

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6V-2010-0023
WDID No. 6B360911001

**WATER RECYCLING REQUIREMENTS AND
WASTE DISCHARGE REQUIREMENTS
CITY OF VICTORVILLE AND
SOUTHERN CALIFORNIA LOGISTICS AIRPORT (SCLA);
SCLA CENTRAL WASTEWATER TREATMENT PLANT**

San Bernardino County

The California Regional Water Quality Control Board, Lahontan Region (Water Board) finds that:

1. Facility and Location

The Southern California Logistics Airport Central (SCLA) Wastewater Treatment Plant is a City-owned facility designed to produce final effluent meeting California Title 22 Recycled Water criteria. For the purpose of this Water Board Order (Order), the City of Victorville is the "Discharger" and the SCLA Wastewater Treatment Facility and Recycled Water Distribution Pipeline is referred to as the "Facility." The Facility is designed to discharge disinfected tertiary-treated recycled water to be used at the High Desert Power Project (HDPP) and also at the Westwinds Golf Course, both located in the City of Victorville.

The facility location has a latitude of 34.36'53 and a longitude of 117.22'23. Nearby land uses are the Southern California Logistics Airport (SCLA) to the west, Victor Valley Wastewater Reclamation Authority (VWRA) to the east, and open desert to the north and south (see attachment "A") with plans for future industrial development.

2. Recycled Water Report

The Discharger proposes to supply an average flow of 2.5 million gallons per day (mgd) of disinfected, tertiary recycled water as defined in California Code of Regulations, title 22, section 60301.230, that is suitable for cooling purposes at HDPP and for irrigation use at the Westwinds Golf Course.

3. Facilities and Treatment Process

The 2.5 mgd treatment Facility is sized for treating 1.0 mgd of industrial wastewater flows and 1.5 mgd of sanitary flows from the City of Victorville. Industrial wastewater consists of food and beverage clients in the SCLA Industrial Park as well as from the Dr. Pepper Snapple Group (DPSG). Sanitary wastewater is from portions of the City of Victorville. The treatment facility is designed in a modular fashion consisting of equalization, aeration and anaerobic sludge holding tanks and membrane bioreactor tanks.

The treatment Facility is capable of anaerobically treating industrial wastewater, which will be combined with sanitary wastewater, then aerobically treated and then further treated with membrane bioreactor filtration technology before disinfection by ultra-violet light. The effluent is discharged as reclaimed water for use as coolant at the High Desert Power Project and irrigation at the Westwinds Golf Course.

The Treatment Plant will consist of the following unit processes: preliminary screening process, flow equalization, anaerobic and aerobic wastewater treatment of the combined streams, membrane bioreactor filtration, treatment of the industrial wastewater and disinfection. Disinfected treated effluent is delivered to the two recycled water users via an approximate 1.8 mile distribution pipeline. At the Westwinds Golf Course water is stored in a 1 million gallon elevated storage tank.

Aerobic waste-activated sludge is collected from the Membrane Bio-Reactor system. The waste activated sludge is transferred to the aerobic sludge holding tank and aerobically digested. Settled sludge is then pumped to eight on-site sludge drying beds for de-watering to a minimum concentration of 50% dry solids. The sludge drying beds are sized to handle 20 lbs. dry solids per sq. ft. per year of 3% digested waste activated sludge being generated by a 2.5 mgd wastewater treatment plant. The dried sludge will be removed and disposed of off-site to a legal disposal site.

Construction of the sludge drying beds includes a single membrane liner to protect against leakage. The membrane liner includes a 4-inch sand bed over the liner and a 2-inch sand bed beneath the liner. Each drying bed slopes towards a de-watering trench with a drain at the lowest point that directs water back to the head works section of the treatment plant. The sub-grade construction from the bottom-up includes a 6-inch, class-2 aggregate base at 95% compaction. A layer of 2-inch sand is placed over the 6-inch aggregate. The 2-inch sand layer serves as a bed for a 60 mil geo-membrane liner in which another sand layer, 4-inches thick, will confine the membrane from the top and bottom. A 6-inch thick concrete slab with composite fibers is placed over the 4-inch sand as a final finish.

4. Reason for Action

This Order establishes requirements for: (1) the onsite discharge of sewage sludge to drying beds and (2) recycled water requirements for the operation of the Facility and level of treatment for water that will be used at the two use areas. The recycled water distribution system is a City owned pipeline regulated under this Order. The recycled water use areas are separately regulated as follows:

- a. R6V-2009-0138 – establishes use area requirements at the High Desert Power Plant for water supplied from VVWRA.

- b. R6V-2003-028 - establishes use area requirements at the West Winds Golf Course and recycled water treatment requirements for water delivered to the golf course from VVWRA.
- c. R6V-2003-028-A1 – authorizes VVWRA to supply recycled water to the High Desert Power Plant.

5. Expected Quality of Recycled Water

The wastewater treatment plant (WTP) will produce recycled water meeting California title 22 standards for tertiary treatment.

The expected quality of the recycled water discharge is presented in Table 1.

Table 1. Expected recycled water quality

Constituent	Units	Value
pH	pH units	6.5 to 8.0
Turbidity	NTU	< 0.2
BOD	mg/L	5.0
TDS	mg/L	325.0
Chloride	mg/L	50.0
Ammonia-N	mg/L	0.5
Nitrite-N	mg/L	0.2
Nitrate-N	mg/L	15.0
Phosphorus	mg/L	4.0
Total Coliform	MPN/100 mL	<2.0

Notes: The basis for the concentration of these constituents is estimated by the City considering the City's potable water quality and the water quality for recycled water from Victor Valley Wastewater Reclamation Authority.

