

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION**

ORDER NO. R8-2011-0002

**MAINTENANCE AND CORRECTIVE ACTION WASTE DISCHARGE
REQUIREMENTS
FOR**

**RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT AND
THE CITY OF HEMET**

**HEMET SANITARY LANDFILL
CLASS III SOLID WASTE DISPOSAL SITE
RIVERSIDE COUNTY**

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. The County of Riverside Waste Management Department (hereinafter the Discharger) operated the Hemet Class III Sanitary Landfill. The landfill is currently owned by the City of Hemet (hereafter the Owner). The Hemet Sanitary Landfill (HSL) area is 60 acres and is located northwest of the intersection of Warren Road and Esplanade Avenue, in the City of Hemet. The base of the Lakeview Mountains is located directly adjacent to the western edge of the landfill site. Specifically, the HSL is located in the southeast portion of Section 36, T4S, R2W, San Bernardino Meridian/Baseline. Attachment A shows a satellite image of HSL, which is hereby made a part of this Order.
2. The discharge of municipal solid waste to land is regulated by the California Code of Regulations, Title 27 (Title 27). The terms used in this Order are defined in Title 27, Chapter 2, §20164.
3. The HSL is currently regulated by Waste Discharge Requirements (WDR) Order No. 88-71, Supplementing Existing Waste Discharge Requirements Order No. 98-99, and Monitoring and Reporting Program (M&RP) 98-99-02. This order updates and replaces WDR Order No. 88-71, and removes HSL from the coverage of WDR Order No. 98-99 and M&RP Order No. 98-99-02.
4. This Order is being adopted in order to establish a corrective action program at the landfill and to continue the maintenance work by the Discharger and the Owner.
5. The County of Riverside leased the site from the City of Hemet for use as a sanitary landfill from February 1958 to October 1971. On March 1, 1972, upon completion of the landfilling operations, the lease expired and control of the property reverted to the City of Hemet.
6. The HSL served the incorporated cities of Hemet and San Jacinto, and other communities within the San Jacinto Valley. The major sources of waste generation were the urban areas of the cities of Hemet and San Jacinto. Waste disposed at the landfill consisted mainly of household refuse and road construction debris.

Non-chemical septage waste and waste crankcase oil were accepted in unlined ponds at the site. Wet sludge from car wash facilities was also accepted in unlined ponds.

7. The Owner has been using the far western unfilled portion of the landfill as an intermediate storage area for crushed asphalt and concrete. The Owner also used this area for composting greenwaste. The northwest corner of the landfill is used as a shooting range by the police department.
8. In 1990, the HSL was regraded and recompactd, and additional asphalt drains were installed at the landfill to minimize erosion.
9. Since the HSL ceased operating prior to November 27, 1984, the landfill was not required to be closed in accordance with Title 27. Therefore, the landfill cover only consists of approximately two feet of interim cover soil. There is no leachate collection and recovery system and no liner at the site.
10. The HSL is bounded on the west by resistant intrusive igneous Lakeview Mountain Tonalite. Alluvium underlies most of the landfill and generally thins to the west as it tapers out against the tonalite. The alluvium is comprised of fine to coarse grained nonmarine clastic sediments. Boring logs indicated that the alluvium is unconsolidated sand, silty sand, silt and clayey silt.
11. Groundwater flows to the east beneath the landfill at a hydraulic gradient of approximately 14 percent. On the western edge of the site near the Lakeview Mountains, the hydraulic gradient is as high as 20 percent across the landfill. Depth to groundwater ranges from approximately 32 to 132 feet below ground surface. The regional groundwater in the valley flows north towards the San Jacinto River.
12. A revised Water Quality Control Plan (Basin Plan) became effective on January 24, 1995, and was updated in February 2008. The Basin Plan specifies beneficial uses and water quality objectives for waters in the Santa Ana Region.
13. Groundwater beneath the site flows into the Lakeview/Hemet North Groundwater Management Zone, the beneficial uses of which include:
 - a. Municipal and domestic supply,
 - b. Agricultural supply,
 - c. Industrial service supply, and
 - d. Industrial process supply.
14. Surface water discharges from the landfill are tributary to the San Jacinto River, the beneficial uses of which include:
 - a. Municipal and domestic supply,
 - b. Agricultural supply,
 - c. Groundwater recharge,
 - d. Hydropower generation

- e. Water contact recreation
 - f. Non-contact water recreation
 - g. Warm freshwater habitat
 - h. Cold freshwater habitat
 - i. Wildlife habitat
 - j. Spawning, reproduction and development
15. Four groundwater monitoring wells, HE-1, HE-2, HE-3, and HE-4, were constructed from May 16, 1989 to June 24, 1989 around the perimeter of the site by the Discharger as part of the Solid Waste Assessment Test (SWAT) program. Monitoring wells HE-1 and HE-4 were considered the upgradient wells, and wells HE-2 and HE-3 were considered downgradient wells. The Discharger constructed a downgradient Evaluation Monitoring Program (EMP) compliance well, HE-5, in January 1999.
 16. Groundwater monitoring at the site has shown detectable concentrations of volatile organic compounds (VOCs), such as Benzene, cis-1,2-Dichloroethene (cis-1,2-DCE), Tetrachloroethylene (TCE), Trichloroethene (TCE) and vinyl Chloride (VC) in the downgradient wells at the site.
 17. A corrective action system (CAS), which is currently operating at the landfill, was installed on May 25, 1999 by the Discharger. The CAS includes a blower that extracts subsurface landfill gas from subsurface multi-level gas probes. The landfill gas then exhausts through two activated carbon drums, connected in series, which removes volatile organic compound (VOC) vapors. Landfill gas condensate is produced as a byproduct of the CAS operation and is collected in a dedicated gas condensate tank.
 18. On January 22, 2009, the Discharger submitted a complete Joint Technical Document (JTD) Addendum No.1 – Report of Waste Discharge Corrective Action Program, as required by Title 27, § 20430, which requires the Discharger to remediate any releases from any landfill unit to ensure compliance with the water quality standard¹.
 19. On April 16, 2009, Regional Board staff approved the JTD Addendum No. 1 for the HSL.
 20. Adoption of this Order updates an existing WDR for an existing facility and is categorically exempt from the provisions of the California Environmental Quality Act (Public Resources Code, §1000 et seq) in accordance with Section 15301, Chapter 3, Title 14 of the California Code of Regulations.
 21. The Regional Board has notified the Discharger, the Owner, and interested agencies and persons of its intent to prescribe revised WDRs for the HSL.

¹ Water Quality Standard (WQS) consists of the list of Constituents of Concern (COC), the Concentration Limits, and the Point of Compliance and all Monitoring Points. The WQS for HSL is defined in the monitoring and reporting program attached to this order.

22. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger and/or Owner, in order to meet the applicable provisions contained in the California Water Code (CWC), and Title 27, shall comply with the following:

A. DISCHARGE SPECIFICATIONS

1. GROUNDWATER:

Corrective action shall continue to remediate release from the HSL to the Water Protection Standard (Water Standard). Regional Board staff may request a study from the Discharger to evaluate the effectiveness of the current corrective measure, and if necessary, to evaluate expansion of the gas extraction system, and/or any new corrective measures to improve the cover, to decrease water infiltration, and to prevent gas production at the landfill. Corrective action measures taken may be terminated when the Regional Board staff is satisfied that the concentrations of all constituents of concern (COCs) are reduced to levels below their respective concentrations limits for a minimum of three consecutive years throughout the entire zone affected by the release.

