

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-XXXX

WASTE DISCHARGE REQUIREMENTS
FOR
NANCY C. CLEAVINGER, TRUSTEE OF THE NC CLEAVINGER FAMILY TRUST,
ET AL.
FLORIN PERKINS LANDFILL
UNCLASSIFIED LANDFILL UNITS
CLOSURE AND CORRECTIVE ACTION
SACRAMENTO COUNTY

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

1. The Florin Perkins Landfill (the "Site") is an unclassified landfill on Florin Perkins Road near the Jackson Highway about seven miles southeast of downtown Sacramento, as shown in Attachment A, which is incorporated herein and made part of this Order. The 210-acre property is in the southwest $\frac{1}{4}$ of Section 13 and the northwest $\frac{1}{4}$ of Section 24, T8N, R5E, MDB&M; and is comprised of Assessor's Parcel No. 061-0150-056 (in its entirety) and portions of Assessor's Parcel Nos. 061-0150-042, 061-0150-045, 061-0150-049, 061-0150-054, 061-0150-055, 061-0150-058, 078-0202-006, and 078-0202-016. The Site's geographic coordinates are latitude 38.5421° N, longitude -121.3867 ° W.
2. The landfill property is jointly owned and operated by the trustees of a group of family trusts and a revocable trust, including Nancy C. Cleavinger and Audrey A. Hunt, Trustees of the NC Cleavinger Family Trust; Audrey A. Hunt and Nancy C. Cleavinger, Trustees of the AA Hunt Family Trust; Janet E. Harvey and Nancy C. Cleavinger, Trustees of the JE Harvey Family Trust; Sally R. Davis and Martin M. Chorich, Co Trustees of the Sally R. Davis Trust; Audrey A. Hunt and Nancy C. Cleavinger, Trustees under a Testamentary Trust for Sally R. Davis under the terms of the will of Robert Earl Davis as established by Decree of Distribution entered on March 28, 1991; Gail Christine Brown, as successor Trustee of the VA Palmer Family Trust; Gail C. Brown, as Trustee of the GC Brown Family Trust. The trustees of these trusts are hereafter collectively referred to as "Discharger".
3. On 25 May 2012, the Discharger submitted a Report of Waste Discharge (RWD) describing significant changes at the facility since issuance of previous waste discharge requirements (WDRs) Order 95-196 in 1995. Such changes include, but are not limited to, the following:
 - a. Development of area fill cells along the north, south, and east sides of the unit;
 - b. Eviction of the landfill operator and cessation of landfill operations;
 - c. Cleanup of stockpiled wastes in the central part of the Site;
 - d. Implementation of an Evaluation Monitoring Program to investigate landfill gas (LFG)

and groundwater impacts at the Site; and

e. Development of corrective action and final closure plans for the Site.

In light of the above, WDR Order 95-196 no longer adequately regulates the facility. This revised WDR Order includes updated findings, regulatory references, and requirements to reflect the above changes and plans.

4. The landfill began accepting wastes in 1993 shortly after the neighboring Jackson Road Landfill (also owned by trusts represented by Nancy C. Cleavinger) reached capacity and ceased accepting wastes. Florin Perkins Landfill, Inc. operated the landfill from start-up in 1993 to 2005. In February 2005, the property owners evicted Florin Perkins Landfill, Inc. from the Site for noncompliance with Central Valley Water Board Orders and for breaches of the operating agreement. Since then, the landfill has been inactive.
5. Landfill-related facilities at the Site include: the landfill, a former materials stockpile area, gas and groundwater monitoring wells, precipitation and drainage controls, access roads, former buildings areas, and an onsite supply well. Other onsite facilities include: a 10-acre transfer station/materials recovery facility, buffer land, a utility tower easement, quarry pit areas, and site perimeter ditches and berms. See Attachment B: Site Map, which is incorporated herein and made part of this Order.
6. The landfill was developed in the pit of a former gravel quarry, portions of which were backfilled with overburden soil prior to landfilling.
7. Approximately 56 acres of the 106-acre area authorized for disposal under previous WDRs were developed prior to the cessation of waste disposal operations. Wastes were discharged to three unlined area fill cells along the north, south, and east sides of the unit referred to as the northern, southern and eastern fill areas. These waste disposal areas at the landfill may be summarized as follows:

| <u>Cell</u> | Active | Area (acres) | Waste Column (Feet) | Minimum Waste Elevation (Feet MSL) |
|--------------------|-----------|--------------|---------------------|------------------------------------|
| Southern Fill Area | 1991-1995 | 13 | 26 to 38 | 4.5 |
| Northern Fill Area | 1995-2003 | 14 | 18 to 44 | -2.5 |
| Eastern Fill Area | 2003-2005 | 12 | 23 to 33 | 7.8 |

¹. Data based on test pit investigation conducted as part of 2011 evaluation monitoring program.

An additional area, referred to as the Central Processing Area, was used primarily for materials stockpiling and processing. A limited amount of inert material, primarily concrete, was historically buried in the Central Processing Area prior to initiation of processing and area fill operations. Another area of subsurface fill east of the transfer station was clean-closed in 2008. The average elevation of waste at the Site is about 25 feet MSL or about 25 feet below ground surface (bgs) based on surrounding street level grade.

8. In addition to WDRs, the landfill operated under a Conditional Use Permit issued by the City of Sacramento and a Solid Waste Facilities Permit (SWFP) exemption issued by the Sacramento County Environmental Management Department (hereafter referred to as the Local Enforcement Agency or LEA) in 1997. In March 2004, the LEA rescinded the SWFP exemption after new solid waste regulations required that the facility be permitted as a construction and demolition inert (CDI) waste disposal facility if it was going to continue to receive waste. No CDI permit was ever issued for the facility because the landfill ceased operations shortly thereafter.
9. The landfill had a history of noncompliance under the former operator, and was the subject of various enforcement actions by the Central Valley Water Board and the LEA. WDR violations included: discharging non-inert wastes to the landfill, inadequate precipitation and drainage controls, failure to adequately cover wastes, failure to remove unauthorized wastes, and various reporting violations. In April 2005, the Central Valley Water Board issued Administrative Civil Liability (ACL) Order R5-2005-0071 to Florin Perkins Landfill, Inc. for its failure to submit and implement plans to investigate groundwater impacts at the Site and for other WDR violations. Florin Perkins Landfill, Inc. did not pay the civil liability (\$250,000), and the ACL Order was ultimately referred to the California Attorney General's Office for collection.
10. In October 2006, the Discharger entered into a land lease with Zanker Road Resources Management, Inc. (Zanker) whereby Zanker retained the right to develop and operate the landfill and onsite materials recycling facility. On 21 January 2011, the Executive Officer issued a Water Code section 13267 Order requiring that the Discharger submit various reports, including a notice as to whether the Discharger planned to restart the landfill. The Discharger subsequently met with Zanker, which informed the Discharger that it did not intend to operate the landfill. The Discharger therefore reported to the Board that it planned to close the landfill.

WASTES AND UNIT CLASSIFICATION

11. The landfill accepted solid wastes defined as "inert" under the California Code of Regulations, Title 27 ("Title 27"), section 20230.¹ The landfill was not authorized to accept wastes classified as hazardous, designated, or nonhazardous under Title 27. Previous WDRs further limited the discharge to non-water soluble, non-decomposable wastes consisting of the following:
 - a. Construction and demolition (C&D) debris (e.g., soil, rock, concrete, and cured asphalt);
 - b. Vehicle tires (shredded or unshredded);
 - c. Inert industrial wastes (e.g., clay products, glass, rubber, and plastic).A 2011 Evaluation Monitoring Program (EMP) investigation confirmed that wastes

1. Title 27 defined inert waste as *"that subset of solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste."*

discharged to the landfill consisted primarily of C&D debris including asphalt composite roof shingles, concrete, dirt, wood, metal, plastic and other C&D debris.

12. Various materials stockpiles in the Central Processing Area (e.g., green waste, wood chips, rice hull ash, gypsum) also became the subject of Central Valley Water Board and LEA enforcement after it was found that the piles constituted unauthorized waste disposal or violated the SWFP exemption. In 2006, after eviction of Florin Perkins Landfill, Inc. from the Site, most of these piles were removed from the Site as part of a site cleanup action under Title 27. See Finding 45.
13. Previous WDRs described the entire 106-acre authorized disposal area as a single, unclassified waste management unit under Chapter 15 regulations. Under these WDRs, each of the three area fill cells and the Central Processing Area are considered separate unclassified waste management units consistent with the Discharger's final closure and postclosure maintenance plan. The Central Processing Area is considered low threat, however, and is not separately monitored under these WDRs.

