

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0115

WASTE DISCHARGE REQUIREMENTS  
FOR  
COUNTY OF TULARE  
FOR  
OPERATION  
TEAPOT DOME MUNICIPAL SOLID WASTE LANDFILL  
TULARE COUNTY

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

1. The County of Tulare (hereafter Discharger) owns and operates a municipal solid waste landfill about 5 miles southwest of Porterville, in Section 18, T22S, R27E, 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 71 acres, as shown in Attachment B, which is incorporated herein and made part of this Order. The facility is comprised of Assessor's Parcel Numbers (APN) 302-130-001 and 302-130-002.
3. On 16 June 2000, the Regional Board issued Order No. 5-00-162 in which the facility was classified as a Class III waste disposal site for the discharge of municipal solid waste in accordance with Title 27, California Code of Regulations (CCR), Section 20005, et seq. The site and waste classification remain the same for this Order. Revised waste discharge requirements are needed to include requirements for an Evaluation Monitoring Program.

**SITE DESCRIPTION**

4. The Teapot Dome Landfill is located upon the westward dipping, eastern limb of the asymmetrical geosynclinal trough of the San Joaquin Valley. The site overlies a basement complex of pre-Tertiary age metasediments, plutonics, and ultramafics. Sequentially overlying the basement complex are approximately 1,000 to 3,500 feet of consolidated and unconsolidated Tertiary marine deposits, continental deposits, and unconsolidated Quaternary alluvium. Of significance to the site are the Quaternary age continental deposits and the younger and older alluviums. The continental deposits are late Pliocene to early Pleistocene in age and consist of poorly permeable, oxidized sandy-silt and clay. Pleistocene to Recent older alluvium overlies the continental deposits and consists of interbedded gravel, sand, silty-sand, and clay. The younger alluvium consists of moderately to highly permeable, interbedded fluvial deposits of gravelly-sand, silty-sand, silt, and clay.

5. The measured hydraulic conductivity of the native soils underlying the Unit ranges between  $1.0 \times 10^{-4}$  and  $1.7 \times 10^{-3}$  cm/sec.
6. The closest Holocene faults are approximately 20 miles to the east. Recorded magnitudes of seismic events along these faults range between 4.5 and 4.9 on the Richter scale. The Coalinga Nose Fault, used to calculate the peak ground acceleration for the design of the facility's containment structures, is approximately 74 miles northwest of the facility. The seismic event along the Coalinga Nose Fault has a recorded magnitude of 6.7 and is considered to be the maximum probable earthquake associated with the facility. The ground maximum acceleration associated with the maximum probable earthquake is estimated to be 0.03 g.
7. Land within 1,000 feet of the facility is used for agriculture and individual residences.
8. The site receives an average of 11.02 inches of precipitation per year as measured at the Porterville Station. The mean pan evaporation is 80.8 inches per year as measured at the Tulare Station.
9. The 100-year, 24-hour precipitation event is estimated to range between 3.0 and 3.5 inches, based on the U.S. Department of Commerce and U.S. Department of Agriculture, 100-year, 24-hour Precipitation Map, dated December 1972.
10. The Unit is not within a 100-year flood plain based on the National Flood Insurance Program, Flood Insurance Rate Map, Community Number 065066, Panel No. 1050 B, dated 29 September 1986.
11. There are eight domestic wells, 28 agricultural groundwater wells, and nine combination agricultural/domestic supply wells within one-mile of the Unit. No surface springs or other sources of groundwater supply have been observed. Three domestic wells are within 1,000 feet of the landfill and their I.D. numbers are: 22S/R27E-13A1; 22S/R27E-13H1; and 22S/R27E-18D1.

#### **WASTE AND SITE CLASSIFICATION**

12. The Discharger discharges municipal solid wastes, which are defined in Title 27 CCR Section 20164.
13. The site characteristics where the Unit is located (see Finding No. 5) do not meet the siting criteria for a new Class III landfill contained in Title 27 CCR Sections 20260(a) and (b)(1). 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. 12,

without the construction of additional waste containment features in accordance with Title 27 CCR Section 20260(b)(2) and State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*.

### **SURFACE AND GROUND WATER CONDITIONS**

14. 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.
15. Surface drainage is toward the Tule River in the Tule Delta Hydrologic Area (558.20) of the Tulare Lake Hydrologic Basin.
16. The landfill is on the floor of the southern San Joaquin Valley. The designated beneficial uses of the Tule River, as specified in the Basin Plan, are: municipal, agricultural, industrial service, and industrial process supply; water contact and non-contact water recreation; warm fresh water habitat; preservation of rare, threatened, and endangered species; and groundwater recharge.
17. The first encountered groundwater is about 53 to 96 feet below the native ground surface depending on location. Groundwater elevations range from 359 feet MSL to 318 feet MSL. The groundwater is unconfined. Current groundwater elevation data indicates that the depth to groundwater fluctuates seasonally as much as ten feet. Historic groundwater elevation data indicates that the depth to groundwater has been as high as 30 feet below the native ground surface.
18. Monitoring data indicates that background groundwater quality has a specific electrical conductivity (EC) ranging between 720 and 970 micromhos/cm, with total dissolved solids (TDS) ranging between 460 and 600 mg/l.
19. The average direction of regional groundwater flow is toward the southwest. The direction of local groundwater flow varies seasonally and periodically flows to the west and northwest (between S82°W and N73°W). The average groundwater gradient ranges between approximately 0.012 and 0.022 feet per foot. The average groundwater velocity is 1.1 feet per year.
20. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal, agricultural, and industrial supply.
21. The Friant-Kern Canal is the nearest surface water body to the landfill and passes immediately along the eastern and southeastern margins of the landfill. The Friant-Kern

Canal is concrete lined. The base of the Friant-Kern Canal is 20 feet above the landfill's base. Average seepage from the Friant-Kern Canal is 154 acre-feet per linear mile of lined canal per year. Landfill operations should not impact the Friant-Kern Canal.

