EXHIBIT F-2
JUVENILE JUSTICE CAMPUS
WASTE DISCHARGE REQUIREMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0150

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF FRESNO JUVENILE JUSTICE CAMPUS
WASTEWATER TREATMENT FACILITY
FRESNO COUNTY

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

1. The County of Fresno (hereafter Discharger or County) submitted a Report of Waste Discharge (RWD), dated 26 September 2003, in support of a discharge to land from a wastewater treatment facility (WWTF) for the County's Juvenile Justice Campus (hereafter Facility). Additional information to complete the RWD was received on 22 December 2003, 6 January 2004, 15 March 2004, and 13 April 2004. The WWTF has a design average daily flow of 0.12 million gallons per day (mgd) and a maximum daily flow of 0.135 mgd. No outside sewer mains are connected to the Facility's sewer system.

2. The Facility is at 3333 American Avenue, approximately seven miles southwest of downtown Fresno, in Section 6, Township 5 South, Range 21 East, MDB&M, as shown on Attachment A, which is attached hereto and made part of this Order by reference.

3. For the purposes of this Order, the WWTF shall include the wastewater collection system, the treatment system, effluent storage ponds, recycled water distribution piping, and land application areas (Use Areas). Attachment B, which is attached hereto and made a part of this Order by reference, is a plan view of the WWTF and Use Areas.

4. The RWD discusses the Master Plan for the Facility, which will be constructed to accommodate the County's needs for the next 40 years. The first phase (Phase 1) was completed in 2006 and additional phases are planned for the years 2001, 2017, and 2040. Phase 1 of construction includes 480 beds for juveniles, a delinquency court, an institutional core building, and a laundry facility. Phases 2 and 3 will add 240 beds each and Phase 4 will add 480 beds.

5. Flow data from Phase 1 will be used to modify the wastewater generation factors used to determine the required capacity for future phases. At Phase 2, wastewater service may be available from a municipal system. The cost of connection will be evaluated prior to expansion of the WWTF. The anticipated time till expansion will be required is six to 15 years.

Wastewater Treatment Facility

6. The WWTF provides disinfected tertiary treatment of the wastewater. Treatment includes influent screening, flow equalization, trickling filtration, clarification, flocculation, digestion, tertiary filtration, and disinfection. Adjacent to the WWTF are two lined effluent storage ponds and one lined emergency storage basin. A treatment system flowchart is presented in Attachment C, which is attached hereto and made a part of this Order by reference.

7. Influent to the treatment system is screened with duplex mechanical fine screens to remove solids then stored in an enclosed aerated flow equalization tank. The flow equalization tank has a storage capacity of 40% of the total daily flow. This allows wastewater that enters the plant during high flow periods to be stored for processing when influent flows are reduced. The treatment system operates at the average daily flow rate, which reduces the required downstream treatment process capacity.

8. Suspended solids are removed from the influent wastewater in a primary clarifier adjacent to the flow equalization tank. Settled solids are removed from the bottom of the clarifier and conveyed to the sludge storage tank using airlift pumps. The clarified wastewater is conveyed to the first stage trickling filter tower for secondary treatment.

9. Secondary treatment consists of four trickling filters in series that will biologically oxidize the soluble organics in the wastewater. The four filters are operated to achieve the required biochemical oxygen demand (BOD) removal and nitrification of ammonia and other nitrogen compounds. Wastewater is sprayed over the plastic, cross-flow trickling filter media, where microorganisms remove organic compounds and convert them to carbon dioxide, water, and new cells. Periodically, solids slough off and are carried out of the trickling filters to the secondary clarifiers where they are removed by airlift pumps and conveyed to the sludge storage tank.

10. Prior to final clarification, a coagulant (polyaluminum hydroxychloride or aluminum chlorohydrate) is added to the clarifier effluent to agglomerate fine particulates into larger particles to be removed during filtering. Rapid mixing disperses the coagulant and enhances flocculation.

11. The clarified effluent is filtered using duplex sand filters to remove fine suspended solids remaining in the wastewater after clarification. The RWD states that the sand and anthracite media comply with the specifications for filter media issued Department of Health Services (DHS). The filters are sized to treat a maximum flow rate of five gallons per minute per square foot with one filter unit out of service as required by Title 22.

12. The filters are backwashed to flush out solids collected on the filter media. The backwash water is returned to the treatment system at the flow equalization tank.

13. Following filtration, the treated effluent is disinfected using a duplex feed system to pump a 12.5% solution of liquid sodium hypochlorite into the filtered effluent prior to discharge to the chlorine contact chamber. Sufficient detention time is provided to ensure a modal contact time of 90 minutes as required by Title 22. Chemical storage is provided for a minimum of 15 days of sodium hypochlorite usage.

14. Following treatment and disinfection the effluent is discharged to two 80-mil HDPE lined effluent storage ponds prior to irrigation of the landscaped Use Areas. Each pond is 557 feet by 200 feet with a maximum water depth of 15 feet and a total capacity of 45 acre-feet with two feet of freeboard provided.

15. Settled sludge in the clarifier tanks is pumped to an aerated sludge storage tank for digestion and storage. The sludge is thickened to between one to two percent solids. Decant water from the sludge storage tank is returned to the flow equalization tank for processing through the treatment system. The sludge is transferred to a second sludge storage tank and mixed with screenings prior to disposal. Currently, sludge and screenings are transported offsite by a licensed sludge handling company for disposal at an approved receiving station. The volume of sludge to be hauled offsite during Phase 1 is estimated to be approximately 5,000 gallons per week. The use of a sludge-dewatering device, such as a sludge bagging unit, screw press, or centrifuge will be evaluated when the volume of sludge increases sufficiently to justify the capital cost and additional labor.

16. The WWTF is designed for continuous, reliable performance with provisions for component malfunction and primary power outages. These provisions include: a control system to monitor the status and performance of equipment and instrumentation utilized in the treatment process; an alarm and automatic dialer system to contact operating personnel if a problem is detected; all critical mechanical components in the process train have duplex units or spare parts available for immediate repair; in the event of a malfunction, the duplex unit will automatically be started by the control system; by-pass of all unit processes for routine maintenance and repair while maintaining full compliance with the effluent discharge specifications; a standby power generator available for use during power failures; and by-pass to a lined emergency 500,000-gallon storage basin, in the event of a problem.

17. Self-monitoring data from January 2006 to December 2006 characterize the discharge as follows:

Constituent/Parameter	Units[1]	Influent	Effluent	% Removal[2]
Monthly Average Discharge Flow	mgd	0.021	NA[3]	NA
Conventional Pollutants				
pH	su	NA	7.7	NA
BOD_5[4]	mg/L	171	2.5	98.7%
Total Suspended Solids	mg/L	207	1.1	99.5%

Constituent/Parameter	Units[1]	Influent	Effluent	% Removal[2]
Salts				
Chloride	mg/L	NS[5]	91	NA
Sodium	mg/L	NS	84	NA
EC[6]	µmhos/cm	NS	938	NA
TDS[7]	mg/L	NS	634	NA
Nitrogen Forms				
Nitrate (as Nitrogen)	mg/L	NS	22	NA
Total Kjeldahl Nitrogen	mg/L	NS	32	NA
Ammonia (as Nitrogen)	mg/L	NS	28	NA
Total Nitrogen[8]	mg/L	NS	54	NA

1 mgd = million gallons per day. su = standard pH units. mg/L = milligrams per liter. µmhos/cm = micromhos per centimeter

2 Percent removal (% removal)

3 Not applicable

4 5-day biochemical oxygen demand (BOD_5)

5 Not sampled

6 Electrical conductivity at 25ºC (EC)

7 Total Dissolved Solids (TDS)

8 Calculated by summing the concentrations of nitrate as nitrogen and TKN, and assuming the concentration of nitrite is negligible.

