

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 5-00-236

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF TULARE
FOR
CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

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

1. The County of Tulare (hereafter Discharger) owns and maintains a municipal solid waste landfill about two miles north of Earlimart, in Section 22, T23S, R25E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. The facility consists of one existing unlined waste management unit (Unit) covering 16.6 acres, as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Number (APN) 318-130-01.
3. On 22 June 1973, the Board issued Order No. 73-237, in which the facility was classified as a Class II-2 waste disposal site for the discharge of municipal and inert solid waste in accordance with the regulations in effect when the order was issued. This Order reclassifies the Unit as a Class III landfill that accepted municipal solid waste in accordance with Title 27, California Code of Regulations, §20005, et seq. (Title 27).
4. On 17 September 1993, the Board adopted Order No. 93-200, amending Order No. 73-237 and implementing State Water Resources Control Board Resolution No. 93-62, Policy for Regulation of Discharges of Municipal Solid Waste.
5. Discharge ceased in March 1999 and the Discharger does not plan to expand the existing Unit or construct additional Units.

SITE DESCRIPTION

6. The estimated hydraulic conductivity of the native soils underlying the Unit is about 1×10^{-4} cm/sec.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-2-

7. The closest Holocene fault is approximately 32 miles to the northeast near Success Lake. Recorded magnitudes of seismic events along this fault range between 4.5 and 4.9 on the Richter scale. The maximum credible acceleration for the site is estimated to be 0.1g.
8. Land within 1,000 feet of the facility is used for agriculture and individual residences.
9. The facility receives an average of 8.2 inches of precipitation per year as estimated from an isohyetal map prepared by the State of California, Department of Water Resources. The mean pan evaporation is 78.0 inches per year as measured at the Delano Government Camp Station.
10. The 100-year, 24-hour precipitation event is estimated to be 3.33 inches, based on observations at the Exeter Station.
11. The southern portion of the waste management facility is within a 100-year flood zone based on the 29 September 1986, U.S. Department of Housing and Urban Development, National Flood Insurance Rate Map (FIRM) for Tulare County, California, Community-Panel Number 065066-1025B.
12. The 1987 Solid Waste Water Quality Assessment Test (SWAT) submitted by the Discharger, indicates that there are more than 100 water supply wells within one mile of the landfill's perimeter, but water well logs are available for only 23 of the wells. The SWAT identifies 14 domestic wells, six agricultural wells, and six wells with no well data within one mile of the site. No surface springs or other sources of groundwater supply have been observed. Four domestic wells exist within 1,000-feet of the landfill's perimeter. The well I.D. numbers for these domestic wells are 23/25E-16R1, 23/25E-21A1, 23S/25E-21A2, and 23S/25E-21A3.

WASTE AND SITE CLASSIFICATION

13. Municipal solid wastes, which are defined in §20164 of Title 27, were discharged until March 1999.
14. The site characteristics where the Unit is located (see Finding No. 6) do not meet the siting criteria for a new Class III landfill contained in §20260(a) and (b)(1) of Title 27. As such, the site is not suitable for operating new Units or lateral expansions of existing Units for the discharge and containment of Class III wastes as described in Finding No. 13, without the construction of additional waste containment features in accordance with §20260(b)(2) of Title 27 and State Water Resources Control Board Resolution No. 93-62.

SURFACE AND GROUND WATER CONDITIONS

15. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
16. Surface drainage is toward Deer Creek (intermittent) in the Tule Delta Hydrologic Area (558.20) of the Tulare Lake Hydrologic Basin.
17. The landfill is on the floor of the southern San Joaquin Valley with surface drainage toward Deer Creek. Deer Creek is categorized as a "Valley Floor Water" in the Basin Plan. The designated beneficial uses of Deer Creek, as specified in the Basin Plan, are agricultural supply, industrial service and process supply, water contact and non-contact water recreation, warm fresh water habitat, wildlife habitat, preservation of rare, threatened and endangered species, and groundwater recharge.
18. The first encountered groundwater is about 57 to 66 feet below the native ground surface. Groundwater elevations range from 210 feet MSL to 220 feet MSL. The groundwater is unconfined. The depth to groundwater fluctuates seasonally about 5 feet.
19. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 470 and 2,100 micromhos/cm, with total dissolved solids ranging between 290 and 1,100 mg/l.
20. The direction of groundwater flow is toward the northwest. The direction of groundwater flow varies seasonally and periodically flows toward the west. The average groundwater gradient is approximately 0.0077 feet per foot. The average groundwater velocity is 17.4 feet per year.
21. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.