2. SURFACE WATER:

Discharges from the site shall neither cause nor contribute to any surface water contamination, pollution, or nuisance, including, but not limited to:

- a. Floating, suspended, or deposited macroscopic particulate matter or foam;
- b. Increases in bottom deposits or aquatic growth;
- c. An adverse change in temperature, turbidity, or apparent color change beyond natural background levels and occurrences;
- d. The creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin; and
- e. The introduction or increase in concentration of toxic or other pollutants/contaminants resulting in unreasonable impairment of beneficial uses of the waters of the State.

3. UNSATURATED ZONE:

Discharges from the site shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials beneath or outside of HSL if such waste constituents could migrate to the waters of the State and cause a condition of contamination, pollution, or nuisance.

4. PRECIPITATION AND DRAINAGE CONTROL:

- a. Waste management units shall be designed, constructed, and maintained to prevent, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, and washout which could occur as a result of precipitation from a 100-year, 24-hour frequency storm.
- b. Top deck surfaces shall be constructed to achieve a minimum one-percent slope and to direct flows to downdrains.
- c. Downdrains and other necessary drainage structures must be constructed and maintained for all sideslopes.
- d. The gas condensate containment structures shall be protected and maintained continuously to prevent commingling of gas condensate with surface run-on and runoff and to ensure its effectiveness.
- e. The landfill shall not cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act (CWA).

B. LIQUIDS USAGE

The use of liquids, including groundwater or landfill gas condensate, for dust control or irrigation at the HSL is prohibited, unless they are used in accordance with an approved plan. Purged groundwater may be disposed at the site in accordance with requirements set forth in Resolution No. R8-2007-0036.

C. WATER QUALITY PROTECTION STANDARD

Unless proposed, and the Regional Board approves, an alternative water quality protection standard, compliance with this order shall be monitored using the water quality protection standard established by M&RP No. R8-2011-0002. The CAP must be continued until the site has been demonstrated to be in continuous compliance with its water standard (under Title 27 §20390) for a period of three consecutive years.

D. PROVISIONS

1. Comply with all discharge prohibitions, discharge specifications, provisions, and monitoring and reporting requirements of this order immediately upon its adoption.
2. Shall not cause the release of pollutants or waste constituents in a manner that could cause a condition of contamination, pollution, or nuisance to occur, as indicated by the most appropriate statistical or non-statistical data analytical method and retest method.
3. All wastes shall be maintained on property owned or controlled by the Discharger/Owner.

4. The discharge of all waste at a closed landfill is prohibited.
5. Maintenance of the HSL shall not cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the CWA.
6. Remove and properly dispose of any wastes that are placed at the site in violation of these requirements, and relocate that waste to an approved waste disposal facility.
7. Establish and maintain monuments in California coordinates (or equivalent) to define the boundary of the landfill footprint. The control benchmarks shall be certified by a licensed surveyor or a professional civil engineer authorized to practice in California.
8. Notify the Regional Board within 24 hours of any facility or slope failure necessary to maintain compliance with requirements within this order. A written notification shall be submitted to the Executive Officer within five days. Any failure that threatens the integrity of containment features at the landfill shall be promptly corrected and a corrective action report submitted to the Executive Officer.
9. Implement the attached M&RP No. R8-2011-0002 in order to detect any unauthorized discharge of waste constituents from the landfill, or any unreasonable impairment of beneficial uses caused by or associated with discharges of waste to the landfill.
10. At any time, a written request may be filed, including appropriate supporting documents, with the Regional Board, proposing modifications to M&RP No. R8-2011-0002. Once the revised M&RP has been approved by the Executive Officer, the Discharger shall implement any monitoring changes upon receipt of a signed copy of the revised M&RP.
11. The Owner of the landfill shall file an amended deed with the County Recorder by December 31, 2011. The amended deed must restrict any post development of the landfill and must also include a notation advising any potential purchaser of the property that:
 - a. The parcel had been used as an MSW landfill;
 - b. The land use options for the parcel are restricted in accordance with the uses set forth in the WDRs for the landfill; and
 - c. The responsibility for carrying out corrective action measures and maintenance work shall be shared between Discharger and Owner.

E. CONTINGENCY RESPONSES

1. **Leachate seep** –Immediately report by telephone the discovery of any seepage from, or soil staining at, the site. If feasible, a sample of the leachate shall be

collected and analyzed. A corrective action report shall be submitted to the Regional Board within seven days, containing at least the following information:

- a. Map – A map showing the location(s) of seepage;
 - b. Flow rate – An estimate of the flow rate or volume;
 - c. Description – A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
 - d. Corrective measures - Measures proposed to address any seep(s) for approval by Regional Board staff.
2. **Change in known release beyond facility boundary** – Any time the Discharger and/or Owner, or Regional Board staff concludes that the known release from the landfill has proceeded beyond the facility boundary, the Discharger/Owner shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).
- a. **Initial notice** – Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the change in known release.
 - b. **Updated notice** – Subsequent to initial notification, the Discharger/Owner shall provide updates to all Affected Persons, including any persons newly affected by the change in known release, within 14 days of concluding there has been any material change in the nature or extent of the known release.
 - c. **Submittal** – Each time the Discharger/Owner sends a notification to Affected Persons, the Discharger/Owner shall, within seven days of sending such notification, provide Regional Board staff with both a copy of the notification and a current mailing list of all Affected Persons.

F. DRAINAGE AND EROSION CONTROL

1. Design, construct, and maintain:
 - a. A run-on drainage control system to prevent flow from off-site sources onto the disposal areas of the landfill (active or inactive portions), and to collect and divert the peak flow calculated volume from off-site sources that result from a 100-year, 24-hour storm;
 - b. A runoff drainage control system to collect and divert both the calculated volume of precipitation and the peak flow from on-site surface runoff that results from a 100-year, 24-hour storm.
2. All drainage structures shall be protected and maintained to assure their effectiveness.

3. Annually, by October 1, all drainage control system construction and maintenance activities shall be completed and inspected. By October 31 of each year, the Discharger shall submit a drainage control system maintenance and inspection report, which may be combined with the Semi-Annual General Site Monitoring report that is due October 31 to staff of the Regional Board. The drainage control system maintenance report shall include, but not be limited to, the following information:
 - a. For the previous 12 months, a summary of the adequacy and effectiveness of the drainage control system to collect and divert the calculated volume of precipitation and peak flows resulting from a 100-year, 24-hour storm;
 - b. A tabular summary of both new and existing drainage control structures, including the types and completion dates of maintenance activities performed for each of these structures; and
 - c. An 11"x17" or larger site map indicating the locations of the elements listed in Item b., above, and the flow direction of all site drainage, as necessary².
4. At least 30 days prior to the construction of any new elements of the drainage control system, the Discharger/Owner shall submit a workplan outlining all design parameters and calculations, construction details, and a construction quality assurance plan for approval by Regional Board staff.
5. Submit as-built drawings within 4 weeks of completing construction of any new elements of the drainage control system at the site.
6. All design plans, construction plans, and operation and maintenance plans shall be prepared by, or prepared under the direct supervision of, a registered civil engineer or a certified engineering geologist.
7. Periodic inspection of all waste management units, the drainage control system, and all containment structures shall be performed to assess the conditions of these facilities, and to initiate corrective actions necessary to maintain compliance with **Provisions G.1 through G.4** of this order.
8. The facility shall be surveyed every 5 years either by aerial surveillance or a licensed surveyor to assure compliance with the one percent slope requirements. By December 31 of the 5th year, a map compiled from the survey data shall be submitted to Regional Board staff, showing landfill elevations, the flow direction of all site drainage, the drainage control system, and containment structures.
9. Notify the Regional Board staff site representative by telephone (951-782-4130) within 24 hours of determination of a failure of facilities necessary to maintain

² The site map is required only if there is change to the drainage plan. If there is no change to the drainage plan during the reporting period, it is not necessary to submit the site map.

compliance with the requirements in this order. Within 5 days, the notification shall be submitted in writing to the Regional Board.

