

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

ORDER R5-2015-xxxx

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER R5-2014-0017
NPDES NO. CA0084891
FOR
THE BOEING COMPANY
GROUNDWATER EXTRACTION AND TREATMENT SYSTEMS
GET H-B, SOUTHERN GROUNDWATER STUDY AREA GET AND ADMIN GET
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds:

1. On 7 February 2015, the Central Valley Water Board adopted Waste Discharge Requirements (WDR) Order R5-2014-0017, NPDES No. CA0084891, renewing the permit prescribing waste discharge requirements for the Boeing Company, Groundwater Extraction and Treatment Systems in Sacramento County. For the purposes of this Order, the Boeing Company is hereafter referred to as "Discharger." The Discharger, together with the Aerojet Rocketdyne, caused soil and groundwater pollution on the Inactive Rancho Cordova Test Site (IRCTS) in eastern Sacramento County. The Discharger owns and operates two groundwater extraction and treatment systems (GETs) designed to cleanup the groundwater pollution emanating from the rocket-testing facilities on a portion of the IRCSTS.
2. During operation of the Southern Groundwater Study Area GET under a previous version of the permit, the Discharger noted biofouling of bag filters and ion exchange resin vessels by iron and sulfur reducing bacteria. In order to prevent the fouling, the Discharger proposed using sodium hypochlorite and/or chlorine dioxide to control the biofouling. When the permit was updated in 2010 with Order R5-2010-0076, an effluent limit for chlorine residual was added, along with the necessary monitoring. During 2011 the Discharger requested, after performing a pilot study, a switch to the biocide Tetrakis(hydroxymethyl) Phosphonium Sulfate as it was shown to be more successful than chlorine dioxide in controlling the bacteria. During the pilot testing period whole effluent toxicity was conducted and did not show an increase in toxicity in the effluent. The permit was amended in 2011 with Order R5-2011-0089 to allow the use of the biocide.
3. The Discharger operated the SGSA GET utilizing Tetrakis(hydroxymethyl) Phosphonium Sulfate from 2011 through 2013. During continued operation of the facility it was found that there was a slow increase in toxicity of the effluent. Studies showed that the cause was the biocide and the Discharger discontinued the use of a biological control system, leading to decreased extraction well capacity and significant treatment plant

maintenance requirements. The Discharger has requested to go back to using chlorine to control help control the biocide. Most recent studies show that the bag filters need only be changed every three days with the proposed continuous addition of chlorine at the extraction wellhead.

4. To allow the change in biofouling agents, the existing Order needs to be modified to reflect the change by adding in a chlorine residual effluent limitation. In addition, the Monitoring and Reporting Program needs to be modified to add an effluent monitoring requirement for chlorine residual and eliminate monitoring of the effluent for iron and sulfate.
5. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
6. Under Water Code section 13389, this action to amend an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
7. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
8. This Order shall amend WDR Order No. R5-2015-0017, NPDES No. CA0083861, pursuant to Section 402 of the CWA (33 U.S.C. section 1342), and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections.

IT IS HEREBY ORDERED that Order R5-2015-0017 is amended solely to allow the change in biofouling control agent from a phosphonate-based iron biodispersant to chlorine dioxide/sodium hypochlorite, and change influent and effluent monitoring as appropriate to reflect the change, as shown below in underline/strikeout format. The Boeing Company, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with Amended Order R5-2010-0076.