GROUNDWATER MONITORING

22. The groundwater detection monitoring system consists of 9 groundwater monitoring wells installed around the perimeter of the facility (see Attachment B). The background monitoring wells consist of wells M-1A, M-1B, and M-5. The downgradient monitoring wells consist of wells M-3A, M-3B, M-6, and M-7. Groundwater monitoring wells M-2 and M-4 are co-gradient of the Unit. Groundwater monitoring wells M-2 and M-3A are currently dry. Groundwater monitoring wells M-1A, M-2, M-3A, and M-4 were constructed with 10-foot screen intervals and groundwater monitoring wells M-1B, M-3B, M-5, M-6

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-4-

and M-7 were constructed with 20-foot screen intervals. The groundwater monitoring well screens were installed across the groundwater table. The groundwater monitoring wells range between 60 feet and 93 feet in depth below ground surface.

23. The vadose zone detection monitoring system consists of 17 multilevel, landfill gas monitoring wells installed around the perimeter of the facility (see Attachment B). Each multilevel landfill gas monitoring well has been installed to a depth of about 30 feet below ground surface.
24. The Discharger's detection monitoring program for groundwater at this Unit does not satisfy the requirements contained in Title 27. The Discharger submitted a proposed Water Quality Protective Standards (WQPS) report in February 1995. Board staff's 22 June 1995 evaluation of the proposed WQPS determined that it was not complete since a statistical method for evaluating water quality monitoring data was not included. To complete the detection monitoring program and satisfy the requirements of Title 27, the Discharger needs to submit an adequate water quality protection standard that establishes the background concentration limits for the naturally occurring waste constituents in accordance with §20390 of Title 27 and includes a proposal of the statistical methods for evaluating water quality monitoring data. Section B.1. (Water Quality Protection Standard Report) of Monitoring and Reporting Program No. 93-200 (MRP No. 93-200), required the County to submit a WQPS by 1 January 1994. A July 2000 review of the file for the landfill found that a WQPS for the site had not been established in violation of Section B.1 of MRP No. 93-200. In a 25 July 2000 Notice of Violation, the County was required to submit a WQPS by 15 September 2000. The proposed WQPS report was submitted on 15 September 2000. The proposed WQPS will be evaluated to determine if it complies with the requirements of Title 27.
25. Volatile organic compounds (VOCs) are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill (see Finding Nos. 30 and 31). Since volatile organic compounds 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.
26. Sections 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 §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.
27. 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.

28. 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.
29. 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 waste constituents from a Unit. The presence of two waste constituents above their respective method detection limit (MDL), or one 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 waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two 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 waste constituent above its MDL as a trigger.

GROUNDWATER DEGRADATION

30. The 1987 Solid Waste Water Quality Assessment Test (SWAT) detected the non-naturally occurring volatile organic compounds (VOCs): benzene; toluene; methylene chloride; bis(2-ethylhexyl) phthalate; and di-n-butyl phthalate. Benzene was detected at a concentration exceeding its Primary Maximum Contaminant Levels (Primary MCL). However, since benzene was detected in upgradient monitoring well M-1, it may have a source other than the landfill. Toluene was detected in side-gradient monitoring well M-2, so it may have a source other than the landfill. The low levels of methylene chloride detected in downgradient monitoring well M-3 may be a result of laboratory contamination. The trace levels of bis(2-ethylhexyl) phthalate and di-n-butyl phthalate were detected in monitoring wells M-1, M-2, M-3, and M-4. Bis(2-ethylhexyl) phthalate and di-n-butyl phthalate are plasticizers and may have come from plastic containers and/or sampling devices used during the SWAT sampling investigation. The inorganic waste constituents nitrate, electrical conductivity (EC), and total dissolved solids were detected in downgradient monitoring wells at levels that appeared to have exceeded background concentrations. Electrical conductivity and total dissolved solids exceeded their respective Secondary Maximum Contaminant Levels (Secondary MCLs). However, the results of inorganic waste constituent analyses were inconclusive based on the variability of

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-6-

concentrations detected in downgradient monitoring wells and on the inadequate siting of some downgradient wells.

31. A groundwater sampling event in 1994 by Board Staff detected the volatile organic compounds tetrachloroethylene (PCE) above the PQL and 1,1,1-trichloroethane (1,1,1-TCA) at the PQL. Confirmation sampling for PCE and 1,1,1-TCA was not conducted. Subsequent groundwater monitoring events from 1995 through 1999 detected no VOCs. The nondetection of VOCs in groundwater from 1995 through 1996 may be due to the fact that the Discharger used the practical quantitation limit (PQL) and not the method detection limit (MDL) to report VOC concentrations in groundwater. This Order requires the Discharger to analyze groundwater samples using both the MDL and the PQL to report the VOC concentrations.
32. Groundwater detection monitoring from 1992 through 1999 detected the inorganic constituents EC, total dissolved solids, and manganese at concentrations that appear to exceed their respective background levels. However, in 1999, EC and total dissolved solids background concentrations began to rise. The Fourth Quarter, 1999 analytical results indicated that the background concentrations for EC and total dissolved solids are 2100 micromhos/cm and 1100 mg/l respectively, exceeding their downgradient concentrations and their respective Secondary MCLs. The elevated EC and total dissolved solids concentrations in the background groundwater indicates that a source other than the landfill may be responsible for elevated EC and total dissolved solids concentrations. Electrical conductivity, total dissolved solids, and manganese have been detected in downgradient wells at concentration exceeding their Secondary MCLs on several occasions.
33. Groundwater detection monitoring conducted in June 2000, detected BTEX, MTBE, and total petroleum hydrocarbons (TPH) gasoline, in a sample from background groundwater monitoring well M-1A. Background groundwater monitoring well M-1A was resampled in August 2000 and the analytical results confirmed the detection of BTEX, MTBE, and (TPH) gasoline. The source of the BTEX, MTBE, and (TPH) gasoline appears to be from an off-site area since BTEX, MTBE, and (TPH) gasoline were not detected in any of the downgradient groundwater monitoring wells. The Discharger stated in a 13 September 2000 telephone call, that an investigation to determine the source of these waste constituents is being conducted.

