

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0193

WASTE DISCHARGE REQUIREMENTS  
FOR  
FRESNO COUNTY SERVICE AREA NO. 34  
MILLERTON NEW TOWN  
FRESNO COUNTY

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

1. Fresno County Service Area No. 34 (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 19 October 2000, for expansion and eventual replacement of its wastewater treatment facility (WWTF) to provide sewerage service to the proposed Millerton New Town, which includes the existing Brighton Crest development. When completed, Millerton New Town will comprise approximately 1,500 acres of 2,600 homes and related commercial uses and recreational development east of Friant and adjacent to Millerton Road. The WWTF and Use Area will be in Sections 15 and 16 and Millerton New Town will be in Sections 9, 10, 11, 14,15, and 16, T11S, R21E, MDB&M, as shown on Attachment A, a part of this Order.
2. The existing WWTF provides sewerage service for about 42 homes in Brighton Crest. Waste Discharge Requirements (WDRs) Order No. 91-068, adopted on 22 February 1991 for the Discharger, prescribes requirements for the monthly average daily discharge of 0.112 mgd. The existing WWTF has a constructed treatment capacity of 0.056 mgd and consists of a septic tank pumping system, recirculating sand filter, and lined evaporation ponds.
3. Self-monitoring data from January 2001 to December 2001 characterize the discharge as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Influent</u>	<u>Effluent</u>
Monthly Average Daily Flow	mgd	0.0125	0.0125
Settleable Solids	mL/L		tr
BOD <sub>5</sub> <sup>1</sup>	mg/L	48	ND
TSS <sup>2</sup>	mg/L	30	ND
EC <sup>3</sup>	µmhos/cm	N/A	535

<sup>1</sup> 5-day, 20°C biochemical oxygen demand

<sup>2</sup> Total Suspended Solids

<sup>3</sup> Conductivity at 25°C

4. The RWD indicates the existing WWTF serving only Brighton Crest will be expanded to 0.112 mgd to serve portions of Millerton New Town until replaced with a new WWTF. The interim WWTF will include a primary sedimentation tank followed by a recirculating sand filter, lined storage ponds, filtration, disinfection, and recycling on the proposed White Fox Creek Golf Course.

5. Self-monitoring reports from 2001 indicate that winter flows to the existing WWTF are not higher than summer flows, demonstrating insignificant inflow and infiltration to the collection system during winter months.
6. Order No. 91-068 does not reflect the proposed WWTF expansion or replacement. The purpose of this Order is to rescind the previous Order and update waste discharge requirements, in part, to ensure the discharge is consistent with water quality plans and policies, to prescribe the requirements that are effective in protecting existing and potential beneficial uses of receiving waters, and to reflect the Discharger's expanded service area.
7. The RWD indicates the expanded existing WWTF will be replaced with a new WWTF that will be expanded in separate phases to a final capacity of 0.709 mgd. The new WWTF will consist of headworks, a new secondary treatment process, coagulation/flocculation, filtration, disinfection, sludge handling facility, an emergency storage basin, lined (permeability less than  $10^{-6}$  cm/sec) effluent storage ponds, and a recycled water irrigation system. Phase 1 will be for 0.25 mgd, Phase 2 will be for 0.5 mgd, and Phase 3, ultimate build-out, will be for 0.709 mgd. The general WWTF flow diagram is depicted in Attachment B, a part of this Order. The expansion will include dual plumbing to provide for wastewater recycling on additional golf course areas and ornamental landscaping.
8. The RWD projects effluent water quality will meet discharge specifications and those in Title 22, California Code of Regulations (CCR) section 60301 et seq. (hereafter Title 22) for disinfected tertiary recycled water.
9. The Discharger obtains its source water from Millerton Lake. Source water quality is as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Value</u>
EC	µmhos/cm	46
Total Dissolved Solids (TDS)	mg/L	21
Sodium	mg/L	3.0
Chloride	mg/L	2.0
Nitrate (as N)	mg/L	ND

10. The EC of the existing WWTF effluent is about 270 µmhos/cm higher than the source water EC.
11. The term Use Area as used herein means portions of the White Fox Creek golf course, Brighton Crest Golf Course, and other landscaped areas upon which recycled water is or will be used for irrigation.
12. The Discharger currently disposes of sludge at the Fresno County landfill and will continue to do so until the WWTF reaches 0.112 mgd. For Phases 1, 2, and 3, the Discharger proposes to thicken WWTF sludge, decant the supernatant to the headworks, mechanically dewater sludge, and truck it off-site for disposal at an approved receiving facility.

### **State Recycling Policies and Regulations**

13. Domestic wastewater contains pathogens harmful to humans that are typically measured by means of total and fecal coliform as indicator organisms. California Department of Health Services (DHS), which has primary statewide responsibility for protecting public health, has established statewide criteria in Title 22 for the use of recycled water and has developed guidelines for specific uses. Revisions of the water recycling criteria in Title 22 became effective on 2 December 2000. The revised Title 22 expands the range of allowable uses of recycled water, establishes criteria for these uses, and clarifies some of the ambiguity contained in the previous regulations.
14. Section 13523 of the California Water Code (CWC) provides that a regional board, after consultation with and in accordance with the recommendations from DHS as necessary to protect the public health, safety, or welfare, shall prescribe water recycling requirements for wastewater used or proposed to be used as recycled water.
15. The 1988 Memorandum of Agreement (MOA) between DHS and the State Water Resources Control Board (SWRCB) on the use of recycled water establishes basic principles relative to the agencies and the regional boards. In addition, the MOA allocates primary areas of responsibility and authority between these agencies, and provides for methods and mechanisms necessary to assure ongoing, continuous future coordination of activities relative to the use of recycled water in California.
16. The Discharger intends to recycle effluent on golf courses and other landscaped areas. Crops in the proposed Use Area will include grass and ornamental landscaping. Title 22 requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards. Section 60313 of Title 22 states that no person other than a recycled water agency shall deliver recycled water to a dual-plumbed facility. The Discharger submitted an engineering report to DHS pursuant to Title 22 for on-site water recycling of disinfected tertiary recycled water (as defined by Title 22, section 60301.230).
17. Section 60304 of Title 22 states that disinfected tertiary recycled water may be used for the following purposes:
  - a. Food crops,
  - b. Parks and playgrounds,
  - c. School yards,
  - d. Residential landscaping,
  - e. Unrestricted access golf courses, and
  - f. Any other irrigation use not specified in Title 22 and not prohibited by other sections of the California Code of Regulations.
18. According to the *Western Fertilizer Handbook*, the annual nitrogen uptake by turf in the proposed Use Area is greater than 150 lbs/acre. Since the effluent nitrogen concentration will be less than

10 mg/L at an ultimate flow of 0.709 mgd, total effluent applied nitrogen will be about 21,600 pounds per year. At 150 pounds per acre, this requires a Use Area, at project completion, of 144 acres for turf grass irrigation. The RWD indicates the 188-acre golf course will be developed in the initial phases of development, thereby providing more than enough acreage to preclude over-application of nitrogen during all project phases with uniform application of recycled water and judicious use of fertilizers. The Discharger has stated that the annual total nitrogen application will not exceed 150 lbs/acre. Areas that may receive recycled water are delineated in Attachment A.