1. Modify the text in the last paragraph on Page 3 of the Waste Discharge Requirements, as described below:

The Discharger requested one change in the permit conditions specified in the two previous orders. That change involves the addition of chlorine dioxide to control biofouling at the Southern Groundwater Study Area (SGSA) treatment system. A pilot study conducted in the middle of 2009 demonstrated that chlorine dioxide was successful in controlling the biofouling while maintaining a residual chlorine value of less than 0.01 milligrams per liter (mg/L). During operation of the facility in 2010 it was found that the chlorine dioxide was not as effective in controlling the biofouling

as needed. The Discharger evaluated two phosphonate-based iron biodispersants and found that they provided adequate performance in controlling the biofouling while not adversely contributing to the toxicity of the effluent. The Discharger is allowed to use the biodispersant at a concentration that does not exceed 25 mg/L in the combined influent to the treatment system,

2. Modify the Table in Section III. A. of Page E-3 of the Monitoring and Reporting Program (Attachment E), as described below:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
VOCs	µg/L	Grab	Monthly	[1]
Perchlorate	µg/L	Grab	Monthly	[2]
Iron[3]	µg/L	Grab	Monthly	[4]
Sulfate[3]	µg/L	Grab	Monthly	[5]

1. Test Method to be EPA Methods 601 and 602 or 8010 and 8020 or 8260, or 500 Series, or an equivalent method approved by the Regional Board with a Practical Quantitation Level no greater than 0.5 µg/L. All concentrations between the detection level and practical quantitation level shall be reported as trace.
2. Test Method to be EPA Methods 314.0 or 314.1, or an equivalent method approved by the Regional Board. with a practical quantitation Level no greater than 4.0 µg/L. All concentrations between the detection level and practical quantitation level shall be reported as trace.
3. MINFB only.
4. Test Method to be EPA Method 6020/200.8, or an equivalent method approved by the Regional Board with a Practical Quantitation Level of 50 µg/L.
5. Test Method to be EPA Method 300.0, or an equivalent method approved by the Regional Board with a Practical Quantitation Level of 500 µg/L.

3. Modify the Table in Section IV. A. of Page E-3 of the Monitoring and Reporting Program (Attachment E), as described below:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method[5]
Volatile Organics	µg/L	Grab	Monthly	[1]
Perchlorate	µg/L	Grab	Monthly	[2]
Flow[3]	mgd	Measure	Continuous	--
Temperature[3]	°F(°C)	Grab	Monthly	--
Dissolved Oxygen[3]	mg/L	Grab	Monthly	--
Turbidity	NTU	Grab	Monthly	--
Electrical Conductivity[3]	µmhos/cm	Grab	Monthly	--
pH[3]	Standard	Grab	Monthly	--
Hardness as CaCO ₃	mg/L	Grab	Quarterly	--
Total Dissolved Solids	mg/L	Grab	Monthly	--
Acute Toxicity	% Survival	Grab	Quarterly	[4]
<u>Iron</u> [6]	<u>µg/L</u>	<u>Grab</u>	<u>Monthly</u>	<u>[7]</u>
<u>Sulfate</u> [6]	<u>µg/L</u>	<u>Grab</u>	<u>Monthly</u>	<u>[8]</u>

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1. Test Method to be EPA Methods 601 and 602 or 8010 and 8020 or 8260, or 500 Series, or an equivalent method approved by the Regional Board with a Practical Quantitation Level no greater than 0.5 µg/L. All concentrations between the detection level and practical quantitation level shall be reported as trace.
2. Test Method to be EPA Methods 314.0 or 314.1, or an equivalent method approved by the Regional Board, with a Practical Quantitation Level no greater than 4.0 µg/L. All concentrations between the detection limit and practical quantitation level shall be reported as trace.
3. Field Measurements.
4. Acute toxicity testing shall be performed as described in [Whole Effluent Toxicity Testing Requirements V.A.](#), below.
5. Parameters shall be analyzed using the analytical methods described in 40 CFR sections 136, or an equivalent method approved by the Regional Board.
6. Only for M-002 and sample needs to be collected during time when the anti-biofouling agent is added to the system.
7. Test Method to be EPA Method 6020/200.8, or an equivalent method approved by the Regional Board with a Practical Quantitation Level of 50 µg/L.
8. Test Method to be EPA Method 300.0, or an equivalent method approved by the Regional Board with a Practical Quantitation Level of 500 µg/L.

I, Pamela C. Creedon, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 1 December 2011.

Original signed by
PAMELA C. CREEDON, Executive Officer