10. Maintain a copy of this order at the Discharger's headquarters so it is available for review at all times.

11. Permit Regional Board staff:

- a. Entry upon premises where a discharge source is located;
- b. To copy any records required to be kept under the terms and conditions of this order;
- c. To photograph or videotape any structures, facilities, activities, or other phenomena that could result in adverse impacts to water quality and that are pertinent to compliance of the landfill with its WDRs; and
- d. To sample any discharges from the landfill.

12. The Owner shall notify the Regional Board in writing of any proposed change in ownership, while the current owner and the discharger shall hold joint responsibility for maintenance of the landfill. This notification shall be given prior to the effective date of the change and shall include a statement by the new Owner/Discharger that maintenance will be in compliance with any existing WDRs and any revisions thereof.

G. REQUIRED REPORTS AND NOTICES

1. REPORTING PROVISIONS:

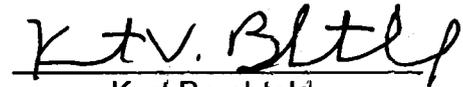
- a. Applications, reports or information submitted to the Regional Board shall be signed and certified in accordance with 40CFR §122.22.
 - b. The Discharger shall furnish, within 90 days of notification, unless the Regional Board and Discharger/Owner specifies or approves an alternative date certain, any information the Regional Board may request to determine whether cause exists for modifying, reissuing, or terminating this order. The Discharger/Owner shall also furnish to the Regional Board, upon request, copies of records that this order requires the Discharger/Owner to maintain.
2. Give advance notice to the Regional Board of any planned changes in the permitted facility or site activities that may result in noncompliance with these WDRs.
 3. In the event of any change in control or ownership of land or waste discharge facilities currently owned or controlled by the Owner, the Owner shall notify the succeeding owner or operator of the existence of this order by letter. A copy of this letter shall be signed by the new owner accepting responsibility for complying

with this order, and shall be forwarded to the Executive Officer of the Regional Board.

4. FINANCIAL ASSURANCE PLANS:

Obtain and maintain assurances of financial responsibility for Corrective action activities pursuant to Title 27 §22222.

I, Kurt Berchtold, 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, Santa Ana Region, on October 28, 2011.


Kurt Berchtold
Executive Officer

Attachment A



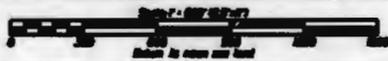
LEGEND

- Property Line
- - - - - Edge of Fill

Riverside County
Waste Management Department

Hemet Sanitary Landfill
Site Map

Attachment A



File Directory: c:\hemet\lha\project\Site Map.dwg

Date: July 12, 2011

Photo Date: July 2011

Scale: 1"=600'

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION**

**MONITORING AND REPORTING PROGRAM (M&RP) NO. R8-2011-0002
FOR
HEMET SANITARY LANDFILL
OPERATED BY
RIVERSIDE COUNTY WASTE MANAGEMENT DEPARTMENT**

A. GENERAL

1. Riverside County Waste Management Department (hereinafter the Discharger) shall perform the monitoring activities in compliance with the water quality protection standards and requirements of Title 27, §20390.
2. The components of this M&RP are subject to change by the Regional Board Executive Officer (EO) and are all incorporated by referenced into the site's Waste Discharge Requirements (Order No. R8-2011-0002). Therefore, all portions of this M&RP, either as adopted or as revised by the Regional Board Executive Officer, are enforceable.
3. Water Quality Protection Standard (Water Standard) – The Water Standard shall consist of the list of Constituents of Concern (COC), the Concentration Limits, and the Point of Compliance and all Monitoring Points. The Water Standard shall apply during the corrective action compliance period.
4. Monitoring Points (MonPt) and Background Monitoring Points selection shall be in accordance with Title 27, §20405. For the Hemet Sanitary Landfill (HSL), the wells for point of compliance are HE-2, and HE-3. Monitoring well HE-5 is considered a sentry well and must be monitored to evaluate concentrations of landfill gas entering this well from the HSL. There is no background monitoring point at HSL because the two upgradient wells, HE-1 and HE-4, have been affected by the release. No new upgradient wells have been installed because the site abuts the Lake View Mountain. Hence, the Department shall determine background concentrations through intrawell statistical methods, not interwell statistical methods.
5. The Water Standard concentration limits shall be determined as follows:
 - a. In cases where the constituent's method detection limit (MDL) is exceeded in less than ten percent of the historical samples, the practical quantitation limit (PQL) is the Concentration Limit.
 - b. In cases where the inorganic constituent's method detection limit (MDL) is exceeded in ten percent or more of the historical samples, a statistically based concentration limit must be defined and regularly updated as follows:

- i. Statistically analyze existing monitoring data, and propose, to the Executive Officer, statistically derived Concentration Limits for each Monitoring Parameter at each Monitoring Point for which sufficient data exists.
 - ii. In cases where sufficient data for statistically determining Concentration Limits does not exist the Discharger shall collect samples and analyze for Monitoring Parameter(s) which require additional data. Once sufficient data is obtained, the Discharger shall submit proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.
 - iii. Sample and analyze new Detection Monitoring Points, including any added by this monitoring and reporting program, until sufficient data is available to establish a proposed Concentration Limit for all Monitoring Parameters. Once sufficient data is obtained the Discharger shall submit the proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.
 - c. In cases where the organic or synthetic constituent's PQL is exceeded in ten percent or more of the historical samples, a concentration limit must be defined and regularly updated. The concentration limit shall be assigned to frequently detected constituents in the following order of precedence: California drinking water maximum contaminant level (MCL), California drinking water notification level (NL), EPA Region 9 tap water screening level (SL) and laboratory practical quantitation limit (PQL).
6. The Discharger shall review Concentration Limits every two years. The past years data will be reviewed for application to revision of Concentration Limits. When appropriate, new Concentration Limits shall be proposed.
 7. For wells in Corrective Action: The Discharger shall use the Mann Kendall trend analysis to evaluate changes in water-quality data or another method acceptable to the Executive Officer.
 8. The corrective action groundwater monitoring system at HSL includes wells HE-1, HE-2, HE-3, HE-4 and HE-5. The Regional Board may request the Discharger to install a new sentry well downgradient of the HSL, to better evaluate the extent of release and the effectiveness of the Corrective Action Measures (CAMs).
 9. Monitoring Parameters:
 - a. The Discharger shall analyze separate water samples from each groundwater monitoring well for the monitoring parameters (MonPar) in Table 2 of Attachment B of this M&RP, and shall test the resulting data using one of the statistical or non-statistical methods listed in Title 27, §20415(e).

- i. **Monitoring parameters that use statistical methods** — For all MonPt/MonPar pairs not addressed by an assigned or approved nonstatistical data analysis method, the Discharger shall use only statistical data analysis methods approved by the Regional Board and that meet §20415(e)(6-12), but that use a pass-1-of-3 retesting approach that involves taking the first sample at the very start of the reporting period (with mid-period retest sample, if needed, and a second retest sample, if needed, just prior to the end of the period) and that are developed to meet the USEPA's **Unified Guidance** (2009), including validation of the method's statistical power by comparison to that agency's relevant Reference Power Curve, as therein described. MonPt/MonPar pairs subject to such testing include:

- (a) **Metals surrogate MonPars** - pH, total dissolved solids (TDS), chloride, sulfate, and nitrate as nitrogen, or other constituents as approved; and
- (b) **Non-metallic MonPar COCs detectable in background** - Each VOC or other non-metallic organic or inorganic COC that exceeds its respective method detection limit (PQL) in at least ten percent of the samples taken from the background monitoring points for a monitored water-bearing medium (i.e., surface water body, aquifer, perched zone, or soil-pore liquid) during a given Reporting Period.