22. The U.S. Bureau of Reclamation has constructed a siphon beneath the Friant-Kern Canal to accommodate surface water flow from the Old Deer Creek (see Attachment A). Water that accumulates at the siphon is channeled via an unlined ditch to the facility's storm water retention/percolation basin.
23. The location of the landfill within the Old Deer Creek drainage system creates the potential for laterally moving water in the unsaturated zone (interflow groundwater) to flow beneath the Friant-Kern Canal and into the Unit.
24. A 1986 investigation indicated that a perched groundwater zone existed at an elevation of 358 feet USGS Datum (37 feet below ground surface) during the installation of monitoring well M-2 adjacent to the facility equipment yard. Adequate information is not available to indicate whether this perched groundwater zone currently exists since monitoring well M-2 boring and construction logs indicate that the well was sealed from 35 to 38 feet below ground surface and the well screen installed from 41 to 51 feet below ground surface. Although information is not available to indicate whether this perched groundwater zone currently exists, it may recur with increased precipitation. A possible perched groundwater zone has also been detected at an elevation of approximately 330 feet USGS Datum (78 feet below ground surface) in monitoring well M-1 in 1991.

### **GROUNDWATER MONITORING**

25. A total of ten groundwater monitoring wells have been installed around the perimeter of the Unit (see Attachment B). The current groundwater detection monitoring system consists of downgradient wells M-2, M-3, M-4A, M-4B, M-6, M-7, and M-8. The background groundwater monitoring system consists of wells M-1 and M-5. Monitoring well M-2 is currently dry. Monitoring well M-9 is used for the collection of groundwater elevation data only. Groundwater samples are currently being collected from monitoring wells M-1, M-3, M-4A, M-4B, M-5, M-6, M-7, and M-8.
26. The Discharger's detection monitoring program for groundwater at this Unit satisfies the requirements contained in Title 27 CCR.
27. Volatile organic compounds (VOCs) are typical waste constituents detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill (see Finding No. 32). 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 CCR for the determination of a release of wastes from a Unit.

28. Title 27 CCR Sections 20415(e)(8) and (9) 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 Title 27 CCR Section 20415(b)(1)(B)2.-4. However, Title 27 CCR does not specify a specific method for non-statistical evaluation of monitoring data.
29. The Regional Board may specify a non-statistical data analysis method pursuant to Title 27 CCR Section 20080(a)(1). California Water Code Section 13360(a)(1) allows the Regional 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.
30. 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.
31. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one 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 non-naturally occurring waste constituent above its MDL as a trigger.

### **GROUNDWATER DEGRADATION**

32. Volatile organic compounds (VOCs) detected in groundwater monitoring wells between 1986 and the present include: vinyl chloride; methylene chloride; tetrachloroethylene (PCE); 1,2-dichloroethylene (1,2-DCE); trichloroethylene (TCE); 1,2-dichloroethane 1,2-DCA; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); 1,1-DCA; chloroethane; 1,1,1-trichloroethane (1,1,1-TCA); 1,4-dichlorobenzene; 1,3-

dichlorobenzene; bis(2-ethylhexyl) phthalate; di-n-butyl phthalate; chloroform; chlorobenzene; methyl chloride; xylenes; benzene; toluene; cis-1, 2-DCE; 1,1-DCE; DBCP; methyl tert-butyl ether (MTBE); acetone; bromodichloromethane; methyl bromide; chloroprene; trans-1,2-DCE; 1,2-dichloropropane; vinyl acetate; and ethylbenzene. The volatile organic compounds: chlorodifluoromethane (CFC-22); dichlorofluoromethane (CFC-21); diethylether; 1,1-difluoroethane; and 1-fluoro-1,1-dichloro-ethane have also been tentatively identified. The volatile organic compounds: PCE; TCE; 1,2-DCA; benzene; 1,1-DCA; cis-1, 2-DCE; 1,1-DCE; vinyl chloride; DBCP; and 1, 4-dichlorobenzene have been detected at concentrations that exceeded their respective Primary Maximum Contaminant Levels (Primary MCLs). The volatile organic compound DBCP has been detected in upgradient monitoring well M-5, indicating a possible off-site source for the DBCP.

