

Central Valley Regional Water Quality Control Board

14 July 2017

Mr. Joseph C. McGahan
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REVIEW OF THE 2016 ANNUAL MONITORING REPORT FOR THE GRASSLAND BYPASS PROJECT ORDER R5-2015-0094

Thank you for submitting the 2016 Annual Monitoring Report (AMR) for the Grassland Bypass Project on 1 May 2017 (resubmitted on 15 June 2017) as required by Order R5-2015-0094 Waste Discharge Requirements for San Luis & Delta-Mendota Water Authority and United States Department of the Interior Bureau of Reclamation (Order). The AMR covers the reporting period from 1 January through 31 December 2016.

The Central Valley Water Board staff review of the AMR is in the attached memorandum and associated checklist. Staff reviewed the AMR to determine if all Order requirements were met and identified minor instances where the requirements of the Order were not met. Care should be taken to ensure that the Order's requirements are fully met in subsequent annual report submittals.

If you have any questions or comments regarding the review, please contact Ashley Peters at 916-464-4857 or Ashley.Peters@waterboards.ca.gov.

Original signed by

Sue McConnell
Program Manager
Irrigated Lands Regulatory Program

Original signed by

Susan Fregien
Senior Environmental Scientist
Irrigated Lands Regulatory Program

cc: Michael Jackson, US Bureau of Reclamation Fresno
Jason Peltier, San Luis & Delta-Mendota Water Authority

Enclosure: Staff review of the AMR

Central Valley Regional Water Quality Control Board

TO: Susan Fregien
Senior Environmental Scientist
IRRIGATED LANDS REGULATORY PROGRAM

FROM: Ashley Peters, P.E.
Water Resource Control Engineer
IRRIGATED LANDS REGULATORY PROGRAM

DATE: 16 June 2017

SUBJECT: REVIEW OF THE GRASSLAND BYPASS PROJECT 2016 ANNUAL
MONITORING REPORT

On 1 May 2017 (resubmitted on 15 June 2017), the Central Valley Water Board received the Grassland Bypass Project 2016 Annual Monitoring Report (AMR) from the San Luis & Delta-Mendota Water Authority and the United States Bureau of Reclamation (Dischargers) as required by the Monitoring and Reporting Program (MRP) for General Order R5-2015-0094 (Order). The AMR covers the reporting period from 1 January 2016 through 31 December 2016.

In this memorandum, staff provides a brief summary of the monitoring activities conducted by the Dischargers during the 2016 reporting period. A checklist (attached) was used to aid staff in review of the AMR. Staff derived the checklist from the Order and it provides an itemized account of the compliance components. Staff used the checklist to document that the reported information complies with the Order.

Staff identified only minor issues in the AMR that do not represent a substantial deviation from the Order's requirements, as noted in the AMR Checklist, and recommends that the AMR be approved.

2016 Program Summary

The Dischargers performed surface water sampling from January through December 2016 at four sites: B3 – Gun Club Road in San Luis Drain, D – Downstream of San Luis Drain in Mud Slough (north), R – China Island Unit in San Joaquin River, and N – Crows Landing in San Joaquin River. The sampling schedule and constituents monitored were determined based on requirements listed in MRP Table 2. Monitoring for each constituent was completed at the frequency specified in the MRP. Approximately 8,361 acre feet of subsurface drain water was discharged through the San Luis Drain to Mud Slough (North) during 2016. There was no flow in the San Luis Drain from June 6 through September 21. Discharges through the San Luis Drain after irrigation activities end in mid-September are primarily attributed to rainfall.

Salt (approximated by electrical conductivity [EC]), boron, molybdenum, and selenium are constituents that naturally occur in the soil within the Grassland Drainage Area. These minerals are dissolved into the subsurface drainage as water infiltrates into the soil, prior to being collected and discharged to the San Luis Drain. None of these constituents originate from

materials that are applied by farmers in the Grassland Drainage Area.

During the reporting period, exceedances were observed for EC and boron. The exceedances for boron occurred at Sites N and D and are summarized in Table 1. Exceedances for EC occurred at Sites D, N, and R during most of the weekly monitoring events, including periods when there was no discharge from the San Luis Drain.

