

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

MONITORING AND REPORTING PROGRAM NO. 2000-06
FOR THE
RAMONA LANDFILL INC.
A SUBSIDIARY OF ALLIED WASTE INDUSTRIES INC.
RAMONA LANDFILL
SAN DIEGO COUNTY

A. MONITORING PROVISIONS

1. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer. Specific methods of analysis must be identified. If methods other than U. S. EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.
2. If the discharger monitors any pollutants more frequently than required by this Order, using the most recent version of Standard U. S. EPA Methods, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report. The increased frequency of monitoring shall also be reported.
3. The discharger shall report all instances of noncompliance not reported under Reporting Requirement D.5 of this Order at the time monitoring reports are submitted. The reports shall contain the information listed in Reporting Requirement D.5.
4. Sample collection, storage, and analysis shall be performed according to the most recent version of Standard U. S. EPA Methods, and in accordance with an approved sampling and analysis plan.
5. All monitoring instruments and equipment shall be properly calibrated and maintained as necessary to ensure accuracy of measurements.
6. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required by this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or application. This period may be extended

- during the course of any unresolved litigation regarding this discharge or when requested by the Executive Officer.
7. Records of monitoring information shall include:
 - a. The date, identity of sample, Monitoring Point from which it was taken, and time of sampling or measurement;
 - b. The individual(s) who performed the sampling or measurements;
 - c. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
 - d. The analytical techniques or method used, including method of preserving the sample and the identity and volumes of reagents used;
 - e. Calculation of results; and
 - f. Results of analyses, and the MDL for each parameter.
 - g. Laboratory quality assurance results (e.g. percent recovery, response factor).
 8. The monitoring reports shall be signed by an authorized person as required by Reporting Requirement D.14 of this Order.
 9. The discharger shall ensure that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points complies with the following restrictions:
 - a. The methods of analysis and the detection limits used shall be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any Matrix effects involved.
 - b. Analytical results falling between the MDL and the practical quantitation limit (PQL) shall be reported as "trace" and shall be accompanied both by the (nominal or estimated) MDL and PQL values for that analytical run.
 - c. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation

procedures. These nominal MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived nominal MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result. The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

- d. All QA/QC data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection and quantitation limits, the recovery rates, an explanation for any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
- e. Upon receiving written approval from the Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (e.g., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
- f. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures

shall be performed to attempt to identify and more accurately quantify the unknown analyte.

- g. The MDL and PQL shall be determined in accordance with the definitions of those terms in Title 27.

B. DETECTION MONITORING

- 1. Water samples from the compliance points shall be collected, analyzed, and reported as shown in the following table:

CONSTITUENT	UNITS	SAMPLING AND REPORTING FREQUENCY
PH	PH	Semi-Annually
Total Dissolved Solids	mg/l	Semi-Annually
Chloride	mg/l	Semi-Annually
Sulfate	mg/l	Semi-Annually
Nitrate as Nitrogen	mg/l	Semi-Annually
Volatile Organic Constituents	Ug/l	Semi-Annually

Note: mg/l = milligrams/liter and μ g/l = micrograms/liter

- 2. The discharger shall establish and maintain ground water wells at the landfill site to be used as part of the water quality monitoring program.
- 3. Prior to pumping monitoring wells for sampling, the static water level shall be measured in each well.
- 4. For any given monitored medium, samples shall be taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Reporting Period shall all be taken during the latter third of the Reporting Period within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible. Sample procurement shall be carried out as late in the Reporting Period as feasible, considering the time needed to analyze the samples, analyze the resulting data, and to prepare and submit the monitoring report within thirty days after the end of the Reporting Period.
- 5. Prior to sampling monitoring wells, the presence of a floating immiscible layer in

