CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

MONITORING AND REPORTING PROGRAM
ORDER NO. R3-2012-0011-01

TIER 1

DISCHARGERS ENROLLED UNDER
THE CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR
DISCHARGES FROM IRRIGATED LANDS

This Monitoring and Reporting Program Order No. R3-2012-0011-01 (MRP) is issued pursuant to California Water Code (Water Code) section 13267 and 13269, which authorize the California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board) to require preparation and submittal of technical and monitoring reports. Water Code section 13269 requires a waiver of waste discharge requirements to include as a condition, the performance of monitoring and the public availability of monitoring results. The Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands Order No. R3-2012-0011 (Order) includes criteria and requirements for three tiers. This MRP sets forth monitoring and reporting requirements for **Tier 1 Dischargers** enrolled under the Order. A summary of the requirements is shown below.

SUMMARY OF MONITORING AND REPORTING REQUIREMENTS FOR TIER 1:

Part 1: Surface Receiving Water Monitoring and Reporting *(cooperative or individual)*;
Part 2: Groundwater Monitoring and Reporting;

Pursuant to Water Code section 13269(a)(2), monitoring requirements must be designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions. The monitoring and reports required by this MRP are to evaluate effects of discharges of waste from irrigated agricultural operations and individual farms/ranches on waters of the state and to determine compliance with the Order.

MONITORING AND REPORTING BASED ON TIERS

The Order and MRP includes criteria and requirements for three tiers, based upon those characteristics of individual farms/ranches at the operation that present the highest level of waste discharge or greatest risk to water quality. Dischargers must meet conditions of the Order and MRP for the appropriate tier that applies to their land and/or the individual farm/ranch. Within a tier, Dischargers comply with requirements

based on the specific level of discharge and threat to water quality from individual farms/ranches. The lowest tier, Tier 1, applies to dischargers who discharge the lowest level of waste (amount or concentration) or pose the lowest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. The highest tier, Tier 3, applies to dischargers who discharge the highest level of waste or pose the greatest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. Tier 2 applies to dischargers whose discharge has a moderate threat to water quality. Water quality is defined in terms of Regional, State, or Federal numeric or narrative water quality standards. Per the Order, Dischargers may submit a request to the Executive Officer to approve transfer to a lower tier.

PART 1. SURFACE RECEIVING WATER MONITORING AND REPORTING REQUIREMENTS

Monitoring and reporting requirements for surface receiving water identified in Part 1.A. and Part 1.B. apply to Tier 1 Dischargers. Surface receiving water refers to water flowing in creeks and other surface waters of the State. Surface receiving water monitoring may be conducted through a **cooperative monitoring program**, or Dischargers may choose to conduct surface receiving water monitoring and reporting individually. Key monitoring and reporting requirements for surface receiving water are shown in Tables 1 and 2. Time schedules are shown in Table 4.

A. Surface Receiving Water Quality Monitoring

1. Dischargers must elect a surface receiving water monitoring option (cooperative monitoring program or individual receiving water monitoring) to comply with surface receiving water quality monitoring requirements, and identify the option selected on the Notice of Intent (NOI).

2. Dischargers are encouraged to choose participation in a cooperative monitoring program (e.g., the existing Cooperative Monitoring Program or a similar program) to comply with receiving water quality monitoring requirements. Dischargers not participating in a cooperative monitoring program must conduct surface receiving water quality monitoring individually that achieves the same purpose.

3. Dischargers (individually or as part of a cooperative monitoring program) must conduct surface receiving water quality monitoring to a) assess the impacts of waste discharges from irrigated lands to receiving water, b) assess the status of receiving water quality and beneficial use protection in impaired waterbodies dominated by irrigated agricultural activity, c) evaluate status, short term patterns and long term trends (five to ten years or more) in receiving water quality, d) evaluate water quality impacts resulting from agricultural discharges (including but not limited to tile drain

discharges), e) evaluate stormwater quality, f) evaluate condition of existing perennial, intermittent, or ephemeral streams or riparian or wetland area habitat, including degradation resulting from erosion or agricultural discharges of waste, and g) assist in the identification of specific sources of water quality problems.