6. Recycled Water Transmission and Distribution System

Delivery of recycled water from the Treatment Facility to HDPP will be through a buried reclaimed water pipeline. The City of Victorville is responsible for the operation and maintenance of the transmission and distribution system that will deliver recycled water to HDPP and the Westwinds Golf Course.

7. Authorized Recycled Water Uses

The only sites authorized to receive recycled water under this Order are: (1) High Desert Power Project and (2) Westwinds Golf Course.

8. Topography

The topography of the Facility varies from flat within developed areas to undulating topography along the eroded old river terrace which occupies the area between the treatment Facility and the Mojave River. The elevation difference between the Facility and the Mojave River is 200 feet. The Facility is

situated on the bluffs about one mile west of the Mojave River on land sloping toward the east.

9. Hydrogeology

There are two aquifers beneath the Facility as follows:

- a. An upper alluvial unit of well- to poorly-graded sands contains the Upper Aquifer. The Upper Aquifer is encountered at about 80 feet below ground surface (bgs) and is about 80 feet thick. The Upper Aquifer groundwater flow direction is to the east.
- b. An aquitard comprised of old lakebed lacustrine deposits with highly plastic clay approximately 25 feet thick occurs beneath the Upper Aquifer. The Upper Aquifer is perched on this unit. The aquitard "pinches out" east of the Facility allowing water in the upper Aquifer to percolate to the Lower or Regional Aquifer.
- c. A lower alluvial unit lies beneath the aquitard and consists of a heterogeneous mixture of interbedded sands, gravel, silt and clay. The upper 50 feet of this unit is unsaturated. The Lower, or Regional Aquifer is located approximately 200 - 250 feet bgs and extends to about 700 feet bgs.

Groundwater quality in the underlying Upper Aquifer (Table 1) has the following quality based on monitoring well data collected between approximately 2,500 feet and 3,000 feet south (cross gradient) of the facility¹.

Table 1 – Underlying Ground Water Quality

Constituent	Units	Range
TDS	mg/L	349 – 399
Chlorides	ug/L	48 – 85
Sodium	ug/L	78 – 94
Sulfate	mg/L	124 – 129

The Upper Aquifer groundwater nitrate as N concentrations range between an estimated 3.6 mg/L to 4.2 mg/L.

10. Lahontan Basin Plan

The Water Board adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan), which became effective on March 31, 1995. This Order implements the Basin Plan as amended.

¹ MWH, 2000. Data is from May 2000 for George AFB Wells NZ-21, NZ-23.

11. Receiving Water and Beneficial Uses

The receiving waters are the groundwater of the Upper Mojave River Valley (DWR Unit No. 6-42). The beneficial uses of the groundwater as set forth and defined in Table 2-2 of the Basin Plan, are:

- a. Municipal and Domestic Supply (MUN);
- b. Agricultural Supply (AGR);
- c. Industrial Service Supply (IND);
- d. Freshwater Replenishment (FRSH); and
- e. Aquaculture (AQUA).

12. State Water Board Recycled Water Policy

State Water Board Resolution No. 2009-0011, "Adoption of a Policy for Water Quality Control for Recycled Water," references and adopts the "State Water Resources Control Board Recycled Water Policy" (Recycled Water Policy). The Recycled Water Policy provides direction to the State and Regional Water Boards regarding the appropriate criteria to be used in issuing permits for recycled water projects. The Recycled Water Policy describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects. This Order implements the Recycled Water Policy in that the recycled water produced meets title 22 criteria. This Order does not regulate a recycled water use area that could affect state receiving waters because those uses are regulated separately as described earlier. There is no discharge to receiving waters authorized by this Order. As such, the following sections of the Policy do not apply to this Order: (1) Item No. 6 (b), Adoption of the Salt/Nutrient Management Plans, (2) Item No. 7 – Landscape Irrigation Projects, (3) Item No. 8 – Recycled Water Groundwater Recharge Projects, (4) Item No. 9 – Anti-Degradation Analysis, and (5) Item No. 10 – Emerging Constituents/Chemicals of Emerging concern.

13. Stormwater

- a. The Discharger is required to obtain coverage for the Facility under the State General Industrial Stormwater Permit (97-03-DWQ) because it is listed by category in 40 CFR 122.26 and has a Standard Industrial Classification Code of 4952. This Order requires evidence to be submitted that the City has applied for coverage.
- b. The Discharger is required to obtain coverage for construction of the Facility under the State General Construction Stormwater Permit (99-08-DWQ) under Waste Discharger Identification No. 6B36C354303 as of December 31, 2008.

14. Maintenance of High Quality Waters in California

This Order regulates the treatment and production of recycled water and the discharge of sludge to the sludge drying beds only. The Discharger has proposed to provide an engineered liner for the sludge drying beds to contain the sludge and any leachate. This Order does not allow discharges to the receiving water from the sludge drying beds. Requirements for recycled water use areas are established in other Board Orders. Board Order No. R6V-2003-028 specifies the use of recycled water at Westwinds Golf Course and the production of recycled water at VVWRA. Board Order No. R6V-2003-028A1 specifies the production of recycled water at VVWRA for the use at HDPP. Board Order No. R6V-2009-0138 specifies the use of recycled water at HDPP and the production of recycled water. Thus, this Order does not allow groundwater degradation and State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California", is satisfied.

