prohibited from entering the water bodies. Consequently, we can only conclude they are the result of pesticide drift, surface

runoff or leaching through the soil and not the result of direct applications approved by USEPA and DPR.

Response:

See Response to Comment 1.09.

Comment 1.13:

The 2003-2004 SFEI report for the State Water Board demonstrated that four aquatic pesticides were shown to be non-toxic. Further, the work by SFEI highlights the high variability, time dependency, and non-pesticide related toxicity outcomes that help demonstrate that in situ aquatic toxicity testing is not a reliable tool, nor a suitable replacement for analytical chemical analysis and ex-situ toxicity testing for assessing potential impacts from aquatic pesticide use.

Response:

As part of a settlement agreement with Waterkeepers Northern California which challenged several aspects of Order No. 2001-12-DWQ, the State Water Board agreed to fund a comprehensive aquatic pesticide monitoring program (APMP) that would assess pesticide alternatives, receiving water toxicity caused by residual aquatic pesticides, and other monitoring parameters. The State Water Board contracted with the San Francisco Estuary Institute (SFEI) to conduct the program. On April 13, 2004, SFEI circulated the final report publicly. The report concluded that “the use of the limited data gathered during the three pesticide application seasons that the APMP has existed should be limited to screening purposes only to identify where further risk characterization or research may be needed.” Specifically, the report provides the following conclusions for the individual active ingredients:

- 2,4-Dichlorophenoxyacetic Acid (2,4-Dimethylamine Salt Formulation)
At this single application, no toxicity was observed nor did risk quotients indicate the need for further information. However, laboratory experiments indicate that 2,4-D may cause endocrine disruption at legal application rates.
- Acrolein
Due to acrolein’s rapid volatilization, it is currently not possible to conduct standard water toxicity tests on it. However, because of its extremely low Lowest Observable Effect Concentration values, the detectable presence of acrolein indicates that very high mortality to USEPA water and sediment toxicity test species can be assumed.
- Copper Sulfate
Copper sulfate applications were monitored in two reservoirs. In one reservoir treatment area treated with dissolved copper sulfate, toxicity to juvenile trout and Ceriodaphnia was found immediately after and, in some cases, up to a week following application.

In the reservoir treated with granular copper sulfate applications, significant mortality was observed in Ceriodaphnia and juvenile trout water toxicity tests immediately after application within the treatment area. Mortality and growth inhibition were also observed in a number of the sediment samples. Sediment

copper concentrations at many sites exceeded a published *Hyalallela* LC50 value. However, the toxicity observed in the sediments indicates that the majority of the copper is not bioavailable.

- **Chelated Copper**
Chelated copper pesticides were monitored during applications in two irrigation canal systems. Chelated copper formulations are likely to have distinct behavior from copper sulfate and each other in aquatic environments based on the chelating agent and other adjuvants. In both canal systems, the water samples were almost uniformly toxic pre-application and post-application. Therefore, no definitive conclusions can be drawn about the toxicity of mixed chelated copper.
- **Diquat**
Diquat dibromide was sampled at two locations: one small pond and a Delta slough. Diquat risk quotients almost uniformly exceeded Levels of Concern at all sampling periods in the Delta slough (including preapplication) and at one hour after application in the pond. Diquat may be applied with a surfactant which may have much higher toxicity than the active ingredient. Diquat sediment concentrations were not considered as diquat is irreversibly adsorbed to sediments and thereafter not bioavailable. Toxicity test and risk quotient results indicate the need for further risk characterization.
- **Fluridone**
Fluridone (applied in pellet or liquid form) was not found to be definitively toxic to or have LOC exceedances for the USEPA three species water or sediment amphipod organisms. The peak concentration risk quotient for Stonewort did exceed an Acute LOC. Fluridone was found to cause sublethal toxicity (decreased shoot and root length) to Typha. This would indicate a potential for impacts on nontarget plants. Further risk characterization of fluridone impacts on nontarget plants is warranted. There is also cause for concern over development of genetic resistance to fluridone which is emerging in plant populations in Florida.
- **Glyphosate**
Glyphosate was monitored at several locations. No toxicity was found to be associated with glyphosate applications. Thus, no further risk characterization associated with glyphosate applications alone is warranted. However, glyphosate is often applied with a surfactant which may have much higher toxicity than the active ingredient. Risk characterizations are warranted when a surfactant is used in conjunction with glyphosate.
- **Methoprene**
Monitoring for methoprene is challenging because it is commonly applied to environments that do not lend themselves to traditional water and sediment sampling and testing methods (i.e. extremely shallow water and highly anoxic sediments). In situ and laboratory toxicity tests were completed, but the results were inconclusive. From the one site monitored for methoprene, water

and pore water risk quotients indicate no need for further risk characterization. Methoprene was persistent in marsh sediments, up to the parts per million level, for several weeks. Little methoprene sediment toxicity data could be located. Future work is warranted to further characterize the risk of methoprene in sediments. Additional studies may also be warranted due to the common simultaneous application of methoprene and Bti.

- **Nonionic Surfactants**
The most commonly used surfactants at the APMP monitoring sites were Target Prospread Activator and R-11. Both are nonylphenoethoxylate based surfactants. Peak concentration risk quotients indicate exceedances of LOCs for a wide range of animal species including Delta Smelt and Sacramento Splittail. Vitellogenin induction experiments in Rainbow trout indicate that these nonylphenol surfactants can be an endocrine disruptor at application rates. There is a wide range of surfactants available, each one having a different toxicological profile. Due to their classification as an adjuvant, very little data are required for registration. Risk characterizations are warranted on all surfactants.
- **Triclopyr**
Triclopyr was monitored at one application only. Triclopyr peak concentration risk quotients show no LOC exceedances. Triclopyr is often applied with a surfactant which may have much higher toxicity than the active ingredient. Risk characterizations are warranted when a surfactant is used with triclopyr.

Based on the SFEI report conclusions, only acrolein and methoprene are not amenable to toxicity testing. In addition, only 2,4-D and glyphosate did not show toxicity in the water samples. In the case of glyphosate, the report recommends risk characterizations when glyphosate is used in conjunction with a surfactant. In fact, the report recommends conducting risk characterizations when active ingredients are used with any surfactant, which may have higher toxicity than the active ingredient itself. Additional risk characterizations are also needed for diquat and fluridone.

Comment 1.14:

Aquatic pesticide water quality data gathered over eight years for the Weed Permit support less monitoring, not more. Sampling and analysis conducted by our members, as required by the Weed Permit, supports the conclusion that intentional pesticide or herbicide applications have not had any significant adverse impact on water quality or the beneficial uses of water. Based on our conversations with staff, it is our understanding that they came to the same conclusion after a July 2010 review of the data that has been submitted for aquatic weed permit monitoring since 2002. With the exception of some limited copper applications, applications of pesticides covered by the aquatic weed permit have not exceeded water quality standards. This data reasonably suggests that less, not more monitoring is in order.

Response:

The pesticides covered in the Aquatic Animal Invasive Species Control Permit and Weed Permit are different. The monitoring data from the Weed Permit are not germane to the Aquatic Animal Invasive Species Control Permit.

Nevertheless, contrary to ACWA's assertion, staff's review of the data from the Weed Permit found some exceedances of water quality standards.

Of the eight pesticide active ingredients covered in the Weed Permit, acrolein, copper, and glyphosate have exceeded their water quality criteria or objectives. However, if the discharger has an exception to meeting the limits for acrolein and copper, an exceedance of these active ingredients does not result in violation of the Weed Permit. There were three exceedances for acrolein out of 213 sampling events. Two of the exceedances are violations since the dischargers did not have exceptions to meeting the limit, There were 85 exceedances for copper out of 294 sampling events. Among the 85 exceedances, 43 are violations since the dischargers did not have exceptions to meeting the copper limits. There were three exceedances for glyphosate out of 167 sampling events. All exceedances are violations since there is no exception for meeting the limit for glyphosate. Therefore, Weed Permit monitoring data from 2004-2008 show that applications of pesticides for aquatic weed aquatic control causing exceedances of water quality criteria or objectives.

Staff concurs that monitoring for some of the active ingredients in the pesticides in the Weed Permit may be reduced. That matter will be addressed during renewal of the Weed Permit.

Comment 1.15:

During the November 2, 2010 hearing, in response to a question from a Board member as to why toxicity testing is necessary under this permit, staff responded that it is the only way to assess the impacts of unknown components contained within the pesticide products, such as adjuvants. This is incorrect on two counts.

First, as is done in the existing weed permit, the analysis of adjuvant surrogates and pesticide breakdown products has been done for eight years, thus, allowing for a determination of the presence of chemicals regulated under the weed permit.

