

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

**MEETING OF JUNE 10 AND 11, 2009
Victorville**

- ITEM:** 8
- SUBJECT:** **WASTE DISCHARGE REQUIREMENTS, ADELANTO PUBLIC UTILITY AUTHORITY; ADELANTO WASTEWATER TREATMENT PLANT, SAN BERNARDINO COUNTY**
- CHRONOLOGY:** September 11, 2002 Revised Waste Discharge Requirements (Board Order No. R6V-2002-050)
- August 29, 2007 Cease and Desist Order (Order No. R6V-2007-24)
- ISSUE:** Should the Water Board adopt new Waste Discharge Requirements for the discharge from the new Adelanto Waste Water Treatment Plant?
- DISCUSSION:** The Adelanto Public Utility Authority (Discharger) collects, treats, and disposes of an average of 2.2 million gallons per day (MGD) of domestic and industrial wastewater and discharges the treated effluent to four existing percolation ponds. A fifth percolation pond is planned to be constructed in 2009 based on the needs for additional percolation capacity.
- The Discharger's current treatment plant has the capacity to treat 1.5 MGD. The Discharger is adding capacity by constructing a new treatment plant at its existing treatment plant site that will be operated in addition to the existing plant. The existing and new facilities both will be used by the Discharger until sometime in the future when the Discharger plans to discontinue use of the existing plant and treat all the flow at the new plant.
- The new plant consists of primary treatment using a technology called "Primary Clean Screens". Effluent from the Primary Clean Screens then receives secondary treatment using a biological process called "Micro-media". The majority of the suspended particles from the incoming wastewater will be filtered at the Primary Clean Screens, thereby reducing the BOD load to the Micro-media sand filters.

This Order establishes new Waste Discharge Requirements (WDRs) for discharge of effluent from the new Micro-media facility. The Report of Waste Discharge (RWD) submitted by the discharger proposes to treat an additional influent flow of 3.0 MGD with the new Micro-media plant. This will allow the Discharger to treat a total flow of 4.0 MGD (3.0 MGD from the new facility and 1.0 MGD from the existing treatment facility).

Board Order R6V-2005-050 authorized the discharge of treated effluent to three percolation ponds. The discharger constructed a fourth percolation pond subsequent to issuance of the Board Order. The discharger intends to construct a fifth percolation pond during 2009. Effluent from the new Micro-Media plant will be piped to discharge independently into any of the five percolation ponds. The proposed Order authorizes the discharge of treated effluent to all five percolation ponds.

The Proposed Order also includes a monitoring and reporting program for the new plant and requires additional groundwater monitoring.

Comments on the proposed Order have been solicited from the Discharger and other interested agencies and persons. Comments were received from the Discharger and have been incorporated into the proposed Order.

RECOMMENDATION:

Adoption of Order as proposed

Enclosure: 1. Proposed Board Order

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6V-2009-(PROPOSED)
WDID NO. 6B369805001

WASTE DISCHARGE REQUIREMENTS

**FOR
ADELANTO PUBLIC UTILITY AUTHORITY
ADELANTO WASTEWATER TREATMENT PLANT**

San Bernardino County

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

1. Discharger

The Adelanto Public Utility Authority has submitted a Report of Waste Discharge (RWD) for its Domestic Wastewater Treatment Plant. The RWD consists of transmittals received on July 15, 2008, September 5, 2008, October 28, 2008 and January 9, 2009. For the purpose of this Water Board Order (Order), the Adelanto Public Utility Authority is referred to as the "Discharger."

2. Facility

The Discharger collects, treats and disposes of an average of 2.2 million gallons per day (mgd) of wastewater generated within the City of Adelanto. The Adelanto Treatment Plant receives domestic wastewater, industrial wastewater (both pretreated and not pretreated). The Discharger's current treatment facility has the capacity to treat 1.5 mgd. The Discharger is adding capacity at its treatment plant by constructing a new treatment plant that will be operated in addition to the existing plant. The existing and new facilities will be both used by the Discharger until sometime in the future when the Discharger plans to divert treatment of all the flow to the new plant. The new plant consists of primary treatment by "Primary Clean Screens." Effluent from the Primary Clean Screens is routed to a junction structure, where flow can be diverted to the flow equalization pond. From the equalization pond wastewater receives secondary treatment through a biological process called "Micro-media." This Order regulates discharge from the new plant. For the purpose of this Order, the new Primary Clean Screens and Micro-media plant are referred to as the "Facility".

3. Permit History

This Order establishes new Waste Discharge Requirements (WDRs) for discharge from the new Micro-media Facility. Discharge from the existing facilities is regulated under Board Order R6V-2002-050.

08-0003

Cease and Desist Order No. R6V-2007-24 was adopted on August 29, 2007 to address influent flow limit violations, exceedance of Biochemical Oxygen Demand (BOD) effluent limits and discharges of waste to a non-permitted percolation pond. These are violations of Discharge Specifications contained in Board Order No. R6V-2002-050.