18. On average, the EC of the WWTF effluent is about 700 µmhos/cm over the source water. The RWD estimated that the effluent EC would be less than 300 µmhos/cm over source water.

19. The RWD reported that nitrogen would be removed in the treatment process through recirculation of nitrified wastewater from the final trickling stage to the first trickling filter stage, and estimated that the average nitrogen concentration in the effluent would be 20 mg/L when active. In a 19 April 2007 communication with the Discharger's consultant, he indicated that the denitrification process has not been implemented.

Water Recycling

20. Disinfected recycled water from the WWTF flows to the adjacent lined effluent storage ponds following disinfection. The ponds serve as the source water for the irrigation pumping station that pressurizes the recycled water distribution system. The ponds provide storage during the winter months when irrigation is not needed due to rainfall or saturated soils. The ponds have sufficient capacity (45-acre feet) to store effluent during a 100-year rain event.

21. The disinfected recycled water is used to supplement irrigation water for spray irrigation of the landscaped and recreational areas within the Facility, which consist primarily of Bermuda grass. Wards of the State will come into contact with the irrigated Use Areas when used during the day for recreational purposes. The total irrigated area required is approximately 90 acres. The irrigated Use Areas are shown on Attachment B.

22. The Discharger's Recycled Water Balance demonstrates that the 90-acre Use Area and 45-acre lined effluent storage ponds are sufficient to maintain the water balance at the full WWTF flows during Phase 1 of the project.

23. With an average daily flow of 0.12 mgd and average effluent nitrogen concentration of 54 mg/L, the nitrogen loading to the landscaped Use Areas from treated effluent would be approximately 219 lbs/acre/year, which is almost equal to the nitrogen uptake rate of 225 lbs/acre/year for Bermuda grass that makes up the majority of the irrigated Use Areas.

Site-Specific Conditions

24. The Facility 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. Average annual precipitation and evaporation in the discharge area are about 10.6 inches and 66 inches, respectively, according to information published by California Department of Water Resources (DWR).

25. Soils in the vicinity of the project area consist of Hanford sandy loam and Hesperia fine sandy loam according to the U.S. Soil Conservation Service (now the Natural Resources Conservation Service). Permeability of the surface soils is moderate to moderately slow. Published infiltration rates for these soils range from about 0.06 to 2.0 inches per hour.

26. Surface water drainage in the area is by sheet flow. Runoff in the region is to the south-southwest. The nearest surface water is the Oleander irrigation canal, which is an unlined canal that runs southwest to northeast along the western boundary of the Facility.

27. The WWTF is not within a 100-year floodplain according to Federal Emergency Management Agency maps.

28. Land use in the WWTF vicinity is primarily agricultural, light industrial, and rural residential. Primary crops grown in the vicinity of the WWTF include grapes, forage and grain crops, plums, peaches, and other stone fruit crops according to DWR land use data published in 2000. Most crops in this area are furrow irrigated, although some are sprinkler irrigated, according to the University of California Cooperative Extension. Irrigation water is supplied primarily by groundwater.

Groundwater Considerations

29. Regional groundwater in the area is encountered at about 55 feet below ground surface (bgs) and flows west-southwest, according to information in *Lines of Equal Elevation of Water in Wells in Unconfined Aquifer*, published by Department of Water Resources in Spring 2004.

30. Source water is provided by two groundwater wells located at the Facility. The average source water characteristics of blended water from the two wells are presented below:

Constituent/Parameter	Units	Average
EC	µmhos/cm	210
Chloride	mg/L	4
Sodium	mg/L	24
TDS	mg/L	125
Nitrate (as NO_3)	mg/L	7.8
Arsenic	µg/L	0.0025
Iron	mg/L	< 0.05
Manganese	mg/L	< 0.01

31. The Discharger installed five groundwater monitoring wells in the vicinity of the WWTF in 2006. The monitoring wells were drilled using a mud-rotary drilling rig and constructed of 4-inch diameter schedule 80 PVC casing with 20 feet of 0.03-inch slotted screen. During the initial sampling, depth-to-water ranged from about 48 to 52 feet below ground surface (bgs) and groundwater flow was to the west at an approximate gradient of 0.001 ft/ft. Based on the well construction details, the three monitoring wells down-gradient of the WWTF and effluent storage ponds were screened 18 to 20 feet below first-encountered groundwater. The screened interval of the two up-gradient monitoring wells is either across or just below first encountered groundwater.

32. Groundwater data for selected constituents is presented below:

Constituent	Units	MW-1U	MW-2U	MW-3D	MW-4D	MW-5D
		up-gradient	up-gradient	down-gradient	down-gradient	down-gradient
EC	µmhos/cm	778	545	695	950	853
TDS	mg/L	600	394	490	645	578
Chloride	mg/L	18	10	13.5	25	21.5
Nitrate (as NO_3)	mg/L	85.5	63	81	103.5	94.5
Iron	mg/L	0.18	< 0.05	< 0.05	0.22	< 0.05

33. Based on existing groundwater data, shallow groundwater beneath the WWTF is generally of good quality except for nitrate. The average EC of groundwater is 760 umhos/cm and TDS is 540 mg/L. Nitrate concentrations in groundwater are in excess of the primary MCL of 45 mg/L. Based on the data supplied, groundwater in the vicinity of the project area has no further assimilative capacity for nitrogen.

Basin Plan, Beneficial Uses, and Water Quality Objectives

34. The Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition, (hereafter Basin Plan) designates beneficial uses, establishes numerical and narrative water quality objectives, contains implementation plans and policies for protecting all waters of the basin, and incorporates by reference plans and policies of the State Water Board. Pursuant to Section 13263(a) of the California Water Code (CWC), these waste discharge requirements implement the Basin Plan.

35. The WWTF is in Detailed Analysis Unit (DAU) No. 233 of the Kings Basin. The Basin Plan designates the beneficial uses of groundwater in this DAU as municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, and water contact and non-contact recreation.

36. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

37. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Tastes and Odors, and Toxicity. The Toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.

38. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:

    a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC shall not exceed the EC of the source water plus

500 µmhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.

b. Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 µmhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.

These effluent limits are considered best practicable treatment or control (BPTC).

39. The list of crops in Finding 28 is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but is representative. Based on climate, and soil type, it is not likely that crops sensitive to salt and boron will be capable of being grown in the area; however, further information regarding the types of crops grown, background groundwater conditions, and overall effluent quality is necessary to make a final determination.

40. The Basin Plan requires municipal WWTFs that discharge to land to comply with treatment performance standards for BOD_5 and TSS. WWTFs that preclude public access and discharge less than 1 mgd must provide removal of 80 percent or reduction to 40 mg/L, whichever is more restrictive, of both BOD_5 and TSS. WWTFs that discharge less than 1 mgd must provide reduction to 40 mg/L of both BOD_5 and TSS.

Antidegradation Analysis

41. State Water Resources Control Board Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:

a. The degradation is consistent with the maximum benefit to the people of the State;

b. The degradation will not unreasonably affect present and anticipated future beneficial uses;

c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; and

d. The discharger employs BPTC to minimize degradation.

42. Constitutes of concern that have the potential to degrade groundwater include salts and nutrients. However, the discharge will likely not degrade the beneficial uses of groundwater because:

a. For salinity, the Basin Plan contains effluent limits (EC of SW + 500 umhos/cm, 1,000 umhos/cm max.). This Order sets an interim effluent limit for EC at the Basin Plan maximum limit of 1,000 umhos/cm, which considered antidegradation when it was adopted. In addition this Order requires the Discharger conduct a salinity evaluation and implement BPTC measures to reduce the salinity of the discharge in accordance with the anitdegradation policy.

b. For nitrogen, the Discharger stores the effluent in a manner that protects underlying groundwater from percolation from ponds until it can be beneficially used on crops.