CONSTRUCTION AND ENGINEERED ALTERNATIVE

34. Closure and post-closure maintenance requirements for landfills are contained in §21090 of Title 27. The prescriptive standard for the final cover is contained in §21090(a) of Title 27.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-7-

35. 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 §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 §20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative 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 §20080(b)(2) of Title 27.
36. 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.
37. The Discharger submitted a design plan for the proposed closure of the Earlimart Landfill in a Final Closure and Post-Closure Maintenance Plan dated December 1996. The Final Closure and Post-Closure Maintenance Plan was determined to be adequate in a letter from the Board dated 2 April 1997. The plan proposed the construction of an engineered alternative in lieu of the prescriptive cover design specified in §21090(a) of Title 27. The engineered alternative, in ascending order, consists of: a two-foot thick foundation layer; a one-foot thick soil layer with a geosynthetic clay liner (GCL) placed midway within it; and a one-foot thick vegetative cover layer, which meets the Title 27 closure prescriptive standard.
38. The Discharger adequately demonstrated that construction of a Title 27 prescriptive standard cover would be unreasonable and unnecessarily burdensome when compared to the proposed engineered alternative design. There is no clay source on-site or nearby and the cost of importing clay from off-site would cost substantially more than the alternative design. The Discharger has adequately demonstrated that the proposed engineered alternative is consistent with the performance goals of the prescriptive standard and affords equivalent protection against water quality impairment.
39. Construction shall proceed only after all applicable construction quality assurance plans have been approved by 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

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-8-

Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301.

41. This order implements:
- a. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition*;
 - 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 RCRA Subtitle D, Part 258; and
 - 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 on request.

IT IS HEREBY ORDERED that Order No. 73-237 is rescinded, and Attachment 1 of Order No. 93-200 is amended to delete the Earlimart Landfill, which is on line No.73, and that the County of Tulare, its agents, successors, and assigns, in order to meet the provisions of

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-9-

Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of any additional waste at this facility is prohibited.
2. The discharge shall not cause 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.
3. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
4. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Unit 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.

B. DISCHARGE SPECIFICATIONS

1. Incorporated waste shall remain within the existing footprint of the Unit at all times.

C. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
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 which could impair the integrity of waste 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, 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, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
6. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
7. The Discharger shall maintain a *Storm Water Pollution Prevention Plan* and *Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.

D. CONSTRUCTION SPECIFICATIONS

1. Materials used to construct the final cover system shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the closure and post-closure maintenance period of the Unit.
2. The Discharger shall submit for Executive Officer review and approval **prior to** construction, design plans and specifications for new Units and expansions of existing Units, that include the following:
 - a. A Construction Quality Assurance Plan meeting the requirements of §20324 of Title 27; and
 - b. A geotechnical evaluation of the area soils, evaluating their use as the foundation layer; and
3. The cover system shall be constructed in accordance with one of the following cover designs:
 - a. The prescriptive standard design that consists of a lower soil foundation layer that is a minimum of two feet thick and has a minimum relative compaction of 90%. Immediately above the foundation layer, shall be a compacted soil barrier that is a minimum of one foot thick with a maximum hydraulic conductivity of 1×10^{-6} cm/sec and a minimum relative compaction of 90%. Above the barrier

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-11-

layer shall be a soil vegetative cover layer that is a minimum of one foot thick;
or

- b. an engineered alternative composite cover system that is comprised, in ascending order, of the following:
 - 1) A two-foot thick engineered foundation layer comprised of soils compacted to a minimum relative compaction of 90%;
 - 2) A one-foot thick soil layer with a geosynthetic clay liner (GCL) that exhibits appropriate strength characteristics to accommodate stresses associated with the specific cover design parameters, placed above the foundation layer; and
 - 3) A one-foot thick vegetative cover layer, that meets the Title 27 closure regulations.
4. The Discharger may propose changes to the cover system design prior to the construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed cover system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Board.
5. If a prescriptive standard soil barrier layer is used in the cover system, then the hydraulic conductivities for the soil barrier layer determined through laboratory methods shall be confirmed by a Sealed Double-Ring Infiltrometer (SDRI) field test, or an equivalent field test method approved by the Executive Officer, of a test pad constructed in a manner duplicating the clay liner construction of the waste management unit or expansion portion of the waste management unit. Test pad construction methods, quality assurance/quality control procedures, and testing shall be in accordance with the construction quality assurance plan approved by the Executive Officer and shall be sufficient to ensure that all parts of the cover meet the hydraulic conductivity and compaction requirements.
6. If the Discharger constructs a cover system that includes a GCL, the foundation layer 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.