15. Engineering Report

The California Department of Public Health (CDPH), formerly the Department of Health Services, establishes criteria for using recycled water. As required under California Code of Regulations, title 22, section 60323, the Discharger must submit an engineering report to the State of CDPH, and obtain its approval, for the production of recycled water to be used at HDPP and for irrigation at the Westwinds Golf Course. The CDPH accepted the Engineering Report in a letter dated April 8, 2010.

16. Consideration of Water Code Section 13241 Factors

Section 13263(a) of the Water Code requires that Waste Discharge Requirements take into consideration factors listed in Section 13241 of the Water Code. The Water Board has considered these factors as follows:

a. Past, present, and probable future beneficial uses of water.

The proposed uses of recycled water regulated separately will not adversely affect present or probable future beneficial uses of water, including municipal and domestic supply, agricultural supply, and industrial service supply. Use of recycled water as proposed in this Order replaces existing potable water sources.

b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

This Order does not allow discharges that cause adverse effects to the environmental characteristics and quality of groundwater.

- c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors, which affect water quality in the area.

The requirements of this Order establish levels for the safe use of recycled water for power plant cooling and landscape irrigation. Because the design of the proposed sludge drying beds will include measures to prevent wastewater seepage to groundwater, the groundwater quality will not be affected.

- d. Economic considerations

Extraction of groundwater in dry years causes significant reductions in groundwater levels at supply wells, and may result in an overdraft condition. These overdraft conditions will become more severe with future population growth. Therefore, the production and reuse of recycled water for uses that are otherwise served by supply wells will preserve high quality groundwater for the potable water uses. Preserving high quality groundwater for future direct use will likely result in economic saving because other potable supplies such as imported water will not need to be relied on as heavily.

- e. The need for developing housing within the region

The proposed recycled water uses would not directly contribute to the creation of additional housing or jobs within the area and thus would not result in direct growth inducement. The proposed recycled water uses in the area would reduce the area's existing and future demand for groundwater through recycling. The groundwater conserved through implementation of the proposed project would be available to serve potable water demands of planned growth.

17. California Environmental Quality Act Compliance (CEQA)

The City of Victorville is the lead agency responsible for evaluating any of the project's significant or potentially significant effects on the environment. The Water Board, acting as a CEQA Responsible Agency in compliance with California Code of Regulations, title 14, section 15096, evaluated the impacts to water quality addressed in the environmental documents.

This project is subject to the provisions of the California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et seq.) in accordance with CCR, title 14, section 15378. The City of Victorville adopted a Mitigated Negative Declaration for the Facility on April 21, 2009.

Additionally, the City of Victorville adopted an Addendum on April 6, 2010 addressing modifications to biosolids management. Instead of offsite disposal, biosolids will be disposed into onsite drying beds lined to prevent percolation. After solids are dry, they will be disposed offsite at a legal facility. The potential for the proposed sludge drying beds to generate nuisance odors, was not found

to be significant. Any significant effects to the environment will be reduced to insignificant because the drying beds are equipped with a liner and a leak detection system to where levels of threat to water quality will be insignificant. A system of observation wells will be used to monitor the beds.

The Water Board has determined that the mitigation measures proposed as part of the project and described in the City's CEQA documents, and the implementation and monitoring of the effectiveness of the mitigation measures as described in this Order, are adequate to reduce water quality impacts to less than significant levels.

18. Notification of Interested Parties

The Water Board has notified the Discharger and interested persons of its intent to prescribe water recycling requirements.

19. Consideration of Public Comments

The Water Board, in a public meeting, heard and considered all comments pertaining to the use of recycled water.

IT IS HEREBY ORDERED that the Discharger must comply with the following:

I. WATER RECYCLING SPECIFICATIONS

A. Title 22 Requirements

1. The maximum instantaneous flow rate of recycled water produced at the Tertiary Treatment Plant must not exceed 3.5 mgd (peak daily flow).
2. All disinfected tertiary recycled water supplied to the recycled water distribution system must, at some point following the treatment process but prior to reuse, meet the requirements specified in California Code of Regulations, title 22, (Division 4 beginning with section 60001 et. seq.), specifically:
 - a. Section 60301.230 for Disinfected Tertiary Recycled Water that is filtered and subsequently disinfected.
 - i. Because ultraviolet light disinfection is proposed, effluent must be demonstrated to inactivate and/or remove 99.999 percent of plaque-forming units of F-specific bacteriophage MS2, or polio virus [as specified in Section 60301.300]. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of demonstration.
 - ii. 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 analysis have been completed and the number of total coliform bacteria does not exceed and MPN of 23 per 100 milliliters in more than once sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

