

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. 05-01-174

WASTE DISCHARGE REQUIREMENTS  
FOR  
COUNTY OF MODOC  
FOR  
OPERATION OF THE  
ALTURAS MUNICIPAL SOLID WASTE CLASS III LANDFILL  
MODOC COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The County of Modoc (hereafter Discharger) owns and operates a municipal solid waste landfill about 1.5 miles southwest of Alturas, in Sections 22 and 23, T42N, R12E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. The 162 acre site is comprised of Assessor's Parcel Numbers (APN) 022-130-40 and 022-130-44. Modoc County has also acquired an additional 130 acres of land adjacent to the west side of the landfill.
3. The facility consists of five existing unlined waste management units (Unit) covering 27.5 acres and two unlined surface impoundments used for disposal of septage wastes covering less than one acre, as shown in Attachment B, which is incorporated herein and made part of this Order. Unit A covers approximately 7 acres and was closed during 1984 and 1985. Unit B covers approximately 15 acres and comprises the "footprint" for current waste disposal activities. Unit C covers approximately 2.5 acres and was closed in 1976. A Unit for disposal of dead animals covers less than 1 acre and the woodash/metal Unit, which hasn't been used for disposal activities since 1989 covers approximately 2 acres.
4. Modoc County constructed a transfer station at the site in March 1995. An aboveground storage tank (AST) containing waste oil and lockers for storage of household hazardous waste are also present at the transfer station. A Spill Prevention Control and Countermeasure Plan has been submitted for the storage of waste oil in the AST.
5. Since the transfer station became operational in March 1995, municipal solid waste has been transported to the Lockwood Landfill near Reno, Nevada. The Alturas Landfill has been used for emergency backup disposal of wastes when transportation to the Lockwood Landfill was not possible due to weather or other unforeseen emergencies. The Alturas Landfill has also been used for disposal of demolition and construction debris during dry weather, a temporary storage area for white goods, temporary storage or burn area for

wood waste, an emergency disposal area for natural disaster waste products, and for disposal of dead animals, septage and toilet vault wastes.

6. The facility was previously regulated by Waste Discharge Requirements (WDRs) Order No. 88-037, issued on 26 February 1988, which is no longer in conformance with Title 27, California Code of Regulations, Division 2, Subdivision 1 (hereafter Title 27), or Title 40 of the Code of Federal Regulations, Part 258 (hereafter Subtitle D). On 17 September 1993, the Board adopted Order No. 93-200, amending Order No. 88-037 and implementing State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*. These WDRs are being updated to incorporate the minimum performance goals and prescriptive standards contained in Title 27, Subtitle D and Order 93-200.

#### SITE INFORMATION

7. The site geology is complex and not well represented by boring logs. Available geologic mapping of the site shows the occurrence of three distinct surface formations, including the Alturas Formation, Warm Springs Tuff, and intermediate alluvium.

The site is primarily underlain by volcanic deposits belonging to the Warm Springs Tuff member of the Alturas Formation. These deposits include loose, unconsolidated clayey sands, gravels, tuffs, and breccias. A thin veneer of soil (one to two feet thick) exists over the site. The tuffs and breccias are workable with heavy equipment and contain the waste disposal trenches. No data on the permeability of the Warm Spring Tuff at the site exist; however, field observations indicate it may be relatively high and influenced locally by cracks and fissures.

8. The closest Holocene fault is the Surprise Valley Fault, located approximately 20 miles east of the Alturas Landfill. The Maximum Moment Magnitude (Mmax) of this fault is calculated to be 7.0.
9. Land uses within 1,000 feet of the facility consist of agricultural fields, federal game refuge, and open space. The nearest residence is located approximately 1/2 mile east of the site.
10. The facility receives an average of about 12 inches of precipitation per year, based on the map, *Mean Annual Precipitation in the California Region*, by S. E. Rantz, 1969.
11. Average annual evaporation is approximately 50 inches, based on information contained in Department of Water Resources Bulletin 73-79 dated November 1979, *Evaporation from Water Surfaces in California*.
12. The 100-year, 24-hour precipitation event is estimated to be approximately 3.5 inches, based on precipitation features published by the National Oceanic and Atmospheric

Administration (NOAA) in *NOAA Atlas 2, Volume XI, Isopluvials of 100-Year 24-Hour Precipitation for Northern Half of California in Tenths of an Inch.*

13. The waste management facility is not within a 100-year flood plain.
14. There are 13 municipal, domestic, industrial; or agricultural groundwater supply wells within one mile of the site.

#### WASTE AND SITE CLASSIFICATION

15. The Discharger discharges municipal and other solid wastes as described in Finding 5.
16. The Units at this site are unlined. Notwithstanding site characteristics, any lateral expansion of the active Unit beyond the existing footprint requires a composite liner with a leachate collection and removal system (LCRS) in accordance with this Order, Title 27, Subtitle D, and State Water Resources Control Board Resolution No. 93-62.

#### SURFACE AND GROUNDWATER CONDITIONS

17. The *Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin*, Fourth Edition (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
18. Surface drainage is to the Pit River in the Upper Pit River Hydrologic Area (526.50) of the Sacramento Basin.
19. The designated beneficial uses of the Pit River include municipal, industrial, and agricultural supply; recreation; esthetic enjoyment; navigation; hydroelectric power generation; and preservation and enhancement of fish, wildlife, and other aquatic resources.
20. The first encountered groundwater is about 10 to 31 feet below the native ground surface and groundwater elevations range from 4346 feet MSL to 4354 feet MSL, as documented during the third quarter of 2000.
21. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) of about 240 micromhos/cm, with a total dissolved solids (TDS) content of about 215 mg/L.
22. The direction of groundwater flow is generally toward the north and northeast, but varies seasonally. The average groundwater gradient is approximately 0.002 feet per foot.
23. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic, municipal, industrial service, industrial process, and agricultural supply.

### GROUNDWATER MONITORING

24. The existing groundwater monitoring system consists of two background wells (OB-5 and OB-6) and four compliance wells (OB-1, OB-2, OB-3, and OB-7), as shown on Attachment B. Wells OB-1 through OB-5 were installed in April 1987. Site monitoring wells have been installed into three different geologic formations. Wells OB-1 and OB-5 are screened and draw water from volcanic deposits of the Warm Springs Tuff Formation, wells OB-3 and OB-4 are screened in silt and clay deposits of the Alturas Formation, and OB-2 is screened in sand and gravel deposits of intermediate alluvium. Monitoring well OB-2 is located approximately 1,500 feet away from the Unit that it monitors. Monitoring wells OB-6 and OB-7 were installed in September 2000 into a geologic formation suspected of being similar to OB-2. Monitoring well OB-7 was installed approximately 600 feet down gradient of the Unit that it monitors, and well OB-6 was installed off-site on Modoc National Wildlife Refuge property north of the facility to provide background water quality data. Total depths of the wells range from 15 to 56.5 feet below ground surface.
25. The Discharger's detection monitoring program for groundwater at the facility appears to satisfy the requirements contained in Title 27. However, if future geologic assessments or if groundwater monitoring data indicate that an adequate hydraulically connected background and compliance well is not present for each Unit and site geologic formation, then additional monitoring wells may be required.
26. Volatile organic compounds (VOCs) are often detected in a release from a landfill. Since VOCs are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a Unit.
27. Section 20415(e)(8) and (9) of Title 27 provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with Section 20415(b)(1)(B)2.-4. of Title 27. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
28. The Board may specify a non-statistical data analysis method pursuant to Section 20080(a)(1) of Title 27. Section 13360(a)(1) of the California Water Code allows the Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
29. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.

30. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The criteria, if met, trigger an evaluation monitoring program in accordance with Section 20425 of Title 27 and Section X entitled **Response to a Release** contained in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D*, April 2000. The presence of two non-naturally occurring waste constituents above their respective method detection limits (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

#### GROUNDWATER DEGRADATION

31. Organic compounds, including Acetone, 2-Butanone (MEK), Ethylbenzene, Methyl tert-Butyl Ether (MtBE), Methylene Chloride, Naphthalene, p-Isopropyltoluene, Bis (2-Ethylhexyl) phthalate, Toluene, 1,1,1-Trichloroethane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene and Xylenes have been detected in the groundwater at the site over the past 9 years.
32. Due to the detections of volatile organic compounds in the groundwater, an Evaluation Monitoring Program is required.

#### CONSTRUCTION AND ENGINEERED ALTERNATIVE

33. On 17 June 1993, the State Water Resources Control Board adopted Resolution No. 93-62 implementing a State Policy for the construction, monitoring, and operation of municipal solid waste landfills that is consistent with the federal municipal solid waste regulations promulgated under Title 40, Code of Federal Regulations, Part 258, (Subtitle D).
34. Resolution No. 93-62 requires the construction of a specified composite liner system at new municipal solid waste landfills, or expansion areas of existing municipal solid waste landfills, that receive wastes after 9 October 1993.

35. Resolution No. 93-62 also allows the Board to consider the approval of engineered alternatives to the prescriptive standard. Section III.A.b. of Resolution No. 93-62 requires that the engineered alternative liner systems be of a composite design similar to the prescriptive standard.
36. Section 20080(b) of Title 27 allows the Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Section 20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Section 20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that a proposed engineered alternative liner system is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Section 20080(b)(2) of Title 27.
37. Section 13360(a)(1) of the California Water Code allows the Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
38. The Discharger has not proposed expansion beyond the existing footprint. Any such expansion proposed in the future must be done in accordance with Title 27, Subtitle D, and Resolution 93-62, as required by the Facility Specifications and Construction Specifications contained in this Order.
39. Construction of any expansion beyond the existing footprint will proceed only after the Discharger has submitted a Report of Waste Discharge, received revised Waste Discharge Requirements, and all design reports, plans, and specifications and applicable construction quality assurance plans have been approved by the Executive Officer.

#### CEQA AND OTHER CONSIDERATIONS

40. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, Section 15301.
41. This order implements:
  - a. *The Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin*, Fourth Edition;

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- b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27 of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;
- c. The prescriptive standards and performance criteria of Part 258, Title 40 of the Code of Federal Regulations (Subtitle D);
- d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993.

**PROCEDURAL REQUIREMENTS**

42. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
43. The Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
44. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
45. Any person adversely affected by this action of the Board may petition the State Water Resources Control Board to review the action. The petition must be received by the State Board within 30 days of the date of issuance of this Order. Copies of the law and regulations applicable to filing the petition will be provided upon request.

IT IS HEREBY ORDERED that Order No. 88-037 is rescinded, and Attachment 1 of Order No. 93-200 is amended to delete the Alturas Landfill, which is on line No. 38, and that the County of Modoc, their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

**A. PROHIBITIONS**

1. The discharge of 'hazardous waste' or 'designated waste' is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23, California Code of Regulations, Section 2510 et seq., and 'designated waste' is as defined in Section 13173 of the California Water Code.
2. The discharge of wastes outside of a Unit or portions of a Unit specifically designed for their containment is prohibited.

3. The discharge of waste to a closed Unit is prohibited.
4. The release of pollutants or waste constituents in a manner which could cause a condition of nuisance, degradation, contamination, or pollution of groundwater to occur, as indicated by the most appropriate statistical or nonstatistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements is prohibited.
5. The discharge of solid, or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
6. Any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of a Unit that was caused by the discharge of wastes at the site, if such waste constituents could migrate to waters of the State — in either the liquid or the gaseous phase — and cause a condition of nuisance, degradation, contamination, or pollution is prohibited.

#### **B. DISCHARGE SPECIFICATIONS**

1. Nonhazardous solid wastes shall be discharged to either:
  - a. The portions of the existing footprint that have not been closed in accordance with applicable regulations; or
  - b. To a Unit equipped with a composite liner containment system which meets the requirements for both liners and leachate collection and removal systems specified under *D. Construction Specifications*.
2. Liquid septage and toilet vault wastes shall be discharged to the septage ponds.
3. Solids from the septage ponds shall be dried to a minimum of 50 percent solids prior to discharge in an unlined landfill unit. Dried septage shall also be analyzed for volatile organic compounds, semi-volatile organic compounds, and metals in accordance with Section 66261.24 Table II of Title 22, California Code of Regulations, to show that the waste is nonhazardous prior to disposal in any Unit other than the septage ponds.
4. The discharge shall remain within the designated disposal area at all times.

#### **C. FACILITY SPECIFICATIONS**

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at the facility in violation of this Order.

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2. The Discharger shall immediately notify the Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, and construction.
4. The Discharger shall maintain in good working order any facility, equipment, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
5. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, hazardous or nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
6. If monitoring reveals substantial or progressive increases of leachate generation from a Unit with a LCRS above the design leachate flow volume by a Unit or portion of a Unit, such that the depth of fluid on any portion of an LCRS (excluding the leachate removal pump sump) exceeds 30 cm, the Discharger shall immediately notify the Board in writing within seven days. The notification shall include a timetable for remedial or corrective action necessary to achieve compliance with the leachate depth limitation.
7. Closure shall not proceed in the absence of closure waste discharge requirements.
8. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
9. The Discharger shall prepare and submit a Notice of Intent (NOI) for a General Industrial Storm Water Permit which includes preparation and maintenance of a *Storm Water Pollution Prevention Plan (SWPPP)* and *Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or demonstrate to the Board that all storm water is retained on-site.

**D. CONSTRUCTION SPECIFICATIONS**

1. For construction of any new Unit or lateral expansion of an existing Unit, the Discharger shall submit for Executive Officer review and approval **prior to** construction, design plans and specifications. The plans and specifications shall include, but not be limited to:

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- a. A Construction Quality Assurance Plan meeting the requirements of Section 20324 of Title 27; and
  - b. A geotechnical evaluation of the area soils, evaluating their use as the base layer; and
  - c. An unsaturated zone monitoring system, which is demonstrated to remain effective throughout the active life, closure, and post-closure maintenance periods of the Unit, which shall be installed beneath the composite liner system in accordance with Section 20415(d) of Title 27.
2. Both the bottom liner and side slope liner of all new Units and lateral expansion areas of existing Units shall be constructed in accordance with one of the following composite liner designs:
- a. The prescriptive standard design which consists of a lower compacted soil layer that is a minimum of two feet thick with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less and has a minimum relative compaction of 90%. Immediately above the compacted soil layer, and in direct and uniform contact with the soil layer, shall be a synthetic flexible membrane component that shall be at least 40-mil thick (or at least 60-mil thick if composed of high density polyethylene [HDPE]), which is immediately overlain with a leachate collection and removal system. A soil operations layer shall be placed above the leachate collection and removal system; **or**
  - b. An engineered alternative composite liner system that has been approved by the Executive Officer and is in conformance with Title 27, Section 20080 and State Water Resources Control Board Resolution 93-62, Section 3, *Containment*.
3. If the Discharger proposes to construct a liner system in which a geosynthetic clay liner (GCL) is placed on top of a subgrade, the subgrade for the bottom and the side slopes of the Unit shall be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a smooth surface that is free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.
4. Following the completion of construction of a Unit or portion of a Unit, and prior to discharge onto the newly constructed liner system, the final documentation required in Section 20324(d)(1)(C) of Title 27 shall be submitted to the Executive Officer for review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist licensed to practice in the State of California. It shall contain sufficient information and test results to verify that construction was in

accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.