7. Hydraulic conductivities of cover materials shall be determined by laboratory tests using water. Hydraulic conductivities determined through laboratory methods shall be confirmed by field testing in accordance with the Standard Provisions and Reporting Requirements, Construction Specifications VIII.J.
8. Construction shall proceed only after all applicable construction quality assurance plans have been approved by the Executive Officer.
9. Following the completion of construction of the waste management unit cover system, a construction report shall be submitted for Executive Officer review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist. 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. The cover construction report shall include as a minimum, but not be limited to, the following:
 - a. Test results on the chemical and geotechnical properties of materials used in the cover system, as specified in these waste discharge requirements.
 - b. Test results on the hydraulic conductivity of the cover system if the prescriptive standard clay layer is used.
 - c. Construction quality assurance and quality control procedures and results for all aspects of cover system construction.
10. 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.
11. Closure of the waste management unit shall be completed by **31 December 2003**.

E. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. 5-00-236.
2. 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 devices, and a minimum of **48** hours notification prior to the collection

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-13-

- of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.
3. **By 31 January 2001**, the WQPS for naturally occurring waste constituents, including the statistical analysis of the water quality monitoring data, approved by the Executive Officer, shall be implemented.
 4. The Discharger shall comply with the WQPS which is specified in Monitoring and Reporting Program No. 5-00-236 and the Standard Provisions and Reporting Requirements, dated April 2000.
 5. 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). The presence of non-naturally occurring organic compounds in samples above the water quality protection standard from detection monitoring wells is evidence of a release from the Unit.
 6. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No.5-00-236.
 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.5-00-236 and §20415(e) of Title 27.
 8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for 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. Specific methods of collection and analysis must be identified. Sample collection, 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), and (3) *Methods for Chemical Analysis of Water and Wastes* (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-14-

10. 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.
11. 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.
12. **"Trace" results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
13. **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.
14. 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.
15. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, and 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

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-15-

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.

16. **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.
17. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to §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 §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 method detection limit (MDL) and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical 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".
18. The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with §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.
19. The Discharger shall use the following nonstatistical method for the VOC_{water} and VOC_{spg} (Soil Pore Gas) Monitoring Parameters and for all Constituents of Concern which 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 which 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).

20. 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.21. and E.23 below, as appropriate) to determine whether a release of VOC_{water} 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_{spg}]:* the VOC_{spg} Monitoring Parameter is a composite parameter for soil pore gas addressing all "qualifying VOCs" detectable using either GC or GC/MS analysis or 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_{water} Monitoring Parameter. For the VOC_{spg} test, "qualifying VOCs" consist of all those VOCs which are detectable in less than 10% of background soil pore gas samples.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-17-

The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.21. and E.23 below, as appropriate) to determine whether a release of VOC_{spg} 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 Constituents of Concern:* For five-yearly testing of all Constituents of Concern (COCs), the “qualifying constituents” consist of COCs that show up in less than 10% of applicable background samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specifications E.21. 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.
21. **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 nonstatistical 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 nonstatistical 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.

22. **Response to Detection in Background of VOCs** (or any other constituent which is not naturally 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.

Then the Discharger shall:

- a) **immediately** notify the Board by phone;
 - b) follow up with written notification by certified mail **within seven days**;
 - c) obtain **two** new independent VOC samples from that background monitoring point; and
 - d) send such samples for laboratory analysis of all detectable VOCs **within thirty days**.
- b. If either or both the new samples validates the presence of VOC(s), using the above criteria, the Discharger shall:

- 1) **immediately** notify the Board 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 §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.
23. 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.

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

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-20-

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 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. 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 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 monitoring point and background monitoring point addressed by the report, a description of:
 - 1) the time of water level measurement;

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-21-

- 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, and conductivity 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 Sampling and Analysis Plan.
- b. A. map or aerial photograph showing the locations of observation stations, 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, 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.
 - 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

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-22-

- 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.
- 5. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. 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 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 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:
 - a. All detectable 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 constituent for the period of record for all monitoring points and background monitoring points, 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

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-23-

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, either in MS-DOS/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 [§20420(h)], in that this facilitates periodic review by the Board.
- 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.
- 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 until completion of closure, 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 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. 5-00-236, 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 §20005 et*

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-24-

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;
 - 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 thus 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.