4. Reason for Action

The Discharger is constructing a new Facility at its wastewater treatment plant site. The Discharger proposes to treat wastewater using a new treatment process referred to as the "Micro-media" process.

The RWD submitted by the Discharger proposes to treat an additional influent flow of 3.0 mgd with the new Micro-media plant. This will allow the Discharger to treat a total flow of 4.0 MGD (3.0 MGD from the new facility and 1.0 MGD from the existing treatment facility).

The existing plant currently discharges effluent to on-site percolation ponds. Of the four existing percolation ponds, one pond was not permitted under Board Order R6V-2002-050. The Discharger has included discharge to the existing four ponds in its RWD. The Discharger has also proposed one additional percolation pond to be constructed. Discharge of treated effluent from the Facility to the four on-site percolation ponds and the proposed new percolation pond is authorized by this Order. The effluent from the new Micro-media plant is piped to discharge into any of five percolation ponds independently.

In addition, this Order establishes a schedule for a work plan for the construction of new monitoring wells down gradient of the plant.

5. Location of Facilities

The Adelanto Treatment Plant and Percolation Ponds are located within an 18-acre site owned by the Discharger. The site is located in the City of Adelanto at the northeast corner of Jonathan Street and Auburn Avenue, San Bernardino County. The site is located within Section 21, T6N, R5W, SBB&M as shown on Attachments A and B, which are made part of this Order.

6. Influent Waste Streams

- a. The present flow to the Adelanto Wastewater Treatment Plant is about 2.2 MGD. The new Micro-media Filtration Plant is capable of treating up to 4.0 MGD. According to the RWD, this plant capacity should be able to handle the equivalent population increase for approximately 14 years; based on using the average growth of about 606 equivalent capacity units per year.

b. Industrial Wastewater Source Control

The Discharger has established an Industrial Wastewater Source Control and Pretreatment Program (Source Control Program). The programs are intended to reduce the amount of non-residential pollutants discharged to the sewer system and the Adelanto Treatment Plant.

7. Description of Treatment Facilities

The Facility consists of new treatment units constructed for the Micro-media process. The new treatment units consist of technology comprised of "Clean Screen" primary separators and Micro-media biological process sand filters with coagulation. The majority of the suspended particles from the incoming wastewater will be filtered at the Primary Clean Screens, thereby reducing the BOD at the Micro-media sand filters.

Influent is pumped to the Primary Clean Screens through a basin within the filter unit. A large fraction of settleable and suspended solids are captured on the screens and are partially dried and blown off using a high temperature blower. Dried solids are removed from the process and disposed off-site at a permitted landfill. The filtrate is then pumped to the Micro-media sand filters, where a small amount of coagulant (Poly Aluminum Chloride) is added. Air is pumped into the filter, primarily for the circulation of the sand bed. The treated wastewater flows through the sand filters and to a weir at the top of the sand filter unit, where it gets directed to the percolation ponds. The coagulated organics are pumped to the Primary Clean Screens, located at the beginning of the process. The bio-solids drop onto heavy duty plastic containers at about 25% to 35% solids content. The City's operations staff will compost and then dispose of the dry solids to a legal disposal or re-use location. A small amount of disinfected secondary treated effluent is used at the plant for washwater and plant maintenance activities.

Treatment and storage systems located at the Adelanto Treatment Plant are described in Table No. 1.

**Table No. 1
 Treatment and Storage Systems**

Treatment and Storage Systems	No. of Units	Description
Screening		Existing
Solids Storage (Dumpster)		Located adjacent to Clean Screens
Wastewater		
Headworks (preliminary treatment)	1	Large screening
Existing lined Activated Sludge Basins	2	One existing Bio-lac Bio-Reactor subsurface diffusion aerator basin will be converted to an equalization pond for the new Micro-media Filtration plant.
Multi-Media Filtration	1	The system is a continuous backwash traveling bridge filter.
Percolation Ponds	5	Total new and existing
Micro-media Treatment plant		
Clean screen separator	3	The clean screen separator is a continuous belt which filters out settleable & suspended solid particles from the incoming wastewater, which in turn reduces the BOD to the Micromedia sand filters.
Micro-media sand filter w/coagulation (Poly Aluminum Chloride Coagulant)	12 trains	The filtrate will receive a small amount of coagulant. Air is pumped into the filter for recirculation of the sand bed.
Sludge		
Dewatering Centrifuge	2	Existing centrifuges to operate in conjunction with the primary clean screens.
Dewatered-Sludge Storage Pad	1	The Pad is constructed of Portland cement concrete (concrete). It includes concrete curbs and is constructed to drain to a sump plumbed to the Adelanto Treatment Plant headworks. In the event of centrifuge malfunction, the Discharger may temporarily use the Pad to dewater sludge from the gravity thickener.
Chlorine Tank	1	A single chlorine tank constructed for disinfection of recycled water for flushing, cleaning and other beneficial uses around the plant only.
Hydro-pneumatic tank	1	Disinfected effluent is stored in a 10,000 gallon tank from which recycled water will be used for flushing, cleaning etc. around the plant.