33. Statistical analyses of the monitoring results for naturally occurring waste constituents (Second Semi-Annual Monitoring Report, 2001) indicate that barium; bicarbonate; calcium; cobalt; EC; magnesium; manganese; potassium; total dissolved solids (TDS); and total organic carbon (TOC) statistically exceeded their respective background concentration limits in one or more detection monitoring wells. Electrical conductivity, TDS, and manganese were detected at levels exceeding their respective Secondary MCLs. Also, TDS concentrations were detected above the Secondary MCLs and nitrate concentrations were detected above the Primary MCLs, in background monitoring wells. Statistical analyses of the latest monitoring results for naturally occurring waste constituents (First Semi-Annual Monitoring Report, 2002) indicate that barium; bicarbonate; calcium; chloride; cobalt; EC; and manganese statistically exceeded their respective background concentration limits in one or more detection monitoring wells. Electrical conductivity exceeded its Secondary MCLs. Statistical analyses of the latest monitoring results for naturally occurring waste constituents also indicate that nitrate concentrations exceeded the Primary MCL and that TDS and EC exceeded their respective Secondary MCLs in the background monitoring wells.
34. The City of Porterville discharges sewage sludge and effluent from the City's waste water treatment plant to the property immediately east and hydraulically upgradient of the landfill that appears to be a source for the elevated nitrate levels detected in the landfill's background and downgradient monitoring wells. In a report submitted by the Discharger on 31 May 2002, the Discharger proposed the construction of an upgradient monitoring well cluster (MW-13A, MW-13B, and MW-13C) and the sampling of three City of Porterville monitoring wells at the City of Porterville's wastewater treatment disposal field (see Attachment A). The Discharger indicates that groundwater data from the additional upgradient monitoring wells and from the City of Porterville's monitoring wells will be useful in determining whether waste constituents from the wastewater treatment disposal field are migrating in groundwater to areas beneath the landfill.

35. The Discharger does not intend to expand the Unit and no new Units have been proposed for construction.

### EVALUATION MONITORING PROGRAM

36. "Pollution" means an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects: (1) such waters for beneficial uses, or (2) facilities which serve such beneficial uses [California Water Code Section 13050(1)]. Water quality objectives are levels of constituents that are established for the reasonable protection of beneficial uses of waters. Exceedence of water quality objectives, including Maximum Contaminant Levels (MCLs) as established by the Department of Health Services, constitutes pollution.

37. California Water Code Section 13304(a) states in part:

"Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action ...."

38. California Water Code Section 13267(b)(1) states:

"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

The reports required pursuant to California Water Code Section 13267 are necessary to enable the regional board to ascertain whether the Discharger is in compliance with this order.

39. Detection monitoring of the first encountered groundwater zone has detected numerous VOCs along the Point of Compliance. The VOCs detected in groundwater at the Point of

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Compliance include: vinyl chloride; methylene chloride; tetrachloroethylene (PCE); 1,2-dichloroethylene (1,2-DCE); trichloroethylene (TCE); 1,2-dichloroethane 1,2-DCA; trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); 1,1-DCA; chloroethane; 1,1,1-trichloroethane (1,1,1-TCA); 1,4-dichlorobenzene; 1,3-dichlorobenzene; bis(2-ethylhexyl) phthalate; di-n-butyl phthalate; chloroform; chlorobenzene; methyl chloride; xylenes; benzene; toluene; cis-1, 2-DCE; 1,1-DCE; DBCP; methyl tert-butyl ether (MTBE); acetone; bromodichloromethane; methyl bromide; chloroprene; trans-1,2-DCE; 1,2-dichloropropane; vinyl acetate; and ethylbenzene. Tentatively identified organic compounds include: chlorodifluoromethane (CFC-22); dichlorofluoromethane (CFC-21); diethylether; 1,1-difluoroethane; and 1-fluoro-1,1-dichloro-ethane. The volatile organic compounds: PCE; TCE; 1,2-DCA; benzene; 1,1-DCA; cis-1, 2-DCE; 1,1-DCE; vinyl chloride; DBCP; and 1, 4-dichlorobenzene have been detected at concentrations that exceeded their respective Primary MCLs.

40. Two water supply wells located hydraulically downgradient and within one-half mile of the Unit, the Berra and Zaninovich wells, have been sampled previously. The Berra well (12667), located 200 feet west of the landfill boundary, was sampled by the Tulare County Environmental Health Department in May 1989 and the results detected PCE and 1,1-DCA. A follow-up confirmation sample of the Berra well in June 1989 detected no VOCs. The Zaninovich well (12325), located 200 feet southwest of the southwest corner of the landfill, was sampled by the Tulare County Environmental Health Department in May 1989 and the results detected PCE. A follow-up confirmation sample of the Zaninovich well in June 1989 detected no VOCs. In November 2001, the Tulare County Department of Health Services sampled the Zaninovich well and detected PCE at 0.62 µg/l and chloroform at a concentration between the MDL and PQL (0.38 µg/l). Based on the latest analytical results from the Zaninovich well, it appears that the lateral extent of VOCs in groundwater is at least 200 feet southwest of the landfill.
41. The groundwater degradation at the point of compliance was caused by a release (discharge of waste) from the Unit. The source of groundwater degradation detected in the Zaninovich well appears to be the Unit.
42. The current plume of degraded groundwater creates or threatens to create a condition of pollution or nuisance.
43. California Water Code Section 13304 requires dischargers to cleanup waste and abate the effects of waste. Cleanup and abatement measures include corrective action measures as required under Title 27 CCR.
44. The nature and lateral and vertical extent of groundwater degradation has not been determined in the unconfined groundwater zone.