19. Easements dedicating specific land for water recycling are necessary to ensure adequate, long term disposal capacity.
20. As the effluent will be treated to meet the requirements for disinfected tertiary recycled water, it is approved for use on food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop; parks and playgrounds; school yards; residential landscaping; unrestricted access golf courses; and any other irrigation use not specified in Title 22, section 60304, and not prohibited by other sections of the CCR.
21. The Regional Board consulted with DHS and the Fresno County Health Department, and considered their recommendations regarding public health aspects for the Discharger's water recycling operation.

#### **Hydrology, Soils, and Land Use**

22. The WWTF and Use Area lie within the San Joaquin Basin, specifically the Millerton Lake Hydrologic Area (No. 540.12), as depicted on interagency hydrologic maps prepared by the California Department of Water Resources (DWR) in 1986. Surface water drainage is to Millerton Lake and to White Fox Creek which enters Little Dry Creek, a tributary of the San Joaquin River, below Friant Dam. The WWTF is not within a 100-year floodplain, and all storm water runoff within the WWTF property will be contained on-site.
23. The discharge area is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. The RWD calculated the water balances using the discharge area 100-year probability precipitation and evapotranspiration values of 23.2 inches and 51.4 inches, respectively.
24. Areal soils consist of shallow soils underlaid by granite. The permeability of the soils is considered moderate.
25. Land use in the WWTF vicinity is primarily residential and recreational.

### Basin Plan

26. The *Water Quality Control Plan for the San Joaquin-Sacramento River Basin, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, and contains implementation plans and policies for protecting all waters of the Basin. The Basin Plan includes plans and policies of the SWRCB incorporated by reference. Pursuant to section 13263(a) of the CWC, waste discharge requirements must implement the Basin Plan.
27. The Basin Plan designates the beneficial uses of Millerton Lake as: potential municipal and domestic supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, potential cold freshwater habitat, and wildlife habitat.
28. The Basin Plan designates the beneficial uses of the San Joaquin River from Friant Dam to the Mendota Pool as: municipal and domestic supply; agriculture supply; industrial process supply; contact and non-contact water recreation; warm and cold freshwater habitat; migration of aquatic organisms; and wildlife habitat.

### Regulatory Considerations

29. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, CCR, section 20005 et seq. (hereafter Title 27). The exemption, pursuant to section 20090(a) of Title 27, is based on the following:
  - a. The waste consists primarily of domestic sewage and treated effluent;
  - b. The waste discharge requirements are consistent with water quality objectives; and
  - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

### Groundwater

30. Groundwater quality, as determined from the well that previously supplied the Brighton Crest subdivision, is characterized as follows:

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Value</u>
EC	µmhos/cm	410
Total Dissolved Solids (TDS)	mg/L	240
Sodium	mg/L	25
Chloride	mg/L	17
Nitrate (as N)	mg/L	15
Bicarbonate	mg/L	200

### **Degradation and Groundwater Limitations**

31. State Water Resources Control Board Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation" Policy) requires the Regional Board, in regulating discharge of waste, to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Basin Plan (i.e., quality that exceeds water quality objectives).
32. The conditional discharge from the WWTF, described in Finding Nos. 2, 4, and 7; and as permitted herein, reflects best practicable treatment and control (BPTC) for the subject wastewater intended to assure that the discharge does not create a condition of pollution or of nuisance and that the highest water quality defined by groundwater limitations will be maintained and is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16. The WWTF incorporates:
  - a. technology for disinfected, filtered tertiary treated of municipal wastewater;
  - b. biosolids handling and treatment for reuse;
  - c. disinfection;
  - d. concrete treatment structures;
  - e. lined storage ponds which have less than  $10^{-6}$  cm/sec permeability;
  - f. application of wastewater, biosolids, and commercial fertilizer to Use Areas at reasonable agronomic rates considering the crop, soil, climate, and irrigation management system in accordance with the use area management plan required under Provision E.6 of this Order;
  - g. an operation and maintenance manual;
  - h. staffing to assure proper operation and maintenance; and
  - i. a standby emergency power generator of sufficient size to operate the treatment plant and ancillary equipment during periods of loss of commercial power.

Degradation, if it occurs, will be: (a) limited to groundwater underlying the recycling areas; (b) limited to salinity constituents as allowed by effluent limitations in accord with the Basin Plan; (c) consistent with the maximum benefit to the people of the State; and will not (d) unreasonably affect present and anticipated beneficial use of affected groundwater or exceed water quality objectives.

### **CEQA**

33. On 18 December 1984, the Discharger adopted the Millerton Specific Plan. On 20 April 1999, the Fresno County Board of Supervisors approved the Millerton Specific Plan Mitigation Measures and Monitoring Program Matrix for the new WWTF in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq., and the State CEQA guidelines). The project as approved by Fresno County will not have a significant effect on water quality.

### General Findings

34. Section 13267 of the CWC states, in part, that:
- In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.
35. The attached Monitoring and Reporting Program No. R5-2002-0193 is necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.
36. The Discharger is not required to obtain coverage under an NPDES general industrial storm water permit because all storm water runoff is diverted into existing storm water retention basins, kept separate from the wastewater stream, and does not discharge to a water of the United States.
37. All the above and the supplemental information and details in the attached Information Sheet, incorporated by reference herein, were considered in establishing the following conditions of discharge.
38. Pursuant to CWC section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.
39. The Discharger and interested agencies and persons were notified of intent to prescribe waste discharge requirements for this discharge and provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
40. In a public meeting, all comments pertaining to the discharge were heard and considered.

**IT IS HEREBY ORDERED** that Waste Discharge Requirements Order No. 91-068 is rescinded and that, pursuant to CWC sections 13263 and 13267, Fresno County Service Area No. 34, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, shall comply with the following:

#### A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous,' as defined in section 2521(a) of Title 23, CCR, section 2510 et seq., or 'designated,' as defined in CWC section 13173, is prohibited.

3. Bypass or overflow of untreated or partially-treated waste is prohibited, except as allowed in Provision E.2 of Standard Provisions and Reporting Requirements.
4. Discharge of recycled water to lands outside the Use Area is prohibited.
5. Application of recycled water so as to cause escape from the Use Area as an airborne spray that could visibly wet vegetation or any other surface is prohibited.
6. Cross-connections between any potable water supply and piping containing recycled water are prohibited. As such, no physical connection shall exist between recycled water piping and any domestic water supply well, or between recycled water piping and any irrigation well that does not have an air gap or reduced pressure principle device.
7. Discharge during rainfall or within 12 hours after rainfall is prohibited.