8. Description of Effluent

The Adelanto Treatment Plant is designed to produce effluent that meets a 30-day mean BOD effluent concentrations of 30 mg/L. These WDRs neither approve nor establish requirements for projects to supply recycled water for off-site users. Any person who proposes to use recycled water must obtain water reclamation requirements separately. At this time, the Water Board has not received any such proposals from the Discharger for off-site reuse of the effluent.

9. Authorized Disposal Sites

The authorized disposal sites for the Facility effluent are the five percolation ponds, which are located within the 18-acre site owned by the Discharger, as shown in Attachment A.

10. Treatment and Disposal Capacity

A provision of this Order requires the Discharger to submit a Technical Report to the Water Board office once the flow reaches 75 percent of the design capacity providing information describing how the Discharger will prevent an exceedance of the treatment and disposal capacity.

11. Sludge/Solids Disposal

Solid debris (screenings) removed at the headworks of the Adelanto Treatment Plant are disposed of at a composting facility in Riverside County.

12. Site Geology

The site is located on a broad Pleistocene alluvial fan sloping gently toward the north and northwest. The 18-acre site is within the 98-square-mile Fremont wash drainage area that drains generally to the northeast eventually joining the Mojave River. A shallow caliche layer exists beneath the site. The bottoms of the percolation ponds are located below the caliche layer. Surface runoff caused by storms is via numerous dry washes and sheet flow across open desert.

13. Site Hydrogeology

The depth to groundwater beneath the site is approximately 90 feet. Table 2 below describes the hydrogeology beneath the site.

Table No. 2
Summary of Hydrogeology Beneath the 18-Acre Site

Zone	Depth (Feet bgs)
Upper aquifer (alluvial)	90 to 170
Aquitard (Clayey soil layer)	170 to 230
Regional Aquifer (alluvial)	230 to < 650
Bedrock	Starts at 650

The full lateral extent of the Upper Aquifer is not known. Site investigation results indicate that its lateral dimensions are at least three miles on each side.

14. Groundwater Quality

Based on monitoring reports submitted quarterly by the Discharger, the groundwater beneath the facility is generally suitable for all beneficial uses with background total dissolved solids (TDS) concentration of approximately 500 mg/L. Sampling of shallow groundwater up-gradient of the site indicates nitrate concentrations of approximately 5-6 mg/L as nitrogen.

15. Receiving Waters

The receiving waters are the groundwaters of the Upper Mojave River Valley Basin (Department of Water Resources Unit No. 6-42)

16. Lahontan Basin Plan

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

17. Beneficial Uses

The beneficial uses of the groundwaters of the Upper Mojave River Valley Basin as set forth and defined in 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).

18. Non-degradation

State Water Resources Control Board Resolution No. 68-16 (Statement of Policy for Maintaining High Quality of Waters in California) is called the non-degradation objective in the Basin Plan. This objective requires maintenance of existing water quality unless appropriate findings are made under Resolution No. 68-16.

There may be degradation of groundwater in the upper aquifer as a result of increased loading of salts and nitrogen from percolation of treated effluent if the Discharger continues to discharge to the percolation ponds. TDS and total nitrogen concentrations in the discharge to the percolation ponds exceed concentrations believed to be representative of the background water quality for the Upper Aquifer. The average TDS for the discharge, which is 580 mg/L, exceeds the background water quality in the upper groundwater for TDS, which is approximately 500 mg/L.

Discharge of treated effluent to on-site percolation ponds at the Adelanto sewage treatment plant has occurred since 1998. Groundwater monitoring wells located downgradient of the three original percolation ponds (Ponds 1-3) show increases of the TDS above background with concentrations detected up to 800 mg/L. These monitoring wells do not indicate nitrate concentrations above background, although total nitrogen concentrations in the effluent discharge exceed 10 mg/L. Currently nitrate concentrations are between 5-6 mg/L in monitoring wells both upgradient and downgradient of the disposal site. This Order requires the discharger to expand its groundwater monitoring system to monitor the two new percolation ponds (ponds 4 and 5) and continue its existing groundwater monitoring. This Order also establishes an interim effluent limit for total nitrogen based on effluent quality from the existing treatment plant and a final effluent limit for total nitrogen to not exceed 10mg/L. The order includes a schedule for the discharger to comply with the total nitrogen effluent limit by July 13, 2013 or provide information to support an alternate limit.