SITE DESCRIPTION

14. The Site is in the Sacramento Valley alluvial plain about 10 miles west of the Sierra Nevada foothills and 8 miles east of the Sacramento River. Topographic relief in the area is relatively flat with a natural grade of about 7 feet per thousand feet to the west toward the Sacramento River. Surface elevations range from about 55 feet MSL immediately east of the Site to 45 feet MSL immediately west of the Site.
15. Land uses within a one-mile radius of the Site include industrial, residential, agricultural, and transportation. Industrial uses in the area include landfills to the north (i.e., the closed Jackson Road Landfill) and southeast (L and D Landfill); industrial park warehouses to the south and west; and aggregate operations (Teichert Aggregates) to the east and northeast. The nearest residential developments are to the north and east as are major transportation corridors in the area (i.e., Folsom Boulevard, Watt Avenue, Hwy 50). Quarry land immediately east of the Site (e.g., Aspen I property owned by Teichert Land Company) is also planned for future residential development. See Attachment A: Location Map.
16. An October 2012 Department of Water Resources (DWR) well survey identified 10 groundwater supply wells within a one-mile radius of the Site, including 7 supply wells (4 agricultural and 3 domestic) within 1,000 feet of the landfill. Locations of these wells relative to the facility are shown on Attachment C, which is incorporated herein and made part of this Order by reference.
17. The Site is within the 100-year flood plain of the South Fork of the American River based on the Federal Emergency Management Agency's Flood Insurance Rate Map (Community-Panel No. 0602620195H, Map No. 06067C0195H) last revised in August 2012. Most of the Site is, however, within an area (Zone X) shown as protected by

levee.² No Base Flood Elevations (BFEs) or depths are shown in this zone, and purchase of insurance is not required. The map shows the southern buffer area and south and east margins of the landfill footprint outside of this protected area. The Discharger is not proposing any additional flood control measures for these areas given that the surface elevation of the landfill will be raised up to three feet by closure construction and the likelihood that onsite quarry pit areas would provide sufficient water storage capacity to buffer 100-year flood flows in the area not protected by levee.

18. The 100-year, 24-hour precipitation event for the Site is about 4.23 inches based on the *Rainfall Depth Duration Frequency Data* provided on the DWR Flood Management Division website for the Morrison Creek/S. Watt P Station approximately 2.75 miles southeast of the Site. The facility receives an average of 18.85 inches of precipitation per year as measured at this station. The mean pan evaporation rate is about 51 inches per year (4.25 inches per month) based on historical data collected at DWR’s Fair Oaks California Irrigation Management Information System (CIMIS) Station about 11.5 miles northeast of the Site.

Geology

19. The regional geology consists of alluvial, flood plain, and delta sediments from the Sacramento and San Joaquin Rivers and their tributaries deposited over geologic time. Such sediments resulted from erosion and/or glaciation of the Sierra Nevada and Coast Range Mountains and are estimated to be at least 2,500 feet deep in the Sacramento area.
20. The Site is underlain by the following sedimentary formations:

| <u>Formation</u> | <u>Age</u> | <u>Depth Range, bgs</u> | <u>Description</u> |
|-----------------------|-----------------------------------|-------------------------|---|
| Modesto/ Riverbank | Mid-to-late Pleistocene | 0 to 125 | Stream channel and flood basin deposits (e.g., cobble, gravel, coarse sand interspersed with silt, clay, and fine sand) |
| Laguna | Pliocene and early Pleistocene | 125 – 375 | Alluvium (e.g., silt, sand and clay interspersed with gravel lenses) |
| Mehrten | Miocene | >375 | Alternating sequences andesitic (dark-colored) alluvium confined by volcanic deposits (e.g., tuff-breccia) |

21. The permeability of soils immediately underlying the landfill units is unknown, but has been estimated based on soil type. In areas where the sand/gravel/cobble layer was

2. Zone X designates areas with a ≤ 0.2% annual chance of flooding; ≤ 1.0% annual chance of flooding with average depths less than one foot; and areas of base flood stream flooding with a contributing drainage area of less than 1 square mile or protected from the base flood by levees.

mined out prior to landfilling, or where overburden soil was backfilled or used as foundation material prior to landfilling, the permeability is estimated to range from about 10^{-5} to 10^{-7} cm/sec. In unmined areas of the facility, the permeability of the soil immediately underlying the landfill could be orders of magnitude higher.

22. The closest historically active fault to the Site is the Cleveland Hill Fault Zone (Holocene) in the northern reach of the Foothills Fault System about 70 miles north of the Site. In 1975, the Cleveland Hill fault produced an earthquake of 5.8 magnitude on the Richter scale that resulted in surface rupture. Other faults proximate to the Site (all late Pleistocene) include the Dunnigan Hills Fault about 28 miles to the NW, the Rescue Fault about 31 miles to the NE, the Lone Fault about 31 miles to the SE, and the Vaca Fault (of the Coast Range-Sierra Block boundary zone) about 33 miles to the west.
23. A maximum magnitude earthquake of 6.4 and a peak horizontal ground acceleration of 0.184g were computed for the Site using a probabilistic approach.³

Surface Drainage

24. Surface water drainage in the area is toward Morrison Creek, as seasonal stream about one mile south of the Site. Morrison Creek flows to the southwest and empties into the Sacramento River
25. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
26. The designated beneficial uses of the Sacramento River are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction and/or early development; wildlife habitat; and navigation.
27. Storm water runoff drains by sheet flow toward undeveloped areas of the original quarry pit on the north, northwest, northeast, and southwest sides of the Site. Runoff from the Central Processing Area and Southern Fill Area generally flows to the southwest quarry pit, while runoff from the Eastern Fill Area flows to the northern quarry pit, and runoff from the Northern Fill Area flows to the northwest quarry pit. See Monitoring and Reporting Program (MRP) Section A.4.
28. Existing cover slopes generally exceed 1%, except for landfill crest areas, where the minimum slope is 0.8%. There is no storm water discharge to surface water at the Site, except for limited discharges to street drains from areas outside of the quarry pit. Additional precipitation and drainage controls will be installed as part of landfill closure construction, as described in Finding 58.

3. Maximum magnitude earthquake derived from probabilistic seismic hazard (PSH) de-aggregation analysis assuming an earthquake in the Foothill Fault System with a 475-year return period (10% chance in 50 years).

UNSATURATED ZONE CONDITIONS

29. In areas of the Site undisturbed by mining (e.g., quarry pit rim and southern buffer area), the unsaturated zone typically consists of 10 to 15 feet of silt and/or clay soil underlain by 20 to 30 feet of sand, gravel, and/or cobble. In mined areas within the facility boundary (e.g., wells MW-D, DB-1, GP-9, and GP-12), most or all of the sand/gravel and/or cobble layers have been removed from the unsaturated zone and partially backfilled with overburden soil and/or landfill waste. In mined areas beyond the facility boundary, such as on the north and west sides of the Site, the height of the soil column in the unsaturated zone soil has been reduced by the depth of the quarry pit.
30. Field monitoring of landfill gas vapor probes installed as part of the 2011 EMP investigation showed methane concentrations ranging from 24.9% to 37.5% in the Southern Fill Area; 6.0% to 22.0% in the Eastern Fill Area; and 9.2% to 45.0% in the Northern Fill Area. Limited VOC field monitoring conducted on Southern Fill Area vapor probes showed low to trace concentrations of VOCs, primarily acetone and Freon 11, in landfill gas. The vapor probe monitoring data may be summarized as follows:

| Gas Constituent | Vapor Probe Monitoring Results | | | | | | | |
|-------------------------|--|------|-------|-------------------|------|------|--------------------|------|
| | Concentration (ppbv, except where noted) | | | | | | | |
| | Southern Fill Area | | | Eastern Fill Area | | | Northern Fill Area | |
| Vapor Probe: | VP-1 | VP-2 | VP-4 | VP-3 | VP-5 | VP-6 | VP-7 | VP-8 |
| Methane, % ¹ | 29.7 | 34.0 | 37.5 | 10.0 | 22.0 | 17.1 | 45.0 | 15.8 |
| <i>Average:</i> | 33.7 | | | 16.4 | | | 30.4 | |
| VOCs: ^{2,3} | | | | | | | | |
| Acetone | 110 | --- | 4,600 | --- | --- | --- | --- | --- |
| Benzene | 590 | --- | <50 | --- | --- | --- | --- | --- |
| Carbon disulfide | 23 | --- | <15 | --- | --- | --- | --- | --- |
| Freon 11 | <50 | --- | 4,600 | --- | --- | --- | --- | --- |
| Freon 12 | <50 | --- | 210 | --- | --- | --- | --- | --- |
| Vinyl chloride | 640 | --- | 170 | --- | --- | --- | --- | --- |

1. Results of December 2012 field monitoring.
2. Results of September 2011 field testing using photoionization detector.
3. "----" denotes probe not tested for VOCs.