Treatment and Control Practices

43. The Discharger provides treatment and control of the discharge that incorporates:
    a. alarm and automatic flow diversion systems to prevent system bypass or overflow;
    b. tertiary treatment of the wastewater;
    c. lined effluent storage ponds;
    d. disinfection of the treated effluent;
    e. appropriate biosolids storage and disposal practices;
    f. an operation and maintenance (O&M) manual; and
    g. certified operators to ensure proper operation and maintenance.

44. This Order establishes groundwater limitations for the WWTF that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order includes a monitoring and reporting program that contains groundwater monitoring to assure that the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

Water Recycling Criteria

45. Domestic wastewater contains pathogens harmful to humans that are typically measured by means of total or 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, California Code of Regulations, Section 60301 et seq., (hereafter 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.

46. A 1988 Memorandum of Agreement (MOA) between DHS and the State Water Resources Control Board (State Water Board) on the use of recycled water establishes basic principles relative to the agencies and the regional water 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.

47. State Water Board Resolution No. 77-1, Policy with Respect to Water Recycling in California, encourages recycling projects that replace or supplement the use of fresh water, and the Water Recycling Law (California Water Code Section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.

48. The Basin Plan encourages recycling for irrigation wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.

49. Title 22, Section 60323 requires recyclers of treated municipal wastewater to submit an engineering report detailing the use of recycled water, contingency plans, and safeguards. The Discharger submitted an engineering report to the Regional Water Board and DHS pursuant to Title 22, Section 60323, for its water recycling operations in May 2005 and a revised report in May 2006 addressing comments made by the DHS in their letter dated 26 October 2005.

Other Regulatory Considerations

50. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in Title 40, Code of Federal Regulations, Part 503, Standards for the Use or Disposal of Sewage Sludge, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to EPA. The RWD states that all biosolids will be hauled to a separate permitted facility.

51. On 2 May 2006, the State Water Board adopted Statewide General Waste Discharge Requirements For Sanitary Sewer Systems General Order No. 2006-003-DWQ (General Order). The General Order requires all public agencies that own or operate sanitary sewer systems greater than one mile in length to comply with the order. The Discharger's collection system is less than one mile in length; therefore, the General Order is not applicable.

52. The Discharger is not required to obtain coverage under the National Pollutant Discharge Elimination System general industrial storm water permit for the WWTF because all storm water runoff is diverted into an existing storm water retention basin, kept separate from the wastewater stream, and does not discharge to a water of the United States.

53. As the discharge consists of treated municipal sewage and incidental discharges from treatment and storage facilities associated with a municipal wastewater treatment plant, and as these discharges are regulated by waste discharge requirements consistent with applicable water quality objectives, the Facility and its discharge is exempt from containment pursuant to Title 27, Section 20090(a).

CEQA

54. Fresno County certified an Environmental Impact Report (EIR) on 25 February 2003 for the proposed development of the Fresno County Juvenile Justice Campus in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended). In the EIR, the Discharger stated wastewater treatment impacts would be mitigated as practicable through formal coordination with the appropriate county, state, and federal authorities; the use of tertiary treatment (with nitrogen removal); onsite effluent storage ponds and reuse; optimal setting of facilities; and implementation of an approved groundwater monitoring program.

55. The Regional Water Board is a responsible agency pursuant to CEQA. The Regional Water Board reviewed and considered the EIR prepared by the Discharger. This Order contains requirements that will mitigate or avoid environmental effects on water quality.

General Findings

56. 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.

57. The Regional Water Board will review this Order periodically and will revise requirements when necessary.

58. California Water Code Section 13267(b) states 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 having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

59. The technical reports required by this Order and the attached Monitoring and Reporting Program No. R5-2007-0150 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the Facility that discharges the waste subject to this Order.

60. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 94-81

(December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to California Water Code Section 13801, apply to all monitoring wells.

Public Notice

61. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

62. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

63. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that, pursuant to Sections 13263 and 13267 of the CWC, the County of Fresno and 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. Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.

2. Bypass or overflow of untreated wastes, except as allowed by Provision E.2 of Standard Provisions and Reporting Requirements, is prohibited.

3. Discharge of waste classified as ‘hazardous’, as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as ‘designated,’ as defined in California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

4. Application of treated wastewater in a manner or location other than that described herein is prohibited.

B. Effluent Limitations

1. The discharge flow shall not exceed:

   a. A monthly average discharge flow of 0.12 mgd; and

   b. A peak daily discharge flow of 0.135 mgd.

2. The discharge shall not exceed the following limitations:

Constituent	Units	Monthly Average	Daily Maximum
BOD_5[1]	mg/L	10	20
TSS[2]	mg/L	10	20

[1] 5-day Biochemical Oxygen Demand

[2] Total Suspended Solids

3. The interim monthly flow-weighted average EC of the discharge shall not exceed 1,000 µmhos/cm calculated on a monthly basis. This performance-based limit will be re-opened based upon completion of Provision G.12.

4. Effluent discharged from the WWTF shall comply with the following limits for total coliform organisms:

   a. The median concentration of total coliform bacteria measured in the disinfected effluent shall not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which the analyses have been completed.

   b. The number of total coliform bacteria shall not exceed an MPN of 23 milliliters in more than one sample in any 30-day period.

   c. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

5. Effluent that is filtered through undisturbed soil or a filter media shall not exceed any of the following with regards to turbidity:

   a. An average of 2.0 NTU within a 24-hour period.

   b. 5.0 NTU more than 5 percent of the time within a 24-hour period.

   c. 10.0 NTU at any time.

6. Effluent that is filtered through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane shall not exceed any of the following with regards to turbidity:

   a. An average of 0.2 NTU more than 5 percent of the time within a 24-hour period.

   b. 0.5 NTU at any time.

C. Discharge Specifications

1. Wastewater treatment and use of recycled water shall not cause pollution or a nuisance as defined by Section 13050 of the CWC.

2. The Discharger shall treat the wastewater such that it complies with Title 22 CCR, Section 60301.230 (“Disinfected Tertiary Recycled Water”).

3. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge. The wastewater shall be filtered at all times.

4. Objectionable odors shall not be perceivable beyond the limits of the WWTF at an intensity that creates or threatens to create nuisance conditions.

5. Application of waste constituents to the landscape and recreational areas shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering soil, climate, and nutrient demand. The annual nutritive loading of the landscape and recreational areas including the nutritive value of organic and chemical fertilizers and of the recycled water, shall not exceed the demand.

6. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

7. Effluent 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.

8. On or about **1 October** of each year, the available effluent storage pond capacity shall at least equal the volume necessary to comply with Discharge Specification C.6.

9. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

   a. An erosion control plan should assure that 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 other 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 1 April to 30 June bird nesting season.

D. Recycling Specifications

1. Recycled water shall be used in compliance with Title 22, Division 4, Chapter 3, Article 3, *Uses of Recycled Water*.

2. Public contact with recycled water shall be controlled using signs and/or other appropriate means. 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 display an international symbol similar to that shown in Attachment D, a part of this Order, and present the following wording:

"RECYCLED WATER – DO NOT DRINK"

"AGUA DE DESPERDICIO RECLAMADA – POR FAVOR NO TOME"

3. Recycled water controllers, valves, and similar appurtenances shall be affixed with recycled water warning signs, and shall be equipped with removable handles or locking mechanisms to prevent public access or tampering. Quick couplers, if used, shall be of a type, or secured in a manner, that permits operation only by authorized personnel. Hose bibs shall not be used.

4. The Discharger will maintain the following setback distances from areas irrigated with recycled water:

Setback Distance (feet)	To
20	Edge of application area to domestic well
100	Wastewater/recycled water storage reservoir to domestic well
50	Application area to surface water

5. No physical connection shall exist between recycled water piping and any domestic water supply or domestic well, or between recycled water piping and any irrigation well that does not have an air gap or reduce pressure principle device.

6. Any irrigation runoff shall be confined to the recycled water use area, and shall not enter any surface water drainage course or stormwater drainage system unless the runoff does not pose a public health threat and is authorized by the regulatory agency.

7. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

8. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.

9. Any connection between the recycled water conveyance system and any potable water conveyance system, groundwater supply well, or surface water supply source for the purpose of supplemental water shall be equipped with a DHS-approved backflow prevention device.

10. Sprinkler heads shall be of the type approved for recycled water and shall create a minimum amount of mist. Drainage through sprinkler heads is prohibited.

11. Land application areas that are spray irrigated and allow public access shall be irrigated during periods of minimal use (typically between 9 p.m. and 6 a.m.). Consideration shall be given to allow maximum drying time prior to subsequent public use.

12. Areas irrigated with recycled water shall be managed to prevent nuisance conditions or breeding of mosquitoes. More specifically:

    a. All applied 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; and

    c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.

E. 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 undergone sufficient treatment and testing to qualify for reuse pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation.

1. Sludge and solid waste shall be removed from screens, sumps, aeration basins, ponds, clarifiers, etc. as needed to ensure optimal plant operation.

2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property.

3. Any handling and storage of residual sludge, solid waste, and biosolids on property of the WWTF shall be temporary (i.e., no longer than two years) 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 of this Order.

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 or State Water Board. In most cases, this means the General Biosolids Order (State Water Board Water Quality Order No. 2004-12-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 authorized by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.

6. Any proposed change in sludge use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

F. Groundwater Limitations

1. Containing constituents concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:

   (i) Nitrate as nitrogen of 10 mg/L.

   (ii) Total coliform organisms of 2.2 MPN/100 mL.

   (iii) For constituents identified in Title 22, the MCLs quantified therein.

G. Provisions

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as Standard Provisions.

2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2007-0150, which is part of this Order, and any revisions thereto as adopted by the Regional Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger self-monitoring reports.

3. The Discharger shall keep at the WWTF a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.

4. The Discharger shall not allow pollutant-free wastewater to be discharged into the Facility collection, treatment, and disposal systems in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means storm water (i.e., inflow), groundwater (i.e., infiltration), cooling waters, and condensates that are essentially free of pollutants.

5. The Discharger must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger only when the operation is necessary to achieve compliance with the conditions of the Order.

6. 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 sections 415 and 3065 of Title 16, CCR, 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.

7. 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 Water 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 Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

8. 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 the appropriate Regional Water Board office.

9. 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 Water 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. If approved by the Executive Officer, the transfer request will be submitted to the Regional Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

10. As a means of discerning compliance with Discharge Specification C.4, the dissolved oxygen content in the upper zone (1 foot) of effluent in the effluent storage ponds shall not be less than 1.0 mg/L for three consecutive sampling events. Should the DO be below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board and propose a remedial approach to resolve the low DO results **within 30 days**.

11. The Discharger shall maintain and operate all ponds sufficient to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically). As a means of management and to discern compliance with this Provision, the Discharger shall install and maintain in each pond permanent markers with calibration that indicates the water level at design capacity and enables determination of available operational freeboard.

12. **By 1 January 2008,** the Discharger shall conduct a salinity evaluation and submit a salinity minimization plan to identify and implement measures to reduce the salinity in discharge to the extent feasible in an effort to meet the Basin Plan's salinity performance goal of 500 µmhos/cm over source water. The salinity minimization plan shall include a time schedule to implement the identified measures.

13. If the Regional Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.

I, PAMELA C. CREEDON, 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 26 October 2007.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

A. Vicinity Map
B. Plane View of Fresno County JJC and WWTF
C. Flow Schematic
D. Nonpotable International Water Symbol

Monitoring and Reporting Program No. R5-2007-0150
Information Sheet
Standard Provisions (1 March 1991) (separate attachment to Discharger only)

kc/DKP/kes: 7/25/07

EXHIBIT F-2
JUVENILE JUSTICE CAMPUS
WASTE DISCHARGE REQUIREMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0150
FOR
FRESNO COUTNY JUVENILE JUSTICE CAMPUS
WASTEWATER TREATMENT FACILITY
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. Changes to sample location shall be established with concurrence of Regional Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples should 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 and Reporting Requirements, dated 1 March 1991. The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in this MRP, shall be reported to the regional Water Board and used in determining compliance.

Field test instruments (such as pH) may be used provided that:

1. the operator is trained in the proper use of the instrument;
2. the instruments are calibrated prior to each use;
3. instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. field calibration reports are submitted as described in the “Reporting” section of this MRP.

Each laboratory report shall clearly identify the following:

1. analytical method;
2. measured value;
3. units;
4. what constituent a value is reported as;
5. method detection limit (MDL);
6. reporting limit (RL) (i.e., a practical quantitation limit or PQL);
7. documentation of cation/balance for general minerals analysis of supply water and groundwater samples.

All laboratory results shall be reported down to the MDL. Non-detect results shall be reported as less than the MDL (<MDL). Results above the MDL, but below the concentration of the lowest calibration standard for multipoint calibration methods or below the reporting limit for other methods, shall be flagged as estimated.

Analytical procedures shall comply with the methods and holding times specified in: *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, 1983); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA/600/R-93/100, 1993); *Standard Methods for the Examination of Water and Wastewater, 20th Edition* (WEF, APHA, AWWA); and *Soil, Plant and Water Reference Methods for the Western Region, 2003*, 2nd Edition (hereafter Western Region Methods).

If monitoring consistently shows no significant variation in magnitude of a constituent concentration after at least 12 months of monitoring, the Discharger may request the MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

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:

Constituent	Units	Type of Sample	Sampling Frequency
Flow	mgd	Continuous	Daily[1]
Monthly Average Flow	mgd	Computed	Monthly
BOD_5[2]	mg/L	8-hr Composite[3]	Weekly
Monthly Average BOD	mg/L	Calculated	Monthly

[1] Sample frequencies referenced hereafter in this program as daily shall not include weekends or holidays.
[2] Five-day, 20°C biochemical oxygen demand
[3] 8-hour composite sampling as referred to in this program shall be flow-proportioned

EFFLUENT MONITORING

The Discharger shall collect effluent samples at a point in the system following treatment and before discharge to the effluent storage ponds. Time of collection of a grab sample shall be recorded. Effluent monitoring shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency[1]
Turbidity	NTU	Flow	Continuous
Chlorine Residual	mg/L	Grab	Daily[2,3]
Total Coliform Organisms	MPN/100 mL	Grab	Daily[2,3]
BOD			
Concentration	mg/L	8-hr Composite[4]	Weekly
Monthly Average	mg/L	Calculated	Monthly

EFFLUENT MONITORING (continued)

TSS			
Concentration	mg/L	8-hr Composite[4]	Weekly
Monthly Average	mg/L	Calculated	Monthly
Salinity			
EC[5]	µmhos/cm	8-hr Composite[4]	Monthly
TDS[6]	mg/L	8-hr Composite[4]	Monthly
Chloride	mg/L	8-hr Composite[4]	Monthly
Nitrogen Forms			
Ammonia (as N)	mg/L	8-hr Composite[4]	Monthly
Nitrate (as N)	mg/L	8-hr Composite[4]	Monthly
Total Kjeldahl Nitrogen	mg/L	8-hr Composite[4]	Monthly
Total Nitrogen	mg/L	Calculated	Monthly
General Minerals[7]	mg/L	Grab	Annually[8]

1 If results of monitoring a pollutant appear to indicate either the failure to achieve the design treatment goals of the wastewater treatment facility (e.g., the monthly mean for BOD_5 or TSS exceeds 10 mg/L) or potential upset of the treatment process, but monitoring frequency is not sufficient to validate the results, the frequency of sampling shall be increased to confirm the magnitude and duration of such treatment failures, if any, and aid in identification and resolution of the problem.

2 The treated effluent shall be sampled at least once daily, including weekends and holidays, to satisfy Title 22, California Code of Regulations, section 60321, unless the California Department of Health Services approves a lesser frequency.

