

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

**BOARD ORDER NO. R6V-2012-0011-A1
WDID NO. 6B361105007**

**AMENDED WASTE DISCHARGE REQUIREMENTS
FOR**

**SAN BERNARDINO COUNTY SOLID WASTE MANAGEMENT DIVISION
HEAPS PEAK CLASS III LANDFILL
LEACHATE TREATMENT AND DISPOSAL SYSTEM**

San Bernardino County

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

1. Discharger

On August 22, 2014, the County of San Bernardino Waste Management Division (County) submitted information that constitutes a complete amended Report of Waste Discharge (RWD) to support a proposed amendment to Waste Discharge Requirements (WDRs), Board Order No. R6V-2012-0011. For the purpose of this Water Board Order (Order), the County of San Bernardino is referred to as the "Discharger," the Heaps Peak Class III closed landfill is referred to as the "Landfill," and the Leachate Treatment and Disposal System is referred to as the "Facility." The Discharger submitted an amended RWD for proposed changes (increases) to the effluent limits for the constituents iron and manganese.

2. Reason for Action

- a. This Order amends Board Order No. R6V-2012-0011, Finding No. 19, Tables 1 and 2, and Order Section No. I.A. Effluent/Discharge Limitations, Table 1. - Effluent Limitations for Inorganic Constituents, to amend effluent limits for iron and manganese. Board Order No. R6V-2012-0011, Findings 19, Table 1, presents the expected treated effluent concentrations for inorganic constituents as well as background groundwater quality data provided by the Discharger. Anticipated treated effluent water quality was based on limited bench-scale tests conducted prior to Facility construction, which indicated that iron and manganese concentrations could be reduced to non-detect levels in the effluent. Construction of the Facility was completed on June 26, 2013. During full-scale operation of the Facility, equipment testing, treatment adjustments/modifications, and effluent data collection were conducted from December 2013 through June 2014. The full scale operation has shown that the treatment technology implemented cannot reduce concentrations of iron and manganese to non-detectable levels. Based on analytical results conducted from April through June 2014, the average treated effluent concentration for iron and manganese

were approximately 60 µg/L and 35 µg/L, respectively. However, iron and manganese occur naturally in concentrations above their respective secondary maximum contaminant levels (MCLs) in groundwater at this site. Based on the Facility effluent leachate testing data, the Discharger has requested to increase effluent limits for iron and manganese that would reflect demonstrated best practicable treatment and control technology for these constituents. The changes to the WDRs, therefore, incorporate higher effluent limits for iron (140µg/L daily maximum, 75 µg/L annual average) and manganese (less than 50 µg/L daily maximum, less than 50 µg/L annual average). These limits are less than the State's secondary MCL and are less than background concentrations in groundwater for each constituent or are commensurate with average background concentrations for these constituents in groundwater and would not result in degradation to water quality.

- b. The Monitoring and Reporting Program is being amended to increase sampling frequency and analysis for all constituents of concern, inorganic and organic parameters, in the effluent during the first year of discharge.

3. California Environmental Quality Act (CEQA) Compliance

The Water Board has determined that the current action of changing the WDRs to reflect increases to effluent limits for iron and manganese will not result in a significant effect on the environment. Because these amended effluent limits will not degrade water quality, the Water Board action of increasing these limits is not subject to CEQA. The proposed changes to the WDRs continue to protect groundwater quality. The Water Board will file a Notice of Exemption within five days from the issuance of this Order.

4. Notice to Interested Parties and Public

The Water Board has notified the Discharger and all known interested parties and persons of its intent to issue amended WDRs for the Facility.