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-25-

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 violations 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. and state that the new owner or 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 conduct an annual review of the financial assurance for initiating and completing corrective action, and submit a report for Executive Officer review and approval. The assurances of financial responsibility shall provide that funds for corrective action shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.
11. The Discharger shall conduct an annual review of the financial assurance for closure and post-closure maintenance, and submit a report for Executive Officer review and approval. The assurances of financial responsibility shall provide that funds for closure and post-closure maintenance shall be available to the Regional Board upon the issuance of any order under California Water Code, Division 7, Chapter 5. The Discharger shall adjust the cost annually to account for inflation and any changes in facility design, construction, or operation.
12. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-26-

<u>Task</u>	<u>Compliance Date</u>
A. Water Quality Protection Standard	
Implement the water quality protection standard for naturally occurring waste constituents approved by the Executive Officer. (see Detection Monitoring Specification E.3)	31 January 2001
B. Construction Plans	
Submit construction and design plans for Executive Officer review and approval. (see Construction Specification D.2)	Prior to construction
C. Completion of Closure	
(see Construction Specification D.11)	31 December 2003
D. Construction Report	
Submit a construction report upon completion demonstrating construction was in accordance with approved construction plans for Executive Officer review and approval. (see Construction Specification D.9)	Within 90 days of completion of closure
E. Financial Assurance Review	
1. Annual Review of Financial Assurance for initiating and completing corrective action (see Provision G.10.)	1 October each year
2. Annual Review of Financial Assurance for closure and post-closure maintenance (see Provision G.11.)	1 October each year

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

-27-

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 27 October 2000.

for Thomas R Porter
GARY M. CARLTON, Executive Officer

VSM:vsm/rac

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 5-00-236
FOR
COUNTY OF TULARE
FOR
CLOSURE AND POST-CLOSURE MAINTENANCE
EARLMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

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. 5-00-236.

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. 5-00-236, F.6.)	Annually
3. Unsaturated Zone Monitoring (Section D.2)	See Table II
4. Facility Monitoring (Section D.3)	As necessary
5. 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. 5-00-236 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 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.

MONITORING AND REPORTING PROGRAM NO. 5-00-236
 COUNTY OF TULARE
 FOR CLOSURE AND POST-CLOSURE MAINTENANCE
 EARLIMART MUNICIPAL SOLID WASTE LANDFILL
 TULARE COUNTY

Each monitoring report shall include a compliance evaluation summary as specified in F. Reporting Requirements, of Order No. 5-00-236.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, 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	Quarterly	Last Day of Month	by Semiannual Schedule
Quarterly	Quarterly	31 March	31 July
		30 June	31 July
		30 September	31 January
		31 December	31 January
Semiannually	Semiannually	30 June	31 July
		31 December	31 January
Annually	Annually	31 December	31 January

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. 5-00-236, 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 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

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.

MONITORING AND REPORTING PROGRAM NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

3

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all 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 ground water** 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 those listed in Tables I and II for the specified monitored medium, and Table IV. The Discharger shall monitor all constituents of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

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 III for the specified monitored medium.

3. Concentration Limits

For a naturally occurring constituent of concern, 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.

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 and the unsaturated zone, in accordance with Detection Monitoring Specification E.1 of Waste Discharge Requirements, Order No. 5-00-236. 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.

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

and unsaturated zone monitoring devices shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I and II.

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

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 in accordance with a Detection Monitoring Program approved by the Executive Officer. 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.

A groundwater contour map and tabular data for 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. The groundwater contour map and the tabular data 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 monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters 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, a Piper graph, or a Schueller plot. Samples for the

constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table IV every five years.

2. **Unsaturated Zone Monitoring**

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 in accordance with a detection monitoring plan approved by the Executive Officer. 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. All detectable monitoring parameters shall be graphed so as to show historical trends at each monitoring point. Samples for the constituents of concern specified in Table II shall be collected and analyzed in accordance with the methods listed in Table IV every five years.

3. **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. 5-00-236. 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

MONITORING AND REPORTING PROGRAM NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

7

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: Thomas R Punter
for GARY M. CARLTON, Executive Officer

27 October 2000

(Date)

VSM:vsm/rac

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
Monitoring Parameters		
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 8260, see Table III)	µg/L	Semiannual
Constituents of Concern (see Table IV)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8150)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141)	µg/L	5 years

TABLE II
UNSATURATED ZONE DETECTION MONITORING PROGRAM

SOIL-PORE GAS

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

TABLE III
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 8260

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
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
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Methyl bromide (Bromomethane)

TABLE III

MONITORING PARAMETERS FOR DETECTION MONITORING

Continued

Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
4-Methyl-2-pentanone (Methyl isobutylketone)
Styrene
1,1,1,2-Tetrachloroethane
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 IV
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Aluminum	6010
Antimony	6010
Barium	6010
Beryllium	6010
Cadmium	6010
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470
Nickel	7520
Selenium	7742
Thallium	7841
Cyanide	9010
Sulfide	9030

Volatile Organic Compounds:

