

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. R6T-2009-0019
WDID NO. 6A260040000

FOR

MONO COUNTY WASTE SYSTEMS DIVISIONS
BRIDGEPORT CLASS III LANDFILL

Mono County

I. WATER QUALITY PROTECTION STANDARD

Water Quality Protection Standard is required by Title 27 of the California Code of Regulations (27 CCR) to assure the earliest possible detection of a release from the Bridgeport Landfill (Landfill) to underlying soil and/or groundwater. The Water Quality Protection Standard shall consist of the list of constituents of concern, the concentration limits, the Point of Compliance and all Monitoring Points. This Water Quality Protection Standard shall apply during the closure period, the post-closure maintenance period, and during any compliance period.

The Landfill is currently in the closure period and under an Evaluation Monitoring Program (EMP) for monitoring wells that have been impacted by a release from the Landfill and a Detection Monitoring Program (DMP) for any wells that show no evidence of a release. This Monitoring and Reporting Program maintains the EMP and DMP for the closed Landfill.

II. MONITORING

From 1989 to 2007, the monitoring network consisted of two downgradient wells, MW-1 and MW-2, and one upgradient well, MW-3. These wells have been used for the DMP and EMP. Board Order 6-01-37 included a Time Schedule for the installation of additional groundwater monitoring wells for the EMP. The Discharger installed two additional downgradient wells, MW-4 and MW-5, in 2007. To date, the Discharger has reported the results from one sampling event for MW-4 and no results for MW-5. The Discharger will report results for all five wells in subsequent events as directed in this MRP.

Since the EMP began in 1997, MW-1 through MW-3 have been sampled quarterly for five indicator parameters (pH, total dissolved solids [TDS], chloride, nitrate as nitrogen, and sulfate) and volatile organic compounds (VOCs) listed in 40 CFR Part 258, Appendix II. The results of the EMP have revealed the following trends.

- TDS, chloride, and sulfate concentrations have increased in the two downgradient wells while remaining relatively stable in the upgradient well.
- Freon 12 and freon 11 have consistently been detected at low concentrations in both downgradient wells.
- Four other VOCs (1,1-dichloroethene, methylene chloride, tetrachloroethylene, and trichloroethene) have been detected at low concentrations in the downgradient wells since November 2000.

None of the detected constituents have exceeded maximum contaminant levels (MCL). However, the EMP indicates that the Landfill is impacting groundwater quality and that the impacts appear to be increasing over time. The Board Order No. R6T-2009-0019 and the Dischargers's Final Closure and Post-Closure Maintenance Plan (Final Closure/Post-Closure Plan) include measures that are designed to remediate these impacts. The landfill cover and storm water run-on designs will decrease infiltration into the waste and will reduce or eliminate the impacts to groundwater. If the groundwater impacts are not remediated by these measures, additional actions may be necessary to maintain groundwater water quality pursuant to Resolution No. 68-16.

A. Landfill Cover Monitoring and Maintenance

The Discharger will install a final cover over the closed Landfill as specified in the Final Closure/Post-Closure Plan. Inspection and Maintenance procedures will be as specified in the Final Closure/Post-Closure Plan and will include the following.

1. **Quarterly**, the Discharger must inspect the condition of the cover to ensure the integrity of the cover and evaluate the cover's capability to promote runoff and prevent ponding on the cover. The quarterly inspections should be approximately every three months. The Discharger must provide reports on the inspections **semiannually**. The quarterly inspection must consist of the following.
 - a. The Discharger must inspect the cover for integrity and inspect the wood chips and vegetation for appropriate coverage.
 - b. The Discharger must also inspect the general integrity of the Landfill for signs of settlement, subsidence, and erosion.
 - c. The Discharger must inspect the drainage system for the entire site including that which will divert water from the Landfill and prevent run-on.
 - d. During sampling events, groundwater and landfill gas monitoring wells will be inspected for damage.