Second, the use of toxicity testing for purposes of solely assessing the presence of inert ingredients or pesticide breakdown products is not possible as toxicity testing evaluates the aggregate or combined water quality characteristics of the water whether or not they are related to the pesticide, its breakdown products or inert ingredient. Hence, the use of toxicity testing may lead to the erroneous conclusion that aquatic pesticides are responsible for test organism mortality. Indeed, follow-up toxicity identification evaluation (TIEs) can be done after toxicity is demonstrated to determine the toxicant(s) responsible for mortality. The TIE process, however, is time consuming and expensive and may never identify the toxicant(s). Why not look directly for the potential toxicant, i.e., the aquatic pesticide, using traditional analytical chemistry and avoid the confusion and cost associated with toxicity testing?

Response:

The existing Weed Permit does not require analysis of adjuvant surrogates and pesticide breakdown products. Therefore, conclusions cannot be made about the impacts of these unknown constituents. In addition, as stated in Response to Comment 1.14, the pesticides covered in the two permits are different. As stated in Response to Comment 1.05, comparison of background, post-event and toxicity results will provide information on the effects of the interaction of the residual pesticide, including inert ingredients and degradation byproducts, with the receiving water. Traditional analytical chemistry cannot provide that information.

Comment 1.16:

The current process for approving emergency applications and new pesticides lacks efficiency and timeliness. Since 2002, there have been four permit re-opener events, two for reasons including the addition of new pesticides to the permit (9/9/05 for imazapyr and 6/13/06 for sodium carbonate peroxyhydrate). Because of the lead time needed for staff to review documents (30-60 days) and time for public review (30 days), this process, although appreciated so that new tools can be employed, is not fast. We suggest that an expedited process be developed so that emergency use of pesticides can be done in a manner analogous to DPR's Section 18 emergency exemption process. Further, in order to prevent delays and allow for rapid response, we encourage SWRCB staff to work with dischargers, DPR, Department of Fish and Game, and other western states that have established aquatic animal control programs to proactively list approved aquatic pesticides on the permit that have shown high efficacy.

Response:

Section 124.10(b) of Title 40 of the Code of Federal Regulations requires 30 days for the public to comment on a Draft Permit. Unless the regulations change, the Water Boards have to comply with this requirement. Staff appreciates the need to use new pesticide products especially when there is an outbreak of pest infestation. However, the NPDES regulations do not have provisions for emergency situations. Staff will continue to work with the California Department of Pesticide Regulation, other State agencies, and stakeholders to expedite inclusion of new pesticides in the State Water Board's pesticide permits.

2. Comment Letter 2 - California State Lands Commission**Comment 2.01:**

The Draft Permit language does not specifically state whether this permit applies to vessels subject to coverage under USEPA's National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (VGP) for Discharges Incidental to the Normal Operation of Commercial and Large Recreational Vessels. This omission might allow for the broad interpretation that the Aquatic Animal Invasive Species Control Permit applies to vessels engaged in the treatment and removal of animal invasive species in ballast water and vessel fouling. To reduce confusion the permit should explicitly state that the permit does not apply to vessels that are covered under the VGP. Commission staff recommends that the following language be added to Section II. Permit

Coverage and Application Requirements, Subpart A. General Permit Coverage: “The General Permit does not apply to vessels covered by the National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (VGP) for Discharges Incidental to the Normal Operation of Commercial and Large Recreational Vessels.”

Response:

Staff added the suggested language to Section II.A.

3. Comment Letter 3 - City of Los Angeles Department of Water and Power (LADWP)

Comment 3.01:

LADWP supports the effectiveness of a BMP strategy, as used in the Weed Permit, for protecting water quality. As demonstrated by eight years' of test data collected under that permit, intentional applications of pesticides have not had adverse water quality impacts. Therefore, LADWP does not believe that toxicity testing as required in the draft aquatic animal invasive species control permit is justified and as written does not fully consider the balance between the operational needs of the dischargers and environmental benefits.

Response:

See Response to Comment 1.14.

Comment 3.02:

The monitoring program as written will be labor-intensive and represents a significant allocation of Dischargers' resources, but without a well-defined environmental benefit. Drift, leaching, and runoff, versus intentional pesticide applications, have contributed to toxicity impairment. In addition, the Board has not indicated why the BMP approach used in the Aquatic Weed Control permit is insufficient, when its effectiveness has been demonstrated. Also, the proposed toxicity testing program calls for the evaluation of *whole systems*, even though the permit is intended to address only Dischargers' applications. Toxicity monitoring is most valuable when the effluent constituents are unknown, or to assess water quality in a broader context. For the latter, toxicity testing evaluates all factors that may contribute to toxicity and affect test organisms. Then a process of elimination is required to determine which specific sources caused acute toxicity (mortality), prior to developing and implementing appropriate mitigation measures. However, the NPDES dischargers know the exact pesticides, and active ingredients of said pesticides, that they are applying. And the pesticides are applied in conformance with FIFRA label requirements.

At the November 2 hearing, Board staff supported toxicity testing on the grounds that it is the only method available for monitoring the effects of pesticide adjuvants. However, the current Aquatic Weed Permit also evaluates an adjuvant surrogate for any adverse impacts. As discussed earlier, monitoring data for that permit showed that intentional applications of pesticides to control weeds have had no adverse water quality impacts, so toxicity testing is not warranted.

For the above reasons, the BMP approach is the most practical and efficacious, requires immediate notification of any adverse impacts, and therefore provides

data necessary for the Board's decision-making process. Maintaining this approach would allow a more focused use of all resources.

LADWP recommends the elimination of the toxicity testing program as written and substitution of a BMP strategy, similar to that proposed in the draft federal pesticides permit, coupled with establishment of a five-year stakeholder work group. The group would review relevant literature and existing test, conduct collaborative field studies, and/or studies recommend pilot/scientific studies.

Response:

See Responses to Comment Letter 1 from ACWA. Comment is noted on establishing a stakeholder work group.

Comment 3.03:

Attachment C, Section III.A.2, Page C-4. This section stipulates that "grab samples" shall be taken. It is unclear whether "grab samples" are the same as the "background" samples referenced in Section IV.B.1 (Page C-6), and in Table C-1, Page C-8. " LADWP recommends that "background samples" should be used in lieu of "grab samples" throughout the Permit.

Response:

All samples to be taken under the Permit are receiving water samples. Background and post-event samples relate to the timing of the sample collection. Background samples are collected within 24 hours before application to determine the conditions of the receiving water prior to pesticide applications. Post-event samples are taken within a week of project completion to determine the impacts of the pesticide application on the receiving water. Background and post-event samples are all grab samples. A grab sample refers to the type of sample. A grab sample is a single sample or measurement taken at a specific time or over a short period. As such, a grab sample reflects the characteristics of the material (receiving water in this case) being sampled only at the point in time that the sample was collected assuming the sample was properly collected. The other type of sample is a composite sample which consists of a collection of numerous individual discrete samples taken at regular intervals over a period of time, usually 24 hours. The material being sampled is collected in a common container over the sampling period. The analysis of this material, collected over a period of time will, therefore, represent the average characteristic of the material being sampled during the collection period. Composite sampling in receiving water is not appropriate due to the receiving water's transitory nature. Thus, the Aquatic Animal Invasive Species Control Permit specifies collection of grab samples, which shall be collected at three feet below the surface or mid-depth if water body is less than six feet deep (Table C-1).

Comment 3.04:

Footnote 4, Table C-1, Coalition or Individual Monitoring Requirements, Page C-9. The footnote mandates six (6) physical, chemical, and toxicity samples per application season per year. Six appears to be an arbitrary number, as there is no benefit to requiring a greater number of samples than applications events. "Application season" is not defined. LADWP recommends that sampling schedules coincide with Dischargers' application events, the dates of which are inherently variable, and that all references to application seasons be deleted.

Response:

Staff concurs that sampling should coincide with application events and has deleted references to application seasons.

All testing for individual chemicals and toxicity have some degree of uncertainty associated with them. The more limited the amount of test data available, the larger the uncertainty. The intent of a sampling program is to select a number that will detect most events of noncompliance without requiring needless or burdensome monitoring. Table 3-1 of the USEPA Region 9 and 10 Toxicity Training Tool (TTT) provides guidance on the selection of the appropriate sample number. It shows that six is the minimum number of samples where there is about a 50 percent chance of detecting at least one toxic event for the three probabilities of occurrence shown on the table.

In addition to the TTT, staff used USEPA's Technical Support Document for Water Quality-Based Toxics Control (TSD) to determine the appropriate number of samples that would be needed to characterize the impacts of the pesticide applications. Page 53 of the TSD recommends using a coefficient of variation (CV) 0.6 when the data set contains less than 10 samples. Table 3-1 of the TSD shows that with a CV of 0.6, the multiplying factors used to determine whether a discharge causes, has the reasonable potential to cause, or contributes to an excursion above a State water quality standard begin to stabilize when the sample number is six.

Thus, staff retained the requirement for six samples to characterize the effects of pesticide applications.

Comment 3.05:

Attachment C, Third paragraph of Section IV. B., Monitoring Requirements, Page C-6. It is unclear whether monitoring is to also take place in man-made canals, ditches, or other similar conveyances. LADWP recommends that the toxicity testing in man-made structures be eliminated, as these structures are most often used for drinking or agricultural water purposes, and any pesticide applications that are made are necessary to protect health.