USEPA Method 8260

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 IV

CONSTITUENTS OF CONCERN & APPROVED USEPA 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
Ethylbenzene
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 methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane

TABLE IV

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270 - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benanthracene)
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
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

TABLE IV

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
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 methacrylate
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin
Isophorone

TABLE IV

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
Naphthalene
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
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

TABLE IV

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Chlorophenoxy Herbicides:

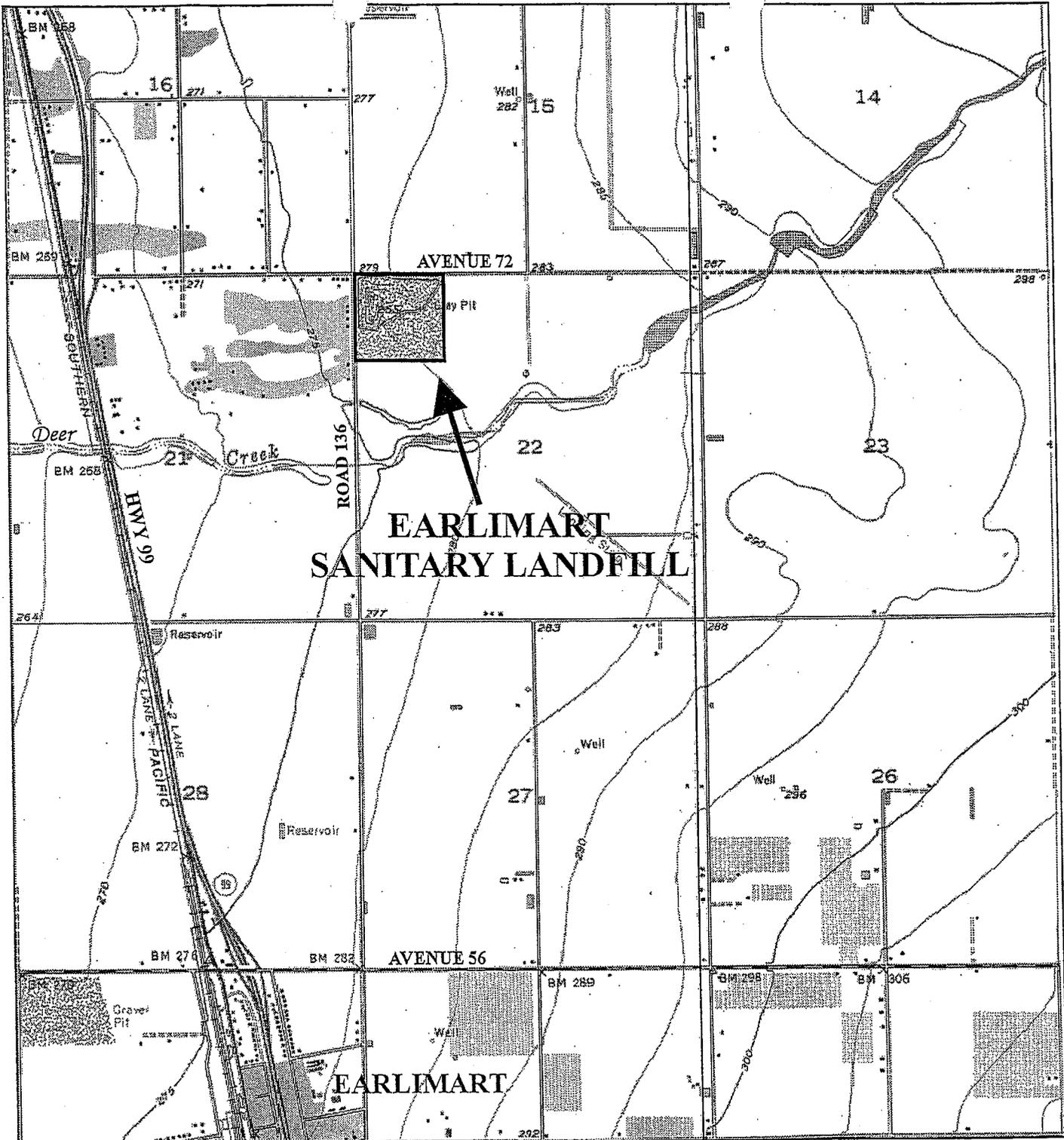
USEPA Method 8150

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 8141

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



**EARLIMART
SANITARY LANDFILL**

LEGEND



LOCATION OF FACILITY



SECTION 22, T23S, R25E, MDB & M

(09/18/00)

(VSM)