In order to allow any degradation, the Water Board must find that the conditions contained in Resolution No. 68-16 are met. In its evaluation of the proposed discharge the Water Board finds that:

1. The water quality changes are consistent with maximum benefit to the people of the state because the effluent expected from this new treatment process will be of a quality equal to or exceeding the current discharge quality, and is not expected to cause significantly more degradation. This new technology plant is designed to comply with the requirements of title 22 so that in the future production of water for recycling may be expanded. The treatment of wastewater is a benefit to the community and the area of TDS degradation is localized.
2. The water quality changes will not unreasonably affect present and anticipated beneficial uses. The new treatment plant is expected to produce an equal or higher quality effluent and the discharge is not expected to affect present and future anticipated beneficial uses. The effluent BOD would provide a carbon source to permit in-situ de-nitrification to occur in soils medium. The secondary maximum contaminant levels (MCLs) for TDS consist of a three part standard of 500 mg/L, 1000 mg/L and 1500 mg/L. Water containing between 500 mg/L and 1000 mg/L may be used for municipal use with no restrictions. The City's existing plant effluent contains TDS concentrations between 580 mg/L and 600 mg/L. The new biological treatment process will not help in reducing the effluent TDS. The discharge is expected to increase TDS in the receiving water by about 3%, which is within an acceptable range to protect beneficial uses.
3. The water quality changes will not result in water quality less than that prescribed in the Basin Plan, because the effect on groundwater from effluent nitrate (including total nitrogen) and TDS is expected to result in groundwater quality consistent with the water quality prescribed in the Basin Plan, and therefore the water quality objectives for the designated beneficial uses of groundwater beneath the site will be met.

4. The project is consistent with the use of best practicable treatment or control to avoid pollution or nuisance and maintain the highest water quality consistent with maximum benefit to the people of the state, because the new treatment facility utilizes a best practicable treatment technology to reduce the BOD and total nitrogen concentrations in the effluent.

In summary, the above evaluation shows that the proposed localized degradation in the vicinity of the waste treatment facility will meet the water quality objectives contained in the Basin Plan and the conditions of SWRCB Resolution No. 68-16. The Water Board finds that the degradation is reasonable, acceptable and appropriate provided the Discharger meets the conditions contained in this Order and attached Monitoring and Reporting Program. Those conditions include requirements for monitoring the long-term trends in concentrations of TDS, nitrate and other constituents to demonstrate whether constituents in the vadose zone and groundwater are acting as predicted by the Discharger's evaluation.

19. Other Considerations and Requirements for Discharge

Section 13263 of the Water Code requires that the Board, when prescribing waste discharge requirements, take into consideration specific factors in section 13241 of the Water Code. The Board has considered these factors as follows:

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

This Order identifies existing groundwater quality and past, present and probable future beneficial uses of water as described in findings no. 14 and 17. The proposed discharge will not adversely affect present or probable future beneficial uses of water, including domestic water supply, agricultural supply and wildlife habitat.

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

As described in finding no. 14, the total dissolved solids concentrations of the ground water are approximately 500 mg/ L, and ground water occurs in an alluvial ground water basin.

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

The requirements of this Order, including application of wastewater at increased rates and the application of the new technology plant will result in improved effluent quality. As stated in finding No. 18, the discharge meets the conditions set forth in State Water Resources Control Board Resolution

68-16. The Water Board will use its existing authority and waste discharge requirements to ensure protection of water quality from these discharges.

d. Economic considerations

This Order authorizes the Discharger to expand and upgrade its wastewater treatment and disposal system as proposed by the Discharger. The Order accepts the Discharger's proposal for a new technology plant as well as the addition of two percolation ponds for their treatment system.

e. The need for developing housing within the region

The Discharger can treat additional flows allowing development of housing within the region to accommodate population growth and the accompanying demand for domestic wastewater treatment. This Order provides for additional capacity to treat and control wastewater from the community.

f. The need to develop and use recycled water

This Order does not provide for use of recycled water. See finding No. 8.

20. California Environmental Quality Act (CEQA) Compliance

In accordance with the California Environmental Quality Act (CEQA), the City of Adelanto, acting as lead agency, certified a Mitigated Negative Declaration (MND) for the Facility on April 23, 2008 in accordance with the provisions of the CEQA (Public Resources Code, Section 21000 et seq.).

21. Notification of Interested Parties

The Water Board has notified the Discharger and interested parties of its intent to issue Revised WDRs for the discharge.

22. Consideration of Public Comments

The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

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

I. DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. The total volume of flow to the Adelanto Treatment Plant (Facility), during a 24-hour period, shall not exceed 4.0 million gallons.
2. The maximum (peak) instantaneous flow rate to the Facility shall not exceed 6.0 mgd.
3. All wastewater discharged to the authorized disposal sites shall not contain concentrations of parameters in excess of the following limits:

<u>Parameter</u>	<u>Units</u>	<u>30-Day Mean¹</u>	<u>Daily Maximum²</u>
BOD ³	mg/L	30 ⁴	45
Methylene Blue Active Substances	mg/L	1.0	2.0
Total Nitrogen (interim)	mg/L	39.0	
Total Nitrogen (Final)	mg/L	10.0	

4. The Discharger must comply with the final nitrogen limit above, by **July 13, 2013**. The Discharger may provide information to the Board that supports an alternate limit.
5. All wastewater discharged to the authorized disposal sites shall have pH of not less than 6.0 pH units nor more than 9.0 pH units.
6. All wastewater discharged to the authorized disposal sites shall have dissolved oxygen concentration not less than 1.0 mg/L.
7. All wastewater discharged to the authorized disposal sites shall not contain concentrations of organic constituents in excess of primary drinking water standards as established by the California Department of Health Services.