- all wells shall be determined at the beginning of each sampling event. This shall be done prior to any other activity which may disturb the surface of the water in a well, e.g. water level measurements. If an immiscible layer is found, the Regional Board shall be notified within 24 hours.
6. For each monitored ground water body, the discharger shall measure the water level in each well and determine ground water flow rate and direction at least quarterly, including the times of expected highest and lowest elevations of the water level for the respective ground water body. Ground water elevations for all background and downgradient wells for a given ground water body shall be measured within a period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water flow rate and direction. This information shall be included in the semi-annual monitoring reports.
 7. Ground water sampling shall also include an accurate determination of the ground water surface elevation and field parameters (temperature, electrical conductivity and turbidity) for that Monitoring Point or Background Monitoring Point [27 CCR Section 20415(e)(13)]. Ground water elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the semiannual ground water flow rate/direction analyses in B.6 above.
 8. Statistical or non-statistical analysis shall be carried out as soon as the monitoring data is available, in accordance with 27 CCR Section 20415(e)(8). The discharger shall use the most appropriate statistical method to compare the downgradient concentration of each monitored constituent (or parameter) with its respective background concentration to determine if there has been a release from the Unit. For any given data set, the discharger shall first decide if statistical analysis is possible, by reference to the relative frequency with which the constituent is detected in background samples. For a constituent that qualifies for statistical analysis, the discharger shall proceed sequentially down the list of statistical analysis methods listed in 27 CCR Section 20415(e)(8)(A-C), using the first method for which the data qualifies. Those constituents for which no statistical method is appropriate shall be analyzed by the non-statistical method. If the initial statistical/non-statistical analysis tentatively indicates the detection of a release, the discharger shall implement the retest procedure.
 9. **Water Quality Protection Standard (Standard) for Detection Monitoring.**
The five parts of the Water Quality Protection Standard [Standard] of 27 CCR§20390 are as follows:
 - a. **Constituents of Concern** [27 CCR§20395]. The list of Constituents of Concern for water-bearing media [i.e., ground water, surface water, and soil pore liquid] consists of the combined listing of all constituents in Appendices I and II to 40 CFR Part 258 in addition to TDS, Sulfate,

nitrate, pH, and Chloride. Constituents of Concern, and many other terms of art used in this Order, are defined in Attachment No. 1 to Monitoring and Reporting Program No.2000-06.

- b. **Concentration Limits** [27CCR §20400]. The Concentration Limit for any given Constituent of Concern or Monitoring Parameter in a given monitored medium (i.e., the uppermost aquifer) at a landfill shall be as follows, and shall be used as the basis of comparison with data from the Monitoring points in that monitoring medium:
- (1) The background value established in this Order for that constituent and medium;
 - (2) The constituent's background value, established anew during each Reporting Period using only data from all samples collected during that Reporting Period from the Background Monitoring Points for that monitored medium. Either:
 - (i.) The mean (or median, as appropriate) and standard deviation (or other measure of central tendency, as appropriate) of the constituent's background data; or
 - (ii.) The constituent's MDL, in cases where less than 10% of the background samples exceed the constituent's MDL; or
 - (iii.) A concentration limit greater than background, as approved by the Regional Board for use during or after corrective action.
- c. **Monitoring Points and Background Monitoring Points for Detection Monitoring** [27 CCR §20405] The Monitoring Points for the Ramona Landfill are: ITRA-1, ITRA-2, ITRA-5, RAGW-1, RAGW-2, RAGW-3, RAGW-4, RAGW-5 and RAGW-7. The Background Monitoring Points for the Ramona Landfill are ITRA-1, ITRA-5, RAGW-3 and RAGW-5. These monitoring points are shown on Attachment No. 2 to this Monitoring and Reporting Program.
- d. **Point of Compliance**[27 CCR §20405]. The Point of Compliance is shown on Attachment No. 2 to this Monitoring and Reporting Program, and extends down through the Zone of Saturation [§20164, Title 27 CCR].
- e. **Compliance Period** [27 CCR §20410]. The estimated duration of the Compliance Period for this Unit is 58 years. Each time the Standard is broken (i.e., a release is discovered), the Unit begins a Compliance Period on the date the Regional Board directs the discharger to begin an

Evaluation Monitoring Program. If the discharger's Corrective Action Program (CAP) has not achieved compliance with the Standard by the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the Unit has been in continuous compliance for at least three consecutive years.