Response:

Monitoring is to take place in man-made canals, ditches, or other similar conveyances if they will eventually be discharged into a water of the U.S. Staff added the definition for "Waters of the U.S." to Attachment A.

Comment 3.06:

Section IV. Table 3, Receiving Water Monitoring limitations, Page 13. The purpose of receiving water monitoring limitations is unclear. The Permit acknowledges the unknown nature of effluent containing pesticides and the short duration of intermittent pesticide releases in Section III.L., Antidegradation Policy, Page 11: "While surface waters may be *temporarily degraded*; water quality standards and objectives will not be exceeded." The Permit therefore calls for the employment of BAT (Best Available Technology Economically Achievable) and BCT (Best Conventional Pollutant Control Technology) for the restoration of water quality following pesticide applications. In other words, the Permit acknowledges the benefits of a BMP strategy. Per the testimony of Board staff

during the October 19, 2010, hearing on the draft Vector Control permit, there is a paucity of data pertaining to toxicity limits and human health impacts.

Response:

In pesticide applications, there is no effluent per se. Thus, numeric effluent limitations cannot be used to protect the beneficial uses of the receiving water. Consequently, the effluent limitations contained in the Permit are narrative and include requirements to develop and implement an Aquatic Pesticide Application Plan (APAP) that describes appropriate BMPs, including compliance with all pesticide label instructions, and to comply with narrative receiving water limitations. In addition to implementing the APAP and other requirements, the Permit also includes numeric receiving water limitations to determine the effectiveness of the APAP and other measures the discharger is implementing to restore the receiving water quality to pre-application conditions when the animal invasive species control project is completed.

Comment 3.07:

In addition, Permit Section III.H., Receiving Water limitations (Page 10) cites the lack of precision pertaining to chlorine measuring instruments.

Response:

See Response to Comment 1.08.

Comment 3.08:

Some water bodies are already listed as impaired for toxicity due to past pesticide uses by unidentified sources, not from intentional applications. Without mechanisms for identifying or apportioning all sources of toxicity, exceedances of numeric receiving water limitations would not necessarily indicate a failure by Dischargers to comply.

Response:

See Response to Comments 1.05.

Comment 3.09:

The use of numeric limitations is also not a guarantee that a reduction in ambient toxicity can be achieved. From a human health perspective, there appears to be an insufficient amount of data regarding appropriate toxicity limits. It would follow that the data are also insufficient for setting numeric receiving water limitations, and that any limitations would therefore be arbitrary. LADWP therefore recommends the elimination of the limitations and that the State Board establish a working group to undertake a small-scale pilot study that examines the relative contributions of toxics from sources other than permitted Dischargers.

Response:

See Response to Comment 3.06 regarding the purpose of the receiving water limitations. Toxicity testing is required for the discharger to prove that it is not causing toxicity or adding toxicity. Also see Response to Comment 1.05 and 1.09.

Comment 3.10:

Attachment C, VIII.C, Page 14. Per this section, APAPs are expected to serve as an outline of the Dischargers' pesticide application plans. However, per the second bullet point after "Question NO.2" in Attachment C, Page C-2, Aquatic Pesticides Application Plans (APAPs) are designed to assist with: "identification of critical gaps in knowledge (e.g., inability to document impacts, lack of knowledge about *potential* (emphasis added) sources, absence of trend-monitoring components) relevant to the Coalition's or Discharger's circumstances." The requirements to identify knowledge gaps, etc. fall outside the scope of an APAP, and better describe a study. A review of the 303(d) list shows that toxicity impairment in numerous water bodies is frequently attributed to "unknown" and "nonpoint sources." It is unclear how an APAP - or application plan - could be used to identify toxicity sources. LADWP recommends that the following language be eliminated from this section of the permit: "identification of critical gaps in knowledge (e.g., inability to document impacts, lack of knowledge about *potential* (emphasis added) sources, absence of trend monitoring components) relevant to the Coalition's or Discharger's circumstances."

Response:

Staff agrees and has deleted all verbiage following the second question.

Comment 3.11:

Attachment C, I.A., Page C-2. This section indicates: "All samples shall be taken at the anticipated monitoring locations specified in the APAP submitted by the Discharger. Monitoring locations shall not be changed without notification to and approval of the appropriate Regional Water Boards." Discharger's or Coalition's PAP, unless otherwise specified. Section II.C.3. on Page 5 requires submittal of an APAP to the Board. Upon approval of the APAP, the Board will issue a Notice of Applicability (NOA) that allows the Discharger to apply pesticides.

- a. The Permit includes no time limit for the Board review of APAPs and the issuance of NOAs. Without NOAs, Dischargers could be precluded from responding to infestations in a timely manner, which could imperil public health and/or water conveyance structures and systems.
- b. The Permit does not specify a mechanism for notifying the Board of revisions to monitoring locations (such as a revised APAP), or a time limit for the Board to review and approve the revisions. Infestations may occur at different locations during different seasons and years. Monitoring locations should reflect application areas.
- c. The Permit seems to imply that Dischargers may have to repeatedly update APAPs as new areas of infestation are discovered through surveillance. However, the APAP is intended to provide a general overview, while the Pesticide Application Log is the document that provides detailed application data.
- d. LADWP recommends that the State Board approve original APAPs within 10 business days. Once the original APAP is approved and an NOA issued, Dischargers should have the authority to undertake pesticide applications for invasive species as needed. Invasive species are often transported via

- privately-owned boats and fishing gear, so locations where they might be found cannot always be predicted.
- e. Logically, Dischargers should also be able to take monitoring samples in areas that correspond to application areas, even if those monitoring locations were not included in the original APAP. Dischargers could then provide written, after-the-fact notice of monitoring location revisions to the Board (within five business days).

Response:

- a. In *Waterkeeper Alliance, Inc. v. EPA*, 399 F.3d 486, the Second Circuit Court found that by not making the nutrient management plans of confined animal feeding operations (CAFOs) part of the permit and available to the public, the USEPA's CAFO rule violated public participation requirements in sections 101(e) and 402 of the Clean Water Act. Staff has added language to the Permit to clarify that APAPs need to be posted for a 30-day public comment period. NOAs will be issued immediately thereafter if no comments are received.
- b. Staff has added language to clarify how the APAP, including modifications to it, will be processed and approved.
- c. Only major changes to the APAP such as using a different product other than what is specified in the APAP, changing an application method that may result in different amounts of pesticides being applied, or adding or deleting BMPs will require approval by the State Water Board Deputy Director of the Division of Water Quality. Since the APAP shall include: 1) ALL the water bodies or water body systems in which pesticides are being planned to be applied or may be applied to control aquatic animal invasive species; and 2) ALL the application areas and the target areas in the system that are being planned to be applied or may be applied, changes in monitoring locations are not considered major changes. However, these changes need to be reported in the annual report.
- d. See response to Item a.
- e. See response to Item c.

Comment 3.12:

Section VIII.B., Page 14. This Section specifies: "Every calendar year, prior to the first application of pesticides, the Discharger shall notify potentially affected government agencies." Due to the possible extensive notice required, this could be challenging or impractical to implement. Secondly, Item 4 of Section VIII.B. (Page 14) states notification should also include "General time period and locations of expected uses." Aquatic animal invasive species control applications are scheduled when presence invasive species requires such. This item implies that applications occur at regular intervals. LADWP recommends that dischargers provide an NOI (Notice of Intent) only to local agricultural commissioners instead of "potentially affected government agencies." LADWP also recommends that once the original APAP is approved and an NOA issued, Dischargers should have the authority to undertake pesticide applications for invasive species as needed. (Invasive species are often transported via privately-owned boats and fishing gear, so the locations and times they might be found

cannot be predicted.) Dischargers could then provide written, after-the-fact notice of monitoring location revisions to the Board (within five business days).

Response:

The Permit only requires dischargers to notify agencies and not to wait for a response from these agencies. See also Response to Comment 3.11.

Comment 3.13:

Section VIII. Standard Provisions, A.10.d, Page 17. This Section states, "... all technical reports must contain a statement..." It is unclear if a "Technical Report" is the same as the sampling results that are to be provided in the annual report, which is referenced in Annual Reports - Section V.B.1.b, Page C-9. LADWP recommends substituting the following language in Section VIII. A.10.d "....all technical reports containing receiving water monitoring data or monitoring sampling results..."

Response:

Technical reports may or may not contain receiving water monitoring data or monitoring sampling results. For example, the APAP will not contain monitoring data but the annual report must contain monitoring data. Therefore, staff did not include the suggested language.

Comment 3.14:

Section VIII. C.2.b.vii, Page 19. This Section requests "any available ambient water data for pesticides applied." It is unclear if "ambient water data" is the same as "background" water samples, which are referenced in Table C-1, Page C-8. For purposes of uniformity, LADWP recommends that one term - "background" -be used throughout the Permit.