3 Required if the Discharger wishes to conduct a study to determine the correlation between the effluent chlorine residual and total coliform concentration that demonstrates that a certain level of chloride residual will provide with reasonable certainty, consistent assurance that total coliform organisms will be less than 2.2 MPN/100 mL.

4 Flow proportioned.

5 Electrical conductivity at 25°C.

6 Total dissolved solids (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.

7 General Minerals as referred to in this program shall include the constituents in the General Minerals Analyte List presented below.

8 In October

General Minerals Analyte List[1]

Alkalinity (as $CaCO_3$)	Carbonate (as $CaCO_3$)	pH
Arsenic	Chloride	Potassium
Bicarbonate (as $CaCO_3$)	EC	Sodium
Boron	Hardness (as $CaCO_3$)	Sulfate
Calcium	Magnesium	TDS

1. General Minerals Analyte lists may vary depending on the laboratory, but shall include at least the above analytes and properties. An anion cation balance shall accompany results.

POND MONITORING

The storage reservoirs shall be sampled systematically for the parameters specified below. Storage and disposal pond monitoring shall include at least the following:

Constituent/Parameter	Units	Type of Sample	Sampling Frequency
Dissolved Oxygen[1] (DO)	mg/L	Grab[2]	Weekly
Freeboard[3]	feet[4]	Observation	Weekly
pH	pH Units	Grab	Weekly
Pond seepage test			1/Five years

1 To address potential for the creation of objectionable odors, the DO content in the upper zone (one foot) of either effluent storage reservoir should not be les than 1.0 mg/L for three consecutive sampling events. If results of monitoring indicate DO concentrations less than 1.0 mg/L, but monitoring frequency is not sufficient to validate the results, the frequency of sampling shall be increased to confirm the magnitude and duration of such low concentrations of DO, if any, and aid in identification and resolution of the problem.

2 Samples shall be collected at a depth of one foot from the storage reservoirs, opposite the inlet, and analyzed for DO. Samples shall be collected between 0700 and 0900 hours.

3 To prevent overtopping, overflows, or levee failures, freeboard in the reservoirs should never be less than two feet in the reservoir (measured vertically).

4 Freeboard shall be monitored to the nearest tenth of a foot.

In addition, the Discharger shall inspect the condition of the storage reservoirs 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 storage and disposal pond surface and their location; whether burrowing animals or insects are present; and the color of the reservoirs (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.

GROUNDWATER MONITORING

Concurrently with groundwater quality sampling, the Discharger shall measure the water level in each well as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundreds above mean sea level). The horizontal geodetic location of

each monitoring well shall be provided where the point of beginning shall be desribed by the California State Plane Coordinate System, 1983 datum.

Prior to collecting samples and after measuring the water level, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall include in its submittal of groundwater elevation data, a contour map based on said data showing the gradient and direction of groundwater flow under/around the facility and effluent disposal area(s). The groundwater contour map shall also include the location of the monitoring wells and active storage and land disposal areas (i.e., areas receiving treated effluent).

The Discharger shall monitor groundwater for the constituents and frequencies specified below:

Constituent/Parameter	Units	Type of Sample	Frequency
Depth to groundwater	Feet[1]	Measured	Quarterly[2]
Groundwater elevation	Feet above mean sea level	Calculated	Quarterly[2]
Iron	mg/L	Grab	Quarterly[2]
Manganese	mg/L	Grab	Quarterly[2]
Nitrogen compounds:			
Ammonia (as N)			
Nitrate (as N)	mg/L	Grab	Quarterly[2]
Total Nitrogen (as N)	mg/L	Calculated	Quarterly[2]
Trihalomethanes[3]	µg/L	Grab	Annually[5]
General Minerals[4]	mg/L	Grab	Annually[5]

1 To the nearest hundredth of a foot.

2 January, April, July and October.

3 General minerals lists may vary, depending on the laboratory, but shall include at least the analytes and properties listed herein. An anion/cation balance demonstrating that analyses are complete shall accompany the results.

4 In October.

WATER SUPPLY MONITORING

The supply water shall be monitored as follows:

Constituent	Units	Measurement	Frequency
EC[1]	µmhos/cm	Grab	Quarterly[2]
General Minerals[3]	mg/L	Grab	Annually[4]

1 EC shall be reported as a flow-weighted average from all supply wells. Include copies of supporting calculations with monitoring reports.
2 January, April, July and October.
3 General minerals lists may vary, depending on the laboratory, but shall include at least the analytes and properties listed herein. An anion/cation balance demonstrating that analyses are complete shall accompany the results.
4 In October.

SLUDGE MONITORING

To ensure that discharges to the WWTF are not interfering with treatment process, the Discharger shall collect a composite sample of sludge annually, as set forth by Title 40 Code of federal Regulations (CFR) Part 503.16. Any Notice of Necessary Information (NANI) form prepared for submittal to the United States Environmental Protection Agency shall be forwarded to the Regional Board.

Composite samples shall be collected in accordance with the Environmental Protection Agency's *POTW Sludge Sampling And Analysis Guidance Document* (EPA/ 833B89100, August 1989) and test for metals:

Arsenic	Copper	Nickel
Cadmium	Lead	Selenium
Molybdenum	Mercury	Zinc

The control of pathogens and the reduction of vector attraction shall be achieved in accordance with the Environmental Protection Agency's *Control of Pathogens and Vectors In sewage Sludge* (EPA/625-R-92/013, July 2003).

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, a log should be complete enough to serve as a basis for part of the annual report.

USE AREA MONITORING

Monitoring of the land application areas shall be conducted daily (when recycled water is being applied) and the results shall be included in an annual monitoring report. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the annual monitoring report. Effluent monitoring results shall be used in calculations to ascertain loading

rates at the application area. Monitoring of the land application areas shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency
Acreage Applied[1]	Acres	Calculated	Daily[2]
Application Rate[3]	gal/acre/day	Calculated	Daily[2]
Total Nitrogen Loading Rate[3]	lbs/acre/month	Calculated[4]	Monthly

[1] Land application areas shall be identified.

[2] While recycled water is being applied and for at least 48-hours following application.

[3] For each land application area.

[4] Total Nitrogen loading rates shall be calculated using the daily applied volume of wastewater, daily application area, and a running average of the three most recent TN results, which shall also be reported along with supporting calculations.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions and Reporting Requirements. Daily, weekly, semi-monthly, and monthly data shall be reported in monthly monitoring reports.

Monitoring data and/or 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.

A. Monthly Reports

Daily, weekly, and monthly monitoring data shall be reported in monthly monitoring reports. Monthly monitoring reports shall be submitted to the Regional Board **by the 1st day of the second month following sampling** (i.e., the January Report is due by 1 March). At a minimum, the reports shall include at the minimum:

1. Results of influent, effluent, pond, and use area (land application) monitoring;
2. Calculated Monthly Average Daily Flow;

3. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
4. Copies of laboratory analytical reports; and
5. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Quarterly Reports

***Wastewater**:* Daily, weekly, monthly, and quarterly monitoring data shall be reported in quarterly monitoring reports. Quarterly monitoring reports shall be submitted to the Regional Water Board **by the 1st day of the second month after the calendar quarter** (i.e., the 1st Quarter Report is due by 1 May, 2nd Quarter Report is due by 1 August, and the 3rd Quarter Report is due 1 November). The monthly reports required on 1 May, 1 August, and 1 November shall be combined with the quarterly report for ease of submittal. Quarterly monitoring reports shall include all monitoring data required in the monthly monitoring schedule, and the data from quarterly effluent and water supply monitoring events.

