

63. Clean Water Act Section 307(b) and Federal Regulations at 40 CFR Part 403 require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants that will interfere with treatment plant operations or sludge disposal and prevent pass through of pollutants that exceed water quality objectives, standards, or permit limitations. Federal Regulation (40 CFR 403.8) requires the Discharger to develop and submit for approval by the Regional Board an acceptable industrial pretreatment program.
64. The Discharger submitted a draft pretreatment program to the Regional Board for approval. The Regional Board, in an October 2001 Pretreatment Audit, identified areas of the program that are deficient or not implemented. The Regional Board staff, on 22 January 2003, provided comments to the Discharger identifying provisions of the City's Waste Ordinance and the Interjurisdictional Agreement between the City of Manteca and the Lathrop County Water District that are deficient. This Order provides a compliance schedule for the Discharger to submit a pretreatment program that corrects the deficiencies noted in the October 2001 Pretreatment Compliance Audit and in the 22 January 2003 letter. The Regional Board will reopen this Order to approve the pretreatment program upon submittal of a program that corrects the deficiencies. Certain areas of the pretreatment program have not been fully implemented pending approval of the program. This Order requires full compliance with all pretreatment program requirements by **1 October 2004**.

OTHER

65. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
66. The discharge is presently governed by Waste Discharge Requirements Order No. 5-01-007, adopted by the Regional Board on 26 January 2001. The discharge of biosolids is also presently governed by Waste Discharge Requirements Order No. 92-052, adopted by the Regional Board on 27 March 1992.
67. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.), requiring preparation of an environmental impact report or negative declaration in accordance with Section 13389 of the California Water Code.
68. The City of Manteca has certified a final environmental impact report (EIR) in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.), and the State CEQA Guidelines.

The Regional Board has considered the EIR and, after review of the available data, finds significant impacts to water quality could occur after the proposed expansion. However, these waste discharge requirements will avoid the significant impacts on water quality by: (a)

reducing BOD, TSS, pathogen and metals concentrations with the addition of tertiary level treatment, (b) reducing ammonia, nitrate and nitrite with the additions of nitrification and denitrification treatment, (c) mitigating the thermal impacts by discharging treated wastewater on outgoing tides only, and (d) reducing the salinity of the discharge through the implementation of pollution prevention measures or treatment.

69. The Regional Board has considered the information in the Information Sheet in developing the Findings of this Order. The Information Sheet is included as Attachment A and is a part of this Order.
70. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe 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.
71. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
72. This Order shall serve as an NPDES permit pursuant to Clean Water Act Section 402, and amendments thereto, and shall take effect upon the date of hearing, provided USEPA has no objections.

IT IS HEREBY ORDERED that Order No. 5-01-007 and Order No. 92-052 are rescinded and the City of Manteca, the City of Lathrop and Dutra Farms, its agents, successors and assigns, in order to meet the provisions contained in California Water Code Division 7 and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13. [See attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)"].
3. Neither the discharge nor its treatment shall create a nuisance as defined in California Water Code Section 13050.

B. Effluent Limitations (Discharge to the San Joaquin River):

1. Effective immediately, and through 31 March 2004, the effluent concentrations and mass loadings shall not exceed the following limits:

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2004-0028
 CITY OF MANTECA, CITY OF LATHROP AND DUTRA FARMS
 WASTEWATER QUALITY CONTROL FACILITY
 SAN JOAQUIN COUNTY

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/l	20 ²	30 ²	---	50 ²
	lb/day ³	1160	1740	---	2900
<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	mg/l	20 ²	30 ²	---	50 ²
	lb/day ³	1160	1740	---	2900
Total Coliform	MPN/100ml	---	23 ⁴	---	500
Settleable Solids	ml/l	0.1	---	---	0.2
Chlorine Residual	mg/l	---	0.01 ⁵	0.02	---
Oil and Grease	mg/l	10	---	---	15
	lb/day ³	580	---	---	870
Aluminum ⁶	ug/l	71	---	---	140
	lb/day ³	4.1	---	---	8.1
Electrical Conductivity	umhos/cm	1000	---	---	---
Ammonia (June-Sept)	mg N/l	2.1	---	---	4.4
	lb/day ³	120	---	---	260
Ammonia (Oct-May)	mg N/l	2.8	---	---	5.6
	lb/day ³	160	---	---	320
Arsenic	ug/l	10	---	---	---
	lb/day ³	0.58	---	---	---
Copper	ug/l	7.9	---	---	10.4
	lb/day ³	0.46	---	---	0.60
Cyanide	ug/l	3.7	---	---	10
	lb/day ³	0.21	---	---	0.58
Iron	ug/l	300	---	---	---
	lb/day ³	17	---	---	---
Manganese	ug/l	50	---	---	---
	lb/day ³	2.9	---	---	---

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Methylene blue active substances (MBAS)	ug/l	500	---	---	---
	lb/day ³	29	---	---	---

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
Nitrate (as N)	mg/l	10	---	---	---
	lb/day ³	580	---	---	---
Nitrite (as N)	mg/l	1	---	---	---
	lb/day ³	58	---	---	---
Bis(2-ethylhexyl) phthalate	ug/l	22	---	---	44
	lb/day ³	1.3	---	---	2.6
Bromodichloromethane	ug/l	5	---	---	8
	lb/day ³	0.29	---	---	0.46
Dibromochloromethane	ug/l	1.4	---	---	2.8
	lb/day ³	0.08	---	---	0.16
Mercury	ug/l	---	---	---	---
	lb/year	0.69	---	---	---
2,4,6-Trichlorophenol	ug/l	34	---	---	69
	lb/day ³	2	---	---	4

- 1 5-day, 20°C biochemical oxygen demand (BOD)
- 2 To be ascertained by a 24-hour composite
- 3 Based upon a design treatment capacity of 6.95 mgd.
- 4 Weekly median
- 5 Expressed as a 4-day average
- 6 The Discharger may conduct a water effect ratio study to develop a site-specific objective, and upon adoption and approval of a Basin Plan amendment, the permit may be reopened and the aluminum limitation reconsidered.