Response:

Staff defined ambient water as *water in the immediate surrounding area*. It may be collected during Background, Event monitoring, or Post-event monitoring. Background monitoring is performed before the application of the pesticide. Therefore, staff did not make the recommended change.

4. Comment Letter 4 - Coachella Valley Water District

Comment 4.01:

Section III, Finding G. This finding states that applications of pesticides are of short duration or intermittent. It is our understanding that applications of sodium hypochlorite for the control of invasive freshwater mussels (*Dreissena spp.*) can also depend on maintaining a continuous chlorine residual to provide an effective barrier to veliger colonization. This finding should be revised to reflect this type of pesticide application.

Response:

Finding G has been modified to clarify that "treatment" was referring to pesticide residues and not the pesticide application itself. Language was also added to clarify that typical pesticide applications are short-term in duration.

Comment 4.02:

Section IV, paragraph C. This paragraph would prohibit any instream excursion above a water quality objective adopted by the State or Regional Water Boards.

This comprehensive prohibition is not compatible with the subject permit which is to cover the direct application of a pesticide to waters of the United States (U.S.) to achieve a target area that is toxic to aquatic animal invasive species. This paragraph should be revised to prohibit any in-stream excursion above a water quality objective adopted by the State or Regional Water Boards outside the target area for the pesticide application.

Response:

Staff agrees and has added the following sentence: "This prohibition shall apply outside the treatment area during treatment, and in the treatment area after treatment has been completed."

Comment 4.03:

Section VI, paragraph E. This paragraph would prohibit toxic pollutants to be present in the receiving water at levels that produce detrimental response in animal or aquatic life. Since the purpose of the pesticide application is to have a detrimental response in aquatic animal invasive species found in waters of the U.S., this limitation would limit the application of pesticides to concentrations that would be useless for control of invasive species. This paragraph should be removed from the subject permit or revised to exclude receiving water within the target application areas.

Response:

The discharger is responsible for meeting receiving water limitations, which are included in the Permit to protect water quality, at post-event monitoring. The pesticide is allowed to serve its purpose, which is to control aquatic animal invasive species, during the project but pesticide residuals must not affect the beneficial uses of the receiving water after project completion. See Response to Comment 1.07.

Comment 4.04:

Receiving water limitations, paragraph I and table 3. Paragraph I and Table 3 include receiving water limitations for chlorine as both daily maximum levels, <10 to 20 micrograms per liter (ug/L), and as a monthly average, 10 ug/L. These levels are set well below the practical detection limit of 80 ug/L determined for widely used field testing methods for chlorine residual and essentially reflect a position that no detectable chlorine residual is acceptable in receiving waters. It is our understanding that chlorine residuals of 0.5 to 1.5 milligrams per liter (mg/L) are commonly used to control *Dreissena spp.* The numeric receiving water limitations in Table 3 would effectively prohibit the application of any sodium hypochlorite to receiving water, which would include applications to waters of the United States (U.S.). As reasoned in Finding G of the general permit, numeric limits would also be infeasible for receiving waters because treatment would render the pesticides useless for pest control. It is our understanding that the purpose of the general permit is to use Best Management Practices to minimize the impact to waters of the U.S. to the target application area. As such, the broad application of receiving water limitations contained in paragraph I and Table 3 should be removed from the subject permit or revised to apply to receiving waters outside the target area for the pesticide application.

Response:

See responses to Comments 1.06, 1.07 and 1.08.

Comment 4.05:

Requirements to perform toxicity testing are present throughout the subject permit. However, the subject permit also specifies that the requirement to perform toxicity testing is not required if chlorine is the only active ingredient in the pesticide application. Since the subject permit would only cover applications of sodium hypochlorite, at this time, and chlorine is the only active ingredient in sodium hypochlorite, there is no logical reason to include any reference to toxicity testing in the subject permit.

Response:

Staff will revise the requirement to be more consistent with the remainder of the Permit. If toxicity testing will be required, the statement regarding toxicity testing exemption if chlorine is the only active ingredient in the aquatic pesticide will be deleted.

Comment 4.06:

In addition, toxicity testing would be inappropriate for the application of any known pesticide for controlling aquatic animal invasive species. Direct monitoring for the pesticide that is applied provides a much better and timely characterization of the discharge and receiving water. This approach has been used successfully for the State Water Board aquatic weed control pesticide use general permit for many years and should be used as a template for meeting the narrative toxicity criteria for the subject permit.

Response:

The aquatic pesticide's active ingredient is directly monitored similar to the approach in the aquatic weed control pesticide general permit. Since the Permit requires comparison of post-event results with background results for compliance, toxicity monitoring only considers toxicity changes in the receiving water produced by the application of the aquatic pesticide. See Response to Comment 1.09.

5. Comment Letter 5 - Marin Municipal Water District

Comment 5.01:

It has been our experience via the weed permit, that monitoring for the active ingredient contained in the pesticide formulation is a much more direct measure of potential toxicity, and also more useful in a timely determination of treatment efficacy and environmental protection during and after pesticide application. For instance, the Marin Municipal Water District's use of Copper Sulfate under the General Weed Permit has not resulted in fish mortality, or in any other deleterious aquatic environmental impacts. In fact, toxicity studies performed by the San Francisco Estuary Institute (SFEI), showed a lack of toxicity both in the water column and sediment layer of our reservoirs which have received copper sulfate applications for decades. The inclusion of data into EPA's Biotic Ligand Model confirmed a predicted lack of toxicity due to the source water characteristics of our reservoirs.

Response:

See Response to Comment 1.13.

Comment 5.02:

The problem with toxicity testing is that it does not define the constituent or constituents causing the toxicity. Determination of toxicity requires a Toxicity Identification Evaluation (TIE), which in turn may or may not conclusively identify the cause of toxicity, particularly when significant time has elapsed since the initial monitoring has occurred.

Response:

See Response to Comment 1.05.

Comment 5.03:

One major reason given for the inclusion of toxicity testing is that there may be other constituents, or adjuvants contained (other than the active ingredient), within the pesticide formulation which could cause or enhance toxicity of the pesticide product. In the case of hypochlorite there is no adjuvant. In the case of copper sulfate there is no adjuvant. In both cases all ingredients are listed. It seems particularly unreasonable to require toxicity testing in these examples. We give the example of copper sulfate with the expectation that it may be added to the list of registered products available in the invasive animal permit at some future date.

Response:

The aquatic pesticide products containing sodium hypochlorite covered under this Draft Permit do have inert ingredients. A method must be provided to assess the effects of inert ingredients, which are not specified on the label, since they could also become residuals or "pollutant" after the intended use of the pesticide discharged. Therefore, toxicity testing is required in this Draft Permit to ensure water quality is also protected from inert ingredient effects and any effects from the combination of active and inert ingredients, their degradation byproducts, and pesticides in the receiving water.

Comment 5.04:

Another reason for toxicity testing would be to afford protection to impaired water bodies, as pesticides have been implicated in a number of water bodies under EPA's 303(d) list. If pesticides allowed under this draft permit had caused, or had reason to cause impairment to water bodies, there would be some rationale for toxicity testing to be a part of the monitoring protocol.

Response:

The pesticides implicated under the 303(d) list may include pesticides covered under this Permit.

Comment 5.05:

Since the impact on receiving waters is the main assessment goal of this draft permit, the permit should state that the sampling location is representative of the receiving water, and "receiving water" should be included under an additional column heading "sample location" to be added to Table C-1 on page C-8 of the

draft. So for consistency, the receiving water should be specifically named as the sample point for permit compliance.

Response:

Location details for sampling are described under the "Sample Type Requirement" column. The descriptions for Background, Event, and Post-Event Monitoring are described in Attachment C, Section IV.B. Since they vary in the receiving water depending on the event monitored, sample location descriptions are too lengthy to include in the Table C-1. Numeric and narrative receiving water limitations are indicative that the receiving water is named as the sample point for Permit compliance. All samples shall be taken from the receiving water.

Comment 5.06:

The Method Detection Limit (MDL), as noted in C-11 and generated by the procedure referenced in the draft permit (40 C.F.R. Part 13), is higher than the receiving water limitations for chlorine noted on 3.H. page 10, and on page D-26 of the tentative order. Additionally, the minimum level (ML), is by definition even higher than the MDL. The lack of precision and sensitivity in chlorine testing is due to the fact that chlorine (hypochlorous acid, and hypochlorite ion when hydrolyzed in water), residuals must be taken in the field, and field methodologies do not generate the precision required to generate a MDL low enough to characterize the numeric receiving water limitations stated, as the MDL is based on the precision of replicate analyses.

Response:

Comment noted. See response to Comment 1.08.