5. Consideration of Comments

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

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

1. Finding No. 19, Tables 1 and 2, and following text sections, Order No. R6V-2012-0011, are amended as follows:

Table 1. Inorganic Constituent Concentrations for Treated Effluent, Average and Maximum Background and Maximum Contaminant Levels

<u>Constituent</u>	<u>MCL</u>	<u>Treated Effluent</u>	<u>Average Background</u>	<u>Maximum Background</u>
Iron (µg/L)	300**	60	140	640
Manganese (µg/L)	50**	35	117	1,300
TDS (mg/L)	1000***	99-355****	86	160
Chloride (mg/L)	250**	66	3.4	10
Fluoride (mg/L)	2*	0.13	0.13	0.36
Nitrate (as N, mg/L)	10*	1.17	0.65	4.0
Sulfate (mg/L)	250**	10.7	2.6	10.0

Table 2. Effluent Limits for Inorganic Constituents

<u>Constituent</u>	<u>MCL</u>	<u>Annual Mean Effluent Discharge Limitation</u>	<u>Daily Maximum Effluent Discharge Limitation</u>
Iron (µg/L)	300**	75	140
Manganese (µg/L)	50**	< 50	< 50
TDS (mg/L)	1000***	416	640
Chloride (mg/L)	250**	80	160
Fluoride (mg/L)	2*	0.2	0.4
Nitrate (as N, mg/L)	10*	2.0	5.5
Sulfate (mg/L)	250**	25	50
pH (pH units)			6.0 < pH < 9.0

*Primary MCL; **Secondary MCL; ***Secondary MCL, recommended MCL is 500 mg/L, Short Term Maximum is 1500 mg/L; ****The range of TDS values in treated effluent is based on a range of 36% - 46%; TDS reduction of the historical average TDS concentration of 554 mg/L due to the treatment process.

Iron and Manganese

Treatability studies initially indicated that iron and manganese can be reduced to concentrations as low as non-detect. However, full-scale leachate treatment analyses have shown that concentrations of iron and manganese may not be reduced to non-detectable levels. Full-scale leachate treatment conducted from April through June 2014 indicates that the best treatment technology will result in iron and manganese effluent concentrations below their respective secondary maximum contaminant levels (MCLs). The annual average effluent limit for iron is 25 percent of its respective

secondary MCL, and manganese will be set at less than its respective secondary MCL. These limits are below their respective average background concentrations in groundwater at the site. The daily maximum effluent limit for iron is set at its respective average background water quality concentration, and the daily maximum effluent limit for manganese is set at less than its secondary MCL. The historical average and maximum iron concentrations in leachate are 624 µg/L and 14,000 µg/L, respectively. The historical average and maximum manganese concentrations in leachate are 2,704 µg/L and 9,200 µg/L, respectively.

2. Order Section No. 1.A. Effluent/Discharge Limitations, Table 1, Order No. R6V-2012-0011, are amended as follows:

Table 1. Effluent Limitations for Inorganic Constituents

<u>Constituent</u>	<u>Annual Mean Effluent Discharge Limitation*</u>	<u>Daily Maximum Effluent Discharge Limitation</u>
Iron (µg/L)	75	140
Manganese (µg/L)	<50	<50
TDS (mg/L)	416	640
Chloride (mg/L)	80	160
Fluoride (mg/L)	0.2	0.4
Nitrate (as N, mg/L)	2.0	5.5
Sulfate (mg/L)	25	50
pH (pH units)		6.0 < pH < 9.0

* The annual mean as used in this Order is defined as the average (sum of concentration values divided by number of concentration values) for all sampling and analysis data generated during the preceding four complete quarters for a given parameter.

3. Order Section II. Requirements and Prohibitions Section B.1.a., are amended as follows:
 - a. The Discharger shall implement and comply with the attached Monitoring and Reporting Program (MRP) No. R6V-2012-0011 and Amendment A1 as required by Order No. III.B.1.
4. Order Section III. Provisions, B.1., are amended as follows:
 1. Pursuant to CWC Section 13267(b), the Discharger shall comply with the attached MRP No. R6V-2012-0011 and Amendment A1 as specified by the Executive Officer pursuant to Section 13267 of the CWC (Attachment "E").