45. The Discharger submitted a work plan for an interim Evaluation Monitoring Program (EMP) for the site on 31 May 2002. Regional Board staff reviewed the EMP work plan and in a 10 July 2002 letter, the Discharger was requested to modify the EMP work plan to include some additional work. The Discharger proposed in the EMP work plan to initiate the interim EMP in July 2002 and to submit a report with the results of the interim EMP in January 2003. The Discharger proposed in a 22 July 2002 report to submit the Final EMP report containing the results of the completed EMP on or before 19 December 2006. In a 19 November 2002 letter to the Discharger, Regional Board staff stated that the submission of the Final EMP report on or before 19 December 2006 was excessive and inappropriate. Regional Board staff informed the Discharger in the 19 November 2002 letter, that revised waste discharge requirements will request the Regional Board to approve an alternative date of 1 February 2005 for the submission of the Final Evaluation Monitoring Program report.

#### CEQA AND OTHER CONSIDERATIONS

46. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA regulations, in accordance with Title 14, CCR, §15301.
47. 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. The USEPA has 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 implement the appropriate state regulations in lieu of Subtitle D. The Discharger needs to comply with all applicable provisions of Subtitle D that are not implemented through compliance with this Order or Title 27 CCR.
48. This order implements:
- a. *Water Quality Control Plan for the Tulare Lake Basin, Second Edition;*
  - b. The prescriptive standards and performance goals of Title 27 CCR, Division 2, Subdivision 1, Chapters 1 through 7, 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.
49. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of having discharged, or who proposed to discharge waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports..." The monitoring and reporting program required by this Order and the attached "Monitoring and Reporting Program No. R5-2003-0115" are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

### **PROCEDURAL REQUIREMENTS**

- 50. 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.
- 51. The Regional 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.
- 52. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
- 53. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Title 23 CCR Sections 2050 through 2068. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at [http://www.swrcb.ca.gov/water\\_laws/index.html](http://www.swrcb.ca.gov/water_laws/index.html) and will be provided on request.

IT IS HEREBY ORDERED, pursuant to California Water Code Sections 13263 and 13267, that Order No. 5-00-162 is rescinded, and that the County of Tulare, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

**A. PROHIBITIONS**

1. The discharge of 'hazardous waste' or 'designated waste' is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23 CCR Section 2510 et seq., and 'designated waste' is as defined in Title 27.
2. The discharge of wastes outside of the existing Unit or portions of the existing Unit specifically designed for their containment is prohibited.
3. 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.
4. The discharge of solid waste, liquid waste, leachate, or waste constituents shall neither cause nor contribute to any degradation, contamination, pollution, or nuisance to surface waters, ponded water, or surface water drainage courses, including, but not limited to:
  - a. floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. increases in bottom deposits or aquatic growth;
  - c. an adverse change in temperature, turbidity, or apparent color beyond natural background levels;
  - d. the creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin; and
  - e. the introduction or increase in concentration of toxic or other contaminants/pollutants resulting in unreasonable impairment of beneficial uses of waters of the State.

5. 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.
6. Internal site drainage from surface or subsurface sources shall not contact or percolate through wastes. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the Unit.

**B. DISCHARGE SPECIFICATIONS**

1. Only Nonhazardous solid wastes shall be discharged to the existing unlined Unit.
2. The discharge shall remain within the designated disposal area at all times.

**C. FACILITY SPECIFICATIONS**

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
2. The Discharger shall immediately notify the Regional 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 leachate containment facilities or precipitation and drainage control structures.
3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control.
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.
8. Cover materials shall be graded to divert precipitation from the Unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation.

**D. CONSTRUCTION SPECIFICATIONS**

1. Closure shall not proceed in the absence of closure waste discharge requirements.

**E. DETECTION MONITORING SPECIFICATIONS**

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 CCR for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. R5-2003-0115.
2. The Discharger shall provide Regional Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation or abandonment of monitoring devices, and a minimum of **48 hours** notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.
3. The Discharger shall comply with the Water Quality Protection Standard (as defined in Title 27 CCR Section 20390) which is specified in Monitoring and Reporting Program No. R5-2003-0115 and the Standard Provisions and Reporting Requirements, dated April 2000.
4. 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.
5. 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. R5-2003-0115.
6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in

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Monitoring and Reporting Program No. R5-2003-0115 and Title 27 CCR Section 20415(e).

7. 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.
8. 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.
9. 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.
10. 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.
11. **“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.
12. **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.

13. 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.
14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
15. **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.
16. 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 Title 27 CCR Section 20415(e)(7) 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 Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Title 22 CCR, Division 4.5, Chapter 14, Appendix IX, for guidance when specifying limits of precision and accuracy in the WDRs. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or 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".

17. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E) of, 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 Regional Board staff.
18. The Discharger shall use the following nonstatistical method specified in Section E.20 for all constituents 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). This includes all constituents in the Monitoring Parameters and for all Constituents of Concern (COC) found in groundwater and unsaturated zone (in soil-pore liquid or - gas). Each constituent at a monitoring point shall be determined to meet this criterion based on either:
  - a. The results from a single sample for that constituent, taken during that reporting period from that monitoring point; or
  - b. If more than one sample has been taken during a reporting period from a monitoring point, the results from the sample which contains the largest number of qualifying constituents shall be used.