**B. Discharge Specifications**

1. **Until satisfaction of Provision F.10**, the monthly average daily discharge flow shall not exceed **0.056** mgd.
2. **Upon satisfaction of Provision F.10**, the monthly average daily discharge flow shall not exceed **0.112** mgd.
3. **Upon satisfaction of Provision F.11**, the Phase I monthly average daily discharge flow shall not exceed **0.25** mgd.
4. **Upon satisfaction of Provision No. F.12**, the Phase II monthly average daily discharge flow shall not exceed **0.5** mgd.
5. **Upon satisfaction of Provision No. F.13**, the Phase III monthly average daily discharge flow shall not exceed **0.709** mgd.
6. The monthly average EC of the discharge shall not exceed the flow-weighted average EC of the source water plus 400  $\mu\text{mhos/cm}$ , or a total of 450  $\mu\text{mhos/cm}$ , whichever is less. The flow-weighted average EC of the source water shall be a moving average for the most recent twelve months.
7. The discharge shall not have a pH less than 6.0 or greater than 9.0.
8. The discharge to storage ponds and Use Area(s) shall not exceed the following limits:
  - a. **Total Coliform.** The number of total coliform bacteria shall not exceed:

- i. A median concentration of a most probable number (MPN) of 2.2/100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed;
    - ii. 23 MPN/100 mL in more than one sample in any 30 day period; and
    - iii. An MPN of 240 coliform bacteria per 100 mL in any sample.
  - b. **Turbidity.** The turbidity shall not exceed any of the following:
    - i. A daily average of 2 Nephelometric Turbidity Units (NTU),
    - ii. 5 NTU more than 5 percent of the time within a 24-hour period, and
    - iii. 10 NTU at any time.
  - c. **Chlorine Residual.** The product of total chlorine residual and modal contact time shall not be less than 450 milligram-minutes/L at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow. The total chlorine residual concentration shall not be less than 5 mg/L.
  - d. **BOD<sub>5</sub>.** The five day, 20°C biochemical oxygen demand shall not exceed:
    - i. 10 mg/L monthly average, and
    - ii. 30 mg/L daily maximum.
  - e. **TSS.** The total suspended solids content shall not exceed:
    - i. 10 mg/L monthly average, and
    - ii. 30 mg/L daily maximum.
9. **Filtration Rate.** The filtration rate shall not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems.
10. Objectionable odors originating at the WWTF shall not be perceivable beyond the limits of the waste treatment areas and effluent storage ponds at an intensity that creates or threatens to create a nuisance.
11. As a means of discerning compliance with Discharge Specification B. 10, the dissolved oxygen content in the upper zone (one foot) of wastewater in all ponds shall not be less than 1.0 mg/L.
12. Ponds shall be managed to prevent breeding of mosquitoes. In particular.

- a. An erosion control plan should assure that small coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
  - d. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but not during, the **April 1 to June 30** bird nesting season.
13. Freeboard shall never be less than two feet in any pond (measured vertically) or lesser freeboard if certified in writing by a California registered civil engineer as adequate to prevent overtopping, overflows, or levee failures.
  14. As a means of discerning compliance with Discharge Specification B.13, the Discharger shall install and maintain in each pond permanent markers with calibration indicating the water level at design capacity and available operational freeboard. Upon the Discharger's written documentation with request, specific WWTF ponds may be exempt from this requirement. Such exemptions are subject to the Executive Officer's written approval.
  15. The WWTF, ponds, and use areas shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year frequency.
  16. The Discharger shall preclude public access to the waste treatment facilities and lined effluent storage pond(s) adjacent to the treatment plant site through methods such as fences and signs.
  17. Storage ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. 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.
  18. On 15 November of each year, available storage capacity in storage ponds shall be at least equal to the volume necessary to comply with Discharge Specification B.17.
  19. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of groundwater limitations.
  20. A lined emergency storage basin shall be constructed adjacent to the WWTF to store effluent that does not meet specifications or raw wastewater in the event of a major problem at the WWTF. The stored wastewater shall be pumped back into the WWTF for processing when the emergency situation has been corrected. The basin shall have a capacity to store a minimum of 24-hours of influent wastewater flow. The liner shall have a permeability of

less than  $10^{-6}$  cm/sec. The design shall be subject to the Executive Officer's written approval.

21. The WWTF shall meet the applicable reliability criteria set forth in Title 22, Sections 60333 to 60355. The WWTF shall be designed for continuous, reliable performance with provisions for component malfunction and primary power outage. All critical mechanical components in the process train shall have duplex or redundant units. In the event of a malfunction, the WWTF control system shall automatically start the secondary unit.
22. A standby power generator shall be installed for use during power failures and shall start automatically in the event of a disruption in service.

### **C. Water Recycling Specifications**

1. Use of recycled water as permitted by this Order shall comply with all the terms and conditions of the most current Title 22 requirements. Specifically, recycled water shall at a minimum be adequately oxidized, filtered, and disinfected water that receives tertiary level treatment.
2. All users of recycled water shall provide for appropriate backflow protection for potable water supplies as specified in Title 17, CCR, section 7604 or as specified by DHS.
3. Recycled water shall remain within the permitted Use Areas (as defined in Finding No. 18) at all times.
4. Application of wastewater, biosolids, and commercial fertilizer to Use Areas shall be at reasonable agronomic rates considering the crop, soil, climate, and irrigation management system in accordance with the use area management plan required under Provision E.6 of this Order, or as approved by the Executive Officer. The annual nutrient loading of use areas, including the nutritive value of organic and chemical fertilizers and of the recycled water shall not exceed 150 lbs/acre/year.
5. The Discharger shall not irrigate with recycled water within 50 feet of a domestic supply well.
6. The Discharger shall assure impoundments of recycled water are not within 100 feet of a domestic supply well.
7. The perimeter of Use Areas shall be graded to prevent ponding along public roads or other public areas.
8. Areas irrigated with recycled water shall be managed to prevent breeding of mosquitoes. More specifically:
  - a. All applied irrigation water must infiltrate completely within a 24-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 recycled water.
- 9. Recycled water used for irrigation shall be managed to minimize erosion.
  - 10. Recycled water shall be managed to minimize contact with workers and the public. Irrigation will take place at night to minimize the potential for public contact with recycled water.
  - 11. If recycled water is used for construction purposes, it shall comply with the most current edition of *Guidelines for Use of Recycled Water for Construction Purposes*. Other uses of recycled water not specifically authorized herein shall be subject to the approval of the Executive Officer and shall comply with Title 22.
  - 12. Signs with proper wording (shown below) of a size no less than four inches high by eight inches wide shall be placed at all areas of public access and around the perimeter of all areas used for effluent disposal or conveyance to alert the public of the use of recycled water. All signs shall present the international symbol similar to that shown in Attachment C and present the following wording:

**RECYCLED WATER - DO NOT DRINK**

**AGUA DE DESPERDICIO RECLAMADA - NO TOME**

- 13. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
- 14. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
- 15. Effluent pipelines and irrigation hardware must be appropriately labeled, and backflow prevention devices shall be used where a potential cross-connection could occur. Purple colored pipe must be utilized for all reclaimed water piping.
- 16. No hose bibbs shall be installed on the recycled water distribution system.
- 17. All valves, outlets, quick couplers, and sprinkler heads serving the recycled water system shall be of a type that can only be operated by an authorized user.
- 18. There shall be at least a ten-foot horizontal and a one-foot vertical separation between all pipelines transporting recycled water and those transporting domestic supply, with the domestic supply above the recycled water pipeline.