¹ Compliance is determined by comparing the limit to the arithmetic mean of laboratory results for 6-hour composite samples collected during a period of 30 days.

² Compliance is determined by comparing the limit to the laboratory result for any 6-hour composite sample.

³ Biochemical Oxygen Demand (five-day, 20°C) of an unfiltered sample.

⁴ This level assumes water produced will not be used as reclaimed wastewater. The Discharger must submit a revised application if proposing reclaimed water use.

B. Receiving Water Limitations

1. This discharge shall not cause a violation of any applicable water quality standards for receiving water adopted by the Water Board or the State Water Resources Control Board.
2. The discharge shall not cause groundwaters of the Upper Mojave River Valley Basin to contain:
 - a. Bacteria: A median concentration of coliform organisms over any seven-day period that is in excess of (or equal to) 1.1MPN/100 milliliters;
 - b. 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;
 - c. 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
 - d. Taste and Odors: Taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses.

C. General Requirements and Prohibitions

1. There shall be no discharge, bypass, or diversion of raw or partially treated sewage, sewage sludge, grease, or oils from the collection, transport, treatment, or disposal facilities to adjacent land areas or surface waters.
2. Surface flow or visible discharge of sewage or sewage effluent at/or from the authorized disposal sites to adjacent land areas or surface waters is prohibited.
3. The vertical distance between the liquid surface elevation and the lowest point of a pond dike or the invert of an overflow structure shall not be less than two feet.
4. The discharge shall not cause a pollution as defined in Section 13050 of the California Water Code, or a threatened pollution.
5. Neither the treatment nor the discharge shall cause a nuisance as defined in Section 13050 of the California Water Code. The discharge of wastewater except to the authorized disposal sites is prohibited.
6. Disinfected effluent shall only be used for in-plant maintenance purposes.
7. The Discharger shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices.

II. PROVISIONS

A. Operator Certification

The Discharger's wastewater treatment facility shall be supervised by persons possessing a wastewater treatment facility operator certificate of appropriate grade pursuant to Chapter 3, Subchapter 14, California Code of Regulations, title 23.

B. Standard Provisions

The Discharger shall comply with the "Standard Provisions for WDRs," dated September 1, 1994, in Attachment "C," which is made part of this Order.

C. Design Capacity

The Discharger must submit a Technical Report to the Water Board office once the flow reaches 75 percent of the design capacity providing information showing how the Discharger will prevent exceedance of the treatment and disposal capacity.

D. Time Schedule

By **January 15, 2011**, the Discharger must submit a report describing measures being taken to comply with the final nitrogen effluent limit. In this report the Discharger may provide information that supports an alternate limit for total nitrogen, if it can be demonstrated that an alternate limit is protective of water quality.