31. There are 13 perimeter gas monitoring wells at the Site, including five along the outside perimeter of the Southern Fill Area (GPs-1,2,3,8, and 13); one along the western perimeter of the Site (GP-9); four along the northern perimeter of the Northern Fill Area (GPs-4, 10, 11, and 12); two along the eastern perimeter of the Eastern Fill Area (GPs-5 and 6); and one along the southeast site perimeter (GP-7). GPs-1 to 3 were installed by Florin Perkins Landfill, Inc. as part of a 2001 soil gas investigation required by the LEA, while GPs-4 through -13 were installed by the Discharger (owner) as part of the 2011 EMP investigation. Seven of the gas wells (GPs-1, 2, 3, 7, 8, 11, and 13) were triple (shallow, middle, and deep) nested completions; one gas well was a double (shallow and

deep) nested completion; and the other five gas wells (GPs-4, 6, 9, 10, and 12) were single (deep) completions. All wells were installed per Title 27, Section 20925, as approved by the LEA.⁴ See MRP, Section A.2.b.

32. The highest concentrations of landfill gas constituents detected in the perimeter soil-pore gas monitoring system at the Site have been in the gas wells proximate to the Southern Fill Area. In these wells, methane has been historically detected up to 2.6% by volume (GP-13M in 2011) and Freon 11 up to 8,800 ppbv (GP-2D in 2006). Higher concentrations have generally been detected during the wet season compared to the dry season. Historical monitoring data through March 2013 for the Southern Fill Area perimeter gas probes may be summarized as follows:

| Perimeter Gas Probe Monitoring Results | | | | | | |
|--|--|-----|-------------------|-------|-------------------|-------|
| Constituent | Maximum Concentration (ppbv, except where noted) | | | | | |
| Well: | GP-13 ¹ | | GP-3 ² | | GP-2 ² | |
| Probe: | M | D | M | D | M | D |
| Fixed Gases: | | | | | | |
| Methane, % | 2.6 | 1.9 | 1.2 | 2.0 | <0.5 | 0.9 |
| VOCs, ppbv | | | | | | |
| Carbon disulfide | <15 | <15 | 39 | 349 | 174 | 997 |
| Freon 11 | 74 | 84 | 2,100 | 2,300 | 1,200 | 1,630 |
| Freon 12 | <50 | <50 | 91 | 127 | 348 | 422 |

1. Results based on monitoring since November 2011 per LEA directive.
 2. Results based on monitoring since November 2005 per LEA directive.

Soil-pore gas probes with the highest Freon 11 concentrations (i.e., GPs-2 and 3) were proximate to Freon 11-impacted groundwater monitoring wells (e.g., MWs C and F), indicating that the soil-pore gas may be a source or transport mechanism for the groundwater impacts. See Finding 38 and Attachment B: Site map. Concentrations of landfill gas constituents detected in the other perimeter gas probes at the Site have generally been low or non-detect (e.g., <0.5% by volume).

GROUNDWATER CONDITIONS

33. Uppermost groundwater at the Site occurs in Riverbank alluvium at an average depth of about 63 feet bgs (-13 feet MSL) sitewide. The groundwater table is unconfined. The groundwater elevation typically ranges from about -10 feet MSL in the northwest corner of the Site (i.e., upgradient) to about -16.5 feet MSL in the southeast corner of the Site (i.e., downgradient) with about 1 foot of seasonal variation from the seasonal average. The groundwater flow direction is generally to the southeast at an average gradient of about 1.4 ft/1000 ft. No significant vertical gradients have been observed between zones in the uppermost aquifer.

4. All wells except GPs-7; 11; and 13 were screened in previously mined areas with less than three feet of gravel in the soil column.

34. Groundwater monitoring data indicates that background water quality at the Site has about 795 $\mu\text{mhos/cm}$ specific conductivity; 510 mg/L total dissolved solids (TDS) and 200 mg/L bicarbonate alkalinity.
35. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.
36. The groundwater monitoring system consists of 11 onsite wells, including MWs-A through F; G(S) and G(D); H(S) and H(D); and MW-I. MWs-A through C were installed in 1993; MWs-D through F in 2002; and MWs-G through I were installed in 2011. MWs A and I; G(S) and G(D); and H(S) and H(D) are well pairs screened in upper and lower intervals of the uppermost aquifer, respectively. Maximum depths of these paired wells correspond to about -31 feet MSL and -78 feet MSL, respectively. Although historically monitored as background wells under previous WDRs, MWs-A and I are not included as background wells under the MRP for this Order because they are not hydraulically upgradient of any of the landfill units. They are, however, required to be monitored for groundwater elevation under the MRP.
37. The groundwater monitoring system also includes five offsite monitoring wells, including two north/northwest of the Site at the Jackson Road Landfill and three east/southeast of the Site on the neighboring Aspen I property owned by Teichert Land Company. The Discharger owns and monitors the Jackson Road Landfill monitoring wells under separate WDRs issued for that facility. The Aspen I wells are operated by Teichert Aggregates, Inc., which has been voluntarily monitoring these wells and providing semiannual monitoring reports to the Central Valley Water Board since 2001. The locations of the monitoring wells at the Site relative to the landfill units are indicated in Section A.1 of the MRP.
38. Historical groundwater monitoring data for the Site indicates that there has been a release from the landfill consisting of low to trace concentrations of volatile organic compounds (VOCs) and mildly elevated concentrations of general minerals. The release was discovered in 2002 upon confirmation of the VOC trichlorofluoro-methane (Freon 11) in MW-F, a Point of Compliance well installed the same year along the southern perimeter of the Southern Fill Area. It is unknown how long the release preceded installation of that well. VOCs and/or elevated general minerals have since been detected in other Southern Fill Area compliance wells and immediately downgradient of the Northern Fill Area. No clear rising or falling trends have been historically evident in the Freon concentrations detected at either unit.
39. Groundwater monitoring data for the Second Half 2012 showed the following results for Southern Fill Area:

| Constituent | Concentration (mg/L, except where noted) | | | | |
|-----------------------------------|---|-------------------|---------------------|--------------------|--------------------|
| | Upgradient | | Point of Compliance | | |
| | MW-E | MW-B | MW-C | MW-F | Aspen I MW-2 |
| Specific Conductance, µmhos/cm | 751 | 762 | 1,526 ² | 1,066 ² | 1,000 ² |
| Bicarbonate | 280 | 160 | 720 ² | 500 ² | 350 |
| Sulfate | 49 | 150 | 91 | 29 | 42 |
| TDS | 500 | 540 | 990 ² | 700 ² | 550 |
| VOCs, µg/L | | | | | |
| Freon 11 | <0.2 ³ | <0.2 ³ | <0.2 ^{1,3} | 4.7 ¹ | 2.2 ¹ |

1. Confirmed (or previously confirmed) exceedance.
2. Potential exceedance.
3. Non-detect.

Low to trace concentrations of Freon 11 have also been intermittently detected in onsite wells MWs- G(S), G(D), and H(S) about 500 feet down gradient of the Southern Fill Area in the onsite buffer area. See Attachment B: Site Map.

40. Groundwater monitoring data for the Second Half 2012 showed the following results for the Northern Fill Area:

| Constituent | Concentration (mg/L, except where noted) | | |
|-----------------------------------|---|-------------------|---------------------|
| | Upgradient | Sidegradient | Point of Compliance |
| | JRLF MW-2 | MW-E | MW-D |
| Specific Conductance. µmhos/cm | 797 | 751 | 771 |
| Bicarbonate | 290 | 280 | 210 |
| Sulfate | 53 | 49 | 80 |
| TDS | 540 | 500 | 550 |
| VOCs, µg/L | | | |
| 1,1-DCE | 0.8 ¹ | <0.2 ² | <0.2 ² |
| Freon 11 | <0.2 ² | <0.2 ² | 1.9 ¹ |

1. Confirmed exceedance.
2. Non-detect.

Freon 11 concentrations in compliance well MW-D have ranged from about 1.0 µg/L to 4.5 µg/L since 2004. No other VOCs have been detected in MW-D or in any other monitoring wells downgradient or sidegradient of the Northern Fill Area. One VOC, 1,1-Dichloroethene, has also been historically detected upgradient of the unit in Jackson Road Landfill monitoring well JRLF MW-2), however.