2. Effective 1 April 2004, and through 31 January 2009, the effluent concentrations and mass loadings shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/l	20 ²	30 ²	---	50 ²

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	lb/day ³	1350	2030	---	3380
Total Suspended Solids	mg/l	20 ²	30 ²	---	50 ²
	lb/day ³	1350	2030	---	3380

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
Total Coliform	MPN/100ml	---	23 ⁴	---	500
Settleable Solids	ml/l	0.1	---	---	0.2
Chlorine Residual	mg/l	---	0.01 ⁵	0.02	---
Oil and Grease	mg/l	10	---	---	15
	lb/day ³	680	---	---	1010
Aluminum ⁶	ug/l	71	---	---	140
	lb/day ³	4.8	---	---	9.5
Electrical Conductivity (1 April to 31 August)	umhos/cm	700 ⁷	---	---	---
Electrical Conductivity (1 Sept to 31 March)	umhos/cm	1000 ⁷	---	---	---
Ammonia (June-Sept)	mg N/l	2.1	---	---	4.4
	lb/day ³	140	---	---	300
Ammonia (Oct-May)	mg N/l	2.8	---	---	5.6
	lb/day ³	190	---	---	380
Arsenic	ug/l	10	---	---	---
	lb/day ³	0.68	---	---	---
Copper	ug/l	7.9	---	---	10.4
	lb/day ³	0.53	---	---	0.70
Cyanide	ug/l	3.7	---	---	10
	lb/day ³	0.25	---	---	0.68
Iron	ug/l	300	---	---	---
	lb/day ³	20	---	---	---
Manganese	ug/l	50	---	---	---
	lb/day ³	3.4	---	---	---

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Methylene blue active substances (MBAS)	ug/l	500	---	---	---
	lb/day ³	34	---	---	---

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
Nitrate (as N)	mg/l	10	---	---	---
	lb/day ³	680	---	---	---
Nitrite (as N)	mg/l	1	---	---	---
	lb/day ³	68	---	---	---
Bis(2-ethylhexyl) phthalate	ug/l	22	---	---	44
	lb/day ³	1.5	---	---	3
Bromodichloromethane	ug/l	5	---	---	8
	lb/day ³	0.34	---	---	0.54
Dibromochloromethane	ug/l	1.4	---	---	2.8
	lb/day ³	0.095	---	---	0.19
Mercury	ug/l	---	---	---	---
	lb/year	0.69	---	---	---
2,4,6-Trichlorophenol	ug/l	34	---	---	69
	lb/day ³	2.3	---	---	4.7

- 1 5-day, 20°C biochemical oxygen demand (BOD)
- 2 To be ascertained by a 24-hour composite
- 3 Based upon a design treatment capacity of 8.11 mgd.
- 4 Weekly median
- 5 Expressed as a 4-day average
- 6 The Discharger may conduct a water effect ratio study to develop a site-specific objective, and upon adoption and approval of a Basin Plan amendment, the permit may be reopened and the aluminum limitation reconsidered.
- 7 State Water Resources Control Board Decision 1641 requires that the 1000 umhos/cm objective be met year round until 1 April 2005 at which time the seasonal objectives will be effective.

3. Effective 1 February 2009, the effluent concentrations and mass loading shall not exceed the following limits:

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<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/l	10 ²	20 ²	---	30 ²
	lb/day ³	820	1650	---	2470
<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	mg/l	10 ²	20 ²	---	30 ²
	lb/day ³	820	1650	---	2470
Total Coliform	MPN/100ml	---	2.2 ⁴	---	23/240 ⁵
Turbidity	NTU	---	---	2 ⁶	5/10 ⁷
Settleable Solids	ml/l	0.1	---	---	0.2
Chlorine Residual	mg/l	---	0.01 ⁸	0.02	---
Oil and Grease	mg/l	10	---	---	15
	lb/day ³	820	---	---	1230
Aluminum ⁹	ug/l	71	---	---	140
	lb/day ³	5.8	---	---	12
Electrical Conductivity (1 April to 31 August)	umhos/cm	700	---	---	---
Electrical Conductivity (1 Sept to 31 March)	umhos/cm	1000	---	---	---
Ammonia (June-Sept)	mg N/l	2.1	---	---	4.4
	lb/day ³	170	---	---	360
Ammonia (Oct-May)	mg N/l	2.8	---	---	5.6
	lb/day ³	230	---	---	460
Arsenic	ug/l	10	---	---	---
	lb/day ³	0.82	---	---	---
Copper	ug/l	7.9	---	---	10.4
	lb/day ³	0.65	---	---	0.86
Cyanide	ug/l	3.7	---	---	10
	lb/day ³	0.30	---	---	0.82
Iron	ug/l	300	---	---	---

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	lb/day ³	25	---	---	---
Manganese	ug/l	50	---	---	---
	lb/day ³	4.1	---	---	---
<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>1- Hour Average</u>	<u>Daily Maximum</u>
Methylene blue active substances (MBAS)	ug/l	500	---	---	---
	lb/day ³	41	---	---	---
Nitrate (as N)	mg/l	10	---	---	---
	lb/day ³	820	---	---	---
Nitrite (as N)	mg/l	1	---	---	---
	lb/day ³	82	---	---	---
Bis(2-ethylhexyl) phthalate	ug/l	22	---	---	44
	lb/day ³	1.8	---	---	3.6
Bromodichloromethane	ug/l	5	---	---	8
	lb/day ³	0.41	---	---	0.66
Dibromochloromethane	ug/l	1.4	---	---	2.8
	lb/day ³	0.12	---	---	0.23
Mercury	ug/l	---	---	---	---
	lb/year	0.69	---	---	---
2,4,6-Trichlorophenol	ug/l	34	---	---	69
	lb/day ³	2.8	---	---	5.7

- 1 5-day, 20°C biochemical oxygen demand (BOD)
- 2 To be ascertained by a 24-hour composite
- 3 Based upon a design treatment capacity of 9.87 mgd.
- 4 Weekly median
- 5 Does not exceed 23 in more than one sample in any 30-day period. No sample shall exceed 240.
- 6 Does not exceed an average of 2 NTU within a 24-hour period.
- 7 Does not exceed 5 NTU more than 5 percent of the time within a 24-hour period and 10 NTU at any time.
- 8 Expressed as a 4-day average
- 9 The Discharger may conduct a water effect ratio study to develop a site-specific objective, and upon adoption and approval of a Basin Plan amendment, the permit

may be reopened and the aluminum limitation reconsidered.

4. The arithmetic mean of 20°C BOD (5-day) and total suspended solids in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).
5. The discharge shall not have a pH less than 6.5 nor greater than 8.0.
6. Effective immediately, the 30-day average dry weather discharge flow shall not exceed 6.95 million gallons per day, less the amount disposed on land at agronomic rates.
7. Effective 31 March 2004, and pursuant to compliance with effluent ammonia limitations, the 30-day average dry weather discharge flow shall not exceed 8.11 million gallons per day, less the amount disposed on land at agronomic rates.
8. Effective 1 February 2009, and in compliance with Provisions 1 and 4, the 30-day average dry weather discharge flow shall not exceed 9.87 million gallons per day, less the amount disposed on land at agronomic rates, and all discharges shall be on out-going tides only.
9. The peak wet weather discharge flow shall not exceed 13 mgd.
10. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay ----- 70%
Median for any three or more consecutive bioassays ---- 90%
11. The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.
12. The total annual mass discharge of mercury shall not exceed 0.69 lbs per year. This interim performance-based limitation shall be in effect until final TMDL is established for mercury. The procedures for calculating mass loadings are as follows:
 - a. The total pollutant mass load for each individual month shall be determined using an average of all concentration data collected that month and the corresponding average monthly flow. All monitoring data collected under the monitoring and reporting program, pretreatment program and any special studies shall be used for these calculations.
 - b. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

- c. The Discharger shall submit a cumulative total of mass loadings for the most recent twelve months in accordance with the MRP No. R5-2004-0028.