- ii. **Monitored constituents that use non-statistical methods:**

- (a) VOCs and any other organic constituents that are not detectable in background, except by accident, or that are detected less than 10 percent of the time in the historical data, use the California Nonstatistical Data Analysis Method described in Attachment C to this M&RP;
- (b) All MonPt/MonPar pairs in Tracking Status (verified release indication) shall use the Concentration-Versus-Time-Plotting nonstatistical data analysis method described in Attachment C to this M&RP; and
- (c) All MonPt/UnPar pairs monitored every five years, under A8.a.ii of this M&RP, shall use the Upper 85th Percentile Nonstatistical Data Analysis Method provided for that purpose in Attachment C to this M&RP.

- b. Monitoring parameters are specified in Attachment B, Table 1, Table 2 and Table 6. The Executive Officer of the Regional Board may approve alternative monitoring parameters that meet the requirements of Title 27, §§20380 et seq. The Executive Officer may also approve alternative statistical or non-statistical methods that meet the requirements of Title 27, §20415(e).

10. The Discharger must monitor for COCs as follows:

- a. **Known constituents plus Appendix II**

- i. The "COC list" (list of Constituents of Concern required under Title 27,

§20395) includes all constituents listed in Attachment B, Table 4 of this M&RP.

ii. The Discharger shall monitor all UnPar COCs (i.e., those COCs that are not MonPars) every five years, pursuant to Title 27, §20420(g). The analytical data shall be analyzed by using the Upper 85th Percentile Nonstatistical Method provided for that purpose in Attachment C of this M&RP.

- b. **Background sampling for new constituents** - For each newly detected Appendix II constituent that is added to the existing COC list, the Discharger shall establish a reference background value using the method described in A 5 of this M&RP. Once this reference set of background data is established, for a given new MonPt/MonPar pair, the discharger shall include the data set as the proposed Concentration Limit for that pair, in a separate identified item in the monitoring report for that reporting period. This proposal shall include, for each such new MonPt/MonPar pair, a data analysis method meeting A.9 of this M&RP. Existing background data for the newly identified Appendix II constituents may be substituted for additional background sampling with the approval of the Executive Officer of the Regional Board.
- c. **Uploading Laboratory Data** — Beginning no later than for the reporting period that begins on April 1, 2012, the Discharger shall establish an account for the facility with the State Water Resource Control Board's GeoTracker data base. Beginning that reporting period, and for each reporting period thereafter, the Discharger shall upload all facility monitoring data for that reporting period to this GeoTracker account in Electronic Deliverable Format (EDF).

B. MONITORING PROGRAM

1. Water Quality Monitoring Under Corrective Action Program (CAP)

- a. Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA Publication "SW-846").
- b. The Discharger shall comply with the requirements of Title 27, §20415 for any water quality monitoring program developed to satisfy §20420, §20425, or §20430 of Title 27 and the requirements of this order.
- i. The ground water monitoring shall meet the requirements of Title 27, §20415(b).
- ii. All general monitoring requirements shall be in accordance with Title 27, §20415(e).

2. **General Site Monitoring** – All deficiencies identified during general site monitoring shall be documented, and the information transmitted via FAX or email to the Regional Board within 48 hours of occurrence. This same documentation must also be submitted as part of the reports described in item C.2 of this M&RP.
- a. At a minimum, the landfill gas condensate collection system shall be inspected and evaluated on a monthly basis for its effectiveness. All deficiencies identified and the dates and types of corrective action taken shall be recorded in a permanent log. All deficiencies shall be photographed for the record. The volume of liquids collected in the containment structure shall be recorded monthly. Samples of gas condensate shall be collected in accordance with the monitoring frequency in **Table 3**, and analyzed for constituents specified in Table 6 of **Attachment B**.
 - b. Monthly, the Discharger shall inspect all waste management units and shall evaluate their effectiveness in achieving compliance with **Discharge Specifications A through G** of the WDRs. All areas of slope failure, differential settlement, fissuring, erosion, ponding, leachate staining, and seepage into or from the landfill shall be identified, field-marked, and documented. In the event seepage is discovered, the location of each seep shall be mapped and a mitigation plan submitted for the approval of Regional Board staff. All findings shall be photographed for the record.
 - c. At a minimum, all run-on and runoff drainage control structures shall be inspected and evaluated quarterly for their effectiveness in achieving compliance with **Discharge Specification A.4** of the WDRs. During dry weather conditions, the effectiveness of the drainage control system shall be evaluated on the basis of its conformance to the as-built drawings, or revised drawings, for the system. All deficiencies shall be identified, recorded, and repaired.
 - d. Every five years, by October 15, an aerial or ground survey of the landfill facility shall be performed in accordance with the schedule in **Attachment B** of this M&RP. The Discharger shall notify the Regional Board if the October 15 deadline for the aerial photogrammetric survey cannot be adhered to due to bad weather conditions or bad visibility.

C. REPORTING

1. **Monitoring report contents** - All reports shall be submitted no later than one month following the end of their respective Reporting Period. The reports shall be comprised of at least the following, in addition to the specific contents listed for each respective report:

- a. **Transmittal letter** - A letter summarizing the essential points in the report. This letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations;
- b. **Compliance evaluation summary** - For groundwater monitoring and COC reports, a compliance evaluation summary containing at least:
 - i. **Flow rate/direction** - For each monitored ground water body, a description and graphical presentation (e.g., arrow on a map) of the velocity and direction of ground water flow under/around the Unit, based upon water level elevations taken during the quarterly collection of the water quality samples. The results are reported on a semi-annual basis;
 - ii. **Well information** - For each monitoring well addressed by the report, a description of the method and time of water level measurement, and a description of the method of purging used before sampling to remove stagnant water in the well, pursuant to Title 27, §20415(e)(12)(B);
 - iii. **Sampling Information** - For each monitoring point and background monitoring point addressed by the report, a description of the type of pump or other device used and its vertical placement for sampling, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name of the person collecting the samples, and any other observations); and
 - iv. **Monitoring report in PDF format and compliance data spreadsheet** — Beginning no later than the Reporting Period that starts on April 1, 2012, and including all reporting periods thereafter, upload to the Hemet Landfill facility's GeoTracker account a word-searchable-PDF-format copy of the monitoring report for that reporting period, including in that report a copy of that reporting period's facility compliance spreadsheet.
- c. **Map** - A map (or copy of an aerial photograph) showing the locations of observation stations, monitoring points, and background monitoring points;
- d. **Laboratory data** - The laboratory results of all analyses shall be submitted in accordance with **Section A.7** of this M&RP;
- e. **Landfill gas condensate containment, and drainage and erosion control systems** - A statement as to the condition and performance of the landfill gas condensate containment structure, the landfill closure cap, and the drainage and erosion control systems. The summary shall include a list of deficiencies identified and the dates and types of corrective actions taken to achieve

compliance with the requirements contained in this order. If corrective actions for identified deficiencies could not be implemented by the end of the monitoring period; the Discharger shall provide the reason(s) for noncompliance and a time schedule for implementing the corrective actions.