41. No release to groundwater has been detected down gradient of the Eastern Fill Area, where Second Half 2012 groundwater monitoring results indicate the following concentrations:

| Constituent | Concentration (mg/L, except where noted) | | |
|-----------------------------------|---|------|---------------------|
| | Upgradient | | Point of Compliance |
| | JRLF MW-1 | MW-D | Aspen I MW-1 |
| Specific Conductance, µmhos/cm | 587 | 771 | 1,100 ¹ |
| Bicarbonate | 260 | 210 | 510 |
| Sulfate | 41 | 80 | 69 |
| TDS | 380 | 550 | 650 |
| VOCs, µg/L | | | |
| Freon 11 | <0.5 ² | 1.9 | <1.0 ² |

1. Potential exceedance.
 2. Non-detect.

Because the down gradient perimeter of the Eastern Fill Area is located along the eastern site boundary, the Eastern Fill Area has no onsite Point of Compliance wells. Nearby offsite well Aspen I MW-1, owned and voluntarily monitored by the neighboring property owner (Teichert Land Company) is therefore used as the Point of Compliance well for the Eastern Fill Area.

EVALUATION MONITORING PROGRAM

42. In 2011, the Discharger implemented an Evaluation Monitoring Program investigation in response to a January 2011 Water Code section 13267 Order issued by the Central Valley Water Board's Executive Officer. The EMP included a geophysical survey of the Site; an investigation of landfill wastes; installation and sampling of landfill vapor probes and perimeter soil-pore gas monitoring wells; installation and sampling of additional groundwater monitoring wells to delineate the extent of impacts; and various other activities. The EMP concluded that landfill gas in the Southern Fill Area was the primary source of Freon 11 impacts at the Site and that unmined gravel in the unsaturated zone in the southern portion of the Site was the likely pathway for LFG migration to groundwater. The complete EMP investigation, including Phases I and II, was documented in the December 2011 report *Evaluation Monitoring Program Report for the Florin Perkins Landfill*, prepared by the DE Team, comprised of Dunn Environmental, Inc.; Fujii Civil Engineering; and GeoChem Applications (DE Team). Additional details of the EMP investigation, including prior compliance history, are summarized in the Information Sheet attached to this Order.
43. The lateral extent of VOC impacts to groundwater were estimated to be as follows, in clockwise order:

- a. 200 feet east of the Site;
 - b. The southeast corner of the Site about 300 feet northwest of Aspen I MW-3 (historically non-detect for VOCs);
 - c. Immediately west of MW-C, DB-1 and the western perimeter of the Northern Fill Area;
 - d. The northern Site boundary about 850 feet north of the Northern Fill Area.
44. The EMP did not address the Northern Fill Area as a potential source of Freon 11 in groundwater, attributing the detection of low concentrations of Freon 11 in compliance well MW-D to likely migration of landfill gas from the Southern Fill Area. The study also did not address the detection of elevated levels of methane, a possible Freon carrier gas, in nearby Northern Fill Area vapor probe VP-7. Given the LFG and groundwater impacts detected at the Northern Fill Area, and potential for such impacts to occur in the future at the Eastern Fill Area, the Discharger plans to implement (and this Order requires that the Discharger implement) passive LFG controls at all three units as an interim corrective action measure.

CORRECTIVE ACTION

45. From February 2005 to October 2008, the Discharger implemented an extensive site cleanup in response to March 2006 and July 2007 Notice and Orders issued by the LEA. Most of the cleanup activity consisted of removing organic and inorganic materials stockpiled in the Central Processing Area. Construction and demolition debris buried east of the transfer station pad (Mather waste) and residual wood chips from the former chip and grind area in the southern part of the Central Processing Area were also excavated and removed. Testing of the piles and disposition of the piles was conducted in accordance with work plans approved by Central Valley Water Board staff and/or the LEA as applicable. Site cleanup of the Central Processing Area may be summarized as follows:

| <u>Material/Waste</u> | <u>Estimated Quantity</u> | | Disposition |
|-------------------------|---------------------------|-------------|-----------------------------|
| | <u>CY</u> | <u>Tons</u> | |
| Concrete/Brick Piles | 15,000 | 15,000 | Reused On-Site |
| Concrete Forms | 2,000 | 2,000 | Reused On-Site |
| Sheetrock Pile | 16,400 | 8,200 | Sent to Recycling Facility |
| Rice Hulls Piles | 6,290 | 2,500 | Reused On-Site |
| Wood Shingles Piles | 14,300 | 3,900 | Offsite Disposal |
| Chip and Grind Piles | 5,105 | 1,900 | Sent to Co-Generation Plant |
| Wood Waste Piles | 440 | 165 | Sent to Recycling Facility |
| Sod Pile | 14,000 | 14,000 | Reuse On-Site |
| Mather Demolition Waste | 30,744 | 21,521 | Offsite Disposal |
| Levee Slurry Piles | 4,460 | 4,460 | Reuse On-Site |
| Metals | 64 | 32 | Sent to Recycling Facility |
| Tires | 44 | 5 | Sent to Recycling Facility |
| Misc. Trash | 1,008 | 378 | Offsite Disposal |

| | | | |
|--------------------------|---------|-------|--|
| <i>Estimated Totals:</i> | 109,855 | 74061 | |
|--------------------------|---------|-------|--|

46. In response to the January 2011 Water Code section 13267 Order, the Discharger submitted an Engineering Feasibility Study/Corrective Action Plan (EFS/CAP) report (30 December 2011 *Engineering Feasibility Study and Phased Corrective Action Plan for the Florin Perkins Landfill*, prepared by the DE Team) that evaluated various corrective action alternatives for addressing VOC impacts at the Site (e.g., groundwater pump and treat, active landfill gas extraction, landfill closure). Groundwater pump and treat was determined to be infeasible for a variety of reasons including a lack of hydraulic control, low VOC concentrations, and a risk of drawing impacted LFG into contact with the saturated zone. Active LFG extraction was also considered to be infeasible due to the relatively low methane concentrations in waste at the Site. The EFS/CAP recommended phased landfill closure, passive landfill gas controls, and monitored natural attenuation as the most effective and feasible corrective action options for addressing impacts at the Site. The report also suggested soil vapor extraction as a possible future corrective action measure at the Site.

Interim Landfill Gas Controls

47. The Discharger proposes installation of passive LFG controls at each unit prior to landfill closure as an interim corrective action measure to address landfill gas concerns (see *Final Closure and Postclosure Maintenance Plan*, Appendix D, *Landfill Gas Monitoring and Control Plan for the Florin Perkins Landfill*, prepared by the DE Team). The LFG controls will consist of passive LFG vents and associated monitoring probes installed in two phases over a three year period in advance of landfill closure, beginning with the Southern Fill Area.
48. The first phase of the interim LFG controls at each unit will be installed in areas where existing vapor probes indicate the highest concentrations of methane (see Finding 30). The second phase will be installed, as necessary, based on the results of monitoring the first phase for a one-year period. The second phase will consist of any additional vents and monitoring probes necessary for interim LFG control prior to closure of the landfill unit. LFG monitoring will be conducted in accordance with the Landfill Gas Monitoring and Control Plan (LGMCP) as approved by the LEA and incorporated into the MRP under this Order. Upon installation of final cover per the landfill closure schedule, the interim vents would be incorporated into a long term LFG control system constructed in accordance with the final closure plan. See Finding 61.
49. Construction and operation of the passive LFG vents will be subject to local approvals and/or permits, including those from the Sacramento Air Quality Management District, which may require that the Discharger obtain a permit to construct and operate the vents, depending on the results of air emissions testing. The schedule in WDR Provision I.8 incorporates the Discharger's anticipated timeline for obtaining local permits and approvals.
50. All gas vents would consist of 4 inch diameter, Schedule 80 PVC vertical risers with wind-

driven turbines on top. The depths of the gas vents would range from about 18 to 40 feet below existing cover grade and average about 25 feet below the existing cover grade. Screen heights will range from about 5 to 15 feet.

51. MRP Order _____ requires that the Discharger monitor the landfill gas control system, including existing and future vents and LFG probes, to evaluate its effectiveness as a corrective action measure. The MRP also requires soil-gas monitoring of the perimeter probes for LFG constituents (methane and VOCs).