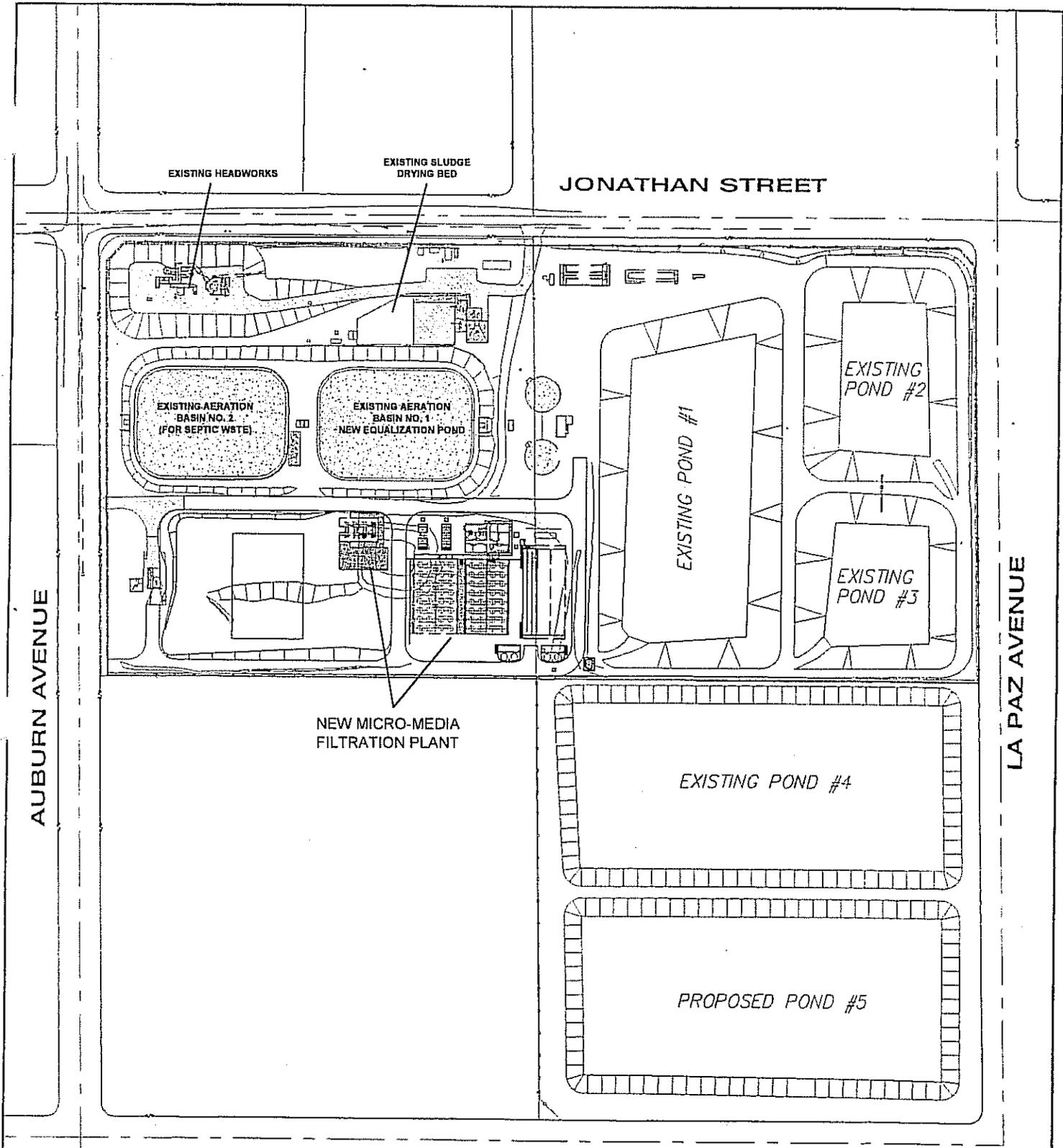
I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on June 10, 2009.

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Site Plan
B. Monitoring Well Map
C. Standard Provisions for Waste Discharge Requirements

JM/rp BO2009/Adelanto WTF/Pro/R6V-2009-Pro Adelanto WDR.doc

PROPOSED



AUBURN AVENUE

JONATHAN STREET

LA PAZ AVENUE

PEARMAIN STREET



ATTACHMENT A
 CITY OF ADELANTO
 ADELANTO PUBLIC UTILITY AUTHORITY
 WASTEWATER RECLAMATION FACILITY
 PHASE 2-A EXPANSION
 OVERALL SITE PLAN

08-0016

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**STANDARD PROVISIONS**
FOR WASTE DISCHARGE REQUIREMENTS1. 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 (WDRs);
- 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 be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs 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 WDRs shall be reported to the Regional Board. Notification of applicable WDRs 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 WDRs, 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 WDRs (or permit) are 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 WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs 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 WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs 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 WDRs. 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 WDRs.

7. Waste Discharge Requirement Actions

The WDRs 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 re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs 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 WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

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

11. Severability

Provisions of the WDRs 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 treatment and disposal 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 operation. 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

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.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. R6V-2009-(PROPOSED)
WDID NO. 6B369805001

FOR

ADELANTO PUBLIC UTILITY AUTHORITY
ADELANTO WASTEWATER TREATMENT PLANT

San Bernardino County

I. MONITORING

A. Flow Monitoring

The Discharger shall monitor the following:

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 million gallons per day (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 wastewater flow to the percolation ponds for each month.
6. The freeboard (distance from the top of the lowest part of the dike to the wastewater surface in the pond) measured each day in each percolation pond. If a percolation pond does not contain wastewater, indicate that it is empty.

B. Plant Influent Monitoring

Samples of influent wastewater shall be collected and analyzed to determine the magnitude of the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Biochemical Oxygen Demand	mg/L	6-hour composite	Weekly
Total Suspended Solids (TSS)	mg/L	6-hour composite	Weekly
Methylene Blue Active Substances	mg/L	6-hour composite	Monthly
Total Cyanide	mg/L	6-hour composite	Annually
Total Phenols ¹	mg/L as	6-hour composite	Annually

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<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Volatile Organic Compounds (VOCs) ²	C ₆ H ₅ OH mg/L	Grab	Annually
Semivolatile Organic Compounds (SVOCs) ³	mg/L	6-hour composite	Annually
Heavy Metals ⁴	mg/L	6-hour composite	Annually
Total Recoverable Petroleum Hydrocarbons ⁵	mg/L	6-hour composite	Annually

