

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION

TENTATIVE ORDER NO. R9-2010-0004

WASTE DISCHARGE REQUIREMENTS  
FOR THE  
UNITED STATES MARINE CORPS  
MARINE CORPS BASE CAMP PENDLETON  
LAS PULGAS LANDFILL  
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board), finds that:

1. **DISCHARGER.** From 1971 to the present, the United States Marine Corps (USMC; hereinafter, Discharger) has owned and operated the Las Pulgas Landfill. The Las Pulgas Landfill is a municipal solid waste (MSW) landfill (Class III waste management unit), accepting municipal solid waste generated within the boundaries of Marine Corps Base Camp Pendleton.
2. **FACILITY LOCATION.** The Las Pulgas Landfill is located within the boundaries of USMC Base Camp Pendleton (Base) in San Diego County, approximately 0.2 miles north of Basilone Road in Area 43, Sections 28 and 29, T9S, R5W, SBB&M. A location map is provided as **Attachment No. 1** to this Order.
3. **WASTE DISCHARGE.** Wastes proposed to be disposed at the Las Pulgas landfill include: putrescible and non-putrescible solid and semi-solid wastes, commercial waste, industrial wastes, construction and demolition wastes, treated wood, sewage sludge, contaminated soil, decommissioned waste, and other non-hazardous or inert waste.
4. **THREAT TO WATER QUALITY.** Municipal solid wastes (MSW), and their degradation products (e.g., landfill gases), contain a wide variety of inorganic and organic constituents in concentrations that present a significant threat to water quality in the San Onofre Creek Watershed.
5. **LEGAL AUTHORITY.** This Order is issued pursuant to the California Water Code (Division 7 commencing with section 13000) and implements the: (1) federal Resource Conservation and Recovery Act (RCRA), including regulations found in the Code of Federal Regulations (CFR), Title 40, Part 258 (hereinafter CFR, Title 40, Part 258), adopted by the U.S. Environmental Protection Agency (USEPA) implementing requirements of RCRA Subtitle D; (2) regulations and policies adopted by the State Water Resources Control Board (State Water Board) in California Code of Regulations (CCR) Titles 23 and 27, and State Water Board Resolution No. 93-62; and (3) applicable provisions of the California Health and Safety Code Division 20, Chapter 6.5 (Hazardous Waste Control).

6. **LOCAL HYDROGEOLOGY.** The overall direction of groundwater flow at the Las Pulgas Landfill is to the south and southeast towards Las Flores Creek. The local hydrogeology of the Las Pulgas Landfill includes an alluvial aquifer and a bedrock aquifer.
  - a. **Alluvial Aquifer.** The alluvial aquifer is composed of undifferentiated, unconsolidated to poorly consolidated, fine- to medium-grained sand, silty sand, clayey sand, silt, and clay with minor gravel and cobbles.
  - b. **Bedrock Aquifer.** The bedrock aquifer is located within the Williams Formation, which consists of a lower member composed of a tan to brown pebble to cobble conglomerate, and an upper member composed of tan to brown, fine- to medium-grained sandstone inter-bedded with siltstone and conglomerate.
7. **GROUNDWATER USE.** There are no water supply wells located within a 1-mile radius of the Las Pulgas Landfill. The nearest Base production wells, identified as well numbers 41611, 41613, and 41621, are located approximately five miles southwest of the Landfill.
8. **COMPLIANCE WITH FEDERAL SITING REQUIREMENTS.** CFR Title 40, Part 258, Subparts B, D, and E contain applicable location restrictions, design criteria, and water quality monitoring requirements, respectively, for the Las Pulgas Landfill. The location of the Las Pulgas Landfill is not restricted pursuant to the location restrictions provided in CFR Title 40, Part 258, Subpart B.
9. **CLASSIFICATION OF UNIT.** The Las Pulgas Landfill is classified as a Class III Waste Management Unit (WMU) based on the siting criteria and construction standards, in accordance with CCR Title 27, sections 20240 and 20260, and 40 CFR, Part 258.10 through 258.15.
10. **LANDFILL EXPANSION.** Waste Discharge Requirements (WDR) Order No. 2000-54 established requirements for a 49.3 acre lined expansion, to be completed in six phases, of the Las Pulgas Landfill based upon information presented in the March 1998 Report of Waste Discharge/Joint Technical Document (JTD). The planned Phases and acreages are as follows:  
Phase I - VIII acres; Phase II - 12.3 acres; Phase III - 7.5 acres; Phase IV - 5.2 acres; Phase V - 2.7 acres; Phase VI - 10.1 acres (vertical expansion only) for a total of 46.3 acres. The other three acres included the perimeter road and ancillary facilities to be constructed during the various phases of expansion. Upon adoption, this Order will supersede Order No. 2000-54.
11. **CONTAINMENT STRUCTURE.** The construction of a containment structure consisting of a composite liner, a leachate collection and removal system

(LCRS), and a subdrain is reasonable and are appropriate measures for the protection of water quality.

- a. **COMPOSITE LINER.** The JTD includes the following design for a composite liner system for the 12.3 acre Phase II expansion area at the Las Pulgas Landfill:

**Basal Liner Design (from bottom to top)**

- i. Gravel-filled subdrain collection trench lined with an 8-ounce/yards squared non-woven geotextile
- ii. 24-inch thick layer of low permeability material less than or equal to  $1 \times 10^{-7}$  centimeters/second (cm/sec)
- iii. 60-mil double-sided, textured, high density polyethylene (HDPE) geomembrane
- iv. 16-ounce non-woven geotextile
- v. 12-inch thick LCRS gravel layer
- vi. 6-ounce non-woven geotextile
- vii. Minimum 24-inch thick protective soil cover layer (operations layer)

**Sideslope Liner Design (from bottom to top)**

- i. 24-inch thick layer of low permeability material less than or equal to  $1 \times 10^{-7}$  cm/sec
- ii. 60-mil, single-sided textured, HDPE (textured side down)
- iii. 16-ounce non-woven geotextile
- iv. 24-inch thick protective soil cover layer (operations layer)
- v. Sacrificial, ultraviolet protection 8-ounce non-woven geotextile on any geomembrane-lined areas until covered by the protective soil cover

- b. **LEACHATE COLLECTION AND REMOVAL SYSTEM – BOTTOM.** The leachate collection and removal system (LCRS) will be comprised of a 1-foot thick continuous gravel blanket (constructed above the 16-ounce non-woven geotextile) and a dendritic network of 6-inch diameter perforated pipes to convey the leachate from the landfill to the leachate collection tank.

- c. **LEACHATE COLLECTION AND REMOVAL SYSTEM – SIDESLOPES.**  
The LCRS on the sideslopes will be comprised of a 24-inch protective soil layer initially placed approximately 8 to 10 feet vertically up the sideslopes, and placed incrementally 8 to 10 feet up the entire lined sideslopes thereafter. This layer will be constructed of on-site material graded to 1-inch minus, having a permeability of at least  $2 \times 10^{-3}$  cm/sec or greater.
- d. **SUBDRAIN SYSTEM.** To meet the five-feet of separation between waste and groundwater requirement set forth in CCR Title 27, section 20240, a subdrain will be constructed beneath the Phase II expansion area to collect groundwater that may be present or develop beneath the landfill subgrade. The subdrain will consist of a four-inch diameter perforated PVC pipe placed in an 8-ounce non-woven geotextile-lined trench and backfilled with permeable gravel.
12. **PROTECTIVE SOIL COVER LAYER.** The protective soil cover layer is the uppermost layer of the liner system. On the basal liner system, this layer will be 24-inches thick, and will serve to protect the underlying liner components from punctures or tears during waste disposal activities. On the sideslopes, this layer serves as the drainage layer of the sideslope LCRS system and will be placed 8 to 10 feet vertically up the sideslopes initially, and incrementally 8 to 10 feet up the entire lined sideslopes thereafter. The protective soil cover is composed of on-site materials having a permeability of at least  $2.0 \times 10^{-3}$  m/sec or greater.
13. **BORROW/STOCKPILE SOILS.** Soil materials excavated and graded during the construction of the landfill will be stockpiled in the legacy (original unlined footprint) area of the landfill for use as daily, intermediate, and final cover. These cover materials will be supplemented with the use of alternative daily cover materials.
14. **ALTERNATIVE DAILY COVER.** Based on volumetric calculations and topographical map data, there is insufficient soil material available within the landfill footprint for use as daily, intermediate, and final cover at the Las Pulgas Landfill. To reduce the amount of soil material needed for cover, the Discharger has proposed the use of Alternative Daily Cover (ADC). ADC will consist of geosynthetic panels which will be used as daily cover in the working face area of the landfill, as allowed under CCR Title 27, section 20690(b)(1).
15. **INDUSTRIAL AND CONSTRUCTION STORM WATER DISCHARGES.** The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES) Permit No. CAS000001 (General Permit), *Waste Discharge Requirements (WDRs) for Discharges of Storm Water Associated with Industrial Activities Excluding Construction*. The SWPPP is expected to be amended pursuant to Order No. 97-03-DWQ, whenever there is a

change in operations which may affect the discharge of pollutants to waters of the United States as required by the Permit.