If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and the mass effluent limitation shall be modified (higher or lower) or an effluent concentration limitation imposed. If the Regional Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the interim mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

C. Discharge Specifications (Land Disposal):

- 1. Discharge of recycled water to surface water or surface water drainage courses is prohibited.
- 2. The discharge shall be kept within the designated reclamation area, as shown on Figure 2, at all times.
- 3. The use of reclaimed water shall be limited to surface irrigation of fodder, fiber, or seed crops. Irrigated crops shall not be used for human consumption (either direct or indirect). Additional reclamation uses may be approved by the Executive Officer.
- 4. Reclaimed water use shall meet the criteria contained in Title 22 California Code of Regulations, Division 4, Section 60301 et. seq.
- 5. Application of reclaimed water shall be at agronomic rates considering the crop, soil, climate, and irrigation management system. The nutrient loading of the disposal area, including the nutritive value of organic and chemical fertilizers, applied biosolids, and of the reclaimed water, shall not exceed the crop demand.
- 6. Reclaimed water shall be managed to minimize erosion, runoff, and movement of aerosols from the disposal area.
- 7. Direct or windblown spray shall be confined to the designated disposal area and prevented from contacting drinking water facilities.
- 8. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
- 9. The discharge of domestic effluent to the reclamation area shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
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BOD ₅ ¹	mg/l	30	45
Settleable Solids	ml/l	0.2	0.5

¹ Five-day, 20° Celsius biochemical oxygen demand.

10. There shall be no standing water in the disposal area 48 hours after wastewater is applied.
11. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
12. Areas irrigated with reclaimed water shall be managed to prevent breeding of mosquitoes. More specifically,
 - a. Tail water must be returned and all applied reclaimed water and any additional supplement irrigation water must infiltrate completely within a 48-hour period.
 - b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.
 - c. Low pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store reclaimed water.
13. Stormwater runoff from the irrigation field shall not be discharged to any surface water drainage course within 30 days of the last application of reclaimed water.
14. There shall be no irrigation or impoundment of reclaimed water within 150 feet of any domestic water well.
15. All reclaimed water equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities, and these shall be of a type, or secured in a manner, that permits operation by authorized personnel only.
16. Conspicuous warning signs indicating that reclaimed water is in use shall be posted at least every 500 feet, with a minimum of a sign at each corner of the parcels and at access road entrances.
17. Supplementing reclaimed water by connection with a domestic drinking water source or irrigation or industrial wells requires an air gap separation device.
18. Neither the treatment nor the use of reclaimed water shall cause a pollution or nuisance as defined by California Water Code Section 13050.

D. Pond Discharge Specifications (Land Disposal):

1. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the disposal areas or property owned by the Discharger.
2. As a means of discerning compliance with Pond Discharge Specification D.1, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/l.
3. Ponds shall not have a pH less than 6.5 or greater than 9.0. Subject to approval of the Executive Officer, lined ponds shall not have a pH less than 6.5 or greater than 10.0.
4. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
 - a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
5. Ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the nonirrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).

E. Biosolids Disposal:

1. Collected screenings, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27 California Code of Regulations, Division 2, Subdivision 1, Section 20005, et seq. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
2. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.
3. Use and disposal of sewage biosolids shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503.

If the State Board and the Regional Water Quality Control Boards are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.

4. The Discharger is encouraged to comply with the "Manual of Good Practice for Agricultural Land Application of Biosolids" developed by the California Water Environment Association.
5. The discharger shall comply with the attached Monitoring and Reporting Program No. R5-2004-0028 biosolids monitoring requirements.

On-site Biosolids Disposal Limitations:

6. The discharge of tailwater or field runoff within 30 days after application of biosolids is prohibited for application areas where biosolids has not been incorporated into the soil and there is not sufficient vegetation in the application area and along the path of runoff to prevent movement of biosolids particles from the application site.
7. The direct or indirect discharge of biosolids to surface waters or surface water drainage course is prohibited.
8. The discharge of waste classified as "hazardous" or "designated" as defined in Title 23, California Code of Regulations, Section 2521 (a) and Section 2522 (a), is prohibited.
9. The onsite application of biosolids at rates in excess of the nitrogen requirements of the vegetation or at rates that would cause the excess nitrogen or metals to leach to ground water, is prohibited. All sources (wastewater, fertilizers, biosolids) of nitrogen and metals to the application area must be included in the analysis of the total loading rate.
10. The onsite discharge of biosolids with pollutant concentrations greater than those shown below is prohibited:

Constituent	Ceiling Concentration Mg/kg dry weight
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Nickel	420
Selenium	100
Zinc	7500

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11. Biosolids shall not be applied to land subject to erosion during a flood, or having a surface slope in excess of fifteen percent.
12. Biosolids shall comply with either Class A or Class B pathogen reduction standards as listed in 40 CFR 503.
13. Biosolids shall comply with one of the Vector Attraction Reduction standards as listed in 40 CFR 503.33.
14. Biosolids shall not be applied to land in amounts which cause the following lifetime cumulative loading rates to be exceeded:

Cumulative Loading Rates

Constituent	kg/hectare	lbs./acre
Arsenic	41	37
Cadmium	39	35
Chromium	3000	2672
Copper	1500	1336
Lead	300	267
Mercury	17	15
Molybdenum	18	16
Nickel	420	374
Selenium	100	89
Zinc	2800	2494

15. Biosolids shall not be deposited to flooded, frozen or water-saturated ground, or during periods of heavy rainfall.
16. Objectionable odor originating at this facility shall not be perceivable beyond the limits of the property owned or controlled by the discharger.
17. Staging areas and biosolids application shall be at least:
 - a. 10 feet from property lines.
 - b. 500 feet from domestic water supply wells.
 - c. 50 feet from non-domestic water supply wells.
 - d. 20 feet from public roads.
 - e. 100 feet from surface waters.
 - f. 100 feet from residential buildings.
18. After the last application of biosolids in each field, the Discharger shall ensure the following:
 - a. For at least 30 days:
 - (1) Public access to the application area is restricted;
 - (2) Feed and fiber crops are not harvested; and

- (3) Animals do not graze on the land.
- b. For at least 12 months:
 - (1) Turf is not harvested if turf is placed on land with a high degree of public exposure:
and
 - (2) If the field is used as pasture, grazing by milking animals is prevented.
- c. For at least 14 months:
 - (1) Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface are not harvested.
- d. For at least 38 months:
 - (1) Food crops with harvested parts below the land surface are not harvested; and
 - (2) If the field is used as pasture, grazing of milking animals used for producing unpasteurized milk for human consumption is prevented.

Biosolids Storage Specifications

- 19. Facilities for the storage of Class B biosolids shall be located, designed and maintained to restrict public access to biosolids.
- 20. Biosolids storage facilities shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.
- 21. Biosolids storage facilities, which contain biosolids, shall be designed and maintained to contain all storm water falling on the biosolids storage area during a rainfall year with a return frequency of 100 years.
- 22. Biosolids storage facilities shall be designed, maintained and operated to minimize the generation of leachate.