6. Comment Letter 6 - Metropolitan Water District of Southern California

Comment 6.01:

Control of aquatic invasive animal and plant species is a growing challenge in California and a critical issue for Metropolitan. Metropolitan needs to be able to respond quickly, using the most effective, approved pest management methods to control and eliminate targeted species, while implementing best management practices to mitigate impacts to the environment. For these reasons, Metropolitan needs streamlined and flexible regulatory requirements that allow us to fulfill our mission both now and in the future. As presently written, the Draft Invasive Species Permit does not provide Metropolitan with the needed flexibility, and imposes additive administrative and Regulatory requirements with no perceived benefit to water quality.

Response:

See Response to Comment 3.02.

Comment 6.02:

Metropolitan received a preliminary draft of subject permit via e-mail from SWRCB staff on August 23, 2010. In response to staff's request for input, Metropolitan provided the attached comments letter on August 31, 2010 to SWRCB staff. Metropolitan's previous letter, which is attached and incorporated by reference, included the following comments:

- a. Requested SWRCB staff to convene a Technical Advisory Committee, and hold a workshop prior to scheduling of a public hearing to better understand stakeholder concerns,
- b. Questioned the necessity of the Draft Invasive Species Permit and the rationale for SWRCB staff making it a high priority, and
- c. Stated that the provisions in the Draft Invasive Species Permit duplicate existing regulatory requirements of such agencies as Department of Fish and Game, and the various Regional Boards and county Flood Control Districts. Although SWRCB staff referenced Metropolitan's comments letter at the State Water Board (Board) hearing on November 2, 2010, the revised Draft Invasive Species Permit fails to address our previous concerns; and raises several additional issues that the Board must resolve with staff before proceeding with adoption of the Draft Invasive Species Permit.

Response:

- a. Staff has communicated with ACWA representatives, who indicated communication with Metropolitan, that we do not have the time to convene a Technical Advisory Committee. However, staff and ACWA, including Metropolitan, met on September 13, 2010 to discuss stakeholder concerns about the Draft Permit.
- b. At the November 2, 2010 Public Hearing, staff presented that the proposed Draft Aquatic Animal Invasive Species Permit has been prepared in response to the *National Cotton Council of America v. USEPA* decision by the Sixth Circuit Court of Appeals which requires that pesticide applications at, near, or over water that could result in the discharge of residual pesticides to waters of the US must be covered by an NPDES permit. Staff is making it a high priority because the Permit must be adopted by the April 2011 deadline to offer coverage for control of aquatic animal invasive species activities.
- c. Dischargers who are already covered by another permit do not need to enroll in the Aquatic Animal Invasive Species Control Permit.

Comment 6.03:

Staff has stated that the Draft Invasive Species Permit needs to become effective by April 2011 to meet legally mandated deadlines and the Environmental Protection Agency's (EPA) Pesticide General Permit (PGP). However, this deadline is not applicable to the current situation in California and may be more relevant to other parts of the United States.

Response:

See *National Cotton Council v. U.S. EPA* (6th Cir. 2009) 553 F.3d 927 regarding when permits are needed when applying pesticides at, near, or over water that could result in the discharge of pollutants.

USEPA is issuing the PGP for states that are not authorized to issue their own NPDES permits. California is an authorized state and must issue its own permits.

Comment 6.04:

Metropolitan does not presently need the Draft Invasive Species Permit for the application of sodium hypochlorite for mollusk control. Metropolitan applies sodium hypochlorite to a closed aqueduct system with no discharges at the time

of application. Potable water is discharged from our systems when we dewater for operations and maintenance shutdowns. These discharges are regulated under other existing discharge permits that contain limits for residual chlorine, and include monitoring and reporting provisions. Additionally, Metropolitan is already required to provide California Department of Fish and Game (pursuant to provisions of Assembly Bill 1683 and Section 2301 of the Fish and Game Code) a written Quagga Mussel Control Program which essentially duplicates the provisions of the Aquatic Pesticide Application Plan (APAP) contained in the Draft Invasive Species Permit.

Response:

See Response to Comment 6.02.c.

Comment 6.05:

Metropolitan is concerned that the Draft Invasive Species Permit is too prescriptive and does not provide the needed flexibility and emergency provisions to allow us to quickly address potential new and emerging invasive species with approved pesticides without a lengthy application, review, and approval process. Although there is a reopener provision in the Draft Invasive Species Permit, our understanding from SWRCB staff is that the amendment process is lengthy and could take three to six months.

Response:

See Response to Comment 1.16.

Comment 6.06:

Additionally, the monitoring and reporting provisions in the Draft Invasive Species Permit are more extensive than those in the existing SWRCB Aquatic Weed Permit and in EPA's PGP. The EPA PGP includes narrative based effluent limits rather than numeric effluent limits. The Draft Invasive Species Permit includes a requirement for toxicity testing (with the exception of sodium hypochlorite) that is not appropriate or scientifically sound to include in aquatic pesticide permits. The pesticides that Metropolitan applies are already approved by EPA under FIFRA and are applied in accordance with requirements designated on the pesticide label. Under these circumstances, additional monitoring, toxicity testing, and numeric limits create an unnecessary and duplicative additional burden, and create the inherent risk of conflict with the existing FIFRA requirements.

Response:

See responses to ACWA's comments.

7. Comment Letter 7 - San Francisco Baykeeper

Comment 7.01:

The Draft Permit should cover more pesticides used for the control of aquatic invasive species. The Draft Permit only covers pesticides containing sodium hypochlorite for the control of invasive mollusks, and only covers two pesticide products. However, section 301(a) of the CWA prohibits the discharge of *any* pollutant to waters of the United States, except in compliance with an NPDES permit. In the Factsheet, the Background section mentions that there are other

pesticide products in use to control other aquatic invasive species, and therefore, these other pesticide products should be covered by the Permit as well.

The SWRCB must continue to add additional pesticide products and receiving water limitations for ingredients as soon as possible to protect navigable waters as required under the CWA. Pursuant to 40 C.F.R. § 122.44(d)(1)(i), NPDES permits must contain limits that control *all* pollutants that are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. Whenever the Permit is re-opened to include additional pesticide products or other updates, the SWRCB must also provide for full public review and comments. The Draft Permit should be updated regularly as better information on active and inert ingredients is gathered.

Response:

The Permit covers only pesticides that are registered by DPR for aquatic use and control of aquatic animal invasive species. Although the Permit cited that lampricides and the pesticide carbaryl were suggested to be effective for controlling lampreys and European Green Crab, respectively, these pesticides are not registered with DPR. Staff's communications with DPR staff and review of DPR's database revealed that only the two pesticide products listed in the Draft Permit are registered for aquatic animal invasive species control, with the exception of rotenone. Due to extensive site-specific information required to adequately regulate rotenone, staff did not include it in the permit. See Response to Comment 1.16.

Comment 7.02:

The Draft Permit should enumerate additional provisions enabling full public review and citizen enforcement. The Draft Permit should enumerate additional provisions to enable full public comment and agency review. The public has a right to know about pesticide discharges before and after they occur.

Response:

See Response to Comment 3.11.

Comment 7.02a:

Before any discharge, an applicant's NOI and APAP should be made available online for public notice and comment for 30 days before the Board decides to issue a Notice of Applicability (NOA), allowing sufficient time for public input before approval may be granted. Only the APAP contains the specific technology-based effluent limitations, or BMPs for pesticide applications, and the APAP therefore must be included as part of the permit for public review and comment.

Response:

See Response to Comment 3.11.

Comment 7.02b:

Once issued, the NOA should also be made available online to inform the public about what specific pesticides may be used and any specific limitations.

Response:

See Response to Comment 3.11.

Comment 7.02c:

All monitoring reports and data generated under the Draft Permit should be made available to the public for review, just as DMRs are required to be.

Response:

Except for confidential statements of formulations which are submitted to DPR during pesticide product registrations, all information on the Permit is public information.

Comment 7.02d:

SMRs should be submitted monthly for periods in which any pesticide discharge occurs, as with most other DMRs and NPDES permits, and not merely on an annual basis as proposed in the Draft Permit.

Response:

Due to the nature of pest control, pesticide applications are conducted on an as-needed basis. Thus, residual pesticide discharges from these applications are not on a set schedule, unlike a typical wastewater treatment plant which discharges regularly and oftentimes constantly. Therefore, annual reporting is appropriate.

Comment 7.02e:

The SWRCB should implement random testing for pesticide residue and BMP implementation.

Response:

Comment noted. Inspections, which may include collecting samples and evaluation of control measures such as BMPs, are an integral part of the Water Boards' compliance program.

Comment 7.02f:

In order to reflect the statute of limitations codified at 28 U.S.C. § 2462, dischargers should be required to retain records for a period of five years. Any documents that dischargers are required to produce and retain should be available for public review pursuant to 33 U.S.C. § 1318(b).

Response:

The Permit implements Section 122.41(j)(2) of 40 C.F.R. which requires the discharger to retain records of all monitoring information for a minimum of three years.

Comment 7.03:

The Draft Permit contains an incomplete antidegradation analysis. The SWRCB Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. However, in the above antidegradation analysis the SWRCB uses unsubstantiated assumptions to justify its conclusion that the Draft Permit complies with antidegradation policies.