ATTACHMENT A

ORDER Number 5-00-236

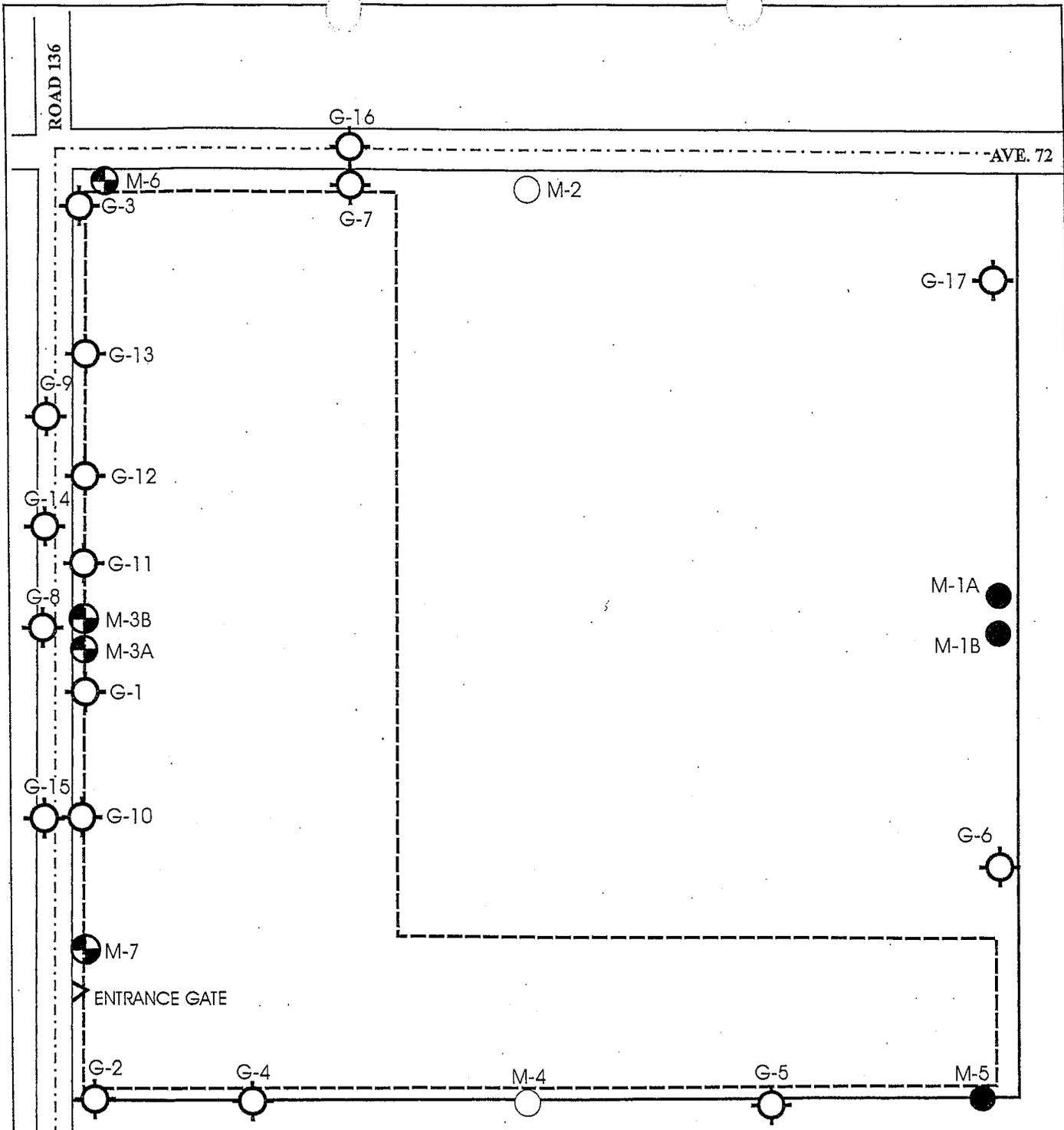
WASTE DISCHARGE REQUIREMENTS
FOR COUNTY OF TULARE

FOR

CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL

TULARE COUNTY

LOCATION MAP



LEGEND

- PROPERTY BOUNDARY
- - - WASTE MANAGEMENT UNIT BOUNDARY
- ⊕ GROUNDWATER MONITORING WELL (DOWNGARDIENT)
- GROUNDWATER MONITORING WELL (BACKGROUND)
- CO-GRADIENT MONITORING WELL
- ⊙ GAS MONITORING WELL



(09/18/00)

(VSM)

ATTACHMENT B

ORDER Number 5-00-236.

WASTE DISCHARGE REQUIREMENTS
FOR COUNTY OF TULARE

FOR
CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

SITE MAP

INFORMATION SHEET

ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

The County of Tulare owns and maintains the Earlimart Municipal Solid Waste Landfill (landfill). The landfill is about two miles north of Earlimart in the southern San Joaquin Valley.

The existing waste management facility contains one existing unlined waste management unit (Unit) covering 16.6 acres. The Unit was previously classified as a Class II-2 landfill that accepted municipal and inert solid wastes. The Unit is currently classified as a Class III landfill that accepted municipal solid waste in accordance with Title 27. The landfill ceased discharge in March 1999.