10. Leachate Monitoring

- (a) During October each year, the discharger shall sample the leachate from the LCRS and analyze the sample for COCs. The COC list shall consist of all waste constituents listed in this Monitoring and Reporting Program and include each constituent listed in Appendix II to 40 CFR Part 258 that is not already a COC for the landfill and that both:

- (1) Is detected in a sample of the landfill's leachate.

The discharger shall report the analytical results to the Regional Board by no later than January 31, including an identification of all detected Appendix II constituents that are not on the landfill's Constituent of Concern list (non-COCs); and

- (2) Is also detected in a retest leachate sample collected the following April.

The discharger is required to sample and analyze this retest sample only in cases where the annual leachate sample identifies non-COCs. The retest sample shall only be analyzed only for the non-COCs detected in the October sample. During any year in which an April leachate retest is carried out, the discharger shall submit a report to the Regional Board, by no later than August 1, identifying all constituents which must be added to the landfill's COC list as a result of detection in both the October and April analyses.

- (b) For each Appendix II constituent that is added to the landfill's COC list (as described above), the discharger shall establish a reference background value in each monitored medium by analyzing at least one sample each quarter from each Background Monitoring Point for a period of at least one year following the date the constituent is submitted to the Regional Board as a new COC. Once this reference set of background data is collected, the discharger shall include it as a separate, identified item in the next monitoring report submittal.

C. RESPONSE TO A RELEASE

1. If the discharger or Executive Officer determines that there is significant physical evidence of a release, the discharger shall conclude that a release has been discovered and shall:
 - a. Immediately notify the Regional Board by certified mail; and
 - b. Carry out the requirements of C.3 for all potentially affected monitored media; and
 - c. Carry out any additional investigations stipulated in writing by the Executive Officer for the purpose of identifying the cause of the indication.

2. If the discharger determines that there is significant statistical evidence of a release, (i.e., the initial statistical comparison or non-statistical comparison indicates, for any Constituent of Concern or monitoring parameter, that a release is tentatively identified), the discharger shall immediately notify Regional Board staff verbally as to the monitoring point(s) involved, shall provide written notification by certified mail within seven days of such determination, and shall carry out a discrete test (described below).

The discharger shall collect two new suites of samples (for VOC_{water} or the indicated COCs) from the indicating monitoring point, within 30 days of such indication. Resampling of the background monitoring points is optional. As soon as the retest data is available, the discharger shall use the same statistical method (or non-statistical comparison) as that which provided the tentative indication of a release to separately analyze each of the two suites of retest data for the affected Monitoring Point. For any indicated Monitoring Parameter or COC, if the test results of either (or both) of the retest data suites confirms the original indication, the discharger shall conclude that a release has been discovered and shall carry out the requirements of C.3 of this section.

All retests shall be carried out only for the monitoring point(s) for which a release is tentatively indicated, and only for the COC or monitoring parameters which triggered the indication there, as follows:

- a. If an ANOVA method was used for the original data, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating monitoring point.

- b. If the Method of Proportions was used for the original data, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, performed separately on each of the new sample suites from the indicating monitoring point.
- c. If the non-statistical method was used for the original data:
 - i. Because the VOC_{water} composite Monitoring Parameter is a single parameter which addresses an entire family of constituents which are likely to be present in any landfill release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample which initiated the retest;
 - ii. Because all COCs that are jointly addressed in the non-statistical test remain as individual COCs, the scope of the laboratory analysis for the non-statistical retest samples shall address only those constituents detected in the sample which initiated the retest.

If the retest confirms the existence of a release, the discharger shall carry out the requirements (described in 3 below). The discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, and provide written results submitted by certified mail within seven days of completing the retest.