- a. First, this analysis assumes that the conditions of the Permit fulfill and meet all applicable water quality objectives, when, for instance the Draft Permit

- does not provide a complete explanation of all applicable water quality standards and objectives and what they specifically require. At times, subsections included in the Findings section seem to summarily conclude that the conditions of an applicable water quality objective are met through the Permit alone, without stating what the specific applicable water quality objective even is, much less what it specifically requires.
- b. Second, the excerpt assumes degradation to exceptional quality waters would only be temporary, when the Draft Permit allows applications “may be performed in a single, semi-continuous, or continuous treatment dosage” at the discretion of the discharger.
 - c. Third, the excerpt assumes that waters of exceptional quality degraded by the application of pesticides is “in the best interest of the people of the State,” which is not necessarily true.
 - d. Fourth, the excerpt assumes water quality standards and objectives will not be exceeded when the permit only covers one type of pesticide product and the receiving water may be subject to a barrage of chemicals not included in the “Receiving Water Limitations” table. Table 3 in the Permit lists only chlorine, when there are potentially thousands of active and inert ingredients used in pesticides. Therefore, an applicable water quality standard could be violated yet escape detection merely because a relevant ingredient was not listed.
 - e. Fifth and finally, just because receiving water limitations are included does not mean *all* applicable water quality standards and objectives will be met. For example, the Draft Permit only covers one type of pesticide product, where more may be applied to control other types of aquatic invasive pests such as the European Green Crab. The presence of un-monitored ingredients in a given waterbody can act synergistically, resulting in an exceedance of an applicable water quality standard or objective.

Response:

- a. The Aquatic Animal Invasive Species Control Permit is a general permit that applies to waters statewide. Thus, it is impracticable to list all of the water quality objectives (WQOs) that are provided in the Water Boards’ Water Quality Control Boards in their Water Quality Control Plans (Basin Plans) into the Permit.
- b. The Permit sets receiving water limitations for chlorine to protect aquatic life from the toxic effects of chlorine. In addition, the Permit also requires toxicity monitoring to determine if residues, including active ingredients, inert ingredients, and degradation byproducts, in any combination, from pesticide applications cause toxicity to the receiving water or adds toxicity to it if there is pre-existing toxicity prior to pesticide applications. If the latter cause toxicity or add to an existing toxicity, the discharger is required to perform an iterative process of evaluating its application methods, BMPs, or alternatives to the pesticide causing toxicity until the applications no longer cause or add toxicity. Compliance with receiving water limitations and other Permit requirements will ensure that degradation of State’s waters will be temporary and that the waters will be returned to pre-application conditions after project completion.

- c. See Response to Comment 7.03b.
- d. The Permit also includes toxicity testing to determine if residues, including active ingredients, inert ingredients, and degradation byproducts, in any combination, from pesticide applications cause toxicity to the receiving water or adds toxicity to it if there is pre-existing toxicity prior to pesticide applications. If the latter cause toxicity or add to an existing toxicity, the Discharger is required to perform an iterative process of evaluating its application methods, BMPs, or alternatives to the pesticide causing toxicity until the applications no longer cause or add toxicity.
- e. See Response to Comment 7.03d.

Comment 7.04:

The Draft Permit should provide better guidance and oversight for implementing the "least intrusive method" and other pollution minimization measures. The unequivocal purpose of the CWA is to eliminate the discharge of pollutants into navigable waters. Thus, the ultimate purpose of the SWRCB's draft Aquatic Invasive Species Permit is to eliminate the application of pesticide residues to California's waters to the maximum extent possible. The Draft Permit should explicitly require the use of the least toxic alternative or require that non-toxic methods of pest control be tried first, and set objective standards for BMPs. This is legally necessary under 40 C.F.R. 131.12(a)(2), which prohibits new or increased discharges to the nation's waters that are not necessary to accommodate important social or economic development.

Response:

Comment noted. Staff has revised Section VII.C.12 of the Permit to require evaluation of alternatives to pesticide use and the use of least toxic pesticides if there are no alternatives to their use.

Comment 7.04a:

The Permit should explicitly require the least toxic alternative. Under the Draft Permit, the discharger has a duty to mitigate effects to water quality from pesticide applications and must take all reasonable steps to minimize or prevent any discharge. This pollution minimization requirement and guidance for undertaking an alternatives analysis should be more explicit in the Permit. However, the Draft Permit should not merely suggest that selection of less toxic alternatives is an example of an effective BMP. Rather, in order to truly "minimize" discharges of pesticides the Draft Permit should contain an explicit presumptive preference for non-toxic alternatives to pesticide use in every case. The discharge of pesticides to water should only be allowed in situations where non-toxic alternatives have been tried and found to be unsuccessful. In that case, the Permit should require that preference be given to the safest pesticide evaluated in the lowest effective amount. The Draft Permit should explicitly include these strict minimization requirements in Section VII.C.12, where the Permit lists requirements for examining the Possibility of Alternatives contained in the APAP. These least-toxic requirements could help clarify sub-point (b) suggesting dischargers use "the least intrusive method of pesticide application," and sub-point (d) suggesting dischargers apply "a decision matrix concept to the choice of the most appropriate formulation." The Draft Permit should give

dischargers more guidance on what “a decision matrix concept” looks like, and define what an “appropriate formulation” of an alternatives analysis is by giving concrete guidance and prioritization criteria dischargers must abide by when deciding their preferred alternative. In the absence of numeric discharge limits, enforcement of these minimization requirements will be absolutely essential for protecting water quality.

Response:

See Response to Comment 7.04.

Comment 7.04b:

The SWRCB should set objective standards for when pesticide use is allowed for control of aquatic invasive species and should develop guidelines regarding what comprises BMPs in this context. As currently written, the discharger has considerable discretion in deciding the resulting discharge of pesticides into California's waters through private choices and action plans developed in the APAP. The Draft Permit fails to specify or designate which practices are considered BMPs, favoring "flexibility" instead. Thus, neither the Permit nor the Factsheet actually describe the particular management technologies that will control each applicator's discharges. While "flexibility" is desirable in order to tailor BMPs to individual circumstances, it does not preclude the SWRCB from providing more demonstrative examples of applicable BMPs, pinpointing where approved BMPs can be found in the aquatic animal invasive species management context, and giving additional guidance as to what methodologies are least intrusive. The SWRCB could also revise the Draft Permit or promulgate a guidance document to include prescribed categories of BAT/BCT for the control of different species, give lists and explanations of non-toxic alternatives that exist for control of each invasive species, and provide specific ways of reducing environmental impacts when pesticides must be used. As written, the requirements set forth in the Draft Permit are too generic to provide meaningful guidance on what specific practices reflect the application of technology that is the best available.

The Draft Permit needs to enumerate objective criteria for dischargers to evaluate and choose between BMPs, and needs additional guidance as to what some specific criteria require, such as guidelines to help the discharger establish densities for pest populations to serve as action threshold(s) for implementing pest management strategies.²⁸ Not all pesticide applicators have experience in determining whether and when actionable thresholds of pest populations are met, and allowing the regulated party to define the terms of regulation appears to be illegal under the CWA. Instead, the Draft Permit should set objective, scientifically-derived guidelines for the establishment of 'action thresholds' allowing pesticide use. Furthermore, the SWRCB should specify that in calculating action thresholds, environmental and human health considerations should take precedence over those relating to economic, aesthetic, or other effects.

The Draft Permit should also further discuss various methods of pesticide application and attempt to categorize these generally according to the least harmful method. The development and implementation of site-specific control

measures or BMPs in the APAP is the only place where the best available and practicable technologies will be selected and required to reduce or eliminate pesticide discharge, and thus, its requirements must also be enforceable as a limitation in the Permit.

Response:

Comment noted. Since staff barely had time to draft the Permit, there was no time to develop BMP guidelines.

Comment 7.05a:

The Draft Permit should require clear and enforceable standards for individual monitoring and toxicity testing. The Draft Permit should require individual monitoring by dischargers in order to provide meaningful data with which to review each individual discharger's compliance with permit requirements and water quality standards. Federal law requires that all NPDES permits specify "[r]equired monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity." 40 C.F.R. § 122.48(b). However, the Draft Permit provides that if "the Discharger elects in its APAP to undertake monitoring and reporting through a Coalition, then the Coalition will act on behalf of the Discharger with respect to monitoring and reporting", and encourages a collective Watershed Management Approach (WMA). The permit should not substitute group monitoring for individual monitoring because it is unclear how or whether individual liability could result from Coalition monitoring that uncovers an exceedance of water quality standards. In order to determine the water quality impacts, data on each individual discharger, specifics on which pesticide products were used, and each individual water body are needed--not just the entire watershed.