I, Patty Z. Kouyoumdjian, 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 Board, Lahontan Region, on February 11, 2015.



**PATTY Z. KOUYOUMDJIAN
EXECUTIVE OFFICER**

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

**MONITORING AND REPORTING PROGRAM NO. R6V-2012-0011-A1
WDID NO. 6B361105007**

FOR

**SAN BERNARDINO COUNTY SOLID WASTE MANAGEMENT DIVISION
HEAPS PEAK CLASS III LANDFILL
LEACHATE TREATMENT AND DISPOSAL SYSTEM**

San Bernardino County

I. TREATMENT FACILITY FLOW MONITORING

The following information shall be recorded in a permanent log book:

1. The total volume, in gallons, of leachate flow to the treatment facility for each day.
2. The total volume, in gallons, of leachate flow to the treatment facility for each month.
3. The average flow rate, in gallons per day, of wastewater to the treatment facility calculated each month.
4. The total volume, in gallons, of treated leachate flow to the disposal facility (ies) for each month.
5. The treatment system non-operation time in hours of each non-operation period and in total hours of non-operation during the reporting period.

II. TREATMENT FACILITY STARTUP MONITORING

Prior to disposal of any treatment plant effluent, the Discharger shall conduct startup monitoring to confirm that the plant will produce effluent that complies with standards prescribed in the Waste Discharge Requirements (WDRs). During startup monitoring, the Discharger shall direct the effluent to a temporary, impervious storage container. Startup monitoring shall be conducted until two consistent, consecutive sample results indicate system stability and compliance with the Order. Samples shall be taken a minimum of twelve hours apart and a maximum of 72 hours apart. Only treatment plant effluent is required to be analyzed during startup monitoring. Effluent that does not meet the Discharge Specifications for effluent shall not be discharged to the disposal area(s).

III. TREATMENT FACILITY INFLUENT MONITORING

The purpose of the influent monitoring is to verify the efficiency of the treatment system and to provide data regarding influent quality. Influent sample shall be collected after the last connection before the waste enters the treatment process. Influent samples should be representative of the volume and nature of the influent. Samples shall be single grab samples. Time of collection of a grab sample shall be recorded. Specific parameters to be monitored and reported are shown below.

<u>Inorganic Parameters</u>	<u>Units</u>	<u>Frequency*</u>
Iron	mg/L	Quarterly
Manganese	mg/L	Quarterly
TDS	mg/L	Quarterly
Chloride	mg/L	Quarterly
Fluoride	mg/L	Quarterly
Nitrate	mg/L as N	Quarterly
Sulfate	mg/L	Quarterly
pH	pH units	Quarterly
<u>Organic Parameters**</u>		
Chlorinated volatile hydrocarbons (EPA 8021) ***	µg/L	Semi-annually****
Aromatic volatile hydrocarbons (EPA 8260) ***	µg/L	Semi-annually****
Total petroleum hydrocarbons (EPA 8015) ***	µg/L	Semi-annually****

*The minimum frequency of sampling during initial start up of treatment shall be as follows:

- A. Samples shall be collected on the 1st, 4th, 14th, 28th, and 56th days of treatment operation.
- B. Sampling thereafter, during the third to twelfth months, the sampling shall be every 30 days.

** At a minimum, concentrations of analytes listed in Discharge Specification I.A., Table 2, shall be reported.

*** Or acceptable equivalent analytical method.

****Semi-annually, the Discharger shall include sampling and analysis once during the wet season and once during the dry season, at a minimum.

IV. TREATMENT FACILITY EFFLUENT MONITORING

Effluent samples shall be collected after the last connection through which wastes can be admitted into the effluent discharge. Effluent samples should be representative of the volume and nature of the effluent. Time of collection of a grab sample shall be recorded. The sampling parameters and frequency for effluent shall be the same as those identified in Item III, above, for influent monitoring.