- 3. If the discharger concludes that a release has been discovered:
 - a. If this conclusion is not based upon monitoring for all Constituents of Concern, then the discharger shall sample for all COCs at all monitoring points in the affected medium for the waste management unit and submit them for laboratory analysis within 30 days of discovery. Within 7 days of receiving the laboratory analytical results, the discharger shall notify the Regional Board, by certified mail, of the concentration of all COCs at each monitoring point in the affected medium. This notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration. Because the data from this scan is not to be statistically tested against background, only a single datum is required for each COC at each monitoring point.

- b. The discharger shall, within 90 days of discovering the release, submit a revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of 27 CCR Sections 20420(k)(5) and 20425 and, satisfies the requirements of 40 CFR 258.55(g)(1)(ii) by committing to install at least one monitoring well at the facility boundary directly downgradient of the center of the release, immediately after delineating the nature and extent of the release under 27 CCR Section 20425(b).
- c. The discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of 27 CCR Section 20420(k)(6).
- d. The discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the discharger can meet the requirement [under 27 CCR Section 20425(b)] to submit a delineation report within 90 days after the Regional Board directs the discharger to begin the Evaluation Monitoring Program. This report shall show the vertical and horizontal limits of the release for all Constituents of Concern. This delineation effort shall be carried out in addition to any ongoing monitoring program (e.g., detection monitoring program); nevertheless, the discharger's delineation effort shall encompass all relevant monitoring data.

D. RESPONSE TO DETECTION OF VOCS IN BACKGROUND (or any other constituent which is expected to be "zero" in background and not amenable to statistical analysis)

- 1. Except as provided in D.3 below, any time the laboratory analysis of a sample from a background monitoring point, sampled for VOCs shows either:
 - (a) two or more VOCs at or above their respective MDL, or
 - (b) one VOC at or above its respective PQL, then the discharger shall:
 - i. Immediately notify the Regional Board by phone that possible background contamination has occurred..
 - ii. Follow up with written notification by certified mail within seven days.
 - iii. Obtain two new independent VOC samples from that background monitoring point.

- iv. Send the samples for laboratory analysis of all detectable VOCs within 30 days.
2. If either or both the new samples validates the presence of VOC(s), using the above procedure, the discharger shall:
 - a. Immediately notify the Regional Board by phone about the VOC(s) verified to be present at the Background Monitoring Point.
 - b. Follow up with written notification by certified mail within seven days of validation.
 - c. Within 180 days of validation, submit a report, acceptable to the Executive Officer – which examines the possibility that the detected VOC(s) originated from the waste management unit and proposing appropriate changes to the monitoring program.
3. If the Executive Officer determines, after reviewing the report submitted under 2.b above, that the VOC(s) detected originated from a source other than the waste management unit, the Executive Officer will make appropriate changes to the monitoring program.
4. If the Executive Officer determines, after reviewing the report submitted under 2.b above, that the detected VOC(s) most likely originated from the waste management unit (e.g., using concentration gradient analyses), the discharger shall conclude that a release has been detected and shall immediately begin carrying out the requirements of C.3 of this monitoring and reporting program.

E. RELEASE BEYOND FACILITY BOUNDARY

1. Any time the discharger concludes (or the Executive Officer directs the discharger to conclude) that a release from the waste management unit has proceeded beyond the facility boundary, the discharger shall notify all persons who either own or reside upon the land that directly overlies any part of the plume (affected persons).
2. Initial notification to affected persons shall be accomplished within 14 days of making this conclusion and shall include a description of the discharger's current knowledge of the nature and extent of the release.
3. The discharger shall provide updates to all affected persons, including any persons newly affected by a change in the boundary of the release, within

14 days of concluding there has been any material change in the nature or extent of the release.

4. Each time the discharger sends a notification to affected persons, the discharger shall provide the Regional Board within seven days of sending such notification, with both a copy of the notification and a current mailing list of affected persons.