5. A third party, independent of both the Discharger and the construction contractor, shall perform all of the construction quality assurance monitoring and testing during the construction of a liner system.

#### E. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall submit for Executive Officer review and approval an updated Water Quality Protection Standard Report prior to any Unit expansion or new Unit construction.
2. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. 05-01-174, and the Standard Provisions and Reporting Requirements, dated April 2000.
3. The concentration limit established pursuant to the Water Quality Protection Standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA Methods 8260 and 8270).
4. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to the Water Quality Protection Standard as defined in Monitoring and Reporting Program No. 05-01-174.
5. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, where appropriate, in accordance with Monitoring and Reporting Program No. 05-01-174. A detection monitoring system for a new Unit shall be installed, operational, and one year of monitoring data collected **prior** to discharge of wastes [27 CCR Section 20415(e)(6)].
6. The Discharger shall provide Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring systems.
7. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. 05-01-174 and Section 20415(e) of Title 27.
8. For any given monitored medium, the samples taken from all compliance monitoring points and background monitoring points to satisfy the data analysis requirements for

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a given reporting period shall all be taken **within a span not to exceed 30 days**, unless the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

9. The Discharger shall submit for Executive Officer review and approval a Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
  - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
  - b. Sample preservation information and shipment procedures;
  - c. Sample analytical methods and procedures;
  - d. Sample quality assurance/quality control (QA/QC) procedures; and
  - e. Chain of Custody control.
10. Sample collection, preservation, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) *Methods for the Analysis of Organics in Water and Wastewater* (USEPA 600 Series), (2) *Test Methods for Evaluating Solid Waste* (SW-846, latest edition), (3) *Methods for Chemical Analysis of Water and Wastes* (USEPA 600/4-79-020), (4) *Standard Methods for the Examination of Water and Wastewater* (Standard Methods), and in accordance with the approved Sample Collection and Analysis Plan.
11. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.
12. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the 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 or interferences.
13. **"Trace" results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.

14. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These 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.
15. If the laboratory 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 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 the lowest achievable concentration associated with a 99% reliability of a nonzero 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.
16. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, 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 recoveries. 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.
17. **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.
18. The statistical method used to evaluate the monitoring data shall account for results below the PQL with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Section 20415(e)(7) of Title 27 that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Section 20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5

of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or non-statistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

19. The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR Section 20415(e)(8)(A-D)] in accordance with Section 20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Board staff.
20. The Discharger shall use the following non-statistical method for the  $VOC_{water}$  and  $VOC_{spg}$  (Soil Pore Gas) Monitoring Parameters and for all Constituents of Concern that are not amenable to the statistical tests above (i.e., less than 10% of the data from background samples equal or exceed their respective MDL). Each qualifying constituent at a monitoring point shall be determined based on either:
  - a. The data from a single sample for that constituent, taken during that reporting period from that monitoring point; or
  - b. The data from the sample that contains the largest number of qualifying constituents, where several independent samples have been analyzed for that constituent at a given monitoring point.

Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR Section 20415(e)(8)(A-D)] in accordance with Section 20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer.

21. The method shall be implemented as follows:
  - a. *For the Volatile Organic Compounds Monitoring Parameter For Water Samples [ $VOC_{water}$ ]*: For any given monitoring point, the  $VOC_{water}$  Monitoring

Parameter is a composite parameter addressing all "qualifying VOCs" (in this case, VOCs that are detected in less than 10% of background samples).

The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.22. and E.23 below, as appropriate) to determine whether a release of VOC<sub>water</sub> Monitoring Parameter has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying VOCs that equal or exceed their respective MDLs; or
  - 2) The data contains one qualifying VOC that equals or exceeds its PQL.
- b. *For the Volatile Organic Compounds Monitoring Parameter For Soil Pore Gas Samples [VOC<sub>spg</sub>]:* the VOC<sub>spg</sub> Monitoring Parameter is a composite parameter for soil pore gas addressing all "qualifying VOCs" detectable using either GC or GC/MS analysis for at least a ten liter sample of soil pore gas (e.g., collected in a vacuum canister). It involves the same scope of VOCs as does the VOC<sub>water</sub> Monitoring Parameter. For the VOC<sub>spg</sub> test, "qualifying VOCs" consist of all those VOCs that are detectable in less than 10% of background soil pore gas samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.22. and E.23 below, as appropriate) to determine whether a release of VOC<sub>spg</sub> Monitoring Parameter has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying VOCs that equal or exceed their respective MDLs; or
  - 2) The data contains one qualifying VOC that equals or exceeds its PQL.
- c. *For 5 Year Constituents of Concern:* For five year testing of all Constituents of Concern (COCs), the "qualifying constituents" consist of COCs that are detected in less than 10% of applicable background samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.22. and E.23 below, as appropriate) to determine whether a release of COCs has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying constituents that equal or exceed their respective MDLs; or

- 2) The data contains one qualifying constituent that equals or exceeds its PQL.
22. **Non-Statistical Method Retest.** A non-statistical test method may be used by the Discharger to analyze the monitoring data for which it is impractical to conduct a statistical analysis. A non-statistical test method shall include a procedure to verify that there is "measurably significant" evidence of a release from the Unit. For the  $VOC_{water}$ ,  $VOC_{spg}$ , and non-statistical COC test, the Discharger shall use a discrete retest consisting of two new samples from each indicating monitoring point. The Discharger shall conduct the retest for the standard non-statistical method as follows:
- a. **For  $VOC_{water}$  and  $VOC_{spg}$ .** Because the VOC composite Monitoring Parameter (for water or soil pore gas) is a single parameter which addresses an entire family of constituents likely to be present in any landfill release, **the scope of the laboratory analysis for each of the two retest samples shall include all VOCs detectable in that retest sample.** Therefore, a confirming retest, in accordance with Detection Monitoring Specification E.20.a. and b. above, for either triggering condition in either of the two retest samples, shall have validated the original indication even if the detected constituents in the confirming retest sample(s) differs from those detected in the sample which initiated the retest.
  - b. **For Constituents of Concern.** Because all Constituents of Concern that are jointly addressed in the non-statistical test above, remain as individual Constituents of Concern, **the scope of the laboratory analysis for the non-statistical retest of Constituents of Concern shall address only those constituents detected in the sample which initiated the retest.** Therefore, the list of "qualifying constituents" for use in the retest, under Detection Monitoring Specification E.20.c., shall consist of those constituents which provided the original indication at that monitoring point. If the retest meets either triggering condition in either of the two retest samples, the retest shall have validated the original indication.
23. **Response to Detection in Background of VOCs** (or any other constituent which is not naturally occurring in the background and thus is not amenable to statistical analysis):
- a. Any time the laboratory analysis of a sample from a background monitoring point, sampled for VOCs, shows either:
    - 1) Two or more VOCs at or above their respective MDL; or
    - 2) One VOC at or above its respective PQL.