Groundwater: Quarterly groundwater monitoring data shall be reported in quarterly monitoring reports and submitted to the Regional Water Board as detailed in the previous section. Quarterly monitoring reports shall include all monitoring data required from quarterly groundwater monitoring events. The quarterly groundwater monitoring reports shall contain:

1. Quarterly groundwater contour maps;
2. Graphs of the laboratory analytical data for all samples taken from each well within at least the previous five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents; and
3. All monitoring analytical data obtained during the quarter presented in tabular form and included with previous data obtained for the given well.

C. Annual Reports

Wastewater: An Annual Report shall be prepared as a fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly schedule plus the results of any annually sampled constituents (general minerals, selected metals, etc). The Annual Report shall be submitted to the Regional Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented, the Annual Report shall include 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 calibrations (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 Provisions E.4 and a figure depicting monthly average discharge flow for the previous five calendar years;
6. The most recent water supply report including laboratory data;
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; and
   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 sludge production disposed of by each method.

      i. For **landfill disposal**, include (a) the Order numbers 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 the sludge.
      ii. For **land application**, include: (a) the locations of the site(s), and (b) the Order number of any WDRs that regulates 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); and
      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 October through September). 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 crop harvest. The summary shall also review the use area management plan (described in Provision F.7) 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.

Groundwater: An Annual Groundwater Monitoring Report shall be prepared as a fourth quarter groundwater monitoring report. The Annual Groundwater Monitoring Report will include all groundwater monitoring data required in the monthly/quarterly groundwater monitoring schedule plus the results of any annually sampled groundwater constituents (general minerals, selected metals, etc). The Annual Groundwater Monitoring Report shall be submitted to the Regional Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented in the quarterly groundwater monitoring reports, the Annual Report shall include the following:

1. Quarterly groundwater contour maps from the previous four quarters;
2. Graphs of the analytical data for all samples collected from each monitoring well for at least five calender years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents specified herein and selected in concurrence with Regional Water Board staff. Graphs shall be plotted at a scale appropriate to show trends or variations in water quality, and shall plot each datum, rather than plotting mean values.
3. All monitoring data obtained during the previous monitring events for at least the last five calendar years.

All technical reports required herein must be overseen and certified by a California registered civil engineer, certified engineering geologist, or certified hydrogeologist in accordance with California Business and Professions Code, sections 6735, 7835, and 7835.1.

All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

A transmittal letter shall accompany each self-monitoring report. The letter shall discuss any violations during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory.

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

_____
PAMELA C. CREEDON, Executive Officer

_____26 October 2007_____
(Date)

KC/DKP/kes: 7/25/07

EXHIBIT F-2
JUVENILE JUSTICE CAMPUS
WASTE DISCHARGE REQUIREMENTS
INFORMATION SHEET

R5-2007-0150
FRESNO COUNTY JUVENILE JUSTICE CAMPUS WWTF
FRESNO COUNTY

Background
Fresno County (hereafter the Discharger or County) owns and operates a wastewater collection, treatment, and disposal facility (WWTF) for the Juvenile Justice Campus (Facility) at 3333 American Avenue. The Facility is to be developed in four phases to accommodate the County's needs over the next 40 years. The first phase (Phase 1) was completed in 2006.

The WWTF was designed and constructed to process wastewater generated from the restroom and laundryroom facilities. No outside sewer mains or industrial discharges are conneted to the Facility's sewer system. The WWTF has an average daily flow design of 0.12 million gallons per day (mgd). The WWTF provides disinfected tertiary treatement of the waste streams. Treatment includes influent screening flow equalization, trickling filtration, clarification, chemical addition, flocculation, digestion, tertiary filtration, and disinfection. The treated effluent is stored in two lined effluent storage ponds and used to supplement irrigation of landscaped areas in and around the Facility including recreational areas utilized by juvenile inmates. According to the Report of Waste Discharge (RWD) the treatment process will meet Title 22 standards for unrestricted irrigation.

Flow data from Phase 1 will be used to modify the wastewater generation factors used to determine the required capacity for future phases. The County anticipates that they will need to expand the capacity of the WWTF in six to 15 years.

Solids and Biosolids Disposal
Sludge Handling: Settled sludge in the clarifier tanks is pumped to the aerated sludge storage tank for digestion and storage where it will thicken. Decant water from the sludge storage tank is returned to the flow equalization tank for processing through the WWTF. The sludge is then transferred to a second sludge tank and mixed with the screenings prior to disposal.

Initially, the liquid sludge will be trucked offsite for disposal at an authorized facility. Sludge disposal volume for Phase 1 is approximately 5,000 gallons per week. The use of a sludge-dewatering device, such as a sludge bagging unit, screw press, or centrifuge will be evaluated when the volume of sludge increases sufficiently to justify the capital cost and additional labor.

Groundwater Conditions
Groundwater in the project area is encountered at about 55 feet below ground surface (bgs) and flows west-southwest, according to information in Lines of Equal Elevation of Water in Wells in Unconfined Aquifer, published by Department of Water Resources in Spring 2004.

In 2006 the Discharger installed five groundwater monitoring wells to monitor shallow groundwater in the vicinity of the WWTF and effluent storage ponds. Based on existing groundwater data, shallow groundwater beneath the WWTF is generally of good quality except for nitrate. The average EC of groundwater is 760 umhos/cm and TDS is 540 mg/L. Nitrate concentrations in groundwater are in excess of the primary MCL of 45 mg/L. Based on

the data available, groundwater in the vicinity of the project area has no further assimilative capacity for nitrogen.

Compliance History
The Discharger has submitted monthly SMRs in compliance with the Tentative Monitoring and Reporting Program issued by the Executive Officer in February 2006. The EC and TDS concentrations in the effluent are much higher than those projected in the RWD (Estimated 300 µmhos/cm over source; Actual 700 µmhos/cm over source).

An Inspection by staff identified several boilers and a water softener that were not identified in the RWD. An email from the County indicated that the boilers are in a closed system, except for one boiler. That boiler and the water softener are connected to the laundry facilities. An investigation by the County determined that the water softener is backwashed one time per month and that only one bag (100 lbs) of salt has been used since the facility began operations, so it is likely not the source of the high EC. The Discharger contends that the high EC is because of water conservation measures at the Facility. However, staff suspects that a contributing source for the high EC may also be the detergents used in the laundry.

Basin Plan, Beneficial Uses, and Regulatory Considerations
The Basin Plan indicates the greatest long-term problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. The Regional Water Board encourages proactive management of waste streams by dischargers to control addition of salt through use, and has established an incremental EC limitation of 500 µmhos/cm or a 1,000 µmhos/cm, as the measure of the maximum permissible addition of salt constituents through use.

Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 µmhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.

Antidegradation
The antidegradation directives of State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" 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. Policy and procedures for complying with this directive are set forth in the Basin Plan.

Constitutes of concern that have the potential to degrade groundwater include, in part, nutrients and salts. However, the discharge will likely not degrade the beneficial uses of groundwater because:

a. For salinity, the Basin Plan contains effluent limits (EC of SW + 500 µmhos/cm, 1,000 µmhos/cm max.). This Order sets an interim effluent limit for EC at the Basin Plan maximum limit of 1,000 µmhos/cm, which considered antidegradation when it was adopted. In addition this Order requires the Discharger conduct a salinity evaluation and implement BPTC measures to reduce the salinity of the discharge in accordance with the anitdegradation policy.

b. For nitrogen, the Discharger stores the effluent in a manner that protects underlying groundwater from percolation from ponds until it can be beneficially used on crops.

Treatment Technology and Control
The Discharger provides treatment and control of the discharge that incorporates:

a. alarm and automatic flow diversion systems to prevent system bypass or overflow;
b. tertiary treatment
c. lined effluent storage ponds;
d. disinfection of treated effluent;
e. appropriate biosolids storage and disposal practices;
f. an operation and maintenance (O&M) manual; and
g. certified operators to insure proper operation and maintenance.

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.