Surface Receiving Water Quality Sampling and Analysis Plan

4. **Within three months** of adoption of the Order, Dischargers (individually or as part of a cooperative monitoring program) must submit a surface receiving water quality Sampling and Analysis Plan and Quality Assurance Project Plan (QAPP). Dischargers (or a third party cooperative monitoring program) must develop the Sampling and Analysis Plan to describe how the proposed monitoring will achieve the objectives of the MRP and evaluate compliance with the Order. The Sampling and Analysis Plan may propose alternative monitoring site locations, adjusted monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water. The Executive Officer must approve the Sampling and Analysis Plan and QAPP.

5. The Sampling and Analysis Plan must include the following minimum required components:
    a. Monitoring strategy to achieve objectives of the Order and MRP;
    b. Map of monitoring sites with GIS coordinates;
    c. Identification of known water quality impairments and impaired waterbodies per the 2010 Clean Water Act 303(d) List of Impaired Waterbodies (List of Impaired Waterbodies);
    d. Identification of beneficial uses and applicable water quality standards;
    e. Identification of applicable Total Maximum Daily Loads;
    f. Monitoring parameters;
    g. Monitoring schedule, including description and frequencies of monitoring events;
    h. Description of data analysis methods;

6. The QAPP must include receiving water and site-specific information, project organization and responsibilities, and quality assurance components of the MRP. The QAPP must also include the laboratory and field requirements to be used for analyses and data evaluation. The QAPP must contain adequate detail for project and Water Board staff to identify and assess the technical and quality objectives, measurement and data acquisition methods, and limitations of the data generated under the surface receiving water quality monitoring. All sampling and laboratory methodologies and QAPP content must be consistent with U.S. EPA

methods, State Water Board's Surface Water Ambient Monitoring Program (SWAMP) protocols and the Central Coast Water Board's Central Coast Ambient Monitoring Program (CCAMP). Following U.S. EPA guidelines[1] and SWAMP templates[2], the receiving water quality monitoring QAPP must include the following minimum required components:

a. Project Management. This component addresses basic project management, including the project history and objectives, roles and responsibilities of the participants, and other aspects.
b. Data Generation and Acquisition. This component addresses all aspects of project design and implementation. Implementation of these elements ensures that appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, and quality control activities are employed and are properly documented. Quality control requirements are applicable to all the constituents sampled as part of the MRP, as described in the appropriate method.
c. Assessment and Oversight. This component addresses the activities for assessing the effectiveness of the implementation of the project and associated QA and QC activities. The purpose of the assessment is to provide project oversight that will ensure that the QA Project Plan is implemented as prescribed.
d. Data Validation and Usability. This component addresses the quality assurance activities that occur after the data collection, laboratory analysis and data generation phase of the project is completed. Implementation of these elements ensures that the data conform to the specified criteria, thus achieving the MRP objectives.

7. The Central Coast Water Board may conduct an audit of contracted laboratories at any time in order to evaluate compliance with the QAPP.

8. The Sampling and Analysis Plan and QAPP, and any proposed revisions are subject to approval by the Executive Officer. The Executive Officer may also revise the Sampling and Analysis Plan, including adding, removing, or changing monitoring site locations, changing monitoring

[1] USEPA. 2001 (2006) USEPA Requirements for Quality Assurance Project Plans (QA/R-5) Office of Environmental Information, Washington, D.C. USEPA QA/R-5
[2] http://waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water.

Surface Receiving Water Quality Monitoring Sites

9. The Sampling and Analysis Plan must, at a minimum, include monitoring sites to evaluate waterbodies identified in Table 1, unless otherwise approved by the Executive Officer. The Sampling and Analysis Plan must include sites to evaluate receiving water quality impacts most directly resulting from areas of agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long term monitoring sites included in related monitoring programs (e.g. CCAMP and the existing CMP). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual dischargers. Any modifications must consider sampling consistency for purposes of trend evaluation.

Surface Receiving Water Quality Monitoring Parameters

10. The Sampling and Analysis Plan must, at a minimum, include the following types of monitoring and evaluation parameters listed below and identified in Table 2:

    a. Flow Monitoring;
    b. Water Quality (physical parameters, metals, nutrients, pesticides);
    c. Toxicity (water and sediment);
    d. Assessment of Benthic Invertebrates;

11. All analyses must be conducted at a laboratory certified for such analyses by the State Department of Public Health (CDPH) or at laboratories approved by the Executive Officer. Unless otherwise noted, all sampling, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, U.S. EPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link:http://www.cdph.ca.gov/certlic/labs/Documents/ELAPLablist.xls

12. Water quality and flow monitoring is used to assess the sources, concentrations, and loads of waste discharges from individual farms/ranches and groups of Dischargers to surface waters, to evaluate impacts to water quality and beneficial uses, and to evaluate the short term patterns and long term trends in receiving water quality. Monitoring

data must be compared to existing numeric and narrative water quality objectives.