- b. Section 60301.320 for Filtered Wastewater in the effluent is passed through microfiltration, ultrafiltration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:
 - i. 0.2 NTU [as specified in Section 60301.630] more than 5 percent of the time within a 24-hour period, and
 - ii. 0.5 NTU at any time.
- c. Section 60301.650 for Oxidized Wastewater in that the effluent organic matter has been stabilized, is non-putrescible, and contains dissolved oxygen.
- d. Section 60325 for Personnel in that the Facility shall be provided with a sufficient number of qualified personnel (per Section 13625 of the Water Code) to operate the facility effectively so as to achieve the required level of treatment at all times.
- e. Section 60323 for Engineering Report in that the Facility shall maintain and exercise accordingly a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use area.
- f. Section 60327 for Maintenance in that the Facility shall have a preventive maintenance program to ensure that all equipment is kept in reliable operating condition.
- g. Section 60329 for Operating Records and Reports in that operating records shall be maintained at the Facility or a central depository within the City of Victorville. These shall include: all analyses specified in the reclamation criteria, records of operational problems, plant and equipment breakdowns, and diversions of emergency storage or disposal, and all corrective or preventive actions taken. Process or equipment failures triggering an alarm shall be recorded and maintained as a separate record file which shall include the time and cause of failure and corrective action taken.

- h. Section 60331 for Bypass in that there shall be no bypass of untreated or partially wastewater from the reclamation plant or any intermediate unit processes to the point of use.
- i. Section 60335 for Alarms in that:
 - i. Alarm devices shall be installed to provide warning of: (1) loss of power from the normal power supply, (2) failure of a biological treatment process, (3) failure of a disinfection process, (4) failure of a filtration process, or (5) any other specific process failure for which warning is required.
 - ii. All required alarm devices shall be independent of the normal power supply for the Facility.
 - iii. The person to be warned shall be the plant operator, superintendent, or any other responsible person designated by the management of the reclamation plant and capable of taking prompt corrective action.
- j. Section 60337 for Power Supply in that the power supply shall be provided with one of the following reliability features: (1) alarm and standby power source, (2) alarm and automatically actuated short-term retention of disposal provisions as specified in Section 60341, or (3) automatically actuated long-term storage or disposal provisions as specified in Section 60341.
- k. Section 60341 for Emergency Storage or Disposal in that:
 - i. Where short-term retention or disposal provisions are used as a reliability feature, these shall consist of facilities reserved for the purpose of storing or disposing of untreated or partially treated wastewater for at least a 24 –hour period and include (1) necessary diversion devices, (2) provisions for odor control, conduits, pumping and pump-back equipment, and (3) provided with independent or a standby power source.
 - ii. Where long-term storage or disposal provisions are used as a reliability feature, these shall: (1) consist of ponds, reservoirs, percolation areas, downstream sewers leading to other treatment or disposal facilities or any other facilities reserved for the purpose of emergency storage or disposal if untreated or partially treated wastewater, (2) have sufficient capacity for at least 20 days, include necessary diversion works, provisions for odor and nuisance control, conduits, and pumping and pump-back systems, and (3) provided with independent or a standby power source.

- iii. Automatically actuated systems shall include sensors, instruments, valves and other devices to enable fully automatically actuated diversion of effluent in the event of a treatment process failure and a manual reset to prevent automatic restart until the failure is corrected.
- I. Section 60345 for Biological Treatment in that all process shall be provided with one of the following reliability features:
 - i. Alarm and multiple biological treatment units capable of producing oxidized wastewater with one unit not in operation.
 - ii. Alarm, short-term retention or disposal provisions, and standby replacement equipment.
 - iii. Alarm and long-term storage and disposal provisions.
 - iv. Automatically actuated long-term storage or disposal provisions.

B. General Requirements and Prohibitions

1. The discharge of sludge to the drying beds must not cause a violation of any applicable water quality standards.
2. Recycled water may only be supplied to those users described in Finding No. 7 of this Order.
3. The City owned recycled water distribution pipelines must be maintained so as to prevent leakage.
4. Where any numeric or narrative water quality objective contained in the Basin Plan is already being exceeded, the discharge of sludge to the drying beds that causes further degradation or pollution is prohibited.
5. The Sludge Drying Beds shall have an adequate Leachate Collection and Recovery System (LCRS) installed to collect any leachate generated and to monitor the integrity of the upper liner performance.
6. The Discharger shall contract with an independent 3rd party to monitor compliance with the Quality Assurance/Quality Control (QA/QC) Plan for the construction of the sludge drying beds sub-grade and LCRS including liner.
7. There shall be no discharge of raw or partially treated wastewater, sludge, grease, or oils from the collection, transport, treatment, or disposal facilities to adjacent land areas or surface waters.

C. Receiving Water Limitations

The discharger shall not cause the existing groundwater quality to be degraded. Under no circumstances shall the Discharger cause the presence of the following substances or conditions in groundwaters of the Upper Mojave River Valley Basin:

1. Bacteria: A median concentration of coliform organisms over any seven-day period that is in excess of (or equal to) 1.1MPN/100 milliliters;
2. Chemical Constituents: Concentrations of chemical constituents in excess of the MCL or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following provisions of the California Code of Regulations, title 22 which are incorporated by reference into this Order: Table 64431-A of Section 64431 (Inorganic Chemicals), Table 64433.2-A of Section 64433.2 (Fluoride), Table 64444-A of Section 64444 (Organic Chemicals), Table 64449-A of Section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels-Ranges). (This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.); Concentrations of chemical constituents that adversely affect the water for beneficial uses, including the beneficial use AGR;
3. Radioactivity: Concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of the California Code of Regulations, title 22 of which is incorporated by reference into this Order. (This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.); and
4. Taste and Odors: Taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses.