F. Receiving Water Limitations:

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit.

The discharge shall not cause the following in the receiving water:

- 1. Concentrations of dissolved oxygen to fall below 5 mg/l. The monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation.
- 2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
4. Esthetically undesirable discoloration.
5. Fungi, slimes, or other objectionable growths.
6. The turbidity to increase as follows:
 - a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
 - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
 - c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
 - d. More than 10 percent where natural turbidity is greater than 100 NTUs.
7. The ambient pH to fall below 6.5, exceed 8.5, or the 30-day average ambient pH change by more than 0.5 units.
8. The creation of a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of the river channel at any point.
9. A surface temperature rise greater than 4°F above the natural temperature of the receiving water at any time or place.
10. Deposition of material that causes nuisance or adversely affects beneficial uses.
11. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in Title 22, California Code of Regulations; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
12. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
13. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

14. Violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Board pursuant to the Clean Water Act and regulations adopted thereunder.
15. Taste or odor-producing substances to impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

G. Groundwater Limitations:

Discharge of waste constituents from any storage, treatment, or disposal component associated with the WQCF shall not, in combination with other sources:

1. Adversely impact beneficial uses of the groundwater or exceed water quality objectives.
2. Cause any waste constituent concentration, when compared with background, to be incrementally increased above the current concentration in down-gradient wells.
3. Cause total coliform organisms to equal or exceed a most probable number of 2.2/100 ml over any seven-day period.

H. Provisions:

1. By **1 February 2009**, wastewater discharged to the San Joaquin River shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the DHS reclamation criteria, Title 22 California Code of Regulations, Division 4, Chapter 3, (Title 22) or equivalent. The Discharger shall comply with the following time schedule to assure compliance with the limitations for BOD, total suspended solids, total coliform and turbidity contained in Effluent Limitations B.3 of this Order:

<u>Task</u>	<u>Compliance Date</u>	<u>Report Due Date</u>
Submit Annual Status Report		1 June, annually
Submit Workplan/Time Schedule		1 September 2004
Full Compliance	1 February 2009	

The Discharger shall submit to the Regional Board on or before each compliance and report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated; the report shall also include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

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2. Pursuant to Title 22 Section 60323, the Discharger shall prepare a Title 22 Engineer's Report that reflects the proposed reclamation uses and operation. The report shall be prepared in accordance with DHS guidelines, as listed in Attachment C. The report shall be submitted to DHS and the Regional Board for review and approval. The report shall be completed in conformance with the following schedule.

<u>Task</u>	<u>Compliance Date</u>
Submit Workplan and Time Schedule	1 May 2004
Submit Draft Report	1 August 2005
Submit Final Report	1 January 2006

The Discharger shall submit to the Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Board by letter when it returns to compliance with the time schedule.

3. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and/or stamp of the seal.
4. The discharger has requested an expansion of allowable flows being discharged to the San Joaquin River. Effluent limitation B.8 allows the flows to increase to 9.87 mgd pending completion of the following by the Discharger, and approval by the Executive Officer:
 - a. The discharger shall install a monitoring station in the receiving water in the vicinity of the outfall adequate to provide real-time monitoring of receiving water flows.
 - b. The discharger shall demonstrate the ability to store effluent and discharge to surface waters only on out-going tides. The demonstration shall document adequate storage capacity, and operations procedures to reliably implement this discharge strategy.
 - c. The Discharger shall implement adequate measures to comply with Effluent Limitations under B.3.
 - d. The discharger shall implement adequate measures to comply with Effluent Limitation B.11 and Receiving Water Limitations F.8 and F.9 or shall have obtained exceptions to the Thermal Plan.

5. There are indications that elevated temperatures in the San Joaquin River may affect migrating Chinook salmon and other fish during portions of the year. Temperature objectives in the Basin Plan and the Thermal Plan may not address the temperature parameters necessary to protect migrating fish. To evaluate the effect of a thermal temperature discharge to migrating fish, the Discharger shall conduct a comprehensive study of the effect of its thermal discharge to migrating fish in the vicinity of the discharge (with particular attention being paid to those periods when River flow is lowest and/or River or effluent temperature are highest). The Discharger shall perform the study in consultation with the Department of Fish and Game, United States Environmental Protection Agency, National Marine Fisheries Service, United States Fish and Wildlife Service, and other interested parties.

A work plan for this study shall be completed and submitted to the Executive Officer by **1 September 2004**. The work plan shall include a schedule for completing all work in accordance with the work plan within eighteen (18) months following work plan approval by the Executive Officer. Also, a progress report shall be submitted every six (6) months after approval of the work plan. The permit may be reopened after review of the study to incorporate Regional Board findings and requirements as appropriate.

6. *Pollution Prevention Plan*: The Discharger shall prepare a pollution prevention plan following California Water Code 13263.3(d)(3) for mercury. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted to the Executive Officer for approval by **1 August 2004**. The Pollution Prevention Plan shall be completed and submitted to the Regional Board by **1 August 2005**. A progress report shall be submitted every six (6) months after submittal of the work plan. Based on a review of the submitted information, this Order may be reopened for addition and/or modification of limitations and requirements for these constituents.

The Discharger shall submit to the Regional Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

7. *SIP Study*: The discharge may contain dioxins that have a reasonable potential to cause or contribute to an exceedance of water quality objectives. The Discharger shall comply with the following time schedule in conducting a study of these constituents potential effect in surface waters:

<u>Task</u>	<u>Compliance Date</u>
Submit Study Report for Dioxins	1 November 2004

If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order will be reopened and effluent limitations added for the subject constituents.

The Discharger shall submit to the Regional Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

8. To determine compliance with the Groundwater Limitations, the groundwater monitoring network shall include one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. All monitoring wells shall comply with the appropriate standards as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981), and any more stringent standards adopted by the Discharger or County pursuant to California Water Code Section 13801.

The Discharger, after one year of monitoring, shall characterize natural background quality of monitored constituents in a technical report, to be submitted by **1 May 2005**. For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27 California Code of Regulations Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration.

If the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall submit a technical report describing the evaluations results and critiquing each evaluated component with respect to BPCT and minimizing the discharge's impact on groundwater quality. In no case shall the discharge be allowed to exceed a water quality objective. This Order may be reopened and additional groundwater limitations added.

9. By **31 March 2006**, the Discharger shall submit a *Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan* (SSS Plan) that describes the actions designed to prevent, or minimize the potential for sanitary sewer overflows. The Discharger shall maintain the SSS Plan in an up-to-date condition and shall amend the SSS Plan whenever there is a change (e.g. in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) that materially affects the potential for

sanitary sewer overflows, or whenever there is a sanitary sewer overflow. The Discharger shall ensure that the up-to-date SSS Plan is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it. A general order to regulate collection systems may be developed by the Regional Board. If a general order for collection systems is adopted by the Regional Board, the Discharger will be required to seek coverage under the general order. Once the Discharger has obtained a general order for the collection system, this permit may be reopened and these requirements may be removed from this permit.

