CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. 5-01-234
FOR
SAN LUIS & DELTA MENDOTA WATER AUTHORITY
AND
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
GRASSLAND BYPASS PROJECT (PHASE II)
FRESNO AND MERCED COUNTIES

Numerous agencies are involved in conducting monitoring and special studies related to the Grassland Bypass Project. Where available, the Discharger may use data collected by other parties, **however the Discharger is ultimately responsible for compliance with the following monitoring and reporting program.** All data reported must meet the detection limits and recovery criteria for quality assurance samples specified in Attachment 1.

SAN LUIS DRAIN MONITORING

Samples representative of the discharge shall be collected from the San Luis Drain at the footbridge between Gun Club Road and the terminus (Site B). Flow shall be measured at the terminus of the drain. The time of collection of a grab sample shall be recorded. The following shall constitute the San Luis Drain discharge monitoring program:

Constituent	Unit	Type of Sample	Sampling Frequency
Flow	cfs	daily average	Daily
pH	pH units	grab	Weekly
Electrical Conductivity	µmhos/cm	grab	Weekly
Temperature	degrees C	grab	Weekly
Boron	mg/L	grab	Weekly
Molybdenum	µg/L	grab	Monthly
Nutrient Series			
Nitrate	mg/L as N	grab	Monthly[1]
Ammonia	mg/L	grab	Monthly[1]
Total Kjeldahl Nitrogen	mg/L	grab	Monthly[1]
Total Phosphorous	mg/L	grab	Monthly[1]
Ortho Phosphate	mg/L	grab	Monthly[1]
Selenium	µg/L	24-hour composite	Daily
Electrical Conductivity	µmhos/cm	24-hour composite	Daily
Boron	mg/L	24-hour composite	Daily
TSS (total susp. solids)	mg/L	grab	Weekly[2]

[1] Sampling Frequency increases to twice monthly during the irrigation season (March through August)
[2] Daily during storm events

RECEIVING WATER MONITORING

Receiving water monitoring shall be conducted when there is a discharge from the San Luis Drain. Except for flow, all receiving water samples shall be grab samples. Receiving water samples shall be taken from the following sites:

Site	Description
C	Mud Slough (north) upstream of the San Luis Drain discharge.
D	Mud Slough (north) at the bridge downstream of the San Luis Drain discharge.
G	San Joaquin River at Fremont Ford
N	San Joaquin River at Crows Landing

Constituent	Unit	Type of Sample	Station	Sampling Frequency
Flow	cfs	daily average	D,G,N	Daily
pH	pH units	grab	C,D,G,N	Weekly
Electrical Conductivity	µmhos/cm	grab	C,D,G,N	Weekly
Temperature	degrees C	grab	C,D,G,N	Weekly
Selenium	µg/L	grab	C,D,G,N	Weekly
Boron	mg/L	grab	C,D,G,N	Weekly
Molybdenum	µg/L	grab	C,D,G,N	Monthly
Nutrient Series				
Nitrate	mg/L	grab	C,D,G,N	Monthly[1]
Ammonia	mg/L	grab	C,D,G,N	Monthly[1]
Total Kjeldahl Nitrogen	mg/L	grab	C,D,G,N	Monthly[1]
Total Phosphorous	mg/L	grab	C,D,G,N	Monthly[1]
Ortho Phosphate	mg/L	grab	C,D,G,N	Monthly[1]
Selenium	µg/L	24-hour composite	N	Daily
Electrical Conductivity	µmhos/cm	24-hour composite	N	Daily
Boron	mg/L	24-hour composite	N	Daily

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Sites C and D. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life

Notes on receiving water conditions shall be summarized in the monitoring report.

[1] Sampling Frequency increases to twice monthly during the irrigation season (March through August)

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing to toxicity in Mud Slough (north). The testing shall be conducted as specified in "Short-Term Methods for Estimating the Chronic Toxicity for Effluents and Receiving Water to Fresh Water Organisms" 3rd edition (USEPA 600-4-91-022) for fatheads and algae and in USEPA-600-D87-080 for *Daphnia magna*. Chronic toxicity grab samples shall be collected at Sites B, C and D. Control water shall be from the Delta-Mendota Canal. Procedures followed shall be consistent with Sections 4.6.1.4, 4.6.1.5, 4.6.1.6, 4.6.1.7, 1.4.1.9, and 4.6.1.10 of the *Compliance Monitoring Program for Use and Operations of the Grassland Bypass Project*, September 1996 or latest version by the U.S. Bureau of Reclamation and others. Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas, Ceriodaphnia magna, and Selenastrum capriocornutum

Frequency: Quarterly

STORMWATER MONITORING

Stormwater monitoring shall be conducted as specified in the "Storm Event Plan for Operating and Protecting the Grassland Bypass Channel" contained in the Report of Waste Discharge (August 1997). At a minimum, the following components shall be completed.