- e. Any adverse conditions found in the visual inspection must be documented and corrected. Documentation of the correction must be submitted with each semiannual report.
2. In addition to the above inspections, the Discharger must conduct the following.
 - a. A leak search will be conducted **annually** during the post-closure period in accordance with 27 CCR section 21090(a)(4)(A). The search will consist of collecting methane readings on a grid pattern over the Landfill surface. Any problems noted during the search and repairs will be described in the Annual Report.
 - b. Landfill subsidence will be monitored by eight settlement monuments and two survey control monuments. The monuments must be surveyed at a minimum of **once every five years** to determine if settling in the Landfill's closed waste pile is occurring. For reporting in the semiannual reports, if no survey is conducted in a given year, the year the last survey was conducted and the year for the next required survey will be identified in the annual report.

B. Ambient Air Monitoring

Ambient air monitoring will be conducted on a quarterly basis (i.e., every three months) as described in the Final Closure/Post-Closure Plan and will be reported in the semiannual reports.

1. Monitoring Parameter and Constituent of Concern

The monitoring parameter and constituent of concern for ambient air shall be methane.

2. Concentration Limit

The concentration limit for methane in ambient air shall be the lowest detectable concentration for the methane detection instrument.

C. Vadose Zone Gas Monitoring

Vadose Zone Gas monitoring will be conducted on a quarterly basis and reported in the semiannual reports.

1. Monitoring Points

The Discharger has installed six landfill gas monitoring wells with a total of 14 probes to monitor the vadose zone. The locations of the landfill gas monitoring wells are shown on Attachment A of this Monitoring and Reporting Program.

2. Monitoring Parameter and Constituent of Concern

The monitoring parameter and constituent of concern for soil gas is methane.

3. Concentration Limit

The concentration limit for methane in soil gas shall not exceed 5% by volume in air at the Landfill property boundary in accordance with 27 CCR section 20921(a)(2).

D. Groundwater

The Landfill presently has five groundwater monitoring wells to monitor groundwater quality. There is one upgradient monitoring well, MW-3, and four downgradient wells, MW-1, MW-2, MW-4, and MW-5, which are used to detect a potential release from the Landfill. Attachment A shows the location of the five monitoring wells.

1. Point of Compliance and Monitoring Points

The Point of Compliance as defined in 27 CCR §20405 is "a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit." Groundwater monitoring wells have been installed upgradient (MW-3) and downgradient (point of compliance monitoring wells MW1, MW-2, MW-4, and MW-5) of the Landfill. The locations of the groundwater monitoring wells are shown on Attachment A, which is made part of this Monitoring and Reporting Program.

2. Aquifer characteristics

The parameters listed in Table 1.a must be measured **quarterly** (i.e., every three months) and reported in tabular form **semiannually**. The required information to be calculated from the measured parameters is listed below in Table 1.b. An area map must be included to show the groundwater flow direction and estimated groundwater gradient.

**Table No. 1.a
Groundwater Field Measurements**

Parameter	Units
depth to groundwater	feet below ground
dissolved oxygen	mg/L
electrical conductivity	micromhos/cm
pH	pH units
Temperature	degree F or C
Turbidity	NTUs

**Table 1.b
Groundwater Calculations**

Parameter	Units
static water level	feet above mean sea level
slope of groundwater gradient	feet per feet
direction of groundwater gradient	degrees from true north

3. Groundwater Purging

Groundwater samples must be collected after the wells have been purged in accordance with California Environmental Protection Agency guidance document, *Representative Sampling of Groundwater for Hazardous Substances*, revised February 2008 (see: http://www.dtsc.ca.gov/SiteCleanup/upload/SMP_Representative_Sampling_GroundWater.pdf). The required stability parameters and criteria from this guidance are summarized in Table 1.c.