13. Toxicity testing is to evaluate water quality relative to the narrative toxicity objective. Water column toxicity analyses must be conducted on 100% (undiluted) sample. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a Toxicity Identification Evaluation (TIE) to identify the individual discharges causing of the toxicity.

Surface Receiving Water Quality Monitoring Frequency and Schedule

14. The Sampling and Analysis Plan must include a schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. Table 2 includes minimum monitoring frequency and parameter lists. Agricultural parameters that are less common may be monitored less frequently. Modifications to the receiving water quality monitoring parameters, frequency, and schedule may be submitted for Executive Officer consideration and approval. At a minimum, the Sampling and Analysis Plan schedule must consist of monthly monitoring of common agricultural parameters in major agricultural areas, including two major storm events during the wet season (October 1 – April 30).

15. Storm event monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event that results in significant increase in stream flow. For purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion or other water quality problem. A significant storm event will generally result in greater than 1-inch of rain within a 24-hour period.

16. **Within six months** of adoption of the Order, Dischargers (individually or as part of a cooperative monitoring program) must initiate receiving water quality monitoring per the Sampling and Analysis Plan and QAPP approved by the Executive Officer.

B. Surface Receiving Water Quality Reporting

Surface Receiving Water Quality Data Submittal

1. **Within nine months** of adoption of this Order and quarterly thereafter (by January 1, April 1, July 1, and October 1), Dischargers (individually or as part of a cooperative monitoring program) must submit water quality

monitoring data to the Central Coast Water Board electronically, in a format specified by the Executive Officer and compatible with SWAMP/CCAMP electronic submittal guidelines.

Surface Receiving Water Quality Monitoring Annual Report

2. **Within one year** of adoption of this Order and annually thereafter by January 1, Dischargers (individually or as part of a cooperative monitoring program) must submit an Annual Report electronically, in a format specified by the Executive Officer, including the following minimum elements:
    a. Signed Transmittal Letter;
    b. Title Page;
    c. Table of Contents;
    d. Executive Summary;
    e. Summary of Exceedance Reports submitted during the reporting period;
    f. Monitoring objectives and design;
    g. Monitoring site descriptions and rainfall records for the time period covered;
    h. Location of monitoring sites and map(s);
    i. Tabulated results of all analyses arranged in tabular form so that the required information is readily discernible;
    j. Summary of water quality data for any sites monitored as part of related monitoring programs, and used to evaluate receiving water as described in the Sampling and Analysis Plan.
    k. Discussion of data to clearly illustrate compliance with the Order and water quality standards;
    l. Discussion of short term patterns and long term trends in receiving water quality and beneficial use protection;
    m. Evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for Toxicity Identification Evaluations (TIEs);
    n. Identification of the location of any agricultural discharges observed discharging directly to surface receiving water;
    o. Electronic data submitted in a SWAMP/CCAMP comparable format;
    p. Sampling and analytical methods used;
    q. Copy of chain-of-custody forms;
    r. Field data sheets, signed laboratory reports, laboratory raw data;
    s. Associated laboratory and field quality control samples results;
    t. Summary of Quality Assurance Evaluation results;
    u. Specify the method used to obtain flow at each monitoring site during each monitoring event;
    v. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date;
    w. Conclusions;

PART 2. GROUNDWATER MONITORING AND REPORTING REQUIREMENTS

Monitoring and reporting requirements for groundwater identified in Part 2.A. and Part 2.B. apply to Tier 1 Dischargers. Key monitoring and reporting requirements for groundwater are shown in Table 3. Time schedules are shown in Table 4.

A. Individual Groundwater Monitoring

1. **Within one year** of adoption of the Order, Dischargers must initiate sampling of private domestic drinking water and agricultural groundwater wells on their farm/ranch to evaluate groundwater conditions in agricultural areas, identify areas at greatest risk for nitrogen loading and exceedance of drinking water standards, and identify priority areas for follow up actions.

2. Dischargers must sample at least one groundwater well for each farm/ranch on their operation. For farms/ranches with multiple groundwater wells, Dischargers must sample the primary irrigation well and all wells that are used or may be used for drinking water purposes. Groundwater monitoring parameters must include well screen interval depths (if available), general chemical parameters, and general cations and anions listed in Table 3.