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Then the Discharger shall:

- a) Notify the Board by phone **within 24 hours** of their discovery;
  - b) Follow up with written notification by certified mail **within seven days**;
  - c) **Within 30 days** of initial detection, obtain **two** new independent VOC samples from that background monitoring point and ship to laboratory for analysis of all detectable VOCs within proper sample holding times.
  - d) Submit results of sampling to the Board **within 30 days** of sample collection.
- b. If any of the new samples validates the presence of VOC(s), using the above criteria, the Discharger shall:
- 1) Notify the Board by phone **within 24 hours** of their discovery about the VOC(s) verified to be present at that background monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and
  - 2) If the Discharger believes that the VOC(s) in background is from a source other than the Unit, then:
    - a) **Within seven days** of determining "measurably significant" evidence of a release, submit to the Board by certified mail a Notification of Intent to make such a demonstration pursuant to Section 20420(k)(7) of Title 27; and
    - b) **Within 90 days** of determining "measurably significant" evidence of a release, submit a report to the Board that demonstrates that a source other than the Unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone.
- c. If the Executive Officer determines, after reviewing the submitted report(s), that the VOC(s) detected originated from a source other than the Unit(s), the Executive Officer will make appropriate changes to the monitoring program.
24. If the Executive Officer determines, after reviewing the submitted report that the detected VOC(s) most likely originated from the Unit(s), the Discharger shall

*immediately* implement the requirements of *XI. Response To A Release, C. Release Has Been Verified*, contained in the Standard Provisions and Reporting Requirements and the provisions of Evaluation Monitoring described in Section 20425 of Title 27.

#### F. REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for 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.

Such legible records shall show the following for each sample:

- a. Sample identification and the compliance monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
  - b. Date, time, and manner of sampling;
  - c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
  - d. Complete procedure 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 and PQL for each analysis.
3. A transmittal letter explaining the essential points shall accompany each report submitted. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no

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violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.

4. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:
  - a. For each compliance monitoring point and background monitoring point addressed by the report, a description of:
    - 1) The date and time of water level measurement;
    - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
    - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, conductivity and turbidity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;
    - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
    - 5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
  - b. A map or aerial photograph showing the locations of observation stations, compliance monitoring points, and background monitoring points.
  - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
  - d. Laboratory statements of results of all analyses evaluating compliance with requirements.
  - e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities, if present at the site.

- f. A summary and certification of completion of all **Standard Observations** for the Unit(s), for the perimeter of the Unit, and for the receiving waters. The Standard Observations shall include:
- 1) For the Unit:
    - a) Evidence of ponded water at any point on the facility (show affected area on map);
    - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
    - c) Evidence of erosion and/or of day-lighted refuse.
  - 2) Along the perimeter of the Unit:
    - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
    - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
    - c) Evidence of erosion and/or of day-lighted refuse.
  - 3) For receiving waters:
    - a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area;
    - b) Discoloration and turbidity - description of color, source, and size of affected area;
    - c) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;
    - d) Evidence of water uses - presence of water associated wildlife;
    - e) Flow rate; and
    - f) Weather conditions - wind direction and estimated velocity, total precipitation during recent days and on the day of observation.
- g. The quantity and types of wastes discharged and the locations in the Unit where waste has been placed since submittal of the last such report.

- c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
- d. A map showing the area and elevations in which filling has been completed during the previous calendar year and a comparison to final closure design contours.
- e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
- f. An evaluation of the effectiveness of the leachate monitoring/control facilities.

#### G. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 and Title 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. 05-01-174, which is incorporated into and made part of this Order.
4. The Discharger shall comply with the applicable portions of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR Section 20005 et seq. and 40 CFR 258 et seq.)*, dated April 2000, which are hereby incorporated into this Order.
5. All reports and transmittal letters shall be signed by persons identified below:
  - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
  - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
  - d. A duly authorized representative of a person designated in a, b or c above if;

5. The Discharger shall report by telephone any leachate seepage from the disposal area **within 24 hours** of its discovery. A written report shall be filed with the Board **within seven days**, containing at least the following information:
  - a. A map showing the location(s) of leachate seepage;
  - b. An estimate of the flow rate;
  - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
  - d. Verification that samples have been submitted for analyses of the 5 Year Constituents of Concern and Monitoring Parameters, and an estimated date that the results will be submitted to the Board; and
  - e. Corrective measures underway or proposed, and corresponding time schedule.
  
6. The Discharger shall submit an **Annual Monitoring Summary Report** to the Board covering the reporting period of the previous monitoring year. This report shall contain the following:
  - a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given compliance monitoring point or background 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. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
  - b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month reporting periods, shall be presented in tabular form as well as on 3.50" computer diskettes or CD-Rom, either in MS-Access/ASCII format or in another 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. PKZIP). The Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Section 20420(h)], in that this facilitates periodic review by the Board.

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- 1) The authorization is made in writing by a person described in a, b, or c of this provision;
- 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may be either a named individual or any individual occupying a named position); and
- 3) The written authorization is submitted to the Board.

e. Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

6. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
7. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the State from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
8. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violation(s) of the Order.
9. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory requirements contained in Provision G.5. above and state that the new owner or

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operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Board.

10. The Discharger shall establish cost estimates for initiating and completing corrective action for all known and reasonably foreseeable releases from the landfill, and submit these estimates to the Executive Officer for review and approval.
11. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the landfill in an amount approved by the Executive Officer, and shall submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board for approval.
12. The discharger is required to establish and maintain financial assurances mechanism(s) for closure and post-closure maintenance costs as specified in Chapter 6 of Title 27. The Discharger is required to submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste management Board, which determines if the mechanism meets the requirements of Chapter 6, Title 27, and if the amount of coverage is adequate.
13. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>TASK</u>	<u>COMPLIANCE DATE</u>	
<b>A. Sample Collection and Analysis Plan</b>		
1. Submit the Sample Collection and Analysis Plan (see Specification E.9.)	1 October 2001	<i>approved 6/6/02</i>
<b>B. NOI and General Industrial Storm Water Permit</b>		
1. Prepare and submit Notice of Intent for General Industrial Storm Water Permit, which includes preparation of a Storm Water Pollution Prevention Plan (SWPPP), or submit demonstration that all storm water is retained on-site (see Specification C.9.)	1 October 2001	<i>/</i>
<b>C. Evaluation Monitoring Program</b>		
1. Submit a work plan for initiating and completing	1 October 2001	<i>Not needed</i>

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- an Evaluation Monitoring Program
2. Implement Evaluation Monitoring Program
  3. Complete Evaluation Monitoring Program