16. **STORM WATER CONVEYANCE SYSTEM.** All drainage and erosion control facilities will be designed to carry the peak discharge resulting from a 100-year, 24-hour storm event per the requirements of CCR Title 27, section 20365(f) and Table 4.1. As part of the Phase II expansion project, both an interim and permanent drainage system will be constructed to convey surface water flows from the floor and slope areas to the existing desilting basin. Interim drainage facilities will include temporary berms and "V" ditches placed near active and inactive refuse areas. Construction of the permanent perimeter drainage facilities began in 1993. These facilities remain functional and intact and will not be upgraded as part of the Phase II expansion project.
17. **GROUNDWATER CORRECTIVE ACTION MONITORING PERFORMANCE.** Groundwater monitoring must comply with the performance requirements set forth in CCR Title 27 [as required by CCR Title 27, section 20415(b) and section 20430(b)] and CFR Title 40, Part 258 [section 258.51(a)(2)] for detecting a release/discharge of waste constituents from the WMU into the groundwater within the fractured rock aquifer.
18. **SURFACE WATER MONITORING PERFORMANCE.** The surface water monitoring network must comply with the applicable performance requirements [CCR Title 27, section 20415(c)(2)(B)]. In particular, the applicable performance standard for the surface water monitoring system is that it provides the "best assurance of the earliest possible detection of a release from the Unit."
19. **WATER QUALITY CONTROL PLAN.** The Water Quality Control Plan for the San Diego Basin (9), (hereinafter Basin Plan), was adopted by the San Diego Water Board on September 8, 1994, and was subsequently approved by the State Water Board on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and approved by the State Water Board. The Basin Plan designates beneficial uses, narrative and numerical water quality objectives, and waste discharge prohibitions that are applicable to the discharges regulated under this Order.
20. **BENEFICIAL USES AND WATER QUALITY OBJECTIVES.** The Las Pulgas Landfill is located in the Las Pulgas Hydrologic Subarea (901.52) of the San Onofre Hydrologic Area (901.50) of the San Juan Hydrologic Unit (HU 901.00). The Basin Plan establishes the designated beneficial uses of surface water and groundwater resources (see Tables 2-2 and 2-5 in the Basin Plan), and the applicable narrative and numeric water quality objectives (see Chapter 3 in the Basin Plan) for the protection of beneficial uses of water resources in the Las Pulgas Hydrologic Subarea.



21. **ENFORCEMENT ACTIONS.** The San Diego Water Board issued Cleanup and Abatement Order (CAO) No. R9-2006-0016 in January 2006 to address the failure of the containment system in Phase I. As a result of the failure of the *containment system in Phase I, WDR Order No. 2000-54 was amended on May 9, 2007* to require a composite liner system for future lined areas, and a revision of construction quality assurance (CQA) requirements. A chronology of enforcement actions is included as **Attachment No. 2** to this Order.
22. **CALIFORNIA ENVIRONMENTAL QUALITY ACT.** The Las Pulgas Landfill is an existing facility and as such is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Code of Regulations, Chapter 3, Article 19, section 15301.
23. **FINANCIAL ASSURANCES.** The Discharger is required to and intends to comply with applicable financial assurance requirements of CCR Title 27. The Discharger may comply by meeting the federal certification requirements prescribed in CCR Title 27, section 22250, and file the federal certification at the time of application for a solid waste facility permit with the California Department of Resources, Recycling, and Recovery (CalRecycle). *The federal certification shall include a commitment by the Discharger to make a timely request for the funds needed to complete the closure and post-closure maintenance activities. If Congress fails to provide the necessary funding, the Discharger must advise CalRecycle within 90 days of such failure, and shall provide to CalRecycle documentation of all measures the Discharger will undertake to ensure the closure and post-closure activities are completed.*

The Discharger submitted federal certification documentation in the Joint Technical Document (JTD) on December 8, 2008. By letter dated March 17, 2008 CalRecycle notified the Discharger and the San Diego Water Board that the financial assurance mechanism for corrective action costs for the Las Pulgas Landfill, in the form of a federal certification, met the financial assurance requirements of CCR Title 27, section 22250, and was thereby approved by CalRecycle.

24. **ANNUAL FEES.** Because the discharge of waste or waste constituents into groundwater or surface waters could cause the long-term loss of the agricultural supply, municipal and domestic supply, contact water recreation, non-contact water recreation, wildlife habitat, and rare and endangered species beneficial uses of water resources, the Las Pulgas Landfill is ranked as Threat to Water Quality (TTWQ) category "1". The complexity ranking is established as Category "B", which is the complexity ranking required for Class III landfills (per factors established in CCR Title 23, section 2200). As an operating/active unit, the Las Pulgas Landfill is required to pay annual fees (tipping fees) pursuant to Public Resources Code section 48000 *et seq.* and shall not be required to pay the



3. The discharge of wastes shall not create conditions that violate any waste discharge prohibition in the Basin Plan.
4. The discharge of waste to areas of the Las Pulgas Landfill without a prescriptive liner or engineered alternative liner, except as authorized by WDRs or the terms described in Water Code section 13264, is prohibited.
5. The discharge of wastes, which have the potential to reduce or impair the integrity of the containment structure or which, if commingled with other wastes, could produce violent reactions, heat or pressure, fire or explosion, toxic byproducts, or reaction products are prohibited.
6. The discharge of the following wastes into the Las Pulgas Landfill is prohibited:
  - a. The discharge of any hazardous wastes, as defined in CCR Title 22, Division 4.5.
  - b. The discharge of liquid or semi-solid waste (*i.e.*, waste containing less than 50 percent solids) other than dewatered sewage or water treatment sludge as described in CCR Title 27, section 20220(c).
  - c. The disposal of designated wastes, as defined by Water Code section 13173 and CCR Title 27 section 20210, unless otherwise authorized by this Order.
  - d. The disposal of wastes containing greater than one percent (>1 percent) friable asbestos.
  - e. The disposal of shredded automobile bodies, household appliances, and sheet metals (shredder waste).
  - f. The disposal of containerized liquids.
  - g. The disposal of decommissioned material/wastes from decommissioned sites into Class III and unclassified WMUs.
  - h. The disposal of any other waste that fails to satisfy the conditions prescribed in Sections B and C of this Order.
7. The discharge of waste shall not exceed the acreages, volumes, types, and locations specified in Finding Nos. 3 and 10.
8. The project shall not cause significant adverse impacts upon the quality of surface waters in a local, state, or federal wildlife preserve or sanctuary, or



other surface waters of significant local, regional, statewide or national importance.

## B. GENERAL DISCHARGE SPECIFICATIONS

1. The discharge of wastes shall not cause the concentration of any Constituent of Concern (COC) or Monitoring Parameter (MPar) to exceed its respective background value in any monitored medium at any *Monitoring Point*.
2. Only non-hazardous wastes and inert wastes as defined in CCR Title 27, section 20220 and section 20230 may be discharged into the WMU.
3. The discharge of wastes shall be confined to the designated disposal areas, including the legacy area and the areas underlain by the liner system prescribed by Landfill **Construction Specification E.6** of this Order.
4. The Discharger is responsible for accurate characterization of wastes [in compliance with CCR Title 27 section 20200(c)], including: determinations of *whether or not wastes will be compatible with containment features and other wastes*, and whether or not wastes are required to be managed as hazardous wastes under CCR Title 22, Division 4.5 section 66300 *et seq.*
5. The discharge of solid waste containing free liquid or moisture shall not cause the moisture holding capacity of the WMU to be exceeded.