2. **Compliance monitoring report** - The Discharger shall submit monitoring reports for the monitoring periods and reporting due dates summarized in **Table 3**. The Discharger may propose an alternate schedule, and the Executive Officer may approve the proposal or require the Discharger to comply under an alternate reporting frequency.
3. **Semi-Annual monitoring reports** - For each monitored medium, all monitoring points assigned to corrective action monitoring, including all background monitoring points, shall be monitored on a semi-annual basis. Reports prepared for this M&RP shall be submitted semi-annually to the Regional Board (in addition, as of April 1, 2012, to being uploaded to the facility's GeoTracker account in word-searchable PDF format) in accordance with the schedule shown in **Table 3**, and shall include a listing of all MonPt/MonPar pairs that have shown a verified exceedance of their respective Threshold Value during that reporting period, plus a listing of all other out-of-compliance MonPt/MonPar pairs (that have demonstrated a release indication during any prior reporting period).
4. **Landfill Gas or Gas Condensate Monitoring Report**
 - a. **October landfill gas or gas condensate sampling results** - The Discharger shall report to the Regional Board, no later than January 31 of each year, the analytical results of the landfill gas or gas condensate sample taken the previous October. If insufficient gas condensate is available to perform the necessary analyses, then landfill gas may be substituted for gas condensate.
 - b. **April landfill gas or gas condensate retest results**- If the annual landfill gas or gas condensate samples taken in October identify constituents that exceed their respective PQL and are not on the updated monitoring parameters list, the Discharger shall collect and analyze a retest landfill gas or gas condensate sample in April. The retest sample or samples shall be analyzed only for the Appendix I constituents detected in the October sampling event. During any year in which an April landfill gas or gas condensate retest is carried out, the Discharger shall submit a report to the Regional Board no later than August 1 of that year. This report must identify all VOC constituents that must be added to the landfill's monitoring parameters list as a result of having exceeded their respective PQL in both the previous calendar year's October sample and also in the April retest sample [as well as degradation by-products of confirmed constituents(s)], plus any additional Appendix II constituents identified as new COCs pursuant to paragraph A.9.a for which the Discharger is in the process of establishing a

Concentration Limit (background data set). The report shall also include an updated monitoring parameter list.

5. **Annual summary report** - The Discharger shall submit an annual report to the Regional Board covering the previous monitoring year (April 1 of the previous year through March 31 of the following year). The annual summary reports are due on April 30. This report may be combined with the water quality monitoring report period ending March 31, and shall meet the following requirements:
 - a. **Graphical Presentation** - Graphing the Groundwater Analytical Data shall be in accordance with Title 27, §20415(e)(14), but the concentration-versus-time plots [including the cleanup concentration goal (background mean value), plotted as an identified horizontal line] for all release-effected MonPt/MonPar pairs will be included in the compliance record discussion of ¶C.5.c.;
 - b. **Tables** - All monitoring analytical data obtained during at least the two previous semi-annual reporting periods shall be presented in tabular form in the annual summary report and shall be uploaded electronically onto the State's database (GeoTracker) within one month following the submittal of the semi-annual monitoring reports to the Regional Board. The Regional Board regards the submittal of data in hard copy and electronically on the State's database as the form necessary for statistical analysis [Title 27, §20420(h)]. This format facilitates periodic review by the Regional Board's statistical consultant;
 - c. **Compliance record discussion** - A comprehensive discussion of the compliance record, and of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the landfill's waste discharge requirements relating to water quality issues. This discussion shall evaluate whether the existing corrective action measures (CAMs) are bringing all release-effected MonPt/MonPar pairs back into compliance with their respective Concentration Limit [see §20415(h)], and shall include the concentration-versus-time plots for each such release-effected MonPt/MonPar pair. Pursuant to §20080(a)(1), the Regional Board finds that an annual update frequency, for this CAMs-effectiveness report, will be more effective at noting changes than would be the case under the prescriptive semi-annual reporting frequency required for it at §20415(h);
 - d. **Summary of changes** - A written summary of monitoring results and monitoring and control systems, indicating any changes made or observed since the previous annual report;
6. **Annual drainage control and maintenance report** - Annually, by October 31, an annual site drainage control and maintenance inspection report shall be prepared and submitted with the Semi-Annual General Site Monitoring report that

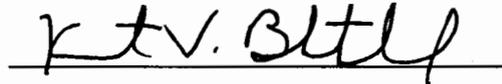
is due October 31. The drainage control system maintenance inspection report shall include, but not be limited to, the following information:

- a. For the previous 12 months, a summary of the adequacy and effectiveness of the drainage control system to collect and divert the calculated volume of precipitation and peak flows resulting from a 100-year, 24-hour storm.
 - b. A tabular summary of the new and existing drainage control structures including the types and completion dates of maintenance activities performed for each of these structures; and
 - c. An 11"x17" site map indicating the locations of the elements listed in Item b., above, and the flow direction of all site drainage, as necessary¹.
7. **UnPar Report at least every five years** - In the absence of a major change in the known release's being indicated, the Discharger shall monitor all parameters on the facility's COC list and submit a report (COC Report).
- a. **Reporting period for UnPars** - The Discharger shall sample all monitoring points and background monitoring points for each monitored medium for all UnPars (non-MonPar COCs) every fifth year, beginning with the Fall of 2015. The first Reporting Period ends September 30, 2015, with subsequent UnPar COC monitoring to be carried out every fifth year thereafter, alternately in the Spring (Reporting Period ends March 31) and the Fall (Reporting Period ends September 30).
 - b. **UnPar COC report** - This report, which is due one month following the Reporting Period, shall be combined either with the semi-annual monitoring report for the completion date or with the annual summary report for that monitoring year. The most recent COC report (then termed "COC report") was submitted in 2010. Future UnPar COC reports are due every 5 years (in 2015, 2020, 2025, etc.). The UnPar COC reports shall identify all non-MonPar COCs that need to become MonPars because they have exceeded their upper 85th percentile (of background data) both initially and in the mid-reporting-period retest sample (see Attachment C to this M&RP for details). Any non-MonPar COC that fails this test at any Monitoring Point shall be reported as such in the monitoring report for that reporting period, including being noted in the summary for it, and becomes a MonPar at all monitoring points in that monitored medium as of the following reporting period.
8. **Reporting Schedule** - The Discharger shall submit the reports/ documents in accordance with the deadlines specified in **Table 3**.

¹ The site map is required only if there is change to the drainage plan during the reporting period. If there is no change to the drainage plan during the reporting period, it is not necessary to submit the site map.

9. **Signature** - All reports shall be signed by a responsible officer or a duly authorized representative of the Discharger and shall be submitted under penalty of perjury.

I, Kurt Berchtold, 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, Santa Ana Region.

A handwritten signature in black ink, appearing to read "K. V. Berchtold", is written over a horizontal line.

Kurt Berchtold
Executive Officer

October 28, 2011

Attachment B

Hemet Sanitary Landfill Monitoring Programs, Monitoring Parameters and Monitoring Frequency

Type of Program	Monitoring Parameters	Monitoring Frequency
Corrective Action Water Quality Monitoring Program (CAP Wells)	pH, nitrate, chloride, total dissolved solids (TDS), Dissolved Oxygen (DO), Iron, Potassium, Sulfate, and volatile organic compounds (VOCs) listed in Table 2 ¹ (MonPar COCs)	Semi-annually
Landfill Gas (LFG) Condensate Monitoring	General minerals (Table 1) and all Appendix II (Table 5 ²), except Organochlorine Pesticides, Chlorinated Herbicides and Polychlorinated Biphenyls (PCBs)	Annually
Extracted Landfill Gas (only if LFG condensate is not monitored)	Appendix II constituents (Table 6)	Annually
Non-MonPar COC Analysis	The Appendix II (Table 5) constituents and general minerals	Once every five years
Aerial or Ground Survey	Not applicable	Once every five years
General Site Monitoring	Not Applicable	Varies (see Section B.2 of M&RP)

1. The list of VOCs shall be updated each year based on landfill gas condensate testing/retesting programs.
2. October landfill gas condensate testing with a confirmation retest in April of the following year