3. Dischargers must conduct two rounds of monitoring groundwater wells, one sample collected during fall **(September - December)** and one collected during spring (**March - June)**. The first round of monitoring must be completed by December 2012. These two rounds of monitoring must be repeated every 5 years. As an alternative to groundwater monitoring requirements, where existing groundwater data is available, Dischargers may submit the following for Executive Officer approval:
    a. Existing groundwater quality data for individual farms/ranches that meet the following criteria: 1) at least one groundwater well for an individual farm/ranch, 2) a minimum of two samples collected for each well within the last five years, and 3) samples analyzed for nitrate using U.S. EPA approved analytical methods.
    b. Reference or citation of local groundwater quality monitoring study that includes data collected within the last 5 years and documents that local groundwater quality in the uppermost aquifer does not exceed drinking water standards.

4. Groundwater samples must be collected by a qualified third-party (e.g., consultant, technician, person conducting cooperative monitoring) using proper sampling methods, chain-of-custody, and quality assurance/quality control protocols. Groundwater samples must be collected at or near the well head before the pressure tank and prior to any well head treatment. In cases where this is not possible, the water sample must be collected from a

sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.

5. Laboratory analyses for groundwater samples must be conducted by a State certified laboratory according to U.S. EPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, United States Environmental Protection Agency, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link : http://www.cdph.ca.gov/certlic/labs/Documents/ELAPLablist.xls

6. In lieu of conducting individual groundwater monitoring, Dischargers may participate in a cooperative groundwater monitoring effort to help minimize costs and to develop an effective groundwater monitoring program. Qualifying cooperative groundwater monitoring and reporting programs may include, but are not limited to, regional or subregional groundwater programs developed for other purposes as long as the proposed cooperative groundwater monitoring program meets the Central Coast Water Board's general purpose of characterizing groundwater quality and ensuring the protection of drinking water sources. Proposals for cooperative groundwater monitoring efforts, including the use of other regional or subregional groundwater monitoring programs, must be approved by the Executive Officer. At a minimum, the cooperative groundwater monitoring effort must include sufficient monitoring to adequately characterize the groundwater aquifer(s) in the local area of the participating Dischargers, characterize the groundwater quality of the uppermost aquifer, and identify and evaluate groundwater used for domestic drinking water purposes. Cooperative groundwater monitoring efforts must comply with the requirements for sampling protocols and laboratory analytical methods identified in this MRP, including parameters listed in Table 3, or propose a functional equivalent that meets the same objectives and purposes as individual groundwater monitoring. The cooperative groundwater monitoring program must report results consistent with individual groundwater reporting defined in part 2.B, or report results in a manner that is consistent with that approved by the Executive Officer in his or her approval of the cooperative groundwater monitoring proposal. Dischargers electing to participate in a cooperative groundwater monitoring effort must convey this election to the Central Coast Water Board **by August 1, 2012**, and the individual groundwater monitoring requirements shall not apply as long as a cooperative groundwater monitoring proposal for that Discharger's area is submitted within one (1) year of adoption of this Order. If no cooperative groundwater monitoring proposal for that Discharger's area is submitted within one (1) year, then the individual

groundwater monitoring provisions shall apply and the Discharger shall have one (1) year to comply with the provisions identified in Part 2.

B. Individual Groundwater Reporting

1. **By October 1, 2013**, Dischargers must submit groundwater monitoring results and information, electronically, in a format specified by the Executive Officer. Dischargers must include the following information:
    a. Signed transmittal letter;
    b. Number of groundwater wells present at each farm/ranch;
    c. Identification of any groundwater wells abandoned or destroyed (including method destroyed) in compliance with the Order;
    d. Owner-assigned well identification;
    e. State identification number, if available;
    f. Well location (latitude and longitude);
    g. Water-use category (e.g., domestic drinking water, agricultural);
    h. Identification of primary irrigation well;
    i. Well construction information (e.g., total depth, screened intervals, depth to water), as available;
    j. Use for fertigation or chemigation;
    k. Presence and type of back flow prevention devices;
    l. Photo-documentation of well condition and back flow prevention device **(photos must be maintained in the Farm Plan and submitted upon request of the Executive Officer);**
    m. Identification of wells sampled to comply with the Order and MRP;
    n. Laboratory data must be compatible with the Water Board's Groundwater Ambient Monitoring and Assessment (GAMA) Program, and GeoTracker electronic deliverable format (EDF).