**Table 1.c
Stabilization Parameters and Criteria**

Parameter	Criteria
temperature	± 3% of reading (minimum of ± 0.2 C)
pH	+/- 0.1
specific electrical conductance	+/- 3%
oxidation-reduction potential	+/- 10 millivolts
dissolved oxygen	+/- 0.3 milligrams per liter

4. Monitoring Parameters and Sampling Frequency

The Discharger shall analyze all samples from all Groundwater Monitoring Points as specified under Part II D.1 of this Monitoring and Reporting Program for the monitoring parameters listed in **Table 1.d**. Groundwater sampling for monitoring parameters will be collected **quarterly** (every three months) and reported **semiannually**.

Table 1.d
Monitoring Parameters

Parameter	USEPA Method ⁽¹⁾	Units
chloride	300.0	mg/L
dissolved oxygen ⁽²⁾	field	mg/L
electrical conductivity ⁽²⁾	field	mmhos/cm
nitrate as nitrogen	9200	mg/L
pH ⁽²⁾	field	pH units
sulfate	300.0	mg/L
temperature ⁽²⁾	field	F/C
total dissolved solids	160.1	mg/L
turbidity ⁽²⁾	field	NTU
antimony ⁽³⁾	7062	mg/L
arsenic ⁽³⁾	7060	mg/L
barium ⁽³⁾	6010B	mg/L
beryllium ⁽³⁾	6010B	mg/L
cadmium ⁽³⁾	6010B	mg/L
chromium ⁽³⁾	6010B	mg/L
cobalt ⁽³⁾	6010B	mg/L
copper ⁽³⁾	6010B	mg/L
lead ⁽³⁾	7421	mg/L
nickel ⁽³⁾	6010B	mg/L
selenium ⁽³⁾	7740	mg/L
silver ⁽³⁾	6010B	mg/L
thallium ⁽³⁾	7841	mg/L
vanadium ⁽³⁾	6010B	mg/L
zinc ⁽³⁾	6010B	mg/L
VOCs ⁽⁴⁾	8260B	mg/L

footnotes:

- (1) An alternate method may be proposed and used if acceptable to the Executive Officer.
- (2) With the exception of temperature and turbidity, these field parameters must be tabulated and graphed in monitoring reports; however, development of statistical background levels is not required.

- (3) Inorganic constituents from Appendix I, 40 CFR Part 258 (Subtitle D).
- (4) The VOCs monitoring parameter includes all VOCs detectable using USEPA Method 8260B, including at least all 47 organic constituents listed in Appendix I to 40 CFR Part 258 and all unidentified peaks.

5. Constituents of Concern Monitoring and Sampling Frequency

Constituents of Concern (COCs) are listed in Table 1.e. Monitoring for COCs shall encompass only those constituents that are not also serving as monitoring parameters (Table 1.d). Analysis for COCs shall be carried out **once every five years** at each of the site's groundwater monitoring points. The COC monitoring shall be carried out in the **spring of year one** (during period of seasonal high groundwater level) and the **fall of the fifth year** (during period of seasonal low groundwater level). Monitoring points that have not previously been sampled for COCs shall be sampled and analyzed for all COCs **within three months of this program becoming effective**. This program becomes effective on the date the Board approves these WDRs. This list is from Appendix II of 40 CFR Part 258, which lists pollutants required to be monitored at the Landfill on a minimum frequency of once every five years. The following constituents will be reported in the annual report. For reporting in the annual reports, if no samples are collected then, the year the last samples were collected and the year for the next required sampling will be identified in the report.

**Table 1.e
 Constituents of Concern**

Constituents of Concern	USEPA Method ⁽¹⁾
chlorinated herbicides	8150
cyanide	9010
nonhalogenated volatiles	8015
organochlorine pesticides and PCBs ⁽²⁾	8080
organophosphorous pesticides	8041A
semi-VOCs	8270
sulfide	9030

Footnotes:

- (1) An alternate method may be proposed and used if acceptable to the Executive Officer.
- (2) PCBs are polychlorinated biphenyls.

III. DATA ANALYSES

All data analyses methods (statistical or non-statistical) shall meet the requirements of 27 CCR section 20415(e)(9).