Response:

After further review, staff now thinks that watershed monitoring may not be appropriate for the dischargers that would be regulated under the Permit for the following reasons:

- a. Each discharger deals with a discrete body of water that may not be amenable to group monitoring. For example, the Metropolitan Water District may have an infestation in one of its reservoirs and the Los Angeles Department of Water may have a similar infestation in its reservoir. Since one reservoir could not represent the other, sampling each reservoir would be required; and
- b. Infestations are unlikely to happen simultaneously in different water bodies.

Thus, staff deleted the reference to watershed monitoring.

Comment 7.05b:

Ideally, the Draft Permit should require water quality monitoring before and after each pesticide application, and require submission of monitoring reports on a monthly basis. Dischargers are rightfully required to conduct monitoring before, during and after the pesticide application to ensure that non-target organisms are not adversely affected by the pesticide. However, the Draft Permit undercuts its own monitoring requirements, stating that the State Water Board Deputy Director of the Division of Water Quality may "approve reductions in monitoring

frequencies if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted." This provision does not enumerate the criteria with which the Deputy Director will approve or deny a request, while historically, the absence and lack of pesticide monitoring data supports the need for more, not less, monitoring requirements.

Response:

Although it is a necessary requirement of an NPDES permit, monitoring should effectively address specific monitoring questions. If the data are not being used to answer a specific question, the need for the monitoring should be scrutinized. Alternatively, when a monitoring question is answered, there is an expectation that some management action will occur. Finally, monitoring should be adaptive and that more monitoring should be allocated to discharges that result in greater environmental impact. In contrast, when little to no impact is observed, adaptive triggers should be in place for reducing the level of effort.

The Permit's monitoring program is built on a risk-based monitoring approach. Basically, it uses the data to determine whether more or less monitoring is warranted. Since the location that receives the most applications will likely show the highest concentrations of residuals, it makes sense to include that location in the monitoring program. If testing at this location shows no exceedance of receiving water limitations, we can conclude that areas that receive fewer applications would also show no exceedance of receiving water limitations. If the most-heavily applied locations show exceedances, discharger shall evaluate its application methods, BMPs, or consider alternatives to the pesticide. Similarly in toxicity testing, after a discharger has shown six consecutive samples of no toxicity, monitoring for toxicity will be discontinued. If toxicity is detected, the discharger shall evaluate its application methods, BMPs, or consider alternatives to the pesticide. The discharger will continue to monitor for toxicity each time new application method is used, a BMP is changed, or an alternative product is used.

Comment 7.05c:

In the MRP attachment C, toxicity testing should be required of all dischargers regardless of whether chlorine is the only active ingredient in the aquatic pesticide used.³⁵ While SWRCB staff "found that sodium hypochlorite is the only active ingredient in all the pesticide products used to control zebra mussels," the California Department of Fish and Game (CDFG) Invasive Species Program was also "aware of pesticide products still in development for control of zebra/ quagga mussels." Therefore, it is foreseeable that chlorine will not be the only toxicant that results from pesticide products that are used to control invasive mussels, much less all of the other aquatic animal invasive species not covered by the Draft Permit. Moreover, just because chlorine may be the only active ingredient listed, several inactive or inert ingredients may be present that also contain toxic pollutants or pollutants that could affect water quality.³⁸ Therefore, toxicity testing should be required for all dischargers.

Response:

See Response to Comment 7.03d.

Comment 7.06a:

The "Corrective Action Deadlines" provision should be changed to include an actual deadline for changes to be made to BMPs before the next pesticide application event that results in a discharge. The Permit should omit the language currently allowing a corrective action "as soon as possible thereafter" if it is not "practicable" for the discharger to change application measures before the next pesticide application. This language would allow an exceedance of a water quality standard or objective for an indefinite amount of time. Instead, where the discharger ("and Regional or State Board," should be additionally specified in the text of this provision), determines corrective action is necessary, an applicator should not be allowed to discharge pesticides any further until the corrective action is taken. The Corrective Action Deadlines provision needs an actually-enforceable deadline, such as the Discharger is prohibited from any further applications and has 30 days to undertake the corrective action.

Response:

Staff concurs and has added 60 days for the discharger to take corrective actions.

Comment 7.06b:

Also note that the five-day written report should still be required when reporting non-compliance regardless whether an oral report was received within 24 hours. No criteria for determining a waiver is provided for in the Draft Permit, leaving room for abuse of discretion, and lack of reviewability. In the case of adverse incidents, written documentation is necessary for the public to determine whether the discharger is in compliance.

Response:

Staff concurs and has deleted the reporting waiver language.

Comment 7.07:

The Draft Permit should explicitly prohibit discharges of pesticides in areas that could adversely affect listed species. Even though the Draft Permit provides that the Discharger is responsible for meeting all ESA requirements, the Draft Permit still provides hyperlinks to NMFS, NOAA, and the U.S. Fish & Wildlife Service for the federal list of endangered species. These hyperlinks should be included in the NOI Instructions to give dischargers more guidance where pesticide discharges could adversely affect listed species, and to provide information regarding requirements to obtain an ESA Section 10 "take permit," at 16 U.S.C. § 1539. The SWRCB should identify any pesticides known to be hazardous to a protected species in consultation with the EPA and Fish & Wildlife Service. Toward that end, and in the case of the San Francisco Bay Region, the Permit should reference provisions of the recent pesticide use Injunction issued by the U.S. District Court, N.D., in May 2010 under which the EPA must develop and distribute a brochure detailing new interim pesticide use restrictions. The CBD lawsuit was based on scientific evidence demonstrating potential harm to specific Bay Area wildlife from the specific pesticides evaluated, and demonstrates how the ESA may impose additional requirements. Meanwhile, the Factsheet mentions that carbaryl was "suggested as a likely effective chemical control of the European Green Crab", when the green crab was first detected in the SF Bay

in the late 1980's and it has spread along 300 miles of the coastal California. Therefore, it is foreseeable that cabaryl could be applied to waters in the SF Bay to control the European green crab, contrary to the pesticide use restrictions listed in the CBD injunction. Therefore, the Draft Permit or NOI form should include a hyperlink or somewhere reference the pesticide restrictions described in the EPA brochure or web-based interactive map.

Response:

Staff has added the hyperlinks to NMFS, NOAA, and the U.S. Fish & Wildlife Service for the federal list of endangered species to the NOI.

8. Comment Letter 8 - Environmental Groups

Comment 8.01:

Strengthen requirements for alternatives analysis – We commend the Board for requiring an analysis of alternatives to pesticides in permit applications, but urge the agency to strengthen those requirements. These requirements do not go far enough in protecting our state's waterways. As the Board concedes, traditional "end-of-pipe" treatment is not a practicable option for controlling the well-documented impacts of pesticide use. DGP pp. 9-10. And yet, the draft permit contains *no* strict mandate to *reduce or eliminate* pesticide use, to choose the *least harmful alternative*, or, where pesticide use is unavoidable, to use *lowest effective amount*. We would like to see the permit strengthened in all of these regards. The permit should require applicators to use the least toxic alternative in *all cases*, or require that these applicators attempt non-toxic methods of pest control *first* (and prove that these methods were ineffective) before pesticides may be used. Attachment pp. 16-18 (Comment 13). We want to see applicators actually considering and using alternatives instead of just "going through the motions" with respect to this requirement. Also, the Board – *not* the applicators – should set objective standards for when pesticide use is allowed, and work with EPA to develop guidelines as to what management practices are truly the "best" at reducing environmental impacts. Attachment pp. 18-21 (Comment 14-16).

Response:

Comment noted. Staff has revised Section VII.C.12 of the Permit to require evaluation of alternatives to pesticide use and the use of least toxic pesticides if there are no alternatives to their use.

Comment 8.02:

Strengthen protections for water bodies that are already degraded, that may serve as supplies of drinking water, or that provide habitat for sensitive species. *The permit forbids the discharge of pesticide residues and degradates to impaired waters, but only where those waters are impaired by the specific active ingredient of the pesticide being discharged. DGP p. 16.*

This requirement is too narrowly drawn. As the Board has noted elsewhere, over one-quarter of the state's waters are already impaired – that is, are *not* meeting applicable water quality standards – for "pesticide-related" constituents. Attachment pp. 9-10 (Comment 4). But the Board rarely (if ever) specifies the *active ingredient* causing such impairment, and some waters may be even *more*

severely impaired by so-called “inert” ingredients. Attachment p. 8 (Comment 3). To close this loophole, the Board should exclude from coverage under the general permit all discharges to waters that are impaired generally for “pesticides,” or for substances or conditions known to exacerbate the harmful effects of pesticides (such as mercury or low dissolved oxygen). Further, the Board should specify a presumption that *all* chemical pesticide applications will leave a residue, and reject any argument that the permit’s terms should be made less strict for applications of biological pesticides. Attachment pp. 6-8 (Comments 1-2).

Response:

The receiving water limitations will ensure that residual pesticide discharges will not exceed the water quality objectives required to protect the beneficial uses of the receiving water. The toxicity testing and related requirements will ensure that the residual pesticide discharges will not cause toxicity or add to an existing toxicity.