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

19. The nonstatistical method (for non-naturally occurring waste constituents) shall be implemented as follows:
  - a. For every compliance well, regardless of the monitoring program, the Discharger shall use this data analysis method, jointly, for all monitoring



parameters and COCs that are detected in less than 10% of background samples. Any COC that triggers a discrete retest per this method shall be added to the monitoring parameter list:

Triggers — From the monitoring parameters and COC list identify each constituent in the current sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary indication [or, for a retest, provide a measurably significant indication] of a change in the nature or extent of the release, at that well, if either:

- 1) The data contains two or more qualifying monitoring parameters and/or COCs that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or
- 2) The data contains one qualifying monitoring parameter and/or COC that equals or exceeds its PQL.

b. Discrete Retest [Title 27 CCR Section 20415(e)(8)(E)]:

- 1) In the event that the Discharger concludes (pursuant to paragraph 19.a., above) that there is a preliminary indication, then the Discharger shall immediately notify Regional Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the indicating compliance well.
- 2) For any given compliance well retest sample, the Discharger shall include, in the retest analysis, only the laboratory analytical results for those constituents indicated in that well's original test. As soon as the retest data are available, the Discharger shall apply the same test [under ¶19.a], to separately analyze each of the two suites of retest data at that compliance well.
- 3) If either (or both) of the retest samples meets either (or both) of the triggers under ¶19.a., then the Discharger shall conclude that there is a measurably significant increase at that well for the constituent(s) indicated in the validating retest sample(s).

20. If the Executive Officer determines, after reviewing the submitted report, that the detected constituent(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. EVALUATION MONITORING SPECIFICATIONS**

1. **By 1 February 2005**, the Discharger shall complete an Evaluation Monitoring Program to the satisfaction of the Executive Officer and that meets the provisions of Title 27 CCR Section 20425(b), and a report shall be submitted that describes all actions and monitoring taken to complete the Evaluation Monitoring Program.
2. The Regional Board has identified the Discharger as the primary or active responsible discharger for purposes of California Water Code Section 13307.1. **By 15 July 2003**, the Discharger shall submit a letter to the Regional Board that identifies all current record owners of fee title of the site. The Discharger shall certify to the Regional Board that the required notifications have been made at the time a cleanup or site closure proposal is made or before the Regional Board makes a determination that no further action is required. If property ownership changes in the future, the Discharger must notify the Regional Board **within 30 calendar days** of the date on which it is informed of the change. The Discharger, within 14 days of determining "measurably significant" evidence of a release, shall notify all persons who own the land or reside on the land that directly overlies any portion of the plume of contamination if contaminants have migrated off-site if indicated by sampling of detection monitoring wells [Title 40 CFR 258.55(g)(1)(iii)].
3. The Discharger shall submit a **semi-annual** status report to the Regional Board, in conjunction with Monitoring and Reporting Program No. R5-2003-0115, describing the progress of the Evaluation Monitoring Program and all activities conducted to complete the Evaluation Monitoring Program.
4. At a minimum, the following documentation is needed to complete the Evaluation Monitoring Program:
  - a. An analysis of all the information gathered to determine the lateral and vertical extent of each waste constituent released from the Unit. This assessment shall include a determination of the spatial distribution and concentration of each constituent of concern throughout the zone affected by the release.
  - b. An assessment of the lateral and vertical extent for each waste constituent in groundwater shall be determined when the constituent no longer meets the trigger criteria for detection in accordance with the Detection Monitoring Program contained in Detection Monitoring Specifications E.19. For a non-

naturally occurring waste constituent, the extent will be determined when groundwater sample analyses do not detect any non-naturally occurring waste constituents at or above the practical quantitation limit (PQL), or no more than one non-naturally occurring waste constituent is detected at or above the method detection limit (MDL) and below the PQL. For naturally occurring waste constituents, or waste constituents that have a statistically derived Water Quality Protection Standard, the extent will be determined when groundwater sample analyses do not detect a released constituent at a “measurably significant” concentration as defined by the Water Quality Protection Standard.

- c. A determination of the Water Quality Protection Standard for evaluation monitoring shall be based on a sufficient number of background monitoring points that represent the quality of groundwater (organic and inorganic compounds) in the uppermost aquifer that has not been affected by a release from the Unit in accordance with Title 27 CCR Sections 20415(b)(1) and 20415(b)(2). If more than one water-bearing zone is present beneath the Unit and included in the Evaluation Monitoring Program, then a Water Quality Protection Standard shall be established independently for each water-bearing zone.
  - d. A table listing the constituents of concern that includes the concentration limit for metals and general water quality parameters based on a statistical evaluation of the background concentrations of these parameters.
  - e. A description of how the determination of the spatial distribution and concentration of each constituent of concern throughout the zone affected by the release was accomplished.
5. By **1 May 2005**, the Discharger shall submit, pursuant to Title 27 CCR Section 20425(c) of, a report containing an updated engineering feasibility study for corrective action pursuant to Title 27 CCR Section 20420(k)(6). At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.
  6. By **1 November 2005**, the Discharger shall submit, pursuant to Title 27 CCR Section 20425(d), an amended report of waste discharge, based on the data collected pursuant to Evaluation Monitoring Specification F. 4 and on the engineering feasibility study submitted pursuant to Evaluation Monitoring Specification F. 5, to establish a Corrective Action Program meeting the requirements of Title 27 CCR Section 20430, to cleanup and abate the effects of all waste discharged to the soil and groundwater.