19. Recycled water use shall cease during any period that the prohibitions, specifications or limitations in this Order cannot be met.

#### **D. Sludge Specifications**

Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal WWTF operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations.
3. Any storage of residual sludge, solid waste, and biosolids on property of the WWTF shall be temporary and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitations.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. 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.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water quality control board. In most cases, this will mean General Biosolids Order (SWRCB Water Quality Order No. 2000-10-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities). For a biosolids use project to be covered by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.
6. Use and disposal of biosolids should comply with the self-implementing federal regulations of Title 40, Code of Federal Regulations (CFR), Part 503, which are subject to enforcement by the U.S. Environmental Protection Agency (EPA), not the Regional Board. If during the life of this Order the State accepts primacy for implementation of 40 CFR 503, the Regional Board may also initiate enforcement where appropriate.

**E. Groundwater Limitations**

The discharge, in combination with other waste sources, shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality, except for increases in salinity constituents consistent with effluent limitations.

**F. Provisions**

1. The Discharger shall comply with Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as Standard Provision(s).
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2002-0193, that is part of this Order, and any revisions thereto as ordered by the Executive Officer.
3. The Discharger shall keep a copy of this Order, including its attachments and Standard Provisions, at the WWTF for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. To ensure the unrestricted availability of land for disposal of the WWTF effluent, prior to approval to discharge, the Discharger shall submit copies of recorded deeds of easement for those portions of land dedicated for effluent recycling. The easements shall state that effluent disposal is the primary use of the land, all other uses are subordinate, recycled water management of the site is the responsibility of the Discharger and must comply with the most recent waste discharge requirements order issued by the Regional Board. Whether the total dedicated land area provides adequate disposal capacity is subject to approval by the Executive Officer.
5. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
6. Prior to approval of each phase, the Discharger shall submit an updated technical report describing a Use Area management plan that ensures wastewater, biosolids, and commercial fertilizer will be applied to the Use Area as defined herein at reasonable agronomic rates considering the crop, soil, climate, and irrigation management system. The report shall describe the types of vegetation to be grown and harvested annually, vegetation water use,

nitrogen uptake, and supporting data and calculations for monthly water and yearly nutrient balances. The technical report shall also describe the wastewater constituent concentrating effect resulting from irrigation. The technical report shall include a map showing locations of all domestic and irrigation wells that are within and near the Use Area, areas of public access, location and wording of public warning signs and setback distances from irrigation/domestic wells, property boundaries, and roads. Upon written acceptance of the technical report by the Executive Officer, this provision will be satisfied.

7. Prior to approval of each phase, the Discharger shall submit an updated technical report describing a Use Area management plan that includes a description of the methods and procedures for implementation of the management, design and operation of the use sites as set forth in Title 22 and in the 22 May 2002 "Revised Title 22 Engineering Report" approved by the California Department of Health Services on 13 August 2002. Upon written acceptance of the technical report by the Executive Officer, this provision will be satisfied.
8. Prior to approval of each phase, the Discharger shall submit an updated technical report describing a sludge management plan that satisfies the information requirements of Attachment D, *Information Needs For Sludge Management Plan*. The technical report submitted pursuant to this Provision shall be prepared in accordance with Provision F.5. Upon written acceptance of the technical report by the Executive Officer, this provision will be satisfied.
9. By **18 February 2003**, the Discharger shall submit for the existing WWTF: (a) technical reports as described in Provisions F.6, F.7 and F.8; and (b) deed(s) of easement for the Use Areas(s) as described in the technical report(s) and meeting the terms of Provision F.4. Upon written acceptance of the technical reports and deeds of easement by the Executive Officer, this Provision will be satisfied.
10. Upon completion of the interim WWTF to **0.112 mgd** (described in Finding No. 4) and at least **120 days** prior to discharging more than **0.056 mgd** to the Use Area, the Discharger shall submit: (a) updated technical reports as described in Provisions F.6, F.7 and F.8; and (b) deed(s) of easement for the expanded Use Area(s) as described in the updated technical report(s) and meeting the terms of Provision F.4 for Regional Board review. Upon written acceptance of the technical reports and deeds of easement by the Executive Officer, this Provision will be satisfied.
11. Upon completion of the Phase I WWTF to **0.25 mgd** (described in Finding No. 7) and at least **120 days** prior to discharging more than **0.112 mgd** to the Use Area, the Discharger shall submit: (a) updated technical reports as described in Provisions F.6, F.7, and F.8; and (b) deed(s) of easement for the expanded Use Area(s) as described in the updated technical report(s) and meeting the terms of Provision F.4 for Regional Board review. Upon written acceptance of the technical reports and deeds of easement by the Executive Officer, this provision will be satisfied.

12. Upon completion of the Phase II WWTF to **0.50 mgd** (described in Finding No. 7) and at least **120 days** prior to discharging more than **0.25 mgd** to the Use Area, the Discharger shall submit: (a) updated technical reports as described in Provisions F.6, F.7, and F.8; and (b) deed(s) of easement for the expanded Use Area(s) as described in the updated technical report(s) and meeting the terms of Provision F.4 for Regional Board review. Upon written acceptance of the technical reports and deeds of easement by the Executive Officer, this provision will be satisfied.
13. Upon completion of the Phase III WWTF to **0.709 mgd** (described in Finding No. 7) and at least **120 days** prior to discharging more than **0.50 mgd** to the Use Area, the Discharger shall submit: (a) updated technical reports as described in Provisions F.6, F.7, and F.8; and (b) deed(s) of easement for the expanded Use Area(s) as described in the updated technical report(s) and meeting the terms of Provision F.4 for Regional Board review. Upon written acceptance of the technical reports and deeds of easement by the Executive Officer, this provision will be satisfied.
14. The Discharger shall not allow pollutant-free wastewater to be discharged into the WWTF collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means stormwater (i.e., inflow), groundwater (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.
15. The Discharger shall implement best practicable treatment and control of the discharge, including proper operation and maintenance, to comply with terms of this Order.
16. The Discharger shall report to the Regional Board any toxic chemical release associated with the WWTF pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986." If the Regional Board determines that the toxic waste constituent had or has a reasonable potential to cause or contribute to violation of a water quality objective, the Regional Board may reopen this Order and prescribe an effluent limitation for the constituent.
17. If the Regional Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of a limit for groundwater, this Order may be enforced or, alternately, reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.
18. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Regional Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus 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. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

19. In the event of any change in control or ownership of land or waste treatment and storage 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, the 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 B.3 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.
20. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, Acting Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 18 October 2002.