The climate is semi-arid, with hot, dry summers and cool winters. The average annual precipitation is estimated at 8.2 inches and the mean pan evaporation is measured to be 78.0 inches per year. The southern portion of the landfill is within a 100-year floodplain of Deer Creek according to U.S. Department of Housing and Urban Development, National Flood Insurance Map (FIRM), for Tulare County, California.

The landfill is in a topographically flat region of the Tulare Lake Hydrologic Basin. The landfill is on the Deer Creek fluvial deposits between the fan deposits. The land surface slopes approximately 10.5 feet per mile to the west. Interbedded clays, clayey-silts, silts, sandy-silts, clayey-sands, silty-sands, sands, and some gravels underlie the landfill.

The 1987 Solid Waste Water Quality Assessment Test (SWAT) submitted by the Discharger, indicates that there are more than 100 water supply wells within one mile of the landfill's perimeter, but water well logs are available for only 23 of the wells. The SWAT identifies 14 domestic wells, six agricultural wells, and six wells with no well data within one mile of the site. Four domestic wells exist within 1,000 feet of the landfill's perimeter. No surface springs or other sources of groundwater supply have been observed.

The first encountered groundwater is about 57 to 66 feet below the native ground surface. Groundwater elevations range from 210 feet MSL to 220 feet MSL. The groundwater is unconfined. The depth to groundwater fluctuates seasonally about 5 feet. Monitoring data indicates background groundwater quality has an electrical conductivity (EC) ranging between 470 and 2,100 micromhos/cm, with Total Dissolved Solids (TDS) ranging between 290 and 1,100 mg/l.

Groundwater monitoring of the unconfined groundwater zone has detected volatile organic compounds along the point of compliance of the landfill in 1987 and 1994.

INFORMATION SHEET ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

- 2 -

Volatile organic compounds were not detected in the landfill's monitoring wells from 1995 through 1999. The nondetection of VOCs in groundwater from 1995 through 1999 may be due to the fact that the Discharger used the practical quantitation limit (PQL) and not the method detection limit (MDL) to report VOC concentrations in groundwater.

Groundwater detection monitoring conducted in June 2000 and August 2000, detected BTEX, MTBE, and total petroleum hydrocarbons (TPH) gasoline, in a sample from background groundwater monitoring well M-1A. The source of the BTEX, MTBE, and (TPH) gasoline appears to be from an off-site area since BTEX, MTBE, and (TPH) gasoline were not detected in any of the downgradient groundwater monitoring wells.

The inorganic constituents nitrate, manganese, EC, and TDS have been detected at concentrations that appeared to exceed their respective background levels. Manganese, EC, and TDS have been detected at concentrations exceeding their respective Secondary MCLs. EC and TDS have also been detected in upgradient monitoring wells at concentrations exceeding EC and TDS concentrations in downgradient monitoring wells indicating that a source other than the landfill may be responsible for the elevated EC and TDS concentrations in downgradient monitoring wells. However, the results of inorganic waste constituent analyses were inconclusive based on the variability of concentrations detected in downgradient monitoring wells and on the inadequate siting of some downgradient wells.

The Discharger's detection monitoring program at this Unit does not satisfy the requirements contained in Title 27, because an adequate water quality protection standard has not been established. The establishment of a water quality protection standard and a statistical method to evaluate naturally occurring waste constituents is required by this Order.

Volatile organic compounds are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill. Since volatile organic compounds 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. Title 27 does 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. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data. The Board may specify a non-statistical data analysis method pursuant to Section 20080(a)(1) of Title 27. 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.

INFORMATION SHEET ORDER NO. 5-00-236
COUNTY OF TULARE
FOR CLOSURE AND POST-CLOSURE MAINTENANCE
EARLIMART MUNICIPAL SOLID WASTE LANDFILL
TULARE COUNTY

- 3 -

The specified non-statistical method for evaluation of monitoring data in this Order provides two criteria (or triggers) for making the determination that there has been a release of waste constituents from a Unit. The presence of two waste constituents above their respective method detection limit (MDL), or one 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 waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release in accordance with Title 27, the detection of two 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 detecting one waste constituent above its MDL as a trigger.

On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste [MSW] regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline", which was on 9 October 1993. With the issuance of Resolution No. 93-62, the State Water Resources Control Board established a statewide policy for the regulation of discharges of municipal solid wastes consistent with Subtitle D. Following the issuance of Resolution No. 93-62, the USEPA deemed the State of California to be an approved state, meaning that compliance with the applicable state regulations constitutes compliance with the corresponding portions of the federal Subtitle D regulations. These requirements are consistent with Resolution No. 93-62 and Subtitle D, and implement the appropriate state regulations in lieu of Subtitle D. The Discharger also needs to comply with all applicable provisions of Subtitle D that are not implemented through compliance with this Order or Title 27.

The action to revise waste discharge requirements for this landfill is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301. Revision of the waste discharge requirements updates the requirements to conform with the California Water Code and Title 27, California Code of Regulations, §20005 et seq.

VSM:vsm/rac:10/27/2000