California Regional Water Quality Control Board
San Diego Region

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Edmund G. Brown Jr.
Governor

ORDER NO. R9-2011-0039

AN ORDER MODIFYING 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. On May 12, 2010, the San Diego Water Board adopted Waste Discharge Requirements (WDR) Order No. R9-2010-0004, which updates waste discharge requirements for the United States Marine Corps (USMC), Las Pulgas Landfill (Landfill).

2. By letter dated January 28, 2011, the USMC submitted a request to amend Order No. R9-2010-0004 to modify the geotechnical design criteria for the Phase II expansion area of the Landfill. The proposed modifications are to provide more protection to the liner system, promote positive drainage and a more effective filter for fine-grained sediments, allow flexibility in the materials that can be used as the sacrificial layer on the side slopes, and allow for larger diameter materials to be left in the subgrade. Supplemental information to complete the amendment application was received through March 8, 2011.

3. The San Diego Water Board, on its own motion, is amending Order No. R9-2010-0004 to modify the language regarding Annual Fees. These modifications are necessary to bring the finding regarding Annual Fees into compliance with current State regulations. Annual Fees for landfills are based on the Threat to Water Quality (TTWQ) and Complexity definitions provided in the Fee Schedule [as established in California Code of Regulations (CCR) Title 23, section 2200]. This change is necessary to allow for modifications of the TTWQ and Complexity rankings without the need to modify the Order in the future. No other changes are being make to Order No. R9-2010-0004.

4. The San Diego Water Board has notified the USMC and all known interested parties of the intent to modify Order No. R9-2010-0004.

5. The San Diego Water Board, in a public meeting, has heard and considered all comments pertaining to the proposed modifications to the Order.

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 x 10^{-7} cm/sec

ii. 60-mil, single-sided textured, HDPE (textured side down)

iii. ~~16 ounce non-woven geotextile~~ **16-ounce/square yard geotextile, a drainage geocomposite material, or an equivalent engineered alternative design**

iv. 24-inch thick protective soil cover layer (operations layer)

v. Sacrificial, ultraviolet protection, 8-ounce/**square yard** non-woven geotexile **or a plastic cover with sandbag ballast placed** on any geomembrane-lined areas until covered by the protective soil cover

3. Finding No. 11.c shall be modified as follows:

LEACHATE COLLECTION AND REMOVAL SYSTEM – SIDESLOPES. The LCRS on the sideslopes will be comprised of a **16-ounce/square yared geotextile, a drainage geocomposite material, or an approved, equivalent engineered alternative design that meets the regulatory requirements of CCR Title 27, section 23040.** ~~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 x 10^{-3} cm/sec or greater.~~

4. Finding No. 11.d shall be modified as follows:

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 a ~~8~~ ~~10.5-ounce~~ non-woven filter fabric geotextile-lined trench and backfilled with permeable gravel.

5. Finding No. 12 shall be modified as follows:

PROTECTIVE ~~SOIL~~ COVER SOIL LAYER. The protective ~~soil~~ cover soil (PCS) 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 have a permeability of at least 2.0×10^{-3} cm/sec or greater~~. **The function of this layer is twofold. First, the PCS must provide protection to the underlying liner components during initial waste placement into the lined expansion area. Second, the PCS much allow the percolation of liquid (i.e., leachate and storm water) into the underlying LCRS. With respect to the second function, the PCS must prevent the build-up of hydraulic head on top of this layer in excess of 12 inches, and must not cause a discharge of leachate or storm water in the form of a seep, on exposed faces, or into unlined areas of the Landfill. The PCS must have a thickness of at least two feet and must be placed continuously across the basal liner system, and initially placed 8 to 10 feet vertically up the side slopes.**

6. Finding No. 18 shall be modified as follows:

SURFACE WATER MONITORING PERFORMANCE. The surface water monitoring network must comply with applicable performance requirements [CCR Title 27, sections 20415(c)(2)(A) and (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."

7. Finding No. 20 shall be modified as follows:

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~~ Flores Creek Hydrologic Subarea.

8. Finding No. 24 shall be replaced as follows:

~~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 annual fee imposed pursuant to subdivision (d) of section 13260 of the Water Code (or CCR Title 23, section 2200) for the same discharge.~~

The Las Pulgas Landfill is an operating/active waste management unit (WMU), and the USMC is thereby required to pay a quarterly fee, (i.e., tipping fee) as determined by the Department of Resources, Recycling and Recovery, pursuant to section 48000 et seq. of the Public Resources Code. The USMC is also required to pay an annual fee (i.e., waste discharger permit fee) as determined by the San Diego Water Board, pursuant to section 13260 et seq. of the Water Code. The annual fee shall be based on the Threat to Water Quality (TTWQ) and Complexity fee schedule criteria, established under CCR Title 23, section 2200 et seq.

9. Landfill Construction Specification E.2 shall be modified as follows:

SUBDRAIN. The bottom liner system of the WMU shall be underlain by a subdrain collection system consisting of a collection trench lined with a 8 ~~**10.5-ounce**~~ non-woven filter fabric 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.

10. Landfill Construction Specification E.5.b shall be modified as follows:

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~~ 3-inches in diameter, organics, and other deleterious material.

11. Landfill Construction Specification E.9 shall be modified as follows:

PROTECTIVE COVER SOIL.

a. The ~~Operations~~ PCS ~~layer~~ shall meet the following minimum requirements:

i. Provide protection to the underlying liner components during initial waste placement into the lined expansion area, and allow for the percolation of liquid (i.e., leachate and storm water) into the underlying LCRS. The PCS shall prevent the build-up of hydraulic head on top of this layer in excess of 12 inches, and shall not cause a discharge of leachate or storm water in the form of a seep, on exposed faces, or into unlined areas of the Landfill.

~~i.~~ii. Be free of debris, roots, scrap material, asphalt, concrete, vegetation, untreated refuse, and other deleterious, or objectionable material.

~~ii.~~iii. ~~Be comprised of soil materials having a minimum laboratory permeability of $2x10^{-3}$ cm/sec.~~ Be comprised of soil materials that are considered suitable for use as follows:

- For sue with a 16-ounce/square yard geotextile, the PCS shall have a minimum laboratory permeability of $2x10^{-3}$ cm/sec or greater;
- For use with a geocomposite (side slope only), the PCS shall have an average laboratory permeability of 1×10^{-4} cm/sec or greater;
- For an equivalent engineered alternative design, the PCS shall have a minimum laboratory permeability greater than a barrier layer (1×10^{-5} cm/sec) as defined in 40 CFR, Part 258.60. Any engineered alternative design must be approved by the San Diego Water Board prior to construction.

~~iii~~iv. May not contain asphalt, concrete, limestone or other material that could adversely react with landfill leachate.

I, David W. Gibson, Executive Officer, do hereby certify 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 11, 2011.

James G. Smith, AEO
for David W. Gibson
Executive Officer