II. PROVISIONS

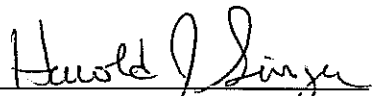
- A. Pursuant to Water Code Section 13267, subdivision (b), the Discharger must comply with Monitoring and Reporting Program R6V-2010-0023 as specified by the Executive Officer.
- B. The Discharger shall comply with the "Standard Provisions for WDRs," dated September 1, 1994, in Attachment "B," which is made part of this Order.
- C. The Discharger must comply with the conditions identified in CDPH's Approval and Comment letter dated April 8, 2010 (see Attachment "C").

- D. At least 180 days prior to when the influent flow to the treatment plant reaches 80% of the design capacity, the Discharger must submit a revised Report of Waste Discharge.

III. TIME SCHEDULES

- A. By **July 10, 2010**, the Discharger must submit evidence that it has filed for coverage under the Statewide General Stormwater Permit for Industrial activities.
- B. By **July 30, 2010, or no later than 5 days prior to the beginning** of construction, the Discharger must submit a QA/QC plan, signed by a California registered civil engineer, for the sub-grade preparation and for installation of the synthetic liners at the sludge drying beds.
- C. By **August 31, 2010, or no later than 60 days** after the completion of construction, the Discharger must submit certification, signed by a California registered civil engineer, that the Facility is constructed in accordance with the Report of Waste Discharge and is designed to meet the requirements of this Order.

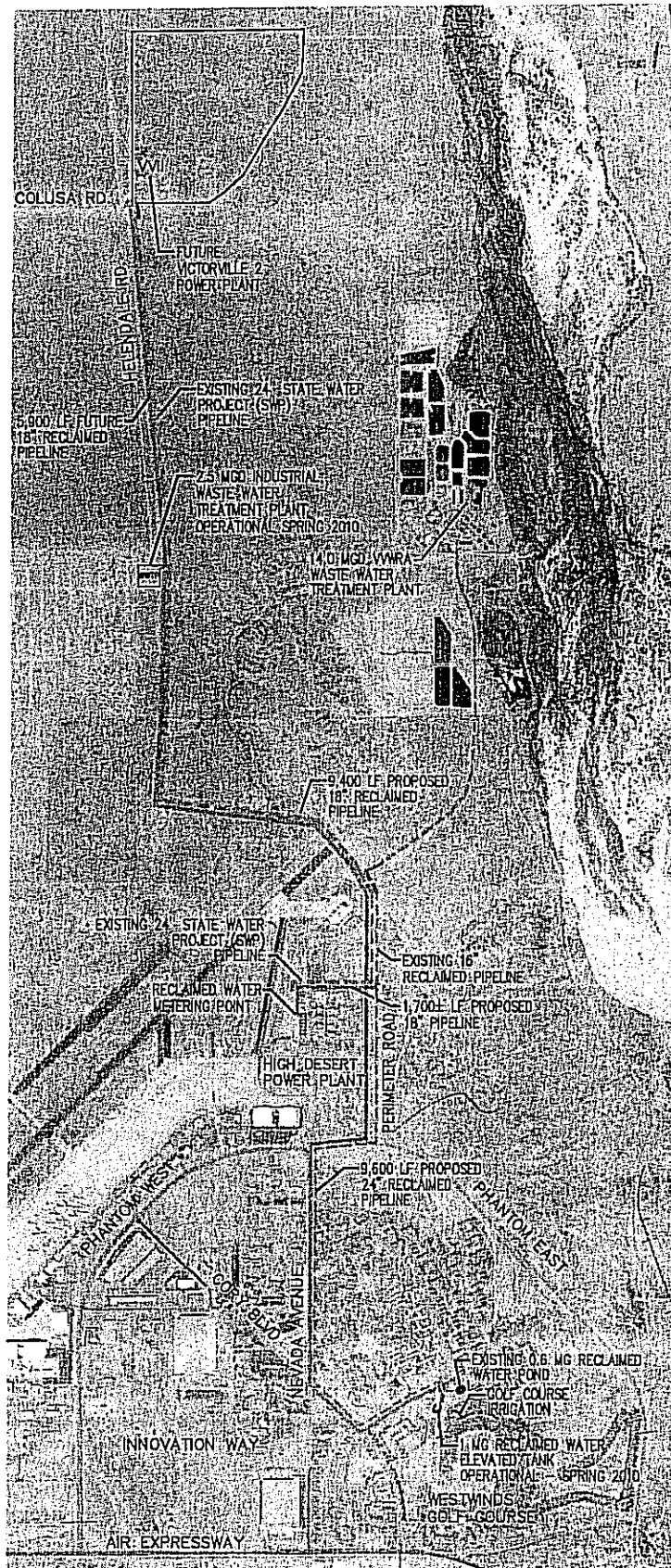
I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on June 9, 2010.


HAROLD J. SINGER
EXECUTIVE OFFICER

- Attachments: A. Existing & Proposed Recycled water system Map
B. Standard Provisions for Waste Discharge Requirements
C. CDPH's Approval and Comment Letter

ATTACHMENT A

Figure 1
EXISTING AND PROPOSED
RECLAIMED WATER SYSTEM
Oct 12, 2009



Attachment "A"

ATTACHMENT B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements;
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260(c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to Waste Discharge Requirements shall be considered to have a continuing responsibility for ensuring compliance with applicable Waste Discharge Requirements in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the Waste Discharge Requirements shall be reported to the Regional Board. Notification of applicable Waste Discharge Requirements shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing and correct that information.
- e. Reports required by the Waste Discharge Requirements, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.