Table 1: Summary of Boron Exceedances at Sites N and D

Sample Date	Site N		Site D	
	Boron ($\mu\text{g/L}$)	Exceedance Limit	Boron ($\mu\text{g/L}$)	Exceedance Limit
1/21/2016	--	--	8,600	5800 max
February	1,075	1,000 monthly mean	--	--
March	923	800 monthly mean	3,387	2,000 monthly mean
April	1,350	800 monthly mean	4,025	2,000 monthly mean
May	1,240	800 monthly mean	--	--
June	822	800 monthly mean	2,640	2,000 monthly mean

Notes:

-- = no exceedance

$\mu\text{g/L}$ = micrograms per liter

More than two exceedances occurred during the reporting period for EC at Sites D, N, and R, and for boron at Sites N and D. A surface water quality management plan is not required for these constituents because they are addressed by a Drainage Management Plan, as described in Section V.G of the Order. EC and boron are addressed by the Westside Regional Drainage Plan (2003), which was developed to address drainage production and discharge from the Grassland Drainage Area. Updates to the drainage plan were provided in the 2016 AMR.

Report Name: Grassland Bypass Project Annual Monitoring Report 2016						Reviewer Name: Ashley Peters	
Submittal Date: 5/1/2017 (resubmitted 15 June 2017)						Review Date: 6/16/17	
Item No.	AMR Component Name	Review code:	Item meets requirement	Incomplete item/ Not	Not applicable	Page # (Section #)	Comments
1 Signed transmittal letter;							
1.1	Certification statement		✓			Letter	
1.2	Signature of authorized party		✓			Letter	
1.3	Dated		✓			Letter	
1.4	Submitted on time		✓			Letter	
2 Title page;							
2.1	Report title		✓			Cover	
2.2	Date of the report		✓			Cover	
2.3	Monitoring date range covered by the report		✓			Cover	
2.4	Coalition Group name		✓			Cover	
3 Table of contents;							
3.1	List of sections/chapters, tables, figures, appendices/attachments with page numbers		✓			i	
4 Executive Summary;							
4.1	Summary of key results and activities		✓			1	
4.2	Brief summary of conclusions and recommendations		✓			1	
5 Monitoring objectives and design;							
5.1	Brief description of monitoring objectives (references to section and page numbers in Monitoring Plan or QAPP, as appropriate)		✓			2-3	
5.2	Monitoring design aligns with Monitoring Plan, any deviations from Monitoring Plan or QAPP are described (references to section and page number in Monitoring Plan or QAPP, as appropriate)		✓			2-3	
	5.2.1 Assessment Monitoring: sites, parameters, schedule				✓		
	5.2.2 Special monitoring (Management Plan, TMDL, source identification): sites, parameters, schedule				✓		
6 Sampling site descriptions and rainfall records for the time period covered under the Monitoring Report;							
6.1	Electronic copies of photos clearly labeled with CEDEN comparable station code and date		✓			Appendix B	
6.2	Sampling site name and description (e.g. geographic area, watershed, crop type and drainages that the site represents), or unique information about the site or surrounding area		✓			4-7	
6.3	Rainfall records in graphic or narrative form (in inches of precipitation)		✓			6-7	
7 Location map(s) of sampling sites;							
7.1	Location maps showing the sampling stations within the project area must be updated and included		✓			6	
	7.1.1 Datum identified on map (<u>must be</u> WGS 1984 or NAD 1983)		✓			6	
	7.1.2 Source and date of all data layers identified on map		✓			6	
7.2	Accompanying GIS shapefile or geodatabase of monitoring site and monitoring well information include the CEDEN comparable site code and name (surface water) and GPS coordinates (monitored sites only).		✓			Appendix C	
7.3	A list or table indicates: site name, ID/well number, CEDEN site code (if applicable), and GPS coordinates (latitude and longitude in decimal degrees to at least five decimal places)		✓			2 (T. 1)	
8 Results of all analyses arranged in tabular form so that the required information is readily discernible;							
8.1	Data are in tabular form, clearly organized and readily discernible		✓			Att. 1	
8.2	Previously reported exceedances match exceedances identified in the AMR			✓			Exceedances for FY2016 not all reported during the monitoring period, including EC and Boron. Consistent and timely exceedance reporting should be completed during the 2017 monitoring season.
8.3	All required constituents for each site have reported results		✓			Att. 1	Report notes where heavy rain and/or site access prevented sample collection.
8.4	All necessary re-sampling completed and results reported				✓		
9 Discussion of data relative to water quality objectives, limitations and water quality management plan milestones, where applicable;							
9.1	Results discussed in text agree with tabulated data		✓			7-18	