## C. DISCHARGE SPECIFICATIONS FOR SPECIFIC TYPES OF WASTE

1. **TREATED WOOD.** The Discharger shall manage and dispose of treated wood in accordance with all requirements of California Health and Safety Code section 25143.1.5 and section 25150.7.
2. **SEWAGE SLUDGE.** Unless the California Department of Toxic Substances Control (DTSC) determines that the waste must be managed as a hazardous waste, dewatered sludge disposal into the WMU shall contain at least 20 percent solids (by weight) if primary sludge, or at least 15 percent solids if secondary sludge, mixtures of primary and secondary sludge, or water treatment sludge. A minimum solids-to-liquid ratio of 5:1 by weight shall be maintained to ensure that the co-disposal will not exceed the initial moisture holding capacity of the non-hazardous solid waste [per CCR Title 27, section 20220(c)].
3. **LANDFILL LEACHATE AND CONDENSATE.** The discharge of leachate or landfill gas condensate must comply with CCR Title 27,

section 20340(g), CFR Title 40, section 258.28, and the following conditions:

- a. The landfill gas condensate or leachate is being returned to the WMU that produced it; and
  - b. Any discharge of leachate or landfill condensate wastes must be into a WMU that is equipped with a prepared foundation/subgrade and waste containment system meeting the requirements of **Landfill Construction Specifications E.5 and E.6** of this Order.
4. **CONTAMINATED SOILS.** The discharge of contaminated soils at the WMU shall comply with the following:
- a. Samples of waste soils shall be collected in accordance with sampling guidelines set forth in the 1996 edition of "*Test Methods for Evaluating Solid Waste, Physical / Chemical Methods, SW-846*", United States Environmental Protection Agency. At a minimum, for quantities of soil less than or equal to 500 cubic yards, four samples shall be collected per 100 cubic yards of waste soil. For quantities of soil between 500 to 5,000 cubic yards, an additional sample shall be collected for every 500 cubic yards.
  - b. Waste soils may be utilized for daily landfill cover if approved for such use by the appropriate agencies.
  - c. All soil wastes received for disposal at the Las Pulgas Landfill must be certified as California non-hazardous wastes pursuant to the criteria found in CCR Title 22, Division 4.5.
  - d. The Las Pulgas Landfill may accept soil wastes containing the following waste constituents: petroleum hydrocarbons, organic and inorganic compounds, metals, and pesticides which could pose a threat to water quality if discharged in an uncontrolled manner. In addition, those waste soils must also meet all of the following criteria for disposal at the WMU:
    - i. Soil wastes, containing concentrations of metals and pesticides, organic and inorganic compounds, shall not exceed the applicable hazardous waste classifications as determined using the waste extraction test (WET) (per CCR Title 22, section 66261.24, as amended).
    - ii. Soil wastes, containing non-hazardous concentrations of metals, pesticides, organic and inorganic compounds, shall not exceed the

maximum concentrations of contaminants using the Toxicity Characteristic Leaching Procedure (TCLP) analysis (per CCR Title 22, section 66261.24, as amended).

- iii. The concentrations of metals in wastes discharged into the WMU shall be below the applicable threshold concentrations for hazardous wastes established in CCR Title 22, Division 4.5.
- iv. The maximum concentration levels for waste soils containing non-hazardous concentrations of pesticides, and organic and inorganic compounds are contained in **Attachment Nos. 3 and 4** to this Order, and shall be used to determine waste soils containing the above-referenced constituents are acceptable for disposal.
- v. The following maximum concentration limits shall be used to determine if waste soils containing petroleum hydrocarbons are acceptable for disposal into the Unit.

Petroleum Hydrocarbon Contaminant	Maximum Concentration Limits	
Gasoline and lighter end hydrocarbons (C <sub>4</sub> -C <sub>12</sub> )	1,000 ppm TPH	1,000 -5,000 ppm TPH w/RCI and 96 hour bioassay
Diesel fuel, Kerosene Oil, Jet Fuel, (C <sub>8</sub> -C <sub>22</sub> )_heavy end hydrocarbons	3,000 ppm TPH	3,000 -15,000 ppm TPH w/RCI and 96 hour bioassay
Hydraulic Oil, Cutting and Grinding Oil, Virgin Motor Oil, Waste Oil (C <sub>8</sub> -C <sub>40</sub> heavy end hydrocarbons)	3,000 ppm TRPH	3,000 -15,000 ppm TPH w/RCI and 96 hour bioassay

ppm = in units of mg/kg  
 TPH - Total Petroleum Hydrocarbon  
 TRPH - Total Recoverable Petroleum Hydrocarbon  
 RCI - Hazardous Waste Criteria for Reactivity, Corrosivity, Ignitability, and 96-Hour Acute Bioassay as established by CCR Title 22



e. Test Methods for Waste Soils Containing Petroleum Hydrocarbons:

The following test methods shall be performed for waste soils containing Petroleum Hydrocarbons:

Petroleum Constituents and Test Methods	TPH 8015B Gas	TPH 8015B Diesel	TRPH EPA 418.1	BTEX 8021B	Lead TCLP	Metals Cd, Cr, Pb, Ni, Zn, OX, and PCBs	Semi-Volatile Organics 8270C or EPA 625	Volatile organics 8260B	Metals CAM 17, and PCBs
Leaded Gasoline	■			■	■				
Unleaded gasoline	■			■	*				
Kerosene Oil		■		■					
Jet Fuel		■		■					
Diesel Fuel		■		■					
Hydraulic Oil		■		■		■			
Cutting and Grinding Oil		■		■		■			
Virgin Motor Oil		■		■			■		
Waste Oil		■		■			■	■	■

BTEX – Benzene, Toluene, Ethylbenzene, and Xylene

PCBs- Polychlorinated Biphenyls

\* with documentation that only unleaded gas was historically on site

f. Test Methods for Waste Soils Containing Metals and Pesticides:

The analyses can include, but are not limited to, the following methodologies:

8015-Modified	(Gas & Diesel)
6010	(CAM 17 Metals)
7420	(Organic Lead)
8015B	(Non-halogenated Volatiles)
8021B	(Aromatic and Halogenated Volatiles)
8081	(Chlorinated Pesticides)
8082	(Polychlorinated Biphenyls)
8151A	(Herbicides)
8260B	(Volatile Organics – VOCs)
8270C	(Semi-VOCs)
TCLP Analysis	(8 RCRA Metals)





- c. Annually, prior to the anticipated rainy season, but no later than **October 31**, the Discharger shall implement any necessary erosion control measures, and shall complete any necessary construction, *maintenance, or repairs of precipitation and drainage control facilities* to prevent erosion, ponding, flooding, or to prevent surface drainage from contacting or percolating through wastes at the WMU. This specification shall not preclude the Discharger from performing maintenance and repairs necessitated by changing site conditions at any time during the rainy season. An annual report describing measures taken to comply with this specification shall be received by the San Diego Water Board office no later than **5:00 pm on January 30** of the following year.
  - d. Surface drainage from outside of the WMU shall be diverted from the WMU via the perimeter storm drain system.
  - e. Precipitation and drainage control facilities shall be constructed and maintained to effectively divert sheet flow runoff laterally, or via the shortest distance, into the drainage and collection facilities.
  - f. The Discharger shall not allow the accumulation of surface water (*i.e.*, ponding) or accumulation of groundwater, to cause or contribute to adverse impacts upon the integrity or performance of the WMU's foundation, liner system, or the structures which control leachate, surface water drainage, erosion, or landfill gas.
  - g. Sediments shall be removed from the desiltation basin(s) whenever the volume of the basin has been reduced by 25 percent of the basin's design capacity.
7. **EROSION CONTROL.** The following measures shall be implemented at the WMU to control erosion:
- a. The Discharger must implement and maintain Best Management Practices (BMPs) as proposed in the Storm Water Pollution Prevention Plan (SWPPP) for the Las Pulgas Landfill.
  - b. Where surface water flows result in erosive flow velocities, erosion control material shall be used for protection of drainage conveyance features. Effective erosion control BMPs shall be implemented on interim bench ditches to control erosion when necessary.