TABLE 1

List of General Minerals

Parameter	EPA Method	Parameter	EPA Method
Total Hardness	130	Total Dissolved Solids	160.1
Bicarbonate (HCO ₃)	310.2	Chemical Oxygen Demand	410
Carbonate (CaCO ₃)	310.2	Phenols	420.1
Total Alkalinity	310.1	Total Organic Carbon	415
Total Cations	1	Total Organic Halogens	450.1
Total Anions	1	Calcium (Ca)	200.7/215
Hydroxide (OH)	2	Magnesium (Mg)	200.7/242.1
Chloride (CL)	325	Manganese (Mn)	200.7/243.1
Fluoride (F)	340	Potassium (K)	200.7/258.1
Nitrate (NO ₃)	353.2	Sodium (Na)	200.7/273.1
Sulfate (SO ₄)	375	Iron (Fe)	200.7/236.1
Phosphate (PO ₄)	365.2	Zinc (Zn)	200.7/289.1
Total Phosphorus	365.1/365.2		
Boron (B)	212.3/200.7		
Specific Conductance (Electrical Conductivity - EC)	120.1		
pH	150.1		

Total cations and anions are determined by the summation of all cations and anions, respectively, in the sample analyzed.

The standard method, SM 2330B, in the "Standard Methods for the Examination of Water and Wastewater" for hydroxide ion analysis shall be used.

TABLE 2

Current MonPar Constituent of Concerns (COC) List For the Hemet Sanitary Landfill

General Chemistry Parameters	Volatile Organic Compounds
Parameter	Parameter
Chloride (Cl)	1,1-Dichloroethane
Iron (Fe)	1,1-Dichloroethene
LAB pH	1,2-Dichlorobenzene
Nitrate (NO3-N)	1,2-Dichloropropane
Potassium (K)	1,4-Dichlorobenzene
Sulfate (SO4)	Acetone
Total Dissolved Solids	Benzene
	Chlorobenzene
Pesticides/Herbicides	Chloroethane ⁴
Parameter	Chloroform
2,4-D	cis-1,2-Dichloroethene
	Dichlorodifluoromethane
Semi Volatile Organic Compounds	Ethylbenzene
Parameter	Methylene Chloride
2-Chlorophenol ¹	Tetrachloroethene
Acetophenone ²	Toluene
Benzyl Alcohol ³	Total Xylenes
	m,p-Xylenes
	o-Xylene
	Trans-1,2-Dichloroethene
	Trichloroethene
	Trichlorofluoromethane
	Vinyl Chloride

The Pesticides/Herbicides analysis shall be completed on Wells HE-3 and HE-5 ONLY.
 The concentration limit for general chemistry parameters listed above is background concentration.
 The concentration limit for pesticides, SVOCs and VOCs listed above are the MCL, NL, SL or laboratory PQL.
 1 – Unconfirmed daughter product of confirm parameter, Chlorobenzene.
 2 – Unconfirmed daughter product of confirm parameter, Ethylbenzene.
 3 – Unconfirmed daughter product of confirm parameter, Ethylbenzene.
 4 – Unconfirmed daughter product of confirm parameter, 1,1-Dichloroethane.

TABLE 3

Monitoring and Reporting Due Dates

Task Description	Monitoring Period	Report Due Date
Semi-Annual Water Quality Monitoring	October 1 - March 31	April 30 of each year
	April 1 - September 30	October 31 of each year
Semi-Annual General Site Monitoring	October 1 - March 31	April 30 of each year
	April 1 - September 30	October 31 of each year
Annual Summary	April 1 of previous year - March 31	April 30 of each year
COC Analysis	Every 5 years (alternating between Fall and Spring Reporting Periods)	April 30, 2010; October 31, 2015; April 30, 2020; October 31, 2025; etc.
October Landfill Gas Condensate Testing Analysis	October 1 - October 31	January 31 of the following year
April Landfill Gas Condensate Retesting Analysis (When Required)	April 1 - April 30	August 1 of each year
Annual Drainage Control and Maintenance	By October 1 of each year	October 31 of each year
Aerial or Ground Survey	By October 15 of every fifth year	December 31 of every fifth year

Reports with the same submittal date may be consolidated into a single report.

TABLE 4
List of Appendix I Constituents

Inorganic Constituents	Organic Constituents – continued
Antimony	p-Dichlorobenzene; 1,4-Dichlorobenzene
Arsenic	trans-1,4-Dichloro-2-butene
Barium	1,1-Dichloroethane; Ethylidene chloride
Beryllium	1,2-Dichloroethane; Ethylene dichloride
Cadmium	1,1-Dichloroethylene; 1,1-Dichloroethane; Vinylidene chloride
Chromium	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene
Cobalt	trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene
Copper	1,2-Dichloropropane; Propylene dichloride
Lead	cis-1,3-Dichloro propene
Nickel	trans-1,2-Dichloropropene
Selenium	Ethylbenzene
Silver	2-Hexanone; Methyl butyl ketone
Thallium	Methyl bromide; Bromomethane
Vanadium	Methyl chloride; Chloromethane
Zinc	Methylene bromide; Dibromomethane
	Methylene chloride; Dichloromethane
Organic Constituents	Methyl ethyl ketone; MEK; 2-Butanone
Acetone	Methyl iodide; Iodomethane
Acrylonitrile	4-Methyl-2-pentanone; Methyl isobutyl ketone
Benzene	Styrene
Bromochloromethane	1,1,1,2-Tetrachloroethane
Bromodichloromethane	1,1,2,2-Tetrachloroethane
Bromoform; Tribromomethane	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
Carbon disulfide	Toluene
Carbon tetrachloride	1,1,1-Trichloroethane; Methylchloroform
Chlorobenzene	1,1,2-Trichloroethane
Chloroethane; Ethyl chloride	Trichloroethylene; Trichloroethene
Chloroform; Trichloromethane	Trichlorofluoromethane; CFC-11
Dibromochloromethane; Chlorodibromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane; DBCP	Vinyl acetate
1,2-Dibromoethane; Ethylene dibromide; EDB	Vinyl chloride
o-Dichlorobenzene; 1,2-Dichlorobenzene	Xylenes