C. Plant Effluent Monitoring

Samples of the final effluent from the wastewater treatment facility shall be collected and analyzed to determine the magnitude of the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Biochemical Oxygen Demand	mg/L	6-hour composite	Weekly
Chemical Oxygen Demand	mg/L	6-hour composite	Weekly
Dissolved Oxygen	mg/L	Grab	Weekly
Ph	pH Units	Grab	Weekly
Methylene Blue Active Substances	mg/L	6-hour composite	Twice per Month
Oil and Grease	mg/L	6-hour composite	Twice per Month
Kjeldahl Nitrogen	mg/L as N	6-hour composite	Monthly
Nitrate Nitrogen	mg/L as N	6-hour composite	Monthly
Ammonia Nitrogen	mg/L as N	6-hour composite	Monthly
Total Dissolved Solids	mg/L	24-hour composite	Quarterly
Total Hardness	mg/L	24-hour composite	Quarterly
Boron	mg/L	24-hour composite	Quarterly
Fluoride	mg/L	24-hour composite	Quarterly
Chloride	mg/L	24-hour composite	Quarterly
Sodium	mg/L	24-hour composite	Quarterly
Sulfate	mg/L	24-hour composite	Quarterly
Sulfide	mg/L	Grab	Quarterly
Total Cyanide	mg/L	Grab	Quarterly
Total Phenols	mg/L as C ₆ H ₅ OH	24-hour composite	Quarterly
Total chromium ⁶	mg/L	24-hour composite	Quarterly
Hexavalent Chromium ⁶	mg/L	24-hour composite	Quarterly
Volatile Organic Compounds (VOCs)	mg/L	Grab	Quarterly
Semivolatile Organic Compounds (SVOCs)	mg/L	24-hour composite	Quarterly
Heavy Metals	mg/L	24-hour composite	Annually
Total Recoverable Petroleum Hydrocarbons	mg/L	24-hour composite	Quarterly

D. Ground Water Monitoring

1. Groundwater monitoring shall be conducted to determine compliance with the receiving water limitations. Groundwater monitoring wells shall be installed at sufficient locations to determine the effect of the discharge on groundwater quality. The current groundwater monitoring well area MW-1, MW-2, MW-4, MW-5 and MW-6. Samples of groundwater shall be collected from the monitoring wells and analyzed to determine the magnitude of the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Methylene Blue Active Substances	mg/L	Quarterly
Kjeldahl Nitrogen	mg/L as N	Quarterly
Nitrate Nitrogen	mg/L as N	Quarterly
Ammonia Nitrogen	mg/L as N	Quarterly
Total Dissolved Solids	mg/L	Quarterly
Chlorides	mg/L	Quarterly
Sulfates	mg/L	Quarterly
Fluoride	mg/L	Quarterly
Boron	mg/L	Quarterly
Total Phenols	mg/L	Quarterly
Volatile Organic Compounds (VOCs)	mg/L	Quarterly
Semivolatile Organic Compounds (SVOCs)	mg/L	Quarterly
Total Recoverable Petroleum Hydrocarbons	mg/L	Quarterly

MW-3 shall also be utilized to monitor groundwater elevation in the area where water percolates from the vadose zone into the saturated zone. The location of existing groundwater monitoring wells are shown on Attachment B of the Waste Discharge Requirements.

2. Each time a well is sampled, the Discharger shall:
 - a. Measure and record the depth below the ground surface and the elevation above mean sea level of the ground water surface in the ground water monitoring wells.
 - b. Plot the above-described elevations and elevation isopleths on an 11" x 17" copy of a site plan, which shows the locations of the Facility and monitoring wells.
 - c. Calculate and record the ground water gradient, the direction of the gradient, and velocity of ground water flow at the authorized disposal/recycle sites.
 - d. Provide concentration contour maps for any constituents detected above background levels.

e. Monitor the wells for the following field parameters:

<u>Parameter</u>	<u>Units</u>
Electrical Conductivity (E _c)	µMHOS/CM
Ph	Ph Units
Temperature	° F or °C

3. For any ground water wells installed, the Discharger shall prepare a Water Well Driller's Report and file it with the California Department of Water Resources in accordance with the provisions of Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code (CWC Section 13750 through 13755). All work and reports shall be completed by (or under the supervision of) a California registered civil engineer, geologist or certified engineering geologist. The Discharger is responsible for obtaining all applicable permits before starting work and complying with CWC Section 13750 through 13755, and applicable County and State Well Standards.

E. Supply Water Monitoring

1. For each semiannual period; chemical analysis of a supply water sample, which is representative of the average municipal water used within the pertaining sewer area, shall be submitted to the Regional Board. Municipal water samples for this analysis shall be collected during the same day that effluent samples are collected.

<u>Parameter</u>	<u>Units</u>
Total Dissolved Solids	mg/L
Total Hardness as CaCO ₃	mg/L
Chloride	mg/L
Sulfate	mg/L
Fluoride	mg/L
Boron	mg/L
Heavy Metals ³	mg/L

The following methods of obtaining a representative chemical analysis of the municipal water will be acceptable:

- a. A chemical analysis shall be conducted on a composite sample of the different municipal waters used in the sewer area. This composite sample shall be weighted in proportion to the estimated semiannual volume of water contributed to the sewer system by each municipal water source.
- b. The constituent concentrations expected in the average municipal water used in the sewer area can be mathematically calculated, if the estimated semiannual volume of water contributed to the

sewer system by each municipal water source and the constituent concentrations in each municipal water source for that semiannual period are known. The estimated volume (million gallons) of water contributed to the sewer system by each municipal water source shall be recorded for each semiannual period.