- c. Where high surface water flow velocities occur at terminal ends of downchutes or where downchutes cross the landfill cover access roads, effective erosion control and surface water conveyance BMPs shall be implemented by the Discharger.
  - d. All areas, including surface drainage courses shall be maintained to minimize erosion.
  - e. The landfill cover shall be maintained to minimize percolation of liquids through wastes.
8. **LEACHATE COLLECTION AND REMOVAL SYSTEM.** The following measures shall be implemented for the LCRS at the Las Pulgas Landfill.
- a. The LCRS shall function without clogging throughout the life of the WMU and the post-closure maintenance period. The Discharger shall perform annual testing of the LCRS to demonstrate proper operation. Results of the annual testing shall be compared with earlier tests made under comparable conditions [pursuant to CCR Title 27, section 20340(d)].
  - b. Leachate production from the LCRS shall not exceed 85 percent of the design capacity of the LCRS. If leachate generation exceeds this value, then the Discharger shall immediately cease the discharge of sludge and other high-moisture wastes to the WMU, and shall notify the San Diego Water Board in writing within **seven days**. Notification shall include a timetable for a corrective action necessary to reduce leachate production.
  - c. The depth of fluid in any LCRS sump shall be kept at or below six inches, the minimum needed to ensure efficient pump operation.
  - d. Landfill leachate shall be discharged to an appropriate onsite and/or offsite liquid waste management facility in compliance with all applicable federal, State and local requirements.
9. **PROTECTIVE SOIL COVER PLACEMENT.** The protective soil cover shall be placed up the side slopes incrementally during operation of the landfill. The two-foot thick layer shall not be compacted against the side slope liner system, and must be placed with additional soil at the toe of the slope to maintain interim stability conditions. Equipment loads shall not be allowed on the landfill side slopes during the placement of the protective soil cover.

## E. LANDFILL CONSTRUCTION SPECIFICATIONS

1. **PRECIPITATION AND DRAINAGE CONTROL.** At a minimum, the precipitation and drainage control system shall be constructed to accommodate precipitation from a 24-hour storm even, with a 100-year return frequency [per CCR Title 27, section 20260(c) and Table 4.1: Title 27 – Construction Standards for Units]. All diversion and drainage facilities shall be designed, constructed, and maintained to take into account the following:
  - a. The expected final contours for closed portions of the WMU, including the planned drainage pattern;
  - b. The drainage pattern for operating WMUs at any given time;
  - c. The possible effects of the WMU's drainage pattern on, and by, the regional watershed; and
  - d. The design capacity of the drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner that does not exceed the expected peak flow rate at the point of discharge as if the WMU were not constructed.
2. **SUBDRAIN.** The bottom liner system of the WMU shall be underlain by a subdrain collection system consisting of a collection trench lined with an 8-ounce geotextile and filled with gravel. The gravel shall be designed to prevent clogging over the service life of the subdrain system and protect the integrity of the liner system during the operating life, closure and post-closure maintenance period of the WMU. The Discharger shall collect and test subdrain effluents for waste constituents and manage the effluent in compliance with all applicable federal, state, and local requirements.
3. **LINER MATERIALS.** Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating life, closure, and post-closure maintenance period of the WMU.
4. **SLOPE STABILITY.** The following measures shall be implemented to maintain slope stability at the WMU:
  - a. All landfill units, including the foundation, final slopes and containment systems, shall be designed and constructed to withstand the maximum probable earthquake (MPE) without damage to the foundation, waste

- containment structures, or to the structures which control leachate, surface drainage, erosion, or landfill gas.
- b. All interim cut and/or fill slopes shall be designed, constructed and maintained to prevent adverse impacts upon the integrity or performance of the WMU's foundation, liner system, waste containment structures, or the structures which control leachate, surface drainage, erosion, or landfill gas.
  - c. The design of temporary cut and/or fill slopes shall be approved by a California registered civil engineer, or a certified engineering geologist [CCR Title 27, section 20310(e)]. All temporary cut and/or fill slopes shall be designed, constructed and maintained to prevent slopes from adversely impacting the integrity or performance of the structures which control leachate, surface drainage, erosion, or gas. All temporary slopes must comply with this specification throughout the range of weather and hydrogeological conditions experienced during the existence of the temporary slope.
  - d. The Discharger shall design, construct, and maintain all containment structures so they are capable of containing wastes, waste constituents, and degradation products of wastes so as to prevent degradation of waters of the State, as a result of discharging waste into the WMU.
  - e. All final cut and fill slopes must be designed to have a minimum dynamic factor of safety of at least 1.5 or meet the alternative design requirements promulgated by CCR Title 27, section 21750(f)(5).
  - f. The WMU slopes shall not exceed a horizontal-to-vertical ratio of 1.5:1, without benching, to ensure slope stability. Other areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.
5. **FOUNDATION/SUBGRADE.** The following measures shall be implemented to maintain the integrity of the foundation/subgrade of the WMU:
- a. The WMU shall have a foundation or base capable of providing support for the structures and capable of withstanding hydraulic pressure gradients to prevent failure or settlement, compression, or uplift and all effects of ground motions resulting from the MCE as certified by either a registered civil engineer or a certified engineering geologist in accordance with CCR Title 27, section 20240(d).

- b. The subgrade shall be rolled to a smooth and level surface. The surface of the subgrade shall be free of stones greater than 0.5-inch in diameter, organics, and other deleterious material.
6. **LINER SYSTEM.** The following measures shall be implemented to maintain the integrity of the liner system at the WMU:
- a. **The engineered alternative liner used for sideslope areas** (e.g., "steep sections with gradients greater than 5:1) shall consist of the components contained in Finding No. 11.a of this Order. The 24-inch thick low permeability layer shall be installed in such a manner that ensures complete long-term coverage of underlying subgrade materials. The geomembrane shall also provide complete coverage on the surface of the underlying liner system components.
  - b. **The engineered alternative liner used for the bottom of the WMU** (and sideslopes with gradients less than 5:1) shall consist of the components contained in Finding No. 11.a of this Order. The 24-inch thick low permeability layer shall be installed in such a manner that ensures complete long-term coverage of underlying subgrade materials. The geomembrane shall provide complete coverage on the surface of the underlying liner system components.
  - c. Pursuant to CCR Title 27, section 20330(d), the Discharger shall ensure that the required liner system covers all natural geologic materials that are likely to be in contact with waste (including landfill gas or leachate).
  - d. The Discharger shall ensure that the junction(s) between the bottom liner system components and sideslope liner system components (at the base of the slopes), the junction between the sideslope liner system and the anchor trenches/tie-downs (at the top of the slopes), and junctions between adjacent panels of geosynthetic materials are constructed in a manner that do not:
    - i. Provide a pathway for the migration and release of wastes; waste constituents, or degradation products (leachate, landfill gas, etc.); or
    - ii. Cause, threaten to cause, or contribute to adverse impacts upon the WMU's ability to contain waste constituents, the integrity and performance of the WMU's foundation, liner system, or the structures which control leachate, surface water drainage, erosion, or gas.





Title 27, section 20324 *et seq.*) and the results shall be submitted to the San Diego Water Board in the final CQA Report, prior to the placement of waste in the WMU.

- c. After completing installation of the LCRS gravel and operations layer, the Discharger shall:
    - i. Complete an electrical leak location survey (ELLS), to check the integrity of all bottom and sideslope areas covered by the geosynthetic membrane component;
    - ii. Take necessary steps to identify and repair all defects located in the geosynthetic membrane component;
    - iii. Include the results from the ELLS and any repairs to the geosynthetic membrane in the relevant construction quality assurance report (CQA Report) including: text discussion of field activities; daily logs of defect repairs; results from all testing performed to assess the integrity of patches/repairs made to the geosynthetic membrane; supporting photographs of all defective areas and repairs made to the geosynthetic membrane component; and a separate site plot plan indicating the location(s) of all defects/repairs performed for each geosynthetic membrane layer. These site plot plans shall be made to the same scale to facilitate comparison between geosynthetic membrane layers.
  - d. The Discharger must provide the San Diego Water Board with an acceptable Final Engineering Report, including a technical demonstration that the proposed sideslope liner design can be constructed and remain stable and functional on: (1) the interior cut slopes of the WMU and (2) in areas where the composite liner overlaps wastes in the legacy area (pre-1993) of the landfill.
  - e. A technically qualified third party, independent of both the Discharger and the construction contractor, shall perform all the construction quality assurance monitoring and testing during the construction of the liner system. The third party shall certify that the liner system was constructed in compliance with all applicable plans and engineering specifications.
8. **LEACHATE COLLECTION AND REMOVAL SYSTEM.** The following measures shall be implemented to ensure proper construction of the LCRS for the WMU:

- a. All containment systems shall include a LCRS that shall effectively convey all leachate that reaches the liner, to a lined sump or other lined collection area.
- b. Materials used to construct the LCRS shall have appropriate physical and chemical properties to ensure the required transmission of leachate/liquid over the operational life of the WMU and throughout the post-closure maintenance period.
- c. The LCRS shall be designed, constructed, and maintained to collect twice the anticipated daily volume of leachate generated by the WMU, and to ensure that there is no build-up of hydraulic head on the underlying liner [per CCR Title 27, section 20340(c)].