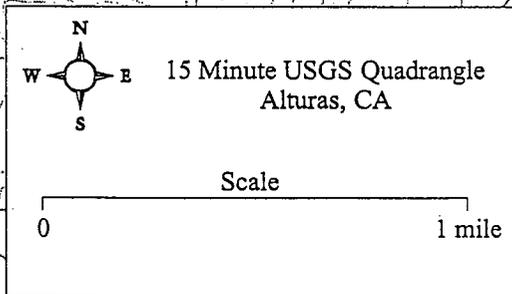
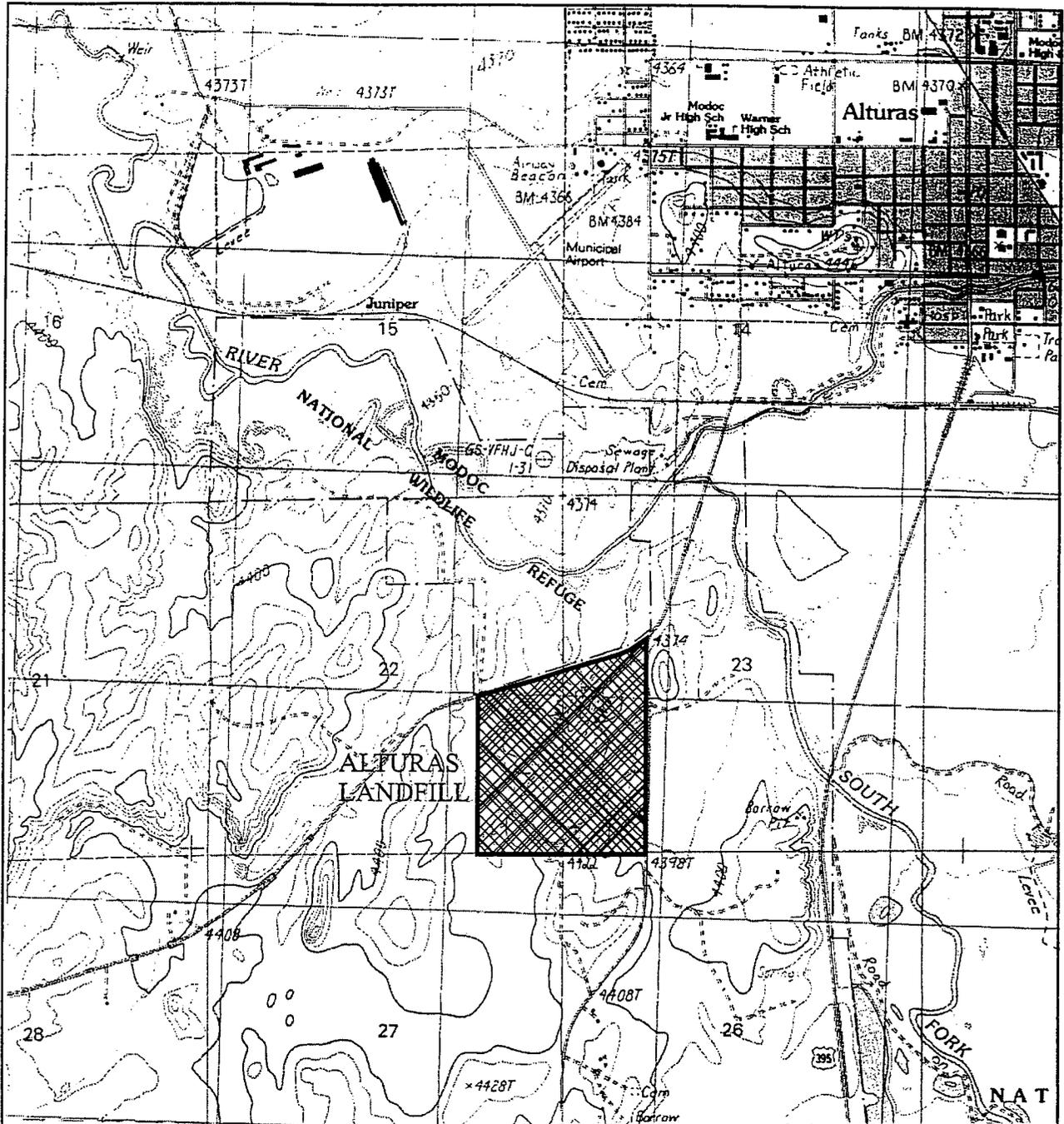
1 February 2002 *N/A*

According to schedule  
approved by the Executive  
Officer *N/A*

I, GARY M. CARLTON, 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, Central Valley Region, on 14 June 2001.

  
\_\_\_\_\_  
GARY M. CARLTON, Executive Officer

DS: sae



15 Minute USGS Quadrangle  
Alturas, CA

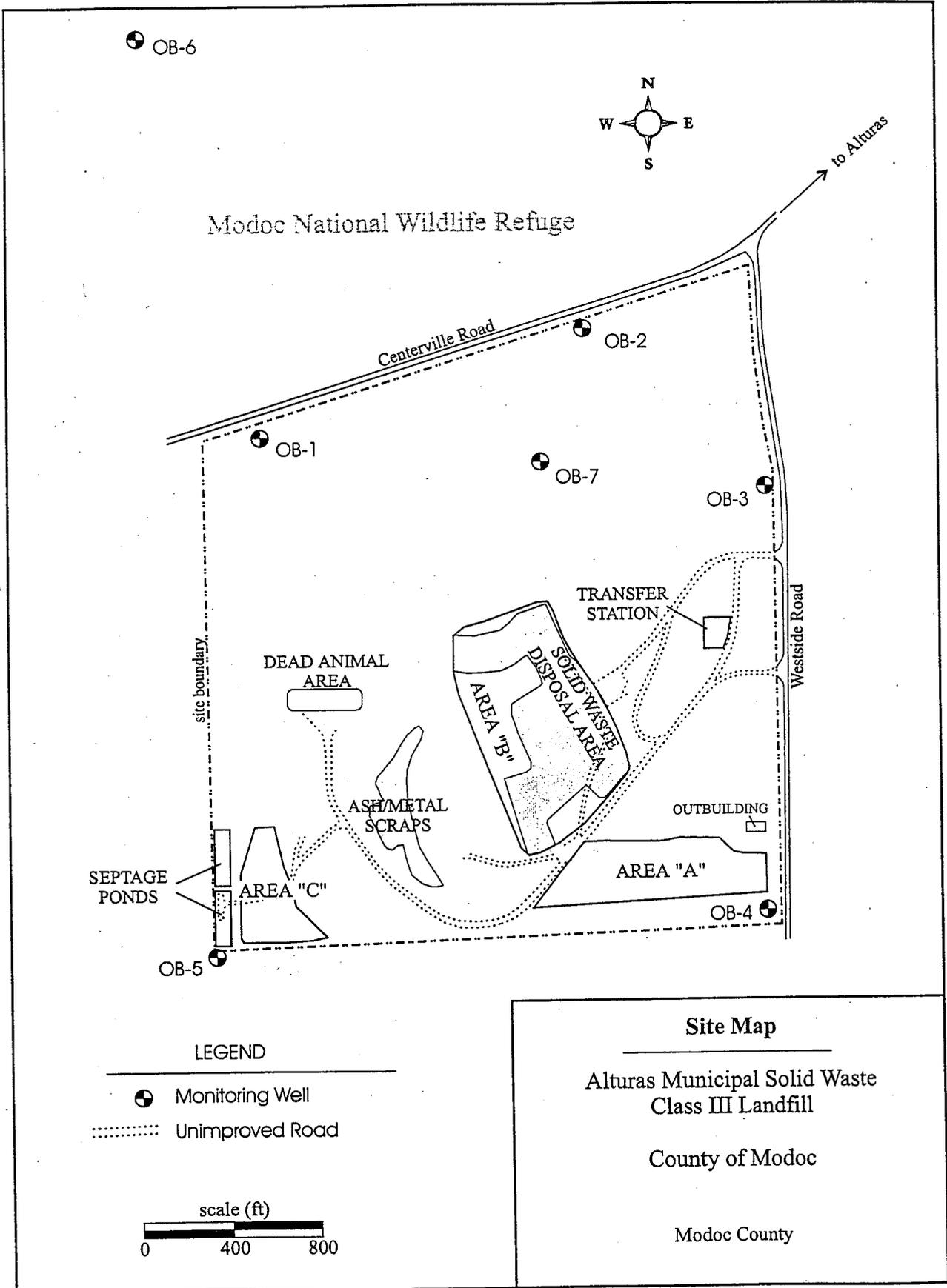
**Vicinity Map**

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Alturas Municipal Solid Waste  
Class III Landfill

County of Modoc

Sections 22 & 23, T42N, R12E, MDB&M  
Modoc County



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

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Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order No. 05-01-174.