7. In conjunction with the assessment conducted pursuant to Evaluation Monitoring Specification F. 4, and while awaiting final approval of the amended report of waste discharge, submitted pursuant to Evaluation Monitoring Specification F. 6, the Discharger shall monitor groundwater to evaluate changes in water quality resulting from the release from the Unit. In conducting this monitoring, the Discharger shall comply with the requirements of Title 27 CCR Section 20425(e).

## G. 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 Regional Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the postclosure period.

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;
    - 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 Sampling and Analysis Plan approved by the Executive Officer.
  - 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 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
    - c) Evidence of erosion and/or of day-lighted refuse.
  - 2) Along the perimeter of the Unit:
    - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
    - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
    - c) Evidence of erosion and/or of day-lighted refuse.
  - 3) For receiving waters:
    - a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area;
    - b) Discoloration and turbidity - description of color, source, and size of affected area;
    - c) Evidence of odors - presence or absence, characterization, source, and distance of travel from source;
    - d) Evidence of water uses - presence of water-associated wildlife;

- e) Flow rate; and
  - f) Weather conditions - wind direction and estimated velocity, total precipitation during recent days and on the day of observation.
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 Regional 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 Regional Board; and
  - e. Corrective measures underway or proposed, and corresponding time schedule.
6. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the reporting period of the previous monitoring year. This report shall contain:
- a. All detected 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 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 appropriate digital storage devices, 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 digital storage device may be submitted in a commonly available compressed format (e.g. PKZIP). The Regional 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 Regional 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.

#### **H. PROVISIONS**

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 CCR and Title 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2003-0115, 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 (Title 27 CCR Section 20005 et seq. and Title 40 CFR 258 et seq.)*, dated April 2000, which are hereby incorporated into and attached to 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 Regional Board.
- e. Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”
- 6. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
- 7. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
- 8. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger’s violations of the Order.

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TEAPOT DOME MUNICIPAL SOLID WASTE LANDFILL  
TULARE COUNTY

9. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional 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 Regional Board, and a statement. The statement shall comply with the signatory requirements contained in the Standard Provisions and Reporting Requirements 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 Regional Board.
10. The Discharger shall establish cost estimates for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill, and submit these estimates to the Executive Officer for review and approval.
11. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in an amount approved by the Executive Officer, and shall submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board.
12. The Discharger is required to maintain financial assurance mechanisms for closure and post-closure maintenance costs as specified in Title 27 CCR Chapter 6. The Discharger is required to submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board, which determines if the mechanism meets the requirements of Title 27 CCR Chapter 6, and if the amount of coverage is adequate.
13. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
a. Record Owners of Fee of Title	
Submit a letter that identifies all current record owners of fee title of the site. (Evaluation Monitoring Specification F.2)	<b>15 July 2003</b>

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<u>Task</u>	<u>Compliance Date</u>
b. Evaluation Monitoring Report  Complete an Evaluation Monitoring Program to the satisfaction of the Executive Officer and submit a report describing all actions and monitoring taken to complete the Evaluation Monitoring Program. (Evaluation Monitoring Specification F.1)	<b>1 February 2005</b>
c. Status Report  Submit a status report describing the progress of the Evaluation Monitoring Program and all activities conducted to complete the Evaluation Monitoring Program. (Evaluation Monitoring Specification F.3)	<b>Semi-annual, within 45 days of the end of the calendar year</b>
d. Updated Feasibility Study  Submit a report containing an updated engineering feasibility study for corrective action. (Evaluation Monitoring Specification F.5)	<b>1 May 2005</b>
e. Amended Report of Waste Discharge  Submit an amended report of waste discharge to establish a corrective action program. The report shall include a plan and proposed time schedule, for Executive Officer review and approval, to cleanup and abate the release of all waste constituents to soil and groundwater. (Evaluation Monitoring Specification F.6)	<b>1 November 2005</b>
f. Annual Monitoring Summary Report  Submit an Annual Monitoring Summary Report covering the reporting period of the previous monitoring year. (Reporting Requirement G.6)	<b>By 31 January of each year</b>

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	<u>Task</u>	<u>Compliance Date</u>
g.	Financial Assurance Review	
1)	Annual Review of Financial Assurance for initiating and completing corrective action (see Provision H.11.)	<b>1 October each year</b>
2)	Annual Review of Financial Assurance for closure and post-closure maintenance (see Provision H.12.)	<b>1 October each year</b>

I, THOMAS R. PINKOS, 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 11 July 2003.

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THOMAS R. PINKOS, Executive Officer

VSM:vsm/rac

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0115  
FOR  
COUNTY OF TULARE  
FOR  
OPERATION  
TEAPOT DOME MUNICIPAL SOLID WASTE LANDFILL  
TULARE COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations (CCR), Section 20005, et seq. (hereafter Title 27 CCR), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2003-0115.

**A. REQUIRED MONITORING REPORTS**

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	<b>See Table I</b>
2. Annual Monitoring Summary Report (Order No. 5-00-162, F.6.)	<b>Annually</b>
3. Unsaturated Zone Monitoring (Section D.2)	<b>See Table II</b>
4. Facility Monitoring (Section D.3)	<b>As necessary</b>
5. Response to a Release (Standard Provisions and Reporting Requirements)	<b>As necessary</b>

**B. REPORTING**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2003-0115 and the Standard Provisions and Reporting Requirements. Reports that 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.