CEQA
The Discharger certified an Environmental Impact Report (EIR) in February 2003 for the County of Fresno Juvenile Justice Campus in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et, seq.) and the State CEQA guidelines (Title 14, Division 6, California Code of Regulations, as amended). The Regional Water Board, as a responsible agency under CEQA, reviewed the EIR for the project relative to water quality. This Order contains requirements that will mitigate or avoid environmental effects on water quality.

Proposed Order Terms and Conditions

Discharge Prohibitions, Specifications and Provisions
The proposed Order prohibits discharge to surface waters and water drainage courses and cross connection between potable water and well water piping with recycled water piping.

The proposed Order would set a monthly average daily flow limit of 0.12 mgd and a peak daily flow limit of 0.135 mgd. With effluent limits for BOD_5 and TSS of 10 mg/L monthly average and 20 mg/L daily maximum based, which are consistent with the effluent quality necessary to meet tertiary standards for filtration and disinfection.

The Order recognizes that the effluent will be stored in lined ponds and requires the effluent to be applied at reasonable agronomic rates for nutrient and hydraulic loading.

The proposed Order would establish an interim effluent limitation for EC of 1,000 µmhos/cm that reflects the maximum EC limit set by Regional Water Board policy for managing the salts within the Tulare Lake Basin, and proscribes a Provision to conduct a salinity evaluation and minimization plan to identify and implement measures to reduce the salinity in discharge in an effort to meet the Basin Plan's salinity performance goal of 500 µmhos/cm over source water.

The proposed Order would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greatest.

In order to protect public health and safety, the proposed Order requires the Discharger to comply with the provisions of Title 22 and to implement best management practices with respect to recycled water application (application at reasonable rates considering the crop, soil, and climate).

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.

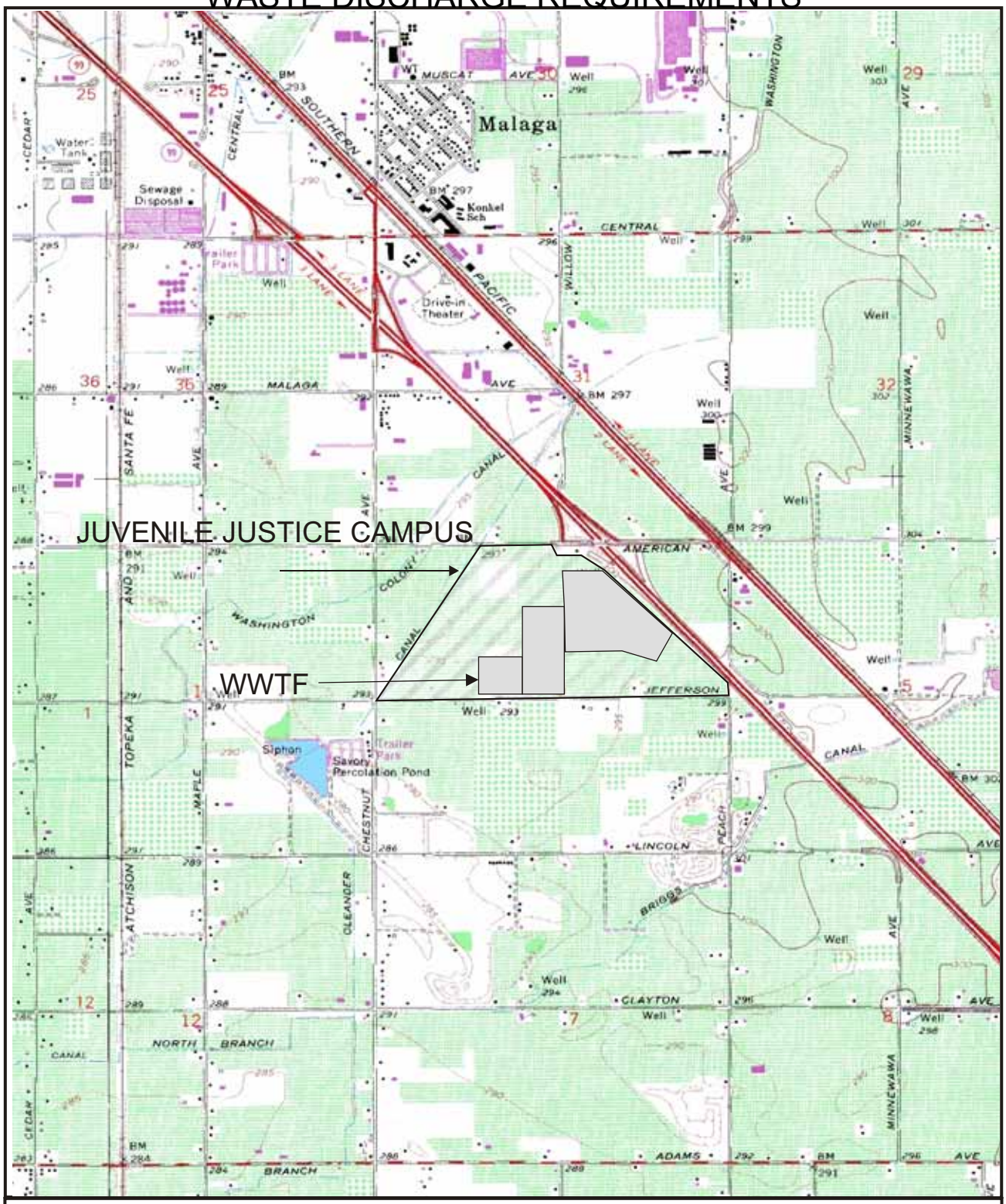
The proposed Order includes effluent monitoring requirements, Use Area monitoring, and groundwater and water supply monitoring. In order to adequately characterize wastewater, the Discharger is required to monitor for BOD5, pH, EC, TDS, nitrogen, and other constituents.

The Discharger must monitor groundwater for waste constituents expected to be present in the discharge, and capable of reaching groundwater, and violating groundwater limitations if its treatment, control, and environmental attenuation, proves inadequate. For each constituent listed in Section F, Groundwater Limitations, of the WDR, the Discharger must, as part of each monitoring event, compare concentrations of constituents found in each monitoring well (or similar type of groundwater monitoring device) to the background concentration or to prescribed numerical limitations to determine compliance.

Reopener
The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. It may be appropriate to reopen the Order if applicable laws and regulations change.