**9. PROTECTIVE COVER SOIL.**

- a. The Operations layer shall meet the following minimum requirements:
  - i. Be free of debris, roots, scrap material, asphalt, concrete, vegetation, untreated refuse, and other deleterious, or objectionable material.
  - ii. Be comprised of soil materials having a minimum laboratory permeability of  $2 \times 10^{-3}$  cm/s.
  - iii. May not contain asphalt, concrete, limestone or other material that could adversely react with landfill leachate.
- b. A 6-ounce nonwoven geotextile fabric layer shall be installed over the primary LCRS gravel on the bottom, prior to placement of the operations layer.

**10. LANDFILL COVER.**

- a. WMUs with intermediate cover (as defined in CCR Title 27, section 20700), which have been/will be exposed for longer than two years from the time the intermediate cover was installed, shall have a minimum of two-feet of soil cover maintained over the landfill unit. All intermediate cover(s) shall be designed and constructed to minimize percolation of liquids through wastes pursuant to CCR Title 27, section 20705.
- b. The Discharger may use the following alternative daily covers (ADC) for the WMU, provided the use of ADC is approved by the Local Enforcement Agency (LEA), and the use of that material does not create or contribute to conditions of pollution or nuisance:

- i. Geosynthetic blankets; or
  - ii. Processed green materials.
- c. The Discharger may propose the use of other ADC materials, pursuant to CCR Title 27, section 20690 *et seq.* The Discharger must demonstrate that any proposed ADC materials meet the performance requirements of CCR Title 27, section 20705(b) and the minimum requirements of CCR Title 27, section 20705(e). The San Diego Water Board and the LEA must approve the use of any additional ADC, before the Discharger uses it at the Las Pulgas Landfill.

**F. CLOSURE AND POST-CLOSURE SPECIFICATIONS.**

1. The closure of the Las Pulgas Landfill shall be in accordance with CCR Title 27, Chapter 3, Subchapter 5, Articles 1 and 2, section 21710(d), and conducted by, or under the direct supervision of, a California registered civil engineer or certified engineering geologist.
2. At closure, the Las Pulgas Landfill shall receive a final cover, which will be designed and constructed to function with minimum maintenance, and shall consist of, at a minimum, a two-foot thick foundation layer (which may contain waste materials), overlain by a two-foot thick clay liner having a permeability of  $1 \times 10^{-6}$  cm/s or less, overlain by a one-foot vegetation layer or an engineered equivalent final cover approved by the San Diego Water Board pursuant to CCR Title 27, section 20800(b) and (c).
3. At closure, all portions of the final cover shall have a slope of at least three percent and the cover shall be maintained to prevent ponding and infiltration.
4. Cover materials shall be graded to divert precipitation from the WMU, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation events with a return frequency specified in this Order. Any drainage layer in the final cover shall be designed and constructed to intersect with the final drainage system for the WMU in a manner promoting free drainage from all portions of the cover [per CCR Title 27, section 20365(f)].
5. The post-closure maintenance period shall continue until the San Diego Water Board determines that the remaining wastes in the WMU no longer have the potential to threaten water quality [pursuant to CCR Title 27, section 20950(a)(1)].

6. Vegetation used at the site shall be selected to require minimum irrigation and maintenance, and shall not impair the integrity of the landfill cover or containment structures, and meet the requirements of CCR Title 27, section 21090(a)(3)(A)(1).
7. The Discharger shall comply with all applicable requirements of CCR Title 27, Subchapter 5, Article 2 for Closure and Post-Closure maintenance of the Las Pulgas Landfill.

**G. PROVISIONS**

1. **GENERAL PROVISION.** The wastes discharged at the Las Pulgas Landfill shall not cause or contribute to a condition of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code.
2. **DUTY TO COMPLY.** Any noncompliance with this Order constitutes a violation of the Water Code and is grounds for: (a) enforcement action, and (b) termination, revocation and re-issuance, or modification of this Order.
3. **CORRECTIVE ACTION.** The Discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.
4. **FINANCIAL ASSURANCES FOR CLOSURE, POST-CLOSURE AND CORRECTIVE ACTION.** The Discharger provided proof of financial assurances to the San Diego Water Board in the form of a Federal Certification, for closure, post-closure monitoring and maintenance, and for implementation of corrective action in response to a release of waste constituents from the WMU. This information was submitted as part of the 2008 JTD, and meets the requirements of CCR Title 27, section 22205.

Initially, the Discharger established financial assurances in the minimum amount of **\$26,378,020**. These financial assurances shall cover the costs estimated for closure, post-closure maintenance, and corrective actions for the reasonably foreseeable releases from the WMUs at the Las Pulgas Landfill:

Task	Estimated Cost	Source Of Estimate
Closure	\$18,608,000	JTD (2008) Volume 3, Appendix J, Table 2



Post-Closure Maintenance and Monitoring	\$7,531,300	JTD (2008), Volume 3, Appendix J, Table 3
Corrective Actions for reasonably foreseeable releases	\$238,720	JTD (2008), Volume 3, Appendix J, Table 1
<b>Total =</b>	<b>\$26,378,020</b>	

The Discharger shall update the financial assurances, every five years, to ensure that adequate funds are available, to cover the cost of closure, post-closure monitoring and maintenance, and corrective actions in response to a reasonably foreseeable release from the Las Pulgas Landfill.

The Discharger shall ensure that its selected financial assurances instrument meets the following minimum criteria:

- a. If the Discharger does not file the federal certification with CalRecycle, in accordance with CCR Title 27, section 22250, then the Discharger is required to comply with applicable financial assurance requirements of CCR Title 27, section 22212(a) by ensuring that the funds associated with the financial assurances, established pursuant to Finding No. 23 of this Order, can be made directly available to the San Diego Water Board when it finds that the Discharger has failed or refuses to implement closure, post-closure monitoring and maintenance, or corrective actions in response to a reasonable foreseeable release from the Las Pulgas Landfill. Financial assurance instruments that do not provide the San Diego Water Board direct access to funds are unacceptable.
- b. The amount of the financial assurances are regularly updated, at least every five (5) years, to ensure that adequate funds are available for implementation of closure, post-closure monitoring and maintenance, or corrective action.

When the Discharger notifies the San Diego Water Board of a transfer of ownership (per **Provision G. 7** and **Reporting Requirement H. 7**), the notification shall include a proposed schedule for the succeeding owner to provide evidence of acceptable financial assurance responsibility to the San Diego Water Board.

5. **PROPER OPERATION AND MAINTENANCE.** The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or

used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate laboratory and process controls including appropriate quality assurance procedures.

6. **REVISION OF WASTE DISCHARGE REQUIREMENTS.** This Order may also be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:
  - a. Violation of any terms or conditions of this Order;
  - b. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts;
  - c. A change in any condition that requires a temporary or permanent modification, reduction, or elimination of the authorized discharge; or
  - d. A material change in the discharge of wastes into the WMU.

The filing of a request by the Discharger for the modification, revocation and re-issuance, or termination of this Order or notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

7. **CHANGE IN OWNERSHIP.** This Order is not transferable to any person except after notice to the San Diego Water Board. The San Diego Water Board may require modification or revocation and re-issuance of this Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the Water Code. The Discharger shall submit notice of any proposed transfer of this Order's responsibility and coverage under Reporting Requirement H.7. The Discharger shall also inform the transferee of the status of the Discharger's annual fee account.
8. **PROPERTY RIGHTS.** This Order does not convey any property rights of any sort of any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the Discharger from liability under federal, State, or local laws, nor create a vested right for owner and operator to continue the regulated activity.
9. **ENTRY AND INSPECTION.** Under the authority of Water Code section 13267, the Discharger shall allow the San Diego Water Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the Discharger premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
  - c. Inspect at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order;
  - d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the Water Code, any substances or parameters at any location; and
  - e. To photograph or videotape any structures, facilities, activities, or other conditions that could result in adverse impacts to water quality and that are pertinent to compliance with this Order.
10. **REPOSITORY FOR WASTE DISCHARGE REQUIREMENTS.** A complete and correct copy of this Order shall be maintained at the facility, and shall be available to operating personnel at all times.
11. **SEVERABILITY.** The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.
12. **DISCHARGE OF DECOMMISSIONED MATERIALS.** A moratorium on the disposal of material from decommissioned sites into Class III and unclassified waste management units is established under Executive Order D-62-02. This moratorium shall remain in effect until both of the following conditions are satisfied:
- a. Department of Public Health completes its assessment of the public health and environmental safety risks associated with the disposal of decommissioned materials and its regulations setting dose standards for decommissioning take effect; and
  - b. The San Diego Water Board rescinds Cleanup and Abatement Order No. R9-2002-0330.
13. **HAZARDOUS SUBSTANCES.** Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous

substance, or sewage, to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Office of Emergency Services, the State Water Board, or the San Diego Water Board. This provision does not require reporting of any discharge of less than a reportable quantity as provided under section 13271 subdivision (f) and (g) of the Water Code, unless the Discharger is in violation of a prohibition in the applicable Water Quality Control Plan [Water Code section 13271(a)]. This provision does not authorize a violation of the federal Clean Water Act section 301 or Water Code section 13260.