- a. At a minimum, the Operation and Maintenance portion of the plan shall contain or describe the following:
 1. Detailed maps of the sanitary sewer system, identifying sewer mains, manholes, and lift stations;
 2. A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;
 3. A schedule for routine inspection and testing of all pipelines, lift stations, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
 4. Provisions for repair or replacement of old, worn out, or defective equipment;
 5. Provisions to minimize the need for manual operation of critical systems and provide spill alarms or other "fail safe" mechanisms;
 6. The ability to properly manage, operate and maintain, at all times, all parts of the collection system that the Discharger owns or over which the Discharger has operational control;
 7. The ability to provide adequate capacity to convey base flows and peak flows for all parts of the collection system the Discharger owns or over which the Discharger has operational control; and
 8. How the Discharger will take all feasible steps to stop and mitigate the impact of sanitary sewer overflows in portions of the collection system the Discharger owns or over which the Discharger has operational control.
- b. At a minimum, the Overflow Prevention and Response Plan shall contain or describe the following:
 1. Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;

2. Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows. Maintenance activities may include pretreatment of wastewater from industrial dischargers who discharge high concentrations of oil and grease in their wastewater;
 3. Procedures for responding to sanitary sewer overflows designed to minimize the volume of sewer overflow that enters surface waters, and minimize the adverse effects of sewer overflows on water quality and beneficial uses;
 4. Steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported; and
 5. A public notification plan, in which any posting of areas contaminated with sewage is performed at the direction of the Sacramento County Health Department. All parties with a reasonable potential for exposure to an overflow event shall be notified.
10. The land leased from Dutra Farms may become unavailable for land disposal over the term of this Order. The Discharger shall provide a technical report by **1 August 2004** that assesses the land disposal capacity of City-owned land covered by this Order, to agronomically apply food processing wastewater, biosolids, and a portion of the municipal wastewater in compliance with this Order. If the Discharger cannot demonstrate that adequate capacity is available for, at a minimum, all food processing wastewater and all biosolids, then the report shall include plans and a time schedule to provide adequate capacity or determine an alternative disposal solution (e.g. landfill disposal of biosolids) in the event the lease is terminated.
 11. The Discharger shall conduct the three species chronic toxicity testing as specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Board, this Order may be reopened and a limitation based on that objective included.
 12. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

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13. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
14. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.
15. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated February 2004, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provisions."
16. The Discharger shall comply with Monitoring and Reporting Program No. R5-2004-0028, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested by USEPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger Self Monitoring Reports.

17. In order to comply with Effluent Limitations and Discharge Specifications for Land Disposal, the Discharger shall submit 120 days in advance of the upgraded plant start-up, a technical report for the maximization of land disposal of wastewater at agronomic rates, which specifies:
 - a. Crop types to be used and their associated water and nutrient uptake rates;
 - b. Seasonal wastewater and sludge application rates based on hydraulic capacity (monthly water balance), BOD removal capacity, nutrient uptake rates, and heavy metal accumulated rates; and
 - c. Application and runoff control techniques.
18. The DO TMDL completion date is anticipated to be in 2004. This Order may be reopened to consider alternative effluent limitations (including but not limited to: BOD, CBOD, ammonia, and TSS) needed to allow the Discharger to meet it's required load allocation that may be specified in the TMDL.
19. This Order expires on 1 March 2009 and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.

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20. The Discharger shall enforce the Pretreatment Standards promulgated under Sections 307(b), 307(c) and 307(d) of the Clean Water Act. The Discharger shall perform the pretreatment functions required by 40 CFR Part 403 including but not limited to:
 - a. Adopting the legal authority required by 40 CFR 403.8(f)(1);
 - b. Enforcing the Pretreatment Standards of 40 CFR 403.5 and 403.6;
 - c. Implementing procedures to ensure compliance as required by 40 CFR 403.8(f)(2); and
 - d. Providing funding and personnel for implementation and enforcement of the pretreatment program as required by 40 CFR 403.8(f)(3).
21. The Discharger shall submit to the Regional Board by **31 May 2004** a revised pretreatment program that corrects, to the satisfaction of the Regional Board, the deficiencies noted in the October 2001 Pretreatment Audit and the 22 January 2003 letter from the Regional Board staff. Upon submittal of an adequate revised pretreatment program, the Regional Board will reopen this Order to approve the pretreatment program. The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the Discharger fails to perform the pretreatment functions, the Regional Board, the State Board or the USEPA may take enforcement actions against the Discharger as authorized by the Clean Water Act. The pretreatment program has not previously been fully implemented. The Discharger shall be in full compliance with all pretreatment program requirements by **1 October 2004**, and shall submit a report by **1 November 2004** that outlines actions taken to implement the program.
22. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
 - a. Wastes that create a fire or explosion hazard in the treatment works;
 - b. Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - c. Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
 - d. Any waste, including oxygen demanding pollutants (BOD; etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;

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- e. Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the Regional Board approves alternate temperature limits;
 - f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
 - h. Any trucked or hauled pollutants, except at points predesignated by the Discharger.
23. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:
- a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or
 - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.
24. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Board (Division of Water Rights).
25. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0028

NPDES NO. CA0081558

FOR
CITY OF MANTECA, CITY OF LATHROP AND DUTRA FARMS
WASTEWATER QUALITY CONTROL FACILITY
SAN JOAQUIN COUNTY

This Monitoring and Reporting Program is issued pursuant to Water Code Sections 13383 and 13267. The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program. Specific sample station locations shall be established under direction of the Regional Board's staff, and a description of the stations shall be attached to this Order.

INFLUENT MONITORING

Samples shall be collected at approximately the same time as effluent samples and should be representative of the influent for the period sampled. Influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
20°C BOD ₅	mg/l, lbs/day	24 hr. Composite	Daily
Suspended Solids	mg/l, lbs/day	24 hr. Composite	Daily
Flow	mgd	Meter	Continuous

EFFLUENT MONITORING
(When discharging to Surface Waters)

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Effluent samples should be representative of the volume and quality of the discharge. Samples collected from the outlet structure of ponds will be considered adequately composited. The date and time of collection of samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Meter	Continuous