	9.2	Discussion illustrates compliance with the WDRs, or if a required component was not met an explanation of missing data or a reason for non-compliance is included	✓			7-18	
	9.3	Results are compared to WDR requirements, water quality standards and trigger limits; toxicity results, TIE's and possible causes of toxicity are discussed	✓			7-18	
10 Sampling and analytical methods used;							
	10.1	Description of sampling methods used (e.g. type of collection, collection containers, sample preservation, transportation, handling, field measurements), with references to SOP's if appropriate	✓			3 (T. 2)	
	10.2	Description of analytical methods used	✓			3 (T. 2)	
11 Summary of Quality Assurance Evaluation results (as identified in the most recent version of the approved QAPP for Precision, Accuracy and							
	11.1	Acceptance criteria for all field and laboratory QA/QC measurements identified and in agreement with most recent approved QAPP; any adjustments to acceptance criteria documented and discussed			✓		Acceptance criteria are provided in the AMR. The QAPP is still draft, so a comparison of the criteria is not appropriate at this time.
	11.2	Summary of accuracy (lab control spike and matrix spike recovery) and precision (RPD for field duplicate, LCS/LCSD and MS/MSD pairs) included for all constituents and tests	✓			Att. 3	
	11.3	QA/QC results that did not meet acceptance criteria identified in a table or narrative description that is prepared by the Coalition (not laboratories)	✓			Att. 3	
	11.3.1	Discussion of how the failed QA/QC results affect the validity of the reported data	✓			Att. 3	
	11.3.2	Corrective actions for QA/QC results that did not meet acceptance criteria are described, laboratory exception reports are included when samples are reanalyzed due to exceedance of the linear range	✓			Att. 3	
	11.4	Both field and laboratory completeness are calculated and reported; overall Project completeness is determined	✓			Att. 3	
12 Specification of the method(s) used to obtain estimated flow at each surface water monitoring site during each monitoring event;							
	12.1	The method used to obtain flow measurement at each monitoring site during each monitoring event is listed	✓			3	
13 Summary of exceedances of water quality objectives/trigger limits occurring during the reporting period;							
	13.1	Summary of all Exceedance Reports submitted during the AMR period is included	✓			19, Att. 2	
14 Any storm event monitoring performed during the reporting period;							
	14.1	All stormwater discharges from the GDA into the wetlands water supply channels and the monitoring performed for the event are documented.	✓			1	
15 Actions taken to address water quality exceedances that have occurred, including but not limited to, revised or additional management practices							
	15.1	Discussion of actions taken to address water quality exceedances during the time frame of the AMR is included	✓			19-23	
	15.2	Updates or additional management practices implemented			✓		
16 Evaluation of monitoring data to identify spatial and temporal trends and patterns;							
	16.1	Identification of spatial and temporal trends and patterns in surface water quality	✓			22-23	
	16.1.1	Incorporation of pesticide use information, as needed, to assist in data evaluation.			✓		
	16.2	Analyze monitoring data to determine if additional sampling locations are needed. Propose schedule for additional monitoring or source studies	✓			7	
17 Status of implemented measures to meet water quality objectives and/or limits;							
	17.1	Activities and measures implemented (control or treatment), as specified in the use agreement, for the year to meet water quality objectives and/or limits discussed.	✓			19-23	
	17.2	Evaluates the effectiveness of the control or treatment measures implemented.	✓			19-23	
	17.3	Includes a cost analysis of the control or treatment measures implemented.			✓		
	17.4	Milestones set in the Drainage Management Plan are identified and status update provided.	✓			21-22	
18 Status of mitigation measures specified in 2009 Use Agreement;							
	18.1	Update on the status of the mitigation measures that are specified in Section III.H and Appendix L of the 2009 Use Agreement is provided.	✓			23	
19 Conclusions and recommendations.							
	19.1	Summary of the AMR results and conclusions	✓			24	
	19.2	Recommendations are appropriate and adequately detailed	✓			24	