TABLE 5

LIST OF APPENDIX II CONSTITUENTS

Acenaphthene	Dibenz [a,h] anthracene
Acenaphthylene	Dibenzofuran
Acetone	Dibromochloromethane; Chlorodibromomethane
Acetonitrile; Methyl cyanide	1,2-Dibromo-3-chloropropane; DBCP
Acetophenone	1,2-Dibromoethane; Ethylene dibromide; EDB
2-Acetylaminofluorene; 2-AAF	Di-n-butyl phthalate
Acrolein	o-Dichlorobenzene; 1,2-Dichlorobenzene
Acrylonitrile	m-Dichlorobenzene; 1,3-Dichlorobenzene
Aldrin	p-Dichlorobenzene; 1,4-Dichlorobenzene
Allyl chloride	3,3-Dichlorobenzidine
4-Aminobiphenyl	trans-1,4-Dichloro-2-butene
Anthracene	Dichlorodifluoromethane; CFC 12
Antimony (total)	1,1-Dichloroethane; Ethylidene chloride
Arsenic (total)	1,2-Dichloroethane; Ethylene dichloride
Barium (total)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride
Benzene	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene
Benzo[a]anthracene; Benzanthracene	trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene
Benzo[b] fluoranthene	2,4-Dichlorophenol
Benzo[k] fluoranthene	2,6-Dichlorophenol
Benzo[ghi] perylene	1,2-Dichloropropane; Propylene dichloride
Benzo[a] pyrene	1,3-Dichloropropane; Trimethylene dichloride
Benzyl alcohol	2,2-Dichloropropane; Isopropylidene chloride
Beryllium (total)	1,1-Dichloropropene
alpha-BHC	cis-1,3-Dichloropropene
beta-BHC	trans-1,3-Dichloropropene
delta-BHC	Dieldrin
gamma-BHC; Lindane	Diethyl phthalate
Bis(2-chloroethoxy) methane	0,0-Diethyl 0-2-pyrazinyl phosphorothioate; Thionazin
Bis(2-chloroethyl) ether; Dichloroethyl ether	Dimethoate
Bis(2-chloro-1-methylethyl) ether; 2,2-Dichlorodiisopropyl ether; DCIP	p-(Dimethylamino)azobenzene
Bis(2-ethylhexyl) phthalate	7,12-Dimethylbenz[a]anthracene
Bromochloromethane; Chlorobromomethane	3,3-Dimethylbenzidine
Bromodichloromethane; Dibromochloromethane	2,4-Dimethylphenol; m-Xylenol
Bromoform; Tribromomethane	Dimethyl phthalate
4-Bromophenyl phenyl ether	m-Dinitrobenzene
Butyl benzyl phthalate; Benzyl butyl phthalate	4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol
Cadmium (total)	2,4-Dinitrophenol
Carbon disulfide	2,4-Dinitrotoluene
Carbon tetrachloride	2,6-Dinitrotoluene
Chlordane	Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol
p-Chloroaniline	Di-n-octyl phthalate
Chlorobenzene	Diphenylamine
Chlorobenzilate	Disulfoton
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	Endosulfan I
Chloroethane; Ethyl chloride	Endosulfan II
Chloroform; Trichloromethane	Endosulfan sulfate
2-Chloronaphthalene	Endrin
2-Chlorophenol	Endrin aldehyde
4-Chlorophenyl phenyl ether	Ethylbenzene
Chloroprene	Ethyl methacrylate
Chromium (total)	Ethyl methanesulfonate
Chrysene	Famphur
Cobalt (total)	Fluoranthene
Copper (total)	Fluorene
m-Cresol; 3-methylphenol	Heptachlor
o-Cresol; 2-methylphenol	Heptachlor epoxide
p-Cresol; 4-methylphenol	Hexachlorobenzene
Cyanide	Hexachlorobutadiene
2,4-D; 2,4-Dichlorophenoxyacetic acid	Hexachlorocyclopentadiene
4,4-DDD	Hexachloroethane
4,4-DDE	Hexachloropropene
4,4-DDT	2-Hexanone; Methyl butyl ketone
Diallate	Indeno (1,2,3-cd) pyrene

Isobutyl alcohol
Isodrin
Isophorone
Isosafrole

Kepone
Lead (total)

TABLE 5 (continued)

LIST OF APPENDIX II CONSTITUENTS

Mercury (total)
Methacrylonitrile
Methapyrilene
Methoxychlor
Methyl bromide; Bromomethane
Methyl chloride; Chloromethane
3-Methylcholanthrene
Methyl ethyl ketone; MEK; 2-Butanone
Methyl iodide; Iodomethane
Methyl methacrylate
Methyl methanesulfonate
2-Methylnaphthalene
Methyl parathion; Parathion methyl
4-Methyl-2-pentanone; Methyl isobutyl ketone
Methylene bromide; Dibromomethane
Methylene chloride; Dichloromethane
Naphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
Nickel (total)
o-Nitroaniline; 2-Nitroaniline
m-Nitroaniline; 3-Nitroaniline
p-Nitroaniline; 4-Nitroaniline
Nitrobenzene
o-Nitrophenol; 2-Nitrophenol
p-Nitrophenol; 4-Nitrophenol
N-Nitrosodi-n-butylamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine;
Di-n-propylnitrosamine
N-Nitrosomethylethylamine
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Parathion
Pentachlorobenzene
Pentachloronitrobenzene
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Phorate
Polychlorinated biphenyls; PCBS; Aroclors
Pronamide
Propionitrile; Ethyl cyanide
Pyrene
Safrole
Selenium (total)
Silver (total)
Silvex; 2,4,5-TP
Styrene
Sulfide
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid
1,2,4,5-Tetrachlorobenzene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
2,3,4,6-Tetrachlorophenol
Thallium (total)
Tin (total)
Toluene

o-Toluidine
Toxaphene

The concentration limits for Appendix II Constituents, that are not current MonPars, are the laboratory practical quantitation limits.

1,2,4-Trichlorobenzene
1,1,1-Trichloroethane; Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene; Trichloroethene
Trichlorofluoromethane; CFC-11
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
1,2,3-Trichloropropane
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene
Vanadium (total)
Vinyl acetate
Vinyl chloride; Chloroethene
Xylenes (total)
Zinc (total)

TABLE 6

Landfill Gas Parameters

Volatile Organic Compounds (VOCs)	
1,1,1,2-Tetrachloroethane	Chlorobenzene
1,1,1-Trichloroethane	Chloroethane
1,1,2,2-Tetrachloroethane	Chloroform
1,1,2-Trichloroethane	Chloromethane
1,1-Dichloroethane	cis-1,2-Dichloroethene
1,1-Dichloroethene	cis-1,3-Dichloropropene
1,1-Dichloropropene	Dibromochloromethane
1,2,3-Trichloropropane	Dibromomethane
1,2,4-Trichlorobenzene	Dichlorodifluoromethane
1,2-Dichlorobenzene	Ethylbenzene
1,2-Dichloroethane	Iodomethane
1,2-Dichloropropane	Methyl isobutyl ketone (MIBK)
1,3-Dichlorobenzene	Methyl Methacrylate
1,3-Dichloropropane	Methylene Chloride
1,4-Dichlorobenzene	Naphthalene
2,2-Dichloropropane	Styrene
2-Butanone (MEK)	Tetrachloroethene
2-Hexanone	Toluene
Acetone	Total Xylenes
Acetonitrile	m-Xylene
Acrolein	o-Xylene
Acrylonitrile	p-Xylene
Allyl Chloride	trans-1,2-Dichloroethene
Benzene	trans-1,3-Dichloropropene
Bromodichloromethane	Trichloroethene
Bromoform	Trichlorofluoromethane
Bromomethane	Vinyl Acetate
Carbon Disulfide	Vinyl Chloride
Carbon Tetrachloride	

The VOCs listed above are a subset of the Appendix II Constituents that can be analyzed by common commercial laboratories by test method EPA TO-15.

ATTACHMENT C: NONSTATISTICAL TEST METHODS

Definitions of Terms

“Constituents of Concern (COCs)” means those waste constituents that could be released from the landfill. For any given medium, each such constituent is either: a Monitoring Parameter (MonPar) subject to compliance testing each Reporting Period, due to being a good indicator or, in the event of a release, due to having been detected and verified in groundwater as having exceeded its respective background data set’s upper 85th percentile concentration; an UnPar (includes all constituents of concern that are not MonPars for that medium);

“Standard Status” means that the given Monitoring Parameter, at a given Monitoring Point (i.e., a MonPt/MonPar pair, for tracking/administrative purposes) has not shown as verified indication of a release yet, so, its purpose, in the monitoring program, is to detect the arrival of the release. This includes MonPt/MonPar pairs, during an evaluation monitoring or corrective action program, that have not yet shown a verified release indication. This also includes MonPars that had historical verified detections but are not currently classified in Tracking Status;

“DMP, EMP, AMP, CAP” mean the detection monitoring program, evaluation monitoring program, assessment monitoring program, and corrective action program;

“InterPoint” means that the Concentration Limit (background data set against which each new datum is tested) comes from the background (upgradient or sidegradient) Monitoring Point;

“IntraPoint” means that the Concentration Limit consists of historical data from the Monitoring Point being tested. This background data must be validated (before use) not to include any indication of a release for any constituent to which the nonstatistical data analysis method is applied;

“Measurably significant increase” has the same meaning as the federal term, “statistically significant increase,” but includes indications by any approved nonstatistical test;

“MonPar” or “MonPar COCs” means one the landfill’s set of Constituents of Concern that functions as a Monitoring Parameter, for any given monitored medium (i.e., that subset of the Constituents of Concern that are subject to compliance data analysis every Reporting Period at each MonPt in that medium). Each monitored medium will have its own MonPars;

“Threshold Value” means the retest-if-exceeded concentration one derives by applying the MonPt/COC pair’s approved data analysis method to that pair’s background data set (also known as its Concentration Limit).