- f. If the Discharger becomes aware that their Waste Discharge Requirements (or permit) is no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their Waste Discharge Requirements (or permit) be rescinded.

3. Right to Revise Waste Discharge Requirements

The Regional Board reserves the privilege of changing all or any portion of the Waste Discharge Requirements upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the Waste Discharge Requirements may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and reissuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the Waste Discharge Requirements which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall 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 Waste Discharge Requirements. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the Waste Discharge Requirements.

7. Waste Discharge Requirement Actions

The Waste Discharge Requirements may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the Waste Discharge Requirements conditions.

8. Property Rights

The Waste Discharge Requirements do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the Waste Discharge Requirements including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the Waste Discharge Requirements shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the Waste Discharge Requirements are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from disposal/treatment facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operator. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either ~~perennial or ephemeral~~, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

- a. All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

ATTACHMENT C



MARK B HORTON, MD, MSPH
Director

State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

April 8, 2010

John Morales
Water Resources Control Engineer
Lahontan Regional Water Quality Control Board
14440 Civic Drive, Suite 200
Victorville, CA 92392

4/600

RECEIVED

CRWQCBREG6
Rec'd
APR - 8 2010
JM
File # 03 3609/11001

Dear Mr. Morales:

**SCLA WASTEWATER TREATMENT PLANT TITLE 22 ENGINEERING REPORT
CITY OF VICTORVILLE (SYSTEM NO. 3690021)**

The Department is in receipt of the report titled *Engineering Report for the Production, Distribution and Use of Recycled Water – Southern California Logistics Airport Wastewater Treatment Plant*, dated February 2, 2010 and prepared by Woodward & Curran. The report was submitted as the engineering report required by Title 22, California Code of Regulations (CCR), Section 60323 by the Victorville Water District (District), a subsidiary district of the City of Victorville (City), for the Southern California Logistics Airport Wastewater Treatment Plant (SCLA WWTP).

The SCLA WWTP is designed to serve the Dr. Pepper Snapple Group (DPSG) beverage bottling facility at the SCLA Industrial Park and to treat a portion of the City's sanitary wastewater. The plant is designed to treat a combined 0.95 million gallons per day (MGD) industrial wastewater and 1.5 MGD sanitary wastewater. Water produced by the SCLA WWTP will be disinfected tertiary wastewater that will be used at the High Desert Power Plant and Westwinds Golf Course.

High strength industrial wastewater from the DPSG bottling facility will undergo anaerobic treatment in an upflow anaerobic sludge blanket (UASB) treatment process. Effluent from the UASB treatment process will be combined with the sanitary wastewater in a complete-mix activated-sludge (CMAS) treatment and solids separation using membrane bioreactor (MBR) technology. MBR permeate will be treated by ultraviolet (UV) disinfection prior to discharge. The membranes are PVdF ultrafiltration ZeeWeed 500d membranes produced by GE Zenon. The UV units are Trojan UV3000Plus™. The Department has reviewed the report and has the following comments.

Page 7-6, Section 7.2.3 Alarms

Title 22, CCR, Section 60335 (b) requires that all alarm devices be independent of the normal power supply. The City should specify the power supply for the alarm devices. More detail on the alarms for the disinfection system and filtration system should be provided in the operations and maintenance (O&M) manual. For disinfection the City will use an UV unit. The City should specify what parameters will be used to determine failure of the UV unit in the O&M manual.

Page 7-8, Section 7.2.10 Filtration

As the City will not be providing chlorine for disinfection, which is required for CT calculations, the City will need to demonstrate 5-log virus inactivation/removal of the plaque forming units of F-specific bacteriophage MS2 or polio virus with filtration and a disinfection process (Title 22, CCR, Section 60301.230 (a)(2)). For membrane filtration Title 22, CCR, Section 60301.320 (b) requires that the filtered wastewater turbidity not exceed 0.2 NTU at more than 5 percent of the time within a 24-hour period and 0.5 NTU at any time.

However, no log reduction value (LRV) has been credited for membrane filtration and no specific study has been completed for virus removal from wastewater with the ZeeWeed 500d membrane. To assure reliability of the filtration process, the Department recommends that direct integrity testing (DIT) be incorporated into the operations plans and that the City specify a frequency for conducting testing and the performance criteria that should be met.

The November 2005 EPA *Membrane Filtration Guidance Manual* provides information on DIT and meeting performance criteria for resolution, sensitivity, and frequency. For reliability, the Department recommends that log removal credit calculated from DIT (LRV_{DIT}) exceed 1.

Page 7-8, Section 7.2.12 Other Alternatives to Reliability Requirements

The City is aware of the requirements for acceptance of the UV3000Plus™ disinfection unit noted in the Department letter dated July 23, 2009. The City will be required to meet all requirements noted in the letter including dose calculations and completion of a bioassay test. The City will need to provide a test protocol for Department review and approval prior to testing.