Final Closure Plan

52. Title 27 does not specify prescriptive closure requirements for an unclassified landfill, however, in the event of a release, landfill closure can be required under as a corrective action measure. Additionally, Water Code section 13360(a)(1) allows the Central Valley Water Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
53. On 14 December 2012, the Discharger submitted a Final Closure and Postclosure Maintenance Plan for the landfill (December 2012 *Final Closure and Postclosure Maintenance Plan for the Florin Perkins Landfill*, prepared by the DE Team) in response to the January 2011 Water Code section 13267 Order. Proposed closure activities include site preparation; stockpiling of cover soil, re-grading/buttressing landfill slopes; relocation of wastes along utility tower footings; placement of final cover; construction of precipitation and drainage and LFG controls; establishment of vegetative cover; and installation of survey monuments. Closure activities would be conducted over a 10 year period beginning with the Southern Fill Area in 2013 and ending with the Northern Fill Area and Eastern Fill Area in 2022. Each cell would be closed as a separate landfill unit. The Southern Fill Area would be closed first because it was found to be the most likely source of Freon 11 detected in groundwater at the Site.
54. The Final Closure Plan proposes installation of a non-prescriptive final cover on each cell, as follows, from top to bottom:
 - a. Vegetative cover – ½ foot of compacted soil seeded with native grass mix;
 - b. Engineered soil layer – 1½ feet of compacted soil;
 - c. Foundation layer -- 1 foot of compacted soil and/or inert waste.

Existing landfill cover and soil diverted from the onsite transfer station/MRF (approximately 35,000 cubic yards per year) will be used for cover soil.⁵ Additional soil will be mined from the quarry pits, if needed.

5. Approximately 340,000 cubic yards of imported soil is anticipated to be needed for cover construction, including 110,000 cubic yards for the Southern Fill Area, 91,000 cubic yards for the Eastern Fill Area, and 130,000 cubic yards for the Northern Fill Area.

55. The top decks of the units will be graded with slopes ranging from a minimum of 1% (Eastern Fill Area) to a maximum of 3.3% (Northern Fill Area). In proposing less than 3% minimum slopes, the plan includes a demonstration that the design will meet the performance standard under Section 21090(b)(1)(B) (i.e., diversion of drainage from laterally adjacent areas, prevention of ponding) such that the top decks will be adequately drained. The demonstration was largely based on the fact that top deck areas should receive minimal drainage from laterally adjacent areas and that settlement in these areas should be minimal given that the landfill accepted a relatively small percentage of decomposable waste compared to a Class III landfill. Therefore ponding should be less of a concern.
56. Landfill side slopes steeper than 3H:1V will be re-graded to a maximum of 3H:1V, the prescriptive standard under Title 27 absent a demonstration of slope stability under Title 27, Section 21090(a). Such slopes will include areas along the western slope of the Northern Fill Area, the northern slope of the Northern Fill Area, and northern slope of the Eastern Fill Area. Re-grading of such slopes will involve relocation of wastes from the upper portion of the slope to the toe area, extending the unit footprints up to 30 feet on the west side of the facility and from 8 to 20 feet on the north side of the facility. Where re-grading steeper slopes to achieve 3H:1V is infeasible due to physical constraints (i.e., utility tower footings, waste orphaned by access road), wastes will be re-located, or if re-location is not feasible, buttressed with fill soil.
57. A technical report demonstrating the stability of the cover slopes per Title 27, section 21750(f)(5) is not required for the facility because none of the final cover slopes will exceed 3H:1V and the landfill is unclassified.
58. Storm water runoff from the landfill units will be discharged to the quarry pits on the north and/or west sides of the facility, as follows:
 - a. Eastern Fill Area
Runoff will be directed away from the Aspen I property, toward the north and west pits. Runoff from the eastern side slope will be captured in a triangular swale (6 feet wide and 2 feet deep) constructed along the eastern perimeter of the unit and conveyed to the north pit. Top deck runoff will be directed by means of berm and swale to over-side (O/S) drains on the north, west, and south sides of the unit. Runoff from the north side of the unit (including O/S drain) will flow to the north pit via the eastern perimeter swale. Runoff from the south and west sides of the unit (including O/S drains) will be discharged to the Central Processing Area, which drains by sheet flow to the southwest pit.
 - b. Northern Fill Area
Top deck runoff will be captured by O/S drains on each side of the unit. Runoff from the north and east sides of the unit (including O/S drains) will be discharged directly to the north pit, while runoff from the west side of the unit (including O/S drains) will be discharged directly to the northwest pit. Runoff from the south side of the unit will be discharged to the Central Processing Area.

c. Southern Fill Area

The top deck will be flush with the southern perimeter and graded to drain to the north. Top deck runoff will be captured by O/S drains on the north side of the unit. All side slope (including O/S drain) runoff will be discharged to the Central Processing Area.

59. The Final Closure Plan includes a demonstration that discharges to the quarry pits are unlikely to cause or contribute to groundwater mounding based on the lack of any evidence of historical mounding and the Site geology, which includes significant clay sequences in the unsaturated zone underlying the pits that should impede groundwater recharge from the pits.
60. Per Title 27, Section 21090(b)(3), all landfill precipitation and drainage facilities (e.g. O/S drains, swales, culverts, outfall, and, quarry pits) will have sufficient capacity to handle a 24-hour, 100-year storm event.
61. Landfill closure will include the installation of long term LFG controls. Prior to final cover construction at a given unit, the interim LFG vents would be capped flush with the landfill surface to allow placement of cover soil. The vents would then be either extended with vertical risers up above the final cover or connected to subsurface manifold piping tied into a centralized passive vent system. Up to 16 wind turbine-driven vents are anticipated to be installed at each landfill unit, depending on the effectiveness of the venting system. Design modifications such as carbon absorption may also be necessary to meet local air district requirements and conversion to an active LFG extraction system may become necessary if the passive controls prove to be inadequate for LFG control.
62. Provision I.12 requires that the Discharger submit a revised Final Closure and Post-Closure Maintenance Plan that reflects the requirements under these WDRs (including MRP ___) and any other planned changes in the closure plan for the landfill not requiring revision of this Order.

FINANCIAL COST OF CLOSURE

63. According to the Final Closure and Postclosure Maintenance Plan, the total estimated cost for landfill closure, including installation of final cover, precipitation and drainage controls, landfill gas vents, reporting and contingency costs, is \$2,196,240 in 2012 dollars. (This cost estimate does not include installation of gas and groundwater monitoring systems already in place.) The total estimated cost for landfill postclosure maintenance, including gas and groundwater monitoring, is \$77,700 per year or \$2,361,000 for 30 years in 2012 dollars.
64. Title 27 does not require the operator of an unclassified landfill to provide financial assurances for closure, postclosure maintenance, and/or corrective action.

CEQA AND OTHER LEGAL REFERENCES

65. The City of Sacramento approved a Negative Declaration and filed a Notices of Determination for this facility with the Sacramento County Recorder 20 August 1979, in

accordance with applicable provisions of Title 14 of the California Code of Regulations and the City of Sacramento's environmental regulations. The City also issued a Special Use Permit for the project containing required mitigation measures, including a condition that the project conform to the requirements of the Central Valley Water Board.

66. The revision of the existing WDRs for this facility is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) pursuant to California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.
67. Water Code section 13267(b) provides that:

In conducting an investigation specified in subdivision (a), the Central Valley Water Board may require that any person who has discharged, discharges, or is suspected of discharging, 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 discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Central Valley Water Board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

The technical reports and monitoring and reporting program required by this Order (MRP _____, attached) are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

68. This Order implements:
- a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;*
 - b. *Chapters 1 through 7, Subdivision 1, Division 2 of Title 27 of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;*
 - c. *The Porter-Cologne Water Quality Control Act (as amended January 1, 2002), Division 7, California Water Code.*
 - d. *State Water Resources Control Board Resolution No. 68-16, Statement of Policy With Respect to Maintaining High Quality of Waters in California.*

PROCEDURAL REQUIREMENTS

69. 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.
70. The Central Valley Water 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.

71. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Water Code Sections 13263 and 13267, that Central Valley Water Board Order No. 95-196 is rescinded except for purposes of enforcement, and that Nancy C. Cleavinger and Audrey A. Hunt, Trustees of the NC Cleavinger Family Trust; Audrey A. Hunt and Nancy C. Cleavinger, Trustees of the AA Hunt Family Trust; Janet E. Harvey and Nancy C. Cleavinger, Trustees of the JE Harvey Family Trust; Sally R. Davis and Martin M. Chorich, Co Trustees of the Sally R. Davis Trust; Audrey A. Hunt and Nancy C. Cleavinger, Trustees under a Testamentary Trust for Sally R. Davis under the terms of the will of Robert Earl Davis as established by Decree of Distribution entered on March 28, 1991; Gail Christine Brown, as successor Trustee of the VA Palmer Family Trust; Gail C. Brown, as Trustee of the GC Brown Family Trust, their agents, assigns and successors, in order to meet the provisions of Division 7 of the Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of non-inert wastes to any of the landfill closure units, including wastes defined as "hazardous", "designated" or "nonhazardous", as defined under Title 27, is prohibited.
2. The discharge of new waste, or new discharge of existing waste, to any of the landfill closure units, or portion thereof, is prohibited, except for the following:
 - a. Wastes being relocated as part of final cover re-grading or buttressing under the Final Closure and Postclosure Maintenance Plan;
 - b. The stockpiling of inert wastes for future use in final cover construction;
 - c. The use of inert wastes for final cover foundation layer construction.
3. The discharge of wastes outside of a closure unit is prohibited, except for the stockpiling of inert wastes for future use in final cover construction.
4. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) to the landfill is prohibited.
5. The discharge of solid waste containing free liquid or moisture in excess of the waste's moisture holding capacity to the landfill is prohibited.
6. The discharge of wood or other decomposable waste or material at the Site (i.e., outside of the transfer station/MRF), including any of the landfill units, is prohibited.
7. With the exception of storm water infiltration, the discharge of solid or liquid waste or

leachate to groundwater is prohibited.

8. The landfill shall not cause pollution or a nuisance, as defined by Water Code section 13050, and shall not cause degradation of any water supply.

B. DISCHARGE SPECIFICATIONS

1. The discharge shall remain within the designated disposal area at all times.
2. The discharge of inert wastes at the facility allowed under Discharge Prohibition A.2 shall be subject to the following restrictions:
 - a. Wastes used in construction of final cover layers shall meet the project specifications. See Construction Specification E.4.
 - b. Only clean soil shall be used in buttressing landfill slopes and the construction of landfill precipitation and drainage controls.
3. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.

C. CORRECTIVE ACTION SPECIFICATIONS

1. Methane and other landfill gases, if present, 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.
2. Consistent with the EFS/CAP and Provisions of this Order, the Discharger shall implement the following corrective action measures to mitigate LFG impacts at the Site:
 - a. Install interim LFG controls (i.e., passive vents) at the landfill units prior to closure in accordance with Provision I.8;
 - b. Close the landfill units, including install final cover and long term LFG controls to the extent necessary to remove LFG as a source of impacts to groundwater;
 - c. Maintain the landfill cover, including interim and final cover in accordance with the Final Closure and Postclosure Maintenance Plan to promote runoff and reduce infiltration.
3. Any proposal to install active LFG controls at the Site shall require revision of the Final Closure and Post-Closure Maintenance Plan and compliance with Construction Specifications F.9 and F.10 of this Order.
4. Installation, repairs, or modifications to LFG control systems, interim or otherwise, shall be conducted so as not to damage landfill cover or expose landfill waste to the

elements. Boots shall be installed around LFG vents extended through landfill cover to prevent infiltration of run-on/runoff into wastes.

5. Monitoring of LFG controls installed as corrective action measures under this Order shall be conducted in accordance with MRP No. ____.

D. STORM WATER SPECIFICATIONS

1. The disposal area shall be protected from any washout or erosion of wastes or covering material, and from inundation, which could occur as a result of floods having a predicted frequency of once in 100 years.
2. Annually, prior to the anticipated rainfall period, all necessary storm water controls, including runoff diversion channels, shall be in place to prevent:
 - a. Erosion of the landfill cover,
 - b. Sedimentation and clogging of storm drains, and
 - c. Flooding of the Site.
3. Storm water run-on shall be diverted around the Site to the extent feasible. Any storm water run-on flowing onto the Site shall be diverted around the closure units into onsite drainage facilities [Title 27, § 20365(e)].
4. Collection and holding facilities associated with landfill precipitation and drainage control systems shall be managed to maintain the design capacity of the system [Title 27, § 20365(d)].
5. All storm water runoff shall be discharged to the onsite quarry pits as described in the Final Closure and Post-Closure Maintenance Plan. Runoff shall not be allowed to pond anywhere at the Site except for within the quarry pits.
6. Cover materials shall be graded to divert precipitation from the waste management unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation [Title 27, § 20365(f)].

E. CLOSURE AND POSTCLOSURE SPECIFICATIONS

Closure

1. The landfill final cover shall be designed, graded, and constructed consistent with the Findings and requirements of this Order, including the updated Final Closure and Post-Closure Maintenance Plan required under Provision I.12, as approved by the Executive Officer.
2. Closure activities shall be implemented in accordance with the schedule in the Provisions of this Order.
3. The final cover grade shall not be less than one percent in any area.

4. Final cover slopes shall not be steeper than a horizontal to vertical ratio of one and three quarters to one and designs having any slopes steeper than a horizontal to vertical ratio of three to one, or having a geosynthetic component, shall have these aspects of their design specifically supported in the slope stability report required in Title 27, § 21750(f)(5) [Title 27, § 21090(a)].
5. All landfill precipitation and drainage control systems shall be designed, constructed, operated and maintained to:
 - a. Convey peak flows from a 100-year, 24-hour storm event; and
 - b. Accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour event conditions.
6. The landfill closure units shall be designed, constructed, and maintained to prevent inundation or washout due to floods with a 100-year return period [Title 27, § 20250(c)].
7. The landfill cover shall be designed, constructed, and maintained to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, and washout under the precipitation conditions for the unit [Title 27, § 20365(a)].
8. Any drainage layer in the final cover shall be designed and constructed to intersect with the final drainage system for the waste management unit in a manner promoting free drainage from all portions of the drainage layer [Title 27, §20365(f)].
9. Any revisions to the Final Closure and Post-Closure Maintenance Plan applicable to a given landfill unit shall be submitted at least one year prior to the anticipated date of closure of that unit.
10. Closure of each waste management unit shall be under the direct supervision of a registered civil engineer or certified engineering geologist [Title 27, § 20950(b)].
11. The Discharger shall incorporate into the Final Closure and Post-Closure Maintenance Plan a cover-integrity monitoring and maintenance program which includes at least the following: a periodic leak search, periodic identification of other problem areas, prompt cover repair, and vegetation maintenance [Title 27, § 21090(a)(4)].
12. The Discharger shall complete a final cover survey upon completion of closure activities for that portion of the landfill. The final cover surveys shall include an initial survey and map [Title 27, § 21090(e)(1)]. Every five years, the Discharger shall conduct a survey of the closed landfill cover and submit an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's engineered soil layer [Title 27, § 21090(e)(2)].

13. Within 60 days of completion of all closure activities, the Discharger shall certify that all closure activities were performed in accordance with the most recently approved final closure plan and CQA Plan, and in accordance with all applicable regulations. The Discharger shall also certify that closed landfill units shall be maintained in accordance with and approved post-closure maintenance plan [Title 27, § 21710(c)(6)].

Postclosure

14. The post-closure maintenance period shall continue until the Central Valley Water Board determines that wastes remaining in the landfill unit(s) no longer pose a threat to water quality [Title 27, § 20950(a)(1)].
15. The Discharger shall conduct a periodic leak search to monitor of the integrity of the final cover in accordance with the schedule in the approved final post-closure maintenance plan [Title 27, § 21090(a)(4)(A)].
16. The Discharger shall periodically inspect and identify problems with the final cover including areas that require replanting, erosion, areas lacking free drainage, areas damaged by equipment operations, and localized areas identified in the required five-year iso-settlement survey [Title 27, § 21090(a)(4)(B)].
17. The Discharger shall repair the cover promptly in accordance with a cover repair plan to be included in the final post-closure maintenance plan [Title 27, § 21090(a)(4)(C)].
18. Throughout the post-closure maintenance period, the Discharger shall maintain the structural integrity and effectiveness of all containment structures, maintain the final cover as necessary to correct the effects of settlement and other adverse factors, maintain the monitoring systems, prevent erosion and related damage of the final cover due to drainage, and protect and maintain surveyed monuments [Title 27, § 21090(c)].