A. **REQUIRED MONITORING REPORTS**

<u>REPORT</u>	<u>DUE</u>
1. Groundwater Monitoring (Section D.1)	See Table I
2. Annual Monitoring Summary Report (Order No. 05-01-174, F.6.)	31 January annually
3. Unsaturated Zone Monitoring (Section D.2) (For new Units or lateral expansions only)	See Table II
4. Leachate Monitoring (Section D.3)	See Table III
5. Facility Monitoring (Section D.5)	15 November annually
6. Annual Report for Storm Water Pollution Prevention Plan (SWPPP)	1 July annually
7. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary

B. **REPORTING**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. 05-01-174 and the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in

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noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in F. Reporting Requirements, of Order No. 05-01-174.

Field and laboratory tests shall be reported in each monitoring report. Semiannual and annual monitoring reports shall be submitted to the Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

<u>SAMPLING FREQUENCY</u>	<u>REPORTING FREQUENCY</u>	<u>REPORTING PERIODS END</u>	<u>REPORT DATE DUE</u>
Monthly	Semiannually	Last Day of Month	by Semiannual Schedule
Quarterly	Semiannually	Last Day of Quarter	by Semiannual Schedule
Semiannually	Semiannually	30 June	31 July
		31 December	31 January
Annually	Annually	31 December	31 January
			1 July (for SWPPP)

The Discharger shall submit an **Annual Monitoring Summary Report** to the Board covering the previous monitoring year. The annual report shall contain the information specified in F. Reporting Requirements, of Order No. 05-01-174, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be reported to the Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

**C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD**

**1. Water Quality Protection Standard Report (Report)**

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all Constituents of Concern, the concentration limit for each Constituent of Concern, the point of compliance, and all water quality monitoring

points. The Executive Officer shall review and approve the Water Quality Protection Standard, or any modification thereto, for each monitored medium.

The Report shall:

- a. Identify **all distinct bodies of surface and groundwater** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the groundwater monitoring program and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

## 2. **Constituents of Concern**

The Constituents of Concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The Constituents of Concern for all Units at the facility are listed in Tables I through III for groundwater, unsaturated zone, and leachate monitoring, respectively. Tables IV and V are incorporated by reference into Tables I through III. Table IV is a list of specific volatile organic compounds referred to by analytical method but not listed in Tables I through III. Table IV also contains inorganic "surrogates for metallic constituents," required by Subtitle D if the metallic constituents are not included in detection monitoring. Table V contains specific inorganic and organic parameters, referred to but not listed in Tables I through III, that are required to be monitored under 5-year Constituents of Concern monitoring.

### a. **Monitoring Parameters**

Monitoring parameters are Constituents of Concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The

monitoring parameters for all Units are those listed in Tables I through IV for the specified monitored medium.

**3. Concentration Limits**

For naturally occurring Constituents of Concern or non-naturally occurring Constituents of Concern that have background values, the concentration limit for each Constituent of Concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27; or
- b. By an alternate statistical method acceptable to the Executive Officer in accordance with §20415 of Title 27.

For non-naturally occurring Constituents of Concern that do not have background values, the concentration limit for each Constituent of Concern shall be determined in accordance with E. Detection Monitoring Specifications of Order No. 05-01-174.

**4. Point of Compliance**

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit.

**5. Compliance Period**

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

**D. MONITORING**

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water (if present), and the unsaturated zone (for new Units or lateral expansions), in accordance with Detection Monitoring Specification E.2 and E.5 of Waste Discharge Requirements, Order No. 01-05-174. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

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All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, unsaturated zone monitoring devices, and leachate monitoring points shall be sampled and analyzed as indicated and listed in Tables I through III.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those that cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table V.

The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

**1. Groundwater**

The Discharger shall install and operate a groundwater detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted semiannually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the Constituents of Concern in accordance with the methods and frequency specified in Table I. All monitoring data shall be graphed so as to show historical trends at each monitoring point.

The applicable inorganic parameters (minerals) shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram and a Piper graph. Stiff diagrams shall

be plotted on a map with each Stiff diagram placed next to its corresponding monitoring point. Groundwater elevation contours shall also be shown.

## 2. **Unsaturated Zone Monitoring**

**For new Units or lateral expansions:** The Discharger shall install and operate an unsaturated zone detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

Unsaturated zone samples shall be collected from the monitoring devices and background monitoring devices of the approved unsaturated zone monitoring system. The collected samples shall be analyzed for the listed constituents in accordance with the methods and frequency specified in Table II.

Unsaturated zone monitoring reports shall be included with the corresponding semiannual groundwater monitoring and shall include an evaluation of potential impacts of the facility on the unsaturated zone and compliance with the Water Quality Protection Standard.

## 3. **Leachate Monitoring**

**For new Units or lateral expansions:** The Discharger shall install and maintain leachate collection and removal systems for new Units and lateral expansions. All Unit leachate collection and removal system sumps shall be inspected monthly for leachate generation. Upon detection of leachate in a previously dry leachate collection and removal system, leachate shall be sampled **immediately** and analyzed for the constituents listed in Table III. Leachate shall then be sampled and analyzed annually during the fourth quarter thereafter, with a retest during the following second quarter if constituents are detected that have not been previously detected. Leachate samples shall be collected and analyzed for the listed constituents in accordance with the methods and frequency specified in Table III. The quantity of leachate pumped from each sump shall be measured and reported monthly as Leachate Flow Rate (in gallons).

**For existing Units:** The surface of each Unit shall be inspected monthly for leachate seeps in accordance with the Facility Monitoring requirements described below. If leachate seeps are present, a sample shall be obtained and analyzed for the constituents listed in **Table III**. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

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MODOC COUNTY

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4. Facility Monitoring

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in section F.4.f. of Order No. 05-01-174. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by:

  
GARY M. CARLTON, Executive Officer

14 June 2001

(Date)

DPS: sae

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**TABLE I**  
**GROUNDWATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Semiannual
Electrical Conductivity ✓	µmhos/cm	Semiannual
pH ✓	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS) ✓	mg/L	Semiannual
Chloride ✓	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen ✓	mg/L	Semiannual
Sulfate ✓	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260B, see Table IV)	µg/L	Semiannual
<b>5-Year Constituents of Concern (see Table V)</b>		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

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TABLE II

UNSATURATED ZONE DETECTION MONITORING PROGRAM

SOIL-PORE GAS

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Monitoring Parameters</b>		
Volatile Organic Compounds (USEPA Method TO-14)	$\mu\text{g}/\text{cm}^3$	Semiannual
Methane	%	Semiannual

PAN LYSIMETERS (or other vadose zone monitoring device)

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Electrical Conductivity	$\mu\text{mhos}/\text{cm}$	Semiannual
pH	pH units	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260B, see Table IV)	$\mu\text{g}/\text{L}$	Semiannual

5-Year Constituents of Concern (see Table V)

Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	$\mu\text{g}/\text{L}$	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	$\mu\text{g}/\text{L}$	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	$\mu\text{g}/\text{L}$	5 years
Organophosphorus Compounds (USEPA Method 8141A)	$\mu\text{g}/\text{L}$	5 years