Page 11-1, Section 11 Recycled Water Applications

The District has prepared an ordinance relating to recycled water, Ordinance No. VWD-003, with anticipated adoption of April 2010. The Title 22 report does not discuss the compliance of the High Desert Power Plant and Westwinds Golf Course with the ordinance. The ordinance specifies that the Department will provide the shutdown test frequency. The report included for the High Desert Power Plant does not specify a testing frequency. This City's adopted ordinance

will need to include a shutdown test frequency applicable for all recycled water users including High Desert Power Plant and Westwinds Golf Course.

The Department accepts the Title 22 Engineering Report for production of tertiary treated recycled water by the SCLA WWTP provided the following conditions are incorporated into the City's water recycling requirements and waste discharge requirements:

1. Regarding the performance standards for membrane filtration; the filtered wastewater turbidity should not exceed 0.2 NTU at more than 5 percent of the time within a 24-hour period and not exceed 0.5 NTU at any time.
2. Regarding the reliability of membrane filtration; direct integrity testing (DIT) be incorporated into the membrane operations at the SCLA WWTP, and that the frequency of testing and the DIT performance criteria be included in the Operations and Maintenance Plan for the SCLA WWTP.
3. Regarding the UV disinfection process; the equations below must be used for calculation of the UV dose:

$$\text{Dose} = (\text{CF}) * (\text{FF}) * (\text{EOLL}) * 10^{-4.83 - 0.7 * \log \text{Flow} + 2.91 * \log \text{UVT} + 1.09 * \log P}$$

$$\text{CF} = -0.003 \times \text{UVT} + 1.075$$

Where:

Dose = Delivered UV dose per bank (mJ/cm³)

FF = Fouling Factor, as determined per the NWRI guidance

UVT = % transmittance at 254 nm (%)

Flow = Flow rate per lamp (gpm/lamp), with gpm/lamp calculated as gpm divided by the number of lamps in one bank

EOLL = End of Lamp Life factor = 0.98 at 9000 hours for the Heraeus lamp

P = Percent power

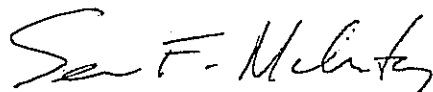
4. Regarding UV disinfection performance; upon completion of construction and prior to operation, an on-site check-point bioassay must be performed on the reactor using seeded MS2 coliphage. The on-site bioassay protocol must be approved by the Department and must be conducted over a range of flows. Results

John Morales
Page 4
April 8, 2010

documenting virus disinfection performance of the system to the standards found in Title 22 of the California Code of Regulations must be submitted to the Department for approval.

We appreciate the opportunity to review and comment on the subject project. If you have any questions regarding this letter, please contact me at (909) 383-4328 or Andrés Aguirre at (909) 383-4308.

Sincerely,



Sean F. McCarthy, P.E.
Senior Sanitary Engineer
San Bernardino District

cc: Reginald Lamson, Director
Victorville Water District
17185 Yuma Street
Victorville, CA 92395

Brian Bernados, CDPH Recycled Water Committee

John Morales
Page 5
April 8, 2010

bcc: Recycled Correspondence – 3690021
Reading
Region
Andrés – PICME

SCLA_WWTP_Title_22_Eng_Rpt.doc – City of Victorville Recycled – Andrés – 3/30/10

CHECKLIST:

Recycled Water

- RW Use Site Reports spreadsheet updated (Engineer)
- IEUA VPN site project files moved to the Approved folder (Engineer)

All Letters

- Entered into PICME as an enforcement action, citation or CO
- Electronic files moved from Sean's review folder to system file (Engineer)

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**MONITORING AND REPORTING PROGRAM NO. R6V-2010-0023
WDID No. 6B360911001**

**WATER RECYCLING REQUIREMENTS AND
WASTE DISCHARGE REQUIREMENTS
CITY OF VICTORVILLE AND
SOUTHERN CALIFORNIA LOGISTICS AIRPORT (SCLA);
SCLA CENTRAL WASTEWATER TREATMENT PLANT**

San Bernardino County

I. MONITORING

A. Flow Monitoring

The Discharger shall monitor the following for each calendar month:

1. The total volume, in million gallons, of wastewater flow to the treatment facility for each day.
2. The total volume, in million gallons, of wastewater flow to the treatment facility for each month.
3. The average flow rate, in mgd, of wastewater to the treatment facility calculated for each month.
4. The maximum instantaneous flow rate, in mgd, of wastewater to the treatment facility that occurs each day.
5. The total volume, in million gallons, of recycled water provided to the High Desert Power Project (HDPP) each month.
6. The total volume, in million gallons, of recycled water provided to the Westwinds Golf Course each month.

B. Sludge Disposal and Amount

For each calendar month, the Discharger shall record the location of the certified disposal site and the amount of sludge transported to the disposal site. This information shall be included in the quarterly Monitoring Reports submitted to the Water Board office.

C. Leachate Collection Recovery System Monitoring

Weekly, the Discharger shall inspect the leachate collection system/inspection observation ports for any system failure or evidence of leakage and state the results in the Facility Daily Log. Any volume of water removed shall be recorded. This information shall be summarized and reported in the quarterly Monitoring Reports submitted to the Water Board.