F. Sludge Monitoring

1. The Discharger has prepared a Sludge Management Plan dated January 20, 1999. The Discharger shall submit subsequent annual reports summarizing disposal of sludge in accordance with the provisions of the plan with the last annual self-monitoring report.
2. The Discharger shall report to the Regional Board all information necessary to comply with the U.S. Environmental Protection Agency Sludge Management Regulations contained in Section 503 of the Federal Clean Water Act.

G. Pretreatment/Source-Control

1. The Discharger has established an Industrial Wastewater Source Control and Pretreatment Program (Source Control Program). Reports dated August 21, 1998 and March 10, 2000 provide documentation and detailed descriptions of the program.

The Discharger shall submit an annual pretreatment/source-control report, which includes, but is not limited to, the following information:

- a. An inventory of significant industrial users, including names, addresses, categories, industrial pollutants, and volumes. A significant industrial use is either:
 - i. An industrial user discharging more than 25,000 gallons per day;
 - ii. A categorical industrial user as defined in 40 CFR 400-471; or
 - iii. A use that can cause upset, pass through, or interference to the wastewater treatment plant.
- b. A discussion of upset, interference, or pass through incidents, if any, at the treatment plant which the Discharger knows or suspects was caused by industrial users.
- c. A discussion of enforcement actions taken or proposed.
- d. A summary of the pretreatment/source-control functions including, but not limited to:

- II. Necessary legal authorities;
- ii. Pretreatment/source-control requirements; and
- iii. Status of funding and personnel to implement the pretreatment/source-control program.

H. Biosolids Disposal

The Discharger shall keep a log of the legal disposal and re-use location for all biosolids generated. The log shall be kept onsite and made available upon request. A summary of the biosolids either disposed or re-used shall be reported in the quarterly monitoring reports.

I. Nuisance Monitoring

The plant area shall be monitored, with results recorded daily, for the detection of odor and/or vector nuisance or potential nuisance conditions.

II. REPORTING

A. General Provisions

The Discharger shall 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.

B. Ground Water Monitoring Work Plan

By **August 31, 2009**, the Discharger shall submit a groundwater monitoring work plan (work plan) for the new ponds. The work plan shall describe proposed monitoring well installation and design and constituent monitoring to evaluate compliance with the WDRs. Methods shall include, but are not limited to, installation or designation of groundwater monitoring wells at sufficient locations and depths to verify any effects of the discharge on groundwater.

A discussion of whether there is a formation of a degraded water plume beneath disposal ponds shall be provided. Constituents of the plume shall be defined, including the vertical and horizontal dimension and the rate and direction of travel of the plume.

C. Sampling and Analysis Plan

Pursuant to General Provision No. 1d. of the General Provisions for Monitoring and Reporting, the Discharger shall submit to the Regional Board by **October 31, 2009**, a Sampling and Analysis Plan (SAP). The SAP shall include a detailed description of procedures and techniques for:

- i. Sample collection, including purging techniques, sampling equipment, and decontamination of sampling equipment;
- ii. Sample preservation and shipment;
- iii. Analytical procedures;
- iv. Chain of custody control; and
- v. Quality assurance/quality control (QA/QC).

D. Quarterly Reports

Beginning on **July 31, 2009**, quarterly monitoring reports including the preceding information shall be submitted to the Regional Board before the end of the month following each quarterly monitoring period.

E. Annual Report

By **March 30th** of each year, the Discharger shall submit an annual report to the Regional Board with the following information:

1. The compliance record and the corrective actions taken or planned, including a time schedule for violations noted.
2. Any needed updates to the SAP.
3. Graphical and tabular data for the monitoring data obtained for the previous year.

Ordered by: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: **June 10, 2009**

Attachment A: General Provisions for Monitoring and Reporting

¹ Total Phenols using the appropriate 4-Aminopyrine (4AAP) Method approved by the US Environmental Protection Agency (USEPA), currently USEPA Method 420.1.

² Use appropriate USEPA approved method that will quantify concentrations down to 0.0005 mg/L.

³ Use either USEPA Method 625 or 8027.

⁴ Analyze for the metals listed in Table II of Section 66261.24(a)(2)(A), Title 22, California Code of Regulations. Use appropriate USEPA approved methods with a minimum quantification limit equal to the background concentration of each metal in ground water. In no case shall the quantification limit be more than the Detection Limits for the Purposes of Reporting (DLRs). The California Department of Health Services establishes DLRs for analyses conducted on samples collected from drinking water supply systems.

⁵ USEPA Method 418.1

⁶ Use appropriate USEPA approved methods that will quantify concentrations down to 0.001 mg/L for hexavalent chromium and 0.0025 mg/L for total chromium

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
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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.