Note: The above information (a-n) is reported electronically in the Notice of Intent and groundwater reporting to the GeoTracker data management system. It is not necessary for Dischargers to prepare and submit a separate technical report that includes this information.

PART 3. GENERAL MONITORING AND REPORTING REQUIREMENTS

A. Submittal of Technical Reports

1. Dischargers must submit reports in a format specified by the Executive Officer. A transmittal letter must accompany each report, containing the following penalty of perjury statement signed by the Discharger or the Discharger's authorized agent:

"In compliance with Water Code §13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision following a system designed to assure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment".

2. If the Discharger asserts that all or a portion of a report submitted pursuant to this Order is subject to an exemption from public disclosure (e.g. trade secrets or secret processes), the Discharger must provide an explanation of how those portions of the reports are exempt from public disclosure. The Discharger must clearly indicate on the cover of the report (typically an electronic submittal) that the Discharger asserts that all or a portion of the report is exempt from public disclosure, submit a complete report with those portions that are asserted to be exempt in redacted form, submit separately (in a separate electronic file) unredacted pages (to be maintained separately by staff). The Central Coast Water Board staff will determine whether any such report or portion of a report qualifies for an exemption from public disclosure. If the Central Coast Water Board staff disagrees with the asserted exemption from public disclosure, the Central Coast Water Board staff will notify the Discharger prior to making such report or portions of such report available for public inspection. In the interest of public health and safety, the Central Coast Water Board will not make available for public inspection, the precise location of any groundwater well monitored in compliance with this Order. Consistent with the reporting of groundwater wells on GeoTracker, groundwater well location and data will only be referenced within a one-half mile radius of the actual well location.

B. Enforcement and Violations

1. Monitoring reports are required pursuant to Section 13267 of the California Water Code. Pursuant to Section 13268 of the Water Code, a violation of a request made pursuant to Section 13267 may subject you to civil liability assessment of up to $1000 per day.

C. Executive Officer Authority

1. The Executive Officer may revise this MRP as necessary, and Dischargers must comply with the MRP as revised by the Executive Officer. Specifically, the Executive Officer may increase monitoring and reporting requirements where monitoring results, pesticide use patterns, or other indicators suggest that the increase is warranted due to an increased threat to water quality. Additionally, the Executive Officer can reduce monitoring and reporting

requirements, including adjusting time schedules, where growers are coordinating efforts at watershed or subwatershed scales or where regional treatment facilities are implemented, or other indicators suggest that the reduction is warranted due to a reduced threat to water quality.

Michael Thomas

Digitally signed by Michael Thomas
DN: cn=Michael Thomas, o=Central Coast Water Board, ou, email=mThomas@waterboards.ca.gov, c=US
Date: 2012.08.10 17:03:11 -07'00'

for Kenneth Harris, Jr.
Interim Acting Executive Officer

August 10, 2012

Date

Table 1. Major Waterbodies in Agricultural Areas[1]

Hydrologic SubArea	Waterbody Name	Hydrologic SubArea	Waterbody Name
30510	Pajaro River	30920	Quail Creek
30510	Salsipuedes Creek	30920	Salinas Reclamation Canal
30510	Watsonville Slough	31022	Chorro Creek
30510	Watsonville Creek[2]	31023	Los Osos Creek
30510	Beach Road Ditch[2]	31023	Warden Creek
30530	Carnadero Creek	31024	San Luis Obispo Creek
30530	Furlong Creek[2]	31024	Prefumo Creek
30530	Llagas Creek	31031	Arroyo Grande Creek
30530	Miller's Canal	31031	Los Berros Creek
30530	San Juan Creek	31210	Bradley Canyon Creek
30530	Tesquisquita Slough	31210	Bradley Channel
30600	Moro Cojo Slough	31210	Green Valley Creek
30910	Alisal Slough	31210	Main Street Canal
30910	Blanco Drain	31210	Orcutt Solomon Creek
30910	Old Salinas River	31210	Oso Flaco Creek
30910	Salinas River (below Gonzales Rd.)	31210	Little Oso Flaco Creek
30920	Salinas River (above Gonzales Rd. and below Nacimiento R.)	31210	Santa Maria River
30910	Santa Rita Creek[2]	31310	San Antonio Creek[2]
30910	Tembladero Slough	31410	Santa Ynez River
30920	Alisal Creek	31531	Bell Creek
30920	Chualar Creek	31531	Glenn Annie Creek
30920	Espinosa Slough	31531	Los Carneros Creek[2]
30920	Gabilan Creek	31534	Arroyo Paredon Creek
30920	Natividad Creek	31534	Franklin Creek