Each monitoring report shall include a compliance evaluation summary as specified in G. Reporting Requirements, of Order No. R5-2003-0115.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Regional 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	<b>by Semiannual Schedule</b>
Quarterly	Quarterly	31 March	<b>31 July</b>
		30 June	<b>31 July</b>
		30 September	<b>31 January</b>
		31 December	<b>31 January</b>
Semiannually	Semiannually	30 June	<b>31 July</b>
		31 December	<b>31 January</b>
Annually	Annually	31 December	<b>31 January</b>

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in G. Reporting Requirements, of Order No. R5-2003-0115 and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of any monitoring conducted more frequently than required at the locations specified herein or by the waste discharge requirements shall be reported to the Regional Board.

**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.

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 the Unit or portion of the Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the waste management facility.
- b. Include a map showing the monitoring points and background monitoring points for the groundwater monitoring program and unsaturated zone monitoring program. The map shall include the point of compliance in accordance with Title 27 CCR Section 20405.
- 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 waste management units at the facility are those listed in Table IV. The Discharger shall monitor all constituents of concern in Table IV 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 the Unit. The monitoring parameters for the Unit are those listed in Tables I through III for the specified monitored medium.

### **3. Concentration Limits**

Pursuant to Title 27 CCR Section 20415(e)(10)(B), for each naturally occurring inorganic constituent of concern, the concentration limit (applicable suite of background data) for that constituent shall be redetermined each semiannual monitoring period according to the following “moving window” formula, and the Discharger shall use the resulting concentration limit to apply the parametric Interwell Upper Prediction Limit analysis method featured in the Sanitas™ for Groundwater statistical software package, unless the software indicates that a different method (e.g., the nonparametric version of the same method) is more appropriate. For each reporting period subsequent to the initial reporting period, the Discharger shall create the new concentration limit, for that constituent, by taking the prior reporting period’s background data, adding the newest datum, for that constituent, from background monitoring wells M-1 and M-5 and removing the oldest datum.

### **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 CCR for groundwater and the unsaturated zone, in accordance with Detection Monitoring Specification E.1 of Waste Discharge Requirements, Order No. R5-2003-0115. 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, leachate (seepage) shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through II.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those that cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table 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 Title 27 CCR Sections 20415 and 20420 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 annually 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 Title 27 CCR Sections 20415 and 20420 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.

## 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 G.4.f. of Order No. R5-2003-0115. 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.

### 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.

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The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs.

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

Ordered by: \_\_\_\_\_  
THOMAS R. PINKOS, Executive Officer

\_\_\_\_\_  
11 July 2003  
(Date)

VSM:vsm/rac

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

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Semi-annual
Specific Conductance	µmhos/cm	Semi-annual
pH	pH units	Semi-annual
Turbidity	Turbidity units	Semi-annual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	Semi-annual
Chloride	mg/L	Semi-annual
Carbonate	mg/L	Semi-annual
Bicarbonate	mg/L	Semi-annual
Nitrate - Nitrogen	mg/L	Semi-annual
Sulfate	mg/L	Semi-annual
Calcium	mg/L	Semi-annual
Magnesium	mg/L	Semi-annual
Potassium	mg/L	Semi-annual
Sodium	mg/L	Semi-annual
Volatile Organic Compounds (USEPA Method 8260, see Table III)	µg/L	Semi-annual
<b>Constituents of Concern (see Table IV)</b>		
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>
<b>Monitoring Parameters</b>		
Volatile Organic Compounds (USEPA Method TO-14)	$\mu\text{g}/\text{cm}^3$	Semi-annual
Methane	%	Quarterly

**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 (Bromomethene)

**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**

<b><u>Inorganics (dissolved):</u></b>	<b><u>USEPA Method</u></b>
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 (Benzanthracene)  
Benzo[b]fluoranthene  
Benzo[k]fluoranthene  
Benzo[g,h,i]perylene  
Benzo[a]pyrene  
Benzyl alcohol  
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)  
Bis(2-ethylhexyl) phthalate  
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  
Toluene  
1,2,4-Trichlorobenzene  
2,4,5-Trichlorophenol

**TABLE IV**

**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

2,4,6-Trichlorophenol  
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

## INFORMATION SHEET

ORDER NO. R5-2003-0115  
COUNTY OF TULARE  
FOR OPERATION  
TEAPOT DOME MUNICIPAL SOLID WASTE LANDFILL  
TULARE COUNTY

The County of Tulare owns and operates the Teapot Dome Municipal Solid Waste Landfill (landfill). The landfill is about five miles southwest of Porterville.

The climate in the southern San Joaquin Valley is semi-arid, with hot, dry summers and cool winters. The average annual precipitation is 11.02 inches and the mean pan evaporation is estimated to be 80.8 inches per year. The landfill is not within a 100-year floodplain according to FEMA maps

The landfill is located upon the westward dipping, eastern limb of the asymmetrical geosynclinal trough of the San Joaquin Valley. The site overlies a basement complex of pre-Tertiary age metasediments, plutonics, and ultramafics. Sequentially overlying the basement complex are approximately 1,000 to 3,500 feet of consolidated and unconsolidated Tertiary marine deposits, continental deposits, and unconsolidated Quaternary alluvium. The continental deposits are late Pliocene to early Pleistocene in age and consist of poorly permeable, oxidized sandy-silt and clay. Pleistocene to Recent older alluvium overlies the continental deposits and consists of interbedded gravel, sand, silty-sand, and clay. The younger alluvium consists of moderately to highly permeable, interbedded fluvial deposits of gravelly-sand, silty-sand, silt, and clay.