A. General Non-statistical Methods

Evaluation of data will be conducted using non-statistical methods to determine if any new releases from the Landfill have occurred. Non-statistical analysis shall be as follows.

1. Physical Evidence

Physical evidence can include vegetation loss, unexplained volumetric changes in the Landfill, groundwater mounding, soil discoloration, or surface gas monitoring. Each semiannual report shall comment on the absence or presence of physical evidence of a release.

2. Time Series Plots

Each semiannual report must include time series plots for groundwater monitoring parameters. Time series plots are not required for parameters that have never been detected above their method detection limit (as specified by the applicable USEPA Method) or if there are less than four quarters of data. Evidence of a release may include trends of increasing concentrations of one or more constituent over time.

B. General Statistical Analysis Methods

For Detection Monitoring, the Discharger shall use statistical methods to analyze COCs and monitoring parameters that exhibit concentrations that equal or exceed their respective method detection limit in at least ten percent of applicable historical samples. The Discharger may propose and use any data analysis that meets the requirements of 27 CCR section 20415(e)(7). The report titled "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities" (USEPA, 1989) or subsequent versions may also be used to select the statistical test to use for comparing detection monitoring well data to background monitoring data. All statistical methods and programs proposed by the Discharger are subject to Executive Officer approval.

IV. REPORTING REQUIREMENTS

A. Semiannual Reports To Be Filed With the Lahontan Regional Water Quality Control Board (Water Board)

All monitoring reports submitted to the Water Board shall be transmitted using the cover letter form in Attachment C. An electronic copy of the cover letter form can be downloaded at: http://www.waterboards.ca.gov/lahontan/water_issues/available_documents/index.shtml. The following periodic reports shall be submitted

to the Water Board in accordance to the following schedule.

1. Two semiannual reports are required per year, as follows:

<u>Report due date</u>	<u>Reporting Period</u>
February 15	July 1- Dec 31
August 15	January 1 – June 30

2. The reports must contain the following information.
 - a. Results of sampling and laboratory analysis of gas and groundwater sampling.
 - b. A map or aerial photograph showing the locations of monitoring points.
 - c. For each monitored groundwater body, a description and graphical presentation of the velocity and direction of groundwater flow under and around the Landfill, based upon water level elevations taken during the collection of the water quality data submitted in the report.
 - d. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting this schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal.
 - e. The reports must contain a description of the conditions of the cover materials. Specifically, comments regarding any subsidence or soil cover washouts that have occurred and the capability of the cover to promote runoff and prevent ponding should be included. In the case where subsidence, washouts or other damage to the cover is noted, the report shall indicate the actions taken to repair cover material so that the event will not reoccur.
 - f. An Executive Summary must accompany each report. The summary shall include a discussion of any requirement violations found since the last report was submitted, and shall describe actions taken or planned for correcting those violations.

B. Other Reports To Be Filed With The Board

1. Notice of Tentative Release

If the appropriate statistical or non-statistical data analysis indicates, for a given constituent of concern, that a release is tentatively identified, Discharger shall:

- a. Immediately notify the Water Board verbally as to the monitoring point(s) and constituent(s) or parameter(s) involved;
- b. Provide written notification by certified mail within seven days of such determination (27 CCR section 20420(j)). The notification should indicate the Discharger's intent to conduct verification sampling, initiate evaluation monitoring procedures, or demonstrate that a source other than the Landfill is responsible for the release.
- c. If the Discharger chooses to attempt to demonstrate that a source other than the Landfill is responsible for the release, the Discharger shall submit a supporting technical report within 90 days of detection of the release (27 CCR section 20420(k)).

2. Evaluation Monitoring

The Discharger shall, within 90 days of verifying a release, submit a technical report pursuant to California Water Code section 13267(b) proposing an EMP. If the Discharger decides not to conduct verification procedures, or decides not to make a demonstration that a source other than the Landfill is responsible for the release, the release will be considered verified.