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THOMAS R. PINKOS, Acting Executive Officer

Order Attachments:

Monitoring Standard Provisions

A. Location Map

B. Flow Diagram

C. Recycled Water Sign Symbol

D. Information Needs for Sludge Management Plan

E. Recommended Use Area Reporting Form

Information Sheet

Standard Provisions (1 March 1991 version as amended) (separate attachment to Discharger only)

BLH/WDH:10/18/02

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0193  
FOR  
FRESNO COUNTY SERVICE AREA NO. 34  
MILLERTON NEW TOWN  
FRESNO COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code section 13267. The Discharger shall not implement any changes to this MRP unless and until the Regional Board adopts or the Executive Officer issues a revised MRP. Sample station locations are depicted on Attachment B. Changes to sample location shall be established with concurrence of Regional Board's staff, and a description of the revised stations shall be submitted to the Regional Board and, following approval of the Executive Officer, attached by the Discharger to its copy of this Order. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with Standard Provisions, Provisions for Monitoring.

**INFLUENT MONITORING**

The Discharger shall collect influent samples at the headworks of the treatment facility prior to any treatment of waste. Time of a grab sample shall be recorded. Influent monitoring shall include at least the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Maximum Daily Flow	mgd	Metered	Continuous
Average Daily Flow	mgd	Computed	Daily <sup>1</sup>
Monthly Average Flow	mgd	Computed	Monthly
Settleable Solids	mL/L	Grab	2/week <sup>2</sup>
pH	pH units	Grab	2/week <sup>2</sup>
BOD <sub>5</sub> <sup>3</sup>	mg/L	24-hr Composite <sup>4</sup>	2/week <sup>2</sup>
Monthly Average BOD <sub>5</sub>	mg/L	Calculated	Monthly
TSS <sup>5</sup>	mg/L	24-hr Composite <sup>4</sup>	2/week <sup>2</sup>
Monthly Average TSS	mg/L	Calculated	Monthly

<sup>1</sup> Sample frequencies referenced hereafter in this program as daily shall not include weekends or holidays.

<sup>2</sup> On nonconsecutive days

<sup>3</sup> Five-day, 20°C biochemical oxygen demand

<sup>4</sup> 24-hour composite sampling as referred to in this program shall be flow-proportioned.

<sup>5</sup> Total Suspended Solids

### EFFLUENT MONITORING

The Discharger shall collect effluent samples at a point in the system following treatment and before discharge to the storage ponds or Use Area (if discharge is directly to Use Area). Effluent samples shall be representative of the volume and nature of the discharge. Time of collection of a grab sample shall be recorded. Effluent monitoring shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> <sup>1</sup>
Settleable Solids	mL/L	Grab	Daily
pH	pH Units	Grab	Daily
BOD <sub>5</sub>			
Concentration	mg/L	24-hr Composite	2/Week
Monthly Average	mg/L	Calculated	Monthly
Percent Removal	%	Calculated	Monthly
TSS			
Concentration	mg/L	24-hr Composite	2/Week
Monthly Average	mg/L	Calculated	Monthly
Percent Removal	%	Calculated	Monthly
Total Dissolved Solids (TDS) <sup>2</sup>	mg/L	24-hr Composite	2/Month <sup>3</sup>
EC <sup>4</sup>	µmhos/cm	24-hr Composite	2/Month <sup>3</sup>
Total Coliform Organisms	MPN <sup>5</sup> /100 mL	Grab <sup>5</sup>	Daily
Running 7-day median	MPN <sup>5</sup> /100 mL	Calculated	Daily
Turbidity	NTU	Continuous	Continuous
Reportable Turbidity			
Maximum Monthly	NTU	Metered	Continuous
24-hr Average	NTU	Calculated	Daily
95 <sup>th</sup> Percentile	NTU	Calculated <sup>6</sup>	Daily
Minimum Chlorine Residual	mg/L	Continuous	Continuous
Modal Contact Time	minutes	Calculated	Daily
Filter Loading Rate	gal/min/ft <sup>2</sup>	Calculated <sup>7</sup>	Daily
Nitrate (as N)	mg/L	24-hr Composite	Monthly
Ammonia (as N)	mg/L	24-hr Composite	Monthly
Total Kjeldahl Nitrogen (TKN)	mg/L	24-hr Composite	Monthly
Total Nitrogen	mg/L	Calculated	Monthly
Total Trihalomethanes	mg/L	Grab	Quarterly
General Minerals <sup>8</sup>	mg/L	24-hr Composite	Semiannual <sup>9</sup>

<sup>1</sup> If results of monitoring a pollutant appear to violate discharge specifications, but monitoring frequency is not sufficient to validate violation (e.g., the monthly mean for BOD<sub>5</sub>), or indicate a violation and potential upset of the treatment process, the frequency of sampling shall be increased to confirm the magnitude and duration of violation, if any, and aid in identification and resolution of the problem.

- 2 TDS referenced hereafter in this program shall be determined using Environmental Protection Agency (EPA) Method No. 160.1 for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS or equivalent analytical procedures specified in 40 Code of Federal Regulations (CFR) Part 136.
- 3 In nonconsecutive weeks coincident with influent EC sampling.
- 4 Conductivity at 25°C
- 5 Most Probable Number. Total coliform organism samples shall be dechlorinated immediately following sample collection as part of sample collection procedures.
- 6 Turbidity compliance pursuant to Title 22, CCR, section 60301.320(a)(2)(B) and (b)(1) shall be determined using readings taken at intervals of no more than 1.2-hours over a period of 24-hours. Should the continuous turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2-hours may be substituted for a period of up to 24-hours.
- 7 Maximum rate during time filter is operated.
- 8 General Minerals as referred to in this program shall include the constituents in the General Minerals Analyte List presented below.
- 9 April and October

#### **General Minerals Analyte List**

Alkalinity (as CaCO <sub>3</sub> )	Carbonate (as CaCO <sub>3</sub> )	Manganese
Aluminum	Chloride	Phosphate
Bicarbonate (as CaCO <sub>3</sub> )	Hardness (as CaCO <sub>3</sub> )	Potassium
Boron	Iron	Sodium
Calcium	Magnesium	Sulfate

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General Minerals Sample Collection and Preservation: With the exception of effluent samples, samples placed in an acid-preserved bottle must first be filtered through a 0.45 µm nominal pore size filter. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24-hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

#### **POND MONITORING**

Storage ponds shall be sampled systematically for the parameters specified below. Freeboard shall be monitored on all storage ponds in use to the nearest one tenth of a foot. Pond monitoring shall include at least the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> <sup>1</sup>
EC	µmhos/cm	Grab	Weekly
Dissolved Oxygen (DO)	mg/L	Grab <sup>2</sup>	Weekly
Nitrate (as N)	mg/L	Grab <sup>3</sup>	Monthly
Ammonia (as N)	mg/L	Grab <sup>3</sup>	Monthly
Total Kjeldahl Nitrogen (TKN)	mg/L	Grab <sup>3</sup>	Monthly
Total Nitrogen	mg/L	Calculated	Monthly
Freeboard	feet <sup>4</sup>	Observation	Weekly

<sup>1</sup> If results of monitoring appear to violate effluent limitations, but monitoring frequency is not sufficient to validate violation or indicate a violation and potential upset of the treatment process (e.g., less than minimum dissolved oxygen concentration), the frequency of sampling shall be increased to confirm the magnitude and duration of violation, if any, and aid in identification and resolution of the problem.