“Tracking Status” means that the given Monitoring Parameter, at a given Monitoring Point (i.e., a MonPt/MonPar pair, for tracking/administrative purposes) has shown a recent verified indication of a release; therefore its purpose, in the monitoring program, is to track the released constituent’s concentration there via a concentration-versus-time plot upon which the concentration limit (i.e. background mean value or health risk based value serves as the cleanup goal). This plotting serves as that MonPt/MonPar pair’s nonstatistical data analysis method. The discharger notifies Regional Board staff as soon as the plot has been at-or-below this plotted horizontal cleanup goal line for two reporting periods in a row and the MonPar shall return to Standard Status. For a landfill in corrective action, the discharger includes these plots of Tracking Status MonPt/MonPar pairs in each Corrective Action Measures Effectiveness Report (CAMs Report);

“UnPar” or “UnPar COC” means one of the landfill’s set of Constituents of Concern that functions as an Uninvolved Parameter for any given monitored medium. For any given monitored medium (groundwater, surface, water, or the unsaturated zone), they are that

subset of the Constituents of Concern that are not Monitoring Parameters (MonPars). Each monitored medium will have its own UnPars.

CONCENTRATION-VERSUS-TIME PLOTTING METHOD

(See definition for "Tracking Status.")

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NONSTATISTICAL DATA ANALYSIS METHODS (NSDAM)

Non-Statistical Method For Detection Status COCs Seldom Found In Background

- A. For any given Monitoring Point (MonPt) subject to compliance testing during each Reporting Period, regardless of the monitoring program (DMP, AMP/EMP, or CAP), the discharger shall use this data analysis method, jointly, for all Standard Status Monitoring Parameters (MonPars) on that MonPt's "scope list" (see ¶A.1. for the initial test scope list and ¶B.1 for the modified scope list use during the single retest).
1. **Scope List** — Create a current "scope list" for that MonPt that includes each Standard Status MonPar, at that MonPt, that is not currently considered in Tracking Status at the start of the reporting period.
 2. **Two Triggers** — From the scope list made under ¶A.1., above, for an initial test [or, for a retest, using the modified scope list created under ¶B.2, below], identify each COC in the **current** sample from that MonPt that exceeds either its respective MDL or its respective PQL. The discharger shall conclude that these exceeding COCs provide a preliminary indication [or, for a retest, provide a measurably significant indication] of a release indication, at that MonPt, if **either**:
 - i two or more of the Standard Status MonPars on the MonPt's scope list exceed their respective MDL; **or**
 - ii at least one of the Standard Status MonPars on the MonPt's scope list equals or exceeds its respective PQL.
- B. **Single Discrete Retest (A "Pass-1-of-2" Plan):**
1. **Notification and Retest Sample Acquisition** — In the event that the discharger concludes (pursuant to paragraph A.2., above) that the initial sample, taken at the very start of the reporting period, indicates that there is a preliminary indication for one-or-more MonPars on the scope list for that MonPt, then the discharger shall immediately notify Regional Board staff by phone or e-mail and, at mid-reporting-period, shall collect a new independent retest sample from the indicating MonPt.
 2. **Apply Test To Modified Scope List** — For the MonPt retest sample, the discharger shall include, from the laboratory retest analysis results, only the determinations for those constituents indicated in that MonPt's original test, under ¶A.2., and these indicated constituents shall comprise the MonPt's "modified scope

list," for use in the retest. As soon as the retest data are available, the discharger shall apply the same test [under ¶A.2., above, but using this modified scope list] to analyze the retest sample's data at that compliance MonPt.

3. **Conclusions** — If the retest sample trips neither one of the triggers under ¶(a)(2), then the discharger shall conclude that the original determination was in error and shall report this to the Regional Board by phone or e-mail and include it in the Monitoring Report for that Reporting Period.

If, instead, the retest sample trips either (or both) of the triggers under ¶A.2., then the discharger shall conclude that there is a measurably significant increase at that MonPt for the constituent(s) indicated in the validating retest sample, shall report this to the Regional Board immediately (by phone or e-mail), and shall include this information in the Monitoring Report for that reporting period. Furthermore, given a confirming retest, beginning with the very next Reporting Period, the discharger shall monitor the indicated-and-verified constituent(s) in Tracking Status (instead of Detection Status) at that MonPt, shall no longer include those constituent(s) in the scope list created (under ¶A.1.) for that MonPt.

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UPPER 85th PERCENTILE NONSTATISTICAL METHOD FOR UNPAR TESTING

A. **Threshold Value** — The UnPar, or UnPar COCs, are those Constituents of Concern (COCs) that are not Monitoring Parameters. Under this Order, they are tested every five years. For any given UnPar at a given Monitoring Point (i.e., for any given MonPt/UnPar pair), its Threshold Value (retest-triggering concentration) shall be the upper 85th percentile value of its Concentration Limit (background data set). Nevertheless, for a constituent whose upper 85th percentile value lies below its then-current Practical Quantitation Limit (PQL), its Threshold Value is its PQL.

B. **Test & Pass-1-of-2 Retest** — If, during the five-yearly UnPar testing, an UnPar exceeds its respective Threshold Value in its initial sample (taken at the start of the reporting period), the Discharger shall take one retest sample (for the indicating MonPt/UnPar pair) at mid-period (~90 days later).

If that single retest sample's concentration does not exceed that UnPar's Threshold Value, then the test is concluded without the UnPar's changing to a MonPar and the Discharger so notifies the Regional Board and includes the test information and conclusion in the Monitoring Report for that reporting period.

If, instead, the single retest sample's concentration for that UnPar exceeds that MonPt/UnPar pair's Threshold Value (like the initial sample did), then that constituent becomes a MonPar COC at all MonPts in that monitored medium (groundwater, surface water, or the unsaturated zone), beginning with the second Reporting Period thereafter, and the Discharger shall report this change to Regional Water Board staff immediately, declare it clearly in the monitoring report (including its summary page) for that Reporting Period, and that report shall include, for each such new MonPt/MonPar pair individually, the proposal of a data analysis method meeting §20415(e)(7-12) to be used for it in Standard Status testing — a nonstatistical method shall use a pass-1-of-2 retesting approach, whereas a

statistical method shall use a pass-1-of-3 retesting approach [see the US EPA's **Unified Guidance** (2009)]².

This approach is imposed as an improvement over the Title 27 prescriptive standards of §20415(e)(8)(E)3., §20420(g) and §20425(e)(4), pursuant to §20080(a)(1) and the leading paragraphs of §20415(e)(8 & 9).

² US EPA, MARCH 2009, STATISTICAL ANALYSIS OF GROUNDWATER MONITORING DATA AT RCRA FACILITIES UNIFIED GUIDANCE (EPA 530/R-09-007) (available at <http://www.epa.gov/osw/hazard/correctiveaction/resources/guidance/sitechar/gwstats/unified-guid.pdf>)