The landfill is in a topographically flat region of the Tulare Lake Hydrologic Basin of the southern San Joaquin Valley. The ground surface slopes approximately 15 feet per mile toward the northwest. The landfill is within the Old Deer Creek drainage system that drains across the mid-fan deposits of the Kaweah River alluvial fan.

The Friant-Kern Canal is the nearest surface water body to the landfill and passes along the eastern and southeastern margins of the landfill. The Friant-Kern Canal is concrete lined. The base of the Friant-Kern Canal is 20 feet above the landfill's base. Average seepage from the Friant-Kern Canal is 154 acre-feet per linear mile of lined canal per year.

The existing waste management facility contains one existing unlined waste management unit (Unit) covering 71 acres. The Unit is currently classified as a Class III landfill that accepts municipal solid waste in accordance with Title 27, California Code of Regulations (CCR), Section 2005, et seq.

There are eight domestic wells, 28 agricultural groundwater wells, and nine combination agricultural/domestic supply wells within one-mile of the Unit. No surface springs or other sources of groundwater supply have been observed.

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The first encountered groundwater is about 53 to 96 feet below the native ground surface. Groundwater elevations range from 359 feet MSL to 318 feet MSL. The groundwater is unconfined. The depth to groundwater fluctuates seasonally as much as ten feet. Historic groundwater elevation data indicates that the depth to groundwater has been as high as 30 feet below the native ground surface. Monitoring data indicates background groundwater quality has a specific electrical conductivity (EC) ranging between 720 and 970 micromhos/cm, with Total Dissolved Solids (TDS) ranging between 460 and 600 mg/l. Perched groundwater was detected in 1986 at an elevation of 358 feet MSL in the area of the facility equipment yard. A possible perched groundwater zone was detected in 1991 at an elevation of 330 feet MSL in the area of groundwater monitoring well M-1.

Surface drainage is toward the Tule River in the Tule Delta Hydrologic Area (558.20) of the Tulare Lake Hydrologic Basin. The Friant-Kern Canal is the nearest surface water body to the landfill and passes immediately along the eastern and southeastern margins of the landfill. The Friant-Kern Canal is concrete lined. The base of the Friant-Kern Canal is 20 feet above the landfill's base. Landfill operations should not impact the Friant-Kern Canal.

Groundwater monitoring of the unconfined groundwater zone has detected volatile organic compounds along the point of compliance of the landfill. The volatile organic compounds: PCE; TCE; 1,2-DCA; benzene; 1,1-DCA; cis-1,2-DCE; 1,1-DCE; vinyl chloride; DBCP; and 1, 4-dichlorobenzene have been detected at concentrations that exceeded their respective Primary Maximum Contaminant Levels (Primary MCLs). The volatile organic compound DBCP has been detected in upgradient monitoring wells M-1 and M-5 (background wells) and the operations well indicating a possible off-site source for the DBCP.

The Zaninovich well (12325), located 200 feet southwest of the southwest corner of the landfill, was sampled by the Tulare County Environmental Health Department in May 1989 and the results detected PCE. A follow-up confirmation sample of the Zaninovich well in June 1989 detected no VOCs. In November 2001, the Tulare County Department of Health Services sampled the Zaninovich well and detected PCE at 0.62 µg/l and chloroform at a concentration between the MDL and PQL (0.38 µg/l). Based on the latest analytical results from the Zaninovich well, it appears that the lateral extent of VOCs in groundwater is at least 200 feet southwest of the landfill.

Statistical analyses of the latest monitoring results for naturally occurring waste constituents (First Semi-Annual Monitoring Report, 2002) indicate that barium; bicarbonate; calcium; chloride; cobalt; EC; and manganese statistically exceeded their respective background concentration limits in one or more detection monitoring wells. Electrical conductivity exceeded its Secondary MCLs. Statistical analyses of the latest monitoring results for naturally occurring waste constituents also indicate that nitrate

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concentrations exceeded the Primary MCL and that TDS and EC exceeded their respective Secondary MCLs in the background monitoring wells.

The City of Porterville discharges sewage sludge and effluent from the City's waste water treatment plant to the property immediately east of the landfill that appears to be a source for the elevated nitrate levels detected in the landfill's background and downgradient monitoring wells.

This Order requires the Discharger to complete an Evaluation Monitoring Program, submit an Engineering Feasibility Study for corrective action, and submit a Report of Waste Discharge for a Corrective Action Program in accordance with the requirements of Title 27 CCR and the time schedule incorporated into this Order. The Discharger is also required to submit semi-annual status reports to the Regional Board describing the progress of the Evaluation Monitoring Program and all activities conducted to complete the Evaluation Monitoring Program.

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 CCR for the determination of a release of wastes from a Unit. Title 27 CCR 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 CCR 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 Title 27 CCR Section 20080(a)(1) of. 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.

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 CCR, 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.



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TULARE COUNTY

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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 CCR.

The action to revise waste discharge requirements for this existing 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 CCR Section 20005 et seq.

VSM:vsm/rac:7/11/2003