14. **PETROLEUM RELEASES.** Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Office of Emergency Services, the State Water Board, or the San Diego Water Board. This provision does not require reporting of any discharge of less than 42 gallons, unless the discharge must be reported pursuant to section 311 of the Clean Water Act, or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan [Water Code section 13272]. This provision does not authorize a violation of the federal Clean Water Act section 301 or Water Code section 13260.
15. **HAZARDOUS WASTE EXCLUSION PROGRAM.** The Discharger shall implement a hazardous waste exclusion program pursuant to CCR Title 27, section 20870 and CFR Title 40 section 258.20, and comply with any additional load inspection requirements imposed by the LEA with jurisdiction over the facility.
16. **DISCHARGES TO NAVIGABLE WATERS.** Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill materials subject to section 404 of the Clean Water Act and discharges subject to a general National Pollution Discharge Elimination System (NPDES) permit) must file an NPDES permit application with the San Diego Water Board.
17. **EFFECTIVE DATE.** This Order becomes effective on the date of adoption by the San Diego Water Board.

18. **ORDER No. 2000-54 SUPERSEDED.** Upon adoption, this Order supersedes Order No. 2000-54.

## H. REPORTING REQUIREMENTS

1. **REPORT OF WASTE DISCHARGE/JOINT TECHNICAL DOCUMENT AMENDMENT.** The Discharger shall file a new Report of Waste Discharge/amendment to the Joint Technical Document at least **120 days** prior to the following:
- a. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;
  - b. A significant change in the disposal method, location or volume (e.g., change from land disposal to land treatment);
  - c. A change in the type of waste being accepted for disposal;
  - d. The addition of a major industrial waste discharge to a discharge of essentially domestic waste, or the addition of a new process or product by an industrial facility resulting in a change in the character or type of waste being discharged;
  - e. Any planned change in the regulated facility or activity, which may result in noncompliance with this Order; or
  - f. As required for implementation of an Evaluation Monitoring Program (pursuant to CCR Title 27, section 20425) and/or a Corrective Action Monitoring Program (pursuant to CCR Title 27, section 20430).
2. **GENERAL REPORTING REQUIREMENT.** The Discharger shall furnish to the San Diego Water Board, within a reasonable time, any information which the San Diego Water Board may request to determine whether cause exists for modifying, revoking and re-issuing, or terminating this Order. The Discharger shall also furnish, upon request by the San Diego Water Board, copies of records required by this Order.
3. **PRELIMINARY DESIGN REPORT.** At least 120 days prior to the beginning of construction for each new construction phase, a preliminary Design Report shall be submitted to the San Diego Water Board and shall include, but not be limited to, the engineered design plans, engineering specifications, and descriptions for all liners and other containment structures, leachate collection and removal components, leak detection system components, precipitation and drainage control facilities, interim covers, and description of ancillary facilities, and all information pursuant to CCR Title 27, section 21760(a)(1).





business hours, at a location at or near the WMU, the following documents and records:

- a. Inspection records, training procedures, and notification procedures required by this Order and CFR Title 40, section 258.20;
- b. Any WMU design documentation for placement of leachate or gas condensate as authorized by this Order and CFR Title 40, section 58.28(a)(2);
- c. Any demonstration, certification, finding, monitoring, testing, or analytical data as required by this Order, CCR Title 27, and CFR Title 40, Subpart E, section 258.50, *et seq.*
- d. Closure and post-closure care plans and any monitoring, testing, or analytical data as required by this Order, CCR Title 27, and CFR Title 40, section 258.60 and section 258.61;
- e. Any cost estimates and financial assurance documentation required by this Order, CCR Title 27, and CFR Title 40, Subpart G, section 258.70, *et seq.*;
- f. Certifications from the generator that the analyses submitted are representative of the material to be disposed;
- g. Analytical data or Material and Safety Data Sheets representing the waste stream;
- h. The Chain-of-Custody form showing the sample's integrity was not compromised;
- i. The approximate volume (in cubic yards) of the waste(s) and the transporter information;
- j. Any information required by CFR Title 40, section 258.29(a)(4) [placement of leachate or landfill gas condensate as allowed by CFR Title 40, section 258.28(a)(2) and this Order], section 258.29(a)(6) [closure and post-closure plans and monitoring, testing, or analytical data as required by CFR Title 40, section 258.60 and section 258.61], and section 258.29(a)(7) [any cost estimates and financial assurance documentation required by CFR Title 40, Subpart G];
- k. Notifications from the Discharger required pursuant to CCR Title 27, section 21710(a)(4) and section 21710(c), and this Order;

- l. Records required to be kept in compliance with CCR Title 27, section 21710(f); and
- m. The JTD and any amendments thereto prepared pursuant to CCR Title 27, section 21585(a)(4); and any additional records and certifications required to be kept in compliance with this Order.

Any other information that is necessary to comply with CFR Title 40, Part 258, CCR Title 27, and this Order, notify the San Diego Water Board **within 14 days** of updating the information in the Operating Record of the facility.

- 9. **CHANGE IN OWNERSHIP.** The Discharger shall notify the San Diego Water Board, in writing, at least **30 days** in advance of any transfer of this Order's responsibility and coverage between the current owner and new owner for construction, operation, closure, or post-closure maintenance of the Landfill. This agreement shall include an acknowledgement that the existing owner is liable for violations up to the date of transfer of ownership and that the new owner is liable after the date that ownership of the property transfers. The agreement shall include an acknowledgement that the new owners shall accept responsibility for compliance with this Order, including obtaining such financial assurances as the State may require, for implementation of closure and post-closure maintenance and monitoring of the WMU.
- 10. **INCOMPLETE REPORTS.** Where the Discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge, or submitted incorrect information in a Report of Waste Discharge, or in any report to the San Diego Water Board, it shall promptly submit such facts or information. The Discharger shall notify the San Diego Water Board of any changes in information submitted to the San Diego Water Board under the applicable State Water Board-promulgated requirements of CCR Title 27 [pursuant to CCR Title 27, section 21710(a)(4)].
- 11. **ENDANGERMENT OF HEALTH AND ENVIRONMENT.** The Discharger shall report any noncompliance, which may endanger human health or the environment. Any such information shall be provided orally to the San Diego Water Board **within 24 hours** from the time the owner becomes aware of the circumstances. A written submission shall also be provided within **five days** of the time the owner becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, or prevent recurrence of the noncompliance. The

San Diego Water Board, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within **24 hours**.