kc/DKP/kes 7/23/07

EXHIBIT F-2
JUVENILE JUSTICE CAMPUS
WASTE DISCHARGE REQUIREMENTS

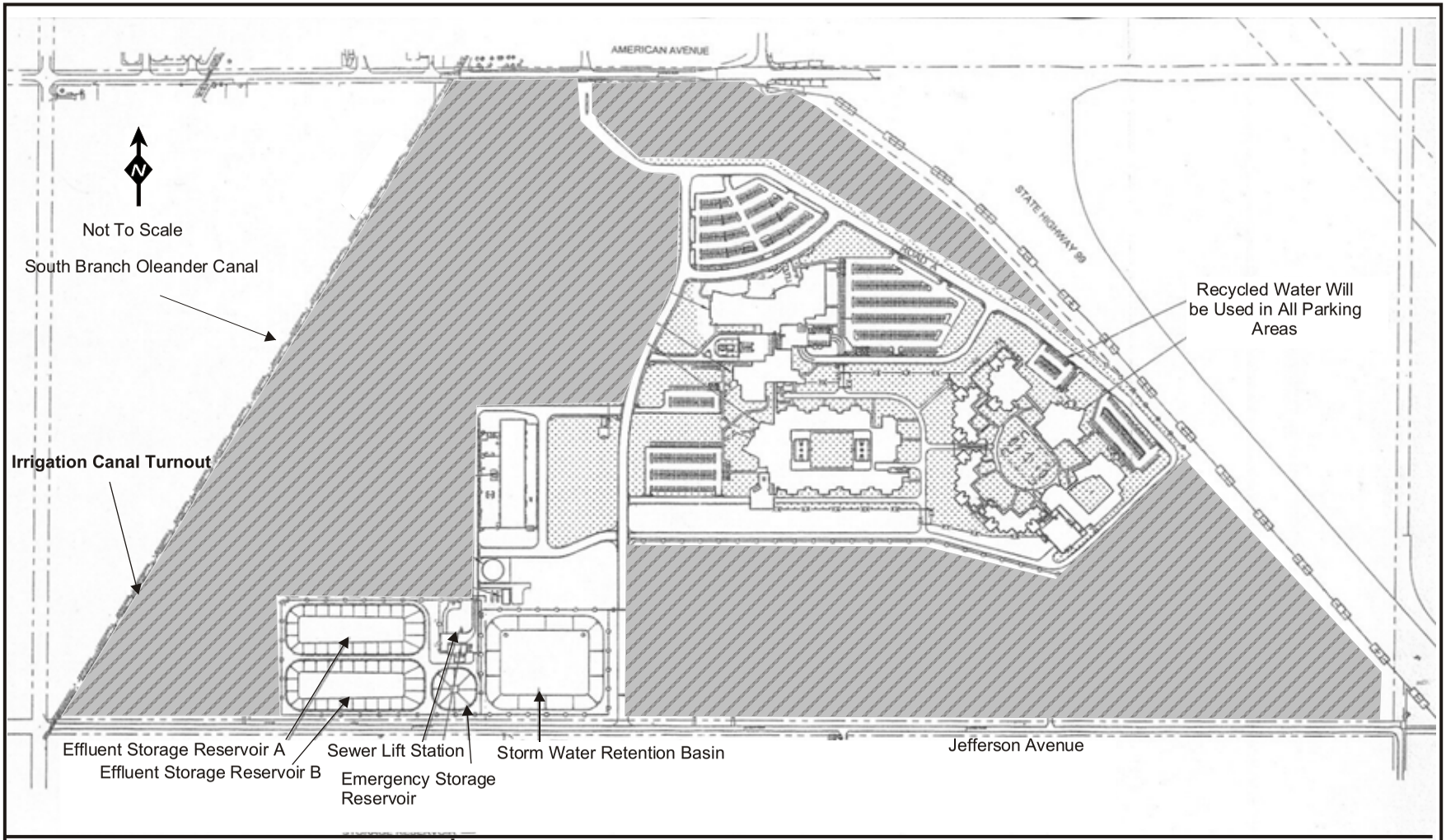


ATTACHMENT A - VICINITY MAP
WASTE DISCHARGE REQUIREMENTS R5-2007-0150
FRESNO COUNTY
JUVENILE JUSTICE CAMPUS WWTF
FRESNO COUNTY
Section 6, T55, R21E, MDB&M
USGS 7.5 MALAGA QUADRANGLE

N

Not to Scale

EXHIBIT F-2
JUVENILE JUSTICE CAMPUS
WASTE DISCHARGE REQUIREMENTS



Legend

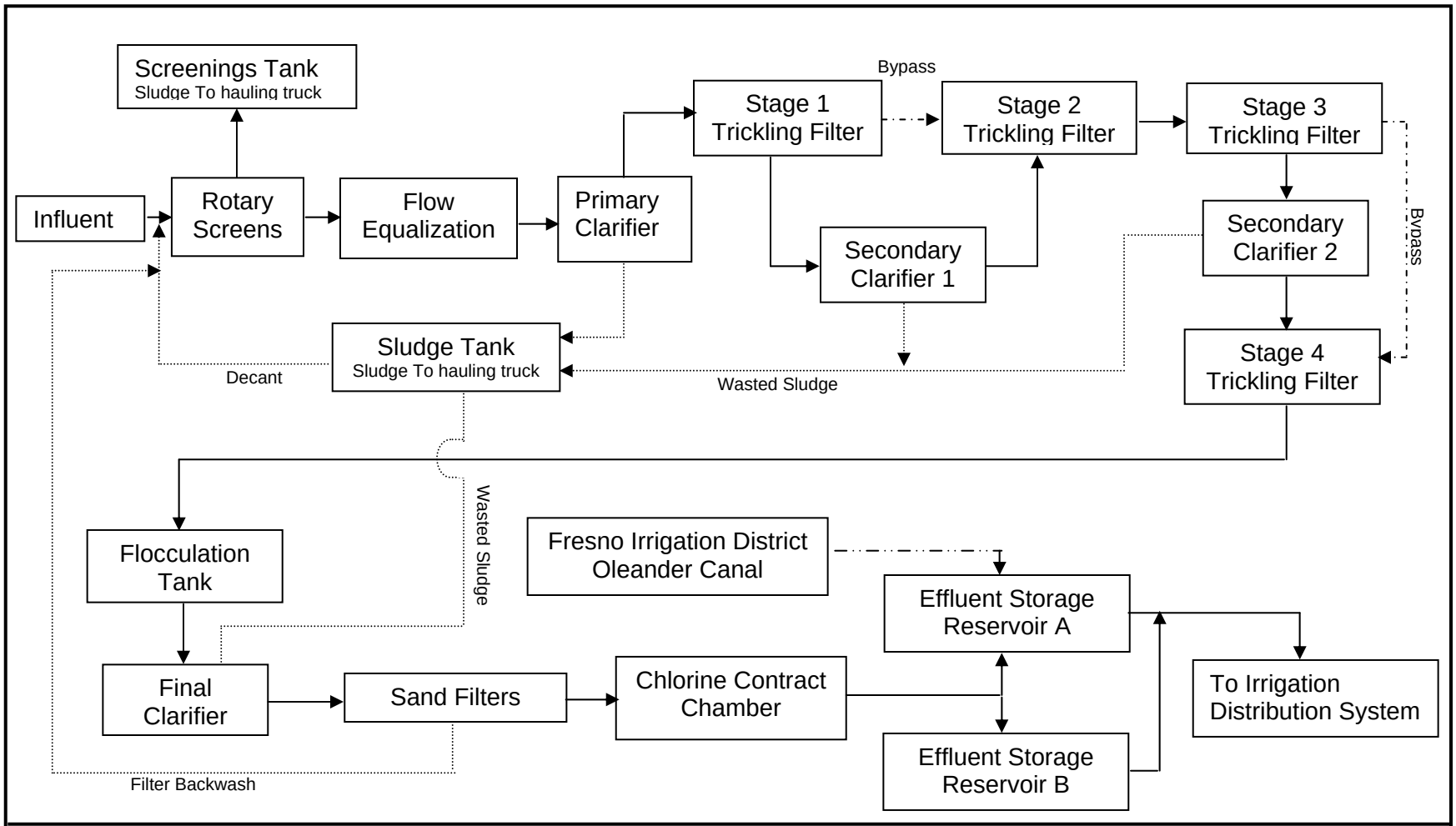
Potential Recycled Water Areas

Landscaped Areas

ATTACHMENT B - PLAN VIEW
WASTE DISCHARGE REQUIREMENTS R5-2007-0150
FRESNO COUNTY
JUVENILE JUSTICE CAMPUS WWTF
FRESNO COUNTY

Figure modified from *Title 22 Engineering Report,* Boyle Engineering Corporation, 2006

EXHIBIT F-2
JUVENILE JUSTICE CAMPUS
WASTE DISCHARGE REQUIREMENTS



ATTACHMENT C – FLOW SCHEMATIC
WASTE DISCHARGE REQUIREMENTS R5-2007-0150
FRESNO COUNTY
JUVENILE JUSTICE CAMPUS WWTF
FRESNO COUNTY

EXHIBIT F-2
JUVENILE JUSTICE CAMPUS
WASTE DISCHARGE REQUIREMENTS

ATTACHMENT D
International Symbol for Nonpotable Water

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2007-0150
FOR
FRESNO COUNTY
JUVENILE JUSTICE CAMPUS WWTF
FRESNO COUNTY