V. **RECEIVING WATER MONITORING**

Samples shall be collected from the groundwater monitoring wells and analyzed for the same parameters listed in Item III, above, for influent. Locations of groundwater monitoring wells are shown in Attachment A. The parameters listed below shall be determined each time wells are sampled and the results reported in tabular form. Each monitoring report shall include a map showing the groundwater sampling locations and groundwater equipotential lines.

<u>Parameter</u>	<u>Units</u>
Depth to groundwater	feet bgs
Electrical conductivity	micromhos/cm
pH	pH units
Temperature	deg. F or C
Turbidity	NTUs
Groundwater gradient	ft/ft
Groundwater direction	compass direction
Groundwater velocity	ft/day
Static water level	ft above sea level

VI. **REPORTING**

- A. Quarterly monitoring reports shall be submitted to the Water Board by the thirtieth (30th) day of January, April, July and October of each year covering monitoring conducted during the prior quarter. The monitoring reports shall include a cover letter describing any violation of the waste discharge requirements and shall reference Board Order No. R6V-2012-0011 and Amendments and WDID No. 6B361105007. These reports shall contain the following information as well as what is required in the General Provision for Monitoring and Reporting.
1. All data collected from the previous quarter.
 2. A map or aerial photograph showing the locations of monitoring wells in the receiving water monitoring program.
 3. Information on operation and maintenance of the Facility which may affect water quality.

- B. In reporting the monitoring data, the Discharger shall arrange the data in tabular and/or graphical form so that the sample date, the constituent, and the concentration are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance or non-compliance with WDRs. The Discharger shall report all periods of non-operation.
- C. The Discharger shall submit an annual report to the Water Board by the thirtieth (30th) of January of each year. The report shall contain appropriate maps, and both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the Discharger shall discuss the compliance record and any corrective actions taken or planned which may be needed to bring the discharge into full compliance with the WDRs. The report shall include an evaluation of facility operations and provide recommendations for improvements to operations and maintenance that could feasibly be implemented. This report may be combined with the fourth quarterly report or submitted under separate cover. If a combined report is submitted, the report must clearly identify the information that comprises the quarterly report and the information that comprises the annual report.
- D. The Discharger shall implement the above monitoring program immediately upon initial operation of the treatment facility.

VII. TIME SCHEDULE

- A. Pursuant to "General Provisions for Monitoring and Reporting," dated September 1, 1994, the Discharger shall submit a revised Sampling and Analysis Plan (SAP) by **March 11, 2015**, that describes changes implemented in the SAP for the sampling and/or sample analyses methods and also include monitoring protocol that will be implemented to determine effectiveness of treatment within the facility. The revised SAP must also describe any changes to the proposed sampling and analyses to be conducted to characterize the effects of the discharge of treated leachate on groundwater quality and to distinguish these effects from the effects of the Landfill.
- B. The Discharger shall submit any changes (if applicable) to the technical report, *Contingency Work Plan*, previously submitted, by **March 11, 2015**, that describes the contingency plan that will be implemented to transfer collected leachate to Running Springs Treatment Plant when environmental conditions cause high leachate production rates that exceed leachate treatment and storage capacity.

- C. The Discharger shall submit the first Annual Monitoring Report as described in Section VI.C by **January 30, 2016**. The first Annual Monitoring Report following start-up of the treatment system shall also contain the results of a study to optimize the effluent pH and minimize the chloride concentration in the treated effluent resulting from the final pH adjustment. The report shall contain recommendations for implementation based on the results of the optimization study to improve the water quality of the discharge.