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<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Temperature ¹	°F	Meter	Continuous
Chlorine Residual ²	mg/l	Continuous	Continuous
PH	Number	Grab	Daily
Total Coliform Organisms	MPN/100 ml	Grab	Daily
20°C BOD ₅	mg/l, lbs/day	24 hr. Composite	Daily
Suspended Solids	mg/l, lbs/day	24 hr. Composite	Daily
Settleable Solids	ml/l	Grab	Daily
Turbidity	NTU	Grab	Daily
Ammonia ^{3,4}	mg/l	Grab	Weekly
Nitrate	mg/l	Grab	Weekly
Nitrite	mg/l	Grab	Weekly
Total Dissolved Solids	mg/l	Grab	Monthly
Electrical Conductivity @25°C	umhos/cm	Grab	Monthly
Acute Toxicity ^{5,6,7}	% Survival	Grab	Monthly
Aluminum, total	ug/l	Grab	Monthly
Arsenic, total ⁸	ug/l	Grab	Monthly
Copper, total ⁸	ug/l	Grab	Monthly
Cyanide, total ⁸	ug/l	Grab	Monthly
Iron, total	ug/l	Grab	Monthly
Manganese, total	ug/l	Grab	Monthly
MBAS	ug/l	Grab	Monthly
Mercury, total ⁹	ug/l	Grab	Monthly
Molybdenum	ug/l	Grab	Monthly
Trihalomethanes ^{8,10}	ug/l	Grab	Monthly
2,4,6-Trichlorophenol ⁸	ug/l	Grab	Monthly
Bis(2-ethylhexyl)phthalate ⁸	ug/l	Grab	Monthly

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<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Carbofuran	ug/l	Grab	Quarterly
Standard Minerals ¹¹	mg/l	Grab	Annually
Priority Pollutants ^{8,12}	mg/l	Grab	Annually

- ¹ Effluent temperature monitoring will be at the outfall location.
- ² Chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/l.
- ³ Concurrent with biotoxicity monitoring.
- ⁴ Report as total.
- ⁵ The acute bioassays samples shall be analyzed using EPA-821-R-02-012, Fifth Edition, or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be fathead minnows (*Pimephales promelas*), with no pH adjustment unless approved by the Executive Officer.
- ⁶ Concurrent with Ammonia Sampling.
- ⁷ The bioassay may be modified to eliminate ammonia-related toxicity until 31 March 2004, at which time the Discharger shall be required to implement the test without modifications to eliminate ammonia toxicity.
- ⁸ Detection limits will be equal to or less than the lowest minimum level published in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan or SIP).
- ⁹ Utilize Method 1631 with a detection limit of 0.0005 ug/l.
- ¹⁰ Trihalomethanes include bromoform, chloroform, bromodichloromethane, and dibromochloromethane.
- ¹¹ Standard minerals shall include all major cations and anions and include a verification that the analysis is complete (i.e., cation/anion balance).
- ¹² Concurrent with receiving water sampling.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

EFFLUENT MONITORING OF RECLAMATION WATER

Effluent samples shall be collected downstream from the last connection through which reclaimed water can be admitted into the field distribution system. Effluent samples should be representative of the volume and nature of the discharge. Samples collected from the outlet structure of ponds will be

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considered adequately composited. The date and time of collection of a grab sample shall be recorded. The following shall constitute the effluent monitoring program:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	MGD	Continuous	Daily
20°C BOD ₅	mg/l	Grab	Twice Monthly
Settleable Matter	ml/l	Grab	Twice Monthly
Total Dissolved Solids	mg/l	Grab	Quarterly
Electrical Conductivity @25°C	umhos/cm	Grab	Twice Monthly
Ammonia (as N)	mg/l	Grab	Twice Monthly
Nitrate (as N)	mg/l	Grab	Twice Monthly
Total Metals ¹	mg/l	Grab	Annually ²

¹Total Metals shall include analyses for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.
²Samples shall be collected during the month of August.

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, with the exception of metals analyses, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

STORAGE POND MONITORING

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Dissolved Oxygen	mg/l	Grab	Weekly
pH	pH units	Grab	Weekly

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. The date and time will be recorded with each sample. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	100 feet upstream from the point of discharge
R-2	500 feet downstream from the point of discharge
R-3	1 mile downstream from the point of discharge
R-4	2 mile downstream from the point of discharge

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
River Flow	cfs	Footnote 1	Continuous ¹
Direction of River Flow		Footnote 1	Continuous ¹
Dissolved Oxygen	mg/l	R-1, R-2, R-3, R-4	Bi weekly ²
pH	Number	R-1, R-2, R-3, R-4	Bi weekly ²
Turbidity	NTU	R-1, R-2	Bi weekly ²
Temperature	°F (°C)	R-1 R-2, R-3, R-4	Continuous Bi weekly ²
Electrical Conductivity @25°C	umhos/cm	R-1, R-2	Bi weekly ²
Fecal Coliform Organisms	MPN/100 ml.	R-1, R-2	Bi weekly ²
Ammonia ³	mg/l	R-1, R-2, R-3, R-4	Bi weekly ²
Nitrate	mg/l	R-1, R-2	Bi weekly ²
Nitrite	mg/l	R-1, R-2	Bi weekly ²
Total Chlorine Residual	mg/l	R-1, R-2	Bi weekly ²
Aluminum, total	ug/l	R-1, R-2	Quarterly
Arsenic, total ⁴	ug/l	R-1, R-2	Quarterly
Copper, total ⁴	ug/l	R-1, R-2	Quarterly
Iron, total	ug/l	R-1, R-2	Quarterly
Manganese, total	ug/l	R-1, R-2	Quarterly

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<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Mercury, total ⁵	ug/l	R-1, R-2	Quarterly
Molybdenum	ug/l	R-1, R-2	Quarterly
Trihalomethanes ^{4,6}	ug/l	R-1, R-4	Quarterly
2,4,6-Trichlorophenol ⁴	ug/l	R-1, R-4	Quarterly
Bis(2-ethylhexyl)phthalate ⁴	ug/l	R-1, R-4	Quarterly
Standard Minerals ⁷	mg/l	R-1, R-4	Yearly
Priority Pollutants ^{4,8}	mg/l	R-1, R-4	Yearly

¹ The Discharger shall propose an appropriate location and real-time monitoring equipment to be installed near the outfall for Executive Officer approval. Flow and directional monitoring must be initiated by 1 March 2005.

² Samples shall be collected every two weeks when discharging to the receiving water.

³ Temperature and pH shall be determined at the time of sample collection.

⁴ Detection limits will be equal to or less than the lowest minimum level published in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan).

⁵ Utilize Method 1631 with a detection limit of 0.0005 ug/l.

⁶ Trihalomethanes include bromoform, chloroform, bromodichloromethane, and dibromochloromethane.

⁷ Standard minerals shall include all major cations and anions and include a verification that the analysis is complete (i.e., cation/anion balance).

⁸ Concurrent with effluent sampling.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention shall be given to the presence or absence of:

- | | |
|---------------------------------|--|
| a. Floating or suspended matter | e. Visible films, sheens or coatings |
| b. Discoloration | f. Fungi, slimes, or objectionable growths |
| c. Bottom deposits | g. Potential nuisance conditions |
| d. Aquatic life | |

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

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to the San Joaquin River. The testing shall be conducted as specified in EPA/821-R-02-013, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002, or later amendment with Regional Board staff approval. Chronic toxicity samples shall be taken at the effluent monitoring location specified in this Monitoring and Reporting Program. Twenty-four hour composite samples shall be representative of the volume and quality of the discharge. Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent. Time of sample collection shall be recorded. The receiving water control shall be obtained immediately upstream of the discharge from an area unaffected by the discharge in the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days.

Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas*, *Ceriodaphnia dubia*, and *Selenastrum capricornutum*

Frequency: Quarterly

Dilution Series:

	<u>Dilutions (%)</u>					<u>Controls</u>	
	<u>100</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>Receiving Water</u>	<u>Lab Water</u>
% WWTP Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water ¹	0	50	75	87.5	93.75	0	100
% Receiving Water	0	0	0	0	0	100	0

¹ Dilution water shall be standard laboratory control water due to intermittent receiving water toxicity.

BIOSOLIDS MONITORING

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A composite sample of biosolids shall be collected in accordance with USEPA's POTW Biosolids Sampling and Analysis Guidance Document, August 1989, (or most recent edition) and tested for the following constituents:

<u>Constituent</u>	<u>Units</u>	<u>Sample Type</u>	<u>Frequency</u>
Quantity	Dry Tons	-----	Quarterly
Solids Content	% percentage	Composite	Quarterly
Disposal Location	-----	-----	Quarterly
Arsenic	mg/kg	Composite	Quarterly
Cadmium	mg/kg	Composite	Quarterly
Chromium	mg/kg	Composite	Quarterly
Copper	mg/kg	Composite	Quarterly
Lead	mg/kg	Composite	Quarterly
Mercury	mg/kg	Composite	Quarterly
Molybdenum	mg/kg	Composite	Quarterly
Nickel	mg/kg	Composite	Quarterly
Selenium	mg/kg	Composite	Quarterly
Zinc	mg/kg	Composite	Quarterly
Oil and Grease	mg/kg	Composite	Quarterly
Nitrogen	mg/kg (dry)	Composite	Quarterly
Ammonia	mg/kg (dry)	Composite	Quarterly
Nitrate	mg/kg (dry)	Composite	Quarterly
Total Kjeldahl Nitrogen	mg/kg (dry)	Composite	Quarterly
Fecal Coliform	MPN/gram total solids	Composite	See Footnote 1
<u>Priority Pollutants</u>	---	Composite	See Footnote 2

¹ The Discharger shall collect seven composite samples over a two week period each quarter, and analyze the samples for fecal coliform (report as MPN/gm total solids). Results for each sample shall be reported along with the geometric mean of the results.

² **Within 90 days of the effective date of this Order, and annually thereafter,** the Discharger shall submit results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). Suggested methods for analysis of biosolids are provided in USEPA publications titled "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods" and "Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater". Other guidance is available in USEPA's POTW Biosolids Sampling and Analysis Guidance Document, August 1989 (or most recent edition).

Results of monitoring shall be reported in compliance with the Reporting Section. The biosolids monitoring report shall include a statement concerning compliance with 40 CFR Part 503 biosolids

disposal requirements. The report shall include, but is not limited to, an assessment of cumulative metals and nitrogen loadings from all sources, type of crop grown, nitrogen demand, and setback and runoff compliance, as well as compliance with pathogen reduction and vector attraction reduction standards.

Discharger shall submit annually a description of disposal methods, including the following information related to the disposal methods used at the facility. If more than one method is used, include the percentage of annual biosolids production disposed by each method.

- a. For **landfill disposal**, include (1) the Regional Board's WDR numbers that regulate the landfill(s) used, (2) the present classifications of the landfill(s) used, and (3) the names and locations of the receiving facility(ies).
- b. For **land application**, include (1) location of the site(s), (2) the Regional Board's WDR numbers that regulate the site(s), (3) the application rate in lbs/year (specify wet or dry), and (4) subsequent uses of the land.
- c. For **incineration**, include (1) name and location of the site(s) where sludge incineration occurs, (2) the Regional Board's WDR numbers that regulate the site(s), (3) the disposal method of the ash, and (4) the names and locations of facilities receiving ash (if applicable).
- d. For **composting**, include (1) name and location of the site(s) where sludge composting occurs, and (2) the Regional Board's WDR numbers that regulate the site(s).

SOIL PROFILE MONITORING

A minimum of four representative locations shall be established for soil profile sampling of the fields where effluent and sludge are applied. The following shall constitute the monitoring program:

<u>Measurement</u>	<u>Units</u>	<u>Soil Profile</u>	<u>Sampling Frequency</u>
Nitrate Nitrogen	mg/kg	4 feet ¹	Annually ²
Kjeldahl Nitrogen	mg/kg	4 feet ¹	Annually ²
Soluble Salts ³	mg/kg	4 feet ¹	Annually ²
Total Metals ⁴	mg/kg	4 feet ¹	Annually ²

¹Samples shall be collected at 1-foot increments.

²Each location shall be sampled during the month of April.

³Soluble salts shall be determined using test methods described in Methods of Soil Analysis, Part 2, Chemical and Microbiological Properties, Second Edition, Edited by Page, Miller and Keeney; American Society of Agronomy, Inc., Soil Science Society of America, Inc.: 1982 Page 168 et seq., or other acceptable test methods with prior approval by the Executive Officer. Analytical results shall report the soil/water ratio.

⁴Total Metals shall include analyses for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.

GROUNDWATER MONITORING

Prior to construction, plans and specifications for ground water monitoring wells shall be submitted to Regional Board staff for review and approval. Wells shall comply with requirements of the Department of Water Resources. Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until pH and electrical conductivity have stabilized. Samples shall be collected using standard USEPA methods. Groundwater monitoring shall include, at a minimum:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sample Frequency</u>
Depth to Groundwater ¹	Feet	Measurement	Quarterly
Groundwater Elevation ¹	Feet	Measurement	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly
Ammonia, as Nitrogen	mg/l	Grab	Quarterly
Nitrate, as Nitrogen	mg/l	Grab	Quarterly
PH	pH Units	Grab	Quarterly
Electrical Conductivity ² @ 25°C	umhos/cm	Grab	Quarterly
Total Coliform Organisms	MPN/100 ml	Grab	Quarterly
Title 22 Metals	mg/l	Grab	Quarterly

¹ Groundwater elevation shall be used to calculate the direction and gradient of groundwater flow. Elevations shall be measured to the nearest one-hundredth of a foot from mean sea level. The groundwater elevation shall be measured prior to purging the wells.

² A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the municipal water supply can be obtained. The following shall constitute the water supply monitoring program.

<u>Constituents</u>	<u>Units</u>	<u>Sampling Frequency</u>
Standard Minerals ¹	mg/l	Yearly
Electrical Conductivity ² @ 25°C	umhos/cm	Yearly
Total Dissolved Solids	mg/l	Yearly

¹ Standard minerals shall include all major cations and anions, including calcium, magnesium, hardness, sodium, potassium, alkalinity, sulfate, chloride, boron, and nitrate, and verification that the analysis is complete (i.e., cation/anion balance).