MONITORING AND REPORTING PROGRAM NO. 05-01-1/4  
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**TABLE III**  
**LEACHATE MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Total Flow	Gallons	Monthly
Flow Rate	Gallons/Day	Monthly
Electrical Conductivity	$\mu$ mhos/cm	Monthly
pH	pH units	Monthly
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	Annually
Chloride	mg/L	Annually
Carbonate	mg/L	Annually
Bicarbonate	mg/L	Annually
Nitrate - Nitrogen	mg/L	Annually
Sulfate	mg/L	Annually
Calcium	mg/L	Annually
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Sodium	mg/L	Annually
Volatile Organic Compounds (USEPA Method 8260B, see Table IV)	$\mu$ g/L	Annually
<b>5-Year Constituents of Concern (see Table V)</b>		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	$\mu$ g/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	$\mu$ g/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	$\mu$ g/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	$\mu$ g/L	5 years

TABLE IV

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH  
Total Dissolved Solids  
Electrical Conductivity  
Chloride  
Sulfate  
Nitrate nitrogen

Constituents included in VOC:

USEPA Method 8260B

Acetone  
Acrylonitrile  
Benzene  
Bromochloromethane  
Bromodichloromethane  
Bromoform (Tribromomethane)  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Dibromochloromethane (Chlorodibromomethane)  
1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans-1,4-Dichloro-2-butene  
Dichlorodifluoromethane (CFC-12)  
1,1-Dichloroethane (Ethylidene chloride)  
1,2-Dichloroethane (Ethylene dichloride)  
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)  
cis-1,2-Dichloroethylene (cis-1,2-Dichloroethene)  
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)  
1,2-Dichloropropane (Propylene dichloride)  
cis-1,3-Dichloropropene  
trans-1,3-Dichloropropene  
Di-isopropylether (DIPE)  
Ethyl tert-butyl ether (ETBE)  
Ethylbenzene  
2-Hexanone (Methyl butyl ketone)  
Methyl bromide (Bromomethane)  
Methyl chloride (Chloromethane)  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)

TABLE IV

MONITORING PARAMETERS FOR DETECTION MONITORING

Continued

Methyl ethyl ketone (MEK: 2-Butanone)  
Methyl iodide (Iodomethane)  
Methyl tert-butyl ether (MTBE)  
4-Methyl-2-pentanone (Methyl isobutylketone)  
Styrene  
tert-amyl methyl ether (TAME)  
tert-butyl alcohol (TBA)  
1,1,2,2-Tetrachloroethane  
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)  
Toluene  
1,1,1-Trichloroethane (Methylchloroform)  
1,1,2-Trichloroethane  
Trichloroethylene (Trichloroethene)  
Trichlorofluoromethane (CFC- 11)  
1,2,3-Trichloropropane  
Vinyl acetate  
Vinyl chloride  
Xylenes

TABLE V

5-YEAR CONSTITUENTS OF CONCERN & APPROVED ANALYTICAL METHODS

Inorganics (dissolved):

USEPA Method

Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium	6010
Chromium VI	7199
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Selenium	7742
Thallium	7841
Cyanide	9010B
Sulfide	9030B

**Volatile Organic Compounds:**

USEPA Method 8260B

Acetone  
Acetonitrile (Methyl cyanide)  
Acrolein  
Acrylonitrile  
Allyl chloride (3-Chloropropene)  
Benzene  
Bromochloromethane (Chlorobromomethane)  
Bromodichloromethane (Dibromochloromethane)  
Bromoform (Tribromomethane)  
Carbon disulfide  
Carbon tetrachloride  
Chlorobenzene  
Chloroethane (Ethyl chloride)  
Chloroform (Trichloromethane)  
Chloroprene  
Dibromochloromethane (Chlorodibromomethane)

TABLE V

5-YEAR CONSTITUENTS OF CONCERN & APPROVED ANALYTICAL METHODS

Continued

1,2-Dibromo-3-chloropropane (DBCP)  
1,2-Dibromoethane (Ethylene dibromide; EDB)  
o-Dichlorobenzene (1,2-Dichlorobenzene)  
m-Dichlorobenzene (1,3-Dichlorobenzene)  
p-Dichlorobenzene (1,4-Dichlorobenzene)  
trans- 1,4-Dichloro-2-butene  
Dichlorodifluoromethane (CFC 12)  
1,1 -Dichloroethane (Ethylidene chloride)  
1,2-Dichloroethane (Ethylene dichloride)  
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)  
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)  
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)  
1,2-Dichloropropane (Propylene dichloride)  
1,3-Dichloropropane (Trimethylene dichloride)  
2,2-Dichloropropane (Isopropylidene chloride)  
1,1 -Dichloropropene  
cis- 1,3-Dichloropropene  
trans- 1,3-Dichloropropene  
Diisopropylether (DIPE)  
Ethyl tert-butyl ether (ETBE)  
Ethylbenzene  
Ethyl methacrylate  
Hexachlorobutadiene  
2-Hexanone (Methyl butyl ketone)  
Isobutyl alcohol  
Methacrylonitrile  
Methyl bromide (Bromomethane)  
Methyl chloride (Chloromethane)  
Methyl ethyl ketone (MEK; 2-Butanone)  
Methyl iodide (Iodomethane)  
Methyl tert-butyl ether (MTBE)  
Methyl methacrylate  
4-Methyl-2-pentanone (Methyl isobutyl ketone)  
Naphthalene  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Naphthalene  
Propionitrile (Ethyl cyanide)  
Styrene  
tert-amyl methyl ether (TAME)  
tert-butyl alcohol (TBA)  
1,1,1,2-Tetrachloroethane  
1,1,2,2-Tetrachloroethane  
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)

TABLE V

5-YEAR CONSTITUENTS OF CONCERN & APPROVED ANALYTICAL METHODS

Continued

Toluene  
1,2,4-Trichlorobenzene  
1,1,1 -Trichloroethane, Methylchloroform  
1,1,2-Trichloroethane  
Trichloroethylene (Trichloroethene; TCE)  
Trichlorofluoromethane (CFC- 11)  
1,2,3-Trichloropropane  
Vinyl acetate  
Vinyl chloride (Chloroethene)  
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270C - base, neutral, & acid extractables

Acenaphthene  
Acenaphthylene  
Acetophenone  
2-Acetylaminofluorene (2-AAF)  
Aldrin  
4-Aminobiphenyl  
Anthracene  
Benzo[a]anthracene (Benzanthracene)  
Benzo[b]fluoranthene  
Benzo[k]fluoranthene  
Benzo[g,h,i]perylene  
Benzo[a]pyrene  
Benzyl alcohol  
Bis(2-ethylhexyl) phthalate  
alpha-BHC  
beta-BHC  
delta-BHC  
gamma-BHC (Lindane)  
Bis(2-chloroethoxy)methane  
Bis(2-chloroethyl) ether (Dichloroethyl ether)  
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)  
4-Bromophenyl phenyl ether  
Butyl benzyl phthalate (Benzyl butyl phthalate)  
Chlordane  
p-Chloroaniline  
Chlorobenzilate  
p-Chloro-m-cresol (4-Chloro-3-methylphenol)  
2-Chloronaphthalene  
2-Chlorophenol