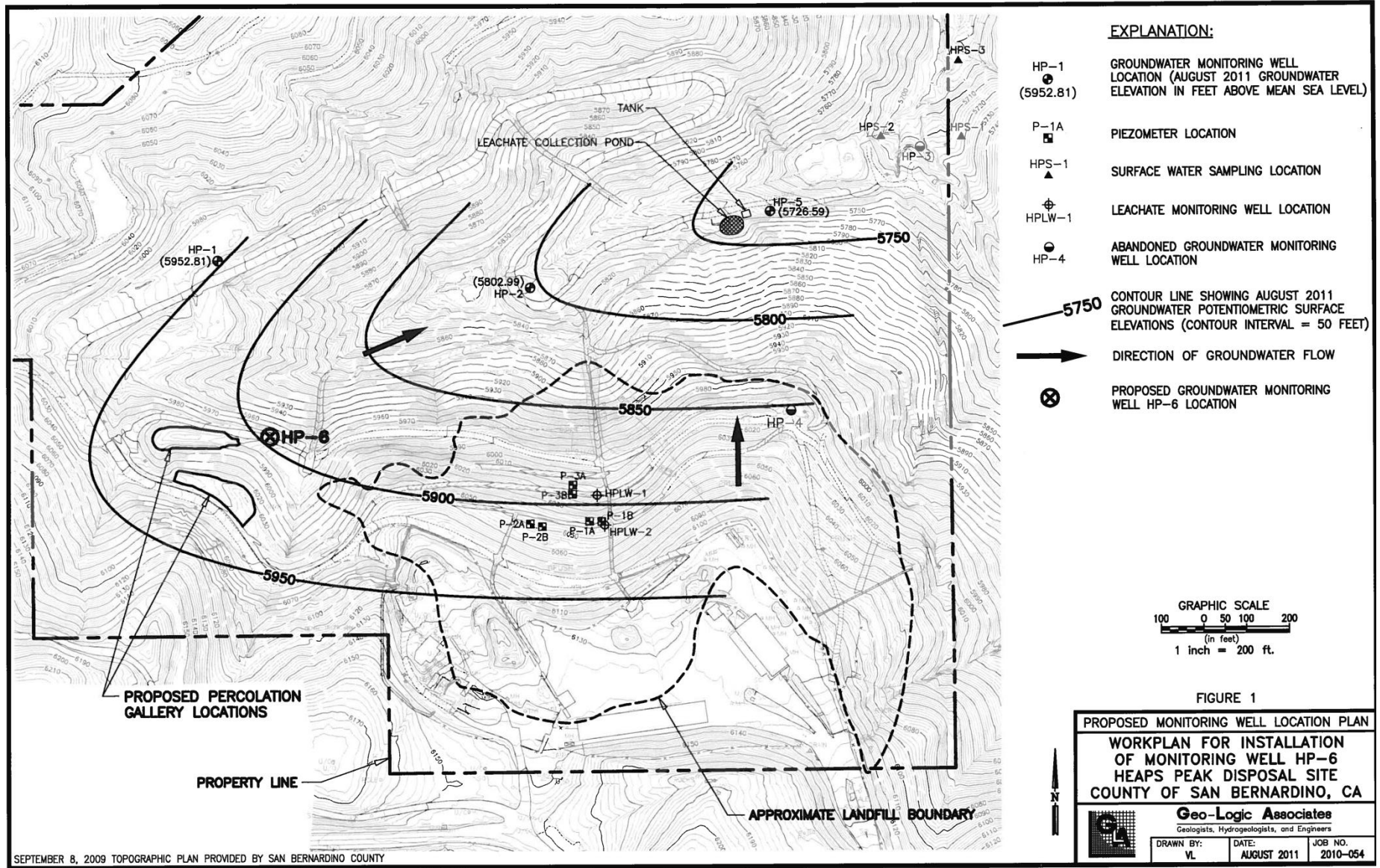
Ordered by: 

Dated: February 11, 2015

PATTY Z. KOUYOUMDJIAN
EXECUTIVE OFFICER

Attachment: A. Groundwater Monitoring Well Locations
B. General Provisions for Monitoring and Reporting

Attachment A – Groundwater Monitoring Well Locations



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