Comment 8.03:

The permit contains no special considerations for pesticide applications directly into drinking water sources or indirectly into aquifers that feed drinking wells. Many California residents do not draw drinking water from a municipal water system, but drink water from wells and springs. When pesticide discharges have the potential to impact sources of drinking water, the Board should impose further limitations on pesticide use, if not an outright ban. At the very least, such discharges should be allowed only pursuant to an individual NPDES permit, which can better account for the specific risks presented. Attachment p. 10 (Comment 5).

Response:

The Permit contains receiving water limitations which are based on the most stringent water quality objectives to protect all the beneficial uses of the receiving water including use for drinking water.

Comment 8.04:

The draft general permit allows discharges into areas containing endangered and threatened species with no additional restrictions whatsoever. Applicators must merely notify federal agencies after the fact when such discharges occur. DGP pp. 21-22. The permit should afford proactive protection to endangered or threatened species. Applicators should avoid discharges into areas containing such species, or at least be made to minimize the amount and frequency of such discharges. Attachment p. 10 (Comment 5).

Response:

See Response to Comment 8.02.

Comment 8.05:

Strengthen site monitoring requirements – Although we applaud the Board for requiring in-stream monitoring and providing for toxicity triggers, we urge that this program be expanded.

The draft permit requires in-stream monitoring for active pesticide ingredients and toxicity indicators, both before and after the application occurs. DGP pp. C-2 to C-7. This monitoring need be done only six times per year, however, at intervals to be determined by the discharger. DGP pp. C-8 to C-9.

The Board should require water quality monitoring before and after *each and every* pesticide application. Especially since the Board is establishing *no* numeric effluent limits for pesticide discharges, post-application monitoring will be crucial in guaranteeing that pesticide use does not contribute to environmental degradation.

Response:

See Response to 7.05b.

Comment 8.06:

Strengthen right-to-know and public engagement opportunities – Pesticide applications to water bodies impact public health and the environment, and the public has a right to know about pesticide discharges before and after they occur.

The Board requires potential applicants to submit notices of intent (NOIs) and aquatic pesticide action plans (APAPs) prior to obtaining coverage, but does not require any of this information to be made available for public notice and comment. DGP p. 5. Discharge monitoring reports need only be submitted on an annual basis. DGP pp. C-9 to C-11.

A well-informed public is an indispensable ally in the fight against water pollution. *Before* any discharges of pesticides are permitted, the Board should make available on its website all NOIs and APAPs submitted for approval, and allow sufficient time for public input before approval may be granted. Attachment pp. 13-14 (Comment 10), p. 24 (Comment 20). Likewise, *after* a discharge occurs, the Board should make available on its website all data submitted pursuant to the permit's monitoring provisions. Attachment pp. 24-25 (Comment 21). Concerned residents shouldn't have to wait an entire year to see monitoring data relating to potentially toxic discharges in their neighborhoods – as with most other NPDES permits, these data should be submitted *monthly* for periods in which any pesticide discharge occurs.

Response:

See Response to 3.11.

9. Comment Letter 9 - Regional Water Board 6

Comment 9.01:

Section II. A. - General Permit Coverage indicates that the General Permit covers direct applications for aquatic animal invasive species control. Staff of the Lahontan Regional Water Quality Control Board (Lahontan Water Board) recommend that the General Permit include a definition of invasive species so that the number of pesticide applications eligible for coverage under the General

Permit is limited to only those necessary to control species that establish and reproduce rapidly outside of their native range and have the potential to negatively impact human health, the environment, or the economy. Staff suggests referencing a definition for invasive species similar to the one mentioned in the California Aquatic Invasive Species Management Plan (Management Plan). Including a definition will make it clear to applicants that the General Permit is specifically intended to cover aquatic invasive species rather than over abundant and perhaps nuisance indigenous species that are more appropriately controlled with non-chemical measures.

Additionally, the General Permit should explicitly state that its applicability is limited to applications of sodium hypochlorite that are applied to control aquatic animal invasive species identified in the Management Plan or a more region-specific management plan prepared for a specific watershed or waterbody.

Response:

Footnote 4 of Section II.A of the Draft Permit provides a definition for “aquatic animal invasive species” similar to the one in CDFG Management Plan. Staff also included the definition in Attachment A.

Comment 9.02:

Section II.C. To accommodate for pesticide applications that meet the General Permit definition of "emergency," the General Permit should modify the above-listed requirements if preparation and submittal of such documents (Aquatic Pesticide Application Plan or APAP, Monitoring Plan) would preclude rapid implementation of control measures. For example, in emergency situations, it may be appropriate to waive certain elements of the APAP (i.e. information required in Section VII.C. element no. 11. a-d- Identify the Problem) or allow the Discharger to submit this information within 14 days of project implementation. Attachment C (Monitoring and Reporting Program) of the General Permit should also include specific monitoring expectations for emergency projects, but allow Dischargers to submit their monitoring plan within 14 days following the pesticide application. For a time-sensitive project, this allows Dischargers to focus their resources on responding rapidly while complying with the pre-, event, and post-application monitoring requirements.

Response:

The NPDES regulations do not include provisions for emergency situations.

Comment 9.03:

Section VIII.A.8. The reference to Section VIII.C.10 is a typo. That section does not exist in this permit. I think the writers meant Section VII.C.12. Additionally, this provision requires the Discharger to implement identified alternatives that could reduce potential water quality impacts. This does not allow for the possibility that the alternatives examined are ineffective and can be dismissed after analysis in preference for discharge.

Response:

Staff has corrected the reference to Section VII.C.12 in the Draft Permit. Staff has also followed “identified alternative measures” with “feasible and effective” to allow for implementation dismissal of ineffective alternatives in Section VIII.A.8.

Comment 9.04:

Perhaps some language can be inserted into the draft permit for pesticides for Aquatic Animal Invasive Species that allows for consideration of other pesticides.

Response:

Section VIII.C.1.f of the Permit allows for reopening of the General Permit to add pesticides products registered by DPR to control aquatic animal invasive species.

10. Comment Letter 10 - San Diego County Water Authority

Comment 10.01:

Issuance of a permit relating to Aquatic Animal Invasive Species Control should be delayed. Currently, water suppliers are struggling with the spread of Quagga Mussels within our local conveyance and raw water storage systems. This current best available treatment is chlorine, as specified by the State Department of Fish and Game, which is critical to managing the growth and spread of this invasive species. There has been no demonstrated water quality impacts associated with the existing treatment. In addition, improved methods for control of invasive species are being developed and will be likely to change significantly over the next few years. There is significant expertise in this area within the water industry. We recommend that you convene a technical advisory committee (TAC) to develop approaches and standards for managing these invasive species and any resulting water quality impacts. This will result in standards that are based both in science and practicality taking into consideration likely chemical treatment that will be used.

Response:

See responses to ACWA's comments.

Comment 10.02:

The Permit Coverage should Specifically Exclude Regulation of Water Supplies. The permit, as written, applies to the point source discharge of pesticide residues. Currently, our imported water supplies may contain constituents, such as TDS, that are above the basin plan objective. The permit should be clear that all the discharge monitoring and quality specifications apply only to the constituents associated with pesticide application itself and not to other constituents that may already be present in the water supply.

Response:

The Permit is proposing to regulate discharges of residues from aquatic animal invasive species control applications. If the discharge of residues causes violations of applicable laws and regulations, including water quality objectives in Regional Water Board Basin Plans, it would be a violation of the Permit.

Comment 10.03:

The chlorine residual standards in the permit should be set at levels which are measurable in the field. The current proposed chlorine residual standard is set at a limitation of 10 ug/L monthly average and 20 ug/L daily maximum. These proposed concentrations cannot be measured using normal field measurement equipment. Transfer of samples to a laboratory could result in a loss of chlorine

residual during the process, and a lack of timely results to make a determination of acceptability of the discharge. Therefore, we recommend that you allow measurements in the field using normal field laboratory equipment. The standard should specify acceptable field monitoring approaches and set a standard of non-detect.

Response:

Footnote 5 of Table C-1 in the Permit indicates that "Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136." Section V.C.3 of Attachment C in the Permit provides reporting protocols for non-detects. "Sample results less than the laboratory's MDL shall be reported as "<" followed by the MDL. Also, see Response to Comment 1.08

Comment 10.04:

A New Rulemaking Process should be Instituted as New Pesticides are Proposed for Application. The current permit should be limited to the application of chlorine for invasive species control. A new rulemaking process should be instituted as new pesticides are added to the permit, so that monitoring requirements can be specified that are applicable to each pesticide that is being used. The permit speculatively includes acute and chronic toxicity monitoring under the premise of not knowing which chemical constituents might be present in aquatic pesticides used in the future. Toxicity testing requirements should be tied only to those applied chemicals where there is demonstrated need for the testing and not to all chemical applications. This issue can be addressed through the rulemaking process.

Response:

See Response to Comment 1.09 regarding toxicity testing. See Response to Comment 1.16 regarding addition of new pesticides.