D. Effluent Quality Monitoring

Samples of the treated effluent leaving the Facility must be collected and analyzed to determine the magnitude of the following parameters:

Parameter	Units	Type	Minimum Frequency
Turbidity	NTU	Recorder	Continuous
Total Coliform ¹	MPN/100mL	Grab	Daily
Kjeldahl Nitrogen ²	mg/L	Composite	Quarterly
Ammonia Nitrogen ²	mg/L	Composite	Quarterly
Nitrate Nitrogen ²	mg/L	Composite	Quarterly
Total Dissolved Solids	mg/L	Composite	Quarterly
Sulfate ²	mg/L	Composite	Quarterly
Chloride ²	mg/L	Composite	Quarterly

1. The calculation of the median concentration of total coliform bacteria utilizing the bacteriological results of the last seven days for which analyses have been completed must be submitted. This calculation must include data from seven days periods.

2. Samples do not need to be collected for these parameters when the recycled water use is for power plant cooling only during the sample frequency period.

1. Record daily, whether, and how long, effluent NTU has exceeded 0.2 NTU for more than 5 percent of the time within a 24-hour period. Compliance with the effluent turbidity shall be determined by recording values every 30 minutes for 48 data points per 24-hours. Any more than 2 samples, within a 24-hour period exceeding 0.2 NTU shall be reported as a violation.
2. Record daily, whether effluent NTU has exceeded 0.5 NTU at any time within a 24-hours period. Compliance shall be determined based on recording values every 30 minutes for 48 data points per day.
3. Record daily the results for median total coliform bacteria based on the results for the last seven days and indicate whether any calculated daily value exceeds MPN of 2.2./100 mL.

4. A total coliform bacteria daily value exceeded a MPN of 23/100 mL in more than one sample in any running 30-day period.
5. Record whether any sample collected in a running 30-day period exceeds a total coliform bacteria MPN of 240/100 mL.

E. Operation and Maintenance Monitoring

Summarize and report monthly, the results of all actions and analytical results necessary to describe compliance with California Department of Public Health conditions. This summary must discuss the elements listed below:

1. All modifications or additions to the recycled water treatment facilities and distribution systems;
2. Operating problems;
3. Equipment breakdowns;
4. Preventative actions taken;
5. Any non-routine maintenance conducted on the recycled water treatment facilities and distribution system; and
6. Calibration results of any recycled water flow measuring devices.

F. Vadose Zone Monitoring

By **October 1, 2010**, the Discharger must submit a work plan describing a monitoring plan to assess the Vadose (Unsaturated) zone liquid. As a minimum, the plan shall propose a semi-annual monitoring for: Total Nitrogen, Nitrate as N, Total Dissolved Solids (TDS), and Volatile Organic Compounds (VOCs).

II. REPORTING

A. General Provisions

1. The Discharger must comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of this Monitoring and Reporting Program (Attachment A).

2. Pursuant to General Provision No. 1d. of the General Provisions for Monitoring and Reporting, the Discharger must submit to the Water Board by **July 30, 2010**, a Sampling and Analysis Plan (SAP) for consideration of approval. The SAP must include a detailed description of procedures and techniques for:
 - a. Sample collection, including the location and the method for sampling and decontamination of sampling equipment;
 - b. Sample preservation and shipment;
 - c. Analytical procedures;
 - d. Chain of custody control;
 - e. Quality assurance/quality control (QA/QC); and
 - f. Monitoring for any seepage through the leachate collection system for the sludge drying beds.

B. Quarterly Reports

Beginning on **August 1, 2010**, quarterly monitoring reports including the preceding information must be submitted to the Water Board by the first day of the second month following each quarterly monitoring period. (Water Code, Section 13523.1, subd. (b)(4)).

Quarterly monitoring periods are defined as follows:

<u>Quarter Period</u>	<u>Report Due</u>
1 st Qtr January 1 - March 31	May 1
2 nd Qtr April 1 - June 30	August 1
3 rd Qtr July 1 - September 30	November 1
4 th Qtr October 1 - December 31	February 1

C. Annual Report

Beginning on **February 1, 2011**, and continuing thereafter, the Discharger must submit an annual report to the Water Board with the information listed:

1. A report containing a contingency plan which assures that no untreated or inadequately treated wastewater is delivered to the use area. The report must also include a back-up plan for emergency storage or disposal for both long and short term retention or disposal;

2. For any violations that occurred during the previous year, the compliance record and the corrective actions taken or planned, which are necessary to bring the Discharger into full compliance with the Water Recycling Requirements; and
3. The Discharger's time schedule for completing any corrective actions needed to achieve compliance.
4. Graphical and tabular data for the monitoring data obtained for the previous year.
5. The Discharger must annually inspect and record results of the recycled water distribution system for cross connections with the potable water supply.
6. The Discharger must annually pressure test and record the results of the recycled water distribution system for leaks or drops in pressure.

Ordered by: Harold J. Singer Dated: June 9, 2010
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachment: A. General Provisions for Monitoring and Reporting Program

ATTACHMENT A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

GENERAL PROVISIONS
FOR MONITORING AND REPORTING

1. SAMPLING AND ANALYSIS

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
 - i. Standard Methods for the Examination of Water and Wastewater
 - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

2. OPERATIONAL REQUIREMENTS

a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

3. REPORTING

- a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.
- b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.
- d. Monitoring reports shall be signed by:
 - i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;
 - ii. In the case of a partnership, by a general partner;
 - iii. In the case of a sole proprietorship, by the proprietor; or

- iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
 - i. Name and telephone number of individual who can answer questions about the report.
 - ii. The Monitoring and Reporting Program Number.
 - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

x:PROVISIONS WDRS

file: general pro mrp