Notification

When heavy rains or storm events are predicted for the region, the Regional Drainage Coordinator shall consider the current status of irrigation and drainage operations to determine if the Grassland bypass will be able to accommodate all of the surface runoff, storm water flows, and agricultural drainage water. Upon reaching a decision, and prior to allowing commingled waters to enter Grassland channels, the Regional drainage Coordinator shall contact the following individuals to inform them of the situation and to notify them regarding operations during the storm event:

1. Personnel in the Agricultural Unit at the Central Valley Regional Water Quality Control Board in Sacramento;
2. The Manager of the Grassland Water District;
3. The Manager of the Central California Irrigation District;
4. The Manager of the San Luis Canal Company;
5. Personnel at State and Federal Wildlife Areas that utilize water supply channels in the region;
6. Managers of the irrigation and drainage districts participating in the Grassland Basin Drainage Activity Agreement; and
7. The Manager of the San Joaquin River Exchange Contractors Water Authority.

Criteria and Associated Actions

Criteria	Action
Anticipated flow through sites PE-14 and FC-5 >100 cfs AND threat of precipitation	--Notification process initiated --Gates to Camp-13 Ditch and/or Agatha Canal opened --Proportional amounts of flow diverted estimated by operators of the Grassland Bypass in consultation with Grassland Water District personnel --Stormwater monitoring program initiated
Combined flow through sites PE-14 and FC-5 falls below 100 cfs and no threat of precipitation	--Flow of water to Grassland Water District terminated --Stormwater monitoring program continued for 1 week

Stormwater Monitoring Sites, Constituents and Frequency

The monitoring program shall be conducted at the following internal wetland water supply channels immediately prior to diversion of stormwater into Camp-13 Ditch and Agatha Canal; daily during water diversion; and for 1-week after diversion ceases:

Camp-13 Ditch (J)
Agatha Canal (K)
San Luis Canal at Splits (L2)
Santa Fe Canal at Weir (M2)
Salt Slough at Lander Avenue (F)

Constituent	Unit	Type of Sample	Sampling Frequency
Flow	cfs	daily average	Daily
pH	pH units	grab	Daily
Electrical Conductivity	µmhos/cm	grab	Daily
Temperature	degrees F	grab	Daily
Selenium	µg/L	grab	Daily
Boron	µg/L	grab	Daily
Molybdenum	µg/L	grab	Daily

INTERNAL WETLAND WATER SUPPLY CHANNELS

The Discharger is required to visually survey potential drainage diversions into Camp-13 Ditch, Charleston Drain and the Agatha Canal weekly and maintain a log of conditions. At any time that drainage diversions are noted into these three channels, the discharger shall initiate the *Notification* and *Stormwater Monitoring Sites, Constituents, and Frequencies* components of the stormwater monitoring program.

REPORTING

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements.

Monthly monitoring reports shall be submitted to the Regional Board no later than 45 days following the end of the month. The nutrient series data shall be included in the annual report described below.

The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Board.

The Discharger shall submit an annual report to the Board by 30 June of each year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year (01 January through 31 December).

The Discharger shall implement the above monitoring program on the date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

_____
(Date)

ATTACHMENT 1

Analysis	Expected Reporting Limit (ppb)	Acceptable Blind Duplicate and Spike Recovery Ranges (ppb & %)
Boron	50	85-115%
Conductivity	--	90-110%
Nitrogen		
Ammonia as N	50	80-120%
Kjeldahl	200	80-120%
Nitrate as N	160	80-120%
pH	--	90-110%
Phosphorous (total) as P	50	80-120%
Phosphate (ortho) as P	30	80-120%
Total Suspended Solids	--	85-115%
Total Dissolved Solids	--	85-115%
Molybdenum	1	1-10 $\pm$ 2 >10=85-115%
Selenium	0.5	1-10 $\pm$ 1 >10=90-110%