TABLE V

5-YEAR CONSTITUENTS OF CONCERN & APPROVED ANALYTICAL METHODS

Continued

4-Chlorophenyl phenyl ether  
Chrysene  
o-Cresol (2-methylphenol)  
m-Cresol (3-methylphenol)  
p-Cresol (4-methylphenol)  
4,4'-DDD  
4,4'-DDE  
4,4'-DDT  
Diallate  
Dibenz[a,h]anthracene  
Dibenzofuran  
Di-n-butyl phthalate  
3,3'-Dichlorobenzidine  
2,4-Dichlorophenol  
2,6-Dichlorophenol  
Dieldrin  
Diethyl phthalate  
p-(Dimethylamino)azobenzene  
7,12-Dimethylbenz[a]anthracene  
3,3'-Dimethylbenzidine  
2,4-Dimethylphenol (m-Xylenol)  
Dimethyl phthalate  
m-Dinitrobenzene  
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)  
2,4-Dinitrophenol  
2,4-Dinitrotoluene  
2,6-Dinitrotoluene  
Di-n-octyl phthalate  
Diphenylamine  
Endosulfan I  
Endosulfan II  
Endosulfan sulfate  
Endrin  
Endrin aldehyde  
Ethyl methanesulfonate  
Famphur  
Fluoranthene  
Fluorene  
Heptachlor  
Heptachlor epoxide  
Hexachlorobenzene  
Hexachlorocyclopentadiene  
Hexachloropropene

TABLE V

5-YEAR CONSTITUENTS OF CONCERN & APPROVED ANALYTICAL METHODS

Continued

Indeno(1,2,3-c,d)pyrene  
Isodrin  
Isophorone  
Isosafrole  
Kepone  
Methapyrilene  
Methoxychlor  
3-Methylcholanthrene  
Methyl methanesulfonate  
2-Methylnaphthalene  
1,4-Naphthoquinone  
1-Naphthylamine  
2-Naphthylamine  
o-Nitroaniline (2-Nitroaniline)  
m-Nitroaniline (3-Nitroaniline)  
p-Nitroaniline (4-Nitroaniline)  
Nitrobenzene  
o-Nitrophenol (2-Nitrophenol)  
p-Nitrophenol (4-Nitrophenol)  
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)  
N-Nitrosodiethylamine (Diethylnitrosamine)  
N-Nitrosodimethylamine (Dimethylnitrosamine)  
N-Nitrosodiphenylamine (Diphenylnitrosamine)  
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)  
N-Nitrosomethylethylamine (Methylethylnitrosamine)  
N-Nitrosopiperidine  
N-Nitrosopyrrolidine  
5-Nitro-o-toluidine  
Pentachlorobenzene  
Pentachloronitrobenzene (PCNB)  
Pentachlorophenol  
Phenacetin  
Phenanthrene  
Phenol  
p-Phenylenediamine  
Polychlorinated biphenyls (PCBs; Aroclors)  
Pronamide  
Pyrene  
Safrole

TABLE V

5-YEAR CONSTITUENTS OF CONCERN & APPROVED ANALYTICAL METHODS

Continued

1,2,4,5-Tetrachlorobenzene  
2,3,4,6-Tetrachlorophenol  
o-Toluidine  
Toxaphene  
2,4,5-Trichlorophenol  
2,4,6-Trichlorophenol  
0,0,0-Triethyl phosphorothioate  
sym-Trinitrobenzene

**Chlorophenoxy Herbicides:**

**USEPA Method 8151A**

2,4-D (2,4-Dichlorophenoxyacetic acid)  
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)  
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)  
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

**Organophosphorus Compounds:**

**USEPA Method 8141A**

0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)  
Dimethoate  
Disulfoton  
Methyl parathion (Parathion methyl)  
Parathion  
Phorate

## INFORMATION SHEET

ORDER NO. 01-05-174  
COUNTY OF MODOC  
ALTURAS MUNICIPAL SOLID WASTE CLASS III LANDFILL  
MODOC COUNTY

The County of Modoc owns and operates a Class III landfill about 1.5 miles southwest of Alturas. The facility consists of five existing unlined waste management units and two unlined surface impoundments covering approximately 28.5 acres of the 162 acre property. Modoc County also owns an additional 130 acre parcel along the west side of the facility that acts as a buffer to the landfill. Land surrounding the facility is used for agricultural production, federal game refuge, and open space.

The site is located in gently rolling hills at an elevation of about 4,400 feet above mean sea level (MSL). The site geology is complex and not well represented by boring logs. Available geologic mapping of the site shows the occurrence of three distinct geologic formations, including the Alturas Formation, Warm Springs Tuff, and intermediate alluvium. The closest Holocene fault is the Surprise Valley Fault, located approximately 20 miles east of the facility. The Maximum Moment Magnitude (Mmax) of this fault is calculated to be 7.0.

The landfill is located in the Upper Pit River Hydrologic Area of the Sacramento Basin. Surface drainage is north towards the Pit River, which is approximately 2,000 feet from the landfill. Beneficial uses of the Pit River include municipal, industrial, and agricultural supply; recreation; esthetic enjoyment; navigation; hydroelectric power generation; and preservation and enhancement of fish, wildlife, and other aquatic resources. The site is not within a 100-year flood plain. Average rainfall at the site is 12.38 inches and average annual evaporation is approximately 50 inches.

The landfill began operation in 1970 and was utilized as a burn dump until 1975. From 1975 until 1995, the site was operated as a cut-and-fill landfill for disposal of municipal solid waste (MSW). Septage sludge and toilet vault waste has been discharged into surface impoundments along the western property boundary since 1980. In 1995, a transfer station was built at the site and MSW has been shipped to the Lockwood Landfill, near Reno, Nevada since its construction. Since 1995, the landfill has been used for emergency backup disposal of wastes when transportation to the Lockwood Landfill was not possible due to weather or unforeseen emergencies, disposal of demolition and construction debris during dry weather, a temporary storage area for white goods, a temporary storage and burn area for wood waste, an emergency disposal area for natural disaster waste products, and for disposal of dead animals, septage and toilet vault wastes.

Seven groundwater monitoring wells have been installed at the site, five in 1987 and two more in 2000. The direction of groundwater flow is generally toward the north and northeast, but varies seasonally. The groundwater gradient is approximately 0.002 feet

per foot. First encountered groundwater beneath the site has been measured between 10 and 31 feet below native ground surface and groundwater elevations ranged from 4,346 feet MSL to 4,354 feet MSL, as documented during the third quarter 2000. Area reconnaissance has identified 13 municipal, domestic, industrial, or agricultural groundwater supply wells within one mile of the site. Beneficial uses of groundwater, as specified in the *Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin, Fourth Edition*, include domestic, municipal, industrial service, industrial process, and agricultural supply.

Elevated concentrations of total dissolved solids, chlorides, and electrical conductivity have been observed in the vicinity of monitoring well OB-2. Similar parameters have exhibited elevated concentrations in the vicinity of new monitoring well OB-6, which was installed on Modoc National Wildlife Refuge property north of the landfill to provide background water quality data. It is suspected that these wells are installed into a highly mineralized geologic formation that is contributing to the elevated inorganic constituent concentrations. Transient organic compound detections have been observed in on-site monitoring wells periodically, and these organic compound detections are being monitored closely. Further investigation and evaluation of groundwater quality data is necessary to determine whether waste disposal activities at the landfill are impacting groundwater quality. An Evaluation Monitoring Program is required to be implemented pursuant to these revised WDRs in response to the organic compound detections.

The facility was previously regulated by Waste Discharge Requirements (WDRs) Order No. 88-037, issued on 26 February 1988, which is no longer in conformance with Title 27 of the California Code of Regulations (Title 27), or Title 40 of the Code of Federal Regulations, Part 258 (Subtitle D). On 17 September 1993, the Board adopted Order No. 93-200 implementing State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*. These WDRs are being updated to incorporate the minimum performance goals and prescriptive standards contained in Title 27, Subtitle D and Resolution No. 93-62.

Modoc County has not requested any lateral expansion of the landfill, nor indicated that expansion may be proposed in the future. Any future expansion of the Alturas Landfill must be in accordance with the construction specifications of Title 27, Subtitle D, and State Board Resolution No. 93-62.