[1] At a minimum, sites must be included for these waterbodies in agricultural areas, unless otherwise approved by the Executive Officer. Sites may be proposed for addition or modification to better assess the impacts of waste discharges from irrigated lands to surface water. Dischargers choosing to comply with surface receiving water quality monitoring, individually (not part of a cooperative monitoring program) must only monitor sites for waterbodies receiving the discharge.

[2] These creeks are included because they are newly listed waterbodies on the 2010 303(d) list of Impaired Waters that are associated with areas of agricultural discharge.

Table 2. Surface Receiving Water Quality Monitoring Parameters

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Photo Monitoring		
Upstream and downstream photographs at monitoring location		With every monitoring event
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Flow (field measure) (CFS) following SWAMP field SOP[9]	.25	Monthly, including 2 stormwater events
pH (field measure)	0.1	"
Electrical Conductivity (field measure) (uS/cm)	2.5	"
Dissolved Oxygen (field measure) (mg/L)	0.1	"
Temperature (field measure) (^{o}C)	0.1	"
Turbidity (NTU)	0.5	"
Total Dissolved Solids (mg/L)	10	"
Total Suspended Solids (mg/L)	0.5	"
Nutrients		
Total Nitrogen (mg/L)	0.5	Monthly, including 2 stormwater events
Nitrate + Nitrite (as N) (mg/L)	0.1	"
Total Ammonia (mg/L)	0.1	"
Unionized Ammonia (calculated value, mg/L))		"
Total Phosphorus (as P) (mg/L)	-	"
Soluble Orthophosphate (mg/L)	0.01	"
Water column chlorophyll a (mg/L)	0.002	"
Algae cover, Floating Mats, % coverage	-	"
Algae cover, Attached, % coverage	-	"
Water Column Toxicity Test		
Algae -*Selenastrum capricornutum, 4 day*	-	Twice in dry season, twice in wet season
Water Flea – *Ceriodaphnia (7-day chronic)*	-	"
Fathead Minnow - *Pimephales promelas (7-day chronic)*	-	"
Toxicity Identification Evaluation (TIE)	-	As directed by Executive Officer
Pesticides[2] (ug/L)		
Carbamates		
Aldicarb	0.05	4 times, concurrent with water toxicity monitoring, in second year of Order term
Carbaryl	0.05	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Carbofuran	0.05	"
Methiocarb	0.05	"
Methomyl	0.05	"
Oxamyl	0.05	"
Organophosphate Pesticides		
Azinphos-methyl	0.02	"
Chlorpyrifos	0.005	"
Diazinon	0.005	"
Dichlorvos	0.01	"
Dimethoate	0.01	"
Dimeton-s	0.005	"
Disulfoton (Disyton)	0.005	"
Malathion	0.005	"
Methamidophos	0.02	"
Methidathion	0.02	"
Parathion-methyl	0.02	"
Phorate	0.01	"
Phosmet	0.02	"
Herbicides		
Atrazine	0.05	"
Cyanazine	0.20	"
Diuron	0.05	"
Glyphosate	2.0	"
Linuron	0.1	"
Paraquat dichloride	4	"
Simazine	0.05	"
Trifluralin	0.05	"
Metals (ug/L)		
Arsenic (total) [5,7]	0.3	4 times, concurrent with water toxicity monitoring, in second year of Order term
Boron (total) [6,7]	10	"
Cadmium (total & dissolved) [4.5,7]	0.01	"
Copper (total and dissolved) [4,7]	0.01	"
Lead (total and dissolved) [4,7]	0.01	"
Nickel (total and dissolved) [4,7]	0.02	"
Molybdenum (total) [7]	1	"
Selenium (total)[7]	0.30	"
Zinc (total and dissolved) [4.5,7]	0.10	"
Other (ug/L)		
Total Phenolic Compounds[8]	10	4 times, concurrent with water toxicity monitoring, in second year of Order term
Hardness (mg/L as CaCO3)	1	"
Total Organic Carbon (ug/L)	0.6	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
SEDIMENT SAMPLING		
Sediment Toxicity - Hyalella azteca 10-day		Annually
Benthic Invertebrate and associated Physical Habitat Assessment	SWAMP SOP	Once during the second year of Order concurrent with sediment toxicity sampling
Pyrethroid Pesticides in Sediment (ug/kg)		
Gamma-cyhalothrin	2	Once during second year of Order, concurrent with sediment toxicity sampling
Lambda-cyhalothrin	2	
Bifenthrin	2	"
Beta-cyfluthrin	2	"
Cyfluthrin	2	"
Esfenvalerate	2	"
Permethrin	2	"
Cypermethrin	2	"
Danitol	2	"
Fenvalerate	2	"
Fluvalinate	2	"
Organochlorine Pesticides in Sediment		
DCPA	10	"
Dicofol	2	"
Other Monitoring in Sediment		
Chlorpyrifos (ug/kg)	2	"
Total Organic Carbon	0.01%	"
Sulfide		"
Sediment Grain Size Analysis	1%	"