12. **NOTIFICATION OF SLOPE FAILURE.** The Discharger shall notify the San Diego Water Board immediately, upon a determination that a slope failure is occurring or has occurred at the facility. The Discharger shall promptly repair any slope failure that affects or threatens the integrity or the performance of the foundation, liner system, waste containment structures, or the structures which control leachate, surface drainage, erosion, or gas at the WMU. Any temporary slope, constructed as part of an engineering measure to mitigate slope stability, must comply with requirements in **Landfill Construction Specifications E.4.b, E.4.c and E.4.f** of this Order.
13. **NOTIFICATION OF SEEPAGE.** The Discharger shall immediately report by telephone or e-mail a discovery of any previously unreported seepage of liquid from any active, inactive, or closed WMU at the Las Pulgas Landfill, and shall comply with reporting requirements in **Section G of Monitoring and Reporting Program No. R9-2010-0004**.
14. **NOTIFICATION OF LEACHATE PRODUCTION CHANGE.** The Discharger shall notify the San Diego Water Board **within seven days** if fluid is detected in a previously dry LCRS, or unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in the LCRS [CCR Title 27, section 21710(c)(3)].
15. **NOTIFICATION OF CLOSURE.** The Discharger shall notify the San Diego Water Board that the WMU is to be closed and provide such notice either at the same time as CalRecycle (pursuant to CCR Title 27, section 21110) or **180 days** prior to beginning final closure activities (for the entire WMU or a portion thereof), whichever is sooner. The Discharger shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable federal and State regulations. The Discharger shall notify the San Diego Water Board within **30 days** of completing all closure activities for a WMU, or a portion thereof, in the case of incremental closure under CCR Title 27, section 21090(b)(1)(D). The Discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations. The Discharger shall certify that closed units shall be maintained in accordance with an approved post-closure maintenance plan.





representative of that person. An individual is a duly authorized representative only if:

- i. The authorization is made in writing by a person described in paragraph (a) of this provision;
  - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and
  - iii. The written authorization is submitted to the San Diego Water Board.
- c. Any person signing a document under this Order 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."

- d. **Duty to Use Registered Professionals.** Pursuant to CCR Title 27, section 21710(d), any report submitted in compliance with CCR Title 27 and this Order, which proposes a design or design change (or which notes occurrences) that might affect the WMU's containment features or monitoring systems shall be approved by a registered civil engineer or a certified engineering geologist appropriately licensed by the State of California.

The Discharger shall provide documentation that plans and reports required under this Order are prepared by or under the direction of, appropriately qualified professionals. CCR Title 27, section 20324(b) and section 21090(b)(1)(C); and California Business and Professions Code section 6735, section 7835, and section 7835.1 all require that engineering and geologic evaluations and judgments be performed by or under the direction of registered professionals. A statement of qualifications and registration numbers of the responsible lead professionals shall be included in all plans and reports submitted by the Discharger. The lead professional shall sign and affix their registration stamp to the report, plan or document.

20. **SAN DIEGO WATER BOARD ADDRESS.** The Discharger shall submit all paper copies of reports and notifications required under this Order and other information requested by the San Diego Water Board to:

California Regional Water Quality Control Board, San Diego Region  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123  
Attn: Land Discharge Program Supervisor

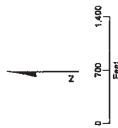
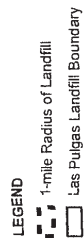
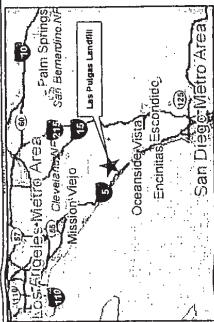
**I. NOTIFICATIONS.**

1. **PENALTIES FOR INVESTIGATION, MONITORING OR INSPECTION VIOLATIONS.** The San Diego Water Board reserves its right to take any enforcement action authorized by law for violations of the terms and conditions of this Order.
2. **CCR TITLE 27 DEFINITIONS.** Definitions of terms used in this Order shall be as set forth in CCR Title 27, section 20164.
3. **DELEGATION OF AUTHORITY.** The San Diego Water Board has delegated to the Executive Officer, all the powers and authority that may be delegated pursuant to Water Code section 13223. The Board anticipates that the Executive Officer may exercise his authority to make modifications or revisions in appropriate cases, to the monitoring and reporting program. The Board further directed the Executive Officer to exercise discretion in determining whether proposed modifications and revisions should be considered for approval by the Board.

*I, David W. Gibson, 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, San Diego Region on May 12, 2010.*



DAVID W. GIBSON  
Executive Officer



Source: U.S. Geologic Survey 1:24K (7.5-minute) Topographic Map, 2006  
 Quads shown: Las Pulgas Canyon and Margaria Peak

PROJECT NO  
 SCALE

PREPARED BY

DESIGN MANAGER

DATE

## CHRONOLOGY OF CONSTRUCTION OF PHASE 1 EXPANSION UNIT AND ENFORCEMENT

The following is a chronology of correspondence between the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) and the United States Marine Corps (USMC), regarding the construction of the Phase 1 expansion unit at the Las Pulgas Landfill, and subsequent violations pertaining to the expansion unit.

- June 24, 1997 Letter sent by USMC (LtC K. Quigley) to San Diego Water Board (Mark Alpert). **RE: Notification of Intent to Install Leachate Collection and Removal Systems at Las Pulgas and San Onofre Landfills.**
- March 5, 1998 Draft Joint Technical Document (JTD) submitted for review and comment.
- March 5, 1998 Submittal of "Final Environmental Assessment for Las Pulgas Landfill permitted Disposal Area Expansion and Leachate and Recovery System Installation" by USMC.
- March 11, 1998 Submittal of "Final Environmental Assessment for Las Pulgas Landfill permitted Disposal Area Expansion and Leachate and Recovery System Installation" by USMC.
- March 12, 1998 Letter sent from San Diego Water Board (Mark Alpert) to Mr. Tom DeCosta, Waste Management Division. **RE: Reporting Schedule and Information update for the San Onofre and Las Pulgas Sanitary Landfills Pursuant to Regional Board Order No. 93-86.** San Diego Water Board conducting information update for landfills.
- April 24, 1998 Letter from the USMC (LtC. R. Tiberg) to San Diego Water Board (Mark Alpert). Letter contains the completed Joint Application for Landfill expansion, and the Report of Facility Information.
- May 1, 1998 Letter from USMC (Tom DeCosta) to San Diego Water Board (Brian McDaniel). **RE: Contractor Quality Control Specifications for Construction of Landfill Liner Systems at San Onofre and Las Pulgas Landfills.** Letter contained the construction quality assurance (CQA) guidelines from the contract specifications for construction of the leachate collection and recovery system (LCRS) systems at both landfills.
- July 22, 1998 Revisions to JTD submitted to San Diego Water Board from the USMC. Attached was the geosynthetic clay liner (GCL) technical evaluation.
- August 3, 1998 Report submittal from EMCON to San Diego Water Board. **RE: Alternative liner design for lateral expansion of Las Pulgas and San Onofre Landfills.**



- August 24, 1998 Revised Report of Waste Discharge (ROWD) submittal in the form of a Joint Technical Document for lateral expansion of Las Pulgas Landfill.
- September 15, 1998 **Letter** sent from San Diego Water Board (John Robertus) to USMC (Tom DeCosta). **RE: Joint Technical Document / Report of waste Discharge; San Onofre and Las Pulgas Sanitary Landfills.** Letter acknowledges receipt of JTD (March 5, 1998), and subsequent revisions (July 22, August 3, August 24, and September 2, 1998). Letter outlines the conditions under which the USMC may proceed with the construction of the landfills as per the Water Code and Title 23.
- November 20, 1998 Letter from USMC (Tom DeCosta) sent to San Diego Water Board (Mark Alpert). Letter was a summary of submittal dates for the ROWD for the expansion of the Las Pulgas and San Onofre Landfills.
- December 1, 1998 Letter from San Diego Water Board (John Robertus) to USMC (Commanding General). **RE:** Letter explains that the 150-day waiting period to begin construction on the project expired on September 5, 1998 and therefore the USMC can commence with the construction of the lateral expansions of the landfills.
- May 24, 1999 Construction of the liner and LCRS at Las Pulgas Landfill completed.
- August 12, 1999 Letter from San Diego Water Board (Mark Alpert) sent to Commanding General. **RE: Compliance Inspection – Las Pulgas and San Onofre Landfills.** A portion of the letter outlines what is required in the CQA Liner Certification Report, as requested by USMC Environmental Security during a post-inspection briefing.
- December 3, 1999 Letter from San Diego Water Board (John Robertus) to Commanding General. **RE: Notice of Violation No. 99-193: Las Pulgas Landfill, U.S. Marine Corps Base Camp Pendleton.** Failure to submit a final CQA Documentation Report.
- December 17, 1999 Submittal of CQA Final Documentation Report for the Las Pulgas liner expansion project.
- March 8, 2000 Letter sent by San Diego Water Board (John Robertus) to the USMC (Theresa Trost). **RE: Construction Quality Assurance (CQA) Plan and Final Documentation Report, San Onofre and Las Pulgas Landfills, U.S. Marine Corps Base, Camp Pendleton, CA.** San Diego Water Board informs USMC that the submittal of 12/17/99 fails to meet the requirements for a final CQA report.
- March 24, 2000 Letter sent from San Diego Water Board (John Robertus) to the Commanding General. **RE: Waste Discharge Requirement Update – Request for Information.** Letter requests the submittal of any additional information reflecting changes that have occurred since the submittal of the 1998 Joint Technical Document.