<sup>2</sup> Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet, and analyzed for DO. Samples shall be collected between 0700 and 0900 hours. If DO results for any pond in use indicate noncompliance with the effluent limit, the Discharger shall implement corrective measures as specified in the operation and maintenance manual and monitor said pond daily until its DO stabilizes above 1.0 mg/L.

<sup>3</sup> Effluent storage pond only.

<sup>4</sup> Freeboard shall be monitored to the nearest tenth of a foot.

In addition, the Discharger shall inspect the condition of storage ponds once per week and write visual observations in a bound logbook. Notations shall include observations of whether weeds are developing in the water or along the bank, and their location; whether dead algae, vegetation, scum, or debris are accumulating on the pond surfaces and their location; whether burrowing animals or insects are present; and the color of the ponds (e.g., dark sparkling green, dull green, yellow, gray, tan, brown, etc.). A summary of the entries made in the log during each month shall be submitted along with the monitoring report the following month. If the Discharger finds itself in violation of Discharge Specifications B.10-B.15, the Discharger shall briefly explain the action taken or to be taken to correct the violation. The Discharger shall certify in each November monitoring report that it is in compliance with Discharge Specification B.18.

### WATER SUPPLY MONITORING

The finished water from the water treatment plant for Fresno County Service Area No. 34 shall be monitored as follows:

<u>Constituent</u>	<u>Units</u>	<u>Measurement</u>	<u>Frequency</u>
EC	µmhos/cm	Grab	Quarterly <sup>1</sup>

<sup>1</sup> January, April, July and October

### SLUDGE MONITORING

To ensure that discharges to the WWTF are not interfering with the treatment process, the Discharger shall collect a composite sample of sludge at least annually in accordance with EPA's *POTW SLUDGE SAMPLING AND ANALYSIS GUIDANCE DOCUMENT, AUGUST 1989*, and test for metals:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling, application and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report. Prior to any disposal or land application of sewage sludge, or removal of sewage sludge from the WWTF, the monitoring and record keeping requirements of 40 CFR 503 shall be met.

### USE AREA MONITORING

The amounts of water and recycled water applied to the Use Area (in acre-feet) and amounts of biosolids and chemical fertilizers (in pounds of nitrogen per acre) shall be measured and reported to the Regional Board quarterly in accordance with the following schedule:

<u>Monitoring Period</u>	<u>Data Due</u>
January – March	1 May
April – June	1 August
July – September	1 November
October - December	1 February

The Discharger shall utilize the form presented in Attachment E (or variation thereof subject to Regional Board staff approval) for reporting the Use Area monitoring data.

### REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions and Reporting Requirements. All reports submitted in response to this MRP shall comply with the signatory requirements in Standard Provisions, General Reporting Requirements B.3. Daily, twice weekly, weekly, twice monthly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly monitoring reports shall be submitted to the Regional Board by the **1<sup>st</sup> day of second month following sampling**. Quarterly monitoring reports shall be submitted by the **1<sup>st</sup> day of the second month after the calendar quarter**. Annual reports shall be submitted by **1 February**.

Monitoring data and discussions submitted concerning WWTF performance must also be signed and certified by the chief plant operator. When reports contain laboratory analyses performed by the Discharger, and the chief plant operator is not in the direct line of supervision of the laboratory, reports must also be signed and certified by the chief of the laboratory.

In reporting 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 that illustrates clearly whether the Discharger complies with waste discharge requirements. 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 discharge monitoring report.

The Discharger may also be requested to submit an annual report to the Regional Board with 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 any corrective actions the Discharger takes or plans to take to bring the discharge into full compliance with the waste discharge requirements.

By **1 February of each year**, the Discharger shall submit a written report to the Executive Officer containing the following:

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal.
2. The names and telephone numbers of persons to contact regarding the WWTF for emergency and routine situations.
3. 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.4).
4. A statement whether the current operation and maintenance manual and contingency plan reflect the WWTF as currently constructed and operated, and the dates when these documents were last reviewed for adequacy.
5. The results of an annual evaluation conducted pursuant to Standard Provision E.4 and a figure depicting monthly average discharge flow for the past five years.
6. A copy of the most recent Fresno County Service Area No. 34 annual water supply report.
7. A summary of sludge monitoring, including
  - a. Annual sludge production in dry tons and percent solids.
  - b. A schematic diagram showing sludge handling facilities and solids flow diagram.
  - c. A description of disposal methods, including the following information related to the disposal methods used at the WWTF. If more than one method is used, include the percentage of annual sludge production disposed of by each method.
    - i. For **landfill disposal**, include: (a) the Order numbers of WDRs that regulate the landfill(s) used, (b) the present classifications of the landfill(s) used, and (c) the names and locations of the facilities receiving sludge.

- ii. For **land application**, include: (a) the locations of the site(s), and (b) the Order numbers of any WDRs that regulate the site(s).
  - iii. For **incineration**, include: (a) the names and location of the site(s) where sludge incineration occurs, (b) the Order numbers of WDRs that regulate the site(s), (c) the disposal method of ash, and (d) the names and locations of facilities receiving ash (if applicable).
  - iv. For **composting**, include: (a) the location of the site(s), and (b) the Order numbers of any WDRs that regulate the site(s).
8. A summary of all recycled water operations for the previous year (i.e., from January through December). The summary shall discuss total monthly water application; total wastewater recycled annually; total nutrient loading annually from applied wastewater, biosolids, and chemical fertilizers; and total estimated amount of nutrients removed through Use Area consumption. The summary shall also review the Use Area management plan (described in Provision E.6) and make recommendations regarding continuation or modification of the plan. In short, the summary shall present a mass balance relative to constituents of concern and hydraulic loading along with supporting data and calculations.
  9. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

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

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THOMAS R. PINKOS, Acting Executive Officer

18 October 2002

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(Date)

## INFORMATION SHEET

ORDER NO. R5-2002-0193  
FRESNO COUNTY SERVICE AREA NO. 34  
MILLERTON NEW TOWN  
FRESNO COUNTY

### **Background**

Fresno County Service Area 34 (hereafter Discharger) operates a wastewater collection and treatment facility (WWTF) that can provide sewage service for up to 152 homes and a golf course clubhouse. Approximately 42 homes have been constructed and are occupied. The existing WWTF consists of individual septic tanks, septic tank effluent pumping (STEP), a recirculating gravel filter, and lined ponds. All disposal is by evaporation. Waste Discharge Requirements (WDRs) Order No. 91-068, adopted by the Regional Board on 22 February 1991, prescribes requirements for the monthly average daily discharge of 0.112 million gallons per day (mgd) of treated wastewater from the WWTF to holding ponds and 80 acres of pasture. The existing WWTF capacity is approximately 0.056 mgd.