F. REPORTS TO BE FILED WITH THE BOARD

All reports shall be submitted no later than one month following the end of their respective Reporting Period. The reports shall be comprised of at least the following in addition to the specific contents listed for each respective report type:

1. Transmittal Letter

A letter summarizing the essential points shall be submitted with each report. The transmittal letter shall include:

- a. A discussion of any requirement violations found since the last such report was submitted and shall describe actions taken or planned for correcting those violations. If the discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter; and
- b. A statement certifying that, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct. This statement shall be signed by an individual that meets the requirements contained in Reporting Requirement D.14.

2. Semi-Annual Report

The semi-annual report shall contain, but not be limited to, a compliance evaluation summary of the ground water data obtained. The summary shall include the following information:

- a. Monitoring parameters;

- b. Detection limit of monitoring equipment;
- c. Measured concentrations found in the current sampling event;
- d. A map (or copy of an aerial photograph) which indicates the locations of observation stations, Monitoring Points, and Background Monitoring Points and ground water flow rate/direction and graphical presentation (e.g., arrow on a map);
- e. Monitoring well information, method and time of ground water level measurement, and a description of the method of purging used both before and after sampling;
- f. Sampling information, type of pump used and its vertical placement, detailed description of sampling procedure, QA/QC;
- g. Leachate and run on/off control statement regarding the condition and performance of any leachate monitoring and control facilities and of the run on/off control facilities; and
- h. Quantity and types of waste discharged and the location in the landfill where waste has been placed since the submittal of the last monitoring report.

3. **Annual Summary Report**

The annual summary report, covering the previous monitoring year, shall contain the following information:

- a. For each monitoring point and background monitoring point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five calendar years. Each graph shall plot the concentration of one or more constituents over time for a given monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Executive Officer may direct the discharger to carry out a preliminary investigation, the results of which will determine whether or not a release is indicated.
- b. All monitoring analytical data obtained during the previous two six-month reporting periods, presented in tabular form as well as on diskettes in a file format acceptable to the Executive Officer. Data sets too large to fit on a single diskette may be submitted on disk in a commonly available compressed format (e.g., PK-ZIP or NORTON BACKUP) acceptable to the Executive Officer.
- c. A comprehensive discussion of the compliance record, and of any

corrective actions taken or planned which may be needed to bring the discharger into full compliance with Order No. 2000-06.

- d. A written summary of the monitoring results and monitoring system(s), indicating any changes made or observed since the previous annual report.
- e. A topographic map at appropriate scale, showing the direction of ground water flow at the landfill site and showing the area in which filling has been completed in the previous year.
- f. A written summary of monitoring results and monitoring system(s) indicating any changes made or observed since the previous report.
- g. For units with leachate control/monitoring facilities, an evaluation of their effectiveness, pursuant to 27 CCR Section 20340(b, c & d).

4. Constituents of Concern Report (every 5 years)

In the absence of a release being indicated, the discharger shall monitor all constituents of concern (COCs) and submit a COC Report as follows:

- a. The discharger shall sample all monitoring points and background monitoring points for each monitored medium for all COCs every fifth year. The first COC report was due in Spring 1996, subsequent COC reports will be carried out every fifth year thereafter alternately in the Fall (Reporting Period ends September 30) and Spring (Reporting Period ends March 31). The COC report may be combined with any Monitoring Report or any Annual Summary report having a reporting period at ends at the same time. The COC Report shall meet the minimum monitoring report requirements as described in E.1 above.
- b. The discharger shall monitor for all COCs in accordance with this Section, provided that such monitoring need only encompass those COCs that do not also serve as monitoring parameters.

G. REPORTING

Monitoring reports shall be submitted in accordance with the following schedule:

<u>Report Frequency</u>	<u>Report Period</u>	<u>Report Due</u>
Semiannually	April – September October – March	October 30 April 30

Annually

April – March

April 30

Monitoring reports shall be submitted to:

Executive Officer
Attention: Land Discharge Unit
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Blvd., Suite A
San Diego, CA 92124-1331

Ordered by

JOHN H. ROBERTUS
Executive Officer
February 9, 2000