- May 10, 2000      **Adoption of WDR Order No. 2000-54 by San Diego Regional Board.**
- June 6, 2000      Submittal of Testing Summary for Camp Pendleton Landfills from Ninyo and Moore. This submittal was submitted as the final CQA Report for the Phase 1 expansion unit.
- April 21, 2003      **NOTICE OF VIOLATION NO. R9-2003-0154.** On April 8, 2003, the San Diego Water Board conducted a routine compliance inspection at the Las Pulgas Landfill after receiving an inspection report from the San Diego County LEA, informing the San Diego Water Board of a series of violations at the site. The San Diego Water Board staff observed that temporary measures had been installed on the affected slopes in an attempt to control erosion and runoff. On April 16, 2003, the San Diego Water Board conducted a follow-up inspection after another storm event. The USMC had failed to implement effective erosion and drainage control measures in the Phase 1 Expansion cell at the facility. Additional measures are required to effectively prevent further erosion and damage to drainage conveyance system parameters due to high volumes of runoff from the upper and lower decks of the Phase 1 expansion unit.
- May 13, 2003      **INVESTIGATIVE ORDER NO. R9-2003-0206:** Technical Report of Damage to Waste Management Unit and Stormwater Conveyance System at the Las Pulgas Landfill. The Order set a due date of September 27, 2003 for the USMC to provide the San Diego Water Board with a technical report containing the results of their evaluation.
- July 2003      USMC voluntarily halts discharges of solid waste into Phase 1 expansion cell at Las Pulgas Landfill.
- December 16, 2003      San Diego Water Board receives technical report: "Technical Evaluation of Soil Slumping and Geosynthetic Liner Damage and Construction Quality Assurance Report for Liner Repairs, Las Pulgas Landfill", prepared by Brown and Caldwell (dated November 2003).
- January 30, 2004      **NOTICE OF VIOLATION NO. R9-2004-0044:** Upon review of a technical report (Brown and Caldwell, 2003), the San Diego Water Board staff identified a number of technical discrepancies between the as-built construction and the design specifications for the expansion of the Phase 1 waste cell. Some of those conditions are also associated with violations of WDR Order No. 2000-54.

In addition, reporting deficiencies were also identified in technical reports submitted to the San Diego Water Board by the USMC pursuant to WDR Order No. 2000-54: "Waste Discharge Requirements for the U.S. Marine Corps, Marine Corps Base Camp Pendleton, Las Pulgas Landfill, San Diego County." These deficiencies were

associated with the WDR Discharge Specification No. B.34 requiring the U.S. Marine Corps to submit an acceptable final Construction Quality and Assurance (CQA) Report for the Phase 1 expansion unit at the Las Pulgas Landfill. Additionally, the cover letter failed to contain certification statement required by Order R9-2004-0044.

- August 16, 2004 San Diego Water Board receives a technical report from the USMC: "Work Plan Evaluation of Liner and Leachate Collection and Removal System and Preparation of a Construction Quality and Assurance Report, Las Pulgas Landfill", prepared by Environmental Remediation Resources (ERRG) and dated August 2004.
- December 1, 2004 San Diego Water Board receives technical reports from the USMC: Liner and Leachate Collection and Removal System Evaluation, Las Pulgas Landfill, Marine Corps Base Camp Pendleton, prepared by ERRG and dated November 2004.
- Construction Quality Assurance Report Liner, Leachate Collection and Removal System Phase 1 Construction, Las Pulgas Landfill, prepared by ERRG and dated November 2004.
- December 6, 2004 San Diego Water Board staff requested (via email) the USMC to provide complete copies of the following technical reports:
- Liner, Leachate Collection and Removal System (LCRS) at the Marine Corps Base Camp Pendleton, prepared by EMCON, May 1997 (Contract Document).
- Geotechnical Report for Las Pulgas and San Onofre Landfills, Camp Pendleton, prepared by EMCOM, dated August 1996 (Geotechnical Report).
- December 9, 2004 San Diego Water Board staff received the technical reports from the USMC, as requested in the December 6, 2004 e-mail.
- December 13, 2004 San Diego Water Board staff met with USMC staff/management from Environmental Security, Facilities Maintenance and ROICC staff to discuss EO/staff concerns and pending enforcement actions for Las Pulgas Landfill.
- December 21, 2004 San Diego Water Board staff sent comment letter to USMC on technical reports prepared by Brown and Caldwell (2003) and EERG (2004).
- February 1, 2005 **NOTICE OF VIOLATION NO. R9-2005-0040.** San Diego Water Board issued Notice of Violation No. R9-2005-0040 for violations of WDR Order No. 2000-54, caused by approximately 1,000 gallons of leachate overflowing the LCRS above ground tank, and discharging to unlined areas.

- February 9, 2005 **NOTICE OF VIOLATION NO. R9-2005-0071.** San Diego Water Board issued Notice of Violation No. R9-2005-0071 for a leachate seep discovered by the USMC, on the side slope of the Phase 1 expansion unit.
- February 11, 2005 **INVESTIGATIVE ORDER NO. R9-2005-0075.** San Diego Water Board issued investigative Order No. R9-2005-0075 for sampling of the leachate seep at the Las Pulgas Landfill. The analytical summary report was due by April 11, 2005.
- February 28, 2005 San Diego Water Board developed Cleanup and Abatement Order No. R9-2005-0029 for violations of waste discharge requirements (Order No. 2000-54) for solid waste disposal operations at Las Pulgas Landfill.
- April 22, 2005 **NOTICE OF VIOLATION NO. R9-2005-0119.** San Diego Water Board issued Notice of Violation No. R9-2005-0119 for failure to submit the technical report regarding the leachate seep, as required under Investigative Order No. R9-2005-0075.
- July 21, 2005 **NOTICE OF VIOLATION NO. R9-2005-0217.** San Diego Water Board issued Notice of Violation No. R9-2005-0217 for failure to submit complete information in the technical report required under Investigative Order No. R9-2005-0075.
- January 27, 2006 **CLEANUP AND ABATEMENT ORDER NO. R9-2006-0016.** San Diego Water Board issued Cleanup and Abatement Order (CAO) No. R9-2006-0016 to the USMC requiring the USMC to develop and implement a Corrective Action Plan for the Phase I expansion area of the Las Pulgas Landfill.
- February 24, 2006 **CLEANUP AND ABATEMENT ORDER NO. R9-2006-0016.** San Diego Water Board reissued CAO No. R9-2006-0016, revising the compliance date to December 31, 2006 for the USMC to submit the Corrective Action Plan.
- December 26, 2006 USMC submitted a Corrective Action Plan for the Phase I expansion area in accordance with CAO No. R9-2006-0016.
- February 23, 2007 San Diego Water Board issues a comment letter to the USMC informing the USMC that the submitted Corrective Action Plan fails to comply with the minimum requirements of the CAO (Directive B.1.c) for implementation of an alternative remedial action.
- April 13, 2007 **ADDENDUM NO. 1 TO CAO NO. R9-2006-0016.** San Diego Water Board issued Addendum No. 1 to CAO No. R9-2006-0016, revising the due date for the Corrective Action Plan to December 14, 2007.

- December 13, 2007 USMC submitted a Corrective Action Plan for the Phase I expansion area at the Las Pulgas landfill in accordance with CAO No. R9-2006-0016 and addenda thereto.
- March 21, 2008 San Diego Water Board issued a letter to the USMC indicating that the Corrective Action Plan submitted in December 2007 fulfills the requirements of CAO No. R9-2006-0016 (with addenda). In that same letter, the San Diego Water Board provided the USMC with several comments regarding the Corrective Action Plan.
- July 1, 2008 The USMC submitted a revised Corrective Action Plan addressing the San Diego Water Board comments from March 2008. The revised Corrective Action Plan also includes a schedule for implementation of the Corrective Action Alternative.
- December 9, 2008 The USMC submitted a Report of Waste Discharge in the form of a Joint Technical Document detailing the liner design for the Phase II expansion area at the Las Pulgas Landfill. After the adoption of waste discharge requirements and upon completion of construction activities in Phase II, the USMC will implement corrective actions for the Phase I expansion area.