The Discharger submitted a Report of Waste Discharge (RWD), dated 19 October 2000, for an expansion and eventual replacement of the WWTF. The expanded and replacement WWTFs will serve the Millerton New Town development. The development will encompass approximately 1,500 acres and serve an ultimate build-out of 2,600 homes and a commercial area. To serve the expanding development, first the existing WWTF will be expanded to 0.112 mgd. To accommodate higher flows up to 0.7 mgd, a new WWTF will be constructed and expanded in phases. The new WWTF will be an advanced wastewater treatment facility designed to meet California Code of Regulations, Title 22 requirements for unrestricted water recycling and will recycle effluent on the White Fox Creek golf course, Brighton Crest golf course, and on landscaped areas within the development. The WWTF will consist of headworks, a new secondary treatment process, coagulation/flocculation, filtration, disinfection, sludge handling, standby power, an emergency storage basin, lined effluent storage ponds, and a recycled water irrigation system. The filtered and disinfected effluent will be applied to 188 acres of turf and landscaping. The pond liners will have a permeability of less than  $10^{-6}$  cm/sec.

The RWD shows that the calculated nitrogen loading to the use area is less than the annual Use Area demand of 150 lbs/acre/year. The water balance in the Report of Waste Discharge shows that additional water will be required to irrigate the golf course and landscape areas. The Discharger currently disposes of sludge at the Fresno County landfill. In the interim WWTF, the Discharger will continue to pump sludge for transport and disposal to an approved landfill. For Phases 1-3, the Discharger proposes to thicken and mechanically dewater sludge and then truck it off-site for disposal at an approved receiving facility.

### **Compliance History**

The Discharger has generally complied with the terms of all existing WDRs.

### **Groundwater Conditions**

There are no DWR groundwater maps for the foothills. Soils in the WWTF vicinity and Use Area are classified as shallow soils underlain by granite. The soils exhibit moderate infiltration rates. The

effluent from the existing WWTF is disposed of in a lined pond. The water quality of groundwater monitoring well No. 4 is similar to the domestic well which implies that groundwater is not degraded by the WWTF.

<u>Constituent / Parameter</u>	<u>Units</u>	<u>Domestic Well</u>	<u>Monitoring Well No. 4</u>
EC	µmhos/cm	410	400
Total Dissolved Solids (TDS)	mg/L	240	--
Sodium	mg/L	25	--
Chloride	mg/L	17	32
Nitrate (as N)	mg/L	15	11
Bicarbonate	mg/L	200	--

Groundwater total coliform is <1.1 MPN/100 mL.

**Land Use Near the Facility**

The land use near the WWTF currently is grazing, etc. Land use will be a golf course, ornamental landscaping, and residential subdivisions.

**Basin Plan, Beneficial Uses, and Regulatory Considerations**

The WWTF is in the Millerton Lake Hydrologic Unit of the San Joaquin Basin. The *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin, Fourth Edition* (Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

The Basin Plan designates the beneficial uses of Millerton Lake as: potential municipal and domestic supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, potential cold freshwater habitat, and wildlife habitat. The Basin Plan designates the beneficial uses of the San Joaquin River from Friant Dam to the Mendota Pool as: municipal and domestic supply; agriculture supply; industrial process supply; contact and non-contact water recreation; warm and cold freshwater habitat; migration of aquatic organisms; and wildlife habitat. The beneficial uses of groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

The California Department of Health Services (DHS) has established statewide recycling criteria in Title 22, California Code of Regulations (CCR), section 60301 et seq., (hereafter Title 22), and guidelines for use of recycled water. The proposed WDRs implement applicable sections of Title 22.

### **Antidegradation**

The antidegradation directives of CWC section 13000 require that waters of the State that are better in quality than established water quality objectives be maintained “consistent with the maximum benefit to the people of the State.” Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference State Water Board Resolution No. 68-16, “Statement of Policy With Respect to Maintaining High Quality Waters in California,” commonly referred to for convenience as Resolution 68-16 or as the “Antidegradation” Policy).

Certain waste constituents in domestic wastewater are not fully amenable to waste treatment and control and it is sometimes reasonable to expect some impact on groundwater. Due to the high level of treatment, the use of lined effluent storage ponds, and recycling at agronomic rates, groundwater degradation should not occur, but if it does it could be found consistent with the Antidegradation Policy guidelines given the treatment and control provided. Groundwater monitoring is not required at this time; however, if discharge monitoring data exceed limitations or recycling operations become excessively concentrated, the Proposed Monitoring and Reporting Program may be revised by the Executive Officer to require groundwater monitoring.

### **Treatment Technology and Control**

Given the character of municipal wastewater, secondary treatment technology is thought generally sufficient to control degradation of groundwater from decomposable organic constituents. Adding disinfection significantly reduces populations of pathogenic organisms, and reasonable soil infiltration rates and unsaturated soils can reduce them further. Neither organics nor total coliform, the indicator parameter for pathogenic organisms, should be found in groundwater beneath a well-designed, well-operated facility. Disinfection by chlorination does create TTHMs. Generally, the higher the BOD of effluent when chlorinated, the higher the concentration of TTHMs formed. Treatment to reduce TTHMs in wastewater generally has not been performed, and little is known at this point on the typical impact a municipal discharge without treatment may have on groundwater.

Municipal wastewater typically contains nitrogen in concentrations greater than objectives, which vary according to the form of nitrogen. The Basin Plan lists numerical objectives for nitrate and nitrite (Title 22, CCR, section 64449, Table 64449-A). The taste threshold for ammonia in drinking water is 0.5 mg/L, according to the Council of the European Union. Degradation by nitrogen in a municipal discharge can be controlled by an appropriate secondary treatment system (e.g., oxidation ditch), tertiary treatment for nitrogen reduction, and agronomic reuse. The effectiveness varies, but generally Best Practicable Treatment and Control (BPTC) measures should be able to limit nitrogen (including ammonia) degradation to a concentration well below Basin Plan objectives.

The majority of ions that compose salinity waste constituents pass through the secondary treatment process and soil profile and effective control of their long-term affects typically relies upon effective residential and industrial source control and pretreatment measures. In areas of high quality

groundwater and areas where salinity objectives are exceeded despite current source control measures, evaluation of BPTC will require, at a minimum, a review of residential and industrial treatment and control technology and consideration of local discharge salinity limits for significant industrial dischargers of high EC waste streams.