3. Engineering Feasibility Study Report

The Discharger shall, within 180 days of verification of a release or detection, submit an Engineering Feasibility Study that shall contain corrective action measures to meet the requirements of 27 CCR section 20420(k)(6).

C. 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.

D. Annual Report

On or before **February 15, 2010**, and on or before **February 15** every year thereafter, the Discharger shall submit an annual report to the Water Board for the period January to December. This report shall include the items described in the General Provisions for Monitoring and Reporting (Attachment B) and information that is required to be collected annually or less frequently. The Annual Report may be combined with semiannual report for the period July 1 through Dec 31 .

E. Financial Assurance

On or before **February 15, 2010**, and on or before **February 15** every year thereafter the Dischargers shall submit an annual financial assurance report to the Water Board. This report shall summarize the amount of money available in the fund. This report should also provide a demonstration that the amount of financial assurance is adequate, or the need to increase the amount of financial assurance based on inflation or other factors.

Ordered by: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: _____

- Attachment:
- A. Location of monitoring points
 - B. General Provisions for Monitoring and Reporting
 - C. Transmittal Cover Letter Form

D. Annual Report

On or before **February 15, 2010**, and on or before **February 15** every year thereafter, the Discharger shall submit an annual report to the Water Board for the period January to December. This report shall include the items described in the General Provisions for Monitoring and Reporting (Attachment B) and information that is required to be collected annually or less frequently. The Annual Report may be combined with semiannual report for the period July 1 through Dec 31 .

E. Financial Assurance

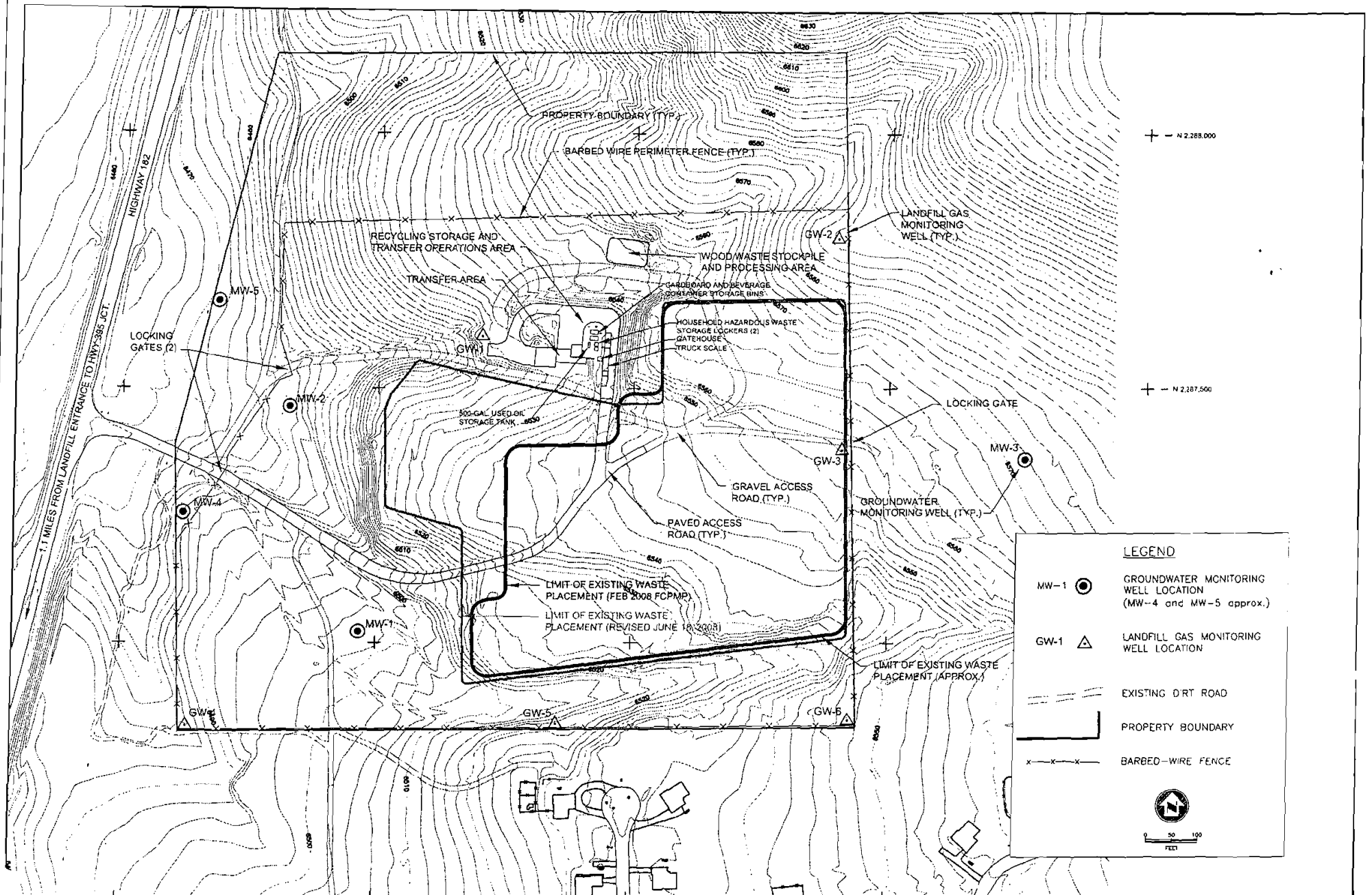
On or before **February 15, 2010**, and on or before **February 15** every year thereafter the Dischargers shall submit an annual financial assurance report to the Water Board. This report shall summarize the amount of money available in the fund. This report should also provide a demonstration that the amount of financial assurance is adequate, or the need to increase the amount of financial assurance based on inflation or other factors.