[1]Monitoring is ongoing through all five years of the Order, unless otherwise specified. Monitoring frequency may be used as a guide for developing alternative Sampling and Analysis Plan.
[2]Pesticide list may be modified based on specific pesticide use in Central Coast Region. Analytes on this list must be reported, at a minimum.
[3] Reporting Limit, taken from SWAMP where applicable.
[4] Holmgren, Meyer, Cheney and Daniels. 1993. Cadmium, Lead, Zinc, Copper and Nickel in Agricultural Soils of the United States. J. of Environ. Quality 22:335-348.
[5]Sax and Lewis, ed. 1987. Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987. Zinc arsenate is an insecticide.
[6]Http://www.coastalagro.com/products/labels/9%25BORON.pdf; Boron is applied directly or as a component of fertilizers as a plant nutrient.
[7]Madramootoo, Johnston, Willardson, eds. 1997. Management of Agricultural Drainage Water Quality. International Commission on Irrigation and Drainage. U.N. FAO. SBN 92-6-104058.3.
[8]http://cat.inist.fr/?aModele=afficheN&cpsidt=14074525; Phenols are breakdown products of herbicides and pesticides. Phenols can be directly toxic and cause endocrine disruption.
[9]See SWAMP field measures SOP, p. 17
mg/L – milligrams per liter; ug/L – micrograms per liter; ug/kg – micrograms per kilogram;
NTU – Nephelometric Turbidity Units; CFS – cubic feet per second;

Table 3. Groundwater Sampling Parameters

Parameter	RL	Analytical Method[3]	Units
pH	0.1	Field or Laboratory Measurement EPA General Methods	pH Units
Specific Conductance	2.5		µS/cm
Total Dissolved Solids	10		mg/L
Total Alkalinity as $CaCO_3$		EPA Method 310.1 or 310.2	
Calcium	0.05	General Cations[1] EPA 200.7, 200.8, 200.9	
Magnesium	0.02		
Sodium	0.1		
Potassium	0.1		
Sulfate (SO4)	1.0	General Anions EPA Method 300 or EPA Method 353.2	
Chloride	0.1		
Nitrate + Nitrite (as N)[2] or Nitrate as NO_3	0.1		

[1]General chemistry parameters (major cations and anions) represent geochemistry of water bearing zone and assist in evaluating quality assurance/quality control of groundwater monitoring and laboratory analysis.
[2]The MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations. The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short holding time required for nitrate. Dischargers may also analyze for Nitrate as NO_3.
[3]Dischargers may use alternative analytical methods approved by EPA.
RL – Reporting Limit; µS/cm – micro siemens per centimeter

Table 4. Tier 1 - Time Schedule for Key Monitoring and Reporting Requirements

REQUIREMENT	TIME SCHEDULE[1]
Submit Quality Assurance Project Plan and Sampling And Analysis Plan for Surface Receiving Water Quality Monitoring *(individually or through cooperative monitoring program)*	Within three months
Initiate surface receiving water quality monitoring *(individually or through cooperative monitoring program)*	Within six months
Submit surface receiving water quality monitoring data *(individually or through cooperative monitoring program)*	Within nine months, quarterly thereafter (January 1, April 1, July 1, and October 1)
Submit surface receiving water quality Annual Monitoring Report *(individually or through cooperative monitoring program)*	Within one year, annually thereafter by January 1
Initiate monitoring of groundwater wells	Within one year
Submit groundwater monitoring results	October 1, 2013

[1] Dates are relative to adoption of this Order, unless otherwise specified.