The proposed WWTF will produce a disinfected tertiary 2.2 effluent suitable for use on food crops where the recycled water comes into contact with the edible portion of the crop, parks and playgrounds, school yards, residential landscaping, and unrestricted access golf courses. The effluent limitations of 10 mg/L for both BOD<sub>5</sub> and total suspended solids, based upon a projected influent of at least 200 mg/L BOD<sub>5</sub> and total suspended solids will result in a treatment removal efficiency of at least 95% which complies with Basin Plan requirements for secondary treated wastewater.

Treatment of trace elements (for protection of groundwater, wastewater recycling, and biosolids reuse) is generally achieved through source control, but if this proves insufficient to be found consistent with Resolution 68-16, technology is available and will need to be evaluated with respect to providing BPTC.

### **Title 27**

Title 27, CCR, section 20005 et seq. (Title 27), contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27. Treatment and storage facilities for sludge that are part of the WWTF are considered exempt from Title 27 under section 20090(a), provided that the facilities not result in a violation of any water quality objective. However, residual sludge (for the purposes of the proposed Order, sludge that will not be subjected to further treatment by the WWTF) is not exempt from Title 27. Solid waste (e.g., grit and screenings) that results from treatment of domestic sewage and industrial waste also is not exempt from Title 27. This residual sludge and solid waste are subject to the provisions of Title 27.

Accordingly, the municipal discharge of effluent and the operation of treatment or storage facilities associated with a municipal wastewater treatment plant can be allowed without requiring compliance with Title 27, but only if resulting degradation of groundwater is in accordance with the Basin Plan. This means, among other things, that degradation of groundwater must be consistent with Resolution 68-16 and in no case greater than water quality objectives.

### **CEQA**

On 18 December 1984, the Discharger adopted the Millerton Specific Plan. On 20 April 1999, the Fresno County Board of Supervisors approved the Millerton Specific Plan Mitigation Measures and Monitoring Program Matrix for the new WWTF in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq., and the State CEQA guidelines).

Exhibit 2 of the Mitigation Measures Monitoring Program contained the following components to mitigate wastewater related project impacts:

- a. All development that occurs within the Specific Plan area must utilize a community sewer system with effluent treated to a tertiary level;  
\* \* \*
- e. Reliability and design requirements for the treatment process must adhere to established engineering standards for Department of Health [Services ]criteria.  
\* \* \*
- j. To the greatest extent possible, reclaimed water shall be reused for irrigation of golf courses and other landscaped areas.  
\* \* \*
- o.Areas for use of reclaimed water shall be constructed to allow for landscaping and golf course use, and protection of wetlands.

### **PROPOSED ORDER TERMS AND CONDITIONS**

#### **Discharge Prohibitions, Specifications and Provisions**

The effluent limitations prescribed in the proposed Order reflect the projected WWTF performance and are based on the levels of treatment necessary to achieve consistent compliance with Title 22, for disinfected tertiary treated wastewater. The Order’s total suspended solids (TSS), BOD<sub>5</sub>, coliform, and turbidity effluent limits reflect the level of treatment necessary to achieve consistent compliance with Title 22, sections 60301.230 and 60301.320.

The proposed Order would also carry over the existing Order’s effluent salinity limitation by requiring the monthly average effluent EC to remain less than the flow-weighted average EC of the source water plus 400 µmhos/cm, or a total of 750 µmhos/cm, whichever is less. The discharge specifications regarding dissolved oxygen and freeboard are consistent with Regional Board practice for the prevention of nuisance conditions, and are applied to all such facilities.

The effluent limits prescribed in the proposed Order for settleable solids, BOD<sub>5</sub>, coliform, total suspended solids (TSS), and turbidity will be more restrictive than the existing Order but would reflect the beneficial use, Title 22 recycling requirements, and are consistent with the project approved as compliant with CEQA. The maximum loading rate of the filters, 5 gallons/ft<sup>2</sup>/min, the chlorine contact

time and concentration, daily coliform testing, and continuous chlorine and turbidity monitoring, comply with Title 22 requirements to ensure effluent which is most protective of public health.

The proposed Order requires the Discharger to comply with the provisions of Title 22. To ensure compliance with Title 22 and Regional Board recycling policies, the proposed Order would require the Discharger to implement best management practices with respect to effluent reuse (e.g., to reuse effluent at reasonable agronomic rates considering the reuse, soil, climate, and irrigation management plan). To this end, the proposed Order would require the Discharger to submit a Use Area management plan and monitor recycling operations.

The conditions for sludge, solid waste, and biosolids management proposed in the proposed Order would assure that degradation resulting from the Discharger's management of sludge is in accordance with the Basin Plan. To this end, the proposed Order would require the Discharger to submit a technical report describing its sludge management plan. It also requires that storage, use and disposal of biosolids comply with the self-implementing federal regulations of Title 40, Code of Federal Regulations (CFR) Part 503, which are subject to enforcement by the U.S. Environmental Protection Agency not the Regional Board, and with the statewide "General Order for the Discharge of Biosolids" (Water Quality Order No. 2000-10-DWQ) (or any subsequent document which replaces Order No. 2000-10-DWQ).

Impacts to groundwater should not occur or will be minimal as the effluent will meet disinfected tertiary treatment requirements, discharge will be to lined ponds, and recycling will occur at agronomic rates. The proposed Order's groundwater limitation requires that the discharge, in combination with other waste sources, not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality.

### **Monitoring Requirements**

Section 13267 of the CWC authorizes the Regional Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

The proposed Order would require influent monitoring of settleable solids, pH, BOD<sub>5</sub>, and TSS, and effluent monitoring of pH, BOD<sub>5</sub>, TSS, turbidity, total coliform organisms, chlorine residual, settleable solids, TDS, EC, ammonia, nitrate, TKN, total nitrogen, total trihalomethanes, and general minerals. Effluent monitoring of these constituents is necessary to check compliance with various discharge specifications. The proposed Order would include supply water, and sludge monitoring. The proposed Order would include monitoring of recycling activities to check compliance with Title 22 and the terms and conditions of the proposed Order

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To determine if the Discharger would be in compliance with Discharge Specification B.6, it would monitor its source water quarterly for EC. To determine the efficiency of the Discharger's operation, the Discharger would monitor influent twice weekly for settleable solids, pH, BOD<sub>5</sub>, and TSS. In order to adequately characterize its wastewater effluent, the Discharger would monitor daily for settleable solids, and pH; twice weekly for TSS, and BOD<sub>5</sub>; twice monthly for TDS, and EC, monthly for nitrogen constituents; and semiannually for general minerals and semiannually for general minerals. To monitor storage ponds for capacity constraints and potential nuisance conditions, the Discharger would monitor available freeboard and dissolved oxygen content weekly.

The proposed Order would require the Discharger to monitor sludge at least annually, in accordance with EPA's *POTW SLUDGE SAMPLING AND ANALYSIS GUIDANCE DOCUMENT, AUGUST 1989*, and test for arsenic, cadmium, molybdenum, copper, lead, mercury, nickel, selenium, and zinc. The proposed Order would require the Discharger to submit an annual summary of sludge discharge operations.

BLH/WDH:10/18/2002