F. CONSTRUCTION SPECIFICATIONS

1. For the purposes of this Order, provisions of Title 27 and the SPRR pertaining to containment structures, features, or systems; or to WMU design or construction, shall include landfill final cover unless otherwise indicated by the provision.
2. The final cover constructed over each closure unit shall be constructed in accordance with the Final Closure and Postclosure Maintenance Plan, as follows, from bottom to top:
 - a. Foundation layer -- one foot of compacted soil and/or inert waste.
 - b. Engineered soil layer - 1½ feet of compacted soil
 - c. Vegetative cover – ½ feet of compacted soil seeded with native grass mix

3. The materials used for the foundation layer shall have appropriate engineering properties for a foundation layer in accordance with Section 21090(a)(1). The foundation layer shall be engineered to minimize the potential for differential settlement so as not to affect the structural integrity of the final cover.
4. The foundation and engineered soil layers of the final cover shall be constructed in accordance with the following specifications per the Final Closure Plan:
 - a. Both layers
 - 1) Materials
 - i. Shall have sufficient clay and/or silt content to allow compaction to project specifications (e.g., CL or ML under the Unified Soil Classification System).
 - ii. When compacted, be sufficiently smooth and free of rocks and debris so as not to impair overlying layer(s) (i.e., engineered soil and vegetative cover layers).
 - 2) Compaction
 - i. Lifts of 8 inches or less;
 - ii. 90% of maximum dry density
 - iii. 1×10^{-5} cm/sec maximum hydraulic conductivity;
 - b. Foundation Layer
 - 1) Materials
 - i. Clean soil or inert waste
 - ii. 3/4-inch maximum particle size
 - 2) Compaction
 - i. Coarse-grained materials: +/- 3% of optimum moisture content;
 - ii. Fine-grained materials: 0 to 4% wet of optimum moisture content;
 - c. Engineered Soil Layer
 - 1) Materials
 - i. Clean soil only;
 - ii. 3/8-inch maximum particle size
 - iii. Minimum 33% passing No. 200 U.S. Standard sieve;
 - iv. Minimum 12% passing 5 microns.
 - 2) Compaction
 - i. +/- 1% of optimum moisture content
5. The soil used in the vegetative cover layer shall support growth of the vegetative cover to the extent necessary to prevent erosion.
6. The Discharger shall ensure that the vegetative cover layer receives necessary seed, binder, and nutrients to establish the vegetation proposed in the Final Closure Plan.

The Discharger shall install necessary erosion and sedimentation controls to prevent erosion and sediment in runoff from the closed landfill during the period the vegetation is being established.

7. The vegetative cover layer shall be planted with native or other suitable vegetation so as to provide effective erosion resistance. Vegetative cover shall be:
 - a. Resistant to foreseeable adverse environmental factors (*e.g., climate, disease, and pests*);
 - b. Tolerant of the vegetative layer's soil conditions;
 - c. Germinate rapidly and have a high percentage of surface coverage;
 - d. Sufficiently persistent and self-propagating to prevent surface erosion; and
 - e. Compatible and harmonize with the proposed postclosure land use.
8. Final grading plans for each landfill unit shall be prepared and approved by a registered civil engineer or certified engineering geologist [Title 27, § 21090(b)(1)(C)].
9. The Discharger may propose changes to the landfill cover design before or after construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed cover system results in the protection of water quality equal to or greater than the design prescribed by this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design may need to be approved by the Central Valley Water Board.
10. At least **90 days** prior to initiation of any closure construction activities under the Final Closure Plan, the Discharger shall submit for review and approval all applicable plans and reports, including, but not necessarily limited to, the following:
 - a. An amended Final Closure and Post-Closure Maintenance Plan, as necessary, to describe any proposed design modifications under Construction Specification E.9.
 - b. A construction design report, including project specifications, drawings, grading and design plans; and
 - c. A Construction Quality Assurance (CQA) Plan which satisfies the requirements of Section 20324 of Title 27 as it applies to the construction of the erosion-resistant and foundation layers.

Closure construction shall proceed only after the above (and any other applicable) reports have been approved by Executive Officer.

11. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during closure construction of the landfill.

12. After completion of closure construction, the Discharger shall submit final documentation to the Executive Officer for review and approval in accordance with Section 20324(d)(1)(C) of Title 27 and the schedule in Provisions I.9 through I.11 herein. The report shall be certified by a registered civil engineer or a certified engineering geologist and shall contain sufficient information and test results to verify that construction was in accordance with the approved project plans and specifications, including the design report, CQA report, and Final Closure and Post-Closure Maintenance Plan. The Discharger shall also certify that closed landfill units shall be maintained in accordance with an approved postclosure maintenance plan [Title 27, § 21710(c)(6)].
13. Notwithstanding the 180-day timeline specified in Title 27, § 21880(c) for submission of closure certification reports, the Discharger shall submit these reports to the Central Valley Water Board, within **60 days** of completion of all closure construction activities at each landfill unit at the facility per Provisions I.9 through I.11 and the updated Final Closure and Post-Closure Maintenance Plan required under Provision I.12 of this Order. The closure documents shall include a final CQA report and any other documents necessary to support the certification [Title 27, § 21880].

G. FACILITY SPECIFICATIONS

1. The Discharger shall immediately notify the Central Valley Water 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.
2. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements. All storm water controls, including drainage facilities and quarry pit discharge areas, shall be maintained so that they function effectively during precipitation events.
3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and maintenance of vegetative cover.
4. The Discharger shall lock all groundwater monitoring wells with a lock on the well cap or monitoring well box. All monitoring devices shall be clearly labeled with their designation including all monitoring wells, LCRS risers, and lysimeter risers and shall be easily accessible for required monitoring by authorized personnel. Each monitoring device shall be clearly visible and be protected from damage by equipment or vehicles.

H. MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection and corrective action monitoring program provisions of Title 27, MRP No. R5-2013-XXXX, and the September 2003 SPRRs (see Section IX, PROVISIONS FOR MONITORING).

2. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, MRP No. R5-2013-XXXX, and the September 2003 SPRRs.
3. The Discharger shall comply with all standard monitoring and response to release provisions of the September 2003 SPRRs listed in Sections IX (PROVISIONS FOR MONITORING) and X (RESPONSE TO RELEASE).
4. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in MRP No. R5-2013-XXXX and the September 2003 SPRRs.
5. The water quality protection standard shall consist of the constituents of concern (COC), concentration limits, and the point of compliance. The water quality protection standard shall apply during the active life of the waste management unit, closure period, post-closure maintenance period, and any compliance period under Title 27, section 20410 [Title 27, § 20390].
6. The point of compliance at which the water quality protection standard applies is a vertical surface located at the hydraulically down gradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit [Title 27, § 20405).
7. The compliance period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program and is the number of years equal to the active life of the waste management unit plus the closure period [Title 27, § 20410(a)].
8. The concentrations of the constituents of concern in waters passing the Point of Compliance (defined pursuant to Title 27, section 20164 as a vertical surface located at the hydraulically downgradient limit of the landfill unit that extends through the uppermost aquifer underlying the unit) shall not exceed the concentration limits established pursuant to MRP No. R5-2013-XXXX.
9. The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the waste management unit [Title 27, § 20415(b)(1)(A)].

Detection Monitoring

10. A surface water monitoring system shall be established to monitor each surface water body that could be affected by a release from the waste management unit [Title 27, § 20415(c)].

11. An unsaturated zone monitoring system shall be established for each waste management unit [Title 27, § 20415(d)].
12. A sufficient number of monitoring points shall be installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance to allow the detection of a release from the waste management unit [Title 27, § 20415(b)(1)(B)1.].
13. Additional monitoring points shall be added as necessary to provide the best assurance of the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)2.].
14. The Detection Monitoring Program shall also include a sufficient number of monitoring points installed at appropriate depths and locations to yield groundwater samples from other aquifers or perched zones not already monitored to provide the **earliest possible detection** of a release from the waste management unit [Title 27, § 20415(b)(1)(B)3. and 4., and §20420(b)].
15. Detection monitoring data analysis methods, including those used for analysis of background data, shall be in accordance with Title 27, Section 20415(e)(7) through (e)(10) and the SPRR, Section IX (*PROVISIONS FOR MONITORING*).

Corrective Action Monitoring

16. Corrective action monitoring shall be conducted for the purposes of monitoring the effectiveness of corrective action measures in returning to the Water Quality Protection Standard.
17. Corrective action monitoring shall include one or more of the following data analysis methods, as appropriate:
 - a. Statistical and nonstatistical data analysis methods used to quantify release;
 - b. Evaluation of trends associated with release
 - i. Statistical methods (e.g., least squares fit, Sens slope)
 - ii. Graphical methods (i.e., time series plots, comparison of concentration contour maps). and
 - c. Water quality chemistry analysis

General

18. Sample collection and analysis shall be in accordance with an approved Sample Collection and Analysis Plan that includes the following elements:
 - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. Sample preservation information and shipment procedures;

- c. Sample analytical methods and procedures;
- d. Sample quality assurance/quality control (QA/QC) procedures; and
- e. Chain of custody control.

See also SPRR, Section IX, *PROVISIONS FOR MONITORING*.

19. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples [Title 27, § 20415(b)(4)(B)]. Groundwater samples shall not be field-filtered prior to laboratory analysis [40 C.F.R. § 258.53(b)]. Groundwater samples needing filtering (e.g., samples to be analyzed for dissolved metals) shall be filtered by the laboratory prior to analysis.
20. Groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same waste management area shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.
21. Monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program. Monitoring devices that cannot be operated and maintained to perform to design specifications shall be replaced after review and approval of a report (i.e., work plan) for the proposed replacement devices.
22. All borings are to be logged during drilling under the direct supervision of a registered geologist or registered civil engineer with expertise in stratigraphic well logging [Title 27, § 20415(e)(2)].
23. Soils are to be described according to the Unified Soil Classification System [Title 27, § 20415(e)(2)(A)]. Rock is to be described in a manner appropriate for the purpose of the investigation [Title 27, § 20415(e)(2)(B)].
24. The Discharger shall submit a work plan for review and approval at least **60 days** prior to installation or abandonment of groundwater monitoring wells.
25. The Discharger shall provide Central Valley Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation or abandonment of monitoring devices.
26. Driller's logs for all monitoring wells shall to be submitted to the Central Valley Water Board and the Department of Water Resources [Water Code, § 13751 and Title 27, § 20415(b)(3)].

27. Groundwater elevation, temperature, electrical conductivity, turbidity, and pH are to be accurately measured at each well each time groundwater is sampled [Title 27, § 21415(e)(13)].
28. The groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation being monitored shall be determined at least quarterly [Title 27, § 20415(e)(15)].
29. The Discharger shall graph all analytical data from each monitoring point and background monitoring point and shall submit the graphs to the Central Valley Water Board annually [Title 27, § 20415(e)(14)].

I. PROVISIONS:

1. The Discharger shall maintain a copy of this Order at the facility, including the MRP No. R5-2013-XXXX and the SPRRs dated September 2003, which are part of this Order, 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, including those not specifically referred to in this Order.
3. The Discharger shall comply with MRP No. R5-2013-XXXX, which is incorporated into and made part of this Order by reference.
4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Industrial Facilities, dated September 2003, which are attached hereto and made part of this Order by reference.
5. If there is any conflicting or contradictory language between the WDRs, the MRP, or the SPRRs, then language in the WDRs shall supersede either the MRP or the SPRRs, and language in the MRP shall supersede the SPRRs.
6. All reports required by this Order shall be submitted pursuant to Water Code section 13267.
7. By **31 January 2014**, the Discharger shall submit the following reports for review and approval:
 - a. An updated Sample Collection and Analysis Plan including the information listed in Monitoring Specification H.18 herein;
 - b. Pursuant to the monitoring specifications of these WDRS and Section C.1 of the MRP, an updated Water Quality Protection Standard Report consistent with the requirements of this Order, including the MRP and SPRR. The updated Water Quality Protection Standard Report shall include the following:

- i. Pursuant to Section 20415(e)(7)(B) and Monitoring Specifications H.15 and H.17, a technical report proposing updated statistical and non-statistical monitoring data analysis methods for the groundwater monitoring programs under this Order, including background, detection, and corrective action monitoring.
 - ii. An updated list of Constituents of Concern, Concentration Limits, Point of Compliance, Monitoring Points, and the Compliance Period each landfill unit under this Order.
 - iii. A contingency plan for ensuring that the Eastern Fill Area and Southern Fill Area will continue to be monitored in accordance with this Order and Title 27 requirements, given that some of the compliance wells for these units are located offsite and are not owned by the Discharger (i.e., Aspen I MWs-1, 2 and 3). At a minimum, the contingency plan shall address how long these wells will continue to be voluntarily maintained and monitored by their owner and the data reported; the need for an offsite access agreement for these wells; the feasibility of installing additional or replacement wells in the event that these wells are no longer available for monitoring; and any other relevant issues.
8. As proposed in the Landfill Gas Monitoring and Control Plan (LGMCP) under the EFS/CAP, the Discharger shall install passive LFG vents at the landfill units as an interim corrective action measure prior to landfill closure. These interim LFG controls shall be installed consistent with the following schedule:

| | Task | Due Date | |
|----|---|------------------------------|--|
| | | <u>Southern Fill Area</u> | <u>Northern and Eastern Fill Areas</u> |
| a. | Submit report documenting installation of initial set of interim LFG vents per LGMCP | 1 September 2013 | 30 September 2016 |
| b. | Obtain project permits and approvals, as required | 31 July 2014 | 31 October 2016 |
| c. | Monitor existing vapor probes and interim vents per LGMCP and MRP | 1 August 2014 – 31 July 2015 | 1 November 2016 – 31 October 2017 |
| d. | Submit plans for any additional vents and/or monitoring probes, as indicated by monitoring data | 15 September 2015 | 30 December 2017 |
| e. | Complete installation of interim LFG vents and probes | 15 July 2016 | 1 February 2018 |
| f. | Submit certification report for interim LFG controls | 30 September 2017 | 1 February 2019 |

9. Consistent with Phase I of the Final Closure Plan/Corrective Action Plan, the Discharger shall close the Southern Fill Area in accordance with the following schedule:

| | Task | Due Date |
|----|---|----------------------------|
| a. | Stockpile cover soil | 1 June 2013 - 15 June 2016 |
| b. | Submit Phase I construction and design plans for review and approval | 15 February 2015 |
| c. | Begin final cover construction at Southern Fill Area | 15 June 2015 |
| d. | Submit construction progress report showing that at least 30,000 yd ³ of soil has been stockpiled per year | 15 October 2015 |
| e. | Complete final cover at Southern Fill Area | 15 October 2016 |
| f. | Submit Phase I construction report | 15 December 2016 |

10. Consistent with Phase II of the Final Closure Plan/Corrective Action Plan, the Discharger shall install long term LFG controls on the Southern Fill Area and final cover on the Northern and Eastern Fill Areas (excluding steep sideslope regrading) in accordance with the following schedule:

| | Task | Due Date |
|----|---|---------------------------------------|
| a. | Stockpile cover soil for the Northern and Eastern Fill Areas | 1 June 2016 - 15 June 2022 |
| b. | Submit Phase II construction and design plans for review and approval | 15 February 2017 |
| c. | Begin installation of long term LFG controls at Southern Fill Area and cover construction at other units | 15 June 2017 |
| d. | Submit report documenting installation of long term LFG controls at Southern Fill Area | 1 October 2019 |
| e. | Submit progress reports for cover construction at the northern and eastern fill areas showing that at least 30,000 yd ³ of soil has been stockpiled per year | 15 November each year of construction |
| f. | Complete final cover on the Northern and Eastern Fill Area decks | 15 October 2020 |
| g. | Submit Phase II construction report | 15 December 2020 |

11. Consistent with Phase III of the Final Closure Plan/Corrective Action Plan, the Discharger shall complete closure of the Northern and Eastern Fill Areas, including installation of long term gas controls and regrading of steep side slopes, in accordance with the following schedule:

| | Task | Due Date |
|----|--|------------------|
| a. | Submit Phase III construction and design plans for review and approval | 15 February 2021 |
| b. | Begin installation of long term LFG controls and side slope re-grading per Findings 61 and 56. | 15 June 2021 |
| c. | Submit report documenting installation of long term LFG controls at both units | 15 October 2021 |
| d. | Complete side slope re-grading per Finding 56 | 15 October 2022 |
| e. | Submit Phase III construction report and landfill closure certification | 15 December 2022 |

12. By **1 February 2014**, the Discharger shall submit for approval the following updated plans to reflect the corrective action and closure requirements of these WDRs, including MRP No. R5-2013-XXXX, and any anticipated changes to these plans within the scope of this Order:
- a. An updated Final Closure and Postclosure Maintenance Plan; and
 - b. An updated Landfill Gas Monitoring and Control Plan.
13. In the event of any change in landowner or the operator of the waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Central Valley Water Board.
14. In the event of any change of ownership or responsibility for construction, operation, closure, or post-closure maintenance of the waste discharge facilities described in this Order, the Discharger shall notify the Central Valley Water Board prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, or post-closure maintenance will be in compliance with this Order and any revisions thereof [Title 27, § 21710(c)(1)].
15. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Central Valley Water 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 Central Valley Water Board, and a statement. The statement shall comply with the signatory requirements contained in Reporting

Requirement VIII.A.8 of the SPRR 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 Water Code. Transfer of this Order shall be approved or disapproved by the Central Valley Water Board.

16. The Discharger shall also notify the Central Valley Water Board of any proposed land use or closure plan changes. This notification shall be given 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these waste discharge requirements.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, 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 _____.

PAMELA C. CREEDON, Executive Officer