² If the water supply is from more than one source, the EC shall be reported as a weighted average and include copies of supporting calculations.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

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 whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Suspended Solids, should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting

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of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names, certificate grades, and general responsibilities of all persons employed at the WWTP (Standard Provision A.5).
- b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
- c. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
- d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

19 March 2004

MWK

1 Introduction

The City of Manteca and City of Lathrop are currently governed by Order No. 5-01-007, NPDES No. CA0081558, adopted 26 January 2001. The City of Manteca has submitted a Report of Waste Discharge for renewal of this Order and for expansion of the wastewater quality control facility (WQCF).

The City of Manteca owns and operates the WQCF that receives wastewater flows from the City of Manteca and some areas of the City of Lathrop. The City of Manteca is responsible for the operation and discharge from the treatment plant, while the City of Lathrop is only responsible for its portion of the wastewater collection system. The City of Manteca leases 150 acres of land from Dutra Farms for application of treated wastewater, therefore Dutra Farms is named in this permit and is responsible for the proper application and management of the wastewater on its land. The City of Manteca, City of Lathrop, and Dutra Farms are hereafter Discharger.

The City's treatment process consists of raw influent bar screening, flow metering, and grit removal, followed by primary sedimentation, biofiltration, conventional activated sludge and secondary sedimentation. Secondary effluent is spread over agricultural fields and the excess flows are chlorinated, dechlorinated and discharged to the San Joaquin River.

The City of Manteca currently discharges an average of 2.0 mgd of treated domestic and industrial wastewater at agronomic rates to 210 acres of farmland owned by the City adjacent to the treatment plant, and 150 additional acres leased by the city with the excess flows discharged to the San Joaquin River. The flows to agricultural land are required to be maximized to limit the discharges to surface waters. Surface water discharges average 4.89 mgd.

The treatment system capacity will be expanded through the addition of primary and secondary treatment units that will be similar to and parallel to the existing units. In addition, nitrification, denitrification, tertiary filtration, and UV disinfection will be added to improve the effluent quality. Only the wastewater that will be discharged to the San Joaquin River will receive tertiary filtration and UV disinfection. The expansion will also include additional sludge digestion and dewatering units, as well as improvements to buildings, pump stations, ponds, and chemical handling. Food processing waste will also be delivered, treated, and land applied separately from the municipal waste collection and treatment system.

2 Dilution

The City of Manteca utilizes a side-bank outfall on the eastern bank of the San Joaquin River. The flow in the San Joaquin River can be estimated from the Vernalis gaging station which is approximately 15 miles upstream of the Manteca outfall. There are agricultural diversions and returns between the Vernalis station and the outfall, which will affect flow and water quality. Additionally, Brown Sand discharges approximately 10 cfs of wastewater made up of primarily groundwater infiltrate from the Oakwood Lake impoundment just 50 feet downstream via a side-bank outfall on the same side of the San Joaquin River as that of Manteca's outfall.

2.1 Available Receiving Water Flow Data

DWR collects daily average flow data for the San Joaquin River near Vernalis at station RSAN112. Evaluation of this data for the period 1980 to 2002 provided a 1Q10 value of 567 cfs, a 7Q10 value of 620 cfs, and a 30Q10 value of 680 cfs. This period was selected because all current flow control structures on the San Joaquin River and its tributaries were in place by 1980. However, the data set may not accurately represent historical critical low flow periods. Table 2 summarizes the flow data and calculations. Stage data collected at the Vernalis station does not indicate any tidal flows this far upstream. Downstream, DWR collects stage data near Mossdale at station RSAN087, near the Manteca outfall. Stage data fluctuated about 0.5 feet daily implying that the tidal flow is present.

Under critical low flow conditions, upstream flows occur on the flood tide, no flow during the slack tide, and downstream flows during the ebb tide. Multiple dosing of the receiving water with effluent may occur as the tide moves the water column upstream and downstream past the outfall. The complex dynamics of the stream flow, the tidal flows, and the intermittent side bank discharges from the City of Manteca and the Brown Sand impoundment must be considered in an evaluation of the available dilution in the immediate area of these side-bank outfalls.

2.2 Available Hydrodynamic/Water Quality Models

Hydrodynamic and water quality models were utilized for the analysis of the water quality impacts of the proposed expansion of the City of Manteca wastewater discharge to the San Joaquin River. Resource Management Associates (RMA) performed the modeling that was published in the *Analysis of the Fate and Water Quality Impacts of the City of Manteca Discharge*, Resource Management Associates, October 10, 2000. Larry Walker Associates utilized the modeling data developed by RMA to generate the *Water Quality Analysis of Surface Water Discharge*, Larry Walker Associates, October 2000. Both of these documents are included in the appendices of the *Draft Environmental Impact Report for the Manteca WQCF Phase III/IV Expansion Project*, October 2000.

The near-field analysis was performed using the RMA-10 model which performed the hydrodynamic simulation and the temperature and ammonia evaluations. The near-field analysis was based on the assumptions that:

1. Minimum daily flows in the San Joaquin River at Vernalis since 1983 were used.
2. Discharge to the river would be only during the out-going tide.
3. Ambient water conditions for temperature and ammonia were based on the DWR-D-1485 site at Mossdale.

The far-field water quality analysis was performed using a link-node hydrodynamic model of the San Joaquin River and Delta. The link-node tidally averaged water quality model simulates the long-term fate and transport of a discharge to the Delta. A total of three Delta configurations were considered for the parameters of dissolved oxygen, total organic carbon, and total dissolved solids. A tracer simulation was utilized to determine the potential influence of the treated effluent on downstream intakes. The model predicts very small changes to downstream locations as a result of the discharge.

The EIR concludes that these small changes are insignificant. The EIR does not evaluate the cumulative impacts of the Manteca discharge.

However, there are concerns about the accuracy of the modeling. The biggest concern is with the lack of a demonstrated calibration of the near-field RMA-10 modeling. Without comparison to field data (e.g. dye or temperature), there is no assurance that plume dimensions or in-stream dilutions are accurate for the Manteca discharge. Dilution and plume dimensions were not determined under critical conditions that have occurred at the outfall. The timed discharge modeling did not appear to be run for an adequate time period to allow the tidal cycles and their recirculation effects to be fully accounted for in the plume development. The Brown Sand, Inc. discharge was not taken into account to determine its effects on plume development.

2.3 Regulatory Guidance for Dilution Credits and Mixing Zones

The Clean Water Act directs states to adopt water quality standards to protect the quality of their waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR §122.44 and §122.45). The USEPA allows states to have broad flexibility in designing their mixing zone policies. Primary guidance on determining mixing zone and dilution credits is provided by the *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California* (State Implementation Policy or SIP), the *USEPA Technical Support Document for Water Quality-based Toxic Control (EPA/505/2-90-001)* (TSD), and the Basin Plan. For NPDES permits in California, the SIP guidance supercedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. The SIP does not apply to non-priority pollutants, in which case the more stringent of the Basin Plan or USEPA guidance applies.

The allowance of mixing zones by the Regional Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Board will consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the TSD. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge.*"

Section 1.4.2 of the SIP states that, "*with the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a basin plan, the Regional Board may grant mixing zones and dilution credits to dischargers ... The applicable priority pollutant criteria and objectives are to be met throughout a*