Ordered by: Harold J. Singer
HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: May 14, 2009

- Attachment: A. Location of monitoring points
B. General Provisions for Monitoring and Reporting
C. Transmittal Cover Letter Form

ATTACHMENT A



LEGEND

- MW-1 GROUNDWATER MONITORING WELL LOCATION (MW-4 and MW-5 approx.)
- GW-1 LANDFILL GAS MONITORING WELL LOCATION
- EXISTING DRT ROAD
- PROPERTY BOUNDARY
- BARBED-WIRE FENCE

MONO COUNTY	LOCATION OF MONITORING POINTS	
BRIDGEPORT LANDFILL MONO COUNTY, CALIFORNIA	Revision Date: 2/17/09 Scale: AS SHOWN Project Number: Drawing Name: WDR F19000.dwg	Sheet No. 1 of 1 Attachment A

ATTACHMENT B

ATTACHMENT "B"
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 Executive Officer 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 6A260004000.
- 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.

T:FORMS/M&R PROVISIONS

ATTACHMENT C

Attachment C

Date _____

California Regional Water Quality Control Board
Lahontan Region
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

Facility Name:

Address:

Contact Person:

Job Title:

Phone:

Email:

WDR/NPDES Order Number:

WDID Number:

Type of Report (circle one):

Monthly Quarterly Semi-Annual Annual Other

Month(s)

JAN FEB MAR APR MAY JUN

(circle applicable month(s)*:

JUL AUG SEP OCT NOV DEC

*annual Reports (circle the first month of the reporting period)

Year:

Violation(s)? (Please check one):

_____ NO

_____ YES*

*If YES is marked complete a-g (Attach Additional information as necessary)

a) Brief Description of Violation:

b) Section(s) of WDRs/NPDES

Permit Violated:

c) Reported Value(s) or Volume:

d) WDRs/NPDES Limit/Condition:

e) Date(s) and Duration of Violation(s):

f) Explanation of Cause(s):

g) Corrective Action(s) (Specify actions taken and a schedule for actions to be taken)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision following a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my knowledge of the person(s) who manage the system, or those directly responsible for data gathering, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

If you have any questions or require additional information, please contact _____ at the number provided above.

Signature: _____

Name: _____

Title: _____